

Network Rail & Office of Rail and Road

Independent Reporter - Digital Signalling Portfolio

Review of Deliverables and Financial Reporting

Reference: PII2025 Summary - Final

Summary - Final | August 2025

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Ove Arup & Partners Limited
8 Fitzroy Street
London
W1T 4BJ
United Kingdom
[arup.com](https://www.arup.com)

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Abbreviations

Abbreviations	Definition
AFC	Anticipated Final Cost
CP	Control Period
DSP	Digital Signalling Portfolio
ECDP	East Coast Digital Programme
FBC	Full Business Case
FiC	First in Class
FOC	Freight Operating Company
H&C	Heritage & Charter
IPDR	Industry Partnership Digital Railway
KPI	Key Performance Indicator
KRA	Key Result Area
MAR	Market Application Readiness
OEM	Original Equipment Manufacturer
ORR	Office of Rail and Road
OSMR	Operations, Support, Maintenance and Renewals
OTM	On Track Machine
RF	Rolling Forecast
ROSCO	Rolling Stock Leasing Company
RNEP	Rail Network Enhancements Pipeline
SEU	Signalling Equivalent Units
TOC	Train Operating Company
TRU	Transpennine Route Upgrade
WCNM	West Coast North Modernisation (formerly Trilink)

1. Introduction

In the PR23 Final Determination published in October 2023 the Office of Rail and Road (ORR) set out the funding available for Digital Signalling operations, support, maintenance and renewals (OSMR) in CP7 (April 2024 – March 2029).

At that time there was limited detail available as to the outputs that Network Rail were planning to deliver in CP7. The total funding allocated in the Final Determination was £1.505m across five categories of:

- Infrastructure renewals: £557m
- Fleet Fitment: £699m
- Enabling projects: £122m
- RD&I projects: £68m
- CP6 legacy projects: £60m

To deliver digital signalling in CP7, Network Rail has set up the Industry Partnership Digital Railway (IPDR) team to oversee digital signalling-related activities grouped together as the Digital Signalling Portfolio.

Arup has been appointed by ORR and Network Rail under the Independent Reporter Framework to provide ORR with independent assurance and reporting of Network Rail's Digital Signalling Portfolio (DSP) deliverables and associated financial reporting across the five categories and to develop an initial baseline (as of 1st April 2024) for ongoing monitoring in CP7.

Please note that some commercially sensitive information has been redacted.

2. Context and Approach

The implementation of Digital Signalling is a complex industry-wide endeavour requiring delivery by multiple parties over a long-term timescale with funding from various sources. In previous Control Periods the majority of digital signalling funding was provided via the Rail Network Enhancements Pipeline (RNEP) but in Control Period 7 (CP7) Network Rail has adopted a renewals-led approach which means that funding for the deployment of digital signalling is part of the periodic review process.

During PR23¹, ORR identified concerns with the maturity of some aspects of the Network Rail Digital Signalling arrangements, the deliverables and the schedule for the complex interdependent programmes. For each of the programmes in the Digital Signalling Portfolio our review has sought to understand:

- Planned and actual expenditure in CP7
- Outputs and outcomes expected from that expenditure
- Governance and assurance arrangements
- Risks and opportunities.

To do this we have used a bespoke 'assessment model' broadly based on industry Portfolio, Programme and Project Management Maturity Model principles. This model is shown below.

¹ PR23 final determination: Supporting document – sustainable and efficient costs 31 October 2023 Table 8.1

Table 1 - Assessment Model

No information	Very Low Confidence	Low Confidence	Medium Confidence	High Confidence
0	1	2	3	4
There was insufficient information to undertake a rating	Scope definition: Poorly defined scope Schedule: Poorly defined schedule Stage gates: PACE stage and deliverables in place are misaligned; the stage gates are administered bureaucratically, with no clarity of risk levels remaining at each stage. Risk and contingency management: Risk allowances do not resemble the maturity of project development or there is no credibility in contingency estimation. Budget and schedule contingencies are not credible. Governance and Assurance: The baseline budget and schedule have not been assured with adequate rigor and independence. Governance structures are not well established with unclear or inappropriate terms of reference and reporting. Supply Chain: There hasn't been any meaningful engagement with the supply chain to corroborate baseline assumptions nor is there a mature supply chain strategy in place.	Scope definition: Scope well defined in some areas and poorly in others Schedule: Schedule is well defined in some areas and poorly in others Stage gates: PACE stage and deliverables are partially aligned. Stage gate process has been administered bureaucratically, without clarity of the risk level remaining. Risk and contingency management: Risks and contingencies have not been identified and quantified in a structured way. There are significant gaps and a lack of understanding of risks in key risk areas. There is no clarity of level of risk in the budget or programme. Governance and Assurance: Governance structures are in place but administered bureaucratically, with lack of clear focus and terms of reference. Similarly, assurance is not risk based and not commensurate with the risks and complexities involved. Supply Chain: Supply chain engagement to date has been superficial, without deeper collaboration. Supply chain strategy is in place, but not adequately developed or executed.	Scope definition: Scope is well defined in all areas. Scope is linked to outcomes. Schedule: Schedule is well defined in all areas. Milestones are clearly linked to outcomes Stage gates: The project products/deliverables correspond to the PACE stage of the project. The stage gates are administered with focus on risk levels remaining with clarity of the key results and risk areas to focus on. Risk and contingency management: Risks have been identified, and noted in congruence with the outcomes of development work however the contingency allowance is not credible. Governance and Assurance: Governance structure and terms of reference, provide confidence that the project teams are adequately supported and that there is adequate challenge. Assurance programme and plan resemble the complexities and risks associated with the portfolio. Supply Chain: Risks, costs and programmes are not yet supported by the supply chain; supply engagement hasn't yet reached the maturity to validate assumptions and contingencies.	Scope definition: Scope is well defined in all areas. Scope is linked to outcomes. There are mechanisms in place to manage scope changes Schedule: Schedule is well defined in all areas. Milestones are clearly linked to outcomes. There are mechanisms in place to manage schedule change Stage gates: Project products are developed to appropriate maturity level for the PACE stage on the project. The stage gates are associated with clarity of remaining risk levels and contingencies. Baseline estimates and programmes are updated progressively with clear approaches to 'design to budget' and manage scope creep. Risk and contingency management: All the risks are very well understood, quantified and adequate allowance has been made in the baseline project budget and programme. Governance and Assurance: Governance structures are well established with embedded terms of reference and adequate reporting. Change control is well embedded and any arising issues proactively and progressively managed. Supply Chain: Supply chain strategy is in progress and effectively implemented for the stage of the project. There is deep engagement with key suppliers and evidence that the overall project assumptions are credible and supported by the supply chain.

