DOITS

Working Group Meeting
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Lindholmen - Gothenburg
2014-10-21

Attendees:

Masternaut – Eric Medan – Via WEB
Astrata – Harry Butcher
Trimble - Frederic Boes
Vehco – Johan Amoruso-Wennerby
Dynafleet – Johan Rundberg
Scania – Fredrik Callenryd
Volvo – Niclas Nygren
Volvo Group Telematics - Mikael Thorman

Mission

The DOIT(S) process was initiated in 2012 by Telematics Valley as a result of a dialogue with vehicle manufacturers as well as Aftermarket Fleet Management Suppliers. The challenge is that end users are not pleased with the difficulties to trust e.g. ECO-driving data and information delivered, as it gives different measures depending on what truck brand's and Aftermarket supplier's solutions are being used. The end user's mixed fleet situation makes it more complex. Comparison between drivers of different brands is unclear and confusion is created amongst the users that lead to not taking full advantage of the FMS application they installed and also unnecessary low penetrations of FMS in Europe as the value of the tool is perceived lower.

DOIT(S) mission is to address this situation and initiate and run a process to identify measurements that are key to improve the usability of FMS and when possible strive for harmonization of how the measurement is generated and presented.

A workshop series was therefore organized by Telematics Valley inviting vehicle manufacturers and large after market FMS suppliers to participate and a DOIT(S) Working Group was established that together agreed on the mission and that Telematics Valley would lead this process. Initially in this process also end users were involved in the dialogue but later it was decided to only have the vehicle manufacturers and large Aftermarket suppliers in the working group at this stage as without a common view on the importance of this change is necessary, there will not be a fertile ground for making changes to improve the situation.

To present DOIT(S), Telematics Valley met with the HDEI WG on January 31:st, 2013 in Brussels and a confirmation was later received that DOIT(S) is accepted as a source of input to HDEI WG and be one channel to collect requirements from the market and make proposals of FMS related information that could be standardized in the coming FMS versions including the Web-based. .

In most ECO-driving related measures the fuel consumption figures are used to show losses and gains. Fuel consumption is calculated differently by the different vehicle manufacturers and DOIT(S) do NOT address fuel consumption as a value as it has to be an agreement between the vehicle manufacturers if and how they want to harmonize that value.

Instead of focusing on specific data, DOIT(S) addresses high level measurements, initially those that are used as key input to the transportation profitability from the ECO-driving perspective.
- Idling
- Coasting/Roll out
- Overspeed

Objective with the meeting 2014.10.21

Ambition with this meeting was to deliver a proposal to the ACEA FMS Standardization Working Group HDEI of a harmonized measurement to be included in the FMS Standard. Idling has in previous DOIT(S) meetings been decided to be the measurement to focus on.

The meeting started with an inventory of the parties definitions of how the status Idling is generated and what variations of Idling that are used. Idling time "grace factor" is one key element in building up the harmonized value. The following definitions of Idling are used by the participating companies.

Definitions of Idling

Trimble	Speed 0 AND RPM<X AND Y set by customer AND not PTO= Idling
Vehco	Speed 0 AND Longer than 59 seconds AND not PTO = Idling
Masternaut	Speed = 0) AND RPM < X AND longer than 119 seconds AND not PTO = Idling
Astrata	Vehicle Speed = 0 and RPM<X AND Y 0-300 sec AND not PTO = Idling
Volvo	Engine ON AND VehicleSpeed = 0 (Not configurable) AND not PTO = Idling
Scania	Engine ON AND Speed = < 4 km/h AND PTO_Inactive AND time < 30 seconds

	Grace period	Speed input
Scania	30 sec; If idling is longer than grace period the total time is used.	Wheel based speed from CAN
Vehco	59 sec	
Astrata	5 min (configurable)	FMS/CAN, Tacho
Trimble	Not known	
Volvo	0 - Configurable	Wheel based speed

Masternaut	<119 sec (configurable)		GPS, RPM, Wheel

As all aftermarket suppliers have access to CAN data, the setting of time periods can be chosen and the Bad Idling Grace period is sometimes decided by the final user that can adapt this to the company policy on ECO-driving.

The need for the Idling measure can both be in real time and as an accumulated time stamped report.

Fuel consumption

The fuel value is captured from the truck electronic system. Sometimes but seldom, extra sensors are mounted to the fuel tank to measure fuel level.

Customers are asking for the amount of fuel in different modes e.g. idling and travel. Ideal would be to get fuel used per trip as it is common to price per transport/ trip. Fuel granularity is not accurate enough (+/- 0,5 litres) to evaluate driver behaviour on short trips. It is more accurate when working with statistical reports especially if verified against real fuel bills. Driving style accumulated will even out the variations and therefore granularity is less of an issue. Accumulation of small fuel consumption values can build up larger accumulated errors.

