



**Federal Motor Carrier Safety Administration (FMCSA)
Electronic Logging Devices (ELD) Technical Specifications Public Meeting Minutes
September 6, 2019**

The Federal Motor Carrier Safety Administration (FMCSA) held a public meeting on September 6, 2019 at the U.S. Department of Transportation. The meeting was open to additional attendees via webinar.

Alan Hanson, Deputy Administrator of FMCSA, opened the meeting at 9:30 a.m.

Panelists and Presenters

- Joe DeLorenzo, Director of the Office of Enforcement and Compliance
- Donnice Wagoner, Transportation Specialist, Enforcement Division
- Danielle Smith, Transportation Specialist, Passenger Carrier Division
- ELD Technical Team: Brian Baker, Andrew Nagel, Walt Zak
- Britt Phillips, Facilitator

1. Welcome and Vision for Phase 3

FMCSA Deputy Administrator Alan Hanson opened the meeting by welcoming participants both in the room and joining via webinar. Hanson reminded the audience of the fast-approaching deadline for full ELD implementation by December 16, 2019. He credited the partnership between the truck and bus industry, law enforcement, and ELD vendors for the progress made toward full implementation.

Joe DeLorenzo remarked that the meeting serves as an opportunity to receive feedback from vendors, resolve issues or concerns, and discuss the future of ELDs. He noted that ELD data transfers currently are over 90% successful and that receiving feedback from vendors will only help improve data transfer success. He spoke about the benefits of successful data transfer, including faster inspections, which will require less of the driver's time and will be a more efficient use of law enforcement resources.

DeLorenzo encouraged vendors to share their experiences with ELDs and data transfer, specifically regarding what issues they are seeing now and what FMCSA can do to help with the transition.



2. Preparing for Phase 3: Transition AOBDRs to ELDs

Danielle Smith noted that FMCSA is preparing for full compliance, with no plan for a soft rollout. As it states in the ELD rule, motor carriers and drivers subject to the rule who have been using automatic on-board recording devices (AOBRDs) under the grandfather provision must transition from AOBDRs to ELDs no later than December 16, 2019. Carriers must be using registered self-certified ELDs by that time, and no extensions will be granted. She stressed the importance of not waiting until the final day to “flip the switch,” as there may be operational issues for carriers to overcome. She then addressed a few of the key differences between the 1998 AOBDR rule and the ELD rule:

1988 AOBDR Rule vs. ELD Rule

- *Data Transfer to Safety Official*
 - AOBDRs had more information to record than display (transfer not covered in 1988 rule) and are not conducive to roadside inspection.
 - Under the ELD rule, the ELD must support one complete data transfer option, each of which includes two methods of data transfer:
 - Telematics (web services and email)
 - Local transfer (Bluetooth and USB).
 - Law enforcement are encouraged to use web services, FMCSA’s preferred data transfer method, as it is faster and more efficient.
 - Bluetooth is not a direct connection to the safety official’s device; rather it borrows the safety official’s internet connection to complete transfer to the eRODS Web Service.
- *Internal Synchronization*
 - Internal Synchronization is covered but not defined in 1988 AOBDR rule.
 - ELDs must interface with an engine’s electronic control module (ECM) to capture data.
 - There is an exemption for commercial motor vehicles (CMVs) older than model year 2000; driver can use paper logs or other acceptable alternative to record RODS.
- *Recording Vehicle Location Information*
 - The ELD rule now requires automated entry at the following events:
 - Change of duty status;
 - 60-minute intervals while in motion;
 - Engine on and off; and
 - Beginning and end of personal conveyance/yard moves.
- *Driver Edits*
 - Edits were allowed in AOBDR rule, but it didn’t specify who could make them.
 - Guidance was later issued to prohibit tamper.
 - ELDs automatically record data. Drivers may make certain edits (see below); supervisors may propose edits, which can be accepted or rejected by the driver.
 - Edits are allowed for:
 - Correction of errors with team drivers.
 - Assignment of records under the Unidentified Driver Profile.
 - One common issue arises when the driver has forgotten to change status for personal conveyance or yard moves.
 - The drive time cannot be edited in these situations. The driver or carrier should make an annotation, which can be viewed by the safety official.



