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49 CFR Parts 385, 386, 390, and 395
Electronic Logging Devices and Hours of Service Supporting Documents; Final Rule

DEPARTMENT OF TRANSPORTATION

Federal Motor Carrier Safety Administration

49 CFR Parts 385, 386, 390, and 395

[Docket No. FMCSA–2010–0167]

RIN 2126–AB20

Electronic Logging Devices and Hours of Service Supporting Documents

AGENCY: Federal Motor Carrier Safety Administration (FMCSA), DOT.

ACTION: Final rule.

SUMMARY: The Federal Motor Carrier Safety Administration (FMCSA) amends the Federal Motor Carrier Safety Regulations (FMCSRs) to establish: Minimum performance and design standards for hours-of-service (HOS) electronic logging devices (ELDs); requirements for the mandatory use of these devices by drivers currently required to prepare HOS records of duty status (RODS); requirements concerning HOS supporting documents; and measures to address concerns about harassment resulting from the mandatory use of ELDs. The requirements for ELDs will improve compliance with the HOS rules.

DATES: *Effective Date:* February 16, 2016.

Compliance Date: December 18, 2017.

Petitions for Reconsideration: The deadline for submitting petitions for reconsideration is January 15, 2016.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Office of the Federal Register as of February 16, 2016.

FOR FURTHER INFORMATION CONTACT: Mr. Michael Huntley, Vehicle and Roadside Operations Division, Office of Bus and Truck Standards and Operations, Federal Motor Carrier Safety Administration, 1200 New Jersey Avenue SE., Washington, DC 20590–0001 or by telephone at 202 366–5370.

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I. Abbreviations and Acronyms

American Bus Association ABA
American Moving & Storage Association AMSA
American Pyrotechnics Association APA
American Trucking Association ATA
Associated General Contractors of America AGC
Automatic On-Board Recording Device AOBRD
Commercial Vehicle Safety Alliance CVSA
Commercial Driver's License CDL
Commercial Motor Vehicle CMV
Department of Transportation DOT
Electronic Control Module ECM
Electronic Logging Device ELD
Electronic On-Board Recorder EOBR
Electronic Records of Duty Status eRODs
Engine Control Unit ECU
Extensible Markup Language XML
Federal Motor Carrier Safety Administration FMCSA
Federal Motor Carrier Safety Regulations FMCSRs
Fleet Management System FMS
Global Positioning System GPS
Hazardous Materials HM
Hours of Service HOS
Information Collection Request ICR
Institute of Makers of Explosives IME
Initial Regulatory Flexibility Assessment IRFA
International Brotherhood of Teamsters IBT
International Foodservice Distributors Association IFDA
Motor Carrier Safety Advisory Committee MCSAC
Motor Carrier Safety Assistance Program MCSAP
National Federation of Independent Businesses NFIB
National Limousine Association NLA
National Motor Freight Traffic Association NMFTA
National Propane Gas Association NPGA
National Transportation Safety Board NTSB
Notice of Proposed Rulemaking NPRM
Office of Management and Budget OMB
Ohio Trucking Association OTA
On-Board Diagnostics OBD–II
On-Duty Not Driving ODND
Owner-Operator Independent Driver Association OOIDA
Quick Response QR
Record of Duty Status RODS
Regulatory Impact Analysis RIA
Supplemental Notice of Proposed Rulemaking SNPRM
Truck Rental and Leasing Association TRALA
Truckload Carriers Association TCA
United Motorcoach Association UMA
Vehicle Identification Number VIN

II. Executive Summary

This rule improves commercial motor vehicle (CMV) safety and reduces the overall paperwork burden for both motor carriers and drivers by increasing the use of ELDs within the motor carrier industry, which will, in turn, improve compliance with the applicable HOS rules. Specifically, this rule: (1) Requires new technical specifications for ELDs that address statutory requirements; (2) mandates ELDs for drivers currently using RODS; (3) clarifies supporting document requirements so that motor carriers and drivers can comply efficiently with HOS regulations; and (4) adopts both procedural and technical provisions aimed at ensuring that ELDs are not used to harass CMV operators.

In August 2011, the United States Court of Appeals for the Seventh Circuit vacated the April 2010 rule on electronic on-board recorders (EOBRs), including the device performance standards. See *Owner-Operator Indep. Drivers Ass'n* v. *Fed. Motor Carrier Safety Admin.,* 656 F.3d 580 (7th Cir. 2011) available in the docket for this rulemaking. This rulemaking addresses issues raised by that decision.

All of the previous rulemaking notices, as well as notices announcing certain Motor Carrier Safety Advisory Committee (MCSAC) meetings and public listening sessions, referred to the devices and support systems used to record electronically HOS RODS as EOBRs. Beginning with the supplemental notice of proposed rulemaking (SNPRM) for this rulemaking (79 FR 17656, March 28, 2014), the term ''electronic logging device (ELD)'' was substituted for the term ''EOBR'' in order to be consistent with the term used in MAP–21. To the extent applicable, a reference to an ELD includes a related motor carrier or provider central support system—if one is used—to manage or store ELD records.

FMCSA based this rulemaking on the authority in a number of statutes, including the Motor Carrier Act of 1935, the Motor Carrier Safety Act of 1984, the Truck and Bus Safety and Regulatory Reform Act of 1988, the Hazardous Materials Transportation Authorization Act of 1994 (HMTAA), and MAP–21.

Today's rule makes changes from the SNPRM. The key changes are:

1. *Documents Requirements*—The maximum number of supporting documents that must be retained has been lowered from 10 in the SNPRM to 8 in today's rule. In addition, the timeframe in which a driver must submit RODS and supporting documents to a motor carrier has been extended from 8 to 13 days.

2. *Technical Specifications*—Two of the options for the required electronic data transfer included in the SNPRM (Quick Response (QR) codes and TransferJet) [1] have been removed. Electronic data transfer must be made by either (1) wireless Web services and email *or* (2) Bluetooth® and USB 2.0. Furthermore, to facilitate roadside inspections, and ensure authorized safety officials are always able to access this data, including cases of limited connectivity an ELD must provide either a display or printout.

3. *Exemptions*—Two optional exceptions are added from the required use of ELDs: (1) Driveaway-towaway operations are not required to use an ELD, provided the vehicle driven is part of the shipment; and (2) ELDs are not required on CMVs older than model year 2000.

4. *ELD Certification*—To ensure that ELD providers [2] have the opportunity for due process in the event that there are compliance issues with their product, procedures are added that FMCSA would employ if it identified problems with an ELD model before it would remove the model from the Agency's list of certified products.

In this rule, the Agency clarifies its supporting document requirements, recognizing that ELD records serve as the most robust form of documentation for on-duty driving periods. FMCSA neither increases nor decreases the burden associated with supporting documents. These changes are expected to improve the quality and usefulness of the supporting documents retained, and consequently increase the effectiveness and efficiency of the Agency's review of motor carriers' HOS records during on-site compliance reviews and its ability to detect HOS rules violations. The Agency is currently unable to evaluate the impact the changes to supporting documents requirements would have on crash reductions.

[1] Quick Response (QR) codes convert information into two dimensional barcodes that can be read using common tools such as smart phones or hand scanners. TransferJet, the close-proximity transfer of data, allows a large amount of data to be transmitted at high speed when two devices are held very close together, or ''bumped.''

[2] ''ELD provider'' describes a manufacturer or packager of an ELD that complies with the appendix to subpart B of part 395 that is also responsible for registering and certifying the ELD on FMCSA's Web site.

Today's rule contains provisions calculated to prevent the use of ELDs to harass drivers. FMCSA explicitly prohibits a motor carrier from harassing a driver, and provides that a driver may file a written complaint under § 386.12(b) if the driver was subject to harassment. Technical provisions that address harassment include a mute function to ensure that a driver is not interrupted in the sleeper berth. Further, the design of the ELD allows only limited edits of an ELD record by both the driver and the motor carrier's agents and in either case the original record generated by the device cannot be changed, which will protect the driver's RODS from manipulation.

Cost and Benefits

The Regulatory Impact Analysis (RIA) for today's rule retains two of the four options put forward in the SNPRM:

- Option 1: ELDs are mandated for all CMV operations subject to 49 CFR part 395.
- Option 2: ELDs are mandated for all CMV operations where the driver is required to complete RODS under 49 CFR 395.8.

In today's rule, FMCSA adopts a slight variation of Option 2 from the SNPRM. Based on comments received on the SNPRM, Options 3 and 4 are not included in the final rule. Unlike the SNPRM, to provide a backup means of accessing data FMCSA will require either a display or printout regardless of the specific data transfer technologies required, thus rendering Options 3 and 4 unnecessary. In response to comments received to the SNPRM, the specific data transfer technologies required under today's rule are simplified, with QR Codes and TransferJet technologies eliminated. In the SNPRM, the required data transfer technologies were the same across the four options presented, with the only differences being the population the rule would apply to and a specific requirement for the ability to print out data. In today's rule, the required data transfer technologies are the same across the two options presented. The change in data transfer technologies from the SNPRM does not affect the per unit cost of the ELD. However, in today's rule the purchase price of the ELD was reduced from that used in the SNPRM, to reflect the most up-to-date prices consistent with the technical requirements of the rule. This change in data transfer technologies from the SNPRM also simplifies and enhances uniformity of enforcement. For purposes of comparison, the analysis from the SNPRM, including Options 3 and 4, is available in the docket for this rulemaking.

The RIA details the costs and benefits of this rule and discusses the methods by which they were derived. The major elements that contribute to the overall net benefits of the rulemaking are shown below in Table 1. The figures presented are annualized using 7 percent and 3 percent discount rates.

TABLE 1—SUMMARY OF ANNUALIZED COSTS AND BENEFITS

[2013 $ millions]

	Option 1: all HOS drivers		Option 2: (adopted) RODS drivers only	
	3%	7%	3%	7%
Total Benefits	$3,150	$3,124	$3,035	$3,010
Safety (Crash Reductions)	694	687	579	572
Paperwork Savings	2,456	2,438	2,456	2,438
Total Costs	2,298	2,280	1,851	1,836
New ELD Costs	1,348	1,336	1,042	1,032
AOBRD Replacement Costs	2	2	2	2
HOS Compliance Costs	936	929	797	790
CMV Driver Training Costs	9	10	7	8
Enforcement Training Costs	1	2	1	2
Enforcement Equipment Costs	1	1	1	1
Net Benefits	852	844	1,184	1,174

Under today's rule, FMCSA estimates 1,844 crashes avoided annually and 26 lives saved annually.

TABLE 2—ESTIMATED REDUCTIONS IN CRASHES

	Option 1: all HOS drivers	Option 2: RODS drivers only
Crashes Avoided	2,217	1,844
Injuries Avoided	675	562
Lives Saved	31	26

III. Public Participation

To view comments, as well as any documents identified in this preamble as available in the docket, go to *http://www.regulations.gov*. Insert the docket number, FMCSA–2010–1067, in the keyword box, and click ''Search.'' Next, click the ''Open Docket Folder'' button and choose the document to review. If you do not have access to the Internet, you may view the docket online by visiting the Docket Management Facility in Room W12–140 on the ground floor of the DOT West Building, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., e.t., Monday through Friday, except Federal holidays.

IV. Overview

A. Today's Final Rule

Today's rule mandates ELD use for HOS compliance. It applies to most motor carriers and drivers who are currently required to prepare and retain paper RODS to comply with HOS regulations under part 395. Today's rule allows limited exceptions to the ELD mandate. As indicated in § 395.1(e), drivers who operate using the timecard exception are not required to keep RODS and will not be required to use ELDs. The following drivers are excepted in § 395.8(a)(1)(iii) from installing and using ELDs and may continue to use ''paper'' RODS: [3]

- Drivers who use paper RODS for not more than 8 days during any 30 day period.
- Drivers who conduct driveaway-towaway operations, where the vehicle being driven is the commodity being delivered.

[3] ''Paper RODS'' means RODS that are not kept on an ELD or AOBRD, but instead are either recorded manually in accordance with § 395.8(f) or on a computer not synchronized to the vehicle or that otherwise does not qualify as an ELD or AOBRD.

• Drivers of vehicles manufactured before model year 2000.

This exception is limited to the ELD requirement only; these drivers are still bound by the RODS requirements in 49 CFR part 395 and must prepare paper logs when required unless they voluntarily elect to use an ELD.

As required by MAP–21, § 395.8(a)(1) directs a motor carrier operating CMVs to install and require each of its drivers to use an ELD to record the driver's duty status no later than December 18, 2017. Drivers and motor carriers currently using § 395.15-compliant Automatic Onboard Recorders (AOBRDs), however, are allowed to continue to use AOBRDs for an additional 2 years after that date.

1. Supporting Documents

Under § 395.11(d), motor carriers must retain up to 8 supporting documents for every 24-hour period a driver who uses ELDs is on duty. Section 395.8(k) continues to require that motor carriers retain RODS and supporting documents for 6 months. New § 395.11(b) specifies that drivers must submit supporting documents to the motor carrier no later than 13 days after receiving them. While ELDs are highly effective at monitoring compliance with HOS rules during driving periods, supporting documents are still needed to verify on-duty not driving time (ODND). In § 395.2, today's rule defines ''supporting document.'' To be considered supporting documents, they need to meet certain criteria in § 395.11(c)(2). The eight documents should contain these elements from § 395.11(c)(2)(i):

• Driver name or carrier-assigned identification number, either on the document or on another document enabling the carrier to link the document to the driver, or the vehicle unit number if that number can be linked to the driver;

• Date;

• Location (including name of nearest city, town, or village); and

• Time.

FMCSA acknowledges that sometimes drivers will not receive documents that meet all these criteria. If a driver has fewer than eight documents that include the four elements under § 395.11(c)(2)(ii), a document that contains all of the elements except ''time'' is considered a supporting document; otherwise, it is not considered a supporting document. FMCSA notes that there is no obligation on a motor carrier to create or annotate documents that it did not otherwise generate or receive in its normal course of business.

If a driver submits more than eight documents to the motor carrier for a single day, paragraph (d)(3) requires that the motor carrier must include the first and last documents for that day among the eight documents that must be retained. If a driver submits fewer than eight documents, the motor carrier must keep each document.

Supporting documents consist of the following five categories, described in § 395.11(c):

• Bills of lading, itineraries, schedules, or equivalent documents that indicate the origin and destination of each trip;

• Dispatch records, trip records, or equivalent documents;

• Expense receipts;

• Electronic mobile communication records, reflecting communications transmitted through a fleet management system (FMS); and

• Payroll records, settlement sheets, or equivalent documents that indicates payment to a driver.

Except for drivers who use paper RODS, there is no requirement for drivers or motor carriers to retain other types or categories of documents. If a driver keeps a paper RODS under § 395.8(a)(1)(iii), § 395.11(d)(4) states that toll receipts must be retained as well. For drivers using paper RODS, the toll receipts do not count in applying the eight-document cap. In applying the limit on the number of documents, § 395.11(d)(2) states that all information contained in an electronic mobile communication record, such as communication records kept by an FMS, will be counted as one document per duty status day.

Section 395.11(e) requires motor carriers to retain supporting documents in a way that allows them to be matched to a driver's RODS. Section 395.11 (f) prohibits drivers or carriers from destroying or defacing a supporting document or altering information on a document. Section 395.11(g) requires the driver to make supporting documents in his or her possession available to an authorized Federal, State, or local official on request. However, the driver only has to provide the documents in the format in which the driver has them available.

Self-compliance systems. On a case-by-case basis, FMCSA may authorize exemptions to allow a motor carrier to use a supporting document self-compliance system, as required by section 113 of HMTAA. Using the procedures already in 49 CFR part 381, subpart C, FMCSA will consider requests for exemption from the retention and maintenance requirements for supporting documents. This alternative system would ensure compliance with the HOS regulations. Section 395.11(h) references the procedures for applying for an exemption for a self-compliance system.

2. Harassment

Today's rule includes a definition of ''harassment,'' which covers an action by a motor carrier toward one of its drivers that the motor carrier knew, or should have known, would result in the driver violating § 392.3, which prohibits an ill or fatigued driver from operating a CMV, or part 395, the HOS rules. Harassment must involve information available to the motor carrier through an ELD or other technology used in combination with and not separable from an ELD. In § 390.36(b), FMCSA explicitly prohibits a motor carrier from harassing a driver.

Today's rule adopts a regulatory prohibition on harassment, as defined, subject to a civil penalty in addition to the penalty for the underlying violation. The rule also has other provisions intended to ensure that ELDs are not used to harass drivers. Some of these are technical provisions intended to guard against harassment. Others are procedural, to give drivers recourse when they are harassed.

Among the technical solutions addressing harassment is a required mute function for FMSs with ELD functionality that would be used to comply with this rule. The mute function ensures that a driver is not interrupted by an FMS that includes an ELD function when the driver is in the sleeper berth. FMCSA emphasizes that a minimally compliant ELD is not required to have voice or text message communication capabilities or to produce audible alerts or alarms. For ELDs that have the ability to generate audible signals, however, today's rule requires that the devices have volume control. This control must either automatically engage, or allow the driver to turn off or mute the ELD's audible output when the driver puts the ELD into a sleeper berth status, and, in the case of co-drivers, when no other driver has logged into the ELD in an on-duty driving status.

The design of the ELD allows only limited edits of an ELD record by both the driver and the motor carrier's agents and in either case the original record generated by the device cannot be changed. Drivers may edit, enter missing information into, and annotate the ELD records but the original record will be retained. The ELD prevents electronically-recorded driving time from being shortened. A motor carrier may request edits to a driver's RODS to

ensure accuracy. However, for the carrier-proposed changes, the driver must confirm them and certify and submit the updated RODS. Section 395.30(c)(2) requires all edits, whether made by a driver or the motor carrier, be annotated to document the reason for the change. All of these procedures and design features will help a driver retain control of the RODS, and ensure against harassment.

The rule requires that anyone making edits to an ELD record have a unique login ID. Drivers must have access to their own ELD records without having to request access through their motor carriers, ensuring that drivers can review the ELD record and determine whether unauthorized edits/annotations have been entered.

Section § 395.26 describes ELD data records, including location data, when the driver changes duty status, when a driver indicates personal use or yard moves, when the CMV engine powers up and shuts down, and at 60-minute intervals when the vehicle is in motion. FMCSA emphasizes that it does not require real-time tracking of CMVs or the recording of precise location information in today's rule.

For the purposes of HOS enforcement, FMCSA requires all ELDs to record location in a way that provides an accuracy of approximately a 1-mile radius during on-duty driving periods. However, when a CMV is operated for authorized personal use, the position reporting accuracy, as required by section 4.3.1.6(f), is reduced to an approximate 10-mile radius, to further protect the driver's privacy. While a motor carrier could employ technology that provides more accurate location information internally, when the ELD transmits data to authorized safety officials, the location data will be limited to the reduced proximities.

Today's rule includes a new process for driver complaints related to harassment involving ELDs.

Civil penalties against motor carriers found to be harassing drivers are governed under Appendix B to Part 386 and today's rule addresses how penalties for harassment will be assessed (Part 386, Appendix B, (a)(7)). Because harassment will be considered in cases of alleged HOS violations, the penalty for harassment is in addition to the underlying violation under 49 CFR 392.3 or part 395. An underlying violation must be found in order for a harassment penalty to be assessed.

3. Technical Specifications; Implementation Period

Today's rule includes technical specifications for an ELD device. All ELDs must meet standard requirements which include recording certain information related to a driver's HOS status, but they are not required to track a CMV or driver in real time. ELDs are not required to include a capability to communicate between the driver and the motor carrier. All ELDs, however, must capture and transfer identical data regarding a driver's HOS status to authorized safety officials. Although an ELD may be part of an FMS, the ELD functions required by this rule are limited to automatically recording all driving time, and intermittently recording certain other information. The ELD functions will make it easy for the driver to record off duty, sleeper berth, and ODND time, and transfer that information to authorized safety officials and motor carriers.

Section 395.26 provides that the ELD automatically record the following data elements at certain intervals: date; time; location information; engine hours; vehicle miles; and identification information for the driver, the authenticated user, the vehicle, and the motor carrier. Unless the driver has indicated authorized personal use of the vehicle, those data elements are automatically recorded when the driver indicates a change of duty status or a change to a special driving category. When the driver logs into or out of the ELD, or there is a malfunction or data diagnostic event, the ELD records all the data elements except geographic location. When the engine is powered up or down, the ELD records all the data elements required by § 395.26. When a CMV is in motion and the driver has not caused some kind of recording in the previous hour, the ELD will automatically record the data elements. However, if a record is made during a period when the driver has indicated authorized personal use, some elements will be left blank and location information will be logged with a resolution of only a single decimal point (approximately 10-mile radius).

In addition to the information that the ELD records automatically, both the motor carrier and the driver must input manually some information in the ELD. The driver may select on the ELD an applicable special driving category, or annotate the ELD record to explain driving under applicable exceptions, including personal conveyance if configured by the motor carrier.

FMCSA will provide a list of provider-certified ELDs on its Web site. Today's rule requires interstate motor carriers to use only an ELD that appears on that list of registered ELDs. ELD providers must register through a FMCSA Web site, and certify through the Web site that their products meet the technical specifications in today's rule. FMCSA will publish compliance test procedures to assist providers in determining whether their products meet the requirements. ELD providers are not required to use FMCSA's compliance test procedures. They may use any test procedures they deem appropriate, but FMCSA will use the compliance test procedures during any investigation and rely upon the results from that procedure in making any preliminary determinations of whether a system satisfies the requirements of today's rule.

If the Agency believes an ELD model does not meet the required standards, new section 5.4 of the technical specifications prescribes a process of remedying the problem, or, if necessary, removing that model from FMCSA's registration Web site.

To meet roadside electronic data reporting requirements, under section 4.9.1 of the technical specifications, an ELD must support one of two options for different types of electronic data transfer. The first option is a telematics-type ELD. At a minimum, it must electronically transfer data to an authorized safety official on demand via wireless Web services and email. The second option is a local transfer method-type ELD. At a minimum, it must electronically transfer data to an authorized safety official on demand via USB2.0 and Bluetooth. Additionally, both types of ELDs must be capable of displaying a standardized ELD data set in the format specified in this rule to an authorized safety official on demand. To ensure that authorized safety officials are always able to receive the HOS data during a roadside inspection, a driver must be able to provide either the display or a printout when an authorized safety official requests a physical display of the information. Display and printouts will each contain the same standardized data set identified in section 4.8.1.3 of the technical specifications. Motor carriers will be able to select an ELD that works for their business needs since both types of ELDs will transfer identical data sets to law enforcement.

4. Enforcement

A driver must submit supporting documents to the driver's employer within 13 days. Today's rule does not require the driver to keep any supporting documents in the vehicle. However, FMCSA notes that any supporting documents that are in a vehicle during a roadside inspection must be shown to an authorized safety official on request.

Authorized safety officials who conduct roadside enforcement activities (*i.e.,* traffic enforcement and inspections) or compliance safety investigations will be able to select a minimum of one method of electronic data transfer from each type of ELD. States will have the option of choosing a minimum of one ''telematics'' electronic data transfer method (wireless Web services or email) and one ''local'' electronic data transfer method (USB 2.0 or Bluetooth) for the electronic transfer of ELD data.

5. Implementation Period

The Agency will make its compliance test available and its Web site available for ELD providers to register and certify ELDs on or shortly following the effective date of today's rule. A motor carrier may then elect to voluntarily use ELDs listed on the Web site. Prior to the rule's effective date, February 16, 2016, the Agency will issue a policy addressing how ELDs will be handled for HOS enforcement purposes during this voluntary period. Beginning on the rule's compliance date, December 18, 2017, the Agency will apply today's rule in its enforcement activities. If a motor carrier elects to voluntarily use ELDs in advance of the rule's compliance date, the provisions of the rule prohibiting harassment of drivers apply. However, those motor carriers that have installed a compliant AOBRD before the compliance date will have the option to continue using an AOBRD through December 16, 2019.

The supporting document provisions of today's rule also take effect as of the rule's compliance date. The effective date of provisions addressing harassment is tied to the use of an ELD.

B. Regulatory History

For a more extensive regulatory history and background of electronic logging device regulations, please see the April 5, 2010 Final Rule (75 FR 17208), February 1, 2011 NPRM (76 FR 5537), and the March 28, 2014 SNPRM (79 FR 17656). See also the table titled, ''Timeline of Regulatory and Judicial Actions after 2010 Related to this Rulemaking,'' in Section IV, F, below.

The 2010 EOBR 1 rule established technical specifications for an electronic logging device, but the rule concerned only remedial and voluntary use of EOBRs (75 FR 17208, Apr. 5, 2010). The rule would have required that motor carriers with demonstrated serious noncompliance with the HOS rules be subject to mandatory installation of EOBRs meeting the new performance standards included in the 2010 rule. If FMCSA determined, based on HOS records reviewed during a compliance review, that a motor carrier had a 10 percent or greater violation rate (''threshold rate violation'') for any HOS regulation listed in a new Appendix C to part 385, FMCSA would have issued the carrier an EOBR remedial directive. The motor carrier would then have been required to install EOBRs in all of its CMVs regardless of their date of manufacture and use the devices for HOS recordkeeping for a period of 2 years, unless the carrier (i) already equipped its vehicles with AOBRDs meeting the Agency's current requirements under 49 CFR 395.15 prior to the finding, and (ii) demonstrated to FMCSA that its drivers understand how to use the devices. At that time, the Agency estimated that the remedial directive aspect of 2010 rule would be applicable to about 2,800 motor carriers in the first year and 5,700 motor carriers each year thereafter.

The 2010 rule would have also changed the safety fitness standard to take into account a remedial directive when determining fitness. Additionally, to encourage industry-wide use of EOBRs, FMCSA revised its compliance review procedures to permit examination of a random sample of drivers' records of duty status after the initial sampling, and provided partial relief from HOS supporting documents requirements, if certain conditions were satisfied, for motor carriers that voluntarily use compliant EOBRs.

On February 1, 2011, FMCSA published an NPRM to expand the electronic logging requirements from the 2010 rule to a much broader population of motor carriers (76 FR 5537). There were several opportunities for public input, including a notice inviting comment on the issue of harassment, public listening sessions, MCSAC meetings,[4] and an online commenting system pilot program called Regulation Room.[5]

In June 2010, the Owner-Operator Independent Drivers Association (OOIDA) filed a petition in the U.S. Court of Appeals for the Seventh Circuit seeking a review of the 2010 rule (*Owner-Operator Indep. Drivers Ass'n* v. *Fed. Motor Carrier Safety Admin.,* 656 F.3d 580 (7th Cir. 2011) (decision available in the docket for this rulemaking)). On August 26, 2011, the Seventh Circuit vacated the April 2010 rule. The court held that, contrary to a statutory requirement, the Agency failed to address the issue of driver harassment.[6]

On February 13, 2012, FMCSA announced its intent to move forward with an SNPRM that would propose technical standards for electronic logging devices, address driver harassment issues, and propose revised requirements on HOS supporting documents (77 FR 7562). Additionally, the Agency stated it would hold public listening sessions and task the MCSAC to make recommendations related to the proposed rulemaking.

On May 14, 2012, FMCSA published a rule (77 FR 28448) to rescind both the April 5, 2010, rule (75 FR 17208) and subsequent corrections and modifications to the technical specifications (75 FR 55488, Sept. 13, 2010), in response to the Seventh Circuit's decision to vacate the 2010 EOBR rule.

As a result of the Seventh Circuit's vacatur, the technical specifications that were to be used in the 2011 NPRM were rescinded. Because the requirements for AOBRDs were not affected by the Seventh Circuit's decision, motor carriers relying on electronic devices to monitor HOS compliance are currently governed by the Agency's rules regarding the use of AOBRDs in 49 CFR 395.15, originally published in 1988. There are no new standards currently in effect to replace these dated technical specifications. Furthermore, because the entire rule was vacated, FMCSA was unable to grant relief from supporting document requirements to motor carriers voluntarily using EOBRs.[7]

FMCSA proposed new technical standards for ELDs and requiring the

[4] The MCSAC provides advice and recommendations to the Administrator of FMCSA on motor carrier safety programs and motor carrier safety regulations. MCSAC members are appointed by the Administrator for two-year terms and includes representatives of the motor carrier safety advocacy, safety enforcement, industry, and labor communities.

[5] The Regulation Room is available on line at: *http://archive.regulationroom.org/eobr*, last accessed January 2, 2015.

[6] 656 F.3d at 589. At the time of the court's decision, 49 U.S.C. 31137(a) read as follows: ''Use of Monitoring Devices.—If the Secretary of Transportation prescribes a regulation about the use of monitoring devices on commercial motor vehicles to increase compliance by operators of the vehicles with hours of service regulations of the Secretary, the regulation shall ensure that the devices are not used to harass vehicle operators. However, the devices may be used to monitor productivity of the operators.'' MAP–21 revised section 31137, which no longer expressly refers to ''productivity.'' However, FMCSA believes that, as long as an action by a motor carrier does not constitute harassment that would be prohibited under this rulemaking, a carrier may legitimately use the devices to improve productivity or for other appropriate business practices.

[7] The Agency's June 2010 guidance, ''Policy on the Retention of Supporting Documents and the Use of Electronic Mobile Communication/Tracking Technology,'' which granted certain motor carriers limited relief from the requirement to retain certain supporting documents, was not affected by the Seventh Circuit decision.

use of ELDs on March 28, 2014 in the SNPRM (79 FR 17656). These technical standards were in response to the vacatur of the 2010 rule, the MCSAC's recommendations (December 16, 2011 and February 8, 2012 reports), the public listening sessions (March 12, 2012 and April 26, 2012), and the enactment of MAP–21. The Agency also proposed new requirements for supporting documents and ways to ensure that ELDs are not used to harass drivers. The regulatory text proposed in the 2014 SNPRM superseded the regulatory text proposed in the 2011 NPRM.

FMCSA conducted a study of the potential for safety benefits with the use of ELDs, and published the results of this study in the docket on May 12, 2014.

FMCSA also conducted a survey of drivers and motor carriers concerning the potential for the use of ELDs to result in harassment, and docketed the results of this survey on November 13, 2014.

C. Provisions of Previous Rulemaking Proposals That Are Not Included in Today's Rule

1. Supporting Document Provisions

A number of provisions relating to a motor carrier's obligations concerning supporting documents that were included in the 2011 NPRM were not re-proposed in the SNPRM. For example, given the comments received in response to the NPRM and additional information brought to the Agency's attention, FMCSA decided not to require an HOS management system as part of this rulemaking.

The NPRM also proposed that a single supporting document would be sufficient for the beginning and end of each ODND period if that document contained the required elements. In addition, the NPRM also proposed a motor carrier to certify the lack of any required supporting document for prescribed periods. Given commenters overwhelming opposition to the HOS Management System, these requirements were not re-proposed in the 2014 SNPRM and are not included in the final rule.

It is a paramount responsibility, however, of all motor carriers to monitor their drivers' HOS compliance. As explained in prior administrative decisions of the Agency, a motor carrier has an obligation to verify HOS compliance of its drivers (See, *e.g., In the Matter of Stricklin Trucking Co., Inc.,* Docket No. *FMCSA–2011–0127–0013, at 10–13 (Order on Reconsideration* Mar. 20, 2012)).[8] Motor carriers have a duty to ensure that their drivers are complying with the requirements and prohibitions imposed on them in the HOS regulations, just as they are responsible for complying with other elements of the FMCSRs. The elimination of the HOS Management System proposed in the NPRM does not alter this obligation.

The Agency eliminated the suggestion that a single supporting document could satisfy the motor carrier's obligation. The Agency agreed with comments submitted at the NPRM stage that this suggestion was not realistic and did not include it in the SNPRM. Similarly, the Agency eliminated the requirement that a motor carrier certify the unavailability of supporting documents based on comments received in response to the NPRM.

2. Technical Specifications

The 2011 NPRM relied upon the technical specifications in the EOBR 1 rule, which the Seventh Circuit vacated and which are now obsolete. The 2014 SNPRM proposed new technical specifications, and today's rule makes some modifications to those technical specifications. Below is a comparison of the technical specifications in the existing 1988 AOBRD rule, the 2010 EOBR 1 rule, the 2014 SNPRM, and today's rule. Motor carriers that have installed compliant AOBRDs before the compliance date of today's rule (2 years from today's publication date) may continue use of these devices for an additional 2 years after the compliance date.

TABLE 3—COMPARISON OF TECHNICAL SPECIFICATIONS

Feature/Function	1988 AOBRD Rule	2010 EOBR Rule	2014 ELD SNPRM	Today's ELD Final rule
Integral Synchronization.	Integral synchronization required, but term not defined in the FMCSRs.	Integral synchronization required, defined to specify signal source internal to the CMV.	Integral synchronization with the CMV engine,* to automatically capture engine power status, vehicle motion status, miles driven, engine hours.*. For model year 2000 and later, interfacing with engine control module (ECM).	Integral synchronization interfacing with the CMV engine ECM, to automatically capture engine power status, vehicle motion status, miles driven, engine hours. (CMVs older than model year 2000 exempted).
Recording Location Information.	Required at each change of duty status. Manual or automated.	Require automated entry at each change of duty status and at 60-minute intervals while CMV in motion.	Require automated entry at each change of duty status, at 60-minute intervals while CMV is in motion, at engine-on and engine-off instances, and at beginning and end of personal use and yard moves.	Require automated entry at each change of duty status, at 60-minute intervals while CMV is in motion, at engine-on and engine-off instances, and at beginning and end of personal use and yard moves.

[8] Available at *http://www.regulations.gov.*

TABLE 3—COMPARISON OF TECHNICAL SPECIFICATIONS—Continued

Feature/Function	1988 AOBRD Rule	2010 EOBR Rule	2014 ELD SNPRM	Today's ELD Final rule
Graph Grid Display.	Not required—"time and sequence of duty status changes".	Not required on EOBR, digital file to generate graph grid on enforcement official's portable computer.	An ELD must be able to present a graph grid of driver's daily duty status changes either on a display or on a printout.	An ELD must be able to present a graph grid of driver's daily duty status changes either on a display or on a printout.
HOS Driver Advisory Messages.	Not addressed	Requires notification at least 30 minutes before driver reaches 24-hour and 7/8 day driving and on-duty limits.	HOS limits notification *not* required.. "Unassigned driving time/miles" warning provided upon login.	HOS limits notification *not* required. "Unassigned driving time/miles" warning provided upon login.
Device "Default" Duty Status.	Not addressed	On-duty not driving when the vehicle is stationary (not moving and the engine is off) 5 minutes or more.	On-duty not driving, when CMV has not been in-motion for 5 consecutive minutes, and driver has not responded to an ELD prompt within 1 minute. *No other non-driver-initiated status change is allowed.*	On-duty not driving, when CMV has not been in-motion for 5 consecutive minutes, and driver has not responded to an ELD prompt within 1 minute. *No other non-driver-initiated status change is allowed.*
Clock Time Drift	Not addressed	Absolute deviation from the time base coordinated to (UTC) Coordinated Universal Timeshall not exceed 10 minutes at any time.	ELD time must be synchronized to UTC, absolute deviation must not exceed 10 minutes at any point in time.	ELD time must be synchronized to UTC, absolute deviation must not exceed 10 minutes at any point in time.
Communications Methods.	Not addressed—focused on interface between AOBRD support systems and printers.	*Wired:* USB 2.0 implementing Mass Storage Class 08H for driverless operation.. *Wireless:* IEEE 802.11g, CMRS	*Primary:* Wireless Web services or Bluetooth 2.1 or Email (SMTP) or Compliant Printout. *Backup Wired/Proximity:* USB 2.0 * and (Scannable QR codes, or TransferJet *). * Except for "printout alternative".	*Two Options: 1-Telematics:* As a minimum, the ELD must transfer data via both wireless Web services and wireless email *2-"Local Transfer":* As a minimum, the ELD must transfer data via both USB 2.0 and Bluetooth. Both types of ELDs must be capable of displaying a standardized ELD data set to authorized safety officials via display or printout.
Resistance to Tampering.	AOBRD and support systems, must be, to the maximum extent practical, tamperproof.	Must not permit alteration or erasure of the original information collected concerning the driver's HOS, or alteration of the source data streams used to provide that information.	ELD must not permit alteration or erasure of the original information collected concerning the driver's ELD records or alteration of the source data streams used to provide that information. ELD must support data integrity check functions.	ELD must not permit alteration or erasure of the original information collected concerning the driver's ELD records or alteration of the source data streams used to provide that information. ELD must support data integrity check functions.
Identification of Sensor Failures and Edited Data.	Must identify sensor failures and edited data.	Device/system must identify sensor failures and edited and annotated data when downloaded or reproduced in printed form.	ELD must have the capability to monitor its compliance (engine connectivity, timing, positioning, etc.) for detectable malfunctions and data inconsistencies. ELD must record these occurrences.	ELD must have the capability to monitor its compliance (engine connectivity, timing, positioning, etc.) for detectable malfunctions and data inconsistencies. ELD must record these occurrences.

D. Coordination With the U.S. Department of Labor

FMCSA has worked with the U.S. Department of Labor to clarify and reinforce the procedures of both agencies, including those pertaining to harassment. The Department of Labor administers the whistleblower law enacted as part of the Surface Transportation Assistance Act (49 U.S.C. 31105). FMCSA and the Department of Labor have previously consulted on particular cases or referred drivers to the appropriate agency based on the nature of the concern. The agencies also have been in communication concerning their respective authorities and complaint procedures and, in the Spring of 2014, entered a memorandum of understanding to facilitate coordination and cooperation between FMCSA and the Occupational Safety and Health Administration concerning statutory provisions addressing retaliation and coercion as well as the exchange of safety and health allegations.[9]

E. MCSAC Recommendations

Under Task 11–04, FMCSA tasked the MCSAC with clarifying the functionality of communications standards originally adopted in the April 2010 rule, in appendix A to part 395—Electronic On-Board Recorder Performance Specifications.[10] The Agency asked the

[9] Copy of Memorandum of Understanding available at *https://www.osha.gov/plsoshaweb/owadisp.show_document?p_table=MOU&p_id=1305.*

[10] Motor Carrier Safety Advisory Committee (MCSAC) Task Statement, Task 11–04, Electronic On-Board Recorders (EOBR) communications protocols, security, interfaces, and display of hours-

Continued

MCSAC to make recommendations on technical subjects to improve the functionality of the information reporting requirements after considering advice from technical experts and input from stakeholders.

The MCSAC created the EOBR Implementation Subcommittee, which met numerous times in late 2011. The MCSAC also held public meetings on August 30–31 and December 5–6, 2011, to discuss the subcommittee's recommendations. In its notice announcing the subcommittee meetings (76 FR 62496, Oct. 7, 2011), FMCSA stated, ''[t]he Agency will consider the MCSAC report in any future rulemaking to reestablish functional specifications for EOBRs.''

The MCSAC report was delivered to the Administrator on December 16, 2011.[11] The report consisted of comments on, and recommended changes to, the April 2010 rule and a discussion of issues the committee believed FMCSA should consider while developing the rule. The committee's recommendations focused on: Technical specifications, including required data elements, location data, and device display requirements; and implementation considerations, including grandfather provisions, product certification procedures, and exceptions for early adopters.

Under Task 12–01, FMCSA tasked the MCSAC to present information the Agency should consider as it develops ways to address potential harassment of drivers related to the use of EOBRs. This report was delivered to the Administrator on February 8, 2012.[12] This report addressed a number of issues concerning harassment, including the definition of harassment, complaint procedures, civil penalties, and the potential for harassment by law enforcement.

FMCSA considered the MCSAC recommendations submitted under Task 11–04 and Task 12–01 during the rulemaking process. Many of the new requirements in today's rule are consistent with the MCSAC recommendations.

F. Table Summary

TABLE 4—TIMELINE OF REGULATORY AND JUDICIAL ACTIONS SINCE THE 2010 RULE

Title	Type of action, RIN	Citation, date	Synopsis
Electronic On-Board Recorders for Hours-of-Service Compliance.	Final rule ..... RIN 2126–AA89 ..... Docket No. 2004–18940.	75 FR 17208, Apr. 5, 2010.	Established new performance standards for EOBRs, required EOBRs to be installed in CMVs for motor carriers that have demonstrated serious noncompliance; set incentives for voluntary usage of EOBRs.
Policy on the Retention of Supporting Documents and the Use of Electronic Mobile Communication/Tracking Technology in Assessing Motor Carriers' and Commercial Motor Vehicle Drivers' Compliance With the Hours of Service Regulations.	Notice of Regulatory Guidance and Policy Change.. No RIN. ..... No docket number.	75 FR 32984, June 10, 2010.	Provided notice to the motor carrier industry and the public of regulatory guidance and policy changes regarding the retention of supporting documents and the use of electronic mobile communication/tracking technology in assessing motor carriers' and commercial motor vehicle drivers' compliance with the HOS regulations.
Electronic On-Board Recorders for Hours-of-Service Compliance.	Final rule; Technical amendments, response to petitions for reconsideration,. RIN 2126–AA89 ..... Docket No. 2004–18940.	75 FR 55488, Sept. 13, 2010.	Amended requirements for the temperature range in which EOBRs must be able to operate, and the connector type specified for the USB interface.
Electronic On-Board Recorders and Hours-of-Service Supporting Documents.	NPRM ..... RIN 2126–AB20 ..... Docket No. FMCSA–2010–0167.	76 FR 5537, Feb. 1, 2011.	Required all motor carriers currently required to maintain RODS for HOS recordkeeping to use EOBRs instead; relied on the technical specifications from the April 2010 final rule, and reduced requirements to retain supporting documents.
Electronic On-Board Recorders and Hours-of-Service Supporting Documents.	NPRM; extension of comment period,. RIN 2126–AB20 ..... Docket No. FMCSA–2010–0167.	76 FR 13121, Mar. 10, 2011.	Extended the public comment period for the NPRM from April 4, 2011, to May 23, 2011.
Electronic On-Board Recorders and Hours-of-Service Supporting Documents.	Notice; request for additional public comment. RIN 2126–AB20 ..... Docket No. FMCSA–2010–0167.	76 FR 20611, Apr. 13, 2011.	Expanded the opportunity for the public to comment on the issue of ensuring that EOBRs are not used to harass CMV drivers.
Motor Carrier Safety Advisory Committee (MCSAC) Series of Public Subcommittee Meetings.	Notice of meeting ..... Related to RIN 2126–AA89. Docket No. FMCSA–2006–26367.	76 FR 38268, June 29, 2011.	Announced series of subcommittee meetings on task 11–04, concerning technical specifications for an EOBR as related to the April 2010 final rule.

of-service data during driver/vehicle inspections and safety investigations. Retrieved December 7, 2014, from *http://mcsac.fmcsa.dot.gov/documents/July2011/task_statement_11-04.pdf*.

[11] MCSAC Task 11–04: Electronic On-Board Recorders (EOBR) Communications Protocols, Security, Interfaces, and Display of Hours-of-Service Data During Driver/Vehicle Inspections and Safety Investigations, December 16, 2011. Retrieved December 7, 2014, from *http://mcsac.fmcsa.dot.gov/meeting.htm*.

[12] MCSAC Task 12–01: Measures to Ensure Electronic On-Board Recorders (EOBRs) Are Not Used to Harass Commercial Motor Vehicle (CMV) Drivers, February 8, 2012. Retrieved January 8, 2015, from *http://mcsac.fmcsa.dot.gov/Reports.htm*.

TABLE 4—TIMELINE OF REGULATORY AND JUDICIAL ACTIONS SINCE THE 2010 RULE—Continued

Title	Type of action, RIN	Citation, date	Synopsis
Owner-Operator Indep. Drivers Ass'n v. Fed. Motor Carrier Safety Admin.	Judicial Decision, United States Court of Appeals, Seventh Circuit. Related to RIN 2126–AA89. No docket number	*Owner-Operator Indep. Drivers Ass'n* v. *Fed. Motor Carrier Safety Admin.,* 656 F.3d. 580 (7th Cir. 2011), Aug. 26, 2011	Vacated the April 2010 rule.
Motor Carrier Safety Advisory Committee Series of Public Subcommittee Meetings.	Notice of meetings related to EOBRs. No RIN. ..... Docket No. FMCSA–2006–26367.	76 FR 62496, Oct. 7, 2011.	Oct. 24–27, 2011, subcommittee review of the functional specifications for EOBRs published by FMCSA as part of EOBR final rule
MCSAC: Public Meeting Medical Review Board: Joint Public Meeting With MCSAC.	Notice of meeting ..... Related to RIN 2126–AB20. Docket Nos. FMCSA–2006–26367 and FMCSA–2011–0131.	77 FR 3546, Jan. 24, 2012.	Announced meeting on task 12–01, concerning issues relating to the prevention of harassment of truck and bus drivers through EOBRs.
Electronic On-Board Recorders and Hours-of-Service Supporting Documents.	Notice of intent ..... RIN 2126–AB20 ..... Docket No. FMCSA–2010–0167.	77 FR 7562, Feb. 13, 2012.	Announced FMCSA's intent to go forward with an SNPRM; two public listening sessions; an initial engagement of the MCSAC in this subject matter; a survey of drivers concerning potential for harassment; and a survey for motor carriers and vendors concerning potential for harassment.
Electronic On-Board Recorders and Hours-of-Service Supporting Documents.	Notice of public listening session,. RIN 2126–AB20 ..... Docket No. FMCSA–2010–0167.	77 FR 12231, Feb. 29, 2012.	Announced public listening session held in Louisville, Kentucky on March 23, 2012.
Electronic On-Board Recorders and Hours-of-Service Supporting Documents.	Notice of public listening session. RIN 2126–AB20 ..... Docket No. FMCSA–2010–0167.	77 FR 19589, Apr. 2, 2012.	Announced public listening session held in Bellevue, Washington on April 26, 2012.
Electronic On-Board Recorders for Hours-of-Service Compliance; Removal of Final Rule Vacated by Court.	Final rule ..... RIN 2126–AB45 ..... Docket No. FMCSA–2012–0006.	77 FR 28448, May 14, 2012.	Responded to a decision of the Court of Appeals for the Seventh Circuit that vacated the April 2010 final rule.
Agency Information Collection Activities; New Information Collection Request: Driver and Carrier Surveys Related to Electronic On-Board Recorders (EOBRs), and Potential Harassment Deriving From EOBR Use.	Notice and request for information. No RIN. ..... Docket No. FMCSA–2012–0309.	77 FR 74267, Dec. 13, 2012.	FMCSA submits an Information Collection Request (ICR) to Office of Management and Budget (OMB) for approval. The purpose of this new ICR is to examine by the collection of survey data, the issue of driver harassment and determine the extent to which EOBRs could be used by motor carriers or enforcement personnel to harass drivers and/or monitor driver productivity. The survey will also collect information on the extent to which respondents believe that the use of EOBRs may result in coercion of drivers by motor carriers, shippers, receivers and transportation intermediaries.
Agency Information Collection Activities; Approval of a New Information Collection Request: Driver and Carrier Surveys Related to Electronic Onboard Recorders (EOBRs), and Potential Harassment Deriving From EOBR Use.	Notice and request for comments. No RIN. ..... Docket No. FMCSA–2012–0309.	78 FR 32001, May 28, 2013.	The purpose of this new ICR is to broadly examine, by the collection of survey data, the issue of driver harassment and determine the extent to which EOBRs used to document drivers' HOS could be used by motor carriers or enforcement personnel to harass drivers or monitor driver productivity. The survey will collect information on the extent to which respondents believe that the use of EOBRs may result in coercion of drivers by motor carriers, shippers, receivers, and transportation intermediaries. The proposed surveys for drivers and carriers collect information related to issues of EOBR harassment of drivers by carriers. FMCSA plans to publish a supplemental notice of proposed rulemaking on EOBRs.

TABLE 4—TIMELINE OF REGULATORY AND JUDICIAL ACTIONS SINCE THE 2010 RULE—Continued

Title	Type of action, RIN	Citation, date	Synopsis
Electronic Logging Devices and Hours of Service Supporting Documents.	Supplemental notice of proposed rule-making; request for comments. RIN 2126–AB20 ..... Docket No. FMCSA–2010–0167.	79 FR 17656, Mar. 28, 2014.	Proposed minimum performance and design standards for HOS ELDs, mandated their use by drivers currently required to keep RODS, proposed clarifying and specified HOS supporting document retention requirements; and included measures to address concerns about harassment resulting from the mandatory use of ELDs.
Electronic Logging Devices and Hours of Service Supporting Documents.	Evaluating the Potential Safety Benefits of Electronic Hours-of-Service Recorders; Notice of availability of research report. RIN 2126–AB20 ..... Docket No. FMCSA–2010–0167.	79 FR 27040, May 12, 2014.	Announced the availability of a new final report, ''Evaluating the Potential Safety Benefits of Electronic Hours-of-Service Recorders.'' The study quantitatively evaluated whether trucks equipped with Electronic Hours-of-Service Recorders (EHSRs) have a lower (or higher) crash and hours-of-service (HOS) violation rate than those without EHSRs.
Coercion of Commercial Motor Vehicle Drivers; Prohibition.	NPRM ..... RIN 2126–AB57 ..... Docket No. FMCSA–2012–0377.	79 FR 27265, May 13, 2014.	FMCSA proposes regulations that prohibit motor carriers, shippers, receivers, or transportation intermediaries from coercing drivers to operate CMVs in violation of certain provisions of the FMCSRs—including HOS limits and the Commercial Driver's License (CDL) regulations and associated drug and alcohol testing rules—or the Hazardous Materials Regulations. In addition, the NPRM would prohibit anyone who operates a CMV in interstate commerce from coercing a driver to violate the commercial regulations.
Electronic Logging Devices and Hours of Service Supporting Documents.	Supplemental notice of proposed rule-making; extension of comment period. RIN 2126–AB20 ..... Docket No. FMCSA–2010–0167.	79 FR 28471, May 16, 2014.	Extended the public comment period for the Agency's March 28, 2014 SNPRM until June 26, 2014.
Agency Information Collection Activities; New Information Collection Request: Electronic Logging Device Vendor Registration.	Notice and Request for Comments. No RIN ..... Docket No.: FMCSA–2014–0377.	79 FR 642848, Oct. 28, 2014.	Invited public comment on the approval of a new information collection request entitled, Electronic Logging Device Vendor Registration. This ICR will enable manufacturers of ELDs to register with FMCSA.
Electronic Logging Devices and Hours of Service Supporting Documents; Research Report on Attitudes of Truck Drivers and Carriers on the Use of Electronic Logging Devices and Driver Harassment.	Notice of Availability of Research Report. RIN 2126–AB20 ..... Docket No. FMCSA–2010–0167.	79 FR 67541, Nov. 13, 2014.	Announced the availability of a new report: ''Attitudes of Truck Drivers and Carriers on the Use of Electronic Logging Devices and Driver Harassment.'' This project surveyed drivers on their attitudes regarding carrier harassment and examined whether reported harassment experiences varied due to the hours-of service logging method used by the driver.
Agency Information Collection: Activities; New Information Collection Request: Electronic Logging Device (ELD) Registration.	Notice and Request for Comments. No RIN ..... Docket No. FMCSA–2014–0377.	80 FR 18295, Apr. 3, 2015.	Announced the FMCSA plan to submit the Information Collection Request (ICR) described below to the Office of Management and Budget for its review, and invited public comment on the approval of a new ICR entitled, Electronic Logging Device Registration to enable providers to register their ELDs with FMCSA.
Coercion of Commercial Motor Vehicle Drivers; Prohibition.	Final Rule ..... RIN 2126–AB57 ..... Docket No. FMCSA–2012–0377.	80 FR 74695, Nov. 30, 2015.	Prohibits motor carriers, shippers, receivers, or transportation intermediaries from coercing drivers to operate CMVs in violation of certain provisions of the FMCSRs. Prohibits anyone who operates a CMV in interstate commerce from coercing a driver to violate the commercial regulations.

V. Legal Basis for the Rulemaking

FMCSA's authority for this rulemaking is derived from several statutes, which are discussed below.

A. Motor Carrier Act of 1935

The Motor Carrier Act of 1935 (Pub. L. 74–255, 49 Stat. 543, August 9, 1935), as amended, (the 1935 Act) provides that, ''[t]he Secretary of Transportation may prescribe requirements for—(1) qualifications and maximum hours of service of employees of, and safety of operation and equipment of, a motor carrier; and (2) qualifications and maximum hours of service of employees of, and standards of equipment of, a motor private carrier, when needed to promote safety of operation'' (49 U.S.C. 31502(b)). Among other things, by requiring the use of ELDs, this rule requires the use of safety equipment that will increase compliance with the HOS regulations and address the ''safety of operation'' of motor carriers subject to this statute. This will result through the automatic recording of driving time and a more accurate record of a driver's work hours.

B. Motor Carrier Safety Act of 1984

The Motor Carrier Safety Act of 1984 (Pub. L. 98–554, Title II, 98 Stat. 2832, October 30, 1984) (the 1984 Act), as amended, provides authority to the Secretary of Transportation (Secretary) to regulate drivers, motor carriers, and vehicle equipment. It requires the Secretary to prescribe minimum safety standards for CMVs to ensure that—(1) CMVs are maintained, equipped, loaded, and operated safely; (2) responsibilities imposed on CMV drivers do not impair their ability to operate the vehicles safely; (3) drivers' physical condition is adequate to operate the vehicles safely; (4) the operation of CMVs does not have a deleterious effect on drivers' physical condition; and (5) CMV drivers are not coerced by a motor carrier, shipper, receiver, or transportation intermediary to operate a CMV in violation of regulations promulgated under 49 U.S.C. 31136 or under chapter 51 or chapter 313 of 49 U.S.C. (49 U.S.C. 31136(a)). The 1984 Act also grants the Secretary broad power in carrying out motor carrier safety statutes and regulations to ''prescribe recordkeeping and reporting requirements'' and to ''perform other acts the Secretary considers appropriate'' (49 U.S.C. 31133(a)(8) and (10)).

The HOS regulations are designed to ensure that driving time—one of the principal ''responsibilities imposed on the operators of commercial motor vehicles''—does ''not impair their ability to operate the vehicles safely'' (49 U.S.C. 31136(a)(2)). ELDs that are properly designed, used, and maintained will enable drivers, motor carriers, and authorized safety officials to more effectively and accurately track on-duty driving hours, thus preventing both inadvertent and deliberate HOS violations. Driver and motor carrier compliance with the HOS rules helps ensure that drivers are provided time to obtain restorative rest and thus that ''the physical condition of [CMV drivers] is adequate to enable them to operate the vehicles safely'' (49 U.S.C. 31136(a)(3)). Indeed, the Agency considered the rulemaking's impact on driver health under 49 U.S.C. 31136(a)(3) and (a)(4), as discussed in the Environmental Assessment, available in the docket for this rulemaking.

By ensuring ELDs are tamper-resistant, this rulemaking will help protect against coercion of drivers (49 U.S.C. 31136(a)(5)). The ELD will decrease the likelihood that driving time, which will be captured automatically by the device, could be concealed and that other duty status information entered by the driver could be inappropriately changed after it is entered. Thus, motor carriers will have limited opportunity to force drivers to violate the HOS rules without leaving an electronic trail that would point to the original and revised records.

This rule also prohibits motor carriers from coercing drivers to falsely certify their ELD records (49 CFR 395.30(e)). FMCSA recently adopted a rule that defines ''coerce'' or ''coercion'' and prohibits the coercion of drivers (49 CFR 390.5 and 390.6, respectively) (80 FR 74695, November 30, 2015).

Because the rule will increase compliance with the HOS regulations, which are intended to prevent driver fatigue, it will have a positive effect on the physical condition of drivers and help to ensure that CMVs are operated safely (49 U.S.C. 31136(a)(1)). Other requirements in 49 U.S.C. 31136(a)(1) concerning safe motor vehicle maintenance, equipment, and loading are not germane to this rule because ELDs and the rulemaking's related provisions influence driver operational safety rather than vehicular and mechanical safety.

C. Truck and Bus Safety and Regulatory Reform Act

Section 9104 of the Truck and Bus Safety and Regulatory Reform Act (Pub. L. 100–690, 102 Stat. 4181, 4529, November 18, 1988) anticipated the Secretary promulgating a regulation about the use of monitoring devices on CMVs to increase compliance with HOS regulations. The statute, as amended, required the Agency to ensure that such devices were not used to ''harass a vehicle operator.'' This provision was further amended by MAP–21, providing that regulations requiring the use of ELDs, ensure that ELDs not be used to harass drivers. See the discussion of MAP–21, below, and the discussion of comments related to harassment in Section IX.

D. Hazardous Materials Transportation Authorization Act of 1994

Section 113 of the Hazardous Materials Transportation Authorization Act of 1994 (Pub. L. 103–311, 108 Stat. 1673, 16776–1677, August 26, 1994) (HMTAA) requires the Secretary to prescribe regulations to improve compliance by CMV drivers and motor carriers with HOS requirements and the efficiency of Federal and State authorized safety officials reviewing such compliance. Specifically, the Act addresses requirements for supporting documents. The cost of such regulations must be reasonable to drivers and motor carriers. Section 113 of HMTAA describes what elements must be covered in regulation, including a requirement that the regulations specify the ''number, type, and frequency of supporting documents that must be retained by the motor carrier'' and a minimum retention period of at least 6 months.

Section 113 also requires that regulations ''authorize, on a case-by-case basis, self-compliance systems'' whereby a motor carrier or a group of motor carriers could propose an alternative system that would ensure compliance with the HOS regulations.

The statute defines ''supporting document,'' in part, as ''any document . . . generated or received by a motor carrier or commercial motor vehicle driver in the normal course of business . . .'' This rule does not require generation of new supporting documents outside the normal course of the motor carrier's business. It addresses supporting documents that a motor carrier needs to retain consistent with the statutory requirements. The provisions addressing supporting documents are also discussed in Section VIII of this preamble.

E. MAP–21

Section 32301(b) of the Commercial Motor Vehicle Safety Enhancement Act, enacted as part of MAP–21 (Pub. L. 112–141, 126 Stat. 405, 786–788, July 6, 2012), mandated that the Secretary adopt regulations requiring that CMVs involved in interstate commerce,

operated by drivers who are required to keep RODS, be equipped with ELDs.[13] The statute sets out provisions that the regulations must address, including device performance and design standards and certification requirements. In adopting regulations, the Agency must consider how the need for supporting documents might be reduced, to the extent data is captured on an ELD, without diminishing HOS enforcement.

The statute also addresses privacy protection and use of data. Section 32301(b) of MAP–21 requires the regulations to ''ensur[e] that an electronic logging device is not used to harass a vehicle operator.'' Among other protections, the rule protects drivers from being harassed by motor carriers that are using information available through an ELD, resulting in a violation of § 392.3 or part 395 of 49 CFR, and minimizes the likelihood of interruptions during a driver's sleeper berth period. In doing so, this rule also furthers the provisions of 49 U.S.C. 31136(a), protecting a driver's health.

Finally, as noted above, MAP–21 amended the 1984 Act to add new 49 U.S.C. 31136(a)(5), requiring that FMCSA regulations address coercion of drivers. Although there may be instances where claims of coercion and harassment might overlap, in enacting MAP–21, Congress addressed the issues separately and each regulatory violation has distinct elements. A motor carrier can only be found to have committed harassment if the driver commits a specified underlying violation based on the carrier's actions and there is a nexus to the ELD. Adverse action against the driver is not required because the driver complied with the carrier's instructions. In contrast, coercion is much broader in terms of entities covered and addresses the threat to withhold work from or take adverse employment action against a driver in order to induce the driver to violate a broader range of regulatory provisions or to take adverse action to punish a driver for the driver's refusal to operate a CMV is violation of the specified regulations.

VI. Discussion of Comments—Overview

In today's rule, FMCSA responds to comments in public docket FMCSA–2010–0167, which includes comments submitted in response to the following **Federal Register** notices:

- February 1, 2011, NPRM
- April 13, 2011, Notice, request for additional public comment concerning harassment associated with electronic recording of HOS duty status
- March 28, 2014, SNPRM
- May 12, 2014, Notice of Availability concerning the Agency's research report evaluating the potential safety benefits of ELDs
- November 13, 2014, Notice of Availability concerning the Agency's research report about harassment and its relationship to ELDs

The docket also includes transcripts of comments received at two public listening sessions held in Louisville, Kentucky on March 23, 2012, and Bellevue, Washington on April 26, 2012.[14]

In the 2014 SNPRM, the Agency stated that the proposed regulatory text should be read to replace that proposed in the 2011 NPRM. Some issues in the NPRM were addressed at the SNPRM stage. FMCSA discusses comments to the 2011 NPRM that remain relevant to this rulemaking in the appropriate sections of this comment summary. However, the Agency generally does not address comments to the 2011 NPRM that have been rendered obsolete by changes in the Agency's proposal and events subsequent to the 2011 NPRM, such as the enactment of MAP–21, or that were also submitted to the SNPRM. Obsolete provisions are discussed in Section IV, Overview, above. Similarly, we do not generally respond to comments related to cost and benefit assumptions that the Agency relied on in the NPRM because the SNPRM and this rule largely rely on different data and methodologies.

At the NPRM stage, FMCSA and the Department of Transportation (DOT) participated in a pilot program intended to increase effective public involvement in this rulemaking by using the Cornell eRulemaking Initiative, called ''Regulation Room.'' Regulation Room is not an official DOT Web site; therefore, a summary of discussions introduced in Regulation Room was prepared collaboratively on the site and submitted to DOT as a public comment to the docket. Regulation Room commenters were informed that they could also submit individual comments to the rulemaking docket.

A. Terminology in This Rulemaking

1. A Note on the Terms ''EOBR,'' ''EOBR Technology,'' and ''ELD'' as Used by Commenters

To the best of the Agency's knowledge, no devices or technologies for HOS compliance in the marketplace to date comply fully with the vacated § 395.16 requirements. However, the characteristics of many systems and devices probably came very close to meeting those requirements, and may have been able to become fully compliant with some relatively minor technological changes. Despite this, many commenters referred to ''existing EOBRs,'' and referenced specific makes and models of EOBR-like (ELD-like) devices and systems. FMCSA does not refer to devices or systems discussed by commenters by brand name in this rule. In these responses to comments, the Agency considers the term ''EOBR'' or ''electronic on-board recorder'' to mean a device or a technology that would cover both HOS data recording and storage systems, but acknowledges that the devices commented upon might not actually be compliant with the technical specifications of today's rule.

MAP–21 defines ''electronic logging device'' or ''ELD'' as a device that ''is capable of recording a driver's hours of service and duty status accurately and automatically; and meets the requirements established by the Secretary through regulation.'' 49 U.S.C. 31137(f)(1). The Agency previously used the term ''electronic on-board recorder'' to refer to this category of HOS recording device and its support system. However, to achieve consistency with MAP–21, the Agency now refers to devices that meet today's final rule's technical specifications as ''ELDs.'' FMCSA may retain the use of the term ''EOBR,'' as appropriate, in the context of comments.

Technically there are only ''ELD-like'' devices in use today, as an ELD did not exist in regulation before today's rule. The Agency assumes that many ELD-like devices could be made compliant with the ELD rule at relatively low-cost, but existing devices would likely need some modification.

2. Fleet Management Systems

An FMS may include the functions of an ELD, but typically provides communication capabilities that go beyond the defined requirements of today's rule. Commenters often use the term ''ELD'' to refer to what appears to be an FMS. FMCSA may retain the language of the comments, despite the fact that the technologies described exceed the minimum specifications and

[13] In the March 28, 2014 SNPRM, the term ''electronic logging device (ELD)'' was substituted for the term ''electronic on-board recorder (EOBR),'' which was used in the April 2010 final rule and February 2011 NPRM, in order to be consistent with the term used in MAP–21.

[14] Transcripts of both sessions are available in the docket for this rulemaking, and the Web casts are archived and available at *http://www.tvworldwide.com/events/dot/120323/* and *http://www.tvworldwide.com/events/dot/120426/*, respectively (last accessed May 30, 2013).

definition to be considered an ELD. Today's rule prescribes technical specifications required for a minimally compliant ELD; however, it also addresses communication features available as part of FMS as part of its effort to prevent harassment. Today's rule does not prohibit certain enhanced capabilities that some ELD providers may choose to create, and some motor carriers may elect to employ, consistent with 49 CFR 390.17.

3. ELD Records

In today's rule, FMCSA uses the term ''ELD records'' reflecting the move from paper logs to electronic records recorded on an ELD. The term ''ELD records'' includes all the data elements that must be recorded by an ELD under the technical specifications in the Appendix to subpart B of part 395. The term does not include information that an ELD is not required to record such as supporting documents, including communication records recorded through an FMS. The term is used to describe a type of RODS that are recorded on an ELD and that must be retained by a motor carrier. A definition of ''ELD record'' is added to 49 CFR 395.2 for clarity.

B. An Overview of Comments

1. Comments to the 2011 NPRM

The Agency received 385 unique and germane comments to the NPRM. The Agency received 66 docket submissions that were generally in favor of the 2011 proposal to expand the use of EOBRs; commenters included industry and safety advocacy groups, as well as individuals, motor carriers, and government entities. The six safety advocacy groups that generally supported the 2011 NPRM included Road Safe America; the Insurance Institute for Highway Safety; the Alliance for Driver Safety and Security; and, in a joint filing, the Truck Safety Coalition, Parents Against Tired Truckers, and the Citizens for Reliable and Safe Highways. The National Transportation Safety Board (NTSB) and the Commercial Vehicle Safety Alliance (CVSA) wrote supportive comments, as did the Truckload Carriers Association, the Arkansas Trucking Association, and the American Trucking Associations (ATA). Several individuals and drivers, motor carriers, and owner-operators also supported the rule.

FMCSA received 232 separate comments to the docket that were generally opposed to the proposed rule, particularly concerning the expansion of the EOBR usage requirements. Some commenters responded several times. The Agency heard from drivers or other individuals, including owner-operators, and motor carriers. Six associations also opposed all or certain elements of the proposed rule: OOIDA; the Agricultural Retailers Association; the Joint Poultry Industry Safety and Health Council; and, in a joint filing, the Air and Expedited Motor Carriers Association, National Association of Small Trucking Companies, and The Expedite Association of North America.

Reasons cited by commenters who opposed the proposed rule included the following:

- The proposal would not improve compliance with the HOS rules
- The proposal would not improve highway safety
- The proposal would impose excessive costs, particularly on small businesses
- The proposed mandated use of EOBRs would be an invasion of privacy
- The proposal did not adequately address protection of drivers from harassment

Comments During Listening Sessions

FMCSA sought public involvement in the rulemaking through two public listening sessions. These sessions occurred at the Mid-America Truck Show in Louisville, Kentucky, on March 23, 2012, and at the CVSA Conference in Bellevue, Washington, on April 26, 2012. The listening sessions were held after the EOBR 1 rule was vacated and after the 2011 NPRM was published. Comments received at these public sessions focused primarily on the topic of harassment.

During the course of these two public listening sessions, FMCSA heard from both commenters present and those participating through the Internet, who offered varied opinions on the implementation and use of EOBRs. Commenters at the listening session in Louisville, Kentucky, included OOIDA officials, drivers, representatives of motor carriers, and owner-operators. The second public listening session in Bellevue, Washington, specifically sought the input of FMCSA's Motor Carrier Safety Assistance Program (MCSAP) agencies because of their role in enforcing the HOS rules and familiarity with EOBR devices and other technical issues. Participants in the Bellevue public listening session included drivers, representatives of transportation-related businesses, representatives of motor carrier industry organizations, authorized safety officials, and Agency representatives.

In addition to the transcripts of the sessions, which are available in the docket to this rulemaking, Web casts are archived at: *http://www.tvworldwide.com/events/dot/120323/* and *http://www.tvworldwide.com/events/dot/120426/*, respectively. The comments made at these listening sessions are incorporated into the comments addressed here.

2. Comments to the 2014 SNPRM

FMCSA received 1,750 unique and germane comments to the SNPRM.

Comments Generally in Support of the SNPRM

More than 200 commenters expressed general support for the SNPRM. In addition, the Agency received a submission from the Karth family providing a copy of ''The AnnaLeah & Mary Karth Petition: STAND UP FOR TRUCK SAFETY,'' which had 11,389 electronic signatures as of May 27, 2014, when it was submitted to the docket. Some of the commenters who expressed general support had additional comments or reservations that FMCSA discusses in the relevant sections elsewhere in this comment summary. A number of motor carriers, providers of FMSs and related technologies, trade associations, and labor unions stated their general support for the goals of the rulemaking. Safety advocacy organizations generally supported a requirement for ELDs. The Truck Safety Coalition, Parents Against Tired Truckers, and Citizens for Reliable and Safe Highways, responding together, noted some concerns, but indicated their organizations and the safety community support the rulemaking.

The California Highway Patrol (CHP) supported FMCSA's efforts to document driver HOS and duty status via ELDs. The NTSB supported expanding the number of motor carriers and drivers required to use ELDs and indicated that it is vitally important that FMCSA expeditiously issue a final rule to increase compliance with HOS regulations and prevent future crashes, injuries, and deaths.

Individual commenters wrote that they supported ELDs because they make keeping logs easier, there is less paperwork, and logs are orderly, clear, and accurate. Some commenters wrote that ELDs make both drivers and motor carriers operate legally and hold both accountable for compliance. Commenters also noted that ELDs will speed up roadside inspections and simplify enforcement.

Comments Generally Opposed to the SNPRM

FMCSA received 1,357 comments that expressed general opposition to the

SNPRM. FMCSA describes many of these comments in more detail in other parts of the response to comments, but the most commonly cited reasons are discussed below.

Unless laws are written to protect drivers and carriers, Freightlines of America, Inc. commented that brokers, shippers, receivers, corporations, and customers will use ELDs and the HOS rules to deduct pay or not pay at all for a load, jeopardizing safety and lives. The U.S. Poultry & Egg Association, National Chicken Council, and National Turkey Federation, responding together, did not believe that motor carriers that successfully monitor HOS with paper logs should be required to incur the expense of electronic recorders. The National Propane Gas Association (NPGA), Klapec Trucking Company (Klapec), and the Pennsylvania Propane Gas Association believed installation of ELDs should be on a voluntary basis only. The California Construction Trucking Association believed that motor carrier management and owner-operators should be free to choose how to implement safety management practices suited to their particular operations.

Numerous commenters objected to the rule, indicating that the government is overreaching, that there is too much regulation, and that the ELD impinges on privacy and freedom. Some believed that FMCSA would require ELDs for reasons that have nothing to do with safety, for example, to make money from carriers and drivers. OOIDA believed that the use of ELDs would have wide-ranging and negative implications for the health, privacy, safety, and economic interests of all U.S.-domiciled truck drivers and motor carriers.

Many commenters wrote that ELDs would be a financial burden, particularly for small motor carriers, and would drive small carriers out of business. The Agricultural Retailers Association and NPGA believed an ELD mandate is an unnecessary expense—with little to no safety benefits. Some wrote that ELDs would cause prices to rise and slow the economy. Some commenters objected to the costs of the ELD being the responsibility of the driver or motor carrier; some suggested that FMCSA should pay for ELDs. Commenters wrote that they would have to keep paper logs as well, in case the ELD failed.

Commenters also stated that ELDs would benefit only large carriers, or provide more benefits for large carriers than small carriers. These commenters believed big corporations would get discounts on ELDs. Commenters believed that ELDs would give big carriers economic advantages, and some accused FMCSA of requiring ELDs in order to eliminate small carriers. Many commenters wrote that one of the costs of ELDs would be a driver shortage, and many wrote that they would leave the driving industry if ELDs were required.

Many commenters wrote that the ELD would not improve safety, security, or compliance. Commenters complained that carriers with ELDs have a disproportionate number of crashes and high Safety Management System scores—more than carriers without ELDs. They provided examples of the Safety Management System scores of a number of major carriers (Schneider, National, J. B. Hunt, Swift, U.S. Xpress, Knight). Commenters believed that a June 2014 CMV crash involving a Walmart truck on the New Jersey Turnpike was equipped with an AOBRD. They argued that the incident is proof that ELDs do not prevent crashes. Commenters said that the ELD does not enhance compliance—ELDs can only prove driving time, not ODND, off duty, or sleeper berth time—and each duty status can be falsely entered. One commenter wrote that the Agency would have no additional manpower to enforce the ELD rules. Many commenters reported that authorized safety officials often fail to inspect trucks with AOBRDs.

Many commenters opposed ELDs because they would enforce the existing HOS rules and eliminate existing ''flexibility.'' They believed that ELDs would contribute to stress, bad diet, and ill health when used to enforce the 14-hour rule. They alleged that trucks with ELDs speed through construction zones, parking lots, and fueling stations. Commenters also believed that the use of ELDs would result in congested traffic and a scarcity of truck parking locations by forcing strict compliance with the HOS rules.

Commenters stated that the ELD would contribute to driver harassment because ELDs enable motor carriers to push drivers to their driving and on-duty time limits.

Many commenters wrote that training—not ELDs—will provide safety, and FMCSA should pursue long overdue driver training programs. Commenters maintained that big carriers need ELDs because they hire undertrained drivers.

More Data Needs To Be Collected and Analyzed

The George Washington University Regulatory Studies Center pointed out that FMCSA conducts regular roadside inspections that should produce data by which the Agency can measure compliance with HOS limits and associated safety benefits. While some links cannot be directly measured (*e.g.,* whether compliance with HOS regulations will actually reduce driver fatigue), the extent to which the predicted safety benefits of the ELD mandate are accurate should be measurable with data from roadside inspections and accident reports. George Washington University recommended that FMCSA explicitly commit to measuring the actual results of the regulation on an annual basis.

An individual commenter stated that independent research not related to the government will provide detailed information about, and answers to, the e-log problem. The commenter pointed to crashes involving all companies, large and small, and stated that the Agency did not completely research all factors in detail.

3. FMCSA Response

FMCSA describes and responds to many of these comments in more detail in other parts of the response to comments. However, FMCSA agrees with commenters who believe ELDs will help to reduce fatigue and fatigue-related crashes.

The use of ELDs will make it easier for drivers to accurately capture their duty status and make it more difficult for individuals who currently do not routinely achieve high levels of compliance with the HOS rules to produce inaccurate records. The ELD will provide increased transparency and a record that is created automatically of some data elements, as well as a record of any human authorship and editing. While commenters pointed out that there can still be falsification of time spent ODND, FMCSA believes that the opportunities for such fraud are drastically reduced when vehicles are equipped with ELDs. Automatic recording of all times when the CMV is moving and regular recording of geolocation data and other data elements will help both employers and authorized safety officials with HOS oversight, as those elements cannot be easily manipulated. FMCSA believes that ELD use will lead to increased compliance and beneficial behavior changes in commercial driving.

FMCSA notes that preventing fatigued operation of CMVs is a complex challenge and achieving increased compliance with the HOS rules is only one component of the problem. This rule addresses the role of HOS non-compliance while the Agency's work with government and industry leaders in launching the North American Fatigue Management Program (*http://*

www.nafmp.com/en/) is intended to address other components related to overall work-rest schedules, and balancing family and work life in a manner that enables the driver to rest during off-duty periods.

With regard to comments about flexibility, today's final rule concerns ELDs and supporting documents and does not involve any changes to the underlying HOS requirements or the various duty status options available under the HOS rules. Therefore, the use of ELDs does not preclude any of the flexibility provided under the HOS rules, such as the use of the CMV for personal conveyance.

And in response to the comments from George Washington University, FMCSA will conduct a regulatory effectiveness study at an appropriate time following the compliance date. The Agency will then be in a position to compare HOS violation rates in the years prior to the ELD mandate and during the years that follow implementation of the ELD mandate.

FMCSA addresses the relationship of ELDs and crashes in the discussion of its research. FMCSA discusses the benefits of ELD use elsewhere in this preamble.

VII. Discussion of Comments Related to Scope and Exceptions to the Mandate

A. Scope

1. Comments to the 2011 NPRM

The April 2010 rule mandated the use of EOBRs for motor carriers that demonstrated a history of severe noncompliance with the HOS regulations. Although many commenters, including the NTSB, had concerns that this limited mandate would not adequately address safety issues, the Agency could not include in the 2010 rule requirements that extended beyond the scope of the January 18, 2007 NPRM (72 FR 2340). At that time, the Agency estimated that the remedial directive aspect of 2010 rule would have been applicable to about 2,800 motor carriers in the first year and 5,700 motor carriers each year thereafter.

In the February 2011 NPRM, FMCSA proposed mandatory installation and use of EOBRs in all CMVs for which the use of RODS was required (76 FR 5537). The provisions of 49 CFR 395.1(e)(1) and (2) would still allow short-haul drivers to continue using the timecard provision to record HOS. Although FMCSA would not have required short haul drivers to install and use EOBRs, nothing in the NPRM precluded them from doing so. Several commenters to the NPRM suggested that the Agency consider expanding the rule to include a broader scope, or a ''true universal'' mandate for ELD use. Many other commenters supported the Agency's proposal for all current RODS users to be required to use ELDs.

2. Comments to the 2014 SNPRM

In the SNPRM, FMCSA proposed to mandate the installation and use of ELDs for the majority of interstate motor carrier operations. Drivers engaged in operations that do not require the preparation of RODS would be able to use ELDs to document their compliance with the HOS rules, but FMCSA would not require them to do so. Drivers currently allowed to use timecards could continue to do so under the provisions of 49 CFR 395.1(e). Drivers who need to use RODS infrequently or intermittently would also be allowed to continue using paper RODS, provided they do not need to use RODS more than 8 days in any 30-day period.

The 2014 SNPRM evaluated four options for this proposed ELD mandate:

- *Option 1:* ELDs are mandated for all CMV operations subject to 49 CFR part 395.
- *Option 2:* ELDs are mandated for all CMV operations where the driver is required to complete RODS under 49 CFR 395.8.
- *Option 3:* ELDs are mandated for all CMV operations subject to 49 CFR part 395, and the ELD is required to include or be able to be connected to a printer and print RODS.
- *Option 4:* ELDs are mandated for all CMV operations where the driver is required to complete RODS under 49 CFR 395.8, and the ELD is required to include or be able to be connected to a printer and print RODS.

Option 2 is FMCSA's preferred option for the mandated use of ELDs. FMCSA adopts this option in today's rule.

General comments. An individual noted that the ELD mandate would put a cost burden on the occasional interstate driver (*e.g.,* 10–20 times per year). An individual stated an objection to the ELD mandate on the basis that the government does not have the right to require private individuals to install something in their private property.

Because service technicians are not subject to Federal and State HOS restrictions, and they operate several vehicles owned or leased by different carriers on a daily basis, the American Truck Dealers (ATD) division of the National Automobile Dealers Association stated that it does not make sense to subject them to the RODS requirements or to the proposed ELD and supporting documents rules.

Comments on Option 1: ELDs mandated for all CMV operations subject to 49 CFR part 395. An owner-operator, a driver, and two individuals stated that the rule should cover all commercial truck drivers, with no exceptions. An individual commenter specifically included the 100/150 air mile carriers—which the commenter asserted were most problematic. Klapec opposed Option 1 and stated that, as a company with an excellent safety record, it is being subjected to punishment for the actions of a small percentage of the industry that routinely violate the HOS rules. The company believes ELDs should be mandated only for the chronic violators of the HOS rules.

Comments on Option 2: ELDs mandated for all CMV operations where the driver is required to complete RODS under 49 CFR 395.8. The majority of commenters supported Option 2. The International Brotherhood of Teamsters (IBT) stated that safety benefits are higher when all regulated CMV operations are included in the ELD mandate, but supported Option 2. The International Foodservice Distributors Association (IFDA) noted its support for the Agency's proposed exclusion from the ELD mandate of drivers who are not currently, or are only occasionally, subject to RODS requirements.

The National Limousine Association (NLA) stated that Option 2 is the most sensible option and that it squarely meets the Congressional mandate under MAP–21. If the short-haul exemption were eliminated, NLA noted there would be severe negative economic impacts on NLA's members, most of whom are small businesses. NLA also stated short-haul carriers have a strong record of safety and HOS compliance, and that the focus must be on long-haul operators, where the fatigue-related safety concerns exist.

Comments on Options 3 and 4: ELDs must include, or be connected to, a printer. Options 3 and 4 are essentially the same as Options 1 and 2, but would also require those ELDs to include, or to be able to be connected to a printer.

Support Printer Requirement. Only one commenter supported the printer requirement. An ELD provider noted that Options 1 and 2 lack a practical interface for carrying out manual inspections at roadside inspections stations and that electronic data transfers are often not possible. The ELD provider recommended that FMCSA require ELDs to have a printer or the ability to connect to a printer.

Oppose Printer Requirement. Several commenters, including the Agricultural Retailers Association, the NLA, and

several individuals, opposed the printer requirement due to the expense of maintaining and operating printers.

3. FMCSA Response

FMCSA agrees with the comments to the NPRM supporting the exception for short haul operations under § 395.1(e) because this approach presents the most cost effective approach for mandating ELD usage among a large percentage of CMVs operating on the Nation's highways. Based on comments to both the 2011 NPRM and the 2014 SNPRM, as well as the economic factors presented in the RIA for this rulemaking, FMCSA requires ELDs for CMV operations where the driver is required to complete RODS under 49 CFR 395.8, subject to limited exceptions addressed below.

The Agency continues to believe that this is the best and most cost-effective option and that it meets the requirements of MAP–21. FMCSA's analysis did not find a compelling safety or cost-benefit argument to include those drivers engaged in ''short haul'' operations given that these drivers work within a limited distance of the work-reporting location and generally are released from duty within 12 hours from the beginning of the work day. Because these drivers currently rely upon time records rather than RODS and operate limited distances within strict daily limits, FMCSA believes there is less cause for concern about fatigue than is the case with the population of drivers that must prepare RODS.

In response to commenters that believe the ELD mandate should be imposed only on drivers required to hold a CDL, the Agency notes that Congress linked the ELD requirement to the HOS requirements such that any person who operates a CMV, as defined in 49 CFR 390.5, and is subject to the Federal HOS requirements for RODS is subject to the mandate. Therefore, today's rule is applicable to CMV drivers required to keep RODS, regardless of whether they require a CDL.

In response to commenters' concerns regarding printer-related expenses, the rule includes a display option as an alternative to a printer as a backup to electronic data transfer.

B. Exceptions to the Requirement To Use ELDs—the 8 in 30-Day Threshold

1. Comments to the 2011 NPRM

In the 2011 NPRM, the Agency acknowledged that drivers working for motor carriers that keep timecards under 49 CFR 395.1(e)(1) and (2) may occasionally operate beyond the parameters of those provisions (for example, by operating outside the specified 100- or 150-air-mile radii). Under the 2011 NPRM, if a driver operated a CMV more than 2 of every 7 days using RODS (outside the parameters of the timecard exemption), the driver would be required to use an EOBR. This effectively set a threshold for EOBR usage. The NPRM specifically asked for comments and suggestions on this topic, as the Agency wanted to know if a more appropriate alternative threshold exists.

None of the commenters responding to the SNPRM favored the proposal as written. However, several commenters offered alternatives for FMCSA's consideration. ATA agreed with the proposed weekly period but recommended setting the threshold at three or more trips. The United Parcel Service (UPS) recommended that FMCSA consider a longer period—at least a month and at least 5 instances of exceeding time or distance limits within that month—to give carriers the opportunity to determine if deviations from the short-haul provisions were due to unplanned but unavoidable situations or from recurring situations. If EOBR use ultimately would be required for specific operations, UPS also suggested that FMCSA mandate EOBRs only for a specified period of time and consider restoring the timecard exemption if no further time or distance limit deviations occur.

