

11th PRIME Plenary

16 November 2017

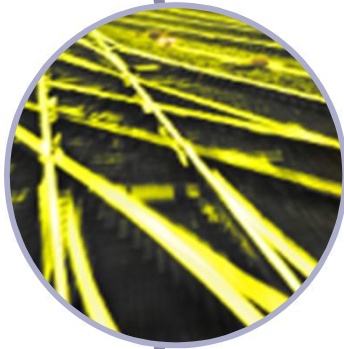
Interoperability – Possibilities and limitations

SBB, Georg Schmalz

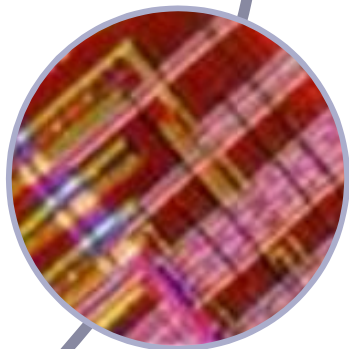
Agenda.



SBB Infrastructure part of the European IOP-rail network.



On-going work with challenges.



Saving cost in interoperability.

SBB is committed to interoperability.



- Swiss rail network part of the European interoperable rail network.
- Promoting rail freight corridors.
- Investments to the benefit of Europe.
- Unanimous decision of Swiss Parliament to adopt EU IOP directive.

Clearing legacy obstacles is not enough. Avoid new ones – as with ETCS DMI.

- Every pixel specified.
- New safety requirements multiply the cost.
- No visibility – no safety.
- Solutions available but not allowed or practical.

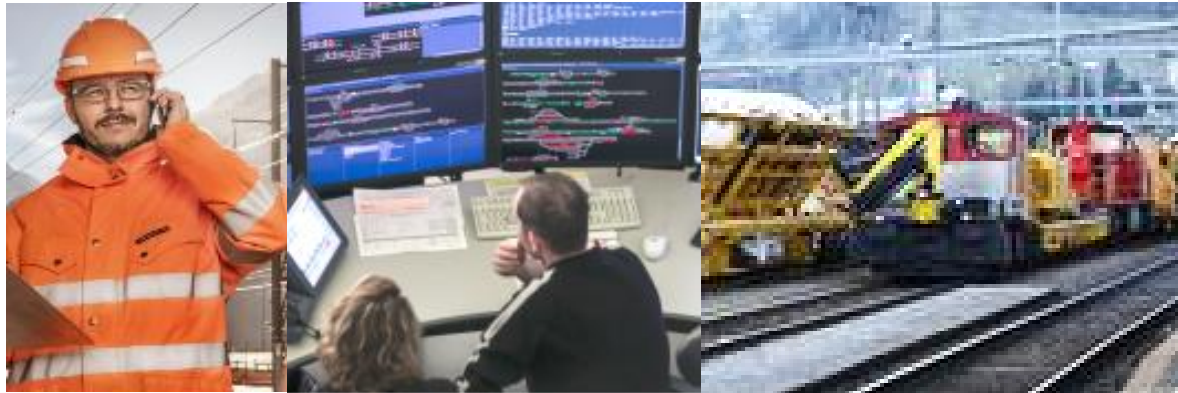


Missing harmonisation may stop interoperable trains during operation.



- No ETCS L2-traffic without crypto keys.
- Different national renewal interval for cryptokeys.
- Missing harmonisation.
- Increasing number of RBC and locomotives
 - more changes of keys required
 - risk for missing keys increase (organisational/human errors).
- Increasing risk that trains are blocking the track due to authentication errors.
- ➔ Systematic cryptokey change only when suitable on-line keymanagement system available and supported by both trackside systems and vehicles.

