# Dublin City Council
# Traffic Department
# Control room Audio Visual technology project

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## Revision History

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## Contents

# 1. Introduction

This document will help identify the costs to consider when filling in the Pricing Schedule for the project detailed in subsequent sections of this document, and will also form part of the contractual agreement for the project.

It is important that this document is read in full and all sections acknowledged and confirmed as accepted and agreed to.

All instructions must be adhered to and the requested information provided.

You must provide a fully compliant response to this document, and state as such in your return. Any recommendations or notes must be detailed in the tenderer's response, with any impact to pricing made clear.

*Please note in relation to all documents, where reference is made to a particular standard, make, source, process, trademark, type or patent, that this is not to be regarded as a de facto requirement. In all such cases it should be understood that such indications are to be treated strictly and solely for reference purposes only, to which the words "or equivalent" will always be appended.*

*While we have included manufacturers and models these are to illustrate an example design, and tenderers may propose alternative manufacturers / models of equipment.*

*Where the tenderer is proposing an alternative, they must clearly outline the proposed alternative and explain why it meets or exceeds the requirements, in addition to the required standards, and how it provides the same functionality or performance as the specified example.*

*Where an alternative system is proposed, tenderers must demonstrate previous experience implementing and installing the alternative system.*

*Where a tenderer is proposing an alternative system, they must give full information and demonstrate that it has worked effectively in a similar environment.*

*Dublin City Council reserves the right to do a reference check where a tenderer is proposing an alternative system.*

# 2. Project overview

Dublin City Council Traffic Department are undertaking a Traffic Management Control Room project for the creation of a brand new main control room, secondary control room, and conference room in the NTCC Heuston, Dublin

The programme covers the supply, installation and configuration of new Audio Visual technology and furniture, plus the on-going support and maintenance of this new technology.

# 3. Locations

The locations of the works are:

National Train Control Centre

Heuston Station
St John's Rd W
Saint James
Dublin 8
Ireland

National Transport Authority
Haymarket
Smithfield
Dublin

# 4. Purpose of this Document

This document specifies the Scope of Requirements to be delivered by the successful tenderer. It will form part of the contract with the successful tenderer and references several other documents. It must be used in the preparation of your response and referred to throughout the project.

Should you seek any clarifications, see section INSTRUCTIONS FOR TENDERERS in the supplied Request For Tender (RFT) document for information on how to submit a question.

All questions you may have regarding these requirements must be asked prior to returning your response. It will otherwise be assumed that all elements are fully understood and accepted.

## 4.1. Documentation

This document must be read in conjunction with the following documentation, all of which form the Requirements. These documents are available to download from www.etenders.gov.ie DCC220005AV.

### 4.1.1. Documentation Package

The following items form the Documentation Package:

| NUMBER | TITLE | Location |
|---|---|---|
| DCC220005AV RFT | Request for Tender document | - |
| Functional Narrative | Functional Narrative | - |
| DCC220005AV TRD | Blank tender response document in MS Word format for completion by the bidder | - |
| Pricing Schedule | Blank Pricing Schedule | - |
| DCC-HEUS-NTCC-EL-01 | LED WALL - FRONT ELEVATION (MAIN) | NTCC Heuston |
| DCC-HEUS-NTCC-EL-02 | LED WALL - FRONT ELEVATION (SECONDARY) | NTCC Heuston |
| DCC-HEUS-NTCC-EL-03 | LED WALL - FRONT ELEVATION (CONFERENCE) | NTCC Heuston |
| DCC-HEUS-NTCC-EL-04 | LED WALL - BRACKET LAYOUT (MAIN) | NTCC Heuston |
| DCC-HEUS-NTCC-EL-05 | LED WALL - BRACKET LAYOUT (SECONDARY) | NTCC Heuston |
| DCC-HEUS-NTCC-EL-06 | LED WALL - BRACKET LAYOUT (CONFERENCE) | NTCC Heuston |
| DCC-HEUS-NTCC-EL-07 | CAMERA - FRONT ELEVATION (MAIN) | NTCC Heuston |
| DCC-HEUS-NTCC-EL-08 | CAMERA - FRONT ELEVATION (SECONDARY) | NTCC Heuston |
| DCC-HEUS-NTCC-EL-09 | CAMERA - FRONT ELEVATION (CONFERENCE) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-01 | AV EQUIPMENT LAYOUT | NTCC Heuston |
| DCC-HEUS-NTCC-GA-02 | POWER & DATA LAYOUT | NTCC Heuston |
| DCC-HEUS-NTCC-GA-03 | VIEWING DETAILS (MAIN) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-04 | VIEWING DETAILS (SECONDARY) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-05 | VIEWING DETAILS (CONFERENCE) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-06 | SPEAKER COVERAGE (MAIN) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-07 | SPEAKER COVERAGE (SECONDARY) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-08 | SPEAKER COVERAGE (CONFERENCE) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-09 | MICROPHONE COVERAGE (MAIN) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-10 | MICROPHONE COVERAGE (SECONDARY) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-11 | MICROPHONE COVERAGE (CONFERENCE) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-12 | CAMERA LAYOUT (MAIN) | NTCC Heuston |
| DCC-HEUS-NTCC-GA-13 | CAMERA LAYOUT (SECONDARY) | NTCC Heuston |

