

12.3.4 Any risks associated with incomplete work at the transfer of the assets into operational use will be recorded by the Delivery Manager on a Residual Risk Register.

**12.4 Residual Risk Register**

12.4.2 The Delivery Manager will maintain a Residual Risk Register detailing all risks that have not been closed when the assets are transferred into operational use. The Delivery Manager will notify the operator and maintainer of all residual risks on the Residual Risk Table, prior to the transfer into operational use. Any residual risks not accepted by the operator and maintainer will be satisfactorily eliminated, fully mitigated or mitigated to the extent deemed acceptable to the operator and maintainer.

**12.5 Fire Risk Assessment**

12.5.2 Supplier’s Method Statements and Risk Assessments for the works shall identify and mitigate any fire risks.

**13 Systems Engineering & Management Plans**

**13.1 Systems Integration**

This change will affect the following asset(s):

<b>Assets</b>	<b>Location</b>	<b>Action/Effect on Asset(s)</b>
Stadler Variobahn and Bobmarbier CR400 Trams	London Tram Depot Therapia Lane	Installation of on tram equipment designed to brake the tram to a standstill under prescribed PPOS parameters (see PPOS Employer’s Requirements).  PPOS on tram event recording equipment.
Line Side Infrastructure	London Trams Depot Therapia Lane.  Network wide tramway.	Subject to the final accepted design solution, Additional track infrastructure, e.g. RFID, may be required. PPOS data download and comms equipment.
Operational Control Centre	London Trams Depot Therapia Lane	Additional Graphical User Interface in the OCC or other location TBA. PPOS OCC event recording equipment.

**Table 7: Affected Asset(s)**

*MB*

### **13.2 Engineering Safety Management**

- 13.2.2 Engineering Safety Management is applicable to the PPOS delivery. The Supplier shall prepare an Engineering Safety Management Plan (ESMP) to record the arrangements for Engineering Safety Management, to be accepted by London Trams stakeholders. The SEMP will summarise both the Supplier's generic Engineering Safety Management process and the activities specific to the delivery of PPOS
- 13.2.3 The Supplier shall appoint an Independent Safety Assessor (ISA) to provide safety verification oversight at all stages of the PPOS delivery. The Supplier shall evidence ISA approval at project lifecycle assurance gates by the provision of ISA reports as required.

### **13.3 Safety Verification**

- 13.3.2 Safety Verification is applicable. A Safety Verification Plan (SVP) will be prepared by the Deliver Manager to record the arrangements for Safety Verification activities during the PPOS delivery. The SVP shall be reviewed and accepted by stakeholders as satisfying the Railways & Other Guided Transport Systems (Safety) Regulations requirements relating to Safety Verification. This document will summarise both the generic Safety Verification process and the activities specific to the delivery of PPOS.
- 13.3.3 An Independent Competent Person (ICP) will be appointed by LT to oversee the PPOS Safety verification Process.

### **13.4 Reliability, Availability and Maintainability (RAM)**

- 13.4.2 Minimum RAM performance, including Mean Time Between Failures (MTBF) and Mean Time Between Repair (MTBR), in satisfaction of BS EN 50126 are mandated within the Employer's requirements, and shall be delivered by the Supplier as part of their design and implementation. The Supplier shall provide Failure Mode Effects Analysis (FMEA) evidence of their RAM compliance for the appropriate parts of the PPOS system.

### **13.5 Human Factors**

- 13.5.2 PPOS shall be delivered by the Supplier in compliance with relevant DDA and RVAR standards mandated within the Employer's Requirements.

### **13.6 Environment**

- 13.6.2 PPOS shall be delivered by the Supplier in compliance with the LT Environmental Management Plan.

### **13.7 EMC**

- 13.7.2 The Supplier shall deliver PPOS in compliance with the requirements of EN 50122.

### 13.8 Fire

13.8.2 All works will be subject to LT's Fire Safety Plan, and in compliance with:

- GM/RT2130 Vehicle Fire Safety and Evacuation, RSSB, 2013 [3].
- BS/EN45545 Railway applications. Fire protection on railway vehicles

### 14 Quality Assurance

14.1.2 Quality Assurance shall be applied to by the Supplier to all aspects of the PPOS delivery (including to their suppliers and sub-contractors), as detailed in the LT Quality Manual.

14.1.3 Specifically, the process for corrective action management is via the LT Delivery Manager.

14.1.4 Quality assurance audits will be carried out by LT throughout the lifecycle of the PPOS project. LT Quality observations requiring corrective action by the Supplier shall be communicated to the Supplier by the Delivery Manager.

### 15 Compliance

#### 15.1 Procedures and Instructions

15.1.2 The following LT operational and maintenance procedures and instructions may be impacted and may need to be updated by the Supplier as a result of PPOS delivery:

- Operational and Maintenance Concepts
- Standard Operating Procedures
- Maintenance Task Instruction

New or amended operational and maintenance procedures and instructions will be created in standard TfL templates.

#### 15.2 Legislation and Standards

15.2.2 The following assurance specific legislation is to be complied with in undertaking this change:

Title	Reference
The Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS)	Office of Road and Rail (ORR)
Health and Safety at Work Act 1974	UK Government
Construction (Design and Management)	UK Health and Safety Executive
DDA	DDA, 1995

Rail Vehicle Accessibility Regulations	RVAR 2010
EMC	EM55022
Fire Precautions in the Design and Construction of Passenger Carrying Trains	BS6853
CPNI "Security for Industrial Control Systems Framework" good practice guide. IEC 62443 Industrial Communication Networks Network and System Security" series of Standards. Rail Cyber Security – Guidance to Industry" published by the Department for Transport. ISO27001:2013 Information Security Management Systems	Cyber Security best practice
BS EN 61373:2010 Railway applications. Rolling stock equipment. Shock and vibration tests.	European Union
GM/RT2130 Vehicle Fire Safety and Evacuation, RSSB, 2013 [3].	Rail Safety and Standards Board
BS/EN45545 Railway applications. Fire protection on railway vehicles	European Union
BS/EN50155 Railway applications. Electronic Equipment used on Rolling Stock [6].	European Union
BS/EN61373 Rolling stock equipment. Shock and vibration tests BSI 2010 [8].	European Union
IEC61508 Functional Safety Of Electrical/Electronic/Programmable Electronic Safety-Related Systems	European Union
EN50128 Railway Applications. Communication, Signalling and Processing Systems - Software for Railway Control and Protection Systems	European Union
EN50125-1 Railway Applications - Environmental Conditions For Equipment - Part 1: Rolling Stock And On-Board Equipment	European Union
EN50121 Railway Applications - Electromagnetic Compatibility.	European Union
EN50126 Railway Applications - The Specification And Demonstration Of Reliability, Availability, Maintainability And Safety (Rams)	European Union

EN50129 Railway applications. Communication, signaling and processing systems. Safety related electronic systems for signaling	European Union
--------------------------------------------------------------------------------------------------------------------------------	----------------

This change shall be delivered in compliance with the following LT assurance documents:

Title	Detail	Reference
Change to Rolling Stock	Formal change control requirements for Rolling Stock	LT-IMS-ENG-401 Issue 2
	As required by LT-IMS-ENG-401 Issue 2	LT-IMS-Change-000 Managing Change
	As required by LT-IMS-ENG-401 Issue 2	LT-IMS-Change-030 Infrastructure, Rolling stock & Systems change
	As required by LT-IMS-ENG-401 Issue 2	LT-IMS-Change-037 Change Categorisation and Approvals
	As required by LT-IMS-ENG-401 Issue 2	LT-IMS-RISK-000 Managing Risk
	As required by LT-IMS-ENG-401 Issue 2	LT-IMS-RISK-040 Modifications Panel
	As required by LT-IMS-ENG-401 Issue 2	LT-IMS-RISK-060 Risk Scoring Scheme
	As required by LT-IMS-ENG-401 Issue 2	LT-IMS-RISK-080 Risk Register
Technical Assurance Templates		LT Technical Assurance Templates LT-IMS-ENG-110 issue 1
Master Document List		LT Master Document List LT-IMS-ENG-107
TfL CAD Standard	Computer Aided Design	S 1037
Collaboration/ Production Code of Practice	Production of CAD Design	BS1192

15.2.3 In the absence of applicable Standards the Supplier shall propose alternative standards to the LT Delivery Manager for approval, and demonstrate compliance to these standards where they are deemed acceptable by LT.

15.2.4 The responsibility to ensure that all relevant legislation and standards are adhered to shall be communicated to all parties involved in delivering PPOS. All parties shall note that failure to identify relevant legislation does not release any party from their obligations under that legislation.

### **15.3 Derogations and Waivers**

15.3.2 It is anticipated that there will be no derogations or waivers applicable to this project.

15.3.3 However, any derogations and waivers applied for by the Supplier shall be submitted to the Delivery Manager in the first instance, who will submit them to PPOS stakeholders for consultation. The Supplier will be informed accordingly of the stakeholders opinion on the validity of any such application.

### **15.4 Product / Type Approval**

15.4.2 Safety Verification shall apply to the delivery of the PPOS system. As such specific design and assurance stakeholder approvals are required throughout the delivery cycle of the project, supported by ICP and ISA reports. Sufficient and satisfactory evidence in support of this process shall be provided as per the project MDL for each stage identified in the Assurance Lifecycle. See Appendix A of this document.

## **15 Review and Change Control**

### **16.1 Design Review**

16.1.1 Prior to submission of design to the Delivery Manager, design checks will be undertaken by the Supplier consistent with the level of review and the independence and competence requirements for those undertaking the reviews detailed in Appendix B. The assigned category for design checks under the PPOS delivery is Category 2.

16.1.2 The Delivery Manager shall arrange formal stakeholder design reviews before each applicable project lifecycle assurance gate. The design review participants will include:

- Delivery Team Manager
- Trams Asset Manager (or representative)
- Operations Representative (TOL)
- Systems Integration Engineer
- ICP
- Suppliers representative(s)

16.1.3 The Supplier shall be represented at the design review. The Delivery Manager will maintain a record of all design reviews, including the conclusion, document status and any actions. All design review records will be provided to the ICP.

16.1.4 If the As-built/O&M documentation is not reviewed as part of the detailed design review, then a review of the As-built/O&M documentation will be arranged by the Delivery Manager prior to the AoA gate.

16.1.5 Whilst the design gates are AiP and AoD, iterative design reviews between AiP and AoD may be undertaken within the project without the involvement of all stakeholders. Where this is applied, the design review comments sheets will be subject to review by the ICP ahead of the AoD gate.

16.1.6 Additionally, design reviews are required for any significant change to previously accepted AoD design submissions, and will be concluded before implementation of the change. All other minor changes to the AoD submission will be accepted by the Delivery Manager before implementation and by the Asset Manager and stakeholders prior to the next gate (AFT or AoA). The Delivery Manager will maintain a record of all changes to the accepted AoD submission, together with the necessary stakeholder acceptances.

## **16.2 Configuration Management**

16.2.1 The Supplier shall be responsible for PPOS hardware and software configuration management.

## **16.3 Document Control**

16.3.1 LT will use the Supplier's document numbering system in order to record submitted information. LT's Document Management system provides an audit trail in which latest version of any document can be seen and any changes can be tracked.

16.3.2 Suppliers documents shall be in the following formats:

- Drawings – *Bentley Microstation*
- Electrical designs – *Amtech*
- Office documents – *Microsoft Office*

16.3.3 All Supplier's documents will be submitted to, and disseminated to stakeholders by, the LT Delivery Manager.

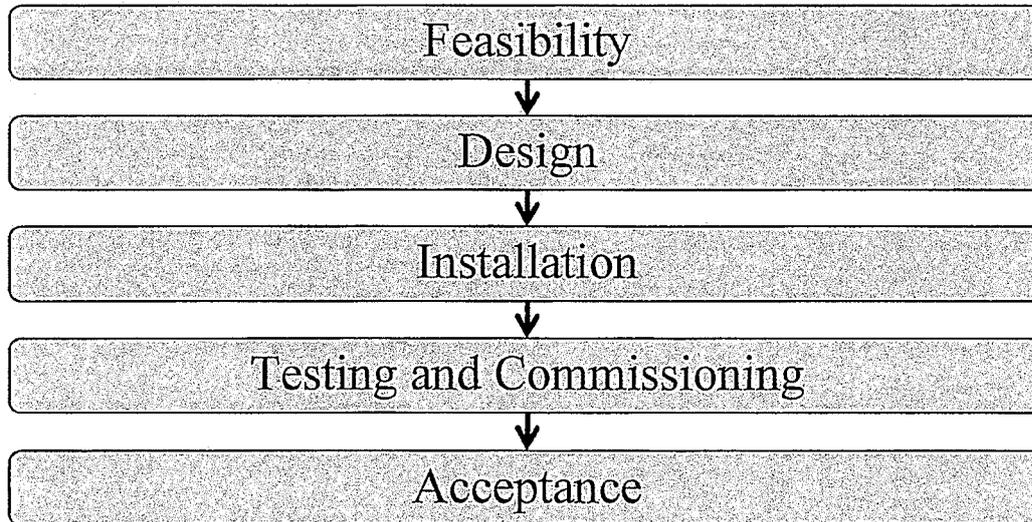
## **16.4 Change Control & Monitoring**

16.4.1 In addition to the requirements detailed in this document, technical and scope change requests will be controlled via Project Change Notices.

16.4.2 Project Change Notices will be prepared by the Lt Delivery Manager for any project change.

## Appendix A: Assurance Life Cycle

General.



Detailed.

See PPOS Assurance Path, document reference SLI-009-140.

## Appendix B: Categories for Design Checks

Cat	Description of items or elements of work	Check by (as minimum)
0	Unlikely to affect safety or operational performance as a consequence of failures, but excluding any work covered by categories C and S	Another member of the design team
1	Not critical to safety or operational performance and which may be designed using standard methods of analysis, but excluding any work covered by categories C and S	Another member of the design team, checking against design calculations and assumptions, and critically, considering whether the assumptions are valid
2	<p>Critical to safety or operational performance which may be designed using standard methods of analysis, but excluding any work covered by categories C and S</p> <p>Not critical to safety or operational performance but which require complex or unusual methods of analysis, but excluding any work covered by categories C and S</p>	Another design team within the same organisation, but independent of the original design team, crucially challenging the original design team's base assumptions
3	<p>Complex civil engineering works and other structures or permanent way schemes using non-standard or rarely-used components or design parameters which are critical to safety or operational performance, and which require complex or unusual methods of analysis</p> <p>Civil engineering works and other structures of permanent way schemes, otherwise subject to Categories 1 and 2 checks, which have been designed by the contractor responsible for their construction</p> <p>Systems or equipment in asset areas other than civil engineering which are critical to safety or operational performance, the adequacy of which cannot be proved in tests or pre-commissioning trials and which require complex, novel or unusual methods of analysis, but excluding software for control or protection of systems and signalling systems</p>	An independent design organisation having relevant knowledge and experience of the particular class of work, supplied with relevant drawings of the final designs, carrying out analyses and assessments to validate designs without sight of those of the original design organisation
C	Software for railway control and protection systems	Application of BS EN 50128

Cat	Description of items or elements of work	Check by (as minimum)
S	<p>Signalling control systems</p> <p>Vital signalling, including data for computer based signalling systems but excluding components such as cables</p>	<p>To involve the Preparer, Checker and Principles Approver. The check by the Preparer and Checker will encompass the full details of the design to achieve freedom from error. The check by the Principles Approver will validate the design in terms of standards, safety principles and operability, and include the signalling logic, a review of interface issues and the correct application of equipment</p>

# Appendix C: Master Document List (MDL)

LONDON TRAMLINK MASTER DOCUMENT LIST, LT-HMS-ENG-107

Change Name: Physical Prevention of Over-Speed (PPoS)		Assurance Documentation		Assurance Data				Responsibility for Document Production		Comments
Document Ref.	Document Title	Assurance Title	NIP	ADD	AIT	AAA	Responsible Party	Production		
Change Number: NIS0141										
Delivery Manager Name:										
Planned assurance review date for AP:										
	Technical Assurance Plan		Y	U	U	U		Supplier		
	Handover / Handback Strategy		Y	U	U	U		Supplier		
	Requirements Traceability Matrix		Y	U	U	U		Supplier		
	Technical Specification		Y	U	U	U		Supplier		
	Functional Design Specification / Assurance in Principle (AP) document		Y	U	U	U		Supplier		
	List of offline design drawings and documents		Y	U	U	U		Supplier		
	Design's Risk Assessment (DRA / online design)		Y	U	U	U		Supplier		
	Systems Engineering Management Plan		Y	U	U	U		Supplier		
	Engineering Safety Plan		Y	U	U	U		Supplier		
	Safety Verification Plan		Y	U	U	U		Supplier		
	Systems Integration Plan		Y	U	U	U		Supplier		
	KCP Report		Y	U	U	U		Supplier		
	RA Report		Y	U	U	U		Supplier		
	EMC Plan		Y	U	U	U		Supplier		
	Pre-Order Planning Strategy		Y	U	U	U		Supplier		
	Human Factors Integration Plan		Y	U	U	U		Supplier		
	Design Management Plan		Y	U	U	U		Supplier		
	RAMS Plan		Y	U	U	U		Supplier		
	Compliance to LT Engineering Standards		Y	U	U	U		Supplier		
	Dispatch Survey Report		Y	U	U	U		Supplier		
	Does cover all aspects of change - refer assurance document									
Planned assurance review date for ADR:										
Acceptance of Design										
	Detailed Design Specification / detailed design		Y	U	U	U		Supplier		
	List of detailed design drawings and documents		Y	U	U	U		Supplier		
	Design's Risk Assessment (detailed design)		Y	U	U	U		Supplier		
	Temporary Works Plans (TWP, for example, crane plans, access & egress plans)		Y	U	U	U		Supplier		

Notes: 1. The template should be used for all the required assurance documents. Evidence may be required for the change. 2. Once completed, submit for review. 3. The NIP should be updated before each gate. 4. The document reference and issue should be added when item 5. R27. 5. Document should be produced for the gate. U - High likelihood of updates / revisions being required at subsequent gates.

Indicators:  
 U - Add rows and update the list with change specific assurance documents that are in addition to the generic assurance documents listed.  
 Y - Delete rows for assurance documents that are not applicable to the change.  
 3) Complete the Assurance Gate column, using the default content as a guide, and add any relevant comments.  
 4) Based on the programme for the change, propose dates for each assurance gate.  
 5) State who is responsible for production of each assurance document.