FedEx Corp (FedEx) raised concerns about the potential complexity of an ''occasional use'' provision. FedEx noted that there are two different operational situations where a driver, who usually uses a timecard, would be required to use RODS because the driver had exceeded the time or distance thresholds: When the driver is aware of this prior to commencing a trip or when the driver discovers this during the trip. For this reason and to facilitate compliance assurance in roadside settings, FedEx recommended that FMCSA adopt a ''bright-line'' rule that would require EOBR use if the driver knew at the start of the trip that a RODS would be required.

The Utility Line Clearance Coalition recommended that FMCSA base the threshold for EOBR use on the number of trips in a month a driver operates outside the timecard provisions. The National School Transportation Association believed that a threshold premised on trips made during a given week does not properly account for the seasonal nature of some school transportation activities. The Association suggested that FMCSA consider a threshold based on total annual trips and that carriers that do not exceed the time or distance limits on more than 10 percent of their trips be exempt from EOBR use.

FirstGroup requested that FMCSA retain the current exemption for intrastate school bus operations and consider allowing the drivers to use RODS on the few occasions (less than 1 percent of all field trips) when they would operate beyond a 100-air-mile radius.

Schneider National, Inc. (Schneider) questioned the ability of short-haul carriers to make day-to-day judgments concerning EOBR use. Schneider also asked FMCSA to clarify the assessment periods (for example, do ''week'' and ''month'' refer to calendar weeks and months, or rolling periods?) and the Agency's expectations concerning when HOS would need to be recorded using an EOBR.

NLA believed that FMCSA did not have sufficient data to justify applying an EOBR mandate to short-haul motor carriers, particularly those carriers that operate smaller capacity passenger vehicles.

Individual commenters expressed different concerns about the short-haul provisions and EOBR use. One commenter believed long-haul motor carriers might change to relay operations to take advantage of the short-haul provisions. Another focused on seasonal operations where a driver is required to use RODS only for 10–15 days per year. This commenter recommended FMCSA consider setting a yearly threshold for RODS use based on annual distance traveled or number of days a CMV driver operates outside the short-haul limits.

2. Comments to the 2014 SNPRM

In response to the comments to the NPRM, FMCSA proposed a new threshold for ELD use in § 395.8(a)(1)(iii) of the SNPRM. FMCSA proposed that a motor carrier could allow a driver who needed to complete RODS not more than 8 days within any rolling 30-day period to record the driver's duty status manually, on a graph grid. FMCSA would not require these drivers to use an ELD. This proposed exception was intended to provide relief for drivers who only intermittently needed to use RODS, for example, drivers in short-haul operations who usually use time cards or occasional CMV drivers.

Many commenters supported the proposed exception for drivers who infrequently need to use RODS, including the California Highway Patrol, the National Private Truck Council, the National School Transportation

Association, the Snack Food Association, and the IBT. Other commenters proposed alternate bases for the exception.

Some commenters believed that the proposed exception was too restrictive to accommodate all those drivers who might need it. A commenter suggested a threshold of 15 days in a 30-day period before an ELD is required, while another commenter said that the 8-day limit did not consider circumstances like weather. The National Ready Mixed Concrete Association opposed the proposed exception, saying that the ''provision, as written, is unachievable in the ready mixed concrete industry.'' It called the 8 days in 30-days exception ''shear overreach and outside the scope of what statutorily should be in the proposal,'' because it is not required by MAP–21. The Association wrote that FMCSA has a duty and is compelled not to include such a provision, which they characterized as ''non-mandated, unnecessary, and unfounded.''

The National Motor Freight Traffic Association (NMFTA) also objected to the 8 days in 30-days exception, writing that the proposed rule effectively requires motor carriers to equip trucks with ELDs if there is any possibility their drivers may surpass the 8-day threshold. NMFTA asked how a driver who may or may not exceed the 8-day threshold and who may have used different pieces of equipment will be expected to provide a recap of the last 7 days of HOS compliance data to roadside inspectors. NMFTA also questioned what the motor carrier's exact responsibilities will be to assemble, monitor, and retain ELD records and other driver records across several pieces of equipment?

The American Pyrotechnics Association believed that the 8 in 30-day exception was too restrictive and would not apply to its drivers because they do not return to the work-reporting location within 12 hours. The California Construction Trucking Association said the exception should also apply to intrastate operations using paper RODS to comply with a State regulation.

Some commenters, including the Continental Corporation (Continental), believed the 8 in 30-day exception would be difficult or impossible to enforce at roadside. CVSA wrote that roadside enforcement would not be able to determine whether the driver had exceeded the short-haul exception and by how much.

3. FMCSA Response

In the 2011 NPRM, FMCSA proposed that drivers using RODS more than 2 out of 7 days would have to use an ELD, and drivers using RODS for 2 days or fewer out of 7 could continue to use paper. Overwhelmingly, commenters rejected this threshold. Therefore, for a number of practical and enforcement reasons, FMCSA proposed in the SNPRM—and retains in today's rule—an 8 in 30-day threshold for ELD use. The fact that Congress vested in the Agency responsibility for mandating ELD-use by regulation, rather than requiring use of ELDs by statute, negates the suggestion that the Agency lacks any discretion to prescribe the parameters of the regulation. Nevertheless, the Agency has exercised that discretion narrowly, providing only three exceptions. Drivers who need to use RODS infrequently or intermittently, even if they are not operating under the short-haul exception in § 395.1(e), may continue to use paper RODS provided they are not required to use RODS more than 8 days in any 30 day period.

The Agency considered a number of factors in selecting the 8/30 day threshold. While the 8/30 day threshold preserves nearly the same ratio as the proposed 2/7 threshold, it will provide drivers and motor carriers with more flexibility. In addition, the 8-day period is the standard time frame for current HOS recordkeeping requirements. Currently drivers are required to keep the previous 7 days' records and the present day's records. Allowing a driver 8 days out of 30 days as the threshold to use paper RODS before requiring ELD use keeps this time frame consistent. The 8/30 day threshold will also accommodate some seasonal concerns. The Agency believes that expanding the 8/30 day threshold to 15/30 days, as suggested by some commenters, is inappropriate. That level of exception would significantly decrease the effectiveness of the ELD mandate. Similarly, extending the 30-day period would limit the ability of the Agency to monitor compliance during reviews.

The Agency acknowledges that any exception to the ELD mandate creates challenges for roadside enforcement. the Agency does not believe that the short haul exception from ELD use will present different challenges from the current challenges authorized safety officials face in monitoring the short-haul exceptions in 49 CFR 395.1 (e)(1) and (2).

C. Requests for Exemption for Driveaway-Towaway Operations, Dealers, and Pre-Model Year 2000 Vehicles

1. Comments to the 2011 NPRM

In the February 2011 NPRM, FMCSA proposed mandatory installation and use of EOBRs in all CMVs for which the use of RODS is currently required (76 FR 5537). While the NPRM would have allowed short-haul drivers to continue to use timecards, it did not provide for any other exceptions other than the 2 in 7-day exception. Commenters asked FMCSA to consider an exception to allow driveaway-towaway operators and CMV dealerships to use paper RODs in the vehicles they deliver to their customers.

In a driveaway-towaway operation, a driver transports an empty or unladen motor vehicle, with one or more sets of wheels on the ground, either by driving it or by using a saddle-mount or tow-bar. The driver moves the vehicle between a manufacturer and a dealer or purchaser, or between someone selling or leasing the vehicle and the purchaser or lessee. The driver may take the vehicle to a terminal or repair facility. Typically, the driver drops the vehicle off and either returns home or picks up another job. A motor carrier that specializes in these driveaway-towaway operations often employs the driver(s). Dealerships have some of the same issues as driveaway-towaway operations when delivering vehicles to their customers. The vehicle driven may or may not be part of the delivery.

While the NPRM did not specifically address older vehicles, FMCSA also received comments on using an EOBR with an older engine.

Driveaway-towaway operations. Several commenters stated that they deliver CMVs of many different makes and models, and that EOBR installation would be a particular burden for them. Other commenters pointed out that the FMCSRs already contain exceptions and special provisions for driveaway-towaway operations (*e.g.,* §§ 390.21(f); 393.42(b)(2); 393.43(f); 393.48(c)(2); 393.95(a)(6); and 396.15). Because EOBRs are generally an aftermarket device, several commenters, including the Engine Manufacturers Association/ Truck Manufacturers Association, stated that the temporary installation and subsequent removal of an EOBR would represent a significant expense for a one-time use. The Engine Manufacturing Association, Rush Enterprises, Inc. (Rush) and ATC Transportation, LLC (ATC) were also concerned that the process of installing and removing a temporary EOBR might damage the new vehicle or the EOBR and cause delivery delays. A few commenters noted that small portable or hand-held units were either not available or the commenters did not have information about them. Others noted that training costs and technical requirements would make using

manufacturer-installed EOBRs impractical, were they to be available. Rush, Driveaway-Towaway Carriers (a group of four individual carriers), and ATC each provided detailed projections of the cost impact on their operations.

Dealerships. One commenter addressed the use of EOBRs on CMVs being transported from dealerships. This commenter suggested that a portable unit could be plugged into the 9-pin connector under the dash and could be used in these operations.

Vehicles manufactured before model-year 2000. Two commenters stated that many older CMVs in use have mechanically-controlled engines and may not accommodate EOBRs (*i.e.,* there is no ECM). In contrast, another commenter advised that two state-of-the-practice EOBR-class models can be attached to a truck that is not equipped with an ECM by use of a sensor attached to the transmission, drive shaft, or axle, depending on the truck. Verigo Inc. (Verigo) recommended that FMCSA permit a driver to use untethered means (*i.e.,* an ELD that achieves integral synchronization through wireless communication with the CMV) to record on-duty time and off-duty time and carry out other recordkeeping tasks while away from the vehicle.

2. Comments to the 2014 SNPRM

Comments to the 2011 NPRM raised the issue of exemptions addressing specific sectors of the industry or specific types of CMVs. Given the 8 in 30 days threshold for drivers infrequently required to keep RODS, FMCSA stated in the SNPRM that it was not proposing any additional exceptions [79 FR 17672, March 28, 2014]. However, drivers and carriers in driveaway-towaway operations and those who use CMVs manufactured before model year 2000 explained how the proposed technical standards would be difficult to apply, given their unique operations.

FMCSA sought comments on issues related to installing and using an ELD on CMVs manufactured prior to 2000 [79 FR at 17668, Mar. 28, 2014]. These comments are also discussed under Section X, W, Pre-2000 Model Year CMVs, of this preamble.

Driveaway-towaway operations. A number of comments to the SNPRM questioned how ELDs would affect driveaway-towaway operations. Several commenters, including ATC, Driveaway-Towaway Carriers (a group representing Classic Transport, Inc., Horizon Transport, Inc., and Quality Drive-Away, Inc.), the, Recreational Vehicle Industry Association, and Driveaway-Towaway Coalition (representing Bennett DriveAway, D&T Transport, EagleOne Oilfield Transportation, Hoosier Transit, Mamo Transportation, Norton Transport, and PARS), asked that the ELD rulemaking provide an exception for driveaway-towaway operations because of the unique nature of the operations. The commenters described the unique circumstances of a driveaway-towaway operation that make the installation and use of ELDs impractical and excessively burdensome:

- A driveaway-towaway operator is not allowed to alter, attach, or disassemble any portion of the CMV being transported. It must be delivered in the same condition as when it was presented for delivery.
- The driveaway-towaway operator does not own the CMV or rent or lease the CMV, but it is financially liable for any re-assembly or repairs to a CMV damaged or changed in transit.
- The driveaway-towaway operator operates the CMV only once, delivering it to the dealer/purchaser.
- The driveaway-towaway operator transports every type of CMV and other drive/towaway cargo for many different manufacturers of recreational, commercial, or specialized motor vehicles. The driver transports both new and used CMVs of every variety; the vehicle being transported may not have an ECM.

Henkels & McCoy Inc. and Driveaway-Towaway Carriers noted the lack of information on existing portable ELDs. The Driveaway-Towaway Coalition reported that many vehicles are not portable-ELD compatible.

ATC noted that a driver will have to carry the equipment to connect to each type of CMV the driver might encounter. ATC maintained that the costs for training, extra equipment, and constant installation are over and above what the majority of the trucking industry would incur to comply with mandated ELDs, and were not part of the cost analysis of the SNPRM.

The Driveaway-Towaway Carriers and the Driveaway-Towaway Coalition provided detailed descriptions of their collective operations. Both sets of commenters noted that FMCSA has recognized the unique nature of driveaway-towaway operations, referencing the exceptions and provisions in the CFR. The Recreational Vehicle Industry Association offered statistics for the driveaway-towaway companies demonstrating a low crash frequency.

Dealerships. ATD wrote that some dealerships use contract drivers to operate new and used CMV inventory in intra- or interstate commerce; others use employee CDL holders. New or used sales department staff may pick-up or drop-off CMVs at factories, ports, customers, auctions, other dealerships, etc.

ATD recognized that some parts drivers may be covered by the exceptions in 49 CFR 395.1(c) and (e). To the extent that they fail to fall within an existing exception, ATD urged FMCSA to provide that such CDL holders need not use ELDs to meet RODS requirements if the vehicles being operated are not titled to or leased by a dealership employer. ATD also maintained it would be very burdensome for small business truck dealerships to have to set ELD systems and install ELD units in vehicles to which they do not take title.

Vehicles manufactured before model year 2000. Eight commenters responded to FMCSA's request for comments on the complexity of compliance with a CMV manufactured on or before 2000. The California Construction Trucking Association said that while it is possible to retrofit an older truck, its research indicates that it is costly, at about $1,000 per truck in California. In contrast, Continental stated that it would cost between $100 and $300 per vehicle. XRS Corporation (XRS) stated that the Global Positioning System (GPS) solutions and related cost for black boxes could result in an incremental cost of $250 per vehicle. PeopleNet stated that obtaining speed from a source other than the ECM or GPS will be very complex and cost-prohibitive. Both PeopleNet and Zonar Systems (Zonar) supported using GPS-based ELDs for older CMVs.

The Truck and Engine Manufacturers Association generally supported the proposed rule. It raised questions about whether FMCSA was referring to model years or calendar years, as these are not the same. The association noted the additional requirement that the engine actually have an ECM is crucial in the event that a mechanically controlled engine was installed in a vehicle with a model year 2000 or later.

One carrier was concerned about light duty vehicles with On-Board Diagnostics (OBD–II) ports. It stated that OBD–II ports cannot share data if they are already dedicated for another purpose. This situation exists in several styles of its vehicles equipped with OBD–II ports; the ports are already occupied by auxiliary equipment. Another problem exists with capturing data from OBD–II ports: There are five different protocols used in OBD–II and the software is proprietary to the vehicle manufacturer. This would require the vehicle manufacturer to release their

software to use the OBD–II to capture the necessary data effectively. A towaway driver asked how the driver is to record time if there is no engine control unit (ECU) plug available.

3. FMCSA Response

Both driveaway-towaway operations and the operations associated with truck dealers represent a unique operational challenge concerning the use of ELDs. FMCSA believes that while many of these operations will fall within the current ''timecard'' provisions for HOS recordkeeping, some will not.

In today's rule, FMCSA includes an exception from the ELD mandate for driveaway-towaway operations, as defined in 49 CFR 393.5, provided that the vehicle driven is part of the shipment delivered. FMCSA acknowledges the concerns raised by these operators. FMCSA understands that ELDs may not fit their operational model when providing a one-time delivery of a vehicle. Neither the driveaway-towaway company nor the driver own or lease the vehicles that they will be driving under this exemption.

This exception only applies to driveaway-towaway operations where the CMV being driven is the commodity. These drivers will be required to keep proper RODS and retain the same number and categories of supporting documents as those required to use ELDs plus toll receipts. FMCSA believes that these operators will be easy to recognize at roadside; by the nature of their operation, drivers will be carrying supporting documents that explain their operation. To the extent that operations at a dealership fit the definition of a driveaway-towaway operation, those operations are able to benefit from this exemption.

FMCSA also includes an exception for to those drivers operating CMVs older than model year 2000, as identified by the vehicle identification number (VIN) of the CMV. Comments have indicated and FMCSA's research has confirmed that pre-2000 model year trucks may not allow the ELD to connect easily to the engine. While the Agency has confirmed that there are ways of equipping older vehicles to use an ELD consistent with today's rule technical specifications, these are not always cost beneficial or practical. Further, the Agency lacks confidence that the technology will be available to address this entire segment of the market (pre-2000 model years) at a reasonable cost.

While OBD–II does support 5 signaling protocols, none of these are proprietary. Each protocol is outlined in the standard and the engine manufacture decides which to implement and most vehicles implement only one of the protocols. It is often possible to deduce the protocol used based on which pins are present on the J1962 connector. While OBD–II diagnostic, connectivity needs, and reporting capability vary by manufacturer, FMCSA believes that ELD providers will work with each vehicle manufacturer for specific details.

D. Requests for Exceptions From the ELD Mandate for Certain Segments of the CMV Industry

1. Comments to the 2011 NPRM

While the NPRM preserved the exception for short-haul drivers who occasionally require RODS to continue to use timecards under § 395.1(e), it did not provide for other exceptions. This exception was limited to drivers requiring RODS no more than 2 days in any 7-day period; on those days, they could maintain paper RODS. FMCSA asked for comment on whether it should grant other exceptions. Responses were received from businesses, trade associations and others representing school bus operations, truck rental operations, agricultural operations, construction, maintenance, oil and gas operations, utilities, concrete companies and hazardous materials transporters. Many commenters believed FMCSA should provide an exception for their segment of the industry or their operations from the mandate to use ELDs. Commenters mainly focused on the nature of their operations or the costs of EOBRs. A hazardous materials transporter raised security concerns over tracking of vehicles. An organization representing concrete companies recommended a limited expansion of the short-haul exception for drivers occasionally exceeding 100 miles.

2. Comments to the 2014 SNPRM

In the SNPRM, FMCSA proposed only a limited exception to the ELD mandate—for drivers who are rarely required to keep RODS. Drivers who need to use RODS infrequently or intermittently would be allowed to continue using paper RODS, if they are not required to use RODS more than 8 days in any 30-day period. The 2 days out of 7-day period proposal in the NPRM was eliminated in light of the 8 days in 30 exception.

Many commenters to the SNPRM believed that ELDs are not necessary or appropriate for drivers in their particular industries, and asked that their industry be excepted from the requirement to install and use ELDs. Some commenters asked for an exception for private motor carriers. A commenter believed an exception would be appropriate because private motor carriers are not usually generating revenue through hauling, crossing State lines, or driving on the roads as much as for-hire carriers. A commenter asked how lawn services, private delivery, horse show teams, etc. would be handled. A commenter wrote that his or her drivers were working in the field, where they may not have any technological connectivity. For flatbeds; specialized heavy-haulers; auto transporters, or any other segment of the industry where drivers have to do their own loading, unloading, or load securement, a commenter wrote that ELDs would cripple the industry. Commenters also asked for an exception for testing a CMV when it is being serviced or repaired.

Comments from the following special industries or types of operations are discussed below: Agricultural-related operations; utilities; construction, oil and gas, and ready-mix concrete industry; pyrotechnics operations; driver salesperson operations; motion picture industry; and waste and recycling industry.

Agriculture-related operations. The Agricultural Retailers Association interpreted the proposed ELD mandate would not apply to agricultural operations. It based its interpretation on the rule FMCSA published March 14, 2013 (78 FR 16189), which provided agricultural exceptions to the HOS rules in part 395. In contrast, several individual commenters believed that the proposed rule would apply to agricultural operations. These commenters maintained that the ELD mandate would be cost prohibitive for farm and ranch operators.

One commenter noted that agricultural commodities are seasonal in nature and asked how the ELD mandate would affect exemptions to the HOS rules for the transportation of anhydrous and liquid fertilizer.

An individual working for a company in the agricultural seed industry also mentioned the seasonal nature of the company's operations. The company has CMV's operating in interstate commerce on the road every day of the year, but most of its drivers qualify and use the 100- or 150- air-mile short haul exemptions. The commenter wrote that during certain seasons (*i.e.* planting, detasseling/pollinating, harvest), some of the drivers may increase their driving and may need to fill out RODS more than 8 times in a 30 day period during a 3–6 week season. The commenter noted that these drivers are not

professional, over-the-road truck drivers, but production and research associates who mainly operate pickup trucks with trailers that put them over the weight limits, qualifying them as CMVs. The commenter stated that putting ELDs in all of these pickups—which are only occasionally used as CMVs—would be a significant burden to the company.

Utilities. Henkels & McCoy Inc. believed the proposed regulation was designed for long-haul truck drivers, not their drivers who are power line, pipeline, and telecommunications workers who only operate a CMV short distances to and from or on a job site. The commenter noted that utility project job sites often span great distances where the majority of the driving is accomplished on the construction right of way, not on public roadways. Henkels & McCoy, Inc., noted that some of these projects might not fall under the short haul exemptions in § 395.1(e) or the current interpretations of Utility Service Exemption from the HOS rules, thereby requiring the installation of ELDs in thousands of pieces of equipment that in the course of a day may only be operated a few miles and may not traverse a public roadway for days or weeks.

Construction, oil and gas, and other specialized operators. A commenter from the service and drilling equipment industry wrote that ELDs are unnecessary because the drivers seldom drive far, but do not qualify for the short-haul exception due to their longer hours. Because of the conditions under which those trucks operate, the commenter wrote that maintenance would be impossible. Another commenter questioned if FMCSA had taken into consideration the ability of ELDs to accommodate the HOS rules applicable to oil fields.

A commenter who operates a small crane company asked FMCSA to consider an exception for special mobile machinery that sometimes needs to be moved more than 100 miles. The commenter maintained that, although the company's drivers will not usually exceed the 8 days in 30 day exception while driving a crane, they will at times exceed that amount when moving one of the large cranes. The commenter noted that older cranes do not have modern electronic engines and computers to support a compliant e-log device, and asked whether FMCSA expects them to modernize the engines to be e-log compliant. The commenter asserted that this process would not only be an excessive financial burden to a small company, but would also achieve no safety gain worth the cost because a slow moving crane on the highway for less than 5,000 miles per year is statistically not a risk to the traveling public. The Associated General Contractors of America (AGC) urged FMCSA to exempt the construction industry from the ELD mandate. AGC noted that Congress directed FMCSA to provide special consideration to construction drivers in the HOS regulations by allowing construction drivers to reset the on-duty clock after an off-duty period of 24 or more consecutive hours, showing Congress' recognition of the unique circumstances faced by the industry's drivers. The commenter also noted that no studies have concluded that there is a safety deficiency specific to construction workers driving under these rules.

AGC believed that the mandate would create unreasonable impacts on the construction industry given the cost of implementation and administration issues. The commenter noted that the constant vibrations, jarring movements, and bumps are likely to have an impact on ELD operations, longevity, and accuracy. AGC reported that several of its members claim that there is at least a 10 percent failure rate for ELDs. The commenter wrote that the purchase and installation of ELDs will be far more expensive than retaining records with paper RODS and believed that FMCSA estimates fall far short of the actual costs. AGC believed that administrative issues related to identifying drivers, particularly temporary drivers, and correctly recording driving time would cause problems for the construction industry. AGC asked FMCSA to consider this record and extend its part 395 exemption to the new ELD proposal.

Pyrotechnics. The American Pyrotechnics Association (APA) supported limiting the scope of the ELD mandate to drivers who are currently subject to keeping RODS. The APA, however, believed that FMCSA should provide an exemption for industries that are engaged primarily in providing services or transporting tools of the trades, as opposed to long-haul trucking. The commenter wrote that the majority of its members operated CMVs over short distances to and from job sites and provided a detailed explanation of their operations. Based upon data provided by APA members and the carriers currently underwriting vehicles to the industry, during the peak Fourth of July season, the industry rents more than 3,500 vehicles for the 7–14 day period. The two primary rental truck suppliers to the fireworks industry have indicated that neither is planning to install ELDs at this time because they do a minimal amount of commercial leasing, focusing instead on the consumer market.

The APA did not believe that ELDs would improve safety or prevent crashes for drivers within the fireworks industry. The commenter wrote that ELDs could actually contribute to more crashes as a distraction for drivers who are not used to them. The APA wrote that it could not comply with the mandate until ''plug and play'' devices, which can be rented on a short term basis, become readily available. APA requested relief be provided to small operators, especially those that must rely on rented vehicles and intermittent/casual drivers over a short period of time to handle all of their business commitments.

Driver/salespersons. YRC Worldwide Inc. (YRC) said that driver salespersons who exceed the short-haul exception in § 395.1(e) should be exempted based on their records availability, starting and ending their shifts at the same location, and serving in the role of driver salesperson. They should not be denied the exemption because of an arbitrary mileage calculation. Based on the flexibility it needs in its city fleet, YRC wrote that it may have to equip all vehicles with ELDs and train all the driver salespersons to ensure they could serve customers outside a 100 air-mile radius.

Motion picture industry. The Motion Picture Association of America (MPAA) recommended that FMCSA permit the non-electronic interchange and production of RODS, at least for production drivers and other similarly situated drivers, *i.e.,* those who operate multiple CMVs or are employed by multiple motor carriers. This approach could be made permanent, or FMCSA could apply it to production drivers for an appropriate period beyond the proposed, industry-wide compliance deadline.

MPAA believed that an exception for drivers who operate multiple CMVs or are employed by multiple motor carriers would allow ELD technology to mature, with drivers generating less complex RODS, before requiring production drivers to produce ELD-generated, all-electronic RODS. The MPAA believed that ELD providers are likely to focus on releasing ELDs suitable for the most common CMV operations and sophisticated ELDs will not be available when the rule is implemented.

Ready-mixed concrete. Both Glacier Northwest and Cemex Construction Materials Pacific believed the rule would force companies to install ELDs, penalizing the ready-mixed concrete industry because of the nature of its product and unpredictable operations.

The National Ready Mixed Concrete Association said that this proposal, in effect, is the true universal approach requested by NTSB. Instead, all three commenters suggested that the rule exempt drivers operating under § 395.1(e)(1), but eliminate the 12-hour on-duty threshold. Both Cemex and Glacier wrote that ready-mixed concrete industry drivers are not subjected to fatigue-inducing situations and generally operate under § 395.1(e)(1), but may need to work longer days.

The National Ready Mixed Concrete Association commented that the reason for the proposed ELD mandate for CMVs ''is to obtain better Hours of Service (HOS) compliance.'' The commenter described the working conditions of mixer drivers, and commented that, because of these conditions and exemptions to HOS compliance, making use of ELDs by mixer drivers ''is a technical inapplicability.''

Since mixer drivers are only in the CMV or driving a small amount of the time they are on-duty, the commenter believed that ELDs cannot accurately determine HOS compliance or productivity for mixer drivers.

Waste and recycling industry. The National Waste and Recycling Association commented that the industry operates a unique fleet that differs significantly from long-haul trucks and other short-haul trucks. The association provided a detailed description of its operations. The commenter was concerned that the ELD may not be able to handle unusual stresses inherent in their operations and may require constant maintenance.

The commenter wrote that FMCSA has acknowledged and research has shown that fatigue is less of a problem for short-haul drivers, for a number of reasons. Further, the association commented that Congress recognized the unique nature of local routes by limiting the required use of ELDs to CMVs operated by a driver subject to the HOS and RODS requirements. It wrote that the Congressional intent is clear: Local route, short-haul drivers who show HOS compliance by the use of time cards do not need to use ELDs. The association commented that the Agency, however, is now proposing that if a driver needs to use paper logs for more than 8 days in any 30-day period, that driver must use an ELD. The commenter was puzzled by the proposed 8 in 30-day threshold because it directly contradicts the language in footnote 15 on page 79 FR 17680, which states, ''Today's SNPRM would not require short-haul drivers who would need to keep RODS more than 8 days in any 30-day period to use an ELD. Although FMCSA cannot quantify the costs to carriers, the Agency believes extending the ELD mandate to these drivers would not be cost beneficial.'' [15] While the commenter wrote that it understands the Agency's desire to prevent abuse of short-haul, local-route status, it believed that the proposed remedy is excessive, unnecessary, and will produce contradictory results. It agreed with the footnote that it is not cost beneficial.

The association commented that time cards adequately document HOS compliance. The commenter wrote that whereas the time card is an absolutely accurate record of duty time, an ELD will be a poor tracker of driving time in the short-haul, local route waste and recycling industry.

3. FMCSA Response

Subject to limited exceptions, today's rule establishes clear requirements for the use of ELDs in CMVs operating under circumstances where drivers currently must keep paper RODS. Generally, the requirements apply to drivers who are subject to the HOS limits under 49 CFR part 395, and do not satisfy the short-haul exception to the RODS requirement. FMCSA considered all the comments and that, subject to a narrow exception, declines to provide industry-specific exceptions, given the lack of safety performance data for specific industry segments and the fact that industry segments often overlap.

The Agency, however, has provided limited exceptions from the ELD mandate. The 8-day out of 30 threshold is intended to accommodate drivers who infrequently require RODS. The driveaway-towaway exception addresses unique aspects of those operations, but only if the vehicle driven is or is part of the shipment. The pre-2000 model year exception reflects concerns about employing an ELD on such vehicles.

FMCSA anticipates that most of the industry segments seeking relief from the ELD mandate are addressed, in part, under the short-haul exemption under 49 CFR part 395. ELD use will be required only if a driver operates outside the short-haul exception to the paper RODS provision for more than 8 days of any 30-day period.

As to the concern about location tracking technology creating a security risk for hazardous materials, FMCSA notes that today's rule does not include a requirement for real time tracking of CMVs.

FMCSA believes that ELD providers will address the needs of specialized industries. We note that Congress did not address concerns of specific industry sectors in mandating a requirement for ELDs.

E. Exceptions for Small Business

1. Comments to the 2011 NPRM

Because small businesses comprise such a large portion of the motor carrier population subject to the FMCSRs, FMCSA stated in the 2011 NPRM that it is neither feasible nor consistent with the Agency's safety mandate to allow a motor carrier to be excepted from the requirement to use EOBRs based only on its status as a small business entity.

Several motor carriers, however, contended that very small operations should be excepted. One commenter suggested that ELDs should be required only for fleets of 25 or more trucks, another would set the threshold at 100 or more trucks. An owner-operator wanted the rule to allow owner-operators who own and drive one truck to use a Smartphone system that uses GPS satellite signals for location tracking and is not integrated with the truck's on-board computer.

Associations representing small motor carriers also wanted special consideration. The Air and Expedited Motor Carrier Association, National Association of Small Trucking Companies, and The Expedite Association of North America asked for a simple waiver procedure for small businessmen, reasoning that the EOBR requirement would impose needless costs on hundreds of thousands of small businesses. The National Federation of Independent Business (NFIB) believed that expanding the EOBR rule to cover all CMV drivers subject to the HOS requirements ''is unnecessarily punitive to small businesses that operate locally.''

Given the disproportionate percentage of small businesses in the industry, the NLA felt that any final rule that mandates EOBRs for all CMV passenger carriers without a specific cost-benefit analysis of the effect of the rule on smaller passenger-carrying CMVs ''would be arbitrary, capricious and excessive.'' The association argued that exempting small businesses whose safety records demonstrate satisfactory compliance with the HOS rules from an EOBR mandate would not equate to toleration of noncompliance. Those drivers would still be required to keep RODS and operate within the HOS limitations. The association asserted

[15] FMCSA acknowledges an error in the referenced footnote. It was intended to read, ''[t]oday's SNPRM would not require short-haul drivers who would need to keep RODS *not* more than 8 days in a 30-day period to use an ELD. . . .''

that members of the industry that operate smaller CMVs for shorter distances and shorter periods of time are not motivated to falsify RODS.

The Advocates for Highway and Auto Safety (Advocates), however, supported the reasoning behind the Agency's decision not to except small businesses from the EOBR requirement. Advocates stated that exempting some or all small businesses would undermine the purpose and safety benefits sought by proposing the rule and render it ineffectual.

2. Comments to the 2014 SNPRM

As with the commenters to the 2011 NPRM, many commenters to the SNPRM wanted an exception for small fleets and owner operators, including one-truck/one-driver operations.

3. FMCSA Response

For those motor carriers whose drivers engage in local operations, ELD use would be required only if a driver operates outside the timecard provisions of part 395 for more than 8 days of any 30-day period. The requirement would be applicable to the specific driver rather than the fleet. FMCSA notes that its safety requirements generally do not vary with the size of the fleet and the ELD rulemaking should not deviate from that practice. While Federal agencies are required to consider the impact of their rulemakings on small businesses, as defined by the Small Business Administration's size standards (discussed later in the preamble under the Regulatory Flexibility Act analysis), FMCSA is not required or expected to provide an exception to its safety rules based solely on the fact that the businesses are small. This approach also is consistent with the provisions of MAP–21 (49 U.S.C. 31137), which does not distinguish between motor carriers or their drivers based on the size of their operations.

Today's technical specifications require that all ELDs be integrally synchronized with the engine. However, the rulemaking does not preclude the use of smart phones or similar devices which could achieve integral synchronization, including wireless devices.

In response to the National Limousine Association, FMCSA notes that the Agency is required to consider the impact of its proposed regulations on small businesses. See XIV. B. (Regulatory Flexibility Act), below. However, it is not required to perform analyses for particular industry sectors.

F. Exceptions for CMVs Under 26,001 Pounds or Carrying Between 9 and 15 Passengers (Including the Driver)

1. Comments to the 2011 NPRM

Although the NPRM did not propose an exception to the ELD requirement for drivers engaged in operating CMVs under 26,001 pounds or vehicles handling between 9 and 15 passengers, the NFIB believed FMCSA should provide an exception for drivers operating CMVs with a gross vehicle weight under 26,001 pounds. The NFIB stated that the rule would disproportionately affect small business and fails to follow Executive Order 13563. It stated that an ELD would have ''little or no positive effect on highway safety for small trucks and vans.'' For many small plumbing, electrical, and other service providers, the NFIB wrote that the cost would be extremely prohibitive. It believed that many other factors provide incentives for the small business owner to use medium trucks responsibly, including market factors and the fact that they live and drive within the community.

2. Comments to the 2014 SNPRM

The SNPRM would require a driver of a CMV, as defined in 49 CFR 390.5, who is subject to the HOS regulations to use an ELD, unless the driver operated under the short-haul exception or qualified for the 8 out of 30 day exception. Thus, it would include a CMV under 26,000 pounds or a CMV designed or used to transport between 9 and 15 passengers (including the driver) for direct compensation.

Commenters had questions and concerns about how the proposed rules would affect light-duty vehicles. An individual commenter and the AGC suggested that the ELD requirement only apply to vehicles of a size requiring a driver with a CDL. Both commenters wrote that drivers operating vehicles between 10,000 and 26,001 pounds are usually engaged in short-haul operations; and, when a log is required, it is likely because they are on duty more than 12 hours or do not start and stop in the same location. While FMCSA regulations apply only to interstate operations, commenters wrote that most States will adopt the rules for intrastate operations. They believed that ELDs will then be required in almost all vehicles rated over 10,001 pounds, which includes 1-ton pickups and 1-ton and up work trucks where, they maintain, fatigue is not an issue. The commenters believed that this would create an undue financial burden.

NLA proposed that vehicles designed or used to transport between 9 and 15 passengers (including the driver) should be exempt. The association noted that the Department of Transportation provides relief for these types of vehicle and their drivers under 49 CFR parts 40, 171–180, 382, 383, and 397. The association also commented that a vehicle designed to carry 15 or fewer passengers is not substantially different from the driving characteristics of a privately operated vehicle of the same size.

The NFIB recommended exempting CMVs with gross vehicle weights (GVW) of less than 26,001 pounds from the ELD requirement. The NFIB's comments to the SNPRM largely echoed their comments to the NPRM. They also stated that since these regulations are only imposed on drivers engaged in commerce, the same driver, driving the same vehicle, along the same route would be regulated differently depending on whether the vehicle is being used for personal or business purposes. The NFIB stated that this decision to regulate drivers engaged in commerce is based on an assumption with no support; namely, that being ''in commerce'' has an adverse effect on the driver's ability to drive the same vehicle that may be driven for personal uses.

3. FMCSA Response

FMCSA acknowledges the commenters' concerns but continues to believe the underlying HOS recordkeeping requirements should not be altered, which in turn, limits the Agency's discretion in considering relief from the ELD mandate. MAP–21 requires that the Agency impose the ELD mandate on drivers who prepare handwritten RODS. Safety would not be enhanced by creating a new category of relief from the RODS requirements. Regardless of the size of the vehicles being operated, any driver who is unable to satisfy the eligibility criteria for the short-haul exception must use RODS.

FMCSA continues to grant relief in the form of an exception in § 395.1(e) to those drivers operating in ''short-haul'' operations. Drivers who infrequently need to keep RODS (*i.e.,* no more than 8 days in any 30-day period), may continue relying on paper RODS. However, because the Congressional mandate to require ELDs extends to CMVs as defined under 49 U.S.C. 31132, FMCSA declines to limit the regulation to CMVs over 26,000 pounds or exempt small passenger vehicles.

G. ELDs Only for Unsafe Carriers or Drivers

1. Comments to the 2011 NPRM

In the February 2011 NPRM, FMCSA requested comments on the potential advantages, disadvantages, and practicality of an exception from the EOBR requirements for motor carriers with few or no HOS violations. Many commenters supported the contention in the 2010 rule and believed that FMCSA should not mandate EOBRs for safe drivers or motor carriers. Other commenters felt that an exception should be available for safe drivers or motor carriers.

A number of commenters, including several trade associations, supported limiting the EOBR mandate to carriers with severe or chronic HOS violations. Other commenters, however, stated that a potential exemption from the EOBR requirement based on a lack of HOS violations ''would result in endangering truck drivers and the motoring public.'' They argued that just because a company does not have a documented history of violations does not mean that violations have not occurred.

2. Comments to the 2014 SNPRM

In the SNPRM, the Agency did not propose an exception based on HOS compliance history. Nonetheless, some commenters felt that experienced drivers or drivers with a history of safe driving should not be required to use an ELD.

3. FMCSA Response

FMCSA acknowledges commenters' concerns, but the Agency disagrees with the suggestion to provide an exception for experienced drivers with good safety records. Such an exception would be difficult to craft with regard to criteria for identifying eligible drivers and difficult to enforce. Furthermore, in enacting the MAP–21 provision requiring that the Agency mandate the use of ELDs, Congress did not predicate that requirement on any ''safe driving'' threshold.

VIII. Discussion of Comments Related to Supporting Documents

A. Definition and Number

Section 113 of the Hazardous Materials Transportation Authorization Act of 1995 (HMTAA) [16] requires the Secretary to adopt regulations under 49 CFR part 395 to address supporting documents used by motor carriers and authorized safety officials to verify a CMV driver's RODS in order to improve compliance with HOS rules. Among other requirements, the regulations are to describe identification factors that enable documents to be used as supporting documents, specify ''the number, type, and frequency'' of supporting documents that must be retained by a motor carrier, allow verification at a reasonable cost, and prescribe a minimum retention period of 6 months. The statute defines ''supporting document'' as ''any document that is generated or received by a motor carrier or [CMV] driver in the normal course of business that could be used, as produced or with additional identifying information, to verify the accuracy of a driver's [RODS].''

1. Comments to the 2011 NPRM

The 2011 NPRM proposed limiting the supporting documents a motor carrier would need to retain and defining the term ''supporting document.'' The proposal recognized that driving time information would be provided through the mandated use of EOBRs in CMVs.

FMCSA proposed in the NPRM to define ''supporting document'' in a way similar to the definition in section 113(c) of the HMTAA. Only one document would have been needed for the beginning and end of each ODND period if that document contained all the necessary elements—personal identification, date, time, and location. Otherwise, the motor carrier would have been required to retain several documents—enough to show collectively all the necessary information.

ATA, Werner Enterprises, Inc. (Werner), and Roehl Transport found the proposed definition too broad, too expensive, and overly burdensome. ATA commented that the definition did not allow for compliance at a ''reasonable cost,'' as required by HMTAA. The commenters believed the NPRM provisions could actually increase the burden for retaining supporting documents. The commenters also questioned why the definition from the HMTAA contained a reference to documents received from the CMV driver and the proposed definition of ''supporting documents'' in the NPRM did not. One commenter preferred the definition from the HMTAA. The commenters stated that at least some of the data elements are usually missing from documents created or received in the normal course of business. With the exception of hazardous material motor carriers, several motor carriers believed that documents to verify ODND were inadequate or unreliable.

ATA wrote that the Agency's attempt to limit supporting document retention to a single document is ''unrealistic,'' and that motor carriers would have to keep a broad range of multiple documents. One motor carrier commented that the Agency should not require a minimum number of documents. Another large motor carrier commented that the NPRM provided ''no guidance as to how many documents must be included.'' The commenter wrote that the NPRM could be interpreted as requiring ''all'' documents, records, and information generated or received by the motor carrier in the normal course of business.

2. Comments to the 2014 SNPRM

At the SNPRM stage, FMCSA significantly modified its proposal governing supporting documents. The revised proposal would limit the supporting documents that a motor carrier must retain by specifying a maximum number and provide categories and required elements for supporting documents. Like the NPRM, the Agency's proposal did not require motor carriers to retain supporting documents to verify driving time because the ELD would automatically capture this information. The Agency's proposal did, however, require motor carriers to retain, for each driver, supporting documents to verify a driver's ODND periods. In terms of number and frequency, FMCSA would require a motor carrier to retain up to 10 documents for a driver's 24-hour period. Electronic mobile communication records covering a driver's 24-hour period would count as a single document. Other types of supporting documents that are relevant to distinct activities—such as a bill of lading for a particular delivery or an expense receipt—would count as an individual document, as explained under Section VIII, B, Categories. If a driver were to submit more than 10 documents for a 24-hour period, the motor carrier would need to retain the documents containing earliest and latest time indications. If the supporting document cap were not reached, the motor carrier would be required to keep all of the supporting documents for that period. While the Agency proposed a single supporting document standard for drivers using ELDs, drivers who continued to use paper RODS would need to also retain all toll receipts.

The IBT stated its support for the supporting document proposal, as ELDs do not automatically record ODND and other duty status periods. The CVSA also supported the proposed supporting document provisions.

[16] Public. Law 103–311, 108 Stat. 1673, 1676–77 (August 26, 1994).

ATA, however, noted that the number and type of supporting documents has consistently increased. It claimed that the requirements in the SNPRM were excessive and unnecessary and do not fulfill the Congressional directive to allow for compliance at a reasonable cost to carriers. It recommended that two supporting documents be required per driver's workday—the one nearest the start of the day and the one nearest the end—sufficient to verify the 14-hour rule. ATA noted that, according to a prior FMCSA HOS rulemaking, only a small percentage of drivers operate near the cumulative 60/70 hour duty time limit,[17] and that fact does not justify FMCSA's proposal for motor carriers to retain supporting documents for all mid-shift duty changes. The Truckload Carriers Association (TCA) also suggested that the only other supporting documents that should be retained are the documents closest to the beginning and the end of the driver's workday.

The American Bus Association (ABA) proposed limiting the supporting document requirement to five documents from three categories. FedEx suggested that motor carriers should only be responsible for fuel data plus one other supporting document type, if one exists. Knight Transportation, Inc. (Knight) noted that enforcement generally relies on no more than two to three supporting documents. The American Moving & Storage Association (AMSA) noted that, in the case of household goods drivers, ODND time is likely to be extensive and requested that the required supporting documents be kept to a minimum and simplified to the extent possible.

The International Foodservice Distributors Association, the Snack Food Association, and an individual commenter noted that the location and tracking functions in the ELDs should eliminate the need for additional paperwork. They therefore recommended elimination of supporting document requirements. The National Waste & Recycling Association suggested a total exemption from the supporting documents requirement for local routes.

FedEx suggested that FMCSA wait to modify the rule on supporting documents until after the ELD rule has been in effect long enough to determine if drivers are falsifying their ODND time on ELDs and if crashes are occurring as a direct result of drivers improperly recording ODND time.

The Institute of Makers of Explosives (IME) and the National Private Truck Council both asked FMCSA to continue to look at supporting document requirements with an eye to providing more flexibility and considering additional means to reduce the compliance burden on carriers.

Other commenters mistakenly believed that FMCSA asserted that the proposed supporting document changes will reduce paperwork. Drivers and carriers will still have to retain certain documents for other business purposes.

In terms of the 10-document cap, ATA noted that, because it is rare for any document to reflect all of the required elements, carriers would have to substitute documents containing all required elements except time, which are not subject to the 10-document daily cap. As such, the 10-document cap is a benefit in theory only and provides no actual relief from the HOS supporting documents requirements.

3. FMCSA Response

As explained in the 2014 SNPRM, FMCSA made major changes to the proposed supporting documents regulations based upon public comments submitted in response to the NPRM. The Agency disagrees with commenters that suggest that the number of required supporting documents has been increased through the 2014 SNPRM. This final rule does not change the fundamental nature of supporting documents; they are records generated in the normal business rather than documents created specifically to verify the duty status of a driver. Because supporting documents used to verify driving time would no longer be required of carriers that use ELDs, some carriers subject to the ELD mandate would end up having fewer supporting documents than they were required to retain before today's rule. And whenever possible, FMCSA tried to reduce the costs and complication of retaining supporting documents without compromising the efficiency in ensuring HOS compliance.

In today's rule, the definition of ''supporting document,'' makes clear that a document can be in ''any medium,'' consistent with the SNPRM. (The reference to CMV driver in HMTAA is not repeated because a driver's obligations are addressed in substantive provisions concerning supporting documents.) In addressing the frequency requirement, the Agency tied the cap to a driver's 24-hour period. While the SNPRM proposed a 10 document cap, FMCSA reduced the supporting document cap to eight documents in today's rule. This definition, combined with clearer categories, and a reduced number of required documents, will allow drivers and carriers to comply at a reasonable cost.

While FMCSA appreciates the desire to eliminate supporting documents or to wait until after widespread ELD use before implementing the requirement, FMCSA does not believe that the ELD eliminates the need for supporting documents. Today's rule requires the retention of supporting documents generated or received in the normal course of business—an essential resource for both authorized safety officials and motor carriers to verify compliance with the HOS rules. Supporting documents are critical in checking ODND periods. FMCSA acknowledges that motor carriers retain supporting documents for reasons other than verifying compliance with the HOS rules, including complying with the rules of other agencies. Thus, the Agency did not project in the SNPRM or in today's rule any paperwork savings associated with the supporting documents provisions.

In terms of the number of documents employed in on-site enforcement interventions or investigations, the Agency uses all types of supporting documents to evaluate a driver's RODS. Because of the scope of transportation activities and the range of documents, enforcement authorities cannot effectively evaluate the accuracy of a driver's RODS based on a maximum of two to three supporting documents per duty day. FMCSA recognizes the number of supporting documents obtained daily may vary based upon the driver's activities. By establishing a maximum of eight supporting documents this rule promotes safety by ensuring that authorized safety officials have the opportunity to evaluate effectively the driver's RODS and HOS compliance.

Limiting required supporting documents to the start and end of the workday is not adequate for ensuring HOS compliance especially with regard to on-duty, not driving periods. Documents acquired throughout the day are important in the enforcement of the 60/70-hour rule—a crucial part of ensuring HOS compliance. Compliance with the 60/70-hour rule limits is based on how many cumulative hours an individual works over a period of days. Supporting documents are critical in helping to verify the proper duty statuses for an individual in calculating compliance with the 60/70 hour rules. FMCSA notes that, absent sufficient documents reflecting each element,

[17] Although this fact was attributed to FMCSA, the statement apparently reflected the commenter's view and not necessarily that of the Agency.

documents lacking time would count in applying the 8-document cap.

B. Categories

1. Comments to the 2011 NPRM

The NPRM proposed four categories of supporting documents: (1) Payroll, (2) trip-related expense records and receipts, (3) FMS communication logs, and (4) bills of lading or equivalent documents.

Some commenters said the four categories represented a significant expansion of the existing requirement. These commenters stated that the four categories were confusing, vague, and unjustifiably burdensome, and instead suggested short, specific lists of documents. FedEx said that a short list of supporting documents, used in the Compliance Review process, would hold all carriers to the same standard. ATA said that a short list might be more effective in getting motor carriers to retain supporting documents. OOIDA cautioned that small-business motor carriers, particularly sole proprietors, might not maintain payroll or expense records, or use an FMS or communications logs.

Many commenters agreed with the Agency that EOBRs would make supporting documents related to driving time unnecessary. Other commenters, however, recommended that the Agency continue to require supporting documents for driving time. A driver said that supporting documents reflecting drive time show whether routes conformed to speed limits, or if a driver was speeding to achieve company productivity standards. The American Association for Justice wanted the Agency to continue requiring supporting documents for driving time to guard against EOBR equipment failure, drivers and motor carriers abusing the system, and multiple drivers using one truck. The Association also wanted FMCSA to require motor carriers to notify GPS providers immediately after a crash and to require GPS providers to retain crash-related data for 6 months.

2. Comments to the 2014 SNPRM

Based on comments received to the NPRM, FMCSA modified the description of the categories of required supporting documents in the SNPRM. For every 24-hour period a driver is on duty, the motor carrier would be required to retain a maximum number of supporting documents from the following five categories: (1) Bills of lading, itineraries, schedules, or equivalent documents that indicate the origin and destination of each trip; (2) dispatch records, trip records, or equivalent documents; (3) expense receipts related to ODND time; (4) electronic mobile communication records reflecting communications transmitted through an FMS for the driver's 24-hour duty day; and (5) payroll records, settlement sheets, or equivalent documents that indicate what and how a driver was paid. Drivers who continue to use paper RODS would also need to retain toll receipts.

The ATA, the IME, and others supported FMCSA's proposal to relieve motor carriers of the requirement to retain supporting documents to verify on-duty driving time. ATA pointed out that because ELDs are synchronized with the vehicle, they consistently, reliably, and automatically capture vehicle movement, and the potential for underreporting driving time is minimal, if not non-existent.

NTSB, however, noted that it has found toll information, such as EZ Pass data and toll receipts, to be some of the most reliable information in verifying HOS compliance. It recommended that FMCSA consider specifically listing toll receipts and electronic toll data in the five categories of required supporting data. As to the requirement that drivers who continue to use paper RODS still need to retain toll receipts, FedEx suggested that FMCSA allow motor carriers to retain either toll receipts or trip dispatch records, so long as those documents are created in the ordinary course of business.

3. FMCSA Response

The role of supporting documents is to improve HOS compliance by providing verifiable records to compare with the RODS to ensure the accuracy of the information entered by the driver. Given the broad diversity of motor carrier and CMV operations, the Agency does not believe that a specific list of supporting documents is appropriate for verifying compliance with the HOS regulations. FMCSA intends the five categories of supporting documents to accommodate various sectors of the industry. Although ELDs eliminate the need for supporting documents that reflect driving time, supporting documents are important in reconstructing a driver's ODND time and other duty statuses—a key element in overall HOS compliance, most notably as it relates to the 14-hour and weekly on-duty limits. FMCSA believes that the five categories proposed in the SNPRM clarified the requirement for supporting documents without compromising the Agency's enforcement abilities. FMCSA did not change the categories of documents required in today's rule.

FMCSA also believes that the listed categories of supporting documents, combined with the reduced cap of eight documents per duty day, will not result in an unreasonable burden. FMCSA notes that two categories—electronic mobile communications and payroll records—will typically not be documents a driver would have to physically retain, and may be a part of a larger record that the carrier already has to retain electronically or physically at the dispatch location or principal place of business.

FMCSA eliminates the requirement to retain supporting documents, such as toll receipts, that verify on-duty driving time for drivers using ELDs. Given that ELDs will adequately track driving time, requiring such documents would be redundant and would not further the purpose of this rule, which is to improve HOS compliance.

FMCSA does not create a new requirement that GPS records be preserved after a crash. The Agency currently requires that RODS and supporting documents be retained for 6 months after receipt and this requirement does not change in today's rule. Crash records are addressed in a separate regulation.

FMCSA emphasizes that drivers using paper RODS must also keep toll receipts. These drivers are not required to use ELDs, and, absent an ELD, this documentation of driving time is necessary. Required toll receipts do not count towards the eight-document cap.

C. Data Elements

1. Comments to the 2011 NPRM

The February 2011 NPRM was based on an assumption that only one supporting document—containing driver name or identification number, date and time, and location—would be needed for the beginning and end of each ODND period within the duty status day. Absent a document containing all four elements, a carrier would have been required to retain sufficient individual documents from specified categories.

Commenters suggested that the proposed requirements would demand a significant expansion of their current recordkeeping responsibilities. Commenters also stated that at least some of the proposed data elements are usually missing from documents created or received in the normal course of business. Based on its research, one commenter said that only drug testing control and custody forms, fuel receipts, and roadside inspection reports provide

any of the proposed data elements useful in verifying ODND activity. Because such a supporting document is rare, some commenters stated that motor carriers would be forced to retain multiple documents. ATA wrote that the Agency's attempt to limit supporting document retention to a single document is ''unrealistic'' and that motor carriers would have to keep many—and a broad range of—documents. Another commenter wrote that the NPRM could be interpreted as requiring ''all'' documents, records, and information generated or received by the motor carrier in the normal course of business.

2. Comments to the 2014 SNPRM

In the SNPRM, FMCSA modified the data elements that a document must contain to qualify as a supporting document. FMCSA agreed with ATA and other commenters that relying on a single document is generally unrealistic. Further, the SNPRM prescribed how the necessary elements related to the document retention cap. The proposed data elements were: (1) Driver name or carrier-assigned identification number, either on the document or on another document enabling the carrier to link the document to the driver, or the vehicle unit number if that number can be linked to the driver; (2) date; (3) location (including name of nearest city, town, or village); and (4) time. If sufficient documents containing these four data elements were not available, a motor carrier would be required to retain supporting documents that contain the driver name or motor carrier-assigned identification number, date, and location.

Schneider requested clarification about whether a document that does not contain the four data elements would meet the definition of a supporting document and need to be retained. Schneider noted that the only documents that have all four data elements are expense receipts, like fueling, drug and alcohol chain-of-custody forms, and accident reports. Schneider also noted that bills of lading, dispatch records, and pay records do not contain a start time or end time and, in some cases, location information. As such, those documents do not verify a driver's duty record.

3. FMCSA Response

FMCSA understands Schneider's comment that some categories of document may not contain some of the data elements. We believe, however, that the driver identifier, date, and location are crucial elements in HOS compliance. If a motor carrier has fewer than eight documents containing all four data elements, a document would qualify as a supporting document if it contains each data element, except time. Under this scenario, a document lacking time would nonetheless count in applying the 8-document cap.

D. Supporting Document Exemption for Self-Compliance System

1. Comments to the 2011 NPRM

The NPRM included a provision to authorize, on a case-by-case basis, motor carrier self-compliance systems, as required by section 113(b)(4) of HMTAA. The statute requires FMCSA to provide exemptions for motor carriers to use qualifying ''self-compliance systems'' instead of retaining supporting documents. FMCSA proposed using the procedures already in 49 CFR part 381, subpart C, Exemptions, to consider requests for exemption from the retention and maintenance requirements for supporting documents. In the NPRM, the Agency asked commenters to describe their current self-compliance systems or the systems they might anticipate developing.

Klapec and Werner said they had self-compliance systems. One provided some details on its auditing procedures. Several commenters were concerned that the number of companies seeking exemptions for self-compliance systems could severely test the Agency's ability to respond. The Truck Safety Coalition and Advocates recommended rulemaking to provide minimum requirements for self-compliance systems. Advocates also wanted an explanation of how parts 381 and 395 would interact. A motor carrier recommended an expedited system for approval of a carrier's self-compliance exemption. Although ATA believed that using the part 381 process made sense, it was skeptical that FMCSA intends to consider such applications seriously.

2. Comments to the 2014 SNPRM

The SNPRM re-proposed the same self-compliance system proposed in the NPRM. ATA and the Ohio Trucking Association (OTA) commented on the self-compliance systems proposal. ATA stated that it supports the proposed self-compliance system process and appreciates the non-prescriptive approach and flexibility it provides. However, the OTA stated that FMCSA should develop and write requirements for the self-compliance system process with comments from the public and the industry rather than forcing each individual carrier to develop its own proposal. OTA stated that with no guidance, motor carriers will be in the position of guessing what FMCSA might find acceptable and going through a long and often costly process of responding to FMCSA questions and public comment.

3. FMCSA Response

In today's rule, the Agency retains the self-compliance option as it appeared in the NPRM and SNPRM. In 49 CFR 395.11(h), FMCSA authorizes, on a case-by-case basis, motor carrier self-compliance systems. A motor carrier may apply for an exemption under existing part 381 provisions for additional relief from the requirements for retaining supporting documents. Because part 381 rules and procedures were developed in response to Congressional direction contained in section 4007 of the Transportation Equity Act for the 21st Century [18] and already contain detailed requirements concerning the application and review processes for exemptions,[19] the Agency does not create a separate process for exemptions related to part 395 regulations. In response to commenters who asked if this would test FMCSA's resources, FMCSA is confident that the Agency would be able to comply with the requirements of HMTAA. Given the diversity of the industry, FMCSA continues to believe that a non-prescriptive, flexible standard to achieve compliance is appropriate, and does not establish minimum standards for a self-compliance system.

E. Supporting Document Management

1. Comments to the 2011 NPRM

FMCSA's NPRM proposal would require motor carriers and CMV drivers to share responsibility for complying with the proposed supporting document requirements. The NPRM proposed that drivers submit supporting documents to a motor carrier within 3 days or, in the case of electronic records, within a single day. A motor carrier would be required to maintain an HOS management system to detect violations of the HOS rules. The motor carrier would be required to retain supporting documents for its drivers for a period of 6 months.

A commenter objected to any requirement that a motor carrier collect from the CMV driver documents of a personal nature generated during the course of business to be used as supporting documents. The commenter also objected to any obligation on the driver or the motor carrier ''to alter, annotate or assemble documents from

[18] Public Law 105–178, 112 Stat. 107 (June 9, 1998).

[19] See 63 FR 67608, December 8, 1998.

the form in which they are generated in the normal course of business.'' OOIDA noted that small carriers may not keep certain records that would qualify as supporting documents. OOIDA asked FMCSA to clarify the requirements, including whether drivers or motor carriers would be required ''to note the missing information on these documents.''

2. Comments to the 2014 SNPRM

Like the NPRM, the SNPRM would require motor carriers and CMV drivers to share responsibility for complying with the proposed supporting document requirements. However, based on comments to the NPRM, the supporting document provisions were changed. The proposed HOS management system was among the provisions eliminated in the SNPRM. The definition and requirements governing ''supporting document'' were clarified. FMCSA extended the proposed time in which a driver would be required to submit his or her supporting documents to the employing carrier to 8 days, consistent with the proposed submission period for RODS. Proposed § 395.11(e) required a motor carrier to retain supporting documents in a way that allows them to be ''effectively matched'' to the corresponding driver's RODS. However, a motor carrier would still need to retain supporting documents received in the course of business for 6 months.

ATA opposed the requirement that carriers retain supporting documents in a way that allows them to be effectively matched to the corresponding driver's RODS. Although ATA believed it was reasonable to expect that carriers not deliberately make matching difficult or frustrate investigators, it noted that ''to require that carriers go beyond 'retaining' records (keeping them in the manner in which they receive them) to 'maintaining' them (by ensuring that they can be easily matched by an investigator) goes a step too far.'' ATA stated that responsible motor carriers should not have to manipulate the manner in which a supporting document is retained or be held accountable for not facilitating such matching if there is no evidence of HOS violations. ATA also noted that the requirement that drivers submit supporting documents to their employing carriers within 8 days creates an imbalance with the existing regulation that requires drivers who keep paper logs to submit those logs and supporting documentation to their employing carriers within 13 days. ATA suggested that all drivers should be required to submit supporting documents within 13 days of receipt.

FedEx asked that FMCSA clarify whether a carrier would be out of compliance with the regulation if it had no supporting documents kept in the carrier's ordinary course of business that fit the description of a supporting document under the rule. FedEx also suggested that FMCSA clarify what it means for a supporting document to be ''effectively matched'' to the corresponding driver's HOS records.

CVSA recommended that FMCSA require CMV drivers to keep the proposed supporting documents for the current and past 7 days with them in the vehicle, so that roadside inspectors could have access to the documents to verify location, time, and date of all driver duty status entries.

3. FMCSA Response

In today's rule, FMCSA expanded the deadline for drivers to submit supporting documents to the motor carrier from 8 days to 13 days, consistent with the current period for submission of RODS. While FMCSA does not require that drivers retain supporting documents in the CMV for a prescribed period, it does require that a driver make any supporting document in the vehicle available to an authorized safety official if requested during roadside inspections. FMCSA believes this approach achieves a reasonable and workable balance between the needs of enhanced enforcement during roadside inspections and not requiring that motor carriers modify their current document management practices.

FMCSA notes that a motor carrier is not required to create supporting documents not otherwise generated or received in the normal course of business or to annotate such documents in any manner. But a motor carrier or driver may not obscure, deface, destroy, mutilate, or alter existing information found on a supporting document.

Today's rule does not require establishment of a new record management system specifically for supporting documents. However, the rule retains the requirement that supporting documents be retained in a manner that allows them to be effectively matched to the driver's RODS. This is a long-existing requirement, well documented in the Agency's administrative decisions. The purpose is to enable a motor carrier, as well as authorized safety officials, to verify a driver's RODS. (See *e.g., In the Matter of Bridgeways, Inc.,* Docket No. FMCSA–2001–9803–0009 (Final Order June 1, 2004)).[20] Agency decisions make clear that a motor carrier cannot take supporting documents that permit identification of a driver, but then store them in a manner or sanitize them so the ability to link individual documents to the driver is lost. See *Darrell Andrews Trucking, Inc. Docket No. FMCSA–2001–8686–21 (Final Order Under 49 CFR 385.15, January 19, 2001), aff'd in part, vacated in part, Darrell Andrews Trucking, Inc.* v. *Fed. Motor Carrier Safety Admin.,* 296 F.3d 1120 (D.C. Cir. 2002), *remanded to* Docket No. FMCSA–2001–8686–26 (Final Order on Remand, Mar. 14, 2003); *see also In the Matter of A.D. Transport Express, Inc.,* Docket No. FMCSA–2002–11540–1 (Final Order Under 49 CFR 385.15, May 22, 2000), *aff'd, A.D. Transport Express, Inc.* v. *Fed. Motor Carrier Safety Admin.,* 290 F.3d 761 (6th Cir. 2002).

F. Requirements When ELDs Malfunction and Requests for Clarification Regarding State Laws

1. Comments to the 2014 SNPRM

Greyhound Lines, Inc. (Greyhound) and Schneider National, Inc., asked for clarification on various parts of the proposed rule. Greyhound asked FMCSA to make it clear that States may not impose supporting document standards that are more specific than, or different from, the Federal standard. Schneider requested clarification on whether toll receipts would be expected for days where a driver is completing a paper ROD due to an ELD malfunction. Schneider noted that, given the size of its fleet, it will experience regular device malfunctions, and it will consequently have to keep all toll receipts for all drivers to ensure it is in compliance on those days where malfunctions occur.

2. FMCSA Response

State laws or regulations addressing supporting documents are not necessarily preempted by Federal law. The FMCSRs are ''not intended to preclude States or subdivisions . . . from establishing or enforcing State or local laws relating to safety, the compliance with which would not prevent full compliance with [the FMCSRs] by the person subject thereto.'' 49 CFR 390.9. However, as a condition of Federal funding under the MCSAP, a State must have rules in place compatible to Federal regulations adopted under the 1984 Act, subject to certain exceptions. See parts 350 and 355 of 49 CFR. Subject to permissible variances, a State law or regulation found by the Secretary of Transportation to be less stringent than its Federal counterpart cannot be enforced; a State law or regulation more stringent than its

[20] Available at *http://www.regulations.gov.*

Federal counterpart may be enforced unless the Secretary decides the State law or regulation has no safety benefit, is incompatible with the Federal regulation, or would cause an unreasonable burden on interstate commerce. 49 U.S.C. 31141(c). A motor carrier such as Greyhound that believes a State law or regulation is incompatible with the FMCSRs may petition FMCSA for review of the matter and the State's eligibility of MCSAP funding. 49 CFR 350.335(d). Therefore, the Agency does not address the preemption of State supporting document requirements in this rulemaking.

Today's rule requires a motor carrier to retain toll receipts for a driver who keeps paper RODS in lieu of using an ELD. However, the Agency does not expect a carrier to modify its supporting document retention policy whenever a driver who regularly uses an ELD needs to complete paper RODS for a brief period due to an ELD malfunction.

IX. Discussion of Comments Related to Harassment

A. Background and 2011 NPRM

1. Background

In enacting the Truck and Bus Safety and Regulatory Reform Act of 1988, Congress required that regulations addressing onboard monitoring devices on CMVs ensure that the devices not be used to harass CMV drivers. However, the devices may be used to monitor productivity.[21] In its challenge to the April 2010 EOBR rule in the U.S. Court of Appeals for the Seventh Circuit, OOIDA raised several issues, including the Agency's failure to ensure that electronic recorders not be used to harass CMV drivers. While the Seventh Circuit litigation was pending, FMCSA published the February 2011 NPRM. By notice published on March 10, 2011 (76 FR 13121), the Agency extended the public comment period for the 2011 NPRM to May 23, 2011.

2011 Notice and Request for Additional Public Comment

The Agency believed that it appropriately addressed the issue of harassment in accordance with the statute, both in the April 2010 rule that was the subject of litigation and the subsequent February 2011 NPRM, focusing on harassment in the context of drivers' privacy concerns. However, in reaction to the litigation and to public comments in response to the NPRM, on April 13, 2011, the Agency published a notice requesting additional comments on harassment (76 FR 20611). FMCSA wanted to ensure that interested parties had a full opportunity to address this issue. The notice explicitly requested information about driver experiences with harassment. The notice asked if the same activities considered harassing might also be considered monitoring for productivity. It questioned if these same activities might be barred by other existing provisions, and if additional regulations were needed. The notice also asked about the role that electronic recorders might play in the ability of carriers, shippers, and others to pressure drivers to violate HOS regulations.

Seventh Circuit Decision

On August 26, 2011, the court vacated the April 2010 rule (*Owner-Operator Indep. Drivers Ass'n* v. *Fed. Motor Carrier Safety Admin.,* 656 F.3d 580 (7th Cir. 2011)). The court held that, contrary to the statutory requirement, the Agency failed to address the issue of driver harassment, namely, how the Agency would distinguish between harassment and productivity, how harassment occurs, and how harassment would be prevented.

On May14, 2012, following the court's decision, FMCSA issued a rule that removed the vacated language from 49 CFR (77 FR 28448). Motor carriers relying on electronic devices to monitor HOS compliance are currently governed by the rules addressing the use of AOBRDs in effect immediately before the court's ruling (49 CFR 395.15). These provisions were not affected by the Seventh Circuit's decision.

Public Listening Sessions

FMCSA conducted two public listening sessions to better understand drivers' concerns about harassment. The first was in Louisville, Kentucky, on March 23, 2012, at the Mid-America Truck Show. The second was in Bellevue, Washington, on April 26, 2012, at the CVSA Workshop. FMCSA heard from commenters, both those in attendance and those participating through the Internet, who offered varied opinions on the implementation and use of electronic recorders. Commenters at the Louisville session included drivers, representatives of motor carriers, owner-operators, and representatives of OOIDA. At the Bellevue session, FMCSA specifically sought the input of State MCSAP agencies because of their role in enforcing the HOS rules and familiarity with electronic recording devices and other technical issues. Additional participants in the Bellevue public listening session included drivers, representatives of motor carriers and other business entities, representatives of the motor carrier industry organizations, authorized safety officials, and other State agency representatives. Transcripts of both sessions are available in the docket for this rulemaking. Web casts are archived at: *http://www.tvworldwide.com/events/dot/120323/* and *http://www.tvworldwide.com/events/dot/120426/*, respectively.[22]

MAP–21

In July 2012, Congress enacted MAP–21, mandating that the Agency adopt regulations requiring that certain CMVs be equipped with ELDs.[23] As part of this legislation, Congress defined ''electronic logging device'' and required that regulations ''ensur[e] that an electronic logging device is not used to harass a vehicle operator.'' 49 U.S.C. 31137(a)(2) and (f)(1). The legislation eliminated the prior reference to ''productivity.''

2. Comments to the 2011 NPRM

Given the intervening events between issuance of the NPRM and the SNPRM, including the Seventh Circuit decision and enactment of MAP–21, and the fact that the SNPRM regulatory text superseded the text included in the NPRM, FMCSA's comment analysis focuses on comments submitted to the SNPRM.

B. General

1. Comments to the 2014 SNPRM

In accordance with the MAP–21 mandate, the 2014 SNPRM addressed harassment, in part, through the new technical specifications. Among the technical specifications intended to address harassment, the Agency included a mute function available during sleeper berth periods, edit rights, and requirements addressing transparency and driver control over editing. The complaints of drivers focused mainly on pressures from motor carriers. Based on their concerns, the Agency also proposed procedural provisions aimed at protecting CMV drivers from actions resulting from information generated by ELDs, since not every type of complaint suggested a technical solution.

Several commenters stated that the SNPRM provisions adequately addressed the issue of driver

[21] Public Law 100–690, Title IX, Subtitle B, sec. 9104(b), 102 Stat. 4527, 4529 (November 18, 1988). This provision was subsequently revised and codified at 49 U.S.C. 31137(a) by Public Law 103–272, 108 Stat. 745, 1004 (July 5, 1994).

[22] In addition to the formal comment process and listening sessions, FMCSA also conducted a survey of drivers and motor carriers to better understand perceptions on the harassment issue, See Section XII. L of this preamble.

[23] Public Law 112–141, sec. 32301(b), 126 Stat. 405, 786–788 (July 6, 2012) (amending 49 U.S.C. 31137).

harassment. Advocates wrote that the SNPRM fulfilled the Agency's obligation following the decision of the U.S. Court of Appeals. Continental stated that the SNPRM has adequately addressed the issues of data privacy. The National Shippers Strategic Transportation Council supported FMCSA's approach.

Some commenters wrote that ELDs actually improved the relationship between drivers and dispatchers and decreased tension. Commenters pointed out that ELDs provide transparency, ensure that both drivers and motor carriers have the same information, and keep a record of interactions. OOIDA, however, commented that Congress told the Secretary to ensure that ELDs are not used to harass and that OOIDA believes the SNPRM fell far short of implementing this mandate. In its comments to the NPRM, which are incorporated by reference into OOIDA's comments to the SNPRM, OOIDA suggested specific proposals to address driver harassment.[24] OOIDA also criticized the Agency for addressing the issue of coercion and harassment in separate rulemakings and addressing only harassment related to ELDs required under today's rule.

Some commenters believed ELDs are not intended to improve safety, but only serve as a management tool to track drivers. Some commenters reported the use of FMSs to direct drivers to do unsafe or even illegal things. Other commenters complained that neither FMCSA nor the ELD could prevent harassment by motor carriers. Many drivers complained that the ELD would limit their flexibility, and cause them to drive while tired or stressed.

2. FMCSA Response

FMCSA believes today's rule appropriately implements MAP–21's mandate requiring certain CMV drivers to use ELDs while addressing the concerns expressed about the potential for harassment resulting from ELD use. The rule adopts a clear prohibition against driver harassment, subject to a civil penalty in addition to the penalty for the underlying violation. ELD technologies, including related technologies often employed in FMS, do not necessarily result in driver harassment; nor do they preclude actions that drivers might view as harassing. However, the Agency believes that, on balance, the use of ELDs will protect drivers from pressures to violate the HOS rules by ensuring a better record of drivers' time. As the court noted in the litigation on the 2010 EOBR rule, the term ''harass'' is not defined by statute and requires amplification. 656 F.3d at 588. In order to better understand the nature and context of drivers' harassment concerns, the Agency undertook extensive outreach. The provisions proposed in the SNPRM, and reflected in today's rule, are largely reflective of this outreach. Today's rule includes the definition of ''harassment'' proposed in the SNPRM, that is, ''. . . an action by a motor carrier toward a driver employed by the motor carrier (including an independent contractor while in the course of operating a [CMV] on behalf of the motor carrier) involving the use of information available to the motor carrier through an ELD . . . or through other technology used in combination with and not separable from the ELD, that the motor carrier knew, or should have known, would result in the driver violating § 392.3 or part 395 [of 49 CFR].''

FMCSA acknowledges that harassment and coercion may often appear related. However, it is important to recognize that the statutory basis for each requirement differs. While the harassment provision is linked specifically to ELDs as defined in MAP–21, Congress required that the Agency, in adopting regulations under the 1984 Act, prohibit motor carriers, shippers, receivers, and transportation intermediaries from coercing CMV drivers in violation of specified regulatory provisions. See FMCSA's rule on coercion, published November 30, 2015 (80 FR 74695). The Agency notes, however, that § 395.30(e) of today's rule does prohibit a motor carrier from coercing (as that term is defined in 80 FR 74695) a driver to falsely certify the driver's data entries or RODS.

The Agency encourages any driver who feels that she or he was the subject of harassment to consider the potential application of the harassment provisions adopted today, as well as FMCSA's coercion rule and the remedies available through the Department of Labor, in determining which approach to pursue in light of the specific facts.

The Agency included some of OOIDA's specific proposals to address harassment in today's rule, such as making it unlawful for carriers to use ELDs to harass drivers and establishing procedures for drivers to submit harassment complaints directly to FMCSA. Some of its suggestions went beyond FMCSA's authority, such as the suggestion that we provide for driver compensation for time spent under out-of-service orders in cases where harassment is implicated in the violation. With regard to the suggestion that we promulgate a regulation protecting drivers who complain about harassment from retaliation, we note that such protections already exist under current law. Retaliation protections available to CMV drivers are set forth in 49 U.S.C. 31105, which is administered by the Department of Labor. The Agency declines to link harassment violations to the safety rating process, consistent with the Agency's approach in the coercion rulemaking (80 FR 74695, November 30, 2015). We therefore also decline to adopt OOIDA's suggestion that drivers be permitted to participate in compliance reviews involving harassment. FMCSA believes that harassment complaints can be effectively addressed through the complaint process established through today's rule and through the civil penalty structure.

C. Privacy; Ownership and Use of ELD Data

1. Comments to the 2014 SNPRM

In development of the proposed technical performance requirements, the Agency took into account drivers' privacy interests in the collection and maintenance of data. For example, the proposed requirements included industry standards affecting the handling of data and access requirements, ensuring only authenticated individuals could access an ELD system. These provisions are part of today's rule.

Several commenters expressed concern about how the data collected from ELDs will be used. For example, questions were posed about who owns the data recorded by an ELD, who will see that data, and whether that data will be retained. Commenters also raised concerns about the use of data in private civil litigation. One commenter asked what would preclude law enforcement from using data gleaned from ELDs to charge truck drivers with other violations such as speeding, illegal parking, and driving on restricted routes. Another commenter stated that

[24] OOIDA suggested the following specific proposals to address driver harassment: (1) Establish guidelines for the appropriate use of EOBRs to improve productivity; (2) promulgate a regulation to make it unlawful for motor carriers to use EOBRs to harass drivers; (3) establish procedures for drivers to complain about harassment and create a unit in FMCSA to review and act on complaints; (4) promulgate a regulation protecting drivers who complain about harassment from retaliation; (5) make harassment a factor considered in compliance reviews; (6) permit drivers to participate in compliance reviews involving harassment; and (7) provide for driver compensation for time spent under out-of-service orders where harassment is implicated in the violation.

FMCSA must ensure that data collected for HOS enforcement purposes will not be provided to other government agencies for other purposes.

2. FMCSA Response

An ELD record reflecting a driver's RODS is the driver's record. However, under the FMCSRs, motor carriers are responsible for maintenance of these records for a 6-month period. Thus, drivers and carriers share responsibility for the record's integrity. FMCSA does not presently plan to retain any data captured by an ELD absent documentation of violations during investigations.

In addition to other statutory privacy protections, MAP–21 limits the way FMCSA may use ELD data and requires that enforcement personnel use information collected from ELDs only to determine HOS compliance. See 49 U.S.C. 31137 (e)(1) and (3).[25] U.S. Department of Transportation regulations govern the release of private information, including requests for purposes of civil litigation. 49 CFR parts 7 and 9. Today's rule includes industry standards for protecting electronic data; it also regulates access to such data and requires motor carriers to protect drivers' personal data in a manner consistent with sound business practices. However, FMCSA has limited authority to ensure total protection of information in the custody of third parties.

MAP–21 also requires that the Agency institute appropriate measures to preserve the confidentiality of personal data recorded by an ELD that is disclosed in the course of an FMCSR enforcement proceeding (49 U.S.C. 31137(e)(2)). To protect data of a personal nature unrelated to business operations, the Agency would redact such information included as part of the administrative record before a document was made available in the public docket.

Finally, the Agency notes that Federal law addresses the protection of individual's personally identifiable information maintained by Federal agencies. See the Privacy Impact Assessment for today's rule available in the rulemaking docket.

D. Tracking of Vehicle Location; Real Time Transmission of Data

1. Comments to the 2014 SNPRM

Location recording is a critical component of HOS enforcement. The SNPRM addressed drivers' concerns about the level of data collected for HOS enforcement. FMCSA did not propose a requirement for real-time tracking of CMVs or the recording of precise location information. Instead, location data available to authorized safety officials would be recorded at specified intervals; that is, when the driver changes duty status, indicates personal use or yard moves, when the CMV engine powers up and shuts down, and at 60-minute intervals when the vehicle is in motion. During on-duty driving periods, FMCSA proposed to limit the location accuracy for HOS enforcement to approximately a 1-mile radius. When a driver operates a CMV for personal use, the position reporting accuracy would be further reduced to an approximate 10-mile radius. The SNPRM did not propose that the ELD record and transmit any CMV location data either to the motor carrier or to authorized safety officials in real time.

ATA stated that the proposed precision requirements for monitoring vehicle location are quite reasonable. ATA believed that these requirements should stave off any concern by drivers that records available to law enforcement during roadside inspections will present an intrusion on their privacy, especially since this limited level of location monitoring will prevent law enforcement from knowing the exact location a driver has visited. ATA wrote that respecting this confidentiality may be important in some circumstances, such as when a driver visits a medical specialist. Provided that law enforcement can still reasonably verify HOS compliance, the needs of both parties will be met.

Other commenters, however, asked who would have access to the tracking data. These commenters believed that the tracking was a form of harassment in that it would allow carriers to harass the driver about his or her performance. Other commenters viewed tracking as an invasion of privacy in violation of their constitutional rights.

The NPGA stated that technologies similar to ELDs have previously been under consideration by the Pipeline and Hazardous Materials Safety Administration as one type of technology that can be used in HM transportation security. In comments submitted to an advance notice of proposed rulemaking concerning the need for enhanced security requirements for the motor carrier transportation of HM, put out by the Research and Special Programs Administration and FMCSA (67 FR 46622, July 16, 2002), NPGA opposed location-tracking systems as a requirement for HM security. Its concerns focused on ease of access to data on CMVs carrying propane and the harm it could cause if the vehicle fell into the wrong hands. Specifically, anyone who wished to cause harm through a coordinated attack could hack the system to learn the whereabouts of any transport vehicle that is loaded with propane. NPGA commented that an outright requirement to install an ELD on these vehicles, particularly for a motor carrier with no demonstrated violations, not only fails to improve safety, but lessens the security of the transport of the fuel.

Knight stated that carriers must be allowed to track vehicle position of the CMVs they own to a proximity closer than 10 miles, even when in personal conveyance. Though the driver may be using the vehicle for personal use, the fleet still has an interest in and responsibility for the vehicle. The commenter wrote that nothing within the rule should impair the ability of the owner of a CMV to track its location, which should not be considered ''harassment.''

ATA believed the needs of carriers to monitor CMV location outweigh the impact on driver privacy. The commenter stated that in the interests of safety, security, and efficiency, motor carriers must be able to monitor their equipment and cargoes.

PeopleNet sought confirmation that GPS precision is only to be limited in the ELD application and that other enterprise solution applications will not be required to reduce GPS accuracy in efforts to support optimization processes and IFTA requirements. Eclipse Software Systems asked for a clarification providing that the system will be allowed to store data in greater position for fleet records (such as highly accurate fuel tax reporting), but that when that data is divulged to law enforcement it will be rounded or truncated to the number of decimal places specified in section 4.3.1.6. The commenter noted that current FMSs store data in far greater detail (often four or more decimal points) for legitimate business purposes.

2. FMCSA Response

FMCSA acknowledges the concern about dispatchers and motor carriers using real-time data in order to require drivers to fully utilize their driving time to the allowed limits. However, FMCSA has not proposed, nor does it include in today's rule, any requirement for ELDs to track CMV drivers in real time. As long as a motor carrier is not compelling a driver to drive while ill or fatigued in violation of § 392.3 or in violation of the HOS limits of part 395, there is no

[25] These measures will be included in the ELD implementation and training protocol currently under development within FMCSA.

violation of the FMCSRs. Authorized safety officials will not have access to information during roadside inspections except the data required by today's final rule that is related to HOS compliance.

The SNPRM proposed limitations concerning the ELD data in order to protect drivers from motor carrier harassment, all of which are reflected in today's rule. The Agency believes that the enhanced security controls and provisions protecting drivers from inappropriate pressures to violate the HOS rules will address many of the concerns raised by drivers concerning ELDs. Although ELDs might be viewed primarily as tools for HOS recordkeeping, the data certainly can be used by motor carriers to document their operations more accurately than they could by using paper RODS.

Further, for systems that include both ELD functionality and real-time tracking and communications capabilities, the device may capture what is transpiring between a driver and a motor carrier or dispatcher. Although this technology is not required under today's rule, such technology also protects drivers from inappropriate pressures to violate the HOS rules.

Today's rule limits the data that may be transferred from an ELD to authorized safety officials. FMCSA, however, did not propose, nor does it include in today's rule, any limitation on a motor carrier's use of technology to track its CMVs at a more precise level than that shared with authorized safety officials, including tracking of CMVs in real time for the purposes of the motor carrier's business. A motor carrier is free to use such data as long as it does not engage in harassment or otherwise violate the FMCSRs. See 49 CFR 390.17.

Given the limited requirements in terms of required location tracking, FMCSA does not agree that the risks suggested by the NPGA outweigh the benefits of ELDs.

Some commenters viewed tracking of vehicles as an invasion of privacy. While a legal basis for their position was not always stated, some of these commenters focused on their Fourth Amendment rights. FMCSA addresses this position under Section XII, M, Legal Issues—Constitutional Rights: Fourth and Fifth Amendments, of this preamble.

E. Mute Function

1. Comments to the 2014 SNPRM

To protect a driver from disrupting communications during rest periods, the SNPRM proposed that, if a driver indicates a sleeper-berth status, an ELD must allow the driver to either mute, turn off, or turn down the volume, or the device must do so automatically. This requirement would only apply to FMSs or other technology that includes an ELD function and that includes a communications function. Given drivers' concerns about interrupted rest periods, this is the single area in which the Agency believed it necessary to address an issue that extends beyond the provisions of a minimally-compliant ELD. However, this protection does not apply if a team driver is logged onto the ELD as on-duty, driving.