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|---|---|---|
| DCC-HEUS-NTCC-GA-14 | CAMERA LAYOUT (CONFERENCE) | NTCC Heuston |
| DCC_HEUS_CONF_SCH_01 | HEUSTON CONFERENCE ROOM SCHEMATIC PART 1 | NTCC Heuston |
| DCC_HEUS_CONF_SCH_01 | HEUSTON CONFERENCE ROOM SCHEMATIC PART 2 | NTCC Heuston |
| DCC-HEUS-MAIN-SCH-01 | HEUSTON MAIN CONTROL ROOM SCHEMATIC PART 1 | NTCC Heuston |
| DCC-HEUS-MAIN-SCH-02 | HEUSTON MAIN CONTROL ROOM SCHEMATIC PART 2 | NTCC Heuston |
| DCC-HEUS-SECC-SCH-01 | SECONDARY CONTROL ROOM SCHEMATIC PART 1 | NTCC Heuston |
| DCC-HEUS-SECC-SCH-02 | SECONDARY CONTROL ROOM SCHEMATIC PART 2 | NTCC Heuston |
| DCC-HEUS-RACK-SCH-01 | EQUIPMENT RACK SCHEMATIC PART 1 | NTCC Heuston |
| DCC-HEUS-RACK-SCH-02 | EQUIPMENT RACK SCHEMATIC PART 2 | NTCC Heuston |
| DCC-HEUS-RACK-SCH-03 | EQUIPMENT RACK SCHEMATIC PART 3 | NTCC Heuston |
| DCC-HEUS-RACK-SCH-04 | EQUIPMENT RACK SCHEMATIC PART 4 | NTCC Heuston |
| DCC-HEUS-RACK-SCH-05 | EQUIPMENT RACK SCHEMATIC PART 5 | NTCC Heuston |
| DCC-HEUS-RACK-SCH-06 | EQUIPMENT RACK SCHEMATIC PART 6 | NTCC Heuston |
| DCC-HEUS-RACK-SCH-07 | EQUIPMENT RACK SCHEMATIC PART 7 | NTCC Heuston |
| DCC-HEUS-RACK-SCH-08 | EQUIPMENT RACK SCHEMATIC PART 8 | NTCC Heuston |
| DCC-HEUS-RACK-SCH-09 | EQUIPMENT RACK SCHEMATIC PART 9 | NTCC Heuston |
| DCC-HEUS-RACK-SCH-10 | EQUIPMENT RACK SCHEMATIC PART 10 | NTCC Heuston |

## 5. Definitions

For the purpose of this document, the following definitions shall apply:

- **Business Day** – 9am to 5pm local time
- **Weekend Day** – Weekend working may be possible, but only with prior agreement.
- **Out of Hours** – Noisy work must be completed prior to 8.30am, or after 5pm. Arrangements for this will vary per office location.
- **Contracting Authority** - Dublin City Council Traffic Department
- **AV** - Audio Visual

- **SoR –** Scope of Requirements

# 6. Clarifications/Questions

Should you seek any clarifications, see section INSTRUCTIONS FOR TENDERERS in the supplied Request For Tender (RFT) document for information on how to submit a question.

# 7. Site Visits

The tenderer will be given full access to the build locations in order to conduct a detailed inspection of the facilities prior to submitting their bid.

# 8. Clarification/Verification meetings

See section 5.3 Clarification/Verification Meetings of the Request For Tender (RFT) document for details on a potential mid-tender meeting.

# 9. Bid Responses

See Section C of the Tender Return Document (TRD) for instructions on how to submit your tender response.

## 9.1. Pricing Schedule

The Pricing Schedule format must remain unmodified to allow for easy assessment of the bid responses. Modification of the Pricing Schedule format may result in invalidation of your response.

Labour categories must be completed in full for the project to allow for assessment of the labour provision for the project. Required hours must be shown for each category accordingly. Where areas are subdivided and shown on separate tabs within the Pricing Schedule, individual labour costs must be shown on each tab.

Tenderers must not provide one averaged hourly rate across all disciplines. All discipline rates (€/hour) must be completed.

# 10. Scope of Requirements

The Scope of Requirements is divided into four parts:

- Equipment Supply
- Equipment Installation and Commissioning
- Warranty
- Support and Maintenance

## 10.1. Equipment Supply

### 10.1.1. Equipment to be supplied by successful tenderer

The successful tenderer must deliver the equipment and services necessary to meet the performance of the system as defined in the Functional Narrative and all other supplied documentation including this document.

#### 10.1.2. Equipment to be supplied by the Contracting Authority

Not all equipment is to be supplied by the successful tenderer. Items such as network edge switches, equipment racking, power and other related services will be provided by the Contracting Authority. However, the bidder must ensure they allow for cabling to connect from their supplied equipment to the Contracting Authority supplied equipment and services.

If the bidder is unsure if they are to supply any item of equipment, they must seek clarification via per section Clarifications/Questions

#### 10.1.3. System Functionality

This functionality is described in the supplied Functional Narrative, which when read in conjunction with the supplied list of equipment, schematics and drawings, provides a full description of that required. Tenderers must provide this functionality.

### 10.2. Equipment Installation and Commissioning

#### 10.2.1. Installation and Commissioning

The successful tenderer will install the audio-visual and unified communications equipment in accordance with the documentation appended to this document.

The work must be completed in the manner and to the quality detailed in this document in section Standards and General Requirements.

#### 10.2.2. User Guides

The successful tenderer must supply an easy to understand simple end-user guide for each system that must extend to no more than two sides of A4 sized paper. This will cover the self-service elements of the system.

These end-user guides must be passed to the project team 2 weeks prior to completion of the AV system, for approval and sign off, where upon a total of 5 laminated copies must be provided per system location by the successful tenderer in addition to an electronic version in MS Word format or similar (non-editable formats are not acceptable).

The successful tenderer must not underestimate the importance of the creation of the user guide document and the focus which will be placed upon the guide's simplicity and ease for end users to understand.

#### 10.2.3. Operation and Maintenance Manual

In addition to the user guides, the successful tenderer must supply a detailed Operation and Maintenance manual for each system in the project, also to include all as-built system drawings. This manual will be stored with each system to serve as a reference for the support staff.

The manual must be provided electronically in MS Word format or similar (non-editable formats are not acceptable).

#### 10.2.4. Training

End-user training must be provided to the Contracting Authority by the successful tenderer and must be included in the successful tenderer's pricing. This must include technician level and non-technical end-user training, and a number of days for all must be included in the successful tenderer's pricing per the schedule below.

Successful tenderers must ensure the correct individual is allowed for to provide this training, who can skillfully tailor their training style to suit the given audience.