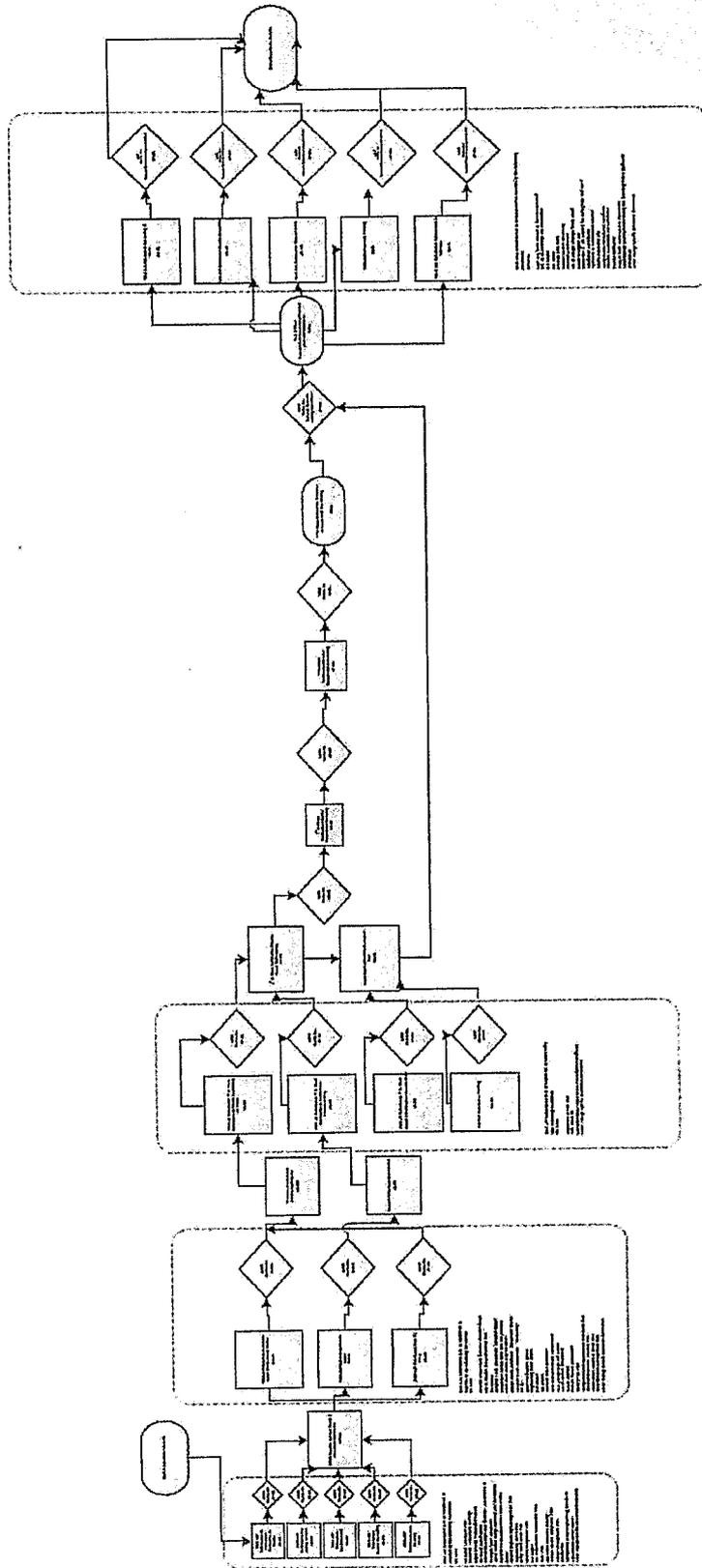
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LONDON TRAMLINK MASTER DOCUMENT LIST, LT-IMS-ENG-107

Document Ref.	Document Title	Assurance Documentation		Assurance Data				Responsibility for Assurance Provision	Comments
		Title	Assurance Data	AIP	ADD	AIF	AGA		
	Design Check Certificate - (Temporary works)				Y	U	U	Supplier	
	Design Risk Assessment - (Temporary works)				Y	U	U	Supplier	
	Safety Verification Report				Y	U	U	Supplier	
	Engineering Safety Report				Y	U	U	Supplier	
	KCP Report				Y	U	U	LT	
	ISA Report				Y	U	U	Supplier	
	Access Risk Assessment				Y	U	U	Supplier	
	Environmental Impact Assessment				Y	U	U	Supplier	
	SAC Design Sign-Off Report				Y	U	U	Supplier	
	List of Method Statements				Y	U	U	Supplier	
	RMS Analysis				Y	U	U	Supplier	
	Human Factors Assessment				Y	U	U	Supplier	
	Factory Test Plan				Y	U	U	Supplier	
	Operational Assurance Readiness Plan				Y	U	U	Supplier	
	Familiarisation and Training Plan				Y	U	U	Supplier	
	Construction Health & Safety Plan				Y	U	U	Supplier	
	Environmental Management Plan				Y	U	U	Supplier	
	<Add rows as required to include sizes of change sheets/assurance documents>								
Assurance for Test									
	Inspection & Test Plan					Y	U	Supplier	
	Test check list					Y	U	Supplier	
	Confirmation of completed training and licensing where applicable					Y	U	Supplier	
	Manufacture/Construction Compliance Certificate					Y	U	Supplier	
	<Add rows as required to include sizes of change sheets/assurance documents>							Supplier	
Assurance of Asset									
	Asset List (IPE*, altered or decommissioned)						Y	Supplier	
	Full list of drawings and documents						Y	Supplier	
	KCP Report						Y	LT	
	ISA Report						Y	Supplier	
	Radiation Risk Table						Y	Supplier	
	Human Factors Issues Log						Y	Supplier	
	Fire Risk Assessment						Y	Supplier	
	List of Design Changes (since AIB)						Y	Supplier	



# PPOS Assurance Path



AG

## **SECTION 4**

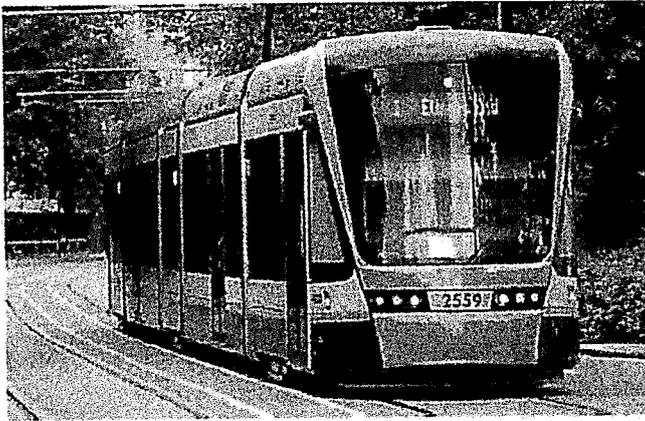
**SCHEDULE 4**

**Charges**

SEE ATTACHED

*AS*

Commercial Proposal



Engineering Support  
Group Limited  
15<sup>th</sup> November 2018

# COMMERCIAL PROPOSAL

Physical Prevention of Over Speeding (PPOS)

NB

Commercial Proposal



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NB

Commercial Proposal



**APPENDIX A – CQ1 – INITIAL SUPPLY, INSTALLATION, AND COMMISSIONING  
OF THE SYSTEM**

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**Activity Schedule**

Activity Schedule to complete the work

Notes-

(1) The Activity Schedule to be read in conjunction with the Employer's requirements. The Activity schedule is for pricing purposes and does not form part of the Employer's Requirements and does not take precedence over the Employer's Requirements.

(2) The quoted rates should be inclusive of contractor's overhead and profit.

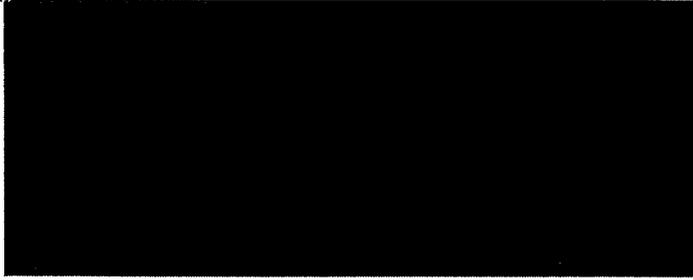
(3) The rates below may be assumed to suit the supplier pricing headings, which in turn must mirror the activities required to complete the works as per the Employer's Requirements. The headings are a guideline and you are not limited to these specific areas for pricing. You can add headings if they are required.

(4) Refer to the FPOS Assurance Path within the TAP for the details of specific assurance paths. Assurance gates are mandated and must form part of the Supplier's final Activity Schedule.

ID Ref from Project Programme	Activity Description	Unit	Rate	Quantity	Total	Milestone Payment (if required)
	<b>Approval in Principle (AIP) - Assurance</b>					
23	Surveyors - Boarded for train	no		1		Please see below
24	Surveyors - Staffer train	no		1		Please see below
25	Surveyors - Standby	no		1		Please see below
26	WAS M&D gate AIP Approval achieved. GT 020	included				
27	WAS M&D gate AIP Approval achieved. GT 010	included				
108	WAS M&D gate AIP Approval achieved. GT 011	no		1		Please see below
109	WAS M&D gate AIP Approval achieved. GT 020	included				
140	WAS M&D gate AIP Approval achieved. GT 011	no		1		Please see below
	<b>Approval of Design (AOD) - Assurance</b>					
220	WAS M&D gate AOD Approval achieved. GT 020	no		1		Please see below
221	WAS M&D gate AOD Approval achieved. GT 010	no		1		Please see below
317	WAS M&D gate AOD Approval achieved. GT 020	no		1		Please see below
	<b>Installation - Trains</b>					
328	1st in Class Formboarder	no		1		Please see below
405	1st in Class Staffer	no		1		Please see below
442	Rest of Seat	no		14		Please see below
418	Installation - Lissade	no		1		Please see below
	<b>Installation - Operational Control Centre</b>					
424	Installation - Operational Control Centre	no		1		Please see below
	<b>Approval for Test (AFT) - Assurance</b>					
325	WAS M&D gate AFT Approval achieved. GT 020	included				
326	WAS M&D gate AFT Approval achieved. GT 020	included				
317	WAS M&D gate AFT Approval achieved. GT 020	included				
324	WAS M&D gate AFT Approval achieved. GT 020	no		1		Please see below
	<b>Testing &amp; Commissioning - Trains</b>					
400	1st in Class Formboarder	no		1		Please see below
411	1st in Class Staffer	no		1		Please see below
442	Rest of Seat	no		1		Please see below
413	Testing & Commissioning - Lissade	no		1		Please see below
	<b>Testing &amp; Commissioning - Operational Control Centre</b>					
427	Testing & Commissioning - Operational Control Centre	no		1		Please see below
	<b>Testing &amp; Commissioning - FPOS System Wide</b>					
403	Testing & Commissioning - FPOS System Wide	included				
	<b>Testing &amp; Reliability - Assurance</b>					
400	1st in Class Formboarder - Depot Static Testing achieved. GT 020	included				
400	1st in Class Staffer - Depot Static Testing achieved. GT 020	included				
401	1st in Class Formboarder - Depot Dynamic Testing achieved. GT 020	included				
401	1st in Class Staffer - Depot Dynamic Testing achieved. GT 020	included				
402	1st in Class Formboarder - Network Dynamic Testing achieved. GT 020	included				
411	1st in Class Staffer - Network Dynamic Testing achieved. GT 020	included				
404	1st in Class Formboarder - 4 weeks full time running achieved. GT 020	included				
411	1st in Class Staffer - 4 weeks full time running achieved. GT 020	included				
425	Rest of Fleet - 4 weeks full time running achieved from last train completed. R020	included				
	<b>Acceptance (ASA) - Assurance</b>					
424	WAS M&D gate ASA achieved. GT 020	included				
425	WAS M&D gate ASA achieved. GT 020	included				
424	WAS M&D gate ASA achieved. GT 020	included				
424	WAS M&D gate ASA achieved. GT 020	included				
424	WAS M&D gate ASA achieved. GT 020	included				
424	WAS M&D gate ASA achieved. GT 020	included				
	<b>Optional - FPOS Type Tests (see note 4.0 below)</b>	no				None - not included in competitive price
					8,067,000.00	

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We propose the following milestone payments:



SUPERSEDED  
BY SCHEDULE  
ON PAGE 119

Notes to Payers

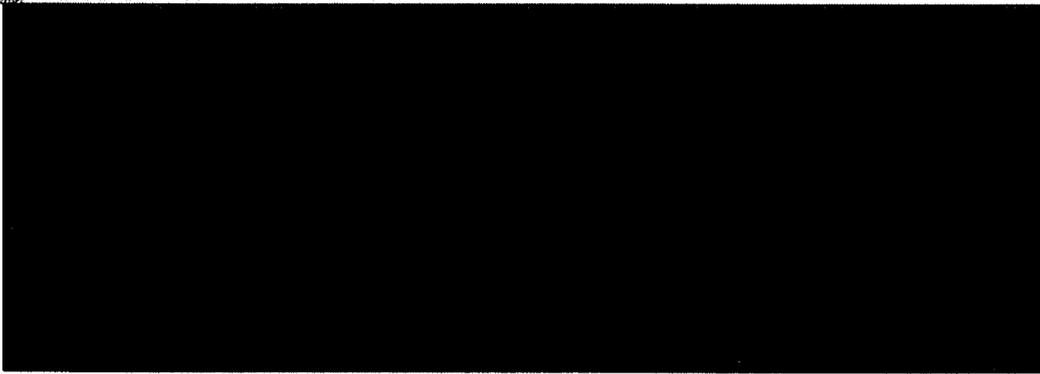
1.0

2.0

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5.0



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Commercial Proposal

**APPENDIX B - CQ2 - FIXED PRICE FOR 10 YEARS - WHOLE LIFE COSTING**

Including Labour Rates and Spares Pricing

**Whole Life Costing (10 Years)**

Item	Description	Price/event	Price Per Year over 10 Years										Total Price over 10		
			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10			
1	Software license for 3 users of software (estimate cost subject to yearly review)	£													
2	REGAS Budget Report for 30 SRA Units (estimate cost subject to yearly review)	£													
3	REGAS Budget Report for 30 SRA Units (estimate cost subject to yearly review)	£													
4	Service check of PPOS workstations and associated hardware. 1 day onsite for service check and update of master security software (Estimate cost subject to yearly review)	£													
4a	Estimate of PPOS workstation/server hardware (Hardware cost estimate only)	£													
4b	Estimate of PPOS workstation/server hardware - Labour -assuming 1 day activity plus travel cost	£													
4c	Estimate of UPS Batteries (Hardware cost estimate only)	£													
4d	Estimate of UPS Batteries - Labour -assuming 1 day activity plus travel cost	£													

Basis of Prices:

1  
2  
3  
4

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## Labour Rates Matrix

### Schedule of Rates for Personnel

Reference	Actual Cost Rates				
	<b>Personnel</b>				
1	Project Manager	£			
2	Assistant Project Manager	£			
3	Assurance Manager	£			
4	Construction Manager	£			
5	HSE Engineer	£			
6	Project Engineer	£			
7	Lead Designer / Principal Designer	£			
8	Design Engineer	£			
9	Document Controller	£			
10	Planner	£			
11	Design Manager	£			
12	Site Manager	£			
13	Site Engineer	£			
14	Senior installation Engineer	£			
15	Installation Engineer	£			
16	Test/commissioning Manager	£			
17	Test/commissioning Engineer	£			
18	Technician	£			
19	Labourer	£			
20	Electrical Engineer	£			
	<b>Protection</b>				
14	Site Person in Charge	£			
15	Tramlink Worksite Supervisor	£			
16	Tramlink Possession Supervisor	£			
17	Protection Master	£			
18	Approved Scaffold Operative	£			
	<b>Others (please specify)</b>				
19	Quality manager	£			
20	Quantity surveyor	£			
21	Approved electrician	£			
22	Maintenance Operative	£			
23	Others (LV)	£			
24	Others (HV)	£			
25	Others (Electrical Fitter)	£			
26	Others (Commercial Manager)	£			
27	Others (MST)	£			
28	Others (CDM Management)	£			
29	Others (please specify)				
30	Others (please specify)				
31	Others (please specify)				

All labour resources shall be declared by the bidder.

Basis of rates:

- 1
- 2
- 3
- 4
- 5
- 6
- 7

**PPOS Spares Pricing**

Item	Description	Price
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		

**Basis of Prices:**

- 1
- 2
- 3
- 4

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Commercial Proposal



**APPENDIX C – CQ3 – ADDITIONAL SITE INSTALLATION (OPTIONAL)**

*NS*

Additional PPOS Beacon Site Installation

The Optional price for the design, supply, installation and testing for an additional site should it be required in the future is [REDACTED] exclusive of VAT.

**Basis of Price:**

- 1 The price is indicative only and is based on the assumption that only 1 track beacon is required at the additional site.
- 2 The price is inclusive of assumed expenses.

11th December 2018 - ESG Proposed Alternative Payment Milestone Schedule ('Activity Schedule')

We propose the following milestone payments:

No	Milestone Event	Percentage of Contract Value
1.0	Survey of trams - Bombardier	
2.0	Survey of trams - Stadler	
3.0	Survey of lineside infrastructure completed	
4.0	Submission of System Requirements Specification	
5.0	Vehicle Concept Design - Bombardier - Accepted	
6.0	Vehicle Concept Design - Stadler - Accepted	
7.0	Lineside Track Beacon Concept Design Accepted	
8.0	Completion of Approval in Principle Stage	
9.0	Vehicle Detailed Design - Bombardier - Accepted	
10.0	Vehicle Detailed Design - Stadler - Accepted	
11.0	Infrastructure Detailed Design - Accepted	
12.0	Completion of Approval of Design Stage	
13.0	Submission of Type Test reports	
14.0	Completion of Approval for Test Stage	
15.0	Supply of 10% Spares	
16.0	Commissioning of FiC - Bombardier	
17.0	Commissioning of FiC - Stadler	
18.0	Infrastructure Installation Complete	
19.0	Installation & Commissioning of Remaining Fleet Vehicles (■■■■ of contract value spread evenly across all 34 remaining units, to be invoiced at the end of the month that a unit installation and commissioning is completed). As per the current installation schedule this will consist of:	
19.1	October 2019 - 2 units	
19.2	November 2019 - 20 units	
19.3	December 2019 - 12 units	
20.0	Project Completion (Acceptance of Asset)	

The Schedule of Rates will be indexed as follows:

**1. REVIEW OF SCHEDULE OF RATES**

- 1.1 The Schedule of Rates will be reviewed on each Review Date during the period of this Contract and if upon any such review the Index Figure last published before the date of review shows an increase or decrease in relation to the Index Figure last published before the Relevant Date the rates then in force under the terms of this Contract will be increased or decreased (as the case may be) in the same proportion. For the purposes of this paragraph the following expressions shall have the following meanings;
- 1.2 "Index Figure" means the monthly figure given by the Consumer Prices Index;
- 1.3 "Relevant Date" means:
- 1.3.1 in the case of the first review the Effective Date;
- 1.3.2 for each subsequent review the date of the previous review;
- 1.4 "Review Date" means the first anniversary of the Effective date and each anniversary thereafter
- 1.5 "Consumer Prices Index" the Consumer Prices Index for all items which is published in the United Kingdom in the Monthly Digest of Statistics by the Office for National Statistics or any replacement of it.

