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Directorate-General for Organisational Development and Services - ORG
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Support Unit
Project Management

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Technical specifications for remote interpretation outside GSC buildings

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0 Introduction

0.1 Background

The General Secretariat of the Council (GSC) organises some meetings outside the Council buildings.

For such meetings which require interpretation, specific infrastructure needs to be put in place in order that:

- the delegates in the meeting room may express themselves in one of the **23 working languages**;
- the interpreters, located in an adjacent room, may benefit from better working conditions thanks to a remote view of the delegates.

NB: In the rest of this document the following terms will be used:

- the 'meeting room' for the space in which the meeting itself takes place;
- the 'interpretation room' for the space in which audio interpretation is carried out.

The aim of this document is therefore to establish the technical specifications for the remote interpretation system to be put in place in order to provide a standard and consistent quality of service in any meeting location.

PLEASE NOTE: If, due to various constraints (linked to the chosen location, time available for installation, etc.), it is not possible to achieve the level of service described in this document, a representative of the GSC must approve the alternative solution chosen.

0.2 Number of participants

GSC meetings follow a protocol which clearly defines the number of delegates as well as their position according to protocol order.

In all cases, the system must cover:

- 36 delegates around the meeting table
- 3 listeners in a booth
- 72 interpreters in 23 booths (there should also be 1 spare booth, fully equipped and configured ready for use)
- 3 technicians in the control room.

DOCUMENTS PROVIDED BY THE GSC: In addition to this document, the installer will be provided with a general plan of the chosen location (meeting room and interpretation room), and a seating plan.

PLEASE NOTE: For certain meetings, these numbers may be different. In that case, the GSC representative may ask the installer to adapt the system accordingly.

0.3 Overview of the active equipment required

In order to have the necessary safety margin, **the system must include the following active equipment:**

- **38 delegate units** (36 for the delegates at the table + 2 spare, configured ready for use)
- **7 channel selectors** (3 in the control room, 3 in the listeners' booth + 1 spare, configured ready for use)
- **50 portable infrared audio receivers**, each with **its charger**
- **60 mono headsets** (compatible with the channel selectors and infrared receivers)
- **76 interpreter desks** (72 installed in the 24 booths + 4 spare, configured ready for use)
- **76 interpretation headphones.**

NB: The specific details of all required elements (active and passive) can be found in paragraphs 2.4 (page 10) and 2.5 (page 12).

0.4 General requirements relating to the system

In all cases, **the system must comply** with the following requirements:

- the system must be **entirely wired**. Wireless technology is EXPLICITLY forbidden. The only permitted exception is audio broadcasting via infrared.
- the equipment must be **installed in accordance with the manufacturer's recommendations**.
- the IT network used by the system must:
 - be sealed from the outside world. Any access to the internet by any means is strictly forbidden;
 - use IP addresses which are:
 - fixed (no DHCP server or automatic configuration);
 - all within the same subnet IP.
 - be connected to the gigabit Ethernet switches **using cables** (Wi-Fi is forbidden).

DOCUMENTS TO BE SUPPLIED:

*Prior to installation, the installer must provide the GSC representative with certain documents certifying the system's compliance. A summary can be found in paragraph **2.10** (page 17)*

0.5 Document structure

For ease of reading, this document is **split into four parts:**

- 1) Specific features of the **meeting room**
- 2) Specific features of the **audio interpretation**
- 3) Specific features of the **video broadcast**
- 4) Framework in which the service is provided

1 Meeting room

1.1 Proceedings at the meeting

Each meeting is moderated by the chair. The chair gives the floor to participants in turn. For that reason:

- The audio system must make it impossible for two microphones to be active at the same time.
- The video system must not show two speakers at the same time.

1.2 Lighting in the room

The **lighting level in the meeting room** must be **between 300 and 500 lux** in order to guarantee:

- bright images
- accurate colour reproduction
- sufficient depth of field to guarantee focus in each image frame to be provided.

If this level cannot be reached, extra lighting must be used, providing soft light which avoids casting shadows or causing visual discomfort for the delegates.

PLEASE NOTE: *The layout of the room must be taken into account in order to avoid fluctuations in light quality during the day (back lighting, external reflections, etc.).*

1.3 Meeting table

The meeting is held around a table at which the participants are seated. Since the shape of this table and the size of the room itself vary according to the organisation of each event, this document presents the most common cases.

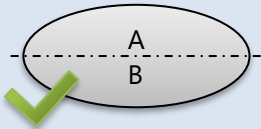
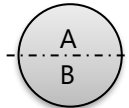
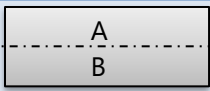

Table shape	Diagram	Additional information
Oval [PREFERRED]		Preferred solution. The chair is always seated in the middle of the table (opposite the letter A on the diagram).
Round		
Rectangular		The chair is always seated in the middle of the table, on the longer side (opposite the letter A on the diagram).
Square [TO BE AVOIDED]		Last resort option, to be avoided.

Table 1 - Various meeting table shapes and separation of sides A & B

2 Audio interpretation

2.1 Specific requirements for the audio interpretation system

In order to:

- comply with interinstitutional agreements on events with remote audio interpretation;
- facilitate technical support;
- guarantee a standard and consistent quality of service;

the audio interpretation equipment to be used must:

- **be entirely wired, since wireless technology is EXPLICITLY forbidden (the only permitted exception is audio broadcasting via infrared);**
- **include coupling to 2 control units:**
 - **one master**
 - **the other slave.**

PLEASE NOTE: *In the rest of this document, the required audio interpretation functions are described on the basis of a Bosch DCN equipment list.*

It is of course possible to use other brands and models, as long as the functions provided are of an equivalent or higher level.

2.2 Use of 2 control units (master & slave)

NB: *The names of the main parts in Bosch's DCN range are as follows:*

- control unit: DCN-CCU2
- delegate unit: DCN-DCIS
- interpreter desk: DCN-Idesk.

The **master DCN-CCU2** is used in the meeting room and must control:

- the microphone input from the DCN-DCIS
- the ambient microphone
- the audio broadcasting from the floor channel
- the infrared broadcasting from the audio interpretation channels through the dedicated peripheral units described below.

The **slave DCN-CCU2** is used in the interpretation room and must control:

- the audio interpretation through the dedicated peripheral units described below.

