

Welcome

ERTMS

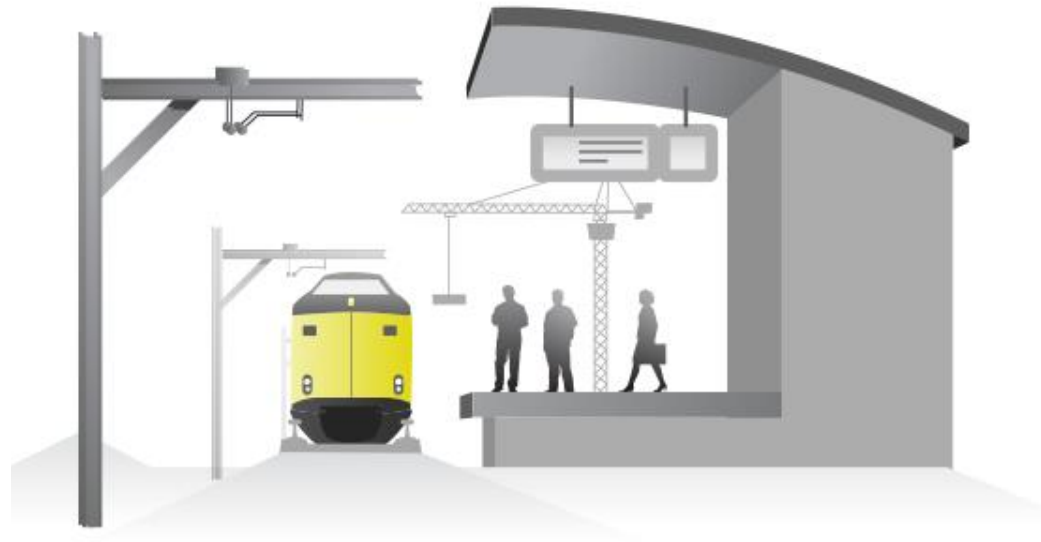
ProRail position and challenges

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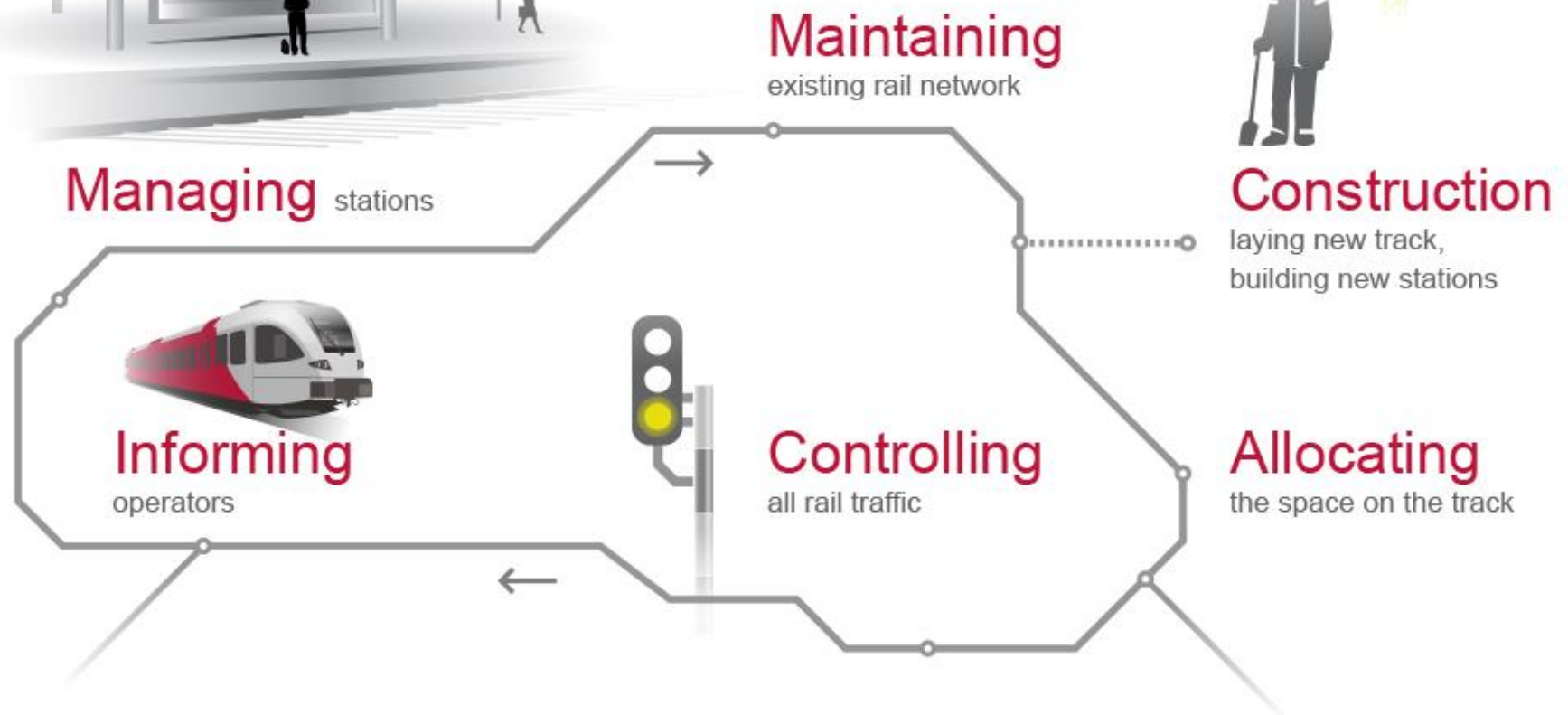
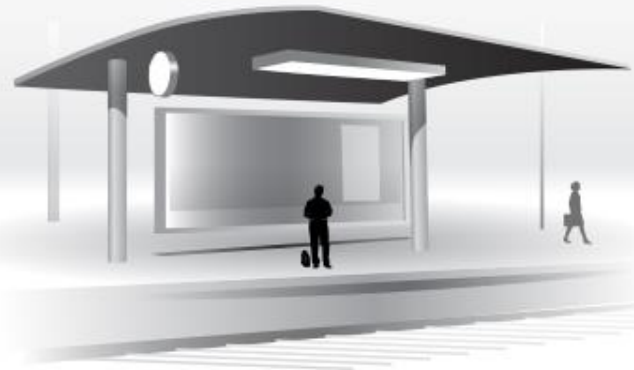
Our Mission

We connect people, cities and companies by rail, now and in the future.

We make pleasant travel and sustainable transport possible.

