



smartrail 4.0 – Zukunft der Zusammenarbeit Bahnen und Industrie

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Why smartrail 4.0 ?



Intermodal competition on value for money



Challenging renewal of interlockings



Implementation of ETCS L2 not satisfactory

Focus smartrail 4.0

- Everything needed to **plan and safely control** movements & occupations on the tracks
- Any type of line, any type of traffic

Re-think (whole) system from scratch using new technology options

Ensure migratability as a key success factor



smartrail 4.0: Clear goals and an up & running programme

Goals

↓ Cost 450 Mio CHF/yr

↑ Capacity 15-30%

↑ Availability 50%

↓ Collisions 90%

↑ Connectivity

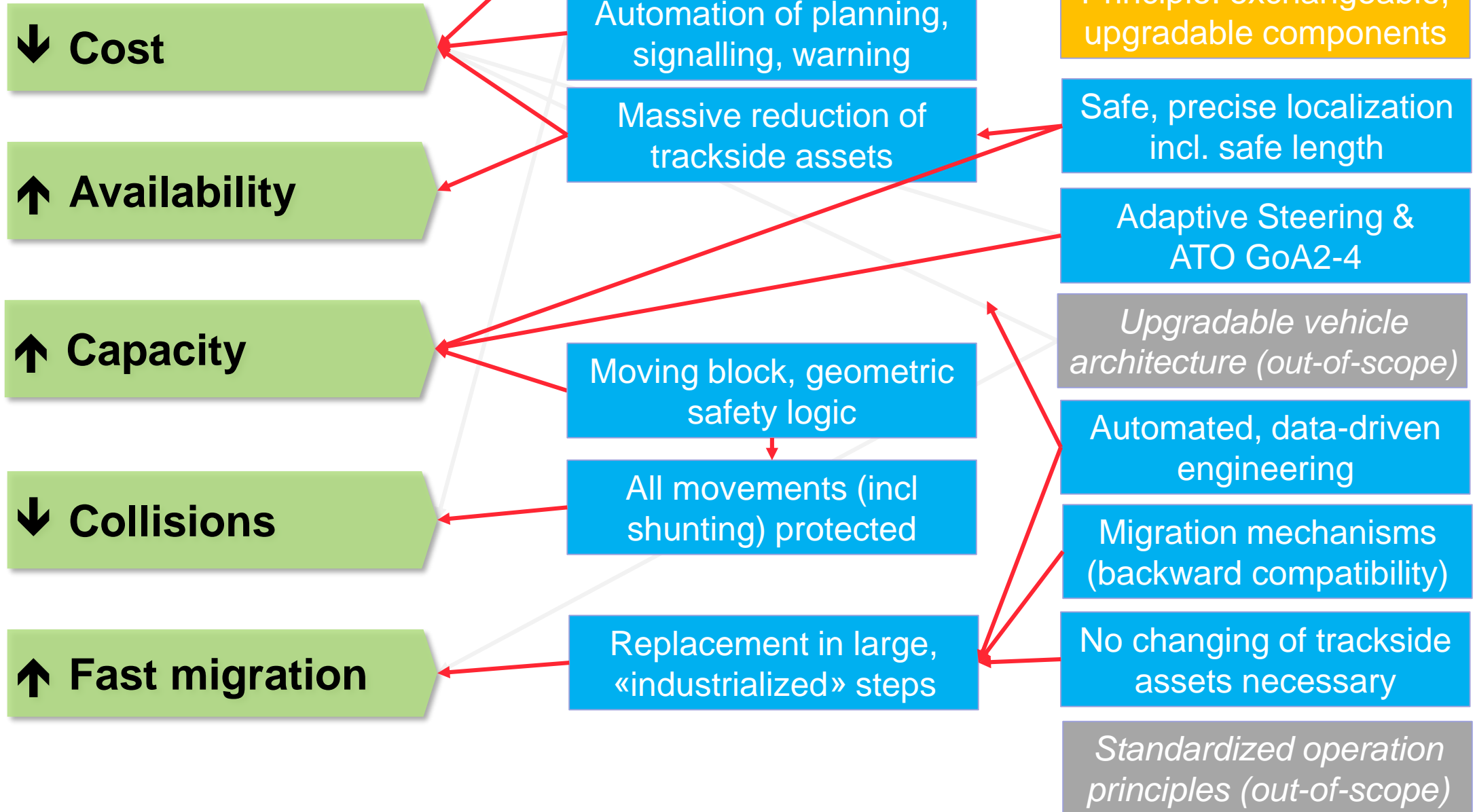
Programme

- approved in decembre 2016
- Joint programme with BLS, SOB, RhB, VöV
- Fully funded 2017-2020
- >150 staff on board