Numerous commenters complained of repeated contact by dispatchers, even during breaks and sleeper-berth time. One commenter wrote that the mute function should be the decision of the driver rather than automatic. She stated that not all companies abuse their drivers as the enforced automatic mute implies.

The IME stated that it did not oppose ELD features that allow a driver to mute, reduce volume, or turn off a device during sleeper berth status. Eclipse Software Systems stated that the audible alarm required by section 4.1.5 of the appendix is very important and should not be muted if the vehicle is moving. Eclipse recommended that the rule be amended to say the mute function does not apply when the engine is running and the vehicle is in motion.

2. FMCSA Response

The complaint from drivers about being contacted during sleeper berth time was a common one and FMCSA responds to that concern by requiring in section 4.7.1 of the technical specifications of today's rule, that the mute function either be engaged automatically when the driver enters sleeper berth status or that it allows the driver to manually select that function. (However, this function would not be available if a co-driver was logged in as on-duty, driving.) In the event the CMV started moving, the ELD would default to on-duty, driving status, thereby overriding the mute function. FMCSA believes this addition of a mute function is important to allow drivers to obtain adequate rest during sleeper berth or off-duty periods.

F. Drivers' Access to Own Records

1. Comments to the 2014 SNPRM

The SNPRM provided that a driver has a right to access the driver's ELD data during the period a carrier must keep these records. During the period that the data is accessible through the ELD, a driver must have a right to the records without requesting access from the motor carrier.

The IME agreed that drivers should have access to their ELD data, including options for a motor carrier to provide the data to drivers upon request. The IBT also supported giving drivers the ability to obtain copies of their own ELD records available on or through an ELD. IBT believed that it is critical that drivers or driver representatives have, upon request, immediate access to, and copies of driver ELD records for the 6 months that the motor carrier is required to retain the records.

XRS, Verigo, and Zonar noted that obtaining the logs from the ELD will limit drivers' access to 7 days. Commenters wrote that drivers require records for numerous reasons, including comparing logs to settlement records, providing records required for tax purposes, providing evidence in loss prevention claims, and qualification for safety awards. It may be necessary for a driver to have access to more than 12 months of records. Commenters believed that access to driver's records is best achieved as a function of the carriers' support system most carriers already have in place rather than as a function of the ELD. XRS asked whether there could be an alternative method, such as a Web-based login, to retrieve the required information. It recommended that, when a driver leaves a carrier, the RODS be supplied on a jump drive in a PDF format to keep costs at a minimum and not cause a security risk by giving access to individuals who no longer have a relationship with the carrier. The commenter questioned what amount of data may be requested by drivers if they have been employed by the carrier for at least 6 months. Extracting 6 months of data through the ELD would be costly.

Verigo stated that the electronic or printout format of the driver's records must be compliant with section 4.8.2.1, which is the comma separated values (CSV) file output format for peer-to-peer record exchange. The format will be of no value to the driver. The commenter believed that records retrievable by the driver should be a PDF copy of the standard paper format in use today because graph-grid logs can be read, understood, printed, distributed, and checked with ease by the driver without a requirement to provide a utility function for the driver to display the data. The commenter recommended the requirement to access records from ELDs connected to backend servers be eliminated and that records be retrieved from support systems connected to the ELD.

2. FMCSA Response

FMCSA acknowledges that a driver's ability to access his or her records through an ELD without requesting them from the carrier will vary depending on the ELD system employed. In some cases, immediate access is limited to the 7 previous days. Thus, we did not prescribe an exact time during which a driver could independently access the records. If the driver cannot independently access the records, the motor carrier must provide a means of access on request. However, the right of access is limited to a 6-month period, consistent with the time period during which a motor carrier must retain drivers' RODS.

The SNPRM proposed a single data format that applies to all the data elements and the file format. This is adopted in today's rule. The ELD data file output will not vary dependent on the ELD used. The data output is a comma delimited file that can be easily imported into Microsoft Excel, Word, notepad, or other common tools that a driver may access. A driver will also be able to access her or his ELD records through either the screen display or a printout, depending on the design of the ELD.

G. Drivers' Control Over RODS

1. Comments to the 2014 SNPRM

Recognizing that ELD data reflect a driver's data, the proposal required that any edits made by a motor carrier would require the driver's approval. FMCSA's proposal was intended to protect the integrity of a driver's records and prevent harassment attributable to unilateral changes by motor carriers.

In the SNPRM, FMCSA used the word ''edit'' to mean a change to an ELD record that does not overwrite the original record. A driver may edit and the motor carrier may request edits to electronic RODS. Drivers have a full range of edit abilities and rights over their own records (except as limited by the rule), while a carrier may propose edits for a driver's approval or rejection. All edits, whether made by a driver or the motor carrier, need to be annotated to document the reason for the change.

Saucon Technologies asked about drivers editing their logs using a support system other than the recording device: Specifically, what drivers are permitted to change versus what safety administrators are allowed to change. The commenter wrote that the safety administrator should be advised when drivers make corrections to their logs and have the opportunity to approve the change. XRS stated that FMCSA needs to allow a process for the driver to accept edits and certify the logs on the ELD prior to transfer to enforcement to be consistent with § 395.30.

A number of commenters, including the Alliance for Driver Safety & Security, Knight, and J.B. Hunt, stated that employers should not be held responsible if a driver makes a false or inaccurate entry onto an ELD and refuses to change the entry when the employer requests it be done. Knight asked whether a carrier can force a driver to make an edit when it is clear the driver failed to log something properly. Knight wrote that, though the carrier is attempting to get the driver to comply with the rules, the driver may be able circumvent compliance and make a false allegation that the carrier is ''coercing'' him or her. Knight believed that FMCSA ought to allow carriers to make edits and allow the driver to either approve or not approve them when made by the carrier.

Knight commented that the rule should clearly allow drivers to edit their ELD records at any time before, during, or after having confirmed a record. Knight wrote that FMCSA should allow drivers to flag personal conveyance or yard moves segments even after they occur. Knight believed the most common error made with ELDs is that drivers forget to change duty status. Therefore, FMCSA should allow drivers to make duty status change designations as edits at any time. Such an allowance will better serve drivers and alleviate concerns about an ELD intruding upon an individual's privacy.

TCA wrote that employers should be allowed to make minor edits to correct driver ELD records, limited to instances that do not pertain to compliance with driving or on-duty time.

ATA stated that the proposed rule on edits will complicate compliance and enforcement, and could raise the potential for fraud. ATA identified several problems it perceived as the result of requiring driver acceptance of edits. The commenter wrote that FMCSA must consider what an employer should do if a driver refuses to accept the changes. Similarly, ATA asked what happens if the erroneous record is identified during an internal review weeks or months after the fact and the driver cannot be contacted for approval because he has since left the company? For these reasons, and because the carrier is ultimately responsible for maintaining accurate records, ATA stated that FMCSA should permit carriers to make edits. At a minimum, the Agency should allow changes that would not disguise driving time violations or otherwise make such violations possible. ATA indicated that minor recordkeeping errors that do not reflect driving time violations comprise the vast majority of HOS violations. ATA recommended that FMCSA allow carriers to correct them, unhindered by the need to seek driver approval, would more efficiently help both carriers and authorized safety officials focus on those comparatively few discrepancies that reflect material fraud (*i.e.,* false logs) and driving time violations.

J.B. Hunt wrote that the final rule should clearly say that corrective action taken by a carrier against a driver for false entries is not harassment.

BigRoad Inc. (BigRoad) stated that, although section 4.3.2.8.2 (2) allows for the correction of errors related to team driver switching, it does not allow for the correction of errors commonly found in slip-seat operations, where drivers do not always drive the same truck each day. In such operations, drivers occasionally forget to sign out when their shift in the truck ends or forget to sign in when their shift begins. This can cause drive time to be incorrectly assigned to the driver who was last signed in instead of the current driver of the truck, essentially the same type of error experienced by team drivers who are signed-in incorrectly. ABA stated that there was some confusion with respect to the SNPRM requirement that only drivers are able to ''edit'' their HOS records. While ABA agreed that drivers should have the ability to revise a duty status designation, it asked whether the SNPRM meant to allow drivers to revise records that do not reflect a change in duty status. ABA contended that the driver should be allowed to revise only the duty status designation and that the final rule should reflect that determination.

Schneider National supported the proposal that the driver must approve edits made by the motor carrier to ensure accuracy. However, since any edit made on a record from more than the preceding 8 days will not impact the current duty cycle, the requirement for driver approval should be removed. Schneider listed several operational reasons why an edit would be made on a record that is more than 8 days old.

Roehl Transport stated that the proposed process will complicate compliance and enforcement. Allowing the company to edit a driver's ELD record would, they argued, facilitate its ability to correct a potential falsification. Roehl Transport wrote that the motor carrier is ultimately responsible for maintaining accurate RODS and FMCSA should permit motor carriers to make edits to drivers' RODS.

Verigo commented that the proposal to allow editing of ODND records does

not indicate any time limit, or address edits that trigger a violation on subsequent records that have already been certified. Verigo believed that the proposal indicated that, when edits, additions, or annotations are necessary, the driver must use the ELD. Commenter believed the rule should allow editing and recertification of records outside of the ELD provided all other proposed protocols are followed.

The IBT supported allowing a driver to edit, enter missing information, or annotate their ELD record when the vehicle is stopped. It was concerned with the motor carrier's ability to propose changes directly to the driver's record within the electronic interface because it would create an opportunity for driver coercion and harassment. It supported the inclusion of edit notes as detailed in the appendix to subpart B of part 395, section 4: Functional requirements. The IBT proposed that, if a driver record is changed, the source of the change be documented.

The IME indicated that any change of a driver's records made by a motor carrier should require the driver's approval.

The OTA stated that some provision needs to be made to allow the carrier to correct RODS without the driver's approval. Given the high turnover in the industry, it is common for a driver to have moved to another carrier and no longer be responsive to the carrier attempting to correct the record. Commenter wrote that even a clear, obvious error could remain unchanged if the driver simply refuses to respond to the carrier's request, resulting in a false log charge against the company.

Although PeopleNet thought that carriers are better suited to provide comments concerning the handling of ''unassigned driver events'' and making corrections to ELD records, it recommended that the final rule provide some additional guidance on how to manage carrier-initiated corrections that the driver opts to reject. Zonar recommended adding a section addressing the certification of records for law enforcement. Commenter believed that the driver should be required to certify the records prior to giving them to law enforcement. In addition, law enforcement should allow the driver sufficient time to certify his or her ELD records before a citation is given for not having them available.

2. FMCSA Response

While FMCSA appreciates carrier management concerns about requiring driver re-certification of any edits made subsequent to the driver's initial certification, today's rule retains this concept. The ELD reflects the driver's RODS, although integrity of the records is both a driver and carrier responsibility. The driver certification is intended, in part, to protect drivers from unilateral changes—a factor that drivers identified as contributing to harassment. In fact, the rule prohibits a carrier from coercing a driver into making a false certification. See § 395.30(e) of today's rule.

Edits are permitted of a driver's electronic record except as limited by the rule's technical specifications. See 4.3.2.8.2 of the technical specifications. Each edit must be accompanied by an annotation. See § 395.30(b)(2) of today's rule. However, if the driver was unavailable or unwilling to recertify the record, the proposed edit and annotation made by a carrier would remain as part of the record. The Agency would expect that a carrier and driver would ordinarily resolve any disputes in this regard. Changes initiated after the period during which records were accessible through the ELD (*i.e.,* minimum of 8 days) would likely be initiated by a carrier; however, driver re-certification would still be required. See § 395.30(b)(4) of today's rule. FMCSA recognizes that the need for edits will sometimes arise at a time when the driver's record will no longer be accessible through the ELD. The process to edit records at this point will vary depending on the ELD system used. However, any edit and annotation will still require recertification of that record by the driver.

Today's rule does not specifically address the ''slip-seat'' scenario raised by BigRoad. However, FMCSA expects the motor carrier to resolve the issue by proposing edits that would adequately attribute the driving time and provide an annotation describing the circumstances. In terms of roadside inspections, the rule would not modify current practice where a driver normally certifies her or his record at the close of the day. See § 395.30(b)(2) of today's rule.

H. Harassment Complaints

1. Comments to the 2014 SNPRM

In the SNPRM, FMCSA proposed a new complaint process under which a driver who felt that she or he was subject to harassment, as defined in the SNPRM, could file a complaint with the FMCSA Division Administrator for the State where the incident is occurring or had occurred. Provided the complaint was not deemed frivolous, an investigation would result. FMCSA's finding of a harassment violation could result in a notice of violation under 49 CFR 386.11(b) or a notice of claim under 49 CFR 386.11(c).

OOIDA noted that proposed § 390.36 requires that harassment complaints be based upon violations of § 392.3 or part 395. It wrote that the statutory provision on harassment is not so limited and the SNPRM does not explain or defend this limitation. In its view, the approach of tying harassment problems to driver violations of part 395 or § 392.3 is flawed. Requiring that driver harassment complaints be based upon regulatory violations creates a giant loophole through which acts of harassment will pass with impunity. It also stated that FMCSA has assigned itself a passive role with no duty to investigate or take any action on its own and criticized the Agency's reference to alternative remedies. Although OOIDA noted that the reference to ''productivity'' was eliminated in MAP–21, it nevertheless criticized the Agency's failure to follow the Seventh Circuit's direction that the Agency define how ELDs may be used to monitor driver productivity. It also argued that the statutory requirement to address harassment under 49 U.S.C. 31137(a)(2) applies to any electronic logging device and is distinct from the ELD mandate under section 31137(a)(2). OOIDA further suggested that the Agency defined ELD in a manner so as to minimize the requirement that the Agency ensure that ELDs do not result in harassment.

ABA stated that § 386.12, regarding complaints of substantial violations, requires that a complaint against a carrier for a ''violation may be filed with the FMCSA Division Administrator for the State where the incident . . . occurred.'' It questioned whether the complaint may be transferred to the FMCSA Division Administrator for the State where the motor carrier is domiciled. For the small business bus operator, ABA commented that the costs associated with defending any complaint can be substantial. The defense would be significantly more costly if the carrier is required to hire an out-of-State attorney and bear the costs of the proceeding in a State that could be thousands of miles away from home.

2. FMCSA Response

In mandating the use of ELDs for CMV drivers required to keep RODS, Congress embraced ELDs as a tool to enhance compliance with the HOS rules. The statute restricts FMCSA's use of ELD-generated data for purposes unrelated to motor carrier safety enforcement. Thus, in today's rule the Agency tied the definition of ''harassment'' to violations of the HOS

rules set forth in part 395 and a related regulation, § 392.3, prohibiting carriers from requiring drivers to drive when their ability or alertness is impaired due to fatigue, illness or other causes that compromise safety.

FMCSA believes the effective enforcement of the harassment prohibition requires that harassment be defined by objective criteria. Linking the definition of harassment to underlying violations of specified FMCSRs will enhance the Agency's ability, through its Division Administrators located throughout the country, to respond to driver harassment complaints filed under § 390.36(c) in a consistent manner and within a reasonable period of time. However, the Agency simply lacks the resources necessary to investigate every possible circumstance that a driver might consider as harassment.

OOIDA's suggestion that the Agency defined the term ''ELD'' to include only recording functions in order to minimize its obligation to address harassment is without merit. The Agency's requirements for an ELD of limited functionality, which are consistent with MAP–21's definition, were developed in order to minimize the cost of required technology. Furthermore, today's rule addresses ELD-related functionality, other than recording, to require that ELDs have a mute function available during sleeper berth periods. This technical specification was adopted directly in response to concerns raised by commenters.

In addition, FMCSA notes that § 390.36 is not the sole remedy available to drivers who believe they have been subjected to harassment. Drivers may alternatively seek relief by filing a coercion complaints with FMCSA under § 386.12(c), a process adopted in the recent coercion rulemaking (80 FR 74695, November 30, 2015), or by filing complaints with the Department of Labor pursuant to 49 U.S.C. 31105, depending on the underlying facts. The Agency notes that certain examples of harassment offered by commenters fall squarely within the realm of labor-management relations rather than the application of the HOS rules and are therefore outside the scope of this rulemaking.

The Agency does not address the distinction between productivity and harassment, because, as part of the MAP–21 legislation, Congress eliminated the statutory provision expressly permitting carriers to use ELDs to monitor the productivity of drivers. In light of that revision, we do not infer congressional intent that the Agency establish guidelines in this rule for the appropriate use of ELDs to improve productivity. FMCSA simply makes clear that, for the protection of drivers, productivity measures undertaken by carriers cannot be used to harass drivers, as that term is defined in the regulations.

The procedures governing the filing of a complaint, including with whom the complaint must be filed, and the procedures addressing the Agency's handling of a harassment complaint have been modified from those proposed in the SNPRM in order to track the procedures governing complaints alleging coercion in a recent FMCSA rulemaking (80 FR 74695, November 30, 2015). Similarly, the complaint process for substantial violations is modified to track, in part, procedures under the coercion rule. Complaints alleging a substantial violation can be filed by any person through the National Consumer Complaint Database or with any FMCSA Division Administrator; the Agency will then refer the complaint to the Division Administrator it believes is best able to handle the complaint.

As further indication of the seriousness with which FMCSA's viewed drivers' harassment concerns, the Agency conducted a survey of drivers and motor carriers concerning their attitudes and experiences related to harassment and its relationship to ELDs. FMCSA placed the harassment survey report in the public docket with a request for comment, to which OOIDA subsequently responded. The survey and related comments, which are part of the record of this rulemaking, are discussed in Section XII, L, of this preamble.

I. Matters Outside FMCSA's Authority

Several commenters submitted recommendations that would require new statutory authorities for FMCSA before action could be taken to address the issue. For example, commenters suggested changes in methods by which drivers are paid, admissibility of ELD data in litigation, and further protections of ELD data beyond current law. The Agency will not consider taking actions beyond its current authority and will not commit to seeking such authority.

X. Discussion of Comments Related to the Technical Specifications

A. Performance and Design Specifications

The detailed performance and design requirements for ELDs included in today's rule ensure that providers are able to develop compliant devices and systems, and that motor carriers are able to make informed decisions before purchasing them. The requirements ensure that drivers have effective recordkeeping systems, which provide them control over access to their records. The technical specifications also address, in part, statutory requirements pertaining to prevention of harassment, protection of driver privacy, compliance certification procedures, and resistance to tampering. Furthermore, they establish methods for providing authorized safety officials with drivers' ELD data when required.

1. Comments to the 2011 NPRM

The 2011 NPRM relied entirely upon the now-vacated 2010 rule. Though comments were submitted to the 2011 NPRM concerning the technical specifications, they were out of the scope of the 2011 proposal, as those specifications had already been finalized in the April 2010 rule and subsequent amendments to address petitions for reconsideration of the rule.

2. Comments to the 2014 SNPRM

FMCSA proposed new technical specifications in the SNPRM, which included detailed design and performance standards for ELDs that address statutory requirements. FMCSA proposed specific standard data formats and outputs that ELD providers would need to use to transfer, initialize, or upload data between systems or to authorized safety officials. These proposed technical specifications are intended to be performance-based, in order to accommodate evolving technology and standards, and to afford ELD providers the flexibility to offer compliant products that meet the needs of both drivers and motor carriers. In the SNPRM, FMCSA asked the following questions specifically about interoperability.

1. Should FMCSA require that every ELD have the capability to import data produced by other makes and brands of ELDs?

2. To what extent would these additional required capabilities for full interoperability increase the cost of the ELDs and the support systems?

3. While full interoperability could lower the cost of switching between ELDs for some motor carriers, are there a large number of motor carriers who operate or plan to operate with ELDs from more than one vendor? How would full interoperability compare to the proposed level of standardized output? If carriers wanted to operate ELDs from more than one vendor, would this be a barrier? Would this issue be impacted

by the market-share of the ELD manufacturer?

4. Would motor carriers and individual drivers have broad-based use or need for such capability? Is there a better way to structure standardized output to lower cost or encourage flexibility without requiring full interoperability?

Providers raised questions about many of the technical specifications and suggested changes. NTSB asked FMCSA to consider adding crash survivability for ELD and ELD data.

EROAD Inc. (EROAD) stated that the easiest and fairest way for FMCSA to provide standards that guarantee high performance is to use general hardware and software technical and security standards. It recommended a requirement for ELD providers to meet appropriate FIPS, Common Criteria, or other equivalent standards.

BigRoad stated that codifying the technical specifications, as part of the regulatory requirements, is undesirable because the regulatory process would impede the development of the technical specifications. Instead, FMCSA should remove technical specifications from the regulatory requirements and create a technical standards open working group consisting of industry and government representatives that is able to work collaboratively through the interoperability issues. BigRoad was concerned that the complexity of the ELD specifications, particularly in support of roadside inspection information transfer, would result in ELD systems that are more expensive and less reliable than necessary to meet the requirements of MAP–21. Interoperability issues between ELD providers and roadside inspection systems could result in an unintended bias toward drivers producing printed paper logs during an inspection. Providing simpler roadside data transfer options, with specific requirements for both ELD providers and authorized safety officials, would allow technology providers to deploy the necessary systems more quickly.

Continental stated that the ELD regulation and associated standards should include a clear security specification, using standard IT industry processes and endorsed by the National Institute of Standards and Technology (NIST) and standardized interfaces. This would assist with the identification of drivers, the transmission of drivers' data from one vehicle to another and easy access to and downloading of data by enforcement personnel and vehicle operators.

PeopleNet requested clarification on how to manage data for those drivers that transition between a compliant AOBRD device and a compliant ELD. Eclipse Software Systems stated that it would be useful for any driver to have access to non-authenticated driving time so they are aware of it, since it will be displayed to roadside inspectors. It asked for a clarification that displaying co-driver names (perhaps automatically from other driver's data on the ELD) is allowed.

3. FMCSA Response

The Agency is not requiring crash survivability standards for ELDs because of the costs involved. Crash survivability is a complicated and expensive requirement, and would mean that the ELD has to withstand high impact or crash forces and be water resistant and withstand exposure to open flames for some period of time. FMCSA does not believe this is necessary.

FMCSA agrees that some level of standardization is necessary. Whenever possible, FMCSA used NIST, or other commonly available technical standards, including those incorporated by reference in today's rule in § 395.38, Incorporation by Reference.

FMCSA has elected to codify the technical specification standards in the appendix to part 395 in today's rule rather than establish a new working group. Though FMCSA acknowledges that including the technical requirements in the regulations makes changing them more difficult, FMCSA believes this is the best way to provide transparency and ensure that all interested parties are aware of the requirements and any proposed changes to the standards. FMCSA notes that adopting technical specifications by regulation is the only way to make them binding. Additionally, though the Agency did not create a workgroup, the MCSAC subcommittee, which included members from the ELD technical community, gave a recommendation to FMCSA on task 11–04, which the Agency considered in lieu of a workgroup's recommendations.

Today's rule requires standardized output and standardized data sets. FMCSA has decided not to require full interoperability between all ELDs. Although full interoperability would have some benefits, it would also be complicated and costly. FMCSA believes that requiring standardized data output and requiring that drivers have access to their own records will achieve some of the goals of the commenters advocating for full interoperability.

The motor carrier and the driver are responsible for ensuring that all the RODS information required by the HOS rules is available for review by authorized safety officials at the roadside. If the driver works for multiple employers with multiple ELD or AOBRD systems that are not compatible (*e.g.,* the data file from one system cannot be uploaded into the other system), the driver must either manually enter the missing duty status information or provide a printout from the other system so that an accurate accounting of the duty status for the current and previous 7 days is available for authorized safety officials.

B. Specific Performance Requirements

1. Comments to the SNPRM

Commenters had comments or questions on specific design elements in the proposed appendix to part 395.

Comments Requesting New Requirements

FedEx stated that ELDs should be programmed to acknowledge that a driver is using the 100-air-mile exception. While taking the exception, the driver should only need to enter start time and end time into the ELD. Omnitracs, LLC (Omnitracs) asked for a definition of minimum duty status duration. Paper logs are to a granularity of 15 minutes, but there is no specification for RODS recorded by the ELD. Omnitracs believed the customer should be able to configure the duration.

CVSA and the United Motorcoach Association (UMA) stated that the ELD should alert a driver when he or she is approaching the HOS limits.

Number of Required Features

The IFDA recommended eliminating the requirement for a single-step interface and graphic display or printout. The commenter wrote that there is not a sufficient safety benefit to justify the 60-minute requirement for recording the location, communications methods, and indications of sensor failure, which it wrote are not currently standard technology.

XRS stated that FMCSA needs to clarify why the engine hours are a requirement. FMCSA should identify what other methods would accurately acquire engine hours without an ECM available.

ATA raised concerns about the requirement to synchronize devices to Coordinated Universal Time (UCT) periodically and to ensure that a device's deviation from UCT not exceed 10 minutes at any point in time. To ensure such synchronization will

require cell or satellite service (depending on the device) and such service is not always available. ATA also questioned if ELDs would be able to produce the volume of data that FMCSA proposes (*e.g.,* last 6 months' records, all drivers who previously used the device). ATA believed that such requirements will cause devices to need large memory capacity that will add to cost, reduce design flexibility, and ultimately impact the ability of some existing hardware to be upgraded to meet new specifications. ATA recommended limiting the requirement to the same level of detail that drivers currently must provide during roadside inspections.

With the requirement for ELD records to resolve latitude and longitude to a place name, as well as the distance and direction to the place name, Verigo stated that it is questionable why locations need to be resolved to an accuracy of two decimal places. This level of granularity does not appear to provide a higher level of safety and is inconsistent with the accuracy in use today. The 10-mile accuracy of single decimal coordinates is consistent with the distance that could reasonably be traveled within the 15-minute interval in use.

Eclipse Software Systems stated that the transaction numbering system, along with the odometer capture (vehicle miles) provides very strong security that makes tampering extremely difficult. Adding engine hours, ignition on/off and VIN detection add very little additional security. Another issue Eclipse asked FMCSA to consider is that the serial and CAN buses of ECMs broadcast the odometer and wheel speed without intervention from an ELD. The ELD can sit in ''listen mode'' and obtain this information. Conversely, to get engine hours and VIN, the ELD must transmit on the ECM bus, and send requests for this information. Eclipse commented that it was aware of some EOBRs improperly transmitting on vehicle buses, causing erratic behavior on the electrical bus. Given that an ELD mandate is likely to draw lots of new providers to this market (who may be inexperienced with ECM interfacing), it seems safer that ELD providers operate in ''listen only'' mode, where they are less likely to interfere with vehicle operation by broadcasting on the engine bus.

2. FMCSA Response

FMCSA is aware that there is no current device on the market that meets every standard in today's rule. However, the intent of this rule is to set a standard that the Agency believes is secure, useful, and can be met at a reasonable cost. FMCSA has been careful to consider the cost of developing new components of an ELD, and has purposefully set standards that can be met by re-programming many existing devices with little cost to the providers.

Requesting New Requirements

FMCSA does not require ELDs to accommodate any statuses other than those that are currently required to complete paper RODS, including excepted and exempted statuses. However, section 4.3.3.1.2. (c) states that an exemption must be proactively configured for an applicable driver account by the motor carrier. The ELD must prompt the motor carrier to annotate the record and provide an explanation for the configuration of the exemption.

FMCSA does not require a minimum duty status duration. The ELD will capture all duty statuses entered; there is no minimum amount of time these statuses must be engaged. While longstanding industry and enforcement practices may have relied upon minimum intervals of 15 minutes in the handwritten RODS, the ELD provides for a more accurate accounting of drivers' time. This should not be construed to be an indicator that the activities that are electronically recorded as less than 15 minutes are suspect, only that the time actually required to complete the task may be less that what had been traditionally noted in the paper RODS.

FMCSA allows, but does not require, any notification of the driver when they are nearing their HOS limits. While an ELD will automatically record on-duty driving time, a driver is still responsible to record other duty statuses based on the driver's actual work time.

Number of Required Features

FMCSA agrees that data transmission is complex, and roadside enforcement and review will likely play a large role, especially in the transition phase of the implementation of today's rule. For this reason, FMCSA has standardized the information on the printout and the display screen to contain the same data set. FMCSA believes that the modifications made from the SNPRM in today's rule to require a standardized backup of a display or printout will increase the ease of users.

FMCSA acknowledges the commenter's concerns about 60-minute location but the Agency believes ELD devices can easily be programmed to record at 60 minute intervals.

FMCSA believes it is necessary to record engine hours, as a check with the other data contained on the ELD. A record of engine hours, when compared with the ECM odometer readings, verifies the accuracy of periods other than drive time. Because today's rule is not applicable to vehicles older than model year 2000, and ELD providers can work-around vehicles using OBD–II, which might not capture engine hours, the concern about engines without ECMs should be eliminated. However, should a driver of a CMV with a non-ECM engine wish to install an ELD, Appendix B sections 4.2(b) and 4.3.1.2(b) provide specifications for an ELD when there is no ECM or ECM connectivity.

With current technology, it should be rare for an ELD's time to drift more than 10 minutes. In addition, the technical specifications require the ELD to (1) periodically cross-check its compliance with the requirement specified in section 4.3.1.5 of the Appendix with respect to an accurate external UTC source and (2) record a timing compliance malfunction when it can no longer meet the underlying compliance requirement.

FMCSA clarifies that the ELD in the CMV only needs to retain the data for the current 24 hour period and the previous 7 consecutive days. Carrier (or private driver) record keeping systems could retain more data for the purposes of historical data storage. FMCSA does not prohibit any ELD from retaining more data than 8 days, but it is not required. The carrier is required to keep data for 6 months in case of an FMCSA inspection. This information can be kept on the device itself or in the carrier's office. These electronic files are not large. FMCSA estimates that 6 months of data, for one ELD, would not require more than 10 MB of storage. Therefore, in this rule, FMCSA does not reduce the data set that needs to be retained.

FMCSA needs to capture latitude and longitude because it is more reliable for computers to process than place names. However, FMCSA also needs place names to allow drivers to verify that the location is correct and safety officials to recognize the location quickly. Data collected in addition to odometer, such as engine hours, are necessary as a cross check to verify that data has not been manipulated. Location resolved to an accuracy of two decimal places when drivers are on-duty driving provides a clear history of where the driver and vehicle have been. In today's rule, FMCSA does not require an ELD to be able to communicate with the motor carrier. FMCSA disagrees that the location information does not have a safety reason; location information will make falsification of HOS records more

difficult. Additionally, FMCSA believes this level of specificity can provide accurate time information, and that this is not a difficult level of location information to meet.

In response to concerns about improper transmittal, the industry will be driven by customer requirements to provide safe and non-interfering connectivity of the ELDs to the engine ECM or ECM connectivity. Additionally, the use of industry standards in the regulation, and the requirement that ELD providers register and certify their ELDs on FMCSA's Web site, should reduce the potential for this type of issue.

C. Security

1. Comments to the 2014 SNPRM

The SNPRM proposed incorporating by reference several industry standards for privacy and encryption including NIST standards.

Continental stated that ELDs should be tested and certified to comply with security standards by independent laboratories that follow processes endorsed by NIST. In the absence of a precise requirement for a specific tamper resistance level, FMCSA should at least ensure that ELD software cannot be accessed and modified by end users. As drafted, Continental stated the rule may lead to the proliferation of hacked or cloned apps for smartphones and tablets that exactly mimic the displays of compliant systems. As a minimum security requirement, FMCSA should only allow ELDs that prohibit user access to the software environment on the device. The provider of the ELD should demonstrate during the certification process that the software environment on the device cannot be easily accessed and modified by the end user. While the industry has shown an interest in using smart devices for operational management, the current market penetration of smart device-based ELDs is very low. Therefore, there will be only a minimal financial impact to the industry by prohibiting open-software devices. As the number and sophistication of tampering attempts will grow with time, the overall tamper resistance level could be significantly enhanced by requiring that the data delivered by ELDs be digitally signed. Continental noted that FMCSA proposes to require that ELDs provide data in the format of an electronic file. Lacking enforceable security requirements, however, it will be extremely easy to perform undetectable modifications on those files.

XRS stated that many suppliers of AOBRD portable devices or handheld devices that are AOBRD compliant and moving to an ELD have been employing security measures through the use of Mobile Device Management software, which provides for security of the device.

BigRoad stated that the series of checksums that are required on event logs, output file lines, and the entire output file itself are calculated in a manner that would be trivial to recalculate should any data be altered. However, in proposed sections 7.1.20, 7.1.26, and 7.1.31 (7.21, 7.27, and 7.32 in this rule), these values have the stated purpose to identify cases where an ELD file or event record may have been inappropriately modified after its original creation. BigRoad stated that, for security against purposeful tampering, only a cryptographically robust signature of the data in question is effective in practice.

Omnitracs also questioned the value of these and stated that as proposed they provide no security. PeopleNet recommended the use of a proven industry standard, MD5 Hash.

2. FMCSA Response

FMCSA follows all DOT Security guidelines which includes NIST standards for access to any FMCSA system or network. In this rule, FMCSA has expressly prohibited any modification at the user level. FMCSA believes that the security standards of ELDs have appropriately balanced industry standards, privacy, the need for accurate HOS monitoring, and the cost of security measures. FMCSA notes that it has only established minimally compliant standards in this rule, and there could be a market for more security features on an ELD. ELD providers are not prohibited from using additional security measures, so long as the data can still be transferred to authorized safety officials as required by the today's rule.

In addition, the commenter's concern about mobile devices is misplaced. Security on mobile devices is well-understood. Banks, governments, and retailers all provide apps which require security. There is no reason to believe that consumer mobile devices cannot be an adequate platform for ELDs. FMCSA believes the specifications and privacy standards and protocols are sufficient to respond to reasonable concerns about hackers.

FMCSA does not prohibit the use of Mobile Device Management software, but believes it is too costly to include as a minimum ELD specification.

The intent of the checksums is to provide a simple method of detecting data manipulation to help prevent a novice user or rogue script programmer from easily modifying the data and gaming the system. The checksum algorithms are sufficiently robust to prevent a novice user from simple data manipulation. Although MD5 is a well-known and more robust checksum algorithm, in this instance it is no better than the simple scheme provided in this rule. Someone changing the data could simply apply the MD5 checksum to each line as there is no independent source to verify its accuracy. The MD5 checksum has the additional disadvantage of adding significantly more data to each line, thus increasing the size of the overall file.

D. External Operating Factors and Failure Rate of ELDs

1. Comments to the 2014 SNPRM

The SNPRM did not address the effect of external operating factors, such as dirt or vibration, on the failure rate of ELDs.

The National Ground Water Association stated that FMCSA should ensure that providers understood that ELDs had to perform when subjected to vibration from heavy equipment. The Association of General Contractors stated that the off-road conditions construction vehicles operate under may be problematic for ELDs. Its members indicate at least a 10 percent failure rate.

2. FMCSA Response

In today's rule, FMCSA continues to allow the marketplace to address developing roadworthy ELDs. As with other electronic device manufacturers (mobile phones and laptop computers for example), the market should drive ELD providers to respond to CMV operating situations where a high level of durability is required. CMVs that operate only on the highway may not need the robustness of design that the construction and utility industries require.

E. Automatic Duty Status

1. Comments to the 2014 SNPRM

If the driver's duty status is Driving, an ELD would only have allowed the driver who is operating the CMV to change the driver's duty status to another duty status. A stopped vehicle would have to maintain zero (0) miles per hour speed to be considered stationary for purposes of information entry into an ELD. Additionally, an ELD would have to switch to driving mode automatically once the vehicle is moving at up to a set speed threshold of 5 miles per hour.

XRS stated that FMCSA should indicate whether the drive time should be set back to the beginning of the on duty period when 5 minutes has expired. Zonar stated that the safety, effectiveness, efficiency, and reliability of the ELD and FMS will be significantly limited by not allowing automatic duty-status changes when the system finds specific criteria for an event have been met. Zonar commented that automatic changes include providing the driver the ability to change the event; if the driver does not respond, then the automatic duty status occurs. Automatic duty status records must include an annotation to describe the system action taken, so the original record is retained.

XRS stated that FMCSA should reconsider ''Other Automatic Duty-Status Setting Actions Prohibited'' since the driver will have the ability to edit and annotate other changes. Section 395.2 (definition of ''on-duty time'') allows a co-driver to be off duty for up to 2 hours in the passenger seat of a moving vehicle before or after at least 8 hours in the sleeper berth and then the co-driver must revert to on duty. Allowing an automatic duty status change from off to on duty when the 2 hours expires, would make ELD records more accurate and avoid additional transactions by the driver without compromising safety.

2. FMCSA Response

FMCSA purposefully did not require drive time to set back automatically. FMCSA believes that the driver of a CMV has a responsibility to ensure the accuracy of his or her own HOS records. FMCSA considers that, in most cases, status changes should be directly linked to an action taken by a driver.

An ELD must prompt the driver to input information into the ELD only when the CMV is stationary and the driver's duty status is not on-duty driving, except for the automatic setting of duty status to ODND. The driver still has the option to edit and switch that time after it has elapsed, as long as it is not driving time. Limited editing rights, coupled with the ability of the driver and motor carrier to annotate, should ensure that records are accurate. FMCSA does not believe this will result in an unreasonable number of edits or complicated data for enforcement.

F. CMV Position

1. Comments to the 2014 SNPRM

The SNPRM provided that an ELD must have the capability to automatically determine the position of the CMV in standard latitude/longitude (proposed section 4.3.1.6. of the SNPRM). The ELD must obtain and record this information without any external input or interference from a motor carrier, driver, or any other person. CMV position measurement must be accurate to ±0.5 mile of absolute position of the CMV when an ELD measures a valid latitude/longitude coordinate value.

FMCSA proposed that position information be obtained in or converted into standard signed latitude and longitude values and must be expressed as decimal degrees to hundreds of a degree precision (*i.e.,* a decimal point and two decimal places).

XRS stated that FMCSA needs to clarify the accuracy of the GPS as to rounding up or truncating on the 1-decimal and 2-decimal accuracy. Eclipse Software Systems stated that FMCSA is requiring that the ELD determine date, time, and location ''[w]ithout allowing external input or interference.'' Given that this data comes from GPS, and GPS can be interfered with (by obscuring the GPS antenna, for example), the wording should be changed to reflect that the carrier, driver, or other individuals are not allowed to set the date, time, and location manually. Eclipse commented that other parts of the SNPRM already make it clear that interfering with GPS is a violation, but the responsibility lies with the individual, not the ELD provider.

Zonar asked for guidance on the maximum characteristics to be displayed. A customer may choose to have more precise information than 3 to 6 or 3 to 7 characters. As an FMS has reports and tools that are supported by the precise GPS location of the vehicle, this will have a major impact on the system.

2. FMCSA Response

Geo-location rounding to a 1-decimal (approximately within a 10 mile radius) will provide sufficient granularity to the data without providing an excessive amount of specificity; this granularity remains of limited specificity when reduced to 2-decimal accuracy. Because the date, time, and location will be determined by the ELD without modification by the driver, motor carrier, or any other individual, any alterations to these records would be considered tampering with an ELD under § 395.8(e)(2).

The output values for GPS location for the purpose of enforcement and compliance to the ELD rule may be 3 to 6 characters. If a carrier has more character requirements for its FMS there is no prohibition on having more precise information.

G. Special Driving Categories

1. Comments to the 2014 SNPRM

The SNPRM proposed to add a requirement for the ELD to provide the capability for a driver to indicate the beginning and end of two specific categories, namely, personal use of a CMV and yard moves, as allowed by the motor carrier. In these cases, the CMV may be in motion but a driver is not necessarily in a ''driving'' duty status. This would record the necessary information in a consistent manner for the use of drivers, motor carriers, and authorized safety officials.

In the data structures as defined in the SNPRM, XRS saw no allowance for identification for items such as adverse conditions, or 16-hour short haul exemption and requested guidance on how these should be identified or indicated in the files. Zonar asked for clarification on the special driving categories: How does FMCSA expect this to be displayed in ''Off-Duty'' and ''On-Duty Not Driving'' or is there no requirement?

While Omnitracs agreed with resetting the special driving situation to ''none'' if the ELD or CMV's engine goes through a power off cycle, it suggested that the same confirmation be allowed during yard driving that is allowed for authorized personal use of the CMV. This would enable the driver to turn off the engine when connecting or disconnecting a trailer when operating within a company's facility without the requirement to re-enter the annotation of yard driving each time the engine goes through a power cycle.

2. FMCSA Response

FMCSA does not require special identification to be built into an ELD for specific exceptions or adverse condition status. FMCSA expects drivers and motor carriers to use the annotation ability on the ELD to record these statuses.

Today's rule permits the driver to indicate the beginning and end of yard moves and personal conveyance, as allowed by the motor carrier. All other special driving categories, such as adverse driving conditions (§ 395.1(b)) or oilfield operations (§ 395.1(d)), would be annotated by the driver, similar to the way they are now.

The Agency feels that the allowance of multiple power off cycles would not provide a substantive reduction in inputs required by the driver during yard moves. In addition, this may create a potential for misuse of the off duty yard-move status.

H. Data Automatically Recorded

1. Comments to the 2014 SNPRM

The SNPRM proposed that the ELD would automatically record the following data elements: (1) Date; (2) time; (3) CMV geographic location information; (4) engine hours; (5) vehicle miles; (6) driver or authenticated user identification data; (7) vehicle identification data; and (8) motor carrier identification data.

Eclipse Software Systems stated that it had concerns that items (6) driver, and (8) motor carrier information cannot truly be ''automatically recorded.'' The ELD can make note of the current driver and carrier, but these values have been manually entered or selected by a human at some point. Unlike items 1 through 5, and 7, they are not provided by external sensors.

Inthinc Technology Solutions, Inc. (inthinc) stated that a driver may log out and then turn off the engine. It asked if engine shutdown should be recorded on the ELD record even though the driver is logged out.

Schneider requested confirmation that in § 395.32(a), where the words ''as soon as the vehicle is in motion'' occur, that the definition of 'motion' is the one found in the appendix, in section 4.3.1.2.

2. FMCSA Response

Today's rule provides that driver and motor carrier information will be the responsibility of the motor carrier, as reflected in § 395.22. After a driver's unique login to the ELD, this information will be available to the ELD and will be recorded by the ELD, with all the other data elements, at each change of duty status and at intermediate recording times.

With regard to comments about the engine status, FMCSA notes the ELD will automatically capture the engine on and engine off activities, including the date, time, and location of these activities. FMCSA expects the driver to enter a new duty status before turning the vehicle off. For example, if the driver intends to remain on duty, then the driver would enter that information and then turn the vehicle off. If the driver plans to switch from driving time to a sleeper-berth period, the new duty status would be entered before the vehicle is shut down. The precision of the data collected by an ELD is not intended to override the practical sequence of events needed to reduce to the greatest extent possible annotations and corrections.

The ELD will indicate the vehicle is in motion once the vehicle begins moving at a set speed threshold of up to 5 miles per hour.

I. Driver's Annotation/Edits of Records

1. Comments to the 2014 SNPRM

The SNPRM proposed that a driver may edit and a motor carrier may request edits to electronic RODS. All edits would have to be annotated to document the reason for the change. The SNPRM did not allow any driving time to be edited into non-driving time.

BigRoad noted that the annotation requires a 4-character minimum. Its database of logs includes hundreds of thousands of 3-letter notes that are meaningful. It stated that the restriction should be removed. Omnitracs stated that the term ''source data streams'' is too vague and should be changed to ''recorded data.'' Omnitracs recommended the process outlined in sections 4.3.2.8.1 and in 4.4.4.2 be amended to track only the original and the driver-approved final edit since they comprise the final record set. It also stated that the requirements regarding edits to driver ELD records do not sufficiently detail that only the original and final edits are to be maintained and are too restrictive regarding automatically recorded drive time edits. PeopleNet stated that the specifications in section 4.4.1.2 mean that if the driver is in Driving, gets to the destination, and turns off the ignition, he will remain in Driving, which is incorrect, but the ELD cannot reduce drive time.

2. FMCSA Response

The term ''source data streams'' has a broader meaning than ''recorded data.'' It includes all the information, recorded or not, that the ELD receives. FMCSA does not find that there is a reason to include 3-letter notes as acceptable annotations, and continues to require 4-character minimum codes. The Agency thinks that a code with a minimum of four characters will provide better quality information and specificity.

When the duty status is set to driving, and the CMV has not been in-motion for 5 consecutive minutes, the ELD must prompt the driver to confirm continued driving status or enter the proper duty status. If the driver does not respond to the ELD prompt within one-minute, the ELD must automatically switch the duty status to ODND. The time thresholds for purposes of this section must not be configurable. Accordingly, the driver status will most likely change to ODND under the PeopleNet scenario.

FMCSA declines to limit the record to only the original record and driver-approved edits. While an edit by a motor carrier normally requires recertification of the record by the driver, the Agency acknowledges that there will be instances where a driver is no longer available at the time of an edit. Although the edit and annotation would lack the required certification, retaining the carrier edits may provide a more complete picture of what occurred.

J. Driver's Data Transfer Initiation Input

1. Comments to the 2014 SNPRM

The rule indicates that a screen icon must be clearly marked and visible when the vehicle is stopped. Verigo asked for clarification regarding the required visibility of this icon at all times when the vehicle is stopped.

2. FMCSA Response

The icon is a function that allows the driver to easily transfer data at roadside. The supported single-step data transfer initiation mechanism (such as a switch or an icon on a touch-screen display) must be clearly marked and visible to the driver when the vehicle is stopped and data transfer is required. We expect that the ELD makers will meet the regulation requirements by incorporating user friendly and useful features to maintain market share.

K. ELD Data File

1. Comments to the 2014 SNPRM

In the SNPRM, FMCSA provided that an ELD must have the capability to generate an electronic file output, compliant with the format described in section 4.8.2, to facilitate the transfer, processing and standardized display of ELD data sets on the authorized safety officials' computing environments. FMCSA required that all output files be standardized on ELDs according to American Standard Code for Information Interchange (ASCII), which the Agency proposed incorporating by reference.

Zonar asked where the output file comment should be stored—within the driver records on the ELD, just in the support system, or both? If stored on the ELD only, when the ELD records are purged after the 7 or 8 days they are required to be retained, should it then be stored within the support system?

Omnitracs recommended replacing the word ''ELD'' in section 4.8.2 with the phrase, ''ELD or a support system used in conjunction with ELDs,'' the same language used in section 4.9.2. The commenter believed that use of the additional term would allow for closer alignment within the rules. Omnitracs also stated that there is nothing in the output file standard that specifies how to handle non-ASCII character sets such

as special characters that may be used either by Canadian cities/provinces or even in driver names.

In section 4.8.2.1 of the appendix to part 395, the SNPRM proposed that the ELD must produce a standard ELD data output file for transfer purposes, regardless of the particular database architecture used for recording the ELD events in electronic format. This ELD data output file must be generated according to the standard specified in section 4.8.2.1.

Omnitracs stated that all of the ''supporting'' elements (*e.g.* annotations, certifications, malfunctions, etc.) reference the event sequence ID number as the only means to associate to the actual driver duty change event (refer to 4.8.2.1.5, which contains the format for Event annotations or comments). If a driver's duty cycle consists of data recorded from multiple ELDs, these sequence IDs may overlap and may not be unique on the current ELD. It recommended that a secondary reference to the original duty status, which could include an ELD unique identifier, or even a date/time reference, be used. Omnitracs requested that there be further clarification on how to handle event sequence IDs when data on the ELD are a mix of data that have been recorded from different ELDs. The current language has no provision on how to handle data from different ELDs when there could be a sequence conflict.

Inthinc recommended that UTF–8 be used for output rather than ASCII. It also asked for examples of how output code should be parsed.

BigRoad stated that the comma-separated format described in the SNPRM is not based on any contemporary standard for structured data and already fails to accommodate some data requirements fully (see Table 6, Event Type 4). BigRoad wrote the format also fails to account for field values that might include inline commas or <CR> characters. The commenter also noted that a file format based on standards like extensible markup language (XML) would allow for more flexibility for future changes and could be paired with any character set encoding, including Unicode, to allow any character data to be captured correctly without loss of precision. BigRoad wrote that to restrict future flexibility of the data format to support a minority of devices seems shortsighted.

Since ELD data that are transmitted to FMCSA Web services are formatted as XML, BigRoad believed that XML should be used as the format for all transmission options. BigRoad wrote that using XML along with a formal XSD schema is beneficial when trying to ensure interoperability between disparate systems and would reduce the number of file format incompatibility issues when transferring data between systems.

BigRoad stated that the ELD data file specifications are not explicit about how to display and transfer data from drivers that produce records on multiple ELDs. The requirements to display multi-day data imply that data must be aggregated across all ELDs the driver uses. None of the ELD data files contains an identifier for the specific ELD that created the record, so if the records from multiple ELDs are aggregated the event sequence number ranges throughout the file could be discontinuous. If the intention is to produce data files containing ELD data aggregated across several ELDs, BigRoad believed adding an ELD identifier would mean that each separate ELD could be easily disambiguated.

2. FMCSA Response

In today's rule, section 4.8.2 is largely the same as proposed. Some changes have been made to accommodate comments and to clarify the rule. In response to the comment asking how the output file comment should be stored, it must be recorded in the output file and transferred to roadside enforcement or inspectors. All captured elements from the output file must be retained by the carrier for 6 months.

FMCSA understands that some capabilities of an ELD may not be located on the same physical device, or even in the CMV, but rather in a support system. FMCSA has provided flexibility in this rule for all provider types and their respective ELDs.

FMCSA requires that all information in the output file be standardized and only include ASCII characters. ASCII is a widely available standard within the United States, and is appropriate for the data required. Although ASCII does not provide for special characters, FMCSA feels that identification of proper names and cities can be clear without the insertion special characters.

The ELD technology option for any data transfers will require that the standard ELD CSV data file outlined in part 395 would be packaged into XML format. FMCSA will provide and manage ELD XML schema and all related instructions outlined in guidance, ''ELD Interface Control Document (ICD),'' to be placed on its Third Party Development site (3PDP). There is no prohibition on using an XML format internally. However, ELD output files have a standardized format. The format method accounts for the suggested needs, including that for Table 7, Event Type 4. In the respective section, only Event code is necessary as event type is implied by the section. Field values including inline commas or <CR> characters can be controlled for or pre-processed by the ELD provider. FMCSA has updated section 4.8.2.1. to accommodate a comma or carriage return by adding: ''(3) Any field value that may contain comma (''‚'') or carriage return (<CR>) must be replaced with a semicolon (';') before generating the compliant CSV output file.''

The concern about HOS records from multiple ELDs is appropriate. FMCSA added data and time stamp fields to annotations to allow an improved method of disambiguation. There may still be rare situations where one or more drivers could have data in multiple ELDs that get combined into a single file having identical event IDs and slightly unsynchronized time stamps. The probability of this occurring is low, but not zero, and the consequences are minimal. An ELD Identifier data element that BigRoad mentions is already defined in the rule.

While today's rule does not include requirements concerning compatibility of files between ELD systems or the ability to upload drivers' duty status files from multiple systems, there is nothing in the rule that prevents collaboration among the providers to produce compatible products. In the absence of a compatibility standard, if a driver's duty cycle consists of data recorded from multiple ELDs, then the records will be in multiple files. If the ELD is set to combine them, then a provider could opt to use an additional field as a database element in order to keep them separated. In today's rule, FMCSA has added a secondary reference to the original duty status to include a date and time field. There are multiple methods to handle combining data from more than one source and FMCSA has purposely left this open for the innovation and flexibility of ELD providers.

L. Engine Power Up and Shut Down

1. Comments to the 2014 SNPRM

The SNPRM proposed that an ignition power on cycle refers to the engine power sequence changing from ''off to on and then off.'' This refers to a continuous period when a CMV's engine is powered.

Omnitracs asked if, since CMV ignition can be in the ''on'' position without the engine running, the ELD must capture when the ignition is in the on position without the engine running. The same commenter recommended

that the 1-minute time for power up be relaxed to 3 minutes to allow for a cold boot situation. Zonar asked what constitutes ''Ignition power on cycle'' when connected to a hybrid truck? A hybrid truck will not produce a RPM of greater than 0 until driven.

2. FMCSA Response

The technical specification included a capture for when the engine goes from on to off, but the intended data capture was for when the driver intended to drive the CMV. Though propulsion variations can be defined, FMCSA wants the specification to capture when the CMV is put into a state where it can be driven. Likewise, ignition on/engine on for a hybrid vehicle will be the status of vehicle ready to drive—the equivalent to ''engine on'' for an internal combustion engine. FMCSA continues to require the capture of the engine on data.

FMCSA does not accept the suggestion to relax the power up status to 3 minutes because the Agency believes that 1 minute is sufficient. Any cold boot event records that would be captured could be annotated, or would be clear from the type of activity that occurred. A 3 minute cold start would be a rare occasion, and would be captured as a diagnostic event, not as a fault, and should not impact driving time.

M. Engine Synchronization Compliance Monitoring

1. Comments to the 2014 SNPRM

The SNPRM proposed that an ELD monitor the data it receives from the engine ECM or alternative sources to record history to identify instances and durations of its non-compliance with the ELD engine synchronization, and establish a link to the ECM, as well as set an engine synchronization compliance malfunction if connectivity to any of the required data sources is lost for more than 30 minutes during a 24-hour period aggregated across all driver profiles, including the unidentified driver profile.

FMCSA also proposed that engine synchronization must be functional for all but 30 minutes in a 24-hour period. If it is not, an engine synchronization compliance malfunction must be logged.

If the vehicle ECM becomes unresponsive, XRS asked what value should be inserted into these fields to record the malfunction. There are other cases of failure that could prevent significant data being available to record (*e.g.,* Driver interface unit failing. . . . ''Data recording compliance'' malfunction). The ECM could recover at a later point and the system will be fully functional.

XRS wanted FMCSA to clarify the 30 minutes mentioned in this section. This could easily exceed 30 minutes in a 24 -hour period especially with many jurisdictions around the country prohibiting CMV drivers from idling their engines. There is the possibility that a vehicle bus under particular stress may not respond for more than 5 seconds. Clarification on the 24-hour period as well as the aggregate of the 30 minutes against all profiles may be difficult or give false errors.

Verigo noted that, given the wide variety of computer processor speeds and other sequencing events that may be encountered, the 5-second limit may introduce a significantly higher level of error reporting than necessary to promote safe operation. There have been several instances where the OBD–II interface does not become active when the ignition is switched on, but only after the vehicle is started. Without additional conditions to be checked, it seems likely that there will be invalid logs of engine sync failure for these vehicles (*i.e.* driver turns on ignition and listens to the radio). It would be useful if the Engine Sync Compliance Monitoring is not required to log a failure until after engine ignition is detected and motion is detected (via GPS) and vehicle data are not available.

Eclipse Software Systems stated engine synchronization must be functional for all but 30 minutes in a 24-hour period. If it is not, an engine synchronization compliance fault must be logged. This is problematic in that the engine bus is not always operational. When the engine is not powered and a cab door is not open, there is usually no activity on the engine bus. This is indistinguishable from the wires to the engine bus being disconnected. One action is harmless, the other is tampering.

2. FMCSA Response

Table 4 of the appendix explains the malfunction codes that must be listed for a variety of issues including engine synchronization compliance malfunctions. If the ECM or ECM connectivity is unresponsive for more than 5 seconds, or if the failure cannot be recorded until the ELD is fully functional again, Table 4 in the appendix outlines how to capture these malfunctions. These conditions are not expected to be occurring frequently but FMCSA acknowledges that on occasion that a malfunction or disconnection anomalies will occur, but still requires the ELD to adhere to the standard of consistent connectivity expected of the ELD product.

In regards to the concern about the aggregate 30 minute period in a 24 hour period, FMCSA believes that this is a generous standard for HOS compliance. If a driver is concerned about this malfunction, there are several ways, including a simple pre-boot, to ensure that the ELD is ready to receive data as soon as the ECM or ECM connection sends it. Additionally, when an ELD displays a malfunction, the authorized safety official should be able to see what the problem is and take that into consideration. There would be enough data in this instance to see what the issue was, and what the real driving time is. When the engine is not powered, the ELD does not have to capture data. The 30 minutes verifies that additional miles and movement has not taken place in the 24 hour period.

FMCSA clarifies that the ECM data or ECM connectivity data must only be captured when the engine is powered, but the ELD is not prohibited from recording information, if desired, when the engine is off. If the CMV is older than model year 2000, then the driver is not required to use an ELD. However, if that driver is voluntarily using an ELD in a vehicle older than model year 2000 with the connections required in section 4 of the appendix, then the interface should become active when the engine is on, not just when the switch is turned on.

N. Engine Miles

1. Comments to the 2014 SNPRM

The SNPRM proposed that engine miles be retrieved from an ECM if the CMV had an ECM. If a vehicle was older than model year 2000, and did not have an ECM, then the vehicle miles would have to be derived.

Zonar stated that there are multiple sources of engine miles. Because of widespread variability among CMVs with respect to what data can actually be readily extracted by ELD providers, Zonar believed FMCSA should consider a version of ELD that substitutes GPS-derived data (such as mileage) for data that cannot be readily obtained from a vehicle ECU or a vehicle data bus. Modern GPS fleet tracking devices can be wired securely and permanently into a vehicle, can be programmed to uniquely identify individual vehicles, and can provide very accurate mileage data and truck run time data to validate driver records.

2. FMCSA Response

Because today's rule is only mandatory for motor carriers operating

CMVs that are model year 2000 or newer, all engine miles must be derived from the ECM or ECM connection. Synchronization with a satellite for the receipt of GPS-derived data is not the same as being integrally synchronized with the engine of the CMV, as required in today's rule. Engine synchronization for purposes of ELD compliance means the monitoring of the vehicle's engine operation to automatically capture data, including: the engine's power status, vehicle's motion status, miles driven value, and engine hours value.

O. Records Logged Under the Unidentified Driver Profile

1. Comments to the 2014 SNPRM

The SNPRM proposed that all records logged be recorded on the ELD. If a driver did not respond to prompts to log in, that time became unassigned driving time, and would be visible to any authorized safety official viewing the ELD records.

Omnitracs stated that it was unclear how to handle unclaimed, unassigned driving time. It recommended that the persistence of unclaimed unassigned driving time only be kept on an ELD for 8 days (maximum duty cycle). After such time, the ELD may delete any recorded yet unclaimed unassigned drive time. In addition, unassigned driving time should be sent to any ELD support system (*e.g.,* host system) for future assignment if the driver does not claim unassigned driving time on the ELD directly.

Omnitracs recommended an exception to this requirement in the case of unit maintenance where the ELD may be completely ''reset'' and all data purged from the ELD. In this situation, the ELD is allowed to act as a ''new'' ELD with no driver history. In addition, Omnitracs recommended that any ELD support system not be required to maintain this information and then ''push'' back to the ELD post maintenance.

2. FMCSA Response

All data for the last 8 days, including unassigned driving time, must be available at roadside. There is no requirement that unassigned driving time be available at roadside after 8 days. All data older than 8 days can be purged from the ELD, but all data, including unassigned driving time, must be available to inspectors at the motor carrier's principal place of business for 6 months.

P. Power-On Status Time

1. Comments to the 2014 SNPRM

The SNPRM stated that an ELD must be powered within 15 seconds of the vehicle's engine receiving power and must remain powered for as long as the vehicle's engine stays powered.

XRS stated that FMCSA needs to clarify the definition of power on the device within 15 seconds referencing Fig 1. XRS asked if this is for internal processing or is this for all input and outputs? There are portable devices commercially available that can take much longer than 15 seconds to be available; these are tablets, ruggedized handheld computers, and smart phones that can meet all other ELD recording requirements. Omnitracs raised the same issue. It stated that a better solution would be for the system to read and retain data from the ECM; a 180-second time frame would better accommodate existing hardware that could have slower cold boot capabilities. Omnitracs and inthinc noted that the rule does not indicate what ELD functionality is required.

2. FMCSA Response

As part of the ELD User Guide or a driver Standard Operating Procedure on proper use of the ELD, FMCSA will recommend that the driver turn on the engine and then power on and start up the ELD, before moving the vehicle. However, the requirement remains the same; the device must receive power within 15 seconds, and the driver should pre-boot the equipment prior to powering up the vehicle. Similarly, at power off and shutdown, FMCSA will recommend driver certifications of records, followed by ELD log off, followed by engine shutdown. By not following these recommendations, malfunction codes and annotations will be needed in order to explain unaccounted odometer changes and suspicious driving activity.

This 15 second start up time is not unreasonable, compared with other start up times for similar technology. However, in response to the concern from commenters, FMCSA extends the requirement to a period of 1 minute for full functionality in today's rule. Additionally, any reboots that take longer would already be logged as power diagnostic events.

Q. Time

1. Comments to the 2014 SNPRM

The SNPRM proposed that the ELD automatically record the time at changes of duty status and certain intervals (§ 395.26(b)(2)). As described in the proposed data elements dictionary (proposed section 7.1.39; section 7.40 in this rule), even though time must be captured in UTC, event records must use time converted to the time zone in effect at the driver's home terminal.

Proposed section 4.6.1.3, timing compliance monitoring, would have required an ELD to periodically cross-check the automatically acquired date and time with an accurate external UTC source.

Zonar asked FMCSA to clarify all sections that reference time format. Zonar commented that it can be very difficult to calculate a true 24 hours and accurately record time unless there is a one consistent format; multiple formats cause inconsistencies in data. If one event needs to be recorded as HH:MM:SS then all clocks within an ELD need to run on this format. If the HH:MM:SS clock needs to record an HH:MM for a different event, the commenter asked how the ELD should handle the seconds—does it round up or down. Zonar asked for specific examples within guidance to this question and suggested an HH:MM clock to eliminate the need to round the seconds.

Eclipse Software Systems stated that it had seen many projects in the past where storing time in the local format leads to problems, particularly when at or near daylight savings changeovers. While it is only 1 hour per year, when daylight savings occurs in the fall, there are two periods from 1am to 2am. All events during those 2 hours are ambiguous. It recommended that all times be stored and reported in UTC, which is what is reported by GPS systems by default.

Omnitracs stated a concern about recording a qualifying 34-hour restart. With respect to timing compliance monitoring, Eclipse stated that aside from GPS, it is difficult to obtain other reliable sources of the precise time. It has seen cell towers (which are not accessible from all proposed ELDs) have time stamps that are years off. The ELD could watch for backdating, if a time stamp from GPS is ever before another received timestamp from GPS, but other validation would be quite difficult.

2. FMCSA Response

In response to comments, FMCSA changes the time to be captured in today's rule to include seconds. Today's rule requires an ELD to convert and track date and time—captured in UTC standard—to the time standard in effect at driver's home terminal, taking the daylight savings time changes into account. An ELD must record the driver's RODS using the time standard

in effect at the driver's home terminal for a 24-hour period beginning with the time specified by the motor carrier for that driver's home terminal.

The data element ''Time Zone Offset from UTC'' must be included in the ''Driver's Certification of Own Records'' events as specified in section 4.5.1.4. Time must be stored in UTC, and reported in carrier's local time. If an ELD stored it in a different format that was translated to UTC, this would be acceptable.

In today's rule, FMCSA does not require the ELD to record State time. FMCSA does not believe that it is necessary for the ELD to record State time for HOS compliance. However, FMCSA does not prevent ELD providers from including State time as part of a compliant ELD.

In regard to the comment on timing compliance monitoring, this section of the rule has been clarified per the requester's suggestion and the rule no longer requires the ELD to cross check time if it uses GPS.

R. User List

1. Comments to the 2014 SNPRM

In section 4.8.2.1.2, the SNPRM proposed that the ELD should provide a ''user list.'' In chronological order, this user list shows all drivers and co-drivers with driving time records on the most recent CMV operated by the inspected driver or motor carrier's support personnel who requested edits within the time period for which this file is generated.

If ELDs are swapped on a CMV, Omnitracs believed that the new ELD should not be required to know the driver list for the CMV prior to the ELD being installed in the CMV. XRS stated that FMCSA needs to describe how this user list would be used at roadside and if there could be a validation process for its use. Depending on the time of day, there may be users who will not be in the CMV user list from the support system due to last time the CMV communicated with the host.

2. FMCSA Response

For a reset or replaced ELD, today's rule requires data or documents showing the driver's RODS history in the vehicle. This data would include the driver's past 7 days of RODS either loaded into the ''new'' ELD or in paper format to be provided at roadside. There is no requirement that the ELD have a wireless connection.

In the case of ELDs that include a wireless connection, a user list must be available up to the date from the last time the CMV or ELD communicated with the host or back office system.

S. ELD Vehicle Interfaces

1. Comments to the 2014 SNPRM

In the SNPRM, section 4.2 of the technical specifications proposed that an ELD must be integrally synchronized with the engine of the CMV. Engine synchronization means monitoring the vehicle's engine operation to automatically capture engine's power status, vehicle's motion status, miles driven value, and engine hours value. An ELD used while operating a 2000 or later model year CMV, as indicated by the tenth character in the VIN, that has an engine ECM, must establish a link to the engine ECM and receive this information automatically through the serial or Control Area Network communication protocols supported by the vehicle's engine ECM. The SNPRM proposed that if a CMV is older than model year 2000 and does not have an ECM, an ELD may use alternative sources to obtain or estimate these vehicle parameters with the listed accuracy requirements under section 4.3.1.

XRS asked FMCSA to clarify if a link to the ECM is the only method for the ELD to receive information or could information be received from specific ECUs in the vehicle; *e.g.,* can the ELD interface with other components on the bus including the instrument cluster and the vehicle management system. Because there is not Fstandardization on the OBD that is published with the Society for Automotive Engineers for odometer and other elements that could be captured, XRS asked what FMCSA would expect manufacturers to capture for light duty vehicles. The same commenter wrote that FMCSA needs to coordinate with National Highway Transportation Safety Administration concerning the requirements of the capturing of ECM data. For light duty vehicles that may be required to use an ELD, FMCSA should require providers of OBD–II to supply proprietary or public information to satisfy the regulation requirements for ECM data capture. XRS also believed that ECM data capture of specific OBD–II data requirements may increase the overall cost of ELD solutions.

2. FMCSA Response

FMCSA agrees that mandatory transfer through the OBD–II could require additional information transfer or equipment. In today's rule, FMCSA does not require drivers of CMVs manufactured before model year 2000 to use ELDs. However, if a driver of one of those vehicles voluntarily uses an ELD, they must do so in compliance with section 4.2 of the technical specifications in today's rule. As indicated in that section, if an ELD is being used voluntarily in a vehicle older than model year 2000, it may use alternative sources to obtain or estimate the required vehicle parameters with the listed accuracy requirements under section 4.3.1. However, any CMV manufactured beginning model year 2000 must use an ELD that connects to the ECM.

FMCSA believes that the ECM or ECM connectivity is the best and most cost-efficient source of data. However, FMCSA understands that drivers with non-ECM engines might see benefits from the use of an ELD. Today's rule requires a reasonable proxy for the data if the ECM or ECM connectivity is not providing it. So although a connection to the ECM or ECM connectivity is preferable, voluntary use of an ELD could be used with any CMV, provided the accuracy specifications are met.

T. Vehicle Miles

1. Comments to the 2014 SNPRM

Section 4.3.1.3 of the SNPRM proposed that an ELD must monitor vehicle miles as accumulated by a CMV over the course of an ignition power on cycle (accumulated vehicle miles) and over the course of CMV's operation (total vehicle miles). If the ELD is required to have a link to the vehicle's engine ECM (as specified in section 4.2), the ELD must monitor the ECM's odometer message broadcast and use it to log total vehicle miles information and determine accumulated vehicle miles since engine's last power on instance. Otherwise, the accumulated vehicle miles indication must be obtained or estimated from an accurate source (within ±10 percent of miles accumulated by the CMV over a 24-hour period, as indicated on the vehicle's odometer display).

XRS suggested that FMCSA define specifics of odometer use that are acceptable. XRS questioned if the odometer may be used from the instrument cluster. XRS believed that the proposed method is inconsistent.

Zonar stated that heavy-duty vehicles may have more than one controller on the data bus that provides odometer value in verifying levels of precision. Zonar suggested pulling the mileage from the dash as this is more accurate than the engine and is in-sync with what will be on the dash.

Eclipse Software Systems stated that it would avoid calculating and storing the mileages for each on/off pair. It is simpler to record the odometer at the required intervals (duty status changes and hourly). The elapsed miles can be

calculated (perhaps by eRODS) for each driving segment (and hour) using only that data.

2. FMCSA Response

By definition, an ELD means a device or technology that automatically records a driver's driving time and facilitates the accurate recording of the driver's HOS, and that meets the requirements of subpart B of this part. The data received from the ECM is more accurate than the data that is displayed on the dash. However, when there is no ECM or ECM connectivity in the CMV, and an ELD is being used voluntarily, vehicle miles can be derived from either engine or dash odometer, provided that method of transfer meets the accuracy specification in section 4 of the technical specifications. If the reading of the mileage meets the accuracy specification required in section 4 of the appendix, although it could be slightly different in the ECM than on the odometer, the reading ensures the vehicle mileage data is of value. In the case of large anomalies between the two readings, the authorized safety official will decide whether further investigation would be required.

U. Vehicle Motion Status

1. Comments to the 2014 SNPRM

In section 4.3.1.2, the SNPRM proposed that an ELD must automatically determine whether a CMV is in motion or stopped by comparing the vehicle speed information to a set speed threshold. If an ELD is linked to the ECM, vehicle speed information must be acquired from the engine ECM. Otherwise, accurate vehicle speed information must be acquired using an independent source—apart from the positioning services described under section 4.3.1.6.

Omnitracs recommended a second distance threshold as an additional means to automatically detect and transition into driving status. This commenter believed that simply using a speed threshold could potentially reduce accuracy in determining an actual driving event. Ongoing verification of this accuracy would require an alternate source of speed detection and is not feasible during normal operation. In addition, Omnitracs believed this level of accuracy (+/−3 miles per hour tolerance) should only be required at the bottom end of the speed values used for motion detection and not be required at higher speed readings (*e.g.* at 75 mph).

2. FMCSA Response

FMCSA continues to believe that a speed threshold is the best way to determine accurate motion. FMCSA declines to create an alternate threshold that relies upon distance; the data files and the actual location will show how far the CMV has moved. Any additional threshold that captures vehicle motion before the speed threshold required by the rule is met is acceptable. However, as soon as the required speed threshold is met, the ELD must record, even if the alternate threshold is not met.

In today's rule, once the vehicle speed exceeds the set speed threshold of no more than 5 miles per hour, it must be considered in motion until its speed falls to 0 miles per hour and stays at 0 miles per hour for 3 consecutive seconds, at which point it will be considered stopped. FMCSA has established this requirement to determine the initiation of vehicle motion, which is at a very low speed of no greater than 5 miles per hour. The accuracy does not apply to highway speed.

V. Wireless Electronic Transfer

1. Comments to the 2014 SNPRM

Proposed section 4.10.1 provided that ELDs must transmit records electronically in accordance with a specified file format and must be capable of a one-way transfer of these records to authorized safety officials upon request. Proposed section 4.10.1.1 described the standards for transferring ELD data to FMCSA via Web services.

BigRoad stated that section 4.10.1.1 describes how an ELD provider must obtain a public/private key pair compliant with NIST SP 800 32. Using a private key in this scenario is not ideal since it would have to be stored on every ELD that might create the email and is therefore exploitable via memory inspection or code disassembly.

2. FMCSA Response

All required security measures for data transfer with the Agency, public or private, will require strict adherence to NIST for all data in transit or 'handshakes' between Government and private systems. DOT guidelines follow NIST 820. The exact Public Key Infrastructure (PKI) for ELD data transfers will be distributed once ELD providers register and certify ELDs.

W. Pre-2000 Model Year CMVs

1. Comments to the 2014 SNPRM

FMCSA sought comments on issues related to installing and using an ELD on CMVs manufactured prior to model year 2000. The SNPRM required all drivers using RODS to use an ELD, regardless of the CMV the drivers operate.

The California Construction Trucking Association said that while it is possible to retrofit an older truck, its research indicates that it is costly, at about $1,000 per truck in California. In contrast, Continental stated that it would cost between $100 and $300 per vehicle.

For vehicles that do not have a diagnostics port, but have an electronic speedometer, Continental stated that the ELD can use the analog speed signal to calculate the odometer and engine hours. This functionality is already integrated in some existing AOBRDs at no additional cost. For vehicles that do not have a diagnostics port and that have a mechanical speedometer (mostly built before 1992), Continental wrote that a speed sensor must be added to convert the mechanical signal into an electronic pulse signal.

XRS stated that the GPS solutions and related costs for black boxes could have an incremental cost of $250 per vehicle.

PeopleNet stated that obtaining speed from a source other than the ECM or GPS will be very complex and cost-prohibitive. When a connection to the ECM is not available, it recommended that GPS be used to determine vehicle speed. The commenter wrote that non-GPS options to determine vehicle speed include ranging laser, accelerometer, revolution counter (tire); or camera. PeopleNet did not believe any of these options could ensure accuracy within (plus or minus) 3 miles per hour of the CMV's true ground speed.

Zonar supported using GPS-based ELDs for older CMVs. It stated that modern GPS fleet tracking devices can be wired into a vehicle, be programmed to identify individual vehicles, and provide very accurate mileage data and truck run-time data.

The Truck and Engine Manufacturers Association raised questions about whether FMCSA was referring to model years or calendar years. The commenter believed that the additional requirement that the engine actually have an ECM is crucial in the event that a mechanically controlled engine was installed in a vehicle with a model year 2000 or later.

One carrier stated that OBD–II ports data could not be shared if they are already dedicated for another purpose. Another problem is that there are five different protocols used in OBD–II and the software is proprietary to the vehicle manufacturer. This would require the vehicle manufacturer to release their software to use the OBD–II to capture the necessary data effectively.

2. FMCSA Response

When FMCSA developed the technical specifications, the Agency considered whether ELDs could be easily installed in the full range of CMVs operated by drivers subject to the HOS requirements. The Agency determined that the most practical and cost-effective means of achieving compliance is the use of the ECM or ECM connectivity or OBD–II ports. Generally, these options are available in all the vehicles manufactured beginning with model year 2000 and on many pre-2000 vehicles. After reviewing the comments in response to the SNPRM, the Agency believes that imposing a requirement for ELDs on pre-model year 2000 vehicles is not feasible in all cases and that trying to distinguish when it is a viable option is too difficult in this rulemaking and next to impossible at the roadside.

Some private-sector publications, such as the IHS Inc.'s March 2014 publication ''Quarterly Commercial Vehicle Report,'' suggest that the population of pre-2000 Class 3 through Class 8 CMVs (CMVs with a gross vehicle weight rating greater than 10,000 pounds) is approximately 35 percent of the registered CMVs in operation (4,178,000 pre-2000 versus 7,723,000 2000-current). These vehicles will have been in operation more than 17 years by the compliance date of this rule. Therefore, the percentage of these vehicles operated by drivers who are required to use ELDs is likely to be small.

The Agency decided not to use alternate technology for vehicles without ECMs, ECM connectivity or OBD–II ports. While FMCSA is aware that there are technologies that would make this possible, it does not mandate their use. In the RIA for today's rule, FMCSA estimates that there will be approximately 209,000 pre-2000 model year vehicles in 2017. FMCSA has decided to exempt this relatively small population of CMVs.

Concerning the comment from XRS, part 395 does not require black boxes nor is there anything in the SNPRM related to 'black box' modification. Each ELD provider supports proprietary communications via satellite, code division multiple access or CDMA, Bluetooth, etc. The market dictates these products and their communication needs.

X. Authenticated User and Account Management

1. Comments to the SNPRM

Section 395.22(b)(2)(i) of the SNPRM would have required that the motor carrier actively manage the ELD accounts. The motor carrier would have to include certain identification data elements in the ELD user account assigned to a driver (§ 395.22(c)). These data elements include the driver's license number and the name of the State that issued the license. Under the proposal, the motor carrier assigns the ELD username during the creation of a new ELD account (§ 395.22(b)(2)(ii)). As proposed, the ELD username is any alphanumeric combination, 4 to 60 characters long, but it cannot include either the driver's license number or social security number. The SNPRM also proposed adding unique authenticated-user profiles for all users of the ELD and its support system, to increase transparency and responsibility between a motor carrier and its drivers, as well as to prevent fraudulent activities.

Commenters expressed concern with the requirements for user names. FedEx stated that it is too restrictive. Because current usernames are sufficiently identifying drivers, FedEx suggested that FMCSA expand this requirement to allow ELD users to set the format of their own usernames. Concerns about the creation of multiple aliases for a single driver could be addressed via DOT compliance reviews.

FedEx stated that the requirement does not accommodate all motor carrier structures. FedEx suggested that the user rights management rule require that ELD accounts are managed appropriately and that the motor carrier is responsible for any failures. With the carrier ultimately responsible, the rule need not dictate who must manage the account.

ATA stated that FMCSA should consider alternatives that accomplish the same objectives and include the same protections against fraud. This alternative would prevent carriers and providers from having to implement new systems to assign identifiers based on CDL numbers.

Saucon Technologies stated that requiring drivers to enter their entire CDL number and State presents some technical challenges. Many existing ELD solutions do not provide the ability to enter alphabetical characters, only numeric characters. Requiring the name of the State and entire CDL number would necessitate new hardware and increase the time required for drivers to sign on. Schneider asked for clarification on what proper identification data are as they relate to logging into an ELD.

AGC stated that in its industry multiple drivers—including temporary employees—may use a vehicle. FMCSA should establish a more secure means to identify the driver operating the vehicle and tie the resulting ELD records to that driver.

Several commenters stated that the requirement that a person have a single role (driver or support person) fails to accommodate smaller carriers where there is no support staff and the driver/owner fills both roles.

BigRoad stated that proposed section 7.1.13 (7.13 in this rule) indicates that a person who is both the driver and the support person would need to maintain two separate accounts in the system, since each account can only be given a single role in the ELD account type field. That person would have to switch between accounts to perform different functions on the same system, creating an unnecessary administrative burden. XRS, Omnitracs, inthinc, and Zonar also raised this issue. XRS asked if account creation can be performed on the host and if the credentials can be stored on the host.

Zonar asked how a driver can certify his or her records at the end of a 24-hour period if the driver has gone off duty for multiple days. It suggested allowing the driver to confirm the records on the driver's return to duty.

Section 395.32(c) describes the carrier's responsibility to review unidentified driving records; however, it does not establish an expectation for when the motor carrier must complete the review. Schneider recommended that the rule specifically state the number of days a carrier is allowed to research and assign the unidentified driving segments or annotate the record explaining why the time is unassigned. Because the carrier has to make contact with the driver or research if the tractor was moved by maintenance, one commenter believed that 8 days is a reasonable time frame to allow for this research to be done.

2. FMCSA Response

FMCSA acknowledges commenters' concerns, but emphasizes that the rulemaking does not impose the types of restrictions on usernames and passwords that the commenters described. Section 4.1.2 of the appendix to part 395 covers account creation with the explanation that each driver account must require the entry of the driver's license number and the State of jurisdiction that issued the driver's license into the ELD during the account creation process. The driver's license information is only required to set up the user account and verify the identity of the driver; it is not used as part of the daily process for entering duty status information.

There may only be one user account per driver's license number and the carrier would be responsible for establishing requirements for unique user identifications and passwords. Therefore, the burden that commenters believed would be imposed by the rule was not intended and indeed is not a requirement in this rule.

This rule does not differentiate between temporary and permanent employees, nor does it affect how many drivers may use a CMV. Each motor carrier that assigns a driver to operate a CMV under its DOT number must establish and manage an ELD user account for that driver.

Each driver should have one account that allows him or her to login and perform driver-related functions specific to the driver. All other administrative functions should be based on the discretion of each company or its provider. This means a driver who is also the owner of the company would have a single account authorizing entries as a driver, and a separate account for administrative functions. Accounts can be created on the ELD or the ELD support system.

In response to Zonar's comments, FMCSA emphasizes that a driver only needs to certify his or her records for each 24 hour duty status period he or she is on duty. This is the case under the HOS rule and the ELD rulemaking does not alter the duty status requirements under the HOS rule. The ELD would allow the record to be confirmed as off-duty when the driver returns to duty. There is no prohibition on a driver certifying multiple days off on a single RODS. And, in the case where the driver has Web-based access to review the records and make certain edits or entries, the rule does not prohibit the driver from logging into the system to provide updates on the duty status when there are multiple days away from the CMV. This is also a means for drivers employed by more than one motor carrier to update records between carriers.

Regarding the issue of providing carriers enough time to audit electronic RODS and make corrections, FMCSA does not place limits on when an annotation or correction may be made. The motor carrier must maintain the original record so that authorized safety officials can compare the chronology with the annotations and corrections, and supporting documents.

Y. ODND Time

1. Comments to the 2014 SNPRM

The existing HOS rules require a driver to record in his or her RODS any ODND time, even if it is not in the truck (see § 395.2, On-duty time). The SNPRM did not propose any changes to this underlying HOS requirement.

Saucon Technologies, XRS, Zonar, and PeopleNet suggested that FMCSA clarify how ODND time is to be managed when the driver is not at the truck. PeopleNet stated that many customers use payroll integrations to put their drivers on duty (*i.e.,* when the driver swipes the time clock, it puts the driver on duty via the AOBRD). Payroll integrations also allow administrators to put a group of drivers on duty to account for time spent at a safety meeting.

2. FMCSA Response

FMCSA emphasizes that today's ELD rule does not change the underlying HOS requirements. The ELD automatically captures the date, time and location when the vehicle is turned on and turned off, when someone starts to drive the vehicle, and when the individual stops driving. The system also captures automatically the date, time and location when manual entries are made so that the driver's location and time are captured when manual entries (such as on-duty, not driving, or sleeper berth) are entered. An ELD system relies upon the driver to enter information about the duty status when the vehicle is stopped or parked. The ELD captures the same duty status options that are available to drivers currently relying upon paper RODS. The technical specifications do not prevent supervisors from having administrative rights to add ODND time onto drivers' ELD records.

With regard to time a driver may spend working for another employer, the time must be counted as on-duty time, either driving or not driving. This is required by the current HOS rules, and the ELD mandate does not change this fact. The ELD system mandated by this rule provides drivers with the ability to update their RODS to account for time the device is not capable of generating automatically.

Z. Data Transfer

1. Comments to the 2014 SNPRM

The SNPRM used a menu-style approach, and several of the compliant options would have required wireless connectivity. The SNPRM proposed that all ELDs would need to use one of seven combinations of USB 2.0, printouts of QR codes, TransferJet, wireless Web services, Web email, and Bluetooth for the electronic transfer of data to authorized safety officials. One alternative included a printout. The SNPRM also required an ELD to be able to present a graph grid of the driver's daily duty status changes either on a display unit or printout.

Omnitracs stated that the SNPRM's technical requirements for data transfer mechanisms, and the options provided, use technologies that are not easily adaptable or readily available for enforcement to deploy. The IME generally supported requirements to ensure that the ELD would be able to communicate with officials at roadside.

IFDA stated that the requirement that systems use a ''standardized single-step driver interface for compilation of driver's ELD records and initiation of the data transfer to authorized safety officials . . .'' is unnecessary and overly prescriptive. Many devices currently in use require the driver to perform more than a single step to display the information. These systems do not pose a significant burden for drivers or authorized safety officials and do not appear to compromise safety in any way. IFDA opposed the requirement for a graphic display or printout, and they felt that these unnecessary requirements would add additional costs without any commensurate safety value.