## **SECTION 5**

**SCHEDULE 5**

**Project Plan**

SEE ATTACHED

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TQ 14 – Programme



Engineering Support  
Group Limited  
15<sup>th</sup> November 2018

# TQ14 – PROGRAMME

Physical Prevention of Over Speeding (PPOS)

MS

TQ 14 – Programme



Contents

TQ14 - Programme.....	3
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TQ 14 – Programme



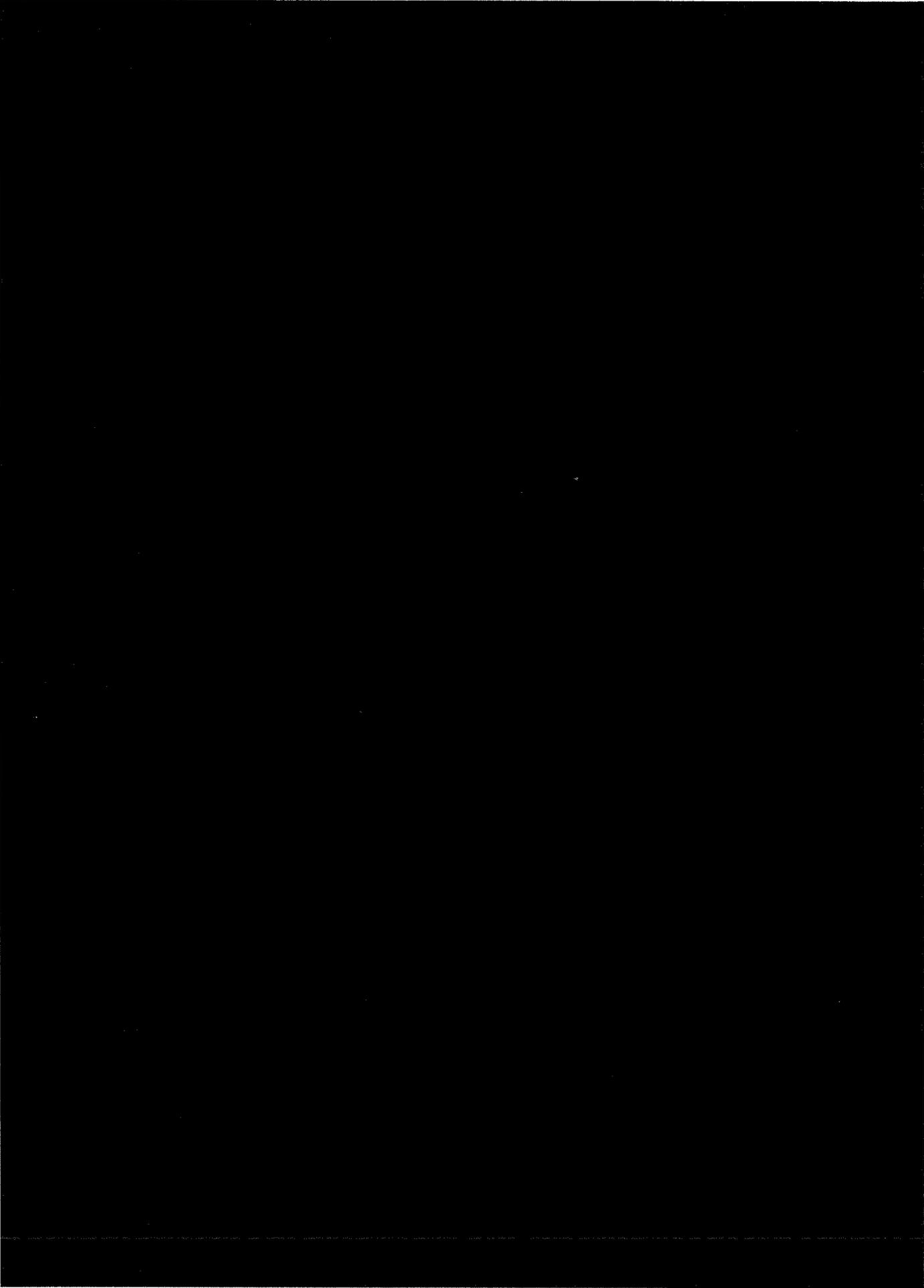
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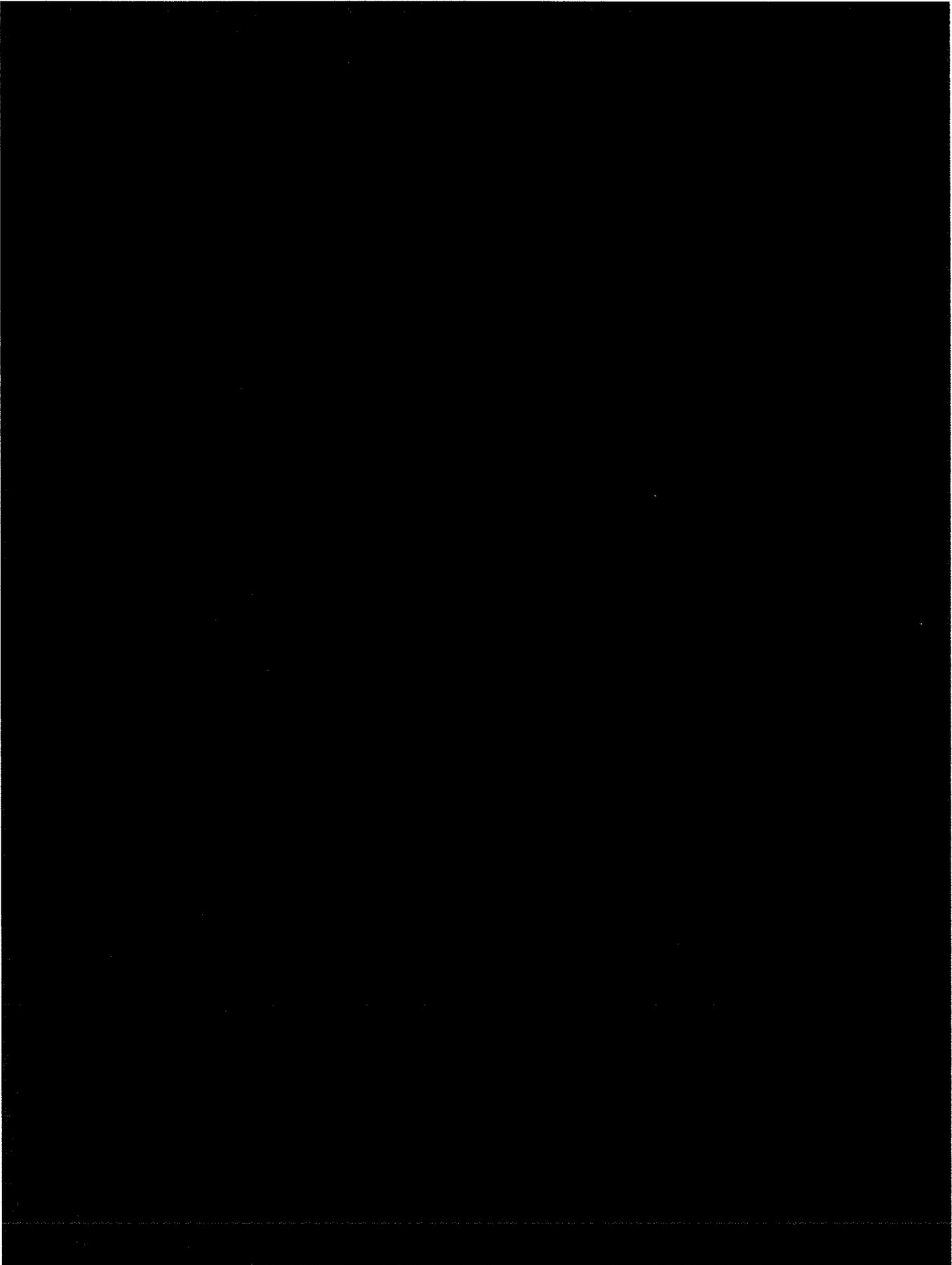
TQ.14 – Programme

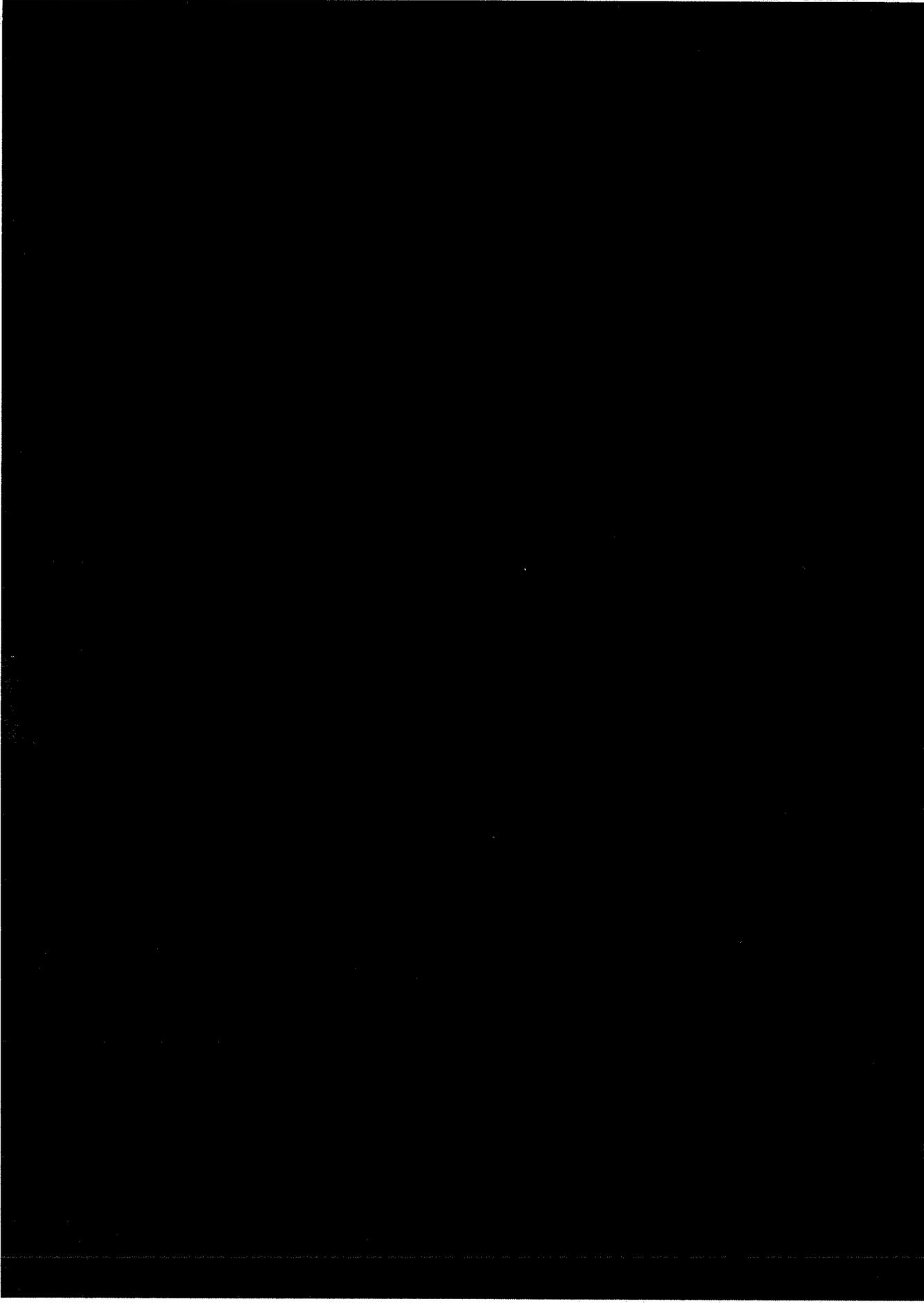


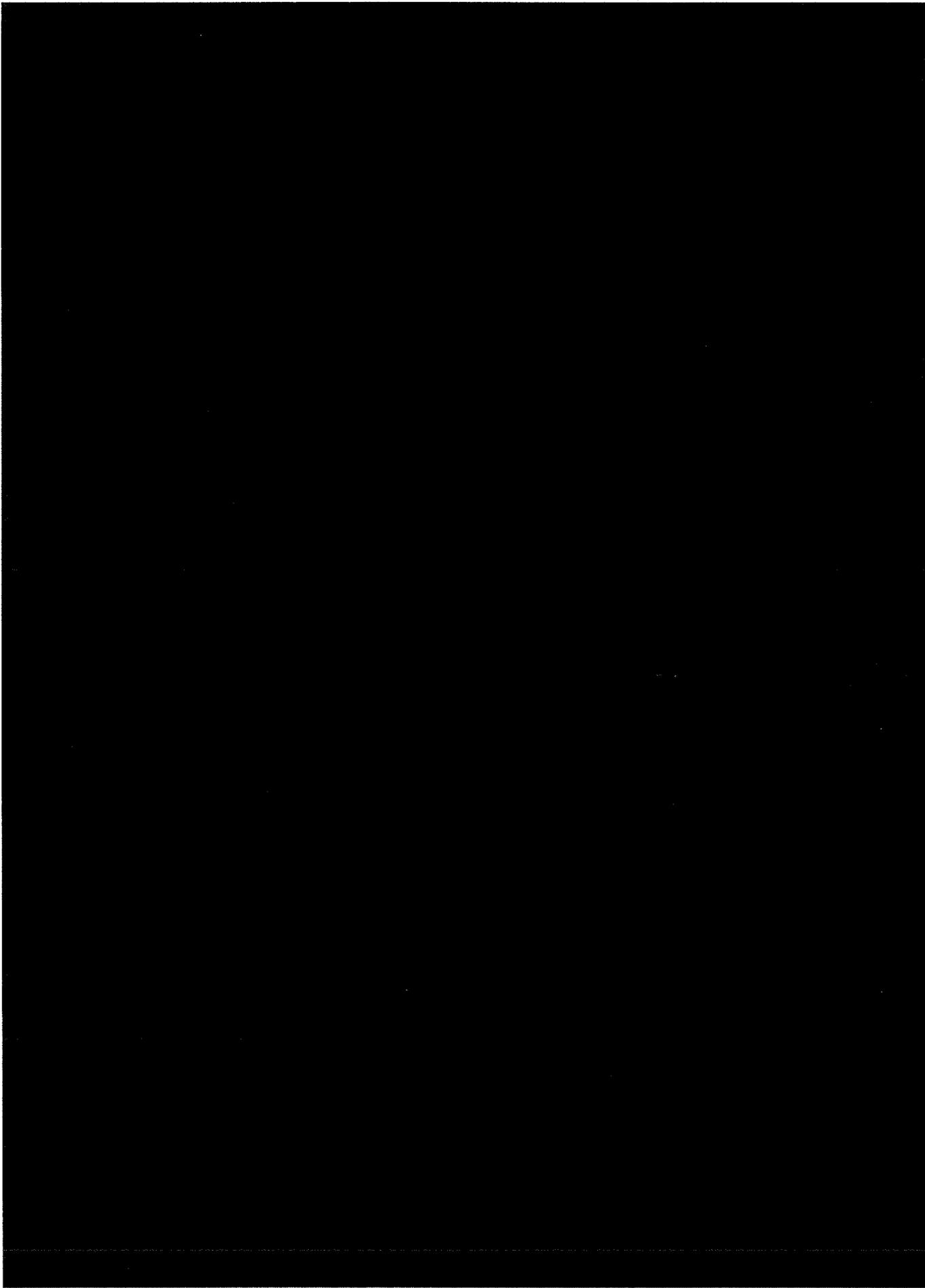
**APPENDIX A – PPOS DELIVERY PROGRAMME**

*AB*

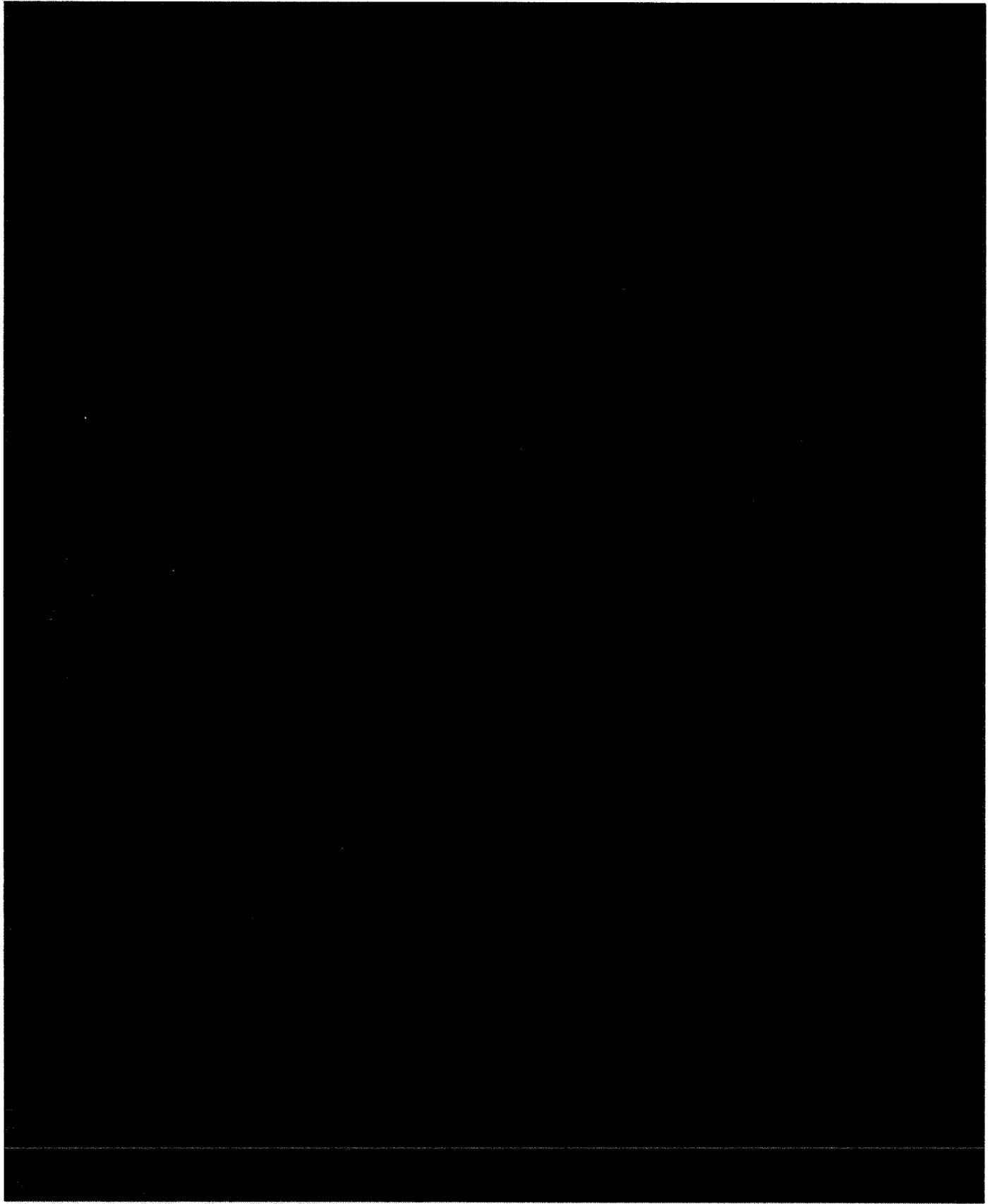




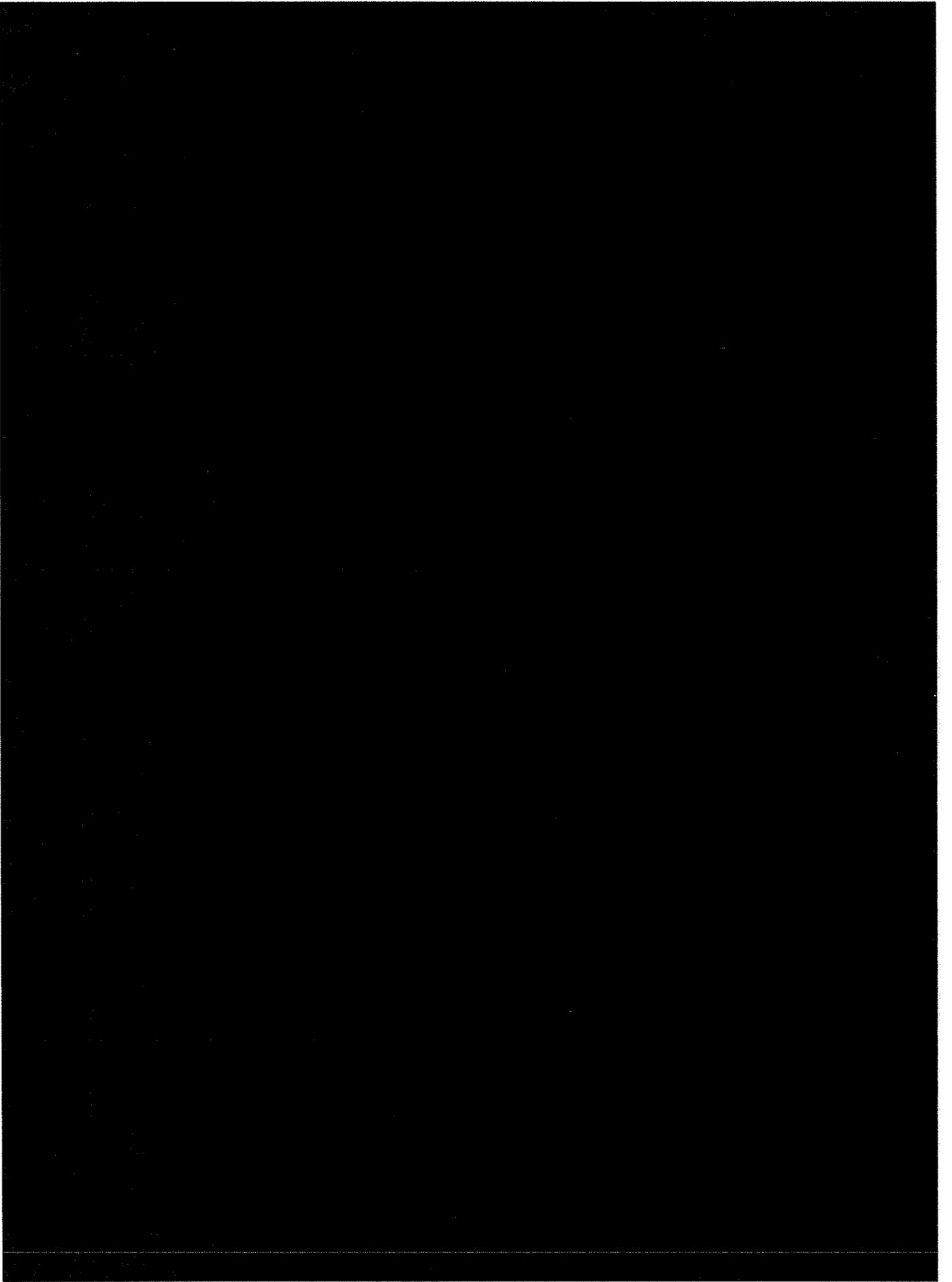




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**SECTION 6**

## SCHEDULE 6

### Form of Variation

Contract Parties: (1) Tramtrack Croydon Limited ("TCL") and (2) Engineering Support Group Limited ("the Contractor")

Contract Number: **LT-C-17-466**

Variation Number: *[to be inserted]*

Authority Contact Telephone: *[to be inserted]*

Fax: *[to be inserted]*

Date: *[to be inserted]*

#### VARIATION TO CONTRACT (AVC)

Pursuant to **Clause 25** of the Contract, authority is given for the variation to the Services and the Charges as detailed below. The duplicate copy of this form must be signed by or on behalf of the Contractor and returned to the Procurement Manager as an acceptance by the Contractor of the variation shown below.

