



## **OPEN CALL FOR TENDERS No 275**

**Upgrade of communication system and related services**

**European Court of Auditors**

## **ANNEX A**

**August 2014**

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# 1. Presentation of the project

The project entails the technical updating of all the multimedia installations in conference room K2-001.

The installations to be updated are of several types:

- Video capture, broadcasting and display;
- Audio broadcasting;
- Multi-channel conference and simultaneous interpretation system (CSIS);
- Room monitoring and control equipment.

The room has a 34-seat main table, a presentation lectern, in-room seats for 119 persons, 22 interpreting booths and a local control room.

The general function of the room must not be modified. The purpose of upgrading the installations is to incorporate the latest technological developments to keep each installation operational for a further 10-year period.

Some of the existing equipment can be retrieved. Details of the components that are to be replaced are set out below in this document.

In summary, the following general services form part of the project:

- Conference and simultaneous interpretation system
  - ↳ Complete replacement of the conference and interpretation system.
- Audiovisual installations
  - ↳ Addition of an HDMI injection point (and retention of the VGA injection point) at each seat at the table;
  - ↳ Removal of the VGA screen output socket at each seat at the table;
  - ↳ Replacement of the projector;
  - ↳ Replacement of all the built-in video display units.
- Recording installations
  - ↳ Complete system replacement (cameras, central equipment and cabling).

Unless otherwise indicated in the present specifications, all technical functions of the room are to be retained. The modifications to be made are set out in the rest of this document (see in particular the chapter 'Functional description').

## **2. Contractor's obligations**

The Contractor must provide a 'turnkey' installation.

The Contractor undertakes to deliver a complete installation, in perfect working order, which fully meets the operational requirements and objectives defined below in this document.

The Contractor is solely responsible to the Court for the installation. It cannot exclude actions attributable to its own subcontractors or suppliers from its warranty.

In any event, the Contractor will remain responsible for the design, implementation, operation and performance of the installation.

The Contractor must be a specialist in this type of service, and the same shall apply to its personnel or the personnel of the subcontractors that it engages to carry out the work. The Contractor must not therefore add the value of any services not described in the present documentation that are necessary for obtaining the final results and/or obligatory in line with good engineering practice and the standards and regulations in force on the date of signature of the contract.

## **3. Description of the project**

### **3.1. Scope of the project**

The part of the contract governed by the present tender specifications comprises design and implementation studies, the supply of installations and equipment, the positioning, assembly, connection, programming and configuration of the installations, their entry into operation, fine-tuning and the testing and checking of the operation and performance of the installations.

The bill of quantities includes flat-rate and global quantities.

### **3.2. Content of the project**

#### **3.2.1. General**

Within the limits of its contract, the Contractor shall be solely responsible, subject to payment of the agreed price, for all works, services and supplies that are required in order to ensure that the installations comply with the tender specifications, regulations, standards and good engineering practice and enable completely normal operation in accordance with the requirements set out below.

Consequently, the Contractor may not invoke errors or omissions in the bill of quantities, plans or tender specifications to limit its obligations and consequently waive the need to

provide, at no additional cost, any supplies, services or works whatsoever that are necessary for the correct functioning of the installations.

The project comprises the following non-exhaustive list of activities:

- The drafting of planning documents, including a list of all deliverables with delivery dates;
- The drafting of implementation documents in French or English or German;
- Supplies, assembly, programming and configuration, adjustments, tests and checks, entry into operation in perfect working order, and the fine-tuning of functions;
- Modifications to be made to existing software and programming;
- Interfaces with other technologies;
- Any necessary reaction to information supplied by the Court during the implementation phase;
- Provision of the “AS-BUILT” folder and special tools;
- Training and instruction for operatives, managers, administrators and maintenance personnel;
- The provisional acceptance;
- The warranty period;
- The final acceptance;
- The re-setting of parameters and assistance with operation during the first year of warranty.

The Contractor must draw up detailed planning documents giving a list of all deliverables and delivery dates. These documents must be prepared in French or English and submitted for the Court's approval no later than one week after signature of the contract.

The Contractor must draw up the implementation documentation and map out its installations, for example by means of detailed plans, detailed schematic diagrams and programming documents (lists, tables, etc.). These documents must be drafted in French or English.

The implementation documents must be submitted during the general planning process so that the Court can examine them, comment on them and express its opinion before any equipment is ordered or any installation work is carried out on-site.

If calculation notes, datasheets or samples need to be checked before one or more implementation plans are drawn up, the Contractor shall be responsible for submitting them to the Court in a sufficiently timely manner (a minimum of 2 weeks is necessary for checks).

Every submitted document must be accompanied by a mandatory summary listing the documents submitted, indicating the document type and number, the submission date, status (pending/accepted/rejected) and validation date. This list must be drawn up and updated by the Contractor.

If modifications are made to the positioning or choice of equipment or design compared with the tender documentation, the Contractor shall be responsible for taking these into account when drafting its implementation plans and for complying with the instructions received from the Court.

Equipment visible in the room must blend in with the architecture (unobtrusive integration). The Court may choose the RAL colour at its own discretion. This colour will be defined when the datasheets are approved.

The installations must be implemented in accordance with good engineering practice, using recognised quality equipment. All new items of equipment must be submitted to the Court for approval prior to installation or procurement. The Contractor must provide all technical information (catalogues, photos, plans) giving full details of the characteristics of such equipment and their compliance with the regulations.

Equipment may not be installed before the Court has given a favourable opinion on the datasheets, samples, implementation plans and calculation notes.

That favourable opinion shall not release the Contractor in any way from its responsibility with regard to the implementation of its installations in accordance with the performance requirements.

The Court reserves the right to refuse any supply, implementation or installation because documents have not first been checked and accepted.

### 3.2.2. Safety

The equipment stored by the Contractor must not in any way compromise safety or access to different parts of the building, or cause any inconvenience to the building occupants.

The Contractor shall be solely responsible for its tools and equipment, whether installed or stored. The Court waives any responsibility in the event of theft, fire, damage or accident.

### 3.2.3. Delivery of equipment

The Contractor shall be solely responsible for the reception, handling and storage of equipment until the confirmation of provisional acceptance.

The Court will not under any circumstances deputise for the Contractor in this respect, even in the event of absence.

### 3.2.4. Intellectual property

The Contractor guarantees to the Court that it is the owner of all systems, hardware, software and methods employed to perform its services. The Contractor furthermore undertakes to obtain all licences relating to its installations and to transfer ownership thereof to the Court.



The studies, hardware and software licences supplied by the Contractor in connection with the present project will become the property of the Court following provisional acceptance of the installation.

### 3.2.5. Quality of the equipment

The Contractor shall be entirely responsible for all installed equipment.

All supplied equipment must be new, compliant with currently applicable standards and regulations and free from any visible or hidden defects.

In the event of any dispute concerning quality, only standardised testing regulations will be applicable (see 4.2 'Reference documents'), and the costs of expert appraisal shall be borne by the Contractor. If the tests reveal an obvious defect in an item of equipment, the Contractor must replace said equipment with equipment having operating characteristics identical to those described in the specifications.

The equipment and software supplied must be of an established make (i.e. already used in comparable projects), using recent technology and of recent manufacture and tried and tested operation (formally certified or approved). The latest versions of software programs must be supplied, with licences.

Equipment must be guaranteed by the manufacturer for the intended use.

During the warranty period, the Contractor must undertake, at its own expense, to replace like-for-like, repair or modify all parts or components identified as defective, and to correct or arrange correction of errors identified in the supplied software or programming carried out.

### 3.2.6. Implementation planning phase

#### 3.2.6.1. Implementation documentation drawn up by the Contractor

The Contractor must keep all implementation documents up-to-date for the duration of the project for the upgrading of audiovisual installations in room K2.001. These documents must also be made available to the Court.

The following documents must be submitted to the Court on a monthly basis:

- the original schedule with an indication of milestones and monthly progress (the works progress report);
- any adjustments, taking account of the planned schedule, with an indication of the new critical path;
- a description of the resources to be deployed in order to meet the schedule.

The implementation documentation must include, *inter alia*, the following documents:

- ❖ The tender specifications
- ❖ The calculation notes
- ❖ All datasheets (provisional and finalised)

Precise datasheets must be supplied for each new item of equipment planned as part of this project.

A summary list (brief description, serial number, submission date, 'pending, refused, accepted, etc.' status) of the numbered datasheets must be drawn up and updated by the Contractor. This summary must be attached without fail to each new sheet.

On completion of the project, all finalised datasheets must be included in the as-built folder.

- ❖ The implementation plans (provisional and finalised)

Each plan must be numbered. A summary list (precise reference number, title, serial number, submission date, 'pending, refused, accepted, etc.' status and validation date) of the technical plans must be drawn up and updated by the Contractor. This summary must be attached without fail to the circulated plans.

The Contractor must draw up implementation plans (coordinated with existing installations, architecture and outfitting) for all of its technical installations, and, in particular:

- a description of the general principles and features of the system;
- a general schematic diagram of the installation;
- block diagrams of all specific installations;
- mimic diagrams of all modified electrical panels and switchboards;
- detailed schematic diagrams;
- construction plans for electrical switchboards, panels, distributors, etc.;
- wiring diagrams;
- a list of cables;
- detailed implementation plans (equipment supports and assembly, cable routing, coordination with other equipment, connections, etc.);
- etc.

- ❖ Working sketches for implementation
- ❖ An updated schedule of works
- ❖ Any other relevant implementation document

- assembly instructions
- suppliers' recommendations
- standards
- etc.

#### 3.2.6.2. Samples

Samples may be requested in addition to the datasheets for some equipment (as specified later in this document).

These items of equipment must not be installed unless a favourable opinion has been given by the Court.

#### 3.2.6.3. Definition of man-machine interfaces

Man-machine interfaces and the related ergonomics must be defined by the Contractor in consultation with the Court.

Meetings between the Contractor and the Court will be arranged for this purpose during the implementation planning phase. The interfaces shall be implemented by the Contractor on the basis of the conclusions of those meetings (after validation by the Court).

#### 3.2.6.4. Marking of installations

Each item of equipment must be uniquely identified by means of an indelible label.

These identification marks must also be copied exactly in the as-built documents (plans, diagrams, lists, etc.) and in the programming and parameterisation of software and man-machine interfaces.

The system for marking installations, and in particular the format used for equipment numbering, must be submitted to the Court for validation prior to actual implementation.

A list of identification marks (for all equipment) must be drawn up by the Contractor and submitted to the Court on paper and in electronic form. This list must include at least:

- the equipment identification number;
- the technology concerned;
- the equipment type;
- the location of the equipment.

#### 3.2.7. Implementation phase

##### 3.2.7.1. Miscellaneous work and services to be provided

The miscellaneous work and services specified below are included in the contract:

- Dismantling, removal and disposal of obsolete equipment (including cables);
- All drilling, cutting, sealing and repairs, including the necessary filling work;
- All repairs following work in the context of the project, to be carried out according to the type of element cut through and its RF characteristics – mandatory submission of the approval report for the product used;

- The supply and installation of all materials providing sound insulation and insulation from the transmission of vibrations and noise resulting from the operation of the installation;
- High and low voltage electrical connections, monitoring/control, etc.;
- Replacement under warranty of all parts identified as defective as a result of a material or manufacturing fault;
- Protection of equipment and maintenance of installations in a good condition (without soiling) during the works and until provisional acceptance.

#### 3.2.7.2. On-site work – Limitation of disruption

Throughout the implementation phase, the Contractor must ensure that its work does not disrupt operations in the rest of the building. If technical work involving possible disruption to the normal operation of the building proves necessary, this work must be validated and planned in advance by the Court and by the technical service responsible for general building maintenance.

#### 3.2.7.3. Inspection by approved body

On completion of the works and before entry into operation, the Contractor must arrange for an inspection to be carried out, by a body approved by the *Inspection des Travaux et Mines* in Luxembourg, on the following parts of the installation that were to be modified during the implementation phase:

- electrical switchboards and components (all equipment);
- fire-resistant seals.

The choice of inspection body must be approved by the Court.

The report by the inspection body shall be part of the as-built folder.

#### 3.2.7.4. On-site checks and tests during implementation

Certain elements of work must be inspected by the Court and the Contractor before being hidden from view:

- ducts and trunking in cavity walls, false floors, false ceilings, etc., before they are closed;
- RF protective seals around trunking, pipes, etc.

These inspections prior to closure must include a visual quality check and a check of conformity with the implementation plans or as-built plans.

The Contractor must inform the Court of the proposed schedule for these checks and tests at least one week before the first such check.