2.3 Schematic diagram of the audio interpretation system

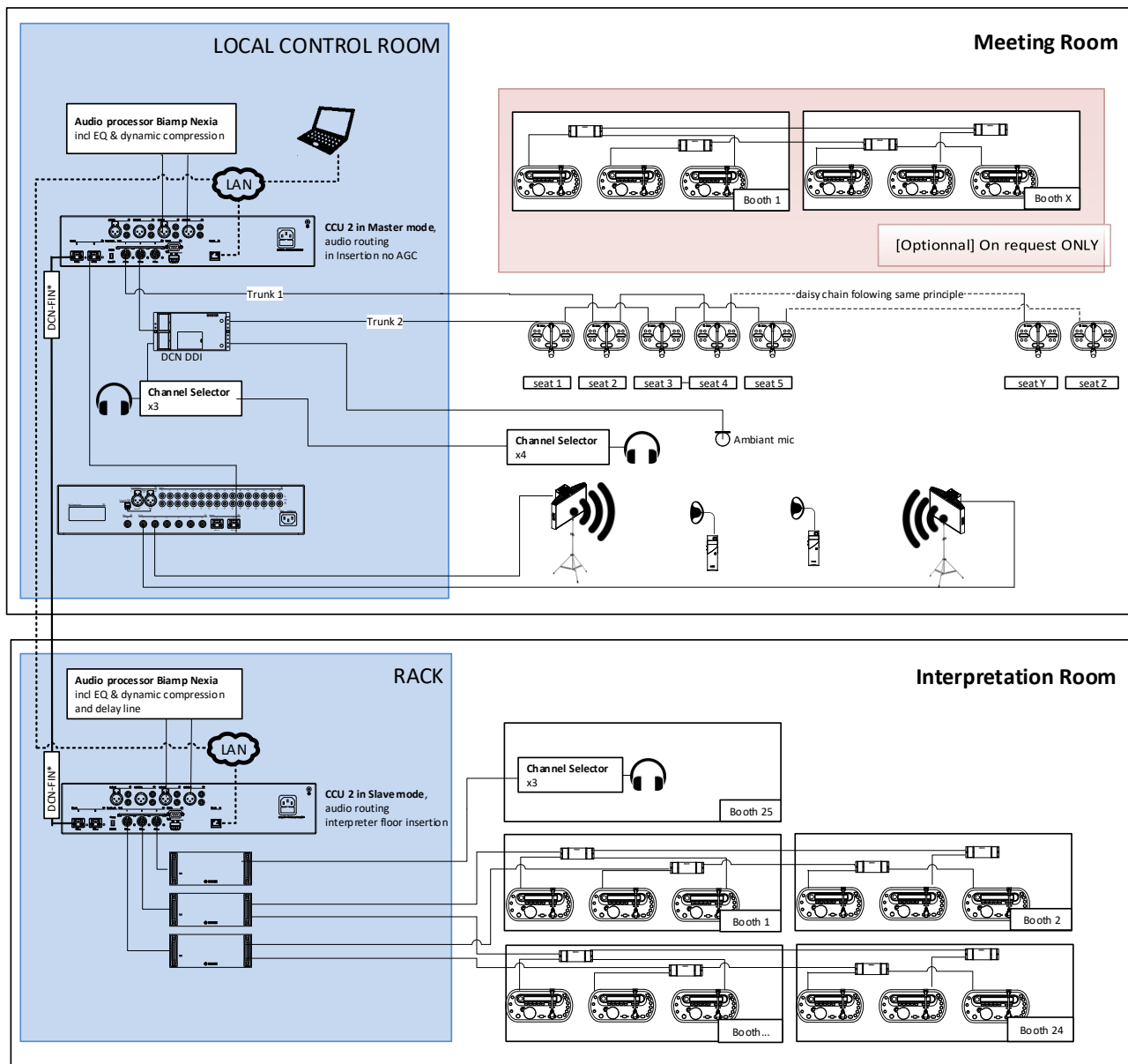


Figure 1 - Schematic diagram of the audio interpretation system

This diagram should serve as a basis for the system to be installed.

Of course, the specific aspects of each event must be taken into account. For example, in the diagram above, the interpretation booths have been placed in the meeting room.

2.4 Audio interpretation equipment in the meeting room

The system in the meeting room must comply with the following requirements, unless the GSC representative explicitly states otherwise.

Qty	Type (*)	Additional information
1	Master DCN-CCU2	using the latest Bosch firmware available (minimum 4.20)
1	DCN-DDI	allowing the connection and control of an ambient microphone channel
1	Ambient microphone	omnidirectional condenser microphone (or cardioid if the meeting room is noisy), powered and level-controlled by the audio processor and inserted into the input of the DCN-DDI
38	DCN Discussion unit (DCN-DICS) with channel selector	<ul style="list-style-type: none"> - 35 placed on the table, configured in normal mode - 1 placed on the table, configured in chair mode - 2 spare, which must be configured and stored in the local control room
4	Channel selectors	<ul style="list-style-type: none"> - 3 in the local control room - 1 spare, configured ready for use and stored in the local control room
1	Multichannel infrared transmitter DCN-INT-TX32	using the same firmware version as the master DCN-CCU2
To be defined	Bosch infrared radiators LBB4512/00 and/or LBB4511/00	The number of radiators will be established depending on the room layout, in order to cover the meeting room without dead spots. The radiators must be installed on height-adjustable stands.
50	Bosch infrared receivers LBB-4540/32	with the compatible charging racks
60	Mono headsets	compatible with the 50 LBB-4540/32 receivers and 7 channel selectors, and a cable length of between 0.8 and 1.3 metres
1	Biamp Nexia audio processor	to be inserted in the audio chain of the master DCN-CCU2
1	Control PC	with the latest versions of the following installed: <ul style="list-style-type: none"> - the Bosch software suite - the control software for Biamp Nexia audio processors
1	Gigabit Ethernet switch (LAN)	as well as the cabling to connect all parts of the Ethernet local area network
Option	PRS-FIN (fibre optic interface) + cables + accessories	depending on the distance to be covered between the meeting room and interpretation room
To be defined	Connections and accessories	all items necessary for the installation of the equipment

Table 2 - List of audio interpretation equipment in the meeting room

(*) The parts supervised by technicians are marked **in bold** in the equipment list tables.

NB: If necessary, **the installer may be asked to install all these supervised parts centrally in the local control room of the meeting room.**

2.4.1 Cabling of the delegate units

The DCN-DICS delegate units are installed side-by-side on the meeting table and their cabling must:

- be carried out alternately on two separate trunk buses. The DCN-DICS delegate units of the:
 - **uneven numbered seats** are connected in a cascade on **trunk bus x**;
 - **even numbered seats** are connected in a cascade on **trunk bus z**.
- be validated using the Bosch Calculation Tool (compliance of the cable lengths and power on each trunk bus).

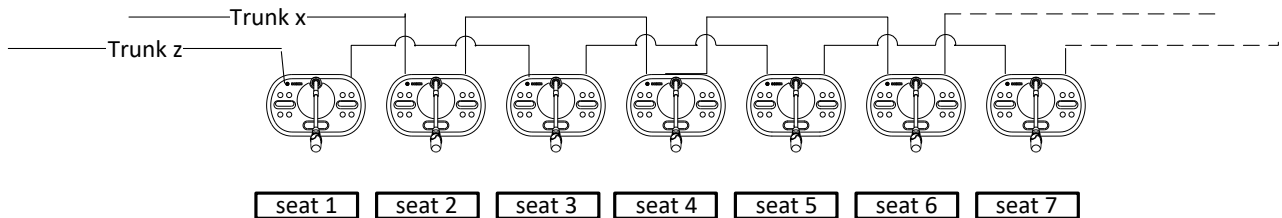


Figure 2 - Cabling of the delegate units

DOCUMENT TO BE SUPPLIED: The GSC requires an Excel export (.xls) of the Bosch Calculation Tool results for the delegate units prior to installation.

2.4.2 Ambient microphone

An ambient microphone is installed in the meeting room to ensure that the interpreters have a continuous audio feed from the floor channel when no delegate unit is active.

The ambient microphone must:

- be automatically activated when no delegate unit is active;
- be automatically deactivated when a delegate unit is active;
- have the option to be deactivated using the control software (if needed).

2.4.3 Audio routing of the master DCN-CCU2 and associated audio processor

The master DCN-CCU2 must:

- be configured in the Bosch 'Insertion no AGC' audio routing mode (menu item 8Gb) to use the insertion loop on the master DCN-CCU2;
- be connected to the audio processor via output #2 and input #2.

FILE PROVIDED BY THE GSC: The GSC representative will provide the configuration file for the audio processor. This file must be uploaded to the audio processor and ready for use.

2.4.4 Infrared broadcasting of audio interpretation

Audio interpretation is available in the meeting room via an infrared system which must:

- guarantee optimal coverage, for good-quality reception throughout the meeting room;
- use a Bosch infrared radiator, model DCN-INT-TX32;
- use 50 Bosch infrared receivers, model LBB-4540/32, which must:
 - have fully-charged batteries before the meeting starts;
 - be placed:

- on the meeting table, next to each DCN-DICS delegate unit;
- at the listener seats (if present in the meeting room);
- (the rest being spares) switched off and stored in the local control room.

DOCUMENT TO BE SUPPLIED: Prior to installation, the GSC requires an Excel export (.xls) of the Bosch simulation software showing the projected infrared coverage of the room, as well as the delays to be used.

2.5 Audio interpretation equipment in the interpretation room

The system in the interpretation room must comply with the following requirements, unless the GSC representative explicitly states otherwise.

Qty	Type (*)	Additional information
1	Slave DCN-CCU2	using the same firmware version as the master DCN-CCU2
tbd	DCN-EPS	The required number depends on the cabling options used by the audiovisual installer based on the manufacturer's recommendations. + 1 spare unit
76	DCN interpreter desks (DCN-ldesk)	- 72, i.e. 3 desks for each of the 24 booths used by the interpreters (23 used, 1 spare booth) - 4 spare desks
76	Interpretation headphones AKG K10 (or K15)	
To be defined	DCN LBB 4115/00 tap-off units	The required number is to be established in order to meet the requirements in paragraph 2.5.2 (page 13) and comply with the manufacturer's recommendations.
1	Biamp Nexia audio processor	
Option	PRS-FIN* (fibre optic interface) + cables + accessories	depending on the distance to be covered between the meeting room and interpretation room
1	Gigabit Ethernet switch (LAN)	as well as the cabling to connect all parts of the Ethernet local area network
3	Channel selectors	in a booth for the listeners
To be defined	Connections and accessories	all items necessary for the installation of the equipment

Table 3 - List of audio interpretation equipment in the interpretation room

(*) The parts supervised by technicians are marked **in bold** in the equipment list tables.

