PART III

NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION

# INTEGRATED AIR AND MISSILE DEFENCE CENTRE OF EXCELLENCE



# IFB FINCON 21-01 "Supply of Conference System"

# PART III SPECIAL PROVISIONS & TECHNICAL SPECIFICATIONS (STATEMENT OF WORK)

December 2021

PART III

NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION

THIS PAGE IS INTENTIONALLY LEFT BLANK

PART III

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION TABLE OF CONTENTS

S/N	TITLE	PAGE
1.	Statement of Work (SOW)	III-5
2.	General System Technical Specifications	III-5
3.	System Components Technical Specifications	III-6
4.	Web browser application	III-19
5.	Requirements	III-19
6.	Conference System General Overview	III-19
7.	Guarantee	III-20
8.	Installation and Shipping costs	III-20
9.	Contractor's Standards	III-20

PART III

NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION

THIS PAGE IS INTENTIONALLY LEFT BLANK

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION 1. Statement of Work (SOW)

1.1 The current Statement of Work (SOW) covers the special provisions and technical specifications that shall be covered by the Contractor for the supply of a digital discussion - conferencing system.

### 2. General System Technical Specifications

2.1 The system shall be a plug-and-play conferencing system that will be ideally suited for small to medium-sized meeting areas, such as town halls, local business centres and conference rooms. The system shall consist of two subsystems:

2.1.1 The first Subsystem (10 microphones capability) shall consist of the following components (as details depicted in below par. 3, 4 and 5):

2.1.1.1 One (1) "Control Unit", with digital recording and Digital Acoustic Feedback Suppression (DAFS);

2.1.1.2 The web browser application for viewing and managing/ configuring system settings;

2.1.1.3 Ten (10) "Discussion Devices", available with a short or long stem fixed microphone - one (1) Discussion Device shall be configurable as chairperson's device and the rest of those as a participants' device;

2.1.1.4 Auxiliary components, such as cable clamps, extension cables, cable locking clamps, and transport cases for one Control Unit and one case for 10 Discussion Devices;

2.1.1.5 Peripheral equipment that can be connected to the system as follows: HD PTZ Camera, feedback suppressor, sdi/scaler, rack wall mount glass door, relevant consumables and PTZ controller/NDI/serial for the camera.

2.1.2 The second Subsystem (16 microphones capability) consists of the following components (as details depicted in below par. 3, 4 and 5):

2.1.2.1 One (1) "Control Unit", with digital recording and DAFS;

2.1.2.2 The web browser application for viewing and managing/ configuring system settings;

2.1.2.3 Sixteen (16) "Discussion Devices", available with a short or long stem fixed microphone - one (1) Discussion Device shall be configurable as chairperson's device and the rest of those as a participants' device;

2.1.2.4 Auxiliary components, such as cable clamps, extension cables, cable locking clamps, and transport cases for one Control Unit and one case for 16 Discussion Devices;

2.1.2.5 Peripheral equipment that can be connected to the system as follows: HD PTZ Camera, feedback suppressor and relevant consumables. NATO UNCLASSIFIED

### PART III

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION 3. System Components Technical Specifications

3.1 Control Unit

The Control Unit (CU), as the main component of the system, shall:

3.1.1 Provide an interface for connecting Discussion Devices and peripheral equipment;

3.1.2 Supply DC power to all Discussion Devices connected to the system;

3.1.3 Monitor and control the discussion system;

3.1.4 Have the following features and benefits:

3.1.4.1 Plug-and-play functionality for quick and easy connection of Discussion Devices;

3.1.4.2 Intuitive touch-buttons on the front panel for easy configuration and operation purposes;

3.1.4.3 Intuitive LED indicators for clear and immediate feedback on the system settings;

3.1.4.4 Web browser control - it shall be possible to use a web browser application to view and manage system settings;

3.1.4.5 System control for up to 80 Discussion Devices;

3.1.4.6 Simultaneous activation of loudspeaker and microphone for enabling face-to-face meeting feel;

3.1.4.7 Possibility to automatically shut down the CU and connected devices, after 2 hours of inactivity, for energy saving purposes;