CVSA believed that the regulation should require a practical standard interface for manual roadside inspections: ''A requirement for a printout of the HOS graph grid showing the same information contained in the paper logs is a proven, reliable, and cost-effective technical solution that would significantly enhance the enforceability of the regulation.''

PeopleNet stated that providers should have to support only one primary and one secondary method.

Boyle Transportation recommended FMCSA require support systems for ELDs, use Web services exclusively, allow display mode for inspections, and limit electronic submissions.

A rural transit provider stated that connectivity is not available in many areas, so Internet and cellphone reception is not possible. ELDs that rely on such connectivity are not viable.

2. FMCSA Response

In consideration of the comments, FMCSA revised the data transfer options, by establishing two options for electronic data transfer (option one is a telematics-type ELD with a minimum capability of electronically transferring data via wireless Web service, and email; option two is a ''local connectivity'' type ELD with a minimum capability of electronically transferring data via USB 2.0 and Bluetooth). Additionally, both types of ELDs must be capable of displaying a

standardized ELD data set in the format specified in this rule via printout or display to an authorized safety official on demand. FMCSA's changes address comments and concerns about the types of data transfer, as well as provide flexibility for providers and motor carriers looking for ELDs to suit different business needs and costs. These changes are discussed in more detail in the next few sections.

Although areas within the United States where data connectivity is not available are shrinking, FMCSA understands that some areas of the country do not have such access. Today's rule allows for alternative methods of data transfer including Bluetooth and USB 2.0. Where data transfer is not practical, the driver can still show enforcement compliance via a printout or the ELD display. Due to potentially hazardous conditions (*i.e.,* weather, traffic, etc.) during roadside inspections, authorized safety officials may ask drivers to hand them their ELD outside of the CMV so that they may examine the ELD display of data at a safe distance outside of the CMV. Absent a printout, an ELD must be designed so that its display may be reasonably viewed by an authorized safety officer without entering the CMV.

AA. USB 2.0

1. Comments to the 2014 SNPRM

J.B. Hunt, Continental, and PeopleNet supported USB 2.0 as a method to electronically transfer data due to its low cost, and ease of deployment without complex IT infrastructure nor any monthly communication and service fees. With appropriate security software on the USB 2.0 device, J.B. Hunt wrote there could be safeguards to avoid transmission of malware. Eclipse Software Systems recommended requiring ''at least one'' USB 2.0 port on ELDs.

In contrast, the National School Transportation Association (NSTA), BigRoad, Omnitracs, inthinc, and Drivewyze Inc. (Drivewyze) did not fully support USB 2.0 as a required backup method for the electronic transfer of data due to future hardware design constraints, security/encryption concerns, lack of availability of connections on computers, and probable obsolescence. J.J. Keller and Associates, Inc. (J.J. Keller) noted that requiring a specific technology, such as USB 2.0, constrains the hardware design to meet the specifications. This will likely cause more frequent upgrades in hardware to adapt to more modern USB 2.0 flash devices, increasing cost to industry. Inthinc recommended that the rule state that USB transfer is specifically for a drive—not for just a cable—and that the USB 2.0 port on the ELD can be an accessory to the ELD.

2. FMCSA Response

FMCSA believes that USB 2.0 is a cost-effective, technically viable option for many authorized safety officials to obtain an electronic data file from an ELD. The Agency acknowledges that some States have IT security—related restrictions that would preclude their officers from relying on USB 2.0 drivers or USB 2.0 connections to the ELD as a means of retrieving the RODS information. This information was presented during the MCSAC's session concerning ELD technical specifications. The Agency continues to believe it should be included in the list of options for making data files available to roadside inspectors. It is not expected that this option would be used by every State, but retaining a range of capabilities required on the driver side, including USB 2.0 capability, will help to ensure flexibility for the enforcement community. In the SNPRM, the USB 2.0 as a part of almost every option for an ELD. In today's rule, the USB 2.0 is a requirement, along with Bluetooth under only the ''local data transfer '' option, meaning that it would be possible to have a compliant ELD that did not have USB 2.0 if the telematics-type ELD is selected for use.

In regard to USB standards becoming obsolete, that is the case with any technical standards irrespective of whether the standards are referenced in a rulemaking. The criticism of the USB 2.0 standard not being widely used by authorized safety officials is no longer relevant, given that authorized safety officials will have the option, under today's rule, to utilize Bluetooth instead of USB 2.0 for electronic data transfer.

BB. Wireless Data Transfer Through Web Services

1. Comments to the 2014 SNPRM

PeopleNet recommended using a Web Service as a primary electronic data transfer method, while Continental supported it as an option, but not a mandate.

BigRoad recommended eliminating wireless data transfer through Web Services to simplify inspection requirements. Omnitracs stated there is a need for clarification around the use of the public/private keys in this section, including security provisions and the process for refreshing the public/private keys as a part of security best practices.

Inthinc recommended Representational State Transfer (REST), noting that Simple Object Access Protocol (SOAP) is much more difficult and expensive to implement, and it is becoming archaic.

2. FMCSA Response

FMCSA believes that Web Services will be a viable data transfer option for telematic ELD providers. SOAP is a standards-based Web services access protocol utilized for telematics data transfers. Therefore, today's rule retains Web Services as a valid method of data transfer, one of the two methods described in section 4.9.1(b) to transfer data as part of the telematics option, along with wireless email.

FMCSA has clarified the public/private key in section 4.10.1.1. of the technical specifications of this rule.

CC. Wireless Services via E-Mail

1. Comments to the 2014 SNPRM

J.B. Hunt and inthinc supported email as a viable, low cost option for electronically transferring ELD data. Inthinc believes that ELDs could have all inspection station email addresses pre-programmed or ELDs could automatically send emails to these addresses upon entry to inspection stations. Continental supported it as an option, but not a mandate.

Drivewyze said that this option is redundant with Web services and could be cut. BigRoad recommended eliminating this option to simplify inspection requirements.

Omnitracs stated there is a need for clarification around the use of the public/private keys, including security provisions and the process for refreshing the public/private keys as a part of security best practices.

2. FMCSA Response

Today's rule allows the use of email as a part of the telematics ELD specifications in section 4.9.1(b) of the appendix to part 395, along with Web services. FMCSA does not believe it is redundant because it provides a way for enforcement to access the data without using FMCSA or other government systems. Authorized safety officials could use either Web services or wireless email to verify ELD data from an ELD with this telematics option.

FMCSA agrees that inspection stations and other enforcement Agencies could post or share a standardized email address but does not require this. FMCSA believes a benefit of transferring ELD data to authorized safety officials by email is a viable method to submit data to the officer if necessary.

FMCSA clarifies the public/private key requirements in 4.10.1.1(4)(b)(2) of the technical specifications.

DD. Bluetooth

1. Comments to the 2014 SNPRM

Drivewyze recommended Bluetooth as a viable data transfer option. Continental supported it as an option, but not a mandate.

J.B. Hunt noted that Bluetooth transmissions are short-range, which would limit the effectiveness of this technology. Eclipse was concerned about Bluetooth personal area network in the roadside environment, commenting that Bluetooth has a typical operating range of 30 feet. Many officers use laptops mounted in their patrol vehicles, which sit behind the truck and a 52-foot trailer, making reception from the patrol car cab unlikely.

Verigo and inthinc disagreed with including Bluetooth as a means of electronic data transfer. Garmin Ltd. (Garmin) believed the description of transferring ELD records using the Bluetooth transfer method in section 4.10.1.2 should be further clarified.

Once the connection is successfully established, this section indicates that the ELD must connect to the official's technology via wireless PAN and transmit the required data via Web Services as described in section 4.10.1.1. Garmin wanted FMCSA to consider the case where the official's device cannot connect to the internet. In this scenario, it will also be possible to transfer the ELD records directly to the official's device over Bluetooth.

2. FMCSA Response

FMCSA included Bluetooth as part of the local data transfer ELD option specifications in section 4.9.1(b), along with USB 2.0 connectivity. FMCSA acknowledges that Bluetooth has its limitations as all technologies do, but, it is a widely used, reliable, short range non-telematic data transfer method.

In today's rule, FMCSA changed the language in 4.10 to clarify the fact that the Bluetooth transfer does not occur via telematics, as was written in the SNPRM. If a driver is using a local data transfer method and the officer cannot accept the data for some reason, the officer has the ability to request the data in the form of a display on the ELD or a printout, depending on the type of ELD.

FMCSA does not agree with the commenter who stated that Bluetooth is not designed for this type of transfer; the mechanism for data transfer does not distinguish between the types of data being transferred.

EE. QR Codes and Transfer Jet

1. Comments to the 2014 SNPRM

Overall, none of the commenters supported QR codes or TransferJet as feasible solutions for electronically transferring ELD data for the purposes of roadside enforcement.

Omnitracs, PeopleNet, XRS, inthinc, and Drivewyze did not believe that QR Codes are a viable ELD data transfer option at roadside. Omnitracs wrote that typical drivers would need to present between 6 and well over 30 QR codes that must be scanned by an authorized safety official in the proper order, which does not seem to be realistic in the field. Issues with screen size, screen resolution, the type of scanner (camera versus laser), and the amount of data that needs to be transferred adversely impact the ability of an authorized safety official to successfully scan the QR codes. Drivewyze stated that on-screen QR codes cannot be scanned, and printed QR codes are redundant with printing grid graphs. As a result, QR codes were recommended to be removed as an option.

Drivewyz, BigRoad, PeopleNet, Continental, and J.B. Hunt questioned the feasibility of TransferJet as a viable method of electronically transferring ELD data to roadside officials. J.B. Hunt, XRS, and Drivewyze noted that TransferJet is not a mainstream technology. PeopleNet and XRS also stated that TransferJet is not widely used except in smartphones; and that there are limited suppliers of products to support current architectures. BigRoad noted TransferJet has no encryption mechanism built into the link layer; for security, the transmission should be encrypted. Continental pointed out that the TransferJet technology is not used today in either automotive or commercial vehicle applications and should be removed from the list of options.

PeopleNet stated that TransferJet requires the purchase of additional hardware, which FMCSA did not take into consideration in the cost analysis. In addition, commenters were concerned that many suppliers would need to make modifications at the operating system level to take advantage of the new hardware. Commenters contended this solution would be prone to failure due to discrete hardware components, and increase both carrier and supplier support costs due to this sole source solution.

2. FMCSA Response

FMCSA agrees with the commenters' technical and practical concerns about both QR codes and TransferJet technology as not being viable means of transferring electronic ELD data. Therefore, today's rule does not include QR codes nor TransferJet technology as options for electronically transferring ELD data to authorized safety officials.

FF. Other Communications and Technology Options

1. Comments to the 2014 SNPRM

Garmin, J.B. Hunt, and Eclipse recommended use of Wi-Fi as an additional primary transfer option. Similar to using Bluetooth, Garmin wrote that Wi-Fi would enable the ELD to connect to the authorized safety official's device via the local area network at the inspection site. Alternatively, the Wi-Fi connection at the inspection site could be used to transfer the ELD records via Web Services. Commenters pointed out that Wi-Fi range is larger than the very short range within which Bluetooth devices communicate, and it supports higher data transfer speeds. Wi-Fi technology has the means to support the setup of security-enabled networks where users can view available devices and request a connection, or may receive an invitation to connect to another device.

Garmin recommended that an additional alternative method to consider is the transfer of ELD records using a secure digital (SD) card, that is via a microSD card and optional microSD to SD memory card adaptor. The requirements for authenticating the driver, the ELD system, and the official's hardware when using the USB 2.0 method can continue to be realized and supported.

2. FMCSA Response

FMCSA does not prohibit the use of a Wi-Fi device for intermediary transfer, but the data transfer to an authorized safety official must occur in accordance with the technical specifications. Data transfer to an authorized safety official must occur through wireless email, wireless Web services, USB 2.0, or Bluetooth. This is because implementation of another option would necessitate hardware changes for ELDs and would also increase the risks of conflicts between the regulatory options and the IT security regulations policies that FMCSA and its State partners must follow.

GG. Data Reporting During Roadside Inspections

1. Comments to the 2014 SNPRM

CHP stated that a data exchange may present cross connectivity issues when using a portable computer for ELD dataset exchange because of the threat of

computer viruses and malware, issues associated with encryption software, regional connectivity issues, operating systems compatibility, and data transfer best practices. Therefore, enforcement will continue to consist of an official physically observing the data on a device's electronic display.

Omnitracs stated that Option 1 presented in Table 5 has no backup mechanism should the printer become disabled, and all other options require two separate backup mechanisms. Inthinc recommended that the regulation state that authorized safety officials are mandated to accept whichever of the seven methods of data transfer that the ELD provider has opted to support.

EROAD recommended that FMCSA consider implementing a simple generic report format as a transition to using eRODS software. FMCSA could require the ELD solutions to generate and send enforcement data not only in a raw data format, but also in a simple generic report format—an enforcement view of the ELD data/records. This could be a secure PDF file with a small number of relevant statistics. This option will be easily implemented in the interim while States adopt eRODS software, and such a report could be viewed on any device with ability to read PDFs. Because ELDs will have the capability to send raw data, the States will always be free to adopt eRODS software and develop or procure additional software to display the information in their own way.

BigRoad stated that the only requirement is that ''an authorized safety official will specify which transfer mechanism the official will use,'' meaning that they can select any of the backup methods without supporting the primary method themselves. In particular, this could mean that although a device supports a primary mechanism such as Bluetooth, the safety official might only ever choose the backup USB 2.0 mechanism. The SNPRM provides no guidance or requirements for data transfer support on the devices used by authorized safety officials. BigRoad also stated that inspections should require that the ELD information be shown on the display of the ELD. Verigo stated that the SNPRM provided too many options. The backup method of file transfer from the ELD in CSV format should be limited to USB 2.0, QRC, or NFC. Advocates cautioned against allowing the introduction of any unnecessary intermediaries in the process of maintaining and transferring HOS data. To prevent data corruption, the Agency must require that the most recent 24 hours as well as the previous 7 days of operation be stored in the ELD for immediate transfer to officers at the roadside. Advocates acknowledged the check value calculations, but did not believe that this limited security feature will thwart determined efforts to evade compliance. Advocates recommended that the Agency establish security features, which would be shared with certified manufacturers and shielded from those subject to the HOS requirements, namely drivers, carriers, and third parties servicing those groups.

2. FMCSA Response

FMCSA believes the SNPRM presented an appropriate number of options for making the HOS data available to authorized safety officials. While various commenters had substantive technical concerns about the options, the Agency continues to believe that—with the exception of TransferJet technology and QR codes—the proposed options remain viable and cost-effective. However, FMCSA does believe that limiting the combinations of data transfer types to two types, local and telematics, and combined with a backup option, will make the data transfer to authorized safety officials clearer. FMCSA believes that today's rule's data transfer mechanism options suit the needs of many business operations of motor carriers, the daily needs of drivers, and the needs of authorized safety officials as well. Additionally, all ELDs are required to have a backup method for the authorized safety official to verify HOS compliance. FMCSA also believes that by not prescribing one specific standard, cost is kept lower and providers can provide ELDs that are able to meet the requirements of this rulemaking, including the security standards.

The Agency considered IT security concerns and the potential need for additional hardware to implement the options. FMCSA does not believe that there are concerns about cross-connectivity and security concerns about portable devices. All ELDs will meet the same minimum standards; there is no reduction in security for portable devices.

HH. Data Transfer Compliance Monitoring

1. Comments to the 2014 SNPRM

Drivewyze requested clarification on the scope of a data transfer test given that this test may occur without the presence of a receiving roadside inspection system or that the receiving system may only support a limited number of transfer mechanisms. Without a full suite of connectivity tests that cover all transfer mechanisms, there can be no confirmation of compliance beyond a test that only monitors the ability to send data, not its successful receipt by third party systems.

BigRoad stated that data transfer mechanisms are only truly verifiable when there are two endpoints to transfer between. It is unclear how either the ELD or the driver could verify transfer mechanisms without extra hardware components to act as one of the endpoints in the pair. BigRoad commented that some clarification of the extent and character of verification is needed.

Omnitracs recommended removing the self-monitoring requirement on the primary data transfer mechanism. To fully verify primary data transfer mechanisms, the ELD would require (1) two Bluetooth radios to test, transmit, and receive (in the case of Bluetooth); and (2) two USB 2.0 connections and an interconnect cable to test, transmit, and receive over the USB 2.0 connections (in the case of USB 2.0). Since there are both primary and backup transfer mechanisms, this added hardware expense and complexity is not feasible.

2. FMCSA Response

FMCSA believes the data transfer options provide a practical way to provide RODS information to authorized safety officials. It is expected that the ELD providers will be testing data transfer options before certifying their devices with FMCSA. If the authorized safety official is unable to receive or open the electronic file, this would not, in and of itself suggest that the ELD system that transmitted the file was non-compliant. The driver would then need to present the RODS information to the authorized safety official at roadside, either on a display screen or a printout. FMCSA does not remove the requirement to self-monitor.

FMCSA will use its Web site to accommodate ELD testing in support of today's rule. This site will accommodate provider registration, allow approved ELD providers to register their device with the Agency and act as single source site for: ELD registration keys, authentication keys, authentication files, data formatting and configuration details and data testing (end to end) with approved third parties. This site will also include an ELD Interface Control Document, specifically written for ELD providers and service providers.

FMCSA is currently in the development stage of modifying this site in preparation for today's rule and plans to have a registration site available and operational for ELD providers by rule's effective date.

II. Printing

1. Comments to the 2014 SNPRM

In the SNPRM, FMCSA explored options that would require a printer during roadside inspections. FMCSA also proposed to require an ELD to be able to present a graph grid of a driver's daily duty status changes—either on a display unit or on a printout—for the current 24-hour period and the previous 7 days.

Proposed section 4.10.2.4, Printout, (section 4.8.13 in the today's rule) laid out the data elements that had to be included in the printed reports for the authorized safety official at roadside. It also specified that print paper must be at least 2 inches wide and 11 inches in height, or on a roll of paper that could be torn when each individual printout was complete.

CHP recommended that ELDs possess printer capabilities. Because of agencies' encryption software, signal transmission, signal coverage, and different operating systems, CHP stated that it may be problematic to use software for ELD dataset exchange. CHP anticipated that enforcement would continue as usual, *i.e.,* an official physically observing the data on a device's electronic display or the data being faxed to an inspection facility. This limitation creates an enforcement situation that requires the official to conduct an enforcement action at a later time, once the faxes are received, or execute an enforcement action without a printout.

BigRoad stated that portable printing devices such as photo printers might use non-standard paper sizes such 4″ x 6″ or 5″ x 7″. Such printed documents would easily be as legible as the allowed 2-inch roll, but would not be at least 11 inches in height or on a roll. BigRoad believed that FMCSA should modify this requirement so that drivers are able to choose the smallest printer that is suitable for printing legible ELD records with a minimum paper width of 2 inches.

Continental stated that a 2010 survey indicated that over 50 percent of CVSA-certified inspectors did not have the equipment to receive and manage electronic files at roadside. A requirement for a printout of the HOS graph grid showing the same information contained in the paper logs is a proven, reliable, and cost-effective technical solution. Inthinc, OTA, and PeopleNet recommended that printing not be an option. PeopleNet stated that the majority of current AOBRD suppliers agree that the print option would be a significant cost to the industry and difficult to implement in a successful way, due to the environment of the vehicle.

2. FMCSA Response

Today's rule requires the ELD to be able to provide certain data elements to an authorized safety official at roadside using either a display or a printout as backup methods to the electronic transfer of data. If drivers or motor carriers want to avoid printers, they have the option to present a display that includes the data elements required by the regulation.

The specifications of paper size in the SNPRM were based upon the presence of a QR Code on the printout. Because QR codes are not an acceptable form of data transfer, FMCSA has removed the specification for minimum paper size and specified a minimum size of 6 inches by 1.5 inches for the size of the graph grid on the printout, in today's rule. For the display, FMCSA has not made specifications on font or size requirements. Today's rule requires a performance standard specifying that the display must be reasonably viewed by an authorized safety official without entering the commercial motor vehicle.

JJ. Portable ELDs

1. Comments to the 2014 SNPRM

The SNPRM did not address portability of ELDs. Many commenters addressed the possibility of allowing portable devices to serve as ELDs. Except for the safety advocacy groups, the commenters generally supported allowing the use of smartphones, tablets, or computers as ELDs.

The Limousine Association and J.J. Keller noted the prevalence of smart devices and the cost-savings involved in using them as ELDs. J.J. Keller supported the rule language as currently proposed, which allows multi-purpose devices to be mounted, with a secure e-logging application that cannot be used while the vehicle is in motion. J.J. Keller wrote that a requirement to lock the device in its entirety, however, would discourage the use of multi-purpose device technology for e-logging.

YRC stated that FMCSA should allow flexibility in the type of device used for compliance—including allowing the use of a Bluetooth device that would avoid monthly cellular charges and would use Wi-Fi networks. YRC wrote that some companies have invested heavily in a handheld device that, while not tethered to the engine, could be used to track city pickup and delivery drivers' duty status and location. Commenter stated that leveraging an existing device offers companies the opportunity to build on that investment and would limit developing entirely new back office technology, significantly drop training times, and not take trucks out of service.

The MPAA stated that the most effective solutions to enable meaningful, all-electronic RODS for production drivers, and others similarly situated, may be either: (a) A greater emphasis on truly portable ELDs that accompany drivers between vehicles and motor carriers; or (b) a more prescriptive rule that standardizes ELD inputs and outputs and methods of data transfer.

The American Pyrotechnics Association stated that, absent readily available ''plug and play'' devices that can be rented on a short-term basis, it would be extremely difficult for its members who use rentals for a very limited time each year for commercial purposes, to comply with the mandatory ELD requirements. BigRoad generally supported allowing portable devices. Verigo asked if the rule language covered netbooks and laptops. Omnitracs noted that the rule would require data that are not available unless the driver is logged onto a specific CMV. Inthinc recommended that an ELD used for oilfield equipment be ruggedized, and not just an ordinary tablet. Zonar asked how a portable device could work if it was removed from the vehicle before it was started. The Truck Renting and Leasing Association (TRALA) similarly stated that there are provisions in the rule that contradict the assertion that the devices will be truly portable. For example, proposed 49 CFR 395.26(h) would require that, when the vehicle's engine is powered up or powered down, the ELD would automatically record the data elements set out in § 395.26(b)(1) through (8). But if a device is actually portable, there is a possibility that it would not be in the vehicle, or not attached to the vehicle engine, when the vehicle was powered up. TRALA stated that the Agency should ensure that the requirement that the ELD be ''integrally connected'' to the CMV's engine does not jeopardize the portability or transferability of ELDs among vehicles and/or customers.

Generally, safety advocacy groups opposed allowing ELDs that are not wired to the engine. Commenters believed the use of portable ELDs that are not directly synchronized or connected to the vehicle engine reduces the effectiveness of the rule and the security of the system.

2. FMCSA Response

FMCSA acknowledges the safety advocates' concerns about the use of portable devices. However, the Agency has concluded that it would be

inappropriate to prohibit the use of such technology in today's rule because all ELDs will be subject to the same technical specifications in the appendix of this rule.

FMCSA relies upon a performance-based standard that allows flexibility in the market place, including the use of certain smart phones and tablets, provided they have a means of achieving integral synchronization.

In its effort to create a minimum standard that is not too expensive or complex, FMCSA has not required ELDs to be ruggedized. However, the Agency does not prohibit more durable devices for industries that may require them.

XI. Discussion Of Comments Related to Costs and Benefits

A. Cost and Analysis—General

1. Comments to the 2011 NPRM

The 2011 NPRM proposed a mandate for the use of an ''EOBR'' that met the technical specification in the 2010 EOBR rule. Under this proposal, FMCSA's recommended option would have required all motor carriers whose drivers were required to keep RODS to use EOBRs, subject to a limited exception for drivers requiring RODS no more than 2 days in any 7-day period. The NPRM, however, analyzed several options comparing them to the current HOS regulations as well as the then proposed HOS rule. The net benefits ranged from $418 million to $891 million.

Many commenters stated that the industry has had many financial challenges recently, and could not handle an added expense. Commenters also stated that the CMV industry has seen dramatic increases in safety and therefore did not need the stress of what they perceived as a costly rule. Referring to the new costs on the industry, OOIDA called the proposal the ''proverbial straw that breaks the camel's back.''

Several commenters to Regulation Room had concerns about the cost to upgrade their equipment. Commenters predicted costs being passed on to consumers, drivers losing income and work, and the costs for goods being driven up, ultimately hurting the economy. Other commenters raised concerns about financial inequality and said that the proposal was lacking because it relied on a ''one-size fits all'' model. An OOIDA member said that there would be a decrease in service quality. A commenter stated that the Cost Benefit Analysis should be re-calculated on a true EOBR, not a technology that incorporates functions of an FMS.

Some commenters had questions about who would pay for the EOBR if the driver were an owner-operator, or owned the CMV and worked for a motor carrier. OOIDA stated that some motor carriers require the use of their systems and take payment for this use from the owner-operators' paychecks; OOIDA believed the drivers are being over-charged for the use. OOIDA believed this made owner-operators function more like employees of a motor carrier as they would be connected to a specific system.

2. Comments to the SNPRM

The 2014 SNPRM proposed a new technical standard for ELDs. It addressed concerns of harassment through both technical specifications and procedural requirements and prohibited a motor carrier from engaging in harassment as defined in the proposed rule. It kept the same population of RODS users that would need to transition to ELD use as was included in the NPRM, subject to a limited exception for drivers requiring RODS no more than 8 days in any 30-day period. This SNPRM analyzed several options within the proposal, resulting in annualized net benefits from negative $355.5 million to positive $493.9 million.

Most of the commenters on this issue disputed some aspect of the analysis and its assumptions. OOIDA noted that the statute is silent regarding who will bear the burden of paying for mandatory ELD use—the driver or the motor carrier. If the burden is placed on owner-operator drivers or small fleet owners, OOIDA believed that the cost poses a very heavy burden. For owner-operators, any additional financial burden may make their continuation in the trucking business impossible. OOIDA stated that a cost-benefit analysis that does not address the crucial question of what type of organization will shoulder the burden of these costs cannot support a reasoned regulatory judgment. OOIDA also commented that FMCSA states, without support and unrealistically, that financing for the equipment costs will be available in the market. However, this is conditioned on ''if the carrier has good credit.''

The AGC stated that, while FMCSA regulations apply only to interstate operations, most States will follow suit and adopt the rules for intrastate operations. If States adopt this rule, ELDs will be required in almost all vehicles with a rating of 10,001 pounds or more, which includes 1-ton pickups and 1-ton and up work trucks. Requiring the drivers of these vehicles to use an ELD creates an undue financial burden on the motor carrier. Commenter believed the cost of purchasing the devices, installation, monthly service fees, and driver training would be excessive. These costs would be incurred for all vehicles even though logging would only be required in limited circumstances.

The California Construction Trucking Association questioned FMCSA's cost-benefit analysis as well as the estimates of CMVs and drivers that will ultimately be covered by this rule. Commenter wrote that FMCSA has calculated tens of millions of hours in savings attributable to drivers no longer needing to complete paper RODS, despite FMCSA being aware that the majority of drivers are not compensated for ODND time. The commenter believed that while some calculated time savings may be present—especially on the fleet management side of the equation—assigning a dollar value to the time drivers spend completing paperwork is an example of government manipulating data to justify a regulation.

NPGA stated that the cost impact from an ELD mandate, particularly for those who have demonstrated an excellent safety record, does not justify the benefits. Moreover, the commenter stated that it is not clear there is any correlation between the use of ELDs and a decrease in CMV crashes. It cited the decline in crashes between 2004 and 2008 as an indication that trucking was becoming safer absent ELDs, as well as the safety record under waivers during the winter of 2013–14.

For small business less-than-truckload (LTL) carriers, the NMFTA stated that the proposed ELD rule will require the additional cost of hiring more personnel to manage and maintain new information systems equipment and software. LTL small businesses are concerned that they do not have the financial wherewithal to comply with such obligations. The association stated that the cost/benefit assessment weighs against the application of the rule over a much broader segment of short-haul operations than acknowledged by FMCSA in the proposed rule.

3. FMCSA Response

FMCSA emphasizes that this rulemaking does not differ from other rulemakings the Agency has undertaken with regard to industry compliance costs and how costs are accounted for in business relationships between motor carriers and any independent drivers working for them under a contract. The task before the Agency is to move forward with a safety regulation requiring the use of ELDs while leaving

to the private sector the contractual arrangements necessary to address the costs for purchasing, installing and maintaining the ELDs. The calculation of the cost benefit analysis does not take into account who bears the cost of ELD purchase and installation. In the case of carriers that require that their subcontractors use a particular ELD system, FMCSA also leaves it to the market to determine how these costs are shared between companies and drivers through their contractual agreements.

We note, however, that to the extent carriers that purchase ELDs in large numbers receive volume-related discounts from the provider, those savings might be passed along to independent drivers who may assume some or all of the purchase cost.

In today's rule, FMCSA requires a device that needs to perform only minimal HOS recording functions. There are several technical requirements focusing on the concern of driver harassment by motor carriers. While the standards allow manufacturers to develop and motor carriers to use an FMS with additional features and functions, the technical specifications included in today's rule allow the market to develop a compliant device at a low cost. FMCSA used currently available devices, whose functions are similar to the minimal requirements in the rule, to determine costs and benefits. There is no support for the rulemaking's more expansive impact on the industry, on the economy, or on service that some commenters suggested.

Interstate CMV drivers and a subset of intrastate CMV drivers are subject to FMCSA HOS regulations in 49 CFR part 395. Although FMCSA only has the statutory authority to directly regulate interstate CMVs, States must adopt compatible regulations as a condition of Federal MCSAP funding. This rule will only impose the ELD requirement on interstate CMV drivers currently required to keep RODS; however, intrastate drivers indirectly affected were included in the final rule analysis of cost and benefits because they will be required to comply with compatible State rules. There is nothing in this ELD rule that requires States to extend the ELD requirement beyond motor carriers already required to retain RODS.

For purposes of assessing the value of the driver's time savings as a result of this rule, FMCSA assumes that a driver's time is valuable whether or not that driver receives an hourly wage for their time. In the rule, we value the time when the driver should be on duty at an hourly wage rate for his or her time, excluding benefits. This is common practice in Federal cost benefit analyses.

FMCSA does not believe that small businesses will have to add personnel to manage their ELDs, and the requirements for motor carriers to manage their drivers' time have not changed with this rulemaking. The basic ELD performs minimal HOS recording functions. Adoption of this automated process will result in simplified HOS compliance management.

B. Costs Associated With ELDs

1. Comments to the 2011 NPRM

Based on extensive research and modeling, the NPRM assumed that ''[t]he annualized cost for a motor carrier that does not currently use an FMS or other 'EOBR-read' system ranges from $525 to $785 per power unit (PU).''

A number of commenters, including OOIDA, maintained that EOBRs are costly, do not benefit the trucking community, and have no practical or safety application. Other commenters questioned if the cost is commensurate with the benefits from the use of the EOBR by carriers with a strong safety record. One commenter said that the use of the EOBR provides FMCSA with data, but provides minimal benefit to the carrier. Another commenter said that any data collection by EOBRs, other than what is strictly required by HOS compliance, is an unnecessary expense and a burden on small business owners. This commenter also said that any savings to truckers from collecting other information should not be included in DOT's cost-benefit estimates. Commenters believed that EOBRs might provide large motor carriers a financial advantage over small carriers and owner-operators.

A number of commenters, including trade associations and carriers, provided specific information on the costs of an EOBR or implementing an EOBR mandate for their company or industry. J.B. Hunt stated that it thought there was opportunity for the devices to become increasingly affordable, while staying in compliance with the requirements of the 2011 NPRM. Another commenter stated that EOBRs are not financially burdensome, and models exist that do not have real-time components. The National Association of Chemical Distributors, however, was concerned that there would not be sufficient EOBRs available, which would drive the cost up. Some commenters provided reasons for using an EOBR, including improvements in HOS compliance. Knight said, ''if you are a fleet or an operator who does not comply with the HOS rules, it is true that investing in a system to electronically monitor logs will cost you greater than to not comply using paper RODS.''

Multiple commenters stated that the cost of the EOBR used in the cost benefit analysis was overestimated, as the market for EOBRs is broader than FMCSA considered in the NPRM. They maintained that the market will expand once there is a mandate, further driving down costs. One said that ''it is probable that FMS vendors will offer a logs-only solution,'' thus reducing the cost dramatically. ATA believed that the proposed rule did not require an investment beyond a basic system.

A commenter criticized the cost estimates used, saying that they were too generalized, and did not account for the budget or size of the motor carrier. A number of commenters stated that the hourly rates used were too high. Another commenter stated that the useful life of an EOBR should be about 3 years. Many commenters compared the cost of purchasing an EOBR to the cost of a paper log book, which they estimated to be less than $10 per month. Other commenters stated that the cost of an EOBR would be less than the cost of other common equipment on CMVs, like stereos or citizen's band radios.

OOIDA thought that including fleet management systems with EOBR functions in the analysis was ''simply incorrect'' as the fleet management systems do not necessarily incorporate the EOBR function. OOIDA also thought FMCSA's estimates of repair costs were too low.

2. Comments to the SNPRM

In the SNPRM, FMCSA took a very conservative approach to the cost of an ELD. It analyzed the Mobile Computing Platform 50, a higher-end FMS, and included installation, hardware costs, and monthly fees. However, by relying on performance standards and prescribing minimal requirements, FMCSA allowed for use of a basic ELD that would satisfy the rule. The SNPRM estimated an average cost of $495 per CMV on an annualized basis where the range is from $165 to $832 per CMV on an annualized basis. In the SNPRM, FMCSA analyzed a range of devices, the most expensive one being $1,675 and the least expensive provided for free as part of a monthly service agreement.

FMCSA found that time savings to drivers and carriers from filling out, submitting, and handling paper can exceed these annualized costs. FMCSA estimated that 4.6 million inter- and intra-state drivers were subject to HOS and 3.1 million were required to keep RODs.

A carrier estimated the cost to install, maintain, monitor, and replace ELDs at

over $100,000 per year for its 200 trucks. This did not include the cost of employee's downtime when the ELD is not working, the penalties, and inactivity at the job site because the load does not make it. The Association of Independent Property Brokers and Agents stated that its research indicates that there are options available that range from a reasonable, one-time fee of a few hundred dollars to an even smaller set up fee with a reasonable monthly fee equal to a basic cellular phone service bill. It doubted that a few hundred dollars increase in truckers' costs would have a significant impact.

The ABA stated that the SNPRM does not account for all of the costs that bus operators will bear with the implementation of the ELD rule. The commenter wrote that bus operators are required to pay separate charges for monitoring the ELD system and a per-driver fee for the system. Even small operators are obligated to pay a $25 monthly service charge and a $25 per-driver fee. The ABA commented that all bus operators will have to add staff to ensure that the operator is in compliance with the rule. The ABA predicted that costs will mount each year.

AGC stated that purchase and installation of ELDs will be far more expensive than retaining paper RODs; anecdotal accounts from a sampling of members who have researched the costs suggested that FMCSA estimates fall short of the actual costs. While the costs of the devices themselves would be significant, the commenter believed that additional overhead would increase costs significantly. AGC wrote that FMCSA's estimates do not appear to include the additional costs for data plans, training, programming, and support. Because there tends to be substantial turnover of drivers in the construction industry, AGC held that the training costs alone will be significant.

The NPGA estimated, based on FMCSA's figures, that the startup costs of purchase and installation alone would approach $8 million for the 9,000 trucks in their industry. For the propane industry, regular monitoring would add another $180,000 annually; even if three-fourths of the drivers of the 9,000 transport trucks needed training, it would cost the industry nearly $122,000. The commenter wrote that not all motor carriers, particularly those considered small businesses, possess the type of technology needed to comply with the ELD mandate. Those who do not would also incur significant startup costs for purchasing new computers, file servers, etc. Continental believed that the ELD mandate will increase the market from 50,000 units per year to around 3 million units in the mandate year and will attract additional suppliers and competition. This will bring costs down. In addition, Continental commented that the truck and bus manufacturers will offer ELDs as a standard product, further lowering the costs of acquisition and installation of the systems. Based on its experience in other countries, Continental wrote that highly tamper resistant ELDs can be made available to motor carriers for less than $500 per unit, while ELDs with an integrated thermal printer are already available for purchase in the United States for $500. It criticized FMCSA for including in its estimated operating costs of $25 in monthly fees per ELD (for wireless data extraction) since FMCSA does not require that ELDs include wireless communication technology. Continental wrote it is inappropriate to factor in costs related to features that are not required by the rule, thus, monthly fees should be excluded from the cost calculation. Similarly, a safety group noted that over 90 percent of carriers operate with six or fewer power units, yet FMCSA included the yearly cost for adding electronic HOS monitoring to an FMS. Only the larger carriers will use an FMS and most of them already pay for HOS electronic monitoring. Since this cost will only be assumed by a very small percentage of carriers, the commenter wrote it should not be added as a general cost of ELD yearly use.

Verigo stated that the annual record keeping costs for motor carrier clerical staff of $120 per driver to handle and file RODS does not appear to include any allowance for the appropriate validation, measurement, and management practices to determine ongoing compliance of drivers. Verigo commented that examples for proper HOS compliance management taken from industry best practices and carrier excellence programs indicate a higher cost than reported in the proposal. Conversely, business case studies following the implementation of electronic log management systems have consistently revealed the cost of compliance management, including truck mounted data terminal hardware, to be 30 percent lower than manual compliance management procedures used for paper logs.

A number of commenters compared the very low cost of purchasing paper logbooks to the cost of ELDs. They provided a wide range of estimates for ELD implementation, from about $800 to $6,000 per truck. A commenter believed that FMCSA's estimate does not account for the initial cost of set-up, including iPhones/tablets and activation fees. A driver believed that the economic factor will drive a large percentage of owner/operators out of business or they will sacrifice maintenance to meet these regulation costs. The driver wrote that the cost of ELD repairs included in the costs, and the economic impact of necessary equipment for enforcement personnel has only been ''loosely'' estimated.

Knight stated that opponents' argument that the cost of using an ELD is higher than using a paper log is not the proper way to frame the issue and is intentionally misleading. The question must not be purely about the cost to complete a log; it must be about the cost to comply with the rules. For a fleet to assure a level of compliance using paper logs commensurate with the level of compliance assured by use of an ELD, Knight commented, ''it does and would cost much more to use a paper log.'' To assure compliance, the commenter wrote that a carrier must invest considerable resources to collect the logs, the supporting documents, and then to audit them against each other. The ELD automates the collection of logs and the auditing of driving activity. It is that automation that makes the ELD more cost effective to fleets. Knight wrote that a paper log is less costly than an ELD only when you do not invest the necessary resources to audit those paper logs, especially against reliable vehicle position history, which is only possible with some form of telematics/GPS technology on the truck. It noted that, even for the owner-operator, there is a cost benefit associated with the ELD.

Advocates questioned whether the cost to the industry represented by coming into compliance with the law should be included in these calculations. It stated that the industry is already required to comply with HOS requirements and has been for many years. The costs associated with HOS compliance are costs that should have been borne by the industry regardless of the ELD requirement. Advocates held that the cost side of the cost-benefit analysis for this rule should not be encumbered simply because some in the industry have, for decades, violated the HOS rules, and will now be forced to act responsibly and in compliance with long established rules of conduct.

Advocates also stated that FMCSA must reconsider the justification for including in the cost estimates for the ELD both the unquantified costs to a limited number of motor carriers that have FMS with no electronic HOS monitoring, as well as the highly overstated printer cost. Advocates

believed that those cost figures must be substantially reduced in accordance with the realistic use by multi-vehicle fleets and current pricing for inexpensive printer equipment. The failure to reflect more realistic cost estimates has led the Agency to conclude that certain options are not cost beneficial and therefore underestimate the net benefits of all the options presented in the SNPRM.

The UMA stated that FMCSA should include in the cost analysis the adverse effects this rulemaking has on new equipment acquisition and fleet modernization. It commented that keeping passengers in older motorcoaches and compelling groups to use alternative vehicles, such as private passenger automobiles and vans, could delay the desired results and potentially increase fatalities. The George Washington University Regulatory Study Center wrote that FMCSA should consider the effect of the SNPRM on driver compensation and small carriers.

OOIDA stated that FMCSA greatly underestimates the cost of the regulations, taking into account driver and equipment turnover. If a driver buys a new truck, OOIDA wrote, he or she will have to buy a new ELD or pay to transfer his existing unit. If a driver moves to another carrier, the driver will have to modify equipment to meet the requirements of a new carrier.

OOIDA questioned FMCSA assumptions on cost savings. It stated that logs will still need to be checked and stored. More personnel may have to be added to interpret new information from the ECM and GPS synchronization, to maintain the equipment and software, and perform repairs and software updates.

OOIDA stated that, according to FMCSA statistics, driving past the 11th hour accounted for only 0.9 percent of HOS violations in 2009. If the automatic detection of the 11-hour violation is an ELD's only compliance and enforcement advantage over paper logbooks, this should be the starting point for any benefit calculation of ELDs. OOIDA commented, however, that FMCSA assumes, without explanation or support, a far greater level of benefits for HOS compliance through ELDs. OOIDA believed that FMCSA should acknowledge the limited capability of ELDs and measure the safety benefits to be derived from that limited capacity. If the Agency performed such an analysis, it would be clear that the costs of ELDs in economic, privacy, and safety terms far outweigh whatever marginal benefits are identified.

Both OOIDA and the California Construction Trucking Association criticized the Agency's estimate of the total number of CMV operators who would be affected by the rule, noting that FMCSA had reduced its estimates of affected drivers. The California Trucking Association believed that FMCSA's analysis had given ''little thought to the totality of CMVs operated beyond freight hauling operations.''

OOIDA claimed that FMCSA based its cost benefit analysis on an estimate of 4.3 million drivers in FMCSA-regulated operations. However, OOIDA wrote that, in the ICR for the HOS rule (79 FR 35843–44 (June 24, 2014)), the Agency lowered the number of drivers covered under the HOS rules from 4.6 million to 2.84 million—a reduction of 38 percent—and estimated that 10 percent of those drivers currently use electronic HOS technology.

3. FMCSA Response

In today's rule FMCSA estimates the annualized cost for an ELD that must support one of two options for electronic transfer. The first option is a telematics type ELD. We estimate a total annualized cost of $419 for an ELD with telematics. The RIA prepared for the SNPRM assumed an annualized device cost of $495, which FMCSA acknowledged was on the high end of the range of costs of existing units. The $495 figure cited by OOIDA is therefore no longer relied upon by the Agency. The reduction in the estimated annualized cost for an ELD with telematics, from $495 to $419, is largely attributable to the reduction in purchase price of the device from $799 to $500. The second option is a local transfer method type ELD (ELD with USB 2.0 and Bluetooth). The estimated annualized cost of an ELD with USB 2.0 and Bluetooth is $166. The lower price of these units is a reflection of their limited FMS functionality rather than a decline in either the manufacturing or component costs. For estimating the cost of the final rule, the Agency conservatively assumed that drivers would purchase an ELD with telematics, however the Agency did reduce the baseline price estimate of these units to reflect the market trend towards more basic FMS designed primarily for ELD functionality.

Although we do not specifically account for the cost of ''driver turnover'' as described by OOIDA, the RIA for the final rule does factor in the cost of installing, removing, and repairing ELDs. The Agency notes that some independent drivers will have the option to purchase a portable ELD, which fall at the lower end of the price range and which typically can be removed and reinstalled in less than 30 minutes. In addition, to the extent that OOIDA's comments concerning driver turnover costs are based on the premise that drivers will always be financially responsible for the purchase and installation of ELDs, we note that OOIDA did not identify the source of its information underlying this assumption, nor is the Agency aware of any data that could be reviewed independently to validate the claims.

FMCSA made an effort to consider, and reduce, the costs of overhead. Because the technical requirements of this final rule have been changed, there is no longer a requirement to use any wireless communication capabilities (*e.g.,* telematics or email), eliminating this monthly cost. These basic ELDs do not require monitoring, data plans, or programming support; FMCSA has reduced the cost of ELDs to reflect that. FMCSA has considered the cost of repair, fleet modernization, and useful life in its cost analysis.

As explained in the RIA, the use of ELDs will significantly reduce the paperwork and recordkeeping burden associated with the HOS regulations. Drivers' time spent completing RODS and forwarding RODS to their employers while away from the motor carriers' terminals will be reduced by $558 and $65, respectively. Further, the RIA estimates that the savings in clerical time spent retaining paper RODS and eliminating the need to purchase paper log books is $144 and $42, respectively. This amounts to a total annual paperwork savings of $809 per driver.

The rule does not mandate specific training requirements for drivers in connection with ELDs. While the RIA includes training costs for drivers, these are not anticipated to be different from existing training related to paper RODS. New drivers currently need to be trained on paper RODS instead of ELDs. FMCSA expects that motor carriers will continue to monitor their drivers' records for compliance with HOS. Additionally, there is no real-time requirement, and much of this could be done electronically. Further, electronic records are less expensive, and take less time to manage, compared to paper RODS.

Some ELDs are portable and can be transferred between vehicles. For example, one of the least expensive devices on the market, Continental's VDO Roadlog which costs $500 and does not require monthly fees, can be simply unplugged from the ECM from one CMV and plugged into the ECM of another CMV. A permanently installed ELD can be sold or purchased with the CMV it is installed in and reflected in the sale price for the vehicle.

Additionally, as Continental pointed out in a comment, some manufacturers might start offering ELDs as a standard feature.

The assertion of some commenters that the Agency reduced the number of CMV drivers affected by the rule is incorrect. In fact, the number of CMV drivers subject to the rule increased from 2.8 million, the number cited in the SNPRM, to 3.4 million in today's rule. The increase is primarily due to the inclusion of intrastate long-haul drivers subject to RODS, which we added due to the likelihood of state-level adoption of similar requirements in order to obtain MCSAP funding. The basis for determining the number of CMV drivers impacted by the rule is further explained in the Agency's discussion of the Paperwork Reduction Act in Section XIV, J, of today's rule.

The Agency rejects OOIDA's premise that the automatic detection of the 11 hour violation is the ELD's only enforcement and compliance advantage over paper log books.[26] FMCSA's Roadside Intervention Model, described in Appendix E of the RIA to this rule, directly measures the relationship between crashes and violations using roadside inspection, traffic enforcement, and safety data. This model represents a major improvement in the Agency's estimates of the safety benefits of ELD use.

C. Cost and Analysis—Updating Existing Systems

1. Comments on the 2011 NPRM

The NPRM proposed a 3-year compliance date and a 3-year grandfathering period for devices meeting the standards of 49 CFR 395.15 that could not be updated to meet the new (now vacated) standard in § 395.16. The NPRM assumed a cost of $92 to update an existing device to be compliant with those specifications.

Though UPS voiced support for the EOBR mandate, it also ''estimates that the total cost of bringing . . . [its] fleets into compliance with the proposed rule would be approximately $25,520,000. In addition, UPS would need to incur the costs to install ELDs in new units it purchases that are manufactured after June 1, 2012.'' Werner stated that under the rule as proposed, carriers who voluntarily complied with the April 2010 rule lose the benefit of having complied early.

2. Comments to the SNPRM

In the RIA for the SNPRM, FMCSA estimated that the FMS upgrade would be significantly cheaper than the purchase of any new device. FMCSA estimated annualized costs to all voluntary adopters of AOBRD systems to upgrade their systems: $174 per CMV to add electronic HOS monitoring services to FMS that have this capability. Some carriers that have already adopted AOBRDs would have to replace their older devices 2 years after the effective date of the final rule. FMCSA estimates that the annualized cost of replacing an older AOBRD is $106 per unit.

PeopleNet agreed with FMCSA's assessment and, based on the details provided in the SNPRM, agreed that only software updates would need to be made on the majority of the deployed devices. This would include those manufactured before 2010 as well as those manufactured after.

3. FMCSA Response

The RIA prepared for today's rule estimates the annualized cost of replacing existing devices will be between $93 per device for FMS upgrades and $128 per device for AOBRD replacements. Because FMCSA carefully studied the industry and looked at several devices representing a significant fraction of the AOBRDs in use, the Agency thinks that the majority of FMS devices that exist today could easily meet the minimum specifications of this rule with relatively inexpensive upgrades. Information materials from many providers indicate that ELD functionality is available for their FMS. FMCSA based the estimated cost to add the functionality, which it used in the RIA, on real price data from providers.

D. Paperwork Analysis

1. Comments to the 2011 NPRM

The proposed rule would not have required additional reporting, recordkeeping, or other paperwork-related compliance requirements beyond those already required in the existing regulations. In fact, the NPRM was estimated to result in paperwork savings, particularly from the elimination of paper RODS. Compared to paper RODS, drivers could have completed, reviewed, and submitted EOBR records more rapidly. Furthermore, motor carriers would have experienced compensatory time-saving and administrative efficiencies as a result of using EOBR records in place of paper RODS. The level of savings would have varied with the size of the carrier implementing the systems (larger carriers generally experience greater savings).

In the NPRM, FMCSA estimated annual recordkeeping cost savings from the proposed rule of about $688 per driver. This was comprised of $486 for a reduction in time drivers spend completing paper RODS and $56 submitting those RODS to their employers; $116 for motor carrier staff to handle and file the RODS; and $30 for elimination of expenditures on blank paper RODS for drivers.

One trade association stated that the reasonable cost stipulation in the HMTAA would not be met, and that the rule would cost over 1 billion dollars. A commenter believed that the paperwork savings estimate is ''fictitious'' and inflated. This commenter stated that large fleets getting this advantage are already using EOBRs, but they will have to purchase new equipment to fit the new EOBR requirements, and small fleets ''will see nothing but increased cost and no savings.''

The Specialized Carriers and Rigging Association believed the EOBR costs to be so large that they would not be offset by paperwork reductions. Other commenters wrote that that the paperwork benefits of the rule would not be realized because some drivers would keep a paper log despite it not being required. A motor carrier said that the rule increased the paperwork burden due to the requirement to monitor supporting documents and HOS compliance, cost of the EOBR, cost of potential violations of not maintaining a system, and the requirement to submit documents within 3 days.

2. Comments to the SNPRM

The Paperwork Reduction Act analysis presented in the SNPRM was similar to that in the NPRM. FMCSA still assumed that under HOS regulations, most CMV drivers would be required to fill out RODS for every 24-hour period. The remaining population of CMV drivers would be required to fill out time cards at their workplace (reporting location). Motor carriers must retain the RODS (or timecards, if used) for 6 months. FMCSA estimated the annual recordkeeping cost savings from the proposed rule to be about $705 per driver. This would comprise $487 for a reduction in time drivers spend

[26] OOIDA's assertion that, according to FMCSA data, driving past the 11th hour accounted for only 0.9 percent of HOS violations in 2009 is incorrect. In fact, FMCSA stated that 11th hour violations are present in around 0.9 percent of total driver inspections. The rate of out of service violations for any reason related to HOS was about 5.8 percent in 2009, which implies that 11th hour violations were present in 16 percent of inspections in which there was an out of service order due to HOS (0.9/5.8). Other data consistently indicate that 11th hour rule violations are a significant reason for HOS out of service violations. Therefore, the Agency reasonably expects that ELDs will have a significant impact on reducing these violations.

completing paper RODS and $56 submitting those RODS to their employers; $120 for motor carrier clerical staff to handle and file the RODS; and $42 for elimination of expenditures on blank paper RODS for drivers.

The George Washington University Regulatory Study Center stated that, according to the ICR submitted to OMB, the transition from paper RODS to ELDs will reduce the time spent complying with the HOS regulations by 68.33 million hours per year. The commenter maintained that FMCSA should commit to gathering data to evaluate whether these predicted time savings materialize, either through a representative survey of drivers and carriers, or by encouraging feedback under the Paperwork Reduction Act .

Greyhound noted that this is the third rulemaking within the last few months in which FMCSA proposes to impose substantial new recordkeeping requirements on passenger motor carriers. The other two were the Lease and Interchange of Vehicles: Motor Carriers of Passengers NPRM and the Commercial Driver's License Drug and Alcohol Clearinghouse NPRM. Greyhound suggested ways to reduce the recordkeeping burdens of the proposals so that passenger carriers can keep an operational focus.

FedEx did not believe that the supporting documents rule would create any paperwork relief. FedEx believed the proposed rule is burdensome and that the new requirement that carriers retain 10 supporting documents far outweighs the reduction of one paper RODS per day. For a carrier like FedEx Ground, the proposed supporting documents rule would generate at least 80,000 documents per day (assuming that the carrier collects 10 supporting documents for each driver's 24-hour day). Over the course of 1 year, the carrier would need to collect, review, and file approximately 29 million documents. FedEx wrote that carriers will also be required to implement new systems to store a potentially large number of documents so that they can be ''effectively matched'' to the corresponding driver's HOS records. FedEx asked FMCSA to address what motor carriers should do with a driver's reconstructed logs if the ELD is repaired and the original logs are retrieved from the device. FedEx suggested that only the ELD-created logs should be retained if they can be retrieved from the device or ELD provider.

Unless an ELD is required, Knight stated that a driver may not understand that he or she is saving the 10–15 minutes a day spent filling out the paper log. With a paper log, there really are not HOS limits for that kind of operator/operation.

ATA stated that, as a result of the illusory document cap and the unnecessary burdens of proving mid-shift ODND time, it is not surprising that FMCSA does not expect this rulemaking to produce a reduction in the overall document collection and retention burden. ATA writes that this is at odds with the intent of the HMTAA. Since the passage of HMTAA in 1994, FMCSA has maintained a broad view of what constitutes a supporting document and thus continued to impose an unusual and uncustomary burden on the trucking industry.

A carrier, which mistakenly believed that the paperwork reduction was the result of the reduced number supporting documents, noted that the SNPRM states a paperwork reduction in one section, and then lists required supporting documents that must be retained in another. Commenter wrote that government agencies require carriers to keep all documentation for IFTA, the International Registration Plan, the Internal Revenue Service, etc.; therefore, it believed that there is no reduction of paperwork overall.

3. FMCSA Response

FMCSA believes that this rulemaking meets the HMTAA's ''reasonable cost'' standard for HOS supporting documents. Almost all AOBRDs and ELDs electronically transmit log data. This eliminates a source of burden associated with drivers and carrier staff handling paper records, and eliminates the cost of the paper. ELDs automate many of the steps needed to make RODS entries, thereby saving time. On a daily, per-driver basis, these savings may seem small, but multiplied by the number of drivers that would be required to use ELDs over the course of a year, the savings are significant. In today's rule, FMCSA extends the period that a driver has to submit records to a motor carrier; both RODS and supporting documents are to be submitted within 13 days.

FMCSA clarifies that any ELD data that has been reconstructed is a part of the HOS records and must be retained as part of the record.

Neither the NPRM nor the SNPRM claimed any paperwork reduction benefit related to supporting documents. The Agency understands that supporting documents are kept in the ordinary course of business for purposes other than satisfying FMCSA's regulations. The removal of the requirement to retain paper RODS, which will no longer be required for ELD users, will lead to a reduction in paperwork.

FMCSA recognizes that short-haul drivers exempt from keeping RODS would get none of these savings. MAP–21 mandates the installation of ELDs for CMV drivers required to use RODS. FMCSA's preferred option, adopted in today's rule, is consistent with the statutory mandate and maximizes paperwork savings.

Although not all drivers are paid by the hour, their time does have value, and their time saved has value. It is common practice for benefit/cost analyses to value either time savings or delays for individuals in terms of an hourly wage rate. The hourly wage a person requires to work reflects the value they place on their time.

FMCSA notes that the obligation on a motor carrier to monitor its drivers' compliance with HOS is not new. (See *In the Matter of Stricklin Trucking Co., Inc., Order on Reconsideration* (March 20, 2012)).[27]

E. Small Business

1. Comments to the 2011 NPRM

The Agency examined its registration data and found that 96 percent of, or just over 19,000, interstate passenger carriers have 47 power units or fewer. The 2011 NPRM did not propose any exclusions or exceptions based upon business size. However, the Agency did request comment on a possible phased-in compliance date to help small businesses.

OOIDA commented that 2011 NPRM RIA made assumptions about the safety practices of large carriers. OOIDA commented that small businesses could not realize any reduction in cost, as paperwork is not considered to be a source of cost, since their only revenue is from operating. Since many drivers are not paid by the hour, OOIDA believed that the analysis in the RIA should not use hourly estimates of the value of their time. OOIDA also stated that because many drivers or motor carriers may not trust EOBRs, they might keep manual logs anyway, which would mean no paperwork savings. OOIDA thought that FMCSA had not included an explanation of benefits in the 2011 NPRM.

Though they support the objective of this rule, AMSA stated that it is too much of a burden on their segment of the industry. Commenters to Regulation Room stated that the cost benefit analysis included savings for the reduction of clerical costs, but small

[27] Available in Docket FMCSA–2011–0127, *http://www.regulations.gov* (Document No. FMCSA–2011–0127–0013).

businesses would not realize those costs. A carrier stated that compliance costs are two to three times as expensive for the small firms. Some commenters also stated that small businesses would not see a return on investment like larger businesses would. Several commenters suggested that the rule should apply only to carriers with a threshold number of power units. Other commenters stated that there should be a waiver process for small businesses to be exempted from the rule.

The NFIB said that this was a punitive measure for small business, impacting them disproportionately. This organization suggested an exception for vehicles based on weight that they thought would benefit local service vehicles used by small plumbers, electricians, and other service providers.

2. Comments to the SNPRM

FMCSA did not re-analyze a phased-in compliance date in the SNPRM. MAP–21 requires a 2 year compliance date following publication of the rule. The Agency did, however, increase its commitment to outreach among small businesses. As stated in the SNPRM, ''[t]he Agency recognizes that small businesses may need additional information and guidance in order to comply with the proposed regulation. To improve their understanding of the proposal and any rulemaking that would result from it, FMCSA proposes to conduct outreach aimed specifically at small businesses. . . . [The] purpose would be to describe in plain language the compliance and reporting requirements so they are clear and readily understood by the small entities that would be affected.'' (79 FR 17683, Mar. 28, 2014)

ABA characterized the bus industry as small, generally family owned, and without the financial resources to undertake a major addition to their equipment. Taking the average ABA member's equipment roster as a guide, the commenter believed that this proposal would add approximately $6,600 to the cost of a small business operating a bus company.

At a June 2014 meeting of ABA's Bus Industry Safety Council, the question was asked of approximately 100 bus operators: How many operators have ELDs on their coaches? About 10 operators did. Assuming that the percentage of operators with ELDs is the same industry-wide, only 10 percent of the industry uses ELDs. ELD-use is confined to the larger bus operators, those operators who need many ELDs for their buses and whose purchasing power will allow them to take delivery of ELDs faster than smaller operators.

ABA believed that the majority of bus operators seeking ELDs will be the smaller bus operators. They will be able to obtain ELDs only after the larger, more financially able carriers receive them. ABA believed that the prices of ELDs, particularly for smaller operators with little purchasing power, are more likely to rise rather than fall.

3. FMCSA Response

Because the majority of regulated entities are considered small businesses, FMCSA did not propose a special waiver process, a threshold for usage based upon size of the motor carrier, or a blanket exception for small businesses. FMCSA believes that there are benefits to be realized from this rule for businesses of all sizes, and, as with most technology, new uses and abilities will continue to emerge to fit the needs of the end users.

F. Cost of a Printer

1. Comments to the 2011 NPRM

The 2011 NPRM did not propose or analyze the cost of an ELD with a printer.

2. Comments to the SNPRM

The 2014 SNPRM analyzed options for ELDs that included a mandatory printer. FMCSA sought comment on the feasibility and accuracy of the benefit and cost estimates associated with this requirement. The requirement for printers with each ELD would increase ELD costs by about 40 percent. One of the two ELD-like devices that the Agency considered as baseline devices offers the printer function.

Advocates stated that FMCSA erred in its estimate of how much a printer would increase ELD costs. It identified a recent article that cites a basic ELD with an integrated printer retailing at a total combined cost to an owner-operator of approximately $600. Advocates wrote that similarly low ELD-plus-printer costs, as well as low-cost thermal printers that are commonly found in taxi cabs and in hand-held portable devices used in restaurants and elsewhere, can readily be found by contacting suppliers and on the Internet. Advocates held that it is likely that some models could meet performance requirements for use in ELD-equipped CMVs at a far lower cost than the Agency used in its estimate for the SNPRM.

Other commenters, including ATA, PeopleNet, and J.B. Hunt, were concerned with the costs associated with requiring a printer. To survive in the environment of a truck cab, an external printer would need to be ''ruggedized.'' PeopleNet and J.B. Hunt anticipated that printers would be stolen unless they are built-into the vehicle. The commenters believed that maintaining and storing operational supplies for the printer would be difficult and an added cost.

ATA noted that the vast majority of manufacturers do not market a device with internal printing capability; to offer it would require redesigning their hardware. In addition to adding cost, ATA believed that requiring paper printers would put a chilling effect on voluntary ELD adoption in advance of an industry-wide mandate. If FMCSA were to require all devices to be capable of producing paper printouts, the ''software upgrade'' claims for existing systems would no longer be true and those using such devices would find themselves holding obsolete hardware. ATA understood law enforcement's interest in facilitating roadside verification of HOS compliance. However, it asked if it makes more sense to impose a prescriptive data transfer requirement on close to 3,000,000 CMVs and drivers, or to require that approximately 13,000 certified CMV enforcement officials have the means to accept records electronically by one of several required options.

To assess the cost of printers on commercial vehicles, J.B. Hunt and PeopleNet. considered a number of different products, including the HP Officejet 100 Mobile Printer, priced at $309, not ruggedized, which was the cheapest. Applying the cost for that printer to the 2,840,000 CMV drivers that FMCSA stated would be affected by the ELD requirements of this rulemaking, the initial purchase of printers would cost the industry $877,560,000. If each printer used one color cartridge and one black cartridge annually, the costs would be an additional $164,663,200 per year. If the printer has an expected life cycle of 5 years, the annualized replacement costs would be $175,512,000. The commenters wrote that the cost of equipping every weigh station and CMV enforcement cruiser in the country is minimal when compared to equipping CMVs with printers. While printers should be optional, these commenters maintained that the cost of requiring them on all CMVs is cost prohibitive. PeopleNet was also concerned with the security of printed log records, which could be lost, stolen, or damaged.

Continental believed it would have been appropriate to add external printer costs to ELDs prior to the mandate taking effect. However, Continental wrote that it is not appropriate to do so post-mandate, given that industry will

choose to use the much more cost-effective option of installing ELDs with an integrated thermal printer. Continental also stated that FMCSA's estimated cost of $500 for an external printer is on the order of five times more than current market costs; there are many portable thermal printers available for $100. As a reference point, Continental noted that taximeters with an integrated thermal printer cost between $150 and $350. The commenter wrote that FMCSA added the cost of an external printer to all ELDs when looking at the Options, which was fundamentally flawed because carriers would acquire more cost-effective solutions (*i.e.,* ELDs with an integrated printer). The cost of an integrated printer in an ELD is less than $10, considerably lower than the cost of an external printer. The VDO RoadLog ELD, currently available on the United States market, costs $500 and has an integrated printer.

A safety coalition stated that enumerating costs for a separate printer is unnecessary as ELDs with an integrated printer are available at less than FMCSA's estimated cost for an ELD lacking an integrated printer. While some carriers will choose options that best fit their operational needs regardless of cost, the commenter believed that the least expensive system that complies with ELD performance requirements for CMVs should be used for FMCSA's cost estimates. It commented that inflation of costs reduces net benefit calculations, and may be used by some to justify slowing or preventing an expedient ELD compliance process.

Knight stated that the most cost effective approach is not to require some kind of printout in the vehicle. The National Limousine Association opposed printers. Schneider opposed a requirement to supply printers in the vehicle because the cost will be prohibitive and far outweigh the benefits. Schneider wrote that the benefit of this rule is the paperwork reduction and requiring a printer would defeat that purpose. Another group stated that law enforcement officers could be equipped with a dedicated portable printing device that the officer could hold with a USB 2.0 plugged to the ELD and print the data, as almost all ELD manufacturers will accommodate a USB 2.0.

The Alliance for Driver Safety and Security believed that while carriers certainly have the option of using an ELD with a portable printer, they should not be required to do so. OTA stated that relying on the industry to provide a printed copy is not cost effective. Adding the cost of printers to each CMV would raise the cost of this rule to the point the benefits would not outweigh the costs.

3. FMCSA Response

In today's rule, FMCSA requires ELDs to have either the capability to transfer data to roadside inspectors telematically, via Web services and email, or the capability to transfer data locally, via Bluetooth and USB 2.0. The final rule also requires ELDs to have either a printer or display as a backup method for displaying data to law enforcement. FMCSA believes that leaving the decision to use a display or printout to the ELD providers and the motor carrier will allow individuals to make the most cost effective decision for their particular operations. By allowing alternative methods for electronic transfer of information, coupled with two backup mechanisms (display or printout), the Agency anticipates that ELD providers will offer alternative products, responsive to motor carrier needs.

G. Tax Credits and Relief To Off-Set Costs

1. Comments to the 2011 NPRM

The NPRM did not propose any tax credits because the Agency does not have the statutory authority to deal with such matters. However, several commenters, including FedEx and the Specialized Carriers and Rigging Association, suggested that FMCSA offer a tax credit for motor carriers using EOBRs, to offset carriers' costs. FedEx related this request to the use of EOBRs by Mexican motor carriers and drivers. The Truckload Carriers Association wanted direct financial relief from any EOBR mandate.

2. Comments to the SNPRM

The SNPRM did not propose any tax credits, nor were there comments.

3. FMCSA Response

FMCSA does not have the authority to offer any tax credits or direct financial relief. While FMCSA equipped each vehicle approved for use in the United States-Mexico Cross-Border Long-Haul Trucking Pilot Program with monitoring equipment, FMCSA owned the monitoring equipment and had access to and control of the data. The pilot program has ended, and FMCSA no longer funds the cost of those electronic monitoring devices.

H. Basis for Evaluating Safety Benefits

1. Comments to the 2011 NPRM

ATA believed that compliance with the HOS regulations will lead to better safety, stating that ''. . . data generated in the course of evaluating the agency's Compliance, Safety, Accountability program shows a strong correlation between hours of service compliance and favorable safety performance (*e.g.,* low crash rates).'' CVSA commented that the cost benefit analysis underestimated the number of lives saved and overestimated the cost of the EOBR by at least 50 percent based on information the organization has received from providers.

Some commenters criticized Agency studies or claimed that the Federal government had no evidence that EOBRs will help reduce fatigue. Commenters believed that more data or studies are needed, including studies to measure fatigue and issues related to the security of information. Some commenters said that there was no link between HOS compliance and safety. The National Limousine Association stated that the now-vacated 2010 final rule was based on insufficient data and that the information in the 2011 NPRM did not reflect enough research on the ''non-trucking'' part of the industry.

Commenters to the Regulation Room questioned the validity of existing methods for measuring fatigue. Some were concerned that fatigued driving is a political issue and the rule was not based on sound evidence. One of these commenters also requested that the cost of an upgrade for security reasons be included in the proposal cost.

OOIDA stated that no published data supported the rulemaking and believed that the degree of non-compliance was not known. OOIDA commented that the Cambridge Study, commissioned by FMCSA, showed ''no documented improvement in compliance or safety,'' and stated that non-driving time was being ignored. OOIDA also criticized FMCSA for relying on public comments when no data exist.

OOIDA said that the RIA was based on underlying flawed research, and that FMCSA lacked evidence to link benefits to this rule. It claimed that the RIA for the NPRM was inadequate due to the use of data from 2003, as well as ''false assumption[s]'' made about fatigue. It also wanted to know the credentials of the people making assumptions about the 2003 data and claimed that the National Highway Transportation Safety Administration's Fatality Analysis Reporting System (FARS) data contradicted the data used in the RIA. OOIDA stated that FMCSA failed to

show the connection between fatigue-related crashes and EOBRs.

OOIDA stated that the ''Agency has never attempted to demonstrate, through examples or detailed explanations, the benefits of EOBRs over paper logs during this rulemaking or EOBR 1.'' OOIDA also said that FMCSA ''use[d] assumptions/staff opinions rather than data or facts to try to measure safety benefits gained from EOBRs.'' OOIDA further stated that FMCSA had previously ignored analysis and data because they ''[did] not show improvements in safety.''

The Specialized Carriers and Rigging Association also believed that data failed to establish a link between crashes and EOBR use.

2. Comments to the SNPRM

Several commenters addressed the benefits of ELDs. The Alliance for Driver Safety & Security stated that the ELD mandate will improve compliance with Federal HOS rules and ultimately reduce driver fatigue and the number of highway crashes caused by driver fatigue. Alliance noted that the leading freight transportation companies have found that the ability to record accurate driving records decreases HOS compliance violations, reduces driver fatigue, improves inspection reports to the Compliance, Safety, and Accountability program, and improves Behavior Analysis and Safety Improvement Category scores.

AMSA stated that the proposed ELD requirements would significantly help to enhance HOS compliance, reduce paperwork for motor carriers and drivers, and increase CMV safety. NAFA Fleet Management stated that use of ELDs will improve compliance with HOS regulations, which is important because of the strong correlation between compliance with HOS regulations and safe operations. ELD provider BigRoad, Inc. stated that is has found that drivers and motor carriers who use electronic HOS solutions have increased awareness of, and compliance with, HOS requirements.

J.B. Hunt pointed out that many of the opponents of mandatory ELDs commented about the ''flexibility'' of paper logs and how they will not be able to run as many miles and earn as much money if they are held accountable for their driving time and breaks. J.B. Hunt stated that these opponents are acknowledging that they are not complying with the current regulation, which provides justification for mandating ELDs. Knight stated that electronic logs that record drive time and are tamper proof, to the degree proposed by the SNPRM, do not allow drivers to cheat on driving time. Knight pointed out that paper logs are often exploited and that the industry is in urgent need of a universal ELD mandate to ensure compliance with existing rules. Knight did acknowledge, however, that ELDs cannot prevent crashes or prevent drivers from violating HOS rules. The carrier noted that drivers must be individually accountable for following the rules and safe driving.

Several drivers spoke from personal experience about how the use of ELDs improves safety and compliance with HOS requirements. One driver stated that the system will remind him to take a break an hour in advance. The driver noted that this helps with safety by allowing him enough time to find a safe place to stop. The driver also pointed out that with electronic logs, his fleet manager can see the hours he has and better plan his loads. Another driver noted that his ELD keeps him from having log violations because it notifies him of his exact time status. The driver also stated that the ELD provides a definite benefit in trip planning and load booking, and enables him to determine if he has enough time to complete a load legally. The driver also stated that he is more productive. Another driver stated that the electronic log system forces drivers to be better trip planners, which makes them better drivers. The driver also pointed out that ELDs improve safety by giving drivers reminders of when they need to take a 30-minute break and when the end of their 14-hour tour-of-duty is approaching.

Numerous commenters stated that the use of ELDs will not improve safety or HOS compliance. OOIDA noted that the primary criticism of paper logbooks is the ease with which a driver can ''falsify'' time, which can lead to fatigue and unsafe driver. OOIDA believed an ELD is unable to provide any appreciable improvement to the accuracy of a driver's RODS and compliance with the HOS rules over paper logbooks, and submitted several hypothetical RODS constructed to demonstrate why, in its view, the use of ELDs does not result in improved HOS compliance because drivers would still be able to mask HOS violations by manually entering false duty status into the ELD. OOIDA stated that the ability of ELDs to automatically record the length of time a truck has been driven has no appreciable value over paper logbooks if drivers can continue to enter an incorrect duty status while they are not driving. OOIDA further stated that only an accurate record of both a driver's driving and non-driving activities will enable a determination of whether the driver is complying with HOS rules. OOIDA stated that ELDs will give inspectors and people concerned about highway safety a false sense of safety and driver compliance when, in fact, ELDs will permit up to 11 hours of unlawful driving a day without showing a violation. In addition, OOIDA argued that the safety analysis did not take into account that ELD use will increase pressure on drivers to violate speeding and other local ordinances and engage in other unsafe behavior. Advocates stated that a poorly crafted ELD regulation would provide drivers and carriers with the opportunity to continue to falsify logs electronically, thus enabling drivers to work, or to be forced to work, excessive hours resulting in fatigue and the associated increase in crashes, injuries and fatalities. Advocates expressed concern that the proposed rule does not ensure that drivers or carriers cannot manipulate the process of securing the data and transferring it from the ELD to roadside inspectors and enforcement officers, thus circumventing the purpose and intent of the regulation.

Quoting from FMCSA's April 2014 report on the safety benefits of ELDs,[28] the UMA noted the American Transportation Research Institute stated that the correlation between EOBRs and safety is weak. The UMA pointed out that the ELD mandate is a significant proposal for passenger carriers, and that a direct and measurable correlation between reducing crashes is a necessity that goes to the very core of the Agency's mission. Freightlines of America, Inc., stated that putting ELDs in CMVs will not get to the root of the problems in the industry, but instead make drivers and carriers more desperate to survive and endanger themselves, their businesses, and the public safety.

An individual commenter pointed out that FMCSA has yet to show any direct correlation between ELD use and reduced crashes, or any other kinds of safety benefit. The commenter also pointed to OOIDA's comments that the proposed rule as written will not improve highway safety, does not fully address the issue of driver harassment, and does not fulfill the requirements prescribed by Congress. Another individual pointed out that ELDs will not prevent drivers from lane deviation, following too closely, or any other poor driving habits. The commenter

[28] In the docket for this rulemaking, docket number FMCSA–2010–0167–0900. *http://www.regulations.gov/#!documentDetail;D=FMCSA-2010-0167-0900.*

recommended better driver training regulations, infrastructure maintenance, and improvements to the national highway system, ''share the road'' education for both commercial drivers and passenger vehicle drivers, and a greater focus on truck parking and increasing the number of rest stations. Implementing ELDs without addressing these issues would strain an industry that is already seeing a major shortage in drivers. The commenter pointed out that shippers and receivers detain trucks during loading and unloading without consideration for HOS requirements because they have no oversight over their actions.

Several commenters pointed to what they believe is the real reason for the ELD mandate—*i.e.,* big trucking companies trying to put smaller trucking companies out of business. The California Construction Trucking Association stated that mandating ELDs will not achieve the safety benefits calculated by the Agency, and that the only true beneficiaries of an ELD mandate would be those intent on chasing competitors from the market under the guise of safety. Herbi-Systems, a lawn care company, stated that there is no public demand for ELDs, and that some large trucking firms want to raise the cost of doing business for small trucking firms in order to minimize competition. An individual commenter stated that ELDs are not necessary for medium and small carriers because the drivers do not alter their paper RODS due to potential penalties. The commenter also stated that the big trucking companies who are pushing for the ELD mandate have sister companies with stock ownership in companies that produce ELDs.

Klapec commented that ELDs are no more reliable than paper logbooks, and the ''safest thing to put into a truck is a well-trained, experienced driver.'' Klapec noted that experienced drivers will leave the industry, causing an increase in crash and fatality rates. It believed the Agency is discriminating against small carriers, and stated that large carriers know that the ELD mandate will cause an exit of many small carriers from the marketplace because they will be unable to sustain the high costs of doing business. Klapec said that the Vice President of ELD provider XATA Corporation sits on two of the three boards for FMCSA and that XATA Corporation stands to gain a potential windfall of business if the ELD mandate goes through. Klapec also pointed out that ATA's members include big, national carriers that are eager to see small carriers, like Klapec, become extinct. Klapec urged the Agency to be careful about who is on its advisory boards, who is giving advice on the potential benefits of ELDs, and who stands to benefit from the passage the proposed ELD mandate.

3. FMCSA Response

In the SNPRM, FMCSA used a different approach from that in the 2011 NPRM to estimate the number of crashes mandatory ELD use will prevent. Based on an analysis of carriers using ELDs, and using the peer-reviewed Roadside Intervention Model,[29] FMCSA was able to estimate the reduction in crashes from mandatory ELD use. This estimate used a sample period from January 2005 through September 2007, which contained 9.7 million interventions.

Generally, ELDs bring about improvements in safety by making it difficult for drivers and carriers to falsify drivers' duty status which in turn deters violations of the HOS rules. And increased compliance with the HOS rules will reduce the risks of fatigue-related crashes attributable, in whole or in part, to patterns of violations of the HOS rules. Part of the improvement in safety also involves motor carriers accepting the responsibility of reviewing the electronic records and supporting documents. Motor carriers are required to ensure their drivers comply with applicable safety regulations and motor carriers that strive to do so will now have a more effective tool for reviewing drivers' RODS.

A more detailed explanation of the process FMCSA employed to determine crash reduction benefits, with a clear, full accounting of assumptions and procedures, is in the RIA for this rulemaking. In response to these comments, FMCSA also undertook a study about the potential safety benefits of the ELD, and discusses that study and comments received about it in today's rule, in Section XII, K, of this preamble.

OOIDA submitted several hypothetical RODS constructed to demonstrate why, in its view, the use of ELDs does not result in improved HOS compliance because drivers would still be able to mask HOS violations by manually entering false duty status into the ELD. We note that the examples OOIDA provides rely on the premise that drivers using paper RODS accurately record their driving time and location. FMCSA's enforcement experience demonstrates that is not always the case. Contrary to OOIDA's assertion that ''knowing how long a driver has operated a truck rarely helps identify whether the driver is in compliance with the HOS rules'', the Agency's field inspection personnel report that the bulk of their time spent on enforcement is in determining whether or not the driver has accurately entered driving time on the paper log. The use of ELDs would minimize this concern.

Rather than respond directly to OOIDA's hypothetical scenarios, we think it is more useful to illustrate how ELD use could have easily detected actual HOS violations recently documented in FMCSA's field reports. For example, an FMCSA inspector reviewed a driver's paper log, which showed that he was within the permitted HOS and that he had taken the required breaks. However, when the inspector compared the paper log to the driver's time/date stamped toll receipts, it was apparent that the driver was at least 500 miles from the location shown on his log for a particular day. The inspector concluded that the driver simply could not have reached that location by taking the required 10-hours of off-duty driving time and by travelling at a speed of 60 miles per hours as ''documented'' on the log. Had an ELD been installed in this driver's truck, the device, by automatically capturing driving time, mileage and location, would have made this HOS violation readily apparent to the FMCSA inspector.

Another recent example of an actual HOS violation involved a driver leaving Arkansas just before noon on a Saturday to reach the first of several retail delivery locations in California the following Monday morning. The driver's paper RODS showed 30 hours of driving time, arranged to accommodate the required 10-hour breaks. The log also showed that the driver spent about an hour unloading at each of the retail locations in California. However, when the FMCSA inspector compared the GPS-based asset tracking record with the driver's log, it was apparent that, between Arkansas and California, the driver stopped for only brief periods, most of which ranged from 15 minutes to 75 minutes. The longest period the driver stopped driving did not exceed 3 hours during a total of 34 hours of actual driving time. Asset tracking also showed that the periods of unloading took longer than the hour that the driver logged.

As with the previous example, an ELD would have immediately revealed the falsification of the driver's RODS. The Agency thus believes it is reasonable to conclude that drivers would be less likely to engage in, and carriers would be less likely to encourage, the types of

[29] See Appendix E of the RIA to today's rule, available in the docket.

HOS subterfuge that ELDs would readily detect. We also believe that ELDS will facilitate better trip planning by drivers and carriers, resulting in fewer unintentional HOS violations. While FMCSA acknowledges that ELDs will not prevent every crash or ensure that every driver will follow the HOS rules to the letter, we do believe that by reducing HOS violations, ELDs will result in less fatigued and less dangerous drivers, thereby achieving the statutory mandate of MAP–21.

In addition, to the extent that OOIDA focuses on ELDs as the sole means of monitoring HOS compliance, that focus is misguided. In addition to retaining RODS, motor carriers have long been required to retain supporting documents. Today's rule continues that requirement while also providing specific guidance as to the type of documentation that must be retained. In addition, today's rule requires drivers to make available supporting documents in their possession upon request during a roadside inspection. Enforcement personnel as well as carriers rely on these documents along with driver's RODS, to provide a more comprehensive view of a driver's workday.

Finally, we also note that, in addition to HOS violations, certain aspects of the behavior OOIDA describes in its hypothetical RODS are currently prohibited under the FMCSRs. For example, FMCSA could cite a motor carrier under 49 CFR 392.6 for scheduling a run between points in a way that would necessitate speeding. Similarly, § 392.2 requires that CMVs be operated in accordance with local laws; § 392.3 prohibits driving, and prohibits the carrier from requiring driving, while the driver is fatigued, ill or the driver's ability to remain alert is otherwise impaired.

XII. Discussion of Comments Related to Procedures, Studies, Etc.

A. Registration and Certification

1. Comments to the SNPRM

FMCSA proposed that ELD providers would have to register with FMCSA, certifying that their devices meet the requirements and providing information on how the ELD works and how it was tested. FMCSA would make much of that information available on an FMCSA Web site that would list the registered providers. FMCSA would develop optional test procedures, which providers could use to ensure their ELDs meet the requirements. In the SNPRM, FMCSA sought comments on the certification issue and the ability of carriers and providers to meet the requirements in the time provided.

Although ATA, UMA, and CVSA supported the certification process, OTA opposed it, arguing that it would expose carriers to considerable risk. If a device is later held to be non-compliant, the carrier would have a fleet of vehicles that might need to be taken off the road. OTA stated that FMCSA should provide assurance that a carrier is not at risk of having to replace a registered product or have its logs declared invalid. OTA was concerned that FMCSA might refine the regulations, which could require expensive modifications, reprogramming, or replacement of the first equipment purchased.

Drivewyze noted that FMCSA has not anticipated the use of intermediaries to support ELD providers' internet-connected data transfer needs; the intermediaries may also need to register and conform to FMCSA standards. ATA stated that providers contend that the cost of the upgrades will be high and that the existing hardware will need to be tested.

FedEx, UMA, CVSA, and an ELD provider stated that FMCSA should require each registering providers to use FMCSA-prescribed test procedures to provide carriers with some assurance that the devices meet the specific requirements. CVSA stated that the certification process must include resistance against tampering with the device/system.

Several providers raised concerns about the information that has to be submitted. Some stated that only major releases should be reported to FMCSA—not every update. Zonar asked if ''version'' refers to hardware or includes software, and whether providers will be able to update information posted on the FMCSA Web page, and stated that providers should be listed in random order.

Some providers questioned the requirement to provide the user manual. XRS stated that the Enforcement Instruction Card should be sufficient; the user manual may contain proprietary information that should not be publicly available. Omnitracs recommended providing a link to the provider's Web site rather than the manual; this would make it easier to ensure that carriers had access to the most recent version.

2. FMCSA Response

In today's rule, FMCSA includes procedures for provider registration of an ELD as they were proposed in the SNPRM. However, in response to comments, FMCSA is adding section 5.4 to the technical specifications—a procedure to remove a listed certification from the Web site—in order to provide additional assurance to motor carriers that that the ELDs listed on the provider registration Web site are compliant. The procedure includes as a preliminary step an opportunity for the ELD provider to cure any deficiency. It also protects an ELD provider's interest in its product.