Question and Answer Period

*Below are highlights from this Q&A period. To hear all questions and complete answers, watch the [webinar recording](#).

- *Question to participants* – How many of your customers are still using AOBDRS?
 - Not many hands in room.
 - "We know that 80% of our customers are in that migration process. The other 20% have generally not started that process."
 - "Our customers are 85% ELD compliant; 15% are still in the transition phase."
 - "90% are transitioned already with 10% in process."

Edits and Annotations

- Can a time clock system automatically make on-duty and off-duty entries, or do they have to be handled as proposed edits?
 - Because those are coming from the carrier, they'd have to be proposed edits.
- How can an ELD allow for incorrectly assigned extended periods of automatically recorded drive time? Example: A driver shuts off the ELD without switching to off-duty status and auto-transition never occurs, thus the driver remains in a driving status for an extended period of time, incorrectly reflecting their driving status.
 - If there was no power to the device at the time, so the automatic transition didn't occur, the driver can make an annotation but cannot edit this drive time. Upon review, the safety official would see that no miles were traveled during that time.
 - *Follow-up Question* – Could FMCSA make a clarification in the form of an FAQ that says drive time automatically recorded on the third line cannot be edited?
- Frequent guidance points drivers to annotate their logs to remedy issues. Is there any movement to create new event types or other solutions to remedy these scenarios? Example: Supporting guidance around short repositioning movement (less than five minutes during off-duty breaks).
 - Vendors can create additional event types if it is more helpful. Log records are required by the rule, and these are the only records that should be transmitted in the file.
 - *Follow-up Question* – So we can have our log records and we have data to transfer for your log records. Are these considered two different log records?
 - The ELD records are the records required according to the rule and again only these should be sent in the file. Everything else is included in the driver dashboard, which is outside the scope of the rule. However, these additional log records may be used as supporting documents.
- Can yard moves or personal conveyance be entered later by a driver if they forget to make their duty status change when the situation occurred?
 - Once a driver fails to put that duty status change in, that movement will be shown on the drive line. Drivers cannot reduce driving time but can go back and annotate.
 - While an annotation will not change the events that the ELD has recorded, it will give the safety official more information about the situation.¹

¹ During the meeting, the Technical Team referred to adding "bookend" events at the beginning and end of the drive time. FMCSA does not recommend this approach. Use of annotations is advised in this case.



- From a process standpoint, this is exactly how it worked with paper logs. The improvement with ELDs is the availability of other data, such as GPS location showing the driver didn't really go anywhere.
- If an ELD records driving time as a yard move, can the driver edit this to off-duty?
 - Yes. If the driver puts himself in a yard move, forgets to take themselves out and never drives, it can be edited to off-duty. What you cannot do is edit automatically recorded drive time.

Automatically Recorded Data

- Regarding access to ECMs, certain OEMs are not making this available to after-market products. The technical guidance from FMCSA states that providers "must use all means necessary, including entering into an agreement with the OEM or a third party" to obtain data. Is there any consideration to loosening this requirement?
 - FMCSA does not have plans to make changes to this requirement, but there is a second part that covers what happens when you exhaust all options and are unable to retrieve certain data from the ECM. The rule allows for alternative means to obtain that data. However, the rule hinges on grabbing the information right from the ECM, so we want you to do everything you can to make that work.
- ECM data provided by OEMs can be very inconsistent. In cases where the ECM falsely reports speed values and the driver is put into driving, what options do ELD vendors have to remedy? Ideally, beyond annotations because in these cases the driver is unaware of the false data values.
 - The same edit limitations apply. If you are consistently getting bad values from the ECM, that is a reason to go to alternative methods.
- If a driver sets the duty status to On-Duty Not Driving and indicates a yard move, does the driver's duty status have to remain On-Duty Not Driving until the driver manually indicates the end of that driving status?
 - No. As detailed in the UPS exemption, a motor carrier may configure an ELD so that the driver's On Duty Not Driving status ends when the driver exits an identified geo-fenced location.²
- Can you clarify the "older than 2000" exemption? Does it mean a vehicle from prior to the year 2000 does not need an ELD, or is it not required to have direct synchronization from the ECM?
 - A vehicle that is older than 2000 or has an engine that is older than 2000 is not required to have an ELD, but the carrier can choose to have one.

