



Standard based on-board multimedia and telematics services  
for the railway industry

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# Standard based on-board multimedia and telematics services for the railway industry

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- ❑ Sylviane is senior expert in train to ground communication and network system with a large experience in radio communication. She is member of IEC TC9 WG43 & WG46.
- ❑ Laurent is leading development of Train and Passenger Information system with a background experience in rolling stock system engineering. He is member of IEC TC9 WG43, WG46 & WG48, CLC WG15 and CENELEC TC9X/TC256/WG36.

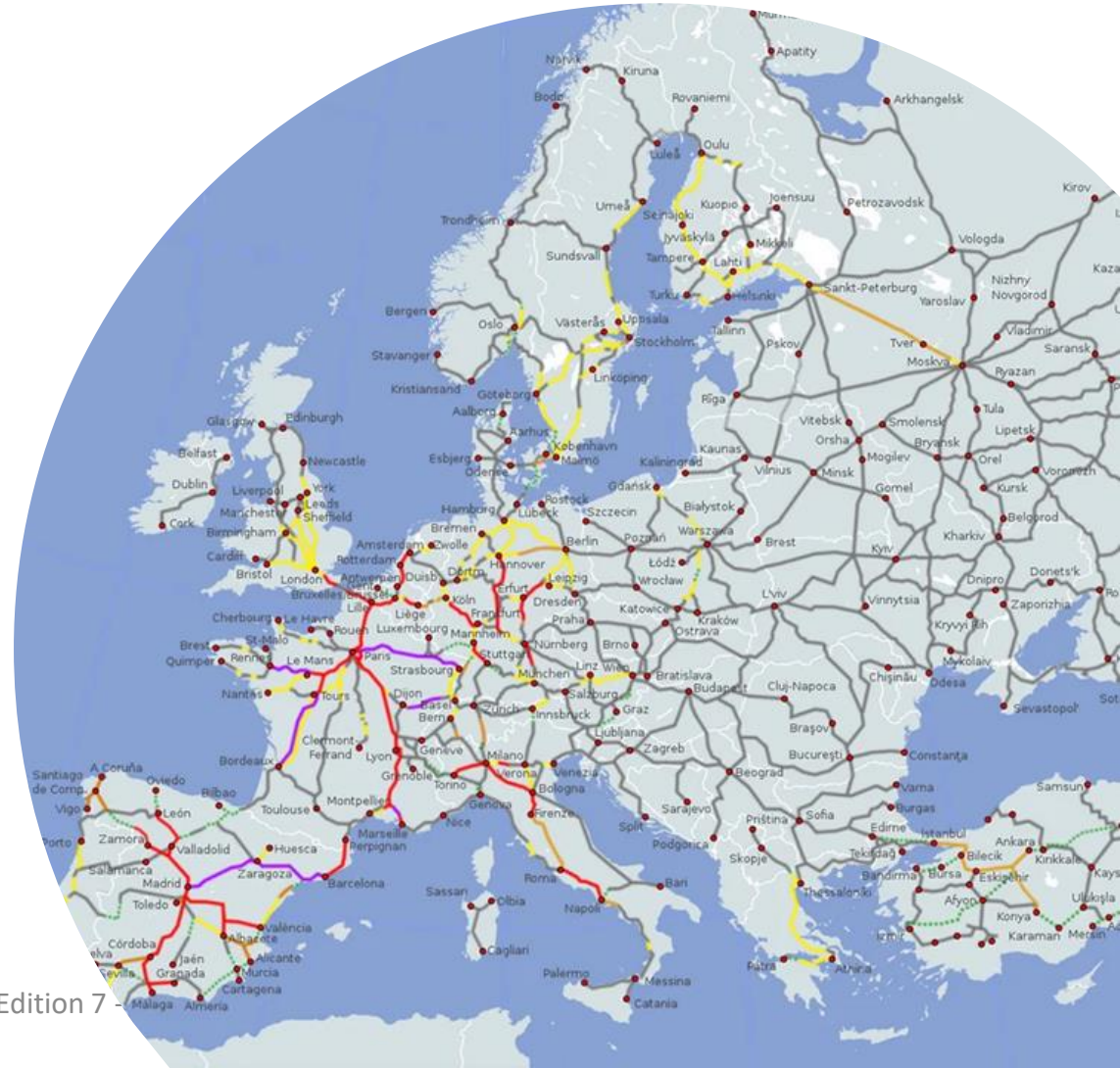


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## Interoperability ?

