







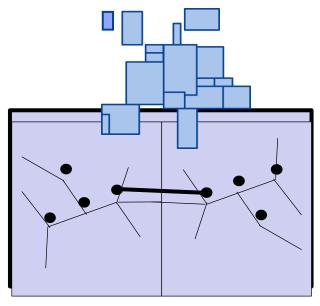




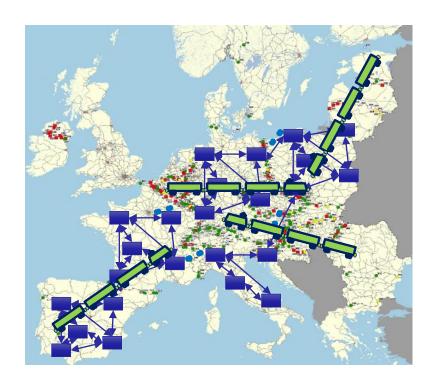


### Frictionless Train Movement in the Single European Railway Area

### **European Thinking in the Rail Network**



Single Rail Area - harmonised specification Operators work seamlessly across borders (in competition)



Go everywhere operators and rail vehicles - Single Safety Certification and EU wide Authorisation (4 RP)

True harmonisation of operations at EU level - OPE TSI 2019 revision and elimination of national rules

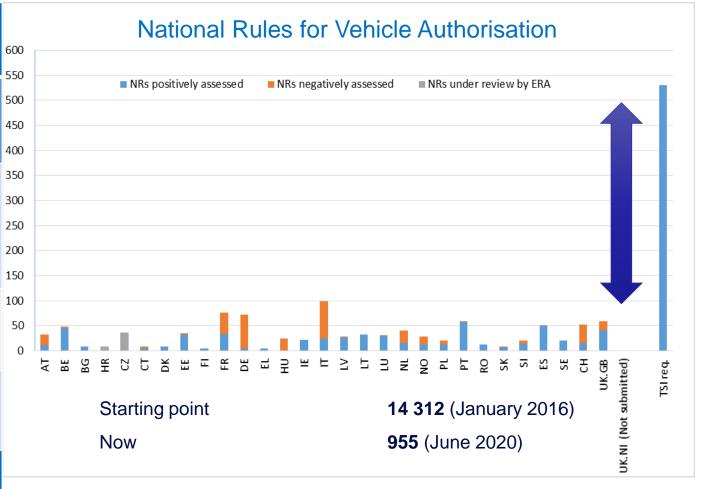
Increased interoperability and ERTMS game changers - TSI 2022 revision

# SFM SHAPING THE FUTURE OF MOBILITY

(4 rejected)

#### Facts & Figures (December 2020)\* **ERTMS** Vehicle Single Safety Trackside Certificates **Authorisations Approvals** 1221 24 19 delivered\* representing in total delivered applications 14488 vehicles 15 93 19 projects ongoing projects ongoing initial engagements from which 4 closed since 15 December 2020 Delivery for conformity-to-Delivery within an type with median of 3 average time of 4,25 working days in months November 2020 1138 conformity-to-type; 30 pre-engagement baseline opinions; 45 other

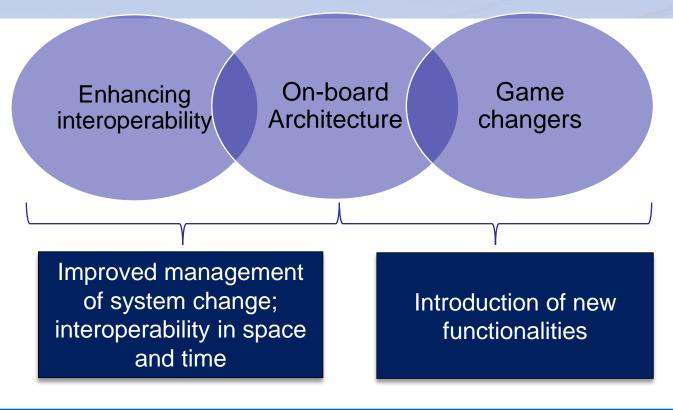
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\*) since 16 June 2019