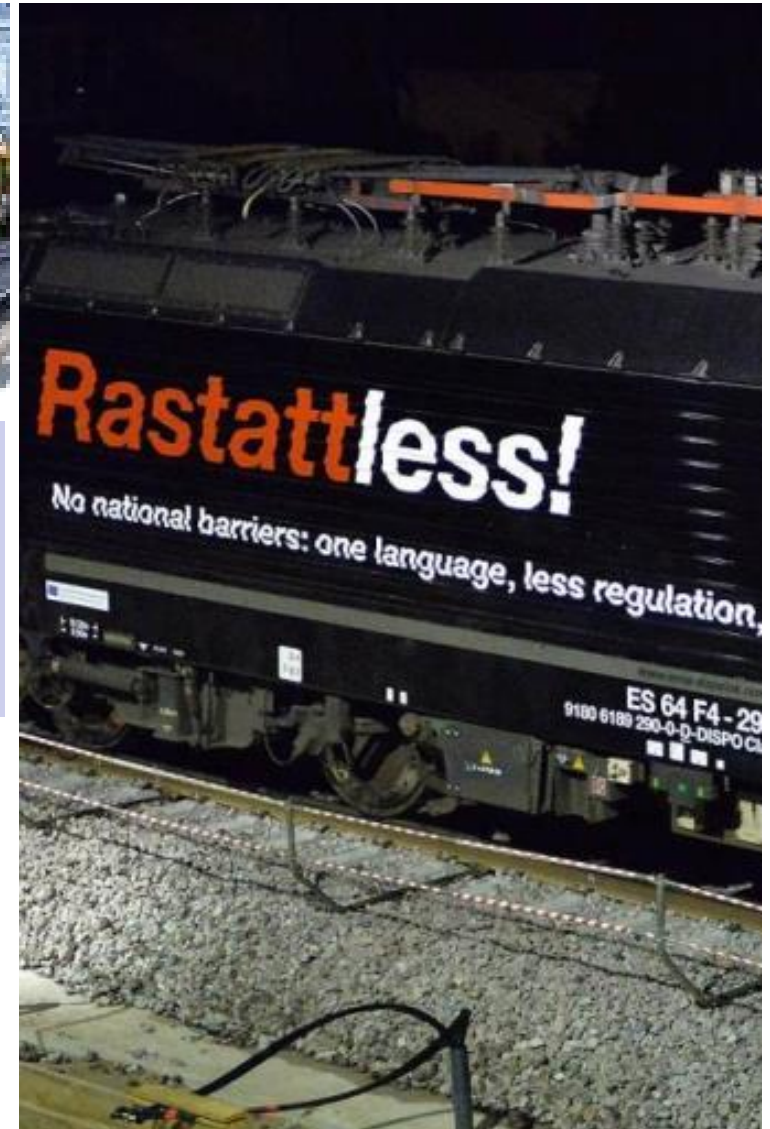
Listen to the dreams of our customers, but staff don't have to tell theirs during work.



Official Common Reference Level, B1:

"[...] Can describe experiences and events, dreams, hopes & ambitions and briefly give reasons and explanations for opinions and plans."

- Does B1 improve rail's competitiveness?
- Rail specific communication must be ensured
 - Define a more appropriate level plus a common rail vocabulary.
- Single operational language might be a long term solution.



Our vision.



Highest capacity

A photograph showing a crowded train platform. People are standing on the platform, and a train is visible in the background. The scene is brightly lit, suggesting an indoor or well-lit outdoor station.

Lowest cost

A 3D bar chart with five blue bars of decreasing height from left to right. A blue line graph is overlaid on the bars, showing a downward trend. The word "Kosten" (Costs) is written in blue text next to the line.

Highest safety

A blue road sign with a white border. The word "Risiko" (Risk) is written in white at the top. Below it, there is a white arrow pointing straight up, and a white arrow pointing to the right. To the right of the right-pointing arrow, the text "Auf Nummer sicher!" (Be sure!) is written in white.

Fastest migration

A blurred image of a train tunnel. The perspective is from the end of the tunnel, looking down its length. The walls and floor of the tunnel are blurred, creating a sense of motion and speed.