

# Telematics Workshop: Remote 2-Way Communication Meeting Results

March 31, 2016

ASAM Members and Non-Members primarily from the North American On-Road/Off-Road Commercial Vehicle Market met to discuss the need and requirements for standardization in the area broadly described as Telematics. The goal for the workshop was to determine interest in gathering, aligning, and prioritizing use cases from an End User viewpoint (Equipment or Vehicle Manufacturer / Tier 1 perspective). Significant discussion and participation demonstrated the need for standards and the willingness for cooperation. The group decided the next workshop should include the Telematics Service Providers and the Tool Suppliers. The next workshop will be held in North America in late May or early June 2016. Please contact [joseph.sparacino\(at\)asam.net](mailto:joseph.sparacino(at)asam.net) if interested.

The participants were:

<u>OEMs:</u>	<u>Tier 1s:</u>	<u>Other:</u>
Daimler Trucks	Allison Transmissions	Control Tec
Navistar	Bosch	Ricardo
PACCAR	Continental	SBD North America
	Cummins	
	Eaton	
	WABCO	
Other global organizations expressed interest in participating, but were unable to attend this workshop		

## Importance of Standards

Cummins kicked off the discussion by highlighting the importance of standards. The stated benefits include:

- Investment efficiency – reduce time, manpower, or costs
- Faster cycle time – initial and ongoing
- Enable the best OEM and Tier 1&2 capabilities
- Consistent UX
- Foundation for the future of SaaS
- Customer confidence in system-level security
- Protect proprietary data and intellectual property

## Goals of Workshop

ASAM and Cummins then stated the goals for the initial workshop:

1. Evaluate if OEMs and Tier 1 providers are interested in standardization in the telematics space
2. Explore the role/expectations of the telematics box in the field
3. Gather, align, and prioritize use cases from the end user perspective
4. Develop “Champion” charter

## Why ASAM?

Cummins explained that working in the ASAM community is beneficial. The primary reasons from Cummins point of view were:

1. Leveraging knowledge and know-how from current membership in the topics of data gathering and data exchange
2. ASAM has a proven track record of developing useful standards
3. ASAM is the right size community with a focused group of industry experts
4. ASAM has international support and infrastructure

## Results

The group is interested in proceeding to standardize aspects of the “telematics” 2-way communication.

Several use cases were initially identified (see below) during the meeting. The group aligned and prioritized the top use cases to be:

- Standard format for exchange of telematics data to enable efficient integration of backend systems and analytics
- Standardized method for authenticating and authorizing a telematics box to communicate with a controller
- Remote Programming

There is a recognition and acknowledgement that these use cases need to be broken into smaller topics for more analysis.

## Next Steps

The group decided that Telematics provider participation is critical to future development. Each participating OEM and Tier 1 should prepare a presentation to present use cases where standards would reduce time, manpower, or costs. ASAM will also prepare a presentation of how to consolidate these ideas and opportunities into a streamlined process.

ASAM will host a meeting in North America at the end of May or June in either the Seattle, Minneapolis, or Dallas region for ASAM members and non-members to present their use cases. At this meeting, a central group must be established and agreed with a group charter who will align, steer, and promote efforts leading towards standardization.

Finally, the group suggested that the two best forms of communication are via website with hosted forum and by email. A hosted forum is being investigated and details will be communicated as soon as one is established.

Please send all suggestions for other OEMs, Tier 1s, TSPs, and Tool Suppliers for invitation to the next meeting to [joseph.sparacino@asam.net](mailto:joseph.sparacino@asam.net).

Identified Use Cases:

Use Case	Priority (by number of votes)
Standard format for exchange storage of telematics data to enable efficient integration of backend systems and analytics	11
Remote Programming	10
Pre-analytics before sending to cloud optimizing diagnostics prognostics	8
We should discuss a standardized method for authenticating and authorizing a telematics box to communicate with a controller	8
Standard way of 2-way proprietary data exchange (Parameters Calibrations software) in a secured manner	7
Remote Diagnostics	7
HD trucks have multiple networks: ECUs Need standard for how different ECUs / networks will connect and what data is available	5
A common telematics box hardware platform on which service providers can build their services	4
How to lower cost for getting data into cloud hardware software transmission etc.	3
How to minimize transmission of data reduce cost compress etc.	3
Individual Subsystems 3rd Party Systems Who owns data how is data transferred between the multiple systems	3
Standards for hardening a telematics device against unauthorized remote access to prevent rogue datalink communications	2
Intrusion detection system on vehicles and reporting	2
Driver vehicle use monitoring information for fleets OEs and Tiers	1
How do we work with ISO20078 community?	1
How to keep anonymous data anonymous	1
A standard for exchanging processing and distributing data for the purpose of self-learning ADAS and autonomous systems	1
Geo-fencing Route Tracing GPS Data Logging Build Specification of equipment	1

Use Case Definitions:

Group 1: Cloud Interface								
Problem Statement:	Standard method to interface at the cloud (ex: cloud to cloud) to enable faster implementation, reduce work, etc. Included methods to publish enriched data make to clouds (TSPs, OEMs, Fleet Management Systems)							
Additional details and benefits (user stories)	<ul style="list-style-type: none"> <li>Cloud to cloud data exchange; Cloud to Tool (Matlab)</li> <li>Community data (GPS, DM1, engine speed, etc); Proprietary data (method to get at this data - including security)</li> <li>Methods to get data: JSON, XML, API (or Queue)</li> <li>Security standard; Who can access data (Goverment agencies?)</li> <li>Access to data - different levels of data based on who owns it or grants access to it; data scrubbing;</li> </ul>							
Other organizations doing similar work	OpenAPI spec; TMC?, LD ISO20078 (extended vehicle data)							
Existing standards that may be impacted	ODS, Right to repair,							
Please describe possible impact to vehicle electronics	Multiple engine applications, may drive way to get data from all							
Impact to "telematics box" and HMI	TSPs in vehicle box needs to support the meta data; usually a single CAN port, depends on data needs							
Impact to Cloud	Yes, see above							
Impacted Market/ Applications/ Segment	X	On-Hwy	X	Off-Hwy	X	Pass Car	Marine, Industrial	Other
Areas of concern	Data ownership, how is a company authorized							
Who should be involved?	Company Name(s)		Primary Contact Name(s)		Primary Contact Details		If not present, who will contact?	
• OEMs	Navistar, PACCAR							
• Tier 1s	Cummins, Eaton							
• Telematics Providers	Omnitracs:Zonar:PeopleNet:GeoTab, etc							
• Fleets	Swift							
• Others	ETI, Conti, CTE/Delphi							
Company willing to lead a workgroup	?							
Other comments:								

[illegible]

Group 3: Remote Programming							
Problem Statement:	Remote Programming						
Additional details and benefits (user stories)	Over the air updates of software, calibration and configurations. From and OE perspective the idea of controlling overall vehicle configuration is important, specifically a compatibility check. Question on Fleet as the owner and Driver as a user to their involvement and responsibilities. The need for a gateway module to protect specific comm lines has been identified as a key topic						
Other organizations doing similar work	UMTRI, is looking at automotive update, the feeling of the group is that this topic of FOTA standards is late and needs to speed up to be effective						
Existing standards that may be impacted	potential RP1210 or UDS but no direct conflict.						
Please describe possible impact to vehicle electronics	Decreased cost of operation, customer satisfaction increase, new revenue streams and a way of doing business that may not be known today.						
Impact to "telematics box" and HMI	The reality of supporting multiple module rev levels and the interdependencies that exist. The concern of supporting multiple engine / trans and support systems that may require independent update. Managing the complexity off board and on board deployment.						
Impact to Cloud	Bandwidth concerns						
Impacted Market/ Applications/ Segment	X	On-Hwy	X	Off-Hwy	X	Pass Car	Other
Areas of concern	End to end security, reliability, configuration						
Who should be involved?	Company Name(s)	Primary Contact Name(s)		Primary Contact Details		If not present, who will contact?	
• OEMs	the usual suspects						
• Tier 1s							
• Telematics Providers							
• Fleets	owner operators and Fleets						
• Others							
Company willing to lead a workgroup							
Other comments:	The telematics box must be able to run proprietary logic. Concern over current spec and future product						

Group 4: Box Needs									
Problem Statement:		What standards should telematics hardware providers comply with.							
Additional details and benefits (user stories)		Advantages of widespread adoption of standard APIs & common libraries to enable <ul style="list-style-type: none"> <li>data exchange (between ECUs, between the telematics HW &amp; ECUs, TPS HW &amp; back-end systems)</li> <li>on board processing</li> <li>Security - necessary authorization/authentication provided by ECU suppliers</li> <li>providers need to provide a layer that abstracts the APIs from the OS</li> <li>portability of the application layer</li> </ul>							
Other organizations doing similar work		Example: Genivi, a collaboration among passenger car OEMs - focus on infotainment. FMS standard, an API used in commercial vehicles							
Existing standards that may be impacted		CAN/j1939, limited bandwidth to implement security. Ethernet (Broad R reach). ODX / OTX for diagnostic test sequences, ISO26262, AutoSAR							
Please describe possible impact to vehicle electronics									
Impact to "telematics box" and HMI		Formulating standard APIs & common libraries. For data exchange & common features. Wi-Fi capacities / BT. De-emphasis on HMI device technology.							
Impact to Cloud									
Impacted Market/ Applications/ Segment		X	On-Hwy	X	Off-Hwy	X	Pass Car		Other
Areas of concern		Buy-in from telematics providers. Tendency among OEMs to retain proprietary methods. Ability to form collaborations.							
Who should be involved?		Company Name(s)		Primary Contact Name(s)		Primary Contact Details		If not present, who will contact?	
• OEMs		Leading CV & automotive suppliers							
• Tier 1s		Critical							
• Telematics Providers		Critical							
• Fleets									
• Others									
Company willing to lead a workgroup		Each are willing to participate.							
Other comments:									