



 **17-21**
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 **Vienna, Austria**
Aula der Wissenschaften

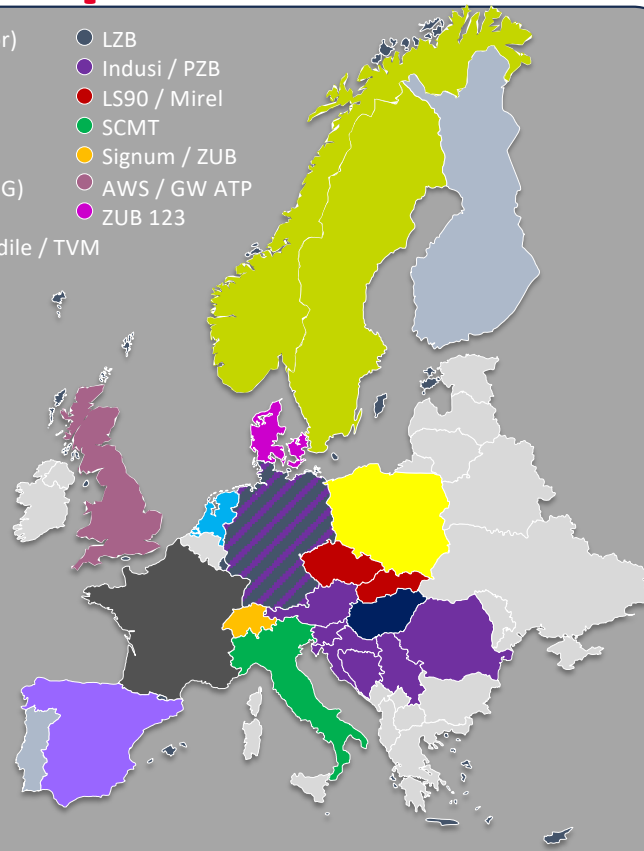
The transition period in Europe

Marc Trippel, CEO Stadler Signalling AG, CH

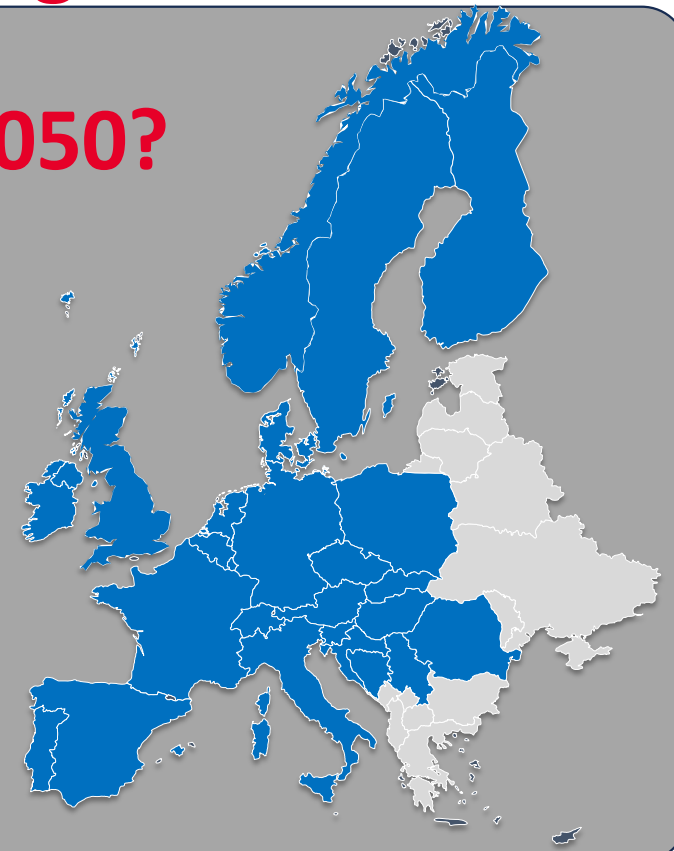


Europe's vision: Harmonizing ATP

- | | |
|-------------------------|----------------|
| ● TBL (/Memor) | ● LZB |
| ● ASFA | ● Indusi / PZB |
| ● EBICAB | ● LS90 / Mirel |
| ● EVM | ● SCMT |
| ● SHP | ● Signum / ZUB |
| ● ATP (EG & NG) | ● AWS / GW ATP |
| ● ATC2 | ● ZUB 123 |
| ● KVB / Crocodile / TVM | |



2050?



Europe's painful migration path

The European Rail Traffic Management System (ERTMS) became a crucial topic within European railways. Exponentially growing stakeholder situation resulting in migration period +50 years.

- **Interoperability of the national railway systems**
Class B Systems still dominating the picture
- **Efficiency gains (CAPEX, OPEX, capacity and safety)**
High cost due to double equipment during transition phase
- **Safety is national**

Europe's painful migration path

Tendency towards large scale projects brings additional complexity to the table. Competencies managing such contracts may pose serious challenges to any railway operator, while the industry lacks resources.

- **Competitiveness**
Limited supplier base and ongoing consolidation
- **Missing harmonization and challenging interfacing**
Operations, legacy systems, vehicles.
Discrepancy between decision making and financing

Way forward: Cooperations

Success Story:

ETCS GUARDIA ON BR 185.2

The pilot project by
Stadler, DB and AngelStar!

Stadler has for the first time
retrofitted a third-party locomotive
with its own ETCS train protection
system GUARDIA.



Way forward: Reduce stakeholders



- Development and deployment within 3 years
- Scalable system design: GoA2 in 2024 / expandable to GoA4
- Depot automation 2025 in commercial operation

Way forward: Ambitions



- ATO GOA4 on open track
- Pioneering automated rail traffic on open track
- On-demand operation in planning

Innovation to reduce complexity

The key to today's innovation lies in refocusing to the initial purpose, aligning the different interests between regulators, operators and suppliers and leveraging new technologies.

- **Flexibility and digitalization**
Process digitalization, efficient error corrections, open interfaces
- **New cooperation models**
Incentives/performance-based models
- **Predictability and stability**
Regulatory frame, safety vs. operations



Thank you for
your attention!