### 3.2.7.5. On-site installation tests, self-checks and partial completion inspections

As soon as the on-site assembly work is complete and the installations are ready to be put into operation or to be used under normal operating conditions, the Contractor must notify the Court to this effect.

The Contractor must first carry out checks to verify that the works have generally been carried out correctly.

The Contractor must then carry out all self-checks (tests and, where necessary, adjustments and fine-tuning of the installations), following a precise procedure and taking account of external constraints.

Two weeks at the latest before starting these self-checks, the Contractor must submit the test procedures which it intends to apply to the Court for its opinion.

The results of the self-checks carried out by the Contractor shall be collated in detailed reports (for which the Contractor shall be responsible), which must be submitted to the Court for examination at least **8 days** before the provisional acceptance date.

The self-check reports must include the following information:

- identification of the equipment and the installation tested (purpose, parameters set, etc.);
- a description of the test carried out;
- the result of the test;
- any faults identified;
- the test date.

Partial completion inspections may also follow these self-checks. The Contractor must arrange and participate in the completion inspections. During this phase of testing, the Court or its representatives may carry out the following checks:

- verification of the self-check reports (through sampling and random testing of the installation);
- qualitative and quantitative conformity checks against the tender specifications and implementation studies;
- checks of compliance with the required functions;
- checks of compliance with the applicable regulations and standards;
- checks of equipment and software compliance with the tender specifications;
- checks of the positioning of equipment;
- checks of compliance with the implementation rules;
- electrical checks;
- etc.

Each partial completion inspection shall result in the Contractor's drafting of a test report which must be submitted one week later for validation by the Court or its representatives.

The Contractor shall be responsible for providing the resources necessary for carrying out these tests (and any modifications required to ensure compliance).

All of the equipment required for the on-site tests must be provided by the Contractor, which will remain the owner thereof but with no entitlement to require the payment of rental or compensation.

Additional test sequences may be required for any equipment found to be unsatisfactory.

At each new entry into operation or test, the Contractor and, where appropriate, its suppliers must be represented by qualified personnel capable of performing all necessary operations and taking all decisions.

If an incident or anomaly occurs during preliminary testing or at acceptance, the Court or its representatives may require the test to be repeated in its entirety. The Contractor shall then be solely responsible if the delivery schedule is not met.

The miscellaneous actions and operations required in connection with implementation and testing shall be carried out by the Contractor, which shall assume full responsibility in this respect, being deemed to be qualified to determine the nature of such operations and, if necessary, refuse them if it believes that there is a risk of damage to its equipment or to that of a third party.

#### 3.2.8. Entry into operation

The period of entry into operation can begin at the end of the aforementioned testing period, and following submission of the various test reports specified above. Entry into operation may be partial for each technical installation, simultaneous or successive for several different installations.

This period allows the Court to verify the correct operation of the installations.

The Contractor must provide, at its own expense, the measuring devices, tools, general supplies and personnel necessary for the performance of the tests and additional checks required by the Court.

When, to the Court's satisfaction, the installations:

- have undergone conclusive tests;
- have been successfully checked by an approved body/bodies;
- have operated for a minimum continuous period of 1 month;
- are ready to provide normal service;

the end of entry into operation shall be documented in a report.

Once the installations have thus entered into operation, the Contractor must then carry out, at its own expense, any additional fine-tuning, adjustments and repairs the need for which was revealed during operation, use or specific tests.

During this fine-tuning period, the installations shall remain under the responsibility of the Contractor.

### 3.2.9. Briefing, instruction and training phase

The present contract includes all of the services necessary for the training, instruction and briefing of personnel whom the Court will designate (three members of staff) and who will be in charge of the operation and control of the installations.

The instruction period can be implemented in parallel with the period of entry into operation as described above, but independently from it.

The instruction shall include both theory and practical training on the installations themselves; these theoretical and practical training elements must be completed before the provisional acceptance.

Training shall be geared towards the different skills required to operate the installations (manager/administrator, operator, operative, maintenance teams, etc.).

The theoretical training shall describe the implemented systems and installations, along with their features and operating procedures. It shall be based mainly on the as-built documents. This training may be delivered, with the Contractor's support, by representatives of the installed equipment and hardware manufacturers.

The practical training shall consist of a presentation of the use of the installed equipment, including a series of individual exercises. It shall also include an explanation of the link between the documentation (as-built folder) and the installed system.

At the end of each training session (theoretical and practical), the trainer shall arrange a question and answer session.

The trainer shall draw up an evaluation and suggestion grid of a similar nature for each of the training modules. At the end of each training session, the trainer shall collect the grids completed by each participant.

At the end of each training module, the trainer shall draw up a report comprising:

- the subject of the training;
- the signed attendance lists;
- the evaluation grids completed by the participants.

The training shall be carried out by personnel with both technical and communication skills.

The training shall be based on syllabuses which shall be drawn up in French, tailored to the systems implemented and the jobs concerned, and issued to each participant in the training modules. Technical documentation may be used to illustrate the presentations, but may not replace them.

A schedule and a timetable for the training modules must be drawn up by the Contractor and submitted to the Court so that it can comment, make the necessary arrangements and determine the participants. Designated participants who fail to attend shall be considered to have received training.

The total training time shall be a minimum of 1 working day for the theory session and 1 working day for the practical session.

The instruction period may not start until at least three weeks after the Contractor has submitted the elements of the as-built folder that are necessary for the training. The instruction period shall begin no later than 1 month before the provisional acceptance.

### 3.2.10. 'AS-BUILT' folder

During the implementation phase, the plans, datasheets and diagrams shall be corrected and updated by the Contractor in minute detail in order to show the installations exactly as they were actually implemented.

After the completion of work and before the provisional acceptance, the Contractor must submit to the Court, for information, a draft of its as-built folder, composed as specified below.

Following approval of this draft by the Court, the Contractor shall supply 3 hard copies and 5 electronic copies of the final as-built folder. The Contractor shall retain a further 1 hard copy and 1 electronic copy.

The as-built folder must be supplemented by elements relating to the checks and tests in the period between submission of the folder and the provisional acceptance.

#### 3.2.10.1. Presentation of the as-built folder

Each folder must be presented in a uniform and homogeneous manner in labelled A4 ring binders with separator sheets and a table of contents for each binder.

The as-built folder shall be structured as follows:

##### **0. General index**

- Summary of all binders and tables of contents for each binder

##### **1. General descriptive notes on the installations**

- General description of each installation
- Basic data
- Description of the general principles and features of the system
- General schematic diagram of the installation
- General plan of interdisciplinary links

##### **2. Calculation notes**

- List of calculation notes



- Finalised calculation notes
- 3. Block diagrams, schematic diagrams**
  - List of diagrams
  - Graphic material
- 4. As-built plans**
  - List of plans
  - Complete front and top views of the installations, including detailed drawings
- 5. Operation and maintenance instructions**
  - Manuals containing the necessary information:
    - for the installation manager
    - for the operator
    - for maintenance and servicing personnel
  - Descriptions of operating, maintenance and servicing activities (bespoke documents containing step-by-step instructions for operatives, managers, administrators and maintenance personnel)
  - Fault clearance procedures
  - Lists of recommended spare parts and special tools necessary for maintenance
- 6. Datasheets**
  - List of datasheets specifying the following elements:
    - datasheet number
    - description of the equipment
    - location of the equipment
    - makes, types, origin, supplier
  - Datasheets
- 7. Checks, tests and entry into operation**
  - List of checks and tests (reports, etc.)
  - Factory production control reports
  - On-site test and inspection reports
  - Acceptance reports from approved bodies
- 8. Warranties**
  - List of warranties
  - Copies of warranties offered by equipment suppliers
  - Compliance documents for fire-resistant fillers
- 9. Miscellaneous**
  - Backup of the database and operating programs (in electronic format)
  - Programming matrices
  - Wiring diagrams
  - Lists of cables

3.2.11. Provisional acceptance

Following testing and checking, the briefing and training of personnel and supply of the as-built folder documentation, the Contractor can then invite the Court to proceed with the provisional acceptance of the installation.

For the provisional acceptance, the installations under the present contract must be in perfect working order, complete in all respects, aesthetically pleasing and clean.

The provisional acceptance, which shall be carried out in the presence of the Court and the Contractor, may not take place until the following conditions have been satisfied:

- Submission of all documents, checked and signed by the Court;
- Complete supply of all equipment specified in the contract;
- Complete activation of the technical features of the installation following real, complete and satisfactory tests, validated by test reports and checks of any corrections made;
- Training of the personnel responsible for operating the system;
- Provision of a list of defects to be remedied during the finalisation period, specifying the deadline agreed with the Court for remedying defects; the defects to be remedied may entail minor elements only which have no impact on either the operation or maintenance of the installations;
- Provision of the final account.

The Contractor shall be solely responsible for its installations until the provisional acceptance.

The provisional acceptance shall take the form of a **report** drawn up by the Contractor, which must then be validated by the Court or its representatives.

The warranty period shall begin on the date of the provisional acceptance.

### 3.2.12. Warranty period

#### 3.2.12.1. Equipment warranty

The Contractor shall guarantee the correct operation of the equipment which it has supplied and installed, taking the site environment into account. The Contractor undertakes to replace, repair or modify, at its own expense, all defective parts or elements of the installation during the entire warranty period.

All equipment supplied shall be guaranteed for 24 months (parts and labour) from the provisional acceptance date confirmed by the Court. This warranty shall cover all defects, visible or otherwise, in the materials employed, and all manufacturing and design faults, and will guarantee the correct operation of the installation.

The Contractor's responsibility shall also cover, in the same terms, all supplies which it may have subcontracted.

### 3.2.12.2. Software warranty

All specific software and software packages supplied shall be guaranteed for 24 months from the date of provisional acceptance by the Court.

This warranty shall cover the capacity of the software to perform the required functions, and the absence of design, programming or parameterisation errors.

The Contractor's responsibility shall also cover, in the same terms, all supplies that it may have subcontracted.

The Contractor undertakes to correct, or arrange correction, at its own expense, errors identified within the application software supplied. In the case of the operating systems, this obligation shall be limited to informing the suppliers of identified errors and installing the patches issued by these suppliers.

During the warranty period, software shall be updated by the Contractor at no additional cost. Software updates shall be recorded in the as-built folder. Complete new versions of software shall therefore be supplied to the Court.

The Contractor must also ensure and guarantee to the Court that all functions are retained following the implementation of a new version of software or software package.

### 3.2.13. Final acceptance

At the end of the warranty period, the Contractor can then ask the Court to proceed with the final acceptance of works.

According to the terms of the contract, and if:

- provisional acceptance has been confirmed;
- all defects noted in the provisional acceptance report have been remedied and any reservations expressed have been dealt with;
- the operation of the installations during the warranty period has been satisfactory;

final acceptance may be granted by the Court.

One (1) month before the date planned for the final acceptance of works, the Contractor shall provide the Court with a **report** on the final acceptance of works.

Where the Court deems it necessary, it may ask the Contractor for new documents or additional information in relation to the report submitted by the Contractor on the provisional acceptance of works.

Where the Court is fully satisfied following the final acceptance inspection, a report (the "report on final acceptance of the project") shall be drawn up and signed by both parties. This document shall be evidence of the final acceptance.

The Court shall confirm its final acceptance of the works by signing the report on the final acceptance of works.

Once the Court has signed the report on the final acceptance of works, it shall pay the balance outstanding in accordance with the provisions of Article I.4.4 of the contract.

## **4. General technical clauses**

### **4.1. General**

The equipment, appliances, accessories and software, and the characteristics of their implementation, execution, installation or assembly, even where not explicitly described in the technical specifications, are to be designed and implemented by the Contractor in such a way that they conform to good engineering practice and satisfy the following conditions:

- do not compromise the safety of persons or the protection of property;
- ensure fault-free operation of the installations to which they belong and are of impeccable appearance;
- minimise the number of possible outages and incidents, in particular by excluding components with an abnormal degree of ageing;
- provide simple, comfortable and safe access to all elements and connections;
- enable occupancy and operation under optimum conditions;
- allow the modification and extension of the installations.

The compatibility between new equipment and retrieved equipment must be guaranteed in such a way as to obtain a uniform overall system that is fully operational and meets the Court's expectations.