Today's rule provides the specifications for the data elements and related HOS data transfers that are mandatory to develop a compliant ELD in the appendix to subpart B of part 395. This includes all aspects of the file structure, formatting, and naming conventions. However, FMCSA understands that providers and motor carriers need assurance that an ELD meets FMCSA's requirements. FMCSA will provide guidance to providers that will contain the tools providers will need to ensure that their ELD meets the technical specifications. However, it will be the responsibility of each provider to ensure that its product complies with the RODS file data definitions FMCSA provides.

While FMCSA does not mandate third party software requirements, it allows for them, and will provide guidance so that providers can evaluate whether they are in compliance with part 395. Any agents acting on behalf of a motor carrier must comply with FMCSA's regulations as well.

FMCSA provides more information about this process, and the mandatory elements that providers will have to submit to FMCSA in order to be listed on the public Web site, in the ICR notices related to ELD provider registration. FMCSA released the related Paperwork Reduction Act ICR notice for public comment on October 28, 2014 (79 FR 64248).

The elements that providers have to submit are adopted as proposed in section 5.2.1, Online Certification. User manuals are generally available to the public. Given required submission, FMCSA does not believe that providers would include proprietary information that the manufacturer does not want to make available to the public.

The elements that providers may have to submit are limited to those included in the ICR for ELD certification. The ICR process is separate from the rulemaking process, and FMCSA responds to comments on the ELD certification ICR in the notice issued in accordance with the Paperwork Reduction Act on April 3, 2015 (80 FR 18295).

B. Compliance Date and Grandfather Period

1. Comments to the 2011 NPRM

The NPRM proposed a compliance date 3 years after the effective date of the anticipated final rule. Motor carriers would have been required to install EOBRs in CMVs manufactured on or after June 4, 2012. Motor carriers that installed AOBRDs before the compliance date of the final rule would have been allowed to continue to use those devices for 3 years beyond the compliance date, for a total of 6 years after the publication of a final rule.

The Agency asked for comments on factors it should consider to determine if the compliance date should be adjusted (76 FR 5544, February 1, 2011). It asked if EOBRs should be phased-in, based on the number of power units in a motor carrier's fleet.

Several commenters, including CVSA, supported a 3-year implementation period with a single effective date for EOBR use. The Insurance Institute for Highway Safety believed that the compliance date should not be later than 3 years. Several commenters contended that the 3-year period is too long; others believed that the proposed 3-year compliance period was too short.

Some commenters, including AMSA, NSTA, and NPGA, asked for a 5-year compliance period. While a large motor carrier recommended that large motor carriers have additional time, several large carriers, as well as TCA and ATA, opposed different compliance dates. AMSA recommended that FMCSA conduct a 2–3 year operational test of EOBRs, providing EOBRs to United States-based motor carriers under a program similar to the Agency's North American Free Trade Agreement pilot program.

2. Comments to the 2014 SNPRM

Subsequent to the NPRM, Congress enacted MAP–21, which required that the ELD regulations apply to a CMV beginning 2 years following publication of the rule (49 U.S.C. 31137(b)(1)(C)). In the SNPRM, FMCSA proposed an effective date of 30 days after publication of a rule in the **Federal Register** and a compliance date of 2 years thereafter. FMCSA proposed that motor carriers that installed AOBRDs, as described in current § 395.15, before the compliance date of the ELD rule be allowed to continue to use those devices for 2 years beyond the compliance date.

Two-Year Compliance Date

Four commenters, including the NTSB, expressed support for the proposed effective and compliance dates. Knight the Alliance for Driver Safety & Security, and the NTSB urged FMCSA to implement the rule quickly. The American Moving & Storage Association stated that the compliance schedule for mandated ELDs and related requirements are appropriate.

The majority of commenters on this issue, however, stated that the proposed 2-year compliance date should be extended. CHP recommended collaboration with private and public stakeholders to ensure compliance dates are realistic. The UMA stated that FMCSA should consider an incremental approach.

The ABA stated that 3 years is the absolute minimum needed for ELD implementation in the motorcoach industry. YRC estimated that under a 2-year implementation schedule, it would have to take approximately 500 trucks a month out of service for installation and train 700 to 1,000 drivers a month on the new devices. The National Propane Gas Association stated that a 3- to 5-year compliance deadline is necessary to ensure sufficient availability of devices and that there is enough time to install them.

CVSA and an ELD provider stated that the grandfather clause should be eliminated, and that a 3-year compliance deadline should be applied to all CMVs. CVSA stated that having multiple compliance deadlines would complicate roadside enforcement and undermine uniformity. Omnitracs was concerned that there could be confusion with enforcing the grandfather period and, therefore recommended a 3-year compliance deadline for ELD use.

Four commenters stated that the compliance deadline should be extended to 4 years from the effective date. MPAA suggested that FMCSA delay initial enforcement of its all-electronic roadside inspection requirement or apply the ELD mandate to production drivers either 1 year after FMCSA confirms that sufficient RODS transfer functionality is available in the market, or 2 years after the initial implementation of the rule (*i.e.,* 4 years after publication).

Two-Year Grandfather Period

Most of the commenters on this issue, including Roehl Transport, the International Foodservice Distributors Association, the Snack Food Association, UMA, TCA, ATA, and OTA, stated that the proposed 2-year grandfather period for AOBRDs installed prior to the compliance date is too short. Many recommended that carriers be permitted to use installed AOBRDs for the remainder of the service life of the vehicle in which they are installed. ATA and TCA both stated that failure to extend the grandfather period for the life of the vehicle would discourage fleets from making an early investment in ELDs. A non-profit transit provider noted that it has already invested in Mobile Data Terminals and tablets for some of its vehicles, and asked that FMCSA allow flexibility to upgrade current devices to meet the proposed requirements.

The NAFA Fleet Management Association agreed with FMCSA's proposed 2-year grandfather period. However, an ELD provider and the Alliance for Driver Safety & Security recommended eliminating the 2-year grandfather provision. The ELD provider stated that it would unnecessarily extend the use of noncompliant systems, incentivize some carriers to circumvent HOS enforcement, and undermine the ability of law enforcement to enforce the ELD mandate and the HOS rules. The provider believed it would be difficult to determine if an AOBRD was installed before or after the compliance date. Law enforcement will need to be trained to use both AOBRDs and ELDs, which will also increase the cost of enforcement.

Knight recommended that FMCSA be more specific in identifying the conditions for eligibility for the 2-year grandfather provision. It believed that a ''high percentage'' of the fleet should be so equipped to be eligible.

3. FMCSA Response

In enacting MAP–21, Congress required the Agency to use a compliance date 2 years after publication of the rule. This means that a CMV driver required to use an ELD will be required to use a certified ELD 2 years after this rule is published unless the grandfathering provision is met. Until this date, existing AOBRD devices or paper logs will be acceptable. In today's rule, FMCSA clarifies that the compliance date, as well as the grandfather period, is calculated to run from today's publication rather than from the effective date of the rule, consistent with the requirement of MAP–21.

For 2 years after the compliance date, today's rule requires a driver subject to this regulation to use either an ELD or an AOBRD, *i.e.,* a device that meets the requirements of § 395.15, which was installed and that a motor carrier required its drivers to use before the rule compliance date. FMCSA clarifies that the grandfather provision is vehicle-based, not fleet-based.

While FMCSA proposed a 3-year grandfathering date in the NPRM, mirroring the 3-year compliance date in

that proposal, FMCSA does not believe the intent of the statute would allow for a grandfathering date longer than the compliance date. Therefore, the rule allows drivers to continue to use grandfathered AOBRDs for 2 years after the rule's compliance date. FMCSA declines to remove or shorten the grandfathering period beyond what was proposed in the SNPRM. The Agency believes that some transitional time is necessary for ELD providers to produce a sufficient quantity of ELDs to meet the needs of the motor carrier industry.

FMCSA does not think that the 2-year grandfather period will penalize early adopters of logging technology. Motor carriers currently using AOBRDs will have 4 years of use of the devices, starting from the publication date of this rule; these devices have an estimated useful service life of 5 years. FMCSA notes that it has heard from ELD providers during the rulemaking process, as well as through the MCSAC subcommittee on ELD technology, about their current technologies. The Agency kept current systems in mind while developing the technical specifications, and believes that many existing AOBRDs can become ELDs.

Given the obstacles and cost of converting AOBRDs operated under 49 CFR 395.15, FMCSA believes that it will be necessary to have some overlap in time where both AOBRD and ELD devices are acceptable. The Agency does not think that this will lead to a delayed enforcement program or inconsistency. Other than grandfathering current AOBRDs, the Agency does not provide a phased or incremental compliance period.

The Agency notes that, in today's rule, it corrects references to the compliance and grandfather date. The clock starts at the rule publication date, rather than the effective date, consistent with MAP–21.

C. Penalties and Enforcement

1. Comments to the 2011 NPRM

An individual commenter asked who would be responsible for paying the penalty for disconnecting an EOBR device. Another commenter said that EOBR records should provide drivers the same authorities as a ship's logs and have the same rules against fraudulent entries. A commenter stated that the EOBR will now make it ''institutionalized'' that driving during a break period is a violation of the HOS, no matter the circumstances. The commenter stated that this would lead to drivers getting HOS violations and losing their livelihoods.

2. Comments to the 2014 SNPRM

FMCSA proposed a new prohibition against harassment, subject to a civil penalty, for a motor carrier that engages in harassment. Harassment would be considered in cases where a motor carrier is alleged to have required a driver to violate the HOS rules involving the use of the ELD.

Some commenters recommended enhanced penalties for repeated violations of the ELD requirements. Advocates stated that there is no provision for specific or enhanced penalties to be imposed for violations of the requirement to use ELDs. Advocates believed the Agency must specify strong penalties for intentional and unintentional violations that progressively increase with a subsequent violation and permit an out of service order for a carrier, and provide for disqualification of a driver found to have committed a third violation of the ELD requirements.

A coalition of safety groups (Truck Safety Coalition, Parents Against Tired Truckers and Citizens for Reliable and Safe Highways) stated that carriers and drivers must have a strong motivation to comply with the new ELD regulation, and serious and meaningful penalties should be identified as part of the rulemaking to ensure that the cost of a violation is not merely part of doing business. These commenters wrote that, unfortunately, there is no provision for penalties in the ELD regulation. They believed that FMCSA must remedy this oversight and include strong penalties for offenders, with an escalation for repeat offenders such that, by the third violation, an order to cease operation is issued.

EROAD supported FMCSA's approach. It commented that the proposed regulation leaves States with the flexibility to continue their own commercial vehicle policies and enforcement approaches while allowing private companies to support the requirements in an open market environment.

FedEx commented that it is possible that law enforcement will be inclined to write violations for failing to use an ELD if the driver cannot prove at roadside that he or she did not complete a log more than 8 times in the last 30 days. In effect, this rule would require these occasional drivers to carry their HOS records for the previous 30 days in their vehicles, directly conflicting with the requirement that drivers retain logs only for the previous 7 days.

IBT supported heavy penalties for carriers who harass and coerce drivers to violate HOS regulations. IBT would also like FMCSA to include language in the rule that defines penalties for carriers and drivers when evidence of tampering is detected. It supported heavy penalties issued to carriers who tamper with or otherwise alter a ELDs ability to operate per FMCSA specifications.

IBT commented that the SNPRM provides that a motor carrier may request an extension of time from FMCSA to repair, replace, or service an ELD. Unless an extension is granted, a driver could receive a citation for the malfunctioning ELD. The IBT does not support this language, as it would unjustly penalize the driver for the motor carrier's failure to apply for a service extension correctly. IBT believed that the driver should only be responsible for having manually prepared RODS for the current 24-hour period and the previous 7 days. Any citation issued by law enforcement should be directed to the carrier, not the driver where the driver can produce evidence, via the driver vehicle inspection report (DVIR) or other acceptable means, that he/she notified the motor carrier of the malfunction within the specified 24-hour period.

Inthinc recommended that the regulations state that law enforcement officers must ask carriers, not drivers, for non-authenticated driver logs.

3. FMCSA Response

FMCSA adopts an approach that increases drivers' control over their own HOS records in order to maximize transparency and ownership of edits being made. All edits to ELD records will appear with clear authorship. FMCSA clearly prohibits any kind of ELD tampering or altering.

The Agency prescribes penalties for non-compliance with the requirements in today's rule. Civil penalties for violations of regulations addressing ELDs will be assessed under Appendix B to 49 CFR part 386, and numerous factors, including culpability and history of prior offenses, are taken into account. 49 CFR 386.81. Tampering with an ELD is also an acute violation under FMCSA's safety rating process under today's rule. Section VII of Appendix B to 49 CFR part 385. FMCSA includes a provision that allows penalties for harassment to be enforced at the maximum levels in order to discourage motor carriers and drivers from committing violations. In assessing the amount of a civil penalty, however, the Agency is required by statute to take certain factors into account. See 5 U.S.C. 521(b)(2)(D). Thus, the Agency intends to apply this provision through its Uniform Fine Assessment software to

assure civil penalties are assessed in individual cases in a fair manner while addressing the gravity of harassment violations at an appropriate level.

Both motor carriers and drivers are prohibited from committing violations of the FMCSRs. FMCSA acknowledges, through today's rule, concerns of harassment of drivers by motor carriers through the use of ELDs and related technologies, and believes provisions addressing harassment appropriately target motor carriers for actions affecting drivers they control. The use of an ELD makes a driver's HOS records more transparent. Furthermore, carriers using ELDs with related communication components generate records documenting carrier/driver interactions. These electronic records generated in the ordinary course of business are covered by the supporting documents provisions in today's rule.

During investigations, inspections, and safety audits, FMCSA and its State partners will evaluate the 8 out of 30 day threshold for ELD use under today's rule. Drivers currently allowed to use timecards may continue to do so under the provisions of 49 CFR 395.1(e). Authorized safety officials may request the time cards from the motor carrier supporting the exception. Section 395.1(e)(2)(v) requires a motor carrier to maintain ''accurate and true time records'' for each driver. These records must show the time the driver goes on and off duty, as well as the total number of hours on duty, each day. The lack of a time record for a driver under this exception on any given day would ordinarily suggest that the driver was not on duty that day. If an authorized safety official discovers that the driver was in fact on duty, despite the absence of a time record, the motor carrier has violated § 395.1(e), because it has not retained ''true and accurate time records.'' Appropriate enforcement action may then be taken. FMCSA recognizes that records relevant to the evaluation of the 8 out of 30-day exception will not ordinarily be available during roadside inspections. However, this factor does not differ from enforcement of the short-haul exception at roadside, where similarly, on-site confirmation generally is not available from records inspection or otherwise.

D. Enforcement Proceedings

1. Comments to the 2014 SNPRM

The SNPRM included a new procedural provision, § 395.7, Enforcement proceedings. The proposed provision encompassed three concepts, providing that: (1) A motor carrier is liable for an employee's acting or failing to act in a manner that violates the HOS rules if the action is within the course of the motor carrier's operation; (2) the burden of proof in demonstrating that an employee's action was outside the course of the motor carrier's operation is on the carrier; and (3) knowledge of a document in a motor carrier's possession, or available to the motor carrier, that could be used to enforce the HOS rules is imputed to the motor carrier.

Given drivers' autonomy, ATA stated that a carrier ought to be held liable only in cases where the carrier encouraged a violation or, for undetected violations by an employee, where the government can show that the carrier failed to perform due diligence in providing instruction and training to the driver on HOS compliance. ATA indicated that the burden of proof ought to be on the government for proving HOS violations.

With respect to the proposed provision imputing knowledge of a document to the carrier, OTA asked what ''available to the motor carrier'' means, and to what extent the motor carrier is required to pursue such documents. OTA suggested that the carrier should only be charged with knowledge of a document if the carrier receives that document in the regular course of business. J.B. Hunt stated that the Agency must define the term ''available'' and present a cost benefit analysis addressing the paperwork burden the new standards place on carriers. J.B. Hunt also recommended that certain statements in the SNPRM be modified to make it clear that carriers are responsible only for documents generated and maintained during the normal course of business.

2. FMCSA Response

The provisions originally proposed as § 395.7 in the SNPRM, addressing part 395 enforcement proceedings, are included as § 386.30 in today's rule. The provisions are moved to codify the enforcement provisions with other rules of practice.

Motor carriers and drivers share the responsibility for complying with HOS requirements under part 395. A motor carrier's responsibility for an employee's violation of the HOS rules is not a new concept; it dates back to the Interstate Commerce Commission. Under 49 CFR 390.11, a motor carrier is required to have its drivers observe any duty or prohibition on drivers under the FMCSRs. Section 386.30(a) reiterates a carrier's liability with respect to the HOS rules. The FMCSA and its predecessor agencies have consistently held carriers liable for their drivers' actions that violate the HOS regulations. This addition, however, does not in any way modify a carrier's liability under 49 CFR 390.11.

Carriers are deemed to have knowledge of regulatory violations if the means were present to detect the violation. (See *In the Matter of Goya Foods, Inc.,* Final Order (July 7, 2014).[30] Section 386.30(a) codifies administrative case law addressing a motor carrier's responsibility for an employee acting within the course of the motor carrier's operations. For example, in the case of a driver providing false logs, a carrier is responsible for the driver's violation regardless of the systems it has established to prevent violations or whether it actually detected the violation. (In the Matter of Holland Enterprises, Inc., Order Appointing Administrative Law Judge p. 4 (February 13, 2013)).[31] This is consistent with the principle of *respondent superior. Id.* However, this concept does not result in strict liability in that a carrier could argue the driver was acting outside the scope of employment. (*See* In the Matter of Stricklin *Trucking Co., Inc.,* Docket No. *FMCSA–2011–0127* (*Order on Reconsideration* Mar. 20, 2012)).[32]

In terms of the applicable burden of proof under § 386.30(b), a motor carrier claiming that a driver was acting outside the carrier's operations is in the best position to establish this fact and will need to raise the issue as an affirmative defense under the rule.

Section 386.30(c), providing that a motor carrier is deemed to have knowledge of any document in its possession or available to the motor carrier for purposes of enforcement proceedings, is written to preclude a motor carrier from ignoring documents that would assist in monitoring its drivers. Questions of imputed knowledge are more likely to arise in enforcement of false log violations than violations of provisions governing supporting documents. The concept of imputed knowledge is material in determining the effectiveness of a motor carrier's efforts in monitoring its drivers. Generally, a carrier has imputed knowledge if it could have discovered violations had it reviewed its internal records. (See *In the Matter of Transland,*

[30] Available in Docket FMCSA–2011–0156, *http://www.regulations.gov* (Document No. FMCSA–2011–0156–0004).

[31] Available in Docket FMCSA–2008–0233, *http://www.regulations.gov* (Document No. FMCSA–2008–0233–0006).

[32] Available in Docket FMCSA–2011–0127, *http://www.regulations.gov* (Document No. FMCSA–2011–0127–0013).

Inc., Decision of Chief Administrative Law Judge (February 16, 2010)).[33]

Nevertheless, available documents are not necessarily limited to documents a carrier actually uses in its normal course of business in ensuring compliance with the HOS rules. Rather, the standard is whether the documents could be used to determine compliance. (See *In the Matter of Roadco Transportation Services, Inc.,* Decision on Petition for Review of Safety Rating (December 4, 2003);[34] see also *In the Matter of Stricklin Trucking Co., Inc.,* Order on Reconsideration (March 20, 2012)).[35] Section 386.30(c), prescribing the imputed knowledge concept applicable to enforcement proceedings, is not intended to modify a motor carrier's current obligations under the Agency's administrative case law. Thus, in response to J.B. Hunt's comment, no new paperwork burden results. In terms of the impact on motor carriers, today's rule neither increases nor decreases the burden associated with supporting documents.

E. FMCSA Should Not Provide Mexican Motor Carriers With ELDs

1. Comments to the 2011 NPRM

Between October 14, 2011, and October 10, 2014, FMCSA conducted the United States-Mexico Cross-Border Long-Haul Trucking Pilot Program (Pilot Program). The Pilot Program evaluated the ability of Mexico-domiciled motor carriers to operate safely in the United States beyond the municipalities and commercial zones along the United States-Mexico border. The Pilot Program was part of FMCSA's implementation of the North American Free Trade Agreement cross-border long-haul trucking provisions. As part of FMCSA's information gathering process, FMCSA equipped each vehicle approved for use by a Mexico-domiciled motor carrier in the Pilot Program with an electronic monitoring device.

Numerous commenters strongly objected to FMCSA's funding of electronic monitoring devices for CMVs in the Cross-Border Pilot Program. Klapec, AMSA, and FedEx believed that the United States government was providing Mexican-based carriers with an advantage not available to domestic carriers. AMSA suggested FMCSA institute a 2 to 3-year long pilot program, for which FMCSA would fund the EOBRs, to test the integration of EOBRs into the CMV fleet nationwide. FedEx felt that FMCSA's agreement to pay for EOBRs in Mexican trucks bolstered its suggestion that the United States government provide tax credits to purchasers of EOBRs to offset their costs.

2. Comments to the 2014 SNPRM

A number of commenters objected to FMCSA paying for electronic monitoring devices for foreign carriers. Some suggested that FMCSA fund ELDs for domestic carriers.

3. FMCSA Response

FMCSA acknowledges commenters' concerns about the Agency purchase of ELDs for foreign motor carriers. The Agency emphasizes that the purchase was an essential step to ensuring appropriate levels of oversight during a pilot program. FMCSA used electronic monitoring devices with GPS capabilities to monitor the operation of vehicles used in the Pilot Program and used the data to identify potential violations. This approach addressed concerns expressed by members of Congress and others.

FMCSA owned the monitoring equipment and had near real-time access to and control of the data provided by the electronic monitoring devices and GPS units, 24 hours per day, every day of the week. This will not be the case with the ELDs required through this rulemaking.

The Pilot Program ended in October 2014 and FMCSA discontinued the subscription service used in connection with the devices. FMCSA no longer funds the cost of electronic monitoring devices for Mexico-domiciled carriers authorized to operate in the United States.

The suggestion that ELD's acquired during the Pilot Program provide foreign carriers with a competitive advantage is without merit. The number of vehicles equipped with ELDs was limited, with approximately 55 vehicles operating at the conclusion of the pilot program. Also, foreign carriers are prohibited from making domestic point-to-point deliveries within the U.S. FMCSA is not in a position to fund ELDs for domestic carriers and implementing a domestic pilot program is inconsistent with the Congressional mandate that the Agency require certain drivers to use ELDs.

F. International Issues

1. Comments to the 2011 NPRM

Under existing regulations, drivers from Canada and Mexico who drive in the United States need to be in full compliance with our HOS rules once they cross the border—just like any domestic driver. Under this rulemaking, Canadian and Mexican drivers would keep their RODS using an ELD in the same way that United States drivers would, unless they qualified for one of the exceptions.

The Regulation Room received a remark suggesting that an EOBR helped ''keep a driver straight'' in the face of complex rules, and allowed the driver to change from Canadian to United States rules with the flip of a switch. However, Verigo, a Canadian wireless logbook provider, recommended that FMCSA allow companies in the oil and gas sector, which operate under an equivalent level of safety required by a Canadian Oil Well Service Vehicle Permit, be exempt from mandatory use of EOBRs. CVSA commented that Canada is pursuing the development of an EOBR standard. It recommended that FMCSA make every effort to work with Canada to develop a harmonized standard across North America.

OOIDA believed that there might be a need for a dual mandate for both paper RODS and EOBRs, absent a Canadian mandate. This would add to the costs of the United States mandate for those drivers. The Air and Expedited Motor Carriers Association, the National Association of Small Trucking Companies, and The Expedite Association of North America (TEANA), responding together, were concerned about the compatibility of United States and Canadian requirements for EOBRs because Canada required EOBRs to print and present a paper log.

2. Comments to the 2014 SNPRM

Klapec stated that Mexican and Canadian trucking companies are already taking a share of the trucking business from small United States carriers, and believed that the ELD mandate would make competition between small carriers and foreign carriers impossible. An individual commenter stated that FMCSA wants American truckers to operate like truckers in Europe, despite the different economic situation between Europe and the United States. A number of commenters questioned how the rule will apply to Mexican or Canadian drivers.

Several commenters emphasized the importance of harmonizing the proposed regulation with Canadian and Mexican standards. Greyhound pointed out that the SNPRM does not address the compatibility of the proposed ELD standards with Canada and Mexico, and noted that compatibility among the

[33] Available in Docket FMCSA–2006–25348, *http://regulations.gov* (Document No. FMCSA–2006–25348–0133).

[34] Available in Docket FMCSA–2002–13667, *http://regulations.gov* (Document No. FMCSA–2002–13667–0005).

[35] Available in Docket FMCSA–2011–0127, *http://regulations.gov* (Document No. FMCSA–2011–0127–0013).

three countries is critically important for carriers like Greyhound who operate a large number of daily trips between the United States and Canada or Mexico. UMA pointed out that there is significant international traffic (between the United States and Mexico and Canada) involving passenger carriers and recommended FMCSA complete regulatory harmonization prior to full implementation of the proposed rule. ABA noted that Canadian motor carrier authorities have not instituted a change in their regulations in line with the United States ELD proposed rule. ABA further noted its understanding that Canadian authorities will wait for FMCSA to issue its rule before considering any changes to Canadian laws and regulations. It stated that the 2-year compliance period may be an insufficient period of time for Canadian-domiciled carriers to obtain ELDs.

A Canadian owner-operator stated that FMCSA should exempt Canadian owned and operated CMVs from ELD regulations because FMCSA is not adopting Canada's HOS regulations. The commenter asserted that the imposition of ELD regulations forces the Canadian Federal Transportation Ministry to enforce United States law on Canadians operating in the United States.

ELD provider PeopleNet requested further clarification as to how to manage harmonization of data for those drivers who transition between United States Federal regulations and Canadian or intrastate regulations. XRS pointed out that there are additional data elements for each duty status change, as well as several additional events, such as ignition on, which will need to be captured in the harmonization required for drivers who travel between Canada and the United States.

Two individual commenters addressed the issue of drivers traveling between Alaska and the lower 48 states through British Columbia and the Yukon Territory. One commenter noted that there are different HOS requirements for each jurisdiction through which he travels. The commenter stated that it would be impossible for an ELD to function properly under these circumstances. The other commenter pointed out that there are many areas between Alaska and the lower 48 states in which GPS devices do not show accurate locations. That commenter noted that he has researched several ELDs and found that none would work for his situation.

A recruiter who hires owner-operators for a small carrier in Canada was concerned about the impact the ELD mandate will have on the expedite business from Canada to the United States. The recruiter pointed out that Canadian owner-operators who agree to install ELDs in their trucks to do this expedite work to the United States will also be required to use the ELDs for local work to be compliant with the United States regulations. The recruiter noted that most of the owner-operators he spoke to in Canada stated that if the ELD mandate goes into effect they will stop doing expedite work and either do local work only or retire from trucking entirely.

3. FMCSA Response

The Agency emphasizes that this rule does not alter the underlying HOS regulations or the obligation of drivers to comply with the applicable rules of the jurisdiction in which they are operating. Though FMCSA agrees that complying with several sets of regulations can be complex and challenging, the applicable requirements have not been altered. FMCSA requires that Canada- and Mexico-domiciled drivers comply with the Federal HOS rules while operating in the United States.

While FMCSA agrees with the commenter that regulatory harmonization would be ideal, North American HOS harmonization is not an option at this time. However, the Agency understands that there are electronic monitoring devices currently on the market that have been programmed to accommodate the HOS rules of multiple jurisdictions. Further, under today's rule, a driver operating in multiple jurisdictions would be able to annotate the driver's record of duty status on the ELD to reflect information about periods outside the United States. Regarding the concern raised by several entities that Canada requires a printout of an electronic log, today's rule includes a printer option. FMCSA declines to exempt through this rulemaking specialized equipment or vehicles tied to specific industrial sector, including CMVs subject to safety regulation under a Canadian Oil Well Service Vehicle Permit.

G. Effects of ELDs on Current Business Practices

1. Comments to the 2011 NPRM

Several commenters stated that the impact of ELDs would unevenly fall on smaller carriers. OOIDA provided an example of a current practice by a carrier that instructs drivers to falsify HOS records kept on EOBR-like devices, and said there was no reason for current illegal practices to change with the use of EOBRs. Advocates, and others, also noted that current practices often involve violating the HOS rules; however, in their view, ELDs could help stop those violations. A commenter stated, ''[a] lot of the fear of EOBRs seems to stem from a lack of good practices following the HOS [rules] in the first place.''

2. Comments to the 2014 SNPRM

A number of commenters were concerned that the rule would affect their current business practices. Continental stated that some carriers are opposed to an ELD mandate because they anticipate that the costs for ELDs will be high; they relate the problems associated with today's complex FMS (*e.g.,* system-to-system incompatibility, complex handling, or data privacy concerns) to ELDs; and they fear that ELDs may be a capable tool to enforce the HOS regulation (a rule they fundamentally oppose). Continental said it is likely that the majority of carriers will accept ELDs, assuming FMCSA adequately addresses some concerns. The commenter said that FMCSA effectively addressed cost and data privacy concerns. Continental also noted fleets that would not benefit from the use of FMS functionalities will not be required to use real-time communications and will be able to use ELDs without monthly fees.

Three commenters addressed the proposed requirements, in §§ 395.8 (a)(2)(ii) and 395.11(b), that RODS and supporting documents be transferred from the vehicle to the carrier's office within 8 days. Current regulations in § 395.8(i) require a driver to submit RODS within 13 days. FedEx stated that, like the 13-day time period, an 8-day time period is too long, especially given that the vast majority of logs will be created using ELDs and the proposed ELD rule requires that drivers certify their daily record ''immediately after the final required entry has been made or corrected for the 24-hour period.'' To allow carriers to better manage HOS and ensure they are not at risk of allowing a driver to operate in violation of § 395.3, FedEx recommended drivers should be required to certify and submit their HOS records to carriers within 24 hours of the end of their day. FedEx suggested that FMCSA carve out an exception for logs showing only off duty time and only require that they be turned over to the motor carrier prior to the driver performing any on duty work for the carrier.

Where trucks do not return to the main office every 8 days, Continental was concerned that this shorter timeframe may force carriers to use cell phone or satellite wireless communication for data transfer,

creating additional costs. Continental stated the requirement to send RODS to the back office should remain at 13 days.

Eclipse Software Systems stated that the requirement to file logs within 8 days will be onerous to carriers wanting to use low-cost ELDs that do not support wireless connections for data transfer, and problematic for drivers who are away from their home terminal for more than 8 days. The commenter noted that the gains in safety from such a requirement would also seem to be minimal because the most pressing compliance issues occur in real-time, when a driver is tired. According to the commenter, carriers have been operating under the 13-day submission rule for many years, and continuing with that limitation would mirror current operational patterns without penalizing users of low-cost ELD systems that experience longer trips.

The MPAA stated that FMCSA should confirm that industries in which drivers work for multiple carriers, such as the motion picture and television industry, may employ third-party administrators to coordinate ELD information and technology. The commenter believed that this approach may support the unique characteristics of production drivers better than a carrier-by-carrier approach. MPAA suggested an amendment to proposed § 395.20(c). The National Private Truck Council appreciated that the Agency clarified that carriers may use ELDs ''to improve productivity or for other appropriate business practices,'' and that the rulemaking will not ''ban or impose significant new restrictions on those functionalities.''

3. FMCSA Response

FMCSA intentionally created technical specifications that allow an ELD of limited complexity, at lower cost, and without monthly charges. Today's rule does not require real-time data transferor wireless submission of data. Based on the comments to the SNPRM, FMCSA changed some parts of the proposal to address data transfer and other issues, in order to increase the flexibility of the ELD and address multiple motor carrier business models and price points without compromising safety or data integrity.

Based on comments that reducing submission timeframes from the currently required 13 days to 8 days will interfere with current business practices, today's rule requires submission of both RODS and supporting documents to the motor carrier within 13 days. A motor carrier that wants a shorter time frame than 13 days for the submission of RODS or supporting documents already has the ability to make this request of its drivers, and today's rule does not change that. Motor carriers can require different policies so long as they are not less rigorous than the FMCSRs.

As a point of clarification, if a driver is off-duty for multiple days, the motor carrier may annotate the driver's ELD records to reflect that, subject to the driver's certification. As stated before, the only prohibition is that no time that a driver spent driving can be converted into non-driving time. Another acceptable method of noting time spent off duty would be to have the driver add this time retroactively with an annotation, at the beginning of his or her first day back on duty. Drivers who have responsibilities outside of driving should note those job-related functions in their ELDs as ODND time at the start of their driving the CMV.

Nothing in the today's rule prohibits third parties from being engaged by a motor carrier to help with HOS compliance. If the third party is engaged as an agent of the motor carrier and is involved in HOS compliance through ELD use, that person will be required to have a unique login on ELD systems. The requirement for HOS compliance ultimately lies with the motor carrier, so FMCSA does not make the suggested change to the regulatory language.

FMCSA has eliminated language that was proposed in § 395.20(c) to avoid confusion as evidenced by comments. FMCSA recognizes that different ELDs will employ different technologies, including back office systems. FMCSA does not intend to limit alternative technologies, provided that the ELD operates in a manner that satisfies the technical specifications in today's rule.

H. Leased and Rented Vehicles

1. Comments to the 2011 NPRM

Commenters asked how rented and leased trucks would be treated (*e.g.,* would a truck rental company be required to install EOBRs for its customers). A commenter explained that the occasional or seasonal use of rental vehicles is a key part of many businesses.

2. Comments to the 2014 SNPRM

The IFDA wrote that while rental units can be equipped with ELDs, they may not be the same as the system in use in other company vehicles. The commenter noted this situation raises issues concerning training and maintaining records for drivers who are using multiple systems within the same week. IFDA urged the Agency to recognize that such events are a routine aspect of daily fleet operations and allow flexibility for companies and drivers in the rule.

ATA said that FMCSA should consider the real-world challenges an ELD mandate would create for fleets using rented and leased vehicles. In the event of a breakdown, ATA explained that a motor carrier will call on its truck rental and leasing company to provide a replacement truck. It is not reasonable to expect the provider will have one with an ELD that matches the carrier's HOS management system. ATA noted that the carrier will be unable to populate the device in the replacement vehicle with the driver's RODS for the prior 7 days. Even if the driver manually populates the device, the motor carrier will not have the means to communicate and read data from it. ATA suggested that fleets using short-term replacement vehicles should be permitted to use paper RODS for more than 8 days.

Similarly, the NMFTA commented that its members are concerned about the complications and costs ELDs present when the carrier routinely requires drivers to use different pieces of equipment. LTLs often rely on the short-term use of rental equipment, and LTL carriers must constantly manage and shuffle drivers in and out of both company and temporary equipment to meet business needs. NMFTA stated different truck manufacturers install different types of data equipment, connections, and software. NMFTA noted this situation requires carriers who wish to maintain the flexibility of bringing in outside equipment on a temporary basis to invest in different types of cables and software to ensure that their office systems can integrate with it.

TRALA expressed concern about proposed § 395.26(d)(2), which requires that ELDs capture personal miles operated in a CMV. TRALA asked how the recording of personal miles of a regulated motor carrier employee will be reconciled with the personal use of rental vehicles by unregulated consumer customers or motor carrier drivers who are not subject to the ELD requirements because they are under one of the short-haul exemptions in 49 CFR 395.1(e). The commenter asserted that trip data of rental customers who are not subject to the ELD requirements, either because they are using the CMV for non-commercial purposes or are exempt short-haul operators, should not be recorded nor be available for FMCSA or State inspection.

TRALA noted that transferability allows TRALA members to use ELDs on vehicles where use is required, and to

avoid the cost of employing that technology where it is not. TRALA is concerned that its member companies may disclose their unregulated customers' geographic location as a mandatory ELD data element, or violate the proprietary nature of the HOS data recorded and stored on the ELDs by and on behalf of their regulated customers, the motor carriers. With multiple users of a single vehicle, TRALA companies could be liable for unlawful disclosure or access to such data. TRALA recommended allowing portable devices that have unique logins for each driver and strict protocols for device accessibility and information capture to alleviate this concern.

In light of the significant concerns raised by the TRALA, IFDA, and others, the American Truck Dealers Division of the National Automobile Dealers Association urged FMCSA to clarify in the rule that lessors and rental companies bear no responsibility for providing or installing ELDs in leased or rented CMVs operated by CDL holders employed by unrelated motor carriers.

3. FMCSA Response

Because today's rule provides a performance-based standard for ELDs, motor carriers will have a number of options to choose from the market place of ELD providers. This includes portable units that stay with the driver as opposed to being installed in the vehicle. Motor carriers that rely upon long-term leases of CMVs can work with the leasing companies to identify options and implement solutions to the challenge of using ELDs with leased vehicles. Therefore, the Agency has not included in today's rule an exception for leased or rented CMVs.

If a driver who is not required to use an ELD were to operate a motor vehicle that is equipped with an ELD, that driver would not have to use the ELD. This would apply to a driver operating under the short-haul exception in § 395.1(e) or to a private individual using a rented truck to move his or her own household goods. A company renting a truck to an unregulated consumer could protect that customer's information by removing the ELD or removing any recorded information from the ELD.

FMCSA does not regulate truck-rental companies. There is no requirement or prohibition for a rental agreement or short-term lease to include an ELD. A rental company might choose to include an ELD as a part of the agreement, just as they might include another piece of equipment.

I. Business Relationships With Owner-Operators

1. Comments to the 2011 NPRM

In addition to concerns related to harassment (addressed elsewhere in this preamble), commenters believed that ELDs could affect the relationship between motor carriers and the owner-operators with whom they contract. An owner-operator said that the devices allow corporations to micromanage. Another owner-operator said that the use of EOBRs could lead to drivers being paid by the hour rather than the mile. One commenter stated ''absent uniform compatibility profiles and mandates, EOBRs installed on owner-operator units would only necessitate additional installation costs and the incurring of unused vendor contracts as owner-operators elect to move from one carrier to another which is their right to do so in a free market on a regular basis.'' Another commenter wanted to know what system would be required if the driver contracted to multiple motor carriers.

2. Comments to the 2014 SNPRM

United Van Lines, LLC (United) and Mayflower Transit, LLC (Mayflower), responding together, and AMSA, said a carrier's obligations related to the use of ELDs should not be a factor in determining whether a lessor is an independent contractor or an employee for Agency determination purposes and recommended that FMCSA amend § 395.20 to reflect that.

United's/Mayflower's disclosed household goods agents may typically contract with non-employee, owner-operators (''drivers'') who own or lease their CMVs. United/Mayflower did not believe that their companies bear any responsibility for the drivers' compliance with HOS regulations when the drivers are not driving under their respective authorities.

United/Mayflower believed the proposed rules would require them to install ELDs in drivers' CMVs when operating under their authorities and, subsequently, to remove the ELDs. United/Mayflower believed that the proposed rules permit them to require drivers operating under their operating authorities to install ELDs owned by United/Mayflower, even if the drivers have already installed and are using their own ELDs in their CMVs.

3. FMCSA Response

The Agency understands that there are many types of relationships between owner-operators and motor carriers. This rule does not change the relationship between employee and employer or carrier and contractor. This rule does not change the underlying requirement to comply with HOS. The responsibility for complying with HOS, including through the use of an ELD, lies with both the driver and the motor carrier.

FMCSA declines to amend the language of § 395.20, as suggested by the commenters. The independent contractor relationship is outside the scope of this rulemaking.

J. Carrier Liability

1. Comments to the 2011 NPRM

Several commenters to the NPRM, including J.B. Hunt, stated that EOBR use would help motor carriers lower risk and liability because they would record more information and lower the crash risk. Commenters also stated that access to a driver's records through an EOBR would help decrease liability, as the carrier and driver could plan routes together to avoid delays. Other commenters spoke of benefits as a result of minimizing the carrier's liability while the CMV is being used for personal purposes.

2. Comments to the 2014 SNPRM

AMSA and United/Mayflower stated that ELDs will be required to automatically record a limited set of data points. However, ELDs being marketed to the trucking industry by ELD system providers are able to, and do, collect significantly more data than required under the rule. Examples of source data streams include, but are not limited to, measurements of a driver's speeding, hard braking, and idling. These data are recorded even when the drivers are not under dispatch for a carrier. The proposed rule forbids carriers from altering or erasing the original source data. This means that even if a carrier elects not to view reports including data points that are not required by the rules, it must not seek or permit the destruction of the extraneous data collected by the devices.

AMSA and United/Mayflower were concerned that the mandated retention of the additional data will lead to an unintended increase in carrier liability. These commenters anticipated that certain lawyer groups will second-guess FMCSA's judgment and carriers' reliance on the information requirements imposed by the proposed regulations by arguing that carriers had a ''duty'' to access and use the additional data created by ELDs. United/Mayflower proposed that FMCSA add new language that clarifies

that the motor carrier would not be responsible for accessing such data.

These commenters also asked that FMCSA provide guidance that removes any ambiguity concerning the application of proposed regulations prohibiting alteration or destruction of data streams and reaffirm that drivers not placed out of service are authorized for use.

3. FMCSA Response

FMCSA believes that transparency and increased control over a driver's records by the driver is beneficial to the carrier-driver relationship. FMCSA notes that commenters appear to focus on a device that goes beyond the minimum requirements of this rulemaking, but is still part of an ELD-like device, such as an FMS. Though it does not have a regulatory definition, any device that has the capabilities of an ELD, like an FMS, is bound by the same recording and editing requirements and prohibitions as an ELD in terms of required data elements. While an extended data set might be recorded by an FMS, the items in it are not part of the driver's electronic RODS that are required to be transferred to an authorized safety official. Information like hard braking or other events would not be a part of that required data set. See also Section IX, C, Privacy; Ownership and Use of ELD Data, for information on the use of data provided by an ELD.

Today's rule does not change motor carriers' existing obligation to ensure its drivers' comply with HOS regulations. The Agency does not believe that this requirement is ambiguous. However, the Agency does not address data elements that are not required as part of the minimal technical standards for an ELD. Nor does the Agency have the authority to address through its regulations the use of evidence in civil litigation.

K. Safety Study

1. Comments to the 2014 SNPRM

On May 12, 2014, FMCSA announced the availability of a study concerning the safety benefits of ELD-like devices: ''Evaluating the Potential Safety Benefits of Electronic Hours-of-Service Recorders'' (Safety Study). It quantitatively evaluated whether trucks equipped with devices like ELDs had a lower (or higher) crash and HOS violation rate than those without such devices (May 12, 2014, 79 FR 27040). The study is available in the docket for this rulemaking.[36]

An ELD provider was the only commenter who agreed with the Safety Study's finding that ELDs provide safety benefits. The remaining 21 commenters criticized the Safety Study. One commenter provided crash and fatality data for motor carriers that use ELDs, and noted that carriers with ELDs are still involved in crashes. Another commenter claimed that most traffic fatalities are not caused by large trucks, therefore, the ELD mandate is unnecessary. OOIDA provided a detailed critique of the Safety Study's data and concluded that, ''FMCSA has no credible data on the relationship between the use of ELDs and actual HOS compliance, and even less data on the relationship between HOS compliance and highway safety.''

According to OOIDA, the 2014 Safety Study lacks reliability for numerous reasons, including because it is taken from the records of carriers with differing recording criteria. OOIDA criticized the study for failing to provide sufficiently detailed information about how the data inconsistencies were reconciled and for including crashes that OOIDA believed could not have been avoided by drivers. OOIDA wrote that the number of HOS violations included in the 2014 Safety Study is not consistent with the violation data in FMCSA's Safety Measurement System. OOIDA claimed that the Safety Study data did not include on-board recording device violations. OOIDA also criticized the study for the small sample size, failure to include small carriers, and failure to account for how trucks are selected for inspection. OOIDA noted that although 97 percent of all carriers have fleets with 20 or fewer trucks, 9 of the 11 carriers in the Study maintained fleets with more than 1000 trucks while the remaining two carriers had fleets with between 100 and 500 trucks.

OOIDA stated that the Safety Study's failure to control for the effects of ELD use on inspection frequency biased the results. Based on its own survey and the anecdotal evidence it collected, OOIDA claimed that trucks with ELDs are less likely to be inspected for HOS violations than trucks without ELDs. In OOIDA's survey, 39 percent of the 2,347 respondents reported seeing ''a law enforcement official passing on inspecting another driver's logs because the truck was equipped with an EOBR/ELD. Further, numerous responders reported that in addition to just passing on inspection, officers did not know how to operate EOBRs/ELDs.'' According to OOIDA, trucks in the study with ELDs had lower HOS violation rates because they were less likely to be selected for inspection than trucks without ELDs.

OOIDA objected to the study's conclusion that ELDs have clear safety benefits. OOIDA cited one of its own surveys that compared the safety record of carriers with speed limiters and electronic logging devices to carriers without those monitoring devices. Using FMCSA/CSA data, OOIDA concluded that carriers without electronic monitoring had a better crash ratio than monitored carriers.

2. FMCSA Response

While the Agency acknowledges commenters' concerns about the study, we did not rely on its conclusions to establish the safety benefits of ELDs relative to paper logs. The Safety Benefits Analysis in the RIA uses a different measure of HOS violation rates, a different data set and a different study design to demonstrate a reduction in HOS violations attributable to ELD use. The Safety Study did, however, provide corroborative data to support the crash reduction estimates used in this rulemaking.

FMCSA notes that the crash data in the Safety Study were vetted by analysts to ensure consistency across carriers. The Safety Study received two types of crash files from participating carriers—those with only crashes and those with crashes plus claims data. To ensure the crash data was comparable across carriers, data analysts removed all claims data according to procedures described in the study. The report includes examples of claims. However, the report does not separately describe each specific claim in the original carrier data.

As indicated in the report, all of the HOS violations from the participating carriers were collected from FMCSA's Safety Measurement System Web site during a short portion of 2010 and all of 2011 and 2012. All categories of HOS violations were included in the analysis, although some HOS violations that could not be linked to a specific truck in the study were dropped from the analysis.

The study clearly acknowledged that its sample was skewed toward large, for-hire carriers. However, because the study was designed to compare trucks with and without ELDs owned by the same carrier, large carriers provided the best set from which to obtain this data. Any bias toward a specific carrier or type of carrier would equally affect trucks with and without ELDs.

The study applied statistical techniques to identify and measure the

[36] In the docket for this rulemaking, docket number FMCSA–2010–0167–0900, *http://www.regulations.gov/#!documentDetail;D=FMCSA-2010-0167-0900.*

effects of ELD use separately from the many other factors that affect crash rates. As with any study, the Safety Study could not completely eliminate all potential sources of bias. Although the study was able to control for carrier factors that might affect selection for roadside inspection, the study did not address the relationship between ELD use and the likelihood a truck would be selected for inspection. The Safety Study measured HOS violation rates as the ratio of HOS violations to millions of vehicle miles travelled. If trucks with ELDs were less likely to be inspected per mile traveled then the study would overestimate the reduction in HOS violations due to ELD use. By contrast, the safety benefits analysis in the RIA measured HOS violations *per inspection* and found a significant reduction in HOS violations in a before and after comparison in a group of carriers that had implemented ELDs at a certain time. OOIDA's claim that the Safety Study data did not include on-board recording device violations is incorrect; the Safety Study did include these violations.

In reviewing the data presented by OOIDA, FMCSA notes that those studies did not control for numerous other factors that affect crash or violation rates. In addition, OOIDA's survey data showing that roadside inspections of ELD-equipped CMVs are routinely waived is subject to its own selection bias. FMCSA continues to believe that the safety benefits estimates presented with the SNPRM were appropriate and supported by the research the Agency sponsored.

The Safety Study focused on estimating the effects of ELDs on outcome measures of safety, such as crash rates, rather than process measures, such as violation rates and fatigue. The study found a significant reduction in the overall crash rate and the preventable crash rate for trucks with ELDs compared to trucks without ELDs. Due to limited data, the study could not evaluate the effect of ELDs on DOT-reportable and fatigue-related crashes.

L. Harassment Survey

1. Comments to the Survey

FMCSA conducted a survey to examine the issue of driver harassment and to determine the extent to which ELDs are used to either harass drivers or monitor driver productivity. The research explored the relevant issues from the perspective of both drivers and carriers. On November 13, 2014, FMCSA published a notice of availability for the survey in the **Federal Register** (79 FR 67541). In that notice, FMCSA re-opened the public docket for this rulemaking for the limited purpose of soliciting comment on this survey.

The report titled, ''Attitudes of Truck Drivers and Carriers on the Use of Electronic Logging Devices and Driver Harassment'' (the Harassment Survey),[37] summarized the survey findings. The survey explored driver's attitudes about harassment and whether harassment is more prevalent for drivers using ELDs. The survey had seven major findings in the following areas:

1. Interactions which drivers consider harassment.
2. Frequency of experiencing interactions considered harassment.
3. Whether harassing experiences are associated with ELDs.
4. Whether drivers who use ELDs have different experiences than those who use paper.
5. Nature of attitudes toward ELDs.
6. Whether the perspectives of carriers are substantially different from drivers.
7. Reactions to FMCSA definitions of harassment and coercion.

Of the 13 comments that FMCSA received in response to the notice of availability, 9 commenters did not address the report; rather, they expressed their opposition to the ELD mandate, the HOS rules, or both. Advocates and ATA agreed that the data indicates that drivers' experience of harassment is unlikely to be affected by ELD use. ATA also stated that the survey's findings that instances of harassment are uncommon are consistent with ATA members' experiences. However, ATA expressed concern that in the report FMCSA represented some scenarios as harassment, such as waiting time delays and driver compensation issues, that are, in fact, not related to harassment. ATA further noted that FMCSA's definition of harassment does not refer to waiting time or how drivers are paid, nor has Congress suggested that harassment should include delays caused by customers.

The Snack Food Association addressed concerns about the driver harassment and coercion rulemakings. The commenter stated the results of FMCSA's survey report suggest ''that coercion or harassment of drivers is not a significant issue impacting motor carrier safety,'' thereby undermining the need for regulation. Should the Agency establish a connection between driver harassment or coercion and motor carrier safety in the future, the Snack Food Association recommended that FMCSA use enforcement tools under existing regulations to address the issue.

In its comments on the Harassment Survey, OOIDA raised several issues concerning the ELD rulemaking, including FMCSA's responsibility to ensure ELD's are not used to harass drivers and the demonstrated use of ELDs by motor carriers to harass drivers. OOIDA cited language in the ''Notice'' section, on page 2 of the report, that indicates the report does ''not necessarily reflect the official policy of the USDOT,'' nor does it ''constitute a standard, specification or regulation,'' as suggesting that the Agency has distanced itself from the results of the study and ''disavows responsibility for the accuracy of the data in the report.'' The commenter pointed out that the report did not provide information on the background or qualifications of the contractor or the authors of the report, information about the Agency's direction to the contractor regarding the research, and the raw data from the survey. OOIDA also noted the report is not peer reviewed and FMCSA has not made any official statement recognizing or adopting any findings of the study.

OOIDA contended the survey framework and terminology differ from the statutory requirements for ELDs set forth in 49 U.S.C. 31137(a) (2012). For example, OOIDA stated FMCSA's duty to ensure ELDs are not used to harass drivers does not require the finding of any particular level of harassment, or a comparison of the level of driver harassment by motor carriers using ELDs versus instances of harassment when paper log books are used. However, the commenter stated the survey compares reports of harassment between AOBRD users and paper log users. Although language related to the use of ELDs to monitor productivity is not included in the current version of the law, OOIDA wrote ''the survey report spends excessive time on productivity issues.'' The commenter also took issue with the definitions of ''harassment'' and ''coercion'' used in the survey, stating that the statute does not require that harassment result in any driver violation. Similarly, OOIDA noted the survey definition of coercion requires the offending conduct be based on the denial of business or work, but the statute does not include such a requirement.

OOIDA asserted the survey methodology likely resulted in under reporting instances of driver harassment. One source of under

[37] The Harassment Survey is available in the docket for this rulemaking; it is docket number FMCSA–2010–0167–2256. It is also available on line at: *http://ntl.bts.gov/lib/54000/54100/54178/RRR-14-009-Attitudes_of_Truck_Drivers_and_Carriers_on_the_Use_of_ELDs_and_Harassment-V11-FINAL.pdf.*

reporting is the result of the survey being based on self-reporting rather than direct observation. OOIDA noted motor carriers are not likely to admit to unlawful driver harassment, and drivers are unlikely to admit that they were a victim of harassment, particularly when it might implicate them in a violation.

OOIDA also contended large motor carriers are strong supporters of ELDs and, therefore, more likely to report positive results with respect to ELD use. OOIDA argued that large motor carriers were the subject of the survey. According to OOIDA, although motor carriers with 10 or fewer trucks make up 92 percent of registered motor carriers, they made up only 2 percent of the survey.

OOIDA expressed concern about the quality of the survey data, stating that the survey only partially focused on driver harassment. The commenter explained that of the total of 14 questions asked of respondents, 7 questions have no connection to ELDs or harassment, 3 other questions relate to harassment, but have no relationship to ELDs, and only 4 questions relate to motor carrier use of ELDs to harass drivers. However, OOIDA stated, the four relevant questions were asked in generic terms that suggested unlawful behavior, but they were not presented in the context of a real-world example that might be meaningful to drivers. OOIDA said comparing the data associated with responses to generically worded questions to data associated with responses to questions that used more specific language supports its concern.

Although the report characterized the instances of driver harassment as few on a percentage basis, OOIDA believed the evidence shows significant use of ELDs to harass drivers in terms of raw numbers. Applying the report's percentages to the 2.3 million drivers who would be covered by the proposed ELD rulemaking, OOIDA's analysis showed, at least once a month, motor carriers changing the duty status of more than 98,000 drivers, contacting more than 206,000 drivers and asking why their truck was not moving, and asking 276,000 drivers to operate when fatigued. OOIDA asserted this data illustrates that motor carriers would use ELDs as a tool to ask drivers to operate longer hours than the driver's professional judgment will support. Furthermore, OOIDA believed the study documents the serious problem of harassment requiring a serious regulatory response.

OOIDA contended FMCSA's proposed rules do not take into account the record it has made on the current use of ELDs to harass drivers. It stated it expects FMCSA to review its pending proposed ELD rules to address the record it has now made with this study.

OOIDA stated that the record for the proposed rulemaking is deficient because it lacks information and analysis on the survey, and because the public has not had an opportunity to react to, and comment on, the survey. As described in the SNPRM, OOIDA noted that FMCSA initiated a survey of drivers and motor carriers regarding the use of e-logging devices to harass drivers, but a report on the results of that survey is not due until 2 months after the close of the comment period for the SNPRM. OOIDA asserted that it was this type of defect in a rulemaking process that caused the U.S. Court of Appeals for the DC Circuit to overturn the HOS rules in July 2007. OOIDA stated that to remedy this problem and comply with the Administrative Procedure Act, FMCSA must be prepared to publish the data collected by the survey and its analysis of that data, and welcome another round of comments so that interested parties may properly address the driver harassment issue.

3. FMCSA Response

In accordance with the Paperwork Reduction Act of 1995, FMCSA announced its plan to submit an ICR to OMB and asked for comments in **Federal Register** notices on December 13, 2012 (77 FR 74267) and May 28, 2013 (78 FR 32001). Both of these notices provided the name and complete contact information for the contractors who conducted the survey. That information is also in the study report itself, and available at: *http://ntl.bts.gov/lib/54000/54100/54178/RRR-14-009-Attitudes_of_Truck_Drivers_and_Carriers_on_the_Use_of_ELDs_and_Harassment-V11-FINAL.pdf* .

The study objectives are set out in the report. In addition the December 13, 2012, and May 28, 2013, notices spelled out the objectives clearly and provided opportunity for comment. Two peer reviews were conducted—the first on the study design and methodology and the second on the actual findings and presentation. Further, the study methodology was reviewed through the OMB Paperwork Reduction Act and ICR processes.

OOIDA contended that the survey framework and terminology and the definitions of ''harassment'' and ''coercion'' used in the survey differ from the statutory requirements. The harassment element of the survey was premised on the opinion of the United States Court of Appeals for the Seventh Circuit, addressing this matter. *Owner-Operator Indep. Drivers Ass'n* v. *Fed. Motor Carrier Safety Admin.,* 656 F.3d 580, 588–89 (7th Cir. 2011). The Agency's obligation to consider coercion in certain rulemakings was subsequently enacted as part of MAP–21. 49 U.S.C. 31136(a)(5). Neither term is defined by statute. Although OOIDA objected to survey time spent on productivity issues, those issue were included because the circuit court explicitly addressed productivity. FMCSA responded to OOIDA's concerns about the definitions of harassment and coercion in the May 28, 2013, notice addressing the Agency's ICR under the Paperwork Reduction Act (78 FR 32001).[38] Further, Congress eliminated the statutory reference to productivity in enacting MAP–21 and the Agency does not regulate productivity in this rule (other than to clarify that productivity measures undertaken by carriers cannot be used to harass drivers).

FMCSA acknowledges OOIDA's concern that neither drivers nor motor carriers may disclose harassment when it might implicate them in a violation. However, every reasonable step was taken in the survey to ensure the anonymity of drivers. They were assured that no one would be told of their participation or their answers. The sheet they signed acknowledging questionnaire topics was kept separate from the surveys. Participation was not mandatory, which was explained to the drivers and written on the sheet. Carrier personnel were included in the survey because they interact with drivers and because their perspective on harassment is relevant to FMCSA.

OOIDA criticized the survey questions because, in their view, only four questions relate directly to the use of an ELD by a motor carrier to harass a driver. The questions were formulated to include a list of interactions which includes items seen as both positive and negative, which helped to ensure that the list was not biased. Second, the opinions of what is beneficial can vary. The wording of questions was pre-tested in a series of in-depth interviews with a random set of drivers. Comprehension of the items was confirmed, and drivers were also asked whether there was anything else they considered harassment that was not on the list of what had been asked.

The report characterized instances of driver harassment as ''few'' when considered on a percentage basis. Based on an estimate of 2.3 million drivers, OOIDA applied the percentages in the report to the affected population of

[38] OOIDA's comment on the December 13, 2012, notice is available in docket FMCSA–2012–0309.

drivers and concluded that many drivers are affected by harassment. This extrapolation may or may not be accurate, since confidence intervals were not provided for the incidence of harassment.

OOIDA recommended that FMCSA identify current Federal and State enforcement practices and rules that protect drivers from harassment and coercion. At least nine questions in the survey addressed this very issue, including question 32, which specifically asked drivers to rate the effectiveness of Federal regulations.

FMCSA conducted the Harassment Survey to better understand drivers' and carriers' perceptions of harassment. FMCSA posted the report on the survey in the rulemaking's public docket and opened the rulemaking for public comment on the report (November 13, 2014, 79 FR 67541). The Agency considered the results of the survey, as well as comments on the report, as part of the rulemaking process. The Agency relied on both the survey results and the responsive comments to inform this rule.

M. Legal Issues—Constitutional Rights: Fourth and Fifth Amendments

1. Fourth Amendment

Comments to the 2011 NPRM

Numerous commenters to the NPRM claimed that the proposed rule violates the Fourth Amendment of the United States Constitution in that the required use of an electronic recorder results in an unreasonable search and seizure and an invasion of a driver's right of privacy.

Comments to the 2014 SNPRM

Similar Fourth Amendment arguments were submitted in response to the SNPRM. A majority of these commenters stated that the ELD mandate would be an invasion of privacy rights. Comments included statements such as one noting that requiring an ELD results in a sustained illegal search without a warrant and a search of property (including data and personal information) without permission or reasonable cause. One commenter noted that, when an agent of a government can stop your vehicle and download your whereabouts over the last several weeks, you have lost your privacy. Two commenters pointed out that the Supreme Court recently ruled that authorities must have a warrant to obtain cellular phone data. Those commenters noted that mandatory tracking and monitoring of CMV drivers with ELDs is the same thing and should require a warrant. Several commenters pointed out that the ELD mandate is particularly invasive because most drivers spend a significant amount of time in their trucks and view them more as homes. Commenters pointed out that 24-hour audio and visual monitoring would be particularly offensive to husband and wife teams who live in their trucks.

Another commenter stated that there needs to be a way for enforcement personnel to view logs from outside of trucks, because he would not give enforcement personnel permission to enter his truck without a search warrant. Another commenter pointed out that the government does not drug test every citizen to ensure compliance with drug laws, or put GPS trackers on all vehicles on the highway, or put ignition interlocks on all vehicles to deter driving while intoxicated, or read every piece of mail or listen to every phone call, because it would be unconstitutional to do so; likewise, required use of an ELD is unconstitutional. Commenters stated that the government should not mandate ELDs on CMVs unless it is willing to mandate such devices for every form of transportation.

OOIDA provided the most extensive analysis addressing why, in its view, the required use of ELDs runs afoul of the Fourth Amendment. OOIDA noted that the Fourth Amendment applies to both criminal and civil cases and proscribes unreasonable searches and seizures. OOIDA pointed to Federal case law to support the conclusion that prolonged and systematic tracking of drivers using ELDs constitutes a search under the Fourth Amendment. OOIDA first pointed to a Supreme Court case, *United States* v. *Knotts,* 460 U.S. 276 (1983), in which the Court held that the short term use of a simple beeper device to track the movement by truck of a 5-gallon drum of chloroform used in drug manufacturing was not a search. OOIDA noted that the *Knotts* case presents a very narrow ruling under facts that are easily distinguished from the proposed use of ELDs. OOIDA also cited to subsequent case law where Federal courts declined to apply the *Knotts* ruling beyond the narrow confines of the facts presented in that case.

OOIDA next stated that the use of ELDs to monitor driver behavior is not covered by the ''pervasively regulated business'' exception to the warrant requirement articulated by the Supreme Court in *New York* v. *Burger,* 482 U.S. 691, 702–703 (1987). OOIDA explained that the Supreme Court concluded in *Burger* that where (1) the business in question is closely regulated, and (2) the warrantless inspections are necessary to further the regulatory scheme, then (3) compliance with the Fourth Amendment turns on whether the inspection program, in terms of the certainty and regularity of its application, provides a constitutionally adequate substitute for a warrant.

OOIDA stated that the proposed use of ELDs does not involve the inspection of ''commercial premises,'' but, rather, involves the systematic tracking of the movement of individual drivers over extended periods of time by the use of sophisticated electronic devices in order to enforce compliance with HOS regulations. OOIDA pointed out that neither *Burger* nor any of the cases implementing the pervasively regulated industry exception stand for the proposition that individuals working in a pervasively regulated industry may be personally subjected to continuous surveillance by sophisticated monitoring devices over long periods of time without a warrant.

OOIDA also argued that the proposed use of ELDs does not fall within the pervasively regulated industry exception because it does not satisfy the second prong of the *Burger* test—*i.e.,* that the search be necessary to accomplish regulatory goals. In support of its argument, OOIDA noted that, according to FMCSA, government interests at issue in this rulemaking are to improve compliance with various HOS rules; to make the operation of CMVs safer; and to improve drivers' opportunities for rest. OOIDA asserted that the record presented does not support the conclusion that FMCSA's regulatory goals are furthered by the ELD mandate, arguing that drivers must manually enter changes in duty status into an ELD, which makes the device no better than paper logs. OOIDA also stated that FMCSA is completely unable to support its safety claims with current, reliable data.

FMCSA Response

FMCSA disagrees that the required use of ELDs violates the Fourth Amendment. For more than 75 years, CMV drivers engaged in interstate commerce have been required to keep paper logbooks as part of their compliance with HOS rules. Under current regulations, the log must show, among other information, the driver's duty status (on duty, on-duty driving, sleeper berth, off duty) and the general location of any change in duty status. Although an ELD will record driving time information automatically (including date, time and location for any transition into or out of driving time) and collect location information at intermediate intervals, only the methodology changes; the fundamental

data and the purpose of data collection remains unchanged. To be sure, an ELD collects additional data elements (such as engine on, engine hours), but the minimal expansion is aimed at ensuring the authenticity of the driver's data. While technology such as GPS can generate a ''precise comprehensive record of a person's public movements'' that reflects a wealth of personal information (*United States* v. *Jones,* __ U.S. __, 132 S. Ct. 945, 955 (2012) (Sotomayor, J., concurring)), the rule does not provide for presentation of this level of precision to authorized safety officials. Rather, the Agency has deliberately limited the location information shared with authorized safety officials to avoid specific proximities, and is recorded at varying prescribed intervals rather than real time reporting—measures taken to address drivers' privacy concerns. While ELDs would generally replace paper logs, a change required by statute, the basic premise, that is, prescribing a method of policing a driver's compliance with HOS regulations, remains unchanged. An ELD records data only during operation of a CMV and drivers have no reasonable expectation of privacy in the data captured during that period.

The Fourth Amendment provides, in part, that, ''[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated.'' A Fourth Amendment search occurs when the government invades a person's privacy interests that society recognizes as reasonable or seeks to obtains information by physically intruding on a constitutionally protected area. *United States* v. *Jones,* __U.S. __, 132 S. Ct. 945 (2012). Commenters argued that required use of an ELD results in an unconstitutional search. (No commenter argued the use of ELDs involved a seizure.) However, commenters arguing that a Fourth Amendment violation results from the required use of ELDs rely largely on case law addressing law enforcement's use of technology for surveillance purposes, thus without the subject's knowledge, or searches of property conducted incident to arrests. FMCSA believes these cases are inapposite. Given that ELDs are employed by motor carriers pursuant to a Federal regulatory requirement and drivers are aware of their use, there is no trespass or infringement of a reasonable expectation of privacy. Thus, there is no search for purposes of the Fourth Amendment. *Cf. El-Nahal* v. *Yassky,* 993 F.Supp.2d 460 (S.D.N.Y. 2014) (required use of technology, including GPS, under municipal regulatory scheme governing taxicabs did not result in a search under Fourth Amendment).

Commenters also referenced a recent Supreme Court decision holding that authorities required a warrant to view data captured on a cell phone that they compared to an ELD. The case referenced, *Riley* v. *California,* __U.S. __, 134 S. Ct. 2473 (2014), involved searches of cell phone data incident to arrests; thus, it is clearly distinguishable from the required use of ELDs.

Even if we assumed that requiring the collection of data through an ELD and sharing that information with authorized safety officials qualified as a search, the commenters fail to recognize that not every search is unreasonable for purposes of the Fourth Amendment. Notwithstanding comments to the contrary, it is well established that interstate commercial trucking is a pervasively regulated industry. See *United States* v. *Castelo,* 415 F.3d 407, 410 (5th Cir. 2005), and *United States* v. *Maldonado,* 356 F.3d 130, 135 (1st Cir. 2004) (applying *New York* v. *Burger,* 482 U.S. 691 (1987)), concluding that interstate commercial trucking is a pervasively regulated industry, capable of supporting recourse to an administrative search exception. The nature of its regulation justifies treating motor carriers and CMV drivers differently from the population at large. Although some commenters draw an analogy between a driver's truck and the driver's home, the Supreme Court has long recognized that an individual's expectation to privacy in a private vehicle is less than that in a home (*Preston* v. *United States,* 376 U.S. 364, 366–367 (1964)). The privacy interests of CMV drivers are clearly diminished given the nature of the commercial trucking industry (*Int'l Bhd. of Teamsters* v. *Dep't of Transp.,* 932 F.2d 1292, 1300 (9th Cir. 1991) (upholding DOT drug testing regulations)). OOIDA notes that case law addressing the pervasively regulated industry does not support the proposition that individuals working in the industry may be subject to continuous surveillance over long periods of time absent a warrant. However, that argument ignores that ELD-related monitoring is limited, tied to a driver's compliance with HOS rules while operating a CMV. Although the methodology is new, the required monitoring of hours has been in place over 75 years.[39]

As to the concern about authorized safety officials entering the CMV, the technical specifications in today's rule require that an ELD without a printer be designed so that its display may be reasonably viewed by an authorized safety official outside of the vehicle. Some commenters' Fourth Amendment concerns reflected a misunderstanding of the rule. For example, at no point did the Agency propose constant audio and visual monitoring of drivers. In sum, the Agency believes that commenters' Fourth Amendment objections are not supported by the relevant case law as applied to today's rule.

2. Fifth Amendment

Comments to the 2011 NPRM

Several commenters said that requiring the use of EOBRs violates drivers' rights under the Fifth Amendment of the United States Constitution.

Comments to the 2014 SNPRM

In responding to the SNPRM, OOIDA elaborated on its Fifth Amendment concerns, claiming that the required use of ELDs violates drivers' right of due process through an imposition of ''an unconstitutional deprivation of a driver's freedom of movement.'' It described the SNPRM as ''provid[ing] for electronic monitoring combined with, effectively, a curfew.'' According to OOIDA, electronic monitoring is imposed without any determination of an individual driver's risk to public safety. OOIDA notes that the ''right of procedural due process requires an individual hearing for each person to determine whether electronic monitoring plus a curfew (restricting the accuser's [sic] right to freedom of movement) was reasonable and necessary to meet the government's interest.'' In support of its position, OOIDA relies on a series of Federal district court cases finding that automatic electronic monitoring and curfews imposed as a condition of bail, required under the Adam Walsh Child Protection and Safety Act of 2006[40] for certain violations involving minors, are unconstitutional.

[39] OOIDA also argued that the ELD requirement does not satisfy an exception to the warrant requirement applicable to situations involving special needs beyond the needs of ordinary law enforcement. Given the Agency's position that required use of an ELD is not a ''search'' for purposes of the Fourth Amendment but, even if it were considered a search, it is justified under the exception for administrative searches in a pervasively regulated industry, we do not address this argument.

[40] Public Law 109–248, Title II, sec. 216, 120 Stat. 587, 617 (July 27, 2006).

FMCSA Response

OOIDA and other commenters stated that the ELD mandate is akin to a criminal penalty that unlawfully restricts a driver's freedom of movement. OOIDA's reliance on cases under the Adam Walsh Child Protection and Safety Act is misplaced. That Act requires continuous electronic monitoring by the government of individuals who have been charged, but not convicted, of certain crimes involving minors. The statute's very purpose is to track and restrict the *individual's* movement without any procedural review of the risk posed by the individual charged. In contrast, today's rule requiring ELDs, applicable to certain individuals electing to operate CMVs as part of a pervasively regulated industry, does not require constant monitoring of individual drivers. It simply replaces a long-standing existing process under which drivers have been required to manually track their time to demonstrate compliance with HOS rules with an electronic recording system. There is no automatic electronic monitoring once a driver steps out of the CMV.

Although other comments did not fully explain how the Fifth Amendment would be violated, it appears that their concerns related to access to the HOS records and the right against self-incrimination. The commenters, however, ignored established law that provides an exception to the Fifth Amendment privilege against self-incrimination for records that are required to be kept by law such as the HOS rules. Driver HOS records, whether in the form of a paper log book or data captured by an ELD, fall under this exception. By engaging in a regulated industry, a driver waives any privilege related to the production of required records (*Thomas* v. *Tyler,* 841 F. Supp. 1119 (D. Kan. 1993)).

In sum, commenters' Fifth Amendment arguments lack merit.

N. Short Movements or Movements Under a Certain Speed and Personal Use of a CMV

1. Comments to the 2011 NPRM

The NPRM relied upon the technical specifications from the April 2010 rule. Those specifications did not address the issue of short movements or movements under a certain speed and for personal use.

2. Comments to the 2014 SNPRM

In the SNPRM, FMCSA sought comments on how short movement, such as movements within a terminal, similar slow movements, and yard movements by other drivers, should be logged. FMCSA proposed that the ELD would provide the capability for a driver to indicate the beginning and end of two specific categories: Personal use of a CMV and yard moves, where the CMV may be in motion but a driver is not necessarily in a ''driving'' duty status. If a motor carrier allowed drivers to use a CMV for personal conveyance or yard moves, the SNPRM proposed that a driver's indication of the start and end of such occurrences would record a dataset; but the ELD would not indicate these as separate duty statuses. If a driver used a CMV for personal conveyance, the ELD would not record that time as on-duty driving.

FMCSA did not define a specific threshold of distance or time traveled for a driver to be able to use the personal conveyance or the yard movement provisions. Instead, authorized motor carrier safety personnel and authorized safety officials would use the ELD data to further explore and determine whether the driver appropriately used the indicated special category.

ATA stated that FMCSA's modified proposal represents a reasonable middle ground. Carriers will have a record of all vehicle movements but will be able to distinguish those that should be legitimately recorded as driving time from those should not. Further, it will help law enforcement identify true driving time violations, while at the same time providing visibility to yard and personal conveyance movements in the event they are unreasonable or excessive.

Defining Yard Moves and Personal Conveyance

Schneider recommended ''yard moves'' be defined, as did inthinc. Schneider noted this term, which is used in § 395.28 under ''special driving categories—other driving statuses,'' requires a clear definition. Without a definition, Schneider asserted, there will be inconsistency in the use of this status that will create issues during roadside enforcement. Schneider suggested defining ''yard move'' to mean ''an on-duty not driving activity where all driving is done within an area that does not allow for any public access.''

CVSA recommended that FMCSA define the term ''personal conveyance'' in 49 CFR 395.2 as ''an unladen commercial motor vehicle (CMV) . . . used by a driver, while in an ''off-duty'' status and when the utilization of a motor carrier's CMV is necessary for personal transportation, and for a short distance.'' CVSA would consider ''short distance'' travel to and from the nearest lodging or restaurant facilities in the immediate vicinity. ''Personal conveyance'' would also include use of a motor carrier's CMV to travel from a driver's home to his/her terminal (normal work reporting location), or from a driver's terminal (normal work reporting location) to his/her home. In any case, this distance could not exceed the lesser of 25 miles or 30 minutes. Schneider supported this definition.

Comments on the Practical Application of the Rule

Through testing with hundreds of drivers, Schneider found that having driving status trigger only off of a speed threshold without an additional mileage threshold is detrimental to the ELD. It recommended that FMCSA change the appendix to subpart B of part 395, section 4.3.1.2, paragraph (1) to read ''[o]nce the vehicle speed exceeds the set speed threshold OR the vehicle travels more than 1.5 miles, it is considered in motion.'' The commenter believed this avoids the potential for a tractor to move 20 miles at 2 miles per hour without showing any driving time. Also, in section 4.3.1.2, paragraph (2), Schneider suggested the vehicle should be considered stopped when the speed reaches 0 miles per hour AND the unit stays at 0 miles per hour for 5 minutes, rather than the proposed ''3 consecutive seconds.'' Commenter wrote that to leave the threshold at 3 seconds as the rule proposes will result in invalid duty status changes.

AGC urged the Agency to include a provision allowing short vehicle movements within a closed facility (*e.g.,* less than 2 miles in the aggregate) to be recorded as ODND time. Saucon Technologies recommended allowing the driver to indicate yard movement by selecting an appropriate comment on the device. Once yard movement is selected, the driver would be allowed to move the CMV within the confines of the yard, (minimum amount of distance should be clearly defined), before the status would automatically change to On-Duty Driving.

While the driver is to indicate manually the beginning and ending of yard moves, XRS stated that there is no guidance on how the ELD should indicate a yard move is beyond appropriate limits, such as a warning if the ELD indicates Yard Move and the CMV exceeds the normal safe yard speed or distance. Geo-fencing of yards would be costly and time consuming and not an effective practice.

XRS asked FMCSA to clarify the process of reviewing unassigned driver moves of the CMV with an ELD device

installed. XRS believed the language in proposed § 395.32(c) seems to contradict the driver identification process as later described in § 395.32(c)(1)(ii). Commenter believed that the SNPRM made the carrier responsible for the final determination of ownership of unidentified driving. XRS suggested an edit process that would give the driver the opportunity to reject the unidentified hours in the edit review. XRS asked for direction concerning which ELD records under the unidentified driver profile need to be presented to the driver.

Coach USA stated that support personnel, rather than drivers, often make yard moves, for example, when they wash buses. The result is many short movements within the facility by personnel who are not drivers and never operate a bus outside of the facility. Under FMCA's proposed ELD specifications, Coach USA wrote that it appears that all of these yard moves by support personnel would be recorded as ''unidentified driving,'' and the carrier would be responsible for annotating each of these records to explain why they are not assigned to a driver. This would create a substantial administrative burden for large carriers. Coach USA suggested that FMCSA allow ELDs to be designed to recognize, using GPS, when they are being operated within the carrier's facility and could be set to automatically record any unassigned operation within the facility of a duration of less than 15 minutes as ''yard moves by support personnel.'' Such a system would effectively annotate all of the unassigned yard moves automatically. If a driver were to engage in yard moves, Coach USA wrote that driver could still log in and set the ELD to record the yard moves under his or her account. The Alliance for Driver Safety and Security stated that there is no guidance for the common situations whereby the truck leaves the property briefly, increases speed for a mile and returns to the yard.

Eclipse Software Systems asked FMCSA to allow automated yard moves. The point at which a vehicle comes to rest for more than 5 minutes becomes its anchor point. As long as the vehicle does not move, say, outside a half-mile radius of that anchor point, these moves could be logged automatically as yard moves. This prevents any significant vehicle use, while reducing the likely number of unauthenticated driving events. Eclipse also stated that sometimes drivers need to move their trucks short distances at a truck stop. It would be fair if they could log this as a yard-move, rather than having to switch to personal use, or trigger unauthenticated driving time. Truck stops are not technically ''yards'' so a clarification may be warranted in the rulemaking.

TRALA stated that, at the very least, there is some confusion as to whether all miles, including personal and yard miles, must be recorded. Zonar stated that an ELD must provide the means for a driver to indicate the beginning and end of a period when the driver uses the CMV for personal use or yard moves. Zonar asked how the driver will end the yard move if the CMV is moved in the yard and then continues out of the yard to a road move.

While the SNPRM does not subscribe to a specific threshold of miles or time, the TCA stated that it is important that personal conveyance be distinguished from true driving time. TCA wrote that FMCSA should more clearly define the principals and parameters of personal conveyance so that it can avoid any misinterpretation. ATA supported FMCSA's proposed treatment and recording of personal conveyance and movements within closed facilities (*i.e.,* yards). NAFA Fleet Management Association concurred that authorized use of a CMV for personal conveyance would not be recorded as driving, but rather off-duty time. Eclipse Software Systems agreed that the driver needs to indicate when he or she begins personal use. However, just as the proposed rules allow the driver to be placed in ODND after 5 minutes with no vehicle movement, Eclipse would like to enable the same automatic functionality for the end of Personal Use time. A number of individual commenters asked FMCSA to clarify when it is appropriate to use a CMV for personal conveyance. One asked that the guidance be rewritten. Another commenter suggested that personal conveyance could be used to disguise moves in the local delivery area of a terminal. Several individual commenters asked that allowances be made for maintenance driving, for example, when a CMV was being tested.

3. FMCSA Response

FMCSA acknowledges and agrees with the commenters who stated that ELDs, by virtue of recording all movements, will create a visible consistent record of all actions taken in the CMV.

The Agency is aware that there are concerns about personal conveyance and yard moves, as some commenters would like clear-cut limits on the mileage or time thresholds for CMV usage acceptable under personal conveyance and yard moves. However, the Agency does not think it is appropriate to include these definitions in the ELD rulemaking, as both clearly fall under the HOS rules and are applicable to a wide variety of CMV operations, not just those using ELDs. Thus, the Agency declines to address these matters at this time.

Additionally, the Agency does not create any new provisions for either status, instead requiring only that they each be recorded. By making specific requirements on how these statuses must be recorded, but not specifying limits in mileage or time, FMCSA has purposely left these guidelines as open as they are today, to suit the diversity of operations across the country.

FMCSA wishes to clarify that all miles driven, regardless of the status the driver has selected, are recorded. However, when a personal conveyance status is selected, the CMV's location is recorded with a lower level of precision, *i.e.,* an approximate 10-mile radius. FMCSA believes that the recording of these miles is essential to HOS compliance, but balances this requirement with protections on the privacy of location data when drivers are not on-duty.

If a driver selects the yard moves status and then begins regular driving, the driver simply switches statuses. If there is no break, and the driver forgets to add the new status, the driver can annotate his or her record to explain this, and can switch the time between the two statuses, as both are driving statuses.

At the end of a personal conveyance status, FMCSA does not require that the ELD automatically switch to an off-duty status. Again, the driver can annotate his or her record to explain if the driver forgets to record an off-duty status at the end of the driving time.

FMCSA understands the potential for abuse of the personal conveyance status, and has purposely required that all movements of the CMV be recorded (with a less precise location requirement). The rules do not allow driving statuses, including off-duty driving, to be edited to say they are non-driving time. These protections will directly address the falsification of HOS records, making it significantly harder. FMCSA believes that recording all the time that a CMV is in motion will limit significantly the amount of falsified time.

Commenters asked about mechanics or maintenance personnel operating CMVs, or driving done by employees who are not listed CMV drivers. Today's rule allows any employee of the motor carrier that operates the vehicle to have a unique login. If a CMV is operated by someone without a CDL within a yard, the mileage could be attributed to the

individual. Generally, the short-haul exception for RODS would mean these individuals would not be expected to use an ELD and there is nothing in this rulemaking that would preclude the ELD system from having entry categories to capture occasional movements of an ELD-equipped vehicle by individuals who are not required to prepare RODS.

FMCSA agrees that the carrier should have the opportunity to review unassigned driver miles, as they are ultimately responsible for the records. There is no prohibition on the motor carrier reviewing these records. FMCSA does not believe that this will be a significant administrative burden, especially if all employees who have the potential to operate CMVs on company property or beyond are given unique identifiers.

Today's rule does not allow ''anchoring'' or any location-based operational exemption. Drivers have the option to select a yard moves status in this case, and their operational history would need to be consistent with that status, which may look different depending on different types of operations.

O. Statutory Definition of ELD

1. Comments to the 2014 SNPRM

Subsequent to the NPRM, Congress enacted MAP–21, requiring regulations mandating the use of ELDs by drivers of CMVs required to keep RODS. The statute defines an electronic logging device as a ''device that . . . is capable of recording a driver's [HOS] and duty status accurately and automatically . . . and . . . meets the requirements established by the Secretary through regulation.'' 49 U.S.C. 31137(f)(1).

Focusing on the statutory definition of an ELD, OOIDA commented that FMCSA failed to comply with the statutory directive enacted as part of MAP–21 in that an ELD is not ''capable of recording a driver's hours of service and duty status accurately and automatically.'' 49 U.S.C. 31137(f)(1)(A). OOIDA viewed the Agency's action as ''arbitrary, capricious and reason enough for any court to overturn the . . . rule.'' Furthermore, OOIDA emphasized that the majority of HOS violations result from the miscoding of non-driving duty status.

2. FMCSA Response

The Agency acknowledges that technical specifications in this rule do not include ELDs that automatically record a driver's duty status, other than on-duty driving time. Although technology currently exists that could track a driver's every movement, including whether a driver is sleeping, this type of technology is not regularly employed in electronic recorders used to record drivers' HOS. FMCSA does not believe that Congress, in directing the Agency to require use of ELDs, envisioned this level of monitoring and the inherent privacy invasion that would occur. Indeed, given the privacy concerns raised by OOIDA and other commenters, we find it difficult to reconcile OOIDA's argument that the ELD functionality required in today's rule is not sufficiently broad because it does not record all of a driver's duty statuses.

In order to support its claim that FMCSA willfully ignores the definition of an ELD set forth in MAP–21, OOIDA reads the statutory definition in isolation. However, a fundamental rule of statutory construction requires that a statutory provision be read in the context of the statutory scheme and that no subsection be read in isolation. 2A Norman J. Singer & J.D. Shambie Singer, Statutes and Statutory Construction § 46.5 (7th ed. 2007). As part of the MAP–21 enactment addressing ELDs, Congress addressed the role of supporting documents, requiring the Agency to ''consider how [the] regulations may . . . reduce or eliminate . . . supporting document[s] associated with paper-based [RODS] if . . . data contained in an [ELD] supplants such documentation . . . and . . . using such data without paper-based records does not diminish the Secretary's ability to audit and review compliance with [HOS] regulations[.]'' 49 U.S.C. 31137(d)(1). Supporting documents serve a critical role in monitoring a driver's ODND time. Had Congress envisioned that the ELD could automatically track every duty status, it would have simply eliminated the need for supporting documents.