We have held meetings with key staff in Network Rail and ORR to develop a view on the above aspects and an overall opinion as to the current confidence level of the Network Rail Digital Signalling Portfolio. As part of the assessment, we have also suggested an expected confidence level for projects and programmes.

3. Funding & Expenditure

The funding of Digital Signalling has changed between the ORR Final Determination in October 2023, the Network Rail CP7 Delivery Plan Baseline at 1st April 2024, the Network Rail Rolling Forecast for Period 6 (RF6) in October 2024 and the Network Rail Rolling Forecast Period 11 (RF11) in February 2025. Such a change in funding at the points noted above is not unexpected given the complex and large portfolio of works; the review considered (a) the changes (b) the reasons for the changes and (c) whether said changes were explained / justified. These overall changes are shown graphically in Figure 1 with a commentary on the variance in Table 2 below.

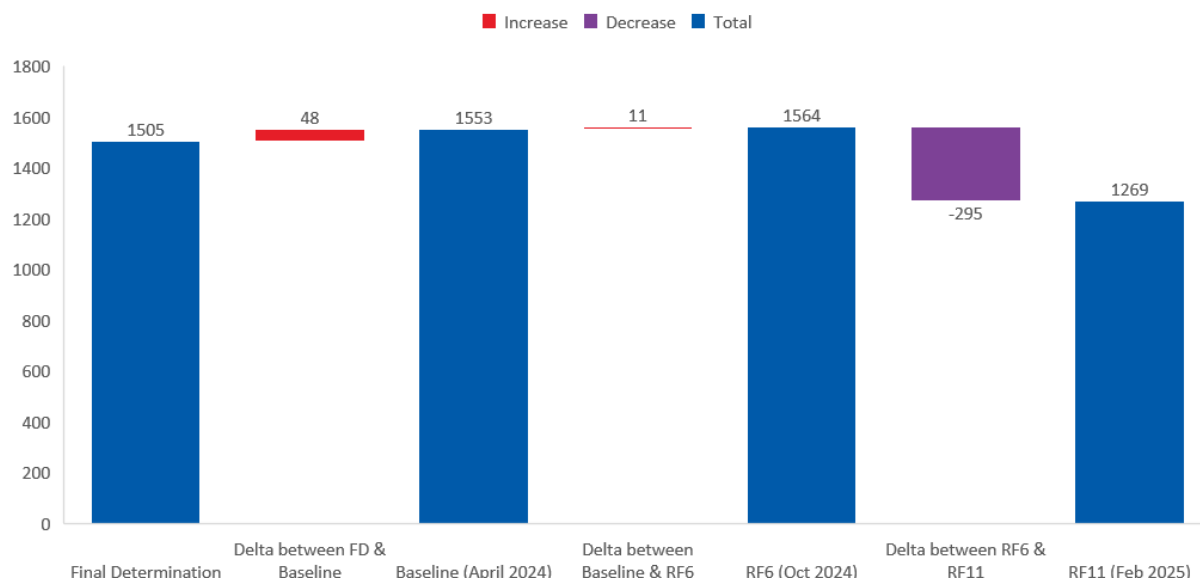


Figure 1 - Digital Signalling Funding Changes (£m);
(Note all figures quoted are post-efficient)

