

4th September 2018

ERTMS – Global Status & Project Delivery View



Jon Hayes

Agenda

- ERTMS Global Status
- Project View (Thameslink and Cambrian)
- ERTMS Programme Review

Jon Hayes & Systra Scott Lister

○ Jon Hayes

- Over 25 years of introducing new technology onto the railway
- Involved in ETCS work since 1996
- Engineering Manager responsible for the delivery of Cambrian Line ETCS scheme for Ansaldo (2007 to 2011)
- Network Rail Programme Engineering Manager/Deputy Project Director Thameslink High Capacity Infrastructure Project (ETCS/TMS/ATO) (2011 to 2018)

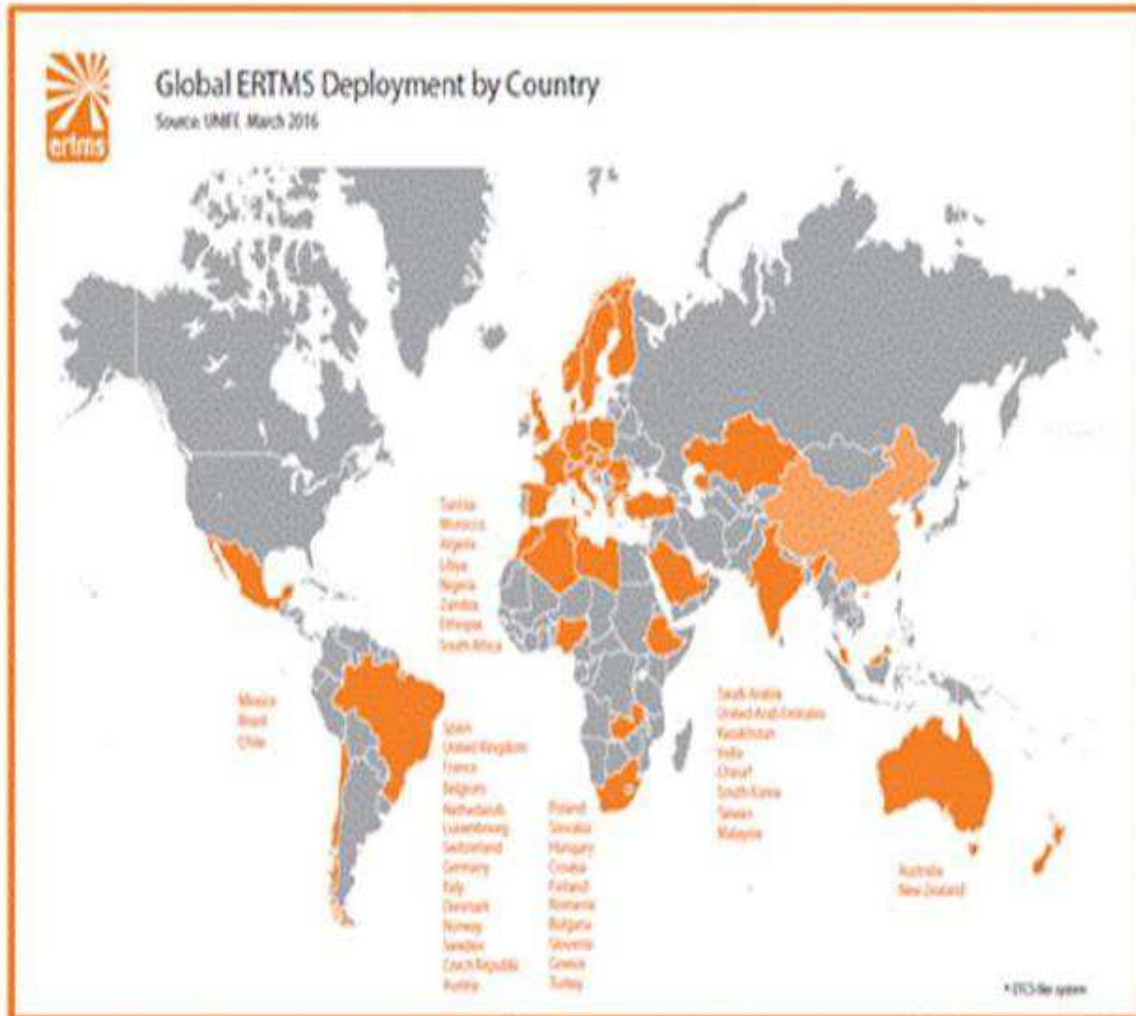
○ Systra Scott Lister

- Involved with current ETCS /TMS projects in Europe, Middle East and Australia (Queensland and New South Wales)
- Have worked for both the supplier and Client (Infrastructure Manager) on ETCS/TMS projects
- Wide skill set in Railway Engineering, Systems Engineering and Assurance.