A train can travel freely and safely on **any line** in the European Union.

The aim is **seamless operation** for rolling stock which could run anywhere in Europe, and consequently infrastructures, which would be completely **compatible** with and accessible to any train.





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Interoperability ?

The coexistence of different electrification systems, a dozen of signaling systems, various clearance profiles and track gauges represent a **substantial hindrance** to the requirements of **interoperability**.



Power supply



Signaling



Gauge





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## Interoperability & Standards

Interoperability Directives **do not ask directly for standards** but intermediate mandatory laws as TSI

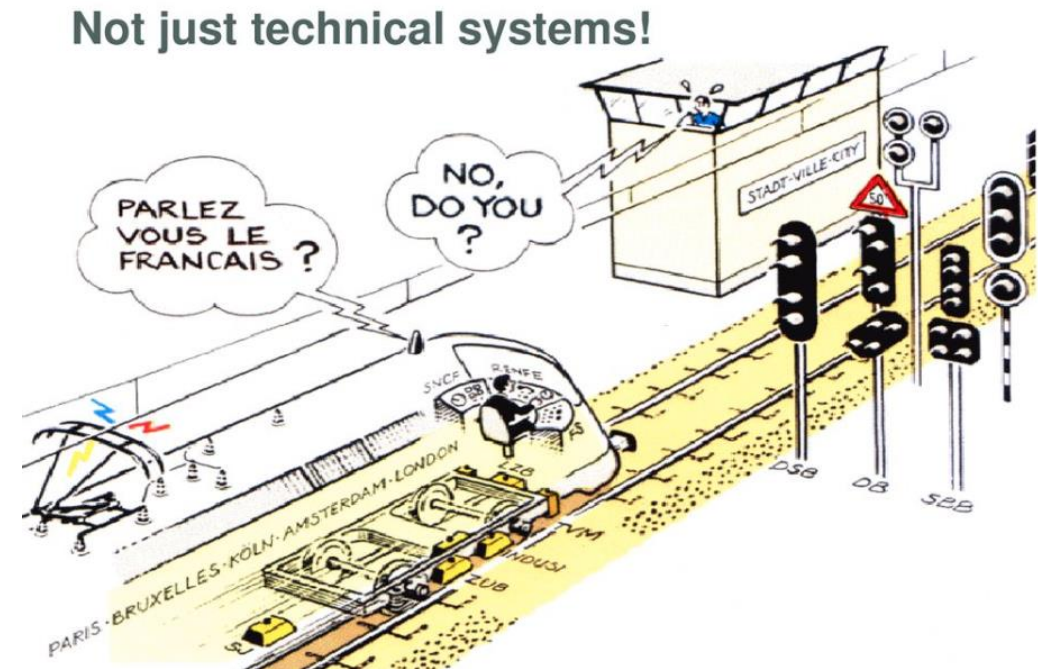




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## Interoperability & Standards

**TSI** relies on **standards** to achieve a better interoperability however ...





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## Interoperability & Standards