NB: If necessary, **the installer may be asked to install all these supervised parts centrally in the local control room of the meeting room.**

2.5.1 Booths in the interpretation room

The interpretation room will be equipped with **25 mobile booths complying with EN ISO 4043-2016 standart:**

- 23 booths for interpreters
- 1 spare booth for interpreters (configured and ready for use)
- 1 booth equipped with 3 channel selectors for listeners.

2.5.2 Cabling of the interpreter desks

One DCN-Idesk must be connected to the protected tap-off output of one DCN LBB 4115/00 tap-off unit. The adjacent DCN-Idesks in the same booth are powered by 2 different trunk buses.

Each DCN LBB 4115/00 tap-off unit must:

- feed a maximum of 1 DCN-Idesk through the protected tap-off output;
- feed the following DCN tap-off unit through the trunk output which itself:
 - is fed by the trunk output of the previous DCN tap-off unit;
 - is fed directly by a tap-off output of a DCN-EPS;
- has its cable lock-in devices in the closed position.

Consequently, each mobile booth:

- contains 3 DCN-Idesks
- is fed by two separate trunk buses
- uses two DCN LBB 4115/00 tap-off units
- is equipped with cables which are all:
 - labelled
 - locked, if they are extension cables.

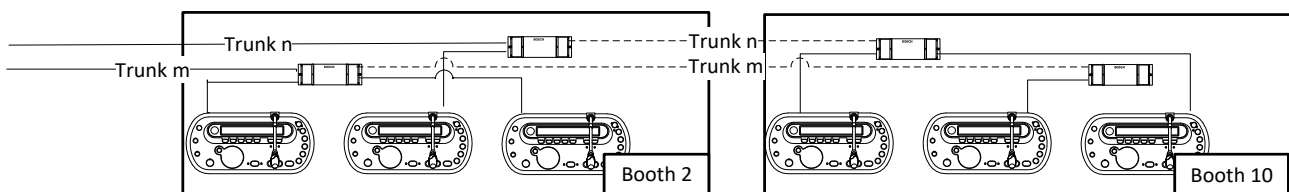


Figure 3 - Cabling of the interpreter desks

DOCUMENT TO BE SUPPLIED: The GSC requires an Excel export (.xls) of the Bosch Calculation Tool results for the interpreter desks (DCN-Idesk) prior to installation.

2.5.3 Audio routing of the slave DCN-CCU2 and associated audio processor

The slave DCN-CCU2 must:

- be configured in the Bosch 'Interpreter floor insertion' audio routing mode (menu item 8Gb) to use the insertion loop on the slave DCN-CCU2;
- be connected to the audio processor via output #2 and input #2.

FILE PROVIDED BY THE GSC: The GSC representative will provide the configuration file for the audio processor. This file must be uploaded to the audio processor and ready for use.

NB: For audio-video synchronisation (lip sync), the difference between the transmission delays in the audio and video streams must be established.

This figure, expressed in milliseconds, must:

- be input in the signal flow of the local floor channel on the audio processor;
- be validated by a representative of the interpreters.

2.6 Organisation of the control room and rack (if any)

Depending on what is possible, the audio interpretation system should consist of:

- a local control room (in all cases)
- a rack (where possible)

2.6.1 Local control room in the meeting room

This **local control room** is set up in a mobile booth in the meeting room.

It **must contain** the following **AS A MINIMUM**:

- 1 master BOSCH DCN-CCU2
- 1 BOSCH DCN-DDI
- 4 BOSCH DCN channel selectors (3 + 1 spare)
- 1 BOSCH DCN-INT-TX32 infrared transmitter
- 1 Biamp Nexia audio processor for the meeting
- 1 control PC
- 1 Ethernet Gigabit switch
- [Optional] BOSCH PRS-FIN fibre optics interface + cables + accessories

If a rack cannot be installed in the interpretation room, it **must ALSO contain**:

- 1 slave BOSCH DCN-CCU2
- 1 other Biamp Nexia audio processor for interpreters

The **spare equipment** must also be stored there, configured and ready for use. This means:

- 2 BOSCH DCN-CIS delegate units
- 1 BOSCH DCN channel selector
- 3 mono headsets
- 4 BOSCH DCN-Idesk interpreter desks

PLEASE NOTE: The installer must arrange for a single-phase power supply of sufficient strength to be distributed to the local control room on the basis of the equipment installed there

2.6.2 Interpretation room rack

If possible, a rack is to be installed in the interpretation room

PLEASE NOTE: Depending on the equipment in place, the installer must arrange one or more power supplies of sufficient strength, fed from the same electrical phase as the equipment in the local control room in the meeting room.

2.7 Equipment cabling

2.7.1 Cabling in the 2 rooms

Cabling in the rooms must:

- run along the edges of the room inside discreet cable ducts
- be organised so as to keep the number of cable paths crossing the room to a minimum
- cabling running to the central table (in the meeting room) or the interpretation booths (in the interpretation room) must also:
 - be protected by a rigid cable duct
 - be clearly marked on the ground to ensure the safety of people moving about the room

2.7.2 Specific features of cabling in the meeting room

Cabling on the meeting table must also:

- be installed in line with the table plan provided in advance by the GSC representative
- group together, in one cable path, the cables for the trunk buses daisy-chaining the DCN-DICS delegate units
- be fastened with Velcro strips (other means of fastening are not permitted)
- be locked to the DCN-DICS delegate units to prevent cables from being disconnected by accident

2.7.3 Specific features of cabling in the interpretation room

Cabling in interpretation booths must also:

- be grouped together in one cable path following the path of the trunk buses
- be fastened with velcro strips (other means of fastening are not permitted)

The **DCN LBB4115/00 tap-off units** must:

- be installed in a visible and accessible place in the interpretation booths using them (sharing one unit between two interpretation booths is not permitted)
- be identifiable as regards the trunk bus feeding them

The **DCN EPS units** must:

- be identifiable as regards the diagram of the cabling plan
- be labelled:
 - according to the trunk bus feeding them
 - clearly indicate which interpretation booth groups are fed by their tap-off output sockets

2.8 Audio interpretation system operating mode

2.8.1 Proceedings at the meeting

The meeting is chaired by the **PEC** (President of the European Council). The PEC's **DCN-DICS** delegate unit is **configured in 'chair' mode**, meaning it can be used to play an attention tone (the gong) on the master DCN-CCU2.

The **other delegates** each have a **DCN-DICS** delegate unit **configured in 'normal' mode**, and they each activate their own microphone when the PEC gives them the floor.

2.8.2 Control of microphones

The system must be configured as follows:

- On the **master DCN-CCU2**, the **contribution mode** must be set to **FIFO1 mode** to prevent more than one microphone being activated at any one time.
- **The ambient microphone** must be automatically:
 - **activated** when all the DCN-DICS microphones are disabled (floor continuity)
 - **deactivated** when a DCN-DICS microphone is activated
- The BOSCH DCN-SW software suite must be installed on the control room computer to be able to:
 - **manually activate and deactivate:**
 - **any DCN-DICS microphone**
 - **the ambient microphone**
 - monitor activity on the BOSCH system
- The control software for the Biamp Nexia audio processors must also be installed on the control room computer

DOCUMENT TO BE SUPPLIED: A VISIO (.VSD) file giving an overview of the position of:

- all DCN-DICS microphones on the meeting table

- all DCN-Idesk interpreter desks in all the interpretation booths

is required by the GSC prior to installation. The overview must also be reproduced in the BOSCH operator control software installed on the control room computer.

2.8.3 Audio interpretation configuration

FILE PROVIDED BY THE GSC: The GSC representative provides the installer with a language distribution plan for the interpretation booths.