3.1.4.8 Hot swap of Discussion Devices, without having to power down the system;

3.1.5 Have the following capacitive touch buttons and LED indicators:

3.1.5.1 24 VDC power on/off button with red/green LED indicator;

3.1.5.2 Plus/minus buttons and green LED indicators for setting the volume range of all connected Discussion Devices;

3.1.5.3 Microphone-mode selection button and green LED indicators for selecting one of the following microphone operating modes: "open mode", "override mode", "voice activation mode", and "push to talk (PTT) mode";

PART III

## NATO UNCLASSIFIED

## RELEASABLE FOR INTERNET TRANSMISSION

3.1.5.4 Number of Open Microphones (NOM) button and green LED indicators for selecting the number of microphones that can be activated at the same time. It shall be possible to select up to four open microphones at the Control Unit.

3.1.6 Have the following connections at the rear of the unit:

3.1.6.1 1 x 4-pole circular female 24 VDC power input connector;

3.1.6.2 2 x 6-pole circular female connectors for loop-through connection of 40 Discussion Devices;

3.1.6.3 1 x RJ45 Ethernet connector for communication with the web browser application;

3.1.6.4 1 x 3-pole XLR female microphone input connector with phantom supply;

3.1.6.5 RCA input for 'Floor' (i.e. external audio source, such as a CD or DVD player);

3.1.6.6 RCA output for a "sound reinforcement system";

3.1.6.7 RCA input/output for either:

3.1.6.7.1 "Recorder" for connecting an external re-

corder;

3.1.6.7.2 "Insertion" for connecting an external audio

processor;

3.1.6.7.3 "Telephone/mix minus" for allowing a remote participant to join a discussion via a telephone/video connection;

3.1.6.7.4 "Participant loudspeaker" for distributing the participant loudspeaker signal to a sound reinforcement system.

3.1.7 Cover the following technical specifications:

Electrical	
Mains voltage	100 to 240 VAC ± 10%
Current consumption	Maximum 0.6 A (100 VAC) to 0.2 A (240 VAC)
DC supply to Discussion Devices	24 V ± 1 V (current limited)
Number of Discussion Devices per Control Unit	Max. 40 devices per trunk connector
Discussion Device loudspeakers volume control	15 steps of 1.5 dB (starting from -10.5 dB)
Limit threshold level to unit	12 dB above nominal level
Gain reduction due to number of open microphones (NOM)	1/SQRT (NOM)
Sample rate	44.1 kHz

## NATO UNCLASSIFIED

### PART III

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION

Nominal input (85 db SPL)	< 0.5%
Max. input (110 db SPL)	< 0.5%

## Audio inputs

Total harmonics

XLR nominal mic. input	-56 dBV
XLR maximum mic. input	-26 dBV
RCA nominal input	-24 dBV (+/- 6 dB)
RCA maximum input	+6 dBV
S/N	> 94 dBA
Frequency response	30 Hz to 20 kHz

### Audio outputs

RCA nominal output	-24 dBV (+6/- 24 dB)
RCA maximum output	+6 dBV
S/N	> 102 dBA
Frequency response	30 Hz to 20 kHz

### Mechanical

Dimensions including feet (H x W x D)	45 x 440 x 200 mm (1.8 x 17.3 x 7.9 in)
	19" wide, 1 RU high
Height of feet	5.5 mm (0.2 in)
Mounting	Tabletop
Woulding	19-inch rack
Weight (CCSD-CU)	Approx. 3.2 kg (7.1 lb)
Weight (CCSD-CURD)	Approx. 3.4 kg (7.5 lb)
Material (top)	Painted metal
Material (base)	Painted metal
Color (top)	Traffic black (RAL 9017) matt-gloss
Color (base)	Traffic black (RAL 9017) matt-gloss
Rim	Pearl light grey (RAL 9022) matt-gloss

### Environmental

	5 °C to +45 °C
Operating temperature	(+41 °F to +113 °F)
Starage temperature	-40 °C to +70 °C
Storage temperature	(-40 °F to +158 °F)
Relative humidity	5% to 98% non-condensing

## 3.2 Microphone operating modes

3.2.1 The following four (4) modes shall be selectable by pressing the microphone mode button on the front panel of the CU.