Table 2 - Portfolio Funding across Final Determination, Baseline, RF6 and RF11

Digital Signalling Category	Final Determination Funding (Oct 2023)	Baseline (Apr 2024)	RF6 (Oct 2024)	RF11 Forecast (Feb 2025)	Variance between Final Determination and RF11	Variance Commentary (between Final Determination and RF11)
Infrastructure renewals (includes ECDP², Midland Mainline, St Pancras, WCNM, Brighton Mainline South and Paddington to Hayes)	£557m	£553m	£567m	£273m	-£284m	West Coast North Modernisation programme (WCNM) reprofiling (-£295m), ECDP (-£37m) movement in forecast rollover of Tranche 4 based on updated programme and Siemens costs netted against ECDP efficiency overlay (+£47m) resulting movement i.e. reduced efficiency challenge on the programme from East Coast Route due to improved Tranche 4 cost forecast.
Fleet Fitment and Business Change (included in IPDR³)	£699m	£813m	£813m	£816m	+£117m	Network Rail introduced additional funding for Heritage & Charter from efficiencies in MAR ⁴ [REDACTED], added inflation [REDACTED] as plans moved from 2023/24 to cash prices, reallocation from other projects to accommodate increases on ECDP OTM ⁵ i.e. [REDACTED] from IPDR enablers, [REDACTED] transferred in from Route Services - including a+£6m rollover from CP6 in training - and remainder of change arises from realigned fitment to signalling workbank for passenger, freight and OTM (programme reprofiling and mitigation of the ongoing OTM funding shortfall accounted for with an overlay [REDACTED]).
Enabling projects (included in IPDR)	£122m	£114m	£114m	£110m	-£12m	Reduced number of suppliers enabled an efficiency cost reduction of MAR. This efficiency was reallocated to H&C [REDACTED]), efficiency cost reduction from revised headcount reallocated to ECDP OTM [REDACTED], netted against added inflation [REDACTED] remaining variance representing reallocation of portfolio capability funding to mitigate OTM shortfall [REDACTED].
RD&I projects (Technical Authority)	£68m	£47m	£45m	£44m	-£24m	This budget line includes T190 and other relevant RD&I programmes. Several T190 projects have been completed within CP6.

² East Coast Digital Programme

³ Industry Partnership Digital Railway

⁴ Market Application Readiness

⁵ On Track Machine

Digital Signalling Category	Final Determination Funding (Oct 2023)	Baseline (Apr 2024)	RF6 (Oct 2024)	RF11 Forecast (Feb 2025)	Variance between Final Determination and RF11	Variance Commentary (between Final Determination and RF11)
						Remainder have continued into CP7. Furthermore, compared to CP6, there have been overall reductions in R&D funding since the Final Determination, with only minor changes between Baseline and RF6/RF11.
CP6 legacy projects	£60m	£25m	£26m	£25m	£-35m	Funding [REDACTED] for OTM fitment moved from Route Services to Fleet Fitment including [REDACTED] OTM CP6 funding rolled over.
Total	£1505m	£1553m	£1564m	£1269m	£-236m	

NB Totals may be affected by rounding

These categories and the evolution of the funding allocation is shown graphically below in Figure 2.

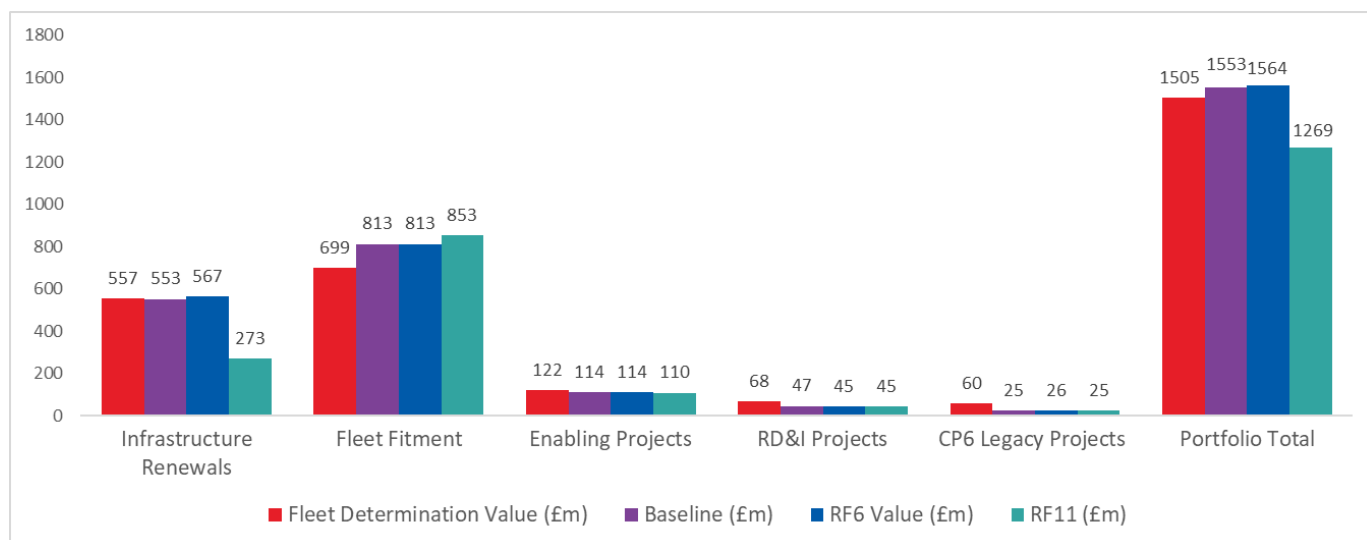


Figure 2 – Digital Signalling Portfolio funding changes (£m)