The programme of each training session will be established during the course of the deployment phase in conjunction with the project team:

**Training Days required**

| | |
|---|---|
| On completion (staggered): | 5 |
| 1 month after completion: | 2 |
| 6 months after completion: | 1 |

### 10.2.5. As Built Documentation

The successful tenderer will be required to submit a detailed pack of 'as built' and Operation and Maintenance documentation in electronic and hard copy. This must include but not be limited to:

All drawing and documentation submittals made during the pre-installation phase, changed to include all modifications made during the installation, testing and commissioning phases.

All documentation must be labelled 'As Built' and must be provided for the project to be considered complete. It must include:

- Health and Safety file information
- Equipment list, specifying
    - Unique item ID
    - Location
    - Manufacturer
    - Model
    - Serial Number
    - MAC Addresses
    - Manufacturer warranty termination date
- System Warranty
- Test results
- Power up sequence/power down sequence
- Procedures for emergency shutdown of all systems, including isolation of the power supply and where necessary, immobilisation of any equipment to enable subsequent manual operation or maintenance
- Operational and environmental factors which may give rise to hazards, with appropriate safety precautions to be taken
- Operating limits and guidelines to be adhered to in order to ensure safe operating conditions
- The necessary information to enable the system as a whole to be maintained in, or restored to, safe and efficient working order, including details of necessary cleaning regimes
- Details of all recommended periodic checks and tests to verify that performance levels are maintained for each room, system and ancillary areas
- Information and instructions on fault diagnostics for each room, systems and ancillary areas
- The manufacturer produced Owners Manuals must be included for all items of supplied equipment.
- Full system drawings including;
    - Plans
    - Elevations
    - Video schematics
    - Audio schematics
    - Control schematics

    - Power schematics
    - All drawings must be provided in AutoCAD format **and** PDF formats (Other file formats are not acceptable)
    - Revit Model (where applicable)
- It is the responsibility of the successful tenderer to update the existing Revit model to reflect all changes established during Installation and Commissioning phases, and to provide the Contracting Authority with an accurate Digital Twin of their offices (where applicable).
- Fully collated network related data including;
    - IP addresses, gateway, MAC address
    - Network port numbers
    - Network port location plans

This documentation must be kept up to date by the successful tenderer during the warranty and support phases and any updates supplied to the Contracting Authority.

#### 10.2.6. System programming and configuration

All system programming and configuration required to provide a fully working solution outside of that provided by the Contracting Authority, must be provided by the successful tenderer.

#### 10.2.7. Programming and configuration files

The successful tenderer will be required to supply the final programming and configuration files (both compiled and uncompiled), GUI files, DSP configuration files and any other programming file that forms part of the audio visual system. This must also include any pertinent passwords.

The successful tenderer must ensure these files are current, and they must only be handed over once the system has been fully signed off and all snags completed.

On the successful tenderer receiving full and final payment for the equipment and services provided, full ownership of these files (including intellectual property ownership) must be passed to the Contracting Authority.

These files must be kept up to date by the successful tenderer during the warranty and support phases and any updates supplied to the Contracting Authority.

#### 10.2.8. GUI design

The design of any Graphical User Interfaces (GUIs) to provide a fully working and operable solution is the responsibility of the successful tenderer. It is acknowledged this is an iterative and, in part, creative process that requires close coordination with the Contracting Authority to ensure their requirements are met. The successful tenderer must allow for this process.

The successful tenderer must ensure that a modicum of design change requests are fulfilled, but it is ultimately the responsibility of the successful tenderer to ensure the final GUI design is signed off by the Contracting Authority before final implementation.

### 10.3. Warranty

An extended warranty/Service and Maintenance contract will be put in place (see section Service and Maintenance), starting at the conclusion of the Rectification Period detailed below.

As such, and in addition to the standard return to base manufacturer warranty, the following extended Rectification Period will apply:

#### 10.3.1. Rectification Period

This is defined as **1 year** from completion acceptance. During this period, the successful tenderer must return to site to review, fault find and resolve any issues, regardless of fault, including operator error, at no further costs to the Contracting Authority.

The successful tenderer must be able to respond and be on site within 4 working hours of the fault notification.

The successful tenderer must provide a temporary resolution or a work around within 2 business days of fault notification.

The time between receipt of the fault notification and a permanent resolution will vary due to the varying timescales of manufacturer fault repair processes. The successful tenderer must keep the Contracting Authority informed regularly on progress and anticipated resolution timescales.

There must be no itemised cost for this extended Rectification Period. It must form part of the overall successful tenderer's costs.

#### 10.3.2. Manufacturer warranties

The successful tenderer must ensure that, through the proper acquisition of goods in the appropriate territory, all manufacturer warranties are maintained and supported by the manufacturer in the territory in which the goods are deployed.

For the avoidance of doubt, this references the practice of 'grey importing', where the goods are acquired in one territory and deployed in another, with the result that the manufacturer will no longer honour their warranty, be that statutory or advanced, including Advanced Replacement.

### 10.4. Support and Maintenance

On conclusion of the 1 year Rectification Period, the Support and Maintenance period will commence, to ensure the Contracting Authorities new systems remain fully functioning.

The total Support and Maintenance contract period will be for 4 years, from the start of year 2 of ownership through to the end of year 5 of ownership. (Year 1 is covered by the Rectification Period. See Rectification Period)

The Support and Maintenance agreement must be structured thus:

#### 10.4.1. Preventative Maintenance

The successful tenderer must provide pricing for preventative maintenance checks with the aim of preventing support call-outs from occurring.

Preventative Maintenance (PM) checks must be performed every 6 months.

A preventative maintenance visit must comprise the following functions:

a) Test **all** system functions

b) Clean all system items and filters

c) Check input from laptop PC at each connection point (this will require that the service provider supplies a laptop, or test signal generator capable of generating a variety of PC resolutions)

d) Visual inspection of all displays and projectors, with fault rectification if easy, low risk and agreed to by the Contracting Authority. This must include projector alignment and focus, and LED matrix display pixel health, panel alignment and replacement if deemed appropriate.

e) Check video conference unit including test call (if applicable)

f) Visual inspection of equipment rack for loose connectors & equipment damage

g) Rectify any faults found if within scope of PM visit

h) Produce log of activity and record any faults found

i) Escalate any faults found not within scope of PM visit

j) Perform firmware updates

k) Complete maintenance log and issue copy to site staff

### 10.4.2. Service Level Agreements

The successful tenderer must provide technical 2nd line fault resolution support to the Contracting Authority.