DETAILS OF VARIATION	AMOUNT (£)
<b>ALLOWANCE TO TCL</b>	
<b>EXTRA COST TO TCL</b>	
<b>TOTAL</b>	

.....  
For TCL (signed)

.....  
(print name)

<b>ACCEPTANCE BY THE CONTRACTOR</b>	
<b>Date</b>	<b>Signed</b>



**SECTION 7**

## SCHEDULE 7

### Health and Safety and Environmental Considerations

#### CONTENTS

WI 1105	Health, Safety and Environmental (HSE) Requirements
WI 1110	Performance Monitoring
WI 1115	HSE Meetings
WI 1120	HSE Management Systems
WI 1125	HSE Competence and Training
WI 1130	CDM
WI 1135	PPE
WI 1140	Hazardous Materials
WI 1145	Site Rules
WI 1150	Documentation
WI 1155	Fire
WI 1160	Electromagnetic Disturbance
WI 1165	Work Related Road Risk
WI 1170	Environmental Management Plan
WI 1175	Control of Pollution and Environmental Nuisance
WI 1180	Waste Management
WI 1185	Ecological Requirements
WI 1190	Control of Vehicle Emissions
WI 1195	Police and Traffic Regulations
Appendix 01	Supplier Assessment Guidance
Appendix 02	HSE KPI Reporting Requirements
Appendix 03	TfL Incident Line Instructions
Appendix 04	Design Management Template
Appendix 05	Direct Vision Standards (DVS)

#### WI1105

#### Health, Safety and Environmental (HSE) Requirements

The *Contractor* shall comply with all current safety, health, welfare and environmental legislation and with all current approved Codes of Practice.

#### The *Contractor* shall comply with all notified LT and other Standards including:

- LT-IMS-SHEQ-070 Drugs & Alcohol Policy;
- LT-IMS-PROC-HSE-100 Incident Reporting and Investigation;
- LT-IMS-SHEQ-050 Specification of PPE;

#### WI1110

#### Performance Monitoring

The *Contractor's* health, safety and environmental performance will be monitored by the *Employer* using the HSE Supplier Assessment. The frequency for assessment shall be determined by the *Employer* in light of the level of activity or performance. The *Contractor* shall participate in the assessment through the provision of information and evidence requested by the *Employer* in respect of the criteria. The results of the assessment will be discussed with the *Contractor* upon completion. If required, the *Contractor* will be asked to prepare an Action Plan in response; progress against which is monitored as part of subsequent assessments. The full assessment criteria and monitoring schedule will be shared with the *Contractor* at the time of tendering (see Appendix 01).

**WI1115 Health, Safety and Environmental Management System**

**WI1115.1 HSE Management System**

The *Contractor's* HS&E Management System shall comply with the following requirements:

- The *Contractor* shall operate a health and safety management system that, as a minimum, meets the requirements contained in OHSAS 18001, HSG65 or can be demonstrated as equivalent
- The *Contractor* shall operate an environmental management system that, as a minimum, meets the requirements contained in ISO 14001 or can be demonstrated as equivalent.

**WI1115.2 HSE KPI Reporting**

The *Contractor* shall report its own and its subcontractors HSE performance to the *Employer* on a periodic basis. The data shall be provided in the format prescribed by the *Employer* (details of the current requirements can be found in Appendix 02). The data is to be submitted within 3 business days of the TFL accounting period ending.

**WI1115.3 Audit**

The *Contractor* shall provide a risk-based Health, Safety and Environmental audit schedule. The reports completed after all audits shall be forwarded to the *Project Manager*, for information, within 2 weeks of the audit being completed. The report shall include details of any identified issues and any proposed corrective actions. The report shall be reviewed during periodic HSE progress meetings.

The *Contractor* allows the *Employer* to observe or participate in these audits and to conduct additional independent audits, acting reasonably with the cooperation of the *Contractor*, to provide Assurance that the *works* are being conducted in accordance with the contract requirements. The *Contractor* shall provide the facilities and access necessary for these audits to be carried out.

**WI1115.4 Inspections**

The *Contractor* shall undertake regular Health, Safety and Environmental inspections of the Site at a frequency agreed with the *Project Manager* to monitor performance in respect of health, safety and the environment. Completed inspection reports shall be submitted to the *Project Manager* for Information no later than 5 business days following the date of inspection.

The *Contractor* allows the *Employer* to observe or participate in these inspections and to conduct additional independent inspections to provide assurance that the *works* are being carried out in accordance with the contract requirements.

**WI1115.5 Incident Reporting and Investigation**

The *Contractor* shall report all HSE incidents, accidents and near miss events which occur during the Contract via the TFL Incident Line before the end of the shift in which the incident occurred. (Details of how to report an incident to the TFL Incident Line are provided in Appendix 03).

The *Contractor* shall, within forty eight (48) hours submit an initial written report and after 14 days a full report detailing as a minimum the following:

- Description of the incident;
- Immediate actions taken;

- Immediate causes;
- Root causes; and
- Actions taken to prevent a recurrence

With the agreement of the *Project Manager* a longer timescale to complete the final report may be agreed.

All investigation reports will be completed to establish root causes and to a level of detail acceptable at the time to the *Employer*. Any comments provided by the *Employer* shall be addressed by the *Contractor* and an updated report submitted if required.

Where serious accidents occur – Major injuries and Dangerous Occurrence (as defined in RIDDOR) - these shall be subject to a thorough formal investigation. The *Employer* may take part in any investigation led by the *Contractor* and/or in certain instances lead their own investigation in which the *Contractor* will be required to co-operate.

**WI1120 HSE Competence and Training**

**WI1120.1 HSE Advice**

The *Contractor* shall at all times have access to competent Health, Safety and Environmental support to fully implement all the applicable HSE requirements and to provide a presence on Site at regular periods for inspections, advice and instruction.

**WI1120.2 HSE Training**

All operatives and management on site employed directly or indirectly by the *Contractor* shall have received such HS&E training the work they are required to undertake and are to be made fully aware of the techniques and procedures to be used during the *works* with regard to their own health and safety and the health and safety of others and the protection of the environment.

**WI1120.3 Licenses**

The following licenses are required when working for London Trams:

- Tram Safety Awareness Course (Pink Ticket course) (when working on or near the track);
- Tramlink Possession Supervisor/Tramlink Worksite Supervisor (when track possessions and 'worksites' are required); and
- Authorised Person (AP) for those carrying out electrical isolations

**WI1120.4 Briefings**

The *Contractor* shall attend any HSE briefings specified by the *Employer* and include all relevant information from these in their own briefings.

The *Contractor* shall ensure that all visitors to the Site (including *Employer's* staff) are provided with HSE briefing and induction, which will include as a minimum an overview of the activities taking place on Site, the likely hazards on site, the areas where they are permitted to walk, emergency evacuation routes, PPE and First Aid. These briefings/inductions must be aligned with the *Employer's* local inductions where applicable.

The *Contractor* shall make available to the *Employer* a record of training and the relevant certification for all of their site operatives under their control in order to demonstrate that the operatives are suitably qualified for the operations they are carrying out

The *Contractor* shall arrange regular relevant toolbox talks for his staff, and maintains a register of attendees of these sessions for the *Project Manager* to inspect. The *Contractor* shall take a pro-active stance on promoting health, safety and environmental awareness on the site and may be asked to participate acting reasonably in any *Employer* led HSE forums and campaigns

**WI1120.5 Construction Skills Certification Scheme (CSCS)**

The *Contractor* shall ensure that all employees, sub contractors and suppliers of any tier and other contractors entering the Working Areas are in possession of a valid

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Construction Skills Certification Scheme (CSCS) card appropriate to their specific role on the project

An exception to this requirement is granted where the individual holds a valid card from a CSCS affiliated or amalgamated scheme or other accepted scheme which has been assessed as meeting similar standards. Dispensation against this requirement may be given by the *Employer's Project Manager* following a written request by the *Contractor*.

**WI1120.6 Non English Speaking Workers**

The *Contractor* shall have adequate arrangements in place to communicate health and safety information to non-fluent English speakers on site such that:

- They receive the required HSE training/briefing (including any emergency procedures before commencing the work);
- Instructions are effectively communicated to, and understood by, all such team members

These arrangements shall be described in the Construction Phase Plan

**WI1120.7 Safety Critical Work**

The *Contractor* shall identify all Safety Critical tasks (as defined by Railways and Other Guided Transport Systems (Safety) Regulations 2006 and amendments) associated with the Contract and agree these with the *Employer*.

The *Contractor* shall demonstrate that they have suitable and sufficient arrangements in place to monitor the competence and fitness of those carrying out safety critical tasks. These arrangements should be described in the Construction Phase Plan.

The *Contractor* shall provide a means of identification for all staff employed on safety critical tasks.

**WI1125 CDM**

**WI1125.1 Client**

The *Employer* is the Client for the purposes of the CDM Regulations 2015.

**WI1125.2 Principal Contractor, Principal Designer and Designer**

The *Contractor* is appointed as Principal Contractor as required by the Construction (Design and Management) Regulations 2015 from the Contract Date.

The *Contractor* is appointed as Principal Designer as required by the Construction (Design and Management) Regulations 2015 from the Contract Date.

**WI1125.3 Health, Safety and Environmental Pre-construction Information**

The *Contractor*, in their role as the Principal Designer, shall support the *Employer* (Client) in the development of the pre-construction information by producing, providing and bringing together the required information. The *Employer* may require the *Contractor* to share this information with other designers, principal contractors and contractors involved in the project. The *Contractor* shall agree the format for the pre-construction information with the *Employer*.

**WI1125.4 F10**

The F10 will be provided by the *Employer* and shall be displayed in the site offices by the *Contractor*

**WI1125.5 Health and Safety File**

A health and safety file shall be produced for all projects, even where there is only one contractor involved. The Contractor shall work with the Employer and/or Principal Designer to compile the Health and Safety File in a format specified by the Employer. The format of the H&S File is described in the HSE pre-construction information (add reference here).

Where the Principal Designer appointment is terminated or where there is no Principal Designer appointment the *Contractor* shall be responsible for the compiling of the Health and Safety File.

**WI1130 Personal Protective Equipment (PPE)**

The *Contractor* shall assess and provide the appropriate PPE for his personnel, sub-contractors, suppliers and visitors.

The *Employer* requires that high visibility clothing compliant with LT-IMS-SHEQ-050 must be worn at all times when on the Tram network.

This high visibility clothing shall carry the *Contractor's* company name. The *Contractor's* staff shall not wear London Trams branded high visibility clothing, unless working under a 'labour only' contract and requested to by the *Project Manager*.

*Contractors* shall not wear any garment or article that impedes their vision or hearing when working for London Trams, unless required as part of a safe system of work e.g. hearing protection. The wearing of hats, clothing with hoods and any other headwear is prohibited when working for London Trams with the exception of:

- Hoods or headwear required as PPE in response to a risk assessment
- Headwear specifically designed:
  - To be compatible with PPE and
  - Not to impede vision or hearing

The Contractor provides PPE for use on site by the Project Manager, his staff and other agents involved in the contract.

## **WI1135 Hazardous Materials**

### **WI1135.1 Control of Substances Hazardous to Health (COSHH)**

The *Contractor* is obliged to notify the *Employer* of any substances to be used in the works that are, or may be, classified as hazardous and which could impact on others in the vicinity of the work where the material is to be used. The *Contractor* shall provide full details of such substances, including storage details and the Risk Assessment for the works to be undertaken. These details shall be submitted to the *Project Manager* prior to the work involving these materials commencing.

### **WI1135.2 Asbestos**

The *Employer* will supply all information in his possession in respect of the presence of asbestos within the site. The information will be included in the Health and Safety Pre-Construction Information. Based on this information, the *Contractor* shall liaise with the *Employer* to determine where additional surveys will be required and the type of survey to be undertaken.

Where the *Contractor* believes that they have disturbed asbestos as a consequence of their works, they shall stop works immediately, inform the *Project Manager* and report the incident as a Near Miss via the TfL reporting line.

## **WI1140 Site Rules**

### **WI1140.1 Agreement of Site Rules**

The *Contractor* shall propose site rules for agreement by the *Employer* and shall ensure that all persons for whom the *Contractor* is responsible abide by the same. The Site Rules shall be included in the Construction Phase Plan.

### **WI1140.2 Drugs and Alcohol**

The *Contractor* shall operate a drugs and alcohol policy at least as stringent as London Tramlink Drugs and Alcohol Policy LT-IMS-SHEQ-070.

The *Contractor* shall implement suitable arrangements to verify compliance with its policy including undertaking the necessary alcohol and drug testing. In addition the *Contractor* shall co-operate with the *Employer* who may require the execution of random and/or for cause alcohol and drug tests. The *Contractor* shall provide records of testing if requested by the *Employer*. The testing arrangements shall be described in the Construction Phase Plan.

### **WI1140.3 Smoking**

Smoking (including e-cigarettes) within the working areas is prohibited with the exception of designated smoking areas. The *Contractor* shall provide suitably signed designated smoking areas within the working areas close to welfare facilities but away

from the work locations, site access routes and sensitive neighbouring properties. The *Contractor* shall take all reasonable measures to prevent personnel under his control from smoking on the streets adjacent to worksites.

**WI1145 Documentation**

**WI1145.1 Construction Phase Plan**

The *Contractor* shall ensure that all Health, Safety and Environment Pre-Construction Information provided by the *Employer* is addressed in the Construction Phase Plan (CPP) and/or the Environmental Management Plan (EMP) in the format agreed with the *Employer*. For smaller scale works and with the agreement of the Project Manager, the EMP can be incorporated into the CPP. More details on the content of the EMP can be found in clause xx.

The Construction Phase must not start before a suitable CPP and EMP are in place and accepted by the *Employer*.

For larger/more complex projects, a separate Security Plan may be required, otherwise Security arrangements shall be incorporated into the CPP.

For larger/more complex projects a separate Traffic Management Plan may be required, otherwise traffic management arrangements shall be incorporated into the CPP.

The *Contractor* shall maintain the CPP as required by the CDM Regulations. Following the *Employer's* acceptance of the initial CPP, subsequent updates shall be submitted to the *Employer* for acceptance.

Where sub-contractors are used to undertake surveys and they are appointed as the Principal Contractor or Contractor under the CDM Regulations, the *Contractor* shall ensure that they have reviewed and approved the CPP and EMP produced by the sub-contractor before they are submitted to the *Employer*.

**WI1145.2 Emergency Preparedness Plan**

The Emergency Preparedness Plan (EPP) shall be submitted to the *Employer* for acceptance prior to commencement of work on Site. In addition to describing the emergency arrangements for the *works* on site, the plan shall consider potential impacts beyond the site boundary, especially where there are interfaces with neighbours, operational assets etc. Any existing site specific EPPs will be provided as part of the pre-construction information, and should be incorporated in the *Contractor's* EPP as appropriate. For smaller scale works, and with the agreement of the *Employer*, the EPP can be incorporated into the CPP.

Immediately following an emergency, or following a simulated emergency exercise, the *Contractor* shall review the actions taken, against the requirements set out in the EPP, and revise the EPP accordingly. The output of these reviews shall be shared with the *Employer*.

**WI1145.3 Method Statements**

The *Contractor* is responsible for producing and approving all Method Statements (also known as Safe Systems of Work and Work Package Plans) in a format agreed with the *Employer*. The *Contractor* shall submit a schedule of Method Statements to the *Employer* for acceptance within 2 weeks of contract start date. The *Employer* shall determine which Method Statements they will review for acceptance.

The *Contractor* shall submit all Method Statements to the *Employer* with adequate time allowed for any required acceptances to be gained prior to that element of the *works* starting on site. The time allowed for review will be agreed with the *Employer*. No element of the work shall commence without a Method Statement being produced and approved by the *Contractor* and being accepted by the *Employer* where required.

All Method Statements and supporting documentation, including any relevant approvals from others, shall represent and detail the *Contractors* planned works and address construction sequences, co-ordination with third parties and the relevant control and mitigation measures for identified risks.

Within each Method Statement the *Contractor* shall include a risk assessment that demonstrates how potential HSE risks resulting from the *works* have been mitigated to As Low As Reasonably Practicable (ALARP) status.

Where sub-contractors are used, the *Contractor* shall ensure that they have reviewed and approved all Method Statements produced by the sub-contractor before they are submitted to the *Employer*.

**WI1150 Fire**

**WI1150.1 General Requirements**

The *Contractor* shall ensure that all *works* are compliant with the relevant legislation, Standards, TFL guidance and industry best practice in terms of fire compliance.

The *Contractor* shall make himself aware of any existing fire evacuation arrangements for the site, and co-ordinate their own arrangements with those of the site Landlord (as provided in the HSE pre-construction information).

The *Contractor* shall develop a fire evacuation procedure for agreement with the *Employer*. The *Contractor* shall ensure that all persons working on Site or who may have authority to visit site from time to time are aware of this procedure and receive any instruction that might be appropriate. These arrangements shall be recorded in the Emergency Preparedness Plan.

The *Contractor* shall remove all superfluous flammable materials from site on a daily basis.

The *Contractor* shall obtain the consent in writing from the *Employer* before storing or using plant, equipment or materials involving risk of fire or posing any hazard to any person and property.

The *Contractor* shall provide any fire extinguishers or other fire suppression systems on site as may be required to deal with the *Contractor's* method of working and/or any materials, packaging and equipment brought or stored on site by the *Contractor*.

The *Contractor* shall take all precautions to prevent the outbreak of fire arising from the *works*.

**WI1150.2 Hot Works**

The *Contractor* shall liaise with the *Employer* regarding Hot Works and the obtaining of any necessary permits associated with these works.