PART III

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION

3.2.1.1 Open mode - shall allow participants to join the discussion by pressing their microphone buttons. When the maximum number of open microphones is reached, the next participant that presses their microphone button shall be added to a "waiting list". The first participant in the 'waiting list' shall be allowed to speak when an activated microphone is disabled;

3.2.1.2 Override mode - shall allow participants to override each other by pressing their microphone buttons. When the maximum number of open microphones is reached, the next participant that presses their microphone button shall deactivate the microphone that has been activated for the longest time (the chairperson's microphone shall not be included in the number of open microphones and, therefore, cannot be overridden by a participant);

3.2.1.3 Voice activation mode - shall allow participants to activate their microphones by speaking into them. It shall be possible to temporarily mute a microphone by pressing and holding down the microphone button;

3.2.1.4 Push to talk (PTT) mode - shall allow participants to speak by pushing and holding in their microphone buttons. A microphone shall be deactivated when the microphone button is released. The maximum number of participants that can speak shall be determined by the number of open microphones.

3.2.2 In all modes it shall be possible to limit the maximum NOM. A maximum of four (4) microphones shall be selectable on the CU. If the web browser application is used, it shall be possible to select a maximum of ten microphones.

3.3 Control Unit with recording and DAFS

The Control Unit with recording and DAFS shall have the following additional features:

3.3.1 Built-in digital recorder with internal memory and USB recording. LED indicators shall inform users when data is being recorded to the internal memory or a USB memory stick. The appropriate LED indicator shall be automatically selected when a USB memory stick is inserted or removed from the USB connector. Three (3) short beeps and a red flashing LED shall indicate when 5 minutes of recording are left. A long beep and a red/green flashing LED shall indicate when it is not possible to re-cord a discussion (i.e.: internal memory full and USB memory stick not connected to the CU, USB memory stick full or damaged). This recorder shall:

3.3.1.1. Enable discussions to be recorded in the MP3 format to the internal memory or a USB memory stick with a maximum capacity of 128 GB:

3.3.1.1.1 Internal memory recordings shall be automatically stored in the internal memory unless a USB memory stick is connected to the USB connector at the front of the CU. The internal memory shall be able to record up to 8 hours discussion;

3.3.1.1.2 USB memory stick - recordings shall be automatically saved to a USB memory stick when it is connected to the CU. A USB memory stick of 128 GB shall be able to record up to 4,000 hours discussion. NATO UNCLASSIFIED

### PART III

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION 3.3.1.2 Cover the following technical specifications:

3.3.1.2.1	The	same	technical	specifications	as	the
"Control Unit" (as described above);						

3.3.1.2.2 The additional specifications as follows:

#### Recorder

Recording/Playback (bit rate)	64, 96, 128, 256 Kbit/sec
Recording/ Playback (sample frequency)	44.1 kHz

#### Monitoring loudspeaker

Nominal output	72 dB SPL
Frequency response	200 Hz to 12.5 kHz
Gain range mute	-10.5 to +12

### USB memory stick compatibility

SanDick LISP moment stick	Formatted with FAT32 file system.		
Sandisk USB memory slick	Maximum size: 128 GB		

### Monitoring loudspeaker

Rito roto	Internal memory	USB memory stick hours			
Dite fate	hours	16 GB	32 GB	64 GB	128 GB
64	8 hrs	500	1000	2000	4000
96	5 hrs	350	700	1400	2800
128	4 hrs	250	500	1000	2000
256*	2 hrs	125	250	500	1000

\* Supported when recording floor only.

3.3.2 Built-in loudspeaker and headphone socket for listening to recorded discussions before replaying them to the Floor, or listening to recordings;

3.3.3 Additional capacitive touch buttons and LED indicators for:

3.3.3.1 CU loudspeaker volume (or headphones volume, if con-

nected);

3.3.3.2 Start, Pause (hold), and Stop recording.

3.3.4 Built-in Digital Acoustic Feedback Suppression (DAFS);

3.3.5 USB connector on front of unit for connecting a USB memory stick;

3.3.6 3.5 mm (0.14 in) stereo headphone socket;

PART III

## 

RELEASABLE FOR INTERNET TRANSMISSION

3.3.7 Micro USB connector on rear of unit for transferring internal memory (recordings) to a PC;

3.3.8 Four (4) additional RCA outputs for individual microphone recording, e.g. for re-cording individual speakers in a courtroom.