On award of contract, the successful tenderer must provide a Service Desk telephone number, email contact details, and an online customer portal, to log faults.

On receipt of a support request being received by either the successful tenderer's Service Desk telephone number or the alternative methods, the following response definitions must apply:

a) Contracting Authority contacts successful tenderer's Service Desk.

b) Successful tenderer help desk to answer within 30 seconds, log the call, and run through a fault check list

c) A decision must be made on whether an engineer is to be despatched, with confirmation of the decided action to be received by the Contracting Authority within 30 minutes of the original fault call being made.

d) If an engineer is to be despatched, attendance to site must be within 4 business hours

e) Resolution of the fault must be within 2 business days of attendance to site. Resolution is defined as reinstatement by the successful tenderer of the pre-fault functionality, using device repair, loan and replacement as necessary.

### 10.4.3. Repair of warranted equipment

The successful tenderer is responsible for the arrangement of and payment of shipping costs for the in-warranty repair of all faulty audio visual hardware.

The successful tenderer is also responsible for identification of the faulty unit, extraction of the unit, swap-out of the unit using a loan item to maintain functionality, and post-repair re-installation of the unit, where appropriate.

The successful tenderer engineer must, as part of the service call logging process, record the fault resolution system test results at each stage of the above defined process, gaining written local Contracting Authority acceptance of a working system prior to departure.

### 10.4.4. Repair of non-warrantied equipment

Should an item of equipment become faulty throughout the period of Service and Maintenance, it is the responsibility of the successful tenderer to repair or replace the faulty item at no further cost to the Contracting Authority, whilst maintaining the full functionality of the systems as defined in this specification using loan items as necessary.

Extraction and reinstallation costs of the faulty/repaired/replacement item are the responsibility of the successful tenderer.

No specific SLA is applied to this. The SLAs defined under the section Service Level Agreements apply.

Tenderers must provide information on how they will achieve these SLAs, and maintain full functionality of the system throughout the Support and Maintenance period should an item of equipment become faulty.

### 10.4.5. Excluded equipment

The successful tenderer will not be responsible for the support or repair of any hardware that is provided by and supported by the Contracting Authority. They remain responsible, however, for the support and maintenance of any successful tenderer supplied software that resides on a Contracting Authority supplied computer.

#### 10.4.6. Review meetings

There must be a review meeting held at the Contracting Authority's premises to be attended by the successful tenderer's Account Manager once a quarter. The purpose of this will be to review the successful tenderer's performance and any problems which have arisen in the preceding period. All aspects of the support service will be reviewed and any required changes will be highlighted.

Review of all KPIs and success/failure rates must form part of this meeting.

At any time the Contracting Authority can request additional meetings if there are concerns over performance throughout the life of the Contract.

See section 2.4 of the Request For Tender document for further detail.

# 11. Deployment Phases

This section describes the phases involved in the deployment of the systems detailed in this specification:

## 11.1. Communication

All communication must be through and or include Contracting Authority staff at all times. No direct communication either electronic or face to face is to be undertaken without the Contracting Authority's staff or representatives involved or present.

## 11.2. Initiation and Mobilisation

Following contract award, the successful tenderer must initiate the project internally, and engage with the project team. The successful tenderer will receive a Contracting Authority purchase order to confirm the award which, along with vendor on-boarding, will take some time to complete.

## 11.3. Engineering for deployment

Once the successful tenderer has initiated the project, the designs must be engineered for deployment using their internal processes. This work may be partially completed in parallel to procurement activities where large or long lead time items need to be procured as soon as the successful tenderer has satisfied themselves that they have the correct product details.

#### 11.3.1. Site Visit

The successful tenderer will be given full access to the build locations in order to conduct a detailed inspection of the facilities.

The successful tenderer must submit their site survey requirements in advance to allow the required access to people and facilities to be arranged.

#### 11.3.2. Specified equipment

The equipment detailed in this specification has been chosen for its suitability to this particular application, and its ability to interoperate with other technology. Successful tenderers are asked to complete the Pricing Schedule as defined. Any items the successful tenderer deems missing must be listed in the Additional Items tab of the Pricing Schedule, the total of which must be carried forward to the Summary page.

Suggestions for alternative products are welcomed. However, these must be in the form of an entirely separate 'Alternative solution' Pricing Schedule.

*While we have included manufacturers and models these are to illustrate an example design, and tenderers may propose alternative manufacturers / models of equipment.*

*Where the tenderer is proposing an alternative, they must clearly outline the proposed alternative and explain why it meets or exceeds the requirements, in addition to the required standards, and how it provides the same functionality or performance as the specified example.*

*Where an alternative system is proposed, tenderers must demonstrate previous experience implementing and installing the alternative system.*

*Where a tenderer is proposing an alternative system, they must give full information and demonstrate that it has worked effectively in a similar environment.*

*Dublin City Council reserves the right to do a reference check where a tenderer is proposing an alternative system.*

#### 11.3.3. Design issues

It is the successful tenderer's responsibility to highlight any areas of the issued specification which they believe may be of issue prior to tender award. Once the procurement process has been completed and the contract awarded, it will be the successful tenderer's responsibility to resolve any issues at no further cost to the Contracting Authority. For clarity, the successful tenderer must take full responsibility for the Design, as made against the issued Functional Narrative, under the terms of the contract.

#### 11.3.4. Unavailable products

Should any product no longer be available during either the tender or post contract award, this must be identified as soon as it is known.

In such instances, an alternative product may be suggested from the same manufacturer as listed and must match or better the specification in all details.

