



Crossrail Project Representative

Crossrail Joint Sponsor Team

Sponsor Summary

Project Status Report 146

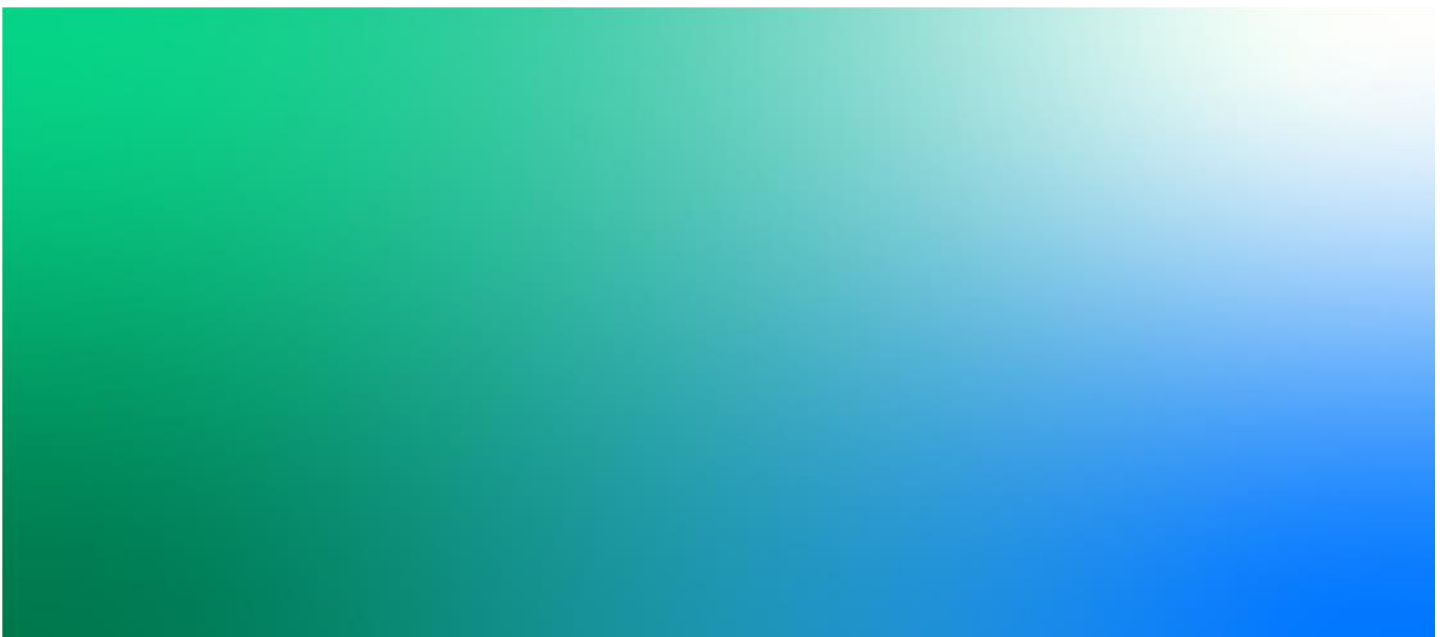
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Note: This report relies on the information set out in CRL's Period 10 reports augmented by more current information received by PRep during the course of our routine discussions with CRL since the Period close on 9 January 2021. Note that information emerging after the close of Period 10 is subject to formal confirmation by CRL in its Period 10 reports. This report is supplemented by our weekly reports to JST and regular meetings with JST staff.

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
1.	29/1/2021	PSR 146 Period 10 FY 2020-21 Sponsor Summary v1.7 - Draft	██████	██████	██████	██████
2.	1/2/2021	PSR 146 Period 10 FY 2020-21 Sponsor Summary v1.8 - Draft	██████	██████	██████	██████
3.	5/2/2021	PSR 146 Period 10 FY 2020-21 Sponsor Summary v1.10 - Final	██████	██████	██████	██████

1. Sponsor Summary

1.1 Key Observations in the Period

A varied campaign of work was successfully completed in the Christmas Blockade, including Yellow Plant demonstrations and the uploading of software configuration TR2 Point Release 6; this latest software is designed to resolve important GWML interface functionality issues necessary for Trial Running, and there has been positive initial feedback from testing. RAB(C) Acceptance of the two Energy Chapter SJs and the Stage 4A Steering Group's provisional go-ahead in May 2021 are evidence of CRL's continuing drive to achieve the [REDACTED]. However, this [REDACTED] remains at risk.