FMCSA finds further support for its position in the applicable legislative history. In developing the ELD provisions incorporated into MAP–21, including the statutory definition, the Senate Committee on Commerce, Science, and Transportation considered EOBRs then in use and referenced the Agency's February 1, 2010, NPRM, as to the type of electronic recorders it envisioned. S. Rep. No. 112–238 at 4 (2012). In prescribing the ELD mandate, Congress was clearly aware that neither existing technology nor the Agency's 2010 NPRM contemplated devices that would ''automatically'' monitor a driver's non-driving hours.

In response to OOIDA's comment that HOS violations result primarily from the miscoding of non-driving duty time, FMCSA notes that the data captured by ELDs, such as time, location, and mileage, combined with required supporting documents, will result in a more accurate record of a driver's duty status than paper RODS currently provide.

P. Roadside Enforcement

1. Comments to the SNPRM

The SNPRM specified how the ELD would transmit data to authorized safety officials at roadside. The proposed primary method of data transmission was Wireless Web Services or Bluetooth 2.1 or Email (SMTP) or compliant printout. The proposed backup methods were USB 2.0, Scannable QR codes, or TransferJet. An ELD must be able to present a graph grid of driver's daily duty status changes either on a display unit or on a printout.

Commenters believed that authorized safety officials at road side do not have the training or equipment to inspect vehicles with ELDs. FedEx stated that there is concern in the industry about uneven acceptance and use of the data transfer mechanisms by law enforcement. Particularly, there is concern that some law enforcement officers will feel more comfortable reviewing paper records and will thus demand paper from drivers. If the driver's ELD cannot print, then the officer may write a violation for failure to produce the required HOS documents. To prevent this type of uneven enforcement, FedEx suggested that FMCSA make clear in § 395.24 that a driver can provide his or her records to law enforcement by printouts or by data transfer.

The UMA stated that it is essential that enforcement personnel are able to evaluate the accuracy of compliance in the field. UMA has heard that a number of field interventions do not include reviewing electronic logs. UMA suggested that expedited uniform standards and training are critical to achieving the desired benefits of compliance.

OOIDA conducted a survey regarding the frequency with which State roadside inspections passed trucks monitored with EOBRs/ELDs through the inspection process without checking the trucker's logs. OOIDA received over 2,687 responses. Of those, 69 percent (2,069) reported that many trucks carry a sticker stating that it has an EOBR/ELD installed on the truck. The survey found that many responders reported that a law enforcement official declined to inspect the driver's logs because the official saw that the truck had a sticker. Many responders also stated that they

saw a law enforcement official passing on inspecting another driver's logs because the truck was equipped with an EOBR/ELD. Further, numerous responders reported that officers did not know how to operate the EOBRs/ELDs. Responders to the survey reported the practice of passing on inspection of such trucks was evident throughout the country, with no particular area singled out.

A driver said he had heard similar reports. He asked if poorly maintained vehicles are also being overlooked.

2. FMCSA Response

FMCSA recognizes the potential challenges during the transition from the current use of AOBRDs and paper logs to ELDs. Starting on the mandatory compliance date of this rule, FMCSA expects standardized data—shared with authorized safety officials by both electronic and non-electronic methods—to make enforcement more efficient by increasing the ease of reading and interpreting data presented by ELDs. Today's rule makes clear that either the standard display or printout will be available to ensure that CMVs with ELDs can be inspected absent an electronic data transfer.

To support a smooth transition period for the upcoming technological changes, FMCSA has initiated early planning to implement today's rule that will facilitate comprehensive, consistent enforcement. Today's rule standardizes the data transfer and display options on ELDs. This standardization facilitates the ability of roadside officers to use the ELD technology. While there will still be some unique functionality between systems and vendors, the underlying information and data will be communicated to roadside officers in a consistent manner across all ELDs, which will enhance roadside officers' ability to enforce HOS rules during roadside inspections.

Authorized safety officials also will receive standardized training, which will be scenario-driven and activity-based and focused on reading and interpreting standardized data. The Agency believes that training focused on efficiently reading ELD data in a standardized format will improve the ability of authorized safety officials to conduct inspections and investigations.

Q. Out of Scope Comments

1. 2011 NPRM and 2014 SNPRM

Commenters to both the 2011 NPRM and the SNPRM brought up a number of issues that are outside the scope of this rulemaking. Issues are out of scope if they cannot be addressed or changed in this rulemaking, though they may be related in some way to ELDs. For example, a number of comments are now out of scope because they dealt with the technical specifications of the (now vacated) April 2010 rule.

Commenters asked FMCSA to address a number of issues, such as changes to or elimination of HOS rules—a matter outside the scope of this rulemaking. Commenters had suggestions about how drivers should be paid, including payment by the hour and overtime after 40 hours. Commenters asked that shippers and receivers be held accountable for HOS-related violations, detention times, or loading issues.

A commenter asked FMCSA to raise the minimum insurance liability limits that truck drivers are required to carry, and to implement requirements for improved underride guards. A commenter asked FMCSA to impose speed limiters; another opposed them. A commenter also asked FMCSA to concentrate on maintenance issues.

Commenters recommended that FMCSA focus on all motorists, not just on commercial vehicles. A motor carrier wrote that whenever there is a crash involving a commercial vehicle, it goes on the history of that driver and company even if they were not at fault. The commenter asked why we are not getting this needed change accomplished first and then looking at the fatality numbers.

Commenters wrote that this rulemaking fails to address the parking shortage, and the problems drivers face when they cannot find a safe place to park at the end of their shift, when they are delayed, or when they run out of hours and are forced off property by a customer. Numerous commenters emphasized that adequate training is essential for drivers, or criticized existing training. Some commenters suggested that FMCSA go after inadequate driving schools or chameleon carriers. A commenter suggested that drivers have a panic button in the sleeper berth area to allow them to call law enforcement for help.

2. FMCSA Response

FMCSA is aware of the ongoing concerns, as reflected in these comments, concerning drivers' HOS, including parking issues, detention time, and hourly versus mileage payments. However, many of the issues raised are either outside the Agency's authority or outside the scope of today's rule.

XIII. Section-By-Section Analysis

This rulemaking establishes technical specifications for ELDs and sets forth requirements pertaining to the use of ELDs, the maintenance of supporting documents and the potential for ELD-related harassment of drivers.

Any substantive changes from the SNPRM are noted. The SNPRM tied compliance to the effective date of the final rule. However, in order to reflect the requirements of MAP–21, this rule ties compliance to the publication date.

A. Part 385—Safety Fitness Procedures

In Section VII of appendix B of part 385, the list of acute and critical regulations is modified to reflect changes in part 395 (HOS). The Agency removes the reference to a violation of § 390.36(b)(1) that appeared in the SNPRM to make this rule consistent with the treatment of violations under the recent coercion rulemaking (80 FR 74695, November 30, 2015). This deletion does not affect the treatment under appendix B of part 385 of any underlying violation in a carrier's safety fitness determination.

B. Part 386—Rules of Practice for Motor Carrier, Intermodal Equipment Provider, Broker, Freight Forwarder, and Hazardous Materials Proceedings

1. Section 386.1 (Scope of the Rules in This Part)

FMCSA modifies this section to reflect the handling of substantial violations and harassment violations by the appropriate Division Administrator, rather than the Division Administrator for the State where the incident occurs as was proposed. Paragraph (c) of this section was changed from the language of the SNPRM to make today's rule consistent with the recently published coercion rule (80 FR 74695, November 30, 2015), including the revision to and changes in codification in § 386.12.

Section 386.12 (Complaints)

All of § 386.12, including the heading, is changed and recodified to reflect the recently published coercion rulemaking (80 FR 74695, November 30, 2015). What was proposed in § 386.12 is now included in paragraph (a) of that section, ''complaint of substantial violation.'' FMCSA changes this paragraph to provide that substantial violation complaints must be filed through the National Consumer Complaint Database and will be referred to the Division Administrator who the Agency believes will be best able to handle the complaint. (Because any person may file a complaint alleging a substantial violation, references to a driver's State of employment found in § 386.12(b) and (c) are not included in this paragraph.) The time for filing a

complaint is extended from 60 to 90 days and the procedures are modified to closely track the procedures governing complaints under the coercion rule (80 FR 74695, November 30, 2015).

In a new paragraph (b), ''complaint of harassment,'' FMCSA adds the material that was proposed in § 386.12a. Harassment complaints are to be filed through the National Consumer Complaint Database or with the Division Administrator for the State where the driver is employed. Paragraph (b) identifies the information that a driver needs to include in a written complaint alleging harassment by a motor carrier, as well as procedures that the appropriate Division Administrator follows in handling complaints. The language in this paragraph was changed from the SNPRM to reflect the language in paragraph (c) of this section, adopted as part of the coercion rulemaking (80 FR 74695, November 30, 2015).

Paragraph (c), complaint of coercion, of this section was originally published on November 30, 2015 as part of the coercion rulemaking (80 FR 74695). Only changes are stylistic.

3. Section 386.12a

Proposed § 386.12a is not included in today's rule. Instead, the procedures proposed in § 386.12a are moved to § 386.12(b).

4. Section 386.30

Today's rule adds § 386.30—a provision that appeared as § 395.7 in the SNPRM. The only changes are stylistic. This section adds procedural provisions that apply during any proceeding involving the enforcement of 49 CFR part 395. Specifically, it provides that a motor carrier is liable for an employee acting or failing to act in a manner that violates part 395 as long as the action is within the course of the motor carrier's operations. The burden of proof is on the motor carrier to show that the employee acted outside the scope of the motor carrier's operation. Finally, knowledge of any document in the motor carrier's possession, or available to the motor carrier, that could be used to ensure compliance with part 395 is imputed to the motor carrier.

5. Appendix B to Part 386 (Penalty Schedule: Violations and Monetary Penalties)

FMCSA adds new paragraph (a)(7) granting the Agency discretion to consider the gravity of the driver harassment violation in the imposition of penalties up to the maximum permitted by law. The addition of this paragraph reflects the Agency's intention to appropriately address findings of driver harassment. In assessing the amount of a civil penalty, however, the Agency is required by statute to take certain factors into account. See 5 U.S.C. 521(b)(2)(D). Thus, the Agency will apply this provision through its Uniform Fine Assessment software to assure civil penalties are assessed in individual cases in a fair manner while addressing the gravity of harassment violations.

C. Part 390—Federal Motor Carrier Safety Regulations; General

FMCSA adds a new § 390.36 to define harassment by a motor carrier toward a driver employed by the motor carrier and to prohibit motor carriers from engaging in the harassment of drivers. This section also identifies the process under which a driver who believes he or she was subjected to harassment by a motor carrier may file a written complaint.

D. Part 395—Hours of Service of Drivers

Today's rule divides part 395 into two subparts. Subpart A, General, includes §§ 395.1 through 395.19. Subpart B, ELDs, addresses the design and use of ELDs and consists of §§ 395.20 through 395.38. FMCSA provides detailed performance specifications applicable to ELDs in the appendix to subpart B.

Subpart A—General

1. Section 395.1 (Scope of Rules in This Part)

FMCSA amends § 395.1(e) to reflect that drivers who qualify to use the short-haul exceptions under 49 CFR 395.1(e)(1) or (2) are not required to keep supporting documents under § 395.11.

2. Section 395.2 (Definitions)

In this section, FMCSA adds three new definitions. ''ELD record'' is added to mean a record of duty status, recorded on an ELD, that reflects the data elements that must be captured by an ELD under the technical specifications in the Appendix to subpart B of part 395. ''Electronic Logging Device (ELD)'' is added to mean a device or technology that automatically records driving time and facilitates the accurate recording of HOS and that meets the requirements of subpart B of part 395. FMCSA also adds a definition of ''supporting document'' similar to the definition in the HMTAA. Substantive provisions pertaining to supporting documents are in § 395.11.

3. Section 395.7 (Enforcement Proceedings)

Section 395.7, as proposed in the SNPRM, is included in today's rule as § 386.30. The only changes are stylistic.

4. Section 395.8 (Driver's Record of Duty Status)

This section addresses general requirements for HOS RODS. Subject to limited exceptions, it requires motor carriers to install and use ELDs that comply with the technical specifications no later than 2 years following the date of publication of today's rule.

Subject to limited exceptions, under paragraph (a)(1), motor carriers must require drivers that keep RODS to use ELDs. The rule allows a motor carrier that installs, and requires its drivers to use, AOBRDs before the compliance date of this rule to continue to use AOBRDs until December 16, 2019 thereby providing a 2-year grandfather period for devices installed prior to the compliance date.

Paragraph (a)(1)(iii) reflects a change from the SNPRM. The SNPRM would have allowed the use of paper RODS only by drivers requiring RODS not more than 8 days in a 30-day period. Today's rule allows drivers in a driveway-towaway operation—when the vehicle being driven is part of the shipment being delivered—as well as drivers of vehicles that were manufactured before model year 2000 to also use paper RODS.

Paragraph (a)(1)(iv) provides that, until the compliance date of this rule, motor carriers must require their drivers to keep RODS manually or by using either an ELD or an AOBRD.

Paragraph (a)(2)(ii) is also changed from the SNPRM. The SNPRM would have required drivers to use the recording method required by their motor carrier and to submit their RODS to their carrier within 8 days. Today's rule requires drivers to submit their RODS within 13 days.

Proposed paragraph (a)(3) is eliminated because operating a CMV while the ELD is malfunctioning is addressed in § 395.34(d).

Paragraph (e) prohibits a motor carrier or driver from making a false report in connection with duty status and from tampering with, or allowing another person to tamper with, an AOBRD or ELD to prevent it from recording or retaining accurate data.

Paragraph (i) (Filing driver's record of duty status) is eliminated because it duplicates the requirements of § 395.8(a)(2)(ii). Paragraph (k)(1) continues to require a motor carrier to retain RODS and supporting documents for a 6-month period.

5. Section 395.11 (New Section—Supporting Documents)

The detailed requirements concerning supporting documents are set forth in § 395.11. Paragraph (a) provides that the new supporting document provisions take effect 2 years after the publication date of the rule. Until this date, the June 10, 2010 policy on the retention of supporting documents and the use of electronic mobile communication/tracking technology remains in place (75 FR 32984).

Paragraph (b) addresses the drivers' obligation to submit supporting documents to their employers. While the SNPRM would have required the driver to submit supporting documents within 8 days, today's rule specifies 13 days. (The term ''employer'' is defined in § 390.5.) The phrase ''required to be retained under [§ 395.11]'' is eliminated in today's rule to avoid the erroneous implication that the driver, rather than the motor carrier, determines what records are retained.

Paragraph (c) describes five categories of supporting documents generated or received in the normal course of business. These categories include: (1) Bills of lading, itineraries, schedules, or equivalent documents indicating the origin and destination of a trip; (2) dispatch records, trip records, or equivalent documents; (3) expense receipts related to ODND time; (4) electronic mobile communication records reflecting communications transmitted through an FMS (*e.g.,* text messages, email messages, instant messages, or pre-assigned coded messages); and (5) payroll records, settlement sheets, or equivalent documents reflecting driver payments.

Paragraph (c)(2) identifies the four data elements that a document must contain in order to qualify as a supporting document: Driver identification, date, vehicle location and time. The SNPRM provided that, for a driver who had fewer than 10 supporting documents containing those four data elements, documents containing the first three specified elements (*i.e.,* all elements *except* time) would be considered supporting documents for purposes of paragraph (d) of this section (discussed below). In this rule, FMCSA reduces the number of supporting documents to eight.

Paragraph (d) generally requires a motor carrier to retain a maximum of eight documents for an individual driver's 24-hour duty day. While the SNPRM proposed a 10-document cap, today's rule reduces that number to eight. Paragraph (d)(2) describes how FMCSA will treat electronic mobile communication records in applying the eight-document cap. Under paragraph (d)(3), if a motor carrier has more than eight documents for a driver's 24-hour period, the motor carrier needs to retain the documents containing the earliest and latest time indications. Under paragraph (d)(4), drivers who continue to use paper RODS must retain all toll receipts, irrespective of the eight-document requirement. The Agency interprets the reference to ''toll receipts'' to include electronic records.

Paragraph (e) requires a motor carrier to retain supporting documents in a way that allows the documents to be matched to a driver's RODS.

Paragraph (f) prohibits motor carriers and drivers from obscuring, defacing, destroying, mutilating, or altering information in a supporting document.

Paragraph (g) requires that, during a roadside inspection, drivers must make available to an authorized official, any supporting document in the driver's possession. In today's rule, a paragraph heading is added for clarification.

Paragraph (h) describes the process for submitting requests for self-compliance systems that FMCSA may authorize on a case-by-case basis, as required by HMTAA.

6. Section 395.15 (Automatic On-Board Recording Devices)

Paragraph (a) describes how FMCSA will sunset the authority to use AOBRDs 2 years after the rule's publication date. However, those motor carriers that have installed AOBRDs prior to the sunset date are allowed to continue using AOBRDs for an additional 2 years (*i.e.,* up to 4 years after the publication date of the final rule).

Subpart B—Electronic Logging Devices (ELDS)

7. Section 395.20 (New Section—ELD Applicability and Scope)

Section 395.20 paragraph (a) states that this subpart applies to ELDs used to record a driver's HOS.

Paragraph (b) describes the applicability of technical specifications required for ELDs under subpart B, effective 2 years after the rule's publication date.

In order to avoid confusion, proposed paragraph (c) was removed to eliminate language referencing support systems.

8. Section 395.22 (New Section—Motor Carrier Responsibilities—In General)

Section 395.22 outlines motor carriers' responsibilities related to the use of ELDs. Paragraph (a) requires motor carriers to use only ELDs registered and certified with FMCSA and listed on the Agency's Web site: *www.fmcsa.dot.gov/devices*.

Paragraph (b) outlines the responsibilities of a motor carrier and its support personnel authorized to access ELD records.

Paragraph (c) lists the required driver identification data.

Paragraph (d) details the identification data for motor carrier support personnel.

Paragraph (e) states that a motor carrier must require its drivers and support personnel to use the proper log-in process for an ELD.

Paragraph (f) requires a motor carrier to calibrate and maintain ELDs.

Paragraph (g) contains the requirements for mounting portable ELDs.

Paragraph (h) lists the information a motor carrier is required to provide to its drivers who are using ELDs in their CMVs.

Paragraph (i) requires a motor carrier to retain a driver's ELD records so as to protect the driver's privacy in a manner consistent with sound business practices. This paragraph also requires that the motor carrier retain a separate back-up copy of ELD records for six months.

Paragraph (j) requires a motor carrier to provide 6 months of ELD records electronically to authorized safety officials when requested during an enforcement activity or, if the motor carrier has multiple offices or terminals, within the time permitted under § 390.29.

9. Section 395.24 (New Section—Driver Responsibilities—In General)

Paragraph (a) requires a driver to provide data as prompted by the ELD and as required by the motor carrier.

Paragraph (b) lists the duty statuses that a driver may choose from, corresponding to the duty status categories currently listed on paper RODS.

Paragraph (c) lists other data that a driver may sometimes need to enter manually into the ELD, such as annotations, file comments, verification, CMV number, trailer numbers, and shipping numbers, as applicable.

Paragraph (d) requires a driver to produce and transfer the driver's HOS data to an authorized safety official on request.

10. Section 395.26 (New Section—ELD Data Automatically Recorded)

Paragraph (a) notes that the data elements listed in this section are in accordance with the requirements of the appendix to subpart B of part 395.

Paragraph (b) lists the data elements recorded when an ELD logs an event.

Paragraph (c) describes requirements for data recording during a change of duty status event.

Paragraph (d) describes what an ELD records during an intermediate recording when the CMV is in motion and there has been no change of duty status entered into the ELD and no other intermediate status recorded in an hour.

Paragraph (e) describes what an ELD records when a driver selects a special driving category, *i.e.,* personal use or yard moves.

Paragraph (f) describes what an ELD records when a driver certifies a daily log.

Paragraph (g) describes what an ELD records when there is a log in/log off event.

Paragraph (h) describes what an ELD records when the CMV's engine powers on or off.

Paragraph (i) describes an ELD's recording of location information during authorized personal use of a CMV.

Paragraph (j) describes what an ELD records when it detects a malfunction or data diagnostic event.

11. Section 395.28 (New Section—Special Driving Categories; Other Driving Statuses)

Paragraph (a) allows motor carriers to configure an ELD to authorize a driver to indicate that he or she is operating a CMV under one of the special driving categories identified in this paragraph. This paragraph also lists a driver's responsibilities related to ELD use when operating under one of these special driving categories.

Paragraph (b) allows a motor carrier to configure an ELD to show that a driver is exempt from ELD use.

Paragraph (c) requires a driver excepted under § 390.3(f) or § 395.1 to annotate the ELD record to explain why the driver is excepted.

12. Section 395.30 (New Section—ELD Record Submissions, Edits, Annotations and Data Retention)

Paragraph (a) states that both drivers and motor carriers are responsible for ensuring that drivers' ELD records are accurate.

Paragraph (b) requires a driver to review and certify that the driver's ELD records are accurate and explains how to use the certification function of the ELD.

Paragraph (c) allows a driver, within the edit limits of an ELD, to edit, add missing information, and annotate ELD recorded events. This paragraph states that a driver must use an ELD and follow the ELD's prompts when making such changes or annotations. It also explains how mistakes involving team drivers may be corrected.

Paragraph (d) permits a motor carrier to request edits to a driver's RODS in order to ensure accuracy. It explains the process by which a driver implements motor carrier-proposed edits, requiring that a driver must confirm or reject any edits made to his or her record by anyone other than the driver.

Paragraph (e) prohibits a motor carrier from coercing a driver to falsely certify the driver's data entries or RODS. FMCSA defined the term ''coerce'' in a separate rulemaking (80 FR 74695, November 30, 2015).

Paragraph (f) prohibits a motor carrier from altering or deleting original ELD records concerning the driver's HOS, the source data used to provide that information or related driver HOS information contained in any ELD. Language referencing support systems proposed in the SNPRM was removed to avoid confusion.

13. Section 395.32 (New Section—Non-Authenticated Driver Logs)

This section describes how the ''non-authenticated'' operation of a CMV is accounted for in the ELD record.

Paragraph (a) describes how the ELD tracks non-authenticated use of a CMV as soon as the vehicle is in motion.

Paragraph (b) requires a driver to review any unassigned driving time listed under the account upon login to the ELD. If the unassigned records are not attributable to the driver, the driver must indicate that fact in the ELD record. If driving time logged under this unassigned account belongs to the driver, the driver must add that driving time to his or her own record.

Paragraph (c) lists the requirements for a motor carrier to explain or assign ''non-authenticated driver log'' time. The motor carrier must retain unidentified driving records for at least six months as a part of its HOS ELD records and make them available to authorized safety officials.

14. Section 395.34 (New Section—ELD Malfunction and Data Diagnostic Events)

Paragraph (a) sets forth a driver's recordkeeping requirements in the event of an ELD malfunction. It specifies that the driver would need to provide written notice to the motor carrier of an ELD malfunction within 24 hours.

Paragraph (b) explains what a driver is required to do if the driver's HOS records are inspected during a malfunction.

Paragraph (c) requires a driver to follow the ELD provider's and the motor carrier's recommendations to resolve data inconsistencies that generate an ELD data diagnostic event.

Paragraph (d) requires that a motor carrier take corrective action within 8 days of discovering the malfunction of an ELD, or notification of the malfunction by the driver, whichever comes first. If a motor carrier needs additional time to repair, replace, or service one or more ELDs, paragraph (d) also provides a process for requesting an extension of time from FMCSA.

15. Section 395.36 (New Section—Driver Access to Records)

Paragraph (a) makes clear that drivers must have access to their own ELD records. A motor carrier may not require that its drivers access their own ELD records by requesting them through the motor carrier if those records are otherwise available on or retrievable through the ELD operated by the driver.

Paragraph (b) requires a motor carrier to provide a driver with access to the driver's own ELD records, upon request, if they are unavailable through the ELD.

16. Section 395.38 (New Section—Incorporation by Reference)

Section 395.38 describes materials that are incorporated by reference (IBR) in subpart B of part 395 and addresses where the materials are available. Whenever FMCSA, or any Federal agency, wants to refer in its rules to materials or standards published elsewhere, it needs approval from the Director of the Office of the Federal Register. FMCSA describes the process it needs to follow in this section.

Industry best practices rely upon these standards. FMCSA updated the standards proposed in the SNPRM in order to make the most recent, easily available versions of the applicable standards part of the final rule. None of these is a major version change; most are revisions to the standards that should not be complicated or onerous for those ELD providers already working in this field. Additionally, these standards are technical in nature, and focus on the function of the device. The only parties who will need to purchase these standards are parties who wish to become ELD providers.

The following provides a brief description of each standard. All the standards are available for low cost or free, as noted below. In order to provide better access, FMCSA includes Web addresses where the user can find more information about the standard or download it. Complete contact information is included as part of § 395.38. These standards are also available for review at FMCSA headquarters.

Paragraph (b)(1), American National Standard Institute 's (ANSI) ''4–1986

(R2012) Information Systems—Coded Character Sets—7-Bit American National Standard Code for Information Interchange (7-Bit ASCII),'' describes a character set code to convert digits to alphabet, number, and symbol characters used in computing. This code set is used to create ELD files. IBR in section 4.8.2.1, Appendix to subpart B of part 395. As of October 20, 2015, this standard was available for $60, and information about it can be found at *http://webstore.ansi.org/RecordDetail.aspx?sku=INCITS+4-1986%5bR2012%5d.*

Paragraph (b)(2), ANSI's ''ANSI INCITS 446–2008 (R2013), American National Standard for Information Technology—Identifying Attributes for Named Physical and Cultural Geographic Features (Except Roads and Highways) of the United States, Its Territories, Outlying Areas, and Freely Associated Areas and the Waters of the Same to the Limit of the Twelve-Mile Statutory Zone (10/28/2008),'' covers geographic names and locations stored in the U.S. Geological Survey (USGS) Geographic Names Information System (GNIS). This information is required to populate the location database of compliant ELDs. IBR in section 4.4.2, Appendix to subpart B of part 395. As of October 20, 2015, this standard was available for $60, and information about it can be found at *http://webstore.ansi.org/RecordDetail.aspx?sku=INCITS+446-2008%5bR2013%5d.*

Paragraph (c)(1) describes ''Specification of the Bluetooth System: Wireless Connections Made Easy,'' the Bluetooth Special Interest Group's standard for short range wireless network communication. Under today's rule, the standard could be used for a transfer of ELD data. IBR in sections 4.9.1, 4.9.2, 4.10.1.4, 4.10.2, Appendix to subpart B of 395. As of October 20, 2015, this standard was available at no cost, and information about it can be found at *https://www.bluetooth.org/Technical/Specifications/adopted.htm.*

Paragraph (d)(1), Institute of Electric and Electronic Engineers' (IEEE) ''Standard for Authentication in Host Attachments of Transient Storage Devices,'' describes a trust and authentication protocol for USB 2.0 flash drives and other storage devices that can be used for a possible transfer of ELD data according to the specifications of this rule. IBR in section 4.10.1.3, Appendix to subpart B of part 395. As of October 20, 2015, this standard was available for $185, and information about it can be found at *http://standards.ieee.org/findstds/standard/1667-2009.html.*

Paragraph (e)(1) contains the standard for ''Use of the Advanced Encryption Standard (AES) Encryption Algorithm in Cryptographic Message Syntax (CMS)'' This standard relates to wireless data transfer through email. IBR in section 4.10.1.2, Appendix to subpart B of 395. As of October 20, 2015, this standard was available at no cost, and can be found at *https://tools.ietf.org/html/rfc3565.*

Paragraph (e)(2) references ''Use of the RSASSA–PSS Signature Algorithm in Cryptographic Message Syntax (CMS).'' This standard relates to wireless data transfer through email. IBR in section 4.10.1.2, Appendix to subpart B of 395 of title 49 of the CFR. As of October 20, 2015, this standard was available at no cost, and can be found at *https://tools.ietf.org/html/rfc4056.*

Paragraph (e)(3), IETF's ''Simple Mail Transfer Protocol,'' is an industry standard for a computer networking protocol to send and receive electronic mail (email) containing ELD data. IBR in section 4.10.1.2, Appendix to subpart B of part 395. As of October 20, 2015, this standard was available at no cost, and can be found at *https://www.rfc-editor.org/rfc/rfc5321.txt.*

Paragraph (e)(4) contains ''Secure/Multipurpose Internet Mail Extensions (S/MIME).'' This standard relates to wireless data transfer through email. IBR in section 4.10.1.2, Appendix to subpart B of 395. As of October 20, 2015, this standard was available at no cost, and can be found at *https://tools.ietf.org/html/rfc5751.*

Paragraph (e)(5), IETF's ''Internet Message Format,'' describes an industry standard for the formatting of email, (*i.e.* address, header information, text, and attachments), including those emails containing ELD data. IBR in section 4.10.1.2, Appendix to subpart B of part 395. As of October 20, 2015, this standard was available at no cost, and can be found at *https://tools.ietf.org/html/rfc5322.*

Paragraphs (e)(6), IETF's RFC 7230, Hypertext Transfer Protocol—HTTP/1.1 Message Syntax and Routing, and (e)(7), IETF RFC 7231, Hypertext Transfer Protocol—HTTP/1.1 Semantics and Content, both describe a computer networking protocol that is the foundation for the World Wide Web. These standards will be used if ELD files are transferred using the Web. They are both incorporated by reference in section 4.10.1.1, Appendix to subpart B of part 395. As of October 20, 2015, standard RFC 7230 was available at no cost, and can be found at *https://tools.ietf.org/html/rfc7230.* As of October 20, 2015, standard RFC 7231 was available at no cost, and can be found at *https://tools.ietf.org/html/rfc7231.*

Paragraph (e)(8) incorporates IETF's ''The Transport Layer Security (TLS) Protocol Version 1.2,'', a security mechanism standard for information that is being transmitted over a network. This standard is best known for use with Web sites that start with ''https://'' rather than just ''http://''. This standard will be used to secure data when ELD files are transferred using the Web. IBR in section 4.10.1.1, Appendix to subpart B of part 395. As of October 20, 2015, this standard was available at no cost and it can be found at *https://tools.ietf.org/html/rfc5246.*

Paragraph (f)(1),''Federal Information Processing Standards (FIPS) Publication 197, November 26, 2001, Announcing the ADVANCED ENCRYPTION STANDARD (AES),'' describes the National Institute of Standards and Technology's (NIST) Federal government standard for encrypting data in order to protect its confidentiality and integrity. This standard may be used to encrypt emailed data derived from the ELD. IBR in sections 4.10.1.2 and 4.10.1.3, Appendix to subpart B of 395. As of October 20, 2015, this standard is available at no cost at *http://csrc.nist.gov/publications/fips/fips197/fips-197.pdf.*

Paragraph (f)(2) describes ''Special Publication (SP) 800–32, February 26, 2001, Introduction to Public Key Technology and the Federal PKI Infrastructure,'' NIST's guidance document for securely exchanging sensitive information, including some ELD data. IBR in section 4.10.1.2, Appendix to subpart B of 395. As of October 20, 2015, this standard is available at no cost at *http://csrc.nist.gov/publications/nistpubs/800-32/sp800-32.pdf.*

Paragraph (g)(1) contains Universal Serial Bus Implementers Forum's (USBIF) ''Universal Serial Bus Specification'' or USB 2.0, which is an industry standard for communication between two computing devices. The USB 2.0 allows a driver to transfer the record of duty status data to a safety official using a small device commonly called a ''flash drive.'' IBR in sections 4.9.1, 4.9.2, 4.10.1.3, and 4.10.2, Appendix to subpart B of part 395. As of October 20, 2015, this standard was available at no cost and it can be found at *http://www.usb.org/developers/docs/usb20_docs/.*

Paragraph (h)(1) describes ''Simple Object Access Protocol (SOAP) Version 1.2 Part 1: Messaging Framework (Second Edition), W3C Recommendation 27 April 2007,''

W3C's specification for a computer networking protocol for Web services. This protocol will be used if ELD files are transferred using the Web. IBR in section 4.10.1.1, Appendix to subpart B of 395. As of October 20, 2015, this standard was available at no cost, and can be found at *http://www.w3.org/TR/soap12-part1/*.

17. Appendix A to Subpart B of Part 395 (New Section)

Appendix A to subpart B of part 395 contains the technical requirements for ELDs. It consists of seven sections.

Section 1 outlines the purpose and content of the rest of the appendix. Section 1 was recodified by adding letters and numbers to each paragraph for ease of reference.

Section 2 lists the abbreviations used throughout this appendix. FMCSA removes the abbreviation ''QR'' for ''quick response'' because that technology is not included in today's rule.

Section 3 provides definitions for terms and notations used in this appendix. In the today's rule, FMCSA codified section 3 throughout, adding letters and numbers to each paragraph as necessary for ease of reference. FMCSA clarifies section 3.1.4 by adding a specific reference to the display or printout required in section 4.I

Section 4 lists all the functional requirements for an ELD. This section provides a detailed description of the technical specifications for an ELD, including security requirements, internal engine synchronization, ELD inputs, manual entries of data, and drivers' use of multiple vehicles. FMCSA provides descriptions specific enough to allow the ELD provider to determine whether an ELD would meet the requirements for certification.

FMCSA made numerous changes to proposed section 4, which reflect the simplified data transfer requirements in today's rule. FMCSA recodified section 4 throughout, due to changes in the text and for ease of reference. FMCSA has eliminated language referencing support systems that was proposed in § 395.20(c) to avoid confusion. Throughout section 4, FMCSA made conforming changes.

In section 4.2, FMCSA adds a specific reference to the information that the ELD must receive automatically, and clarifies that the use of non-ECM data is only acceptable when there is no other option. In section 4.5, FMCSA changed the references to section 7 to reflect the codification changes in section 7. In section 4.6.1.4, FMCSA changed the phrase ''within the past 5 miles of the CMV's movement'' to read ''within 5 miles of the CMV's movement'' to clarify how the regulation applies FMCSA revised proposed section 4.6.3.1 to remove the last two paragraphs because they are redundant. In section 4.7.2(b), FMCSA changed the reference to ''hours-of-service records'' to ''ELD records,'' to clarify which records are meant.

FMCSA revises proposed section 4.8.1 to describe the compliant report that the ELD must be able to generate either as a printout or on a display. In addition, FMCSA corrected the data elements in sections 4.8.2.1.5 and 4.8.2.1.9.

Proposed section 4.9.1 is revised to remove the references to the proposed roadside data transfer capabilities and add new methods for meeting roadside electronic data reporting requirements. The new methods require transferring electronic data using either Option 1, wireless Web services and email, or Option 2, USB 2.0 and Bluetooth. In section 4.9.2(c), FMCSA replaces the term ''ELD data file or files'' with the term ''ELD records.'' In paragraph (c), FMCSA also adds Bluetooth to the transfer mechanisms already specified.

Proposed section 4.10 is reorganized. FMCSA revises proposed section 4.10.1 to remove the word ''Wireless'' in the heading, and add a reference to a ''data transfer mechanism'' to reflect the new methods of transferring electronic data. Proposed section 4.10.1.2, which described wireless data transfer via Bluetooth, is moved to new section 4.10.1.4. Proposed section 4.10.1.3, which described wireless data transfer through email, is moved to 4.10.1.2. In addition, in new section 4.10.1.2(b), FMCSA adds three new encryption standards: The Secure/Multipurpose Internet Mail Extensions as described in RFC 5751, the RSA algorithm as described in RFC 4056, and RFC 3565. Proposed section 4.10.2.1, which covers USB 2.0, becomes new section 4.10.1.3, but the rest of proposed section 4.10.2 is removed as part of the reorganization. Proposed sections 4.10.2.2, which pertained to scannable QR codes, and 4.10.2.3, which described TransferJet, are both removed because those technologies are not included in today's rule. The rest of 4.10.2, as appropriate, is moved to section 4.8.1. Proposed section 4.10.3 becomes section 4.10.2. FMCSA adds a new paragraph to section 4.10.2(d) to describe Bluetooth.

Section 5 describes the ELD certification and registration process. FMCSA numbered the paragraphs in Section 5 for ease of reference and made related conforming changes. In section 5.2.2, the phrase ''institute an'' is corrected to read ''identify its.'' FMCSA adds section 5.4 to the appendix, which describes the process that FMCSA uses to remove an ELD model or version from the list of ELDs on the FMCSA Web site. The administrative review process available to an ELD provider is described in section 5.4.5. The administrative review process consists of a two steps. First, an ELD provider will have an opportunity to either cure any deficiency that the Agency identified or explain to the Agency why, in the ELD provider's view, the Agency's determination is wrong. If the ELD provider fails to respond, fails to convince the Agency that its decision is erroneous, or fails to cure any defect to the Agency's satisfaction, within prescribed time periods, the Agency will then remove the ELD model or version from its list of certified products. Second, in the event of removal, the ELD provider will have an additional opportunity to challenge the Agency's decision through an administrative post-deprivation review.

Section 6 lists references cited throughout this appendix. Section 6 is changed to conform with the new codification in the rest of the appendix. Section 6 matches § 395.38 exactly. It is repeated in the appendix to provide a convenient guide for these standards within the Appendix to Subpart B itself. To conform to § 395.38, FMCSA adds several new references to section 6, and updates others to the current versions. FMCSA also removes several references that are no longer relevant to the rulemaking.

Section 7 provides a data elements dictionary for each data element referenced in the appendix. In today's rule, FMCSA adds a new data element to section 7, ''ELD provider,'' to clarify what is meant by that term. Section 7 is recodified to conform with the codification used in the rest of the appendix.

XIV. Regulatory Analyses

A. Executive Order 12866 (Regulatory Planning and Review), Executive Order 13563 (Improving Regulation and Regulatory Review), and DOT Regulatory Policies and Procedures

FMCSA has determined that this rulemaking is an economically significant regulatory action under Executive Order (E.O.) 12866, Regulatory Planning and Review, as supplemented by E.O. 13563 (76 FR 3821, January 21, 2011). It also is significant under Department of Transportation regulatory policies and procedures because the economic costs and benefits of the rule exceed the $100 million annual threshold and because of the substantial congressional and public

interest concerning the crash risks associated with driver fatigue.

FMCSA mandates the installation and use of ELDs by drivers currently required to prepare HOS RODS.[41] However, the costs and benefits of such a broad mandate are not identical across both options evaluated in the RIA. The Agency has chosen to evaluate options that reflect public comments regarding past ELD and HOS rulemakings and the Agency's safety priorities. The RIA associated with this rule examined two options:

- Option 1: ELDs are mandated for all CMV operations subject to 49 CFR part 395.
- Option 2 (Adopted): ELDs are mandated for all CMV operations where the driver is required to complete RODS under 49 CFR 395.8.

FMCSA adopted Option 2. The costs and benefits resulting from the adoption of Option 2 are presented in the table below:

TABLE 5—SUMMARY OF ANNUALIZED COSTS AND BENEFITS

[7% discount rate]

	Annualized total value (2013 $ millions)	Notes
Cost element:		
New ELD Costs	$1,032.2	For all long-haul (LH) and short-haul (SH) drivers that use RODS, to pay for new devices and FMS upgrades.
Automatic On-Board Recording Device (AOBRD) Replacement Costs.	2.0	Carriers that purchased AOBRDs for their CMVs and can be predicted to still have them in 2019 and would need to replace or update them with ELDs.
Enforcement Equipment Costs	1.3	The final rule does not require inspectors to purchase QR code scanners. Instead, inspectors would have Bluetooth capability and USB 2.0.
Enforcement Training Costs	1.6	Costs include travel to training sites, as well as training time, for all inspectors in the first year and for new inspectors each year thereafter.
CMV Driver Training Costs	8.0	Costs of training new drivers in 2017, and new drivers each year thereafter.
HOS Compliance Costs	790.4	Extra drivers and CMVs needed to ensure that no driver exceeds HOS limits.
Total Costs	1,836	
Benefit element:		
Paperwork Savings (Total of three parts below).	$2,437.6	
(1) Driver Time	1,877.2	Reflects time saved as drivers no longer have to fill out and submit paper RODS.
(2) Clerical Time	433.9	Reflects time saved as office staff no longer have to process paper RODS.
(3) Paper Costs	126.6	Purchases of paper logbooks are no longer necessary.
Safety (Crash Reductions)	572.2	Although the predicted number of crash reductions is lower for SH than LH drivers, both should exhibit less fatigued driving if HOS compliance increases. Complete HOS compliance is not assumed.
Total Benefits	3,010	
Net Benefits	1,174	

Modifications to the rule analysis resulted in moderate changes to the cost and benefit estimates for the rule from what was included in the SNPRM. For example, the purchase price of the ELD was reduced to reflect the most up-to-date prices consistent with the technical requirements of the rule, the population estimates were adjusted to update the universe of drivers subject to the requirements of the rule, and equipment requirements for inspectors were adjusted to no longer include QR scanners. The population changes had the effect of increasing costs, while adjustments to the ELD purchase price and equipment needs resulted in a decrease in costs. Overall, the total costs are somewhat higher than what was projected in the SNPRM. In addition, the total benefits of the rule increased due to updated wage estimates and adjustments to the projection of the cost of a crash. This resulted in an increase in the overall net benefits for the rule from what was proposed in the SNPRM. These revisions are discussed in more detail throughout the RIA.

B. Regulatory Flexibility Act

1. Introduction

The Regulatory Flexibility Act of 1980, Public Law 96–354, 94 Stat. 1164 (5 U.S.C. 601–612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121, 110 Stat. 857, March 29, 1996) and the Small Business Jobs Act of 2010 (Pub. L. 111–240, September 27, 2010), requires Federal agencies to consider the effects of the regulatory action on small business and other small entities and to minimize any significant economic impact. The term ''small entities'' comprises small businesses and not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000. Accordingly, DOT policy requires an

[41] This rule does not require short-haul drivers who would need to keep RODS for not more than 8 days in any 30-day period to use an ELD. Although FMCSA cannot quantify the costs to carriers, the Agency believes that extending the ELD mandate to these drivers would not be cost beneficial.

analysis of the impact of all regulations on small entities, and mandates that agencies strive to lessen any adverse effects on these businesses.

A Final Regulatory Flexibility Analysis must contain the following:

- A statement of the need for, and objectives of, the rule.
- A statement of the significant issues raised by the public comments in response to the Initial Regulatory Flexibility Act (IRFA), a statement of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments.
- The response of the agency to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration in response to the proposed rule, and a detailed statement of any change made to the proposed rule in the final rule as a result of the comments.
- A description of and an estimate of the number of small entities to which the rule will apply or an explanation of why no such estimate is available.
- A description of the projected reporting, recordkeeping, and other compliance requirements of the rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record.
- A description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.
- For a covered agency, as defined in section 609(d)(2), a description of the steps the agency has taken to minimize any additional cost of credit for small entities.

2. Statement of the Need for and Objectives of This Rule

The Agency is issuing this rule to mandate the use of ELDs by the majority of CMV operations. The objective is to reduce the number of crashes caused by driver fatigue that could have been avoided had the driver complied with the HOS rules.

The Agency is required by statute (MAP–21) to adopt regulations requiring that CMVs operated in interstate commerce by drivers required to keep RODS, be equipped with ELDs. FMCSA amends part 395 of the FMCSRs to require the installation and use of ELDs for CMV operations for which RODS are required. CMV drivers are currently required to record their HOS (driving time, on- and off-duty time) in paper RODS, although some carriers have voluntarily adopted an earlier standard for HOS recording using devices known as AOBRDs. The HOS regulations are intended to ensure that driving time ''do[es] not impair their ability to operate the vehicles safely'' (49 U.S.C. 31136(a)(2)). Driver compliance with the HOS rules helps ensure that ''the physical condition of commercial motor vehicle drivers is adequate to enable them to operate the vehicles safely'' (49 U.S.C. 31136(a)(3)). FMCSA believes that properly designed, used, and maintained ELDs would enable motor carriers to track their drivers' on-duty driving hours accurately, thus preventing regulatory violations or excessive driver fatigue.

Improved HOS compliance would prevent commercial vehicle operators from driving for long periods without opportunities to obtain adequate rest. Sufficient rest is necessary to ensure that a driver is alert behind the wheel and able to respond appropriately to changes in the driving environment.

Substantial paperwork and recordkeeping burdens are also associated with HOS rules, including time spent by drivers filling out and submitting paper RODS and time spent by motor carrier staff reviewing, filing, and retaining these RODS. ELDs would eliminate all of the driver's clerical tasks associated with the RODS and significantly reduce the time drivers spend recording their HOS. These paperwork reductions offset most of the costs of the devices.

3. Public Comment on the IRFA, FMCSA Assessment and Response

Although public comment on the SNPRM for this rule was extensive, there were no comments specific to the Initial Regulatory Flexibility Analysis.

4. FMCSA Response to Comments by the Chief Counsel for Advocacy of the Small Business Administration on the IRFA

The FMCSA did not receive comments from the Chief Counsel for Advocacy of the Small Business Administration on the IRFA included with the SNPRM for this rule.

5. Description and Numerical Estimate of Small Entities Affected by the Rulemaking

The motor carriers regulated by FMCSA operate in many different industries, and no single Small Business Administration (SBA) size threshold is applicable to all motor carriers. Most for-hire property carriers operate under North American Industrial Classification System [42] (NAICS) code 484, truck transportation (see: *http://www.bls.gov/iag/tgs/iag484.htm*), although some for-hire carriers categorize themselves as ''express delivery services'' (NAICS 492110) or ''local delivery'' (NAICS 492210) or operate primarily in other modes of freight transportation. As shown in Table 6 below, the SBA size standard for truck transportation and local delivery services is currently $27.5 million in revenue per year and 1,500 employees for express delivery services. For other firms in other modes that may also be registered as for-hire motor carriers, the size standard is 500 or 1,500 employees. As Table 6 also shows, for-hire passenger operations that FMCSA regulates have a size standard of $15 million in annual revenue.

TABLE 6—SBA SIZE STANDARDS FOR SELECTED INDUSTRIES

[2014 $]

NAICS codes	NAICS industry description	Annual revenue (millions)	Employees
481112 and 481212	Freight Air Transportation		1,500
482111	Line-Haul Railroads		1,500
483111 through 483113	Freight Water Transportation		500
484110 through 484230	Freight Trucking	$27.5	

[42] More information about NAICS is available at: *http://www.census.gov/eos/www/naics/.*

TABLE 6—SBA SIZE STANDARDS FOR SELECTED INDUSTRIES—Continued

[2014 $]

NAICS codes	NAICS industry description	Annual revenue (millions)	Employees
492110	Couriers and Express Delivery		1,500
492210	Local Messengers and Local Delivery	27.5	
485210 through 485510	Bus Transportation	15.0	
445110	Supermarkets and Grocery Stores	32.5	
452111	Department Stores (except Discount Department Stores)	32.5	
452112	Discount Department Stores	29.5	
452910	Warehouse Clubs and Superstores	29.5	
452990	Other General Merchandise Stores	32.5	
453210	Office Supplies and Stationery Stores	32.5	
236115 through 236220	Building Construction	36.5	
237110	Water and Sewer Line and Related Structures Construction	36.5	
237120	Oil and Gas Pipeline and Related Structures Construction	36.5	
237130	Power and Communication Line and Related Structures Construction	36.5	
237210	Land Subdivision	27.5	
237310	Highway, Street, and Bridge Construction	36.5	
237990	Other Heavy and Civil Engineering Construction	36.5	
238110 through 238990	Specialty Trade Contractors	15.0	
111110 through 111998	Crop Production	0.75	
112111	Beef Cattle Ranching and Farming	0.75	
112112	Cattle Feedlots	7.5	
112120	Dairy Cattle and Milk Production	0.75	
112210	Hog and Pig Farming	0.75	
112310	Chicken Egg Production	15.0	
112320 through 112990	All Other Animal Production	0.75	
113310	Logging		500
211111 through 213111	Oil and Gas Extraction and Mining		500

This rulemaking will also affect private motor carriers. These carriers use CMVs they own or lease to ship their own goods (such as a motor carrier that is operated by a retail department store chain to distribute goods from its warehouses to its store locations) or in other regulated transportation activities related to their primary business activities (for example, dump trucks used by construction companies). The latter category also includes the provision of passenger transportation services not available to the general public. FMCSA does not have NAICS codes for motor carriers and therefore cannot determine the appropriate size standard to use for each case. As shown, the size standards vary widely, from $0.75 million for many types of farms to $36.5 million for building construction firms.

For for-hire motor carriers, FMCSA examined data from the 2007 Economic Census [43] to determine the percentage of firms that have revenue at or below SBA's thresholds. Although boundaries for the revenue categories used in the Economic Census do not exactly coincide with the SBA thresholds, FMCSA was able to make reasonable estimates using these data. According to the Economic Census, about 99 percent of trucking firms had annual revenue less than $27.5 million; the Agency concluded that the percentage would be approximately the same using the SBA threshold of $25.5 million as the boundary. For passenger carriers, the $15 million SBA threshold falls between two Economic Census revenue categories, $10 million and $25 million. The percentages of passenger carriers with revenue less than these amounts were 96.7 percent and 98.9 percent. Because the SBA threshold is closer to the lower of these two boundaries, FMCSA has assumed that the percentage of passenger carriers that are small will be closer to 96.7 percent, and is using a figure of 97 percent.

For private carriers, the Agency constructed its estimates under the assumption that carriers in the 99th percentile in terms of number of CMVs of for-hire property carriers will be large. In the case of for-hire property carriers, we assumed that carriers in the 97th percentile will also be large. That is, any company of sufficient size to maintain a fleet large enough to be considered a large truck or bus company will be large within its own industry. This could overestimate the number of small, private carriers. However, the Agency is confident that no small private carrier would be excluded. The Agency found that for property carriers, the threshold was 194 CMVs, and that for passenger carriers, it was 89 CMVs. FMCSA identified 195,818 small private property carriers (99.4 percent of this group), and 6,000 small private passenger carriers (100.0 percent of this group).

The table below shows the complete estimates of the number of small carriers. All told, FMCSA estimates that 99.1 percent of regulated motor carriers are small businesses according to SBA size standards.

[43] U.S. Census Bureau, ''2007 Economic Census.'' *http://www.census.gov/econ/census/.*

TABLE 7—ESTIMATES OF NUMBERS OF SMALL ENTITIES

	For-hire general freight	For-hire specialized freight	For-hire passenger	Private property	Private passenger	Total
Carriers	176,000	152,000	8,000	197,000	6,000	539,000
Percentage of Small Carriers	98.9%	98.9%	97.0%	99.4%	100.0%	99.1%
Number of Small Carriers	174,064	150,328	7,760	195,818	6,000	533,970

6. Description of Reporting, Recordkeeping and Other Compliance Requirements of the Rule

FMCSA believes that implementation of the rule will not require additional reporting, recordkeeping, or other paperwork-related compliance requirements beyond what are already required in the existing regulations. In fact, the rule is estimated to result in paperwork savings, particularly from the elimination of paper RODS. Furthermore, the carriers will experience compensatory time-saving or administrative efficiencies as a result of using ELD records in place of paper RODS. The level of savings will vary with the size of the carrier implementing the systems (larger carriers generally experience greater savings).

Under current regulations, most CMV drivers are required to fill out RODS for every 24-hour period. The remaining population of CMV drivers is required to fill out time cards at their workplace (reporting location). Motor carriers must retain the RODS (or timecards, if used) for 6 months. FMCSA estimates annual recordkeeping cost savings from this rule of about $805 per driver. This comprises $558 for a reduction in time drivers spend completing paper RODS and $65 submitting those RODS to their employers; $144 for motor carrier clerical staff to handle and file the RODS; and $38 for elimination of expenditures on blank paper RODS for drivers. One of the options discussed in the rule (Option 1) would extend the ELD mandate to carrier operations that are exempt from the RODS requirements. Paperwork savings would not accrue to drivers engaged in these operations.

Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501 *et seq.*), Federal agencies must obtain approval from OMB for each collection of information they conduct, sponsor, or require through regulations. This rule makes regulatory changes to several parts of the FMCSRs, but only those applicable to part 395, ''Hours of Service of Drivers,'' will alter or impose ICR. The ICR of this rule will affect OMB Control Number 2126–0001, which is currently approved through May 31, 2018, at 127,600,000 burden hours.

7. Steps To Minimize Adverse Economic Impacts on Small Entities

Of the population of motor carriers that FMCSA regulates, 99 percent are considered small entities under SBA's definition. Because small businesses constitute a large part of the demographic the Agency regulates, providing exemptions to small business to permit noncompliance with safety regulations is not feasible and not consistent with good public policy. The safe operation of CMVs on the Nation's highways depends on compliance with all of FMCSA's safety regulations. Accordingly, the Agency will not allow any motor carriers to be exempt from coverage of the rule based solely on a status as a small entity. Furthermore, exempting small businesses from coverage would be inconsistent with the explicit statutory mandate contained in MAP–21.

The Agency recognizes that small businesses may need additional information and guidance in order to comply with the regulation. To improve their understanding of the rule, FMCSA intends to conduct outreach aimed specifically at small businesses, including webinars and other presentations upon request as needed and at no charge to the participants. These sessions will be held after the rule has published and before the rule's compliance date. To the extent practicable, these presentations will be interactive. They will describe in plain language the compliance and reporting requirements so they are can be readily understood by the small entities that will be affected.

ELDs can lead to significant paperwork savings that can offset the costs of the devices. The Agency, however, recognizes that these devices entail an up-front investment that can be burdensome for small carriers. At least one provider, however, provides free hardware and recoups the cost of the device over time in the form of higher monthly operating fees. The Agency is also aware of lease-to-own programs that allow carriers to spread the purchase costs over several years. Nevertheless, the typical carrier will likely be required to spend about $584 per CMV to purchase and install ELDs. In addition to purchase costs, carriers will also likely spend about $20 per month per CMV for monthly service fees.

8. Description of Steps Taken by a Covered Agency To Minimize Costs of Credit for Small Entities

FMCSA is not a covered agency as defined in section 609(d)(2) of the Regulatory Flexibility Act, and has taken no steps to minimize the additional cost of credit for small entities.

C. Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 requires Agencies to evaluate whether an Agency action would result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $155 million or more (which is $100 million in 1995, adjusted for inflation) in any 1 year, and, if so, to take steps to minimize these unfunded mandates. As Table 8 shows, this rulemaking would result in private sector expenditures in excess of the $155 million threshold for each of the options. Gross costs, however, are expected to be more than offset in savings from paperwork burden reductions.

The Agency is required by statute to adopt regulations requiring that CMVs, operated in interstate commerce by drivers required to keep RODS, be equipped with ELDs (49 U.S.C. 31137). To the extent this rule implements the direction of Congress in mandating the use of ELDs, a written statement under the Unfunded Mandates Reform Act is not required.[44] However, the Agency

[44] *Unfunded Mandates Reform Act of 1995.* Title II, Section 201. *http://www.gpo.gov/fdsys/pkg/PLAW-104publ4/pdf/PLAW-104publ4.pdf.*

provides its projection of the annualized costs to the private sector in Table 8 below. Additionally the Agency's adopted option provides the lowest cost and highest net benefits of the options considered.

TABLE 8—ANNUALIZED NET EXPENDITURES BY PRIVATE SECTOR

[2013 $ millions]

Cost or Savings Category	Option 1	Option 2
New ELD Costs	$1,336	$1,032
AOBRD Replacement Costs	2	2
HOS Compliance Costs	929	790
Driver Training Costs	10	8
Total Costs	2,278	1,833
Total Savings (Paperwork)	2,438	2,438
Net Expenditure by Private Sector	−160	−605

D. Executive Order 12988 (Civil Justice Reform)

This rulemaking meets applicable standards in sections 3(a) and 3(b)(2) of E.O. 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden.

E. Executive Order 13045 (Protection of Children)

FMCSA analyzed this action under E.O. 13045, Protection of Children from Environmental Health Risks and Safety Risks. FMCSA determined that this rulemaking would not pose an environmental risk to health or safety that might affect children disproportionately.

F. Executive Order 12630 (Taking of Private Property)

This rulemaking would not effect a taking of private property or otherwise have takings implications under E.O. 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights.

G. Executive Order 13132 (Federalism)

A rulemaking has implications for Federalism under E.O. 13132, Federalism, if it has a substantial direct effect on State or local governments and would either preempt State law or impose a substantial direct cost of compliance on State or local governments. FMCSA analyzed this action in accordance with E.O. 13132. The rule would not have a substantial direct effect on States or local governments, nor would it limit the policymaking discretion of States. Nothing in this rulemaking would preempt any State law or regulation.

H. Executive Order 12372 (Intergovernmental Review)

The regulations implementing E.O. 12372 regarding intergovernmental consultation on Federal programs and activities do not apply to this action.

I. Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments)

FMCSA analyzed this rulemaking in accordance with the principles and criteria in E.O. 13175, Consultation and Coordination with Indian Tribal Governments. This rulemaking is required by law and does not significantly or uniquely affect the communities of the Indian tribal governments or impose substantial direct compliance costs on tribal governments. Thus, the funding and consultation requirements of E.O. 13175 do not apply and no tribal summary impact statement is required.

J. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) requires Federal agencies to obtain OMB approval of each information collection (IC) they conduct, sponsor, or require through agency regulations. Information-collection requests (ICRs) submitted to OMB by agencies must estimate the burden hours imposed by their information-collection (IC) requirements. Part 395 of the Federal Motor Carrier Safety Regulations, ''Hours of Service of Drivers,'' requires drivers and motor carriers to collect, transmit and maintain information about driver daily activities. The part 395 ICR is assigned OMB Control Number 2126–0001. On May 21, 2015, OMB approved the Agency's estimate of 127.6 million burden hours as the annual IC burden of part 395 as it existed at that time, prior to this final rule. This rulemaking substantially amends the IC requirements of part 395.

For the SNPRM of this rulemaking (79 FR 17656, March 28, 2014), the Agency excluded the IC burden of drivers operating purely in intrastate commerce, but following discussions with OMB, decided the burden of these drivers should be included in future part 395 estimates. The intrastate burden was included in the estimate approved by OMB on May 21, 2015, and is included in the Agency's burden estimate for this final rule.

FMCSA estimates that 3.37 million interstate and intrastate CMV drivers are subject to the IC requirements of part 395 as of 2013. OMB regulations require that Agencies estimate IC burdens over a period of 3 years. This rule has a compliance date 2 years from the date of its publication. Thus, during the first 2 years of this PRA estimate, drivers and motor carriers will not be required to employ ELDs. The Agency has incorporated estimates of the number of drivers who will be voluntarily employing electronic HOS recording devices during each of the first 2 years. For year three, the Agency's estimate is based upon all drivers using electronic logging devices. FMCSA estimates that the part 395 amendments of this final rule will reduce the IC burden an average of 21,373,653 hours annually for the 3-year period.

K. National Environmental Policy Act and Clean Air Act

FMCSA analyzed this rulemaking for the purpose of the National Environmental Policy Act of 1969 (42 U.S.C. 4321, *et seq.*) and determined under DOT Environmental Procedures Order 5610.1, issued March 1, 2004 (69 FR 9680), that this action would have a minor impact on the environment. The Environmental Assessment is available for inspection or copying at the Regulations.gov Web site listed under Section II.A of this preamble. There were two notable changes to data input values used in section 3.2.1 of the Environmental Assessment for today's rule as compared to the equivalent values used in the Environmental

Assessment for the SNPRM. First, in the calculation of emissions from additional idling, the number of affected long-haul tractors with sleeper berths was increased from 665,000, which was based on year 2002 data, to a revised estimate of 976,889 to reflect growth in the number of truck tractors from 2002 to 2012 as reported by the Federal Highway Administration. For additional details, see section 3.2.1 of the Environmental Assessment. Second, in the calculation of the reduction of emissions from crash prevention, the emission rates per crash for the six Environmental Protection Agency criteria pollutants and for carbon dioxide were updated from values that were previously based on FMCSA research from 2004 regarding the environmental impacts of truck crashes, to revised emission rate values that are based on more recent FMCSA research from 2013 regarding the environmental impacts of truck crashes. For additional details, see section 3.2.1 of the Environmental Assessment.

FMCSA also analyzed this action under section 176(c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7506(c)), and the U.S. Environmental Protection Agency's implementing regulations, 40 CFR part 93. Pursuant to 40 CFR 93.153, a conformity determination is required ''for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or maintenance area caused by a Federal action would equal or exceed any of the rates in paragraphs (b)(1) or (2) of this section.'' FMCSA recognizes that the action taken in this rulemaking could slightly affect emissions of criteria pollutants from CMVs. FMCSA discusses the air emissions analysis in section 3.2.1 of the Environmental Assessment for this rule.

As discussed in section 3.1.2 of the Environmental Assessment, the CAA requires additional analysis to determine if this action impacts air quality. In determining whether this action conforms to CAA requirements in areas designated as nonattainment under section 107 of the CAA and maintenance areas established under section 175A of the CAA, FMCSA is required (among other criteria) to determine if the total direct and indirect emissions are at or above de minimis levels. In the case of the alternatives in this rulemaking, as discussed in section 3.2.1 of the Environmental Assessment (except for the No-Action Alternative), FMCSA considers the change in emissions to be an indirect result of the rulemaking action. FMCSA is requiring drivers and motor carriers to use ELDs that would lead to greater compliance with the HOS regulations, which does not directly result in additional emissions releases.

Although emissions from idling are foreseeable and an indirect result of the rulemaking, in order for the idling emissions to qualify as 'indirect emissions' pursuant to 40 CFR 93.152, they must meet all four criteria in the definition: (1) The emissions are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action; (2) they are reasonably foreseeable; (3) FMCSA can practically control them; and (4) FMCSA has continuing program responsibility for them. FMCSA does not believe the increase of emissions of some criteria pollutants or their precursors from the proposed rulemaking meet two of the criteria: That FMCSA can practically control the emissions, and that FMCSA has continuing program responsibility. FMCSA's statutory authority limits its ability to require drivers to choose alternatives to idling while taking a rest period. If FMCSA had authority to control CMV emissions, the Agency could prohibit idling or require drivers to choose an alternative such as electrified truck stops or use of auxiliary power units, both of which reduce idling emissions. Moreover, based on FMCSA's analysis, it is reasonably foreseeable that this rulemaking would not significantly increase total CMV mileage, nor would it change the routing of CMVs, how CMVs operate, or the CMV fleet mix of motor carriers. Therefore, because the idling emissions do not meet the definition of direct or indirect emissions in 40 CFR 93.152, FMCSA has determined it is not required to perform a CAA general conformity analysis, pursuant to 40 CFR 93.153.[45]

L. Executive Order 12898 (Environmental Justice)

FMCSA evaluated the environmental effects of this rulemaking in accordance with E.O. 12898 and determined that there are neither environmental justice issues associated with its provisions nor any collective environmental impact resulting from its promulgation. Environmental justice issues would be raised if there were ''disproportionate''' and ''high and adverse impact'' on minority or low-income populations. None of the alternatives analyzed in the Agency's deliberations would result in high and adverse environmental justice impacts.

M. Executive Order 13211 (Energy Effects)

FMCSA analyzed this action under E.O. 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. FMCSA determined that it is not a ''significant energy action'' under that E.O. because, although this rulemaking is economically significant, it is not likely to have an adverse effect on the supply, distribution, or use of energy.

N. National Technology Transfer and Advancement Act

The National Technology Transfer and Advancement Act (15 U.S.C. 272 note) requires agencies to ''use technical standards that are developed or adopted by voluntary consensus standards bodies'' to carry out policy objectives determined by the agencies, unless the standards are ''inconsistent with applicable law or otherwise impractical.'' This requirement pertains to ''performance-based or design-specific technical specifications and related management systems practices.'' MAP–21 also requires that the Agency adopt a ''standard security level for an electronic logging device and related components to be tamper resistant by using a methodology endorsed by a nationally recognized standards organization'' (49 U.S.C. 31137(b)(2)(C)).

FMCSA is not aware of any technical standards addressing ELDs. However, in today's rule, the Agency employs several publicly-available consensus standards consistent with these statutory mandates, including standards adopted by the World Wide Web Consortium to facilitate secure Web based communications, American National Standards Institute (ANSI) codes for identification of geographic locations and for standard information display, Institute of Electrical and Electronic Engineers (IEEE) Standards Association standards addressing secure transfer of data with a portable storage device, Bluetooth Special Interest Group (SIG) standards addressing short-range wireless information transfer, and the USB Specification (Revision 2.0). In addition, although not developed by a private sector consensus standard body, FMCSA also employs the National Institute of Standards and Technology (NIST) standards concerning data encryption. A complete list of standards that FMCSA proposes for adoption is found in 49 CFR 395.38.

[45] Additionally, the EPA General Conformity regulations provide an exemption for rulemaking activities. See 40 CFR 93.153(c)(2)(iii).

O. E-Government Act of 2002

The E-Government Act of 2002, Public Law 107–347, section 208, 116 Stat. 2899, 2921 (Dec. 17, 2002), requires Federal agencies to conduct a privacy impact assessment for new or substantially changed technology that collects, maintains, or disseminates information in an identifiable form. FMCSA completed an assessment in connection with today's rule addressing the handling of PII. The assessment is a documented assurance that privacy issues have been identified and adequately addressed, ensures compliance with laws and regulations related to privacy, and demonstrates the DOT's commitment to protect the privacy of any personal information we collect, store, retrieve, use, and share. Additionally, the publication of the assessment demonstrates DOT's commitment to provide appropriate transparency in the ELD rulemaking process. A copy of the privacy impact assessment is available in the docket for this rulemaking.

List of Subjects

49 CFR Part 385

Administrative practice and procedure, Highway safety, Mexico, Motor carriers, Motor vehicle safety, Reporting and recordkeeping requirements

49 CFR Part 386

Administrative practice and procedure, Brokers, Freight forwarders, Hazardous materials transportation, Highway safety, Motor carriers, Motor vehicle safety, Penalties

49 CFR Part 390

Highway safety, Intermodal transportation, Motor carriers, Motor vehicle safety, Reporting and recordkeeping requirements

49 CFR Part 395

Highway safety, Incorporation by reference, Motor carriers, Reporting and recordkeeping requirements

In consideration of the foregoing, FMCSA amends 49 CFR chapter III, parts 385, 386, 390, and 395 as follows:

PART 385—SAFETY FITNESS PROCEDURES

■ 1. The authority citation for part 385 is revised to read as follows:

Authority: 49 U.S.C. 113, 504, 521(b), 5105(e), 5109, 5123, 13901–13905, 31133, 31135, 31136, 31137, 31144, 31148, and 31502; Sec. 113(a), Pub. L. 103–311; Sec. 408, Pub. L. 104–88, 109 Stat. 803, 958; and 49 CFR 1.87.

■ 2. Amend Appendix B to part 385, section VII, by removing the entries for §§ 395.8(a), 395.8(e), and 395.8(i), and the two entries for § 395.8(k)(1); and adding entries for § 395.8(a)(1), § 395.8(a)(2)(ii), § 395.8(e)(1), § 395.8(e)(2), § 395.8(k)(1), § 395.11(b), § 395.11(c), § 395.11(e), § 395.11(f), and § 395.30(f) in numerical order to read as follows:

Appendix B to Part 385—Explanation of Safety Rating Process

* * * * *

VII. List of Acute and Critical Regulations

* * * * *

§ 395.8(a)(1) Failing to require a driver to prepare a record of duty status using appropriate method (critical).

§ 395.8(a)(2)(ii) Failure to require a driver to submit record of duty status in a timely manner (critical).

§ 395.8(e)(1) Making, or permitting a driver to make, a false report regarding duty status (critical).

§ 395.8(e)(2) Disabling, deactivating, disengaging, jamming, or otherwise blocking or degrading a signal transmission or reception; tampering with an automatic on-board recording device or ELD; or permitting or requiring another person to engage in such activity (acute).

§ 395.8(k)(1) Failing to preserve a driver's record of duty status or supporting documents for 6 months (critical).

§ 395.11(b) Failing to require a driver to submit supporting documents in a timely manner (critical).

§ 395.11(c) Failing to retain types of supporting documents as required by § 395.11(c) (critical).

§ 395.11(e) Failing to retain supporting documents in a manner that permits the effective matching of the documents to the driver's record of duty status (critical).

§ 395.11(f) Altering, defacing, destroying, mutilating, or obscuring a supporting document (critical).

§ 395.30(f) Failing to retain ELD information (acute).

* * * * *

PART 386—RULES OF PRACTICE FOR MOTOR CARRIER, INTERMODAL EQUIPMENT PROVIDER, BROKER, FREIGHT FORWARDER, AND HAZARDOUS MATERIALS PROCEEDINGS

■ 3. The authority citation for part 386 is revised to read as follows:

Authority: 49 U.S.C. 113, 504, 521(b), 5105(e), 5109, 5123, 13901–13905, 31133, 31135, 31136, 31137, 31144, 31148, and 31502; Sec. 113(a), Pub. L. 103–311; Sec. 408, Pub. L. 104–88, 109 Stat. 803, 958; and 49 CFR 1.87.

■ 4. Amend § 386.1 by revising paragraph (a) and adding paragraph (c) to read as follows:

§ 386.1 Scope of rules in this part.

(a) Except as provided in paragraph (c) of this section, the rules in this part govern proceedings before the Assistant Administrator, who also acts as the Chief Safety Officer of the Federal Motor Carrier Safety Administration, under applicable provisions of the Federal Motor Carrier Safety Regulations (49 CFR parts 350–399), including the commercial regulations (49 CFR parts 360–379), and the Hazardous Materials Regulations (49 CFR parts 171–180).

* * * * *

(c)(1) The rules in § 386.12(a) govern the filing of a complaint of a substantial violation and the handling of the complaint by the appropriate Division Administrator.

(2) The rules in § 386.12(b) govern the filing by a driver and the handling by the appropriate Division Administrator of a complaint of harassment in violation of § 390.36 of this subchapter.

(3) The rules in § 386.12(c) govern the filing by a driver and the handling by the appropriate Division Administrator of a complaint of coercion in violation of § 390.6 of this subchapter.

■ 5. Revise § 386.12 to read as follows:

§ 386.12 Complaints.

(a) *Complaint of substantial violation.* (1) Any person alleging that a substantial violation of any regulation issued under the Motor Carrier Safety Act of 1984 is occurring or has occurred must file a written complaint with FMCSA stating the substance of the alleged substantial violation no later than 90 days after the event. The written complaint, including the information below, must be filed with the National Consumer Complaint Database at *http://nccdb.fmcsa.dot.gov or any FMCSA Division Administrator.* The Agency will refer the complaint to the Division Administrator who the Agency believes is best able to handle the complaint. Information on filing a written complaint may be obtained by calling 1–800–DOT–SAFT (1–800–368–7238). A substantial violation is one which could reasonably lead to, or has resulted in, serious personal injury or death. Each complaint must be signed by the complainant and must contain:

(i) The name, address, and telephone number of the person who files it;

(ii) The name and address of the alleged violator and, with respect to each alleged violator, the specific provisions of the regulations that the complainant believes were violated; and

(iii) A concise but complete statement of the facts relied upon to substantiate each allegation, including the date of each alleged violation.

(2) Upon the filing of a complaint of a substantial violation under paragraph (a)(1) of this section, the Division Administrator shall determine whether the complaint is non-frivolous and meets the requirements of paragraph (a)(1) of this section. If the Division Administrator determines the complaint is non-frivolous and meets the requirements of paragraph (a)(1), the Division Administrator shall investigate the complaint. The complainant shall be timely notified of findings resulting from the investigation. The Division Administrator shall not be required to conduct separate investigations of duplicative complaints. If the Division Administrator determines the complaint is frivolous or does not meet the requirements of paragraph (a)(1), the Division Administrator shall dismiss the complaint and notify the complainant in writing of the reasons for the dismissal.

(3) Notwithstanding the provisions of 5 U.S.C. 552, the Division Administrator shall not disclose the identity of complainants unless it is determined that such disclosure is necessary to prosecute a violation. If disclosure becomes necessary, the Division Administrator shall take every practical means within the Division Administrator's authority to ensure that the complainant is not subject to coercion, harassment, intimidation, disciplinary action, discrimination, or financial loss as a result of such disclosure.

(b) *Complaint of harassment.* (1) A driver alleging a violation of § 390.36(b)(1) of this subchapter (harassment) must file a written complaint with FMCSA stating the substance of the alleged harassment by a motor carrier no later than 90 days after the event. The written complaint, including the information described below, must be filed with the National Consumer Complaint Database at *http://nccdb.fmcsa.dot.gov* or the FMCSA Division Administrator for the State where the driver is employed. The Agency may refer a complaint to another Division Administrator who the Agency believes is best able to handle the complaint. Information on filing a written complaint may be obtained by calling 1–800–DOT–SAFT (1–800–368–7238). Each complaint must be signed by the driver and must contain:

(i) The driver's name, address, and telephone number;

(ii) The name and address of the motor carrier allegedly harassing the driver; and

(iii) A concise but complete statement of the facts relied upon to substantiate each allegation of harassment, including:

(A) How the ELD or other technology used in combination with and not separable from the ELD was used to contribute to harassment;

(B) The date of the alleged action; and

(C) How the motor carrier's action violated either § 392.3 or part 395.

Each complaint may include any supporting evidence that will assist the Division Administrator in determining the merits of the complaint.

(2) Upon the filing of a complaint of a violation under paragraph (b)(1) of this section, the appropriate Division Administrator shall determine whether the complaint is non-frivolous and meets the requirements of paragraph (b)(1) of this section.

(i) If the Division Administrator determines the complaint is non-frivolous and meets the requirements of paragraph (b)(1) of this section, the Division Administrator shall investigate the complaint. The complaining driver shall be timely notified of findings resulting from the investigation. The Division Administrator shall not be required to conduct separate investigations of duplicative complaints.

(ii) If the Division Administrator determines the complaint is frivolous or does not meet the requirements of paragraph (b)(1) of this section, the Division Administrator shall dismiss the complaint and notify the complainant in writing of the reasons for the dismissal.

(3) Because prosecution of harassment in violation of § 390.36(b)(1) of this subchapter will require disclosure of the driver's identity, the Agency shall take every practical means within its authority to ensure that the driver is not subject to coercion, harassment, intimidation, disciplinary action, discrimination, or financial loss as a result of the disclosure. This will include notification that 49 U.S.C. 31105 includes broad employee protections and that retaliation for filing a harassment complaint may subject the motor carrier to enforcement action by the Occupational Safety and Health Administration.

(c) *Complaint of coercion.* (1) A driver alleging a violation of § 390.6(a)(1) or (2) of this subchapter must file a written complaint with FMCSA stating the substance of the alleged coercion no later than 90 days after the event. The written complaint, including the information described below, must be filed with the National Consumer Complaint Database at *http://nccdb.fmcsa.dot.gov* or the FMCSA Division Administrator for the State where the driver is employed. The Agency may refer a complaint to another Division Administrator who the Agency believes is best able to handle the complaint. Information on filing a written complaint may be obtained by calling 1–800–DOT–SAFT (1–800–368–7238). Each complaint must be signed by the driver and must contain:

(i) The driver's name, address, and telephone number;

(ii) The name and address of the person allegedly coercing the driver;

(iii) The provisions of the regulations that the driver alleges he or she was coerced to violate; and

(iv) A concise but complete statement of the facts relied upon to substantiate each allegation of coercion, including the date of each alleged violation.

(2) *Action on complaint of coercion.* Upon the filing of a complaint of coercion under paragraph (c)(1) of this section, the appropriate Division Administrator shall determine whether the complaint is non-frivolous and meets the requirements of paragraph (c)(1).

(i) If the Division Administrator determines that the complaint is non-frivolous and meets the requirements of paragraph (c)(1) of this section, the Division Administrator shall investigate the complaint. The complaining driver shall be timely notified of findings resulting from such investigation. The Division Administrator shall not be required to conduct separate investigations of duplicative complaints.

(ii) If the Division Administrator determines the complaint is frivolous or does not meet the requirements of paragraph (c)(1) of this section, the Division Administrator shall dismiss the complaint and notify the driver in writing of the reasons for the dismissal.

(3) *Protection of complainants.* Because prosecution of coercion in violation of § 390.6 of this subchapter will require disclosure of the driver's identity, the Agency shall take every practical means within its authority to ensure that the driver is not subject to coercion, harassment, intimidation, disciplinary action, discrimination, or financial loss as a result of the disclosure. This will include notification that 49 U.S.C. 31105 includes broad employee protections and that retaliation for filing a coercion complaint may subject the alleged coercer to enforcement action by the Occupational Safety and Health Administration.

■ 6. Add § 386.30 to subpart D to read as follows:

§ 386.30 Enforcement proceedings under part 395.

(a) *General.* A motor carrier is liable for any act or failure to act by an employee, as defined in § 390.5 of this subchapter, that violates any provision of part 395 of this subchapter if the act or failure to act is within the course of the motor carrier's operations. The fact that an employee may be liable for a violation in a proceeding under this subchapter, based on the employee's act or failure to act, does not affect the liability of the motor carrier.

(b) *Burden of proof.* Notwithstanding any other provision of this subchapter, the burden is on a motor carrier to prove that the employee was acting outside the scope of the motor carrier's operations when committing an act or failing to act in a manner that violates any provision of part 395 of this subchapter.

(c) *Imputed knowledge of documents.* A motor carrier shall be deemed to have knowledge of any document in its possession and any document that is available to the motor carrier and that the motor carrier could use in ensuring compliance with part 395 of this subchapter. ''Knowledge of any document'' means knowledge of the fact that a document exists and the contents of the document.

■ 7. Amend appendix B to part 386 by adding paragraph (a)(7) to read as follows:

Appendix B to Part 386—Penalty Schedule; Violations and Monetary Penalties

* * * * *

(a) * * *

(7) *Harassment.* In instances of a violation of § 390.36(b)(1) of this subchapter the Agency may consider the ''gravity of the violation,'' for purposes of 49 U.S.C. 521(b)(2)(D), sufficient to warrant imposition of penalties up to the maximum permitted by law.

* * * * *

PART 390—FEDERAL MOTOR CARRIER SAFETY REGULATIONS; GENERAL

■ 8. The authority citation for part 390 is revised to read as follows:

Authority: 49 U.S.C. 504, 508, 31132, 31133, 31134, 31136, 31137, 31144, 31151, 31502; sec. 114, Pub. L. 103–311, 108 Stat. 1673, 1677–1678; sec. 212, 217, Pub. L. 106–159, 113 Stat. 1748, 1766, 1767; sec. 229, Pub. L. 106–159 (as transferred by sec. 4115 and amended by secs. 4130–4132, Pub. L. 109–59, 119 Stat. 1144, 1726, 1743–1744); sec. 4136, Pub. L. 109–59, 119 Stat. 1144, 1745; sections 32101(d) and 34934, Pub. L. 112–141, 126 Stat. 405, 778, 830; sec. 2, Pub. L. 113–125, 128 Stat. 1388; and 49 CFR 1.87.

■ 9. Add § 390.36 to read as follows:

§ 390.36 Harassment of drivers prohibited.

(a) *Harass or harassment defined.* As used in this section, harass or harassment means an action by a motor carrier toward a driver employed by the motor carrier (including an independent contractor while in the course of operating a commercial motor vehicle on behalf of the motor carrier) involving the use of information available to the motor carrier through an ELD, as defined in § 395.2 of this chapter, or through other technology used in combination with and not separable from the ELD, that the motor carrier knew, or should have known, would result in the driver violating § 392.3 or part 395 of this subchapter.

(b) *Prohibition against harassment.* (1) No motor carrier may harass a driver.

(2) Nothing in paragraph (b)(1) of this section shall be construed to prevent a motor carrier from using technology allowed under this subchapter to monitor productivity of a driver provided that such monitoring does not result in harassment.

(c) *Complaint process.* A driver who believes he or she was the subject of harassment by a motor carrier may file a written complaint under § 386.12(b) of this subchapter.

PART 395—HOURS OF SERVICE OF DRIVERS

■ 10. The authority citation for part 395 continues to read as follows:

Authority: 49 U.S.C. 504, 31133, 31136, 31137, and 31502; sec. 113, Pub. L. 103–311, 108 Stat. 1673, 1676; sec. 229, Pub. L. 106–159 (as transferred by sec. 4115 and amended by secs. 4130–4132, Pub. L. 109–59, 119 Stat. 1144, 1726, 1743, 1744); sec. 4133, Pub. L. 109–59, 119 Stat. 1144, 1744; sec. 108, Pub. L. 110–432, 122 Stat. 4860–4866; sec. 32934, Pub. L. 112–141, 126 Stat. 405, 830; and 49 CFR 1.87.

■ 11. Redesignate § 395.1 through § 395.15 as subpart A, and add a new subpart heading to read as follows:

Subpart A—General

■ 12. Amend § 395.1 by revising the introductory text of paragraphs (e)(1) and (e)(2) to read as follows:

§ 395.1 Scope of rules in this part.

* * * * *

(e) * * *

(1) *100 air-mile radius driver.* A driver is exempt from the requirements of § 395.8 and § 395.11 if:

* * * * *

(2) *Operators of property-carrying commercial motor vehicles not requiring a commercial driver's license.* Except as provided in this paragraph, a driver is exempt from the requirements of §§ 395.3(a)(2), 395.8, and 395.11 and ineligible to use the provisions of § 395.1(e)(1), (g), and (o) if:

* * * * *

■ 13. Amend § 395.2 by adding definitions for *Electronic logging device (ELD), ELD record,* and *Supporting document,* in alphabetical order, to read as follows:

§ 395.2 Definitions.

* * * * *

Electronic logging device (ELD) means a device or technology that automatically records a driver's driving time and facilitates the accurate recording of the driver's hours of service, and that meets the requirements of subpart B of this part.

ELD record means a record of duty status, recorded on an ELD, that reflects the data elements that an ELD must capture.

* * * * *

Supporting document means a document, in any medium, generated or received by a motor carrier in the normal course of business as described in § 395.11 that can be used, as produced or with additional identifying information, by the motor carrier and enforcement officials to verify the accuracy of a driver's record of duty status.

* * * * *

■ 14. Amend § 395.8 by:

■ a. Revising paragraphs (a) and (e),

■ b. Removing and reserving paragraph (i), and

■ c. Revising the heading of paragraph (k), and paragraph (k)(1) to read as follows:

§ 395.8 Driver's record of duty status.

(a)(1) Except for a private motor carrier of passengers (nonbusiness), as defined in § 390.5 of this subchapter, a motor carrier subject to the requirements of this part must require each driver used by the motor carrier to record the driver's duty status for each 24-hour period using the method prescribed in paragraphs (a)(1)(i) through (iv) of this section, as applicable.

(i) Subject to paragraphs (a)(1)(ii) and (iii) of this section, a motor carrier operating commercial motor vehicles must install and require each of its drivers to use an ELD to record the driver's duty status in accordance with subpart B of this part no later than December 18, 2017.