Data Transfer Issues

- Please confirm: If the ELD is unable to transmit the ELD file at roadside due to lack of cell connectivity—would this be a violation?
 - If the driver has no connectivity, but the safety official does, this may be considered a violation.
 - *Follow-up Question* – What if the FMCSA system is down?
 - Since launch, the FMCSA Web Service has been functioning as expected.

² During the public meeting, the response from the Technical Team was that the driver is required to manually start the yard move. This response has been clarified to address the scenario in the UPS exemption.



- In the event there is a technical issue on FMCSA's end, the driver would not be cited.
- There are notifications in place to indicate if the system is down.
 - Law enforcement will get a notification via email.
 - Scheduled maintenance will be noted on the website.
 - FMCSA is adding a feature to the enforcement software that will indicate to the safety official the status of the Web Service.
- Data transfer via email may result in delays that are not due to an issue with the FMCSA system. Email is extremely variable. Some email providers queue up messages, so sometimes the message with the ELD file might sit in a queue for as long as an hour before it gets sent. This is another reason why web services is FMCSA's preferred method.
- *Follow-up Question* – Would FMCSA consider pushing notifications when the FMCSA system is down to ELD providers?
 - This will be taken into consideration.
- Regarding transfers that fail or have issues, emails from FMCSA include no identifiable data that enable tying it to a specific driver or carrier. Is there a way to tie ELD response to a submission to help address situations like this?
 - This is specific to the email method. There is a universal identifier in the header of the email, so you can tie those two together.
- Can you confirm that the ELD display is an acceptable backup method if a file does not transfer?
 - Per the rule, the ELD is required to show information on the display or a printout. If there is a transfer failure, then the safety official has been directed to use the ELD display/printout backup method to verify hours and compliance for that driver.
 - The safety official must be able to view the display without entering the vehicle.
- Can a provider display the ELD file with the Web eRODS tool available on the FMCSA ELD website?
 - They can, and that tool is a great value add, but it is not a replacement for data transfer.
 - You cannot be 100% sure that the mechanism for uploading a file to Web eRODS does not change in some way so be aware if there are any changes to the website as well.

Miscellaneous

- *Important to note:* The ELD rule intentionally does not specify how ELDs handle flagging hours-of-service (HOS) violations, as this is not one of the minimum requirements. Safety officials determine a driver's compliance with HOS regulations using their training and investigative skills.
- Can ELD providers add custom data to the generated CSV file? Example: Adding a new optional event type for listing custom data attributes.
 - That would require a change to the rule, because an ELD output file that does not conform to the technical specifications the ELD rule (e.g., with custom data or different events types) would not pass the FMCSA File Validator, and would not be readable by the safety official. Instead, drivers/carriers should add annotations to existing event types.
- There is concern about FMCSA's stance with the provider should bugs cause a roadside violation.



- There are times when an issue with the ELD's ability to transfer data results in a violation for the carrier. Most of those things should not cause significant issues with their measure in the Safety Measurement System (SMS).
- May providers give administrators the ability to remotely force the logout of a driver? (Example: in the event a driver forgot to log out of the device.) Can this happen without the change being a proposed edit to the driver's log, so long as a change in the driver's duty status does not occur?
 - An automatic timeout would be a simpler solution.
- As a follow-up to the recent Live Q&A session webinars, will the answer be considered regulatory interpretation? Also, how/when will the information be consolidated and disseminated?
 - Recordings are now available online at <https://eld.fmcsa.dot.gov/Support/NewsAndEvents>.
 - FAQs serve as clarification, they are not considered regulatory guidance.