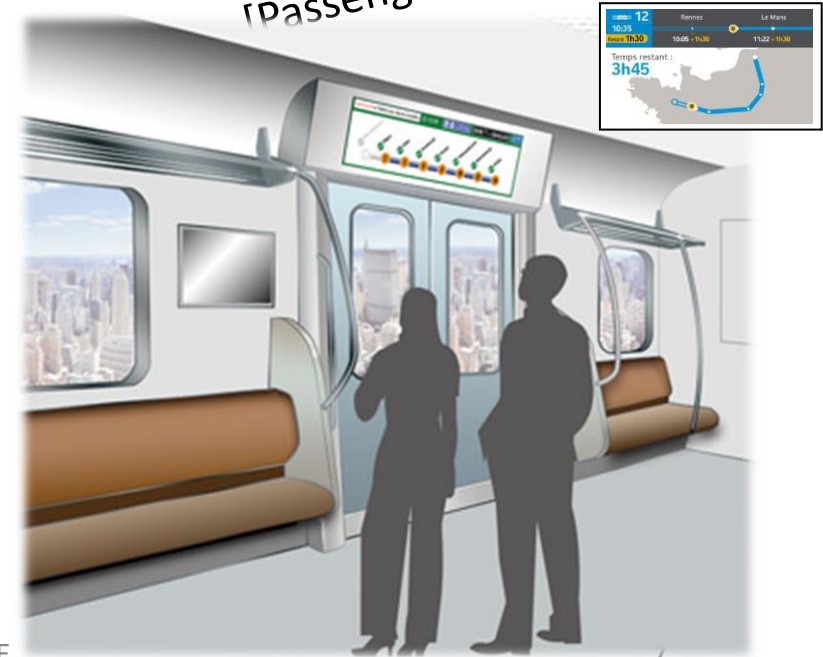
At a step down to equipment or system level:  
→ TSI and standards **are not enough** to guarantee interoperability in the sense of “**compatibility**” or “**exchangeability**”

Equipment  
[Doors]



How to ensure an easier exchange / refurbishment / upgrading of the system ?

Sub system  
[Passenger Information]





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## On board Multimedia & Telematics Services



Owners and stakeholders of OMTS domain request to master easily and freely the system with their own requirements

