



UNIFE – Digital SERA

How do we get there?

Alice Polo
Senior Manager

27 November 2015, Florence

- **UNIFE** represents the **European Rail Supply Industry**
- Based in Brussels since 1992
- The trusted partner of **European and International Institutions** in all matters related to rail and transport
- **Full members:**
Over 80 of the largest and small and medium-sized companies in the rail supply sector
- **Associated members:**
17 including 15 National Associations (ASSIFER in IT), representing almost 1000 suppliers of railway equipment
- UNIFE members have an **84% market share in Europe** and supply more than **46% of the worldwide production** of rail equipment and services.

Who we are



UNIFE Members



Associate Members



- **UNIFE has put great attention to the digital initiative and considers digitalisation as a priority**
- **UNIFE is engaged with DG move in the discussion paper on Digital SERA**
- **UNIFE is supporting different EU initiatives, such as the DTLF – Digital Transport and Logistic Forum**
- **UNIFE recently created a “UNIFE digitalisation Platform”:**
 - To bring together all the relevant rail manufacturers/suppliers;
 - To develop an industry view of the priorities for the Digital SERA;
 - To ease discussion with others stakeholders.

Digital SERA

How do we get there?

- 1. Why digitalisation? What are the main benefits that digitalisation will bring to the sector and what are the customers' expectations?**
- 2. What has been already achieved in terms of digitalisation of the railway sector? Examples of digital solutions**
- 3. What are the regulatory challenges posed by digitalisation?**

Why digitalisation? The industry's answer

- **The industry is ready to digitalize the rail system in order to:**
 - Increase system performance and at the same time reduce its LCC;
 - Develop easy to access solutions to the benefit of the European users/passengers;
 - Work in partnership with RUs/IMs to reach common goals.

- **The next steps should consist on better understanding the initiative and identifying:**
 - How the industry can make best use of existing digital technologies to improve its current offer?
 - How to best use this initiative to position rail as the backbone of public transportation in a multi-modal environment?
 - How the EC and stakeholders can practically support its implementation?

Digitalisation: Touching all rail subsystems

■ DIGITAL RAILWAYS a (overly) vast subject:

■ Every rail subsystem is concerned by digital:

- *Rolling Stock*
- *Infrastructure*
- *Signaling*
- *Energy*
- *Passenger / freight customer information*



■ There are many perspectives from which a holistic digital rail system can be drawn:

- *End user perspective*
- *IM/RU perspective*
- *Rail supply industry perspective*

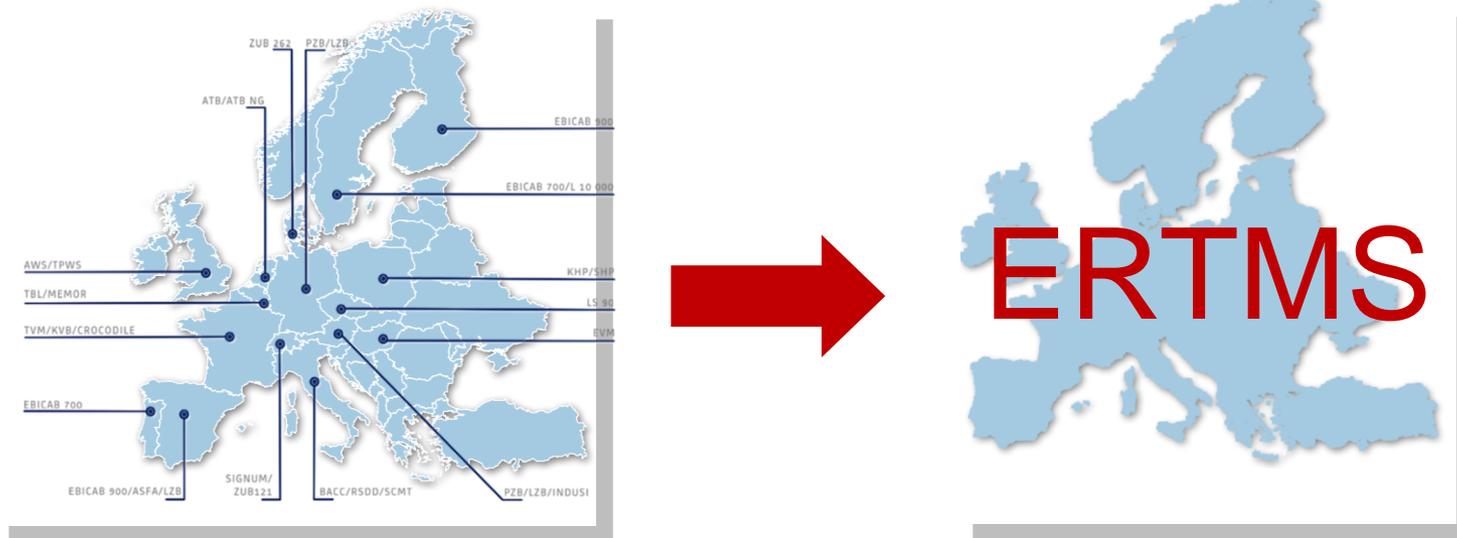
What has been already achieved?