### **4.2. Reference documents**

The installations, equipment, accessories and software must comply with the following standards and regulations:

- ISO 2603:1998 - Booths for simultaneous interpretation -- General characteristics and equipment
- IEC 60914: Electrical and audio requirements for conference systems
- ISO/IEC 11801 - Information technology – Generic cabling for customer premises
- EN 50310 - Application of equipotential bonding and earthing in buildings with information technology equipment
- EN 50173 – Information technology – Generic cabling systems
- EN 50174-1 - Information technology - Cabling installation - Part 1: Specification and quality assurance
- EN 50174-2 - Information technology - Cabling installation - Part 2: Installation planning and practices inside buildings
- FIA-TSD-2000-1-1 – Optical Fibre Cabling LAN Application support guide
- IEEE 802.x series
- EN 61000 – Electromagnetic compatibility (EMC)

- The Grand-Ducal Regulation on electromagnetic compatibility (Law of 25 March 2009 governing electromagnetic compatibility)

and, in a general manner, with the following regulations:

- European standards produced by ETSI
- Standards harmonised at European level (CEN or HD)
- International standards (IEC or CEE-EL)
- Environmental acts or decrees
- Individual regulations the application of which is required by:
  - the electricity distribution company;
  - telecommunications operators;
  - the fire prevention services;
  - police regulations;
  - etc.

The latest versions of the documents listed above must be considered, along with all addenda, annexes and/or amendments published at least 10 days before the bid submission date.

The Contractor may not invoke any contradiction or repetition in the texts of the different documents, whereby the Court shall always benefit from the interpretation of each clause that is most favourable to it. Reference either to a provision of a particular standard or to a specific standard shall not in any way diminish the full application of the standard cited or the standards in general.

### **4.3. Accessibility**

Decisions concerning the choice and implementation of equipment shall be made by the Contractor, account being taken of the dimensions of the premises and technical areas set aside for the equipment (racks in the control room, false floors, false ceilings, furniture, etc.), in such a way as to ensure accessibility to the equipment and guarantee simple operation and maintenance in total safety.

### **4.3 Compatibility with final fittings**

The Contractor must take account of the nature and dimensions of the premises, the fire compartmentation and the composition of dividing walls in order to meet the requirements for acoustics, fire protection and, in a general manner, the compatibility of the equipment with the final fittings of the premises.

### **4.4 Electromagnetic compatibility**

Electromagnetic interference caused by the new equipment must not exceed the threshold appropriate to the locations in which the equipment is to be used.

Each item of equipment must offer a level of immunity to electromagnetic interference that is sufficient to guarantee its fault-free operation in the environment in which it is installed.

The equipment and installations must comply in particular with the following standards:

- EN 50082: Electromagnetic compatibility (EMC) - Generic immunity standard.

#### **4.5 Drilling, housings, miscellaneous fixings**

All drilling, cuts and grooves necessary for the works must be requested explicitly from the Court, which must approve the request and the means of implementation.

Particular care must be taken by the Contractor with regard to the work to be carried out in the premises in which retrieved or new installations are ready to operate. In particular, the Contractor must use suitable tools or provide effective protection to prevent dust from reaching the installed equipment.

#### **4.6 Acoustics**

The implementation of specific measures relating to protection against noise and the propagation of vibrations shall be an integral part of the Contractor's responsibilities.

#### **4.7 Constraints linked to existing installations**

##### **4.7.1 Cabling**

New cabling must use existing routing.

The services provided must also include the removal and disposal of cabling associated with removed equipment.

If drilling or cutting is necessary, the Contractor must also carry out all fire-resistant filling and sealing work at its own expense. The Contractor must also ensure that acoustic constraints are meticulously observed.

##### **4.7.2 Dimensional constraints**

All items of equipment (and the work necessary for their installation and connection) must be chosen and planned by the Contractor in such a way as to comply with the dimensional constraints relating to the existing equipment that is to be retained, the available technical areas, the final fittings and furniture (space for the integration of equipment into the furniture).

Existing spaces in the furniture or architectural components must be retained as far as possible.

If integration of the equipment that it proposes nevertheless requires modifications to the furniture or fittings, tenderers:

- must include in their bids all supplies and services necessary for these modifications;
- must describe explicitly in their bids the changes to be made and the work planned (details of operations and work schedule).

For each type of equipment to be housed, a prototype must be submitted for validation before going into production.

#### 4.7.3 Ventilation/air conditioning of the premises

No modification is envisaged to the existing arrangements for ventilation and air conditioning of the premises.

The control room has no active cooling system. The Contractor must consequently design its installation in such a way that the total heat output of the installed equipment in the control room is limited and allows all the equipment (new and retrieved) to function without the addition of an active cooling system.

The conference room is ventilated via the false floors. The Contractor must ensure that the new components (equipment or cabling) do not interfere with the correct operation of this ventilation. Furthermore, the types and numbers of fixtures and mountings of the different components installed in the false floors must be planned by the Contractor in such a way as to avoid any disruption by whistling or hissing.

#### 4.7.4 Power supply to the equipment

All of the electrical and multimedia equipment in room K2.001 is powered from the electrical switchboards installed in rooms K2.T0.05 and K2.T0.07.

The upgraded multimedia installations (new and retrieved equipment) must be powered from the same switchboards.

The Contractor shall assume responsibility for all supplies (cables, transformers, EIB modules, etc.) and services necessary for the power supply to the multimedia equipment, whether new or retrieved. These supplies and services must be included in the unit prices of the price schedule.

*NB: Wiring diagrams for the existing panels are appended.*

### 4.8 Ancillary services

All ancillary services shall be fully included in the unit prices, unless specific equivalent services are shown as a separate item in the price schedule. The following is a non-exhaustive list of ancillary services:

- Setting-up of the site;
- Coordination with the technical services responsible for building maintenance;

- Waste management;
- Small fixtures and fittings;
- Assembly, adjustment and activation of all components;
- Earthing of all metal parts;
- Tools and equipment required for implementing the installation;
- Measuring tools and appliances required for entry into operation, testing and acceptance;
- Removal of waste and packaging brought in by the Contractor;
- Daily cleaning of working areas;
- Full cleaning and dust removal of the installations prior to acceptance;
- Attendance at meetings during the implementation planning and implementation phases;
- Supply, assembly, maintenance and dismantling of scaffolding or platforms;
- Services to provide evidence of the quality of the supplied equipment and installations;
- Partial or provisional entry into operation;
- Supply and erection of specific apparatus for the installation of equipment;
- Drafting of all planning and implementation documents (calculation notes, plans, diagrams, coordination plans, etc.);
- Supply of samples;
- Provisional measures for the management, maintenance, monitoring and servicing of the installations in operation prior to acceptance;
- Extension of warranty for installations in operation prior to acceptance;
- Drafting of test procedures;
- All self-checks and partial tests;
- Participation in completion inspections and acceptances;
- Drafting of a specific health and safety plan;
- etc.

## **4.9 Documents to be provided**

### **4.9.1 Documents to be provided by the Contractor**

No later than one month after signature of the contract, the Contractor must submit the following documents to the Court for approval:

- Schematic diagrams of the installation
- Datasheets for each component of the installation (equipment, cables, etc.)
- Implementation plans
- Samples



## **5 Functional description**

### **5.1 Introduction**

Since the project involves a global upgrade of an existing installation, the functional description provided below describes the present situation and the changes to be made to it.

Depending on the tenderer and the products with which it works, the required performance may be achieved in different ways (network topology, integration of different functions, integration into the furniture, etc.). Consequently, tenderers must append to their bids a general description and a schematic diagram of the proposed installation, along with the technical specifications for each component of this installation.

If required, the Court can provide the current as-built folder.

### **5.2 General operation of the room**

The room has a 34-seat main table, a presentation lectern, in-room seats for 119 persons, 22 interpreting booths and a local control room.

The room operates entirely in local mode and has no connection to an external control room.

The room is designed to hold conferences and meetings (using the table only). Two configurations are available depending on use. In a 'round table' configuration (meeting), only the equipment on the main table is used and the public address system is also limited to the table.

Each person at the main table is able to connect a portable computer (to their control panel) and inject video and/or audio signals (PowerPoint presentation or similar). These signals are then sent to the conference and simultaneous interpretation system, to screens built into the main table, to the projector and to the screens installed in the interpreting booths.

### **5.3 Public address system**

The existing public address system is to be retained in its entirety (equipment in the control room and the meeting area). All current features, in particular management of the different configurations (conference/meeting), must be retained.

The work (equipment and labour) required for integration of the existing installation into the overall upgraded multimedia system must be specified by tenderers in their bids.

### **5.4 Main table**

#### **5.4.1 Current situation**

Each of the 34 seats is equipped with a multimedia control panel which is flush-mounted in the table and comprises the following equipment:

- 1 language selection module (with volume control and remote headset connector)
- 1 headset
- 1 microphone activation button
- 1 gooseneck microphone
- 1 VGA screen output socket
- 1 VGA injection socket (injection of video from the user's portable computer)
- 1 IN mini-jack (for injection of sound from the user's portable computer)
- 1 attendant call button
- 1 x 230 V socket
- 1 x RJ45 socket for connection to the data network
- 1 LED signal presence indicator

Figure 1: Main table – "Participant" control panel

The control panel located on the lectern is similarly equipped, but also has a switch to control the motorised height adjustment of the lectern.

Figure 2: Lectern control panel

The main table is equipped with 16 Element One Versis 150 hinged but not motorised screens (1 screen for every 2 seats). The chairman's seat and the seat located opposite are equipped with vertical Element One Convers 150 motorised screens.

Each screen has its own ON/OFF controls. There is also a universal ON/OFF switch for all screens in the control room.

Figure 3: Main table - Workstation

A monitoring screen is also fitted in the main table. An additional mains socket, dedicated to this screen, is installed at seat 35. This is a touchscreen which offers the same controls as the room management system:

- Conference system management
- Management of audio and video input + forwarding to the display screens and the projector
- Public address system volume control
- Control of room lighting and blinds (separate controls + 8 predefined settings)
- Videoconference system management
- Room access control management

Speakers can take the floor by pressing the red microphone activation button located on the control panel. Several speaker management settings are provided:

- FIFO mode

- Group of 4 (maximum of 4 microphones switched on at the same time)
- Group of 8 (maximum of 8 microphones switched on at the same time)
- Request to speak:  
Requests to speak are made by pressing the red button once. All requests are displayed on the AMX screen. With the chairman's verbal agreement, users can then activate their microphone by pressing the red button a second time. After speaking, the speaker switches off their microphone, again by pressing the red button.

Speakers may switch off their microphones at any time by pressing the microphone activation button on their control panel.

The chairman's microphone always has precedence over other microphones.

When a microphone is switched on, its built-in indicator light is illuminated.

The 'attendant call' button is currently linked to a system which forwards the number of the seat from which the call originates in SMS text format to the attendant's mobile phone.

#### 5.4.2 Changes to be made

##### ❖ Multimedia control panels.

The general functions of the control panels must be retained.

The panels (fixing plates) to which the different modules are attached may be retained or replaced:

- If retained, the modified panels (following removal and addition of the components described below) must be of impeccable aesthetic appearance and have a level of finishing equivalent to the current panels.
- In the event of replacement, the new panels must have exactly identical dimensions so that they can be mounted in the existing furniture with no modification of the latter. A prototype must be made and submitted to the Court for validation before going into production.

The 230 V socket and the data connector must be retained and their operation must not be adversely affected by the modifications made to the panels.

The headsets and remote headset connectors must be retained.

The microphone must be replaced with a microphone offering 'anti-mobile' protection.

The monitor output (VGA) socket is to be removed and must not be replaced.

The existing VGA injection socket must be retained. An HDMI injection point must be added to each control panel. Injection of an 'Apple TV' signal must also be possible.

The entire conference and simultaneous interpretation system must be replaced. The language selectors must consequently be replaced with equipment compatible with the new

central equipment. It must provide the same features as the current selectors (choice of language, volume control, channel display).

❖ Attendant call system

The attendant call system must be replaced. This feature may be managed directly from the new conference system or by an ancillary system. The number of the calling seat must be displayed on a new screen to be installed on the attendant's desk located at the entrance to the room (and then forwarded in SMS format to a mobile phone). The operation of the system must be based on the system currently in operation in room K1.625.

❖ Control room call

A 'call control room' button must be added to the chairman's control panel. This button should activate a sound and/or light signal in the control room. An acknowledgement button (hardware or software) must also be installed in the control room. This button must allow the operative to confirm acceptance of the call and deactivate the call signal.

❖ Built-in video display units

The existing built-in screens (Element One Versis and Convers) must be replaced with new screens to allow optimum display of signals from the new video sources (injection points and cameras – see below).

The new screens to replace the Versis screens must be fixed or hinged but not motorised. The Convers screens must be replaced by motorised vertical screens (same configuration as the current screens).

