

Annex B

Call-Off Contract

Framework Agreement Number: ICT11448 IT solutions

Call-Off Contract Number: ITC11448/28

THIS CALL-OFF CONTRACT is made the 22nd day of May, 2017

BETWEEN:

- (1) Transportation for London ("**the Contracting Authority**"); and
- (2) Cognizant Worldwide Limited, a company registered in England (Company Registration Number 07195160) whose registered office is at 1 Kingdom Street, Paddington Central, London, W2 6BD ("**the Service Provider**").

RECITALS:

- A. The Contracting Authority and the Service Provider have entered into an agreement dated 3rd August 2015 which sets out the framework for the Service Provider to provide certain Deliverables to the Contracting Authority or the Contracting Authority ("**the Framework Agreement**").
- B. The Contracting Authority wishes the Service Provider to provide the specific Deliverables described in this Call-Off Contract pursuant to the terms of the Framework Agreement and this Call-Off Contract and the Service Provider has agreed to provide such Deliverables on those terms and conditions set out in the Call-Off Contract.

THE PARTIES AGREE THAT:

1. CALL-OFF CONTRACT

- 1.1 The terms and conditions of the Framework Agreement shall be incorporated into this Call-Off Contract.
- 1.2 In this Call-Off Contract the words and expressions defined in the Framework Agreement shall, except where inconsistent with the context requires otherwise, have the meanings given in the Framework Agreement. In this Call-Off Contract references to Attachments are, unless otherwise provided, references to attachments of this Call-Off Contract.
- 1.3 The Special Conditions at Attachment 3 shall apply to this Call-Off Contract. In the event of a conflict between Attachment 3 and the terms and conditions of the Framework Agreement, Attachment 3 shall prevail.

2. DELIVERABLES

- 2.1 The Deliverables to be supplied by the Service Provider pursuant to this Call-Off Contract are set out in Attachment 1.
- 2.2 The Service Provider acknowledges that it has been supplied with sufficient information about this Call-Off Contract and the Deliverables to be provided and that it has made all appropriate and necessary enquiries to enable it to provide the Deliverables under this Call-Off Contract. The Service Provider shall neither be entitled to any additional payment nor excused from any obligation or liability under this Call-Off Contract or the Framework Agreement due to any misinterpretation or misunderstanding by the Service Provider of any fact relating to the Deliverables to be provided. The Service Provider shall promptly bring to the attention of the Call-Off Co-ordinator and Commercial Manager any matter that is not adequately specified or defined in the Call-Off Contract or any other relevant document.
- 2.3 The timetable for any Deliverables to be provided by the Service Provider and the corresponding Milestones (if any) and Key Milestone Dates (if any) and Implementation Plan (if any) are set out in Attachment 1.

The Service Provider must provide the Deliverables in respect of this Call-Off Contract in accordance with such timings and the Service Provider must pay liquidated damages in accordance with the Framework Agreement of such an amount as may be specified in Attachment 1. The Service Provider shall be liable for the ongoing costs of providing Deliverables in order to meet a Milestone and Key Milestone Dates. Time shall be of the essence in relation to the Key Milestone Dates where stated in the Implementation Plan.

- 2.4 The Service Provider acknowledges and agrees that as at the commencement date of this Call-Off Contract it does not have an interest in any matter where there is or is reasonably likely to be a conflict of interest with the Deliverables provided to the Contracting Authority under this Call-Off Contract.

3. CALL-OFF TERM

This Call-Off Contract commences on the date of this Call-Off Contract or such other date as may be specified in Attachment 1 and subject to the provisions of the Framework Agreement, shall continue in force [June 2017 – June 2019] unless terminated earlier in whole or in part in accordance with the Framework Agreement.

4. CHARGES

Attachment 2 specifies the Charges payable in respect of the Services provided under this Call-Off Contract. The Charges shall not increase during the duration of this Call-Off Contract unless varied in accordance with the Framework Agreement. The Service Provider shall submit invoices in accordance with the Framework Agreement and the Charges shall be paid in accordance with this Call-Off Contract.

5. CALL-OFF CO-ORDINATOR /COMMERCIAL MANAGER AND KEY PERSONNEL

The Contracting Authority's Call-Off Co-ordinator in respect of this Call-Off Contract is named in Attachment 1 and the Service Provider's Key Personnel in respect of this Call-Off Contract are named in Attachment 2.

This Call-Off Contract has been signed by duly authorised representatives of each of the Parties.

SIGNED

For and on behalf of the Transport for London

Signature: _____

Name: _____

Title: Senior Commercial Manager

Date: 14/07/2017

SIGNED

For and on behalf of Cognizant Worldwide Limited

Signature: _____

Name: _____

Title: GC UK MEA

Date: 13/07/2017

Attachment 1

The Computerised Track Access Control (CTAC) system is used by LUL's Track Access Control (TAC) office to record and manage the safe and pre-approved booking of personnel on and off LUL track. As part of this call of form, the Contracting Authority has engaged Cognizant as a partner who can upgrade the CTAC application to the latest software versions and provide enhancements.

Background

The CTAC 1.1 application is written using Visual C++ 6.0 code with Oracle 10 as the database. The CTAC server and client components run on Windows XP and Windows Server 2003. As the application is running on old technology and also since support for Windows XP is no longer available, this needs to be upgraded to current versions of Contracting Authority infrastructure.

The details in this attachment are grouped into the following sub-sections.

1. Services In Scope
2. Services Out of Scope
3. Delivery Approach
4. Status Reports
5. List of Deliverables
6. Assumptions
7. Dependencies
8. Schedule
9. Risks and Mitigation
10. Change management Process
11. Warranty Period
12. Acceptance Criteria

1. Services In Scope:

The scope of the CTAC Software recompile/Upgrade is as per the requirements enlisted in the document "User Requirements Specification", dated 9th March 2017 given in Annex 3 to the Call-Off Contract. The scope is in two parts as stated below.

- 1) Produce a recompiled and updated version of the current CTAC 1.1 software.
 - a. Compilation of VC++ 6.0 to VS2015 to WIN 7 64-bit and Windows Server 2012
 - b. Construction of Test Cases for the baselined requirements
 - c. Upgrade of Oracle 10 to Oracle12c R1 on Solaris 10
 - d. Software development compliance to Safety Standard (CENELEC 50128)

- 2) The Provision of optional enhancements to the CTAC application mentioned in Annex 2, table 11 lists details of requirements In-scope – Yes/NO/NA. The in scope (Yes) was arrived based on the discussions with Contracting Authority SME.
The requirements are listed below.
 - a. Could – 10 (OE1,OE3,OE5,OE7,OE8,OE12,,OE16,OE20,OE22,OE28)
 - b. Should – 2 (OE23,OE25)
 - c. Would -10 (OE2,OE9,OE10,OE11,OE14,OE15,OE21,OE24,OE29,OE30)

Note: The Contracting Authority needs to confirm if any change in the operating systems and targeted hardware within a week from project kick-off meeting.

2. Services Out of Scope:

The following list of items is considered to be out of scope for this contract.