4. Digital Signalling Portfolio

The Network Rail Digital Signalling Portfolio comprises a group of programmes and projects aligned slightly differently to the categories adopted by the ORR in the Final Determination. The categories used by Network Rail are:

- Industry Partnership Digital Railway (IPDR) - Enablers/Capability Building (Previously, under PR23, known as Enabling Projects).
- Industry Partnership Digital Railway (IPDR) - Fleet Fitment
- East Coast Digital Programme (ECDP)
- West Coast North Modernisation (WCNM) previously referred to as West Coast Mainline North in ORR's PR23 final determination and latterly Trilink

- Brighton Mainline South
- Paddington to Hayes
- RD&I projects
- Legacy Projects (CP6)

We have adopted these categories for our review and are suggesting that these categories are used for the ongoing monitoring in CP7. Please note that Fleet Fitment also includes Business Change.

The progressive changes in funding allocation for these categories are shown in Figure 3.

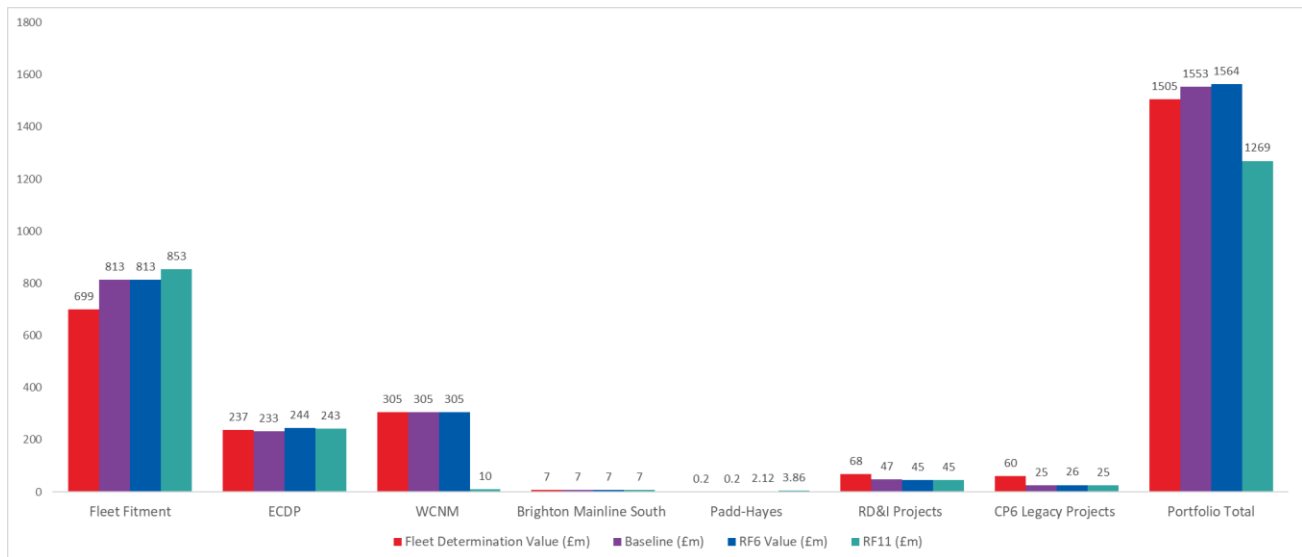


Figure 3 - Portfolio Category Funding Changes Between Final Determination and RF11 (£m)

5. Findings

5.1 General

Our review has identified the following findings that relate to the Digital Signalling Portfolio and that are common across the various DSP Programmes:

- **Programme delivery monitoring** – The programme delivery reporting lacks the necessary granularity to enable the effective identification and impact assessment of delivery trends and outputs. Without detailed, progressive monitoring of outputs against each programme, accompanied by corresponding forecast updates, the validity of assumed delivery timescales is unclear. [see REC0030-01].
- **Requirements Management & System Integration** - The intricacies of system integration, combined with a complex and demanding stakeholder landscape - both within and beyond the digital railway system boundary - introduces significant risks, including:
 - Scope creep
 - Failure to achieve the DSP outcomes which underpin the business case for digital railway transformation

A robust approach to system integration management is essential for mitigating these risks and ensuring alignment with the strategic goals of the portfolio. The review found that requirements management maturity could be improved. Demonstrating clear traceability between requirements and strategic outcomes remains challenging and without improvements in this area, change control is unlikely to be effective. [see REC0030-02]

- **Risk analysis, quantification and contingency allocation** - the innovative nature of the technology, the industry structure, and the maturity of the supply chain introduce substantial risks to the portfolio's timescales and budget, all of which need to be carefully managed. The absence of truly comparable benchmarks introduces significant estimating uncertainty within the digital railway portfolio of works. [see REC0030-04]

- **Stakeholder Management, Risk Ownership & Accountability** - the introduction of the digital railway represents a significant industry-wide transformation, rather than solely a Network Rail initiative.

The portfolio relies heavily on navigating this complex stakeholder environment. Although some stakeholders are actively engaged in the governance process, not all are, and the strategy for addressing associated risks at the industry level has yet to be fully defined and agreed by all parties. The misalignment between risk ownership and accountability, driven by the Network Code, remains a key concern, with potential implications for achieving portfolio objectives.