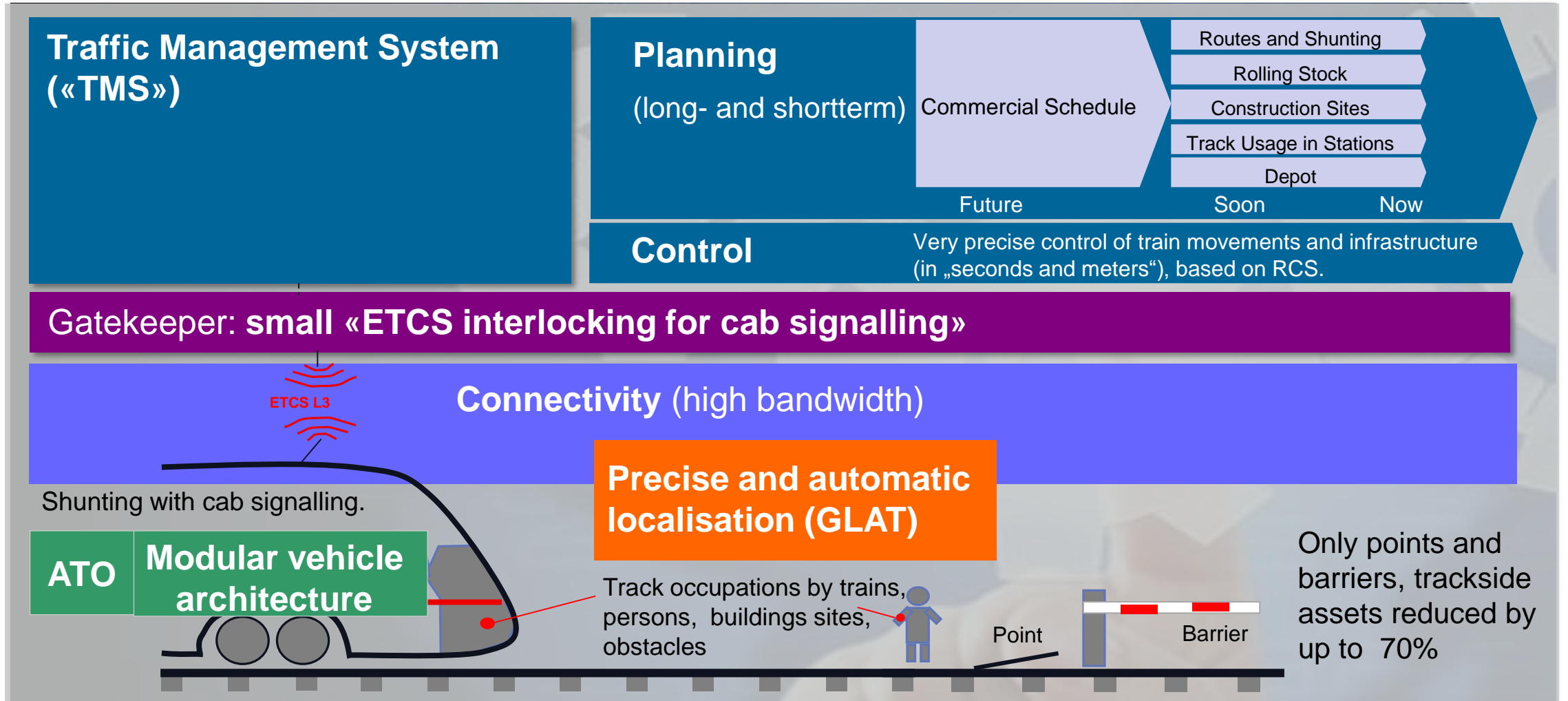


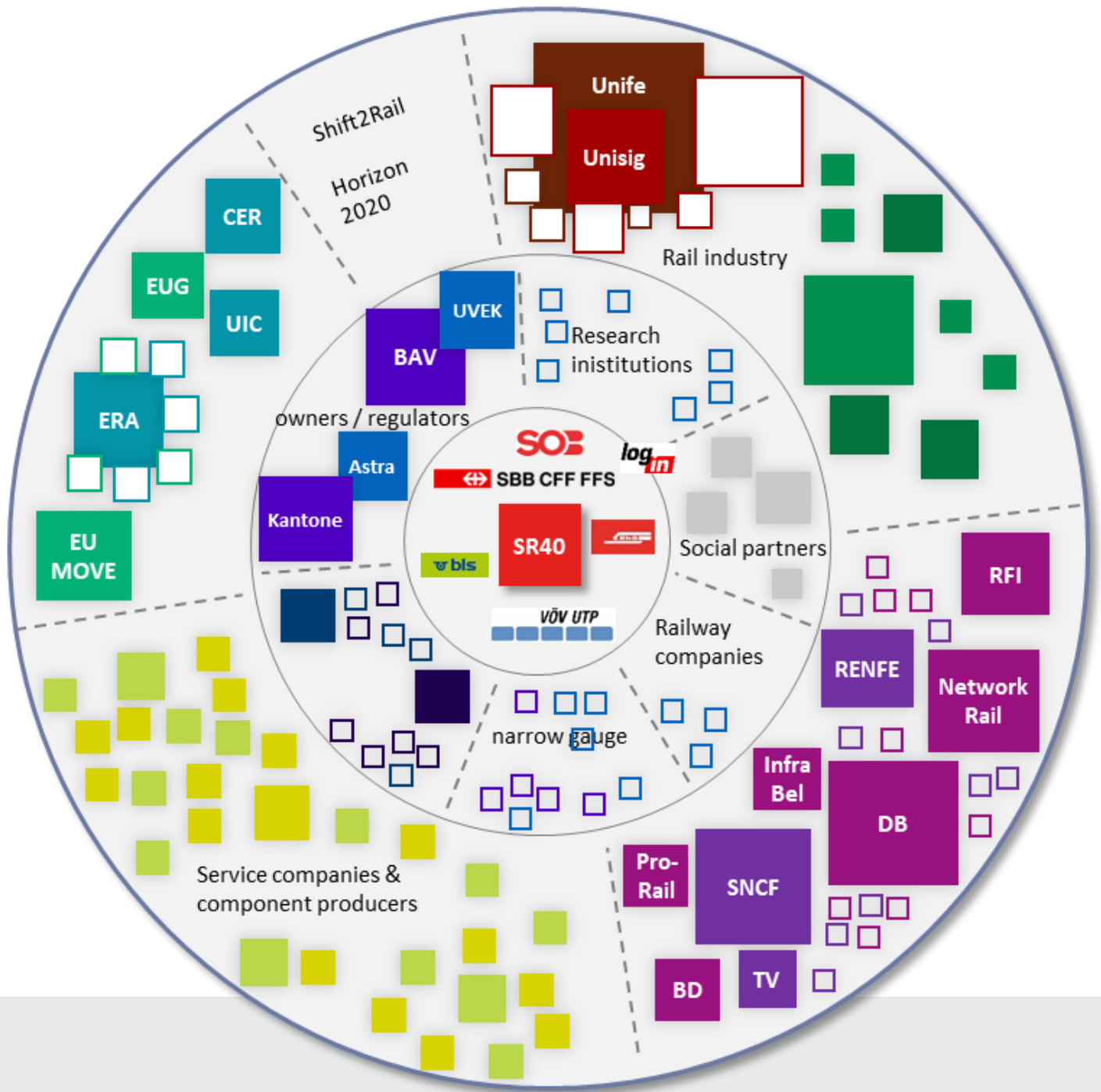