- Below Optional Enhancements are considered out of scope
 - a. Could and Should – 4 (OE6, OE18, OE26, OE27)
 - b. Would – 4 (OE4, OE13, OE17,OE19)
- CTAC Message Queue Interface Development
- Solidus System Upgrade, however CTAC interface to Solidus System is alone in scope
- Safety Certification related activities of the CTAC system
- Provision of production/DR/Test hardware/Software infrastructure procurement.
- Hardware sizing/Capacity planning, infra design and Oracle 12c new features.
- Migration to other operating systems during the project execution other than the agreed Windows desktop client, Windows Server and Solaris for DB Server.
- Major operating system service packs/patches. These to be considered in support and maintenance project
- Any other Infrastructure HW/SW Support required for UAT
- Support and Maintenance of upgraded and UAT signed off CTAC new version. This needs to be part of Support and maintenance project.
- Documentation of CTAC operations guides and manuals.
- Deployment of upgraded CTAC system at the Contracting Authority production environment is considered to be part of support and maintenance project.
- Using or implementing OEM Grid for monitoring
- Data Archival for all environments

3. Delivery Approach

Cognizant will execute the CTAC refresh project in a 'Phased manner' which is in compliance with CENELEC EN50128:2011. This phased approach with incremental deliverables and early Contracting Authority reviews will reduce the delivery risks and enable smoother execution.

The project will follow the 'V' model software development Lifecycle for

- Development,
- Verification & validation and
- Safety activities as recommended by the CENELEC EN 50128:2011 for each of the phase.
- The Contracting Authority will review the existing CTAC SIL confirmation and will produce a review report. Cognizant test plan and test strategy as defined will be aligned to the recommendation given in the review report.

The delivery approach with high level timelines is depicted in below Figure 1.

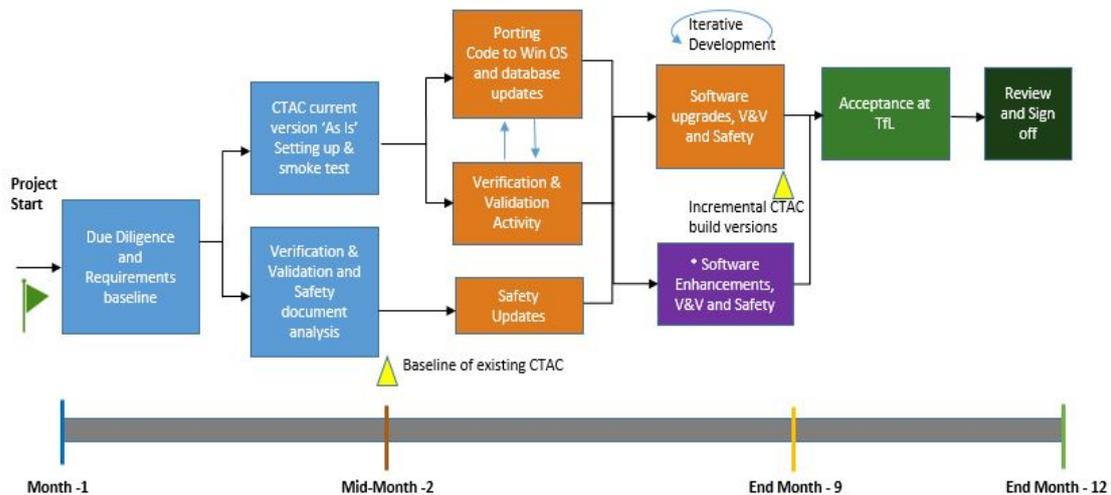


Figure 1 Delivery Approach

1) Project Kick off

The project kick-off meeting will be formally conducted by inviting all project key stakeholders from Cognizant and the Contracting Authority. As part of this meeting the below details of the project will be discussed and agreed –

- Identify the key project stakeholders.
- Team Organisation
- Development Schedule
- Project Governance and communication plan
- RACI
- Input required and their timelines
- Project dependencies and risks
- Infrastructure needs

2) Due-Diligence during Knowledge Transfer

Cognizant has assumed that all knowledge transfer will be executed as per the KT Plan Schedule given in Section 8. The KT plan will also be referring to the outgoing vendor exit plan. The Contracting Authority is required to facilitate KT sessions from the outgoing vendor.

3) Project Plan Document

- The CTAC Project plan document will describe all the allied plans of project management along with the quality assurance plan.

4. Status Reports

Cognizant team will publish weekly status report and proposed to have the weekly status meetings with the Contracting Authority to discuss on the project progress, risks, issues, deliverables feedback and timelines.

5. List of Deliverables:

Below table 1 lists the proposed CTAC recompile milestones along with the list of deliverables.

<u>Milestone</u>	<u>List of Deliverables</u>
M1 - Baseline functional requirements catalogue Gate review and signoff	D01: KT/understanding document on existing CTAC Requirements specifications document
M1a - Procuring and configuring Development and SIT offshore servers, and procuring initial Oracle Enterprise licenses, Visual Studio, TFS	D02: Demonstrating the development and test environments setup at Cognizant offshore
M1b - Procuring and configuring 3rd party software LDRA and SOLIDUS	D03: Install and configure LDRA and SOLIDUS software at Cognizant's development and V&V environment.
M2 - CTAC application as is replicated at offshore Gate review and signoff	D04: Baseline the CTAC recompile as is and up running at offshore (DEMO) D05: Updated Quality Assurance Plan D06: Updated Safety Plan
M3 - V&V and safety strategy Gate review and signoff	D07: V&V test strategy
M4a - Migration completion Gate review and signoff	D08: Recompile and OS migration of CTAC completion (DEMO)
M4b- CTAC migration with Enhancements and fixes Gate review and signoff	D09: Enhancements completion and CTAC new version 1.0 available (DEMO)
M5 - Safety case completion Gate review and signoff by the Contracting Authority Principal System Safety Engineer	D10: Safety case document Initial draft (The document will be reviewed by the Contracting Authority Principal System Safety Engineer) D11: PHA document D12: Risk analysis document
M6 - V&V completion on NEW CTAC	D13: Unit level test reports, Coverage reports

	D14: Integration test reports, Unit and integration Functional test reports
M7 - System testing at offshore Gate review and signoff	D15: System level test reports
M8- Performance Testing Gate review and signoff	D16: System level performance test reports
M9- UAT completion Gate review and Project completion signoff	D17: UAT test reports D18: Updated Safety Case, Upgraded CTAC source code, builds, scripts for deployment, upgraded Database. Review with the Contracting Authority Principal System Safety Engineer. Engineer signs off.

Table 1 Re-compile Milestones and Deliverables

Below table 2 lists the milestones for the enhancements of “could” “should” and “would” requirements.

Milestone	List of Deliverables
M10: OE1, OE3, OE5 and OE7 requirement implemented build	D19: <ul style="list-style-type: none"> • CTAC recompile code with enhancements fixes (DEMO) • System Test reports update
M11: OE8, OE12 and OE16 requirement implemented build	D20: <ul style="list-style-type: none"> • CTAC recompile code with enhancements fixes (DEMO) • System Test reports update
M12: OE20, OE22, OE23, OE25 and OE28 implemented build	D21: <ul style="list-style-type: none"> • CTAC recompile code with enhancements fixes (DEMO) • System Test reports update • PHA update • Risk Analysis update • Safety case update • Upgraded CTAC source code, builds, scripts for deployment, upgraded Database
M13: OE2,OE9,OE10, OE11,OE14 requirements implemented build	D22: <ul style="list-style-type: none"> • CTAC recompile code with enhancements fixes (DEMO) • System Test reports update • Upgraded CTAC source code, builds, scripts for deployment, upgraded Database
M14: OE15,OE21,OE24,OE29,OE30 requirements implemented build	D23: <ul style="list-style-type: none"> • CTAC recompile code with enhancements fixes (DEMO) • System Test reports update • PHA update • Risk Analysis update • Safety case update • Upgraded CTAC source code, builds, scripts for deployment, upgraded Database