Under no circumstances must any product be substituted without acceptance by the Contracting Authority. If items are replaced without full prior consent by the Contracting Authority, it will be the responsibility of the successful tenderer to replace with approved items at no further cost to the Contracting Authority.

#### 11.3.5. IT network and configuration set up

All network requirements will be the responsibility of the successful tenderer to identify and coordinate with the Contracting Authority IT team to ensure the system functions correctly. All networked equipment must reside on the Contracting Authority's network.

#### 11.3.6. Detailed Design Sign-off

At a date defined by the successful tenderer in their project schedule, and before procurement and manufacture begins, the successful tenderer must ensure the following information has been submitted to the Contracting Authority for review:

- Elevation drawings
- Plan drawings
- Equipment location drawings
- Rack layout drawings
- Audio, Video and Control system schematics
- Revit model (if applicable)
- Site cable schedule
- Detail of enabling works by others
- Dependencies schedule

- Risk register
- User interface/GUI design
- Connection plate manufacturing drawings
- Small power requirements
- Connectivity schedules
- DSP software schematics
- Audio device coverage maps
- Induction loop designs

The as-built versions of these documents must be included in the final documentation pack.

#### 11.3.7. GUI Design

The design of any Graphical User Interfaces (GUIs) to provide a fully working and operable solution is the responsibility of the successful tenderer. It is acknowledged this is an iterative and, in part, creative process that requires close coordination with the Contracting Authority to ensure their requirements are met.

The successful tenderer must ensure that a modicum of design change requests are fulfilled, but it is ultimately the responsibility of the successful tenderer to ensure the final GUI design is signed off by the Contracting Authority before final implementation.

#### 11.3.8. Control System Programming

All Control System programming, and any other system programming required to provide a fully working solution must be provided by the successful tenderer.

#### 11.3.9. Digital Sound Processor (DSP) system set up

The successful tenderer must install and fully configure the Digital Sound Processor (DSP) audio system.

The programming files must be made available to the Contracting Authority in its fully editable format at the completion of the project.

The successful tenderer will be asked to demonstrate that the copy provided is the latest and most up to date copy at the time of hand over.

#### 11.3.10. Induction loop design

It is the responsibility for the successful tenderer to provide detailed induction loop layouts prior to their installation, where appropriate.

The successful tenderer must coordinate the installation of any induction loops with the appropriate Contracting Authority department. However, it will be the responsibility of the successful tenderer to lift and re-lay any existing floor coverings in order to facilitate the installation of the induction loop.

If an induction loop is damaged prior to acceptance the successful tenderer must resolve the issue at no cost to the Contracting Authority.

### 11.4. Procurement and Off-site work

All systems must be fully built and configured at the successful tenderer's site prior to shipping to site. All equipment racks must be built connected to screens and display devices and have all required cabling installed to enable it to be fully tested and witnessed. Any external systems required for testing, such as a network, must be replicated by the successful tenderer.

Where devices are to be supplied by the Contracting Authority, alternative similar devices must be provided by the successful tenderer on loan and at no extra cost to enable testing.

The successful tenderer must ensure that all software has been installed and fully tested prior to any witness testing being organised

Where multiple systems of the same specification are to be tested, one set of display screens can be deployed. All displays must be tested however prior to delivery to site to ensure there are no dead-on-arrival units.

It is a requirement of the system test that all cabling be provided by the successful tenderer, including any replacement site cabling required for the system to operate and be tested fully.

If cables are to be reused on site the successful tenderer must ensure that they are installed correctly and remain undamaged.

### 11.4.1. Factory Acceptance Testing

The project team will visit the successful tenderer's premises on pre-agreed dates to perform full off-site witness tests. This must be viewed as demonstrating a fully working system, as far as is practical, with as many peripheral components (such as displays screens, loudspeakers, transmit/receive units) connected and fully functioning as possible.

Should it become apparent during the witness test that the system has not been fully programmed and tested, the Contracting Authority reserves the right to seek recompense from the successful tenderer for the revisits necessary to achieve a satisfactory conclusion to the witness tests.

Please provide with your bid;

- Images of previously completed Equipment racks.
- Location of your proposed build and test facilities
- Images of your build and test facilities.

### 11.4.2. Process for Factory Acceptance Testing (FAT)

The successful tenderer must make their own arrangements to ensure the systems are complete, tested and commissioned and ready for Factory Acceptance Testing. These systems must then be offered to the project team for testing.

An FAT testing schedule will be issued by the successful tenderer 2 weeks prior to the witness testing.

Once the successful tenderer is happy that the systems perform as required, these systems must be offered to the Contracting Authority for their review.

The Contracting Authority will have final sign-off of the system readiness for shipping to site.

All equipment and tooling required for the testing of the systems must be provided by the successful tenderer.

The hardware and equipment remains the responsibility of the successful tenderer until fully installed on site, signed off and accepted by the Contracting Authority.

### 11.4.3. Shipping to site

The successful tenderer must deliver all hardware to the Contracting Authority sites.

Equipment racks must not be broken down (as far as possible) and must be shipped as tested fully protected. Any shipping damage is the responsibility of the successful tenderer to rectify

The successful tenderer must survey the access to the site to ensure that all hardware can be delivered to site and that access to the site is sufficient for all hardware.

Any lifting, carriage, labour or special access equipment required to get hardware to the specific site location is the responsibility of the successful tenderer.

### 11.4.4. Non-AV dependencies

It is the responsibility of the successful tenderer to detail all dependencies and requirements of others including, but not limited to, all power, data, containment, and structural reinforcement.

The successful tenderer must also define when these dependencies must be in place in order for them to achieve successful completion on time.

#### 11.4.5. Out-of-hours working

Should the successful tenderer need to work on site outside of normal working hours, this must be arranged prior to the working period.

The exact process involved must be established by the successful tenderer with the Contracting Authority.

#### 11.4.6. Room ready definition

The successful tenderer must issue a room ready document within 2 weeks of appointment. This document must detail the complete readiness state required for the AV first and second fix work to commence and for the commissioning to take place.