Goals & architectural enablers

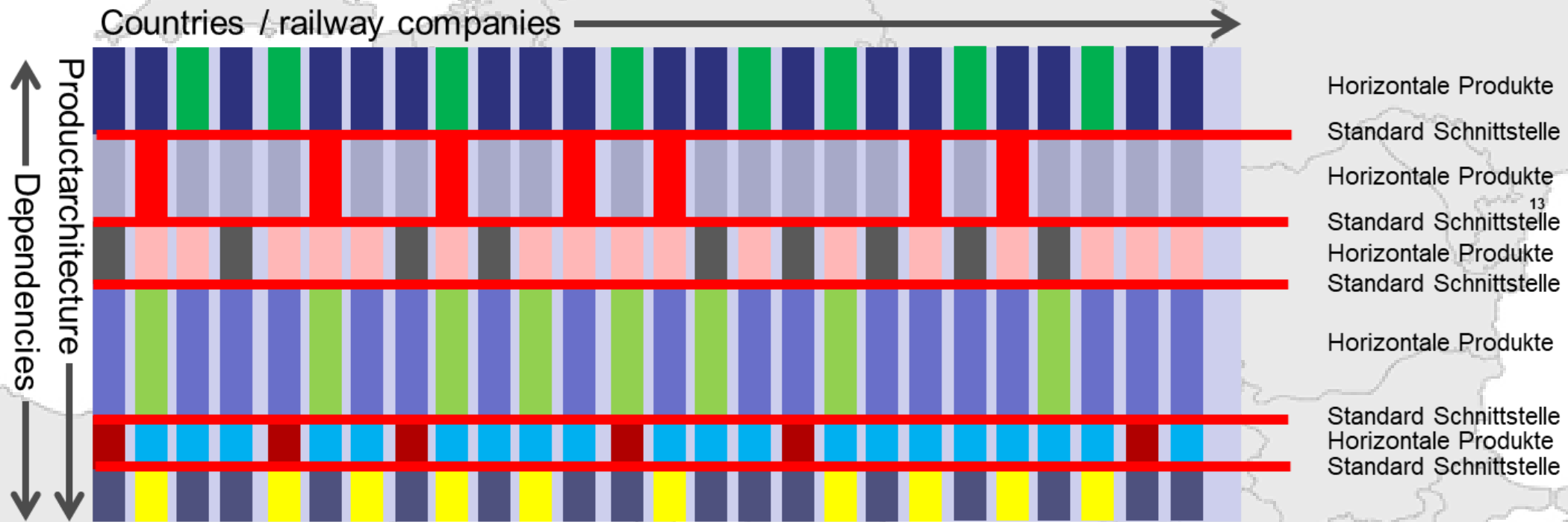