The portfolio operates within a complex stakeholder environment. The lack of a clear strategy for risk ownership, and how this will work throughout design/delivery, has the potential to lead to confusion over accountability. [see REC0030-05]

- **Estimate Maturity** - The assumptions made on unit rates, both SEUs and Fleet Fitment, need to be validated to ensure maximum confidence in the delivery of key projects and programmes.

The importance of having accurate unit rates is critical because (a) it drives how projects and programmes are costed and (b) Network Rail have committed to try to reduce unit rates to £190k per SEU⁶, which is important in proving affordability for future funding decisions, and having a defined cost for signalling renewals. The actual achievement of unit costs could have a significant impact on the overall Portfolio budgets. It should be noted however, that these efficiencies are not expected to have any impact on projects already progressed within CP7.

It is of critical importance that the achieved unit costs are monitored progressively with any trends identified and assessed in terms of impact on the overall portfolio budget. Greater certainty needs to be given that agreed levels of risk and contingency are appropriate for the portfolio, programmes and projects. [see REC0030-06]

5.2 Industry Partnership Digital Railway (IPDR)

To deliver digital signalling in CP7, Network Rail has set up the Industry Partnership Digital Railway (IPDR) team to oversee the Digital Signalling Portfolio. The IPDR organisation has been established to fulfil a dual role. Firstly, to provide portfolio management to the introduction of digital signalling in Great Britain, with primary focus on the following objectives:

1. Implement an efficient, robust, repeatable and cost-effective approach to signalling renewals and Fleet Fitment
2. Increase supply chain capability, capacity and diversity
3. Improve industry capability and flexibility
4. Demonstrate the benefits of the migration

Secondly, IPDR is also responsible for centrally managing Fleet Fitment activities across Great Britain as part of the digital signalling transition. To date, the primary focus of the IPDR portfolio management team has been on mobilising Fleet Fitment works and there is limited evidence of progress in advancing strategic initiatives aimed at enhancing unit cost efficiency, developing an industry-wide resource strategy, and addressing other key portfolio management objectives. Recognising the need to strengthen efforts in these critical areas, the IPDR Portfolio Management Team is implementing improvements in governance to drive these more strategic aspects.

⁶ Signalling Equivalent Units (SEUs) serve as Network Rail's standard metric for estimating the cost, duration, and resource requirements of signalling projects; unit rates are all 17/18 prices and network average costs. SEU infrastructure costs encompass trackside signalling, interlocking systems, and control technology, with the Target 190 initiative aiming to reduce costs from £315k per unit to £190k per unit.

Our assessment of current and expected confidence levels for IPDR is shown below in Figure 4.

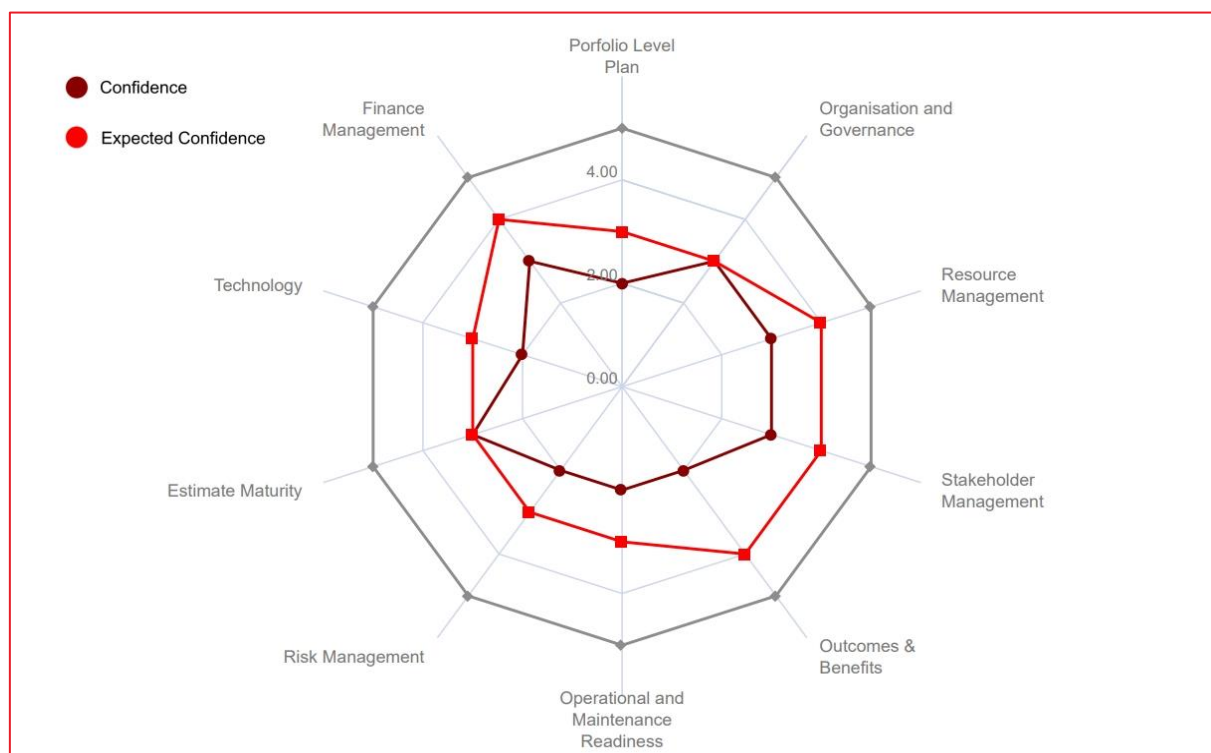


Figure 4 - IPDR Portfolio Maturity Assessment

The key finding of our review regarding IPDR Portfolio Management is:

- **Governance Line of Sight** - The need for, and objectives of portfolio management to support the industry-wide transition to digital railways are well recognised and clearly defined at a strategic level. However, the governance and reporting frameworks do not yet establish a clear line of sight between the portfolio management key result areas and the desired outcomes and benefits of this approach. [see REC0030-07]

5.3 Industry Partnership Digital Railway (IPDR) - Fleet Fitment

Fleet Fitment across all TOCs and FOCs is centrally managed by the IPDR team. Fleet Fitment is the largest planned expenditure in CP7 at £812m (Network Rail RF11 forecast). The planned work comprises the following key aspects and associated key outputs:

- Passenger Fleet Fitment
- Freight Fleet Fitment
- OTM⁷ Fleet Fitment for IPDR
- OTM Fleet Fitment for ECDP
- Heritage & Charter Fleet Fitment

At the time of our assessment, no Fleet Fitment works have been completed; however, progress has been made in First-in-Class (FiC) activities in line with the IPDR delivery programme. As the programme is at an early stage there remains limited insight into the likely unit costs of Fleet Fitment works. Formal agreements with the majority of key stakeholders including TOCs and FOCs and suppliers are still pending, which suggests that the majority of cost and programme delivery risk will be held by Network Rail for Fleet Fitment activities.

⁷ OTM's – On Track Machines (non-passenger trains or vehicles designed to work on the railway infrastructure)

Our assessment of current and expected confidence levels for Fleet Fitment is shown below in Figure 5.



Figure 5 - Fleet Fitment Maturity Assessment

The key findings on the maturity of Fleet Fitment activity are:

- **Challenging Stakeholder Situation** – Programme success depends on effectively navigating a complex stakeholder landscape. Despite governance structures incorporating stakeholder input, we have not seen a clear strategy for managing industry-level risks. Misaligned risk ownership, accountability, and Network Code protocols, combined with a fragmented stakeholder structure, pose significant challenges. The leadership model of the DSP aligns to the industry structure and requires consensus. This can undermine overall focus on delivery, efficiency, minimum viable product, and desired outcomes. [see REC0030-05]
- **Estimate and Unit Cost Certainty** – The Fleet Fitment programme is at an early stage with limited cost experience in some sectors. While passenger and freight cost data is more mature, data and delivery experience is less mature across OTM and Heritage & Charter sectors. Budget risks/gaps will persist until unit costs are proven and scope definition is clearer. [see REC0030-06]

5.4 East Coast Digital Programme (ECDP)

The East Coast Digital Programme (ECDP) will introduce in-cab digital signalling on the southern part of the East Coast Main Line, between London Kings Cross and Grantham, and aims to deliver greater reliability, more punctual services and greener journeys.

The programme began its rollout with ETCS-operated services on the Northern City Line in late 2023. ETCS operation without lineside signals commenced in May 2025. The upgrades will then be progressively introduced on the southern section of the East Coast Main Line, with the first trains expected to operate using digital signalling by the end of 2025. The full programme is scheduled for completion by 2030, requiring funding in the early years of CP8 as well as CP7.

The programme comprises both lineside equipment works as well as Fleet Fitment and is the first programme to be mobilised within the Digital Signalling Portfolio of programmes.

Our assessment of current and expected confidence levels for ECDP is shown below in Figure 6.



Figure 6 – ECDP Maturity Assessment

Our key findings on the maturity of East Coast Digital Programme activity are:

- **Estimate Maturity** – Contingency levels provided within the estimate appear to be significantly lower than the risk levels. The estimate is based on assumptions about unit rates, Rolling Stock fitment costs have been somewhat higher than expected so far. The delivery programmes are still at an early stage of development and any changes may have significant impact on indirect costs. Abnormal costs are yet to be confirmed through surveys and design. The anticipated gradual reduction in unit costs needs more evidence, and the inflation rates assumed during the FBC (Full Business Case) were relatively low. It is unclear to what extent these trends have been used to update the AFC. [see REC0030-06]
- **Requirements Management** - Traceability between top-level requirements and project requirements needs improvement. Maintenance requirements were not cascaded or procured in collaboration with Siemens. There are gaps in the system integration approach, particularly in terms of governance and leadership, with issues of intellectual property still to be addressed. [see REC0030-02]

5.5 West Coast North Modernisation (WCNM)

WCNM is a renewals programme and relates to the route from Warrington to Carlisle. The programme will renew track, digital signalling, telecoms and overhead line assets to increase capacity, improve asset resilience and facilitate ETCS operation.

No specific ETCS related outputs are currently planned for CP7 as the digital signalling activity has been moved into CP8. It is understood that the focus in CP7 will be on ETCS enabling activities but as yet these are to be fully defined. The deferment of spend has resulted in a reduction in forecast for the programme in CP7 from £310m to £10m. The programme is at an early stage of development, with scope at a high level, with the majority of scope to be delivered in CP8, therefore it is difficult to comment on confidence levels for delivery.