Examples of digital solutions

- **The supply industry makes already digitalisation possible through the development of innovative products and services:**
 - Signaling solutions, ERTMS/ETCS
 - Communication solutions, onboard safety related (TCMS) or infotainment (internet, etc.)
 - Passenger/customer information solutions, apps, timetable and ticketing devices, TAF/TAP
 - Monitoring and diagnosing tools, train and track maintenance
 - Energy management solutions
 - Development of sensors, use of internet of things
 - Security systems, software image recognition, cyber security
 - Traffic management products, asset management tools and big data

An example of digital application for railways: ERTMS

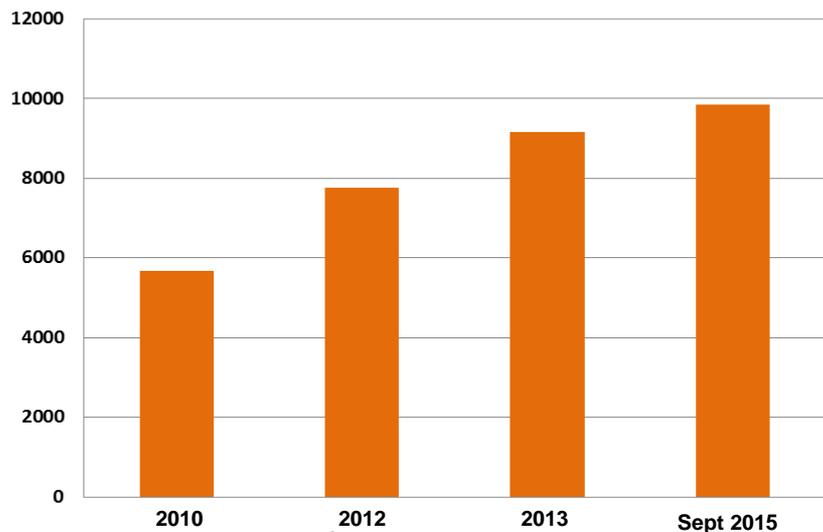
- Having more than 20 signalling systems (ATP) in Europe is a major problem for international railway traffic
 - Costs are significantly raised as locomotives have to be equipped with each system to cross borders
 - Drivers needs to be trained for each system
 - In some cases trains must be changed at the border



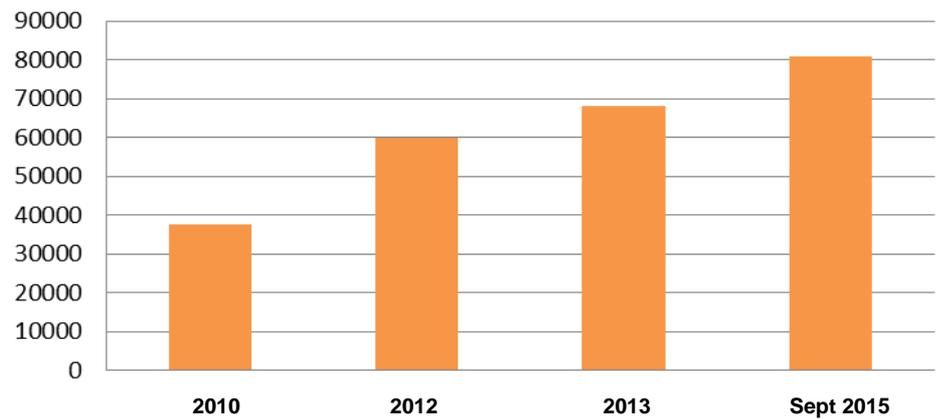
- **ERTMS = create a unique signalling system for Europe**