The plan allows the installer to **set up the audio interpretation** as follows:

- All the **interpretation booths** (23 + 1 spare) must be **programmed and ready for use** with the languages assigned to them
- The working mode in and between interpretation booths must be set to **override**.
- Each **interpreter** works **on channel A** on their DCN-Idesk
- **Interpreters** must be able to **freely**:
 - **work on channel B** on their DCN-Idesk, which they can set up themselves
 - **override the channel selection for the booth** they are working in
 - **override the channel selection for another booth via channel B** on their DCN-Idesk

2.9 Documents and files transmitted by the GSC

The GSC representative provides the installer with the **following documents**:

- This document
- A **general plan** of the workspaces (meeting room and interpretation room)
- A **table plan** for the meeting room
- The full **interpretation regime** to be programmed in the booths

The GSC representative provides the installer with the **following files**:

- The **configuration** file for the **Biamp Nexia** audio processor **in the meeting room**
- The **configuration** file for the **Biamp Nexia** audio processor **in the interpretation room**

2.10 Recap of documents to be transmitted by the audio contractor

The GSC representative must receive the following documents prior to installation:

Format	Document	Additional information
Visio (.VSD)	Installation plan	Scale installation plan depicting all the elements in the audio interpretation system.
Visio (.VSD)	Schematic diagram of the DCN-CIS and DCN-Idesks	Schematic diagram giving an overview of the planned setup of all the microphones (DCN-CIS) and interpreter desks (DCN-Idesk) in the different booths
Excel (.XLS)	Compliance of connections to the master DCN-CCU2	Export of the Calculation Tool results (DCNNGW CT 7.01, attached) for items connected to the master DCN-CCU2
Excel (.XLS)	Compliance of connections to the slave DCN-CCU2	Same export for the slave DCN-CCU2
Excel (.XLS)	Infrared coverage	Export from the Room Simulation Tool (INT FPC 3.00, attached) for infrared coverage in the meeting room
Excel (.XLS)	Infrared delays	Export from the Delay Calculation Tool (INT DSC 2.30, attached) for the coax cables intended for use in installing the infrared radiators
Excel (.XLS) or Word (.DOC)	List of IP addresses	List of the IP network addresses of the items controlled by software (also showing that all the IP addresses are on the same subnet)

Table 4 - Recap of documents which the contractor must submit to the GSC representative for the audio system

3 Video

3.1 Background

If interpreters are to work in the correct conditions, they must be able to see what is happening in the meeting from the remote interpretation room.

A video recording system must therefore be set up in the meeting room. Recording is managed from a local control room, which broadcasts the images to the interpretation room.

This section sets out the specific requirements for the video system, dealing with them in the following order:

- Recording
- Processing
- Broadcasting

PLEASE NOTE:

(1) The equipment required for these services must be **of broadcast quality**, i.e. it must comply with norms and standards, and the type of equipment and stand used must be suited to the production of professional television broadcasts.

(2) Throughout all the stages of processing (from recording to broadcasting)

- * the **broadcast quality** must be maintained
- * the **minimum format** of the image must never be **less than Full HD 1080i/p in 16:9**
- * the **image sync** must be performed using a **sync generator**

DOCUMENT TO BE SUPPLIED:

The contractor must provide the GSC with the **technical specifications for the proposed equipment, in English**

3.2 Schematic diagram of the video system

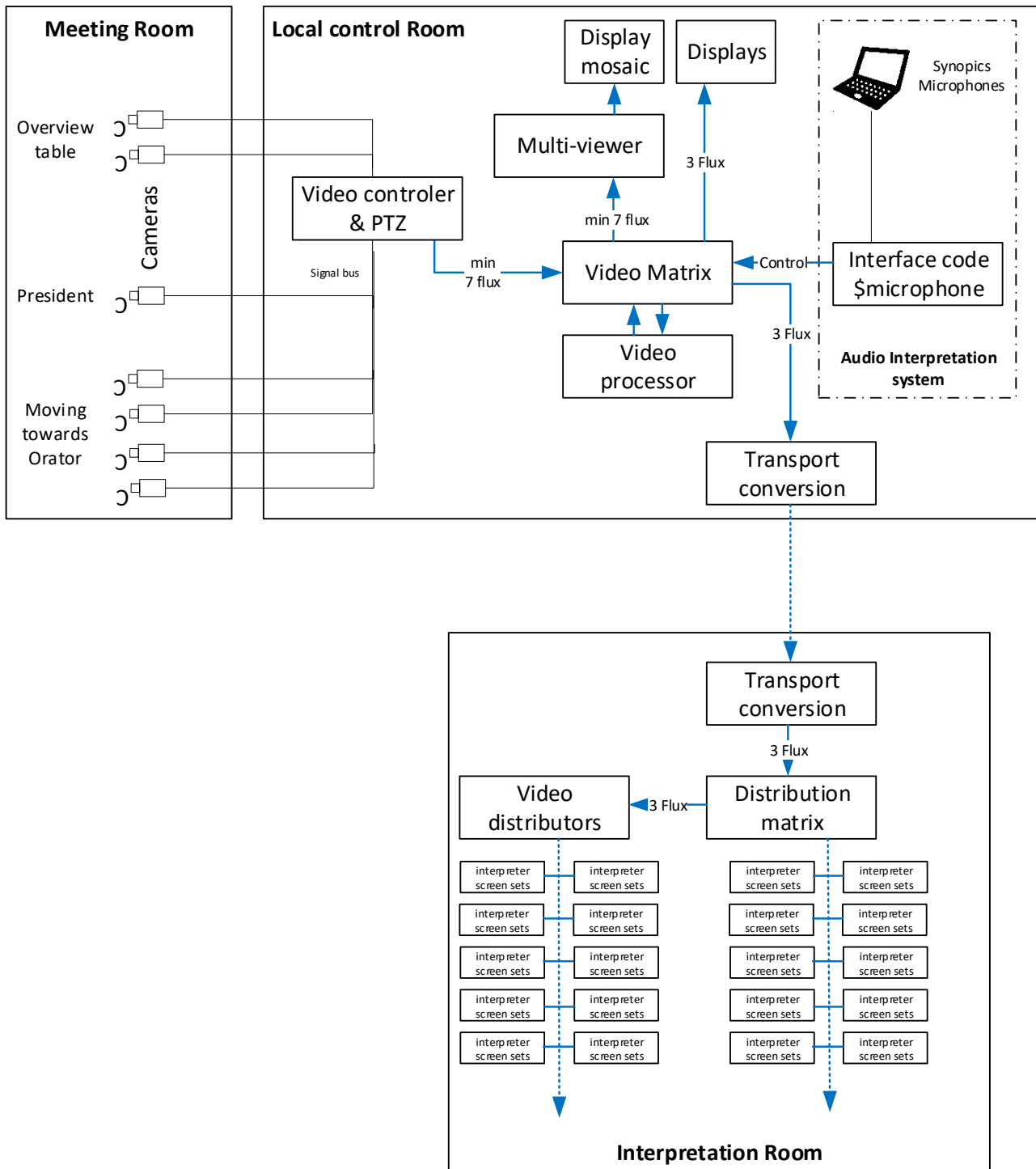


Figure 4 - Schematic diagram of the video system

DOCUMENT TO BE SUPPLIED:

The contractor must provide the GSC with an annotated proposed **schematic diagram of the video system**

3.3 Recording

Before discussing camera features, positioning and configuration, it is worth explaining the different frame types to be supplied to the video control room.

3.3.1 Frames to be provided by the cameras

The number of cameras and their positioning will depend on the layout of the room being recorded and the meeting table, and must guarantee **the following three frames**, which must all be **in focus, stable and free of movement or vibration**:

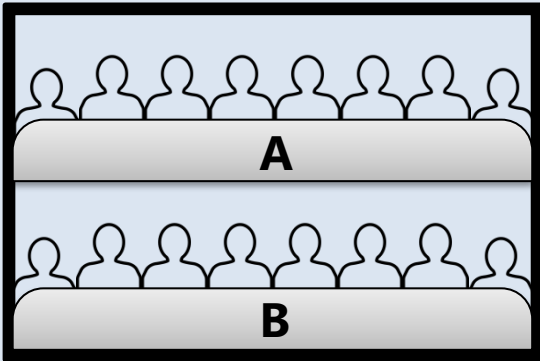
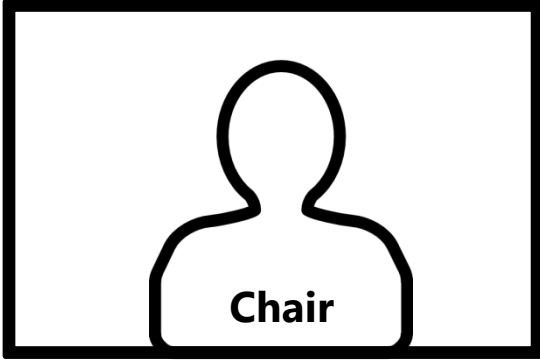
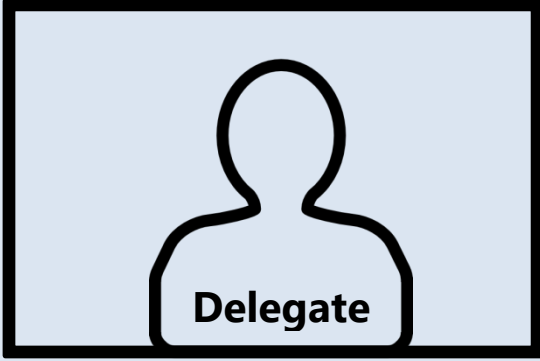
Frame	Diagram	Description
Table		<p>A fixed overview:</p> <ul style="list-style-type: none"> - of sides A and B (front view of speakers) of the meeting table - which is completely symmetrical <p>The aim is for the position of each speaker to be visible in a coherent spatial representation of the interactions between delegates in the meeting room.</p> <p>The two frames are to be grouped on a single HD stream in a dual split composition. Referred to hereinafter as 'permanent table frame'</p>
Chair		<p>A permanent frame of the chair of the meeting; close-up shot.</p> <p>Referred to hereinafter as 'permanent chair frame'</p>
Delegate		<p>A frame of the active delegate, close-up shot; usually 35 positions to cover.</p> <p>Referred to hereinafter as 'delegate frame'</p>