Table 2 Optional Enhancements Milestones and Deliverables

6. Assumptions

- 1) The Contracting Authority SMEs are required to be available for reviews for the deliverables and provide acceptance as per the project schedule.
- 2) The development of enhancements is planned to be executed in an incremental model in parallel to the software upgrades that is post completion of the core component migration work. Verification & Validation, Safety efforts are optimised, considering that some of these activities will be performed along with core component. If the project plan gets modified during the project execution due to reasons beyond Cognizant control, it will be subject to change control process.
- 3) Understood the Contracting Authority might revisit the "would" requirements as these are not mandatory. If there is any change to the list of "would" requirements as per table 11, the given fixed quote of "would" requirements will be revisited.
- 4) The "could" requirement OE16 is complex in nature, only ball-park estimate was considered. More clarity and details will be known during the design and implementation. If there is major impact to the efforts estimated, Cognizant will discuss with the Contracting Authority for appropriate change request for the additional efforts.
- 5) For COTS component inclusion in the safety system, including them in Verification and Validation is sufficient to prove their integrity with the system. This in accordance with CENELEC 50128:2011 safety standard. No separate COTS validation is planned.
- 6) The CTAC upgraded build will consist of recompiled software and the optional enhancements for UAT test. The UAT acceptance is considered in two iterations for recompilation and enhancements build with 10-days for each iteration.
- 7) Considering LDRA automation capability, it is assumed, 50% of the lines of code to test can be optimised.
- 8) The Contracting Authority will help Cognizant if in case, any priority support is required from 3rd party vendor for 3rd party software installed in the Contracting Authority CTAC environments. The list of 3rd Party CTOS will be referenced to the outgoing vendor Asset List.
- 9) If the upgraded CTAC go-live is delayed beyond 1-week post UAT acceptance and warranty period expires, the support and maintenance of the upgraded period shall be considered as part of the support and maintenance T&M project.
- 10) Number of Oracle Databases for upgrade and migration are assumed as 5 (1 DEV, 1 QA, 1 PROD, 1 DR and 1 Reporting) with a size of maximum 250 GB each. Any change in the number of databases to upgrade/migrate, will affect the project schedule and cost.
- 11) The CONTRACTING AUTHORITY will take the required backup and provide storage for Production and DR databases assumed for the CTAC upgrade and migration
- 12) For any COTS specific issues, Cognizant will raise a Service Request (SR) with 3rd Party vendor. Cognizant team will follow-up with 3rd Party vendor and provide all the necessary information required by 3rd Party vendor to facilitate the resolution. Till the permanent resolution is available from them, Cognizant will recommend, discuss, finalise and implement a temporary workaround / fix, if feasible. If any delay in schedule and effort due to reasons beyond Cognizant control, it will be subject to change control process.

7. Dependencies

Below table 3 gives the list of project dependencies and timelines when they require for execution of project activities.

#	Description	Version	When	Owner
1	<p>Current CTAC version artefacts listed below:</p> <p>The below list will get updated referring to outgoing vendor software Assets (M0003 CSC Tfl Document Management List v13.1)</p> <p>Development:</p> <ul style="list-style-type: none"> • Baselined Software last updated version requirements specifications documents (Functional Requirements Catalogue) • High and Low level Architecture Design documents • Coding Guidelines Documents. • Development environment installation guide <p>V & V :</p> <ul style="list-style-type: none"> • Software quality assurance plan • Software Requirements Verification Report • Software Integration test report • Software Module Verification report • Software Source Code verification report • Software Validation Report • Software Validation Plan/report • Previous UAT test results and Acceptance plan if any • Test Harness source code • Test results documents if any <p>Safety:</p> <ul style="list-style-type: none"> • System Safety Plan • System Safety Requirements Specification • System Safety Case • CTAC hazard Analysis and risk assessment • PHA, Hazard Logs, Incident Reports (up to date) 		Start of the project	Contracting Authority

	<ul style="list-style-type: none"> CTAC SIL Confirmation/Determination report (the Contracting Authority 2017) <p>The Contracting Authority Process Documents:</p> <ul style="list-style-type: none"> The Contracting Authority change management process The Contracting Authority Review process The Contracting Authority Safety Management process The Contracting Authority configuration process and other process relevant documents. <p>Any other artefacts which are relevant to CTAC software development.</p>			
2	Current CTAC Client and Server Binaries and Source code.		Start of the project	The Contracting Authority
3	Current CTAC test harness binaries and source code		2 weeks from start of the project	The Contracting Authority
4	Existing Solidus and other interfaces of CTAC infrastructure and simulators if any.		Start of the project	The Contracting Authority
5	Provision of tool licenses, schema and sample data bases to replicate the data bases (SCL, SABRE) at offshore location		Start of the project	The Contracting Authority
6	Provision of access to production environment for onsite team and remote connect access to offshore team		By Due-diligence/KT phase	The Contracting Authority
7	Provision of access to the current Dev and test environments through WebEx or skype		Start of the project	The Contracting Authority
8	The Contracting Authority should make available incident and accident data relating to CTAC since its inception into operation. These will be included in the hazard log for analysis.		By Due-diligence/KT phase	The Contracting Authority
9	Providing responses to the clarifications requested by Cognizant within 2 business days		During project execution	The Contracting Authority

10	Infrastructure support for Cognizant onsite resources – (PC, Desktop, required hardware/software licenses)		Start of the project	The Contracting Authority
11	Copies of disaster recovery procedures		2 weeks from start of the project	The Contracting Authority
12	Outstanding list of bugs and details of Backlog/future enhancements for baselining before starting the recompile project		Start of the project	The Contracting Authority

Table 3 Project Dependencies

8. Schedule

Cognizant will execute the CTAC refresh project in 55 weeks. This includes recompile, optional enhancements (could, should and would requirements). Please refer below the schedule for the high level activities and tasks.