PTA : Public Transport Authority  
 PTO : Public Transport Operator





A PTO can operate multiple type and range of fleet vehicle and want to offer a seamless service to the travelers.

- ❑ The interface with the back-office IT system is crucial.
- ❑ T2G communication standards (eg IEC61375-2-6) do not provide a complete answer





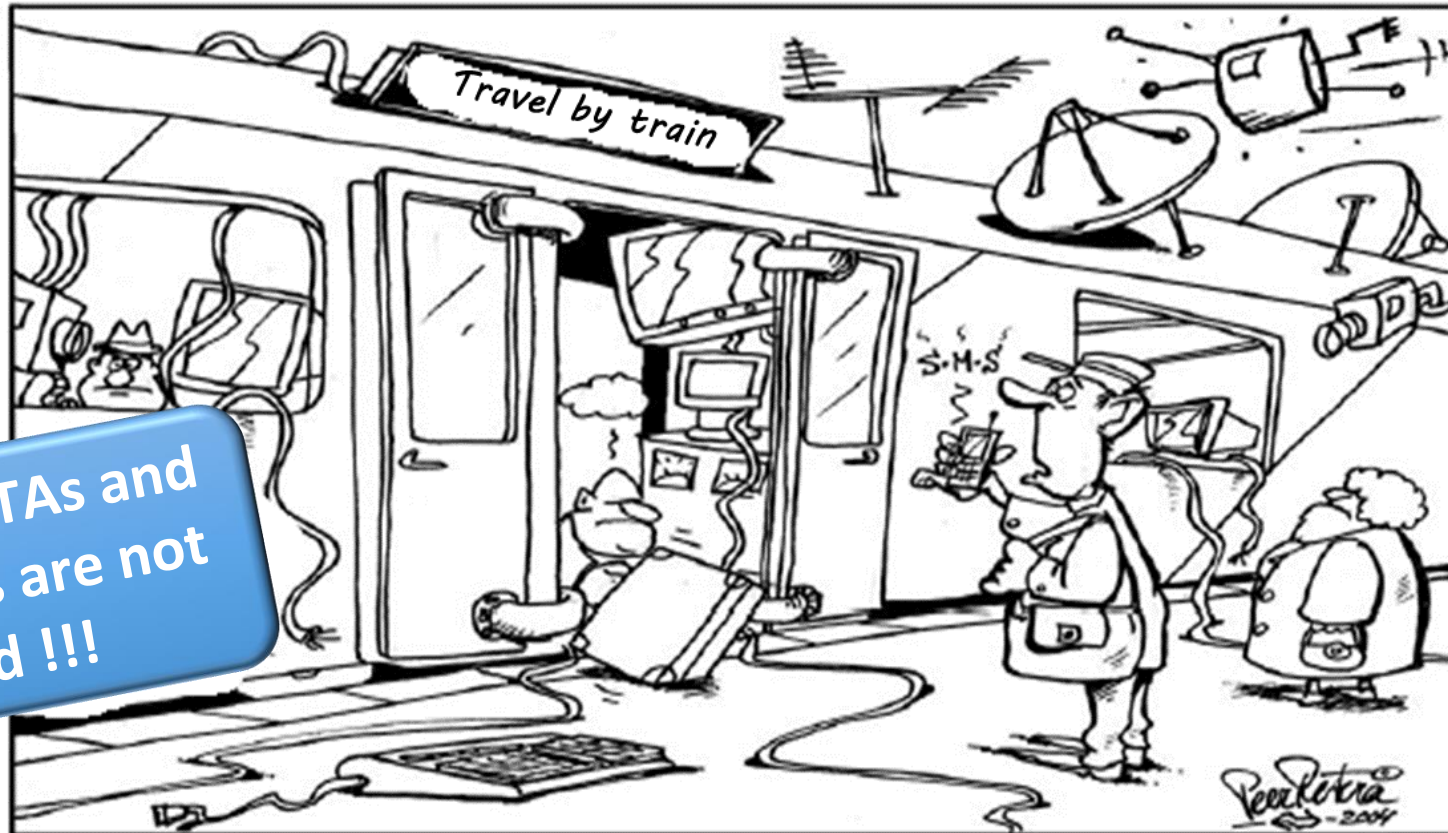
PTAs want the very best services for **traveler satisfaction** and improve **attractiveness** of public transport.