Programme countdown to Trial Running has started, with CRL and RfLI executive management meeting weekly for issue escalation and resolution. This will become an important forum for swift decision-making, to help secure the start of Trial Running. It is likely that issues will continue to arise that will require close collaboration to resolve. Further review meetings at the T-Minus milestones will be critical in establishing readiness status, and to confirm [REDACTED]. Regular schedule logic adjustments and new mitigation proposals are indications of CRL's continual challenge to meet [REDACTED]; while CRL's Period 10 [REDACTED], the various reported schedule pressures suggest that Trial Running, as currently scoped, might actually start closer to [REDACTED].

While reliability growth is an important consideration for entry into Trial Operations, finalisation and formal instruction of scope to be completed during Trial Running, is also crucial in determining the start date for the Trial Operations period. Technical works that require collective decisions from CRL and RfLI for supply chain instruction include: Tunnel Ventilation System modifications, the resolution of Platform Screen Door issues, and the Windows 10 upgrade. Importantly, CRL's ability to meet the PDA requirements for railway maintenance requires modification to systems, without which passenger service performance will be compromised. CRL must advise Sponsors of the performance implications, if deferment is being considered. As implementation plans are finalised, it is likely that management interventions will be required to minimise schedule impact to the [REDACTED].

While CRL continues to refine its Workforce Plan and delivery model, resource pressures continue, as resources seek longer employment opportunities beyond [REDACTED]. Enforcement of IR35 rules in April 2021 may also compound the situation. CRL is caught between seeking to retain resources, while also streamlining its organisation to achieve cost savings. The situation is made more difficult by a need to prolong resources due to poor schedule adherence, caused by unrealistic schedule assumptions and multiple demands upon the same resources.

Achieving planned [REDACTED] is the primary driver for Programme delivery, and success within budget is unlikely without drawdown on risk and contingency. We remain concerned at CRL's lack of attention to actively managing time-bound risk mitigation measures, in order to minimise risk exposure. In addition, scope continues to emerge, and it is not clear how CRL is managing the associated cost threats, which are currently unaccounted for in the AFCDC and risk monies. At Period 9 CRL reported a [REDACTED] cost pressure which, following management review, would increase the AFCDC by between [REDACTED] and [REDACTED]. At Period 10, this excluded cost pressure has increased to a potential of [REDACTED], which

is subject to CRL's review. Similarly, CRL calculates a [REDACTED], that the Elizabeth Line can be delivered within the current funding position of £15,789m. This excludes the impact of the potential [REDACTED] cost pressures. CRL is applying stricter budgetary controls and risk drawdown processes, but these will need to be implemented quickly by the delivery teams, if the schedule is not to be impacted. A [REDACTED] threat to the funding threshold remains, with no defined plan to manage this deficit.

Based on our Period 10 status report, we recommend that the following questions are considered by Sponsors and the CRL Leadership Team:

- 1) How is CRL accounting for, and reporting on, emerging additional scope?
- 2) How can CRL demonstrate its interventions are delivering timely resolution of risks to minimise exposure?
- 3) How will completion of the Programme be reflected in the Delivery Control Schedule and AFCDC, including all resource requirements, realistic delivery assumptions, lessons learned and CRL's close-out strategy?

1.2 Health and Safety

There were no significant health and safety incidents in Period 10 and the Safety Performance Indicator decreased slightly. With the Covid-19 'third wave' established, CRL remains vigilant and ensures delivery resilience through the safeguarding of key resources and critical operational assets.

1.3 In-Period Progress Overview

Recovery Plan and Schedule

CRL continues to use the Period 4 DCS v1.1 [REDACTED] to measure Programme performance. An update to the Delivery Control Schedule (DCS v1.2) is expected in Period 1, and will include Stations commissioning plans, critical resource management inputs and software plans. T-Minus countdown meetings will be used to assess readiness for Trial Running.

The Critical Path to Trial Running remains within the safety assurance process. Clearance of Dependencies, assisted by the StEJ process, is critical to the Central Operating Section SJ (COS SJ) acceptance by RAB(C). Completion of CRL's Element Completion Handover Reports (ECHR) is also critical to input to RfLI's RCAC/EAC assurance documents, which then leads to the Trial Running Railway Assurance Case (TRRAC) and the Crossrail Engineering Safety Assurance Case (CESAC). CRL is expected to reach agreement with the ORR next period on the final procedural steps for entry into Trial Running.

Tottenham Court Road, Liverpool Street and Woolwich Stations achieved SC3, and 4 of the 9 Stations achieved SC1 Enactment, in the period. Schedule adherence at Paddington Station dipped during work carried out over the Christmas break, due to poor forecasting. Consequently, achievement of SC1 Enactment and the T-12 date of mid-February 2021 is under pressure. Farringdon Station remains on target to achieve SC3 ROGS handover to RfLI in early March 2021.

¹CRL Period 10 Executive Programme Performance Reviews (EPPRs) held on 2 and 3 February 2021. Cost and Risk Provisions Slides 18 & 20.

Handover Delivery and Assurance

Due to Asset Data issues, Plumstead Maintenance Depot handover is likely to slip to March 2021; the Sidings remain on schedule for handover on 22 January 2021.

Completion of SC1 Enactment at all Stations is expected by mid-Period 11. Paddington Station is the last forecast to achieve SC1 Enactment, which may pose a threat to Trial Running. Commissioning of Stations and BIU dry-runs are progressing; the dry-run completed at Farringdon was regarded as successful, and the dry-run at Custom House is about to start, with Tottenham Court Road and Paddington Station to follow in Period 11. The risk of resource shortages for Stations and their commissioning works remains, but is being addressed by CRL². The remaining [REDACTED] reports are targeted for submission to the Local Authorities by [REDACTED]. Woolwich West will require resolution of [REDACTED] ahead of Trial Operations, but has now been de-linked as a requirement for Trial Running.

SIDT, Dynamic Testing, Trial Running and Trial Operations

Weekly countdown meetings to Trial Running [REDACTED] [REDACTED] are planned with independent advisors at T-8, T-6 and T-4.

The second SIDT period started on 13 January 2021 and is scheduled to run through to mid-March 2021. Early indications are that the tests carried out so far with software Point Release 6 have been successful.

An important area of progress is the transition to Trial Operations and the requirements, readiness and structure for the Passenger Service Mobilisation Board that will oversee the Passenger Service Readiness Team. The Board will form on commencement of Trial Running.

Stage 2B Operations

FLUs operating on the GWML have maintained an adequate performance, arising from fewer ETCS faults. The next software release remains on schedule for implementation by February 2021.

Organisation Transition

ELDG approval⁴ of the Project Authority commitment request allows the previously identified 164 roles to proceed; this includes roles within CRL, its supply chain and RfLI, and the extension of existing resource contracts from [REDACTED]. Executive management reviews are being held in early Period 11, and are expected to identify an updated strategy for the delivery model within the Workforce Plan, for the organisation through to Passenger Service and beyond; this is anticipated to yield a substantial reduction in the Indirect costs.

² Integrated Project Review Part A and B on 19 and 20 January 2021, respectively.

³ Project Delivery Review Part A and B held on 14 and 15 January 2021, respectively.

⁴ Elizabeth Line Delivery Group (ELDG) meeting held on 12 January 2021.

1.4 Ongoing Concerns

Our wider concerns with delivery of the Elizabeth Line are set out below.

Stage 3 – SIDT, Trial Running, Reliability Growth and Trial Operations

Given the complexity of the assurance process, Period 11 continues to be pivotal to CRL's achievement of the [REDACTED] Trial Running date. There is significant tension in the process, particularly in the formation of the CESAC submission in mid-February 2021. This is attributed to CRL's timely completion of its ECHR and supporting information impacting RfLI's ability to complete its assurance work associated with RCAC/EAC. These activities, and Dependency closure, are requiring intense management focus. Management interventions will need to be successful, and RfLI's must be in a position to process late information, to maintain the [REDACTED] date. Given the ongoing schedule pressures, CRL's current [REDACTED] appears optimistic, and Trial Running, as currently scoped, might actually start closer to [REDACTED].

With two more blockades planned during the Trial Running period, maintaining reliability growth will be a key factor for determining entry into Trial Operations.

Delivery of Bond Street Station to SC2 is the key schedule driver, and is on the Critical Path to entering Trial Operations, with the completion of all station integration activities running close to the Critical Path. Initial indications suggest that CRL will push hard to deliver Trial Operations [REDACTED] [REDACTED] to provide an opportunity to open Stage 3 by [REDACTED]. However, this is likely to need further interventions to address risk on outstanding works such as the TVS, and may require the adoption of an SC2 configuration at certain stations, should further schedule slippage occur. CRL's review of the assurance process for the ELR100 software configuration has enabled an improvement [REDACTED] [REDACTED] in the period, to [REDACTED].

Stations Assurance and Commissioning for Trial Operations

Schedule adherence at Paddington, Tottenham Court Road, Custom House, Bond Street and Canary Wharf Stations has generally slipped in the period, in part due to poor forecasting. Consequently, intense pressure remains to achieve all Station SC1 Enactments necessary for Trial Running; Paddington is now forecast to be the last remaining Station to acquire this status in Period 11, and this is threatening the Critical Path for the start of Trial Running. As Paddington Station faces intense pressure to achieve its T-12 countdown date in mid-February 2021, and while testing and commissioning might be impacted, the likely additional costs will be managed through risk drawdown. Emerging scope continues to require management focus, in particular for Canary Wharf Station and Bond Street Station, where scope definition must be completed. Issues that threaten Stations assurance completion include Asset Data, Red Line Drawings, key resource departures and prolonged review periods.

Activities to be undertaken during the Trial Running period, such as TVS modifications, PSD rectification and works to improve on times for isolations and possessions for maintenance periods, have yet to be instructed by CRL. These, as well as the time necessary to complete the Windows 10 upgrade, may have the potential to further impact the schedule for entry into Trial Operations.

Completion of the delivery strategy for Bond Street Station is still due by end of Period 11. In the meantime, indications are that the date for SC2 completion is slipping, and will require interventions.

Commercial and Risk

The AFCDC reported for Period 10 at the EPPR was held at £15,885m; this exceeds current funding by [REDACTED]. We are concerned that there has been no change to CRL's forecast over the past 4 periods, particularly since, at Period 9, CRL reported a [REDACTED] cost pressure that resulted in an excess of unallocated allowances between [REDACTED] and [REDACTED]. At Period 10, this excluded cost pressure⁵ has now increased to a potential [REDACTED]; CRL is presently reviewing its cost pressure list.

In Period 10, CRL released £20m of Prolongation Risk allowance. This is a consequence of CRL's increased confidence in achieving the start of Trial Running, and a corresponding reduction of Prolongation Risk of its mitigated [REDACTED]. This release of Prolongation Risk has been transferred to the CEO Reserve. CRL continues to identify emerging issues and to draw down risk and contingency, to offset AFCDC increases, putting pressure on the allocation from the CRL Reserve. Consequently, the threat of not completing the Elizabeth Line within the current funding threshold is increasing.

Organisation

Resource pressures continue on the Programme, as resources seek longer employment opportunities beyond [REDACTED]. The situation is compounded by the enforcement of new IR35 rules in April 2021, which are anticipated to impact CRL's supply chain. With works being pushed into the Trial Running period, and general prolongation of assurance activities, CRL must strike a difficult balance between extending resources beyond the previously extended end date of [REDACTED] and reducing headcount to manage its Indirect costs and AFCDC. This dichotomy is expected to remain for the coming periods until a streamlined organisation that can be fully implemented with a timing that does not conflict with Trial Operations.

⁵ CRL Period 10 Executive Programme Performance Reviews (EPPRs) held on 2 and 3 February 2021. Cost and Risk Provisions Slide 18.