(ii) A motor carrier that installs and requires a driver to use an automatic on-board recording device in accordance

with § 395.15 before December 18, 2017 may continue to use the compliant automatic on-board recording device no later than December 16, 2019.

(iii)(A) A motor carrier may require a driver to record the driver's duty status manually in accordance with this section, rather than require the use of an ELD, if the driver is operating a commercial motor vehicle:

(*1*) In a manner requiring completion of a record of duty status on not more than 8 days within any 30-day period;

(*2*) In a driveaway-towaway operation in which the vehicle being driven is part of the shipment being delivered; or

(*3*) That was manufactured before model year 2000.

(B) The record of duty status must be recorded in duplicate for each 24-hour period for which recording is required. The duty status shall be recorded on a specified grid, as shown in paragraph (g) of this section. The grid and the requirements of paragraph (d) of this section may be combined with any company form.

(iv) Subject to paragraphs (a)(1)(i) through (iii) of this section, until December 18, 2017, a motor carrier operating commercial motor vehicles shall require each of its drivers to record the driver's record of duty status:

(A) Using an ELD that meets the requirements of subpart B of this part;

(B) Using an automatic on-board recording device that meets the requirements of § 395.15; or

(C) Manually, recorded on a specified grid as shown in paragraph (g) of this section. The grid and the requirements of paragraph (d) of this section may be combined with any company form. The record of duty status must be recorded in duplicate for each 24-hour period for which recording is required.

(2) A driver operating a commercial motor vehicle must:

(i) Record the driver's duty status using one of the methods under paragraph (a)(1) of this section; and

(ii) Submit the driver's record of duty status to the motor carrier within 13 days of the 24-hour period to which the record pertains.

* * * * *

(e)(1) No driver or motor carrier may make a false report in connection with a duty status.

(2) No driver or motor carrier may disable, deactivate, disengage, jam, or otherwise block or degrade a signal transmission or reception, or reengineer, reprogram, or otherwise tamper with an automatic on-board recording device or ELD so that the device does not accurately record and retain required data.

(3) No driver or motor carrier may permit or require another person to disable, deactivate, disengage, jam, or otherwise block or degrade a signal transmission or reception, or reengineer, reprogram, or otherwise tamper with an automatic on-board recording device or ELD so that the device does not accurately record and retain required data.

* * * * *

(i) [Reserved]

* * * * *

(k) *Retention of driver's record of duty status and supporting documents.* (1) A motor carrier shall retain records of duty status and supporting documents required under this part for each of its drivers for a period of not less than 6 months from the date of receipt.

* * * * *

■ 15. Add § 395.11 to read as follows:

§ 395.11 Supporting documents.

(a) *Effective date.* This section takes effect December 18, 2017.

(b) *Submission of supporting documents to motor carrier.* Except drivers for a private motor carrier of passengers (nonbusiness), a driver must submit to the driver's employer the driver's supporting documents within 13 days of either the 24-hour period to which the documents pertain or the day the document comes into the driver's possession, whichever is later.

(c) *Supporting document retention.* (1) Subject to paragraph (d) of this section, a motor carrier must retain each supporting document generated or received in the normal course of business in the following categories for each of its drivers for every 24-hour period to verify on-duty not driving time in accordance with § 395.8(k):

(i) Each bill of lading, itinerary, schedule, or equivalent document that indicates the origin and destination of each trip;

(ii) Each dispatch record, trip record, or equivalent document;

(iii) Each expense receipt related to any on-duty not driving time;

(iv) Each electronic mobile communication record, reflecting communications transmitted through a fleet management system; and

(v) Each payroll record, settlement sheet, or equivalent document that indicates payment to a driver.

(2)(i) A supporting document must include each of the following data elements:

(A) On the document or on another document that enables the carrier to link the document to the driver, the driver's name or personal identification number (PIN) or a unit (vehicle) number if the unit number can be associated with the driver operating the unit;

(B) The date, which must be the date at the location where the date is recorded;

(C) The location, which must include the name of the nearest city, town, or village to enable Federal, State, or local enforcement personnel to quickly determine a vehicle's location on a standard map or road atlas; and

(D) Subject to paragraph (c)(2)(ii) of this section, the time, which must be convertible to the local time at the location where it is recorded.

(ii) If a driver has fewer than eight supporting documents containing the four data elements under paragraph (c)(2)(i) of this section for a 24-hour period, a document containing the data elements under paragraphs (c)(2)(i)(A) through (C) of this section is considered a supporting document for purposes of paragraph (d) of this section.

(d) *Maximum number of supporting documents.* (1) Subject to paragraphs (d)(3) and (4) of this section, a motor carrier need not retain more than eight supporting documents for an individual driver's 24-hour period under paragraph (c) of this section.

(2) In applying the limit on the number of documents required under paragraph (d)(1) of this section, each electronic mobile communication record applicable to an individual driver's 24-hour period shall be counted as a single document.

(3) If a motor carrier has more than eight supporting documents for a driver's 24 hour period, the motor carrier must retain the supporting documents containing the earliest and the latest time indications among the eight supporting documents retained.

(4) In addition to other supporting documents required under this section, and notwithstanding the maximum number of documents under paragraph (d)(1) of this section, a motor carrier that requires a driver to complete a paper record of duty status under § 395.8(a)(1)(iii) must maintain toll receipts for any period when the driver kept paper records of duty status.

(e) *Link to driver's record of duty status.* A motor carrier must retain supporting documents in such a manner that they may be effectively matched to the corresponding driver's record of duty status.

(f) *Prohibition of destruction.* No motor carrier or driver may obscure, deface, destroy, mutilate, or alter existing information contained in a supporting document.

(g) *Supporting documents at roadside.* (1) Upon request during a roadside inspection, a driver must make available

to an authorized Federal, State, or local official for the official's review any supporting document in the driver's possession.

(2) A driver need not produce a supporting document under paragraph (g)(1) of this section in a format other than the format in which the driver possesses it.

(h) *Self-compliance systems.* (1) FMCSA may authorize on a case-by-case basis motor carrier self-compliance systems.

(2) Requests for use of a supporting document self-compliance system may be submitted to FMCSA under the procedures described in 49 CFR part 381, subpart C (Procedures for Applying for Exemptions).

(3) FMCSA will consider requests concerning types of supporting documents retained by a motor carrier under § 395.8(k)(1) and the method by which a driver retains a copy of the record of duty status for the previous 7 days and makes it available for inspection while on duty in accordance with § 395.8.

■ 16. Amend § 395.15 by revising paragraph (a) to read as follows:

§ 395.15 Automatic on-board recording devices.

(a) *Authority to use.* (1) A motor carrier that installs and requires a driver to use an automatic on-board recording device in accordance with this section before December 18, 2017 may continue to use the compliant automatic on-board recording device no later than December 16, 2019. Otherwise, the authority to use automatic on-board recording devices under this section ends on December 18, 2017.

(2) In accordance with paragraph (a)(1) of this section, a motor carrier may require a driver to use an automatic on-board recording device to record the driver's hours of service.

(3) Every driver required by a motor carrier to use an automatic on-board recording device shall use such device to record the driver's hours of service.

* * * * *

§§ 395.16–395.19 [Added and Reserved]

■ 17. Add and reserve §§ 395.16 through 395.19 in subpart A.

■ 18. Amend part 395 by adding a new subpart B, consisting of §§ 395.20 through 395.38, and Appendix A to Subpart B of Part 395, to read as follows:

Subpart B—Electronic Logging Devices (ELDs)

Sec.

395.20 ELD applicability and scope.
395.22 Motor carrier responsibilities—In general.
395.24 Driver responsibilities—In general.
395.26 ELD data automatically recorded.
395.28 Special driving categories; other driving statuses.
395.30 ELD record submissions, edits, annotations, and data retention.
395.32 Non-authenticated driver logs.
395.34 ELD malfunctions and data diagnostic events.
395.36 Driver access to records.
395.38 Incorporation by reference.
Appendix A to Subpart B of Part 395—Functional Specifications for All Electronic Logging Devices (ELDS)

Subpart B—Electronic Logging Devices (ELDs)

§ 395.20 ELD applicability and scope.

(a) *Scope.* This subpart applies to ELDs used to record a driver's hours of service under § 395.8(a).

(b) *Applicability.* An ELD used after December 18, 2017 must meet the requirements of this subpart.

§ 395.22 Motor carrier responsibilities—In general.

(a) *Registered ELD required.* A motor carrier required to use an ELD must use only an ELD that is listed on the Federal Motor Carrier Safety Administration's registered ELDs list, accessible through the Agency's Web site, *www.fmcsa.dot.gov/devices.*

(b) *User rights management.* (1) This paragraph applies to a motor carrier whose drivers use ELDs and to the motor carrier's support personnel who have been authorized by the motor carrier to access ELD records and make or suggest authorized edits.

(2) A motor carrier must:

(i) Manage ELD accounts, including creating, deactivating, and updating accounts, and ensure that properly authenticated individuals have ELD accounts with appropriate rights;

(ii) Assign a unique ELD username to each user account with the required user identification data;

(iii) Ensure that a driver's license used in the creation of an ELD driver account is valid and corresponds to the driver using the ELD account; and

(iv) Ensure that information entered to create a new account is accurate.

(c) *Driver identification data.* (1) The ELD user account assigned by the motor carrier to a driver requires the following data elements:

(i) A driver's first and last name, as reflected on the driver's license;

(ii) A unique ELD username selected by the motor carrier;

(iii) The driver's valid driver's license number; and

(iv) The State or jurisdiction that issued the driver's license.

(2) The driver's license number or Social Security number must not be used as, or as part of, the username for the account created on an ELD.

(d) *Motor carrier support personnel identification data.* The ELD user account assigned by a motor carrier to support personnel requires the following data elements:

(1) The individual's first and last name, as reflected on a government issued identification; and

(2) A unique ELD username selected by the motor carrier.

(e) *Proper log-in required.* The motor carrier must require that its drivers and support personnel log into the ELD system using their proper identification data.

(f) *Calibration.* A motor carrier must ensure that an ELD is calibrated and maintained in accordance with the provider's specifications.

(g) *Portable ELDs.* If a driver uses a portable ELD, the motor carrier shall ensure that the ELD is mounted in a fixed position during the operation of the commercial motor vehicle and visible to the driver when the driver is seated in the normal driving position.

(h) *In-vehicle information.* A motor carrier must ensure that its drivers possess onboard a commercial motor vehicle an ELD information packet containing the following items:

(1) A user's manual for the driver describing how to operate the ELD;

(2) An instruction sheet for the driver describing the data transfer mechanisms supported by the ELD and step-by-step instructions for the driver to produce and transfer the driver's hours-of-service records to an authorized safety official;

(3) An instruction sheet for the driver describing ELD malfunction reporting requirements and recordkeeping procedures during ELD malfunctions; and

(4) A supply of blank driver's records of duty status graph-grids sufficient to record the driver's duty status and other related information for a minimum of 8 days.

(i) *Record backup and security.* (1) A motor carrier must retain for 6 months a back-up copy of the ELD records on a device separate from that on which the original data are stored.

(2) A motor carrier must retain a driver's ELD records so as to protect a driver's privacy in a manner consistent with sound business practices.

(j) *Record production.* When requested by an authorized safety official, a motor carrier must produce ELD records in an electronic format either at the time of the request or, if the motor carrier has multiple offices or terminals, within the time permitted under § 390.29 of this subchapter.

§ 395.24 Driver responsibilities—In general.

(a) *In general.* A driver must provide the information the ELD requires as prompted by the ELD and required by the motor carrier.

(b) *Driver's duty status.* A driver must input the driver's duty status by selecting among the following categories available on the ELD:

(1) ''Off duty'' or ''OFF'' or ''1'';

(2) ''Sleeper berth'' or ''SB'' or ''2'', to be used only if sleeper berth is used;

(3) ''Driving'' or ''D'' or ''3''; or

(4) ''On-duty not driving'' or ''ON'' or ''4''.

(c) *Miscellaneous data.* (1) A driver must manually input the following information in the ELD:

(i) Annotations, when applicable;

(ii) Driver's location description, when prompted by the ELD; and

(iii) Output file comment, when directed by an authorized safety officer.

(2) A driver must manually input or verify the following information on the ELD:

(i) Commercial motor vehicle power unit number;

(ii) Trailer number(s), if applicable; and

(iii) Shipping document number, if applicable.

(d) *Driver use of ELD.* On request by an authorized safety official, a driver must produce and transfer from an ELD the driver's hours-of-service records in accordance with the instruction sheet provided by the motor carrier.

§ 395.26 ELD data automatically recorded.

(a) *In general.* An ELD provides the following functions and automatically records the data elements listed in this section in accordance with the requirements contained in appendix A to subpart B of this part.

(b) *Data automatically recorded.* The ELD automatically records the following data elements:

(1) Date;

(2) Time;

(3) CMV geographic location information;

(4) Engine hours;

(5) Vehicle miles;

(6) Driver or authenticated user identification data;

(7) Vehicle identification data; and

(8) Motor carrier identification data.

(c) *Change of duty status.* When a driver indicates a change of duty status under § 395.24(b), the ELD records the data elements in paragraphs (b)(1) through (8) of this section.

(d) *Intermediate recording.* (1) When a commercial motor vehicle is in motion and there has not been a duty status change or another intermediate recording in the previous 1 hour, the ELD automatically records an intermediate recording that includes the data elements in paragraphs (b)(1) through (8) of this section.

(2) If the intermediate recording is created during a period when the driver indicates authorized personal use of a commercial motor vehicle, the data elements in paragraphs (b)(4) and (5) of this section (engine hours and vehicle miles) will be left blank and paragraph (b)(3) of this section (location) will be recorded with a single decimal point resolution (approximately within a 10-mile radius).

(e) *Change in special driving category.* If a driver indicates a change in status under § 395.28(a)(2), the ELD records the data elements in paragraphs (b)(1) through (8) of this section.

(f) *Certification of the driver's daily record.* The ELD provides a function for recording the driver's certification of the driver's records for every 24-hour period. When a driver certifies or recertifies the driver's records for a given 24-hour period under § 395.30(b)(2), the ELD records the date, time and driver identification data elements in paragraphs (b)(1), (2), and (6) of this section.

(g) *Log in/log out.* When an authorized user logs into or out of an ELD, the ELD records the data elements in paragraphs (b)(1) and (2) and (b)(4) through (8) of this section.

(h) *Engine power up/shut down.* When a commercial motor vehicle's engine is powered up or powered down, the ELD records the data elements in paragraphs (b)(1) through (8) of this section.

(i) *Authorized personal use.* If the record is created during a period when the driver has indicated authorized personal use of a commercial motor vehicle, the data element in paragraph (b)(3) of this section is logged with a single decimal point resolution (approximately within a 10-mile radius).

(j) *Malfunction and data diagnostic event.* When an ELD detects or clears a malfunction or data diagnostic event, the ELD records the data elements in paragraphs (b)(1) and (2) and (b)(4) through (8) of this section.

§ 395.28 Special driving categories; other driving statuses.

(a) *Special driving categories*—(1) *Motor carrier options.* A motor carrier may configure an ELD to authorize a driver to indicate that the driver is operating a commercial motor vehicle under any of the following special driving categories:

(i) Authorized personal use; and

(ii) Yard moves.

(2) *Driver's responsibilities.* A driver operating a commercial motor vehicle under one of the authorized categories listed in paragraph (a)(1) of this section:

(i) Must select on the ELD the applicable special driving category before the start of the status and deselect when the indicated status ends; and

(ii) When prompted by the ELD, annotate the driver's ELD record describing the driver's activity.

(b) *Drivers exempt from ELD use.* A motor carrier may configure an ELD to designate a driver as exempt from ELD use.

(c) *Other driving statuses.* A driver operating a commercial motor vehicle under any exception under § 390.3(f) of this subchapter or § 395.1 who is not covered under paragraph (a) or (b) of this section must annotate the driver's ELD record to explain the applicable exemption.

§ 395.30 ELD record submissions, edits, annotations, and data retention.

(a) *Accurate record keeping.* A driver and the motor carrier must ensure that the driver's ELD records are accurate.

(b) *Review of records and certification by driver.* (1) A driver must review the driver's ELD records, edit and correct inaccurate records, enter any missing information, and certify the accuracy of the information.

(2) Using the certification function of the ELD, the driver must certify the driver's records by affirmatively selecting ''Agree'' immediately following a statement that reads, ''I hereby certify that my data entries and my record of duty status for this 24-hour period are true and correct.'' The driver must certify the record immediately after the final required entry has been made or corrected for the 24-hour period.

(3) The driver must submit the driver's certified ELD records to the motor carrier in accordance with § 395.8(a)(2).

(4) If any edits are necessary after the driver submits the records to the motor carrier, the driver must recertify the record after the edits are made.

(c) *Edits, entries, and annotations.* (1) Subject to the edit limitations of an ELD, a driver may edit, enter missing information, and annotate ELD recorded events. When edits, additions, or annotations are necessary, a driver must use the ELD and respond to the ELD's prompts.

(2) The driver or support personnel must annotate each change or addition to a record.

(3) In the case of team drivers, if there were a mistake resulting in the wrong driver being assigned driving-time hours

by the ELD, and if the team drivers were both indicated in each other's records for that period as co-drivers, driving time may be edited and reassigned between the team drivers following the procedure supported by the ELD.

(d) *Motor carrier-proposed edits.* (1) On review of a driver's submitted records, the motor carrier may request edits to a driver's records of duty status to ensure accuracy. A driver must confirm or reject any proposed change, implement the appropriate edits on the driver's record of duty status, and recertify and resubmit the records in order for any motor carrier-proposed changes to take effect.

(2) A motor carrier may not request edits to the driver's electronic records before the records have been submitted by the driver.

(3) Edits requested by any system or by any person other than the driver must require the driver's electronic confirmation or rejection.

(e) *Coercion prohibited.* A motor carrier may not coerce a driver to make a false certification of the driver's data entries or record of duty status.

(f) *Motor carrier data retention requirements.* A motor carrier must not alter or erase, or permit or require alteration or erasure of, the original information collected concerning the driver's hours of service, the source data streams used to provide that information, or information contained in any ELD that uses the original information and HOS source data.

§ 395.32 Non-authenticated driver logs.

(a) *Tracking non-authenticated operation.* The ELD must associate the non-authenticated operation of a commercial motor vehicle with a single account labeled ''Unidentified Driver'' as soon as the vehicle is in motion, if no driver has logged into the ELD.

(b) *Driver.* When a driver logs into an ELD, the driver must review any unassigned driving time when prompted by the ELD and must:

(1) Assume any records that belong to the driver under the driver's account; or

(2) Indicate that the records are not attributable to the driver.

(c) *Motor carrier.* (1) A motor carrier must ensure that records of unidentified driving are reviewed and must:

(i) Annotate the record, explaining why the time is unassigned; or

(ii) Assign the record to the appropriate driver to correctly reflect the driver's hours of service.

(2) A motor carrier must retain unidentified driving records for each ELD for a minimum of 6 months from the date of receipt.

(3) During a safety inspection, audit or investigation by an authorized safety official, a motor carrier must make available unidentified driving records from the ELD corresponding to the time period for which ELD records are required.

§ 395.34 ELD malfunctions and data diagnostic events.

(a) *Recordkeeping during ELD malfunctions.* In case of an ELD malfunction, a driver must do the following:

(1) Note the malfunction of the ELD and provide written notice of the malfunction to the motor carrier within 24 hours;

(2) Reconstruct the record of duty status for the current 24-hour period and the previous 7 consecutive days, and record the records of duty status on graph-grid paper logs that comply with § 395.8, unless the driver already possesses the records or the records are retrievable from the ELD; and

(3) Continue to manually prepare a record of duty status in accordance with § 395.8 until the ELD is serviced and brought back into compliance with this subpart.

(b) *Inspections during malfunctions.* When a driver is inspected for hours of service compliance during an ELD malfunction, the driver must provide the authorized safety official the driver's records of duty status manually kept as specified under paragraphs (a)(2) and (3) of this section.

(c) *Driver requirements during ELD data diagnostic events.* If an ELD indicates that there is a data inconsistency that generates a data diagnostic event, the driver must follow the motor carrier's and ELD provider's recommendations in resolving the data inconsistency.

(d) *Motor carrier requirements for repair, replacement, or service.* (1) If a motor carrier receives or discovers information concerning the malfunction of an ELD, the motor carrier must take actions to correct the malfunction of the ELD within 8 days of discovery of the condition or a driver's notification to the motor carrier, whichever occurs first.

(2) A motor carrier seeking to extend the period of time permitted for repair, replacement, or service of one or more ELDs shall notify the FMCSA Division Administrator for the State of the motor carrier's principal place of business within 5 days after a driver notifies the motor carrier under paragraph (a)(1) of this section. Each request for an extension under this section must be signed by the motor carrier and must contain:

(i) The name, address, and telephone number of the motor carrier representative who files the request;

(ii) The make, model, and serial number of each ELD;

(iii) The date and location of each ELD malfunction as reported by the driver to the carrier; and

(iv) A concise statement describing actions taken by the motor carrier to make a good faith effort to repair, replace, or service the ELD units, including why the carrier needs additional time beyond the 8 days provided by this section.

(3) If FMCSA determines that the motor carrier is continuing to make a good faith effort to ensure repair, replacement, or service to address the malfunction of each ELD, FMCSA may allow an additional period.

(4) FMCSA will provide written notice to the motor carrier of its determination. The determination may include any conditions that FMCSA considers necessary to ensure hours-of-service compliance. The determination shall constitute a final agency action.

(5) A motor carrier providing a request for extension that meets the requirements of paragraph (d)(2) of this section is deemed in compliance with § 395.8(a)(1)(i) and (a)(2) until FMCSA makes an extension determination under this section, provided the motor carrier and driver continue to comply with the other requirements of this section.

§ 395.36 Driver access to records.

(a) *Records on ELD.* Drivers must be able to access their own ELD records. A motor carrier must not introduce a process that would require a driver to go through the motor carrier to obtain copies of the driver's own ELD records if such records exist on or are automatically retrievable through the ELD operated by the driver.

(b) *Records in motor carrier's possession.* On request, a motor carrier must provide a driver with access to and copies of the driver's own ELD records unavailable under paragraph (a) of this section during the period a motor carrier is required to retain the records under § 395.8(k).

§ 395.38 Incorporation by reference.

(a) *Incorporation by reference.* Certain materials are incorporated by reference in part 395, with the approval of the Director of the Office of the Federal Register under 5 U.S.C. 552(a), and 1 CFR part 51. To enforce any edition other than that specified in this section, the Federal Motor Carrier Safety Administration must publish notice of the change in the **Federal Register**, and

the material must be available to the public. All approved material is available for inspection at the Federal Motor Carrier Safety Administration, Office of Analysis, Research and Technology, (800) 832–5660, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*.

(b) *American National Standards Institute (ANSI).* 11 West 42nd Street, New York, New York 10036, *http://webstore.ansi.org*, (212) 642–4900.

(1) ANSI INCITS 4–1986 (R2012), American National Standard for Information Systems—Coded Character Sets—7-Bit American National Standard Code for Information Interchange (7-Bit ASCII), approved June 14, 2007, IBR in section 4.8.2.1, Appendix A to subpart B.

(2) ANSI INCITS 446–2008 (R2013), American National Standard for Information Technology—Identifying Attributes for Named Physical and Cultural Geographic Features (Except Roads and Highways) of the United States, Territories, Outlying Areas, and Freely Associated Areas, and the Waters of the Same to the Limit of the Twelve-Mile Statutory Zone, approved October 28, 2008, IBR in section 4.4.2, Appendix A to subpart B.

(c) *Bluetooth SIG, Inc.* 5209 Lake Washington Blvd. NE., Suite 350, Kirkland, WA 98033, *https://www.bluetooth.org/Technical/Specifications/adopted.htm*, (425) 691–3535.

(1) Bluetooth SIG, Inc., Specification of the Bluetooth System: Wireless Connections Made Easy, Covered Core Package version 2.1 + EDR, volumes 0 through 4, approved July 26, 2007, IBR in sections 4.9.1, 4.9.2, 4.10.1.4, 4.10.2, Appendix A to subpart B.

(2) [Reserved]

(d) *Institute of Electrical and Electronic Engineers (IEEE) Standards Association.* 445 Hoes Lane, Piscataway, NJ 08854–4141, *http://standards.ieee.org/index.html*, (732) 981–0060.

(1) IEEE Std 1667–2009, IEEE Standard for Authentication in Host Attachments of Transient Storage Devices, approved 11 November 2009, IBR in section 4.10.1.3, Appendix A to subpart B.

(2) [Reserved]

(e) *Internet Engineering Task Force (IETF).* C/o Association Management Solutions, LLC (AMS) 48377 Freemont Blvd., Suite 117, Freemont, CA 94538, (510) 492–4080.

(1) IETF RFC 3565, Use of the Advanced Encryption Standard (AES) Encryption Algorithm in Cryptographic Message Syntax (CMS), approved July 2003, IBR in section 4.10.1.2, Appendix A to subpart B.

(2) IETF RFC 4056, Use of the RSASSA–PSS Signature Algorithm in Cryptographic Message Syntax (CMS), approved June 2005, IBR in section 4.10.1.2, Appendix A to subpart B.

(3) IETF RFC 5246, The Transport Layer Security (TLS) Protocol Version 1.2, approved August 2008, IBR in section 4.10.1.1, Appendix A to subpart B.

(4) IETF RFC 5321, Simple Mail Transfer Protocol, approved October 2008, IBR in section 4.10.1.2, Appendix A to subpart B.

(5) IETF RFC 5322, Internet Message Format, approved October 2008, IBR in section 4.10.1.2, Appendix A to subpart B.

(6) IETF RFC 5751, Secure/Multipurpose Internet Mail Extensions (S/MIME) Version 3.2, Message Specification, approved January 2010, IBR in section 4.10.1.2, Appendix A to subpart B.

(7) IETF RFC 7230, Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing, approved June 2014, IBR in section 4.10.1.1, Appendix A to subpart B.

(8) IETF RFC 7231, Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content, approved June 2014, IBR in section 4.10.1.1, Appendix A to subpart B.

(f) *National Institute of Standards and Technology (NIST).* 100 Bureau Drive, Stop 1070, Gaithersburg, MD 20899–1070, *http://www.nist.gov*, (301) 975–6478.

(1) Federal Information Processing Standards Publication (FIPS PUB) 197, Advanced Encryption Standard (AES), approved November 26, 2001, IBR in sections 4.10.1.2 and 4.10.1.3, Appendix A to subpart B.

(2) SP 800–32, Introduction to Public Key Technology and the Federal PKI Infrastructure, approved February 26, 2001, IBR in section 4.10.1.2, Appendix A to subpart B.

(g) *Universal Serial Bus Implementers Forum (USBIF).* 3855 SW. 153rd Drive, Beaverton, Oregon 97006, *http://www.usb.org*, (503) 619–0426.

(1) USB Implementers Forum, Inc., Universal Serial Bus Specification, Revision 2.0, approved April 27, 2000, as revised through April 3, 2015, IBR in sections 4.9.1, 4.9.2, 4.10.1.3, and 4.10.2, Appendix A to subpart B.

(2) [Reserved]

(h) *World Wide Web Consortium (W3C).* 32 Vassar Street, Building 32–G514, Cambridge, MA 02139, *http://www.w3.org*, (617) 253–2613.

(1) W3C Recommendation 27, SOAP Version 1.2 Part 1: Messaging Framework (Second Edition), including errata, approved April 2007, IBR in section 4.10.1.1, Appendix A to subpart B.

(2) [Reserved]

Appendix A to Subpart B of Part 395—Functional Specifications for All Electronic Logging Devices (ELDs)

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1. Scope and Description

(a) This appendix specifies the minimal requirements for an electronic logging device (ELD) necessary for an ELD provider to build and certify that its technology is compliant with this appendix.

1.1. ELD Function

The ELD discussed in this appendix is an electronic module capable of recording the electronic records of duty status for CMV drivers using the unit in a driving environment within a CMV and meets the compliance requirements in this appendix.

1.2. System Users

Users of ELDs are:

(a) CMV drivers employed by a motor carrier; and

(b) Support personnel who have been authorized by the motor carrier to:

(1) Create, remove, and manage user accounts;

(2) Configure allowed ELD parameters; and

(3) Access, review, and manage drivers' ELD records on behalf of the motor carrier.

1.3. System Architecture

An ELD may be implemented as a stand-alone technology or within another electronic module. It may be installed in a CMV or may be implemented on a handheld unit that may be moved from vehicle to vehicle. The functional requirements are the same for all types of system architecture that may be used in implementing the ELD functionality.

1.4. System Design

(a) An ELD is integrally synchronized with the engine of the CMV such that driving time can be automatically recorded for the driver operating the CMV and using the ELD.

(b) An ELD allows for manual inputs from the driver and the motor carrier support personnel and automatically captures date and time, vehicle position, and vehicle operational parameters.

(c) An ELD records a driver's electronic RODS and other supporting events with the required data elements specified in this appendix and retains data to support the performance requirements specified in this appendix.

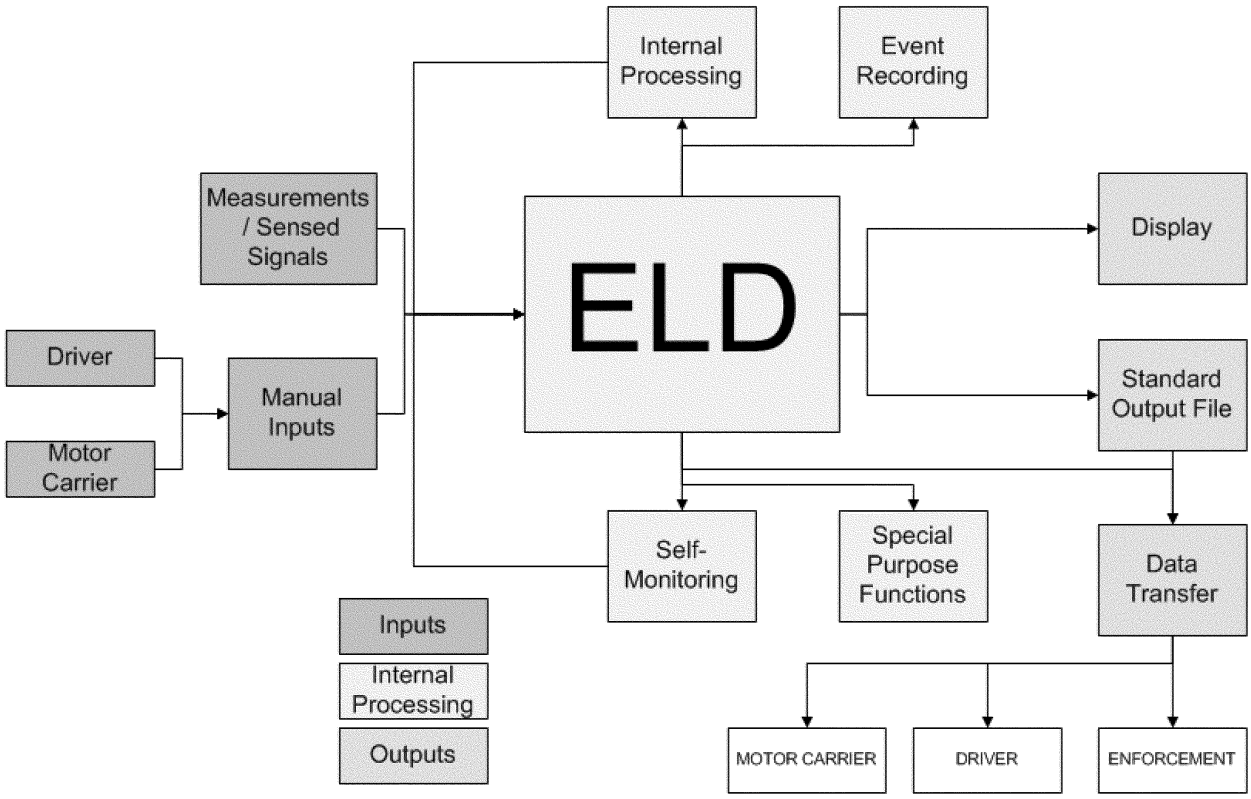
(d) An ELD generates a standard data file output and transfers it to an authorized safety official upon request.

(e) This appendix specifies minimally required data elements that must be part of an event record such that a standard ELD output file can be produced by all compliant ELDs.

(f) Figure 1 provides a visual layout of how this appendix is generally organized to further explain the required sub-functions of an ELD.

Figure 1

A Pictorial Overview of an ELD's Inputs, Outputs, and Other Sub-Functions



1.5. Sections of Appendix

(a) Section 2 lists the abbreviations used throughout this appendix.

(b) Section 3 provides definitions for terms and notations used in this document.

(c) Section 4 lists functional requirements for an ELD. More specifically, section 4.1 describes the security requirements for account management within an ELD system and introduces the term ''Unidentified Driver'' account. Section 4.2 explains internal engine synchronization requirements and its applicability when used in recording a driver's record of duty status in CMVs. Section 4.3 describes the inputs of an ELD which includes automatically measured signals by the ELD as covered in section 4.3.1, and manual entries by the authenticated driver as covered in section 4.3.2 and by the motor carrier as covered in section 4.3.3. The ELD requirements for internal processing and tracking of information flow are described in section 4.4, which includes conditions for and prohibitions against automatic setting of duty-status in section 4.4.1, required geo-location and date and time conversion functions in sections 4.4.2 and 4.4.3, respectively, use of event attributes for tracking of edit and entry history in section 4.4.4, and the use of data check functions in the recording of ELD logs in section 4.4.5 as standard security measures for all ELDs. Section 4.5 describes the events an ELD must record and the data elements each type of event must include. Section 4.6 introduces device self-monitoring requirements and standardizes the minimal set of malfunctions and data diagnostic events an ELD must be able to detect. Section 4.7 introduces technical functions that are intended to guard a driver against harassment and introduces a privacy preserving provision when a driver operates a CMV for personal purposes. Section 4.8 explains ELD outputs, which are the information displayed to a user and the standard data output file an ELD must produce. Sections 4.9 and 4.10, respectively, describe the data reporting requirements and the communications protocols.

(d) Section 5 describes the ELD certification and registration process.

(e) Section 6 lists the cited references throughout this appendix.

(f) Section 7 provides a data elements dictionary referencing each data element identified in this appendix.

2. Abbreviations

3pDP Third-Party Developers' Partnership
ASCII American Standard Code for Information Interchange
CAN Control Area Network
CMV Commercial Motor Vehicle
ECM Electronic Control Module
ELD Electronic Logging Device
FMCSA Federal Motor Carrier Safety Administration
HOS Hours of Service
HTTP Hypertext Transfer Protocol
HTTPS Hypertext Transfer Protocol Secure
ICD Interface Control Document
SAFER Safety and Fitness Electronic Records
RFC Request for Comments
RODS Records of Duty Status
TLS Transport Layer Security
UCT Coordinated Universal Time
USB Universal Serial Bus
WSDL Web Services Definition Language
XML Extensible Markup Language
XOR Exclusive Or {bitwise binary operation}

3. Definitions; Notations

3.1. Definitions

3.1.1. Databus

A vehicle databus refers to an internal communications network that interconnects components inside a vehicle and facilitates exchange of data between subsystems typically using serial or control area network protocols.

3.1.2. ELD Event

An ELD event refers to a discrete instance in time when the ELD records data with the data elements specified in this appendix. The discrete ELD events relate to the driver's duty status and ELD's operational integrity. They are either triggered by input from the driver (driver's duty status changes, driver's login/logout activity, etc.) or triggered by the ELD's internal monitoring functions (ELD malfunction detection, data diagnostics detection, intermediate logs, etc.). ELD events and required data elements for each type of ELD event are described in detail in section 4.5.1 of this appendix.

3.1.3. Exempt Driver

As specified in further detail in section 4.3.3.1.2 of this appendix, an ELD must allow a motor carrier to configure an ELD for a driver who may be exempt from the use of the ELD. An example of an exempt driver would be a driver operating under the short-haul exemption in § 395.1(e) of this part (100 air-mile radius driver and non-CDL 150-air mile radius driver). Even though exempt drivers do not have to use an ELD, in operations when an ELD equipped CMV may be shared between exempt and non-exempt drivers, motor carriers can use this allowed configuration to avoid issues with unidentified driver data diagnostics errors.

3.1.4. Geo-Location

Geo-location is the conversion of a position measurement in latitude/longitude coordinates into a description of the distance and direction to a recognizable nearby location name. Geo-location information is used on an ELD's display or printout.

3.1.5. Ignition Power Cycle, Ignition Power On Cycle, Ignition Power Off Cycle

(a) An ignition power cycle refers to the engine's power status changing from ''on to off'' or ''off to on'', typically with the driver controlling engine power status by switching the ignition key positions.

(b) An ignition power on cycle refers to the engine power sequence changing from ''off to on and then off''. This refers to a continuous period when a CMV's engine is powered.

(c) An ignition power off cycle refers to the engine power sequence changing from ''on to off and then on''. This refers to a continuous period when a CMV's engine is not powered.

3.1.6. Unidentified Driver

''Unidentified Driver'' refers to the operation of a CMV featuring an ELD without an authenticated driver logging in the system. Functional specifications in this appendix require an ELD to automatically capture driving time under such conditions and attribute such records to the unique ''Unidentified Driver account,'' as specified in section 4.1.5 of this appendix, until the motor carrier and the driver review the records and they are assigned to the true and correct owner, as described in § 395.32 of this part.

3.2. Notations

Throughout this appendix the following notations are used when data elements are referenced.

(a) < . > indicates a parameter an ELD must track. For example refers to the unique <ELD username> or identifier specified during the creation of an ELD account with the requirements set forth in section 7.18 of this appendix.

(b) { .} indicates which of multiple values of a parameter is being referenced. For example <ELD username {*for the co-driver*}> refers specifically to the ELD username for the co-driver.

(c) <CR> indicates a carriage return or new line or end of the current line. This notation is used in section 4.8.2 of this appendix, which describes the standard ELD output file.

4. Functional Requirements

4.1. ELD User Accounts

4.1.1. Account Types

An ELD must support a user account structure that separates drivers and motor carrier's support personnel (*i.e.* non-drivers).

4.1.2. Account Creation

(a) Each user of the ELD must have a valid active account on the ELD with a unique identifier assigned by the motor carrier.

(b) Each driver account must require the entry of the driver's license number and the State or jurisdiction that issued the driver's license into the ELD during the account creation process. The driver account must securely store this information on the ELD.

(c) An ELD must not allow creation of more than one driver account associated with a driver's license for a given motor carrier.

(d) A driver account must not have administrative rights to create new accounts on the ELD.

(e) A support personnel account must not allow recording of ELD data for its account holder.

(f) An ELD must reserve a unique driver account for recording events during non-authenticated operation of a CMV. This appendix will refer to this account as the ''unidentified driver account.''

4.1.3. Account Security

(a) An ELD must provide secure access to data recorded and stored on the system by requiring user authentication during system login.

(b) Driver accounts must only have access to data associated with that driver, protecting the authenticity and confidentiality of the collected information.

4.1.4. Account Management

(a) An ELD must be capable of separately recording and retaining ELD data for each individual driver using the ELD.

(b) An ELD must provide for and require concurrent authentication for team drivers.

(c) If more than one ELD unit is used to record a driver's electronic records within a motor carrier's operation, the ELD in the vehicle the driver is operating most recently must be able to produce a complete ELD report for that driver, on demand, for the current 24-hour period and the previous 7 consecutive days.

4.1.5. Non-Authenticated Operation

(a) An ELD must associate all non-authenticated operation of a CMV with a single ELD account labeled unidentified driver.

(b) If a driver does not log onto the ELD, as soon as the vehicle is in motion, the ELD must:

(1) Provide a visual or visual and audible warning reminding the driver to stop and log in to the ELD;

(2) Record accumulated driving and on-duty, not-driving, time in accordance with the ELD defaults described in section 4.4.1 of this appendix under the unidentified driver profile; and

(3) Not allow entry of any information into the ELD other than a response to the login prompt.

4.2. ELD-Vehicle Interface

(a) An ELD must be integrally synchronized with the engine of the CMV. Engine synchronization for purposes of ELD compliance means the monitoring of the vehicle's engine operation to automatically capture the engine's power status, vehicle's motion status, miles driven value, and engine hours value when the CMV's engine is powered.

(b) An ELD used while operating a CMV that is a model year 2000 or later model year, as indicated by the vehicle identification number (VIN), that has an engine electronic control module (ECM) must establish a link to the engine ECM when the CMV's engine is powered and receive automatically the engine's power status, vehicle's motion status, miles driven value, and engine hours value through the serial or Control Area Network communication protocols supported by the vehicle's engine ECM. If the vehicle does not have an ECM, an ELD may use alternative sources to obtain or estimate these

vehicle parameters with the listed accuracy requirements under section 4.3.1 of this appendix.

4.3. ELD Inputs

4.3.1. ELD Sensing

4.3.1.1. Engine Power Status

An ELD must be powered and become fully functional within 1 minute of the vehicle's engine receiving power and must remain powered for as long as the vehicle's engine stays powered.

4.3.1.2. Vehicle Motion Status

(a) An ELD must automatically determine whether a CMV is in motion or stopped by comparing the vehicle speed information with respect to a set speed threshold as follows:

(1) Once the vehicle speed exceeds the set speed threshold, it must be considered in motion.

(2) Once in motion, the vehicle must be considered in motion until its speed falls to 0 miles per hour and stays at 0 miles per hour for 3 consecutive seconds. Then, the vehicle will be considered stopped.

(3) An ELD's set speed threshold for determination of the in-motion state for the purpose of this section must not be configurable to greater than 5 miles per hour.

(b) If an ELD is required to have a link to the vehicle's engine ECM, vehicle speed information must be acquired from the engine ECM. Otherwise, vehicle speed information must be acquired using an independent source apart from the positioning services described under section 4.3.1.6 of this appendix and must be accurate within ±3 miles per hour of the CMV's true ground speed for purposes of determining the in-motion state for the CMV.

4.3.1.3. Vehicle Miles

(a) An ELD must monitor vehicle miles as accumulated by a CMV over the course of an ignition power on cycle (accumulated vehicle miles) and over the course of CMV's operation (total vehicle miles). Vehicle miles information must use or must be converted to units of whole miles.

(b) If the ELD is required to have a link to the vehicle's engine ECM as specified in section 4.2 of this appendix:

(1) The ELD must monitor the engine ECM's odometer message broadcast and use it to log total vehicle miles information; and

(2) The ELD must use the odometer message to determine accumulated vehicle miles since engine's last power on instance.

(c) If the ELD is not required to have a link to the vehicle's engine ECM as specified in section 4.2 of this appendix, the accumulated vehicle miles indication must be obtained or estimated from a source that is accurate to within ±10% of miles accumulated by the CMV over a 24-hour period as indicated on the vehicle's odometer display.

4.3.1.4. Engine Hours

(a) An ELD must monitor engine hours of the CMV over the course of an ignition power on cycle (elapsed engine hours) and over the course of the total engine hours of the CMV's operation. Engine hours must use or must be converted to hours in intervals of a tenth of an hour.

(b) If an ELD is required to have a link to the vehicle's engine ECM, the ELD must monitor the engine ECM's total engine hours message broadcast and use it to log total engine hours information. Otherwise, engine hours must be obtained or estimated from a source that monitors the ignition power of the CMV and must be accurate within ±0.1 hour of the engine's total operation within a given ignition power on cycle.

4.3.1.5. Date and Time

(a) The ELD must obtain and record the date and time information automatically without allowing any external input or interference from a motor carrier, driver, or any other person.

(b) The ELD time must be synchronized to Coordinated Universal Time (UCT) and the absolute deviation from UCT must not exceed 10 minutes at any point in time.

4.3.1.6. CMV Position

(a) An ELD must determine automatically the position of the CMV in standard latitude/longitude coordinates with the accuracy and availability requirements of this section.

(b) The ELD must obtain and record this information without allowing any external input or interference from a motor carrier, driver, or any other person.

(c) CMV position measurement must be accurate to ±0.5 mile of absolute position of the CMV when an ELD measures a valid latitude/longitude coordinate value.

(d) Position information must be obtained in or converted to standard signed latitude and longitude values and must be expressed as decimal degrees to hundreds of a degree precision (*i.e.,* a decimal point and two decimal places).

(e) Measurement accuracy combined with the reporting precision requirement implies that position reporting accuracy will be on the order of ±1mile of absolute position of the CMV during the course of a CMV's commercial operation.

(f) During periods of a driver's indication of personal use of the CMV, the measurement reporting precision requirement is reduced to tenths of a degree (*i.e.,* a decimal point and single decimal place) as further specified in section 4.7.3 of this appendix.

(g) An ELD must be able to acquire a valid position measurement at least once every 5 miles of driving; however, the ELD records CMV location information only during ELD events as specified in section 4.5.1 of this appendix.

4.3.1.7. CMV VIN

The vehicle identification number (VIN) for the power unit of a CMV must be automatically obtained from the engine ECM and recorded if it is available on the vehicle databus.

4.3.2. Driver's Manual Entries

(a) An ELD must prompt the driver to input information into the ELD only when the CMV is stationary and driver's duty status is not on-duty driving, except for the condition specified in section 4.4.1.2 of this appendix.

(b) If the driver's duty status is driving, an ELD must only allow the driver who is operating the CMV to change the driver's duty status to another duty status.

(c) A stopped vehicle must maintain zero (0) miles per hour speed to be considered stationary for purposes of information entry into an ELD.

(d) An ELD must allow an authenticated co-driver who is not driving, but who has logged into the ELD prior to the vehicle being in motion, to make entries over his or her own records when the vehicle is in motion. The ELD must not allow co-drivers to switch driving roles when the vehicle is in motion.

4.3.2.1. Driver's Entry of Required Event Data Fields

(a) An ELD must provide a means for a driver to enter information pertaining to the driver's ELD records manually, *e.g.,* CMV power unit number, as specified in section 7.4 of this appendix; trailer number(s), as specified in section 7.42; and shipping document number, as specified in section 7.39.

(b) If the motor carrier populates these fields automatically, the ELD must provide means for the driver to review such information and make corrections as necessary.

4.3.2.2. Driver's Status Inputs

4.3.2.2.1. Driver's Indication of Duty Status

(a) An ELD must provide a means for the authenticated driver to select a driver's duty status.

(b) The ELD must use the ELD duty status categories listed in Table 1 of this appendix.

Table 1

Duty Status Categories

Duty Status	Abbreviation	Data Coding
Off Duty	OFF	1
Sleeper Berth	SB	2
Driving	D	3
On-duty Not Driving	ON	4

4.3.2.2.2. Driver's Indication of Situations Impacting Driving Time Recording

(a) An ELD must provide the means for a driver to indicate the beginning and end of a period when the driver may use the CMV for authorized personal use or for performing yard moves. The ELD must acquire this status in a standard format from the category list in Table 2 of this appendix. This list must be supported independent of the duty status categories described in section 4.3.2.2.1 of this appendix.

Table 2

Categories for Driver's Indication of Situations Impacting Driving Time Recording

Category	Abbreviation	Data Coding
Authorized Personal Use of CMV	PC	1
Yard Moves	YM	2
Default: None	---	0

(b) An ELD must allow a driver to select only categories that a motor carrier enables by configuration for that driver, as described in section 4.3.3.1.1 of this appendix.

(c) An ELD must only allow one category to be selected at any given time and use the latest selection by the driver.

(d) The ELD must prompt the driver to enter an annotation upon selection of a category from Table 2 of this appendix and record the driver's entry.

(e) A driver's indication of special driving situation must reset to none if the ELD or CMV's engine goes through a power off cycle (ELD or CMV's engine turns off and then on) except if the driver has indicated authorized personal use of CMV. If the driver has indicated authorized personal use of the CMV, the ELD must require confirmation of continuation of the authorized personal use of CMV condition by the driver. If not confirmed by the driver and the vehicle is in motion, the ELD must default to none.

4.3.2.3. Driver's Certification of Records

(a) An ELD must include a function whereby a driver can certify the driver's records at the end of a 24-hour period.

(1) This function, when selected, must display a statement that reads ''I hereby certify that my data entries and my record of duty status for this 24-hour period are true and correct.''

(2) An ELD must prompt the driver to select ''Agree'' or ''Not ready.'' An ELD must record the driver's affirmative selection of ''Agree'' as an event.

(b) An ELD must only allow the authenticated driver to certify records associated with that driver.

(c) If any edits are necessary after the driver certifies the records for a given 24-hour period, the ELD must require and prompt the driver to re-certify the updated records.

(d) If there are any past records on the ELD (excluding the current 24-hour period) that require certification or re-certification by the driver, the ELD must indicate the required driver action on the ELD's display and prompt the driver to take the necessary action during the login and logout processes.

4.3.2.4. Driver's Data Transfer Initiation Input

(a) An ELD must provide a standardized single-step driver interface for compilation of driver's ELD records and initiation of the data transfer to authorized safety officials when requested during a roadside inspection.

(b) The ELD must input the data transfer request from the driver, require confirmation, present and request selection of the supported data transfer options by the ELD, and prompt for entry of the output file comment as specified in section 4.3.2.5 of this appendix. Upon confirmation, the ELD must generate the compliant output file and perform the data transfer.

(c) The supported single-step data transfer initiation mechanism (such as a switch or an icon on a touch-screen display) must be clearly marked and visible to the driver when the vehicle is stopped.

4.3.2.5. Driver's Entry of an Output File Comment

An ELD must accommodate the entry of an output file comment up to 60 characters long. If an authorized safety official provides a key phrase or code during an inspection to be included in the output file comment, it must be entered and embedded in the electronic ELD records in the exchanged dataset as specified in section 4.8.2.1.1 of this appendix. The default value for the output file comment must be blank. This output file comment must be used only for the creation of the related data files for the intended time, place, and ELD user.

4.3.2.6. Driver's Annotation of Records

(a) An ELD must allow a driver to add annotations in text format to recorded, entered, or edited ELD events.

(b) The ELD must require annotations to be 4 characters or longer, including embedded spaces if driver annotation is required and driver is prompted by the ELD.

4.3.2.7. Driver's Entry of Location Information

(a) An ELD must allow manual entry of a CMV's location by the driver in text format in support of the driver edit requirements described in section 4.3.2.8 of this appendix.

(b) The driver's manual location entry must be available as an option to a driver only when prompted by the ELD under allowed conditions as described in section 4.6.1.4 of this appendix.

(c) A manual location entry must show ''M'' in the latitude/longitude coordinates fields in ELD records.

4.3.2.8. Driver's Record Entry/Edit

(a) An ELD must provide a mechanism for a driver to review, edit, and annotate the driver's ELD records when a notation of errors or omissions is necessary or enter the driver's missing ELD records subject to the requirements specified in this section.

(b) An ELD must not permit alteration or erasure of the original information collected concerning the driver's ELD records or alteration of the source data streams used to provide that information.

4.3.2.8.1. Mechanism for Driver Edits and Annotations

(a) If a driver edits or annotates an ELD record or enters missing information, the act must not overwrite the original record.

(b) The ELD must use the process outlined in section 4.4.4.2 of this appendix to configure required event attributes to track the edit history of records.

(c) Driver edits must be accompanied by an annotation. The ELD must prompt the driver to annotate edits.

4.3.2.8.2. Driver Edit Limitations

(a) An ELD must not allow or require the editing or manual entry of records with the following event types, as described in section 7.25 of this appendix:

Event type	Description
2	An intermediate log,
5	A driver's login/logout activity,
6	CMV's engine power up/shut down, or
7	ELD malfunctions and data diagnostic events.

(b) An ELD must not allow automatically recorded driving time to be shortened or the ELD username associated with an ELD record to be edited or reassigned, except under the following circumstances:

(1) *Assignment of Unidentified Driver records.* ELD events recorded under the ''Unidentified Driver'' profile may be edited and assigned to the driver associated with the record; and

(2) *Correction of errors with team drivers.* In the case of team drivers, the driver account associated with the driving time records may be edited and reassigned between the team drivers if there was a mistake resulting in a mismatch between the actual driver and the driver recorded by the ELD and if both team drivers were respectively indicated in each other's records as a co-driver. The ELD must require each co-driver to confirm the change for the corrective action to take effect.

4.3.3. Motor Carrier's Manual Entries

An ELD must restrict availability of motor carrier entries outlined in this section only to authenticated ''support personnel'' account holders.

4.3.3.1. ELD Configuration

If an ELD or a technology that includes an ELD function offers configuration options to the motor carrier or the driver that are not otherwise addressed or prohibited in this appendix, the configuration options must not affect the ELD's compliance with the requirements of this rule for each configuration setting of the ELD.

4.3.3.1.1. Configuration of Available Categories Impacting Driving Time Recording

(a) An ELD must allow a motor carrier to unilaterally configure the availability of each of the three categories listed on Table 2 of this appendix that the motor carrier chooses to authorize for each of its drivers. By default, none of these categories must be available to a new driver account without the motor carrier proactively configuring their availability.

(b) A motor carrier may change the configuration for the availability of each category for each of its drivers. Changes to the configuration setting must be recorded on the ELD and communicated to the applicable authenticated driver during the ELD login process.

4.3.3.1.2. Configuration of Using ELDs

(a) An ELD must provide the motor carrier the ability to configure a driver account exempt from use of an ELD.

(b) The ELD must default the setting of this configuration option for each new driver account created on an ELD to ''no exemption.''

(c) An exemption must be proactively configured for an applicable driver account by the motor carrier. The ELD must prompt the motor carrier to annotate the record and provide an explanation for the configuration of exemption.

(d) If a motor carrier configures a driver account as exempt

(1) The ELD must present the configured indication that is in effect for that driver during the ELD login and logout processes.

(2) The ELD must continue to record ELD driving time but suspend detection of missing data elements data diagnostic event for the driver described in section 4.6.1.5 of this appendix and data transfer compliance monitoring function described in section 4.6.1.7 when such driver is authenticated on the ELD.

4.3.3.1.3 Motor Carrier's Post-Review Electronic Edit Requests

(a) An ELD may allow the motor carrier (via a monitoring algorithm or support personnel) to screen, review, and request corrective edits to the driver's certified (as described in section 4.3.2.3 of this appendix) and submitted records through the ELD system electronically. If this function is implemented by the ELD, the ELD must also support functions for the driver to see and review the requested edits.

(b) Edits requested by anyone or any system other than the driver must require the driver's electronic confirmation or rejection.

4.4. ELD Processing and Calculations

4.4.1. Conditions for Automatic Setting of Duty Status

4.4.1.1. Automatic Setting of Duty Status to Driving

An ELD must automatically record driving time when the vehicle is in motion by setting duty status to driving for the driver unless, before the vehicle is in motion, the driver:

(a) Sets the duty status to off-duty and indicates personal use of CMV, in which case duty status must remain off-duty until driver's indication of the driving condition ends; or

(b) Sets the duty status to on-duty not driving and indicates yard moves, in which case duty status must remain on-duty not driving until driver's indication of the driving condition ends.

4.4.1.2. Automatic Setting of Duty Status to On-Duty Not Driving

When the duty status is set to driving, and the CMV has not been in-motion for 5 consecutive minutes, the ELD must prompt the driver to confirm continued driving status or enter the proper duty status. If the driver does not respond to the ELD prompt within 1-minute after receiving the prompt, the ELD must automatically switch the duty status to on-duty not driving. The time thresholds for purposes of this section must not be configurable.

4.4.1.3. Other Automatic Duty-Status Setting Actions Prohibited

An ELD must not feature any other automatic records of duty setting mechanism than those described in sections 4.4.1.1 and 4.4.1.2 of this appendix. Duty status changes that are not initiated by the driver, including duty status alteration recommendations by motor carrier support personnel or a software algorithm, are subject to motor carrier edit requirements in section 4.3.3.1.3.

4.4.2. Geo-Location Conversions

(a) For each change in duty status, the ELD must convert automatically captured vehicle position in latitude/longitude coordinates into geo-location information, indicating approximate distance and direction to an identifiable location corresponding to the name of a nearby city, town, or village, with a State abbreviation.

(b) Geo-location information must be derived from a database that contains all cities, towns, and villages with a population of 5,000 or greater and listed in ANSI INCITS 446–2008 (R2013) (incorporated by reference, see § 395.38).

(c) An ELD's viewable outputs (such as printouts or display) must feature geo-location information as place names in text format.

4.4.3. Date and Time Conversions

(a) An ELD must have the capability to convert and track date and time captured in UTC standard to the time standard in effect at driver's home terminal, taking the daylight savings time changes into account by using the parameter ''Time Zone Offset from UTC'' as specified in section 7.41 of this appendix.

(b) An ELD must record the driver's record of duty status using the time standard in effect at the driver's home terminal for a 24-hour period beginning with the time specified by the motor carrier for that driver's home terminal.

(c) The data element ''Time Zone Offset from UTC'' must be included in the ''Driver's Certification of Own Records'' events as specified in section 4.5.1.4 of this appendix.

4.4.4. Setting of Event Parameters in Records, Edits, and Entries

This section describes the security measures for configuring and tracking event

attributes for ELD records, edits, and entries in a standardized manner.

4.4.4.1. Event Sequence Identifier (ID) Number

(a) Each ELD event must feature an event sequence ID number.

(1) The event sequence ID number for each ELD event must use continuous numbering across all users of that ELD and across engine and ELD power on and off cycles.

(2) An ELD must use the next available event sequence ID number (incremented by one) each time a new event log is recorded.

(3) The event sequence ID number must track at least the last 65,536 unique events recorded on the ELD.

(b) The continuous event sequence ID numbering structure used by the ELD must be mapped into a continuous hexadecimal number between 0000 (Decimal 0) and FFFF (Decimal 65535).

4.4.4.2. Event Record Status, Event Record Origin, Event Type Setting

(a) An ELD must retain the original records even when allowed edits and entries are made over a driver's ELD records.

(b) An ELD must keep track of all event record history, and the process used by the ELD must produce the event record status, event record origin, and event type for the ELD records in the standard categories specified in sections 7.23, 7.22, and 7.25 of this appendix, respectively for each record as a standard security measure. For example, an ELD may use the process outlined in sections 4.4.4.2.1–4.4.4.2.6 to meet the requirements of this section.

4.4.4.2.1. Records Automatically Logged by ELD

At the instance an ELD creates a record automatically, the ELD must:

(a) Set the ''Event Record Status'' to ''1'' (active); and

(b) Set the ''Event Record Origin'' to ''1'' (automatically recorded by ELD).

4.4.4.2.2. Driver Edits

At the instance of a driver editing existing record(s), the ELD must:

(a) Identify the ELD record(s) being modified for which the ''Event Record Status'' is currently set to ''1'' (active);

(b) Acquire driver input for the intended edit and construct the ELD record(s) that will replace the record(s) identified in paragraph 4.4.4.2.2(a) of this appendix;

(c) Set the ''Event Record Status'' of the ELD record(s) identified in paragraph 4.4.4.2.2(a) of this appendix, which is being modified, to ''2'' (inactive-changed);

(d) Set the ''Event Record Status'' of the ELD record(s) constructed in paragraph 4.4.4.2.2(b) of this appendix to ''1'' (active); and

(e) Set the ''Event Record Origin'' of the ELD record(s) constructed in paragraph 4.4.4.2.2(b) of this appendix to ''2'' (edited or entered by the driver).

4.4.4.2.3. Driver Entries

When a driver enters missing record(s), the ELD must:

(a) Acquire driver input for the missing entries being implemented and construct the new ELD record(s) that will represent the driver entries;

(b) Set the ''event record status'' of the ELD record(s) constructed in paragraph 4.4.4.2.3(a) of this appendix to ''1'' (active); and

(c) Set the ''event record origin'' of the ELD record(s) constructed in paragraph 4.4.4.2.3(a) of this appendix to ''2'' (edited or entered by the driver).

4.4.4.2.4. Driver's Assumption of Unidentified Driver Logs

When a driver reviews and assumes ELD record(s) logged under the unidentified driver profile, the ELD must:

(a) Identify the ELD record(s) logged under the unidentified driver profile that will be reassigned to the driver;

(b) Use elements of the unidentified driver log(s) from paragraph 4.4.4.2.4(a) of this appendix and acquire driver input to populate missing elements of the log originally recorded under the unidentified driver profile, and construct the new event record(s) for the driver;

(c) Set the event record status of the ELD record(s) identified in paragraph 4.4.4.2.4(a) of this appendix, which is being modified, to ''2'' (inactive–changed);

(d) Set the event record status of the ELD record(s) constructed in paragraph 4.4.4.2.4(b) of this appendix to ''1'' (active); and

(e) Set the event record origin of the ELD record(s) constructed in paragraph 4.4.4.2.4(b) of this appendix to ''4'' (assumed from unidentified driver profile).

4.4.4.2.5. Motor Carrier Edit Suggestions

If a motor carrier requests an edit on a driver's records electronically, the ELD must:

(a) Identify the ELD record(s) the motor carrier requests to be modified for which the ''event record status'' is currently set to ''1'' (active);

(b) Acquire motor carrier input for the intended edit and construct the ELD record(s) that will replace the record identified in paragraph 4.4.4.2.5(a) of this appendix—if approved by the driver;

(c) Set the event record status of the ELD record(s) in paragraph 4.4.4.2.5(b) of this appendix to ''3'' (inactive–change requested); and

(d) Set the event record origin of the ELD record constructed in paragraph 4.4.4.2.5(b) of this appendix to ''3'' (edit requested by an authenticated user other than the driver).

4.4.4.2.6. Driver's Actions Over Motor Carrier Edit Suggestions

(a) If edits are requested by the motor carrier, the ELD must allow the driver to review the requested edits and indicate on the ELD whether the driver confirms or rejects the requested edit(s).

(b) If the driver approves the motor carrier's edit suggestion the ELD must:

(1) Set the event record status of the ELD record(s) identified under paragraph 4.4.4.2.5 (a) of this appendix being modified, to ''2'' (inactive–changed); and

(2) Set the ''event record status'' of the ELD record(s) constructed in paragraph 4.4.4.2.5 (b) of this appendix to ''1'' (active).

(c) If the driver disapproves the motor carrier's edit(s) suggestion, the ELD must set the ''event record status'' of the ELD record(s) identified in paragraph 4.4.4.2.5 (b) of this appendix to ''4'' (inactive–change rejected).

4.4.5. Data Integrity Check Functions

(a) An ELD must support standard security measures that require the calculation and recording of standard data check values for each ELD event recorded, for each line of the output file, and for the entire data file to be generated for transmission to an authorized safety official or the motor carrier.

(b) For purposes of implementing data check calculations, the alphanumeric-to-numeric mapping provided in Table 3 of this appendix must be used.

(c) Each ELD event record type specified in sections 4.5.1.1 and 4.5.1.3 of this appendix must include an event data check value, which must be calculated as specified in section 4.4.5.1. An event data check value must be calculated at the time of the following instances and must accompany that event record thereafter:

(1) When an event record is automatically created by the ELD;

(2) When an authorized edit is performed by the driver on the ELD;

(3) When an electronic edit proposal is created by the motor carrier through the ELD system.

(d) Each line of the ELD output file must include a line data check value, which must be calculated as specified in section 4.4.5.2 of this appendix.

(e) Each ELD report must also include a file data check value, which must be calculated as specified in section 4.4.5.3 of this appendix.

4.4.5.1. Event Data Check

The event data check value must be calculated as follows.

4.4.5.1.1. Event Checksum Calculation

(a) A checksum calculation includes the summation of numeric values or mappings of a specified group of alphanumeric data elements. The ELD must calculate an event checksum value associated with each ELD event at the instance of the event record being created.

(b) The event record elements that must be included in the checksum calculation are the following:

(1) <Event Type>,
(2) <Event Code>,
(3) <Event Date>,
(4) <Event Time>,
(5) <Vehicle Miles>,
(6) <Engine Hours>,
(7) <Event Latitude>,
(8) <Event Longitude>,
(9) <CMV number>, and
(10) <ELD username>.

(c) The ELD must sum the numeric values of all individual characters making up the listed data elements using the character to decimal value coding specified in Table 3 of this appendix, and use the 8-bit lower byte of the hexadecimal representation of the summed total as the event checksum value for that event.

4.4.5.1.2. Event Data Check Calculation

The event data check value must be the hexadecimal representation of the output 8-bit byte, after the below bitwise operations

are performed on the binary representation of the event checksum value, as set forth below:

(a) Three consecutive circular shift left (rotate no carry -left) operations; and

(b) A bitwise exclusive OR (XOR) operation with the hexadecimal value C3 (decimal 195; binary 11000011).

4.4.5.2. Line Data Check

A line data check value must be calculated at the time of the generation of the ELD output file, to transfer data to authorized safety officials or to catalogue drivers' ELD records at a motor carrier's facility. A line data check value must be calculated as follows.

4.4.5.2.1. Line Checksum Calculation

(a) The ELD must calculate a line checksum value associated with each line of ELD output file at the instance when an ELD output file is generated.

(b) The data elements that must be included in the line checksum calculation vary as per the output data file specified in section 4.8.2.1 of this appendix.

(c) The ELD must convert each character featured in a line of output using the character to decimal value coding specified on Table 3 of this appendix and sum the converted numeric values of each character listed on a given ELD output line item (excluding the line data check value being calculated), and use the 8-bit lower byte value of the hexadecimal representation of the summed total as the line checksum value for that line of output.

4.4.5.2.2. Line Data Check Calculation

The line data check value must be calculated by performing the following operations on the binary representation of the line checksum value as follows:

(a) Three consecutive circular shift left (rotate no carry -left) operations on the line checksum value; and

(b) A bitwise XOR operation with the hexadecimal value 96 (decimal 150; binary 10010110).

4.4.5.2.3. Line Data Check Value Inclusion in Output File

The calculated line data check value must be appended as the last line item of each of the individual line items of the ELD output file as specified in the output file format in section 4.8.2.1 of this appendix.

4.4.5.3. File Data Check

A file data check value must also be calculated at the time of the creation of an ELD output file. A file data check value must be calculated as follows.

4.4.5.3.1. File Checksum Calculation

(a) The ELD must calculate a single 16-bit file checksum value associated with an ELD output file at the instance when an ELD output file is generated.

(b) The file data check value calculation must include all individual line data check values contained in that file.

(c) The ELD must sum all individual line data check values contained in a data file output created, and use the lower two 8-bit byte values of the hexadecimal representation of the summed total as the ''file checksum'' value.

4.4.5.3.2. File Data Check Value Calculation

(a) The file data check value must be calculated by performing the following operations on the binary representation of the file checksum value:

(1) Three consecutive circular shift left (aka rotate no carry -left) operations on each 8-bit bytes of the value; and

(2) A bitwise XOR operation with the hexadecimal value 969C (decimal 38556; binary 1001011010011100).

(b) The file data check value must be the 16-bit output obtained from the above process.

4.4.5.3.3. File Data Check Value Inclusion in Output File

The calculated 16-bit file data check value must be converted to hexadecimal 8-bit bytes and must be appended as the last line item of the ELD output file as specified in the output file format in section 4.8.2.1.11 of this appendix.

Table 3

Character to Decimal Value Mapping for Checksum Calculations

"Character" ➔ Decimal mapping {ASCII ("Character") (*decimal*)– 48 (*decimal*)}

"1"➔1	"A"➔17	"J"➔26	"S"➔35	"a"➔49	"j"➔58
	"s"➔67				
"2"➔2	"B"➔18	"K"➔27	"T"➔36	"b"➔50	"k"➔59
	"t"➔68				
"3"➔3	"C"➔19	"L"➔28	"U"➔37	"c"➔51	"l"➔60
	"u"➔69				
"4"➔4	"D"➔20	"M"➔29	"V"➔38	"d"➔52	"m"➔61
	"v"➔70				
"5"➔5	"E"➔21	"N"➔30	"W"➔39	"e"➔53	"n"➔62
	"w"➔71				
"6"➔6	"F"➔22	"O"➔31	"X"➔40	"f"➔54	"o"➔63
	"x"➔72				
"7"➔7	"G"➔23	"P"➔32	"Y"➔41	"g"➔55	"p"➔64
	"y"➔73				
"8"➔8	"H"➔24	"Q"➔33	"Z"➔42	"h"➔56	"q"➔65
	"z"➔74				
"9"➔9	"I"➔25	"R"➔34		"i"➔57	"r"➔66
All other characters including blank spaces➔ 0					

4.5. ELD Recording

4.5.1. Events and Data To Record

An ELD must record data at the following discrete events:

4.5.1.1. Event: Change in Driver's Duty Status

When a driver's duty status changes, the ELD must associate the record with the driver, the record originator—if created during an edit or entry—the vehicle, the motor carrier, and the shipping document number and must include the following data elements:

(a) <Event Sequence ID Number> as described in section 7.24 of this appendix;

(b) <Event Record Status> as described in section 7.23;

(c) <Event Record> Origin as described in section 7.22;

(d) <Event Type> as described in section 7.25;

(e) <Event Code as described in section 7.20;

(f) <{*Event*} Date> as described in section 7.8;

(g) <{*Event*} Time> as described in section 7.40;

(h) <{*Accumulated*} Vehicle Miles> as described in section 7.43;

(i) <{*Elapsed*}> Engine Hours as described in section 7.19;

(j) <{*Event*}> Latitude as described in section 7.31;

(k) <{*Event*}> Longitude as described in section 7.33;

(l) <Distance Since Last Valid Coordinates> as described in section 7.9;

(m) <Malfunction Indicator Status {*for ELD*}> as described in section 7.35;

(n) <Data Diagnostic Event Indicator Status {*for Driver*}> as described in section 7.7;

(o) <{*Event*}> Comment/Annotation as described in section 7.6;

(p) <Driver's Location Description> as described in section 7.12; and

(q) <Event Data Check Value> as described in section 7.21.

4.5.1.2. Event: Intermediate Logs

(a) When a CMV is in motion, as described in section 4.3.1.2 of this appendix, and there has not been a duty status change event or another intermediate log event recorded in the previous 1-hour period, the ELD must record a new intermediate log event.

(b) The ELD must associate the record to the driver, the vehicle, the motor carrier, and the shipping document number, and must include the same data elements outlined in section 4.5.1.1 of this appendix except for item (p) in section 4.5.1.1.

4.5.1.3. Event: Change in Driver's Indication of Allowed Conditions That Impact Driving Time Recording

(a) At each instance when the status of a driver's indication of personal use of CMV or yard moves changes, the ELD must record a new event.

(b) The ELD must associate the record with the driver, the vehicle, the motor carrier, and the shipping document number, and must include the same data elements outlined in section 4.5.1.1 of this appendix.

4.5.1.4. Event: Driver's Certification of Own Records

(a) At each instance when a driver certifies or re-certifies that the driver's records for a given 24-hour period are true and correct, the ELD must record the event.

(b) The ELD must associate the record with the driver, the vehicle, the motor carrier, and the shipping document number and must include the following data elements:

(1)<Event Sequence ID Number> as described in section 7.24 of this appendix;

(2)<Event Type> as described in section 7.25;

(3)<Event Code> as described in section 7.20;

(4)<Time Zone Offset from UTC> as described in section 7.41.

(5) <{*Event*} Date> and <Date {of the certified record}> as described in section 7.8; and

(6) <{*Event*} Time> as described in section 7.40.

4.5.1.5. Event: Driver's Login/Logout Activity

(a) At each instance when an authorized user logs in and out of the ELD, the ELD must record the event.

(b) The ELD must associate the record with the driver, the vehicle, the motor carrier, and the shipping document number, and must include the following data elements:

(1) <Event Sequence ID Number> as described in section 7.24 of this appendix;

(2) <Event Type> as described in section 7.25;

(3) <Event Code> as described in section 7.20;

(4) <{*Event*} Date> as described in section 7.8;

(5) <{*Event*} Time> as described in section 7.40;

(6) <{*Total*} Vehicle Miles> as described in section 7.43; and

(7) <{*Total*} Engine Hours> as described in section 7.19.

4.5.1.6. Event: CMV's Engine Power Up and Shut Down Activity

(a) When a CMV's engine is powered up or shut down, an ELD must record the event within 1 minute of occurrence and retain the earliest shut down and latest power-up event if the CMV has not moved since the last ignition power on cycle.

(b) The ELD must associate the record with the driver or the unidentified driver profile, the vehicle, the motor carrier, and the shipping document number, and must include the following data elements:

(1) <Event Sequence ID Number> as described in section 7.24 of this appendix;

(2) <Event Type> as described in section 7.25;

(3) <Event Code> as described in section 7.20;

(4) <{*Event*} Date> as described in section 7.8;

(5) <{*Event*} Time> as described in section 7.40;

(6) <{*Total*} Vehicle Miles> as described in section 7.43;

(7) <{*Total*} Engine Hours> as described in section 7.19;

(8) <{*Event*} Latitude> as described in section 7.31;

(9) <{*Event*} Longitude> as described in section 7.33; and

(10) <Distance Since Last Valid Coordinates> as described in section 7.9.

4.5.1.7. Event: ELD Malfunction and Data Diagnostics Occurrence

(a) At each instance when an ELD malfunction or data diagnostic event is detected or cleared by the ELD, the ELD must record the event.

(b) The ELD must associate the record with the driver, the vehicle, the motor carrier, and the shipping document number, and must include the following data elements:

(1) <Event Sequence ID Number> as described in section 7.24 of this appendix;

(2) <Event Type> as described in section 7.25;

(3) <Event Code> as described in section 7.20;

(4) <Malfunction/Diagnostic Code> as described in section 7.34;

(5) <{*Event*} Date> as described in section 7.8;

(6) <{*Event*} Time> as described in section 7.40;

(7) <{*Total*} Vehicle Miles> as described in section 7.43; and

(8) <{*Total*} Engine Hours> as described in section 7.19.

4.6. ELD's Self-Monitoring of Required Functions

An ELD must have the capability to monitor its compliance with the technical requirements of this section for the detectable malfunctions and data inconsistencies listed in Table 4 of this appendix and must keep records of its malfunction and data diagnostic event detection.

Table 4

Standard Coding for Required Compliance Malfunction and Data Diagnostic Event Detection

Malfunction/Diagnostic Code	Malfunction Description
P	"Power compliance" malfunction
E	"Engine synchronization compliance" malfunction
T	"Timing compliance" malfunction
L	"Positioning compliance" malfunction
R	"Data recording compliance" malfunction
S	"Data transfer compliance" malfunction
O	"Other" ELD detected malfunction

Malfunction/Diagnostic Code	Data Diagnostic Event
1	"Power data diagnostic" event
2	"Engine synchronization data diagnostic" event
3	"Missing required data elements data diagnostic" event
4	"Data transfer data diagnostic" event
5	"Unidentified driving records data diagnostic" event
6	"Other" ELD identified diagnostic event

4.6.1. Compliance Self-Monitoring, Malfunctions and Data Diagnostic Events

4.6.1.1. Power Compliance Monitoring

(a) An ELD must monitor data it receives from the engine ECM or alternative sources as allowed in sections 4.3.1.1–4.3.1.4 of this appendix, its onboard sensors, and data record history to identify instances when it may not have complied with the power requirements specified in section 4.3.1.1, in which case, the ELD must record a power data diagnostics event for the corresponding driver(s), or under the unidentified driver profile if no drivers were authenticated at the time of detection.

(b) An ELD must set a power compliance malfunction if the power data diagnostics event described in paragraph 4.6.1.1(a) of this appendix indicates an aggregated in-motion driving time understatement of 30 minutes or more on the ELD over a 24-hour period across all driver profiles, including the unidentified driver profile.

4.6.1.2. Engine Synchronization Compliance Monitoring

(a) An ELD must monitor the data it receives from the engine ECM or alternative sources as allowed in sections 4.3.1.1–4.3.1.4 of this appendix, its onboard sensors, and data record history to identify instances and durations of its non-compliance with the ELD engine synchronization requirement specified in section 4.2.

(b) An ELD required to establish a link to the engine ECM as described in section 4.2 must monitor its connectivity to the engine ECM and its ability to retrieve the vehicle parameters described under section 4.3.1 of this appendix and must record an engine-synchronization data diagnostics event when it no longer can acquire updated values for the ELD parameters required for records within 5 seconds of the need.

(c) An ELD must set an engine synchronization compliance malfunction if connectivity to any of the required data sources specified in section 4.3.1 of this appendix is lost for more than 30 minutes during a 24-hour period aggregated across all driver profiles, including the unidentified driver profile.

4.6.1.3. Timing Compliance Monitoring

The ELD must periodically cross-check its compliance with the requirement specified in section 4.3.1.5 of this appendix with respect to an accurate external UTC source and must record a timing compliance malfunction when it can no longer meet the underlying compliance requirement.

4.6.1.4. Positioning Compliance Monitoring

(a) An ELD must continually monitor the availability of valid position measurements meeting the listed accuracy requirements in section 4.3.1.6 of this appendix and must track the distance and elapsed time from the last valid measurement point.

(b) ELD records requiring location information must use the last valid position measurement and include the latitude/longitude coordinates and distance traveled, in miles, since the last valid position measurement.

(c) An ELD must monitor elapsed time during periods when the ELD fails to acquire a valid position measurement within 5 miles of the CMV's movement. When such elapsed time exceeds a cumulative 60 minutes over a 24 hour period, the ELD must set and record a positioning compliance malfunction.

(d) If a new ELD event must be recorded at an instance when the ELD had failed to acquire a valid position measurement within the most recent elapsed 5 miles of driving, but the ELD has not yet set a positioning compliance malfunction, the ELD must record the character ''X'' in both the latitude and longitude fields, unless location is entered manually by the driver, in which case it must log the character ''M'' instead. Under the circumstances listed in this paragraph, if the ELD event is due to a change in duty status for the driver, the ELD must prompt the driver to enter location manually in accordance with section 4.3.2.7 of this appendix. If the driver does not enter the location information and the vehicle is in motion, the ELD must record a missing required data element data diagnostic event for the driver.

(e) If a new ELD event must be recorded at an instance when the ELD has set a positioning compliance malfunction, the ELD must record the character ''E'' in both the latitude and longitude fields regardless of whether the driver is prompted and manually enters location information.

4.6.1.5. Data Recording Compliance Monitoring

(a) An ELD must monitor its storage capacity and integrity and must detect a data recording compliance malfunction if it can no longer record or retain required events or

retrieve recorded logs that are not otherwise catalogued remotely by the motor carrier.

(b) An ELD must monitor the completeness of the ELD event record information in relation to the required data elements for each event type and must record a missing data elements data diagnostics event for the driver if any required field is missing at the time of recording.

4.6.1.6. Monitoring Records Logged Under the Unidentified Driver Profile

(a) When there are ELD records involving driving time logged on an ELD under the unidentified driver profile, the ELD must prompt the driver(s) logging in with a warning indicating the existence of new unassigned driving time.

(b) The ELD must provide a mechanism for the driver to review and either acknowledge the assignment of one or more of the unidentified driver records attributable to the driver under the authenticated driver's profile as described in paragraph 4.3.2.8.2(b)(1) of this appendix or indicate that these records are not attributable to the driver.

(c) If more than 30 minutes of driving in a 24-hour period show unidentified driver on the ELD, the ELD must detect and record an unidentified driving records data diagnostic event and the data diagnostic indicator must be turned on for all drivers logged in to that ELD for the current 24-hour period and the following 7 days.

(d) An unidentified driving records data diagnostic event can be cleared by the ELD when driving time logged under the unidentified driver profile for the current 24-hour period and the previous 7 consecutive days drops to 15 minutes or less.

4.6.1.7. Data Transfer Compliance Monitoring

(a) An ELD must implement in-service monitoring functions to verify that the data transfer mechanism(s) described in section 4.9.1 of this appendix are continuing to function properly. An ELD must verify this functionality at least once every 7 days. These monitoring functions may be automatic or may involve manual steps for a driver.

(b) If the monitoring mechanism fails to confirm proper in-service operation of the data transfer mechanism(s), an ELD must record a data transfer data diagnostic event and enter an unconfirmed data transfer mode.

(c) After an ELD records a data transfer data diagnostic event, the ELD must increase the frequency of the monitoring function to check at least once every 24-hour period. If the ELD stays in the unconfirmed data transfer mode following the next three consecutive monitoring checks, the ELD must detect a data transfer compliance malfunction.

4.6.1.8. Other Technology-Specific Operational Health Monitoring

In addition to the required monitoring schemes described in sections 4.6.1.1–4.6.1.7 of this appendix, the ELD provider may implement additional, technology-specific malfunction and data diagnostic detection schemes and may use the ELD's malfunction status indicator and data diagnostic status indicator (described in sections 4.6.2.1 and 4.6.3.1) to communicate the ELD's malfunction or non-compliant state to the operator(s) of the ELD.

4.6.2. ELD Malfunction Status Indicator

ELD malfunctions affect the integrity of the device and its compliance; therefore, active malfunctions must be indicated to all drivers who may use that ELD. An ELD must provide a recognizable visual indicator, and may provide an audible signal, to the operator as to its malfunction status.

4.6.2.1. Visual Malfunction Indicator

(a) An ELD must display a single visual malfunction indicator for all drivers using the ELD on the ELD's display or on a stand-alone indicator. The visual signal must be visible to the driver when the driver is seated in the normal driving position.

(b) The ELD malfunction indicator must be clearly illuminated when there is an active malfunction on the ELD.

(c) The malfunction status must be continuously communicated to the driver when the ELD is powered.

4.6.3. ELD Data Diagnostic Status Indicator

ELD data diagnostic status affects only the authenticated user; therefore, an ELD must only indicate the active data diagnostics status applicable to the driver logged into the ELD. An ELD must provide a recognizable visual indicator, and may provide an audible signal, to the driver as to its data diagnostics status.

4.6.3.1. Visual Data Diagnostics Indicator

(a) An ELD must display a single visual data diagnostics indicator, apart from the visual malfunction indicator described in section 4.6.2.1 of this appendix, to communicate visually the existence of active data diagnostics events for the applicable driver.

(b) The visual signal must be visible to the driver when the driver is seated in the normal driving position.

4.7. Special Purpose ELD Functions

4.7.1. Driver's ELD Volume Control

(a) If a driver selects the sleeper-berth state for the driver's record of duty status, and no co-driver has logged into the ELD as on-duty driving, and if the ELD outputs audible signals, the ELD must either:

(1) Allow the driver to mute the ELD's volume or turn off the ELD's audible output, or

(2) Automatically mute the ELD's volume or turn off the ELD's audible output.

(b) For purposes of this section, if an ELD operates in combination with another device or other hardware or software technology that is not separate from the ELD, the volume controls required herein apply to the combined device or technology.

4.7.2. Driver's Access to Own ELD Records

(a) An ELD must provide a mechanism for a driver to obtain a copy of the driver's own ELD records on demand, in either an electronic or printout format compliant with inspection standards outlined in section 4.8.2.1 of this appendix.

(b) The process must not require a driver to go through the motor carrier to obtain copies of the driver's own ELD records if driver's records reside on or are accessible directly by the ELD unit used by the driver.

(c) If an ELD meets the requirements of this section by making data files available to the driver, it must also provide a utility function for the driver to display the data on a computer, at a minimum, as specified in § 395.8(g).

4.7.3. Privacy Preserving Provision for Use During Personal Uses of a CMV

(a) An ELD must record the events listed in section 4.5.1 of this appendix under all circumstances. However, when a driver indicates that the driver is temporarily using the CMV for an authorized personal purpose, a subset of the recorded elements must either be omitted in the records or recorded at a lower precision level, as described in further detail below. The driver indicates this intent by setting the driver's duty status to off-duty, as described in section 4.3.2.2.1, and indicating authorized personal use of CMV as described in section 4.3.2.2.2.