An increasingly **high demand** for new services to be implemented on board **quickly** and **easily**



PTAs and PTOs need to manage obsolescence, functional upgradability and retrofitting of their IT systems at the lowest cost.



**A nightmare for PTAs and PTOs if interfaces are not standardized !!!**

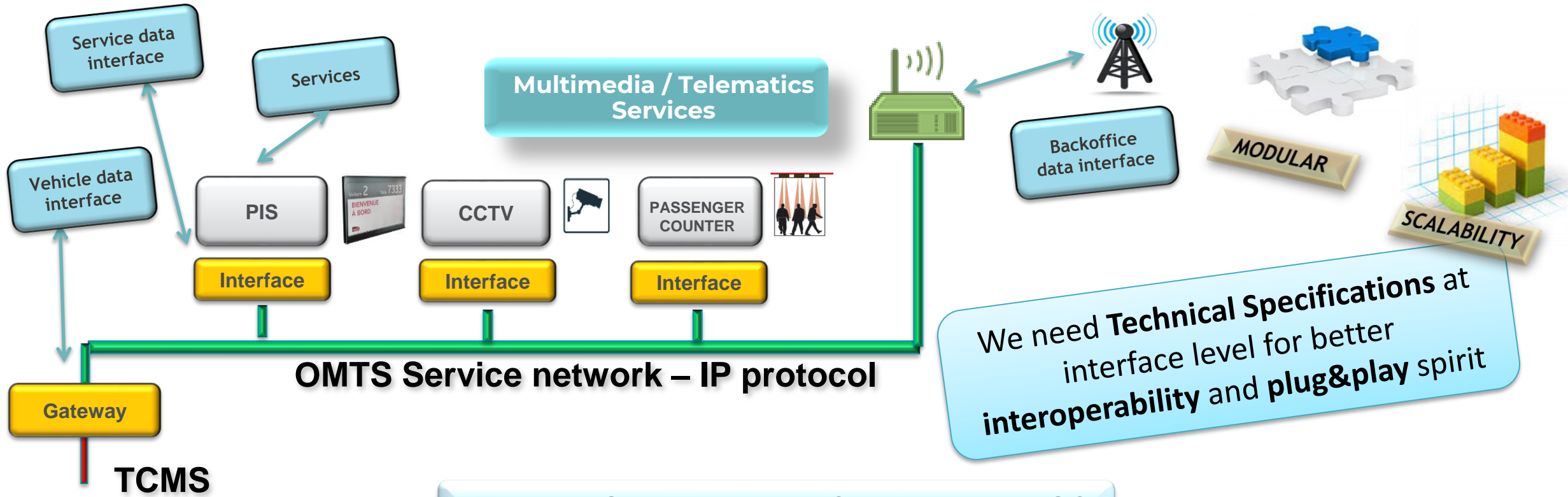




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For the benefit of **PTA** and **PTO** and industry, the railway stakeholders need an **open platform for OMTS**, based on relevant **standards** with the objectives of **being interoperable** in the sense of “**compatibility**” required by public transport organization

**On board Multimedia & Telematics Services**



**Technical Specification for Compatibility - TSC**



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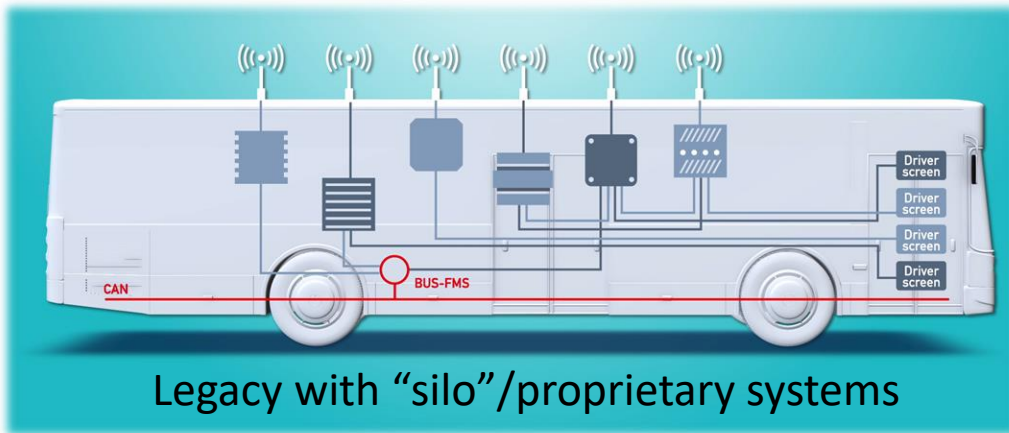
## OMTS issues in Public Transport

An inspiring history coming from light public transportation systems

Without standardization:

- Proprietary
- Inextensible
- Costly

→ ITS stand-alone on-board systems



Without standardization:

- Difficult installation
- Redundancies
- Multi-connectors
- Wiring issues

→ PT vehicles were not ready to implement such ITS systems



Lot of antennas



Many connectors



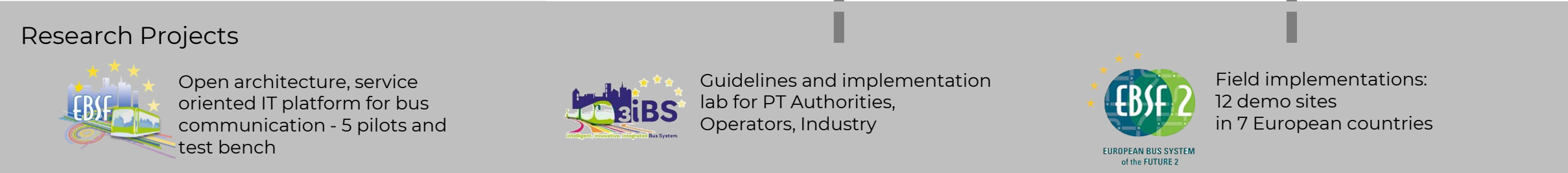
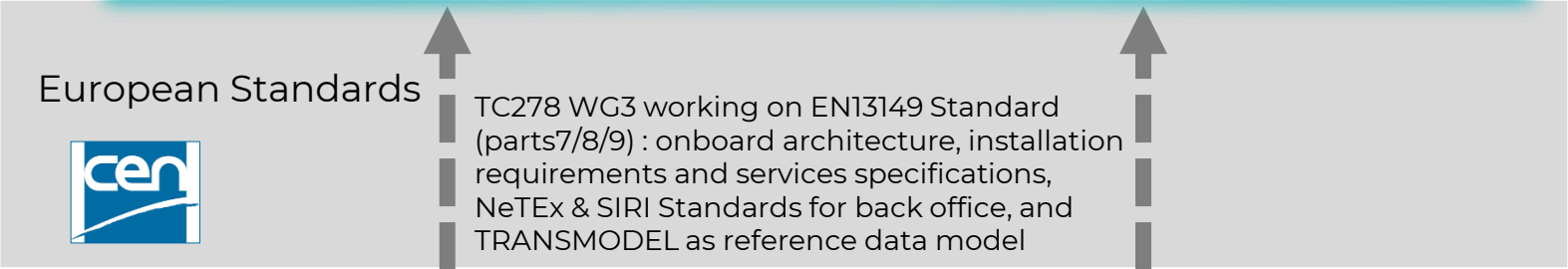
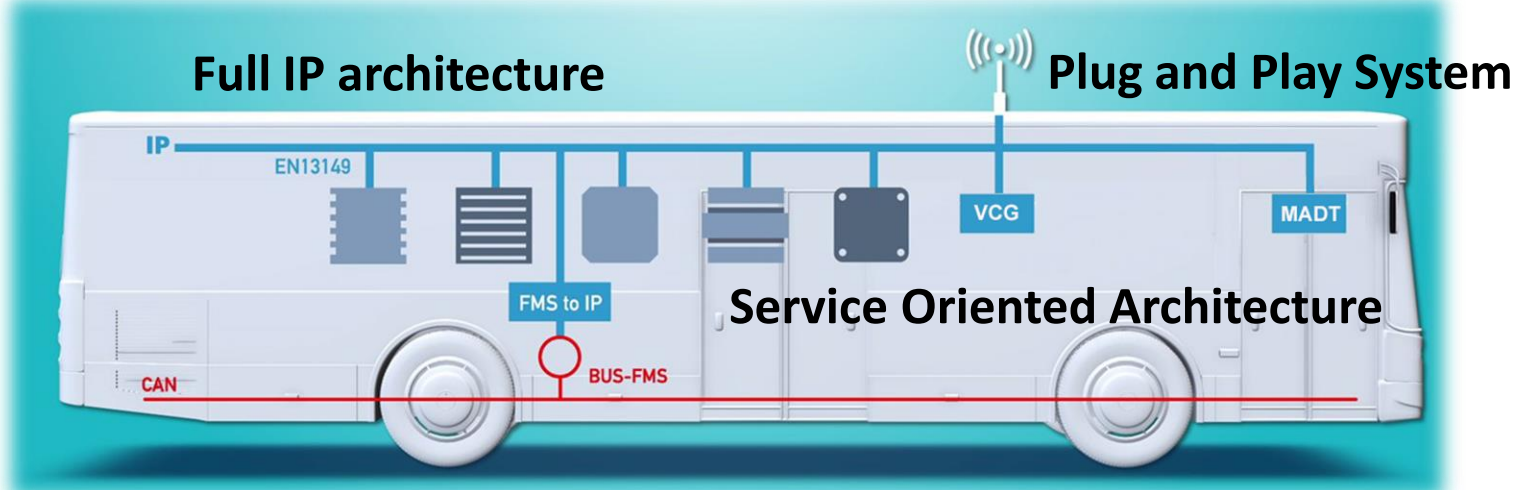
Difficult access



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OMTS issues in Public Transport

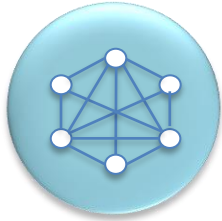
An open standard platform development granted from an European R&D project and coordinated by UITP