Our assessment of current and expected confidence levels for WCNM is shown below in Figure 7.



Figure 7 – WCNM Maturity Assessment

The key finding on the WCNM programme is:

- Programme Re-scheduling & Re-forecasting** - the WCNM Programme delivery plan for ETCS has undergone significant change; at the moment the implications of deferring expenditure on the supply chain are unclear and it could have significant implications on the development of supply chain capability. Establishing the necessary industry capability at scale will be essential to achieving efficient unit rates within the Digital Railway Programme. [see REC0030-03]

6. Recommendations

The recommendations from this review are summarised in Table 3 with suggested timescales for implementation.

Table 3 - Recommendations

Risk/Issue	Recommendation	Target
Programme and project delivery monitoring [REC0030-01] The aim of the DSP is to develop wider industry experience and capability. At the current point in time there is limited Great Britain industry capability/experience with the particular activities associated with digital signalling, and some assumptions regarding forecast delivery timescales are unvalidated.	Granularity of programme and project controls Continue to improve granularity and quality of reporting of progress against baseline delivery plan	Short-term (by end of December 2025) Reporting improved to include: - Continuation of reporting of forecast variance in period. - Continuation of granular performance against milestones, with periodic progressive reporting. - Periodic reporting against forecast delivery of outputs and volumes (when applicable) of work for all aspects of the Digital Railway programme. Outputs to include softer items such as stakeholder agreements, as well as tangible volumes of work for infrastructure works. - Periodic reporting of changes in risk exposure and contingency available. - Plan agreed for progressive validation of programme milestones (such as those previously agreed with operators, OEMs and ROSCOs) through supply chain and stakeholder commitments with risk transfer. - Assurance programme in place, with independent programme reviews and deep dives into critical areas. - Recognition should also be made that some schemes span Control Periods, and therefore these schemes should be assessed in the context of envisaged funding potentially not being available.
Requirements Management & System Integration [REC0030-02] The intricacies of system integration, combined with a complex and demanding stakeholder	Conduct a deep dive review of system integration management to assess maturity, identify challenges, and recommend improvements. This review should	Medium term (by end of April 2026) Requirements Management Review Identify an appropriate system to check project requirements and manage any changes e.g. a requirements management tool.

Risk/Issue	Recommendation	Target
landscape - both within and beyond the digital signalling system boundary - introduce significant risks, including: Scope creep in the absence of effective change control Failure to achieve desired outcomes, which underpin the business case for digital railway transformation A robust approach to system integration management is essential for mitigating these risks and ensuring alignment with strategic goals. However, the review found that system integration maturity could be further improved, and that demonstrating clear traceability between requirements and strategic outcomes remains challenging.	evaluate traceability between requirements and strategic outcomes, highlight gaps in current processes, and propose targeted actions to enhance integration effectiveness and risk mitigation.	- Conduct independent reviews of requirements definition, traceability, and management. - Assess system modelling adequacy to support strategic outcomes. - Validate risk mitigation measures for gaps and potential risks. - Ensure traceability of client requirements across projects and contracts. - Define objective acceptance criteria to prevent scope creep. - Embed the proposed structured change management framework. - Confirm stakeholder consensus to avoid misalignment at project/programme level. Independent Assurance Review of System Integration Risks (Process Outputs) Comprehensive Risk Assessment: Identifies security, data, and operational risks. Gap Analysis Report: Highlights discrepancies in system performance. System Boundaries: Defines internal and external testing parameters. Stakeholder Alignment: Documents engagement and expectations. Ongoing Monitoring & Assurance - Establish continuous risk mitigation monitoring. - Conduct periodic audits and adaptive assurance reviews (every period).