ERTMS Global View

ERTMS State of Play



Total track > 94,000

50 Countries are using ETCS trackside

Total No vehicles > 12,000

46 Countries are using ERTMS vehicles

ERTMS State of Play

- Roll out continues and recent contracts awarded
 - Network Rail – Dec 17, 750 Freight locomotives (Siemens)
 - Bane Nor – April, Network Wide (Siemens, Alstom and Thales)
 - Poland - June, 2 lines 785 network km (Thales)

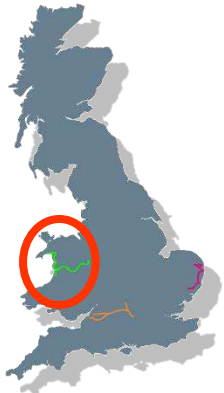
- Upcoming Major Tenders
 - UK – East Coast Main Line South (Q3/Q4 2018)
 - Australia – Queensland Rail (Bidders Alstom/Siemens, Ansaldo)
 - Australia – NSW Sydney Area (Q4 2018)

- Brownfield Challenges
 - Netherlands (increased costs and timescales)
 - UK – change in ‘strategy’ fleet first focus



Cambrian Early Deployment Scheme

Cambrian Line Scope



Project scope

ERTMS Level 2 (no line-side signals)

215 km of track

24 Trainsets for passenger service

3 locos to pilot unfitted trains

New control centre (Machynlleth)

New axle counters & interlocking

2 Terminal stations

Transition from semaphore to L2

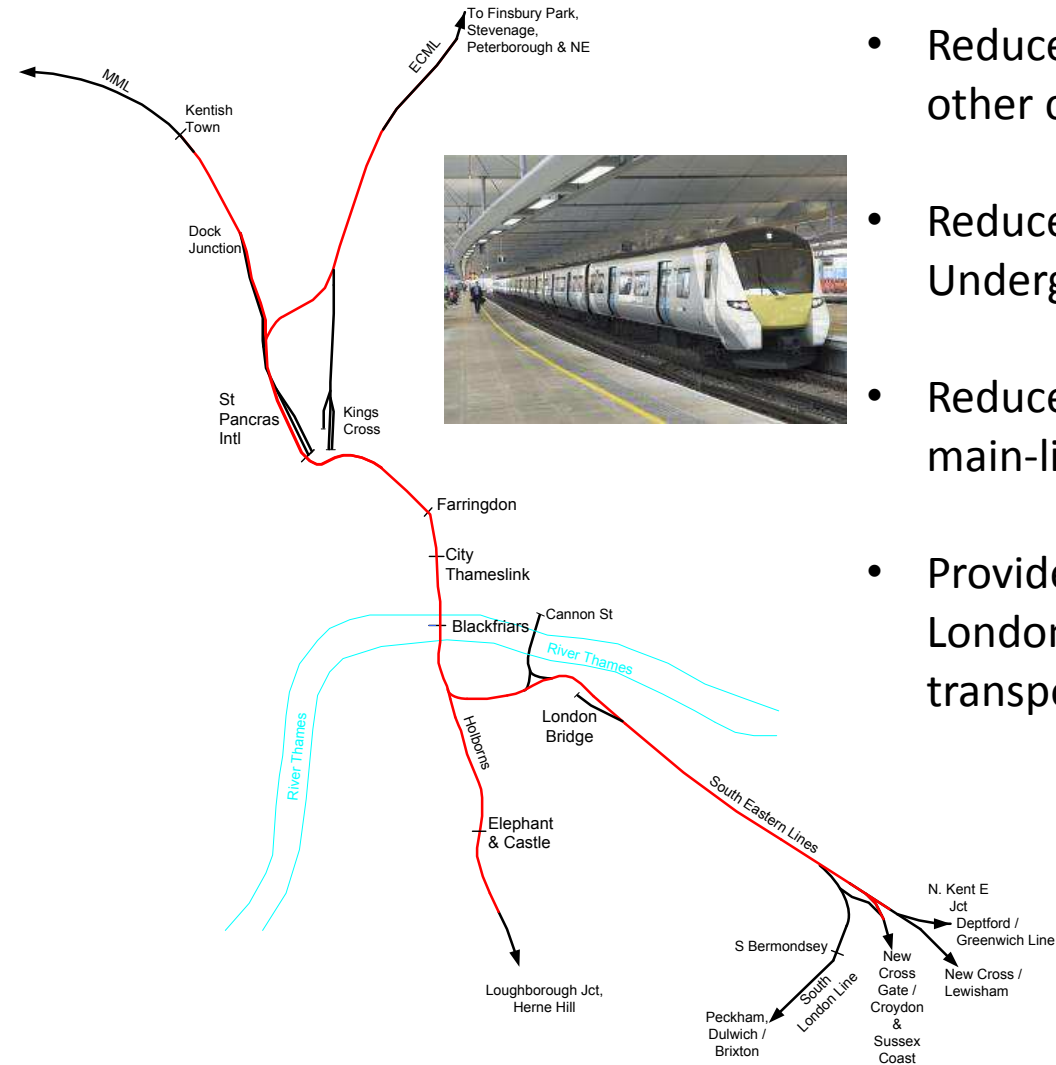
Depot for Class 97/3



Thameslink

Thameslink Programme

- Reduce overcrowding on Thameslink and other commuter services
- Reduce overcrowding on London Underground
- Reduce the need for interchange between main-line and LUL train services
- Provide for the introduction of new cross-London services, so improving public transport accessibility in South East England





Review of ERTMS Programme in Denmark

Roll-out Strategy

- Built around fitment strategy and “Trains for the Future”.
- Increasing complexity of infrastructure (a challenge in the East).
- Re-baselined programme more conservative on efficiencies during roll-out.
- Recognises increased functionality through roll-out.

- Best plan available given the experience and knowledge to date
 - Programme ‘owns’ the schedule
 - Greater challenge of supplier optimism
 - Based on ‘seen’ productivity to date.
 - Timescales not dissimilar to other delivered ERTMS projects

Roll-out Strategy – Challenges

- “Open” Points
 - Completion of “settlement agreement” with Alstom for onboard fitment with new baseline schedule.
- Number of ‘First of Class’, availability of resources and co-operation from train owners/operators
 - Improvement seen in Alstom performance since team change
 - Lack of ‘goal’ alignment with DSB
- Certainty of “Trains for the Future” dates (impacts whether IC4 are fitted or not).
- Ability of the “Business As Usual” functions to manage ERTMS (Technical Department)
- Non resource levelled programme (Alstom)
- Issues with supplier project reporting
 - Good ‘historic’ cost
 - Very poor look ahead.
 - Working to improve, programme providing more challenge

Onboard Fitment

- Improvement in performance since new Alstom team put in place
 - Fitment timescales closer to/at 'contract' timescales
 - Better approach to kitting/manufacturing
 - Quality improving
- Significant numbers of First of Class to complete next year
 - Resourcing – design and fitment.
 - Push for Alstom to contract DSB for fitment/support (Local domain knowledge).
 - Challenge to Alstom BE definition of FoC

Opportunities

- Supplier performance
 - If improvements seen in Alstom onboard fitment continue, opportunity for completing fitments earlier.
 - Thales programme more aggressive than high level programme.
- Earlier/greater use of the Joint Test Lab to reduce site testing
 - Need experience from the EDLs
 - Review if overlaps between Supplier factory test and JTL tests.

Summary

- Strategy is pragmatic and balanced
 - Not overly optimistic but assumes supply chain can deliver with few if any significant issues.
- Early Deployment Delivery critical to validate assumptions and programme.
- Alstom “settlement” and baseline critical to train fitment.
- Some development work still required by all suppliers.

- Biggest risk – delivery of train fitment

Upcoming Challenges

- Skilled ETCS Resources
 - A number of contracted and soon to be contracted competing schemes in Europe and Australasia.
 - Focus on “brownfield” implementation/ ETCS 3.6.0
 - Resource retention mechanisms
- Alstom/Siemens Merger.
 - Efficiency through product rationalisation?
- Early Deployment feedback
 - Incorporating into the roll-out

SYSTRA
SCOTTLISTER 