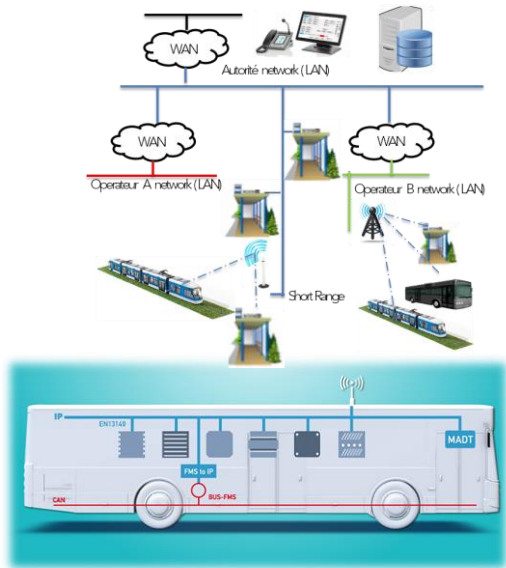
# Standard based on-board multimedia and telematics services for the railway industry

ITxPT : Information Technology for Public Transportation



## AN ARCHITECTURE FOR INTEROPERABILITY

The ITxPT **open architecture** brings not only cost advantaged, but also improves services to travellers and supports innovation



## A COMMUNITY FOR INNOVATION

The ITxPT community **gathers PTAs, PTOs, IT suppliers and Vehicle Manufacturers** from all **over the world** to define solutions for the next generation mobility



## A LABEL FOR COMPLIANCE

The ITxPT **label** is the **quality seal** confirming that equipment, software or service are **compliant** with **Technical Specifications**





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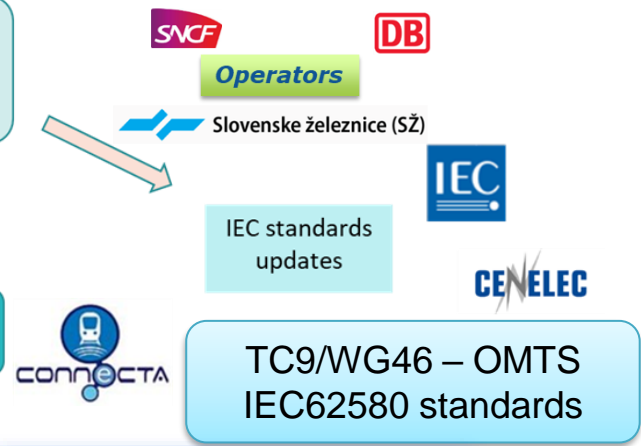
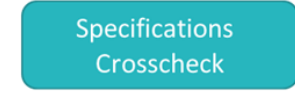
ITxPT goes for Heavy Rail

- ❑ Technical specification with Heavy Rail profile on going
- ❑ Best practices with guidelines for easier implementation



Shift2Rail/Connecta3 – R&D project enabler

- ❑ Analysis of ITxPT architecture by railway industry
- ❑ Provide inputs for standardization and ITxPT



Communication

- ❑ Promotion of ITxPT at INNOTRANS 2022
- ❑ More and more railways stakeholders are following the initiative and willing to adopt ITxPT architecture.



InnoTrans 2022  
20 – 23 SEPTEMBER · BERLIN

Join ITxPT and become an active member for interoperability





**ICT FOR RAILWAYS**



ITxPT complements the standards and provides the **missing brick** for **interoperability** and **compatibility** of multimedia and telematics services for the railway industry.



**ITS Directive & TSI**



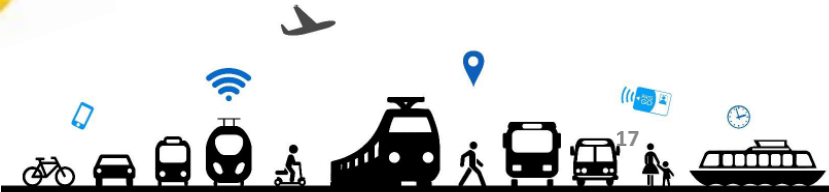
**IRS Multimedia**



**IEC62580**

**ITxPT**

**Technical Specifications**





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Thank you for your attention