The horizontal and vertical viewing angles (when raised in the case of hinged screens) must be adjusted to the dimensions of the furniture and the chosen form of mounting, and must guarantee optimum reading comfort.

Each screen must be equipped with local ON/OFF controls. A general ON/OFF switch for all screens must also be installed in the control room.

The dimensions of the new screens must be such that they can be mounted in the existing furniture with no adaptation of the latter. A prototype must be made and submitted to the Court for validation before going into production.

Tenderers which cannot offer equipment meeting the above description may propose one of two alternatives:

1. Replacement screens with different dimensions to those of the current screens.

This option must include all the supplies and work required to mount the

screens (including modifications or adaptations to furniture).

Bids must be supported by:

- A description of the proposed form of mounting
- A precise description of any planned modifications and other work affecting the furniture
- A provisional schedule of work

## 2. Retrieval and upgrading of existing screens

This option must include all the supplies and work necessary to adapt the screens to the new video sources in the room.

Bids must be supported by:

- A precise description of the proposed solution
- A precise description of the planned modifications and other work affecting the screens
- The technical characteristics of the screens following the modification/upgrade
- A provisional schedule of work

### ❖ Monitoring screen

The table-mounted monitoring screen must be retained. All the controls currently available on this screen, and the general ergonomics of display, must also be retained. If the control pages need to be modified, the new layouts must be submitted to the Court for validation before implementation.

## **5.5 Camera recording system**

### 5.5.1 Current situation

The room is equipped with 5 PTZ cameras for recording participants. The video system is interfaced with the conference system. The cameras are automatically directed towards participants as their microphones are activated.

The video installation (switching matrix and system programming) enables fast switching (less than 2 seconds) during a change of speaker. The system is programmed in such a way that no camera movement is visible on the various display devices. Switching consequently occurs once a camera has been positioned on the new speaker.

The joystick installed in the control room allows the camera settings to be changed manually.

A document camera is also included in the video system. It has a VGA output socket which allows it to be connected via an existing injection point.

### 5.5.2 Changes to be made

The current cameras must be replaced with 3 CCD 1 megapixel motorised cameras. The current camera positions are to be retained. New cabling is to be installed between the cameras and the control room.

All of the video equipment installed in the rack located in the control room (matrices, converters, etc.) must be replaced with equipment compatible with the characteristics of the new sources (cameras and injection points). The interfaces necessary to integrate the new cabling must also be added.

The current joystick must be replaced with a joystick compatible with the new cameras.

The interfacing with the new conference system must also be reviewed. Programming must be done in such a way as to retain the current mode of operation of the system. The level of performance in the switching of views in particular must be at least equivalent to that of the current system.

The existing document camera is to be retained.

## **5.6 Projector/projection screen and display screens**

### **5.6.1 Current situation**

A projection screen measuring 3m x 4m is fixed to the wall behind the main table. It is linked to a projector located in a recess above the control room. The projector is included in the video matrix and enables projection from all the different sources (injection points at the main table, cameras, document camera, TV decoder, etc.).

### **5.6.2 Changes to be made**

The screen must be retained in its current state. Its dimensions cannot be changed.

The current projector must be replaced with a projector compatible with the characteristics of the new sources, in particular those of the new HDMI injection points planned at the main table (format, resolution, etc.).

The optics of the projector must be chosen in such a way that the image projected on the projection screen is as large as possible.

New fibre-optic cabling must also be installed (incorporating the receiver, interfaces, etc.) between the new projector and the video equipment in the control room.

## **5.7 Interpreting booths**

### **5.7.1 Current situation**

The room has 18 booths with 4 seats and 4 booths with 5 seats. All seats are currently equipped with an interpreter station (removable).

Figure 4: Interpreting booth

Eight booths with an imperfect view of the projection screen are also equipped with display screens. These screens are built into the work desks and are similar to the Element One Versis screens mounted in the main table.

Figure 5: Interpreting booth equipped with display screens

Figure 6: Interpreting booth - Display screen

The interpreters have a local switch for selecting the source to be displayed on the screen (images from the cameras or from the injection points on the main table).

### 5.7.2 Changes to be made

Generally speaking, the current operation of the booths and the interpreter stations must be retained. However, the number of equipped stations is to be reduced to 3 per booth. Seats that are not equipped must nevertheless retain the facility to be equipped at a later date.

The interpreter stations must be replaced. The new stations must have the same controls and functions as at present. The microphones in the new stations must have 'anti-mobile' protection.

Furthermore, all installed stations must be identical and interchangeable (including when the room is in use).

Each interpreter station is currently fitted with a remote headset connection (mini-jack connector) on the edge of the work desk. This connector is to be retrieved and built into the new stations.

The existing (cat 5) cabling may be retrieved. The other booth equipment (data network connections, 230 V sockets, reading light and dimmer, etc.) must be retained.

The screens in the eight cabins that are so equipped must be replaced with new screens offering an optimum display of the signals from the new video sources.

The new screens must be fixed or hinged and unmotorised. The horizontal and vertical viewing angles (when raised in the case of hinged screens) must be adjusted to the dimensions of the furniture and the chosen form of mounting, and must guarantee optimum reading comfort.

Each screen must be equipped with local ON/OFF controls. A general ON/OFF switch for all screens must also be installed in the control room.

The new screens must have exactly the same dimensions as at present so that they can be mounted in the existing furniture with no adaptation of the latter. A prototype must be made and submitted to the Court for validation before going into production.

Tenderers which cannot offer equipment meeting the above description may propose one of two alternatives:

1. Replacement screens with different dimensions

This option must include all the supplies and work necessary for mounting of the screens (including modifications or adaptations to the furniture).

Bids must be supported by:

- A description of the proposed form of mounting
- A precise description of any planned modifications and other work affecting the furniture
- A provisional schedule of work

2. Recovery and upgrading of existing screens.

This option must include all the supplies and work necessary for adaptation of the screens to the new video sources in the room.

Bids must be supported by:

- A precise description of the proposed solution
- A precise description of the planned modifications and other work affecting the screens
- The technical characteristics of the screens following the modification/upgrade
- A provisional schedule of work

## **5.8 Room**

### **5.8.1 Current situation**

The room contains 119 seats, each with a control panel comprising the following equipment:

- 1 language selection module (with volume control and remote headset connector)
- 1 microphone activation button
- 1 gooseneck microphone
- 1 headset
- 1 x 230 V socket
- 1 x RJ45 socket for connection to the data network

The room is also equipped with 2 wireless microphones. These microphones are currently incorporated into the room's PA system.

Figure 7: Room

Figure 8: Room – "Audience" control panel



## 5.8.2 Changes to be made

The general functions of the control panels must be retained.

The mechanical parts of the panels (mounting plates) to which the different modules are attached may be retained or replaced:

- If they are retained, the modified panels (following removal and addition of the components described below) must be of impeccable aesthetic appearance and have a level of finishing equivalent to the current panels.
- In the event of replacement, the new panels must have exactly the same dimensions so that they can be mounted in the existing furniture with no modification of the latter. A sample must be made and submitted to the Court for validation before going into production.

All modules (language selection, microphone activation button, microphone, etc.) must be replaced with equipment compatible with the new central equipment installed in the control room.

The microphone must be replaced with a microphone offering 'anti-mobile' protection.

The existing wireless microphones must be retrieved. The audio signals from these microphones must also be forwarded to the conference and simultaneous interpretation system (so that they can be heard by the interpreters).

The work (supplies and labour) necessary for integration of the wireless microphone system into the overall upgraded multimedia system must be included by tenderers in their bids.

## 5.9 Control room

### 5.9.1 Current situation

The control room is equipped with three 19'' racks containing all of the central equipment for the multimedia systems in the room (one rack dedicated to the conference system, one rack dedicated to the sound equipment and one rack dedicated to the audiovisual equipment).

Figure 9: Control room - 19" racks

The control room is also equipped with:

- A 15'' flat screen for video preview
- A 15'' flat screen for data preview
- A room control touch screen
- A control computer (equipped with an external DVD writer)
- A joystick to control the PTZ cameras

Figure 10: Control room - Operator station

The room management touchscreen performs the following functions:

- Management of audio and video input + forwarding to the display screens and the projector;
- Detailed adjustments to the audiovisual system (including camera settings);
- PA system volume control;
- Control of room lighting and blinds (separate controls + 8 predefined settings);
- Videoconferencing system management;
- Audio and video recorder management;
- Webstreaming system management.

Access to the management screens is obtained by inputting a user code. The system allows different codes to be created with different levels of security (access rights to the various functions).

## 5.9.2 Changes to be made

The new equipment must be installed in the existing 19'' racks. The equipment to be replaced or removed must also be dismantled and taken away.

The features of the installation management equipment (screens, joystick, PC, etc.) and the related ergonomics must be retained.

A new digital recording system (audio + video/on hard disk with a facility for transfer to external medium) must be provided.

The current control PC must be replaced. With the exception of the room-management touchscreen, all screens in the control room must be replaced.

Checks and adjustments must be foreseen to the programming of all monitoring equipment. The EIB interface for managing the lighting and blinds must also be reprogrammed.

A system for monitoring the different audio channels used by the conference and simultaneous interpretation system must be made available to the operator in the control room. This system will allow simultaneous monitoring of the speaker channel (room) and an interpretation channel.

A system for the automatic management of the installation activation and deactivation sequences must be installed. This system will allow the operator to start up all of the equipment in the control room by actuating a single switch.

The videoconferencing system must not be retrieved or replaced.

The existing TV tuner must be retrieved and incorporated into the updated multimedia installations.

### Conference and simultaneous interpretation system

All of the current conference system equipment (central console, extension units, analogue input panels, analogue output panels) must be replaced. The interpretation system must allow the use of at least 30 different languages.

The current digital recorder (SONIFEX) must be replaced with new equipment.

The audio cassette player/recorder is to be removed and must not be replaced.

### Audiovisual system

The central audiovisual equipment must be replaced with new equipment that is compatible with the characteristics of the new sources. The new equipment (matrices, converters, transmission modules, synchronisers, etc.) must be installed in the existing video rack.

Any retained equipment must be checked and overhauled (dismantled, cleaned, possible firmware updates, etc.) before being reincorporated into the upgraded installation as a whole.

The current VHS player must be replaced with a CD/DVD/Blu-Ray player/recorder.

The new video equipment must allow:

- Retrieval and matrixing of the video signals from all sources (cameras, injection points in the room, CD/DVD/Blu-Ray player, TV tuner, etc.);
- Automatic switching of camera images according to speaker (conference system slave);
- Remote control of cameras;
- Preview of data and video signals before broadcasting;
- Broadcasting to the projection screen;
- Broadcasting to the table screens (main table and interpreting booths);
- Digital recording of video and data signals.

### AMX

The AMX management equipment may be retrieved. The current management principles must be retained. Full reprogramming is required in order to integrate all of the new equipment. A new webstreaming system (see below) must also be managed by the AMX equipment.

All of the controls currently available on the touch screen, and the general ergonomics of the displays, must be retained. If the control pages need to be modified, the new layouts must be submitted to the Court for validation before implementation.

## **5.10 Webstreaming**

The addition of a new webstreaming system is also part of the multimedia installation upgrade project.

This system must allow audio and video sources originating from the conference room to be broadcast live, or as a recording, on the Court's Intranet. Users should be able to follow a meeting or conference held in room K2.001 from their offices and via a web browser and a video player installed on their personal computers.

Users should be able to switch during a broadcast between three audio sources (original language + 2 simultaneous interpretations). The video sources originating from the cameras and injection points (PowerPoint presentations, for example) must also be available.

A simple editing module (management of presentations, division into chapters, deletion of pauses, addition of metadata, etc.) must be linked to the webstreaming system.

The storage space required for recording the different sources will be provided by the Court's IT department. Data backup will also be provided by the IT department.

The system must allow broadcasting to the Internet (possibly via EbS, a European Commission service or the like) and to mobile devices.

It must also be possible to broadcast content from other locations in the 3 buildings of the Court.

The system must allow detailed statistics relating to streaming usage to be generated and exported.

The system may also offer broadcasting of all the languages in which simultaneous interpretation is provided (rather than just the three audio sources referred to above).

## **6. Technical specifications**

### **6.1. Public address system**

#### 6.1.1. Current system

The existing PA system should be preserved in its entirety.

The Contractor must nevertheless fully verify the sound equipment installed in the control room and, if necessary, overhaul it.

Tenderers are reminded that all of the system functions are to be retained.

The work (hardware and software, materials and labour) necessary for the connection and problem-free integration of the existing installation into the upgraded multimedia system are also part of the contract.