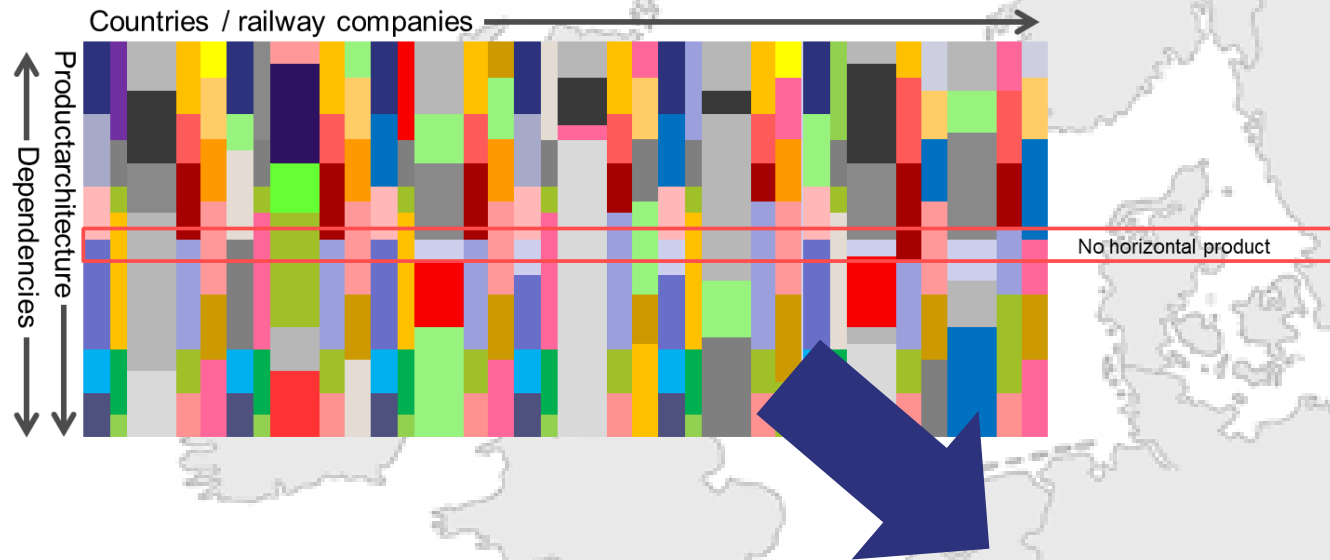
Different IMs will have different priorities.



