INTERNATIONAL UNION
OF RAILWAYS

RAILWAY UNDERTAKINGS ADVISORY GROUP MEETING RFC NORTH SEA - MED

X-BORDER 2

NOVEMBER 18TH 2020

Sandra GEHENOT/Constanze BANNHOLZER

RAILFREIGHT FORWARD

EUROPEAN RAIL FREIGHT VISION 2030

SITUATION

We are faced with a critical challenge on a global scale. To battle climate change, the EU Green Deal aims to make Europe the first carbon-neutral continent by 2050.

TO GET THERE, EUROPE HAS TO LOWER ITS CO_2 EMISSIONS WITH 40-50% BY 2030.

COMPLICATION

Freight transport is responsible for 10% of those emissions. This is mainly caused by trucks, as 75% of cargo transport is currently done via road. Apart from the clear negative impact on our climate, this also congests our roads produces accidents and affects our economy in times of crisis.

With the transport sector expected to grow another 30% by 2030, HOW CAN WE PREVENT THIS SITUATION FROM GETTING WORSE?

SOLUTION

30BY 2030

#MODAL SHIFT

WE NEED MORE RAIL FREIGHT.

Rail is 6 times more energy efficient, pollutes 8 times less and emits 9 times less CO_2.

HOW

RAIL FREIGHT FORWARD aims to:

- INCREASE COMPETITIVENESS AND ATTRACTIVENESS
  through easy-to-use products, data exchange and a level playing field

- RAPIDLY INTEGRATE NEW TECHNOLOGIES
  to existing infrastructures and operations

bls cargo

T Cargo

CFL cargo

DB

green cargo

LINEAS

SNCF LOGISTICS

ZSSK CARGO

CER
The Voice of European Railways

VDV Die Verkehrs-unternehmen

MERCITALIA
GRUPPO FERROVIE DELLO STATO ITALIANE

LTE
logistics & transport

OST-WEST
LOGISTIK NETZWERK

PKPCARGO

Rail Cargo Group
Member of ÖBB

renfe
Mercancías

ERFA

uic

FTE
FORUM TRAIN EUROPE

CIT

SBB CFF FFS Cargo

FIELDS OF ACTION

30% RAIL FREIGHT MODAL SHARE BY 2030

- Xborder language
- Unified Braking Scheme
- Strengthening the RU business in the Rail Freight Corridor (RFC) debate
- Sector agreement on game changers

EUROPEAN RAIL TRAFFIC MANAGEMENT SYSTEM

One European train control system to allow interoperability of trains in Europe.

AUTONOMOUS TRAIN OPERATION

Automatic train operations for remote long haul driving by qualified drivers and autonomous driving in terminals & yards.

DIGITAL CAPACITY MANAGEMENT

Standardized and internationalized capacity planning with reserved slots for rail freight and transparency on available capacity.

DIGITAL PLATFORMS

Operational data exchange across countries and companies to enable seamless transport and new competitive products.

DIGITAL AUTOMATIC COUPLING

Automatic coupling and decoupling of trains and wagons to enable longer and heavier trains at higher speed.

X Border aims improving interoperability within a European Drive through philosophy & the competitiveness of rail freight in crossborder operations

UIC X Border project….

- is a **CEO Task Force priority**
- addresses relevant **key subjects** for the **railway business**
- is **part** of the field **of** actions defined in the **RailFreightForward** and X Border **contributes to pillar 1**
  - Language work stream ~ RUs doing their homework in overcoming the language barrier

RailFreightForward
Fields of actions for modal shift are met with X Border

1 Railway Undertakings continue the journey: offering superior innovative products for the benefit of the customer

X Border language project is aiming to overcome the language barrier

Deliverables consist of multiple necessary steps!

- Enhanced list of standardised/pre-defined messages
- Guideline for PDM to be used in daily operational service for the pilot
- develop an “european risk analysis” for the Pilot (incl. alternative means of communication – Language Tool), as per CSM 402/2103. Safety is paramount and therefore, the purpose is to provide RUs this analysis to use it as a basic construct for risk assessments by RUs
- performing a gap analysis and conclusion on the use of the Predefined Messages on a full-penetration basis
- providing continuous support of pilot testing, providing consultation and oversight
- Contribute to T4R project and RNE LP
- ….

X Border experts want to share findings on the “Gap analysis and conclusion on the use of the Predefined Messages on a full-penetration basis”, since it is the first real application of PDMs

What is understood to be the gap?

The objective was to perform a gap analysis and conclusion on the use of the PDMs on a full-penetration basis in order to use the PDMs on an extended geographical scope from short cross-border sections to border areas or even inland routes. In this scope the usability and quality of PDMs for dialogues was also assessed in parallel.