#### 6.1.2. Wireless microphones

The existing wireless microphone set must be preserved. The receiver installed in the control room is a Sennheiser EM 3032. The Contractor must verify that the equipment is working properly and, if necessary, overhaul it.

The overhaul shall consist of disassembly, cleaning, servicing the connectors, testing for proper functioning and reassembly.

The work (supplies and labour) necessary for reintegration of the wireless microphone system into the upgraded multimedia system is to be included by tenderers in their bids.

### **6.2. Conference and simultaneous interpretation system**

#### 6.2.1. Control room equipment

##### 6.2.1.1. 19” rack

- *Note* -

The new central equipment shall be installed in the existing 19” racks situated in the control room.

##### 6.2.1.2. Central CSIS equipment

All of the central equipment for the current conference and simultaneous interpretation system must be replaced by new state-of-the-art equipment. Some peripheral hardware may be retrievable.

- Equipment to be removed (without replacement)

→ 1 cassette tape recorder

▪ Equipment to be removed and replaced

- 1 TELEVIC CPU5500 central console
- 3 TELEVIC EU5500 interpretation system extension units
- 2 TELEVIC PS5500 power supply modules
- 2 TELEVIC AIP5500 modules (analogue audio input)
- 3 TELEVIC AOP5500 modules (analogue audio output)
- 1 management PC (including accessories and software)
- 1 SONIFEX digital recorder

The configuration of the central equipment (use or non-use of extension modules for example) may vary depending on the material proposed by the tenderer. Tenderers shall therefore ensure that the equipment proposed:

- has at least the same interconnectability as the equipment being replaced;
- is compatible with all other new or retrieved equipment;
- ensures management of all the equipment installed in the control room, conference room and interpreting booths;
- satisfies the functional specifications for the installation;
- satisfies the additional specifications set out below.

Central equipment – Additional specifications

- Simultaneous interpretation digital control station
  - Digital console conforms to IEC 60914
  - Assembly in 19” rack
  - Can be controlled via the existing management system for the conference room
  - Management of camera switching control
  - Number of interpreter desks managed by the console:  $\geq 100$
  - Number of interpretation channels managed by the console:  $\geq 30$
  - Number of decks (language selector + microphone module) managed by the console:  $\geq 200$
  - Number of analogue audio input points (with extension modules):  $\geq 6$
  - Number of analogue audio output points (with extension modules):  $\geq 12$
  - Communication with management PC: TCP/IP
- Must include all the console extension modules necessary for management of the equipment in the conference room and interpreting booths
- Must include all analogue audio input and output extension modules
- Must include all equipment power supply modules
- Must include “attendant call” function management module (see description below)
- Must include management and configuration software for installation on the operator PC

- Must include all supplies and work necessary for implementation of the camera switching control
- Must include wiring
- Must include all the interfaces, hardware and software accessories and connections necessary for proper functioning of the system
- Must include system for mounting and fixing in the existing 19" rack
- Must include the disassembly, removal and disposal of obsolete equipment

Tenderers shall provide, upon submission of their bids, a breakdown including the make, type, quantity and price per unit of each component included in their proposal for configuration of the control station.

Tenderer's proposal

- Control station
  - Make / reference: .....
- Planned extension modules (function / make / references):
  - .....
  - .....
  - .....

*Reminder: equipment datasheet and basic diagram to be supplied with the bid.*

6.2.1.3. Control room audio monitoring

A monitoring system must be installed in the control room to permit simultaneous monitoring of:

- the speaker channel;
- one of the interpretation channels.

Characteristics

- The system shall be equipped with:
  - two selectors allowing the choice of 2 channels to be monitored;
  - a "selected channel" display;
  - 2 mini-jacks (3.5 mm) for headphones;
  - a separate volume control for each of the 2 output modules;
  - 2 headsets with cord and mini-jack connection.
- Automatic adjustment to the number of available channels
- Must include wiring
- Must include all the interfaces, hardware and software accessories and connections necessary for proper functioning of the system
- Must include mounting and fixing system

Tenderer's proposal

- Make: .....
- Type: .....

6.2.1.4. Management PC

- Note: see "Operator PC" below -

6.2.1.5. Audio recording of channels from the CSIS central console

The current SONIFEX Netlog recorder must be replaced with a recording system offering the following minimum characteristics:

- 4 channel recording (1 speaker channel + 3 interpreter channels)
- MP3 recording format
- Option of exporting recordings to external digital media (USB stick or DVD)
- Control by conference room management system
- System management via management PC and specific software (including all the accessories, interfaces and software licenses necessary for proper functioning of the system)
- Must include wiring and connection to the grid
- Must include all the interfaces, hardware and software accessories and connections necessary for proper functioning of the system
- Must include system for mounting and fixing in the existing 19" racks
- Must include the disassembly, removal and disposal of obsolete equipment

Tenderer's proposal

- Make: .....
- Type / references: .....

6.2.1.6. Attendant call system

The current attendant call system must be removed.

The "call attendant" function shall be managed from the CSIS central management console.

In their bids, tenderers must allow for:

- All of the modules, licences and accessories necessary for the management of the "call attendant" function from the CSIS central management console;
- A touchscreen, to be placed on the attendant's desk, allowing calls to be displayed and acknowledged.
- All of the work (supplies and labour) necessary for wiring the system;
- All of the interfaces, hardware and software accessories and connections necessary for proper functioning of the system.

The time between the activation of a call button and the call's appearance on the screen shall be less than 10 seconds.

The "attendant" screen shall allow a list of at least 5 callers to be displayed, in chronological order. Each call shall be handled individually.



Tenderer's proposal

- Make: .....
- Type / references: .....

6.2.1.7. Control room call system

The control room call system shall consist of:

- A warning light and/or audible signal located in the immediate vicinity of the operator workstation. The signal shall be activated by a "call control room" button on the chairman's control panel.
- An acknowledgement button (hardware or software) with which to confirm a response to the call and deactivate the call signal.

The "call control room" function shall be managed by the conference and simultaneous interpretation system.

In their bids, tenderers must allow for:

- All of the modules, licences and accessories necessary for management of the "call control room" function from the CSIS central management console;
- All of the work (supplies and labour) necessary for wiring the system;
- All of the interfaces, hardware and software accessories and connections necessary for proper functioning of the system.

Tenderer's proposal

- Make: .....
- Type / references: .....

6.2.2. Equipment in the conference room

All the equipment in the conference room must be connected to the central equipment installed in the control room. The existing wiring may be retrieved by the Contractor. If, for reasons of technical incompatibility, size, network topology or for any other reason, the conference and simultaneous interpretation system proposed by a tenderer does not allow retrieval of the wiring, all the supplies and work necessary for new wiring shall be stated by the tenderer in its bid.

In order to facilitate maintenance, all furniture-mounted equipment in the conference room must be detachable, and wiring must be carried out in a manner which permits easy disassembly from the top of the furniture.

6.2.2.1. "Participant" multimedia control panels

These multimedia control panels are built into the main table at the 33 seats of meeting participants.

From the user's perspective, the new control panels must operate in exactly the same way as at present (see also the chapter "Functional description").

The various modules in the current control panels are to be removed, replaced or retrieved as follows:

- Components to be retrieved and remounted

- 1 mounting and finishing plate
- 1 VGA connector (VGA injection socket)
- 1 IN mini-jack connector
- 1 call attendant button
- 1 LED signal presence indicator
- 1 remote headphone connector

The Contractor must verify the condition of retrieved components and, if necessary, have them overhauled.

The work (supplies and labour) necessary for the reconnection and remounting of retrieved components in the upgraded multimedia system is to be included by tenderers in their bids.

If they deem it necessary, tenderers may also provide for the replacement of components with new equipment. Where this is the case, their bids shall include all the supplies and work relating to the installation of the components in question.

- New equipment to be installed

- 1 language selection module with volume control
- 1 microphone module with activation button, gooseneck microphone and headset connector (3.5 mm mini-jack installed on the mounting plate)
- 1 HDMI connector (HDMI insertion point)

The technical characteristics of this new equipment are indicated below.

- Components to be removed

- 1 output screen (VGA connector)

- Components to be retrieved without modification

- 1 headset
- 1 230 V socket
- 1 RJ45 socket for connection to the data network

The work (supplies and labour) necessary for the reconnection and remounting of retrieved components are to be included by the tenderers in their bids.

Bids shall also include the disassembly, removal and disposal of all equipment to be removed but not retrieved.

The components mentioned above have the following characteristics:

❖ Mounting and finishing plates

All of the modules in the control panels are mounted on a metal mounting plate. The dimensions of the mounting plate and the modules equipping it should allow a perfect fit in the furniture, without modification of the latter.

In their bids, tenderers have the option of retaining or replacing the mounting plates.

If the plates are retained, the new modules must be mounted in such a manner that the aesthetic appearance and level of finishing of the modified panels are equivalent to those of the current panels.

In the event of replacement, the dimensions of the new panels must be such that they fit perfectly into the existing furniture, without any adaptation of the latter.

In both cases, a prototype must be made and submitted to the Court for validation before production begins.

Tenderer's proposal

- Retention or replacement of mounting plates: .....
- Dimensions: .....
- Finish: .....

❖ Language selectors

The new language selectors must have the same functions as at present (choice of language, volume control, channel display).

They must take the form of an electronic module fitted under the mounting plate described above.

They must be compatible with the new central CSIS equipment, to which they must be linked by a bus (if necessary by means of an interface).

The language selectors shall have the following characteristics:

- Control buttons
  - audio channel selection buttons
  - listening volume selection buttons
  - use of the buttons should be silent

- Digital display screen
  - display of selected channel and ISO code (3 characters) of the corresponding language
  - display of listening volume
  - the screen should be legible even under low lighting in the conference room
- Automatic adjustment to the number of available channels
- Bus connection to the control centre (if necessary by means of a dedicated interface)
- Power supply from the control centre
- Must include connection for remote mini-jack (3.5 mm)
- Must include wiring
- Must include all the interfaces, hardware and software accessories and connections necessary for proper functioning of the system
- Must include system for mounting and fitting in the mounting plate

Tenderer's proposal

- Make: .....
- Type / reference: .....

❖ Microphone module

From the user's perspective, the microphone module should operate in exactly the same way as at present.

The module shall comprise an electronic panel to be fitted under the mounting plate described above, an activation button and a gooseneck microphone.

The module must be compatible with the new central CSIS equipment, to which it must be linked by a bus (if necessary by means of an interface).

The microphone module shall have the following characteristics:

- Gooseneck microphone
  - detachable microphone
  - microphone length (L):  $30\text{ cm} \leq L \leq 40\text{ cm}$
  - red "ON" indicator light fitted in the collar
  - "anti-mobile" protection
  - windscreen
- Microphone activation button (use of the button must be silent)
- Bus connection to the control centre (if necessary by means of a dedicated interface)
- Power supply from control centre
- Must include wiring

- Must include all the interfaces, hardware and software accessories and connections necessary for proper functioning of the system
- Must include system for mounting and fitting in the mounting plate

Tenderer's proposal

- Make: .....
- Type / reference: .....

❖ Network connection interface

Depending on the installation topology and the type of equipment envisaged by the tenderer, an interface may be necessary to connect the microphone modules and language selectors to the control centre communication bus.

Specifications:

- Management of a maximum of 4 microphone modules and 4 language selectors per interface
- Bus connection to the control centre
- Power supply from control centre
- Must include wiring
- Must include all the interfaces, hardware and software accessories and connections necessary for proper functioning of the system
- Must include system for mounting and fitting in the furniture

Tenderer's proposal

- Make: .....
- Type / reference: .....
- Number of microphone modules per interface: .....
- Number of language selectors per interface: .....

6.2.2.2. Chairman's multimedia control panel

The chairman's control panel shall be identical to the "participant" panels but also have a "priority" function (the chair can interrupt a speaker and take the floor at any time) and a "call control room" button activating a sound and/or light signal in the control room.

Characteristics

- See characteristics of the "participant" control panels
- 1 "priority" button
- 1 control room call button (including wiring and connection to the control room call system)
- Use of the buttons must be silent

- Must include wiring
- Must include all the interfaces, hardware and software accessories and connections necessary for proper functioning of the system
- Must include system for mounting and fitting in the mounting plate

Tenderer's proposal

- Make: .....
- Type / reference: .....

6.2.2.3. “Lectern” multimedia control panel

The lectern control panel shall be identical to the "participant" control panels but also have a button controlling the motorised height adjustment of the lectern. This button and its functioning are to be retrieved from the present system.

6.2.2.4. “Audience” multimedia control panels

These multimedia panels are mounted in the furniture at each of the 119 seats in the conference room.

From the user's perspective, the new control panels must operate in exactly the same way as at present (see also the chapter “Functional description”).

The various modules in the current panels are to be removed, replaced or retrieved as follows:

- Components to be retrieved and remounted
  - 1 mounting and finishing plate
  - 1 remote headphone connector

The Contractor must verify the condition of retrieved components and, if necessary, have them overhauled.

The work (supplies and labour) necessary for the reconnection and remounting of retrieved components in the upgraded multimedia system is to be included by tenderers in their bids.

If they deem it necessary, tenderers may also provide for the replacement of components with new equipment. Where this is the case, their bids shall include all the supplies and work relating to the installation of the components in question.

- New equipment to be installed
  - 1 language selection module with volume control
  - 1 microphone module with activation button and gooseneck microphone

The technical characteristics of this new equipment are identical to those of the equipment at "participant" panels, described above.

- Components to be retrieved without modification
  - 1 headset
  - 1 230 V socket
  - 1 RJ45 socket for connection to the data network

The work (supplies and labour) necessary for the reconnection and remounting of retrieved components are to be included by tenderers in their bids.

Bids shall also include the disassembly, removal and disposal of all equipment to be removed but not retrieved.

Tenderer's proposal

- Language selector
  - Make: .....
  - Type / reference: .....
- Microphone module
  - Make: .....
  - Type / reference: .....
- Connection interface
  - Make: .....
  - Type / reference: .....

❖ Mounting and finishing plates

All of the modules in the panels are mounted on a metal mounting plate. The dimensions of the mounting plate and the modules equipping it must allow a perfect fit in the furniture, without modification of the latter.

In their bids, tenderers have the option of retaining or replacing the mounting plates.

If the plates are retained, the new modules must be mounted in such a manner that the aesthetic appearance and level of finishing of the modified panels are equivalent to those of the current panels.

In the event of replacement, the new panels must have strictly the same dimensions so that they can be mounted in the furniture without any adaptation of the latter.

In both cases, a prototype must be made and submitted to the Court for validation before going into production.

Tenderer's proposal

- Retention or replacement of mounting plates: .....
- Dimensions: .....

- Finish: .....

6.2.3. Equipment in interpreting booths

6.2.3.1. Interpreter consoles

The conference room has 18 booths with 4 seats and 4 booths with 5 seats. It must be possible to equip all seats with an interpreter station, but only 3 seats per booth will actually be equipped in the present project.

The current Televic ID 5500 consoles are to be fully replaced by new material compatible with the new central CSIS equipment.

The new consoles shall have the same controls and functions as the current Televic ID 5500 consoles.

The consoles must all be identical and interchangeable at short notice.

The new interpreter consoles must have the following characteristics:

- Conform to the following standards and requirements:
  - IEC 60914
  - ISO 2603
- Detachable consoles placed on the work desks
- External dimensions: width < 380 mm
- Detachable gooseneck microphone with integrated indicator light and "anti-mobile" protection
- Bus connection to the control centre (if necessary by means of a dedicated interface)
- Must include connector socket for remote mini-jack (3.5 mm)
- Must include wiring, connection and entry into operation
- Must include all the interfaces, hardware and software accessories and connections necessary for proper functioning of the system

Tenderer's proposal

- Make: .....
- Type / reference: .....

*Reminder: equipment datasheet to be supplied with the bid.*

6.2.3.2. Headphone sets

- Note: The existing headphones are to be retrieved -



### 6.3. Video system

All the video equipment in room K2.001 must be replaced by new equipment suited to the characteristics of the new sources.

As a reminder, the main characteristics of the video system shall be:

- Filming by cameras (with automatic view switching under the control of the conference system)
- Retrieval and matrixing of audio and video signals from various sources (cameras, conference room injection points, CD/DVD/Blu-ray player, TV tuner, etc.)
- Transmission to the projection screen
- Transmission to the table screens (main table and interpreting booths)
- Digital recording of video and data signals
- Webstreaming

The new central equipment must be installed in the video rack already located in the control room.

Any retained equipment must be checked and serviced (dismantling, cleaning, firmware updates if necessary, etc.) before being reintegrated into the updated installation as a whole.

The connections between the various sources and broadcast points shall be achieved by means of a multi-format digital matrix.

To minimise lip-sync problems, all HD equipment shall use the 1080p protocol.

The matrix and/or associated external equipment shall contain the image conversion (scaling) modules for transmitting images in the format best suited to the native formats of the screens and projector.

All wiring of the video installation shall be renewed. Fibre-optic links shall be laid between the control room and the conference room equipment.

#### 6.3.1. Video sources

##### 6.3.1.1. Conference room injection points – Fibre-optic interface module

The "participant", "Chair" and "lectern" multimedia control panels shall be equipped with VGA, HDMI and mini-jack connectors for injecting signals from a portable computer.

The supply and fitting in the control panels of VGA, HDMI and mini-jack connectors are addressed under the heading "Multimedia control panels".

The signals injected via these connectors must be transmitted to the control room through fibre-optic cables. For this purpose, each multimedia panel shall be connected to an interface module, the specifications of which shall be:

- Connectors

- HDMI input: 1080p HD video and WUXGA data signals with HDCP
- VGA input: maximum resolution 1600x1200 or 1080p @ 60 Hz
- stereo audio input (3.5 mm mini-jack)
- LC or SC fibre-optic connectors for transmission of signals to the control room
- network connection for the conference room management system
- Switching between video inputs: automatic or controlled by the conference room management system
- HDCP protocol management
- Automatic management of signal format via EDID
- Must include all the supplies and services required to connect VGA, HDMI and mini-jack connectors to the interface module
- Must include system for mounting and fitting in the existing furniture
- Must include all the supplies and services required for the power supply to equipment
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Depending on the topology proposed, one fibre-optic interface may support multiple control panels (up to 6).

In this case, the retrieval of signals and switching may be handled by the fibre-optic interface (which therefore shall have several input modules) or through an external switcher. Switching shall not entail any loss of quality and must be controllable from the conference room management system.

Tenderer's proposal

- Make: .....
- Type / reference: .....
- Number of panels handled per interface: .....
- External switcher
  - Yes/no: .....
  - Make: .....
  - Type / ref.: .....
  - Number of inputs: .....
  - Number of outputs: .....
- Switching of sources (auto / controlled): .....
- Dimensions: .....

6.3.1.2. Document camera

- Note: existing equipment to be retrieved – uses an injection point in the main table

6.3.1.3. Filming by cameras

6.3.1.3.1. Cameras

The five existing cameras must be replaced by 3-CCD 1-megapixel motorised dome cameras. The current positioning of the cameras shall be preserved. New fibre-optic wiring shall be laid between the cameras and the control room.

The camera mountings shall house the power supply and other accessories. The following technical characteristics shall be met:

- Motorised dome camera
- 3-CCD 1.3 colour camera
- 1 effective megapixel
- 12x optical zoom
- Video output: RGB analogue
- Angle of rotation:
  - Pan: -170 to +170 degrees
  - Tilt: -30 to +90 degrees
- Rotation speed:
  - From 0.25 degrees/s to 60 degrees/s
  - Silent rotation
- Image stabiliser
- Wall or ceiling mounting
- On/off switch and controls via conference room management system
- Must include all the supplies and services required for power supply to the equipment
- Must include mounting bracket housing the power supply and accessories
- Must include wiring
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....

6.3.1.3.2. Fibre-optic interface module

Each camera shall be equipped with an interface module for the fibre-optic transmission of video signals and the signals required for camera synchronisation and control.

The characteristics of this interface module shall be:

- Compatible with the maximum resolution of the camera
- Transmission of video signals without loss of quality
- Transmission/reception of synchronisation and control signals
- LC or SC fibre-optic connector

- Must include all the supplies and services required to fit and connect the camera
- Must include wiring
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....
- Dimensions: .....

6.3.1.3.3. Fibre-optic receiver

Each camera shall be connected, via a fibre-optic interface module, to a fibre-optic receiver installed in the AV rack in the control room.

The receiver shall be used to receive video signals and transmit synchronisation and monitoring/control signals for the cameras.

Technical specifications:

- Mounting in 19" rack
- Fibre-optic connector: LC or SC
- Outputs: RGB analogue / SDI
- Interface for the conference room management system: RS-232/RS-422/RS-485
- Two BNC connectors for in/out synchronisation signals
- Multiple connection: up to five units
- Must include mounting bracket housing the power supply and accessories
- Must include wiring (video and control signals, power)
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....

6.3.1.3.4. SDI distributors

Each video signal from a camera must be transmitted to the matrix and to the camera preview screens at the operator station in the control room.

Each fibre-optic receiver as described in the previous section must therefore be linked to a distributor for duplicating video signals from the cameras. This shall be done via an extension card installed in the fibre-optic receiver, or through an external module.

Technical specifications:

- Two SDI outputs (BNC connectors) per camera

- 19" rack mounting
- Must include power
- Must include wiring
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications
- Must include mounting system

Tenderer's proposal

- Make: .....
- Type / reference: .....

6.3.1.3.5. Common synchronisation source

The cameras in the conference room will require a common synchronisation source to be built into the local control room.

Synchronisation signals shall be sent to the cameras via the fibre-optic receiver described above.

Technical specifications:

- Outputs: female BNC connectors with Black Burst signal
- Input: one female BNC connector
- Light indicators for monitoring (data rate, fault)
- 19" rack mounting
- Must include wiring
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications
- Must include mounting system

Tenderer's proposal

- Make: .....
- Type / reference: .....
- Number of output modules: .....

6.3.1.3.6. Joystick

The current joystick shall be replaced by a joystick compatible with the new cameras.

The joystick shall be used for the manual adjustment of camera settings. It shall in particular be used when defining camera presets.

The technicians must also have software with which to access the various camera settings and programming of presets.

Tenderers must include in their bids all the supplies and services (including the wiring of cameras) required to set up these control tools.

Tenderer's proposal

- Make: .....
- Type / reference: .....

6.3.1.4. Control room sources

The various players (DVD player, VHS player, etc.) currently installed in the AV rack shall be removed.

6.3.1.4.1. TV tuner

- *Note: The existing TV tuner shall be retrieved and reincorporated into the updated multimedia installations -*

6.3.1.4.2. 5-CD player and changer

The current 5-CD player and changer is to be replaced.

Technical specifications:

- 19" rack mounting
- Frontal display and function keys
- 5-CD deck with continuous reading capability
- Frontal USB port for iPod or USB stick connection
- CD-R/RW reading
- MP3 and WMA compatible
- Rear-mounted analogue output modules
- Two IR remote controls
- Steered by the conference room management system via an RS-232 port (rear-mounted)
- Must include all the supplies and services necessary for connection to the AV matrix
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications
- Must include mounting and fitting system

Tenderer's proposal

- Make: .....
- Type / reference: .....

6.3.1.4.3. Multi-format player/recorder

A multi-format player/recorder shall be installed in the control room, replacing the DVD and VHS players.

The multi-format player/recorder shall provide for:

- the broadcast, via the AV matrix, of any type of video file contained on one of the media supported by the player;
- the recording, on internal hard disk, of signals from an output module in the AV matrix;
- re-recording on to an external medium (CD, DVD, SD memory card or USB stick).

Technical specifications:

- 19" rack mounting
- Frontal display and function keys
- Playback: Blu-ray, video DVD, audio CD, video CD, SD cards
- Burn: Blu-ray, DVD, CD
- Recording: MPEG-2 or MPEG-4 AVC (H.264)
- HDMI video output
- Audio prelisten
- One IR remote control
- Steered by the conference room management system via an RS-232 port
- Must include all the supplies and services required for connection to the AV matrix
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications
- Must include mounting and fitting system

Tenderer's proposal

- Make: .....
- Type / reference: .....

### 6.3.2. Video outputs

#### 6.3.2.1. Projector

The current projector shall be removed and replaced by a projector suited to the characteristics of the new sources.

The new projector shall be installed in the same place as the current projector. The projector lens shall be such that the image projected on the projection screen is as large as possible.

New fibre-optic wiring shall be laid between the new projector and the AV matrix in the control room.

The new projector shall exhibit the following minimum characteristics:

- WUXGA three-chip DLP digital projector, HDCP compatible, 1080p
- Technology: 0.67" DMD x3
- Resolution: 1920 x 1200
- Brightness: 7300 ANSI lumens / 8000 lumens (centre)

- Contrast ratio: 2200:1 (standard)
- Brightness uniformity: > 90 % (standard)
- Optical lens shift - Vertical: 0% to +100%
- Horizontal: -30% to +30% on zooms (memorised)
- Lamp: 2 x 330 W
- Lamp life: 1500 hours
- Quick-replacement lamp housing
- Sealed DLP™ processor core
- Video input: HDMI
- Control/monitoring via the conference room management system
- 10/100 Mbits/s Ethernet network connection (on RJ-45)
- Usual noise level (at 25°C): 40 dB(A)
- Motorised zoom
- Keystone correction
- Automatic synchronisation (identification of source and automatic adjustment)
- Must include all the supplies and services required for connection to the AV matrix
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications
- Must include mounting and fitting system

Tenderer's proposal

- Make: .....
- Type / reference: .....

6.3.2.2. HDMI fibre-optic receiver for projector

The wiring between the projector and the control room shall be fibre-optic wiring. An HDMI fibre-optic receiver will therefore be necessary to connect the projector.

Specifications:

- Connectors:
  - LC or SC fibre-optic connector for the reception of signals from the AV matrix
  - One HDMI output module: 1080p HD video and WUXGA data signals with HDCP
  - Network connection for the conference room management system
- Integrated scaler
- HDCP protocol management
- Automatic management of signal format via EDID
- Must include mounting and fitting system
- Must include all the supplies and services required for power supply to the equipment
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications



Tenderer's proposal

- Make: .....
- Type / reference: .....
- Dimensions: .....

6.3.2.3. Built-in viewing screens

The current screens (Element One Versis and Convers) must be replaced by new screens so that signals from the new video sources can be displayed in an optimal manner.

The screens replacing the Versis screens may be fixed (tilted) or hinged (unmotorised).

The Convers screens shall be replaced by vertical motorised screens.

The horizontal and vertical viewing angles (when raised in the case of hinged screens) must guarantee optimum reading comfort.

Each screen shall be equipped with local ON/OFF switches. The conference room management system shall also have a universal on/off switch.

Likewise, each motorised screen shall have a local open/close command, with a central command via the conference room management system.

The electromechanics of motorised screens must include a pinch-prevention safety feature.

Bids must include:

- The LCD screen
- The casing for mounting in the furniture
- All the mechanical and electromechanical components for screen opening and closing
- All the necessary connectors and cables
- Power supply

Minimum specifications:

- Full HD LCD screen
- Screen size  $\geq 15$ " (diagonal)
- Brightness: 400 cd/m<sup>2</sup>
- Contrast ratio: 400/1
- Resolution: 1920(h)x1080(v)
- Horizontal viewing angle: 80° left / 80° right
- Vertical viewing angle: 60° above / 80° below
- Response time: < 20 ms
- Video interface: RGB VGA, HDMI, DVI
- Steered via conference room management system

- Dimensions: as furniture mounting
- Must include all the supplies and work required for mounting in the existing furniture
- Must include production of a prototype
- Must include wiring
- Must include all the services (supplies and labour) required for power supply to the equipment
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

The new screens must be mounted without modifying the outer surfaces of the existing furniture. Work surfaces (main table and interpreter desks) must be unaffected.

The overall cost of mounting shall be included by tenderers in the unit prices of their bids.

Tenderer's proposal to replace the Versis screens

- Make: .....
- Type / reference: .....
- Screen size (diagonal): .....
- Resolution: .....
- Viewing angles: .....
- Number and types of input modules: .....
- Dimensions: .....

Tenderer's proposal to replace the Convers screens

- Make: .....
- Type / reference: .....
- Screen size (diagonal): .....
- Resolution: .....
- Viewing angles: .....
- Number and types of input modules: .....
- Dimensions: .....

As stated above, tenderers unable to meet the above specifications must propose one of two alternatives.

**Alternative 1**

**Replacement screens with different dimensions to those of the current screens**

This option must include all the supplies and services required to mount the screens, including any modifications to furniture.

Bids must be supported by:

- A description of the proposed form of mounting
- A precise description of any planned modifications and other work affecting the furniture

→ A provisional schedule of work

Tenderer's proposal to replace the Versis screens

- Screen
  - Make: .....
  - Type: .....
  - Screen size (diagonal): .....
  - Resolution: .....
  - Viewing angles: .....
  - Number and types of input modules: .....
  - Dimensions: .....
- Description of the form of mounting  
.....  
.....  
.....  
.....  
.....  
.....  
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Tenderer's proposal to replace the Convers screens

- Screen
  - Make: .....
  - Type: .....
  - Screen size (diagonal): .....
  - Resolution: .....
  - Viewing angles: .....
  - Number and types of input modules: .....
  - Dimensions: .....
- Description of the form of mounting  
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**Alternative 2**

Retrieval and upgrading of existing screens

This option must include all the supplies and work required to adapt the screens to the new video sources in the conference room.

Bids must be supported by:

- A precise description of the proposed solution
- A precise description of the planned modifications and other work affecting the screens

Tenderer's proposal for the Versis screens

- Screen
  - Make:.....
  - Type:.....
  - Screen size (diagonal):.....
  - Resolution:.....
  - Viewing angles:.....
  - Number and types of input modules:.....
  - Dimensions:.....
- Description of the solution  
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Tenderer's proposal for the Convers screens

- Screen
  - Make:.....
  - Type:.....
  - Screen size (diagonal):.....
  - Resolution:.....
  - Viewing angles:.....
  - Number and types of input modules:.....
  - Dimensions:.....
- Description of the solution:  
.....  
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Whichever alternative is preferred, a prototype must be made and presented to the Court for validation before going into production.

6.3.2.3.1. HDMI fibre-optic receiver

Video signals shall be transmitted between the control room and the screens (in the conference room or interpreting booths) via fibre-optic cables. An HDMI fibre-optic receiver will therefore be required to connect the screens.

Technical specifications of the fibre-optic receiver:

- Connectors:
  - LC or SC fibre-optic connector for the reception of signals from the AV matrix
  - HDMI output: 1080p HD video and WUXGA data signals with HDCP
  - Network connection for the conference room management system
- Integrated scaler
- HDCP protocol management
- Automatic management of signal format via EDID
- Must include mounting and fitting system
- Must include all the supplies and services required for power supply to the equipment
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....
- Number of HDMI output modules: .....
- Dimensions: .....

6.3.2.3.2. HDMI amplifier distributors – Main table

All the screens on the main table must carry the same image. The same fibre-optic receiver may therefore be used to supply the signal to multiple screens (up to six screens per receiver). The duplication of signals to the various screens may be handled directly by the receiver (which would then have several output points) or through an external distributor.

Technical specifications of the HDMI amplifier distributors:

- Input connector: female HDMI connector
- Output connectors: up to six female HDMI connectors
- HDCP protocol management
- Automatic management of signal format via EDID
- Control via conference room management system
- Must include mounting and fitting system
- Must include all the supplies and services required for power supply to the equipment
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....
- Number of HDMI output modules: .....
- Dimensions: .....

#### 6.3.2.3.3. HDMI amplifier distributors – Interpreting booths

The screens installed in the interpreting booths shall be able to display the images from cameras or injection points on the main table.

All the interpreting booths shall receive signals from these two sources. The same fibre-optic receiver (see section 6.4.2.3.1 above) may therefore be used to supply the signal to the screens in multiple booths (up to two booths and four screens per receiver). The duplication of signals to the various screens may be handled directly by the receiver (which would then have several output points) or through an external distributor.

Technical specifications of the HDMI amplifier distributors:

- Input connector: female HDMI connector
- Output connectors: four female HDMI connectors
- HDCP protocol management
- Automatic management of signal format via EDID
- Control via conference room management system
- Must include mounting and fitting system
- Must include all the supplies and services required for power supply to the equipment
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....
- Number of HDMI output modules: .....
- Number of screens connected to each distributor: .....
- Dimensions: .....

6.3.2.3.4. Local HDMI switchers – Interpreting booths

In the interpreting booths, each screen shall be linked to a local switcher so that the user can choose which of the two sources he/she wishes to display on the screen.

Technical specifications of local HDMI switchers:

- Input connectors: two female HDMI connectors
- Output connector: one female HDMI connector
- HDCP protocol management
- Automatic management of signal format via EDID
- Local switch to be installed in each booth
- Must include mounting and fitting system
- Must include all the supplies and services required for power supply to the equipment
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....

6.3.2.4. Control room preview screens

6.3.2.4.1. Preview monitors

The monitors currently located at the operator station in the control room must be replaced. The following minimum technical characteristics shall be met:

- 16.5" LCD monitor
- Format: 16:9
- Resolution: 1920 x 1080
- Broadcast of HD/SD multi-format signals
- Viewing angles: 85°/85°/85°/85° (up/down/left/right)
- Inputs:
  - SDI: BNC x 2
  - HDMI x 1

- RS-232 interface for control by PC / management system
- Brightness: 300 cd/m<sup>2</sup>
- Contrast ratio: 500:1
- Adjustable colour temperature (9 300 K / 6 500 K / 5 600 K; 3 000 - 9 300 K)
- On front panel: phase, chroma, brilliance, contrast and volume controls
- Table stand to be included
- RS-232C interface for control by PC
- Must include all the supplies and services required for wiring and connection to the AV matrix
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....

6.3.2.4.2. Camera preview monitor

Camera signals must be monitored on a preview screen at the operator workstation in the control room. This screen shall replace the current preview displays (which must be removed).

The following minimum technical characteristics shall be met:

- 16.5" LCD monitor
- Format: 16:9
- Resolution: 1920 x 1080
- Broadcast of HD/SD multi-format signals
- Split-screen function (simultaneous display from multiple sources)
- "Tally" capability
- Viewing angles: 85°/85°/85°/85° (up/down/left/right)
- Inputs:
  - SDI: BNC x 2
  - HDMI x 1
  - Possibility of extension by means of added interface cards
  - External synchronisation: BNC x 1
- RS-232 interface for control by PC / management system
- Brightness: 300 cd/m<sup>2</sup>
- Contrast ratio: 500:1
- Adjustable colour temperature (9 300 K / 6 500 K / 5 600 K; 3 000 - 9 300 K)
- On front panel: phase, chroma, brilliance, contrast and volume controls
- Table stand to be included



- RS-232C interface for control by PC
- Must include all the supplies and services required for wiring and connection to the AV matrix
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....

6.3.2.4.3. Multi-format player/recorder

- Note: see section 6.4.1.4.3.-

6.3.3. Multi-format digital matrix / Central equipment

The control room shall be equipped with a multi-format digital matrix for switching between audio and video sources. Input and output modules shall be used to retrieve and broadcast various types of signals, in particular:

- retrieval from all available sources:
  - all injection points in the main table
  - the five cameras in the conference room
  - the sources in the control room (TV tuner, radio tuner, multi-format player)
- broadcast to all media:
  - viewing screens mounted in the main table
  - viewing screens in the interpreting booths
  - projector
  - control room preview screens
  - digital recorder
  - webstreaming module

A modular matrix shall be used which, by the addition of modules, shall enable configurations of up to at least 32 inputs and 32 outputs. The input and output modules must be chosen according to the characteristics of the various video sources and equipment as described in the present specifications (existing or new).