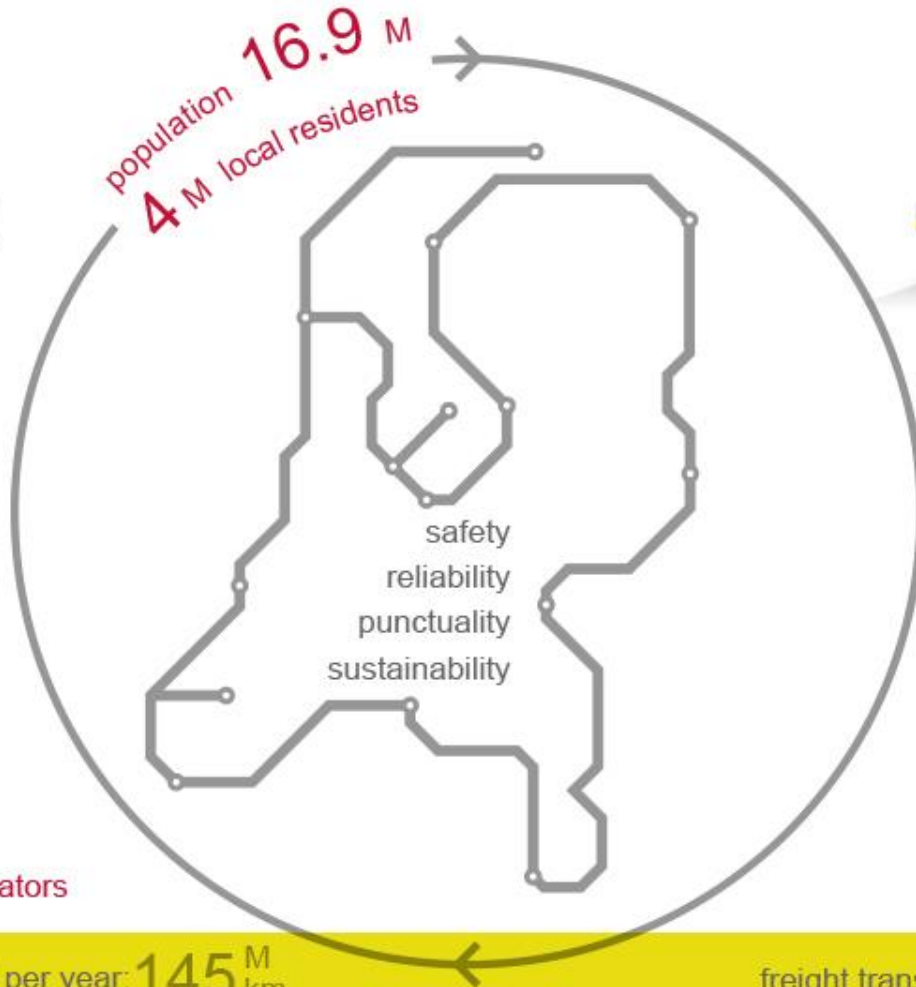


What we do



24/7

24 hours per day / 7 days a week / 365 days a year



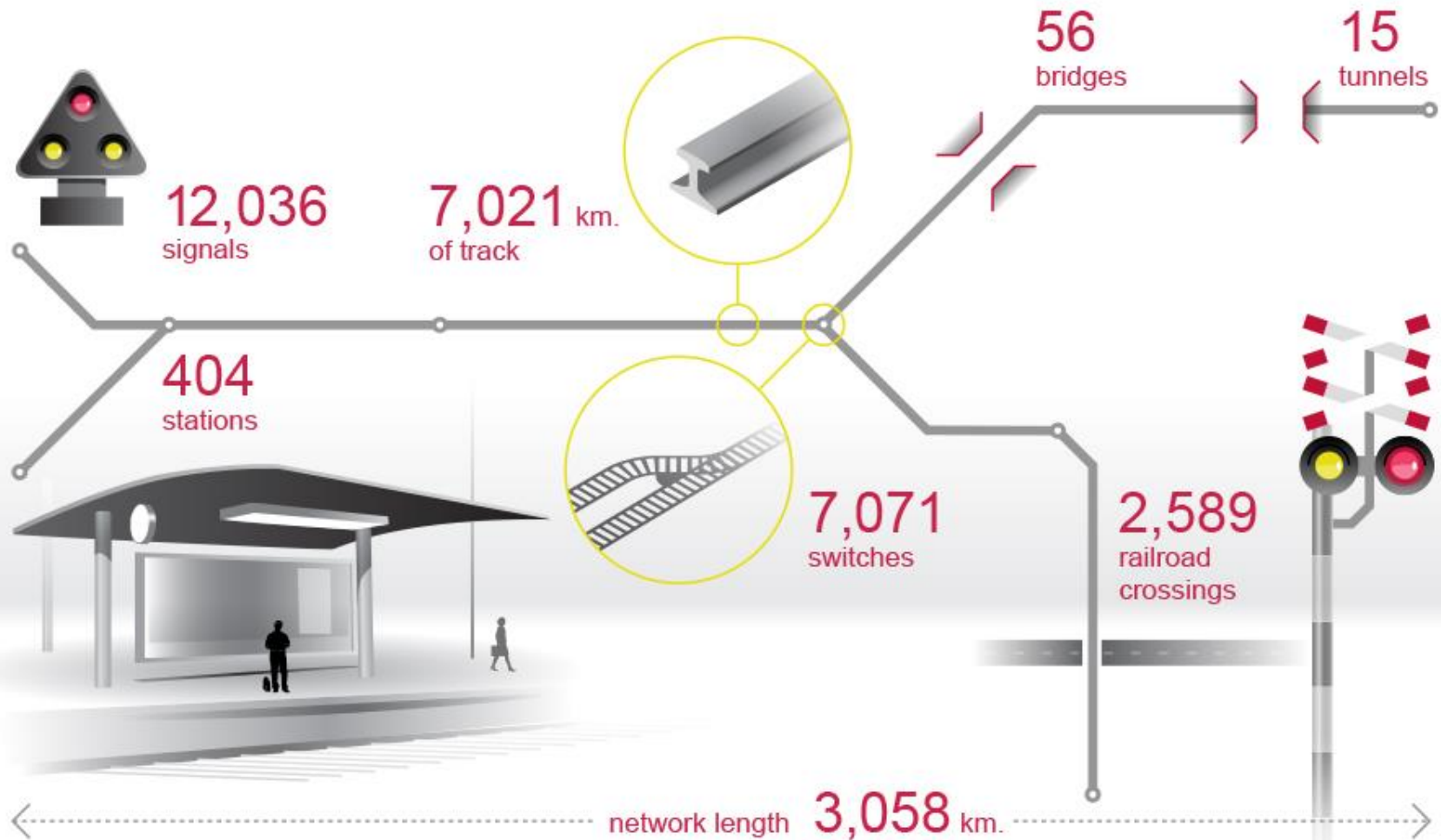
10 passenger operators

20 freight carriers

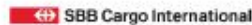
passenger transport per year: 145 M km.

freight transport per year: 6 M km.

Infrastructure



Our customers



ProRail needs

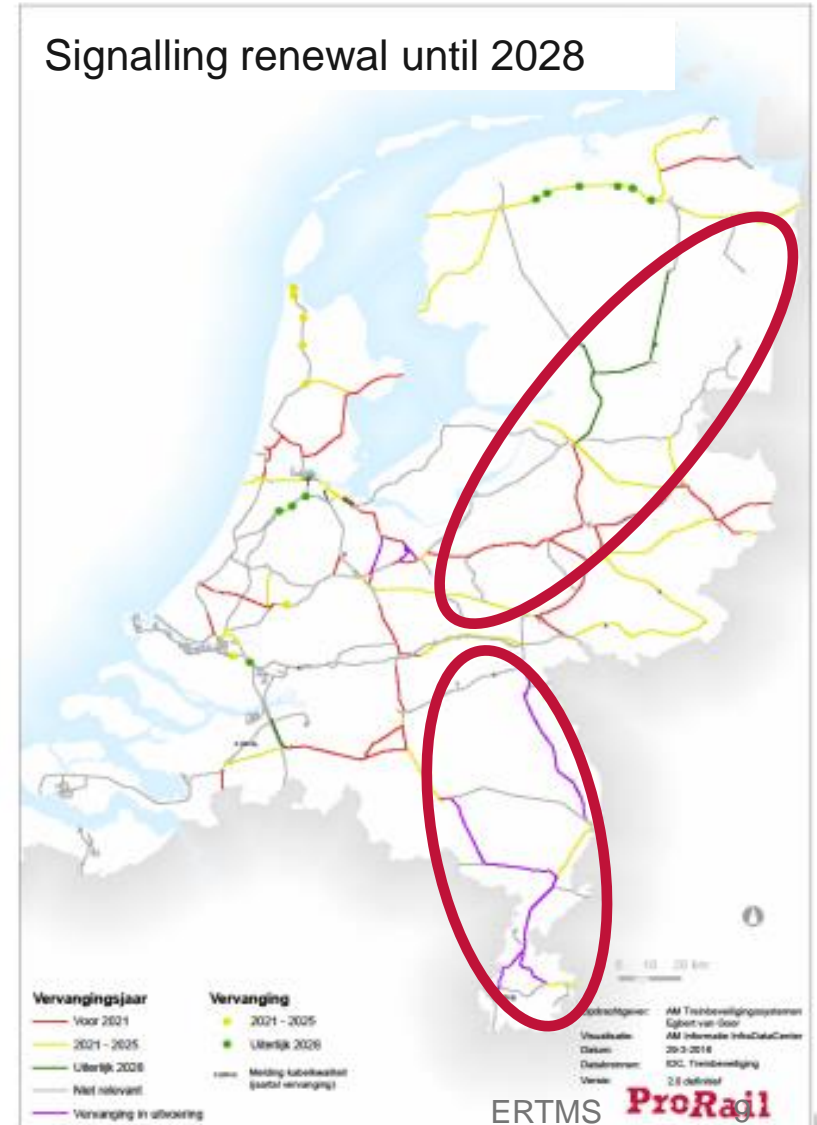
Current situation

- The future target regarding the capacity of the railway system can't be fulfilled with the legacy signalling concept with line side signals
- Existing signalling systems are at the end of their life-cycle
- Due to introduction of modern rolling stock, there is a growing problem regarding the compatibility with the track side train detection systems
- The (operational-) knowledge of the old signalling technology is declining
- ERTMS is the only follow up for the Dutch legacy ATP system (ATB)

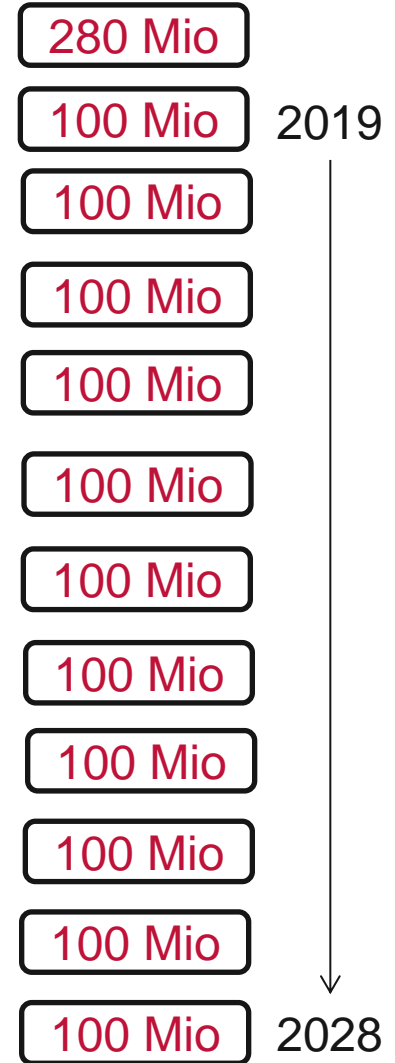
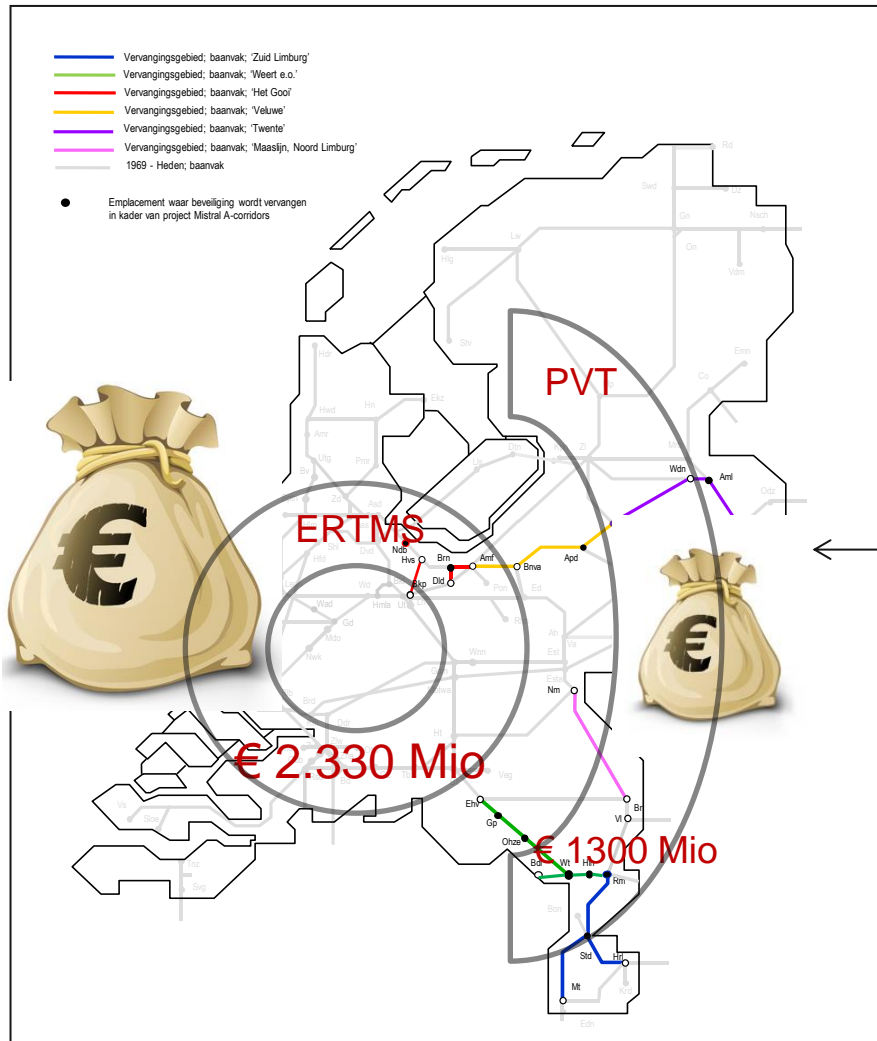
The ambition