smartrail 4.0 overall architecture



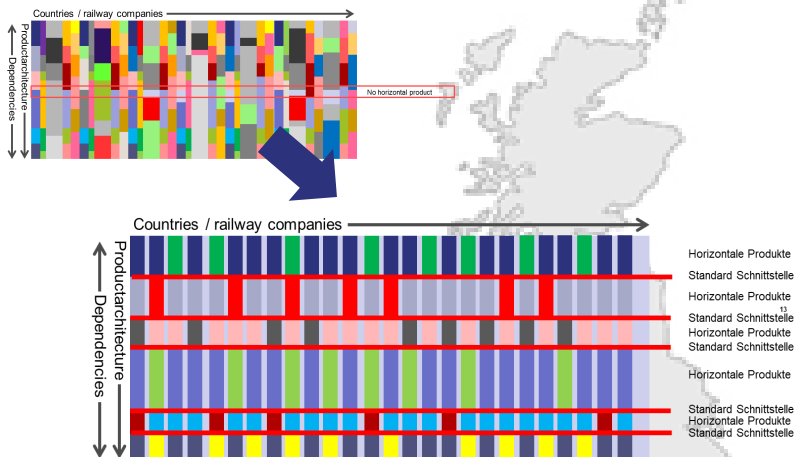




RCA

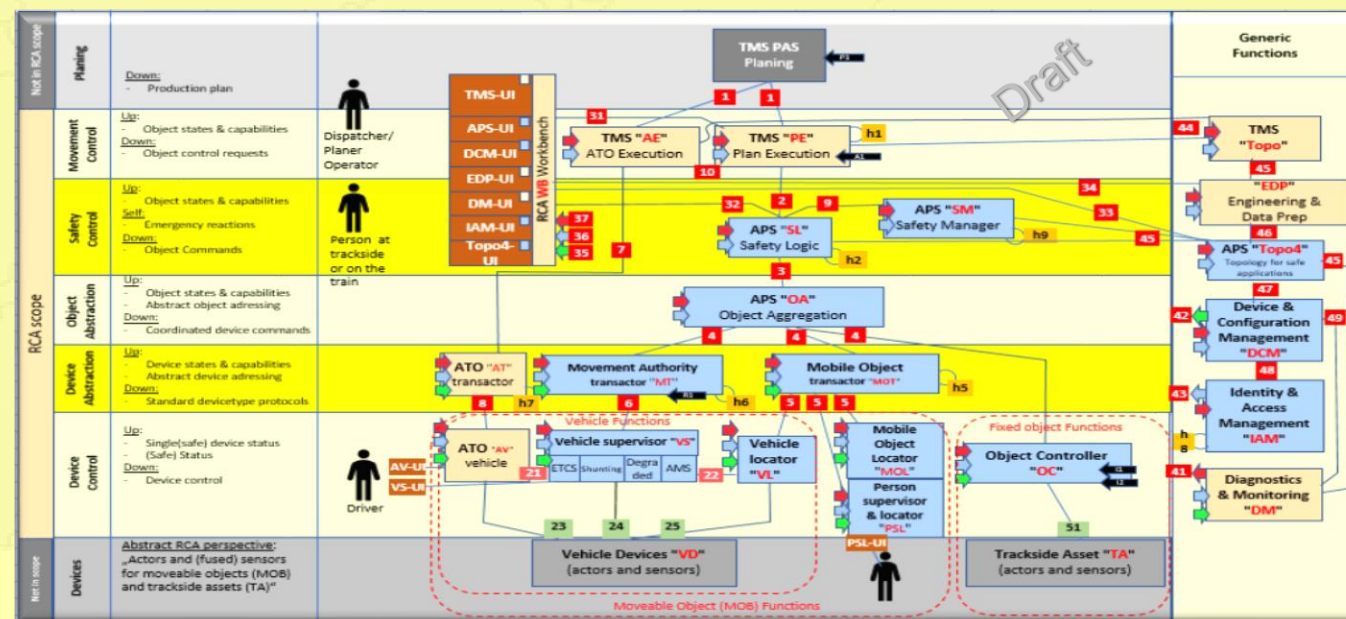
(= reference CCS architecture)

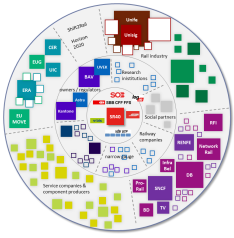
- Goal: shared interface specification for use in future projects / procurements.
- active members: DB, NR, ProRail, SBB, others to follow.
- first public «Alpha» release in feb. 19



smartrail 4.0 contrib

- Share our concepts & specifications (→ www.smartrail40.ch)
- Help drive the RCA process
- Want to apply RCA for smartrail 4.0





SR40 und RCA bedeuten Veränderungen

- **technisch**
- **organisatorische innerhalb der Bahnen (Abläufe, Berufsbilder)**
- **zwischen den Bahnen**
- **Zusammenarbeit / Geschäftsmodell Bahnen-Industrie**

Bahnen untereinander

- Wettbewerb zwischen Infrastrukturbetreibern?
- Fähigkeit auf nationale Eigenheiten zu verzichten?
- Gemeinsame Einschätzung Sense-of-urgency?
- Mut zum «driving seat»?

Bahnen – Industrie

- Bahnen harmonisieren Anforderungen
- Bahnen definieren als Kunden die Architektur
- Austauschbare Komponenten mit besserem Performance / TCO Verhältnis.
 - **Mehr Wettbewerb**
 - **Mehr Innovation, kürzere Erneuerungszyklen**
 - **Neue Anbieter**
 - **Mehr Rollouts**
- Neue Geschäftsmodelle, Anpassungen Produktlinien?





smart rail 4.0

Fragen?