**W1155 Not Used**

**WI1160 Not Used**

**WI1165 Work Related Road Risk**

**WI1165.1 Definitions**

For the purposes of WI1165.2 to WI1165.10 (inclusive), the following expressions have the following meanings:

**"Approved Progressive Training"** an ongoing programme of personal development that uses a combination of theoretical, e-learning, practical and on the job training to ensure Drivers have the knowledge, skills and attitude to operate safely on urban roads and includes:

- i) Safe Urban Driving (SUD) training to be undertaken every five years; or
- ii) A training course, which in the reasonable opinion of the *Employer* is an acceptable substitute to SUD; and
- iii) One safety related FORS e-learning module to be undertaken every twelve (12) months

**"Bronze Accreditation"** the minimum level of accreditation within the FORS Standard, the requirements of which are more particularly described at: [www.fors-online.org.uk](http://www.fors-online.org.uk);

**"Category N2 Lorry"** a vehicle designed and constructed for the carriage of goods having a MAM exceeding 3,500 kilograms but not exceeding 12,000 kilograms;

**"Category N3 Lorry"** a vehicle designed and constructed for the carriage of goods and having a MAM exceeding 12,000 kilograms;

**"Car-derived Van"** a vehicle based on a car, but with an interior that has been altered for the purpose of carrying larger amounts of goods and/or equipment;

**"Collision Report"** a report detailing all collisions during the previous twelve (12) months involving injuries to persons or fatalities;

**"Delivery and Servicing Vehicle"** a Lorry, a Van or a Car-derived Van;

**"Driver"** any employee of the *Contractor* (including an agency driver), who operates Delivery and Servicing Vehicles on behalf of the *Contractor* to Provide the Works;

**"DVLA"** Driver and Vehicle Licensing Agency;

**"Direct Vision Standard" or "DVS"** a performance based assessment and rating tool, as updated from time to time that measures how much direct vision a Driver has from a Category N3 Lorry cab in relation to other road users. Further information can be found at: [www.tfl.gov.uk](http://www.tfl.gov.uk);

**"FORS"** the Fleet Operator Recognition Scheme, which is an accreditation scheme for businesses operating van and lorry fleets. It offers impartial, independent advice and guidance to motivate companies to improve their compliance with relevant laws and their environmental, social and economic performance;

**"FORS Standard"** the standard setting out the accreditation requirements for the Fleet Operator Recognition Scheme, a copy of which can be found at: [www.fors-online.org.uk](http://www.fors-online.org.uk);

**"Front Underrun Protection"** devices that are fitted at the front of Lorries and which comply with EC Directive 2000/40/EEC and the Road Vehicles (Construction and Use) Regulations 1986;

**"Gold Accreditation"** the highest level of accreditation within the FORS Standard, the requirements of which are more particularly described at: [www.fors-online.org.uk](http://www.fors-online.org.uk);

**"Lorry"** a vehicle with an MAM exceeding 3,500 kilograms;

**"MAM"** the maximum authorised mass of a vehicle or trailer including the maximum load that can be carried safely while used on the road;

**"Side Underrun Protection"** devices that are fitted between the front and rear axles of Lorries and which comply with EC Directive 89/297/EEC and the Road Vehicles (Construction and Use) Regulations 1986;

**"Silver Accreditation"** the intermediate level of accreditation within the FORS Standard, the requirements of which are more particularly described at: [www.fors-online.org.uk](http://www.fors-online.org.uk);

**"Van"** a vehicle with a MAM not exceeding 3,500 kilograms;

#### **WI1165.2 Fleet Operator Recognition Scheme Membership**

Where the *Contractor* operates Delivery and Servicing Vehicles to Provide the Works, within 90 days of the Contract Date/Contract Commencement date:

- (i) (unless already registered) he registers for FORS or a scheme, which in the reasonable opinion of the *Employer*, is an acceptable substitute to FORS (the **"Alternative Scheme"**); and
- (ii) (unless already accredited) he attains the standard of Bronze Accreditation (or higher) or the equivalent within the Alternative Scheme and maintains the standard of Bronze Accreditation (or equivalent standard within the Alternative Scheme) by way of an annual independent assessment in accordance with the FORS Standard or takes such steps as may be required to maintain the equivalent standard within the Alternative Scheme. Alternatively, where the *Contractor* has attained Silver or Gold Accreditation, the maintenance requirements are undertaken in accordance with the periods set out in the FORS Standard.

#### **WI1165.3 Safety Features on Lorries**

The *Contractor* ensures that every Lorry, which he uses to Provide the Works, has:

- (i) Side Underrun Protection fitted at a height not exceeding 550mm from the ground, unless the *Contractor* can demonstrate to the reasonable satisfaction of the *Employer* that the Lorry will not perform the function for which it was built if the Side Underrun Protection is fitted;

- (ii) Front Underrun Protection fitted at a height not exceeding 400mm from the ground, unless the *Contractor* can demonstrate to the reasonable satisfaction of the *Employer* that the Lorry will not perform the function for which it was built if the Front Underrun Protection is fitted;
- (iii) equipment fitted with an audible means of warning other road users of the Lorry's left manoeuvre;
- (iv) prominent signage on the Lorry to warn cyclists and other road users of the dangers of the Lorry's near side blind spot and of getting too close to the Lorry; and
- (v) front, side and rear blind spots completely eliminated or minimised as far as practical and possible, through the use of direct vision, fully operational indirect vision aids and driver audible alerts.

**WI1165.4 Direct Vision Standard (DVS)**

Where applicable:

The *Contractor* complies with the Heavy Goods Vehicle Direct Vision Standard in Appendix 05 of WI1100.

The *Contractor* ensures that:

- (i) From and including 1 October 2018, all Category N3 Lorries used to Provide the Works achieve a minimum of a one (1) star Direct Vision Standard rating;
- (ii) from and including 1 April 2020 all Category N3 Lorries used to Provide the Works achieve a minimum of three (3) star Direct Vision Standard rating; and
- (iii) so far as reasonably practicable, the conditions at:
  - a. any part of the Site which is within the control of the Contractor, or
  - b. any other site or location which is within the control of the contractor and at which, in order to Provide the Works, waste is being disposed of or suppliers are being delivered to or from

are appropriate for each Category N2 Lorry and Category N3 Lorry used to Provide the Works

**WI1165.5 Driver Licence Checks**

Where the *Contractor* operates Delivery and Servicing Vehicles to Provide the Works the *Contractor* ensures that:

- (i) he has a system in place to ensure all his drivers hold a valid driving licence for the category of vehicle that they are tasked to drive, along with recording any endorsements, or restrictions on the Drivers' licences; and
- (ii) each of his Drivers engaged to Provide the Works has a driving licence check with the DVLA or such equivalent before that Driver commences work and that the driving licence check with the DVLA or equivalent authority is repeated in accordance with either the following risk scale (in the case of the DVLA issued licences only), or the *Contractor's* risk scale, provided that the *Contractor's* risk scale has been approved in writing by the *Employer* within the last 12 months
  - a. 0 – 5 points on the driving licence – six monthly checks;
  - b. 6 – 8 points on the driving licence – quarterly checks; or
  - c. 9 or more points on the driving licence – monthly checks.

**WI1165.5 Driver Training**

Where the *Contractor* operates Delivery and Servicing Vehicles to Provide the Works the *Contractor* ensures that each of his Drivers attends Approved Progressive Training throughout the duration of the contract.

**WI1165.7 Collision Reporting**

Where the *Contractor* operates Delivery and Servicing Vehicles to Provide the Works, the *Contractor*:

- (i) ensures that he has a system in place to capture, investigate and analyse road traffic collisions that results in fatalities, injury or damage to vehicles, persons or property and for generating Collision Reports; and
- (ii) within 15 days of the Contract Date, provides to the *Employer* a Collision Report. The *Contractor* provides to the *Employer* an updated Collision Report within five working days of a written request from the *Employer*.

**WI1165.8 Self Certification of Compliance**

Where the *Contractor* operates Delivery and Servicing Vehicles to Provide the Works, within 90 days of the Contract Date, the *Contractor* makes a written report to the *Employer* detailing his compliance with **WI1165.2, WI1165.3, WI1165.4, WI1165.5, WI1165.6 and WI1165.7** (the "WRRR Self-certification Report"). The *Contractor* provides updates of the WRRR Self-certification Report to the *Employer* on each three month anniversary of his submission of the initial WRRR Self-certification Report.

**WI1165.9 Obligations of the Contractor Regarding Sub-contractors**

The *Contractor* ensures that those of his Subcontractors who operate Category N2 Lorries, Category N3 Lorries, Vans and/or Car-derived Vans to Provide the Works:

- (i) comply with **WI1165.2**;
- (ii) for Category N2 Lorries, comply with **WI1165.3, WI1165.5, WI1165.6, WI1165.7 and WI1165.8**;
- (iii) for Category N3 Lorries, comply with **WI1165.3, WI1165.4, WI1165.5, WI1165.6, WI1165.7 and WI1165.8** and, where applicable, the appropriate provisions of the Heavy Goods Vehicle Direct Vision Standard; and
- (iv) for Vans and Car-derived Vans, comply with **WI1165.6, WI1165.7 and WI1165.8**

**WI1165.10 Failure to Comply with Work Related Road Risk Requirements**

Without limiting the effect of any other clause of this contract relating to termination, if the *Contractor* fails to comply with **WI1165.2, WI1165.3, WI1165.4** (where applicable), **WI1165.5, WI1165.6, WI1165.7 and WI1165.8**:

- (i) the *Contractor* commits a material breach of this contract; and
- (ii) the *Employer* and/or any member of the TfL Group may refuse the *Contractor*, his employees, agents and Delivery and Servicing Vehicles entry onto any property that is owned, occupied or managed by the *Employer* and/or any member of the TfL Group for any purpose (including but not limited to deliveries).

**WI1170 Design - Environment**

The *Contractor* undertakes the development of the design in such a way as to minimise any adverse environmental impacts and maximise any environmental benefits.

**WI1175 Environmental Management Plan**

Within 4 weeks of the contract commencement date, the *Contractor* provides to the Project Manager for acceptance, an appropriately detailed environmental management plan (EMP) which describes the details of the Environmental Management System for each part of the works.

As a minimum, the *Contractor* reviews and, as necessary, updates the EMP every six months to ensure it remains relevant to the works, and that it addresses any changes in legislation, or recommendations arising from any environmental incidents that may have occurred on site, on other TfL worksites (these are notified by the Project Manager) or from the industry, including the *Contractor's* own organisation.

The *Contractor* makes the EMP available to the *Employer* for regular review.

The EMP as a minimum provides:

- The environmental management system being operated (including details of any accreditation e.g. ISO 14001);

- Partnership working on environmental matters (regulators, environmental bodies, industry groups/clients/supply chains); and
- Identification of the environmental aspects and impacts of the contract and how the Contractor intends to minimise or negate the potential risks
- Full details of all environmental consents required to design, construct and operate the works, together with timescales and responsibilities for obtaining these
- Details of the arrangements for monitoring, measuring and analysing environmental performance
- Details of how the evaluation of compliance will be undertaken – this may include site inspections, internal and Subcontractor audits, and management review arrangements
- Full details of how the Contractor ensures that all specific environmental requirements are communicated to their staff, Subcontractors and suppliers
- The Contractor's environmental objectives and targets and how these contribute to the objectives and targets provided by the Employer
- The procedures, processes and initiatives (including training requirements) to be employed to ensure that all the Contractor's staff (including Subcontractors and suppliers) comply with the environmental requirements of this contract
- An environmental staffing plan (identifying duration and input of any environmental specialists) required during design and construction

**WI1180 Control of Pollution and Environmental Nuisance**

**WI1180.1 Notifications**

The Contractor notifies occupiers of nearby properties in advance of the works taking place, including the duration and likely noise and vibration effects. In the case of work required in response to an emergency, the relevant local authority and local residents are advised as soon as reasonably practicable that emergency work is taking place. Potentially affected residents are to be notified of the helpline number.

**WI1180.2 Complaints Handling**

The details of the complaints handling process are set out, by the Contractor, within the EMP. Once agreed with the Project Manager and all other relevant parties, the Contractor implements the complaints handling process throughout the works.

The contractor reports all environmental complaints to the Project Manager within 24hours, including written details as appropriate.

**WI1180.3 Noise and Vibration – Construction**

The Contractor develops and implements a noise and vibration management plan as part of the EMP for the works. The noise and vibration management plan sets out how noise and vibration requirements are to be managed.

The Contractor uses best practical means to reduce noise and vibration at all times having regard to the provisions of the latest edition of BS5228 – Code of Practice for Noise and Vibration Control on Construction and Demolition Sites.

The Contractor agrees the proposed core working hours with the relevant Local Authority and the Project Manager, the mechanism to be implemented to seek approval for working outside these agreed hours (should the need arise), and the approach to obtaining prior consents under Section 61 of the Control of Pollution Act 1974.

**WI1180.4 Noise and Vibration - Monitoring**

The Contractor employs a trained and competent person to undertake monitoring if required by the Project Manager and the Contractor complies with any additional measures required by the Project Manager including relocation or modification of equipment to reduce noise, vibration, nuisance, light, dust, pollution and disturbance.

The Contractor shall ensure all acoustic measurements are made with industry recognized and suitably calibrated Equipment e.g. using sound level meters which comply with BS EN 61672, Part 1, 2003 Electroacoustics – sound level meters.

The Contractor shall ensure all sound level meters are checked by the Contractor with a sound level calibrator conforming to BS EN 60492: 2003 before and after installation and at agreed intervals where longer term monitoring is proposed. The results of these checks are recorded and held as Contractor's records.

Where construction noise and vibration monitoring is required, the Contractor shall:

- (i) Develop clear proposals for undertaking noise and vibration monitoring, at key sensitive receptors. Proposals are also developed for undertaking on-site monitoring to confirm compliance with any appropriate standards, and to confirm the implementation of BPM on site
- (ii) Define appropriate trigger levels, which, if exceeded, prompts him to take appropriate action to review, and if necessary, implement action to control/reduce the effects. If fixed monitoring locations are proposed, meters with the facility to be remotely accessed are used in order to aid the download and interrogation of the data at least once a week. The equipment is capable of providing text alerts to the Contractor's staff when any proposed trigger levels are exceeded
- (iii) Ensure noise and vibration monitoring requirements as outlined above (and as agreed with the Project Manager and local authorities) are detailed by the Contractor within his noise and vibration management plan, and are implemented throughout the construction phase (unless agreement to curtail monitoring is obtained from the Project Manager and the local authorities).

#### **WI1180.5 Dust and Air Quality**

The Contractor uses best practicable means to reduce dust and other emissions at all times and does not create a dust nuisance. If the *Project Manager* decides that the Contractor is not dealing adequately with the control of dust or other emissions, the *Project Manager* may instruct the Contractor to carry out such additional measures as the *Employer* considers are necessary. Such measures will not be considered a compensation event.

#### **WI1180.6 Control of Vehicle and Plant Emissions**

The Contractor shall implement all reasonably practicable measures for limiting emissions from the use of Equipment and for avoiding potential nuisance.

As a minimum, the Contractor's controls include:

- the engines of all vehicles and Equipment on Site are not left running unnecessarily;
- uses low emission vehicles and Equipment fitted with catalysts, diesel particulate filters or similar devices;
- uses ultra low sulphur fuels in plant and vehicles;
- Equipment is well maintained, with routine servicing of Equipment and vehicles to be completed in accordance with the manufacturers' recommendations and records maintained for the work undertaken;
- all project vehicles, including off-road vehicles, hold current MOT certificates, where required due to the age of the vehicle, (or tested to an equivalent standard) and that they comply with exhaust emission regulations for their class;
- Site haul routes are located, and Equipment operated away from potential receptors such as houses, schools and hospitals;
- avoid the use of diesel or petrol powered generators and instead use mains electricity or battery powered Equipment wherever practicable; and
- maximise energy efficiency (this may include using alternative modes of transport, maximising vehicle utilisation by ensuring full loading and efficient routing);

#### **WI1180.7 Lighting**

To minimise the impact of lighting required for the *working areas* during night works, the Contractor ensures that, where applicable, lighting designs comply with the provisions of latest edition of BS5489, Code of Practice for the Design of Road Lighting. Further guidance is contained within the Guidance Notes for the Reduction of Light Pollution 2000, published by the Institute of Lighting Engineers or its most recent equivalent.

**WI1185****Waste Management**

The *Contractor* prepares the Waste Management Plan (WMP) outlining the contract targets and expectations for the Project. The *Contractor* develops the WMP for the Construction Phase taking account of all relevant information provided by the *Employer* and designer prior to commencing the *works* on site. The *Contractor* does not commence works on site prior to the *Employer's* acceptance of the WMP. The *Contractor* regularly reviews, and as necessary, updates the WMP to take account of changing circumstances.

The *Contractor* makes available Site Waste Management records for review by the *Project Manager* on request.

The aforementioned Site Waste Management obligations are without prejudice to the *Contractor's* obligations under this contract in respect of Statutory Requirements.

The *Contractor* is responsible for registering any sites falling under the Hazardous Waste (England and Wales) Regulations, 2005.

Unless otherwise stated in this Works Information, the *Contractor* is responsible for the disposal of rubbish, debris and spoil arising from the *works* as soon as practicably possible.

The *Contractor* makes available to the *Employer*, within three (3) working days, any waste management documentation and/or transfer records upon request of the *Project Manager*.

**WI1190****Ecological Requirements****WI1190.1****Ecology**

The Project Manager will provide the Contractor with any available information about the ecology of the Site – such as the presence of protected species, invasive or noxious weeds etc.

Prior to commencing any works on-site, the Contractor shall review the ecological information that is available to determine if it is sufficient and current enough for the risks and opportunities to be understood.

If the Contractor deems the available information to be insufficient or out-dated, the Contractor shall arrange for a suitably competent Ecologist to undertake an ecology survey. As a minimum, the survey shall be used to identify:

- The presence of any protected species that may be affected by the Works
- The main habitat types present on site and their ecological value
- The ecological value of any habitats or areas of ecological interest that may be affected by the Works

The Ecologist shall prepare a written report to detail:

- The recommendations for dealing with ecological issues – to both avoid adverse impacts and to maximise opportunities for enhancing the ecological value of the development, and
- The proposals for monitoring the Works to ensure that the recommendations are being implemented and are effective

The report must be prepared in sufficient time to enable the Contractor to implement the recommendations before the commencement of any works with the potential to affect ecological resources.

When developing mitigation proposals, the Ecologist shall follow the mitigation hierarchy (of avoid, minimise, restore then compensate) with the aim of delivering a net gain in biodiversity.

Works shall not start on site until the Project Manager has accepted the Ecologist's report (where required).

The Contractor shall adhere to all the recommendations in the Ecologist's report and to any applicable guidance or code of practice when undertaking the works.

The Contractor shall also ensure that the monitoring proposals in the Ecologist's report are fulfilled. If the monitoring identifies that the recommendations from the Ecologist's Report are not being adhered to, or are not effective, the Ecologist shall propose refinements to the mitigation and control measures to ensure that the project delivers a net gain in biodiversity. The Contractor shall implement these refined recommendations.

**WI1190.2 Nesting Birds**

The Contractor shall implement the following control measures:

- Where possible, any clearance of scrubs and/or trees shall be undertaken outside of the peak nesting bird season (typically March to August inclusive).
- If clearance of scrubs and/or trees or other works affecting structures with the potential for nesting birds is required during the breeding season, the Contractor shall engage a suitably qualified ecologist to undertake checks prior to these works to ensure nesting birds are not affected. If nesting birds are found, the area must be left until the birds have fledged, as is required by the legislation

**WI1190.3 Invasive Species**

Prior to commencing Works, the Contractor shall identify any invasive species (such as Japanese Knotweed, Giant Hogweed etc.) that may be on, or adjacent to the Site. This information should be contained within the Ecologist's report (see WI1185.1).

If such species are present, the Contractor shall develop and implement proposals for controlling the invasive species and ensuring they are not spread by the Works. These proposals, which shall adhere to good industry practice and be implemented by competent staff, shall be agreed with the Project Manager before commencing any works with the potential to disturb the identified invasive species. The Contractor shall allow for the price and programme implications arising from same.

