1. Background

The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (the Commission) with its headquarters in Vienna is the International Organization mandated to establish the global verification system foreseen under the Comprehensive Nuclear-Test-Ban Treaty (CTBT), which is the Treaty banning any nuclear weapon test explosion or any other nuclear explosions. The Treaty provides for a global verification regime, including a network of 321 stations worldwide, a communication system, an International Data Centre and on-site inspections to monitor compliance with the Treaty.

The Commission is building a dedicated and protected Equipment, Storage and Maintenance Facility (ESMF) in Seibersdorf, Austria for operational functions including for storage, maintenance, testing and training (and business continuity as deemed applicable) to support the technical divisions of the Commission, the International Monitoring System (IMS), International Data Centre (IDC), On-Site Inspection (OSI) and other activities of the Commission both prior to and after entry-into-force of the CTBT.

The facility will enable the Commission to further develop and sustain on-site inspection capabilities, provide storage of and access to equipment, spares and consumables for rapid deployment at IMS stations and other facilities and to undertake related training and exercises. The new facility will be operated to support all elements of the CTBT verification regime and will allow for modular and staged extensions.

Construction of the facility is estimated to be completed by Q1 2019.

2. Purpose/objective of the project

The purpose of this project is to equip the training rooms of the new ESMF facility with:

1. an integrated video camera system to record and stream lectures and presentations;
2. an integrated sound system capable of playing audio from multimedia sources, and wired and wireless microphones;
3. projection capabilities; and,
4. a multimedia switching system.

An additional objective is to establish a movable solution for streaming and recording video and audio areas outside of the training rooms for activities such as equipment demonstrations in storage areas or workshops. An additional objective is to equip two additional rooms, Operations Support Centre (OSC) room and Press Briefing Area, with audio/visual equipment as specified below.

The successful Contractor is responsible for the supply, installation, and configuration of the various systems specified in this Terms of Reference. The Contractor would also provide a half day orientation training session to Commission staff members in the operation of the systems.

Bidders are expected to provide examples of similar projects completed in industries such as higher education, congress centers, training facilities, etc.

Training Room Specifications

The floor plan of the training rooms, specifications and a rendering are available in Annex I. The training room area is a flexible space with a modular wall system allowing for one large conference/congress room with a capacity of 100 people and measuring 150 square meters. This larger room can be divided into four smaller rooms with a capacity of 25 people and area of 40 square meters.

The training rooms are each prepared with connections for a multimedia box, WS15 and WS16 type outlets under the floor tiles, W-LAN, RJ-45 LAN sockets, a darkening system, audio system preparation and dimming lights.

A description of how the training rooms shall be finished in preparation for this project is available in Annex I.

Operations Support Centre Room

This room has the same dimensions as the training rooms in breakout configuration (40 square meters) and is prepared with connections for a multimedia box, WS15 and WS16 type outlets under the floor tiles, W-LAN, RJ-45 sockets, a darkening system, audio system preparation and dimming lights.

Press Briefing Area

The press briefing area has an area of approximately 82 m2 and is prepared with connections for a multimedia box, WS15 and WS16 type outlets under the floor tiles, W-LAN, RJ-45 sockets, a darkening system, audio system preparation and dimming lights.

Detailed Requirements for Training Room Components

Integrated Video Camera System for Streaming and Recording of Lectures

An integrated video camera system is required for capturing lectures in HD quality video (1920x1080) in both of the training room configurations – large conference room (150 square meters and 100 person capacity) and also when divided into the four smaller rooms (40 square meters and 25 person capacity).

When the room is configured as the large conference room, the camera system should be able to automatically track the movements of the presenter(s) to always keep them in the video frame. The camera should automatically zoom and focus on the speaker and be able to capture audio in a clear and direct way. The system should also be able to focus on audience members when they are asking questions and to capture their audio clearly.