(b) During a period when a driver indicates authorized personal use of CMV, the ELD must:

(1) Record all new ELD events with latitude/longitude coordinates information rounded to a single decimal place resolution; and

(2) Omit recording vehicle miles and engine hours fields in new ELD logs by leaving them blank, except for events corresponding to a CMV's engine power-up and shut-down activity as described in section 4.5.1.6 of this appendix.

(c) A driver's indication that the CMV is being operated for authorized personal purposes may span more than one CMV ignition on cycle if the driver proactively confirms continuation of the personal use condition prior to placing the vehicle in motion when the ELD prompts the driver at the beginning of the new ignition power on cycle.

4.8. ELD Outputs

4.8.1. Printout or Display

The ELD must be able to generate a compliant report as specified in this section, either as a printout or on a display.

4.8.1.1. Print Paper Requirements

Print paper must be able to accommodate the graph grid specifications as listed in section 4.8.1.3 of this appendix.

4.8.1.2. Display Requirements

(a) This section does not apply if an ELD produces a printout for use at a roadside inspection.

(b) An ELD must be designed so that its display may be reasonably viewed by an authorized safety official without entering the commercial motor vehicle. For example, the display may be untethered from its mount or connected in a manner that would allow it to be passed outside of the vehicle for a reasonable distance.

4.8.1.3. Information To Be Shown on the Printout and Display at Roadside

(a) The printout and display must show reports for the inspected driver's profile and the unidentified driver profile separately. If

there are no unidentified driver records existing on the ELD for the current 24-hour period and for any of the previous 7 consecutive days, an ELD does not need to print or display unidentified driver records for the authorized safety official. Otherwise, both reports must be printed or displayed and provided to the authorized safety official.

(b) The printout and display must show the following information for the current 24-hour period and each of the previous 7 consecutive days: (Items in < . > are data elements.)

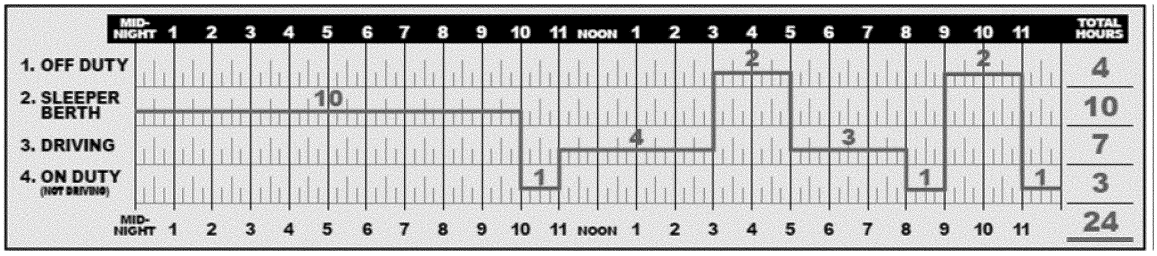
Date: <Date {*of Record*}>
24-hour Starting Time, Time Zone Offset from UTC: <24-Hour Period Starting Time>, <Time Zone Offset from UTC>
Carrier: <Carrier's USDOT number>,<Carrier Name>
Driver Name: <{*Driver*} Last Name>, <{*Driver*} First Name>
Driver ID < ELD username{*for the driver*} >
Driver License State <{*Driver*} Driver License Issuing State>
Driver License Number: <{Driver} Driver License Number>
Co-Driver: <{*Co-Driver's*} Last Name>, <{*Co-Driver's*} First Name>
Co-Driver ID: < ELD username{*for the co-driver*}>
Current Odometer: <{*Current*}{*Total*} Vehicle Miles>
Current Engine Hours: <{*Current*}{*Total*} Engine Hours>
ELD ID: <ELD Registration ID>
ELD Provider: <Provider>
Truck Tractor ID: <CMV Power Unit Number>
Truck Tractor VIN: <CMV VIN>
Shipping ID: <Shipping Document Number>
Current Location: <{*Current*} Geo-location>
Unidentified Driving Records: <{*Current*} Data Diagnostic Event Indicator Status {*for ''Unidentified driving records data diagnostic'' event*}>
Exempt Driver Status: <Exempt Driver Configuration {*for the Driver*}>
ELD Malfunction Indicators: <Malfunction Indicator Status {and Malfunction Description} {*for ELD*}>
Driver's Data Diagnostic Status: <Data Diagnostic Event Status {and Diagnostic Description}{*for Driver*}>
Date: <Date {*of Printout or Display*}>
Change of Duty Status, Intervening Interval Records and Change in Driver's Indication of Special Driving Conditions:
<Event Record Status>,<Event Record Origin>,<Event Type>,<{*Event*} Date>, <{*Event*} Time>,<{*Accumulated*} Vehicle Miles>,<{*Elapsed*} Engine Hours>,<Geo-Location>#,<{*Event*} Comment/Annotation>
<Event Sequence ID Number>,<Event Record Status>,<Event Record Origin>,<Event Type>,<Event Code>,<{*Event*} Date>,<{*Event*} Time>,<{*Accumulated*} Vehicle Miles>,<{*Elapsed*} Engine Hours>,<Geo-Location>#,<{*Event*} Comment/Annotation>
''<Geo-location> must be substituted with ''<Driver's Location Description>'' field for manual entries and with ''<{blank}>'' field for intervening logs.

Example of Print/Display Daily Header

Record Date	*USDOT #*	*Driver License Number*	*Driver License State*	*ELD ID*	*Trailer ID*
20-Nov-14	123456789	D000368210361	IL	987654	Unit #
Time Zone	*Driver Name*	*Co-Driver Name*	*ELD Manufacturer*	*Shipping ID*	*Data Diagnostic Indicators*
CST	Smith, Richard	Jones, David	Acme ELDs	BL1234567890	Yes
24-Period Starting Tim	*Driver ID*	*Co-Driver ID*	*Truck Tractor ID*	*Unidentified Driver Records*	*ELD Malfunction Indicators*
Midnight	1234567	8910111	Unit #	No	Yes
Carrier		*Start- End Odometer*	*Truck Tractor VIN*	*Exempt Driver Status*	*Start-End engine hours*
Acme Trucking		39564-40044	1M2P267Y5AM022445	No	758.2-766.7
Current Location		*File Comment*		*Print/Display Date*	
Truckee, CA				20-Nov-14	

24 Hours [Print/Display Graph Grid]
Total hours <Total Hours {in working day so far}>
Off duty <Total Hours {logged in Off-duty status}>
Sleeper Berth <Total Hours {logged in Sleeper berth status}>
Driving <Total Hours {logged in Driving status}>
On duty not driving <Total Hours {logged in on-duty not driving status}>
Miles Today <Vehicle Miles {Driven Today}>

Example of Print/Display 24 Hours Duty Status Grid



[For Each Row of Driver's Record Certification Events]
Time: <{Event} Time>
Location: <Geo-Location>#
Odometer: <{Total} Vehicle Miles>
Engine Hours: <{Total} Engine Hours>
Event: <Date {of the certified record}>
Origin: Driver
Comment: <{Event} Comment/Annotation>

[For Each Row of Malfunctions and Data Diagnostic Events]
Time: <{Event} Time>
Location: <Geo-Location>#
Odometer: <{Total}Vehicle Miles>
Engine Hours: <{Total}Engine Hours>
Event: <Event Type>
Origin: <Event Record Origin>
Comment: <{Event} Comment/Annotation>

[For Each Row of ELD Login/Logout Events]
Time: <{Event} Time>
Location: <Geo-Location>#
Odometer: <{Total}Vehicle Miles>
Engine Hours: <{Total}Engine Hours>
Event: <Event Type>
Origin: <ELD username>
Comment: <{Event} Comment/Annotation>

[For Each Row of CMV Engine Power up/Shut Down Events]
Time: <{Event} Time> (24 hours)

Location: <Geo-Location>#
Odometer: <{Total}Vehicle Miles>
Engine Hours: <{Total}Engine Hours>
Event: <Event Type>
Origin: Auto
Comment/Annotation>

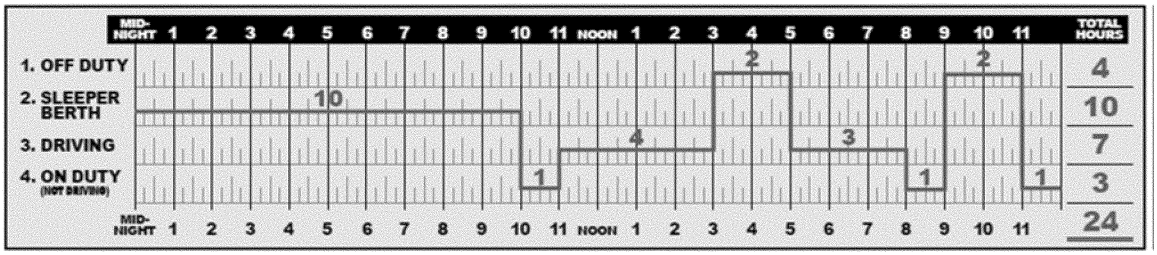
[1] Printout report must only list up to 10 most recent ELD malfunctions and up to 10 most recent data diagnostics events within the time period for which the report is generated.

Example of Print/Display detail log data

Time	Location	Odometer	Eng Hours	Event Type/Status	Origin
19-Nov-14					
22:00	49 mi NNE Fallon, NV	39564	758.2	Off duty	Driver
20-Nov-14					
10:00	49 mi NNE Fallon, NV	39564	758.2	Login	Driver
10:00	49 mi NNE Fallon, NV	39564	758.2	ODND	Driver
11:52	49 mi NNE Fallon, NV	39564	758.2	PowerUp	Auto
11:52	49 mi NNE Fallon, NV	39564	758.2	Power Compliance	Auto
11:52	49 mi NNE Fallon, NV	39564	758.2	Engine Sync	Auto
12:00	49 mi NNE Fallon, NV	39564	758.3	Driving	Driver
13:00	2 mi E Fernley, NV	39624	759.3	Int Location	Auto
14:00	7 mi NNE Truckee, CA	39684	760.3	Int Location	Auto
15:00	6 mi SSE Meadow Vista, CA	39744	761.3	Int Location	Auto
16:00	3.5 mi SW Davis, CA	39804	762.3	Off duty	Driver
16:45	3.5 mi SW Davis, CA	39804	762.3	On duty	Driver
17:00	3.5 mi SW Davis, CA	39804	762.4	Driving	Auto

Example of Full Day ELD Record:

Record Date	*USDOT #*	*Driver License Number*	*Driver License State*	*ELD ID*	*Trailer ID*
20-Nov-14	123456789	D000368210361	IL	987654	Unit #
Time Zone	*Driver Name*	*Co-Driver Name*	*ELD Manufacturer*	*Shipping ID*	*Data Diagnostic Indicators*
CST	Smith, Richard		Acme ELDs	BL1234567890	No
24 Period Starting Time	*Driver ID*	*Co-Driver ID*	*Truck Tractor ID*	*Unidentified Driver Records*	*ELD Malfunction Indicators*
Midnight	1234567		Unit #	No	No
Carrier	*Start End Odometer*	*Miles Today*	*Truck Tractor VIN*	*Exempt Driver Status*	*Start End Engine Hours*
Acme Trucking	39564 - 39984	420	1M2P267Y5AM022445	No	758.2-765.7
Current Location		*File Comment*		*Print/Display Date*	
6 mi. NE North Auburn, CA				20-Nov-14	



Time	Location	Odometer	Eng Hours	Event Type/Status	Origin
20-Nov-14					
0:00	49 mi NNE Fallon, NV	39564	758.2	SB	Driver
10:00	49 mi NNE Fallon, NV	39564	758.2	Login	Driver
10:00	49 mi NNE Fallon, NV	39564	758.2	ODND	Driver
10:52	49 mi NNE Fallon, NV	39564	758.2	Power Up	Auto
11:00	49 mi NNE Fallon, NV	39564	758.2	Driving	Auto
12:00	2 mi E Fernley, NV	39624	759.3	Int Location	Auto
13:00	7 mi NNE Truckee, CA	39684	760.3	Int Location	Auto
14:00	6 mi SSE Meadow Vista, CA	39744	761.3	Int Location	Auto
15:00	3.5 mi SW Davis, CA	39804	762.3	Off Duty	Driver
17:00	3.5 mi SW Davis, CA	39804	762.3	Driving	Auto
18:00	1 mi E Emeryville, CA	39864	763.4	Int Location	Auto
19:00	4 mi SSW Univ. of California, CA	39924	764.4	Int Location	Auto
20:00	6 mi NE North Auburn, CA	39984	765.5	ODND	Driver
21:00	6 mi NE North Auburn, CA	39984	765.7	Off Duty	Driver
23:00	6 mi NE North Auburn, CA	39984	765.7	ODND	Driver
23:58	6 mi NE North Auburn, CA	39984	765.7	Cert	Driver
23:58	6 mi NE North Auburn, CA	39984	765.7	Logout	Driver

(c) The printout and display must show a graph-grid consistent with § 395.8(g) showing each change of duty status.

(1) On the printout, the graph-grid for each day's RODS must be at least 6 inches by 1.5 inches in size.

(2) The graph-grid must overlay periods of driver's indications of authorized personal use of CMV and yard moves using a different style line (such as dashed or dotted line) or shading. The appropriate abbreviation must also be indicated on the graph-grid.

4.8.2. ELD Data File

An ELD must have the capability to generate a consistent electronic file output compliant with the format described herein to facilitate the transfer, processing, and standardized display of ELD data sets on the authorized safety officials' computing environments.

4.8.2.1. ELD Output File Standard

(a) Regardless of the particular database architecture used for recording the ELD events in electronic format, the ELD must produce a standard ELD data output file for transfer purposes, which must be generated according to the standard specified in this section.

(b) Data output must be provided in a single comma-delimited file outlined in this section using American National Standard Code for Information Exchange (ASCII) character sets meeting the standards of ANSI INCITS 4–1986 (R2012) (incorporated by reference, see § 395.38). It must include:

(1) A header segment, which specifies current or non-varying elements of an ELD file; and

(2) Variable length comma-delimited segments for the drivers, vehicles, ELD events, ELD malfunction and data diagnostics records, ELD login and logout activity, and unidentified driver records.

(3) Any field value that may contain a comma ('',") or a carriage return (<CR>) must be replaced with a semicolon (';') before generating the compliant CSV output file.

4.8.2.1.1. Header Segment

This segment must include the following data elements and format:

ELD File Header Segment: <CR>

<{*Driver's*} Last Name>,<{*Driver's*} First Name>,< ELD username{*for the driver*}>,< {*Driver's*} Driver's License Issuing State>,<{*Driver's*} Driver's License Number>,<Line Data Check Value> <CR>

<{Co-Driver's} Last Name>,<{Co-Driver's} First Name>,<ELD username {*for the co-driver*} >,<Line Data Check Value> <CR>

<CMV Power Unit Number>,<CMV VIN>,<Trailer Number(s)>,<Line Data Check Value> <CR>

<Carrier's USDOT Number>,<Carrier Name>,<Multiday-basis Used>,<24-Hour Period Starting Time>,<Time Zone Offset from UTC>,<Line Data Check Value> <CR><Shipping Document Number>,<Exempt Driver Configuration>,<Line Data Check Value> <CR>

<{*Current*} Date,< {*Current*} Time>, < {*Current*} Latitude>,<{*Current*} Longitude,< {*Current*} {*Total*} Vehicle Miles,< {*Current*} {*Total*} Engine Hours>,<Line Data Check Value> <CR>

<ELD Registration ID>,<ELD Identifier>, <ELD Authentication Value>,<Output File Comment>,<Line Data Check Value> <CR>

4.8.2.1.2. User List

This segment must list all drivers and co-drivers with driving time records on the most recent CMV operated by the inspected driver and motor carrier's support personnel who requested edits within the time period for which this file is generated. The list must be in chronological order with most recent user of the ELD on top, and include the driver being inspected, the co-driver, and the unidentified driver profile. This segment has a variable number of rows depending on the number of profiles with activity over the time period for which this file is generated. This section must start with the following title:

User List: <CR>

Each subsequent row must have the following data elements:

<{*Assigned User*} Order Number>,<{*User's*} ELD Account Type,<{*User's*} Last Name>,<{*User's*} First Name>,<Line Data Check Value> <CR>

4.8.2.1.3. CMV List

This segment must list each CMV that the current driver operated and that has been recorded on the driver's ELD records within the time period for which this file is generated. The list must be rank ordered in accordance with the time of CMV operation with the most recent CMV being on top. This segment has a variable number of rows depending on the number of CMVs operated by the driver over the time period for which this file is generated. This section must start with the following title:

CMV List: <CR>

Each subsequent row must have the following data elements:

<{*Assigned CMV*} Order Number>,<CMV Power Unit Number>,<CMV VIN>,<Line Data Check Value> <CR>

4.8.2.1.4. ELD Event List for Driver's Record of Duty Status

This segment must list ELD event records tagged with event types 1 (a change in duty status as described in section 4.5.1.1 of this appendix), 2 (an intermediate log as described in section 4.5.1.2), and 3 (a change in driver's indication of conditions impacting driving time recording as described in section 4.5.1.3). The segment must list all event record status types and all event record origins for the driver, rank ordered with the most current log on top in accordance with the date and time fields of the record. This segment has a variable number of rows depending on the number of ELD events recorded for the driver over the time period for which this file is generated. This section must start with the following title:

ELD Event List: <CR>

Each subsequent row must have the following data elements:

<Event Sequence ID Number>,<Event Record Status>,<Event Record Origin>,<Event Type>, <Event Code>,<{*Event*} Date>,<{*Event*}Time>,<{*Accumulated*} Vehicle Miles>,<{*Elapsed*} Engine Hours>, {*Event*} <Latitude>,<{*Event*}Longitude>,<Distance Since Last Valid Coordinates>, <{*Corresponding CMV*} Order Number>,<{*User*} Order Number {*for Record Originator*}>,<Malfunction Indicator Status {*for ELD*}>,<Data Diagnostic Event Indicator Status {*for Driver*}>,<Event Data Check Value>,<Line Data Check Value> <CR>

4.8.2.1.5. Event Annotations, Comments, and Driver's Location Description

This segment must list only the elements of the ELD event list created in section 4.8.2.1.4 of this appendix that have an annotation, comment, or a manual entry of location description by the driver. This segment has a variable number of rows depending on the number of ELD events under section 4.8.2.1.4 that feature a comment, annotation, or manual location entry by the driver. This section must start with the following title:

ELD Event Annotations or Comments: <CR>

Each subsequent row must have the following data elements:

<Event Sequence ID Number>,<ELD username {*of the Record Originator*}>,<{*Event*} Comment Text or Annotation>,<{Event} Date>,<{Event} Time>, <Driver's Location Description>,<Line Data Check Value> <CR>

4.8.2.1.6. ELD Event List for Driver's Certification of Own Records

This segment must list ELD event records with event type 4 (driver's certification of own records as described in section 4.5.1.4 of this appendix) for the inspected driver for the time period for which this file is generated. It must be rank ordered with the most current record on top. This segment has a variable number of rows depending on the number of certification and re-certification actions the authenticated driver may have executed on the ELD over the time period for which this file is generated. This section must start with the following title:

Driver's Certification/Recertification Actions: <CR>

Each subsequent row must have the following data elements:

<Event Sequence ID Number>,<Event Code>, <{*Event*} Date>,<{*Event*} Time>,<Date {*of the certified record*}>,<{*Corresponding CMV*} Order Number>,<Line Data Check Value> <CR>

4.8.2.1.7. Malfunction and Diagnostic Event Records

This segment must list all malfunctions that have occurred on this ELD during the time period for which this file is generated. It must list diagnostic event records related to the driver being inspected, rank ordered with the most current record on top. This segment has a variable number of rows depending on the number of ELD malfunctions and ELD diagnostic event records recorded and relevant to the inspected driver over the time period for which this file is generated. This section must start with the following title:

Malfunctions and Data Diagnostic Events: <CR>

Each subsequent row must have the following data elements:

<Event Sequence ID Number>,<Event Code>,<Malfunction/Diagnostic Code>,<{*Event*} Date>,<{*Event*} Time>,<{*Total*} Vehicle Miles>,<{*Total*} Engine Hours>, <{*Corresponding CMV*} Order Number>,<Line Data Check Value> <CR>

4.8.2.1.8. ELD Login/Logout Report

This segment must list the login and logout activity on the ELD (ELD events with event type 5 (A driver's login/logout activity)) for the inspected driver for the time period for which this file is generated. It must be rank ordered with the most recent activity on top. This section must start with the following title:

ELD Login/Logout Report: <CR>

Each subsequent row must have the following data elements:

<Event Sequence ID Number>,<Event Code>,<ELD username>,<{*Event*} Date>,<{*Event*} Time>,<{*Total*} Vehicle Miles>,<{*Total*} Engine Hours>,<Line Data Check Value> <CR>

4.8.2.1.9. CMV's Engine Power-Up and Shut Down Activity

This segment must list the logs created when a CMV's engine is powered up and shut down (ELD events with event type 6 (CMV's engine power up/shut down)) for the time period for which this file is generated. It must be rank ordered with the latest activity on top. This section must start with the following title:

CMV Engine Power-Up and Shut Down Activity: <CR>

Each subsequent row must have the following data elements:

<Event Sequence ID Number>,<Event Code>,<{*Event*} Date>,<{*Event*} Time>,<{*Total*} Vehicle Miles>,<{*Total*} Engine Hours>,<{*Event*} Latitude>,<{*Event*} Longitude>,<CMV Power Unit Number>,<CMV VIN>,<Trailer Number(s)>,<Shipping Document Number>,<Line Data Check Value> <CR>

4.8.2.1.10. ELD Event Log List for the Unidentified Driver Profile

This segment must list the ELD event records for the Unidentified Driver profile, rank ordered with most current log on top in accordance with the date and time fields of the logs. This segment has a variable number of rows depending on the number of Unidentified Driver ELD records recorded over the time period for which this file is generated. This section must start with the following title:

Unidentified Driver Profile Records: <CR>

Each subsequent row must have the following data elements:

<Event Sequence ID Number>,<Event Record Status>,<Event Record Origin>,<Event Type>,<Event Code>,<{*Event*} Date>,<{*Event*} Time>,< {*Accumulated*} Vehicle Miles>,< {*Elapsed*} Engine Hours>,<{*Event*} Latitude>,<{*Event*} Longitude>,<Distance Since Last Valid Coordinates>, <{*Corresponding CMV*} Order Number>,<Malfunction Indicator Status {*for ELD*}>,<Event Data Check Value>,<Line Data Check Value> <CR>

4.8.2.1.11. File Data Check Value

This segment lists the file data check value as specified in section 4.4.5.3 of this appendix. This part includes a single line as follows:

End of File: <CR>

<File Data Check Value> <CR>

4.8.2.2. ELD Output File Name Standard

If the ELD output is saved in a file for transfer or maintenance purposes, it must follow the 25 character-long filename standard below:

(a) The first five position characters of the filename must correspond to the first five letters of the last name of the driver for whom the file is compiled. If the last name of the driver is shorter than five characters, remaining positions must use the character "_" [underscore] as a substitute character. For example, if the last name of the driver is "Lee", the first five characters of the output file must feature "Lee_ _".

(b) The sixth and seventh position characters of the filename must correspond to the last two digits of the driver's license number for the driver for whom the file is compiled.

(c) The eighth and ninth position characters of the filename must correspond to the sum of all individual numeric digits in the driver's license number for the driver for whom the file is compiled. The result must be represented in two-digit format. If the sum value exceeds 99, use the last two digits of the result. For example, if the result equals "113", use "13". If the result is less than 10, use 0 as the first digit. For example, if the result equals "5", use "05".

(d) The tenth through fifteenth position characters of the filename must correspond to the date the file is created. The result must be represented in six digit format "MMDDYY" where "MM" represents the month, ""DD" represents the day, and "YY" represents the last two digits of the year. For example, February 5, 2013, must be represented as "020513".

(e) The sixteenth position character of the filename must be a hyphen "-".

(f) The seventeenth through twenty-fifth position characters of the filename must, by default, be "000000000" but each of these nine digits can be freely configured by the motor carrier or the ELD provider to be a number between 0 and 9 or a character between A and Z to be able to produce distinct files—if or when necessary—that may otherwise be identical in filename as per the convention proposed in this section. ELD providers or motor carriers do not need to

disclose details of conventions they may use for configuring the seventeenth through twenty-fifth digits of the filename.

4.9. Data Transfer Capability Requirements

An ELD must be able to present the captured ELD records of a driver in the standard electronic format as described below, and transfer the data file to an authorized safety official, on demand, for inspection purposes.

4.9.1. Data Transfer During Roadside Safety Inspections

(a) On demand during a roadside safety inspection, an ELD must produce ELD records for the current 24-hour period and the previous 7 consecutive days in electronic format, in the standard data format described in section 4.8.2.1 of this appendix.

(b) When a driver uses the single-step driver interface, as described in section 4.3.2.4 of this appendix, to indicate that the ELD compile and transfer the driver's ELD records to authorized safety officials, the ELD must transfer the generated ELD data output to the computing environment used by authorized safety officials via the standards referenced in this section. To meet roadside electronic data transfer requirements, an ELD must do at least one of the following:

(1) Option 1—Telematics transfer methods. Transfer the electronic data using both:

(i) Wireless Web services, and

(ii) Email, or

(2) Option 2—Local transfer methods. Transfer the electronic data using both:

(i) USB2 (incorporated by reference, see § 395.38), and

(ii) Bluetooth (incorporated by reference, see § 395.38).

(c) The ELD must provide an ELD record for the current 24-hour period and the previous 7 consecutive days as described in section 4.8.1.3 either on a display or on a printout.

(d) An ELD must support one of the two options for roadside data transfer in paragraph (b) of this section, and must certify proper operation of each element under that option. An authorized safety official will specify which transfer mechanism the official will use within the certified transfer mechanisms of an ELD.

4.9.2. Motor Carrier Data Reporting

(a) An ELD must be capable of retaining copies of electronic ELD records for a period of at least 6 months from the date of receipt.

(b) An ELD must produce, on demand, a data file or a series of data files of ELD records for a subset of its drivers, a subset of its vehicles, and for a subset of the 6-month record retention period, to be specified by an authorized safety official, in an electronic format standard described in section 4.8.2.1 of this appendix or, if the motor carrier has multiple offices or terminals, within the time permitted under § 390.29.

(c) At a minimum, an ELD must be able to transfer the ELD records electronically by one of the following transfer mechanisms:

(1) Web Services as specified in section 4.10.1.1 of this appendix (but not necessarily wirelessly), and Email as specified 4.10.1.2 (but not necessarily wirelessly); or

(2) USB 2.0 as specified in section 4.10.1.3 of this appendix and Bluetooth, as specified in section 4.10.1.4 (both incorporated by reference, see § 395.38).

4.10. Communications Standards for the Transmittal of Data Files from ELDs

ELDs must transmit ELD records electronically in accordance with the file format specified in section 4.8.2.1 of this appendix and must be capable of a one-way transfer of these records to authorized safety officials upon request as specified in section 4.9.

4.10.1. Data Transfer Mechanisms

For each type of data transfer mechanism, an ELD must follow the specifications in this section.

4.10.1.1. Wireless Data Transfer via Web Services

(a) Transfer of ELD data to FMCSA via Web Services must follow the following standards:

(1) Web Services Description Language (WSDL) 1.1.

(2) Simple Object Access Protocol (SOAP) 1.2 (incorporated by reference, see § 395.38).

(3) Extensible Markup Language (XML) 1.0 5th Edition.

(b) If an ELD provider plans to use Web Services, upon ELD provider registration as described in section 5.1 of this appendix,

(1) FMCSA will provide formatting files necessary to convert the ELD file into an XML format and upload the data to the FMCSA servers. These files include FMCSA's Rules of Behavior, XML Schema, WSDL file, Interface Control Document (ICD), and the ELD Web Services Development Handbook, and

(2) ELD Providers must obtain a Public/Private Key pair compliant with the NIST SP 800–32, Introduction to Public Key Technology and the Federal PKI Infrastructure (incorporated by reference, see § 395.38), and submit the public key with their registration.

(3) ELD Providers will be required to complete a test procedure to ensure their data is properly formatted before they can begin submitting driver's ELD data to the FMCSA server.

(c) ELD data transmission must be accomplished in a way that protects the privacy of the driver(s).

(d) At roadside, if both the vehicle operator and law enforcement have an available data connection, the vehicle operator will initiate the transfer of ELD data to an authorized safety official. In some cases, an ELD may be capable of converting the ELD file to an XML format using an FMCSA-provided schema and upload it using information provided in the WSDL file using SOAP via RFC 7230, RFC 7231, and RFC 5246, Transport Layer Security (TLS) Protocol Version 1.2 (incorporated by reference, see § 395.38).

4.10.1.2. Wireless Data Transfer Through Email

(a) The ELD must attach a file to an email message to be sent using RFC 5321 Simple Mail Transfer Protocol (SMTP) (incorporated by reference, see § 395.38), to a specific email address, which will be shared with the ELD providers during the technology registration process.

(b) The file must have the format described in section 4.8.2.1 of this appendix and must be encrypted using the Secure/Multipurpose Internet Mail Extensions as described in RFC 5751 (incorporated by reference, see § 395.38), and the RSA algorithm as described in RFC 4056 (incorporated by reference, see § 395.38), with the FMCSA public key compliant with NIST SP 800–32 (incorporated by reference, see § 395.38) to be provided to the ELD provider at the time of registration. The content must be encrypted using AESin FIPS Publication 197 (incorporated by reference, see § 395.38), and RFC 3565 (incorporated by reference, see § 395.38).

(c) The email must be formatted using the RFC 5322 Internet Message Format (incorporated by reference, see § 395.38), as follows:

Element	Format
To :	<Address Provided by FMCSA during online registration>
From :	<Desired return address for confirmation>
Subject :	ELD records from <ELD Registration ID><':'><ELD Identifier>
Body :	<Output File Comment>
Attachment: ..	MIME encoded AES–256 encrypted file with <filename>.<Date string>.<unique identifier>.aes

(d) A message confirming receipt of the ELD file will be sent to the address specified in the email. The filename must follow the convention specified in section 4.8.2.2 of this appendix.

4.10.1.3 Data Transfer via USB 2.0

(a) ELDs certified for the USB data transfer mechanism must be capable of transferring ELD records using the Universal Serial Bus Specification (Revision 2.0) (incorporated by reference, see § 395.38).

(b) Each ELD technology must implement a single USB-compliant interface with the necessary adaptors for a Type A connector. The USB interface must implement the Mass Storage class (08h) for driverless operation, to comply with IEEE standard 1667–2009, (incorporated by reference, see § 395.38).

(c) The ELD must be capable of providing power to a standard USB-compatible drive.

(d) An ELD must re-authenticate the driver prior to saving the driver's ELD file to an external device.

(e) On initiation by an authenticated driver, an ELD must be capable of saving ELD file(s) to USB-compatible drives (AES, in FIPS Publication 197, incorporated by reference, see § 395.38) that are provided by authorized safety officials during an inspection. Prior to initiating this action, ELDs must be capable of reading a text file from an authorized safety officials' drive and verifying it against a file provided to ELD providers who have registered their technologies as described in section 5.1 of this appendix.

4.10.1.4. Data Transfer via Bluetooth®

(a) Bluetooth SIG Specification of the Bluetooth System covering core package

version 2.1 + EDR (incorporated by reference, see § 395.38) must be followed. ELDs using this standard must be capable of displaying a Personal Identification Number generated by the Bluetooth application profile for bonding with other devices(incorporated by reference, see § 395.38).

(b) Upon request of an authorized official, the ELD must become discoverable by the authorized safety officials' Bluetooth-enabled computing platform, and generate a random code, which the driver must share with the official (incorporated by reference, see § 395.38).

(c) The ELD must connect to the roadside authorized safety officials' technology via wireless personal area network and transmit the required data via Web Services as described in section 4.10.1.1 of this appendix.

4.10.2. Motor Carrier Data Transmission

Regardless of the roadside transmission option supported by an ELD, ELD records are to be retained and must be able to transmit enforcement-specified historical data for their drivers using one of the methods specified under section 4.9.2 of this appendix.

(a) Web services option must follow the specifications described under section 4.10.1.1 of this appendix.

(b) The email option must follow the specifications described under section 4.10.1.2 of this appendix.

(c) The USB option must follow the specifications of Universal Serial Bus Specification, revision 2.0 (incorporated by reference, see § 395.38) and described in section 4.10.1.3 of this appendix.

(d) Bluetooth must follow the specifications incorporated by reference (see § 395.38) and described in section 4.10.1.4 of this appendix.

5. ELD Registration and Certification

As described in § 395.22(a) of this part, motor carriers must only use ELDs that are listed on the FMCSA Web site. An ELD provider must register with FMCSA and certify each ELD model and version for that ELD to be listed on this Web site.

5.1. ELD Provider's Registration

5.1.1. Registering Online

(a) An ELD provider developing an ELD technology must register online at a secure FMCSA Web site where the ELD provider can securely certify that its ELD is compliant with this appendix.

(b) Provider's registration must include the following information:

(1) Company name of the technology provider/manufacturer.

(2) Name of an individual authorized by the provider to verify that the ELD is compliant with this appendix and to certify it under section 5.2 of this appendix.

(3) Address of the registrant.

(4) Email address of the registrant.

(5) Telephone number of the registrant.

5.1.2. Keeping Information Current

The ELD provider must keep the information in section 5.1.1(b) of this appendix current through FMCSA's Web site.

5.1.3. Authentication Information Distribution

FMCSA will provide a unique ELD registration ID, authentication key(s), authentication file(s), and formatting and configuration details required in this appendix to registered providers during the registration process.

5.2. Certification of Conformity With FMCSA Standards

A registered ELD provider must certify that each ELD model and version has been sufficiently tested to meet the functional requirements included in this appendix under the conditions in which the ELD would be used.

5.2.1. Online Certification

(a) An ELD provider registered online as described in section 5.1.1 of this appendix must disclose the information in paragraph (b) of this section about each ELD model and version and certify that the particular ELD is compliant with the requirements of this appendix.

(b) The online process will only allow a provider to complete certification if the provider successfully discloses all of the following required information:

(1) Name of the product.

(2) Model number of the product.

(3) Software version of the product.

(4) An ELD identifier, uniquely identifying the certified model and version of the ELD, assigned by the ELD provider in accordance with section 7.15 of this appendix.

(5) Picture and/or screen shot of the product.

(6) User's manual describing how to operate the ELD.

(7) Description of the supported and certified data transfer mechanisms and step-by-step instructions for a driver to produce and transfer the ELD records to an authorized safety official.

(8) Summary description of ELD malfunctions.

(9) Procedure to validate an ELD authentication value as described in section 7.14 of this appendix.

(10) Certifying statement describing how the product was tested to comply with FMCSA regulations.

5.2.2. Procedure To Validate an ELD's Authenticity

Paragraph 5.2.1(b)(9) of this appendix requires that the ELD provider identify its authentication process and disclose necessary details for FMCSA systems to independently verify the ELD authentication values included in the dataset of inspected ELD outputs. The authentication value must include a hash component that only uses data elements included in the ELD dataset and datafile. ELD authentication value must meet the requirements specified in section 7.14 of this appendix.

5.3. Publicly Available Information

Except for the information listed under paragraphs 5.1.1(b)(2), (4), and (5) and 5.2.1(b)(9) of this appendix, FMCSA will make the information in sections 5.1.1 and 5.2.1 for each certified ELD publicly available on a Web site to allow motor carriers to determine which products have been properly registered and certified as ELDs compliant with this appendix.

5.4. Removal of Listed Certification

5.4.1. Removal Process

FMCSA may remove an ELD model or version from the list of ELDs on the FMCSA Web site in accordance with this section.

5.4.2. Notice

FMCSA shall initiate the removal of an ELD model or version from the list of ELDs on the FMCSA Web site by providing the ELD provider written notice stating:

(a) The reasons FMCSA proposes to remove the model or version from the FMCSA list; and

(b) Any corrective action that the ELD provider must take for the ELD model or version to remain on the list.

5.4.3. Response

An ELD provider that receives notice under section 5.4.2 of this appendix may submit a response to the Director, Office of Carrier Driver, and Vehicle Safety Standards no later than 30 days after issuance of the notice of proposed removal, explaining:

(a) The reasons why the ELD provider believes the facts relied on by the Agency, in proposing removal, are wrong; or

(b) The action the ELD provider will take to correct the deficiencies that FMCSA identified.

5.4.4. Agency Action

(a) If the ELD provider fails to respond within 30 days of the date of the notice issued under section 5.4.2 of this appendix, the ELD model or version shall be removed from the FMCSA list.

(b) If the ELD provider submits a timely response, the Director, Office of Carrier, Driver, and Vehicle Safety Standards, shall review the response and withdraw the notice of proposed removal, modify the notice of proposed removal, or affirm the notice of proposed removal, and notify the ELD provider in writing of the determination.

(c) Within 60 days of the determination, the ELD provider shall take any action required to comply. If the Director determines that the ELD provider failed to timely take the required action within the 60 day period, the ELD model or version shall be removed from the FMCSA list.

(d) The Director, Office of Carrier, Driver, and Vehicle Safety Standards may request from the ELD provider any information that the Director considers necessary to make a determination under this section.

5.4.5. Administrative Review

(a) Within 30 days of removal of an ELD model or version from the FMCSA list of certified ELDs under section 5.4.4 of this appendix, the ELD provider may request administrative review.

(b) A request for administrative review must be submitted in writing to the FMCSA Associate Administrator for Policy. The request must explain the error committed in removing the ELD model or version from the FMCSA list, identify all factual, legal, and procedural issues in dispute, and include any supporting information or documents.

(c) The Associate Administrator may ask the ELD provider to submit additional information or attend a conference to discuss the removal. If the ELD provider does not submit the requested information or attend the scheduled conference, the Associate Administrator may dismiss the request for administrative review.

(d) The Associate Administrator will complete the administrative review and notify the ELD provider of the decision in writing. The decision constitutes a final Agency action.

6. References

(a) *American National Standards Institute (ANSI).* 11 West 42nd Street, New York, New York 10036, *http://webstore.ansi.org*, (212) 642–4900.

(1) ANSI INCITS 4–1986 (R2012), American National Standard for Information Systems—Coded Character Sets—7-Bit American National Standard Code for Information Interchange (7-Bit ASCII), approved June 14, 2007, IBR in section 4.8.2.1, Appendix A to subpart B.

(2) ANSI INCITS 446–2008 (R2013), American National Standard for Information Technology—Identifying Attributes for Named Physical and Cultural Geographic Features (Except Roads and Highways) of the United States, Territories, Outlying Areas, and Freely Associated Areas, and the Waters of the Same to the Limit of the Twelve-Mile Statutory Zone, approved October 28, 2008, IBR in section 4.4.2, Appendix A to subpart B.

(b) *Bluetooth SIG, Inc.* 5209 Lake Washington Blvd. NE., Suite 350, Kirkland, WA 98033, *https://www.bluetooth.org/Technical/Specifications/adopted.htm*, (425) 691–3535.

(1) Bluetooth SIG, Inc., Specification of the Bluetooth System: Wireless Connections Made Easy, Covered Core Package version 2.1 + EDR, volumes 0 through 4, approved July 26, 2007, IBR in sections 4.9.1, 4.9.2, 4.10.1.4, 4.10.2, Appendix A to subpart B.

(2) [Reserved]

(c) *Institute of Electrical and Electronic Engineers (IEEE) Standards Association.* 445 Hoes Lane, Piscataway, NJ 08854–4141, *http://standards.ieee.org/index.html*, (732) 981–0060.

(1) IEEE Std 1667–2009, IEEE Standard for Authentication in Host Attachments of Transient Storage Devices, approved 11 November 2009, IBR in section 4.10.1.3, Appendix A to subpart B.

(2) [Reserved]

(d) *Internet Engineering Task Force (IETF).* C/o Association Management Solutions, LLC (AMS) 48377 Freemont Blvd., Suite 117, Freemont, CA 94538, (510) 492–4080.

(1) IETF RFC 3565, Use of the Advanced Encryption Standard (AES) Encryption Algorithm in Cryptographic Message Syntax (CMS), approved July 2003, IBR in section 4.10.1.2, Appendix A to subpart B.

(2) IETF RFC 4056, Use of the RSASSA–PSS Signature Algorithm in Cryptographic Message Syntax (CMS), approved June 2005, IBR in section 4.10.1.2, Appendix A to subpart B.

(3) IETF RFC 5246, The Transport Layer Security (TLS) Protocol Version 1.2, approved August 2008, IBR in section 4.10.1.1, Appendix A to subpart B.

(4) IETF RFC 5321, Simple Mail Transfer Protocol, approved October 2008, IBR in section 4.10.1.2, Appendix A to subpart B.

(5) IETF RFC 5322, Internet Message Format, approved October 2008, IBR in section 4.10.1.2, Appendix A to subpart B.

(6) IETF RFC 5751, Secure/Multipurpose Internet Mail Extensions (S/MIME) Version 3.2, Message Specification, approved January 2010, IBR in section 4.10.1.2, Appendix A to subpart B.

(7) IETF RFC 7230, Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing, approved June 2014, IBR in section 4.10.1.1, Appendix A to subpart B.

(8) IETF RFC 7231, Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content, approved June 2014, IBR in section 4.10.1.1, Appendix A to subpart B.

(e) *National Institute of Standards and Technology (NIST).* 100 Bureau Drive, Stop 1070, Gaithersburg, MD 20899–1070, *http://www.nist.gov*, (301) 975–6478.

(1) Federal Information Processing Standards Publication (FIPS PUB) 197, Advanced Encryption Standard (AES), approved November 26, 2001, IBR in sections 4.10.1.2 and 4.10.1.3, Appendix A to subpart B.

(2) SP 800–32, Introduction to Public Key Technology and the Federal PKI Infrastructure, approved February 26, 2001, IBR in section 4.10.1.2, Appendix A to subpart B.

(f) *Universal Serial Bus Implementers Forum (USBIF).* 3855 SW. 153rd Drive, Beaverton, Oregon 97006, *http://www.usb.org*, (503) 619–0426.

(1) USB Implementers Forum, Inc., Universal Serial Bus Specification, Revision 2.0, approved April 27, 2000, as revised through April 3, 2015, IBR in sections 4.9.1, 4.9.2, 4.10.1.3, and 4.10.2, Appendix A to subpart B.

(2) [Reserved]

(g) *World Wide Web Consortium (W3C).* 32 Vassar Street, Building 32–G514, Cambridge, MA 02139, *http://www.w3.org*, (617) 253–2613.

(1) W3C Recommendation 27, SOAP Version 1.2 Part 1: Messaging Framework (Second Edition), including errata, approved April 2007, IBR in section 4.10.1.1, Appendix A to subpart B.

(2) [Reserved]

7. Data Elements Dictionary

7.1. 24-Hour Period Starting Time

Description: This data element refers to the 24-hour period starting time specified by the motor carrier for driver's home terminal.

Purpose: Identifies the bookends of the work day for the driver; makes ELD records consistent with § 395.8 requirements, which require this information to be included on the form.

Source: Motor carrier.

Used in: ELD account profile; ELD outputs.

Data Type: Programmed or populated on the ELD during account creation and maintained by the motor carrier to reflect true and accurate information for drivers.

Data Range: 000000 to 235959; first two digits 00 to 23; middle two digits and last two digits 00 to 59.

Data Length: 6 characters.

Data Format: <HHMMSS> Military time format, where ''HH'' refers to hours,

''MM'' refers to minutes, and ''SS'' refers to seconds; designation for start time expressed in time standard in effect at the driver's home terminal.

Disposition: Mandatory.

Examples: [060000], [073000], [180000].

7.2. Carrier Name

Description: This data element refers to the motor carrier's legal name for conducting commercial business.

Purpose: Provides a recognizable identifier about the motor carrier on viewable ELD outputs; provides ability to cross check against USDOT number.

Source: FMCSA's Safety and Fitness Electronic Records (SAFER) System.

Used in: ELD account profile.

Data Type: Programmed on the ELD or entered once during the ELD account creation process.

Data Range: Any alphanumeric combination.

Data Length: Minimum: 4; Maximum: 120 characters.

Data Format: <Carrier Name> as in <CCCC> to <CCCC. . . . . .CCCC>.

Disposition: Mandatory.

Example: [CONSOLIDATED TRUCKLOAD INC.].

7.3. Carrier's USDOT Number

Description: This data element refers to the motor carrier's USDOT number.

Purpose: Uniquely identifies the motor carrier employing the driver using the ELD.

Source: FMCSA's Safety and Fitness Electronic Records (SAFER) System.

Used in: ELD account profiles; ELD event records; ELD output file.

Data Type: Programmed on the ELD or entered once during the ELD account creation process.

Data Range: An integer number of length 1–8 assigned to the motor carrier by FMCSA (9 position numbers reserved).

Data Length: Minimum: 1; Maximum: 9 characters.

Data Format: <Carrier's USDOT Number> as in <C to <CCCCCCCCC>.

Disposition: Mandatory.

Examples: [1], [1000003].

7.4. CMV Power Unit Number

Description: This data element refers to the identifier the motor carrier uses for their CMVs in their normal course of business.

Purpose: Identifies the vehicle a driver operates while a driver's ELD records are recorded; Makes ELD records consistent with § 395.8 requirements, which require the truck or tractor number to be included on the form.

Source: Unique CMV identifiers a motor carrier uses in its normal course of business and includes on dispatch documents, or the license number and the licensing State of the power unit.

Used in: ELD event records; ELD output file.

Data Type: Programmed on the ELD or populated by motor carrier's extended ELD system or entered by the driver.

Data Range: Any alphanumeric combination.

Data Length: Minimum: 1; Maximum: 10 characters.

Data Format: <CMV Power Unit Number> as in <C> to <CCCCCCCCCC>.

Disposition: Mandatory for all CMVs operated while using an ELD.

Examples: [123], [00123], [BLUEKW123], [TX12345].

7.5. CMV VIN

Description: This data element refers to the manufacturer-assigned vehicle identification number (VIN) for the CMV powered unit.

Purpose: Uniquely identifies the operated CMV not only within a motor carrier at a given time but across all CMVs sold within a 30-year rolling period.

Source: A robust unique CMV identifier standardized in North America.

Used in: ELD event records; ELD output file.

Data Type: Retrieved from the engine ECM via the vehicle databus.

Data Range: Either blank or 17 characters long as specified by NHTSA in 49 CFR part 565, or 18 characters long with first character assigned as ''-'' (dash) followed by the 17 character long VIN. Check digit, *i.e.,* VIN character position 9, as specified in 49 CFR part 565 must imply a valid VIN.

Data Length: Blank or 17–18 characters.

Data Format: <CMV VIN> or <''-''> <CMV VIN> or <{*blank*}> as in <CCCCCCCCCCCCCCCCCC>, or <-CCCCCCCCCCCCCCCCCC> or <>.

Disposition: Mandatory for all ELDs linked to the engine ECM and when VIN is available from the engine ECM over the vehicle databus; otherwise optional. If optionally populated and source is not the engine ECM, precede VIN with the character ''-'' in records.

Examples: [1FUJGHDV0CLBP8834], [-1FUJGHDV0CLBP8896], [].

7.6. Comment/Annotation

Description: This is a textual note related to a record, update, or edit capturing the comment or annotation a driver or authorized support personnel may input to the ELD.

Purpose: Provides ability for a driver to offer explanations to records, selections, edits, or entries.

Source: Driver or authorized support personnel.

Used in: ELD events; ELD outputs.

Data Type: Entered by the authenticated user via ELD's interface.

Data Range: Free form text of any alphanumeric combination.

Data Length: 0–60 characters if optionally entered; 4–60 characters if annotation is required and driver is prompted by the ELD.

Data Format: <Comment/Annotation> as in <{blank}> or <C> to <CCC. . . . . CCC>.

Disposition: Optional in general; Mandatory if prompted by ELD.

Examples: [], [Personal Conveyance. Driving to Restaurant in bobtail mode], [Forgot to switch to SB. Correcting here].

7.7. Data Diagnostic Event Indicator Status

Description: This is a Boolean indicator identifying whether the used ELD unit has an active data diagnostic event set for the authenticated driver at the time of event recording.

Purpose: Documents the snapshot of ELD's data diagnostic status for the authenticated driver at the time of an event recording.

Source: ELD internal monitoring functions.

Used in: ELD events; ELD outputs.

Data Type: Internally monitored and managed.

Data Range: 0 (no active data diagnostic events for the driver) or 1 (at least one active data diagnostic event set for the driver).

Data Length: 1 character.

Data Format: <Data Diagnostic Event Indicator Status> as in <C>.

Disposition: Mandatory.

Examples: [0] or [1].

7.8. Date

Description: In combination with the variable ''Time'', this parameter stamps records with a reference in time; even though date and time must be captured in UTC, event records must use date and time converted to the time zone in effect at the driver's home terminal as specified in section 4.4.3.

Purpose: Provides ability to record the instance of recorded events.

Source: ELD's converted time measurement.

Used in: ELD events; ELD outputs.

Data Type: UTC date must be automatically captured by ELD; date in effect at the driver's home terminal must be calculated as specified in section 4.4.3.

Data Range: Any valid date combination expressed in <MMDDYY> format where ''MM'' refers to months, ''DD'' refers to days of the month and ''YY'' refers to the last two digits of the calendar year.

Data Length: 6 characters.

Data Format: <MMDDYY> where <MM> must be between 01 and 12, <DD> must be between 01 and 31, and <YY> must be between 00 and 99.

Disposition: Mandatory.

Examples: [122815], [010114], [061228].

7.9. Distance Since Last Valid Coordinates

Description: Distance in whole miles traveled since the last valid latitude, longitude pair the ELD measured with the required accuracy.

Purpose: Provides ability to keep track of location for recorded events in cases of temporary position measurement outage.

Source: ELD internal calculations.

Used in: ELD events; ELD outputs.

Data Type: Kept track of by the ELD based on position measurement validity.

Data Range: An integer value between 0 and 6; If the distance traveled since the last valid coordinate measurement exceeds 6 miles, the ELD must enter the value as 6.

Data Length: 1 character.

Data Format: <Distance Since Last Valid Coordinates> as in <C>.

Disposition: Mandatory.

Examples: [0], [1], [5], [6].

7.10. Driver's License Issuing State

Description: This data element refers to the issuing State, Province or jurisdiction of the listed Driver's License for the ELD account holder.

Purpose: In combination with ''Driver's License Number'', it links the ELD driver account holder uniquely to an individual with driving credentials; ensures that only one driver account can be created per individual.

Source: Driver's license.

Used in: ELD account profile(s); ELD output file.

Data Type: Entered (during the creation of a new ELD account).

Data Range: To character abbreviation listed on Table 5 of this appendix.

Data Length: 2 characters.

Data Format: <Driver's License Issuing State> as in <CC>.

Disposition: Mandatory for all driver accounts created on the ELD; optional for ''non-driver'' accounts.

Example: [WA].

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Table 5

State and Province Abbreviation Codes

U.S.A.

STATE CODE	STATE	STATE CODE	STATE
AL	ALABAMA	MT	MONTANA
AK	ALASKA	NC	NORTH CAROLINA
AR	ARKANSAS	ND	NORTH DAKOTA
AZ	ARIZONA	NE	NEBRASKA
CA	CALIFORNIA	NH	NEW HAMPSHIRE
CO	COLORADO	NJ	NEW JERSEY
CT	CONNECTICUT	NM	NEW MEXICO
DC	DIST of COL	NV	NEVADA
DE	DELAWARE	NY	NEW YORK
FL	FLORIDA	OH	OHIO
GA	GEORGIA	OK	OKLAHOMA
HI	HAWAII	OR	OREGON
IA	IOWA	PA	PENNSYLVANIA
ID	IDAHO	RI	RHODE ISLAND
IL	ILLINOIS	SC	SOUTH CAROLINA
IN	INDIANA	SD	SOUTH DAKOTA
KS	KANSAS	TN	TENNESSEE
KY	KENTUCKY	TX	TEXAS
LA	LOUISIANA	UT	UTAH
MA	MASSACHUSETTS	VA	VIRGINIA
MD	MARYLAND	VT	VERMONT
ME	MAINE	WA	WASHINGTON
MI	MICHIGAN	WI	WISCONSIN
MN	MINNESOTA	WV	WEST VIRGINIA
MO	MISSOURI	WY	WYOMING
MS	MISSISSIPPI		

AMERICAN POSSESSIONS OR PROTECTORATES

STATE CODE	STATE
AS	AMERICAN SAMOA
GU	GUAM
MP	NORTHERN MARIANAS
PR	PUERTO RICO
VI	VIRGIN ISLANDS

CANADA

PROVINCE CODE	PROVINCE
AB	ALBERTA
BC	BRITISH COLUMBIA

MB	MANITOBA
NB	NEW BRUNSWICK
NF	NEWFOUNDLAND
NS	NOVA SCOTIA
NT	NORTHWEST TERRITORIES
ON	ONTARIO
PE	PRINCE EDWARD ISLAND
QC	QUEBEC
SK	SASKATCHEWAN
YT	YUKON TERRITORY

MEXICO

STATE CODE	STATE	STATE CODE	STATE
AG	AGUASCALIENTES	MX	MEXICO
BN	BAJA CALIFORNIA NORTE	NA	NAYARIT
BS	BAJA CALIFORNIA SUR	NL	NUEVO LEON
CH	COAHUILA	OA	OAXACA
CI	CHIHUAHUA	PU	PUEBLA
CL	COLIMA	QE	QUERETARO
CP	CAMPECHE	QI	QUINTANA ROO
CS	CHIAPAS	SI	SINALOA
DF	DISTRICTO FEDERAL	SL	SAN LUIS POTOSI
DG	DURANGO	SO	SONORA
GE	GUERRERO	TA	TAMAULIPAS
GJ	GUANAJUATO	TB	TABASCO
HD	HIDALGO	TL	TLAXCALA
JA	JALISCO	VC	VERACRUZ
MC	MICHOACAN	YU	YUCATAN
MR	MORELOS	ZA	ZACATECAS

OTHER

PROVINCE CODE	PROVINCE, STATE or COUNTRY
OT	ALL OTHERS NOT COVERED ABOVE

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7.11. Driver's License Number

Description: This data element refers to the unique Driver's License information required for each driver account on the ELD.

Purpose: In combination with driver's license issuing State, it links the ELD driver account holder to an individual with driving credentials; ensures that only one driver account can be created per individual.

Source: Driver's license.

Used in: ELD account profile(s); ELD output file.

Data Type: Entered (during the creation of a new ELD account).

Data Range: Any alphanumeric combination.

Data Length: Minimum: 1; Maximum: 20 characters.

Data Format: <Driver's License Number> as in <C> to <CCCCCCCCCCCCCCCCCCCC>. For ELD record keeping purposes, ELD must only retain characters in a Driver's License Number entered during an account creation process that are a number between 0–9 or a character between A–Z (non-case sensitive).

Disposition: Mandatory for all driver accounts created on the ELD; optional for ''non-driver'' accounts.

Examples: [SAMPLMJ065LD], [D000368210361], [198], [N02632676353666].

7.12. Driver's Location Description

Description: This is a textual note related to the location of the CMV input by the driver upon ELD's prompt.

Purpose: Provides ability for a driver to enter location information related to entry of missing records; provides ability to accommodate temporary positioning service interruptions or outage without setting positioning malfunctions.

Source: Driver, only when prompted by the ELD.

Used in: ELD events; ELD outputs.

Data Type: Entered by the authenticated driver when ELD solicits this information as specified in section 4.3.2.7.

Data Range: Free form text of any alphanumeric combination.
Data Length: 5–60 characters.
Data Format: <CCCCC> to <CCC.....CCC>.
Disposition: Mandatory when prompted by ELD.
Examples: [], [5 miles SW of Indianapolis, IN], [Reston, VA].

7.13. ELD Account Type

Description: An indicator designating whether an ELD account is a driver account or support personnel (non-driver) account.
Purpose: Enables authorized safety officials to verify account type specific requirements set forth in this document.
Source: ELD designated.
Used in: ELD outputs.
Data Type: Specified during the account creation process and recorded on ELD.
Data Range: Character ''D'', indicating account type ''Driver'', or ''S'', indicating account type ''motor carrier's support personnel'' (*i.e.* non-driver); ''Unidentified Driver'' account must be designated with type ''D''.
Data Length: 1 character.
Data Format: <C>.
Disposition: Mandatory.
Examples: [D], [S].

7.14. ELD Authentication Value

Description: An alphanumeric value that is unique to an ELD and verifies the authenticity of the given ELD.
Purpose: Provides ability to cross-check the authenticity of an ELD used in the recording of a driver's records during inspections.
Source: ELD provider-assigned value; includes a certificate component and a hashed component; necessary information related to authentication keys and hash procedures disclosed by the registered ELD provider during the online ELD certification process for independent verification by FMCSA systems.
Used in: ELD outputs.
Data Type: Calculated from the authentication key and calculation procedure privately distributed by the ELD provider to FMCSA during the ELD registration process.
Data Range: Alphanumeric combination.
Data Length: 16–32 characters.
Data Format: <CCCC.....CCCC>.
Disposition: Mandatory.
Example: [D3A4506EC8FF566B506EC8FF566BDFBB].

7.15. ELD Identifier

Description: An alphanumeric identifier assigned by the ELD provider to the ELD technology that is certified by the registered provider at FMCSA's Web site.
Purpose: Provides ability to cross-check that the ELD used in the recording of a driver's records is certified through FMCSA's registration and certification process as required.
Source: Assigned and submitted by the ELD provider during the online certification of an ELD model and version.
Used in: ELD outputs.
Data Type: Coded on the ELD by the ELD provider and disclosed to FMCSA during the online certification process.
Data Range: A six character alphanumeric identifier using characters A–Z and number 0–9.
Data Length: 6 characters.
Data Format: <ELD Identifier> as in <CCCCCC>.
Disposition: Mandatory.
Examples: [1001ZE], [GAM112], [02P3P1].

7.16. ELD Provider

Description: An alphanumeric company name of the technology provider as registered at the FMCSA's Web site.
Purpose: Provides ability to cross-check that the ELD used in the recording of a driver's records is certified through FMCSA's registration and certification process as required.
Source: Assigned and submitted by the ELD provider during the online registration process.
Used in: ELD outputs.
Data Type: Coded on the ELD by the ELD provider and disclosed to FMCSA during the online registration process.
Data Range: Any alphanumeric combination.
Data Length: Minimum: 4; Maximum 120 characters.
Data Format: <ELD Provider> as in <CCCC> to <CCCC.....CCCC>.
Disposition: Mandatory.
Examples: [ELD PROVIDER INC].

7.17. ELD Registration ID

Description: An alphanumeric registration identifier assigned to the ELD provider that is registered with FMCSA during the ELD registration process.
Purpose: Provides ability to cross-check that the ELD provider has registered as required.
Source: Received from FMCSA during online provider registration.
Used in: ELD outputs.
Data Type: Coded on the ELD by the provider.
Data Range: A four character alphanumeric registration identifier using characters A–Z and numbers 0–9.
Data Length: 4 characters.
Data Format: <ELD Registration ID> as in <CCCC>.
Disposition: Mandatory.
Examples: [ZA10], [QA0C], [FAZ2].

7.18. ELD Username

Description: This data element refers to the unique user identifier assigned to the account holder on the ELD to authenticate the corresponding individual during an ELD login process; the individual may be a driver or a motor carrier's support personnel.
Purpose: Documents the user identifier assigned to the driver linked to the ELD account.
Source: Assigned by the motor carrier during the creation of a new ELD account.
Used in: ELD account profile; event records; ELD login process.
Data Type: Entered (during account creation and user authentication).
Data Range: Any alphanumeric combination.
Data Length: Minimum: 4; Maximum: 60 characters.
Data Format: <ELD Username> as in <CCCC> to <CCCC.....CCCC>.
Disposition: Mandatory for all accounts created on the ELD.
Examples: [smithj], [100384], [sj2345], [john.smith].

7.19. Engine Hours

Description: This data element refers to the time the CMV's engine is powered in decimal hours with 0.1 hr (6-minute) resolution; this parameter is a placeholder for <{Total} Engine Hours>, which refers to the aggregated time of a vehicle's engine's operation since its inception, and used in recording ''engine power on'' and ''engine shut down'' events, and also for <{Elapsed} Engine Hours>, which refers to the elapsed time in the engine's operation in the given ignition power on cycle, and used in the recording of all other events.
Purpose: Provides ability to identify gaps in the operation of a CMV, when the vehicle's engine may be powered but the ELD may not; provides ability to cross check integrity of recorded data elements in events and prevent gaps in the recording of ELD.
Source: ELD measurement or sensing.
Used in: ELD events; ELD outputs.
Data Type: Acquired from the engine ECM or a comparable other source as allowed in section 4.3.1.4.
Data Range: For <{Total} Engine Hours>, range is between 0.0 and 99,999.9; for <{Elapsed} Engine Hours>, range is between 0.0 and 99.9.
Data Length: 3–7 characters.
Data Format: <Vehicle Miles> as in <C.C> to <CCCCC.C>.
Disposition: Mandatory.
Examples: [0.0], [9.9], [346.1], [2891.4].

7.20. Event Code

Description: A dependent attribute on ''Event Type'' parameter that further specifies the nature of the change indicated in ''Event Type''; this parameter indicates the new status after the change.
Purpose: Provides ability to code the specific nature of the change electronically.
Source: ELD internal calculations.
Used in: ELD event records; ELD outputs.
Data Type: ELD recorded and maintained event attribute in accordance with the type of event and nature of the new status being recorded.
Data Range: Dependent on the ''Event Type'' as indicated on Table 6 of this appendix.
Data Length: 1 character.
Data Format: <Event Type> as in <C>.
Disposition: Mandatory.
Examples: [0], [1], [4], [9].

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Table 6

"Event Type" Parameter Coding

Event Type	Event Code	Event Code Description
1	1	Driver's duty status changed to "Off-duty"
1	2	Driver's duty status changed to "Sleeper Berth"
1	3	Driver's duty status changed to "Driving"
1	4	Driver's duty status changed to "On-duty not driving"
2	1	Intermediate log with conventional location precision
2	2	Intermediate log with reduced location precision
3	1	Driver indicates "Authorized Personal Use of CMV"
3	2	Driver indicates "Yard Moves"
3	0	Driver indication for PC, YM and WT cleared
4	1	Driver's first certification of a daily record
4	n	Driver's n'th certification of a daily record (when recertification necessary). "n" is an integer between 1 and 9. If more than 9 certifications needed, use 9 for each new re-certification record.
5	1	Authenticated driver's ELD login activity
5	2	Authenticated driver's ELD logout activity
6	1	Engine power-up with conventional location precision
6	2	Engine power-up with reduced location precision
6	3	Engine shut down with conventional location precision
6	4	Engine shut-down with reduced location precision
7	1	An ELD malfunction logged
7	2	An ELD malfunction cleared
7	3	A data diagnostic event logged
7	4	A data diagnostic event cleared

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7.21. Event Data Check Value

Description: A hexadecimal ''check'' value calculated in accordance with the procedure outlined in section 4.4.5.1 of this appendix and attached to each event record at the time of recording.

Purpose: Provides ability to identify cases where an ELD event record may have been inappropriately modified after its original recording.

Source: ELD internal.

Used in: ELD events; ELD output file.

Data Type: Calculated by the ELD in accordance with section 4.4.5.1 of this appendix.

Data Range: A number between hexadecimal 00 (decimal 0) and hexadecimal FF (decimal 255).

Data Length: 2 characters.

Data Format: <Event Data Check Value> as in <CC>.

Disposition: Mandatory.

Examples: [05], [CA], [F3].

7.22. Event Record Origin

Description: An attribute for the event record indicating whether it is automatically recorded, or edited, entered or accepted by the driver, requested by another authenticated user, or assumed from unidentified driver profile.

Purpose: Provides ability to track origin of the records.

Source: ELD internal calculations.

Used in: ELD event records; ELD outputs.

Data Type: ELD recorded and maintained event attribute in accordance with the procedures outlined in sections 4.4.4.2.2, 4.4.4.2.3, 4.4.4.2.4, 4.4.4.2.5, and 4.4.4.2.6 of this appendix.

Data Range: 1, 2, 3 or 4 as described on Table 7 of this appendix.

Data Length: 1 character.

Data Format: <Event Record Origin> as in <C>.

Disposition: Mandatory.

Examples: [1], [2], [3], [4].

Table 7

"Event Record Origin" Parameter Coding

Event Record Origin	Event Record Origin Code
Automatically recorded by ELD	1
Edited or entered by the Driver	2
Edit requested by an Authenticated User other than the Driver	3
Assumed from Unidentified Driver profile	4

7.23. Event Record Status

Description: An attribute for the event record indicating whether an event is active or inactive and further, if inactive, whether it is due to a change or lack of confirmation by the driver or due to a driver's rejection of change request.

Purpose: Provides ability to keep track of edits and entries performed over ELD records while retaining original records.

Source: ELD internal calculations.

Used in: ELD event records; ELD outputs.

Data Type: ELD recorded and maintained event attribute in accordance with the procedures outlined in sections 4.4.4.2.2, 4.4.4.2.3, 4.4.4.2.4, 4.4.4.2.5, and 4.4.4.2.6 of this appendix.

Data Range: 1, 2, 3 or 4 as described on Table 8 of this appendix.

Data Length: 1 character.

Data Format: <Event Record Status> as in <C>.

Disposition: Mandatory.

Examples: [1], [2], [3], [4].

Table 8

"Event Record Status" Parameter Coding

Event Record Status	Event Record Status Code
Active	1
Inactive – Changed	2
Inactive – Change Requested	3
Inactive – Change Rejected	4

7.24. Event Sequence ID Number

Description: This data element refers to the serial identifier assigned to each required ELD event as described in section 4.5.1 of this appendix.

Purpose: Provides ability to keep a continuous record, on a given ELD, across all users of that ELD.

Source: ELD internal calculations.

Used in: ELD event records; ELD outputs.

Data Type: ELD maintained; incremented by 1 for each new record on the ELD; continuous for each new event the ELD records regardless of owner of the records.

Data Range: 0 to FFFF; initial factory value must be 0; after FFFF hexadecimal (decimal 65535), the next Event Sequence ID number must be 0.

Data Length: 1–4 characters.

Data Format: <Event Sequence ID Number> as in <C> to <CCCC>.

Disposition: Mandatory.

Examples: [1], [1F2C], p2D3], [BB], [FFFE].

7.25. Event Type

Description: An attribute specifying the type of the event record.

Purpose: Provides ability to code the type of the recorded event in electronic format.

Source: ELD internal calculations.

Used in: ELD event records; ELD outputs.

Data Type: ELD recorded and maintained event attribute in accordance with the type of event being recorded.

Data Range: 1–7 as described on Table 9 of this appendix.

Data Length: 1 character.

Data Format: <Event Type> as in <C>.

Disposition: Mandatory.

Examples: [1], [5], [4], [7].

Table 9

"Event Type" Parameter Coding

Event Type	Event Type Code
A change in driver's duty-status	1
An intermediate log	2
A change in driver's indication of authorized personal use of CMV or yard moves	3
A driver's certification/re-certification of records	4
A driver's login/logout activity	5
CMV's engine power up / shut down activity	6
A malfunction or data diagnostic detection occurrence	7

7.26. Exempt Driver Configuration

Description: A parameter indicating whether the motor carrier configured a driver's profile to claim exemption from ELD use.

Purpose: Provides ability to code the motor carrier-indicated exemption for the driver electronically.

Source: Motor carrier's configuration for a given driver.

Used in: ELD outputs.

Data Type: Motor carrier configured and maintained parameter in accordance with the qualification requirements listed in § 395.1.

Data Range: E (exempt) or 0 (number zero).

Data Length: 1 character.

Data Format: <Exempt Driver Configuration> as in <C>.

Disposition: Mandatory.

Examples: [E], [0].

7.27. File Data Check Value

Description: A hexadecimal ''check'' value calculated in accordance with the procedure outlined in section 4.4.5.3 of this appendix and attached to each ELD output file.

Purpose: Provides ability to identify cases where an ELD file may have been inappropriately modified after its original creation.

Source: ELD internal.

Used in: ELD output files.

Data Type: Calculated by the ELD in accordance with section 4.4.5.3 of this appendix.

Data Range: A number between hexadecimal 0000 (decimal 0) and hexadecimal FFFF (decimal 65535).

Data Length: 4 characters.

Data Format: <File Data Check Value> as in <CCCC>.

Disposition: Mandatory.

Examples: [F0B5], [00CA], [523E].

7.28. First Name

Description: This data element refers to the given name of the individual holding an ELD account.

Purpose: Links an individual to the associated ELD account.

Source: Driver's license for driver accounts; driver's license or government-issued ID for support personnel accounts.

Used in: ELD account profile(s); ELD outputs (display and file).

Data Type: Entered (during the creation of a new ELD account).

Data Range: Any alphanumeric combination.

Data Length: Minimum: 2; Maximum: 30 characters.

Data Format: <First Name> as in <CC> to <CC.....CC> where ''C'' denotes a character.

Disposition: Mandatory for all accounts created on the ELD.

Example: [John].

7.29. Geo-Location

Description: A descriptive indicator of the CMV position in terms of a distance and direction to a recognizable location derived from a GNIS database at a minimum containing all cities, towns and villages with a population of 5,000 or greater.

Purpose: Provide recognizable location information on a display or printout to users of the ELD.

Source: ELD internal calculations as specified in section 4.4.2 of this appendix.

Used in: ELD display or printout.

Data Type: Identified from the underlying latitude/longitude coordinates by the ELD.

Data Range: Contains four segments in one text field; a recognizable location driven from GNIS database containing—at a minimum—all cities, towns and villages with a population of 5,000 in text format containing a location name and the State abbreviation, distance from this location and direction from this location.

Data Length: Minimum: 5; Maximum: 60 characters.

Data Format: <Distance from {*identified*} Geo-location> <'mi '> <Direction from {*identified*} Geo-location> <' '> <State Abbreviation {*of identified*} Geo Location> <' '> <Place name of {*identified*} Geo-location> where:

<Distance from {*identified*} Geo-location> must either be <{blank}> or <C> or <CC> where the up-to two character number specifies absolute distance between identified geo-location and event location;

<Direction from {*identified*} Geo-location> must either be <{blank}> or <C> or <CC> or <CCC>, must represent direction of event location with respect to the identified geo-location, and must take a value listed on Table 10 of this appendix;<State Abbreviation {*of identified*} Geo Location> must take values listed on Table 5; <Place name of {*identified*} Geo-location> must be the text description of the identified reference location;

Overall length of the ''Geo-location'' parameter must not be longer than 60 characters long.

Disposition: Mandatory.

Examples: [2mi ESE IL Darien], [1mi SE TX Dallas], [11mi NNW IN West Lafayette].

Table 10

Conventional Compass Rose Direction Coding To Be Used in the Geo-Location Parameter.

Direction	Direction Code
At indicated geo-location	{blank}
North of indicated geo-location	N
North – North East of indicated geo-location	NNE
North East of indicated geo-location	NE
East – North East of indicated geo-location	ENE
East of indicated geo-location	E
East – South East of indicated geo-location	ESE
South East of indicated geo-location	SE
South – South East of indicated geo-location	SSE
South of indicated geo-location	S
South – South West of indicated geo-location	SSW
South West of indicated geo-location	SW
West – South West of indicated geo-location	WSW
West of indicated geo-location	W
West – North West of indicated geo-location	WNW
North West of indicated geo-location	NW
North– North West of indicated geo-location	NNW

7.30. Last Name

Description: This data element refers to the last name of the individual holding an ELD account.

Purpose: Links an individual to the associated ELD account.

Source: Driver's license for driver accounts; driver's license or government-issued ID for support personnel accounts.

Used in: ELD account profile(s); ELD outputs (display and file).

Data Type: Entered (during the creation of a new ELD account).

Data Range: Any alphanumeric combination.

Data Length: Minimum: 2; Maximum: 30 characters.

Data Format: <Last Name> as in <CC> to <CC.....CC>.

Disposition: Mandatory for all accounts created on the ELD.

Example: [Smith].

7.31. Latitude

Description: An angular distance in degrees north and south of the equator.

Purpose: In combination with the variable ''Longitude'', this parameter stamps records requiring a position attribute with a reference point on the face of the earth.

Source: ELD's position measurement.

Used in: ELD events; ELD outputs.

Data Type: Latitude and Longitude must be automatically captured by the ELD.

Data Range: −90.00 to 90.00 in decimal degrees (two decimal point resolution) in records using conventional positioning precision; −90.0 to 90.0 in decimal degrees (single decimal point resolution) in records using reduced positioning precision when allowed; latitudes north of the equator must be specified by the absence of a minus sign (−) preceding the digits designating degrees; latitudes south of the Equator must be designated by a minus sign (−) preceding the digits designating degrees.

Data Length: 3 to 6 characters.

Data Format: First character: [<'−'> or <{blank}>]; then [<C> or <CC>]; then <'.'>; then [<C> or <CC>].

Disposition: Mandatory.

Examples: [−15.68], [38.89], [5.07], [−6.11], [−15.7], [38.9], [5.1], [−6.1].

7.32. Line Data Check Value

Description: A hexadecimal ''check'' value calculated in accordance with procedure outlined in section 4.4.5.2 and attached to each line of output featuring data at the time of output file being generated.

Purpose: Provides ability to identify cases where an ELD output file may have been inappropriately modified after its original generation.

Source: ELD internal.

Used in: ELD output file.

Data Type: Calculated by the ELD in accordance with 4.4.5.2.

Data Range: A number between hexadecimal 00 (decimal 0) and hexadecimal FF (decimal 255) .

Data Length: 2 characters.

Data Format: <Line Data Check Value> as in <CC>.

Disposition: Mandatory.

Examples: [01], [A4], [CC].

7.33. Longitude

Description: An angular distance in degrees measured on a circle of reference with respect to the zero (or prime) meridian; The prime meridian runs through Greenwich, England.

Purpose: In combination with the variable ''Latitude'', this parameter stamps records requiring a position attribute with a reference point on the face of the earth.

Source: ELD's position measurement.

Used in: ELD events; ELD outputs.

Data Type: Latitude and Longitude must be automatically captured by the ELD.

Data Range: −179.99 to 180.00 in decimal degrees (two decimal point resolution) in records using conventional positioning precision; −179.9 to 180.0 in decimal degrees (single decimal point resolution) in records using reduced positioning precision when allowed; longitudes east of the prime meridian must be specified by the absence of a minus sign (−) preceding the digits designating degrees of longitude; longitudes west of the prime meridian must be designated by minus sign (−) preceding the digits designating degrees.

Data Length: 3 to 7 characters.

Data Format: First character: [<'−'> or <{blank}>]; then [<C>, <CC> or <CCC>]; then <'.'>; then [<C> or <CC>].

Disposition: Mandatory.

Examples: [−157.81], [−77.03], [9.05], [−0.15], [−157.8], [−77.0], [9.1], [−0.2].

7.34. Malfunction/Diagnostic Code

Description: A code that further specifies the underlying malfunction or data diagnostic event.

Purpose: Enables coding the type of malfunction and data diagnostic event to cover the standardized set in Table 4 of this appendix.
Source: ELD internal monitoring.
Used in: ELD events; ELD outputs.
Data Type: Recorded by ELD when malfunctions and data diagnostic events are set or reset.
Data Range: As specified in Table 4 of this appendix.
Data Length: 1 character.
Data Format: <C>.
Disposition: Mandatory.
Examples: [1], [5], [P], [L].

7.35. Malfunction Indicator Status

Description: This is a Boolean indicator identifying whether the used ELD unit has an active malfunction set at the time of event recording.
Purpose: Documents the snapshot of ELD's malfunction status at the time of an event recording.
Source: ELD internal monitoring functions.
Used in: ELD events; ELD outputs.
Data Type: Internally monitored and managed.
Data Range: 0 (no active malfunction) or 1 (at least one active malfunction).
Data Length: 1 character.
Data Format: <Malfunction Indicator Status> as in <C>.
Disposition: Mandatory.
Examples: [0] or [1].

7.36. Multiday Basis Used

Description: This data element refers to the multiday basis (7 or 8 days) used by the motor carrier to compute cumulative duty hours.
Purpose: Provides ability to apply the HOS rules accordingly.
Source: Motor carrier.
Used in: ELD account profile; ELD outputs.
Data Type: Entered by the motor carrier during account creation process.
Data Range: 7 or 8.
Data Length: 1 character.
Data Format: <Multiday basis used> as in <C>.
Disposition: Mandatory.
Examples: [7], [8].

7.37. Order Number

Description: A continuous integer number assigned in the forming of a list, starting at 1 and incremented by 1 for each unique item on the list.
Purpose: Allows for more compact report file output generation avoiding repetitious use of CMV identifiers and usernames affected in records.
Source: ELD internal.
Used in: ELD outputs, listing of users and CMVs referenced in ELD logs.
Data Type: Managed by ELD.
Data Range: Integer between 1 and 99.
Data Length: 1–2 characters.
Data Format: <Order Number> as in <C> or <CC>.
Disposition: Mandatory.
Examples: [1], [5], [11], [28].

7.38. Output File Comment

Description: A textual field that may be populated with information pertaining to the created ELD output file; An authorized safety official may provide a key phrase or code to be included in the output file comment, which may be used to link the requested data to an inspection, inquiry, or other enforcement action; if provided to the driver by an authorized safety official, it must be entered into the ELD and included in the exchanged dataset as specified.
Purpose: The output file comment field provides an ability to link submitted data to an inspection, inquiry, or other enforcement action, if deemed necessary; further, it may also link a dataset to a vehicle, driver, carrier, and/or ELD that may participate in voluntary future programs that may involve exchange of ELD data.
Source: Enforcement personnel or driver or motor carrier.
Used in: ELD outputs.
Data Type: If provided, output file comment is entered or appended to the ELD dataset prior to submission of ELD data to enforcement.
Data Range: Blank or any alphanumeric combination specified and provided by an authorized safety official.
Data Length: 0–60 characters.
Data Format: <{blank}>, or <C> thru <CCCC.....CCCC>.
Disposition: Mandatory.
Examples: [], [3BHG701015], [113G1EFW02], [7353930].

7.39. Shipping Document Number

Description: Shipping document number the motor carrier uses in their system and dispatch documents.
Purpose: Links ELD data to the shipping records; makes ELD dataset consistent with § 395.8 requirements.
Source: Motor carrier.
Used in: ELD outputs.
Data Type: Entered in the ELD by the authenticated driver or motor carrier and verified by the driver.
Data Range: Any alphanumeric combination.
Data Length: 0–40 characters.
Data Format: <{blank}>, or <C> thru <CCCC.....CCCC>.
Disposition: Mandatory if a shipping number is used on motor carrier's system.
Examples: [], [B 75354], [FX334411707].

7.40. Time

Description: In combination with the variable ''Date'', this parameter stamps records with a reference in time; even though date and time must be captured in UTC, event records must use date and time converted to the time zone in effect at the driver's home terminal as specified in section 4.4.3 of this appendix.
Purpose: Provides ability to record the instance of recorded events.
Source: ELD's converted time measurement.
Used in: ELD events; ELD outputs.
Data Type: UTC time must be automatically captured by ELD; time in effect at the driver's home terminal must be calculated as specified in section 4.4.3 of this appendix.
Data Range: Any valid date combination expressed in <HHMMSS> format where ''HH'' refers to hours of the day, ''MM'' refers to minutes, and ''SS'' refers to seconds.
Data Length: 6 characters.
Data Format: <HHMMSS> where <HH> must be between 00 and 23, <MM> and <SS> must be between 00 and 59.
Disposition: Mandatory.
Examples: {070111}, {001259}, {151522}, {230945}.

7.41. Time Zone Offset from UTC

Description: This data element refers to the offset in time between UTC time and the time standard in effect at the driver's home terminal.
Purpose: Establishes the ability to link records stamped with local time to a universal reference.
Source: Calculated from measured variable <{*UTC*} Time> and <{*Time Standard in Effect at driver's home terminal*} Time>; Maintained together with ''24-hour Period Starting Time'' parameter by the motor carrier or tracked automatically by ELD.
Used in: ELD account profile; ELD event: Driver's certification of own records.
Data Type: Programmed or populated on the ELD during account creation and maintained by the motor carrier or ELD to reflect true and accurate information for drivers. This parameter must adjust for Daylight Saving Time changes in effect at the driver's home terminal.
Data Range: 04 to 11; omit sign.
Data Length: 2 characters.
Data Format: <Time Zone Offset from UTC> as in <HH> where ''HH'' refer to hours in difference.
Disposition: Mandatory.
Examples: {04}, {05}, {10}.

7.42. Trailer Number(s)

Description: This data element refers to the identifier(s) the motor carrier uses for the trailers in their normal course of business.
Purpose: Identifies the trailer(s) a driver operates while a driver's ELD records are recorded; makes ELD records consistent with § 395.8 which requires the trailer number(s) to be included on the form.
Source: Unique trailer identifiers a motor carrier uses in their normal course of business and includes on dispatch documents, or the license number and licensing State of each towed unit; trailer number(s) must be updated each time hauled trailers change.
Data Type: Automatically captured by the ELD or populated by motor carrier's extended ELD system or entered by the driver; must be updated each time the hauled trailer(s) change.
Data Range: Any alphanumeric combination.
Data Length: Minimum: blank; Maximum: 32 characters (3 trailer numbers each maximum 10 characters long, separated by spaces).
Data Format: Trailer numbers; separated by space in case of multiple trailers hauled at one time; field to be left ''blank'' for non-combination vehicles (such as a straight truck or bobtail tractor).

<Trailer Unit Number {#1}><' '><Trailer Unit Number {#2}> <' '><Trailer Unit Number {#3}> as in <{blank}> to

<CCCCCCCCCC CCCCCCCCCC CCCCCCCCCC>.

Disposition: Mandatory when operating combination vehicles.

Examples: {987}, {00987 PP2345}, {BX987 POP712 10567}, {TX12345 LA22A21}.

7.43. Vehicle Miles

Description: This data element refers to the distance traveled using the CMV in whole miles; this parameter is a placeholder for <{Total} Vehicle Miles>, which refers to the odometer reading and is used in recording ''engine power on'' and ''engine shut down'' events, and also for <{Accumulated} Vehicle Miles>, which refers to the accumulated miles in the given ignition power on cycle and is used in the recording of all other events.

Purpose: Provides ability to track distance traveled while operating the CMV in each duty status. Total miles traveled within a 24-hour period is a required field in § 395.8.

Source: ELD measurement or sensing.

Used in: ELD events; ELD outputs.

Data Type: Acquired from the engine ECM or a comparable other source as allowed in section 4.3.1.3.

Data Range: For <{Total} Vehicle Miles>, range is between 0 and 9,999,999; for <{Accumulated} Vehicle Miles>, range is between 0 and 9,999.

Data Length: 1–7 characters.

Data Format: <Vehicle Miles> as in <C> to <CCCCCCC>.

Disposition: Mandatory.

Examples: [99], [1004566], [0], [422].

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T.F. Scott Darling, III,

Acting Administrator.

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