



Saucon Prox ELD Verification and Compliance Report



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Report Approval Form

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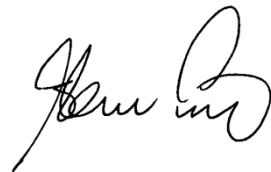


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Introduction

In December 2015, the Federal Motor Carrier Safety Administration (FMCSA) published the final electronic logging device (ELD) rule, mandating that motor carriers electronically record their drivers' Record of Duty Status. The rule, or ELD mandate, came into full effect in December 2017.

To ensure that its ELD solution is fully compliant, Saucon Technologies, Inc. employed the services of PIT Group (FPInnovations) for third-party verification of the Saucon Prox ELD solution. While ELD suppliers can self-certify their technologies, given that the FMCSA does not require independent verification, Saucon chose third-party verification because it realizes the added value of unbiased verification.

This report summarizes the verification methodology, test results, and key findings from the verification process of the Saucon Prox ELD solution.

ELD verification and testing methodology

FMCSA ELD rule and test procedure

The FMCSA's final ELD rule includes technical specifications for ELDs in Title 49, Code of Federal Regulations, Part 395, Subpart B – Functional Specifications for All Electronic Logging Devices (ELDs). Based on this rule, the FMCSA developed the Electronic Logging Device (ELD) Test Plan and Procedures document (FMCSA test plan) to help ELD providers test their solutions for compliance with the ELD rule before certifying and registering them.

The FMCSA test plan outlines a process to verify each functional requirement and organizes the test into the categories listed in Table 1.

Table 1. Outline of the FMCSA test plan

Section	Functional area based on the FMCSA test plan
Chapter 1	1.1 ELD Test Procedures – Accounts
	1.2 ELD Test Procedures – Inputs
	1.3 ELD Test Procedures – Vehicle Interface
Chapter 2	2.1 ELD Test Procedures – Processing
	2.2 ELD Test Procedures – Monitoring
	2.3 ELD Test Procedures – Recording
Chapter 3	3.1 ELD Test Procedures – Outputs
	3.2 ELD Test Procedures – Data Transfer

PIT Group's test process

PIT Group's test process is an adaptation of the FMCSA test plan, with modifications to the test sequence to allow for convenience of testing. This test procedure re-organizes the FMCSA test plan and separates the tests in each functional area into various sections based on the specific method of testing to be used. For example, while some tests can be performed in-cab or on the road, other tests need to be performed on the back office application or with a bench test unit. As such, PIT Group's test process is based on the FMCSA test plan and covers every test outlined in it.

Installation and ELD technical specifications

The Saucon Prox ELD solution was tested in a live operational environment with a vehicle, and on a test bench. The solution consisted of the following:

- **Device:** Saucon Prox ELD with Saucon Touch display
- **Model number:** PROXST16
- **Software and version:** Driver Logs app software version 20180406 or later (and states "ELD Compliant" when Info button is tapped), and Saucon's My Driver Log website.
- **ELD identifier:** PROXST

Saucon Prox ELD units were installed in a motor coach from Coach Canada, working out of its terminal in Peterborough, Ontario. The test vehicle and the respective Saucon ELD units are shown in Table 2.

Table 2. Test vehicles and Saucon ELD units tested

Vehicle fleet ID	89030	Test bench unit
Vehicle identification number	2MG3JMHA9BW065881	Variable
Make and model	MCI J4500	-
Model year/engine build year	2011 / 2007	-
Engine make and model	Detroit Diesel Series 60 ("S60")	-
ELD make/model	Saucon Prox ELD / PROXST16	Saucon Prox ELD/PROXST16
Software version	20180224	20180323
ELD serial number	M7AFS 8508 1131 4850 05822	M7AFS 8508 1131 4850 00065

Road tests

All road tests were performed with a licensed driver from the motor coach company, driving similar routes during real-time operational activity. Road test results discussed in this report were performed with the MCI J4500 coach bus equipped with the Saucon Prox ELD unit with the serial number M7AFS 8508 1131 4850 05822

Bench test and verification of back-office application

Saucon also provided a test bench unit for back-office tests. The Saucon Prox ELD unit with the serial number M7AFS 8508 1131 4850 00065 was installed in PIT Group's test bench environment and was used for all tests that did not require the user to be in a stationary or moving vehicle.

Results from the verification process

Technology modifications and improvements

PIT Group tested Saucon's ELD solution from March 1 until March 22, 2018. The test duration included the time for initial testing, improvements, and regression tests. During the test period, Saucon made several firmware updates and modifications to its back-office application to ensure the compliance of its ELD solution.