#### 11.4.7. First Fix

The AV first fix starts once the initial construction work has completed. It is defined as:

- Installing cables
- In-wall and/or surface mounted containment
- Fixing brackets to walls and ceilings
- Mounting specialist wall plate back-boxes
- Any other enabling work located within or attached to the fabric of the building.

All installed cabling must be bagged and protected to prevent damage prior to 2nd fix termination.

#### 11.4.8. Second Fix

Following the AV first fix, the construction works are completed followed by the AV second fix. The AV second fix is defined as follows:

- Termination and presentation of all installed cables
- Making good and necessary modifications to all installed audio visual cables/hardware
- All screens, displays, cameras and pre-built and test equipment racks
- Final configuration of all systems
- All interfacing with other installations by others (e.g. Network connections, furniture, fire safety systems)
- All other items required for a complete installation of the systems

#### 11.4.9. Noisy On-site Work

The successful tenderer must consider any potentially noisy on-site work, and the impact this may have on what will be an occupied building during normal business hours. The successful tenderer must be prepared to conduct any noisy work outside of business hours.

#### 11.4.10. Work pertaining to Asbestos

It must also be noted that installation operatives skills, fixing methodology, and risk assessments must be adhered to in line with the HSE guidelines regarding any Asbestos Reinspection Surveys that may have been undertaken.

#### 11.4.11. Connection to other systems

It is the successful tenderer’s responsibility to interface with other systems such as lighting, blinds, the Contracting Authority’s network or the fire alarm system. It is the successful tenderer's responsibility that integration with all necessary Contracting Authority departments, trades and skills are included in their tender response.

### 11.5. Acceptance Testing

### 11.5.1. Commissioning

On completion of the on-site work, the successful tenderer must ensure the overall system is fully operational and complies with the Contracting Authority's requirements and standards, as defined in this and the accompanying documentation.

The successful tenderer must use this stage to ensure the systems are fully functioning such that Site Acceptance Testing is a straight-forward sign-off process.

### 11.5.2. Site Acceptance Testing

Following the completion of the successful tenderer's commissioning, the system must be handed over to the project team who will conduct Site Acceptance Testing (SAT).

The objective of this test phase is for the project team to ensure that the overall system functions as designed and specified. The SAT is not an extension of the Commissioning phase, and failure to fully commission a system before offering it for SAT may result in charges levied at the successful tenderer for return visits for re-testing.

### 11.5.3. Handover to Support

Once the site acceptance testing has been signed off by the Contracting Authority, the new facilities must be handed over to the Contracting Authority and winning bidder's support teams..

The successful tenderer must provide training days as defined in section Training, which must also include any training necessary for Contracting Authority on-site support staff.

The successful tenderer must issue a list of suggested training courses that Contracting Authority support staff should attend in order to support the installed systems.

## 12. Timescales

Successful tenderers must provide a high level programme with their tender return defining the following as a minimum:

- Required Contracting Authority date of order/contract placement
- Equipment lead times
- Dependencies of others
- Off-site build work
- On-site build work
- Room ready dates
- On-site testing and commissioning
- Finished system witnessing

This will be assessed under Criterion A of the RFT.

Key dates are as follows:

**Heuston onsite build commencement**: Q4 2026

**Heuston completion:** Q1 2027

**NTA commencement:** Q4 2026

**NTA completion:** Q4 2026

# 13. Standards and General Requirements

This section specifies the various standards and general requirements which are applicable to the Scope of Requirements.

## 13.1. Equipment Rack manufacture

Defined quality industry practices must be adhered to. This includes, but is not limited to:

### 13.1.1. Rack Layout

Equipment must be arranged within equipment racks to ensure stability of the equipment rack, easy maintenance, reliability and adequate cooling to maintain manufacturer warranties. The equipment rack layout must be signed-off by the audio visual consultant as per the defined schedule.

Where appropriate, devices must be installed with ventilation gaps above and below in all instances.

If the successful tenderer feels that the AV rack layouts can be improved, these designs must be submitted for sign off.

Unless otherwise stated equipment racks must be 19” racks with lockable front and rear access doors.

When deployed into cupboards or credenzas of any type, the racks must be easily accessed and have sufficient cable lengths to allow for their moving for service and support without stressing or straining the cables and or connectors.

Sufficient ventilation and cooling of equipment housed within equipment racks, and equipment racks within furniture items, are the responsibility of the successful tenderer.

The successful tenderer must provide detailed heat and power loads for all AV equipment to the Contracting Authority.

### 13.1.2. Rack cabling

All rack cabling must adhere to recognised industry standards for use and application.

All cables must be retained within the rack neatly and securely to maintain easy serviceability.

Power cabling and ELV signal cabling must be segregated and formed separately.

Tie/lacing bars must be used to support cable forms across the rear of units and to prevent pulling on device connectors.

Plastic cable zip ties must not be used to secure cables anywhere in the system.

Velcro cable ties must be used on all audio visual and Ethernet cables, tightened to secure the cabling but not so tight as to compress the cable and restrict performance. Distances between velcro cable ties must be uniform across the build.

## 13.2. Equipment locations

### 13.2.1. Centralised systems

Where possible, all systems have been designed with the majority of audio visual equipment housed within a Comms room or AV Closet. This is to reduce heat and noise output in working spaces, and to maximise any benefits of sharing system resources between rooms and areas.

### 13.2.2. Room-based systems

This furniture must be designed to maximise airflow around the equipment to exhaust emitted heat into the room. It is therefore the responsibility of the successful tenderer to ensure equipment rack designs and layouts do not inhibit the outward flow of this heat.

### 13.2.3. In-room equipment

Some equipment needs to remain in local spaces even where centralised designs have been implemented. It is the successful tenderer's responsibility to coordinate the placement of this equipment within furniture to be supplied by others, and any cut-outs or containment required are the responsibility of the successful tenderer and must be approved by the Contracting Authority during the pre-installation phase.

It is the responsibility of the successful tenderer to detail the required delivery date of all furniture with an interface to the AV systems. The successful tenderer must ensure that they can be delivered to the timescales required by the project team.

