



## RESPONSE TO THE CROSSRAIL SPONSORS ON THE PROJECT REPRESENTATIVE SPONSOR SUMMARY REPORT FOR PERIOD 6

**Date of Issue (this paper):** 01 November 2019

**Issued to:** Simon Adams, Head of Crossrail Joint Sponsor Team - Transport for London

**Author:** Liam Hewitt, DCEO Business Lead – Crossrail. [REDACTED]

**Approved by:** Mark Wild, Chief Executive Officer – Crossrail Ltd

### 1. Purpose

- 1.1. The purpose of this paper is to provide the Crossrail Sponsors with Crossrail's response to the Project Representative's ("**PRep**") Sponsor Summary report. It has been produced in consultation with Crossrail subject matter experts. A list of consultees is attached as Appendix 1.
- 1.2. The report responded to in this paper is for the Period 06 FY2019-20 (18 August 2019 – 14 September 2019) report, issued and received on 08 October 2019.
- 1.3. To ensure Crossrail's comments can be mapped accurately to the PRep's comments, each header (typed in **bold**) has the relevant PRep paragraph reference number in brackets. For this Period, Crossrail has annotated the PRep's report to include paragraph references. This annotated report is attached as Appendix 2.

### 2. Opening Statement from the Chief Executive Officer of Crossrail Ltd

- 2.1. Crossrail appreciates the opportunity to exercise its commitment to transparency through its response to the PRep's reports. While there are occasionally areas of disagreement with the PRep's commentary, this is healthy and has provided Crossrail with valuable discussion internally and with the PRep team. This constructive relationship has provided tangible benefits, enabled not least through Crossrail's proactive involvement of the PRep in meetings, workshops and progress updates throughout the programme.
- 2.2. Period 07 has been busy for the team who have been working hard to prepare for the Crossrail Board on 07 November. Crossrail has been, and will continue to be, open about the challenge that this phase of delivering the Elizabeth line brings. The November Board will provide a focus on these complex challenges what this means for the safe delivery of the railway.

### 3. PRep Key Areas of Concern in the Period

- 3.1. The PRep highlighted two key areas of concern for Period 06 (*Reference: 15.1 and 15.2*). Crossrail's comments are provided below.

**PRep Concern:** “a. We note the increasingly large number of issues with respect to handover paperwork and engineering assurance documentation. Could CRL demonstrate the alignment of current levels of production with the dates in the DCS?”

**Crossrail Response:** Crossrail recognises the challenges associated with the volume of handover paperwork and engineering assurance documentation, with the potential constraint of Crossrail’s and other technical resources to meet these, given a potential compression in the schedule. The Handover team has initiated analysis to assess the intended profile of work to deliver against the milestones within the DCS to inform resource demand and any re-profiling as necessary.

While current production levels in the Period Handover Over Report do not demonstrate alignment to DCS this does not fully reflect the situation on individual projects. The early projects in the programme, deemed “Nursery” projects, are reaching local agreements with the IMs on reduced requirements for Handover documentation. For example, at Tottenham Court Road 20 non-critical O&Ms have been agreed as only requiring Code 2 sign off. Crossrail are not able to reflect these local agreements on eB at this time but the Handover team is working to better visualise this data and apply the approach to all elements.

Crossrail has adopted a number of interventions to address Technical Assurance and Handover, including:

- Increase in supplier resource to improve production rates of documentation;
- Technical Directorate and IM team resource increase to focus on review and approval of documentation;
- Development of Right First Time Metrics to drive quality in production;
- Development of KPIs to track quality and consistency of reviews to reduce number of revisions; and
- Series of briefings have been carried out with all projects to clarify requirements and expectations on documentation.

Crossrail’s response to the PRep’s specific Assurance comments (*Reference: 9.0*) provide further detail on the measures being undertaken to refine the assurance process.

**PRep Concern:** “b. When does CRL believe it will have a detailed cost and schedule for the period of the project post-ROGS?”

**Crossrail Response:** Significant work is ongoing this period to improve and refine the schedule, cost and risk view of work up to and post-ROGS, through a combination of DCS development and overlays. A version of this will be presented to the P07 Crossrail Board meeting on 07 November, and will subsequently be incorporated fully into the DCS in subsequent Periods. This will give an update on the schedule and cost including post ROGS, and will be at a top down level with a detailed bottom up to be completed by a later date as determined in agreement with the Programme team and post-Board output.