Table 5 - The three frames to be provided by the cameras

3.3.2 Camera models

To provide the three types of frame (table, chair, delegates), two different camera models will be needed:

- a wide-angle Ultra HD model for the permanent table frame
- a HD model for the delegate frames and the permanent chair frame

3.3.2.1 Features of the cameras for the permanent table frame

The two cameras used for the permanent table frame must be addressed and, as a minimum, be of Ultra HD professional broadcast standard.

The minimum technical requirements are:

- Active MFT (Micro Four Thirds) lens mount
- 11mm super-wide-angle lens
- 4K 4096x2160 or Ultra HD 3840x2160 resolution
- 1.5G, 3G, 6G SDI rates
- SDI + HDMI (monitoring video) outputs

Unlike the other cameras, the cameras for the permanent table frame are fixed and must have a lens with a sufficiently wide angle to cover the width of the meeting table depending on its layout and the camera placement possibilities.

They must also be able to guarantee an in-focus frame for all of the delegates all along the table.

PLEASE NOTE:

It is not permitted to use streams from several cameras to compose the overview of one of the sides (A or B) of the meeting table.

The full 'permanent table frame' (sides A + B) must therefore come from 2 cameras only

3.3.2.2 Features of the cameras for the delegate and chair frames

The cameras used for the delegate and chair frames must be addressed PTZ (Pan Tilt Zoom) cameras and, as a minimum, be of HD-SDI professional broadcast standard.

The minimum technical requirements are:

- 3MOS image sensor, 1/3-type, 2.2-megapixel, format 16:9
- Motorised lens, 20X zoom, F1.6 to F3.4
- FULL HD 1920 x 1080 resolution
- 1080i/p in 16/9 format
- 2000 lux minimal sensitivity at focal 10
- HD 1080 50i/p output format
- HD-SDI output, BNC, SMPTE292M/SMPTE259M, 75 Ohm
- RS422 or Ethernet controller
- 60°/second rotation speed
- Pan range +/-175°
- Tilt range -30° to +210°

3.3.2.3 Camera settings (PTZ addressing and control)

The system must allow the settings and PTZ addresses of cameras to be:

- adjusted:
 - individually (PTZ, white balance, autofocus, zoom, iris, etc.)
 - at any time (including during the event, if necessary)
 - remotely
- saved and retrieved:
 - based on the active microphone for the delegate cameras
 - at any time (including during the event if a camera breaks down)
 - without interrupting the stream

3.3.3 Position of cameras

3.3.3.1 Common features

In all cases, cameras must be positioned so as to enable each delegate to be captured by at least two mobile cameras:

- one main camera
- one secondary camera which:
 - will be used if the main camera malfunctions
 - will in turn become the new main camera

The table below sets out the quantities and features common to all layouts, as well as the icons used in the diagrams below.

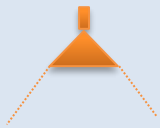


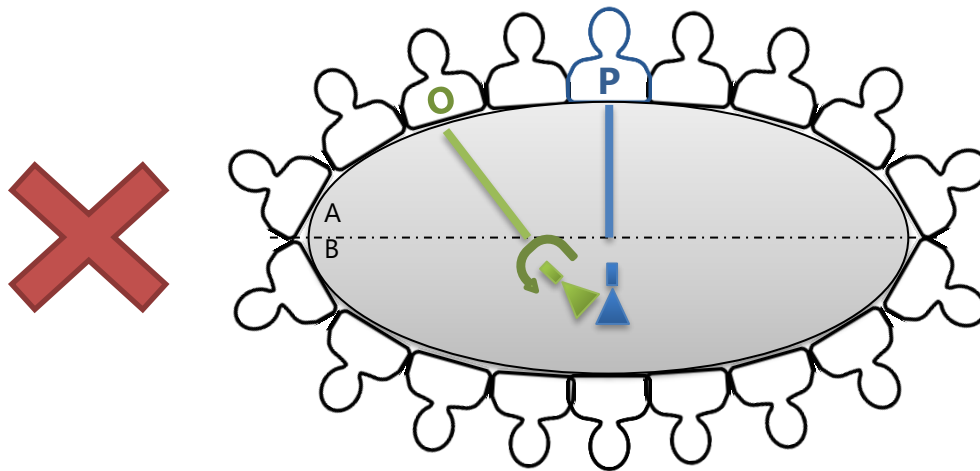
Quantity	Type	Icon	Additional information
2	Fixed		Fixed cameras to create the overview for the permanent table frame
1	Fixed		Fixed camera to cover the permanent chair frame
Min. 4	Mobile		Depending on the type of table, 2 or more mobile cameras per side (A and B) to cover the delegate frame

Table 6 - Types of cameras (and key to diagrams)

3.3.3.2 Cameras positioned in the centre of a solid-top table (layout not allowed)

This layout is **not allowed**.



3.3.3.3 Cameras positioned around a solid-top table (preferred layout)

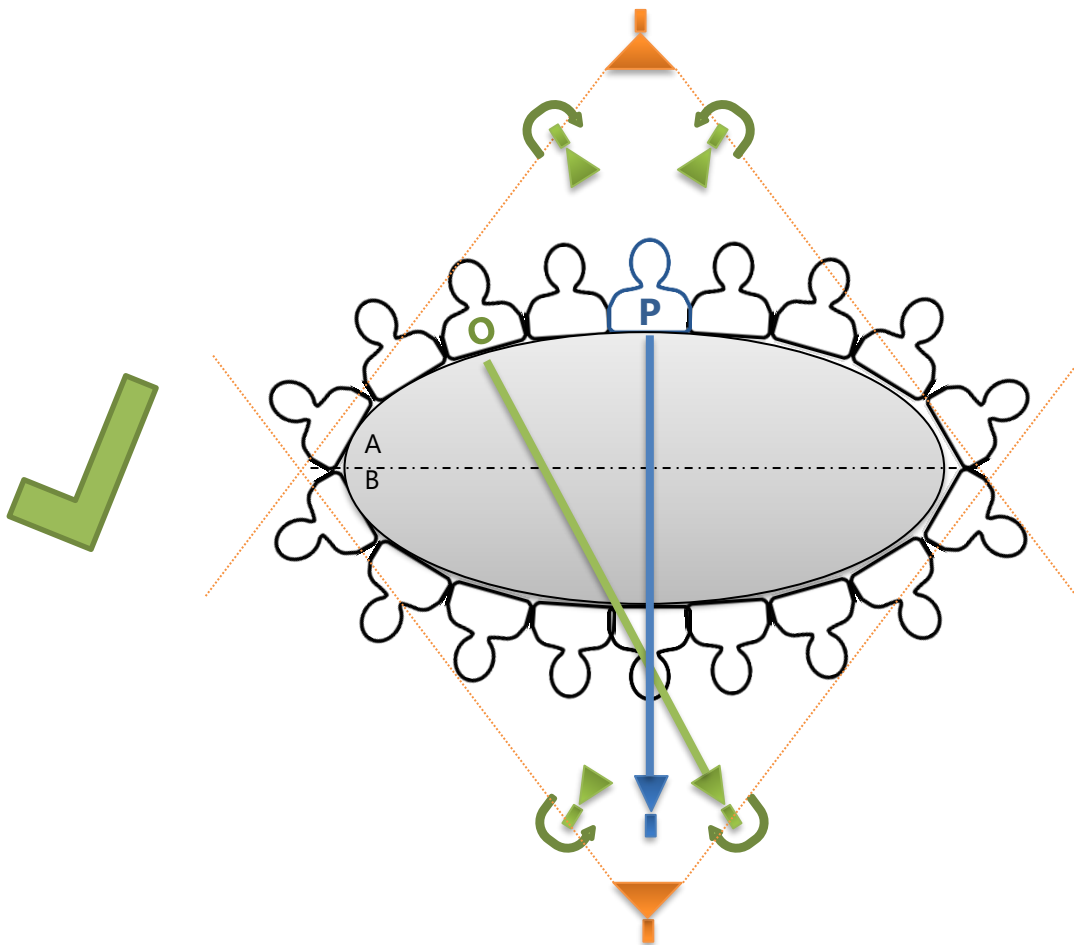


Figure 5 - Cameras positioned around a solid-top table

3.3.3.4 Cameras positioned in the centre of a hollow table setup (layout to be avoided)

This layout should be avoided as the camera movements can be distracting for delegates.