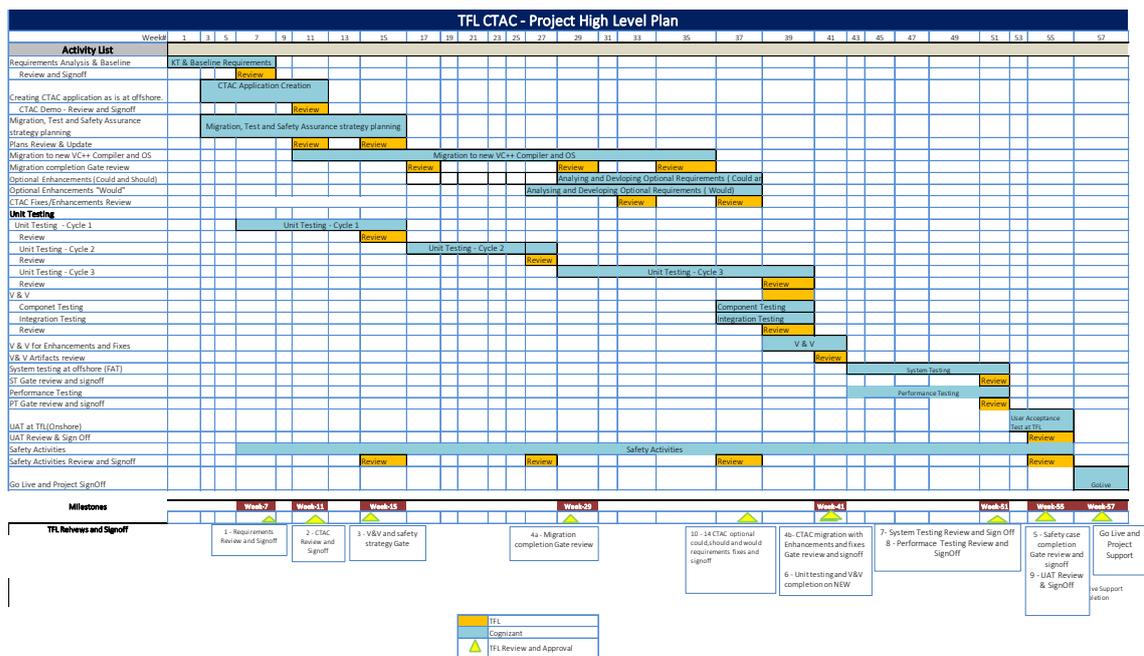


Figure 2 Project Schedule

9. Risks and Mitigation

Below table lists the initially identified risks and mitigation plan for this project. The new risks identification and mitigation plan and revisit of existing risks are an integral activity throughout the project.

#	Risk Description	Probability	Impact	Mitigation
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#	Risk Description	Probability	Impact	Mitigation
1	Non availability of the Contracting Authority SMEs for the expected duration during Knowledge Transition.	Medium	High	<ul style="list-style-type: none"> Joint planning with the Contracting Authority to plan time allocation and accommodate known contingencies. Usage of Reverse engineering tools. Prioritise SME time to cover core applications first.
2	Lack of participation from Incumbent Vendor during KT and reviewing and signing off Cognizant KT plan.	Medium	High	<ul style="list-style-type: none"> Incumbent vendor involvement from commencement of the due diligence planning phase. Arrange for incumbent vendor to review and sign off the transition plan (along with potential SME requirements) during due diligence. Work with incumbent vendor to seek resolution to any challenges in providing the requested number of SMEs.
3	Insufficient Existing Documentation	Medium	Medium	<ul style="list-style-type: none"> Bring in Cognizant's standard templates and process flows to reduce documentation time. Leverage the onsite-offshore and collaboration tools to accelerate documentation creation. In case of major efforts required Cognizant will discuss with the Contracting Authority and considering the change request.
4	Non availability of WIN XP Support for replicating the development and testing environment	Medium	High	<ul style="list-style-type: none"> The Contracting Authority to provide access to Contracting Authority's CTAC DR systems for initial analysis.
5	Non availability of the correct version of the 3rd party tools from vendors in India	High	High	<ul style="list-style-type: none"> Joint planning with the Contracting Authority for the usage of 3rd party tools with the available versions. Cognizant will check with its vendor to get the right version. If not available with vendor the Contracting Authority need to procure and ship to Cognizant Offshore.
6	Non availability of production environment for UAT and other verification during the project execution. It impacts the project schedule. It is required to have testing and production environments for UAT	MEDIUM	HIGH	<ul style="list-style-type: none"> Cognizant will inform the Contracting Authority well in advance for the production environment.

#	Risk Description	Probability	Impact	Mitigation
	and other verification activities			
7	Delay in procurement of tool licenses and SOLIDUS if Cognizant is required to procure for offshore	MEDIUM	HIGH	<ul style="list-style-type: none"> The Contracting Authority procuring and shipping to Cognizant Offshore for the usage. In this case impact to the schedules will be discussed and mutually agreed. The Contracting Authority can look at the options of shipping the existing licenses and SOLIDUS
8	Solidus libraries don't perform reliably with VC++ VS2015 on Windows 7 or Windows 10	Medium	High	<ul style="list-style-type: none"> Where Solidus libraries fail to work acceptably, the Contracting Authority will help Cognizant resolve issues with Solidus or its support partner.
9	Poor CTAC/SOLIDUS operation with consolidated SABRE/RAILSYS work-order database	Medium	High	<ul style="list-style-type: none"> The Contracting Authority own this database and must ensure it provides an identical interface to one provided by SABRE today. Cognizant assume RAILSYS generated work-orders will be indistinguishable from those generated by SABRE.

Table 4 Project Risks

10. Change management Process

In case of any changes to requirements to the scope defined in section 1 and section 2, the change management process will be followed. Cognizant will provide the changes and impact details for the Contracting Authority review and approval before coming to the implementation of such changes in requirements /scope. Further details will be described in Quality Assurance Plan.

The change control note to be followed is provided in this document.

11. Warranty Period

The warranty period for the upgraded CTAC software is 30 calendar days and commences immediately after the UAT is signed off by the Contracting Authority. If any of the reported issues during this warranty period are found to be new requirement(s), those will be routed through the change management process.

- o Any issues found during the warranty period (free of cost) will continue to be fixed during the support period
- o The support contact will be a change request to this "Call-off-Contract"

12. Acceptance Criteria

A. Milestone Acceptance Criteria:

- The milestones are deemed accepted once the Contracting Authority has reviewed and signed off the deliverables listed as part of milestones in section 5.
- The Contracting Authority to provide the feedback on each of the deliverables within the 5 business days from the date of delivery stated in table 8 and 9 failing which the corresponding milestone is deemed accepted.
- Cognizant, upon receiving feedback, will assess the feedback points from the Contracting Authority and update deliverables for the points that forms part of the agreed CTAC scope. Any open issues which fall in out of scope shall not be linked to the milestone acceptance and those issues will be taken through change management process.

B. CTAC Recompiled and Optional Enhancements Software Acceptance Criteria:

- Signing off of the UAT acceptance report by the Contracting Authority, after successful demonstration of User Requirements as part of UAT.
- The Contracting Authority to provide the feedback on UAT accepted CTAC software within 2 weeks failing which the UAT is deemed accepted and Safety Case will be frozen for further update.
- CTAC Safety Case acceptance by designated the Contracting Authority safety authority:

Safety Case is updated the below aspects of the engineering safety management process.

- Quality Management - Adequately evidenced that the Cognizant adhered to the CENELEC 50128 recommended development process and procedures agreed in Software Quality Assurance Plan.
- Safety Management - Adequately evidenced that the Cognizant followed safety organization structure and procedure as recommended by CENELEC standard and agreed in the Safety Plan.
- CENELEC Compliance Matrix - a compliance matrix is provided within the safety case as evidence that the CTAC upgrade project followed all the recommended (for SIL2) processes, procedures and techniques. A proper justification is provided for the areas which are not adhered to the CENELEC standard.
- In addition, a report (either from LDRA or from CAST tool) detailing the code quality before and after the upgrade is provided as an evidence that the code quality has been maintained. The quality metrics against which the comparison made is SEI/TQI.

Attachment 2

The details in this attachment are grouped into the following sub-sections.

1. Pricing Details
2. Pricing Assumptions
3. Payment Milestones

1. Pricing Details

1.1 Recompile and OS migration core component:

- The fixed price for the delivery of core component is **GBP [REDACTED]**. The payment milestone values are given in below in table 5.

1.2 Itemised cost for tools licenses / Sub-system

- The itemised list of tools licenses and subsystems which are required for the execution of this call-off contract is detailed below in table 5
- Cognizant will procure and provide LDRA and Solidus tools for the development and V&V environment.