Stakeholders raised the question of whether the PDMs could also be used beyond border stations, or how big the gap between border crossings / train station and the operation of the entire network in terms of required PDMs is.

- Are the current PDMs sufficient to be able to drive not only on border sections and in border stations, but also on broader border areas and onto the entire network?
- If no, where are the gaps?
- Which additional PDMs fill the gaps?

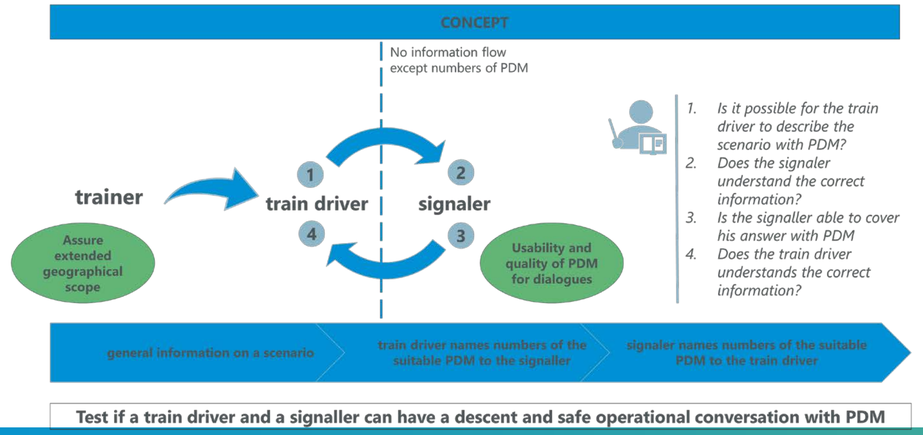
In addition, the suitability of the PDMs for the everyday use between the driver and the IM staff should be examined and potential for improvement derived from the following questions:

- Are PDMs sufficient for the necessary dialogues?
- Are the PDMs in their current format efficient and easy to use?
- What needs to be improved in order to be able to use PDMs better from a user perspective?
- Can redundancies be detected and corrected in the PDMs?

Gap analysis and conclusion on the use of the Predefined Messages on a full-penetration basis

Gap Analysis done by the X Border experts in short

- Testing concept developed
- Test organised including documentation and the technical preparation
- Testing in August 2020
- Evaluation of test results in September 2020
- Draft Report finalised
- Provide Analysis for improvements to the sWG PDM RNE LP/T4R

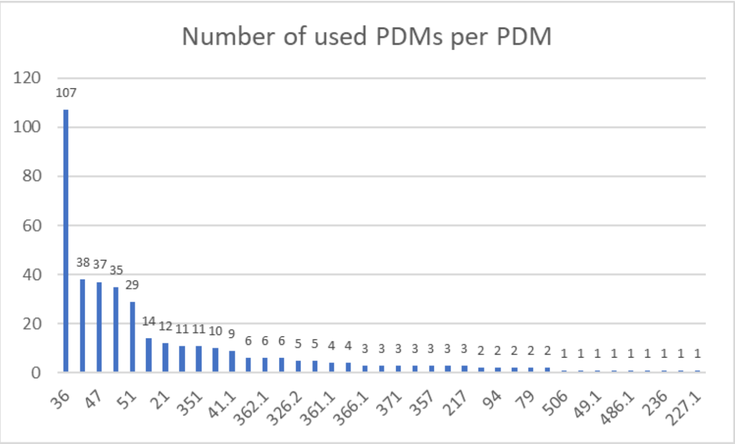


Test

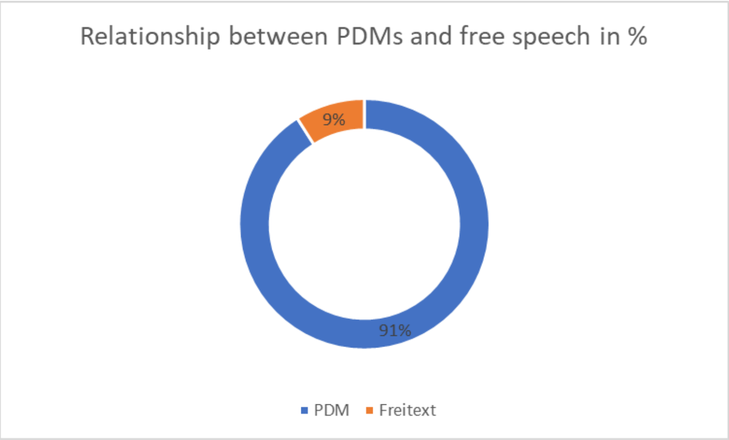
- The test was performed on the 17th, 18th 19th and 20th of August 2020 and carried out via *TEAMS* meeting.
- The test team consisted of three people, a signaler, a train driver and a trainer, and in the background other experts.
- Participants are asked to strictly talk in their own language, German or French.
- Participants confirmed receiving all the necessary documentation in advance (list of PDMs, list of scenarios, test manual, video to demonstrate the test) to prepare themselves.
- Participants confirmed being technically well prepared for the test (*TEAMS* connection and access to the PDMs)
- Participants were reminded that they are asked to have the necessary dialogues (after the trainer explanation of the situation) using only the PDMs, however, in cases the PDMs are assessed not to be sufficient PDMs shall be adapted or free speech used.
- Participants were asked to ask questions when explaining the scenarios, in order to assure fluent dialogues.
- Participants were informed that at the end of the scenarios and at the end of the test, they will be asked for their assessment.
- Participants were informed that the test is recorded for the purpose of the analysis.

