

# DOITS

## Working Group Meeting Novotel, Amsterdam 2016.04.18

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### Attendees:

Harry Butcher – Astrata  
Fredrik Callenryd – Scania  
Uwe Munch – Telogis  
Jan Unander – Telematics Valley  
Jasper Pauwelssen – TomTom  
Joep Van Poppel – Transics  
Jonathan Raemdonck – Trimble  
Johan Amoruso-Wennerby – Vehco  
Niclas Nygren – Volvo (Phone)

### Objective

The meeting had the following action points:

- 1) Update the working group on the status of rFMS 2.
- 2) Make an audit on how the DOIT(S) Working Group's harmonised measures requirements will be met by rFMS 2.0
- 3) Discuss possibilities to harmonise
  - a. Rpm/Torque bands
  - b. Coasting
- 4) Discuss access to Error Codes – “Tell tales”
- 5) Evaluate aftermarket suppliers perceived value of using OEM's API and data communications channel
- 6) Decide if to start up implementation on the agreed measures now to reach the goal with DOIT(S)

### **1) rFMS 2.0**

Fredrik Callenryd presented the proposed content in the rFMS 2.0 standard. This standard ( see presentation enclosed to this report) will most likely be approved by the ACEA FMS Working Group in September 2016.

It is important to note that:

- some data is (O) optional for all OEMs and some are (M) mandatory – see enclosure
- implementation will not be coordinated amongst OEMs i.e. data will be accessed step by step

### **2) Audit of DOIT(S) measures against rFMS**

## Idling

- Engine = ON
- Speed = 0
- PTO – disabled
- Driver Change

**Engine ON** - “Engine ON, data was set due to an engine on”  
Not clear if Mandatory or Optional

**Speed 0** - “Wheel-Based Vehicle Speed in km/h (Speed of the vehicle as calculated from wheel or tailshaft speed)”  
is Mandatory

**Driver Change** – “Driver 1 working state change Data was sent due to that driver 1 changed working state  
Driver 2 working state change Data was sent due to that driver 2 changed working state”

**PTO disabled** – “PTO disabled Data was sent due to that a PTO was disabled, will be sent for each PTO that gets disabled.” not clear if Mandatory or Optional.

The data available through rFMS will give the necessary input to generate a harmonized Idling measure.

However, PTO has to be specified more in detail in the definition. It has to take into account that body builders do use PTO without any data confirming this. It is therefore up to the system supplier to together with the end user define what vehicles should be excluded from using the consolidated Idling-measure.

Also automatic PTO e.g., when charging air tanks or other non bad-idling situations has to be acknowledged and case by case be considered if these are un-frequent and therefore too insignificant to influence the accumulated idling time or should be gauged.

## **Acceleration/Deceleration**

*“Acceleration In Classes – Seconds, Meters, MilliLiters  
Classes define in, in m/s<sup>2</sup> Minimum 11 classes.  
], -4] ]-4, -3] ]-3, -2] ]-2, -1] ]-1, -0.1] ]-0.1, 0.1[ [0.1, 1[ [1, 2[ [2, 3[ [3, 4[ [4, ]”*

The speed change classes seem not to be adapted to normal working conditions. DOIT(S) Working Group recommended the FMS W G following:

- DOIT(S) Recommendations to improve usability:
  - Granularity (minimum 0,1 ms<sup>2</sup>) on acceleration bands perceived low in useful bands ( should improved around -1 to +1 (majority of use cases)

## **Speed bands**

*“SpeedInClass - Classes define in speed intervals. Minimum 40 classes.  
[0, 5[ [5, 10[ [10, 15[ [15, 20[ [20, 25[ [25, 30[ .. [190, 195[ [195, ]”*

Specified speed bands do not capture critical speed situations when using 5 km bands – uneven figure makes calculations difficult and also give less accuracy close to e.g. speed limits.

- DOIT(S) Recommendations to improve usability:
  - Speed profile band preferable in even steps e.g. 0-4 that increase granularity but captures critical speed intervals like 80-84; 84-88

### **3) Harmonizing Rpm/Torque bands, Coasting**

#### **RPM Bands**

*"RpmInClass*

*- Classes define in RPM intervals. Minimum 10 classes.*

*[0, 500[ [500, 1000[ [1000, 1500[ [1500, 2000[ [2000, 2500[ [2500, 3000[3000, 3500[ [3500, 4000[ [4000, 4500[ [4500, ]"*

- DOIT(S) Recommendations to improve usability:
  - RPM – possible redefining of speed classes to give higher resolution and capture critical rev intervals like 1200-1600.