**Appendix 01 Supplier Assessment Guidance – see separate file**

**Appendix 02 HSE KPI Reporting Requirements**

<b>HEALTH, SAFETY and ENVIRONMENT</b>	<b>Unit of Measure</b>	<b>Guidance</b>
<b>Number of hours worked</b>	<b>No.</b>	<b>The total number of hours worked by employees and operatives on the project</b>
<b>Construction, Demolition and Excavation Waste</b>	<b>tonnes</b>	<b>Total amount of waste generated</b>
<b>Construction, Demolition and Excavation Waste, Reused, Recycled and Recovered</b>	<b>tonnes</b>	<b>Amount of waste generated that was reused, recycled or recovered</b>
<b>Hazardous (Construction, Demolition and Excavation) Waste</b>	<b>tonnes</b>	<b>Total amount of hazardous waste generated</b>
<b>Hazardous (Construction, Demolition and Excavation) Waste, Reused etc.</b>	<b>tonnes</b>	<b>Amount of hazardous waste generated that was reused, recycled or recovered</b>
<b>Number of HSE related complaints</b>	<b>No.</b>	<b>Number of HSE complaints received - please provide a short explanation of any complaints received</b>
<b>No. Of PGIs completed</b>	<b>No.</b>	<b>Number of Planned General Inspections completed in the period</b>
<b>No. Of Safety Tours completed</b>	<b>No.</b>	<b>Number of Safety Tours completed in the period</b>

*NS*

No. Of Toolbox talks delivered	No.	Number of Toolbox talks delivered in the period
% of safety actions completed	%	% of actions from inspections or investigations that have been completed by the due date
Number of Incidents	No.	The total number of incidents including Near Misses, Minor Injuries, Major Injuries, LTIs and RIDDOR reportable incidents
Number of Near Misses	No.	Total number of Near Miss (Near Hit) incidents reported
Number of Minor Injuries	No.	The total number of injuries that are not classed as Major Injuries
Number of Major Injuries	No.	The total number of Major Injuries, including those which are RIDDOR reportable
Number of LTIs	No.	Number of Lost Time Injuries including those which are also minor injuries, major injuries of RIDDOR reportable injuries
Number of RIDDORs (Injuries)	No.	Number of RIDDOR reportable injuries
Number of RIDDORs (Dangerous Occurrences)	No.	Number of RIDDOR reportable dangerous occurrences

## Appendix 03 TfL Incident Reporting Line instructions

### Incident Line Instructions

0844 292 0292 (24 hours) or 1558 from TfL Auto Phone/Mobile

What must be reported – all incidents as soon as practicable following the incident

#### What is an incident?:

An unplanned, undesired event that resulted in, or under slightly different circumstances could have resulted in (**i.e. includes near miss**), harm to people, damage to property, damage to the environment or loss of service/process

#### Who will report incidents to the incident line?

The Principal Contractor/Contractor should report all incidents to the incident line

#### What information does the reporter need?

The reporter will be asked a number of routing questions to ensure the incident is allocated to the correct area. These should be responded to as follows (the Incident Line operator has drop down menus on these screens and so can only go by the defined organisational structure).

<b>Responsible Area/Project</b>	London Trams Programme Delivery
<b>Location</b>	TBC
<b>Exact Location</b>	Construction Site (On railway)

Details of the incident!

Their email address (if they want to receive a copy of the report)

#### What happens if there is no answer?

If there is no answer within 2 minutes the call will be diverted to voice mail. Please leave your name and contact details and the incident line will call you back within 30 minutes.

#### What happens once the incident is reported?

The accountable manager will be sent an email requesting that the incident is reviewed. The accountable manager (along with the LT HSE Manager) must:

- Check all the information reported on the incident record
- Ensure that the supplier undertakes an adequate investigation
- Ensure that the incident is closed once the agreed final report is received from the Supplier

## Appendix 05 Heavy Goods Vehicle Direct Vision Standard Schedule

### 1 Introduction

1. In this Schedule, the following terms shall have the corresponding meanings:

**"Business Day"** means any day excluding Saturday, Sundays or public or bank holidays in England;

### 2 HGV DVS Plan

- 2.1 The *Contractor* shall comply with the Initial HGV DVS Plan from the Contract Commencement Date. Within fifteen (15) Business Days of the Contract Commencement Date the *Employer* shall either;
- 2.1.1 confirm that the Initial HGV DVS Plan is approved, in which case such plan shall become the Agreed HGV DVS Plan; or
  - 2.1.2 provide the *Contractor* with any comments on and/or amendments to the Initial HGV DVS Plan.
- 2.2 Within thirty (30) Business Days (for the purpose of paragraph 2.1.2) or 15 Business Days (for the purpose of paragraph 2.3.2) of receipt of any comments and/or amendments from the *Employer* in accordance with paragraph 2.1.2 or paragraph 2.3.2 (as applicable), the *Contractor* shall:
- 2.2.1 develop the Initial HGV DVS Plan to reflect such comments and/or amendments; and
  - 2.2.2 submit an updated Initial HGV DVS Plan to the *Employer* for approval.
- 2.3 Within fifteen (15) Business Days of receipt of the updated Initial HGV DVS Plan, the *Employer* shall confirm that either the updated Initial HGV DVS Plan:
- 2.3.1 is approved, in which case it shall become the Agreed HGV DVS Plan; or
  - 2.3.2 not approved and provide its further comments and/or amendments to the *Contractor* and the *Contractor* shall revise and re-submit the updated Initial HGV DVS Plan for approval in accordance with paragraph 2.3.
- The process set out in this paragraph 2.3 shall be repeated until the updated Initial HGV DVS Plan is approved by the *Employer*.
- 2.4 Where the *Employer*, acting reasonably, has not approved the updated Initial HGV DVS Plan, the *Contractor* may refer that decision to the dispute resolution process set out in the Contract.
- 2.5 Without limiting any other provision of this Contract, the *Contractor* shall, at no additional cost to the *Employer*, and as part of the Works:
- 2.5.1 implement, observe and comply with the Agreed HGV DVS Plan; and
  - 2.5.2 review and amend the Agreed HGV DVS Plan (as necessary) on each 12 month anniversary of the Contract Commencement Date or earlier if requested by the *Employer*, to reflect:
    - 2.5.2.1 any changes to the nature of the Works; and
    - 2.5.2.2 any comments and/or amendments made or proposed by the *Employer*.

### **3 HGV DVS Co-ordinator**

- 3.1 The *Contractor* shall nominate an employee/member of the *Contractor's* Personnel with the necessary experience, competency and authority to:
- 3.1.1 be responsible for implementation and compliance with the Agreed HGV DVS Plan; and
  - 3.1.2 act as the *Contractor's* authorised representative on all matters concerning the Agreed HGV DVS Plan ("**HGV DVS Co-ordinator**").
- 3.2 The *Contractor* shall add the HGV DVS Co-ordinator's details to their list of Key Personnel.

### **4 Self Certification and Reporting**

On each 12 month anniversary of the Contract Commencement Date, the *Contractor* shall submit a report to the *Employer* which sets out the *Contractor's* progress in respect of implementation of the Agreed HGV DVS Plan and confirms (with supporting evidence) that the *Contractor* has complied with the Agreed HGV DVS Plan.

**5 DVS Infractions**

5.1 Without limiting the effect of any other provision of this Contract relating to termination, if the *Contractor* fails to comply with the terms of this Schedule:

5.1.1 the *Contractor* shall be deemed to have committed a material breach of this Contract; and

5.1.2 TfL may refuse the *Contractor*, its employees, agents/Contractor Personnel and each Category N3 Lorry and Category N2 Lorry entry onto any property that is owned, occupied or managed by or on behalf of TfL for any purpose (including but not limited to deliveries).

**APPENDIX TO HGV DVS CONTRACT SCHEDULE**

**Note**

Appendix 1 will be the Initial HGV DVS Plan submitted as part of the tender submission and will be developed to form the Agreed HGV DVS Plan

**SECTION 8**

## SCHEDULE 8

### Handover and Handback Requirements

#### Handover and Handback Process

The process of handing over the trams from TCL (LT Fleet Maintenance) to the Contractor, and for handing them back to TCL (LT Fleet Maintenance) on completion of the works is described in the flow chart below.

The process ensures that the tram functionality and condition are checked and agreed before handover to the Contractor for modification to ensure that the Contractor is provided with a suitable vehicle.

The process ensures that maintenance arrangements for the tram, should they be required between the handover and handback times, are defined and agreed.

The process ensures that after PPOS modification a joint review of the Tram is carried out to ensure that the tram is returned in a condition no worse than it was at handover.

#### Handover and Handback Strategy

##### 1. Description of the Project Works

###### Summary of Proposed Change

Following overturning of Tram 2551 in November 2016 with catastrophic consequences, RAIB have recommended that UK Tram operators should research ways of initiating appropriate automatic responses to tram over speeding events. If reasonably practicable such devices should be introduced onto UK tramways.

Recommendation 3 from RAIB in their report on the Sandilands incident (Report 18/2017: Overturning of a tram at Sandilands junction, Croydon):

*"The intent of this recommendation is to prevent serious accidents due to excessive speed at higher risk locations on tramways. These locations are likely to include all locations where a substantial speed reduction is required for trams approaching at relatively high speed. Implementation of this recommendation may be assisted by work in this area already underway by Croydon tramway organisations"*

LT have taken the decision to both investigate and implement such a solution.

The project shall deliver a system capable of tram speed monitoring and automatic brake application at defined high risk points on the network, thereby significantly reducing the likelihood and frequency of trams over speeding in defined high risk areas.

An independent Safety Risk Analysis has determined that due to its safety critical nature, PPOS shall be provided with a Safety Integrity Level (SIL) rating of SIL 2.

The scope of the project will be broadly as follows;

- Tram modifications:

- Install PPOS on tram equipment permitting speed monitoring and automatic brake application.
  - Install PPOS on tram communications equipment to allow event reporting to the LT Control Room.
  - Provide in cab PPOS health status indication.
  - Provide on tram PPOS reset & inhibit functions.
- Lineside modifications:
    - Install tram energised track beacons at defined high risk locations.
- Control Room modifications:
    - Install PPOS event reporting equipment.
- IMS Updates:
    - Operating concept update.
    - Operational and maintenance personnel training, and maintenance task updates.
    - Asset modification and documentation updates to the LT IMS.
    - Provision of spares.

#### Success Criteria

The success criteria for the project are:

- Tram are modified such that when over speeding in defined high risk locations, the PPOS system causes them to be automatically braked to a standstill.
- The PPOS system informs the driver of the system's health status via in cab indication.
- In the event that the PPOS system causes a tram to be automatically braked to a standstill, the system will report the event to the Control Room.
- Under the appropriate operational control, the PPOS system may be reset or inhibited by on tram controls.
- Track beacons are installed at defined high risk locations causing the PPOS system to automatically brake trams to a standstill if an over speeding event is detected.
- The LT Control Room is informed by the PPOS system in the event of a system activation.
- The network Operating Concept is updated to include the existence, functionality and control of the PPOS system.
- Operational and maintenance personnel are trained in the operation and maintenance of the PPOS system.
- The LT IMS is updated to include the existence, functionality and control of the PPOS system.
- An appropriate level of maintenance spares are provided to support the operation of the PPOS system.
- Appropriate licensing and warranties are provided to support the operation of the PPOS system.

#### Interfaces

As a minimum, the project will interface with the following areas and systems/ assets:

- Rolling Stock
- Depot facilities
- Systems Integration Project
- Trackside Infrastructure
- Control Room environment
- TOL Operational controls
- Maintenance

This Handover/Handback document details the process of releasing and returning the Bombardier and Stadler trams for the purpose of undertaking the PPOS works to an acceptable completion level.

## **2. Programme**

The fleet implementation is planned to commence in the Spring of 2019. The dates for the delivery stages are broadly as follows, but are subject to confirmation on PPOS contract award and appointment of a Supplier in October 2018.

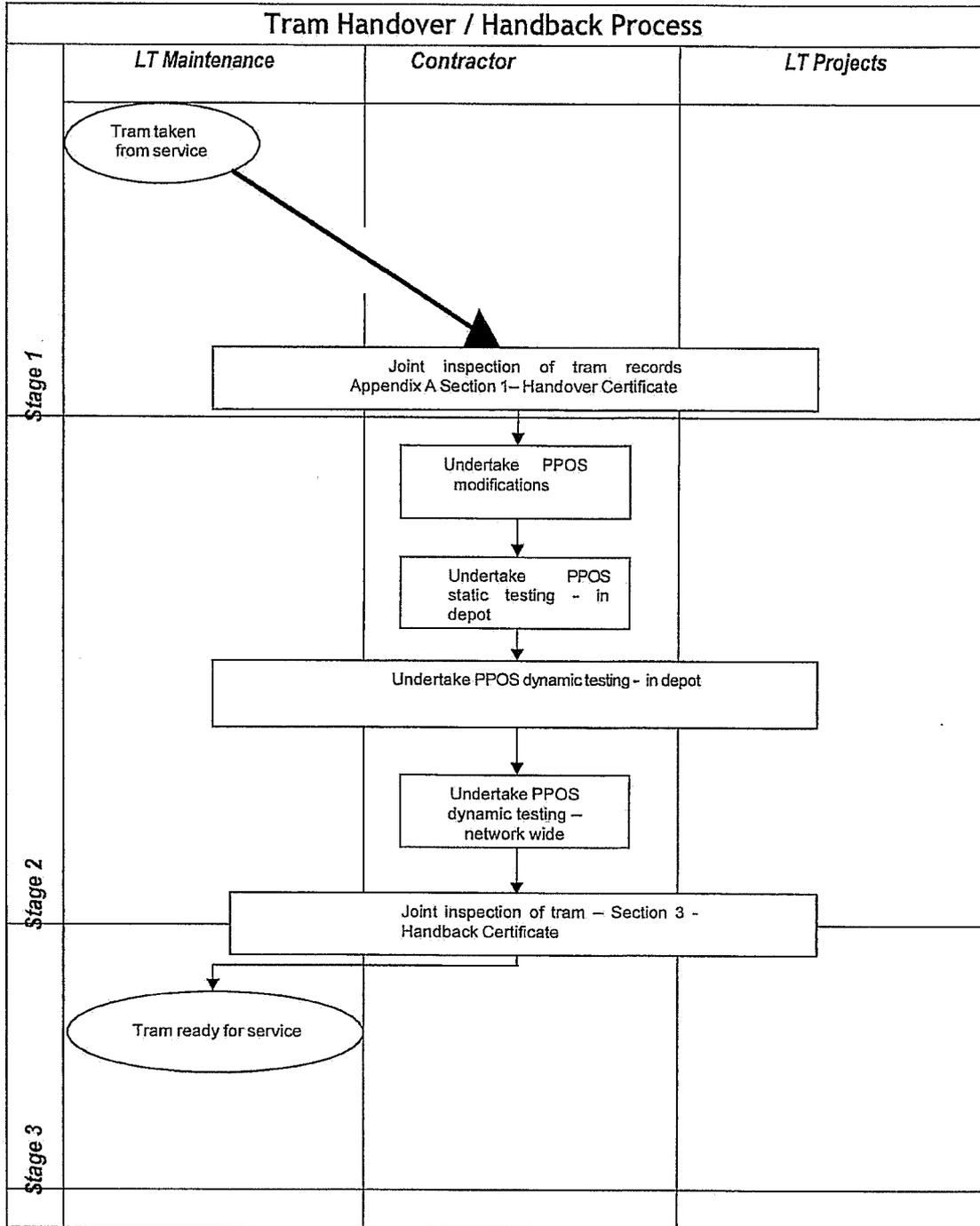
- o Design; October 2018 – April 2019
- o Fleet installation & acceptance; 1<sup>st</sup> Bombardier tram April – July 2019
- o Fleet installation & acceptance; 1<sup>st</sup> Stadler tram April – July 2019
- o Fleet installation & acceptance; Remaining fleet August – December 2019

No more than one tram will be allocated to the PPOS project for installation at any given time, although other trams may be undergoing trial operations in parallel.

### **3. Handover and Handback Process - Vehicles**

#### HO and HB Process trams

The methodology of handing over the tram from TCL(LT Fleet Maintenance) to the Contractor, and for handing them back to TCL(LT Fleet Maintenance) is described in the flow chart over leaf. The process will allow for the tram functionality and condition to be checked before modification to ensure that the Contractor are provided with a suitable tram. After tram modification a joint review will be done to ensure that the tram is returned in a condition no worse than it was previously. The sign off paper work for this three staged process can be found within the Appendices.



#### 4. Roles and Responsibility

##### Roles and responsibility

This project has several key stakeholders who will each need to support the Project to ensure a successful execution. To clarify the roles and responsibilities of all companies the following table has been generated.

TCL(LT Fleet Maintenance)	<ul style="list-style-type: none"><li>• Provide Trams for PPOS modification.</li><li>• Test Trams according to Appendix A section 1 and 3 of the Handover/Handback Process and Test Record Control Document.</li><li>• Make available the depot overhead shore supply in depot together with necessary instructions, training and restrictions in relation to its use.</li><li>• Sign the Handover and Handback documents before and after the works are complete.</li><li>• Make available fork lift support including operative to assist Contractor with deliveries. (Deliveries to be arranged within time slot 08.00 – 16.00 Monday to Friday). This support does not include public holidays and bank holidays.</li><li>• Provide depot training as required to Contractor.</li></ul>
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Contractor	<ul style="list-style-type: none"> <li>• Provide labour to carry out the PPOS works to meet the agreed programme of works.</li> <li>• Carry out PPOS modification works</li> <li>• Provide all necessary tooling</li> <li>• Provide suitably qualified and experienced personal to attend LT maintenance depot training course.</li> <li>• Sign off appropriate sign off sheets.</li> <li>• Provide own secure storage of parts and tools once delivered.</li> <li>• Cooperate with TCL (LT Fleet Maintenance) regarding shared facilities, access and delivery.</li> <li>• Collect, keep secure and dispose of all waste and redundant parts arising from the works.</li> <li>• Keep Therapia Lane depot clean and tidy at all times.</li> </ul>
LT Projects	<ul style="list-style-type: none"> <li>• Provide authorisation to carry out works</li> <li>• Provide overall project management and coordination of activities for all of the works</li> <li>• Support the Contractor whilst on site.</li> <li>• Sign off the PPOS works</li> <li>• Provide suitable experienced personnel to carry out the role and duties of Project management including coordination and direction of all parties' work activities</li> <li>• LT Project are responsible for design and provision of suitable assurance documentation for modifications and, in conjunction with TSG, for sanctioning passenger services</li> </ul>

AB

**5. Identification of Stakeholders**

The key stakeholder contact details are located below: -

*Main Stakeholders:*

<b>Asset Manager</b>	
<b>Name</b>	[REDACTED]
<b>Job Title</b>	Fleet Manager
<b>Company</b>	London Trams
<b>Contact Details</b>	[REDACTED]

<b>Programme Manager</b>	
<b>Name</b>	[REDACTED]
<b>Job Title</b>	Programme Manager
<b>Company</b>	London Trams
<b>Contact Details</b>	[REDACTED]

<b>LT Technical Services Group</b>	
<b>Name</b>	[REDACTED]
<b>Job Title</b>	Technical Services Group Manager
<b>Company</b>	London Trams
<b>Contact Details</b>	[REDACTED]

<b>LT Project Supervisor</b>	
<b>Name</b>	[REDACTED]
<b>Job Title</b>	Project Supervisor
<b>Company</b>	London Trams
<b>Contact Details</b>	[REDACTED]

<b>Contractor; Project Manager</b>	
<b>Name</b>	[REDACTED]
<b>Job Title</b>	Project Manager
<b>Company</b>	Engineering Support Group Limited
<b>Contact Details</b>	[REDACTED]

<b>Contractor; Project Supervisor</b>	
<b>Name</b>	[REDACTED]
<b>Job Title</b>	Project Engineer
<b>Company</b>	Engineering Support Group Limited
<b>Contact Details</b>	[REDACTED]

**6. Site Plan and Access**

*NB*

Refer to Pre-Construction Information document (Ref: SLI-009-138)

**7. Existing and New Assets Affected**

The PPOS modification will be applied to all Bombardier and Stadler trams.

Further information refer to Pre-Construction Information document (Ref: SLI-009-138)

**8. Proposed CDM Responsibilities**

Not Applicable for this project

**9. Site Reporting and Access Arrangements**

Contractor's personnel are required to sign on at the security desk at the entrance to Therapia Lane depot, and then sign on with the LT Project Supervisor.

Contractor will have use of Therapia Lane depot staff parking facilities, and will be able to organise material deliveries to the site. Depot messing and toilet facilities in are also available for PPOS contractor / staff while working in the depot.

Refer to Pre-Construction Information document for depot access and arrangement. (Ref: SLI-009-138)

Facilities and tools

The Contractors will need to provide their own tools and equipment. Any facilities / tool requiring provision from London Trams will need to be formally requested via Technical Query.

**10. Availability of existing information for Existing Assets**

Refer to Pre-Construction Information document (Ref: SLI-009-138) for information for existing assets.

Contractor is responsible for identifying surveys required to verify information provided by LT and to obtain information omitted from Pre-Construction Information, the scope needs to be agreed with LT before commencing any physical survey works.