The test proofs PDMs are promising approach breaking the language barrier

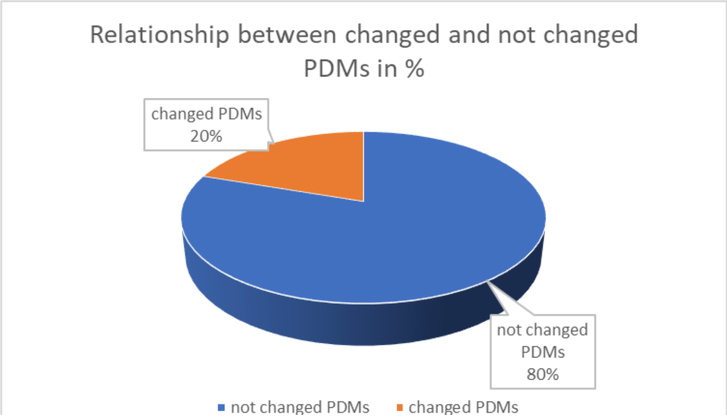
Some PDMs have been used very often compared to others



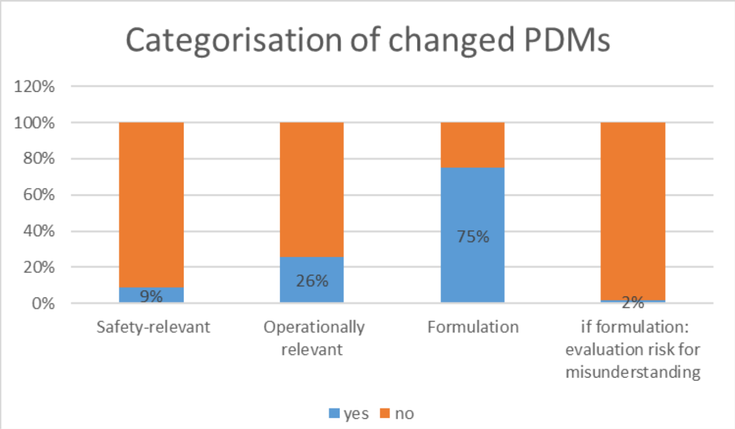
9% of almost 400 messages were not able to be covered with the existing PDMs



The relationship between changed and not changed PDMs in % highlights the fact that the majority of used PDMs has not been changed.



Most of the changes can be explained just by adaptions regarding the formulation



Test participants see PDMs as a promising concept

Time

- It has been recognized by the experts that during the test the usability highly increased for the participants. It was pointed out several times by the participants themselves that the process clearly accelerated.

Form of communication

- Participants pointed out that during normal operations dialogues are more informal that during the test situation.

Value of preparation for dealing with PDMs

- Good preparation/training is essential in order to use the PDMs properly
- fast progress by users when using the PDMs

Practicability of PDMs in daily operations

- Test shows that with correctly developed PDMs and proximity to the real situation, it is possible for two people who do not speak the same language to make it possible to understand each other with a tool.
- PDM make life easier for the operators in a variety of use cases.
- Possibly very easy to use close to borders
- there is a need and interest in train drivers wanting to be on the road in traffic crossing borders

Results and evaluation of the test in short!

Are the current PDMs sufficient to be able to drive not only on border sections and in border stations, but also on broader border areas and onto the entire network?

- The basis for the test were scenarios of real simulators.
- Scenarios of simulators are applicable to the entire network.
- More than 90 % of the approx. 400 messages used, were covered with the existing PDMs

If no, where are the gaps?

- Gaps were detected in case the test participants used free speech.
- Free speech was used just in 9 % of the approx. 400 messages used.
- In some cases
  - Test participants have not used existing PDMs
  - Experts evaluated messages to be retained as fee text
  - Informal phrases were used

Which additional PDMs fill the gaps?