The primary camera(s) utilized for capturing lectures in the large conference room configuration should be ceiling mounted so that the view of the camera is not obstructed when people move around the room. One camera should be affixed toward the rear of the room in order to film the presenter, and another camera should be affixed at the front of the room in order to film audience members asking questions.

When configured as smaller breakout rooms, a single camera with a field of view wide enough to capture the entire 40 square meter room is sufficient. The ability to capture clear audio from presenters is required. The solution shall provide the possibility to simultaneously record video from each breakout room. A tripod based solution would be acceptable.

The video recording and streaming capability of the system requires picture in picture functionality, as well as the capability to display or mirror presentation files, documents, images or videos from the presentation computer to the video stream both in full screen and in picture in picture format. The video stream output shall be in a format compatible with standard off the shelf video and web conferencing platforms such as Adobe Connect, or similar.

To the extent possible, operation of the proposed solution should not require a dedicated specialist operator; it should be as automatic and autonomous as possible.

Movable Recording and Streaming System

An additional set of cameras and audio capture equipment is required to enable the recording and streaming of activities that take place at the ESMF but not within the training and conference room. These areas could include the storage warehouse, workshops, common areas of the building and outdoor areas in close proximity to the building. The cameras should connect to the central recording system through LAN or WLAN.

Description	Quantity	Function
Presenter Tracking System – Vaddio RoboShot camera and RoboTRAK Presenter Tracking system or equivalent	1	To automatically follow the presenter when the room is configured as the large conference room (150 m2)
HD 1080p, wide angle, 12x zoom, H.264, PTZ camera	4	For use in breakout rooms, tripod mounted solution is acceptable
HD 1080p, wide angle, 12x zoom, H.264, PTZ camera, suitable for outdoor use	4	For use in movable recording and streaming system

Multimedia Switching System and Integrated Sound System

The multimedia switching system shall be able to operate in two modes: 1) conference room mode, and 2) breakout room mode.

When configured in the conference room format, audio from the multimedia sources including the primary presentation computer, auxiliary laptop computer(s), HDMI ports, wireless microphones, auxiliary audio jack, and additional multimedia sources should be transmitted to all speakers in the larger conference room. The ability to switch the input source (HDMI inputs, VGA, etc.) to be projected on the primary display screen from a physical control panel are required in the large conference room as well as in the breakout rooms.

When in breakout room mode, the multimedia box installed in each room shall be able to operate independently. The installed speakers should only transmit audio from microphones or multimedia sources from their room. However, the master control unit should have the ability to globally send audio such as a gong, bell, or audio from a microphone to all rooms while in breakout room mode.

Projection System - Projector

A ceiling mounted retractable display screen is required for use in the main conference room that shall be large enough to be visible from the rear of the room.

A ceiling mounted projector is required for use with the ceiling mounted retractable display screen and should have the following characteristics:

- Full color
- Laser, LED or hybrid light illumination (low heat generation)
- Full HD resolution (1920x1080 pixels or higher)
- Good visibility in an enclosed space in large conference room with some ambient light
- Low operating noise
- Connectivity: RJ45, VGA, USB, HDMI, DVI, Wireless
- Remote control

The inputs for the projection screen shall be connected to the main conference room multimedia switching system.

Projection System - Televisions

When configured in breakout room mode, wall mounted flat screen televisions shall be utilized in each room. The wall mounted televisions should be 75 inches, and have the following specifications: 4K UHD Resolution, QLED, HDMI, USB, LAN, Wi-Fi, Bluetooth, DLNA, anti-reflection screen (Samsung QE75Q7F or similar).

The televisions should be wall-mounted on a mount that allows for the televisions to angle horizontally up to a 45 degree angle. The televisions shall be angled and shall mirror the primary projector when in conference room mode in order to allow audience members sitting in the rear of the conference room to see the presentation contents more clearly.

A total of five identical televisions and wall-mounting solutions are required.