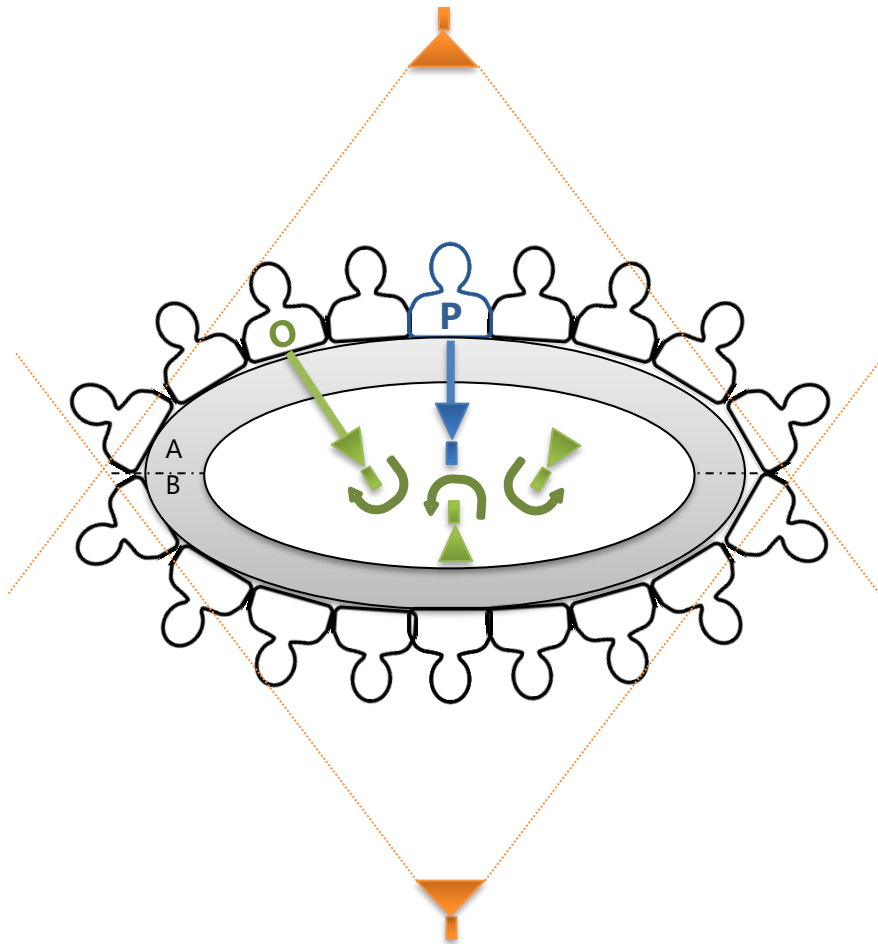


Figure 6 - Cameras positioned in the centre of a hollow table setup

3.3.4 Camera stands

3.3.4.1 Common features

The camera stands must be:

- limited in number
- able to **absorb vibrations** caused by camera movements and have sufficient mechanical safeguards to prevent the transmission of vibrations caused by the movement of room attendants
- be positioned in such a way as to
 - **guarantee a clear field of vision between the camera and each delegate to be framed**
 - **not impede movement around the room**

IMPORTANT REMINDER: *Cameras may never be placed directly on the table.*

3.3.4.2 Stands around the outside of the table

Cameras being installed around the outside of the meeting table must be mounted on stable, height-adjustable stands with a height range of 1.20 to 2.50m.

Preferably, all cameras should be grouped together on a single stand on sides A and B at as low a height as possible to avoid high-angle shots of delegates.

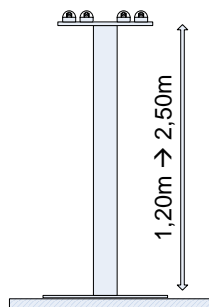


Figure 7 - Camera stand on outside of table

3.3.4.3 Stands on inside of hollow table setup

Cameras being installed in the centre of a hollow table setup must be mounted on small stands (between 0.70 and 1.10m). Ideally, the cameras should not be above the height of the table. The stands will be concealed by a flower arrangement.

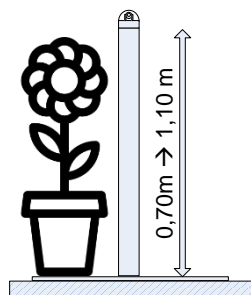


Figure 8 - Camera stand in centre of hollow table setup

3.3.5 Camera cabling

All cabling required for supplying power to the cameras, transmitting signals, syncing and controlling the cameras must **be installed in line with best practice** in cable ducts arranged around the perimeter of the meeting room, and must be run to the video control room without having ducts crossing the room. The cabling system used must guarantee high-quality signals at all times.

In addition, **cables attached to camera stands must be concealed** in a discreet manner using black or white cloth.

If, due to the room layout and the position of the video control room in relation to the meeting room, the cables need to be run through doorways, the necessary accessories must be used to ensure the security of the signals to be transmitted as well as the security of persons needing to use those doorways.

3.4 Processing

3.4.1 Camera preparation

During installation, before the start of the meeting, the following camera settings must be adjusted:

- position
- calibration.

3.4.1.1 Positioning of delegate cameras

Every time a microphone is activated:

- the 'main delegate camera' must be manually or automatically turned toward the delegate in question
- the 'secondary delegate camera' must also turn toward the delegate, so as to be ready if needed.

The operator will thus be free to choose the most appropriate frame, and will also have a back-up frame should one of the cameras malfunction.

To allow this to be automated, the system must be able to store around a hundred PTZ preset camera positions which can be used depending on which microphone is activated.

These presets should be based on the schematic diagram of the meeting room.

3.4.1.2 Camera calibration

All the cameras must be calibrated to ensure that the colours and whites are rendered evenly.

These settings must be saved and must also be able to be adjusted during the meeting in line with any fluctuations in light levels.

3.4.2 System video input streams (cameras)

The cameras installed should provide **a minimum of seven video streams** to the local control room:

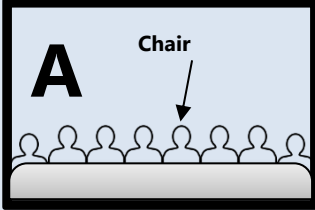
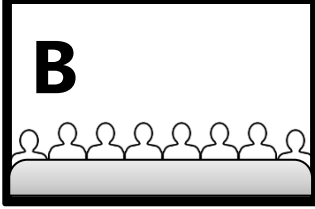
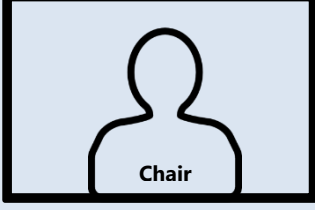
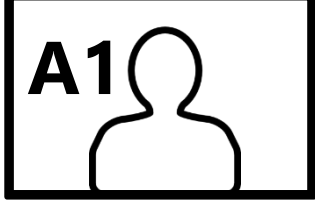
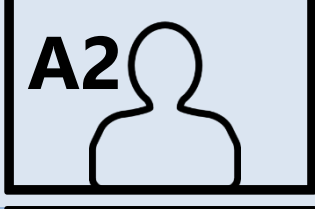
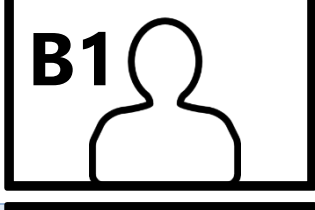
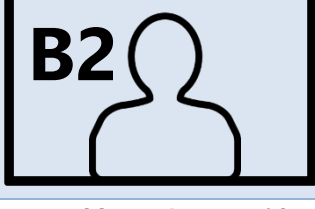
Stream no	Type	Illustration	Description
1	Ultra HD 3160i/p		Static front view of the first half of the table, showing the chair
2	Ultra HD 3160i/p		Static front view of the second half of the table
3	HD 1080i/p		Static close shot of the chair
4	HD 1080i/p		First mobile view of side A of the table
5	HD 1080i/p		Second mobile view of side A of the table
6	HD 1080i/p		First mobile view of side B of the table
7	HD 1080i/p		Second mobile view of side B of the table

Table 7 – System video input streams

IMPORTANT REMINDER: Depending on the features of the room and the table, it may be necessary to install more mobile cameras on sides A and B of the table.