Volvo also matches the fuel consumption against the actual application and delivers a reference average figure.

To measure fuel consumption of PTO on a moving truck can be difficult as it is a small proportion of the total fuel volume consumed.

FMS1 and FMS 2 have too low accuracy for fuel measurements.

Switch off engine

Both Volvo and Scania have introduced a function that is optional but can be used to switch off the engine when in a Bad Idling mode. Volvo has this functionality that is set to activate after 59 seconds.

Implementation of a DOIT(S) Idling measure

Aftermarket suppliers would prefer to use a harmonized Idling value provided by the OEM's as end-users have more trust in OEM's delivered figures. An OEM calculated Idling measure or detailed parameters on FMS for Aftermarket supplier's calculation would therefore be best to use.

Volvo proposes that the OEM's calculate the Idle (time, fuel) in their own ways, and prepare the value for the customer. Then the users (OEM, Aftermarket suppliers) can agree on a higher level on situations / scenarios.

Idling is a relatively easy measurement to start with and can be used as a role model for more complex harmonized measurements later on. The key is to try to work with measurements that are almost digital 1/0, on/off as these are similar independent of vehicle brand. Time and time counters are also exact figures that is equal in all situations. It becomes more complex when various non standardized algorithms are used to calculate a value.

It is noted that old generation of ECU units in trucks can cause problems when creating harmonized values.

Proposal of the DOIT(S) Harmonized Idling Measure

Initially the ambition level is to deliver the Idling measures through the rFMS interface to enable aggregation of accumulated Idling data for report generation. To influence driver behavior in real time the capture of vehicle data is still the optimal way.

Input to Idling cost can be % Idling of total time and Fuel consumed.

1. After Market suppliers wants OEM to calculate and present Idling total counters

2. Proposal for Total counters (time in seconds, fuel in litres)
    a. Total idling (Engine ON, Speed = 0)
    b. Total idling excluding PTO (Engine ON, Speed = 0, PTO = Inactive)
    c. Total engine ON

3. Could be introduced
    a. In rFMS next version
    b. For the current population of FMS trucks (version 1-3), these counters can be calculated by sampling the existing parameters

4. Total counters should be read as snapshots
    a. Minimum frequency rFMS version 1: 1 hour

5. After Market additional proposals
    a. After Market FMS suppliers would like to have higher frequency if possible for more analysis
    b. After Market FMS suppliers would like a snapshot created based on events (e.g. Change of driver) to connect data to individual drivers

Next step - ECO- driving parameters

A proposal was to continue the DOIT(S) process and have the definition of parameters/ measurements search within ECO-driving as umbrella term. Parameters/ measurements can be relative or specific measures.

For further discussions ECO-driving can contain:

-   Coasting/Roll out

- Overspeed
- Green band use / within economy (as defined by OEM)
  - The amount of engine hours when the vehicle operated within the economic band
  - Over Economy – the vehicle operates outside (higher than the economic band maximum RPM) – negative on fuel consumption
  - Under Economy – the vehicle operates outside (under the economic band minimum RPM) – positive on fuel consumption but negative on engine performance

After Market Hardware on-board or WEB solution

The on-board FMS interface do not deliver all the data needed for Aftermarket suppliers to deliver their solutions and rFMS is very limited both in what data that will be delivered and the sampling frequency. The collection and processing of data from the vehicle and the tachograph gives many opportunities to build valuable services.

For the moment it looks like "black boxes" will continue to be installed in the vehicles but when access to right data with the right frequency and quality is available, there is no need or wish to install these. If is possible to access the right input via OEM web-services it will change the business model in the FMS industry.

Presentation of rFMS (Mikael Thorman – Volvo Group Telematics)

Mikael presented the basic set up of the newly released rFMS WEB based interface.

Some important notes were:
- The cost for subscribing on the data from the truck is up to each vehicle manufacturer to decide upon.
- If the information will be available from both existing and new trucks is up to the vehicle manufacturer to decide.
- Also a After Market FMS suppliers can setup a host service exposing the rFMS interface to other users

The perception is that rFMS version 1 is focused on Track&Trace and in its basic set up, needs to be developed to become really useful.

Next DOIT(S) meeting

The DOIT(S) proposal will be presented for the HDEI Working Group and their next meeting in March 2015.

Date and place for the next DOIT(S) Working Group meeting will be advised within short and an invitation to key end users to start to participate in the process will be sent out

DOIT(S) meetings should be possible to attend via web or telephone connection if the process member representative is not able to attend.

Gothenburg 2014-10-28

Jan Unander
Telematics Valley