

DOITS

Working Group Meeting Zoom – On-Line 2021.06.01

Attendees:

Peter E Petersen	AddSecure
Daniel Pacheco Dominguez	Astrata
Jan Unander	DOITS
Jim Crawley	Haldex
Maximilian Birle	Krone
Aleksandre Opacic	Microlise
Andrea Wetterberg	Scania
Niklas Olsson	Scania
Walter Gerling	Schmitz Cargobull
Christian Payne	TIP
Victoria Zhorina	TIP
Jelena Nikolic	TIP
Arie van der Jagt	Transics Wabco Auto
Fredrik Callenryd	Traton
Harry Butcher	Verizon Connect
Peter Sante´n	Volvo
Paul Verheijen	Webfleet
Robin Fellows	Webfleet

INTRODUCTION

DOITS role as forum is to support the transport industry and the actors in the transport ECO-system to become more efficient through harmonization of selected key data and the way this data is generated and made useful.

The method used in DOITS to accomplish this is based on the belief that it is effective to let strong commercial actors on the market come to an agreement on how to best harmonize or standardize to support the whole industry. This method does also minimize the time from decision to implementation compared to e.g. in politically initiated projects.

Therefore, DOITS carry this out by building co-operation between key stakeholders in the industries involved in the delivery of a specific function.

DOITS FOLLOW THE EU “FAIR COMPETITION LAWS” AND NO COMMERCIAL DISCUSSIONS ARE ALLOWED DURING THE DOITS MEETINGS.

Objective with this meeting.

This meeting is a follow up on the last meeting in Amsterdam October 2019.

The objective was to make an update on the situation as regards implementation of a handshake of VIN between the trailer and the truck – with focus on using the broadcasted trailer VIN over the trailer CAN bus as the data channel.

Also on the agenda was a presentation by Trane Technologies/ThermoKing. Unfortunately, the communication of log in details to the meeting met some hinders so the presentation was not able to be done.

A contact was made with Trane Technologies on June 2:nd and major findings during the meeting on June 1:st were conveyed. Trane Technologies will be represented at the next DOITS meeting.

Notes from the discussion of VIN handshake:

1. Scania has carried out a test to capture Trailer VIN via the broadcasted signal from the Trailer EBS system. The following challenges are the learnings:
 - a. Many stakeholders within the company are involved and have to approve the activity.
 - b. It was sometimes hard to get internal priorities to start up the process to do the necessary work to capture the EBS signal.
 - c. Technically the work is not too complicated and therefore the budgeted cost was not a big hurdle
 - d. The results is capture of a free text file that in 95% of the cases were not the correct VIN but “garbage/ wicked” and not useful. Lots of creative solutions were found in the VIN field.
 - e. A large number of the trailers that was included in the test were not new ones but Scania did not see any difference in the quality of the data, independent of trailer year model.
2. At the last DOITS meeting Daimler participated and they confirmed the poor quality of the trailer VIN data that is stored in the EBS system. Daimler do not use the broadcasted trailer VIN message instead they pick this up through the CAN diagnostic channel. This method is good but is more challenging technically and security wise than picking up a broadcasted message. Therefore, the implementation process by the truck OEMs becomes more complicated.
3. Conclusion is that the data stored in the field where the complete trailer VIN number is supposed to be is mostly not correct or sometimes totally blank. Changing of the data in the VIN number field can be done by anyone that has the interface and software to access the EBS system. Trailer customers often want a simple ID, not a 17 characters ID, to be able to administrate and control their trailers.
4. How can we ensure that it will be possible to capture the correct Trailer VIN?

5. It all starts when trailer manufacturers deliver new trailers and an understanding is that all trailers fitted with Telematics solutions normally have the 17-digit VIN in the EBS system and can be remotely identified by the trailer manufacturers. However, trailers not fitted with Telematics might have a shortened number (8-9) of characters than 17 in the VIN field.
6. The solution may be to introduce one (or two) new data fields where one is allocated to the 17-digit VIN and that will allow the trailer owner to create its own internal system without interfering with a correct harmonised handshake of Trailer VIN with the Truck.
7. The perception from the meeting is that the trailer manufacturers were open for a discussion to always insert the 17-digit VIN in the new produced trailers independent of if they are telematics enabled or not.
8. EBS suppliers confirmed that it is possible to add extra fields into the EBS system. However, a challenge is that all three trailer EBS suppliers Haldex, Wabco and Knorr Bremse need to agree on this and the message sent has to be specified.
9. Another technical issue is that the CAN bus is perceived congested and the VIN message might take some time to be sent and received. Real time as a requirement was discussed and normally the time from handshake to confirmation right trailer right truck is not critical but it has to be confirmed rather fast to avoid a truck leaving e.g. a harbour with the wrong trailer. Real time has to be defined by DOITS when looking into the use cases.
10. A critical situation is when trailer repair/maintenance is done and an ECU/Valve assembly or ECU on the trailer is replaced. Mechanics copy trailer braking settings where the VIN is included and the already faulty VIN is inserted in the new ECU.
11. There is a system with digital PIN number to access the EBS system from some of the suppliers. This should give some protection from misuse but how secure?
12. Processes for aftermarket trailer service providers have to be implemented to guarantee that the correct VIN number is inserted.
13. Last but not least, the trailer manufacturers strive to help customers in improving their efficiency and also create solutions that will support the environmental battle against pollution. ***If trailer manufacturers have access to what truck that tows what trailer they can be creative and add much value to the transport industry.***
14. IT IS IMPORTANT TO AGREE ON THAT YOU ALL HAVE YOUR CORE BUSINESSES BUT SOMETIMES YOU NEED THE SAME DATA TO ADD VALUE TO YOUR OFFERS AND THAT DOES NOT MEAN YOU ARE HEAD TO HEAD COMPETITORS!