3.4 19-Inch Rack-Mounting Set

3.4.1 This set shall consist of brackets and other necessary fixings to enable the CU to be mounted in a 19-inch rack system.

3.5 Discussion Device

3.5.1 The Discussion Device shall enable participants to take part in a discussion by speaking into a microphone and listening to proceedings on a loud-speaker. The device shall have the following features and benefits:

3.5.1.1 Plug-and-play functionality;

3.5.1.2 Compact, attractive, ergonomic design, with LED indicator in the Discussion De-vice and in head of microphone;

3.5.1.3 Choice of short or long fixed microphone with flexible stem;

3.5.1.4 Loudspeaker integrated into front of device;

3.5.1.5 Built-in headphone socket with output level control;

3.5.1.6 Automatic level reduction when microphone is activated (configurable via web browser application of Control Unit): prevents acoustic feedback from headphone to microphone;

3.5.1.7 Configurable as a participant or chairperson's device: changeable microphone buttons and concealed slide switch at the bottom of the device for configuration purposes;

3.5.1.8 GSM immunity;

3.5.2 The device shall have the following user controls and indicators:

3.5.2.1 Microphone button;

3.5.2.2 Color-coded LED indicator above microphone button for showing the status of the device:

3.5.2.2.1 White ("Possible-To-Speak") shall indicate that the microphone will be active immediately after pressing the microphone button;

PART III

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION

3.5.2.2.2 Green shall indicate that the participant has pressed the microphone button and the request to speak has been added to the waiting list;

3.5.2.2.3 Green flashing shall indicate that the participant is first in the waiting list, i.e. next in line to speak;

3.5.2.2.4 Red shall indicate that the microphone is ac-

tive.

3.5.2.3 Color-coded light-ring indicator in head of microphone: green shall indicate that a request-to-speak has been added to the waiting list; green flashing shall indicate that the participant is first in the waiting list; red shall indicate that the microphone is active;

3.5.2.4 Rotary thumbwheel on side of device for adjusting volume of connected head-phones;

3.5.2.5 Concealed initialization button at base of device for reassigning the network address;

3.5.2.6 Concealed slide-switch at base of Discussion Device for configuring device as a participant device or chairperson's device. To prevent accidental operation, it shall only be possible to set the switch with a tool, i.e. bent paper-clip;

3.5.2.7 Chairperson's configuration only - separate microphone button and priority but-ton.

3.5.3 The chairperson's device shall enable the user to function as the chairperson at a conference or meeting. The chairperson's microphone shall be activated when the priority button is pressed and held in. All currently active participant microphones shall be muted, allowing the chairperson to take control of the meeting. A chime shall be sounded to announce that the chairperson is about to speak. The device shall have the following connections:

3.5.3.1 1 x 6-pole circular female connector at rear of device with cable locking recess;

3.5.3.2 1 x 3.5 mm (0.14 in) stereo headphone socket on side of device;

3.5.3.3 1 x 2 m (78.7 in) cable with a 6-pole circular male connector with cable lock.

3.5.4 After connecting the Discussion Device to the system for the first time, it shall be possible to initialize the device by pressing the microphone button or the initialization button at the bottom of the device.

3.5.5 The Discussion Device shall cover the following technical specifications:

PART III

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION

Frequency response	200 Hz to 12.5 kHz
Headphones load impedance	> 32 ohms < 1k ohm
Loudspeaker nominal output	72 dB SPL

### Mechanical

Electrical

Dimensions device without microphone (H x W x D)	64 x 203 x 146 mm (2.5 x 8.0 x 5.7 in)
Height with microphone in horizontal position	130 mm (5.1 in)
Length of microphone from mounting surface	CCSD-DS
	CCSD-DL
Weight	Approx. 1 kg (2.2 lb)
Mounting	Tabletop (portable or fixed)
Material (top)	Plastic ABS+PC
Material (base)	Metal ZnAl4
Colour (top)	Traffic black (RAL 9017) matt-gloss