#	Tools licenses / Sub-system	Amount (GBP)	Remarks
1	LDRA	[REDACTED]	<p>This covers 5 user licenses for Dev and Support.</p> <p>The licenses are perpetual.</p> <p>There will be an annual maintenance cost (AMC) of £4,700 per year from Year-2 onwards. This covers for only 1 license which is sufficient for the support and maintenance phase.</p>
2	SOLIDUS	[REDACTED]	<p>This option is for 5 user system and Mitel Solidus e Care Contact Centre System equipped with</p> <ul style="list-style-type: none"> 5 Desktop / DDE COM Users 1 Configuration Manager 1 Report Manager 1 Information Manager <p>Mitel MX-One IP Communication Server equipped with :</p> <ul style="list-style-type: none"> 1 PRI/E1 Interface 50 SIP Extension (Minimum Configuration) MX-One Media Gateway 05 SIP Phone 1023i <p>The price indicated includes the installation, configuration and commissioning charges.</p> <p>The licenses are perpetual and it is a one-time cost.</p>

Table 5 Tools Licenses cost

The summary of LDRA and Solidus costs are given below. Note that Year2, Year3 and Year4 are not applicable and out of scope for this Call of Contact.

	Year 1	Year 2	Year 3	Year 4	Total (GBP)
LDRA	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
SOLIDUS	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total (GBP)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Table 6 Tool licenses YoY cost Details

1.3 Enhancement components Pricing

- o Fixed price cost of GBP ██████ for “could” and “should” requirements.
- o Fixed price of GBP ██████ for “would” requirements. As stated by the Contracting Authority, the “would” requirements will be revisited and will be executed in T&M mode if any change in requirements.

Note:

- The price is based on the analysis of requirements in the table 11 given in Annex 2 of the Call off contract
- The enhancement requirements (“Could”, “Should” and “Would”) will be developed in an incremental model along with the core component migration and software upgrades.
- Team composition is considered only at offshore. Cognizant assumes that the onsite project resource for the core component will liaison for the coordination and support.
- The production build post acceptance test is planned to have recompilation, software upgrade and software enhancements included.
- Verification & Validation, Safety efforts are optimised, considering that some of these activities will be performed along with core component.

1.4 Rate card for T&M activities

Cognizant will use the discounted rate card given in below table for this Call-off contract for any T&M activities to be performed.

#	Role	Location	Discounted Day Rate in GBP
1	Solution Development Team Lead / Project Manager	Onsite - UK	██████
2	Solution Developer	Onsite - UK	██████
3	Senior Business Analyst	Onsite - UK	██████
4	Test Analyst Onsite	Onsite - UK	██████
5	Architect	Offshore – India	██████
6	Senior Test Analyst	Offshore – India	██████
7	Test Analyst	Offshore – India	██████
8	Solution Development Team Lead	Offshore – India	██████
9	Solution Developer 1	Offshore – India	██████
a 10	Solution Developer 2*	Offshore – India	██████
b 11	Project Support Officer	Offshore – India	██████
l 12	Tester*	Offshore – India	██████
e 13	Senior DBA	Offshore – India	██████
14	DBA*	Offshore – India	██████
7 15	Infrastructure Analyst *	Offshore – India	██████

Table 7 Rate card

NOTE: * Additional rates, not present in the framework rate card – optimised bands for the overall project.

2. Pricing Assumptions:

- The price is exclusive of VAT and other taxes.

- Since 5% discount was applied on the pricing along with the discounted rate card, the 3.5% rebate present in the Contracting Authority Framework Agreement (Schedule-3 Annex 1 Part B) will not be applied for this Call-Off contract.
- Estimates included for initial Due-diligence/KT and UAT phase of the project. If any additional travels are requested by the Contracting Authority, the expenses towards travel and per diem allowances would be charged to the Contracting Authority at actuals.

3. Payment Milestones

3.1 Core component payment milestones: The project start date is considered as 15th July 2017.

Milestone	Price (GBP)	Delivery Date	Acceptance Date
M1a - Procuring and configuring Development and SIT offshore servers, and procuring initial Oracle Enterprise licenses, Visual Studio, TFS	████████	17-Jul-17	████████
M1b - Procuring and configuring 3rd party software LDRA and SOLIDUS	████████	17-Jul-17	████████
M1 - Baseline requirements, Gate review and signoff	████████	09-Aug-17	████████
M2 - CTAC application as is replicated at offshore Gate review and signoff	████████	30-Aug-17	████████
M3 - V&V and safety strategy Gate review and signoff	████████	05-Oct-17	████████
M4a - Migration completion Gate review and signoff	████████	02-Jan-18	████████
M4b- CTAC migration with Enhancements and fixes Gate review and signoff	████████	20-Feb-18	████████
M5 - Safety case completion Gate review and signoff	████████	27-Feb-18	████████
M6 - V&V completion on NEW CTAC	████████	20-Mar-18	████████
M7 - System testing at offshore Gate review and signoff	████████	23-May-18	████████
M8- Performance Testing Gate review and signoff	████████	20-Jun-18	████████
M9- UAT completion Gate review and Project completion signoff	████████	11-July-18	████████

Table 8 Recompile Payment Milestones

3.2 Enhancements payment milestones:

Below table lists the payment milestones for the enhancements requirements ("Could" and "Should").

#	Milestone	Price (GBP)	Delivery Date	Acceptance Date
M10	D01: OE1, OE3, OE5 and OE7 requirement implemented build	████████	29-Dec-17	8-Jan-18

#	Milestone	Price (GBP)	Delivery Date	Acceptance Date
M11	D02: OE8, OE12 and OE16 requirement implemented build	████████	5-Feb-18	12-Feb-18
M12	D03: OE20, OE22, OE23, OE25 and OE28 implemented build	████████	28-Mar-18	4-Apr-18

Table 9 Optional Enhancements "Could" and "Should" Payment Milestones

Below table lists the payment milestones for the enhancements "Would" requirements. The Delivery and acceptances dates are TBD. The schedules to be revisited based on the Contracting Authority's confirmation for fixed bid of these requirements,

#	Milestone	Price (GBP)	Delivery Date	Acceptance Date
M13	D04: OE2,OE9,OE10, OE11,OE14 requirements implemented build	████████	05-Jan-18	12-Jan-18
M14	D05: OE15,OE21,OE24,OE29, OE30 requirements implemented build	████████	10-Mar-18	27-Mar-18

Table 10 Optional Enhancements "Would" Payment Milestones

Attachment 3 to Call-Off Contract

Special Conditions for Call-Off Contract

1. IPR

1.1 Without prejudice to the incorporation of the rest of clause 21 of the Framework Agreement clause 21.11 shall be replaced for the purposes of Call-Off Contract, with the following new clause 21.11:

Clause 21.11

- (a) All Intellectual Property Rights in Bespoke Software when developing new enhancement addition(s) to the Authority's pre-existing or existing CTAC system material or product ("the Contracting Authority Rights") shall on payment for the same be and remain vested in the Contracting Authority. Prior to such vesting, the Service Provider grants the Contracting Authority, the Other Contracting Parties and the Contracting Authority Group a perpetual, royalty-free, worldwide and transferable licence to use, adapt, translate, support, gain commercial value and sub-license the Contracting Authority Rights to the extent necessary for the Contracting Authority, the Other Contracting Parties and the Contracting Authority Group and their authorised agents to receive their rights under the Call-Off Contract, including with respect to the right to amend, use, test and support the Deliverables and Software. The Service Provider shall do all such acts and execute all such deeds and documents as shall be necessary or desirable to perfect the right, title and interest of the Contracting Authority in and to such Intellectual Property Rights, including ensuring that the Service Provider's Personnel assign all such Intellectual Property Rights owned by them either direct to the Contracting Authority or to the Service Provider to enable the Service Provider to comply with its obligations hereunder and waive any moral rights they may otherwise have, in each case at no cost to the Contracting Authority.