- ProRail feels responsible for the introduction of a new, efficient and future proof signalling system (including train detection system)
- ProRail sees ERTMS as the one and only possibility for Control Command and Signalling standard
- ERTMS Level 3 seems to be a promising Game Changer
- The introduction of ERTMS will be done in close cooperation with the Railway Undertakings

ERTMS scope versus signalling renewal



ERTMS scope versus signalling renewal



ERTMS experiences

The projects

- Betuwe Route (including Havenspoorline)
- Amsterdam – Utrecht
- High Speed Line South
- Hanze line

ERTMS-baanvakken in Nederland

Stand begin 2017



ProRail QM V10 1.0 | Informatie: SA_4844_V01_1 - rubriek 01032017 (opgesteld: 01-03-2017) | Data: 20170317 ERTMS-certificatie op basis van DC ML.L.cdr | Productie: 20-03-2017

- More than 400 vehicles equipped with ERTMS of different classes: TRAXX, Class 66, DE6400, BR189, G1206, G2000, BR203, ICE-3, Windhoff, Vectron, Flirt NRH, Thalys
- And more vehicles to come: Velaro Eurostar, SNG, ICNG,

ERTMS experiences

Operational experiences

- Operational performance of current ERTMS operation is quite good
- But....not good enough for the rest of our network
- Due to:
 - ERTMS product problems, mainly onboard system being not compliant with the harmonised European ERTMS specifications and it takes too long (more than 2 years!) to correct them
 - Operating an ERTMS railway is different than operating a “classic” railway, especially in degraded situations

The challenges

- The migration to ERTMS has to be done in “brown field” environment
- Operational performance needs to be improved
- “New” operational situations have to be solved (e.g. shunting)
- ERTMS product problems (mainly onboard) have to be resolved rapidly
- The step towards L3 has to be planned
- And our budget is limited!

Conclusions

- ProRail feels responsible for introduction of a new, efficient and future proof Signalling System (including track side train detection renewal).
- We see ERTMS as the only good option for the whole Dutch network.
- We would like to start as soon as possible with the further ERTMS deployment
- We have to overcome the challenges and invite the industry partners to come up with solutions!

Thank you for your attention!