### Environmental

Operating temperature	0 °C to +35 °C	
	(+32 °F to +95 °F)	
	-40 °C to +70 °C	
Storage temperature	(-40 °F to +158 °F)	
Relative humidity	15% to 90%	
Air pressure	600 to 1100 hPa	

### 3.6 Extension Cables

3.6.1 The Extension Cables shall have a 6 mm (0.24 in) diameter Gray PVC sheath, and shall be the same as or similar to:

with connectors;	3.6.1.1	LBB 4116/02 - Extension Cable 2 m (6.6 ft) terminated
with connectors;	3.6.1.2	LBB 4116/05 - Extension Cable 5 m (16.0 ft) terminated
ed with connecto	3.6.1.3 rs;	LBB 4116/10 - Extension Cable 10 m (33.0 ft) terminat-
ed with connecto	3.6.1.4 rs;	LBB 4116/15 - Extension Cable 15 m (49.2 ft) terminat-
ed with connecto	3.6.1.5 rs;	LBB 4116/20 - Extension Cable 20 m (66.0 ft) terminat-
ed with connecto	3.6.1.6 rs.	LBB 4116/25 - Extension Cable 25 m (82.0 ft) terminat-

### PART III

#### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION

3.6.2 The Extension Cables shall be possible to make custom lengths of extension cable by using the LBB 4116/00 - 100 m (328 ft) roll of cable without connectors. The LBB 4119 set of connectors shall be used to terminate custom cables made from the LBB 4116/00 roll of cable.

3.7 Cable Locking Clamps

3.7.1 The Cable Locking Clamps shall be the same as or similar to: LBB 4117/00 - set of 25 cable locking clamps. A set of Cable Locking Clamps shall match the male and female cable connectors, such as those on the extension cables. Each male/female connector shall require one clamp.

3.8 Cable Clamp

3.8.1 The Cable Clamp shall secure loop-through cables to the next Discussion Device. Each male/female connector shall require one cable clamp.

3.9 System Camera

3.9.1 The system shall be able to native support communication with a maximum of six HD SDI conference dome cameras for showing the active speaker.

3.9.2 The web browser application (see par. 4) shall be used to:

3.9.2.1 Detect and select connected system cameras;

3.9.2.2 Define camera pre-positions.

3.9.3 This device shall have the same or equivalent features and specifications with the VC-A50P IP PTZ Camera as below:

3.9.3.1 Full HD 1080p signal output format with a high frame rate of 60 fps;

3.9.3.2 Support live broadcasting (MJPEG, H.264 support SVC);

3.9.3.3 Support POE (Power Over Ethernet) using network cables supply power;

3.9.3.4 Support NDI|HX compatibility for NDI-based video production;

3.9.3.5 Support SRT (Secure Reliable Transport) protocol that optimizes streaming performance;

3.9.3.6 Ethernet low latency (< 120 ms);

3.9.3.7 Ethernet, HDMI, and 3G-SDI synchronous image out-

puts;

PART III

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION 3.9.3.8 Audio input support AAC encoding with 44.1/48 K sam-

pling frequency;

3.9.3.9 Free Lumens VMS software for controlling the cameras remotely;

3.9.3.10 Transport case for 6 Discussion Devices and 1 Control

Unit;

Stream		CHANNEL 1		CHANNEL 2
Settings		H.264	MJPEG	H.264/MJPEG
		1920x1080	1920x1080	D1
Resolution		1280x720	1280x720	
	60/59.94 Hz	60 / 30 / 15	30 / 15	30 / 15
Frame Rate	50 Hz	50 / 25	25	25
Bit Rate		20000 kbps~64 kbps	2~97	8000 kbps~64 kbps
Audio Transm	ission	AAC/G.711		
PoE+		Yes		