- (b) The Service Provider hereby grants the TfL Group a perpetual, royalty free, worldwide non-exclusive and transferable (transferability being confined to within the TfL Group) licence which permits the TfL Group members and their agents and contractors to use, copy, adapt, translate and sub licence (including to and the TfL Group's agents and contractors) all Contributory IPR owned by the Service Provider embedded in Deliverables for the benefit of the TfL Group and any Successor Authority with effect from the date of delivery to the extent necessary to use that Deliverable:
 - (i) subject always to such reasonable limitations in respect of which the Service Provider is unable using reasonable endeavours to avoid being included in the applicable SoW; and
 - (ii) provided always that the TfL Group members or other licensors shall not use Contributory IPR on a standalone basis or extracted from any Deliverable.

- (c) The Service Provider shall provide the Contracting Authority with details any such Contributory IPR which it proposes will be comprised in any Deliverable, such detail to include a description of the Contributory IPR, the date on which it was created, the version, its relevance to the Services including the Deliverables, the ownership of the same, vendor and licensing arrangements.

1.2 The definition of “Bespoke Software” in the Framework Agreement shall, for the purposes of this Call-Off Contract, be deleted and replaced with the following:

“Bespoke Software” software to be provided by or on behalf of the Service Provider or the Service Provider Personnel which is specifically written for the Contracting Authority and which contains no Contributory IPR.

1.3 The following new definition of “Contributory IPR” shall, for the purposes of this Call-Off Contract, be added to clause 1.1:

“Contributory IPR” IPR: which existed prior to the commencement of this Call-off Contract; or in items created after the commencement of this Call-off Contract where it is owned, acquired or developed by or on behalf of a Service Provider affiliate or its licensors, or by a Third Party, whether in the provision of the Services or otherwise (including any modifications, enhancements and derivatives thereof) by the Service Provider and which may include open source software

2. Liability:

For the Purposes of this Call off Contract, Clause 22.4 (General Exclusions and Limitations of Liability) of the Agreement shall be replaced with the following: Subject to clause 22.1, the Service Provider’s maximum aggregate liability for all claims and incidents taken together (howsoever caused and including (i) liability for damage to tangible property; and (ii) any liability arising under clauses 21, 24, 32 and 33) arising out of or in connection with this Call-Off will not exceed £10,000,000 (ten million pounds Sterling). For the avoidance of doubt, clause 22.2 shall not apply to this Call-Off and the Service Provider’s entire liability under the Call-Off for all claims and incidents is as stated in this clause.

3. TUPE: In relation to Clause 35 of the Framework Agreement, the parties agree that the provision of the Services (or part of them) or their termination in whole or in part under this Call-Off Contract are not expected to result in a transfer of undertaking pursuant to the Transfer of Undertaking (Protection of Employment) Regulations 2006 (as amended) and therefore the terms of Schedule 10 of the Framework Agreement will not apply to this Call-Off Contract

4. Provisions that will not apply to this Call off Contract

2.1 The Contracting Authority confirms that, for the purposes of this Call off Contract: (a) no Parent Company Guarantee or Bond (as envisaged by Clause 42 and Schedule 6 of the Framework Agreement shall be required; (b) there are no Goods to which Clauses 4.12 to 4.14 apply; and (c) clause 28 (Suspension Rights) shall not apply.

5. TfL’ s Cyber Security Management Schedule shall apply to this Call Off-Contract:



Cyber Security
Management Schedul

Annex 1 to the Call-Off Contract

1. Principles

Where the Contracting Authority or the Service Provider sees a need to change any of the Deliverables, the Contracting Authority Group's Service Manager may at any time request, and the Service Provider's Service Manager may at any time recommend, such amendment only in accordance with the formal Change Control Procedure ("**CCP**") as set out at paragraph 2.

Neither Party shall unreasonably withhold its agreement to any amendment (which includes not recommending changes to any Deliverables which are not reasonably necessary).

Until such time as an amendment to the Deliverables is made in accordance with this Change Control Procedure, the Contracting Authority and the Service Provider shall, unless otherwise agreed in writing, continue to perform the Services in compliance with its terms prior to such amendment.

Any discussions which may take place between the Contracting Authority and the Service Provider in connection with a request or recommendation before the authorisation of a resultant amendment to the Deliverables shall be without prejudice to the rights of either Party.

Any work undertaken by the Service Provider which has not been otherwise agreed in accordance with the provisions of this Annex 1 shall be undertaken entirely at the expense and liability of the Service Provider.

2. Procedures

2.1 Discussion between the Contracting Authority and the Service Provider concerning an amendment to the Services shall result in any one of the following:

- (a) no further action being taken;
- (b) a request to amend the Services by the Contracting Authority; or
- (c) a recommendation to amend the Services by the Service Provider.

2.2 Where a written request for an amendment is received from the Contracting Authority, the Service Provider shall, unless otherwise agreed, submit two (2) copies of a Change Control Note ("**CCN**") signed by the Service Provider to the Contracting Authority within seven (7) days of the date of the request or such other period as the Service Managers shall agree (acting reasonably).

2.3 A recommendation to amend by the Service Provider shall be submitted direct to the Contracting Authority in the form of two (2) copies of a CCN signed by the Service Provider at the time of such recommendation and the Contracting Authority shall give its response within fourteen (14) days or such other period as the Service Managers shall agree (acting reasonably).

2.4 Each CCN shall contain:

- (d) the title of the amendment;
- (e) the originator and date of the request or recommendation for the amendment;
- (f) the reason for the amendment;
- (g) full details of the amendment including any specifications;
- (h) the price, if any, of the amendment;
- (i) a timetable for implementation together with any proposals for acceptance of the amendment;
- (j) a schedule of payments, if appropriate;
- (k) details of the likely impact, if any, of the amendment on other aspects of the Services including to:
 - the timetable for the provision of the amendment;
 - the personnel to be provided;
 - the amended charges payable under the Services (as now amended);
 - the Documentation to be provided;
 - the training to be provided;
 - working arrangements; and
 - other contractual issues;
- (l) the date of expiry of validity of the CCN; and
- (m) provision for signature by the Contracting Authority and by the Service Provider.

2.5 For each CCN submitted the Contracting Authority shall, within the period of the validity of the CCN:

- (a) allocate a sequential number to the CCN;
- (b) evaluate the CCN and, as appropriate:
 - request further information, or
 - arrange for two (2) copies of the CCN to be signed by or on behalf of the Contracting Authority and return one of the copies to the Service Provider; or
 - Notify the Service Provider of the rejection of the CCN.

2.6 A CCN signed by the Contracting Authority and by the Service Provider shall constitute an amendment to the Services and to the Framework Agreement and otherwise no amendment shall have been agreed.

Change Control Note

Change Request No

Framework Agreement No.....**dated**.....

Title of Amendment.....

Originator.....

Date of request.....