3.4.3 Local control room equipment

3.4.3.1 Local control room location

The signals are to be processed in a dedicated local control room set up near the meeting room.

In practice, **this local control room will be set up in a mobile interpretation booth** which will be provided by the installer. If possible, this local control room should be positioned so as to have **a direct view of the meeting room**.

3.4.3.2 Video matrix

The video matrix must comply with the following specifications:

- a number of **inputs** corresponding to the number of cameras (so at least seven)
- a number of **loops** (inputs and outputs) corresponding to the specific features of the processors to be connected (so, at the minimum, the video processor)
- a number of **outputs** corresponding to the minimum number of streams to be extracted, including:
 - one output for each camera for the multi-viewer (so at least seven)
 - four outputs for the streams to be broadcast.
- no signal discontinuity during switching (clean switch)
- according to requirements, able to be controlled:
 - manually by the operator/video director
 - automatically by the microphone code interface.

3.4.3.3 Video processor

From the two Ultra HD streams of the two general shots on sides A and B of the meeting table, the processor must form an HD-quality dual split fixed stream.

This dual split stream must comply with the following specifications:

- Show the **chair's side of the table in the upper half**
- Show the **other side of the table in the lower half**
- Provide a coherent view of the room without distorting the table
- No use of anamorphic techniques.

NB: This function may be managed directly by the video matrix.

3.4.3.4 Multi-viewer

The multi-viewer (used to create a mosaic of images) must comply with the following specifications:

- capacity to display all camera streams simultaneously
- possibility of modifying at any time
 - the settings
 - the composition of the mosaic display
- high-quality camera-signal inputs (Ultra HD and Full HD)
- output in Full HD format.

NB: This function may be managed directly by the video matrix.

3.4.3.5 Monitor screens (x4)

The four **professional monitors** used in the control room must comply with the following specifications:

- Diagonal measurement of minimum 24 inches (60 cm)
- 16:9 format
- 1920 x 1080 native resolution of the panel
- LED backlight
- 170° horizontal and 160° vertical angle of view

3.4.3.6 Fibre converters

The video signal must retain its broadcast quality regardless of the distance:

- between the meeting room and the local control room
- between the local control room and the interpretation room.

If necessary, the video signals will therefore be transported:

- through monomode fibre optics
- using copper/fibre optic and fibre optic/copper converters compatible with the system.

3.4.3.7 Signal synchronisation

All the video equipment should be connected via cable to a sync generator for the video signals to be synced.

3.4.3.8 Power supply

The installer must provide for the necessary power supplies and power distribution for the equipment:

- in the local control room
- in the meeting room
- in the interpretation room.

3.4.4 System video output streams

The following five video streams must be available for display and broadcast:

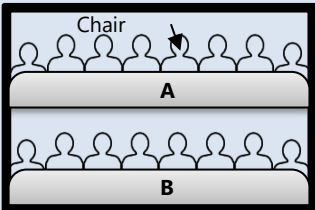
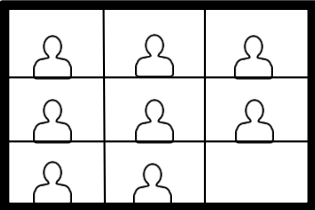
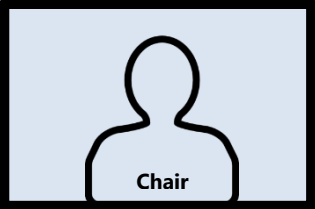
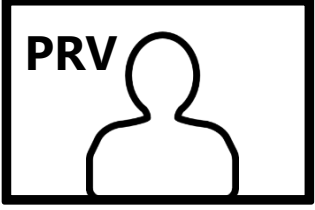

Stream no	Type	Illustration	Description of the stream	Broadcast in the control room	Broadcast to interpreters
1	HD 1080i/p		Stream of the dual split composition of the meeting table	✓	✓
2	HD 1080i/p		Multi-viewer stream	✓	
3	HD 1080i/p		Chair stream		✓
4	HD 1080i/p		Preview (PRV) stream	✓	
5	HD 1080i/p		Programme (PGM) stream	✓	✓

Table 8 – System video output streams

3.4.4.1 The preview (PRV) stream

The 'preview' (PRV) is to be constructed from the image provided by one of the various close shot cameras:

- the 'static chair camera'
- one of the 'mobile delegate cameras'
 - which is already focused on a delegate
 - which is panning around the table towards a delegate.

There are two options for creating the preview:

- **manual:** an operator or director can use the video/PTZ controller to edit it (frame, brightness)
- **automatic:** the video matrix automatically switches the camera images to the preview without the intervention of an operator or director. For this to be possible, all the camera settings (position, focus, zoom, etc.) must of course have been adjusted in advance.

3.4.4.2 The programme (PGM) stream

The 'programme' (PGM) or 'programme output' is the image which has been selected for display on the interpreters' screens in the remote room.

The stream to be sent to the programme should be manually selected by an operator or director using a video matrix switcher.

PLEASE NOTE: This programme must always show a static image. Camera pans may not be shown. If needed, a cutaway shot (of the chair) can be used to transition between two delegates, if the frame has not been properly set up or if no microphone is activated.

3.4.5 Video operator

3.4.5.1 Equipment available to the video operator

In the control room, the video operator should have access to:

- four monitor screens showing, respectively:
 - the dual split composition of the meeting table
 - the multi-viewer mosaic
 - the preview (PRV)
 - the programme (PGM)
- a computer with a schematic plan of the meeting room showing the active microphone

3.4.5.2 Video operator's tasks for manual programme management

When manually managing the programme, the operator should:

- load the settings of the best available camera for the position of the active delegate
- switch to the programme once the camera is stabilised in its position and its saved settings have been loaded

- ensure the smooth adjustment of the frame to reflect the delegate's actions and any fluctuations in the image settings (light, focus, etc.)
- manage the cutaway shot of the chair between two microphone activations.

3.5 Broadcasting

3.5.1 Presentation of the video for interpreters

A multi-screen display system on stands is to be installed in front of each interpretation booth in the interpretation room. This system allows the interpreters to see what is happening in the meeting room.

The image streams described in paragraph 3.4.4 (on page 31) will be transmitted to these display systems. Particular attention must be paid to the quality of the signals for display, and to the broadcast render quality of the streams.

3.5.2 Signal transport

As indicated in paragraph 3.4.3.6 (on page 30), appropriate measures must be taken to ensure high-quality signal transport, such as, in this case, use of fibre optics if necessary.

The installer is responsible for putting in place all the protective measures necessary to ensure the integrity of the fibre optics or cables used in the video broadcast system.

3.5.3 Distribution matrix

Specifications of the distribution matrix:

- Ensure the qualitative integrity of the signals received and transmitted
- **Inputs:** the three streams (chair, dual split and programme) from the video control room
- **Outputs in star configuration:** the same three streams for transmission to the multi-screen display systems.

3.5.4 Video distributor

If necessary, one or more video distributors, of the same quality as the distribution matrix, should be used to distribute the signals from the matrix to the multi-screen systems.

The original signal quality (resolution and format) must be preserved.

These distributors should, where necessary, effect the format conversions required to connect to the screens without altering the signal quality.