#### **RPM/ Torque bands**

*"EngineTorqueInClass*

*Seconds, Meters, MilliLiters*

*Classes define in percent intervals. Minimum 10 classes*

*[0, 10[ [10, 20[ [20, 30[ [30, 40[ [40, 50[ [50, 60[ [60, 70[ [70, 80[ [80, 90[ [90, 100]"*

1. **Definition of Torque: Actual Engine – Percent Torque:**

*The calculated output torque of the engine. The data is transmitted in indicated torque as a percent of reference engine torque. The engine percent torque value will not be less than zero and it includes the torque developed in the cylinders required to overcome friction.*

This measure is Mandatory.

This way of calculating a torque in relation to max torque is used already today and is also applicable as input to a DOIT(S) measures.

#### **Coasting**

*"Accumulated value given in: Seconds, Meters, MilliLiter  
Driving without torque.*

*Reported in The Total number of fuel used while driving without torque."*

This Measure is Mandatory.

- DOIT(S) Recommendations to improve usability:
  - Coasting needs two measures
    - o Driving Without Torque
    - o Driving Without Torque – no brake

#### **4) Tell Tales**

DOIT(S) Recommendations to improve usability:

- DOIT(S) working Group questioned why all relevant TT are not available via rFMS as they already are in ON Board FMS Standard ver. 3.0\*. Irrelevant TTs are driver centric like “turn light signal”, “front fog light” i.e. these could be omitted but why not give access to the remaining? See enclosed list of TTs in ON Board FMS Standard ver. 3.0.  
*\* see slide 18 in presentation*

#### **5) ON Board API/ OEM Data Channel**

The DOIT(S) working Group was positive to the opportunity to access data through APIs offered by the OEMs.

Using OEMs Data Channel was discussed but no real conclusion was made.

#### **6) Starting up implementation on the agreed ECO-driving measures now to reach the objective with DOIT(S)**

DOIT(S) objective:

- Increase usage of FMS solutions in Europe through improving the ability for end users to influence ECO-driving behaviour
- Reduce end user confusion and through cross suppliers harmonized key ECO-driving measures
- Influence the rFMS standardisation work within the OEMs to make the delivered data meet the market requirements in such a way that it becomes useful to create end user value

Today's situation:

- rFMS ver. 2,0 is now specified and will have the potential to support most of the DOIT(S) requirements
- rFMS ver. 2,0 will be implemented in different time periods by the OEMs and wait for all them to do so will mean an unpredictable and unnecessary long time table
- After Market suppliers have already access to the data today through their solutions
- OEMs have all the tools they need
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The purpose with DOIT(S) is to support the market players to harmonize the prioritized measures and facilitate the process to launch these.

There is nothing today that hinders from starting up the implementation of agreed harmonized ECO-Driving measures.

To generalize, implementation is a question of:

- Create a Common identity used by all stakeholders – name
- Programming and grouping of data capture

- collected via "black boxes"
- generated by positive OEMs
- Create awareness amongst end users and the influencing environment around transportation
- Add to FMS-suppliers commercial offers

### Action

The feedback to the proposal of starting up the implementation phase was positive from all participants and it was decided that Jan Unander will create a working tool (document) for the companies in the DOIT(S) working group to enable them to:

- Give comments on the proposed data capturing and consolidation into DOIT(S) measures to ensure usability by end users
- evaluate the technical and commercial consequences of implementing these measures into DOIT(S) working groups members solutions i.e. OEMs as well as After Market Suppliers

The information will be summarized and given as input to the next DOIT(S) meeting held within 6 months.

It is essential to recognize that the result will be ECO-driving measures that are:

- specified what data is used and from what source e.g. "wheel base speed"
- defined how they are consolidated into a Measure
- are described so end users will know on what trucks/trips the measures are applicable

A document will be distributed to all DOIT(S) working groups members to start up the implementation phase.

2016-04-22

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DOIT(S)