#### 4. Matters necessitating Crossrail comment

4.1. Crossrail has the following comments on the PRep report, in a repeated order to the PRep’s Sponsor Summary report.

##### **HEALTH AND SAFETY PERFORMANCE** (*Reference: 1.0*)

4.2. The responses from Tier 1 Contractors to requests for information were made visible at SHELT 83 on 24th October, along with recognition that Siemens, Laing O’Rourke, ATC and Skanska have provided the reporting and Frontline Leaders Summaries.

**UNDERPINNING THE DCS (Delivery Control Schedule) (Reference: 2.0)**

- 4.3. The development of updated schedule management and forecast reporting processes is ongoing, including a schedule forecast variance report. This currently provides narrative for those cardinal milestones where a Board Commitment Date is showing as being at risk or confirmed breached. It is being considered how this will be expanded to also highlight breached Programme dates, within appropriate trigger levels.
- 4.4. It should be noted that the Project dates included within the DCS were recognised as being extremely challenging, but were retained [REDACTED].
- 4.5. Significant refinement of the DCS is being carried out during October, to provide an update to the P07 Board meeting. Consistent guidance around planning assumptions has been issued by the Programme and Sector teams to the Projects for P07 updates, which has provided a common basis of schedule update and AFCs.

**ASSURANCE, OVERSIGHT & EXTERNAL BODIES REVIEW (Reference: 3.0)**

- 4.6. Crossrail is satisfied that the TARs are following an output-focused methodology because they are examining and evaluating the quality of the DCS and AFCDC output products and are not purely process-focused, as was the case with previous reviews.
- 4.7. Crossrail's understanding is that the specific concern of P-Rep in this case is that these TAR review methodologies are not designed to yield an independent, alternative view of completion date and cost out-turn. While Crossrail accepts this observation, given the TAR remits were focused on providing an independent qualitative assessment and not to create an independently modelled alternative version of schedule and cost forecast, the scope and methodology of the two TARs may be therefore considered appropriate.

**PROGRAMME EXECUTION (Reference: 4.0)**

- 4.8. The Strategic Productivity Manager continues to put into action robust KPIs to track progress and to embed existing visualisation and 'lean' approaches in support of Stage 3 delivery. The roll out of 24/7 working has started at Whitechapel, Tottenham Court Road, Liverpool Street, Paddington and Bond Street stations to drive improvements. Additionally, projects are working towards ensuring that the Tier 2/3 resources required for the 'Bench' are retained through the Tier 1 contractors.

- 4.9. [REDACTED]. Due to this, additional circa 100 M&E resources have been brought in to increase productivity on day and night shifts [REDACTED], to mitigate the issue. Utilising this new arrangement, fabrication of CMS (cable management system) is now being carried out on site at Bond Street by the electrical contractors. Previously, fabrication of specialist CMS has been carried out off site and would take 8-14 weeks to manufacture. Crossrail have developed a Chief Engineer's Group/Rail for London Assurance process for the onsite fabricated of CMS.

Turnaround times for CMS fabrication at BOS is now 1 day as opposed to up to 14 weeks when done off site.

4.10.

4.11. These new delivery approaches are being shared to all station project teams across the programme through the newly appointed Supply Chain Delivery Director, and there is extensive ongoing works with all station project teams to develop and embed best practice.

4.12. CRL has adopted a number of interventions to address Technical Assurance and Handover, including:

- Increase in supplier resource to improve production rates of documentation;
- Technical Directorate and IM team resource increase to focus on review and approval of documentation;
- Development of Right First Time Metrics to drive quality in production;
- Development of KPIs to track quality and consistency of reviews to reduce number of revisions; and
- Series of briefings have been carried out with all projects to clarify requirements and expectations on documentation.

#### **COST, COMMERCIAL AND RISK** (Reference: 5.0)

4.13.

4.14. More prominence needs to be placed on managing the Current Control Budget and specifically Contingency (where 'Contingency' in this case refers to the budget amount set aside to deal with Risk events) which would remove this misunderstanding.

4.15. In addition to the paper on 10 October, papers have also been submitted to the 23 October CRL Investment Committee on Cost Management that included the need to balance schedule and cost to maximise overall benefit.