ERTMS, a European standard Worldwide success

**Number of vehicles equipped with ERTMS
worldwide
Contracted**



**ERTMS equipped track worldwide (km)
Contracted**



- **ERTMS is the backbone of the Digital SERA**
- **Current regulatory framework: CCS TSI + European Deployment Plans**
- **Ensure, at European level, the necessary financial support to the ERTMS deployment: CEF, EFSI**



What are the regulatory challenges posed by digitalisation?

- For UNIFE the regulation in place is already comprehensive.
- The working document of the European Commission “Digital SERA” gives a good overview of all the current regulatory activities in place.
- UNIFE would like to see a more strategic view from the railway sector on the digital agenda. In particular, UNIFE would like to prioritize as follows the on-going activities:
 - Priority 1: Speed up technology implementation
 - Priority 2: Modernise maintenance
 - Priority 3: Use of existing registers
 - Priority 4: Research

Digital Sera, priority 1: speed up technology implementation

- **Priority 1 should be to speed up technology implementation:**
 - EU-defined digital railway applications (ERTMS, TAP, TAF, registers) are implemented slowly
 - UNIFE calls for a faster implementation of digital railway application thanks to the Digital Single Market Strategy (e.g. e-transport initiative)
 - Where needed, funds for implementation should be made available



Digital Sera, Priority 2: modernise maintenance

- Digitalisation is **a must** to foster railway safety, sustainability and competitiveness.
- Today **infrastructure maintenance still relies on old practices** (monitoring campaigns, inspection, inventory,...): these practices must necessarily evolve in the digital age, where all technical parameters need to be accurate, objectively evaluated and measured.
- Advantage: **decrease costs, better performance, from corrective to predictive maintenance, better use of track capacity.**
- Today, due to lack of data registration and exploitation, **no predictive analysis** is made possible, and maintenance is limited to identifying weak infrastructure points associated to measuring values reaching an alert level.

Digital Sera, Priority 3: better use of existing registers

- Today registers do not allow for an operational use of the data they contain
- The digitalisation of SERA must go in this direction!



Priority 4 Contribution of Research: Shift2Rail, the new instrument (1/2)

- **Shift2Rail, the new and ambitious European Research & Innovation Programme, is best positioned to handle the future of digitalisation with a holistic approach:**
 - A long term vision on digital railways can be applied;
 - Research can become a quick-win with the deployment support of CEF;
 - All Shift2Rail Innovation Programmes are concerned;
- All sub-systems work together: a digital approach also in the management of the interfaces between the different sub-systems (Technology Demonstrators);
- A whole industry solution: Supply industry, IMs and RUs will work together with the support of academia



Priority 4 Contribution of Research: Shift2Rail, the new instrument (2/2)

- However Shift2Rail will not embrace all the digitalisation challenges due to a limited budget.
- Horizon 2020 should contribute more to the rail research needs regarding digitalisation.
- Rail transport is the backbone for implementing a multi-modal and integrated transport answering to the challenges of the EU digital initiative.



Conclusions

- **UNIFE is engaged to make the digital railways happening**
- **UNIFE suggests to have the following priorities in the digital SERA commission document:**
 1. Speed up the implementation, in particular the deployment of ERTMS in Europe
 2. Implement predictive maintenance by digital solution
 3. Better use of existing registers
 4. Allocate more EU funds to rail research (for digitalisation)

Thank you for your attention!

any question?
please contact alice.polo@unife.org