The following change is requested to the Call-Off Contract identified above

Change Request (to be completed by the Contracting Authority)
<p>Description of Change:</p> <p>Reason/Justification:</p> <p>Affected Area(s) if relevant:</p> <p>Details of the requirement:</p> <p>Price:</p> <p>Timetable for implementation:</p> <p>Schedule of Payments:</p> <p>Details of likely impact, if any, of the amendment on other aspects of the Services-</p> <ul style="list-style-type: none"> • the timetable for the provision of the amendment; • the personnel to be provided; • the amended charges payable under the Services (as now amended); • the Documentation to be provided • the training to be provided; • working arrangements; • other contractual issues.
<p>I request that the described change be considered for inclusion in the Framework Agreement</p> <p>Signature Date/...../.....</p> <p>Position</p> <p>Approved by the Contracting Authority:</p> <p>Signature Date/...../.....</p> <p>Position</p>

Annex 2 to the Call-Off Contract

Req. No	CTAC Enhancement Description	MoScow	Cognizant Analysis	Considered for Scope
OE1.00	<p>Access Details Data Entry – New “And” field and associated functionality required.</p> <p>Background: an extra “And” field on the Access Details Screen is required.</p> <p>This will enable entry of complex bookings. We often have possessions going across two desks with one TAC able to book the whole possession now. However, it is sometimes not possible to get all the traction current sections included in a booking – so this new “And” functionality is required.</p> <p>Recent examples where lack of this functionality has caused a problem– we have had possessions that span the Metropolitan and Jubilee desks and have not been able to include Wembley Park Sidings in the booking, when they should have been.</p>	Could	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE2.00	<p>Access Details Data Entry – New functionality that displays Protection Master call history on the current shift, highlighting where access has been refused.</p> <p>Background: CTAC doesn't display information about PMs who have been refused access by a user (on the current shift). If the 2nd call is presented to a different user, CTAC should display this as the PM's second call (CTAC should also display the reason they were refused on the first call).</p> <p>This new feature will have to be based around the PM's IV number to stop them circumventing this by using a different phone.</p>	Would	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE3.00	<p>Access Details Data Entry – New field for Connect radio details.</p> <p>Background: an additional field on</p>	Could	Requirement demonstrated and we understand the change required	Yes

Req. No	CTAC Enhancement Description	MoScow	Cognizant Analysis	Considered for Scope
	the Access Details Screen for connect radio details is required. A dedicated "connect" box would have the advantage of allowing the user to add the prefix "687" on it.		and hence considered for estimation.	
OE4.00	Access Details Data Entry – New functionality to allow selection of two 2 patrols at one time.	Would	Requirement demonstrated and we understand that this requirement is not considered in scope.	Not Applicable
OE5.00	<p>Access Details Data Entry – New facility to select a discipline (Train Master, Possession Master RL or Possession Master TM) and change it.</p> <p>Background – we need a more flexible implementation – once you have started to type the system locks the selection, and it cannot be changed.</p> <p>Need to be able to change the selection at any reasonable point while entering data in to the Access Details Screen.</p>	Could	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE6.00	<p>Access Details Data Entry – Enhanced station name filtering.</p> <p>Background: when selecting station from the drop down menu filter only a single letter is recognised – if a second letter is entered the filter applies on that second letter rather than the combination.</p>	Should	<p>During the demonstration with Geoff, we observed that this functionality is working as expected.</p> <p>When a key stroke is invoked, drop down selected the item pertaining the key invoked.</p> <p>If you press the second key in quick succession, then the drop down list selects correct item (which has two keys in it).</p> <p>However if you allow delay between two successive key strokes then the list</p>	Not Applicable

Req. No	CTAC Enhancement Description	MoScow	Cognizant Analysis	Considered for Scope
			<p>view filter item pertaining to the last key pressed. This is, as far as we observed, consistent with the list view functionality.</p> <p>We may not be able to enhance it further as it depends the delay configuration between the key strokes which may not be available in new C++ Compiler. Hence This requirement is not considered in scope.</p>	
<p>OE7.00</p>	<p>Access Details Data Entry – New access and exit location fields with associated functionality.</p> <p>Background: when accepting bookings the user enters the location limits into CTAC, for example access and exit information might be – work will be carried out between Old Street station and Angel station.</p> <p>However, there is no functionality in CTAC to input where the work party will access and exit the track. CTAC should be enhanced to provide this. Information which should be entered as a note against the booking.</p> <p>Functionality to list valid access and exit points allowing the user to select as required. This access and exit information will be used by the user when contacting the Protection Master.</p>	<p>Could</p>	<p>Requirement demonstrated and we understand the change required and hence considered for estimation.</p>	<p>Yes</p>
<p>OE8.00</p>	<p>Access Details Display – improved station selection.</p> <p>Background: there are problems selecting stations with the same name in the same TCS section on the Access Details Screen. For example, if you need to select, "Golders Green" and then "Golders</p>	<p>Could</p>	<p>Requirement demonstrated and we understand the change required and hence considered for estimation.</p>	<p>Yes</p>

Req. No	CTAC Enhancement Description	MoScow	Cognizant Analysis	Considered for Scope
	<p>Green TM" it won't let you do this without scrolling down all the station names on the second field.</p> <p>If you are on a desk covering two different lines, it can cause other problems too, depending upon the alphabetical order of the stations involved. This aspect of CTAC's behaviour to be refined, refine station name ordering and selection.</p>			
OE9.00	<p>Alarms – New functionality to highlight critical alarms.</p> <p>Background: CTAC should be enhanced to highlight critical alarms to the Duty Manager with acknowledgement required.</p>	Would	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE10.00	<p>Call-back time – Modified functionality for call backs – delayed switch on.</p> <p>Background: possessions should not have their call-back time generated from TCSs within a possession that is not going to be charged in the morning.</p> <p>This should reduce the number of possessions that get call-back earlier than really necessary when they are still ongoing.</p>	Would	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE11.00	<p>Call-back time – Modified functionality for call backs – override defaults.</p> <p>Background: CTAC should allow variation of default call-back margins and allow users to override default margins. When overriding, the user should enter the reason for doing it, and the system should record the user involved.</p> <p>The details of the booking and the reason for the user (Operator or Team Leader) override should be visible to the Duty Manager.</p>	Would	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE12.00	<p>Data entry – Add a new field for PM and other related information:</p>	Could	Requirement demonstrated and	Yes

Req. No	CTAC Enhancement Description	MoScoW	Cognizant Analysis	Considered for Scope
	<p>Background: CTAC needs an additional field and associated functionality to record additional Possession Master specific information without the need to create a booking.</p> <p>This would be used for situations, such as those when current is to be regarded as on all night. This information will be important information for a PM, who wouldn't be booking on with us otherwise.</p>		we understand the change required and hence considered for estimation.	
OE13.00	<p>Data visibility – New functionality to display booking and traction current map data from previous shifts.</p>	Would	Demonstrated, understood the change is not required. This requirement is not considered in scope.	Not Applicable
OE14.00	<p>Data visibility – New Duty Manager functionality to allow otherwise hidden CTAC data to be included in the Booking Summary Screen. User group functionality version.</p> <p>Background: CTAC needs Duty Manager functionality that allows users who perform a DM role to select data columns for inclusion in the Booking Summary Screen with the ability to apply this view to the Operator and Team Leader roles. Users in these user role groups are not able to change the view assigned to them by the DM.</p>	Would	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE15.00	<p>Data visibility – New Duty Manager functionality to allow un-exposed CTAC data to be included in the Booking Summary Screen. Restricted DM functionality version.</p> <p>Background: CTAC needs Duty Manager functionality that allows users who perform a DM role to select data columns for inclusion in the Booking Summary Screen, presented when they are logged on. The enhanced functionality includes the ability to save this as the user's default view (different DMs may select different views).</p>	Would	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes

Req. No	CTAC Enhancement Description	MoScow	Cognizant Analysis	Considered for Scope
OE16.00	<p>Desk set up – Enhanced functionality to allow CTAC to handle new hazards properly if they are added after 23:00.</p> <p>Background: new hazards that need to be added post 23:00 will not go on to the system at all. This delays safety critical information being displayed on screen, and delays bookings being taken in all desk areas being team worked.</p> <p>CTAC doesn't update correctly until the changes and all users working on those desks have logged back in and "completed". This problem affects such events as "Train after the last", "Cancelled Train", "Specified Area reduction" and any unusual "Non-Normal" events.</p>	Could	<p>Requirement demonstrated, and we understand the change required, however changing this might impact the design and architecture, there by changes to the safety case.</p> <p>Advise it to be considered during the recompile validation phase when total system will undergo validation.</p> <p>Only ball-park estimates were considered in the pricing. During detailed analysis, if any significant efforts are needed, it will be discussed with the Contracting Authority.</p>	Yes
OE17.00	<p>Desk set up – Enhanced modify split functionality.</p> <p>Background: when entering possession current arrangements we need new CTAC functionality to modify splits. This shouldn't delete/alter the rest of the possessions data.</p>	Would	<p>Requirement demonstrated, and we understand the change is not required. This requirement is not considered in scope.</p>	Not Applicable
OE18.00	<p>Extend existing functionality – update the names of contractors, because many of them have changed names.</p>	Could	<p>During the demonstration with Geoff, we observed that this functionality is already implemented.</p> <p>The contractors name can be amended by Administrator. The requirement is not clear whether this feature need to be provided for other</p>	Not Applicable

Req. No	CTAC Enhancement Description	MoScow	Cognizant Analysis	Considered for Scope
			<p>TAC users. If provision to amend the contractor information is only required to Administrator user then there is no change required.</p> <p>No Changes required as confirmed by the Contracting Authority.</p>	
OE19.00	<p>Forms and reports – improved reporting functionality.</p> <p>Background: forms functionality needs to be expanded so that it stores forms in a reportable database into which the existing forms database can be imported.</p> <p>Currently this functionality is not used as the only way to store and report on the data is to enter details into the existing forms database.</p>	Would	Requirement demonstrated and we understand the change is not required. Hence this requirement is not considered in scope.	No
OE20.00	<p>Hazard functionality – improved hazard box functionality on the CTAC MAPGUI Screen (which shows the traction current map).</p> <p>Background: CTAC needs enhanced functionality that allows the user to add a blank hazard box on to a TCS with an additional facility that allows the user to add free text. This hazard would exist for the current shift only. The DM should have visibility of free text hazards for review so that a new standard hazard type can be added to the system for future use.</p>	Could	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE21.00	<p>Hazard functionality – improved hazard flag functionality on the MAPGUI Screen.</p> <p>Background: CTAC needs new hazard flag functionality for exclusive use areas such as specified area, possessions, exclusion zones and Engineers' current areas must stay RED, but the</p>	Would	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes

Req. No	CTAC Enhancement Description	MoScow	Cognizant Analysis	Considered for Scope
	<p>system will use a different colour "Hazard box" for motorised trolleys, asbestos sites and other things in restrictive hazards.</p> <p>This enhancement will help distinguish "exclusive" bookings from "hazards".</p>			
OE22.00	<p>Hazard functionality – enhanced Duty Manager functionality.</p> <p>Background: enhance the MAPGUI Screen so a user who is a Duty Manager can add a new hazard with the option to either add it with or without a flag on the traction current map.</p> <p>Ongoing hazards are included on the map so there is no need for the additional hazard flag created by the system (currently these are moved out of the field of view on the maps).</p>	Could	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE23.00	<p>Inhibit functionality – new Inhibit functionality.</p> <p>Background: when an inhibit is in place, any bookings already on that section can't be viewed.</p>	Should	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE24.00	<p>Logging in – enhanced user role capability.</p> <p>Background: CTAC need to be enhanced so a user can switch between CTAC system user roles (Operator Retro, Operator, Team Leader, Duty Manager) without having to log in and log out on each occasion.</p>	Would	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE25.00	<p>Screen display – Booking Summary Screen enhanced data view functionality.</p> <p>Background: on the Booking Summary Screen the "traction current sections" window should have a tab on it so we can collapse it down to make more bookings visible.</p>	Should	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes

Req. No	CTAC Enhancement Description	MoScoW	Cognizant Analysis	Considered for Scope
OE26.00	<p>Screen display – Enhance screen ergonomics when there are large numbers of bookings.</p> <p>Background: at present because we are often logged into more than one desk, we have so many TCS's visible that only 20 bookings from the 100 plus in the system are visible at any one time.</p>	Could	<p>During the demonstration we understood that the change required, however the difference between requirement OE25 and OE26 is not clear.</p> <p>If OE26 is more on considering the ergonomics analysis and OE25 is the screen enhancement to show more than 20 bookings by collapsing other information on the summary sheet then we will have to consider only one requirement.</p> <p>The efforts and document updates for the ergonomic analysis are not be considered in effort estimation. The same is confirmed by the Contracting Authority</p>	No
OE27.00	<p>Screen display – Enhance screen ergonomics to display multiple bookings.</p> <p>Background: when we are clearing staff or trying to get an overview of what work is taking place on the track, being able to see more bookings in the window would be a boon.</p>	Could	<p>Based on confirmation from the Contracting Authority this requirement is ignored and is out of scope.</p>	Not Applicable
OE28.00	<p>Screen display – Enhance map refresh functionality.</p> <p>Background: during the Line Safe process, buffer sections go red on the LineSafeClear Screen, but do not change colour on the map. When two or more users are team</p>	Could	<p>Demonstrated, this seems to be complex, however it is being considered for estimation.</p>	Yes

Req. No	CTAC Enhancement Description	MoScow	Cognizant Analysis	Considered for Scope
	<p>working on a desk it would be helpful if the system indicated buffer sections as well as holds on the traction current map.</p> <p>Many of the options for colours for the TCS numbers have been used. It might be OK to use a "barber shop" red and white diagonal stripe to show live sidings etc. Further discussion required with users.</p>			
OE29.00	<p>Disaster recovery – Enhanced disaster recovery functionality for the whole CTAC system.</p> <p>Background: CTAC uses a cold standby architecture supplemented with a paper based access records for the shift. CTAC automatically records transactions in such way that these access record sheets can be produced from standalone systems in the TAC office.</p> <p>In the event of system failure, Protection Masters still left on the track can be checked off manually using the access record sheets for the shift. Ideally CTAC needs DR functionality which is not dependent on paper sheets and can be implemented at either the site where user is working, either from a designated DR site, or if practical from any remote location.</p>	Would	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes
OE30.00	<p>Disaster recovery – Enhanced disaster recovery functionality, eliminating the need to manually restore back up data.</p> <p>Background: CTAC Disaster Recovery architecture to eliminate the requirement for retro entry of data, or if this is not possible, permit data to be entered at any time (including on the same shift).</p>	Would	Requirement demonstrated and we understand the change required and hence considered for estimation.	Yes

Table 11 Optional Enhancements Analysis and In-Scope Details (Y/N/NA)

Annex 3 to the Call-Off Contract

CTAC User Requirements Specification Document:



User Requirements
Specification_CTAC