3. Keeping Your ELD Compliant Commons Issues and How to Resolve Them

Andrew Nagel walked through common issues that arise with ELDs. This included compliance issues, display discrepancies, malfunctions, and diagnostic events. Common file compliance issues are:

- Missing Required Fields
- Field Value Outside Valid Range
- Invalid Field Length
- Invalid ELD Registration Information
- Incorrect File Data Check Value
- Incorrect Line Data Check Value
- Invalid Date
- Invalid Time
- Sequence Numbers
- Missing Diagnostics/Malfunctions

Nagel then moved on to display discrepancies, which are harder to diagnose. The web version of eRODS is a helpful tool, as it provides an identical view to what the safety official will see when he or she reviews the file. Some common display discrepancies include:

- *Including Events*
 - The rule is not very specific regarding what events should be included in the file. At the basic level, include any event associated with that driver or necessary to establish the driver's duty status for the duration of the requested time span.
 - Be sure to transmit the correct event and establish the beginning and end of transfer data.
- *Recording and Transferring Time Data*
 - Always record the time in UTC as prescribed by the ELD rule.
 - The file must be transmitted using the time zone of the driver's home terminal. If Daylight Savings Time is in effect, it must be in effect for the whole file.
- *Event Annotations*



- The ELD rule specifically talks about event annotation when it comes to duty status events. This is when you will be required to annotate events. We will accept annotations on any event as long as when you transmit annotations, you include the date, time stamp, and a sequence number of the event.
- *Driver Away from CMV (No ECM)*
 - You can enter events when the driver is away from CMV. For instance, they finished driving for the day and have paperwork to do so they're still on duty.
 - When there is no vehicle to associate with the events, one solution is to create a placeholder vehicle to serve as a stand in with a description like "No CMV" or "Away from CMV," and associate that placeholder vehicle with the event recorded. That will make it clear to the roadside inspector why there are no vehicle miles.

The ELD is required to monitor itself for malfunctions and data diagnostic events, and to record all of them. The most serious issues involve "Power Compliance" or "Engine Synchronization" events, as those are either a sign of a major issue or the driver tampering with the ELD.

Question and Answer Period

*Below are highlights from this Q&A period. To hear all questions and complete answers, watch to the [webinar recording](#).

Unidentified Driving Time

- What should happen to the data if the driver does not accept unassigned drive time?
 - For the driver, it stays unassigned. The carrier must ensure it is assigned to the appropriate driver or annotate to explain why it is still unassigned. The driver is not required to annotate unassigned drive time they do not accept.
- Is there any way to indicate if the driver has reviewed and rejected unidentified driving time?
 - If the driver reviews and rejects it in the vehicle itself, by rule, there's no specific way that would be visible. If they had annotated it as part of the rejection, that might be visible, but they are not required to make this annotation.
 - It would be visible if it was proposed by the motor carrier that this was the driver's time and the driver did not accept it.
- Can we use an event (like on-duty, not driving on the unidentified profile) to get to an end event of the driving time logged under the unidentified profile?
 - Yes, any other duty status event may be used to indicate the end of the recorded drive time.³
- How will you properly calculate the header value if the "ignition on" occurred with nobody logged in?
 - They do not go in the unidentified driving section – that field is just for duty status events.
 - The header is calculated by looking at vehicles in which the driver has a duty status events and using those vehicles for the value header section. If no duty status events was

³ During the public meeting, the response from the Technical Team indicated that the duty status of the unidentified driving profile is not relevant. This updated response takes into account "clearing an unidentified data diagnostic event from the ELD" sections 4.6.1.6(c) and (d).



on those vehicles between engine start and stop, it would not be included in the header calculation.

- If a driver accepts unidentified driving events that overlap existing log events, should the events already existing in the driver's log be set to inactive, or should we prevent overlap? Especially in the case where automatic driving events already exist?
 - That won't happen with an automatic event because it can't be identified and unidentified at the same time. This could happen in a scenario where a driver manually entered the drive time and forgot to log in. The driver could then edit the event in the latter scenario if needed.