#### **STAGE 2 PHASE 2** (Reference: 6.0)

4.16. The scope of the Y0.5XX configuration including P\_D+11 has been agreed by all parties (finalised 18 October). Please note, Y0.5XX is the Bombardier naming convention for software - PD is Siemens'.

4.17. The end of Dynamic Testing is scheduled for [REDACTED].

4.18. The testing of P\_D+10 commenced in the Central Operating Section on 16 October.

#### **STAGE 3 – STATIONS, SHAFTS AND PORTALS** (Reference: 7.0)

4.19. Crossrail agrees with the PRep's comments.

**DYNAMIC TESTING** *(Reference: 8.0)*

- 4.20. BT have confirmed that they can still certify the train to enter Trial Running by [REDACTED], based on the agreed deliverables on [REDACTED] (Siemens have also confirmed). PD+11 testing will only serve to lift any limitations imposed by PD+10. The difficult task for Siemens will be to deliver the ESJ in time to achieve [REDACTED] start of Trial Running.
- 4.21. Crossrail is no longer planning to use possessions after start of Trial Running.
- 4.22. GEML access is agreed up to week 43, and GEML access for weeks 43 to 10 is still under discussion.
- 4.23. NR has recently offered 4½ hours of access on average across the interface on Friday and Sunday nights, rather than the 5½ referenced.

**APPROVALS, ASSURANCE AND AGREEMENTS** *(Reference: 9.0)*

- 4.24. The Crossrail Engineering Safety and Assurance Case (CESAC) strategy has been endorsed by RAB(C). A CESAC Working Group is to be established in November.
- 4.25. A Structured Engineering Judgement Procedure is under review. A ST.EJ Panel will be established to review any Structured Engineering Judgement submissions prior to their agreement under Crossrail governance at either the TAG or the IPDR panels. This is to help with efficiency for these two governance panels. These ST.EJ Submissions will be used as one source of assurance evidence by the CESAC.
- 4.26. A Reliability Board has been established to manage the pace of reliability growth.
- 4.27. A focus on the quality of inputs from contractors to ensure efficiency in the assurance process is ongoing. This includes improvement in the tracking of Derived Safety Requirements (DSRs) that are the precursor to hazard closure.
- 4.28. It should be noted that the ESJ is the final stage in the contractors' process that follows on from the Design ESJ and then an Interim ESJ which have already been reviewed by Crossrail as part of the progressive safety assurance that is being undertaken.
- 4.29. The activity to establish an appropriate reliability entry criterion for Trial Running based upon the latest reliability growth findings from the dynamic testing and design predictions is ongoing.

**STAGE 4 AND 5 SUMMARY** *(References: 10.0, 11.0)*

- 4.30. Crossrail accepts the PRep's comments.

**RLU-FLU SWAP-OUT** *(References: 12.0)*

- 4.31. Testing of this configuration at Melton has started and a plan is being developed to run this on a FLU (empty stock) on the GWML route in time for the decision point of 15 November 2019 set by MTR-C as to whether FLUs or RLUs should start the 5A service.

**STAGE 5A OPENING – NR** *(References: 13.0)*

4.32. Crossrail accepts the PRep's comments.

**STAGE 5B OPENING** (*References: 14.0*)

4.33. NR are due to provide a Value Engineering proposal update. This will define final scope and any resultant impact on ONFR requirements.

**END**

**APPENDIX 1 – LIST OF CONTRIBUTORS****RESPONSE TO THE CROSSRAIL SPONSORS ON THE PROJECT REPRESENTATIVE SPONSOR SUMMARY REPORT**

Period 06 FY2019-20 (18 August July 2019 – 14 September 2019), issued and received on 08 October 2019.

Advisor to the CEO  
Advisor to the Deputy CEO  
Chief of Staff  
Chief Finance Officer  
Cost Engineer (Project Delivery)  
Crossrail Operations Business Manager  
Deputy Chief Executive Officer  
Deputy Programme Controls Director  
Head of Assurance  
Head of Programme Delivery Strategy  
Head of Project and Programme Assurance  
Head of Risk  
Head of Systems Integration  
Health and Safety Director  
Programme Delivery Business Manager

## **APPENDIX 2 – ANNOTATED PREP REPORT**

### **RESPONSE TO THE CROSSRAIL SPONSORS ON THE PROJECT REPRESENTATIVE SPONSOR SUMMARY REPORT**

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