Whilst the AV design has detailed as far as possible the changes required to any furniture, it is the responsibility of the successful tenderer to provide and confirm any final details of any furniture that requires modification within sufficient time to allow the modifications to be made.

Modifications must include but not be limited to:

- Containment
- Location over grommets and floor boxes
- Cut outs for cable cubbies, microphones etc
- Power requirements
- Positive extraction and ventilation

## 13.3. Site Cabling

All site cabling must adhere to recognised industry standards for use and application. In addition, the following standards apply:

- All site cabling must be Low Smoke Zero Halogen (LS0H)
- All cables must be glanded into and out of metal or plastic housings, including floor boxes, back boxes, conduit, trunking, ceiling tiles and floor tiles.
- Wherever cables exit the floor void or ceiling void for connection into equipment they must be loomed and dressed into a heavy duty black Pliosil braided sleeve that must be dressed and secured at either end with a heat shrunk rubber seal.
- All high level cabling must be installed in the trays provided and must be loomed together using Velcro tie wraps at intervals of 1 metre
- All installed cables must be installed in such a manner that the manufacturers recommended bend radii are not exceeded. Any cable incorrectly installed or found to exceed the recommended bend radius must be replaced by the audio visual successful tenderer at no additional cost to the Contracting Authority
- Audio visual cabling must not run alongside power cabling without metal trunking separation.
- Audio visual cabling may cross power cabling, but only at 90 degrees and at as few occasions as possible
- All cables must be run continuously between system components. No joints, splices or intermediate connections are permitted
- 1st fix cable ends that are to be left exposed must be sealed or taped to avoid exposure to any moisture or other damaging elements
- Fixing or tie-wrapping must not cause deformation of or other damage to the cable
- Cabling must not be tie-wrapped or fixed to any other services
- All cable ties used must be cut smooth with no sharp edges.

- Digital video signals are highly susceptible to cable quality and cable length. It is the successful tenderer's responsibility to ensure cable length standards are not exceeded, and to allow for and supply signal extension equipment where necessary.
- All site cables must be labelled at both ends using printed labels according to the cable schedule.
- All rack power sockets must be labelled with the details of the associated item of equipment, using printed labels.
- All equipment rack and site power connections must meet IS or equivalent local standards for safety.
- All equipment racks must be earth bonded in accordance with IS or equivalent local standards for safety.
- All equipment racks must be PAT tested for safety with the results recorded and provided with the Operation and Maintenance manuals.

## 13.4. Network cabling provision

Some devices require connecting to the Contracting Authority's network, and it is the successful tenderer's responsibility to liaise with the Contracting Authority's IT Department to ensure the necessary physical connections are provided, and that the necessary network configurations are in place to enable system commissioning and testing.

### 13.4.1. Network patch cables

The successful tenderer is responsible for supplying the network patch cables that sit between the equipment that forms part of the AV system, and the Contracting Authority's network port. This includes equipment supplied by the Contracting Authority. The network patch cables must be to the Contracting Authority's IT departments specified standard, including connector and cable quality, and colour.

### 13.4.2. Network cable standard

The successful tenderer must ensure, and must test to prove, that all premade and contractor fabricated network cabling adheres to the TIA/EIA-T568B or equivalent termination standard.

## 13.5. Serial number logging

It is a requirement for the successful tenderer to collate all serial numbers for each item and provide this on a detailed spread sheet with but not limited to the following:

- Hardware location by room
- IP address
- Port number
- Firmware revision
- Any and all other pertinent information.

*Note: Asset tagging **is** required as part of this process*

## 13.6. Labelling

### 13.6.1. Cable Labelling

Both site and rack cables must be labelled using printed, stick on labels. These must be manufactured of clear sticky plastic strips with a white area for printing. The strip must be wrapped fully around the cable and itself to protect the printed detail. A label at each end must clearly state the unique cable number as defined by the site cable schedule.

Hand written labels will not be acceptable.

### 13.6.2. Equipment Labelling

All items of equipment must be labelled using printed, stick on labels. These must be manufactured of clear sticky plastic strips with a white area for printing. The label must uniquely identify the item and its location in the AV system and must be placed in an appropriate location for easy identification by support personnel. Hand written labels will not be acceptable.

## 13.7. Schedules

### 13.7.1. Connectivity Schedule

The successful tenderer must submit a detailed schedule of all IT and other connectivity requirements. This must include the specification and quantities of all Contracting Authority supplied hardware, all IP addresses and patching requirements, services, LAN configuration requirements, software, and codec requirements.

### 13.7.2. Audio Visual Power Requirements

The successful tenderer must undertake a detailed review of the small power provision in relation to the overall audio visual design requirements. The successful tenderer is required to produce detailed small power drawings that show the quantity and setting out details for all audio visual related power requirements. Additional requirements for small power must be highlighted and specified by the successful tenderer during the pre-installation phase.

### 13.7.3. Schematic standards

Detailed system schematics must be submitted for sign off, as specified in the Design Sign-off schedule. These must be in AutoCAD and Adobe PDF (other formats are not acceptable) and must include the following detail, as a minimum:

- Unique identifier, item of equipment including make, model & abbreviated description.
- All connections, detailing:
    - Signal type
    - Connector type
    - Cable number

Schematics must be broken down into a minimum of:

- Video Schematic
- Audio Schematic
- Control Schematic
- Power schematic (where appropriate)

### 13.7.4. AV Equipment Location Drawing

Detailed equipment layout drawings for each room and area must be submitted for sign off. These must be AutoCAD, Revit and PDF format and must be scaled as appropriate. These must clearly show the setting out detail of the key items of equipment that are not housed in equipment racks for all elements of the audio visual installation. This must specifically include:

- Reflected Ceiling Plans (RCPs)
- Dimensioned elevations for all screen and loudspeaker locations including set-out
- Dimensioned elevations for all video conferencing camera positions including set-out
- Unique AV location reference of each item of equipment
- Cable containment and routing