### Digital Rail and Green Freight TSI Revision (2022 Package)



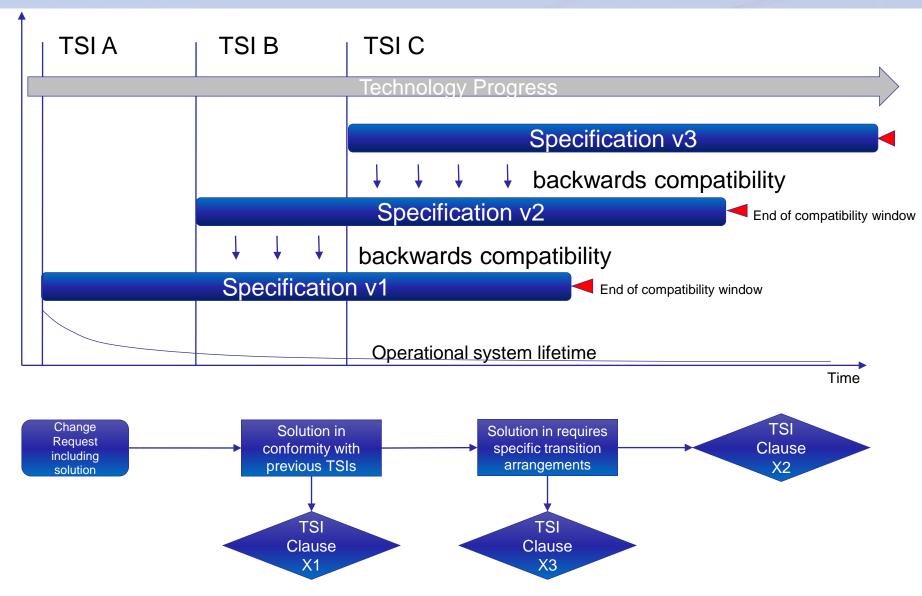
Enhancing ERTMS technical and operational interoperability

Modular on-board architecture to deliver more flexible, robust and future proof system

More efficient rail freight (DAC)

Simplifying and improving requirements on rail vehicles with a particular focus on freight







# The System Pillar

#### RAIL INTEROPERABILITY AND SAFETY COMMITTEE (RISC)

**MEMBER STATES** 

#### **EUROPEAN COMMISSION (DG MOVE)**

- Legislate (Interoperability/Safety Directives)
  - Strategic guidance on overall vision
    - Follow-up and monitoring



RU & IM

Needs

•Requirement

s, Specs

Operations

Services

·etc.

Supplie rs

Design

Development

Systems

•etc.

Others

S2R JU &
European Rail
JU
System Pillar

Single coordinating
Body for the sector to
converge on the
operational concept,
the functional system
architecture, and
associated
specifications and
standards

Harmonised and validated solutions

#### **ERA**

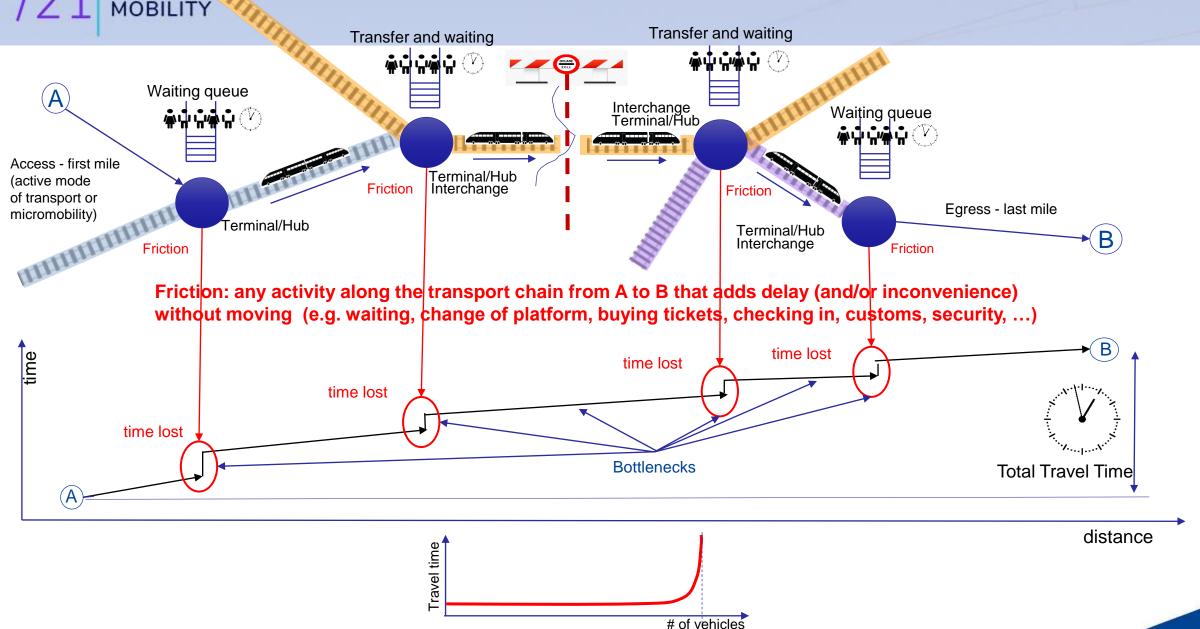
#### **System Authority**

Manages the process through TSIs or through the coordinated activities of CEN/CENELEC and ETSI