Conclusions and activities

To start with, it is essential to agree on the benefits of harmonising a trailer/ truck VIN handshake with VIN. There are obvious use cases where wrong trailer/ truck combination causes logistic mistakes. However, generally when data with clear definitions and a harmonised way to send and receive it is implemented, the number of use-cases will grow and customer satisfaction will increase. This will also happen with the trailer/ truck VIN handshake so a harmonised VIN combined with other data will also be a new opportunity to design new functions and services that we can't foresee today.

Proposed steps to be discussed at the next DOITS meeting;

1. If a harmonised Trailer Truck VIN handshake is going to work it may not interfere with the trailer customers perception of usability. This means that trailer customers want to keep a data field where they can create an own ID-system that makes it possible for them to administrate and control their fleet of trailers. Having said that, it also means that a new data field in the EBS system should be added but it requires a collaboration between the three major EBS suppliers and also an agreement on what messages to send. ***How to initiate that process?***
2. The implementation of the correct VIN in trailers can be done in two processes
 - a. Production of new trailers
 - b. Aftermarket repair and maintenance
3. In the production of new trailers, it was confirmed at the meeting that if there is an extra field for trailer VIN that can be designed to make it impossible/ difficult to change the VIN number, it would be preferable. However, trailer manufacturers can already today insert the full 17 character VIN number in the specified data field in all trailers, telematics fitted or not but cannot guarantee that no changes are made after the trailer left the factory. However, trailer manufacturers (OEM), if I understood correct, can remotely follow up the discipline in keeping the full VIN number in the EBS system in the telematics fitted trailers.

A summary would give us an indication of the magnitude of the challenges and also add to our understanding of what use cases that have to be addressed.

Can Krone and Schmitz Cargobull investigate the possibility to make a follow up on what data is in the VIN number fields? A report could be just the %

a) correct VIN

b) shortened VIN

c) other data non VIN related

d) no data.

As regards trailer manufacturers service and maintenance workshops it is more of a challenge to check the trailer VIN field if not an instruction is made to the workshops to check in what extent the factory inserted number in the VIN number field is changed or not.

Just to get feedback from the telematics fitted units would be valuable.

4. The use cases at aftermarket service and maintenance workshops have to be better understood to support keep the trailer VIN untouched throughout the trailer's life.
 - a. What are the working methods of today when VIN numbers are transferred to new ECUs?
 - b. Why do they not use the correct VIN – root cause – customer request, technical limitations or routines in workshops?
 - c. What are the consequences when changing the trailer VIN – customer dissatisfaction, trailers with same ID etc.?
 - d. If VIN number is changed what to do? What solutions are required to solve each challenge?
 - i. New software
 - ii. Manuals
 - iii. Education
 - iv. Alarm system if VIN is changed from factory installation
 1. Telematics enabled (push alarm)
 2. In workshop tool (indicate in upgrading tool)
 - v. Action what to do if VIN is wrong

It is necessary to explore how service & maintenance providers handle the implementation of trailer VINs when they by any reason need to re-program the software in the ECUs.

Jan U should investigate and describe the use-cases and make a summary to the next DOITS meeting 2021.

Support to this process can be given by TIP and the Trailer manufacturers that run their own workshops to understand if there are standardised instructions on how to handle this situation.

5. I has been a request to also enable the Trailer to pick up the Truck VIN since we started the discussion on exchange of VIN numbers.

This question was brought up and in principle there were no objections from the Truck manufacturers. The issue is:

- If there an ISO standard that regulates the communication between tractor and trailer the question is to see why it is not implemented in the truck electronic system.

Truck OEMs offered to check this up.