Multiple Drivers, Multiple Vehicles

- Which vehicles need to be included in the ELD file?
 - The ELD file must include all vehicles the driver has driven in the time period that is being requested.
- What if Driver A does a power up event and another driver is doing the power down event? Should the power up event for Driver A be inserted into Driver B's log as well?
 - While the engine start up event is only associated with first driver, the event should be included in all ELD output files all drivers that drive the CMV until an engine power down event is recorded. In this case, the event would be included both Driver A's and Driver B's ELD output files.⁴
- How should ELD providers account for a driver that drives for multiple USDOT Numbers in a single day?
 - If the driver is driving with a single ELD for multiple USDOT Numbers, the records for the entire period-of-time belong to the driver. When generating the ELD file, the ELD will generate it for the current USDOT Number using all of the driver's HOS data.⁵
 - There is no inter-operability requirement.
 - This can get complicated when there are multiple drivers driving under multiple USDOT Numbers for multiple vehicles. The ideal situation would be to have an ELD that can keep track of all of the hours.
 - If you are using a driver who has been on a different system, the driver would need to have the printed version of hours with them to back up the ELD that is active during a roadside inspection.
- Something we found causing a bit of confusion are carriers that have drivers in multiple vehicles in quick succession. Is there consideration to iterating the eRODS interface to make this easier to interpret roadside?
 - FMCSA is working on a number of enhancements to the enforcement software to make this easier for the enforcement user to analyze.
- How should providers handle multiple trailer and shipping document numbers? We are running into the character limit after approximately three trailers.
 - You can note additional trailers to an annotation if you need to.

⁴ During the meeting, the response from the Technical Team was that both events should be included in both driving records. This updated response clarifies and expands upon the previous response.

⁵ This response has been added to the meeting notes to more accurately address the question asked during the public meeting.



- It would require a rule change to change the length of that field.
- Is there any consideration to allowing carriers to swap driving between drivers that are not teams due to slip seating when drivers forget to log out and the other driver drives?
 - This is not currently permitted under the ELD rule.

Sensing Power Up

- Regulations state that there is a minute to power up and five seconds to get the ECM data. Do we have five seconds immediately or 60 seconds plus the five seconds to start recording data?
 - You have the 60 seconds to start up and five seconds from when the ELD powers up.
- With the full ignition cycle (off, then on again) requirement with yard move and personal conveyance, drivers often leave themselves in those modes overnight. Do drivers need to worry about editing this to off duty? We often hear from drivers concerned about falsification.
 - First, it is important to note that only duty statuses affect the computation of a driver's HOS. The personal conveyance and yard move modes are not duty statuses; they are events which effect which type of duty status the ELD should record in response to vehicle motion.

Therefore, if the driver simply does not indicate the end of the period of yard move or personal conveyance, and the driver's duty status is correct, a driver edit is not necessary. If, however, a driver leaves themselves in an On-Duty-Not-Driving status overnight, this should be edited to reflect the correct time spent ODND vs Off Duty to maintain correct logs.⁶

- If a driver turns on the ELD after the engine has already powered up, how will this be indicated in eRODS without the power up event, due to the ELD being turned off?
 - The operating procedure should be turning the ELD on *before* powering up so that the ELD can sense that power up. Otherwise this should be captured as a malfunction or diagnostic event.
- How are engine start/stop events going to be handled with hybrids and all-electric vehicles?
 - The engine still powers up, so it shouldn't be an issue getting the ECM data.

Events

- When an event is annotated, is the event now inactive and a new one created?
 - No, the annotations are supplemental events.
- If an event is edited and moved to a prior date outside the range of data requested, will this be a warning indicator due to a jump in Sequence ID, because the event was not in the output file?
 - An edit itself is a warning indicator, but the out of sequence issue is expected with an edit, so that part wouldn't cause any extra issues.

Miscellaneous

- If a driver forgets a duty status change, the administrator makes the change, and it is accepted by the driver in-cab. No engine hours would be recorded, which would be recorded and flagged for

⁶ This response expands on the response given during the public meeting, which indicated the driver must edit and annotate the duty status events as needed. This updated response clarifies and expands upon the previous response.



enforcement as "info: missing data." Is it possible that these not be flagged, as the information is missing for a legitimate reason?