- 3 new PDMs ae proposed to the sWG PDM on the topics (continue train ride, emergency brake, sanding)
- Experts take into account that the test was limited.

Are PDMs sufficient for the necessary dialogues?

- Test shows that with correctly developed PDMs and proximity to the real situation, it is possible for two people who do not speak the same language to make it possible to understand each other with a tool.

Are the PDMs in their current format efficient and easy to use?

- Due to the chosen methodology of the test participants evaluated the use of PDMs as consuming (note working with the excel file)
- It has been recognized by the experts that during the test the usability highly increased for the participants. It was pointed out several times by the participants themselves that the process clearly accelerated.

What needs to be improved in order to be able to use PDMs better from a user perspective?

- Fill gaps
- Tool (see T4R Language Tool)
- Variable translation (not necessary - see T4R Language Tool)

Can redundancies be detected and corrected in the PDMs?

- No redundancies detected

Results will be provided to the RNE LP (sWG PDM) and also contribute to the T4R project

3 Projects - same Goal

The progress of UIC X Border language contributes toT4R project and RNE LP

RNE – UIC – ERFA – EUAR – EIM – CER

Language Programme

UIC Xborder Language

S2R project

Translate4Rail

Improve the competitiveness of rail freight traffic by finding alternative solutions to **support**, with keeping the safety at least at the same level, the **RU-IM communication**

T4R Consortium

2 partners representing the European Sector

THE WORLDWIDE
RAILWAY ORGANISATION

RailNetEurope

Capitalising on synergies and complementary of competences

UIC representing the European Rail Freight Operators

RNE representing the European Infrastructure Managers

The concept of the T4R research project requires a language level of B1 & the successful implementation leads to reach the overall target

Tool

- **Objective: Language Tool development**
- ***Language Tool will be improved with the input of the participating parties for the purpose of the pilot***

Lab Test I

- **Objective (Sandbox): Proving the PDMs effectively complement the language skills for the Pilot**

Lab Test II

- **Objective (Simulator/Pre-Pilot): Proving the PDMs and the Language tool effectively complement the language skills under operational conditions**

Field Tests

- **Objective (Pilot): Proving the Language Tool effectively complements the language skills under real operational conditions**

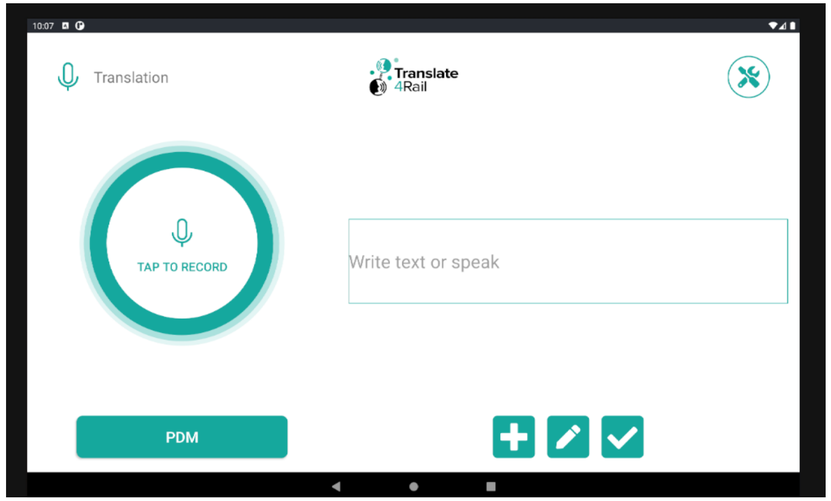
Target

- **amongst other things the target of T4R is to use the output of the project as a proof of concept to enable any driver to be safe when driving in a foreign country of which he does not know the language**

T4R Language Tool & Pilot are progressing well

<u>T4R Pilot arouses great interest!</u>

- aims at contributing to the improvement of the communication between RU drivers and IM signalers (Pontebba – Villach)
- RFI and ÖBB Infra are involved as IMs
- RUs involved are RCG, DB Cargo and Mercitalia
- The RUs coordinated by UIC under X Border project and IMs coordinated by RNE



<u>Language Tool is developed and being tested!</u>

- In the framework of Translate4Rail, an agile digital tool is developed to be pilot tested (developed by RNE and UIC funded by Shift2Rail)
- Enhancement of PDMs
- T4R Language Tool finally developed
- Laboratory Tool Testing started in October
- Execution of the laboratory tests of the language translator prototype and the field test through Pontebba/Villach

T4R partners are available to inform about further progresses on the project in the future

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Thank you for your kind attention.