**11. Requirements for Handover of Existing Assets**

All vehicles on this trial should be of a serviceable condition.

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## **12. Maintenance Requirements and Responsibilities**

The physical work to be undertaken on the tram will affect the future maintenance requirements, as additional components / systems will be installed. Maintenance instructions will be updated by the Contractor to reflect changes required.

## **13. Bringing Back into Operational Use**

Once complete the Contractor will advise the project team / London Trams that the tram is ready to be handed back. Tests will then be conducted in accordance with the procedure detailed in Appendix B to then ensure that the tram is fit for passenger running. Appendix B will be completed before the tram is returned to operational service.

## **14. Project Works requiring attendance by the Asset Manager**

The Asset Manager or a nominated representative will make themselves available to oversee the modification works in progress and will satisfy themselves that the work undertaken is in accordance with the design, the parts supplied and quality of the workmanship meet the standards expected by the Asset Manager.

Requirements for the Handback of Assets part of the Handback strategy the PPOS system is to be set up and tested in line with the requirements stated above in Appendix B.

## **15. Supply of Asset Data on the Particular Asset(s)**

Installation of PPOS system are likely to have new component part numbers and / or serial number and therefore will require input into the Ellipse by the Contractor.

## **16. Process for closing out snagging items**

The Contractor will attend the tram until the London Trams are satisfied that the full PPOS system has been completed to an acceptable standard. This will follow the process and be covered under Appendix B.

## **17. Defects Liability and Warranty**

Defect liability lies with London Trams/ Contractors for these works. The Contractor to advise warranty provisions, ready for fleet implementation.

## **18. Acceptable Completion Level**

The tram should be returned to London Trams / TOL in a condition – aside from the modification works carried out, that is consistent with the condition it was in when handed to the Contractor to carry our modification works to the tram.

## **19. Third Parties Management**

The works are to be carried out with London Trams Sandilands project taking overall Project and Programme management responsibility. The Contractor / will act under the control of the London Trams Sandilands project team, and will provide all specialist skilled labour, materials and components for the PPOS system.

**20. Asset Change Control Procedure Requirements**

In accordance with the project Technical Assurance Plan, there are progressive decision points where the success of PPOS system trials must be established. These decisions will be taken by the project stakeholders on review of satisfactory assurance evidence supporting PPOS deployment up to that point.

**21. References**

References
SLI-009-134 PPOS Technical Assurance Plan
SLI-009-138 Pre-Construction Information Document
Employer's Requirements
Handover Handback Strategy - Infrastructure

NS

## Appendix A: Handover Record

HANDOVER CERTIFICATE			
<b>PROJECT TITLE: Physical Prevention of Over Speeding (PPOS)</b>			
Tram No: _____ Pre MOD km: _____			
<b>PROJECT CONTRACT NUMBER:</b>			
<b>1. DESCRIPTION OF PARTICULAR ASSET(S) TO BE HANDED OVER</b>			
<b>2. CONDITIONS /DEFICIENCIES NOTED AND AGREED AT TIME OF HANDOVER</b>			
<b>3. DECLARATION</b> This certificate records the acceptance of transfer from the Asset Manager of asset management responsibility to the Project Works Contractor for the Particular Asset(s) identified above.			
Name	Representing	Organisation	Signature
	Project Works Contractor/ Representative		
	PPOS Project Team	London Trams	
	Fleet / Asset Manager	London Trams	
Effective from Time		Effective from Date	
<b>4. ADDITIONAL NOTES</b>			

## Appendix B: Handback Record

HANDBACK CERTIFICATE				
<b>PROJECT TITLE: Physical Prevention of Over Speeding (PPOS)</b>				
Tram No: _____		Post MOD km: _____		
<b>PROJECT CONTRACT NUMBER:</b>				
<b>1. DEFICIENCIES IN PROJECT WORKS</b> The following list shall include all deficiencies in the Works, compared to the project specification. The list shall also include deficiencies in adjacent assets which are attributable to the Project Works Contractor. Use additional sheets if necessary				
Defect/Non- Conformance Number (see attached sheet)	Date to be completed by	Action by	Date completed	Contractor Signature
<b>2. DECLARATION</b> A full check has been carried out on all items listed in Appendix C. This certificate records the acceptance back of asset management responsibility from the Project Works Contractor to the Asset Manager of the Particular Asset(s) shown above.				
Name	Representing	Organisation	Signature	
	<b>Project Works Contractor/ Representative</b>			
	<b>PPOS Project Team</b>	<b>London Trams</b>		
	<b>Fleet / Asset Manager</b>	<b>London Trams</b>		
<b>Effective from Time</b>		<b>Effective from Date</b>		
<b>3. NOTES</b>				

*NB*

## Appendix C: Tram Handback Checklist modifications

\*Note: This checklist includes operational generic checks prior to bringing tram into service. The Contractor is responsible for expanding the checklist by including items specific to PPOS installation. The Contractor should seek agreement with London Trams / project team for final tram handback checklist.

<b>ALL CABS TO BE CHECKED PRIOR TO HAND BACK FOR SERVICE</b>			
<b>CAB INTERIOR CHECKS</b>			
	<b>BOMBARDIER CR4000 TRAM</b>	<b>STADLER SVT TRAM</b>	<b>Action</b>
<b>1</b>	Check First Aid Kit is present and sealed (A Cab)	Check First Aid Kit is present and sealed (A & B Cab)	TOL
<b>2</b>	Check and record kilometre reading (A Cab)		LT
<b>3</b>	Check condition and operation of all cab blinds		LT
<b>4</b>	Check driver's seat is fully operational and secure		LT
<b>5</b>	Set exterior blinds to display <b>DEPOT</b>		LT
<b>6</b>	Check driver's key switch is functional; confirm mode Switch reverse position non-selectable		LT
<b>7</b>	With mode Switch in forward, operate main beam & check main beam warning light is operational		LT
<b>8</b>	With mode Switch in forward; check sand button is illuminated and operate sanders	Sand button is not illuminated on this tram	LT
<b>9</b>	Check operation of Bell & Horn		LT
<b>10</b>		Check foot rest platform raises and lowers correctly	LT
<b>11</b>	Confirm that the sealed switches are secured correctly		LT
<b>12</b>	Check operation of Cab heating & ventilation controls	Check operation of air conditioning	LT
<b>13</b>	Check operation of mirror control switch and condition of external mirrors	Check internal mirror / monitors (CCTV)	LT
<b>14</b>	Operate Emergency Stop button (Red mushroom)		LT
<b>15</b>	To be carried out on a weekly basis, operate the Emergency Pantograph down button (reset button after test)		LT
<b>16</b>	Check backlights on Vecom & speedometer		LT
<b>17</b>	Check Park Brake warning Light operational		LT
<b>18</b>	Check Radio has power, backlight operational and display readable		LT
<b>19</b>	Check operation of internal & external PA system carry this out by using the words (Testing-Testing)	This will only work on the external speakers when left or right side doors are selected	LT

20	Check operation of cab light switch		LT
21	Check operation of saloon light Switch	This must be checked in position Automatic, daylight & LED	LT
22	Check operation of all 4 windscreen wiper modes		LT
23	Check windscreen wash is operational		
24	Check Track Brake button is illuminated and confirm it is operating correctly		
25	Check CCTV monitor is working	Check internal CCTV monitor display screen (above head) for any error reports - e.g. 'camera failed', 'HDD error'	
26	When assistant has indicated he/she are at the rear of the Tram, place Mode Switch to forward, put the TBC into brake notch to the brake lights	When assistant has indicated that he/she are at the rear of the Tram, press the brake button on the diagnosis screen, then press the Brake light test button on the far left of the screen ( Light illuminates	
27	Check Fog light button is illuminated and operate		
28	Operate Left Right Indicators		
29	Operate Hazard lights		
30	Once assistant has confirmed that all light functions are operational, return the TBC back to the coast position and place Mode Switch to AUX	Once assistant has confirmed that all light functions are operating correctly, turn them back to the off position	
<b>SALOON INTERIOR CHECKS</b>			
1	With Mode Switch to AUX, assistant to check for out of service PHP's, any that are not in service will be indicated by a telephone handset symbol that has a cross stroked through and will be illuminated in red	Ask assistant to operate a PHP, confirm alarm on the ERIC and answer call with the words (Testing-Testing) end the call	LT
2	Mode switch to forward ask assistant to operate an Emergency Door Handle, confirm warning light illuminates, confirm audible alarm operates (Reset)	Ask assistant to operate an Emergency Door Handle, confirm that the audible warning operates, press the doors button on the diagnosis screen, confirm door number (Reset Handle)	LT
3		Ask assistant to operate an Emergency Brake Handle, confirm that audible warning is operating, correct handle number on diagnosis screen. Confirm Emergency Brake message on ERIC. Reset handle. Clear message from ERIC by pressing the Red button C	LT
4	With doors closed ask assistant to operate a stop request button, confirm the chirrup is operating and that a stop request is displayed in the drivers cab.	With doors closed ask assistant to operate a stop request button, confirm the audible alarm is operating and check diagnosis screen for visual display of the door that has been operated e.g. normal passenger door or wheelchair door	LT

No

5	With the mode switch in forward, operate all door buttons, checking the RED & GREEN warning lights operate correctly	Operate all doors on both sides using the correct door operation making sure that the green light illuminates	LT
6	Correctly checks door safety features, beam/pressure sensitive edges	Operate all doors on both sides to check beam and pressure sensitive edges	LT
7	Check the points bar is serviceable		LT
8	Check the Emergency Hammer for breaking glass is in place and sealed		LT
9	Check Fire extinguisher is present and sealed		LT
10	Check saloon lights are operational		LT
11	Check internal body work		LT
12	Check articulation bellows for any damage		LT
13	Check that there are no DOOR NOT IN USE stickers in placed on any door		LT
14	Ensure that the disabled stickers are in place		LT
15	Check condition of the internal information posters		LT
16	Check that the internal seats are free from damage and fit for use		LT
17	Check general condition of all windows		
18	Check general condition of the floor		
19	Check all interior fittings are serviceable and fit for use		
<b>EXTERIOR CHECKS</b>			
1	Confirm operation of dipped and main beam headlight is correct		LT
2	Confirm operation of all indicators and hazard warning lights		LT
3	Check Cyclops and sidelights		LT
4	Check white marker lights are operating correctly		LT
5	Confirm front reflectors are serviceable		LT
6	Check for windscreen damage		LT
7	Check condition of wiper blades		LT
8	Check coupling panel is secure and locked		LT
9	Check all destination blinds are operating and in sync		LT
10	Check cab door is serviceable and lock is operational	Cab door check will be carried out from saloon	LT
11	Check washer bottle fluid level		LT
12	Check sand box LED status and security of filler flaps	Check security of sand box filler flaps	LT
13	Check traction bogie flaps are secure and no evidence of hydraulic fluid leaks		LT
14	Confirm leading axle sand pipes are operating		LT
15	Check Orange marker lights are operational and Orange reflectors in place		LT

16	Check condition of all body panels		LT
17	Check condition of all saloon windows		LT
18	Check Pantograph is in contact with the OLE		LT
19	Check articulation bellows are in a fit condition		LT
20	Check the security of C-car bogie cover shield		LT
21	Check C-Car bogie hoses for hydraulic leaks	Not visible on this tram	LT
22	Confirm Red marker lights are operational		LT
23	Confirm tail, Brake & Fog lights operational		LT

**SECTION 9**

## SCHEDULE 9

### Change Control Procedure

#### Counterparties:

- (1) **Tramtrack Croydon Limited**, a company incorporated in England and Wales (under company registration number 03092613), whose registered office is at 55 Broadway, London SW1H 0BD, England ("TCL"); and
- (2) **ENGINEERING SUPPORT GROUP LIMITED**, a company registered in England and Wales under company registration number 03038421), whose registered office is at Lakeside Business Park, Carolina Way, Doncaster, South Yorkshire, DN4 5PN (the "**Contractor**").

Contract Number: **LT-C-17-466**

Variation Number: [to be inserted at time of the variation]

Date: [to be inserted at time of the variation]

#### AUTHORITY FOR VARIATION TO CONTRACT (AVC)

Pursuant to the Agreement, authority is given for the variation to the Agreement as detailed below. The duplicate copy of this form must be signed by or on behalf of both parties as an acceptance by both parties of the variation shown below.

DETAILS OF VARIATION	AMOUNT (£)
<b>ALLOWANCE TO TCL</b>	
<b>EXTRA COST TO TCL</b>	
<b>TOTAL</b>	

ACCEPTANCE BY ENGINEERING SUPPORT

NB

**GROUP LIMITED**

**Date**

**Signed**

**Print Name**

**ACCEPTANCE BY TCL**

**Date**

**Signed**

**Print Name**

**SECTION 10**

## SCHEDULE 10

### Cyber Security

#### 1. DEFINITIONS

<b>"Cloud"</b>	A type of internet-based computing service where organisation can have aspects of their IT infrastructure managed by external providers, normally as a Software as a Service (SaaS), Platform as a Service (PaaS) or Infrastructure as a Service (IaaS) basis
<b>"Cyber Essentials Scheme"</b>	is a UK government scheme encouraging organisations to adopt good practice in information security, focussing mainly on technical controls rather than governance, risk, and policy
<b>"Cyber Security Policy / Policies"</b>	The high level Cyber Security requirements for all IT and Operational technology and data owned by TCL or operated and supported by third parties for on behalf of TCL.
<b>"Cyber Security Standard(s)"</b>	The technical detail behind the implementation of the high level cyber security requirements as set out in the Cyber Security Policies.
<b>"Data"</b>	means data created, generated or collected, during the performance of the Services (or any part thereof), including Personal Data and data supplied to TCL and members of the TFL Group in connection with the Services or this Agreement;
<b>"Good Industry Practice"</b>	means the exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator engaged in the same type of undertaking under the same or similar circumstances.
<b>HMG Information Security Assurance Standards</b>	the meaning and definition as well as relevant policy documents and standards can be found at <a href="https://www.gov.uk/government/collections/government-security">https://www.gov.uk/government/collections/government-security</a> or any updated link;
<b>"Information Asset Register"</b>	means a register of all information assets relating to the services connected to this Agreement as detailed in paragraph 3.2(c)
<b>"Information Security Management System" or "ISMS"</b>	a framework of governance models, policies and procedures, based on a business risk approach to establish, implement, operate, monitor, review, maintain and improve information security in accordance with the requirements of Paragraph 15
<b>ISO/IEC 27001</b>	is an information security standard specification for an information security management system (ISMS), with an emphasis on measuring and evaluating how well an organisation's ISMS is performing.
<b>"IT Services"</b>	means the IT services that support the delivery of the Services;
<b>"Malicious Software"</b>	means any software that brings harm to a computer system. Commonly known as malware can be in the form of worms, viruses, trojans, spyware, and adware which steal protected data, delete documents or add software not approved by a user.
<b>"Operational"</b>	means any hardware or software which monitors and/or operates a physical process.

*W.B.*

<b>"Technology"</b>	
<b>"Outline Security Management Plan"</b>	means the security plan provided by the Contractor as part of their tender submission
<b>"Removable Media"</b>	any type of storage device that can be removed from a computer while the system is running. Examples of removable media include CDs, DVDs and Blu-Ray disks, as well as diskettes and USB drives
<b>"Security Incident"</b>	a potential or actual event or attempted breach of security affecting the confidentiality, integrity or availability of the Services, IT Services or Networks which process or hold Data
<b>"Security Management Plan"</b>	means the Contractor's security plan developed and revised pursuant to Paragraph 14
<b>"Security Policy"</b>	means any TCL security policies as amended by TCL from time to time;
<b>"Security Risk"</b>	meaning all Risks associated with the security of the Services which may have a negative impact upon the agreed security posture, including information security and any risks identified pursuant to the Security Management Schedule.
<b>"Security Risk Register"</b>	means a register of Security Risks produced and maintained as detailed in paragraph 3.2(b)
<b>"Service Assets"</b>	means all assets and rights including all physical assets, Software, IPR, as well as spares and components whether in storage, repair or on sites, used by the Contractor to provide the Services in accordance with this Agreement;
<b>"Contractor Personnel"</b>	means all employees, agents, consultants and contractors of the Contractor or of any Sub-Contractor
<b>"Contractor Premises"</b>	means any land or building where the Contractor carries out any part of this contract
<b>"TCL Information Security Controls Framework"</b>	means a hierarchy of IT security documents consisting of the high level Information Management Security Policy and ten security principles (Information Security Controls Framework) available upon request
<b>"TCL Network(s)"</b>	means the network infrastructure and services owned or used by TCL to support the delivery of the IT Services.
<b>"TCL Personnel "</b>	means all employees, agents, consultants and contractors of TCL
<b>"TCL Restricted"</b>	as defined in the TCL Information Security Classification Standard (listed in Annex 5)
<b>"TCL Sites"</b>	means all TCL premises where the services are delivered

## **2. SCOPE AND PURPOSE**

2.1 The purpose of this Schedule is to:

- (a) set out the principles of protective security to be applied by the Contractor in its delivery of the Services;
- (b) set out the Contractor's wider security obligations relating to the Services;
- (c) set out the Contractor's requirements to test and audit the Services including any Information Security Management System, to ensure compliance with the security requirements set out in this Agreement;
- (d) set out the Contractor's obligations in the event of a Security Incident;
- (e) set out the principles for the Contractor's development, implementation, operation, maintenance and continual improvement of the Security Management Plan;
- (f) set out the principles for the Contractor's development, implementation, operation, maintenance and continual improvement of the Information Security Management System;
- (g) set out any Contractor obligation for certification against the Services such as, ISO/IEC 27001, the Cyber Essentials Scheme or HMG Information Security Assurance Standards;
- (h) set out any Contractor requirements to deliver the Services or Service Assets in accordance with the CESG Commercial Product Assurance (CPA) Scheme; and
- (i) set out the requirements on the Contractor when delivering the Service(s), which are aligned with the 10 Steps to Cyber security set out by the Government (see Annex 5).
- (j) the Supplier's obligation to comply with the Operations Technology Cyber Security Standards (see Annex 5).

## **3. SECURITY PRINCIPLES**

3.1 The Contractor acknowledges that security, data protection and confidentiality are of fundamental importance in relation to its provision of the Services and TCL's ability to retain public confidence. The Contractor shall at all times comply with the security principles set out in Paragraph 3 in the delivery of the Services.

3.2 In recognition of the importance that TCL places on security, data protection and confidentiality, the Contractor shall ensure that a director or relevant individual, as agreed by TCL, is made aware of the risks set out in the Security Management Plan and is assigned overall responsibility for ensuring that:

- (a) appropriate members of Contractor Personnel and the Contractor's management team take responsibility for managing the different levels of security risk and promoting a risk management culture;
- (b) a Security Risk Register is produced and maintained and that all Security Risks are documented in an appropriate manner and is included in any contract risk register if one is in place. This Security Risk Register must be available for audit when reasonably required by TCL as set out in Clause 7 of this Schedule
- (c) an Information Asset Register is produced and maintained and that all assets are documented in an appropriate manner in the Information Asset Register and shall identify the criticality of the relevant Service Assets in the delivery of the Services. This register must be available for audit when reasonably required by TCL as stated in Paragraph 7 of this Schedule and when a Security Incident occurs.

- (d) supporting policies are implemented (where relevant) and communicated with Contractor Personnel.

3.3 The Contractor shall, and procure that its Sub-contractors shall, at all times ensure that:

- (a) security threats to the Services are minimised and mitigated;
- (b) the Services shall fully comply at all times with:
  - (i) any security requirements set out in Annex 3;
  - (ii) the agreed Outline Risk Management Processes and approach set out in Annex 2; and
  - (iii) Good Industry Practice.

3.4 The Contractor must notify TCL of any instances where software, applications, services or processes are hosted or run from the cloud that are not part of the Agreement, and that host, process or connect with any of TCL Operational or IT technology, Data and Networks or handle TCL Data. The Contractor is responsible for ensuring that any such cloud services comply with this Cyber Security Management Schedule.