3.9.3.11 IP streaming format shall be as follows:

3.9.3.12 The camera shall have the following specifications:

Sensor	1/2.8" 2MP CMOS	Video Compression	MJPEG, H.264 / SVC
Video Output	1080p 60 / 59.94 / 50 fps, 1080i 60 / 59.94 / 50 fps, 1080p 30 / 29.97 / 25 fps, 720p 60 / 59.94 / 50 fps,	3D NR	Yes
		Horizontal Viewing Angle	63°
Optical Zoom	20x	Aperture	F1.6 ~ F3.5
Panning Angle	-170° ~ +170°	Minimum Illumination	1.0 lux (F1.6, 50IRE, 30fps)
Tilting Angle	-30° ~ +90°	Minimum Object Distance	1.2m
Preset Positions	128	Gain Control	Auto, manual
Video Output (HD)		White Balance	Auto, indoor, outdoor, one-push, manual
Interface	3G-SDI, HDMI, Ethernet	Exposure Control	Auto, manual
Video Stream	RTSP / RTMP	Focus System	Auto, manual
PoE	PoE+ (IEEE802.3at)	Image Flip	Yes
Camera Control Interface	RS-232 / RS-422 / Ethernet	Audio Input	Line In (Input impedance : 33Kohms, input maximum level : 1Vrms)
Camera Control Protocol	VISCA / PELCO D		MIC In (Input impedance : 2Kohms, input maximum level : 5.6mVrms)
Video S/N Ratio	> 50dB	Audio Output	Ethernet, SDI and HDMI
Shutter Speed	1/1 ~ 1/10,000 sec	Weight	2 kg (4.4 lbs)
Focal Length	f = 4.7 ~ 94 mm	Dimensions (W x D x H)	174 x 186 x 187mm (6.9" x 7.3" x 7.3")

### 3.9.3.13 The required I/O connections shall be as follows:



PART III

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION 3.9.3.14 The required single camera connection shall be as fol-



3.9.3.15 The required multi-camera connection shall be as fol-





3.10.1 This transport case shall be able to protect 6 Discussion Devices with standard (short) microphones and one Control Unit during transit or storage. Storage space for the CU power supply adapter and other accessories shall be provided. The inside of the suitcase shall have specially molded packing to accommodate the components. The suitcase shall have a handle on the top and side, and two wheels on the underside for ease of transportation. There shall be two separate locks for locking the case. The keys shall be included.

3.10.2 The "Suitcase for 6 Discussion Devices and one Control Unit" shall have the following Technical Specifications:

PART III

NATO UNCLASSIFIED		
RELEASABLE FOR INTERNET TRANSMISSION		

560 x 795 x 235 mm (22.0 x 31.3 x 9.3 in)		
6 kg (13.2 lb)		
3 mm (0.12 in) ABS		
Aluminium		
Black (RAL9004)		
Silver		

3.11 Multiviewer for 3G HD-SDI video signals

3.11.1 The multiviewer device shall display up to six inputs in any combination and output the image in SDI, HDMI and CV formats. Both pre-programmed and customizable screen divisions shall be supported.

3.11.2 This device shall have the equivalent features and specifications with the Kramer MV-6 3G HD–SDI Multiviewer as below:

3.11.2.1 Max. Data Rate: 3Gbps

3.11.2.2 HDTV Compatible;

3.11.2.3 Standards Compliance: Certified for medical applications according to IEC 60601-1-2 (Electromagnetic Compatibility);

3.11.2.4 Kramer re-Klocking<sup>™</sup> & Equalization Technology: Rebuilds the digital signal to travel longer distances;

3.11.2.5 Multi-Standard Operation: SDI (SMPTE 259M), HD-SDI (SMPTE 292M) and 3G HD-SDI (SMPTE 424M);

3.11.2.6 Re-Clocking Looping Inputs;

3.11.2.7 Multi-Video Output Formats: 3G HD-SDI (SMPTE 424M), HDMI and composite, scaling, refresh rate and video standard conversion;

3.11.2.8 Front Panel Preview Screen: 16:9 4.3in color LCD displaying the output of the unit;

3.11.2.9 Text Overlay: A text label/icon can be added inside each window. Each label has text/background color, alignment, size, etc. settings;

3.11.2.10 Screen Handling Buttons: Freeze, size, position, and 4 pre-programmed and 2 user-definable layouts;

3.11.2.11 Flexible Control Options: Front panel with 2-row LCD, OSD, Ethernet & RS-232 (supplied with PC control software);