Detailed Requirements for OSC room and Press Briefing Area

Multimedia Switching System and Integrated Sound System

Audio from the multimedia sources including the primary presentation computer, auxiliary laptop computer(s), HDMI ports, wireless microphones, auxiliary audio jack, and additional multimedia sources should be transmitted to all speakers in the room. The ability to switch the input source (HDMI inputs, VGA, etc.) to be projected on the primary display screen from a physical control panel are required.

Projection System - Projector

A ceiling mounted retractable display screen is required for use in both the OSC room and press briefing area.

A ceiling mounted projector is required for use with the ceiling mounted retractable display screen and should have the following characteristics:

- Full color
- Laser, LED or hybrid light illumination (low heat generation)
- Full HD resolution (1920x1080 pixels or higher)
- Good visibility in an enclosed space in large conference room with some ambient light
- Low operating noise
- Connectivity: RJ45, VGA, USB, HDMI, DVI, Wireless
- Remote control

Projection System - Televisions

Wall mounted flat screen televisions shall be utilized in each room. The wall mounted televisions should be 75 inches, and have the following specifications: 4K UHD Resolution, QLED, HDMI, USB, LAN, Wi-Fi, Bluetooth, DLNA, anti-reflection screen (Samsung QE75Q7F or similar).

The televisions should be wall-mounted on a mount that allows for the televisions to angle horizontally up to a 45 degree angle. The televisions shall be angled and shall be able to be used as a display for the primary desktop in each room.

A total of two televisions are required in the OSC room and two in the press briefing area.

Audio Breakout Box

A professional audio breakout box with XLR connectors is required in the press briefing area which can relay the primary audio from the integrated sound system into external audio recording devices and cameras.

Ceiling Mounted Video Streaming Camera in Press Briefing Area

Presenter Tracking System – Vaddio RoboShot camera and RoboTRAK Presenter Tracking system or equivalent	1	To automatically follow the presenter

3. Summary of Hardware Requirements

Component	Quantity	Location(s)
Presenter Tracking System – Vaddio RoboShot camera and RoboTRAK Presenter Tracking system or equivalent	2	Primary conference room Press briefing area
Projector and Screen	2	Primary conference room Press briefing area
HD 1080p, wide angle, 12x zoom, H.264, PTZ camera	4	For use in breakout rooms, tripod mounted solution is acceptable
HD 1080p, wide angle, 12x zoom, H.264, PTZ camera, suitable for outdoor use	4	For use in movable recording and streaming system
Projection System - Televisions	9	Breakout conference rooms OSC Room Press briefing area

4. Scope of work and work tasks

The Contractor shall:

1. Propose and supply a technical solution as indicated in the "Detailed Requirements for Training Room Components" section above which enable:

    - an integrated video camera system to record and stream lectures and presentations;

- an integrated sound system capable of playing audio from multimedia sources, and wired and wireless microphones;
- projection capabilities; and,
- a multimedia switching system.

2. Propose and supply movable/mobile solution for streaming and recording video and audio areas outside of the training rooms for activities such as equipment demonstrations in storage areas or workshops.

3. Install, configure, document and provide training CTBTO staff members on the operation of the newly installed systems.

4. Provide all relevant documentation to the CTBTO at the conclusion of the project.

5. Work Schedule

1. Kick-off meeting – 10 December 2018
2. Completion of installation and configuration – 31 January 2019
3. Training session and hand-over of documentation – by 22 February 2019

The Commission reserves the right to adjust the timelines based on the status and progress of the overall ESMF construction timeline.

6. Required Technical Skills of the Contractors

The Contractor shall have demonstrated expertise in the specification, installation, configuration, and documentation of video streaming, projection and multimedia systems in higher education, congress facility and professional training settings.

Annex I – Preparation of Training Rooms for Video, Audio and Presentation Components

For seminar rooms, the device for the passive components is prepared according to specifications. The furnishing of the individual rooms is prepared in such a way that through the use of a mobile cabinet with the built-in active components, all contemporary seminar room functions can be realized.