#### 4. **ACCESS CONTROLS AND SECURE CONFIGURATION OF SYSTEMS**

4.1 The Contractor shall comply with all obligations relating to the patching and configuration management of Service Assets as set out in Annex 4 in addition to any specific obligations set out in Annex 4, the Contractor shall ensure that:

- (a) security patches are applied to Service Assets as soon as possible in line with vendor recommendations in accordance with overall risk management;
- (b) account management and configuration control processes are implemented to ensure that access to Service Assets by Contractor Personnel is limited to the extent required for them to fulfil their roles in supporting the delivery of the Services.
- (c) when Contractor Personnel change roles or no longer support the delivery of the Services access rights are revoked or reviewed;
- (d) any system administration functionality is strictly controlled and restricted to those Contractor Personnel who need to have access to such functionality and that the ability of Contractor Personnel to change the configuration of the Services is appropriately limited and fully auditable;
- (e) Contractor Personnel are informed of what constitutes acceptable access of Operational or IT technology, Data and Networks and the consequences of non-compliance;
- (f) any preconfigured passwords delivered with any Service Assets are changed prior to their implementation for use in the Services;
- (g) the Services have appropriate devices, tools or applications in place to filter traffic or separate connections, such as industry standard firewalls and Malicious Software protection, to all public or private networks which are not controlled by or on behalf of TCL.
- (h) all wireless functionality is secure; and
- (i) software upgrades and patching must be managed appropriately and access to any software shall be granted using the principle of least privilege.

#### 5. **CONTRACTOR PERSONNEL**

5.1 The Contractor shall, appoint a member of Contractor Personnel to be the security manager who shall be responsible for the development, monitoring, enforcement, maintenance and enhancement of all security measures set out in this Agreement (the "**Security Manager**"). The Security Manager shall be a member of the Key Personnel

5.2 The Contractor shall ensure that all Contractor Personnel are security screened or vetted appropriate to the Data and shall provide TCL within five (5) working days of the Effective Date, and every twelve (12) months thereafter, written confirmation that this obligation has been complied with.

5.3 The Contractor shall immediately notify TCL if it becomes aware of any security clearance issues in relation to the Contractor Personnel and the Contractor shall undertake any action requested by TCL in relation to mitigating the impact of any such security clearance issues.

**6. TRAINING**

6.1 The Contractor shall ensure that all Contractor Personnel have undergone suitable security awareness training prior to their deployment and such security awareness training shall cover, as a minimum; account usage, malicious software, home and mobile working, use of removable media, audit and inspection and Security Incident reporting and data handling. The Contractor shall implement an up-to-date on-going programme of security awareness training for Contractor Personnel throughout the Term.

6.2 The Contractor shall provide additional training to its Contractor Personnel, which may be required following a Security Incident, the application of a patch or update, or any relevant Change or Variation.

6.3 The Contractor shall ensure that all Contractor Personnel are familiar with their responsibilities under applicable law and policies including, as a minimum, the Data Protection Legislation, the Security Policies set out in Paragraph 1 of this Schedule and policies in relation to the handling of protectively marked materials both during their employment and following the termination of or change to the terms of their employment.

**7. TESTING & AUDIT**

7.1 The Contractor shall conduct regular automated vulnerability scans of the Services, as agreed in the Risk Management Process and ensure that any identified vulnerabilities are appropriately mitigated or patched in line with the TCL Security Patching standard (Annex 5), taking into consideration the risk posed to TCL and the Services.

7.2 The Contractor shall conduct security tests, including ethical hacking and penetration tests, to assure compliance with the Security Incident Management Process, the security provisions in this Agreement, the Security Management Plan. The Contractor shall conduct security testing in accordance with the Security Management Plan. The Contractor shall conduct such security tests, as a minimum, every twelve (12) months from the Effective Date and shall include security penetration testing of the Services and the associated technical infrastructure. Wherever the Services are accessible from the internet or other such public network, the Contractor shall carry out security penetration tests from the internet or the public network.

7.3 The Contractor shall, within one (1) week completion of the security tests carried out in accordance with Paragraph 7.2, provide a report to TCL setting out:

- (a) the outcome of such security tests including all identified vulnerabilities;
- (b) the Contractor's plans to remedy each such identified vulnerability as soon as possible, provided that any such remediation must be implemented in accordance with this Agreement including the Change Control Procedure.

7.4 The Contractor shall implement its plans to each identified vulnerability in accordance with the report delivered pursuant to Paragraph 7.3 save to the extent directed by TCL in writing.

7.5 The Contractor shall, upon request by TCL, following a Security Incident, carry out such additional security testing over and above the obligations set out in Paragraph 7.2 as TCL requires.

7.6 TCL shall be entitled to send a member of TCL Personnel to witness the conduct of any audit or security tests carried out by or on behalf of the Contractor. The Contractor shall provide TCL with the results of such audits (in a form agreed with TCL in advance) as soon as practicable after the completion of each audit or test.

7.7 In addition to complying with the Requirements, PCI DSS where applicable and other relevant industry standards and Good Industry Practice, the Contractor shall at least once during each twelve (12) month period starting from the Service Commencement Date, engage an appropriately skilled third party to conduct a formal audit of the Services against the then current versions of the following:

- (a) the security controls, processes and procedures required pursuant to this Agreement;
- (b) the Data Protection Legislation (using BS10012 or another standard as agreed with TCL), where applicable; and
- (c) the Security Management Plan,

and shall, within five (5) Working Days of becoming aware of actual or potential security issues which impact or could impact the Services, the Contractor shall inform TCL of each such issue and shall keep TCL up-to-date as the Contractor investigates the nature and impact of such issue. Within five (5) Working Days of the finalisation of the audit findings, the Contractor shall provide to TCL a copy of all such findings which are relevant to the Services.

7.8 Without prejudice to any other right of audit or access granted to TCL pursuant to this Agreement or at Law, TCL and/or its representatives may carry out such audits in relation to security matters as are reasonably required to assess the Contractor's compliance with the Information Security Management System and the Security Management Plan.

7.9 If any test or audit carried out pursuant to this Paragraph 7 reveals any non-compliance with this Agreement or vulnerability (and, in the case of a TCL audit, TCL has informed the Contractor thereof), the Contractor shall, as soon as reasonably practicable, provide TCL with a written plan to remedy each such identified vulnerability as soon as possible, provided that any such remediation must be implemented in accordance with this Agreement including the TCL Change Management Process and the Variation Procedure. The Contractor shall implement its plans to remedy each identified vulnerability in accordance with such report save to the extent directed by TCL in writing.

## **8. SECURITY INCIDENT MANAGEMENT PROCESS**

8.1 The Contractor shall, and shall procure that its Sub-contractors shall:

- (a) establish, document and share with TCL a process to identify and respond to Security Incidents and mitigate the impact of such Security Incidents on the Services, including in relation to assigning clearly defined roles and responsibilities to specific Contractor Personnel;
- (b) record each Security Incident and corresponding severity level in the Contractor's ISMS; and
- (c) without limitation to the other provisions of this Agreement, follow TCL's reasonable instructions in relation to the identification and resolution of any Security Incident.

8.2 The Contractor shall notify and ensure TCL is aware as soon as possible and in any event no later than within one (1) hour upon becoming aware of any Security Incident or any potential Security Incident.

8.3 In addition to the requirements in clause 8.2 the Contractor will additionally provide written notice with all relevant details reasonably available of any actual or suspected breach of security in relation to TCL Personal Data including unauthorised or unlawful access or Processing of, or accidental loss, destruction or damage of any Authority Personal Data

8.4 If a Security Incident occurs, the Contractor shall, within the framework of the Security Incident Management Process:

- (a) immediately take steps to assess the scope of the Data, user accounts and/or TCL Data compromised or affected including, but not limited to, the amount of Data and/or TCL Personal Data affected;

- (b) immediately take the steps necessary to remedy or protect the integrity of the Services against any such Security Incident;
- (c) securely collect and preserve evidence, including logs, to support the Security Incident management process described in this Paragraph and share with TCL such evidence via secure channels as requested by TCL;
- (d) handle any information pertaining to the Security Incident according to the handling requirements for TCL RESTRICTED information defined in TCL's Information Security Classification Standard;
- (e) promptly escalate the Security Incident to a person or governance forum with a level of seniority within the Contractor's organisation as TCL may reasonably require;
- (f) as requested by TCL:
  - (i) provide such information in relation to the Security Incident (including, if necessary, by collating such information from its and its Sub-contractors' systems and the Contractor Personnel);
  - (ii) provide relevant TCL Personnel with supervised access (or, if the Parties agree, direct access) to any relevant systems, Contractor Sites and Contractor Personnel in order to investigate the Security Incident; and
  - (iii) follow TCL's directions in relation to the steps necessary or desirable to remedy or protect the integrity of the Services; and
- (g) as soon as reasonably practicable develop and provide TCL with a copy of its remediation plan for the Security Incident which sets out full details of the steps taken and to be taken by the Contractor to:
  - (i) correct, make good, reinstate, replace and remediate all deficiencies and vulnerabilities, loss and/or damage to the Service Assets, Data, and/or Services in connection with the Security Incident; and
  - (ii) perform or re-perform any security tests or alternative tests relating to the security of the Service Assets and/or Services as appropriate and within the timescales specified by TCL, to assure TCL that the Security Incident has been addressed and its effects mitigated,

provided that any such remediation must be implemented in accordance with this Agreement including the TCL Change Management Process and the Variation Procedure. The Contractor shall fully implement and comply with such remediation plan save to the extent directed by TCL in writing

- 8.5 The Contractor shall provide a detailed report to TCL within two (2) Working Days of the resolution of the Security Incident, such report to detail:
- (a) the nature of the Security Incident;
  - (b) the causes and consequences of the Security Incident;
  - (c) the actions undertaken and length of time taken by the Contractor to resolve the Security Incident; and
  - (d) the actions undertaken by the Contractor to prevent recurrence of the Security Incident.
- 8.6 If there is a suspected security event up to and including a Security Incident, the Contractor shall to the extent requested by the TCL CISO (or any duly authorised delegate):
- (a) provide information in relation to the Services which is relevant collating, if necessary, relevant information from Sub-contractors' systems and the Contractor Personnel;

- (b) provide relevant TCL Personnel with supervised access (or, if the Parties agree, direct access) to any relevant systems, Contractor Sites and Contractor Personnel in order to investigate the security incident; and
- (c) follow TCL's directions in relation to the steps necessary or desirable to remedy or protect the integrity of the Services; and
- (d) work with TCL to identify any lessons learnt which could mitigate any gaps in process, policy or controls.

and TCL shall reimburse the Contractor's reasonable, demonstrable costs and expenses in relation to the Contractor's compliance with such request.

## **9. SECURITY LOGGING AND MONITORING**

- 9.1 The Contractor shall ensure that the Security Management Plan sets out its monitoring strategy to monitor its own performance of its obligations under this Schedule. The Contractor shall update its monitoring strategy as necessary throughout the term of this Agreement in response to:
- (a) changes to applicable laws, regulations and standards;
  - (b) changes to Good Industry Practice;
  - (c) any Changes or Variations and/or associated processes;
  - (d) any Security Incident; and
  - (e) any reasonable request by TCL.
- 9.2 The monitoring strategy should include, as a minimum, processes for monitoring and logging (as appropriate):
- (a) networks and host systems to detect attacks originating both on an internal private network or from public networks (e.g. internet);
  - (b) instances of misuse of the Services, Contractor systems used in the delivery of the Services and access to TCL RESTRICTED Data by TCL Personnel and Contractor Personnel, including attempts at such misuse;
  - (c) wireless access points to ensure that all wireless networks are secure and no unauthorised access points are available;
  - (d) Malicious Software on: (i) the Contractor systems used in the delivery of the Services and, (ii) the Services;
  - (e) access to and movement of TCL RESTRICTED Data, including internal access to such Data; and
  - (f) traffic for unusual or malicious incoming and outgoing activity that could be indicative of an attempt or actual attack.
- 9.3 The Contractor shall ensure that access to system logs and monitoring information is strictly restricted to those Contractor Personnel who need to access these items to ensure the delivery and integrity of the Services.
- 9.4 The Contractor shall ensure that any monitoring process complies with the monitoring strategy developed in accordance with Paragraphs 9.1 and 9.2 and all of its legal and regulatory obligations pursuant to Applicable Law.
- 9.5 The Contractor shall maintain a log of:
- (a) all instances of Contractor Personnel accessing Personal Data;

- (b) all Service Recipient, TCL Personnel and Contractor Personnel logon attempts, successful and failed, to the Services or any elements of the Contractor Solution requiring authentication;
  - (c) all actions taken by Service Recipients, TCL Personnel or Contractor Personnel with administrative privileges;
  - (d) all instances of accounts being created for Service Recipients, TCL Personnel or Contractor Personnel and their relevant privileges;
  - (e) all records of formal staff induction or certification required by Contractor Personnel to operate systems and handle TCL RESTRICTED Data (where required);
  - (f) all instances of accounts for Service Recipients, TCL Personnel, or Contractor Personnel being deleted;
  - (g) Contractor Personnel system access group memberships in relation to relevant Service Assets;
  - (h) Service Recipient and group privilege changes against each of the system resources;
  - (i) unauthorised use of input and output devices and removable media; and
  - (j) all access to log files and audit systems.
- 9.6 The logs required in 9.5 above must be raw logs, which are provided in a structured text format and the schema for such logs will need to be provided.
- 9.7 The Contractor shall implement recording mechanisms to identify TCL Personnel and Contractor Personnel and their actions when cases of misuse are being investigated and shall ensure that any such recording mechanisms are protected against manipulation and disruption.
- 9.8 The Contractor shall regularly review logs to identify: (i) anomalies; (ii) suspicious activity; and (iii) suspected Security Incidents. The Contractor shall notify TCL of such findings in accordance with Paragraph 8.2
- 9.9 The Contractor shall provide copies of any log data collected by the Contractor during its delivery of the Services (system audit log data) at TCL's request in a human readable electronic format such as comma-separated value or Microsoft Excel.

**10. MALICIOUS SOFTWARE**

- 10.1 The Contractor shall throughout the Term, use the latest versions of anti-malware solutions and software available from an industry accepted vendor (unless otherwise agreed in writing between the Parties) to check for, contain the spread of, and minimise the impact of Malicious Software in the IT Services (or as otherwise agreed by the parties).
- 10.2 Notwithstanding Clause 10.1, if Malicious Software is detected within services provided by the Contractor, the Contractor shall ensure the effect of the Malicious Software is mitigated and, particularly if Malicious Software causes loss of operational efficiency or loss or corruption of Data, restore the Services to their desired operating efficiency.
- 10.3 Any cost arising out of the actions of the Parties taken in compliance with the provisions of Clause 10.2 shall be borne by the Parties as follows:
- (a) by the Contractor if the Malicious Software originates from the Contractor Software, the Third Party Software supplied by the Contractor (except where TCL has waived the obligation set out in Clause 10.11) or TCL Data (whilst TCL Data was under the control of the Contractor) unless the Contractor can demonstrate that such Malicious Software was present and not quarantined or otherwise identified by TCL when provided to the Contractor; and
  - (b) otherwise by TCL.

**11. REMOVABLE MEDIA**

*NB*

- 11.1 The Contractor may only use Removable Media to support its delivery of the Services if it has obtained prior written consent of TCL and has implemented appropriate controls to ensure that the use of any input or output devices and removable media is restricted strictly to that needed to supply and support delivery of the Services.
- 11.2 If removable media is approved for use by TCL, the Contractor shall ensure that it deploys suitable anti-virus and anti-malware checking solutions to actively scan for the introduction of Malware onto systems and networks through all Data imports and exports from removable media and that the removable media is encrypted to a suitable standard agreed in advance with TCL in writing.
- 11.3 The Contractor shall report any loss or interception of Data as a result of the use of removable media to TCL in accordance with Clause 8 and TCL reserves the right in such instances to rescind its approval in relation to the Contractor's continued use of removable media.

## **12. MOBILE AND HOME WORKING**

- 12.1 The Contractor may only use offer Mobile and Home working to support its delivery of the Services if it has obtained prior written consent of TCL and has implemented appropriate controls to ensure.
- 12.2 If such consent is granted but the Contractor does not have a home and mobile policy for Contractor Personnel, TCL's Home and Mobile Working Cyber Security Policy shall apply to the Contractor and its Contractor Personnel.
- 12.3 If the Contractor has a home and mobile working policy in relation to the Contractor Personnel, the Contractor shall:
- (a) ensure through this policy that:
    - (i) Data is protected and suitably encrypted in line with Cyber Security Policy (see Annex 5), when stored outside of the Contractor Premises;
    - (ii) Data is protected when accessed, imported or exported through a connection other than one which is accessed at the Contractor Premises; and
    - (iii) Security Incident management plans acknowledge the increased risk posed by home and mobile working such as theft or loss of Data and TCL Data and/or devices; and
- 12.4 The Contractor shall report any loss or interception of Data or TCL Data as a result of home or mobile working to TCL in accordance with Clause 8.

## **13. DISPOSALS**

- 13.1 The Contractor shall not reuse any Service Asset or Removable Media used in the performance of the Services unless such items have been wiped securely in accordance with a TCL agreed standard.
- 13.2 The Contractor shall securely dispose of and delete Data from Service Assets used for the delivery of the Services to a TCL agreed standard upon the termination or expiry of this Agreement or when such Service Assets are no longer required for the delivery of the Services, whichever is sooner, and documented accordingly.
- 13.3 The Contractor shall ensure that the disposal of any Service Asset is accurately reflected in the Information Asset Register.

## **14. SECURITY MANAGEMENT PLAN**

- 14.1 The Outline Security Management Plan as at the Effective Date is set out at Annex 1 (*Outline Security Management Plan*).
- 14.2 The Contractor shall within fifteen (15) Working Days of the Effective Date submit to TCL for approval, a draft Security Management Plan which a minimum will:

- (a) set out the security measures to be implemented and maintained by the Contractor in relation to all aspects of the Services and all processes associated with the delivery of the Services and shall at all times comply with and specify security measures and procedures which are sufficient to ensure the Services comply with this Schedule;
- (b) reference and comply with the security requirements set out in Annex 3;
- (c) state any other cyber security industry standards over and above those set out in this Schedule which are applicable to the Services;
- (d) state all applicable law which relates to the security of the Services; and
- (e) how the Contractor will comply with any other security requirements TCL may reasonably request from time to time.

When the Security Management Plan is approved by TCL the approved plan will replace the Outline Security Management Plan in Annex 1.

14.3 The Contractor shall review and update the Security Management Plan at least annually and as required in response to:

- (a) changes to the Cyber Security Standards;
- (b) emerging changes in Good Industry Practice;
- (c) any relevant Operational Change or Variation and/or associated processes;
- (d) any new perceived or changed security threats; and
- (e) any reasonable request by TCL.

14.4 The Contractor shall submit any amendments to the Security Management Plan for Approval by TCL in accordance with the variation procedure set out in this Agreement

**15. INFORMATION SECURITY MANAGEMENT SYSTEM**

15.1 The Contractor shall develop, implement, operate, maintain the ISMS and shall within fifteen (15) Working Days of the Effective Date submit a draft ISMS to TCL to assure. The Contractor shall ensure that the ISMS includes the Security Incident Management Process, dealing with, among other matters, Security Incident management.

15.2 The ISMS shall, unless otherwise specified by TCL in writing, be designed to protect all aspects of:

- (a) the Services;
- (b) all processes associated with the delivery of the Services; and
- (c) TCL Sites, the Contractor Solution and any information and Data (including TCL Confidential Information and TCL Data) to the extent used by TCL or the Contractor in connection with this Agreement.

15.3 The Contractor shall make any document referenced in the ISMS available to TCL upon request.

15.4 If the investigation of a Security Incident reveals weaknesses or flaws in the ISMS, then any change to the ISMS to remedy the weakness or flaw shall be submitted to TCL for approval in accordance with the Variation procedure set out in this Agreement for the avoidance of doubt, if a change needs to be made to the ISMS to address an instance of non-compliance with the Security Management Plan or security requirements, the change to the ISMS shall be at no cost to TCL.

15.5 The ISMS will be fully reviewed in accordance with ISO/IEC 27001 by the Contractor at least annually, or from time to time as agreed with TCL, in response to: