



**Crossrail Project Representative**

**Crossrail Joint Sponsor Team**

**Sponsor Summary**

**Project Status Report 149**

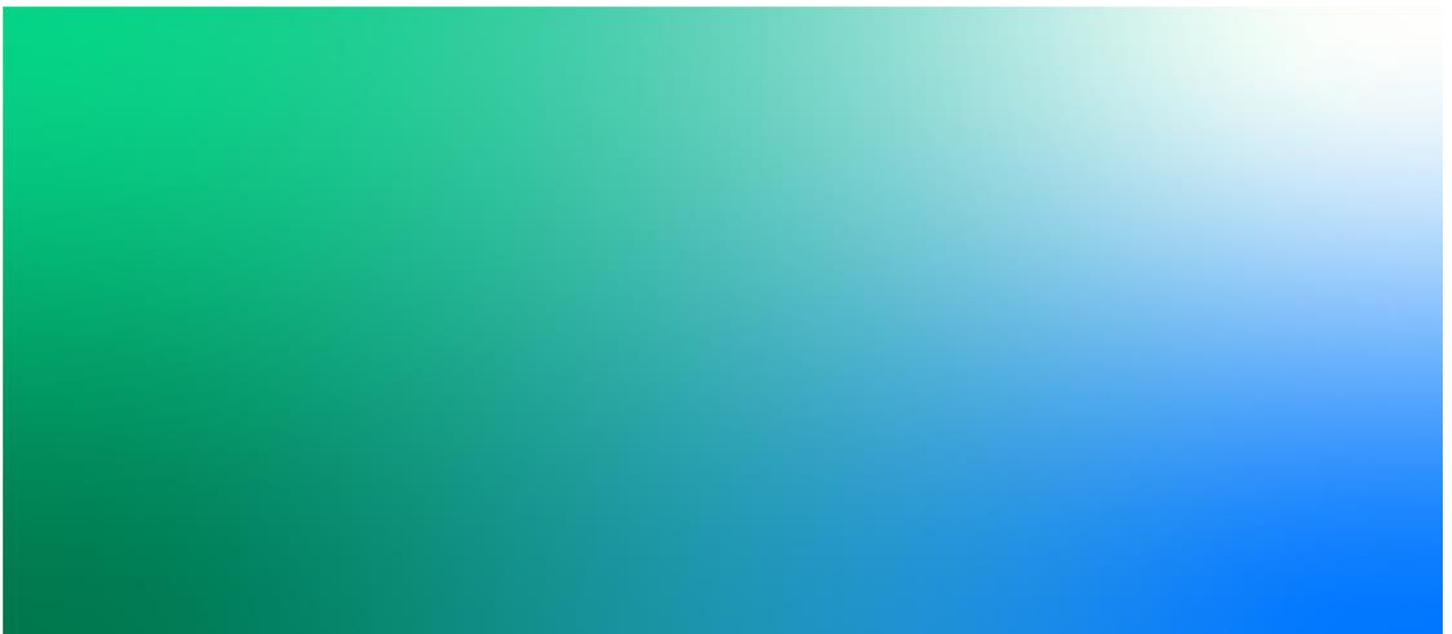
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## Sponsor Summary - PSR 149

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 Client No: RM 3730  
 Project Manager: ██████████  
 Author: PRep Team

Jacobs U.K Limited  
 2<sup>nd</sup> Floor Cottons Centre  
 Cottons Lane  
 London SE1 2QG  
 England  
 Phone: +44 (0)203 980 2000  
 www.jacobs.com

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Note: This report relies on the information set out in CRL's Period 13 reports augmented by more current information received by PRep during the course of our routine discussions with CRL since the Period close on 31 March 2021. Note that information emerging after the close of Period 13 is subject to formal confirmation by CRL in its Period 13 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.	26/4/2021	PSR 149 Period 13 FY 2020-21 Sponsor Summary v1.10 ~ Draft	██████	██████	██████	██████
2.	30/4/2021	PSR 149 Period 13 FY 2020-21 Sponsor Summary v1.12 ~ Final	██████	██████	██████	██████

## Sponsor Summary

### 1. Observations

CRL and RfLI achieved transition into ROGS on 27 March 2021 at 00.01hrs, marking a significant milestone in the opening of the Elizabeth Line. This moves the Programme focus from construction to an operational railway, with RfLI taking the responsibility for System Operator and Infrastructure Manager under the RfLI ROGS Rule Book. With the GWML interface commissioned as planned, the Trial Running period started on 29 March 2021; a critical initial [REDACTED] period of asset maintenance (known as the Maintenance Bridging Plan) was to be implemented during the Controlled Introduction Period. However, since ROGS transition, CRL and RfLI have been unable to carry out the maintenance works on the scale proposed. This may have significant impact upon the achievement of future key milestones.

#### 1.1 Headline Concerns

With details still emerging, it appears from the first few weeks of the Trial Running period that the revised arrangements jointly agreed between CRL and RfLI in the weeks immediately prior to ROGS transition, which allowed the [REDACTED] to be achieved, have resulted in inefficient working. Issues include practical and procedural problems with safe site access under the RfLI ROGS Rule Book, a lack of trained and competent safety supervisory resource, and difficulties with use of unapproved maintenance plant. While we are aware that these issues are being slowly resolved, schedule impacts upon subsequent critical activities will be difficult to avoid.

For example, the delayed implementation of Timetable Running and the start of 4 TPH trials will impact the ramp-up to 12 TPH. This, in turn, is expected to reduce train mileage growth and learning opportunities for fault finding and fixing. Taken together with related issues such as extended periods for establishing possessions and isolations, and difficulties with access to the routeway and to station equipment rooms, there is now more work to be carried out than was intended, in an already compressed Trial Running period. It is important that CRL and RfLI retain the close working relationships developed prior to ROGS transition, to deal with the programmatic challenges mounting already, ahead of Trial Operations. The speed and decisiveness of leadership direction, together with the deployed interventions, will determine whether continued schedule slippage can be prevented.

There is little evidence of improvement in stations delivery to support the start of Trial Operations on [REDACTED]. Delays are being identified at Paddington, Bond Street and Canary Wharf Stations that have the potential to impact the schedule for Passenger Service.

Initial planning for programme completion and the development of DCS v1.2 is underway. The Central Section is now under the control of RfLI, and the delivery of works in an operating railway environment is more complicated and challenging. CRL must ensure that DCS v1.2 takes full account of the processes and agreements necessary for works access and implementation; this is also the case for assets under the control of the other IMs (i.e. LU, MTREL and NR). Planning of the major delivery milestones will be influenced by clear scope definition, assumptions, constraints and productivity basis, with schedules and delivery solutions underpinned by the supply chain. Finalisation of DCS v1.2 by [REDACTED], as currently targeted by CRL, represents a significant challenge. Sponsors will need assurance from CRL that all issues have been fully considered, co-ordinated and agreed with stakeholders, and that realistic and achievable dates for Trial Operations and Passenger Service are confirmed.

The significance of these issues gives rise to the following summary concerns:

- Focus on short term milestones resulting in a lack of strategic planning.
- Implications of delay to the start of Timetable Running, from its original date of [REDACTED], are still emerging and are yet to be fully understood by CRL.
- Start of Timetable Running on the [REDACTED] is at risk and is more likely to occur in early [REDACTED].
- There is a high risk of missing [REDACTED] the start of Trial Operations of [REDACTED].
- Until the drivers of cost are finalised in DCS v1.2, the AFDCDC forecast cannot be reliably underpinned.
- Until DCSv1.2 is finalised, a change to CRL's forecast [REDACTED] is unlikely.

## 1.2 Health and Safety

Two High Potential Near Misses and one Lost Time Incident occurred in Period 13. While the Safety Performance Indicator decreased slightly, the overall indicators remain within those set by the Programme. A steady decline in Covid-19 cases across sites is being realised.

## 2. Programme Overview

### 2.1 Schedule

The forecast [REDACTED] for start of Trial Operations on [REDACTED] and Passenger Service on [REDACTED], are being held this Period.

Period 13 represents a transition period for the Programme, as CRL and RfLI resolve the issues which are preventing progress following entry into Trial Running. Attention is also focussed on the development of DCS v1.2. No formal change to the reported [REDACTED] or risk assessment [REDACTED] is expected, while the DCS reviews are in progress and until DCS v1.2 is finalised and issued. We are concerned that this approach will make it difficult to assess the level of progress being made towards the start of Trial Operations.

Schedule planning workshops have taken place, but we have not been invited, nor had visibility of outputs. We are concerned that CRL may develop a revised schedule that presents an overly optimistic position that is target date driven and constrained by stakeholder expectation.

CRL continues to target [REDACTED] for the start of Timetable Running. The full implications of the Controlled Introduction Period are yet to be fully understood. But, with several previously identified Programme level risks now materialising as issues, initial indications suggest that at least [REDACTED] delay to the 4 TPH trials will affect the ramp-up to higher service levels and will reduce planned train mileage growth. The impact on the start date for Trial Operations is still being evaluated, and interventions and trade-offs are likely, in order to maintain the [REDACTED].

### 2.2 Commercial and Risk

Our Period 13 analysis is principally based on our observations from the CRL Period 13 IPR and subsequent Period 13 EPPR report<sup>1</sup>. Notwithstanding cancellation of its Period 13 PDRs, CRL

<sup>1</sup> Executive Programme Performance Review, Crossrail Performance Period 13, 2020/21, Part B on 21 April 2021.

presented its subsequent IPR<sup>2</sup> data based on Period 12 schedule dates which it reports have been held pending completion of its schedule review. CRL's revised schedule, DCS v1.2, which was reported will be completed in [REDACTED], has slipped to [REDACTED]. Consequently, we consider that the AFCDC is not underpinned until it is aligned with the schedule update.

CRL reported<sup>3</sup> an AFCDC of [REDACTED] for Period 12, a [REDACTED] increase from the previous period. CRL's Period 13 AFCDC was subsequently revised during the EPPR review<sup>4</sup> to [REDACTED], with the addition of [REDACTED] for [REDACTED] at Bond Street Station to deliver SC3 ROGS in [REDACTED]. The EPPR AFCDC assumes that the proposed risk and provisions drawdowns are approved by the ELDG, and consequently may be subject to change or variation.

CRL completed its review and challenge on the cost pressures, which has resulted in a reduction to [REDACTED] this period, from [REDACTED] last period; however, this continues to be excluded from the AFCDC. It is expected that these cost elements will be ultimately included in DCSv1.2 and AFCDC. However, an additional number of as yet un-costed scope items have been identified, that may exert further cost pressures.

The CRL QCRA for the Period 13 IPR was based on Period 12 schedule dates, which have proved to be unreliable. An update to programme risk from QCRA is not available although, in its AFCDC assessment, CRL has reduced programme risk by [REDACTED] and prolongation risk by [REDACTED]. Misalignment between schedule and risk evaluation indicates that such risk retirement is premature.

The uncertainty of the cost and risk forecast is a consequence of CRL undertaking its scope, schedule, risk and resource reviews necessary to inform DCS v1.2 development. Until the drivers of cost are fully identified and the process is completed, the cost forecast cannot be reliably underpinned or given any view of assurance.

### **2.3 Organisation**

The first Passenger Service Steering Group (PSSG) meeting was held immediately after ROGS transition. The PSSG will review the issues and performance metrics associated with the 10 key workstreams, identified by CRL as necessary to achieve Trial Operations and Passenger Service.

In line with its Workforce Plan, the end of March 2021 brought a reduction in CRL's headcount, as a number of its direct resources left the Programme, with some central activities being shared with TfL. With CRL having largely resolved the risks [REDACTED], the effort moving forwards will be maintaining focus on delivery and completion of activities for entry into Trial Operations. Slippage in schedule delivery dates will probably require [REDACTED] [REDACTED], to complete works ahead of the planned start to Trial Operations in [REDACTED].

### **2.4 Stage 3 Trial Running, Trial Operations and Passenger Service**

The Trial Running period started on 29 March 2021, following commissioning of the GWML interface, and the GEML interface commissioning was completed on 26 April 2021. Re-submission of RfLI's TRRAC for acceptance by ITAP is necessary before 4 TPH trials can start. The TRRAC relies upon the sufficient completion of maintenance works, delivery of asset data and the closure of EOWs. Given CRL and RfLI's poor performance during the Controlled Introduction Period, the TRRAC and the

<sup>2</sup> IPR Papers received on 14 April 2021.

<sup>3</sup> Elizabeth Line Delivery Group meeting held on 1 April 2021.

<sup>4</sup> Executive Programme Performance Review, Period 13 2020/21, Part B, held on 21 April 2021.

updated CESAC have not been completed<sup>5</sup>, and the start of 4 TPH Timetable Running has been delayed.

The Maintenance Bridging Plan was developed late in the run-up to ROGS transition, and implementation has been hampered by a shortfall in RfLI and CRL competent resources to safely supervise works. Consequently, the first two weeks of the initial [REDACTED] Controlled Introduction Period has necessitated a cut back to 20% of the planned maintenance bridging works. While RfLI and CRL address these issues, maintenance works on the scale proposed immediately prior to ROGS transition are not being achieved. This may have significant impact upon the achievement of future key milestones.

With the railway designed for an ultimate capacity of 24 TPH, RfLI and CRL are evaluating the requirements and operational limitations to demonstrate a 24 TPH service. In the immediate short term, CRL is revising the Trial Running Plan to address the [REDACTED] delay due to the Controlled Introduction Period.

CRL's delivery of all asset data and input into RfLI's management system remains outstanding, and a completion deadline has been set 8 weeks after transition to ROGS. Although over 90% of data has been delivered, RfLI's ability to plan maintenance activities appears to be impaired. Agreement with NR on access arrangements for maintenance activities on both the North East and South East Spurs is proving challenging.

Much attention will be required from RfLI in Period 1, to ensure that access planning systems meet the conflicting needs of parties which still require to carry out a large volume of outstanding works on the Central Section; access to RfLI secure rooms and systems in stations is a particular concern. The planning lead times are appropriate for a fully operational railway, but are prohibitively long for one which still requires access for Programme works. A pragmatic approach between both CRL and RfLI is essential while the railway transitions to fully operational status.

Following the demanding few months leading up to ROGS transition, a significant number of resources took annual leave. Their absence, combined with the difficulties associated with access and negligible maintenance productivity, has caused delivery to lose momentum. It is important that CRL and RfLI establish a 'joint planning authority' to address the crucial need for a strategic, rather than a short-term, approach to planning for Programme completion.

Entry into Passenger Service is currently based on CRL's [REDACTED] from DCS v1.1. Until DCS v1.2 is fully developed and approved, this date is unlikely to change. Stakeholder support to the future operational planning dates incorporated into DCS v1.2 will be important for the success of the opening stages beyond Trial Operations.

## **2.5 Stations Commissioning and Handover**

Liverpool Street Station entered its T-12 process just after period-end. While Tottenham Court Road Station successfully passed its Safety Justification under the new RfLI Technical Assurance Panel, its date for BIU in early May 2021 is under pressure due to incomplete Asset Data. Poor progress with Paddington Station has resulted in a slippage to [REDACTED] for its BIU date, and is likely to slip further, with Asset Data and assurance the key factors affecting progress.

Momentum has also yet to be developed for Bond Street Station to achieve [REDACTED], and for recovery at Canary Wharf Station, despite acceleration through additional resources and extended work patterns. Delays are being compounded by difficulties with assurance delivery, and access problems

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<sup>5</sup> [REDACTED] Review Meeting held on 20 April 2021.

associated with carrying out work after ROGS transition. In particular, Canary Wharf and Bond Street Stations are experiencing delays with access to key areas and to systems managed or controlled by RfLI. The impact is initially a 2-week delay but is likely to increase as time is taken to resolve access issues, with the potential to delay the SC3 ROGS date. Delays arising from frustrated access at stations are unlikely to be recovered.

While CRL considers [REDACTED] Bond Street Station to be achievable, stakeholder support will be essential. We remain of the view that there remains a risk with a drive to SC3/BIU that could detract from the primary objective of achieving [REDACTED], which is the minimum required to enable the railway to enter to Passenger Service.

## 2.6 Assurance

While CRL and RfLI made a significant effort to close the required 633 Dependencies, 97 remained open at the time of transition into ROGS. CRL and RfLI will be working to close 41 Dependencies by the end of April 2021. The majority are associated with shafts and portals, Plumstead Maintenance Facility, Custom House Station and Civils works. Completion of the 167 outstanding StEJ commitments is split across those required for the start of 4 TPH trial services and those required for entry into Trial Operations.

Safety Assurance delivery will continue through to Trial Operations and Passenger Service. Key areas of focus in the Trial Running period include Energy, ELR100 software, TVS and Communications and Control. The ITAP Plan<sup>6</sup> for moving from ROGS transition to the start of Passenger Service indicates that the railway must be managed through 5 major Configuration States; this will require significant integration activity across Stations, SCADA and Train and Signalling software. It is important that lessons are learnt from experience with the assurance process up to ROGS transition. We are aware that CRL, RfLI and LU are undertaking a review of the assurance process, and streamlining, where possible, will be vital to allow earlier dates to be met. A revised approach is targeted for incorporation into DCS v1.2.

Assurance activities in April and May 2021 include planned interventions by ORR and AsBo to review RfLI's processes related to the safety of people at work, reflecting the change in emphasis to an operational railway.

## 2.7 Future Stages

Stage 4A is scheduled to start in [REDACTED], with a mixed fleet of FLUs, RLUs and Class 315 units. The key risks to the FLUs being available are the timeliness of train approvals and the availability of the Central Section for access to the Great Eastern Main Line. A minimum of [REDACTED] FLUs will support passenger services up to and during the planned August 2021 Blockade. Replacement of RLUs and Class 315s is planned for implementation after the Blockade. Delivery of physical infrastructure at Liverpool Street Station was completed over the Easter 2021 period and delivery of the ONFR scope, which is critical for Stage 4A, is on schedule.

The proposed replacement of [REDACTED] is the subject of CRL's Change Notice (CCN 0026), which is expected to be submitted to Sponsors by the end of [REDACTED]. We would expect it to compare the risks and benefits of [REDACTED]. The process should explain why [REDACTED] will not constitute an unacceptable risk to the delivery of Elizabeth Line and main line timetable operations when implemented.

<sup>6</sup> Elizabeth Line Delivery Group meeting held on 1 April 2021.