The minimum characteristics of the matrix shall be:

- A modular matrix which, by the addition of modules, can enable configurations of up to at least 32 inputs and 32 outputs
- Each input can be switched to one or more outputs
- Video signal matrixing – Support for the following standards (depending on the modules added):
  - Analogue video
    - Standard encoding systems
      - NTSC
      - PAL

- Analogue signal formats
  - Composite video
  - S-Video
  - RGBHV video
  - Component video
- Digital video
  - Digital standards and formats
    - HDCP v. 1.2.
    - Deep Colour
    - 3D format
  - Digital signal formats
    - HDMI
    - DVI
    - SDI
    - HDBaseT
    - Fibre Transmission Protocol
- Resolutions supported by the matrix (depending on the modules added):
  - 640x480 @ 60 Hz
  - 20x480 @ 60 Hz (480p)
  - 720x576 @ 50 Hz (576p)
  - 800x600 @ 60 Hz
  - 848x480 @ 60 Hz
  - 852x480 @ 60 Hz
  - 854x480 @ 60 Hz
  - 1024x768 @ 60 Hz
  - 1024x852 @ 60 Hz
  - 1024x1024 @ 60 Hz
  - 1280x720 @ 50 Hz (720p50)
  - 1280x720 @ 60 Hz (720p60)
  - 1280x768 @ 60 Hz
  - 1280x800 @ 60 Hz
  - 1280x960 @ 60 Hz
  - 1280x1024 @ 60 Hz
  - 1360x768 @ 60 Hz
  - 1365x1024 @ 60 Hz
  - 1366x768 @ 60 Hz
  - 1400x1050 @ 60 Hz
  - 1440x900 @ 60 Hz
  - 1600x900 @ 60 Hz
  - 1600x1200 @ 60 Hz
  - 1680x1050 @ 60 Hz
  - 1920x1080 @ 24 Hz (1080p24)
  - 1920x1080 @ 25 Hz (1080p25)
  - 1920x1080 @ 50 Hz (1080p50)
  - 1920x1080 @ 60 Hz (1080p60)
  - 1920x1200 @ 60 Hz
  - 2048x1080 @ 24 Hz
  - 2048x1152 @ 60 Hz
  - 720x480 @ 30 Hz (480i)

- 720x576 @ 25 Hz (576i)
- 1920x1080 @ 25 Hz (1080i25)
- 1920x1080 @ 30 Hz (1080i30)
- Other resolutions allowed by HDMI up to 165 MHz pixel clock
- SMPTE 425M (3G-SDI) 4:2:2 Colour space: 1920x1080 @ 50 Hz (1080p50), 1920x1080 @ 60 Hz (1080p60)
- SMPTE 425M (3G-SDI) 4:4:4 Colour space: 1280x720 @ 50 Hz (720p50), 1280x720 @ 60 Hz (720p60), 1920x1080 @ 24 Hz (1080p24), 1920x1080 @ 25 Hz (1080p25), 1920x1080 @ 30 Hz (1080p30), 1920x1080 @ 50 Hz (1080i50 or 1080sF25), 1920x1080 @ 60 Hz (1080i60 or 1080sF30)
- SMPTE 260M (HD-SDI): 1920x1035 @ 60 Hz (1035i60)
- SMPTE 295M (HD-SDI): 1920x1080 @ 50 Hz (1080i50)
- SMPTE 274M (HD-SDI): 1920x1080 @ 24 Hz (1080p24), 1920x1080 @ 24 Hz (1080sF24), 1920x1080 @ 25 Hz (1080p25), 1920x1080 @ 30 Hz (1080p30), 1920x1080 @ 50 Hz (1080i50 or 1080sF25), 1920x1080 @ 60 Hz (1080i60 or 1080sF30)
- SMPTE 296M (HD-SDI): 1280x720 @ 50 Hz (720p50), 1280x720 @ 60 Hz (720p60)
- SMPTE 259M-C (SD-SDI): 720x480 @ 59.94 (NTSC), 720x576 @ 50i (PAL)
- Audio signal matrixing - Support for the following standards (depending on the modules added):
  - Analogue stereo
  - 2-channel analogue
  - Dolby Digital Plus
  - Dolby TrueHD
  - DTS-HD High Res
  - DTS HD Master Audio
  - 8-channel PCM
  - Dolby Digital
  - Dolby Digital EX
  - DTS
  - DTS-EX
  - DTS 96/24
  - 2-channel PCM
- Transmission of signals possible over UTP, multimode fibre-optic and single-mode fibre-optic cables (simultaneous transmission down the same cable of video, audio and Ethernet signals, and control and monitoring signals)
- HDCP protocol management
- Automatic management of signal format via EDID
- Control via conference room management system
- Rear panel connections
- Front panel interface keypad and LCD screen
- 19" rack mounting
- Must include control, configuration and diagnostic software
- Must include mounting and fitting system
- Must include all the supplies and services required for power supply to the equipment

- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....
- Number and type of input/output modules:  
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**6.4. Conference room management system**

The conference room management system shall be capable of running and controlling all the multimedia, conference and interpreting installations.

The present conference room management system shall be retrieved. The existing management principles must be retained.

Figure 11: As-built block diagram

As a reminder, the system has two touchscreens for managing all the audiovisual and multimedia installations, the conference room lighting and blinds.

One of the two screens is installed in the control room, and the other is on the main table, where it is connected to a dedicated RJ-45 socket at seat number 35. These two screens shall be retrieved.

All the touchscreen commands must be retained, adapted or modified, depending on the new equipment in the conference room. The general ergonomic design of the various pages available on the touchscreens must be retained. The layouts of all new or modified pages must be submitted to the Court for validation before they are introduced.

The access rights management system (screen access dependent upon inputting a user code) must also be retained.

As a reminder, the touchscreens have the following controls:

- Management and selection of all audio and video sources (on, off, forward, etc.)
- Selection of audio source for conference room broadcast
- Selection of source for projector
- Volume management (main volume, source volume, microphone volume)
- Conference room lighting controls
  - separate switch for each lighting circuit
  - adjustment of the brightness level for each circuit
  - activation of predefined settings
- Conference room blind control
- Management / control / access to the settings for each item of equipment in the multimedia system (projector, cameras, switchers, etc.)
- Management / control of recordings
- Powering-up of equipment
- Inlaying of a video and data postview and preview window on the touchscreen
- Webstreaming management
- etc.

Bids shall include:

- All the supplies and services required with a view to modifying and reprogramming the system in order to adapt it to the new equipment and the new configuration of the installations to be controlled
- All the work required to design the control screens (creation, modification and removal of windows, buttons, icons, text, etc.)
- All the supplies and services required for the wiring and connection of the various items of equipment to be controlled
- All the supplies and services required for power supply to the system
- All the necessary internal wiring
- All the hardware and software accessories required to guarantee each of the functions described in the present specifications
- Supply of a complete programming backup for the system and the documented programming source codes

A list indicating the quantity, type and unit price of the necessary control cards and interfaces must be attached to the bid.

## **6.5. Operator PC**

The control room shall be equipped with a workstation at which the Contractor must install all the applications required to manage and configure the various installations.

The current operator PC shall be removed and replaced with a new workstation offering the following minimum characteristics:

- Type of processor / RAM / graphics card: depending on the rules for the software and applications to be installed
- Hard disk: 1 TB
- Operating system:
  - Microsoft Windows Professional (latest version)
  - Microsoft Windows Server
- CD, DVD and Blu-ray player/recorder
- Two 10/100 Mbps network cards with RJ-45 port
- Ports: four USB, one RS-232
- Must include 17" TFT screen
- Must include mouse, keyboard, speakers
- Must include power supply
- Must include wiring
- Must include all the hardware and software accessories and connections required for correct operation as described in the present specifications

Tenderer's proposal

- Make: .....
- Type / reference: .....
- Processor: .....
- RAM:.....
- Hard disk: .....
- Graphics card: .....
- Number and types of ports: .....

**6.6. Central automatic on/off control**

An automatic system for managing the activation and deactivation sequences of the installations must be installed in the control room.

This system shall enable the operator to launch activation or deactivation via a single switch in one of the racks in the control room. It must also be possible to control the system from the room management touchscreen.

All the supplies and services required for this system shall be described by tenderers in their bids.

Tenderer's proposal

- Description: .....
- Make: .....
- Type / reference: .....

*Block diagram to be supplied with the bid*

## 6.7. Webstreaming system

A webstreaming system must be added to the installation.

The system shall enable the broadcast, over the Court of Auditors Intranet, of audio (original language + two simultaneous interpretations) and video sources from a conference, as well as the associated metadata (information about the agenda, participants, presentations, etc.).

It shall be made up of a central module for retrieving audio and video signals and metadata (encoded from specific software installed on the operator PC), then encoding them and broadcasting them to the Court of Auditors Intranet. The module shall have an internal hard disk enabling it to continue operation in the event that the computer network is down (with transmission starting as soon as the network is up again).

Technical specifications:

- Encoding and broadcast module
  - 19" rack mounting
  - Internal hard disk  $\geq$  100 Gb
  - Connectors: video inputs / audio inputs / serial port for control by the conference room management system / Ethernet network connection
  - Must include power supply
  - Must include wiring and connection to the audio and video sources
- Must include management and editing software supporting the following functions:
  - Addition of metadata
  - Management of presentations
  - Splitting into chapters
  - Deletion of pauses
- Must include web-based viewing system for computers and mobile devices (smartphones and tablets). The viewing system shall be used to simultaneously display video and metadata. It shall also enable users to switch between the three audio sources in the course of a broadcast
- Must include streaming of video/audio from another location in the three buildings of the Court
- Must include streaming to the Internet (possibly via EbS, a European Commission service or the like)
- Must include the generation and export of detailed statistics relating to streaming usage

Tenderer's proposal

- Description: .....
- Make: .....

## **6.8. Wiring**

*- also see general technical specifications -*

The new wiring must make use of existing wiring routes.

Bids shall include:

- all the supplies and services required for the wiring (including patch wiring) of the installations forming the subject of the present specifications;
- the removal and disposal of wiring associated with obsolete equipment;
- all the services and supplies required to fulfil the general technical specifications.

The exact quantities and types of wiring shall be defined by tenderers according to the characteristics of the equipment and installation that they propose.

Bids must be accompanied by datasheets for each of the types of wiring which are proposed for use in the installation.

## **6.9. Power supply**

*- Note: see general technical specifications –*

## **6.10. Testing and entry into operation**

*- Note: see general technical specifications –*

The Contractor must perform operational tests on the entire installation throughout the setting-up process.

The general technical specifications describe how the tests are to be organised and which documents are to be compiled and sent to the Court.

The tests must allow all the functions of the multimedia system in room K2.001 to be verified, and in particular, though not only:

- conference and simultaneous interpretation system
  - speech stations (chair, lectern, etc.)
  - signal routing
  - chair station 'priority' function
  - conference room audio broadcast
  - interpreter console features
  - broadcast of interpreting channels
  - display, selection and audibility of channels on the language selectors
  - conference room broadcast of interpreting channels
  - control room switches (stations on and off, headset volume resets)
  - audio recording of all channels
  - routing of information to the central control room
  - etc.



- video system
  - filming by all cameras
  - positioning of cameras (by control room)
  - manual camera control
  - operation of all control room sources
  - operation of conference room injection points
  - broadcast to all media (screens, video projector)
  - digital recording
  - etc.
- conference room management system
  - activation and deactivation of equipment
  - CSIS control
  - video system control
  - webstreaming control
  - etc.

## 7. ANNEXES

### 7.1.1. Control equipment

#### 7.1.1.1. Conference room management touchscreen

##### Control pages – control room touchscreen

The following pages show the views available in the various modes (technician, user 1 and user 2).

<b>FRENCH</b>	<b>ENGLISH</b>
Son	Sound
Visio	Video
Visio Externe	External Video
Distant	Remote
Lutrin	Lectern
Réunion	Meeting
Début	Start
Fin	End
Ecrans Tactiles	Touchscreens
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Utilisateur	User
Gestion des Sources	Management of Sources

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Utilisateur	User
Gestion des Sources	Management of Sources

<b>FRENCH</b>	<b>ENGLISH</b>
Videoprojecteur	Video projector
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Sources Régie	Control Room Sources
Sources Table	Table Sources
Lutrin	Lectern
Visio Externe	External Video
Distant	Remote
Controle	Control
Envoyer	Send

<b>FRENCH</b>	<b>ENGLISH</b>
Réunion	Meeting
Début	Start
Fin	End
Ecrans Tactiles	Touchscreens
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Videoprojecteur	Video projector
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Sources Régie	Control Room Sources
Sources Table	Table Sources
Lutrin	Lectern
Visio Externe	External Video
Distant	Remote
Controle	Control
Envoyer	Send

<b>FRENCH</b>	<b>ENGLISH</b>
Videoprojecteur	Video projector
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Sources Régie	Control Room Sources
Sources Table	Table Sources
Lutrin	Lectern
Visio Externe	External Video
Distant	Remote
Controle	Control
Envoyer	Send

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Appel Salle	Conference room call
Mr / Mde	Mr / Ms
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Lutrin	Lectern
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Sources – Satellite TV	Sources – Satellite TV
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Videoprojecteur	Video Projector
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Audio - Micros	Audio - Microphones
Micro sans fil 1	Cordless mic 1
Micro sans fil 2	Cordless mic 2
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Audi Projo	Projector Audio
Audi	Audio
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Utilisateur	User
Gestion des Sources	Management of Sources
Audi Projo	Projector Auditorium
Audi	Auditorium
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off

<b>FRENCH</b>	<b>ENGLISH</b>
Huissier	Attendant
Ecrans Tactiles	Touchscreens
Début	Start
Fin	End
Video Sources vers streamer	Video Sources to streamer
Volumes vers streamer	Volumes to streamer
Audi Projo	Projector Audio
Audi	Audio
Pres Projo	Projector Presentation
Presi	Chair
Extin	Off