3.11.2.12 Worldwide Power Supply: 100-240V AC;

3.11.2.13 Inputs: 6 SD/HD/3G HD-SDI with loop on BNC con-

nectors;

#### PART III

#### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION

3.11.2.14 Outputs: 1 HDMI, 1 CV on a BNC connector (for 720p @50Hz and 1920p @50Hz the output is PAL, for 720p @59.94/60Hz and 1920p @59.94/60Hz the output is NTSC), 1 HD/3G HD-SDI on a BNC connector;

3.11.2.15 Max. Input Level: 800mVpp/75Ω;

3.11.2.16 Max. Output Level: 800mVpp/75Ω;

3.11.2.17 Max. Data Rate: Up to 2.97Gbps;

3.11.2.18 Controls: Front-panel, RS-232, Ethernet;

3.11.2.19 Front Panel Display: 4.3" TFT color LCD panel;

3.11.2.20 Power Consumption: Universal, 100–240V AC, 50/60Hz, 35VA;

3.11.2.21 Operating Temperature: 0° to +40°C (32° to 104°F);

3.11.2.22 Storage Temperature: -40° to +70°C (-40° to 158°F);

3.11.2.23 Humidity: 10% to 90%, RHL non-condensing;

3.11.2.24 Included Accessories: Power cord, rack "ears";

3.11.2.25 Product Dimensions 19" x 7.24 x 2U (43.6cm x 18.40cm x 8.80cm) W, D, H;

3.11.2.26 Product Weight 3.1kg (6.8lbs) approx.;

3.11.2.27 Shipping Dimensions 55.00cm x 29.40cm x 16.10cm (21.65" x 11.57" x 6.34" ) W, D, H;

3.11.2.28 Shipping Weight 4.2kg (9.3lbs) approx..



### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION 4. Web browser application

4.1 It shall be possible to use a web browser application installed on a tablet, laptop or PC for viewing and managing/configuring system settings, such as camera settings, microphone management, and digital recording options.

4.2 The web browser application shall be applicable for use with the following most commonly used web browsers, namely Google Chrome, Mozilla Firefox, Internet Explorer, Safari and Opera.

4.3 To prevent unauthorized access to system settings, separate login rights shall be provided for operators and technicians.

4.4 Configuration changes made in the web browser application shall be automatically updated in the CU. Likewise configuration changes made at the CU shall be updated in the web browser application.

4.5 All correctly stored settings shall still be available after a controlled or unexpected power down of the system. If an unexpected power down of the system takes place during recording, the recording shall still be available when power is reapplied to the system.

### 5. Requirements

5.1 The system shall have the capability to support two (2) different meetings at the same time at different places, as two (2) different independent systems (10 and 16 microphones), and also the capability to join to one system combining all the (26) microphones, if needed, and the two (2) cameras supporting a larger meeting of participants.



### 6. Conference System General Overview

III-19

PART III

### NATO UNCLASSIFIED RELEASABLE FOR INTERNET TRANSMISSION

Legend of System Overview \*\*

- (1) Control Unit.
- (2) Discussion Devices.
- (3) Chairperson's device.
- (4) Discussion Device cable.
- (5) Ethernet cable.
- (6) PC/Laptop.
- (7) Ethernet switch.
- (8) Display.
- (9) Wireless access point/router.
- (10) Tablet device.
- (11) HD Conference Dome.
- (12) Coax cable.
- (13) HD-SDI.

\*\* Only the items depicted in abovementioned specifications are requested. The other items are stated indicatively for the description of the system overview.

## 7. Guarantee

7.1 The equipment shall have at least a 24-months guarantee from the date of the purchase, for operating conditions and use based on the official instructions of the manufacturer.

### 8. Installation and Shipping costs

8.1 The bidder's offer - price proposal shall include installation and dispatching cost to the Centre's facilities, but neither the PCs installation costs for configuration/control nor system training services.

### 9. Contractor's Standards

9.1 The Contractor shall establish, document and implement a Quality Management System with procedures that satisfy the ISO 9001 requirements.