### 13.7.5. Site Cable Schedule

Prior to any 1st fix cabling work being undertaken, the successful tenderer must supply a detailed Site Cable Schedule. This must show each cable with its from/to AV Equipment location

reference as laid out on the AV Equipment Location Drawing. The cable schedule must also include:

- Cable ID
- Cable type
- Cable manufacturer
- Cable reference number
- Cable source
- Cable destination
- Purpose

#### 13.7.6. Drawing Format and Issue Sheets

All soft copy drawings must be in AutoCAD and PDF format. All drawing submittals must be accompanied by a drawing issue sheet that details the following:

- Project
- Drawings drawn by
- Drawings checked by
- Date of issue
- Drawing number
- Drawing revision
- Drawing title
- Scale (if applicable)

### 13.8. Building works

#### 13.8.1. Containment Requirements

It is the successful tenderer's responsibility to satisfy themselves that containment is adequate for the new system's cabling requirements. Should any other in-wall, underfloor or above ceiling containment be required, they must inform the project team at the earliest opportunity. Tertiary surface mount containment, where required, is the responsibility of the successful tenderer.

#### 13.8.2. Wall plates and connection boxes

It is the responsibility of the successful tenderer to supply, coordinate locations, and install all specialist wall connection plates and associated back boxes wherever required.

#### 13.8.3. Joinery and Furniture Interfaces

Some coordination of furniture and audio visual requirements has already been undertaken as time allowed. However, it is the successful tenderer's responsibility to check all interfaces between audio visual equipment and furniture to ensure successful installation and correct operation.

#### 13.8.4. Fixings to the Building Fabric

The fixing of brackets and other items to the fabric of the building must be done in accordance with the relevant codes of practice and must not in any way damage or affect the structural integrity of the building.

No fixings must penetrate water barriers or the like. The successful tenderer must identify any attendance required by others to assist in the fixing of an item

It must also be noted that fixing methodology and risk assessments must be adhered to in line with the HSE guidelines regarding any Asbestos Reinspection Surveys that may have been undertaken.

#### 13.8.5. Fire Stopping

Whilst the penetration of Fire Stopping is to be avoided if at all possible, should penetration of any Fire Stopped walls be necessary, it is the responsibility of the successful tenderer to engage a Fire Stopping specialist to reinstate the Fire Stopping at the original performance standards, at no further cost to the Contracting Authority.

### 13.9. Site Operational Requirements

All onsite work must comply with the Contracting Authority's HSE safe working policies, practices and procedures.

#### 13.9.1. Shipping and Delivery of Goods to Site

Due to the restricted timescales and availability of site space, the successful tenderer must coordinate all shipping to be as efficient and non-disruptive as possible. All shipping/delivery costs must be borne by the successful tenderer. Deliveries are to be pre-booked with the Contracting Authority to ensure access to site. The exact process of booking and the notice period to be given will be confirmed.

The successful tenderer must provide all shipping and handling equipment they require, including items such as carts and pallet trucks, to move the equipment to the required location from the loading bay.

There is very limited equipment storage space on site. Thus, suppliers must work on a just-in-time delivery basis.

#### 13.9.2. Site Documentation Requirements

Prior to the 1st fix work commencing, the successful tenderer must submit the following documentation to the body responsible for the site upon which they will be working:

- Detailed method statement for the work
- Detailed health and safety assessment for the work
- Detailed risk assessment for the work
- Details of staff that are to carry out the work
- Dates and times for the execution of the work
- Any other information the responsible party may request

#### 13.9.3. Site Inductions

All site staff must attend a site and HSE induction. Depending on the number of successful tenderer staff who require induction, a separate successful tenderer induction may be possible.

#### 13.9.4. Waste Disposal

It is the successful tenderer's responsibility to dispose of any waste generated during the build process. Successful tenderers must assume responsibility to ship waste away from site, unless arranged otherwise with the site representative.

#### 13.9.5. PPE

Appropriate safety wear must be worn, including but not limited to safety footwear, hard hats and eye protection. The exact PPE requirements will be defined during the specific site safety training sessions.

## 14. Project Management

### 14.1. Meetings

The successful tenderer must attend all meetings necessary to coordinate, plan and deliver the audio visual systems defined in this specification.

In particular the successful tenderer is required to organise and chair a detailed project kick off workshop which must be attended by the successful tenderer, the Contracting Authority and all other pertinent parties including the project team. The agenda of this meeting must include, but not be limited to:

- Scope review
- Timescales
- Procurement, including long lead items
- Offsite work
- GUI Design
- Phasing of work
- Dependencies
- Project risks
- Noisy work
- Contracting Authority training

Weekly meetings between the project teams must be scheduled on contract award. During the execution of on-site work, more frequent meetings may be agreed to ensure full coordination between all parties.

A monthly project management meeting between the project management team and the successful tenderer's project management team is also required.

### 14.2. Reporting

The successful tenderer is required to submit a weekly status report showing, as a minimum:

- Status of deliverables and progress vs plan (MS project with drop line)
- Issues
- Risks
- Latest forecast schedule
- Financial status
- Commercial status, including proposed and accepted changes
- Action items

The contents of this report will be discussed at the monthly project management meeting.

## 15. Payment milestones

Payments will be made against achieved delivery milestones.

The milestones are defined as follows:

25% successful completion of Factory Acceptance Testing

30% installation of all hardware on site

20% successful completion of Site Acceptance Testing

15% completion of training

10% retention, payable after 6 months of trouble-free operation

Should the successful tenderer wish to request specific payment terms, they must be included in their bid return.

It must be noted it is the Contracting Authority's policy not to pay for any goods not on the Contracting Authority's premises.

## 16. Importation of Goods

It is the responsibility of the successful tenderer to ensure all duties, tariffs, and other taxes are included within their bid response total sum, and to ensure they are paid promptly so as not to cause delay to the project. The Contracting Authority will not be bound to pay these on behalf of the successful tenderer at any point.

The Contracting Authority or their in-country entities, colleagues or contacts must not be used as a contact or reference for the purposes of the importation of goods.

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