Risk/Issue	Recommendation	Target																								
West Coast North Modernisation (WCNM) Programme Re-scheduling & Re-forecasting [REC0030-03] The WCNM Programme delivery plan has undergone significant strategic changes, which could have far-reaching implications for the broader strategy of supply chain growth. Establishing the necessary industry capability at scale will be essential to achieving efficient unit rates within the Digital Signalling Portfolio. The programme cost spread (£m) at RF6 is shown below: <table><tr><td>24/25</td><td>25/26</td><td>26/27</td><td>27/28</td><td>28/29</td><td>Total</td></tr><tr><td>4</td><td>16</td><td>44</td><td>99</td><td>143</td><td>310</td></tr></table> The programme cost spread (£m) at RF11 is shown below: <table><tr><td>24/25</td><td>25/26</td><td>26/27</td><td>27/28</td><td>28/29</td><td>Total</td></tr><tr><td>1</td><td>0</td><td>1</td><td>3</td><td>5</td><td>10</td></tr></table>	24/25	25/26	26/27	27/28	28/29	Total	4	16	44	99	143	310	24/25	25/26	26/27	27/28	28/29	Total	1	0	1	3	5	10	Conduct a change impact assessment to evaluate how these WCNM changes may affect the industry's ability to build the expertise and capacity required for the effective and efficient delivery of the Digital Signalling Portfolio. This assessment should identify potential disruptions, measure their significance, and propose mitigation strategies to ensure a smooth transition while maintaining industry capability.	Medium term (by end of April 2026) Change Impact Assessment • Conduct a comprehensive impact assessment with particular focus on deliverability of the rest of the Digital Signalling Portfolio, and the effect on supply chain capacity growth to deliver the portfolio. • Perform a thorough supply chain analysis to assess potential disruptions. • Engage in stakeholder consultation to gather insights and address concerns. • Evaluate the implications of re-programming WCNM’s delivery. Recommendations • Identify proactive measures which may be needed to safeguard supply chain resilience and maintain long-term programme viability. • Identify required adjustments to the Digital Signalling Portfolio strategy, planned outcomes and supply chain approach.
24/25	25/26	26/27	27/28	28/29	Total																					
4	16	44	99	143	310																					
24/25	25/26	26/27	27/28	28/29	Total																					
1	0	1	3	5	10																					
Risk analysis, quantification and contingency allocation [REC0030-04] The absence of truly comparable benchmarks introduces significant estimating uncertainty within the Digital Signalling Portfolio of works. The review identified that ECDP is the only programme to have carried out a QSRA.	Validate the basis for risk and contingency allocation through robust analysis to ensure accurate representation of risk exposure across the portfolio. Strengthen this approach to enhance risk visibility and support informed decision-making.	Medium term (by end of April 2026) • Rigorous quantitative analysis of risk exposure. • Identify mitigating measures for the risks and to review levels of contingency across the portfolio. • Conduct QSRA and QCRA reviews across all projects and programmes within the Digital Signalling Portfolio, ensuring comprehensive stakeholder representation and incorporating their insights into the process. • Assess estimating uncertainty, analyse unit cost variations, and evaluate the sensitivity of anticipated final costs for programmes																								

Risk/Issue	Recommendation	Target
		within the portfolio. Reflect these factors in risk exposure estimates to enhance forecasting accuracy and risk management. • Periodic reporting of variance in risk and contingency • Lessons learned opportunities shall also be sought from other projects and programmes (such as TRU).
Stakeholder Management, Risk Ownership & Accountability [REC0030-05]	Ongoing clarity to be provided on which organisations are accountable for stakeholder management, delivery, risk ownership and accountability, and also for providing strategic advice and governance.	Medium term (by end of April 2026) • The owning organisations shall be accountable for: – Stakeholder Management (including supply chain) – Delivery – Risk – Schedule – Lessons Learned • Industry integration – clarity on who in Network Rail will perform that role and whether additional funding is required. • Network Rail to undertake stakeholder consultation, in particular covering how does “track and train” fit together?
Estimate Maturity [REC0030-06] • Unit Costs • Assurance • Risk & Contingency	Unit Costs The actual achievement of unit costs could have a significant impact on the overall programme budgets. This element of the proposed strategic dashboard is of critical importance so that the achieved unit costs are monitored progressively with any trends identified and assessed in terms of impact on the overall programme budget. Assurance Independent assurance of the budget estimates to be put in place	Long term (before CP8 Business Plan) • SEU Unit Costs Progressive assurance and reporting of achieved unit rates in place e.g. using the proposed strategic dashboard, with periodic trending updates to overall budget, including tangible steps to show how rates can be improved • Fleet Fitment Works First in Class costs broken down. Transparency of data and Cost Break-down structures in place • Dynamic Cost Modelling More dynamic cost trend analysis required. • Assurance Assurance programme in place, with scheduled deep dives and independent assurance of budget estimate. • Risk Estimation

Risk/Issue	Recommendation	Target
	at both project and programme level Risk & Contingency Develop a granular understanding of risks and allocate and manage contingency against risk provision with regular updates of both.	Adoption of QCRA techniques with stakeholder and supply chain involvement. Sensitivity analysis to programme prolongation and key parameters such as inflation and changes in negotiation. • Assumptions/Exclusions Network Rail to confirm these for estimates for all projects/programmes. • Opportunities/Efficiencies Network Rail to continue to confirm the above for all projects/programmes.
Governance Line of Sight [REC0030-07] Governance reports primarily emphasise the delivery of tangible work items, such as Fleet Fitment and lineside infrastructure, presenting high-level project management insights. However, this focus comes at the expense of strategic oversight, limiting visibility into key risks, opportunities, and broader portfolio objectives.	Enhance governance through a sharper focus on key result areas (KRAs)—including unit costs, stakeholder agreements, and progressive, detailed reporting on requirements, milestones, and actual vs. forecast spending (continuation of what is already in place) - would significantly improve transparency. Strengthen this approach to foster more decisive leadership and provide a clear, controlling mind for programme direction and execution.	Long term (before CP8 Business Plan) • Use the proposed strategic dashboard to continue governance reporting to reflect the strategic risks and opportunities for the programme. • These should reflect the strategic objectives identified for the portfolio management organisation, as well as strategic areas for each specific programme. • Key Results Areas for the programme identified - these should include: • Stakeholder Agreements • Unit Costs • Outcomes, requirements and volumes monitoring v. programme and cost • Efficiency targets aligned to initiatives • Industry capacity and resource strategy • Specify KPIs and soft reporting templates to allow for clear reporting focus and critical leadership discussions and decisions to take place.

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