The set-up and the wiring is as follows:

In the suspended ceiling, a beamer and a corresponding number of loudspeakers, such as an electric screen corresponding to the room size, which is operated via KNX system, is to be provided for. For the supply of the seats, the parapet channel workstations are placed in the ground area (by means of floor sockets) as well as on the window side, sideways.

The workplace supply and the remaining cabling of the media technology are managed by the raised floor and the suspended ceiling.

For the use of the mobile media cabinet, a small media distributor (MM-Box) is to be installed on the side of the tutor to connect the system. All plugs and cabling are placed in the distributor so that the media systems can be connected. The wiring shall be prepared according to the wiring diagram.

The built-in multi-media components should be installed in the FM space on a 19" cabinet.

The system cabling shall be coordinated with the media technicians. Cabling includes all necessary VGA, audio, video, speaker and control cables

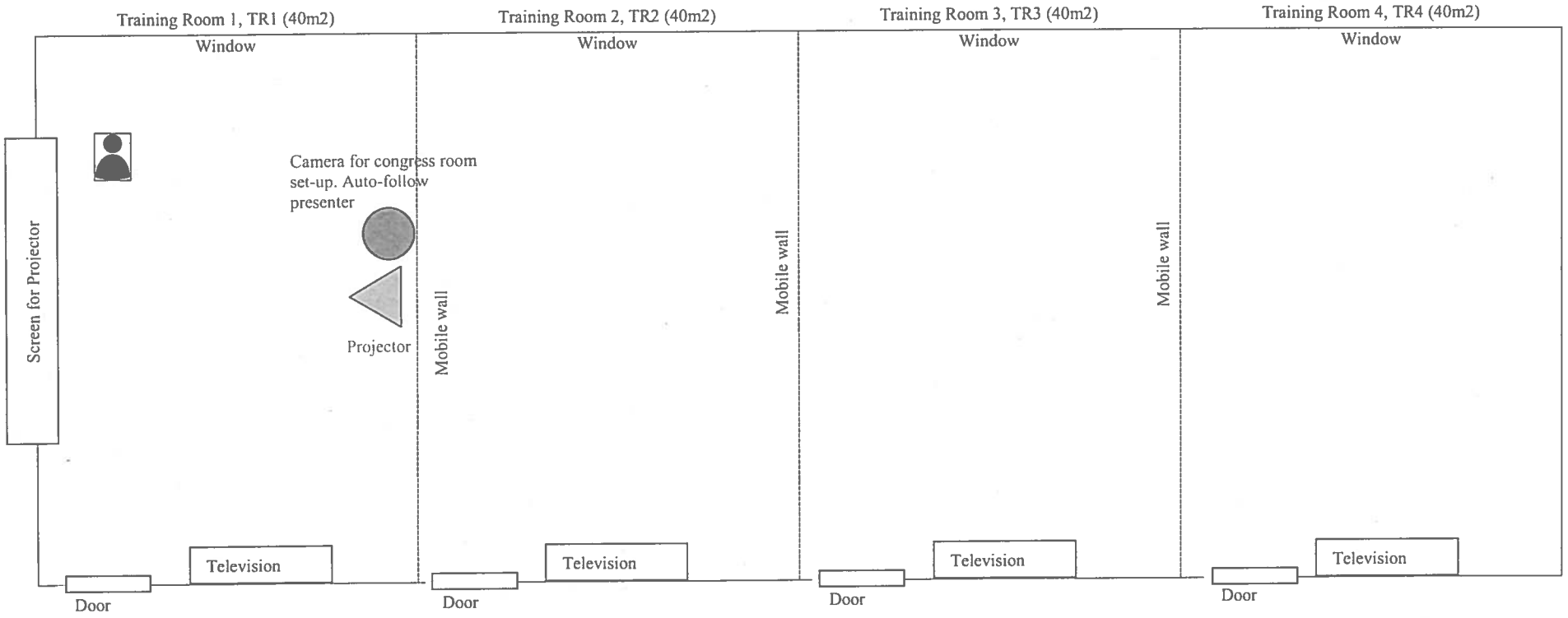
- VGA cabling: Summer, video cable Transit Mini 75 Ohm sw, braid, 5 x 75 Ohm Coax
- Audio Cabling: Summer, micro cable Club series SW 2x0,34 mm² DM 6,2 mm
- Video cabling: Summer, Video cable SC-Altera Split blue, 3x75Ohm
- Speaker Connections: Summer, installation cable FRNC 2x2,5mm²
- Control cables: Summer, combination 2x2x0,25 mm² + P D 7mm

<u>Specifications of the MM-Box</u>

The system consists of the MM-Rack with all the components like „Matrix", control system, signal processor and amplifier. They are connected to the MM-Box in each Training-Room and to the beamer and speakers too.

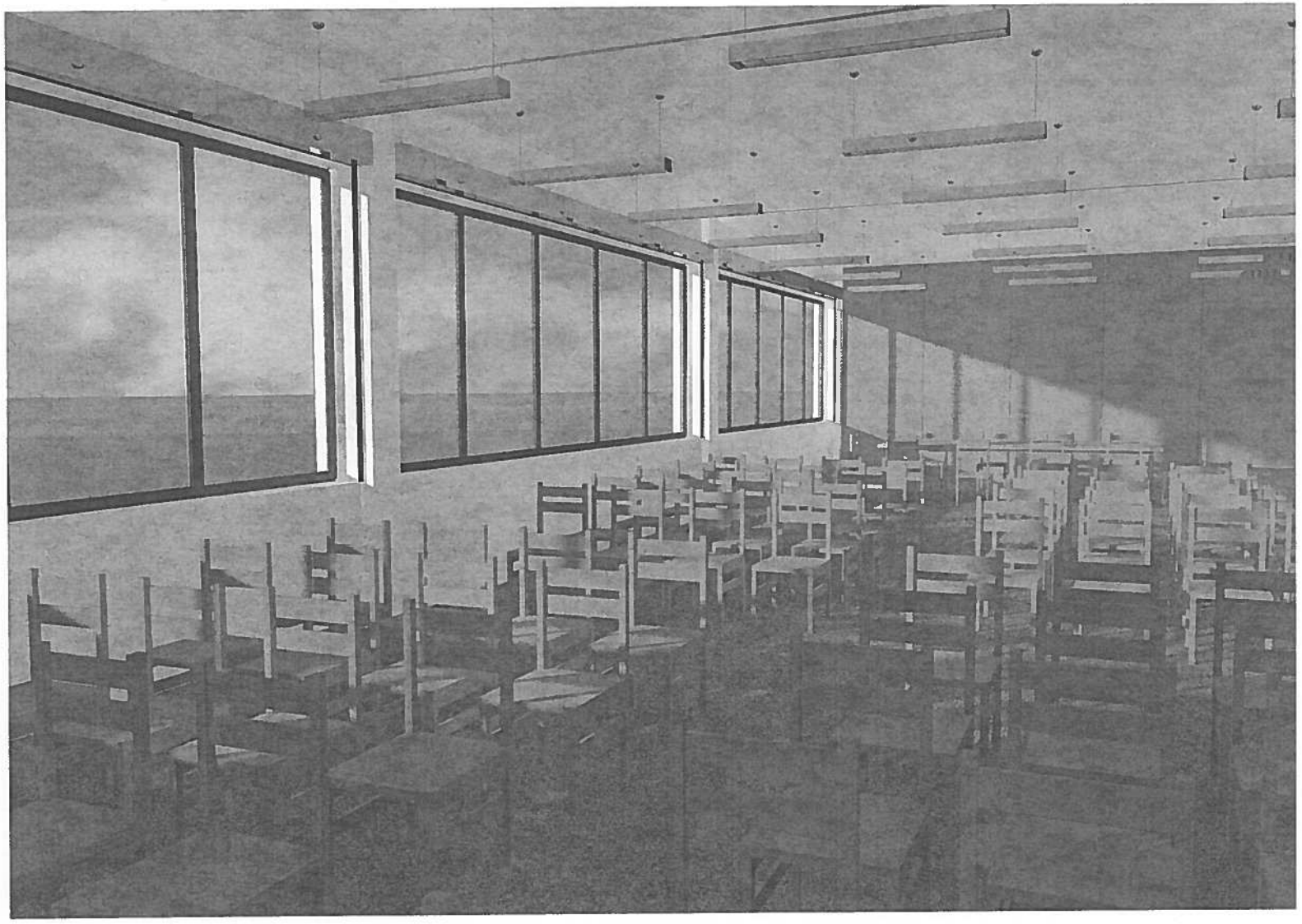
The 2nd part of the system is the mobile media caddy equipped with wireless microphone, HD SAT, DVD and presentation PC computer.

Annex II - Simple Diagram of Training Rooms and Proposed Locations of

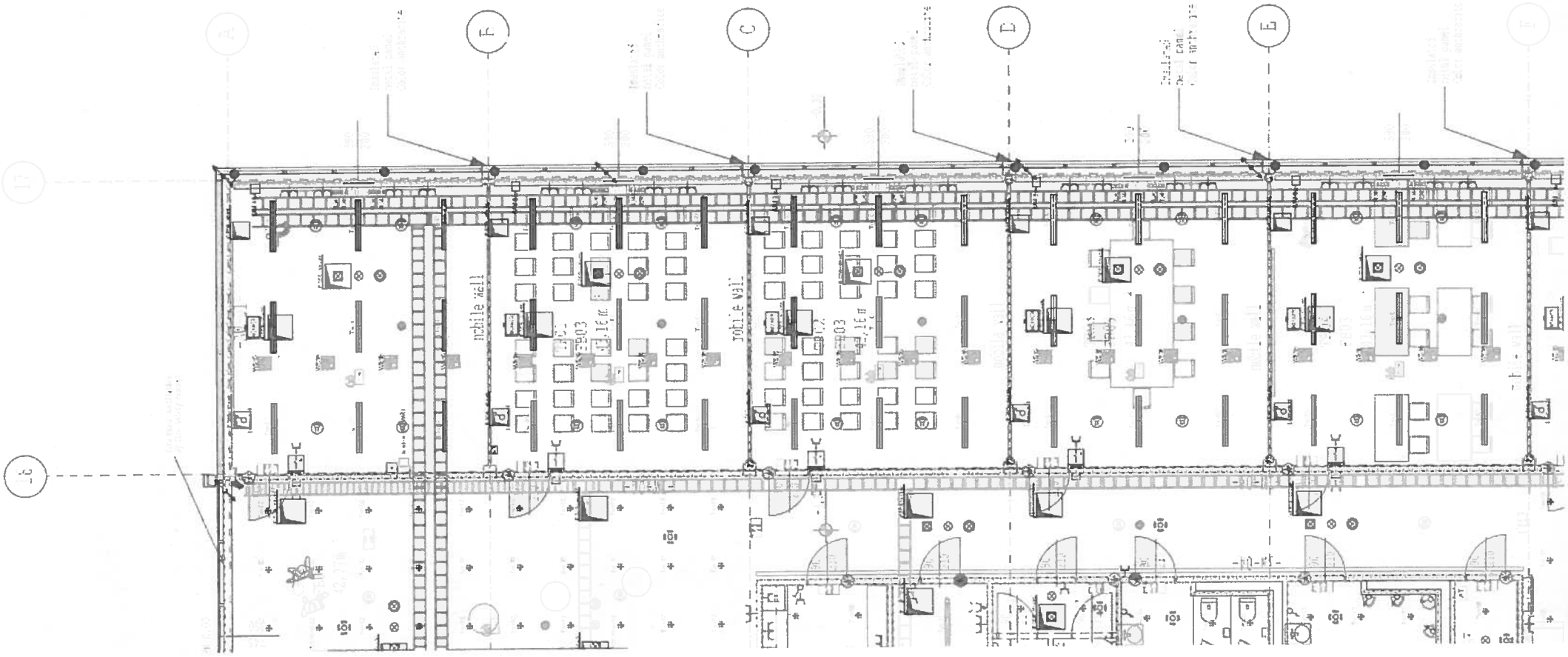


Total training/congress room size appx 150 m2 (TR1+TR2+TR3+TR4)

