

Putting Passengers First

Digital Railway Conference  
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## Developing the Digital Long-Term Deployment Plan in collaboration with the industry



Presented by:

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# Request from Secretary of State to develop a Plan

- Plan requested by Secretary of State
- Delivered to DfT – February 2019
- Aligned train and infrastructure fitment plan
- At the lowest whole life cost
- Developed with the wider rail industry



# Problem : managing asset sustainability

## Average remaining asset life of signalling assets on the network

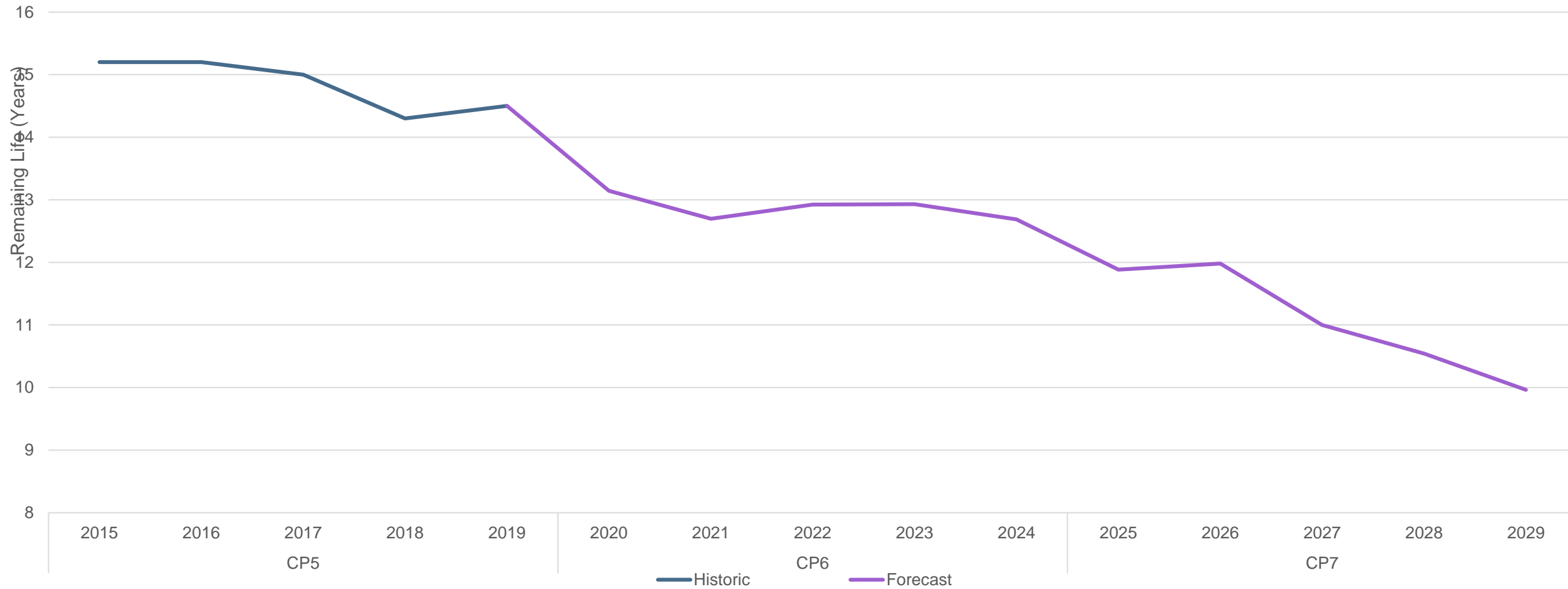
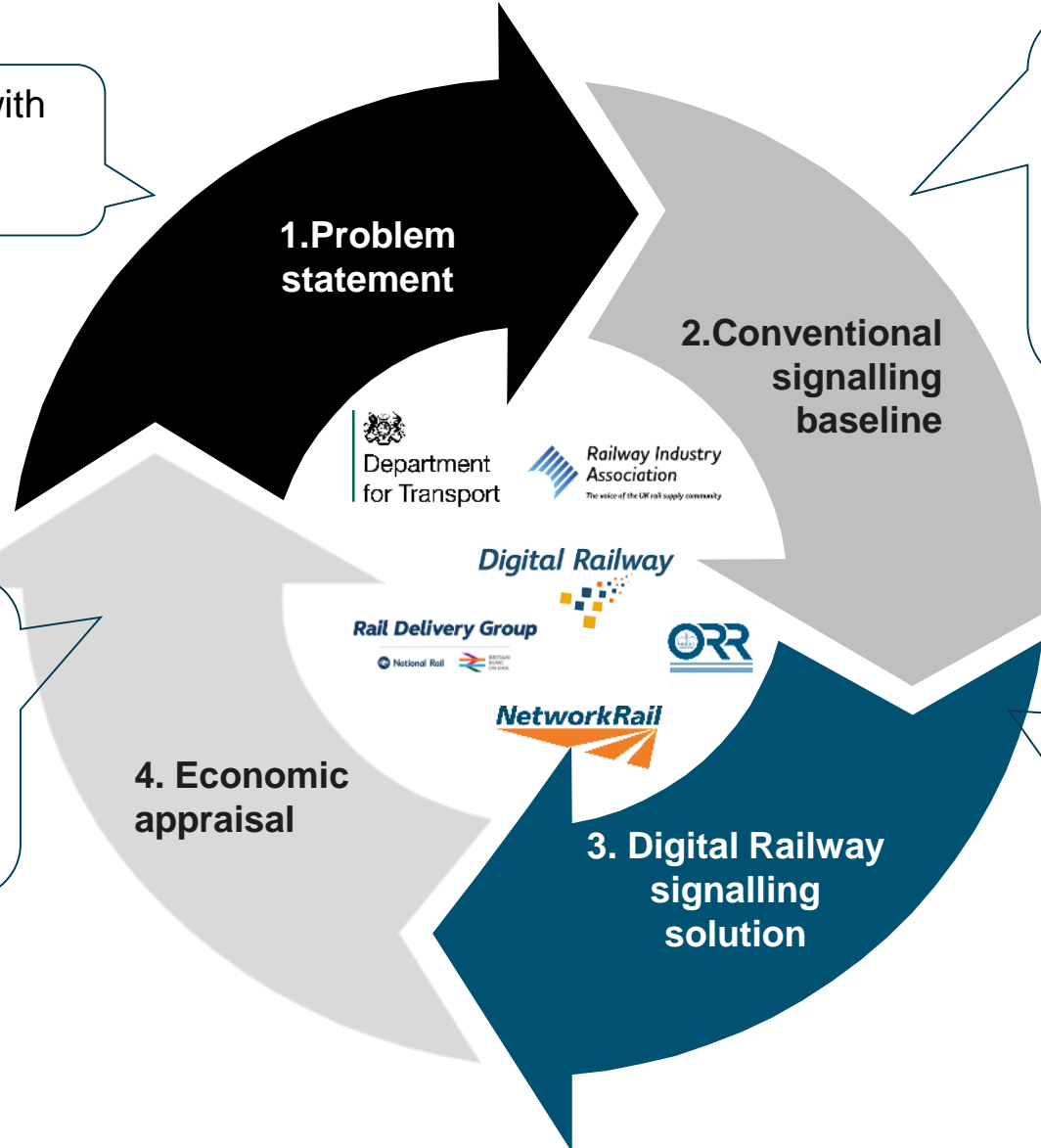


Figure 2

# Approach supported by industry

- Sustainability challenge with the existing conventional renewal approach.



- Analysis of 'do-minimum policy' – renewal of assets based on expiry date.
- Renewal dates deferred to explore deliverable options for conventional.
- Deliverability of conventional renewals determined as not feasible.

- Affordability of conventional and digital renewals assessed.
- Benefits of digital signalling against conventional evaluated.

- Digital signalling solution explored.
- Renewal dates deferred to identify deliverable options.
- Iterative process involving multiple industry stakeholders undertaken.
- Feasible option to deliver digital signalling determined.








# Affordability and deliverability constraints

## 1. Budget constraint

- Planning assumption - CP6 budget indicative for future control periods

## 2. Unit cost to business

- ETCS Unit cost agreed with internal and external stakeholders
- ETCS unit cost to business estimated at £315k/SEU. Estimated in line with Sector Deal.
- This compares to a rate of £419k/SEU for conventional signalling

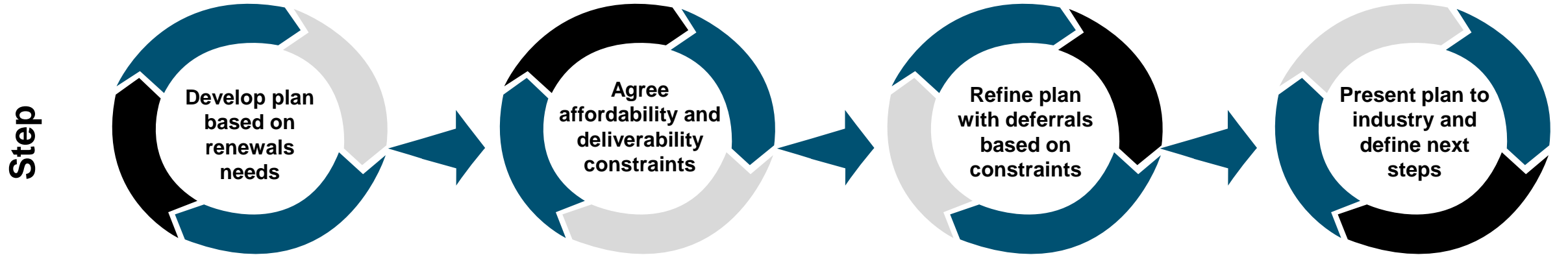
## 3. Work bank volumes

- Volumes for ETCS renewals identified across all Routes and integrated into a national ETCS work bank
- Deployments deliverability ceiling agreed with IP and RIA at 3,000 SEU for ETCS and 1,800 SEU for conventional

## 4. Train retro-fitment volumes

- Train retro-fitment delivery schedule built on the assumption that one unit of one class per operator can be fitted at one time
- Maximum number of trains scheduled to be retro-fitted in one year is 251 trains. Deliverability supported by RIA, NJRP and RDG

# Iterative process to develop the digital signalling plan in collaboration with industry



## Step

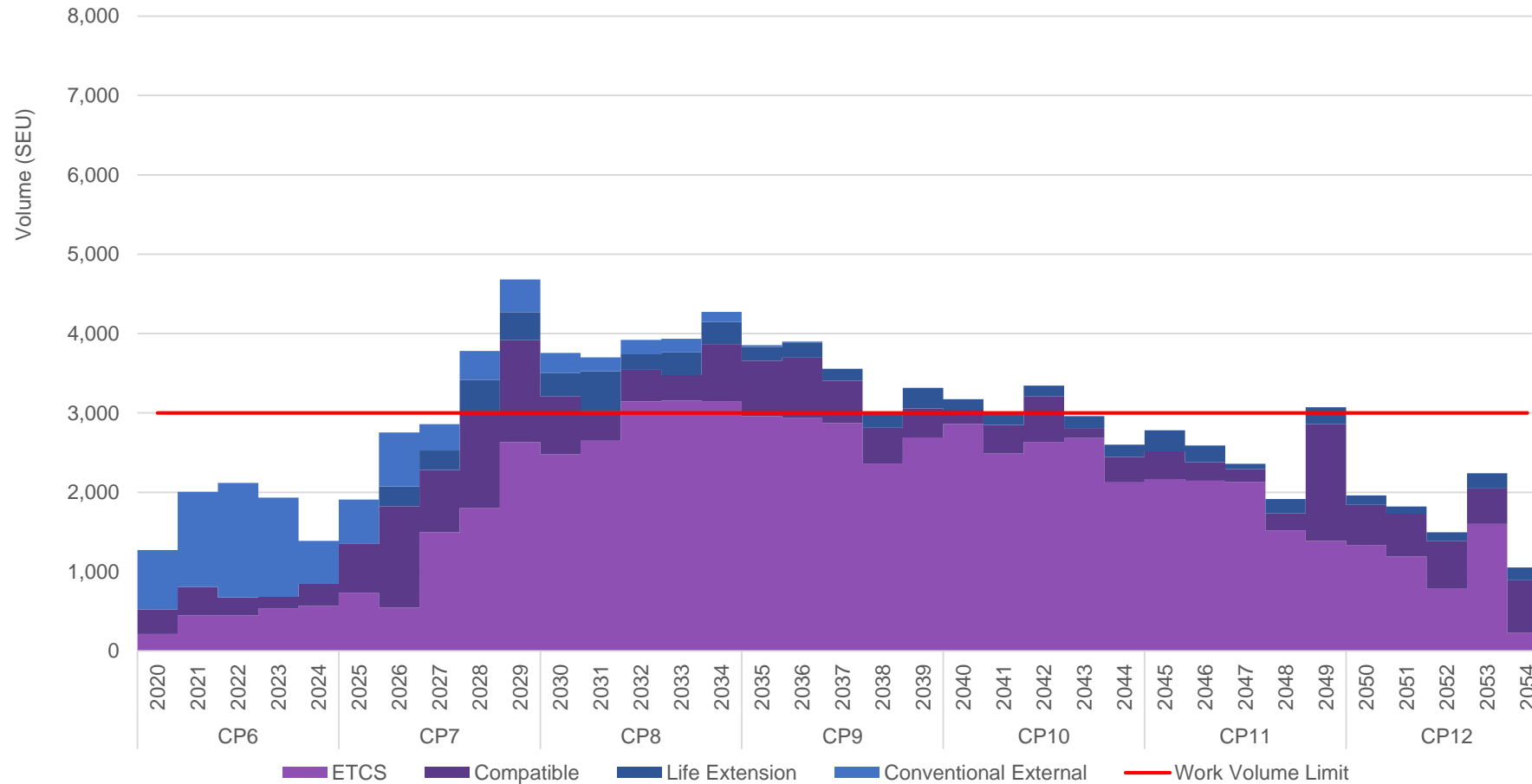
## Stakeholders

## Outcomes

<ul style="list-style-type: none"> <li>Route Asset Managers (NR)</li> </ul>	<ul style="list-style-type: none"> <li>Railway Industry Association</li> <li>Infrastructure Projects (NR)</li> <li>Safety, Technical and Engineering (NR)</li> <li>Rail Delivery Group (representing TOCs and FOCs)</li> </ul>	<ul style="list-style-type: none"> <li>Route Asset Managers (NR)</li> <li>System Operator (NR)</li> <li>Rail Delivery Group (representing TOCs and FOCs)</li> <li>Customer Relationship Executives (NR)</li> <li>Renewals &amp; Enhancements (NR)</li> </ul>	<ul style="list-style-type: none"> <li>System Operator (NR)</li> <li>Rail Delivery Group</li> <li>TOCs</li> <li>FOCs</li> <li>DfT</li> <li>Route Asset Managers (NR)</li> <li>ORR</li> <li>SF&amp;S Board (DR)</li> <li>Safety, Technical and Engineering (NR)</li> <li>National Joint Rolling Stock Project</li> </ul>
<ul style="list-style-type: none"> <li>Working assumptions established</li> <li>Work bank volumes for each route confirmed</li> <li>National unconstrained work bank developed</li> </ul>	<ul style="list-style-type: none"> <li>Deliverability constraints for both conventional and ETCS agreed</li> <li>Train fitment ceiling confirmed</li> </ul>	<ul style="list-style-type: none"> <li>Endorsed principles</li> <li>Deferrals agreed with the NR Routes</li> <li>Train fitment schedule developed and costed based on national work bank</li> </ul>	<ul style="list-style-type: none"> <li>Plan reviewed by industry members</li> <li>Feedback and requirements for next steps documented</li> </ul>

# A digital signalling renewal plan meets infrastructure deliverability constraint .....

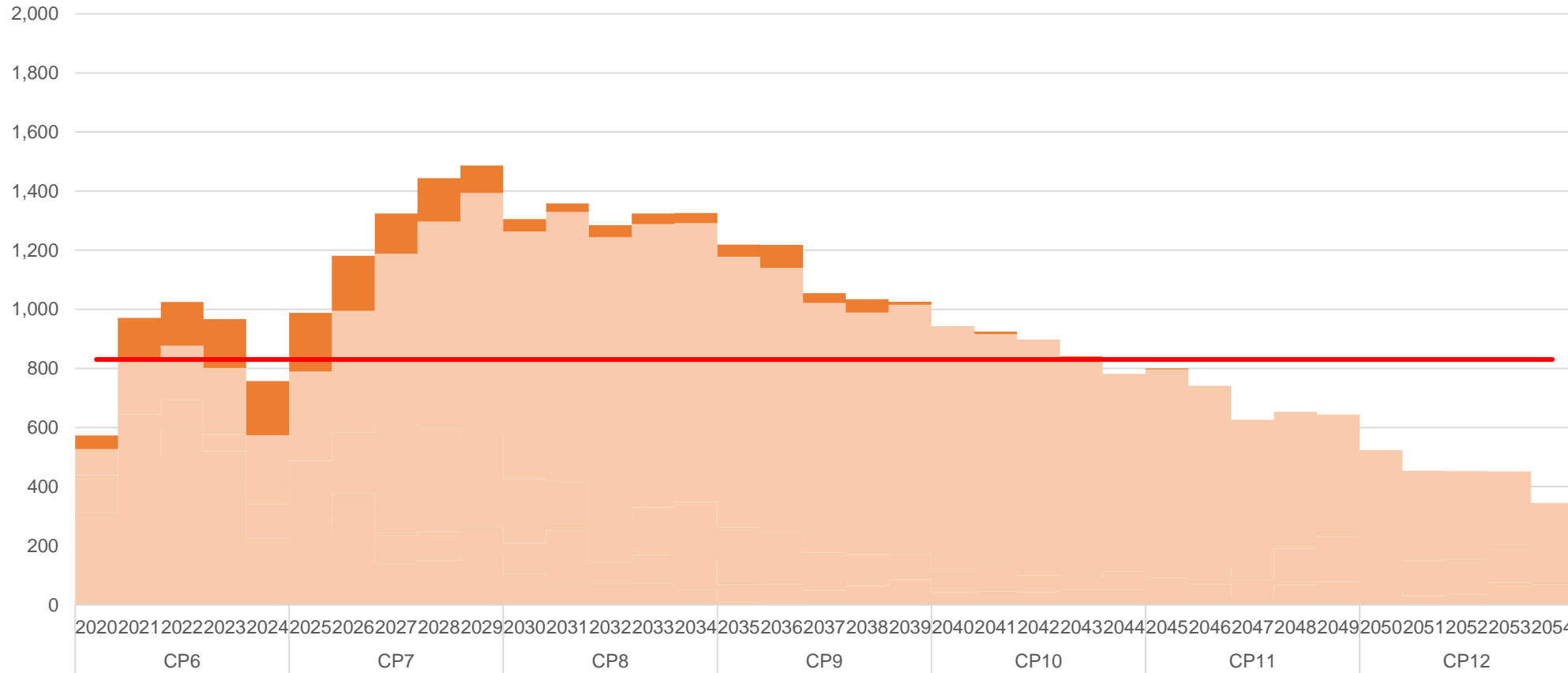
## Digital signalling constrained volume profile



... but not budget

### Constrained digital signalling cost profile (incl. train fitment)

£ (millions)



Digital Infrastructure

Train Fitment

CP6 Budget



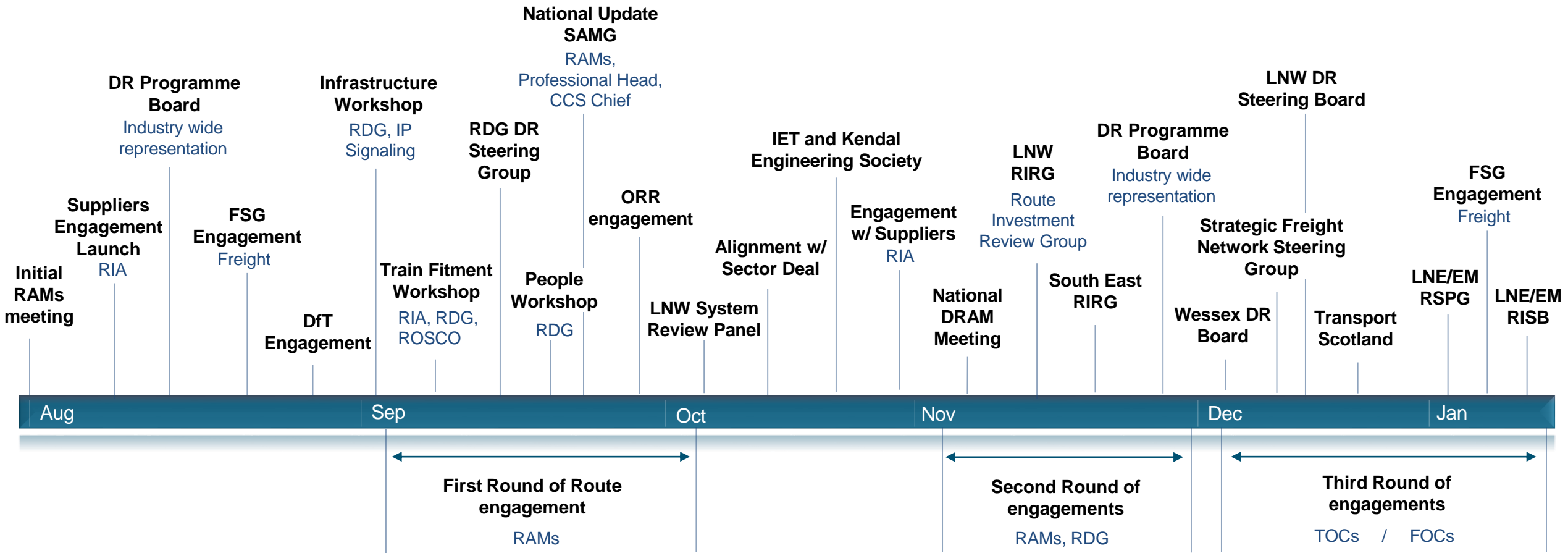


# Likely first sites for ETCS roll out – 3 to be selected



Descriptive name	Responsible Route	Financial Year
*Dover Priory	South East	2027
Ely to Peterborough	Anglia	2027
*Peterborough (Pborocen 02)	LNE	2026
Manchester East	LNW N	2027
*Hull Paragon	LNE	2027
*Sheffield RI	LNE	2027
St Albans	East Midlands	2026
Robin Hood	East Midlands	2027
*Aston SSI - A (ASTONA)	LNW S	2027
Warrington Area	LNW N	2027

# Engagement with internal and external parties



# Key findings

- Evolution from current lineside signalling to next generation technology is required to sustain the network.
- Digital could be delivered at a sustainable volume. However, although more affordable than conventional signalling, costs still exceed CP6 budget levels for the first three control periods.
- Digital signalling will deliver higher performance and better safety.
- There is potential to reduce digital signalling costs towards CP6 budget levels through innovation.
- Digital signalling provides a better long-term cost solution.
- A digital signalling LTDP will promote the Rail Sector Deal and Innovation Strategies.
- Train fitment and infrastructure renewal plans have been aligned successfully.
- An integrated digital renewal plan acts as a baseline, further consideration will be necessary to understand enhancement opportunities.
- A robust change control mechanism will be essential to manage and coordinate the interests of train and infrastructure stakeholders.

# Considerations

- Retrofit of trains programme as identified in the plan.
- New trains / rolling stock come fitted with ETCS at the point of manufacture as a matter of policy.
- Long-term funding commitment to the freight fitment programme.
- Development of base plan into routes plans, and change control process to co-ordinate centrally as a service to the routes.
- Integration of the LTDP with enhancement planning to seek better value solutions and passenger outcomes.
- Technology roadmap to co-ordinate and channel R&D funding to improve ETCS technology and process efficiency.
- Preparation of industry and the supply chain for transition to digital signalling.



**Thank you**