- These flags are informational messages, so they will not be displayed to the safety official. Only warnings and errors display for safety officials.
- Is there a requirement that an ELD permit a driver to manually change his status to driving?
 - Yes, the interpretation of the rule requires that the driver must have the ability to select the drive status. There may be situations where the driver has to select that status manually.
- On the issue of event record origin, "1" is automatic and "2" is entered or edited by the driver. During the webinar, someone said when the driver selects themselves as going on duty, that is a "1," but that seems like it is not an automatic event.
 - That is correct, "1" is automatically recorded by the ELD and "2" is entered or edited by the driver.⁷

4. Resolving Device Issues and Device Decertification

Donnice Wagoner covered steps to resolve issues and ensure compliance with ELD rule. This begins with being proactive, monitoring device performance, responding to customer questions, and resolving issues before they become problems. It is also key to have the device listing up-to-date, so carriers and potential customers can locate providers, either when looking for a device or seeking to contact them. This also enables the provider to stay compliant with Section 5.2.1, which states that providers must disclose required information about "each model and version," and avoid the 5.4 decertification process. Devices with outdated listings may subject to the 5.4 decertification process.

Brian Baker discussed the process FMCSA uses in working with vendors to verify and correct problems. When FMCSA receives information about potential issues from carriers and enforcement, the first step is to verify the problem to see if the device is functioning properly. Once a problem has been identified, FMCSA will try to contact the provider using the information provided. This outreach may be simple or more formal, depending on the severity of the issue. FMCSA's goal is to work with the provider to make sure that things are handled correctly.

When vendors don't respond to communication or do not attempt to remedy the problem in a reasonable amount of time, FMCSA can begin the decertification process, Section 5.4, which lays out how to resolve the issue and the process for potentially removing the device from the FMCSA list:

- Notice
- Response
- 60 Days for Provider to Comply
- Agency Action
- Administrative Review

⁷ The response to this question has been edited from the response given during the public meeting. This updated response is the accurate guidance.



Walt Zak discussed the variety of tools and resources FMCSA provides for vendors to help get and keep devices in compliance. The ELD website includes a development handbook, file validator, FAQs, fact sheets and other tools and resources. There is also an eLearning module forthcoming.

Question and Answer Period

*Below are highlights from this Q&A period. To hear all questions and complete answers, listen to the [audio recording](#).

- *Question for the Audience:* How many have used the FMCSA File Validator or Web eRODs:
 - Webinar Participants: 56% use both often; 37% use one of them.

Registered ELDs

- Must an ELD be listed online if it is not available for sale to the public?
 - If you want a device to be able to submit data to FMCSA, it has to be listed online. That list is used by enforcement as well. It's not intended to be a sales list.
- When we were talking about keeping the ELD website up to date, there may be multiple versions that are compatible (version 5.5 or later). How do we list this?
 - If there is an issue with an older version that makes it non-compliant, you will want to make sure to update your information to indicate what version onward does comply. When enforcement sees an issue in the field and they notify FMCSA about it, they do include the version number, which aids in identifying the issue.

Miscellaneous

- When recording city or state of event in the ELD file, can you use actual geolocation or must you limit geo-positioning to two digits?
 - This is outside scope of rule. You can keep additional data, but it should not be submitted to FMCSA and should not be part of the output file.
- When a profile is set by the carrier to be exempt, the rule mentions to make an annotation. Where will this annotation be displayed to enforcement?
 - The ELD will display the exempt status to the driver during the login and logout process; and in the ELD header. The annotation itself is not displayed to enforcement but there is a flag displayed in the enforcement software that indicates a driver is exempt.

5. Next Steps and Timeline

Bill Mahorney, Chief of the FMCSA Enforcement Division, reinforced the importance of the December 16 deadline and reiterated that FMCSA will do whatever it can to support vendors in getting motor carriers equipped with compliant ELDs. The earlier that carriers and drivers transition, the better.

Mahorney thanked the panel for speaking and participants for coming to the meeting and taking part in the webinar online. Moving forward, FMCSA will be looking at some of the topics shared today. Any other questions are encouraged to go through ELDtech@dot.gov.