Annex III – 3D Rendering of Training Room



Annex IV – ESMF Training Room Floor Plan



Verteiler / Distributors

- E-Verteiler / electrical distributor
- SV Verteiler / EPS distributor
- USV Verteiler / UPS distributor
- EDV Verteiler / IT distributor
- Multimedia Verteiler / multimedia distributor
- ELA Verteiler / ELA distributor
- BMA Verteiler / fire alarm distributor
- Alarm Verteiler / alarm distributors

Tragsystem / carrying system

- Kabeltasse Decke / cable ladder ceiling
- Kabeltasse unterflur / underfloor cable ladder
- Brüstungskanal / cable duct
- Unterflurkanal / unfloor cable duct

Beleuchtung / lights

- Typ 01 Pendelleuchte / suspended light
- Typ 02 Downlight R150 / downlight R150
- Typ 03 Pendeldownlight / suspended downlight
- Typ 04 Lichtlinine / light line
- Typ 05 Downlight R68 / downlight R68
- Typ 06 kleiner Hallenstrahler / small hall spotlight
- Typ 07 großer Hallenstahler / big hall spotlight
- Typ 08 Außenwandleuchte / outside wall-light
- Typ 09 Außenstrahler / outside spotlight
- Typ 10 Mastleuchte / pylon light

Installation / electrical installation

- W-Lan
- Doppel RJ45 / double RJ45
- Ausschalter / switch single pole
- Serienschalter / series switch
- Bewegungsmelder / motion detector
- Not-Aus Taster / emergency shut-down pushbutton
- KNX Taster / KNX pushbutton
- Ventilator / fan
- E Anschluss / power connetior
- Elektroauslass / electrical connection
- AV Steckdose / common socket
- USV Steckdose / UPS common socket
- SV Steckdose / EPS common socket
- FR Doppelsteckdose / wetroom double common socket
- Kraftsteckdose 3pol / power socket 3pol
- Kraftsteckdose 5pol / power socket 5pol
- Jalousieanschluss / jalousie connection

Arbeitsplätze / Workspace (as shown in the requirement list)

- Arbeitsplatz WS1 / Workspace WS1
- Verteilerbox WS1 / junction box WS1
- Bodendose WS15 / floorbox WS15
- Bodendose WS16 / floorbox WS16

Erdung u. Blitzschutz / earthing and lightning protection

- Anschlusspunkt Erdung / earth connectionpoint

Sicherheitsbeleuchtung / safety lights

- Rettungszeichenleuchte / escape and rescue sign
- Aufheller / safetylight

Lichtrufanlage / luminous call system

- Zugtaster / cable pull button
- Ruftaster / call button
- Zimmersignalleuchte / room signal light
- AT Abstelltaster / shutdown button

Brandmeldeanlage / fire alarm system

- Rauchmelder / smoke detector
- MK Mehr Kriterien Rauchmelder / more criteria smoke detector
- Zwischendeckenmelder / smoke detector in suspended ceiling
- Zwischenbodenmelder / smoke detector in raised floor
- Wärmemelder / heat detector
- Druckknopfmelder / pushbutton alarm
- BRE (M) BRE Motor / smoke ventilation engine

Zutrittskontolle u. Video Access control and video

- Sprechanlage / intercom
- ON-Line Leser / ON-line reader
- OFF-Line Leser / OFF-line reader
- Kamera / camera
- Domekamera / dome camera

Multimedia