DOCUMENT TO BE SUPPLIED:

The contractor must provide the GSC with a **diagram showing the set-up of the video system in:**

- **the meeting room**
- **the local control room**
- **the interpretation room.**

3.5.5 Screen bases

The installer is to provide a **robust, stable and height-adjustable base** for the screens in front of each mobile interpretation booth, following the layout below:

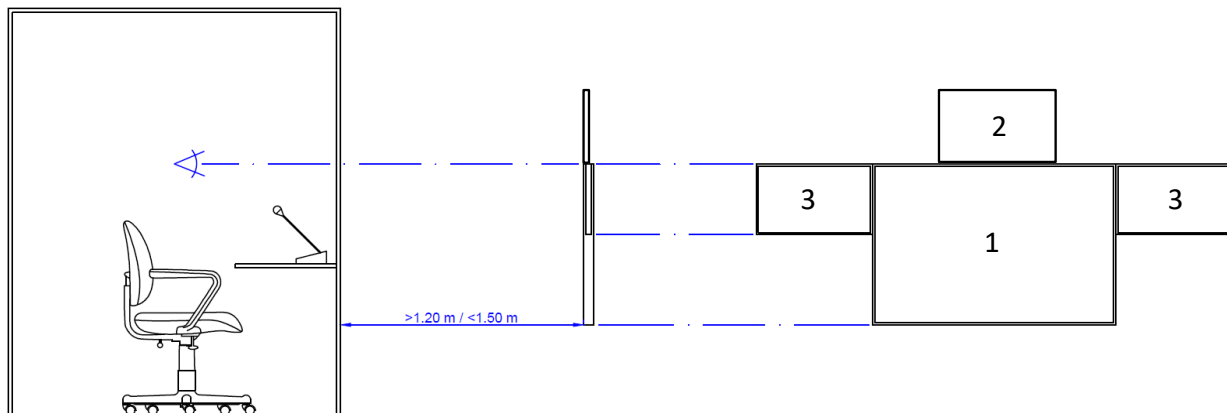


Figure 9 – Layout of the multi-screen system in front of the interpretation booths

Position of the screens:

- the multi-screen system must be
 - centred in front of each interpretation booth
 - placed between 1.2 and 1.5 m from the booth
- the top edge of screen 1 must be positioned in line with the average eye level of an interpreter seated in the interpretation booth
- the heights and distances must be able to be adjusted as needed, within a margin of approximately 20 %.

PLEASE NOTE:

*The practical details of the set-up of these **mobile interpretation booths** should be checked with the **installer** so as to ensure that the screen stands are placed in the best position.*

3.5.6 Distribution of the streams in the multi-screen system

The streams should be distributed so as to achieve the following final result:

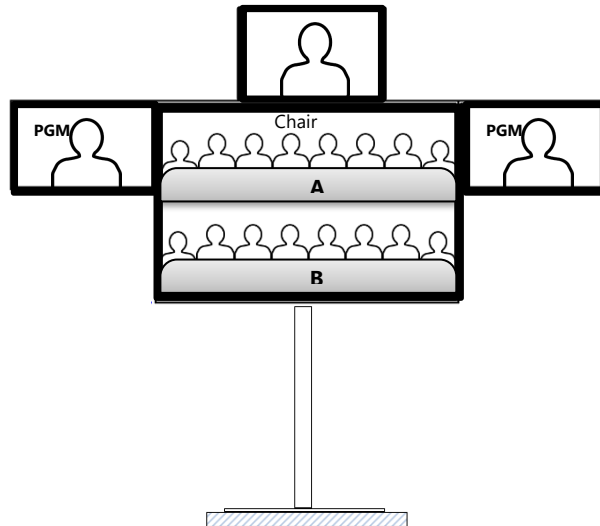


Figure 10 – Distribution of the streams in the standing multi-screen system

3.5.7 Common screen specifications

All the screens must comply with the following **minimum technical specifications**:

- LED
- 1920 x 1080 native resolution of the panel
- 170° horizontal and 160° vertical angle of view
- HD-SDI or HDMI input compatible with the distribution system
- brightness, contrast and colour control.

It is the **installer's responsibility to calibrate all the screens (colour, contrast and white level)** to ensure the consistency of the image broadcast and provide an optimum reproduction of the video recording.

3.5.8 Small 'chair' and 'programme' screens

Screen 2 (chair) and the two type-3 screens (programmes) must also comply with the following minimum technical specifications:

- Diagonal measurement of 22 inches (55 cm)
- 250 cd/m² brightness.

3.5.9 Large 'dual split' screen

Type-1 screens must also comply with the following minimum technical specifications:

- Diagonal measurement of 55 inches (140 cm)
- 400 cd/m² brightness.

3.5.10 System cabling

The transport and distribution of signals and the distribution of power supplies must be effected via cable paths which ensure the security thereof and the safety of the people working in the interpretation room.

These cable paths should preferably be organised in such a way as to keep the interpretation room as clear as possible and ensure that interpreters and technicians can move freely around the workspace.

DOCUMENTS TO BE SUPPLIED:

The contractor must provide the GSC with a **diagram showing the set-up of the system's video cabling**

3.5.11 Power supply

The installer is responsible for providing for sufficient power supplies and the distribution thereof in the broadcasting system in the interpretation room.

DOCUMENT TO BE SUPPLIED:

The contractor must provide the GSC with a **diagram showing the set-up of the electrical cabling.**

3.6 Recap of documents to be submitted by the video contractor

The GSC representative must receive the following documents prior to the system being set up:

Format	Document	Additional information
Acrobat (.PDF) or Word (.DOC) Image (.JPEG)	Technical specifications for equipment	Technical specifications in English for all the proposed equipment
Visio (.VSD)	Annotated schematic diagram of the video system	An annotated schematic diagram of the video system
Visio (.VSD)	Diagram of the video system set-up	A diagram showing the video system set-up in: – the meeting room – the local control room – the interpretation room
Visio (.VSD)	Diagram of the video cabling set-up	A diagram showing the video cabling set-up
Visio (.VSD)	Diagram of the electrical cabling set-up	A diagram showing the electrical set-up of the system

Table 9 – Recap of documents which the contractor must provide to the GSC representative for the video system

4 Services

4.1 Assembly and disassembly

The contractor will be responsible for assembling and disassembling the systems ordered, as well as all the equipment necessary to their proper functioning.

The contractor and the installer are responsible for the handling, delivery and safety of the equipment required for the systems ordered. The same applies for the safety of their employees.

4.1.1 Assembly

The system is to be assembled the day before the meeting. **The installer will have only one day to assemble the system.** It is therefore responsible for ensuring that it has sufficient personnel and that the equipment is delivered in good time, so as to guarantee that the system will be functional by the end of the assembly day.

For security reasons, a security sweeping will be carried out the evening before the meeting. This security procedure is the deadline by which the systems must have been assembled, tested and rendered functional. **After this security sweeping, no new equipment may be brought into the workspaces.** The contractor and the installer must keep this in mind when planning the work ordered.

4.1.2 Disassembly

The system may be disassembled the day after the end of the meeting.

4.2 Operation

The contractor is responsible for ensuring the smooth operation of the systems ordered. It must devote all the necessary resources to ensuring the optimal functioning of the systems ordered.

For the **audio interpretation** system, it must supply at least:

- **two technicians specialised** in the conference audio field with a thorough knowledge of the equipment used.

For the **video broadcast** system, it must supply at least:

- **one technician specialised in the video field** with a thorough knowledge of the equipment used
- **one technician/director** to operate the local video control room during the meeting.

In both cases, the contractor is requested to provide, for each part of the systems ordered, **personnel with at least five years' relevant experience in the specific field in question.**

For the coordination of the works and the centralised management of the preparatory phase, **the contractor must appoint a project manager**, who will be the GSC's dedicated contact point. The project manager must have specific knowledge of the field in question.

PLEASE NOTE:

Absolutely all the staff involved in the event must be able to **speak English**.

DOCUMENTS TO BE SUPPLIED:

CVs for the personnel involved in the event, **drafted in English**.

4.3 Security clearance and/or accreditation

The personnel assigned by the contractor to the event must be able to provide a **security certificate** equivalent to Belgium's 'secret' level and/or to receive a **security accreditation** from the host country.

DOCUMENTS TO BE SUPPLIED:

Before signing the contract, **the contractor must provide either proof that applications have been submitted** concerning these personnel to the authority responsible for delivering security certificates or accreditations in the country hosting the event, or the currently valid certificates or accreditations themselves.

In addition, **the personnel must sign a non-disclosure clause regarding the information** to which they may have access at the event.

4.4 Recap of documents to be submitted by the services contractor

The GSC representative must receive the following documents prior to the system being set up:

Format	Document	Additional information
Word (.DOC)	English CVs for the personnel	CVs for the personnel involved in the event, drafted in English.
To be defined	Personnel security certificates (or proof of application)	Before signing the contract, the contractor must provide either of the following for each member of its personnel: – proof that an application has been submitted to the authority responsible for delivering security certificates or accreditations in the country hosting the event – his or her currently valid certificate or accreditation.

Table 10 – Recap of documents which the contractor must provide to the GSC representative for the services