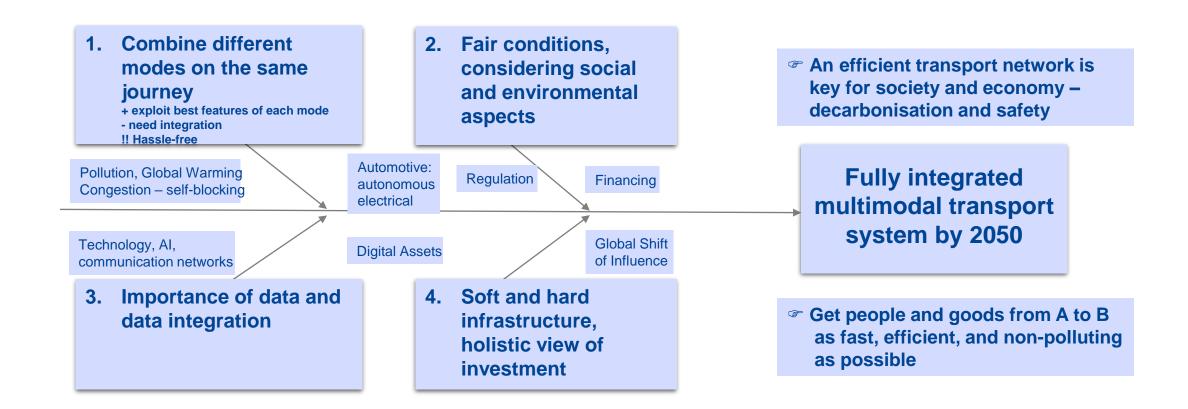
- Assessment of S2R results
- Additional specifications to be harmonised at European level
- TSI OPE
- Harmonisation of operational rules

# SHAPING THE FUTURE **MOBILITY** Waiting queue

### **European Capacity Management**

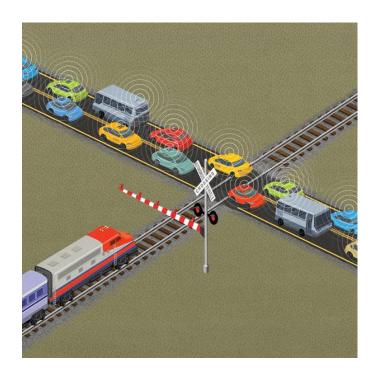


Multimodal Strategy Passengers - Freight



### Rail is the critical component

## Innovation allows the mitigation of hazards



#### Innovation needs to be supported by regulation

- Rules vs risk based (TSI OPE vs SMS)
- > Design Organisation Approval
- Staged (safety) authorisation (cf. Cybersecurity)

Step 2:

trials

Supervised field

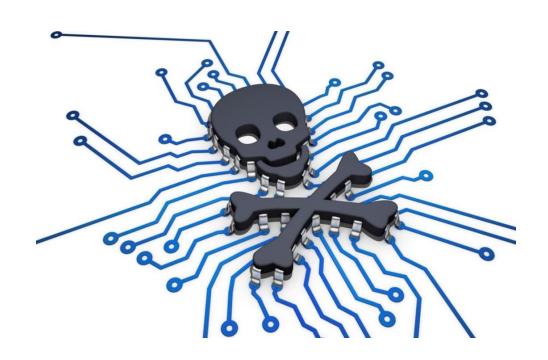
Step 3: Restricted deployment (defined groups of users in defined areas) Step 4: General deployment

Step 1: Laboratory evidence (confined/isolated areas)

Holistic View of Safety

### Legal Requirement for Cybersecurity

 Cybersecurity will be a design requirement of the system – safe operation has to be solidly rooted in physical reality





### Fair Taxes





Pricing of CO2 – "put a price on carbon"

Holistic change across the transport system:

- achievable emission targets for all transport modes
- binding objectives

- 4th Railway Package a turning point for rail: European mindset is necessary
- Regulation to promote a new sustainable hierarchy of transport modes
- Rail: the most energy-efficient transport mode (by far)
- The different modes of transport must be integrated:
  - Optimum transport mix for efficient and sustainable transport of people and goods, while respecting European coherence in digitalisation
  - Integrated requirements for multi-modality to avoid "friction", with capacity management and path allocation and a holistic view of transport safety at EU level
- An EU-wide responsible organisation, such as a Land Transport Agency, should be entrusted





# Thank you!

Making the railway system work better for society.

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