To facilitate the verification of the back-office application, PIT Group requested, and Saucon provided, detailed process explanations and function descriptions as supporting material to further demonstrate that the Saucon ELD solution meets the FMCSA's technical and functional requirements.

Results

Table 3 shows a high-level summary of PIT Group’s test process, the test schedule, and final test results for each functional area. The complete results, which show the entire test process and supporting documentation obtained from Saucon for each test, were retained by PIT Group.

Table 3. Test schedule and final test results¹

PIT Group test segment	Test date	Functional area based on FMCSA test plan	Functional requirement ID	Test result
1	March 1 to 14, 2018	1.3 Vehicle Interface	4.2 ELD-Vehicle Interface	Pass
		1.1 Accounts	4.1 ELD User Accounts	Pass
			4.1.1 Account Types	Pass
			4.1.2 Account Creation	Pass
			4.1.3 Account Security	Pass
			4.1.4 Account Management	Pass
4.1.5 Non-Authenticated Operation	Pass			
2	March 1 to 14, 2018	1.2 Inputs	4.3 ELD Inputs	Pass
			4.3.1 ELD Sensing	Pass
			4.3.2 Driver's Manual Entries	Pass
			4.3.3 Motor Carrier's Manual Entries	Pass
		2.1 Processing	4.4 ELD Processing and Calculations	Pass
			4.4.1 Conditions for Automatic Setting of Duty Status	Pass
			4.4.2 Geo-Location Conversions	Pass
			4.4.3 Date and Time Conversions	Pass
			4.4.4 Setting of Event Parameters in Records, Edits, and Entries	Pass
		4.4.5 Data Integrity Check Functions	Pass	
		2.2 Monitoring	4.6 ELD's Self-Monitoring of Required Functions	Pass
			4.6.1 Compliance Self-Monitoring, Malfunctions and Data Diagnostic Events	Pass
			4.6.2 ELD Malfunction Status Indicator	Pass
		4.6.3 ELD Data Diagnostic Status Indicator	Pass	
		2.3 Recording	4.5 ELD Recording	Pass
4.5.1 Events and Data to Record	Pass			
3	March 1 to 14, 2018	3.1 Outputs	4.8 ELD Outputs	Pass
			4.8.1 Printout or Display	Pass
			4.8.2 ELD Data File	Pass
		3.2 Data Transfer	4.7 Special Purpose ELD Functions	Pass
			4.7.1 Driver's ELD Volume Control	Pass
			4.7.2 Driver's Access to Own ELD Records	Pass
			4.7.3 Privacy Preserving Provision for Use During Personal Uses of a CMV	Pass
			4.9 Data Transfer Capability Requirements	Pass
			4.9.1 Data Transfer During Roadside Safety Inspections	Pass
			4.9.2 Motor Carrier Data Reporting	Pass
4.10 Communications Standards for the Transmittal of Data Files from ELDs	Pass			
4.10.1 Data Transfer Mechanisms	Pass			
4.10.2 Motor Carrier Data Transmission	Pass			
4	March 1 to 14, 2018	Code Verification	Code Verification – Security and Event Sequence Coding	Pass
			4.4.4.1-6, 4.4.4.1-7, 4.10.1.1-5	Pass

¹Table 3 shows PIT Group’s modifications to the order of the FMCSA test sequence.

Conclusion

After thorough and rigorous testing and verification of the Saucon Prox ELD solution according to the FMCSA's test procedure, PIT Group can confirm that Saucon Prox ELD with software version 20180406 meets the FMCSA's functional requirements.

Statement of compliance

PIT Group (FPInnovations) has independently verified and confirms that the tested Saucon Prox ELD systems are compliant with FMCSA's technical specifications outlined in Title 49, Code of Federal Regulations, Part 395, Subpart B – Functional Specifications for All Electronic Logging Devices (ELDs).

Disclaimer and test limitations

This report, produced by PIT Group (FPInnovations), is solely intended to confirm the compliance of the tested technology and the specified model and version according to the stated FMCSA test process and functional requirements. PIT Group's verification of the technology presented in this report is limited to the information provided by the technology supplier. Furthermore, given that certain requirements of the FMCSA's test process are left to interpretation, PIT Group has performed this verification according to its extensive understanding of the FMCSA ELD mandate and the test procedures. Where discrepancies existed between these two, PIT Group opted to follow the regulatory requirements of the ELD mandate and observe the justification submitted by the technology provider in meeting this mandate. This report does not guarantee the compliance of software updates or newer models of this technology.

PIT Group does not guarantee FMCSA certification for the Saucon Prox ELD solution, nor shall PIT Group be liable for damages of any kind, including, without limitation, direct, incidental, or consequential damages (including, but not limited to, damages from lost profit or business interruption) arising out of the Saucon's use of or inability to use the test results and report.



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