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| DCN_LOGODCN Next Generation |
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| en Architect’s &Engineer’sSpecifications |



**About this Document**

**Purpose**

When preparing a specification, tender or quotation for a Bosch DCN Next Generation installation, it may be necessary to supply a detailed functional description of all equipment supplied. The Architect’s and Engineer’s Specifications presented in this publication are intended to be used for these purposes, and may be copied and/or reproduced as required.

**Scope**

DCN Next Generation can be coupled to other systems and networks like Integrus or CobraNet. This Architect’s and Engineer’s Specifications only contains the functional description specific for the DCN Next Generation system.

**Audience**

These Architect’s and Engineer’s Specifications meet the needs of contractors, consultants and other professionals involved in project management, or in designing, specifying and procuring congress systems.

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**Document Format**

The Architect’s and Engineer’s Specifications are available as a digital document in the Word format (.doc). All references to pages, figures, tables, etc. in this digital document contain hyperlinks to the referenced location.

**Special note: conference definition**

For the purpose of this specification, a conference is any gathering of delegates where audio amplification is required

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# Introduction

The DCN Next Generation is a conference control system that provides both the users and owners of assembly venues with a versatile means of fulfilling conference requirements. These may range from small gatherings without an operator or chairman to major international events requiring full conference control, interpretation, language distribution, electronic voting and delegate identification facilities.

The modular design of the system enables the required facilities to be specified in any desired configuration, permitting a high degree of system flexibility. The system conforms to all the relevant ISO and IEC standards.

# Scope of Specification

This specification shall cover the provision, installation and maintenance of the DCN Next Generation system that includes specified functions for chairman and delegate identification, participation and voting. It shall also cover simultaneous interpretation on up to 31 separate language channels plus the floor language, and camera control for displaying active delegates on hall displays and monitors. Furthermore it shall cover the provisions of an optical network for advantaged coupling to both analog and digital audio systems, Infrared Language Distribution system and Cobra Net. Next to that this specification shall cover PC control software to control the DCN Next Generation systems by means of a PC or any other remote controller.

# System summary

## System overview

The conference system shall provide digital signal processing and transmission of all audio signals via a network system. It shall be low susceptible for mobile phones. It shall provide versatility, high audio quality, data transmission security and simplicity of operation and installation. It shall be possible to use the conference system via a PC running user-friendly software. The software shall assist in preparation, controlling and monitoring.

The conference system shall be a modular system. It shall be possible to connect elements of a system simply and quickly, using a daisy-chain or loop-through configuration. Systems shall be expanded or reduced in size by adding or removing equipment. The conference system shall be suitable for situations from small, informal gatherings up to international multi-lingual congresses up to 31 languages and floor. It shall also be possible to couple rooms with little language to a full size system with up to 31 languages.

The range of conference system products shall include central control devices, simultaneous interpretation and language distribution equipment, application-specific software modules, information display systems and installation equipment. This range shall be complemented by external equipment such as video, displays, PCs, monitors, booster amplifiers, cameras and accessories, loudspeakers and printers, all of which shall be fully compatible and easily integrated into the conference system.

Signal transmission and processing shall be by means of advanced digital-audio technology. This advanced digital-audio technology shall result in high-level audio performance (bandwidth up to 20 kHz) with no losses in signal quality or level during transmission. There shall be virtually no background noise, interference, crosstalk or distortion (signal to noise should be at least 80 dB).

A thin, flexible twin-coaxial cable and a thin twin-optical cable shall carry all the system's digital signals. It shall be generally possible to run these cables through existing ducting and cable conduits. The cables shall be able to carry up to 32 high-quality contribution channels, 32 high-quality distribution channels, and 10 separate data channels for messages and other information. It shall be possible to 'tap' these cables at any point to connect extra conference system equipment. Power shall be supplied to all devices via these cables.

The wireless network of the conference system shall be digitally protected via 128bit AES Rijndael encryption against tapping or eavesdropping. It shall operate in the 2.4 GHz band, which is license-free worldwide. The intelligent system shall have features for automatic subscription blocking, to prevent further subscriptions if the administrator forgets to close the subscription process.

The wireless discussion system shall have a Wireless Access Point linked to the Central Control Unit using an optical network, which provides digital optical communication and power supply over a single cable.

The Wireless Access Point of the wireless discussion system shall have a second optical network connector to allow the system network to be expanded from a single branch to a redundant loop configuration, to ensure communication between Wireless Access Point and the Central Control Unit in case one of the cables is disconnected or has a malfunction.

The Central Control Unit shall have a built-in tone control function for loudspeakers in contribution devices. This function shall be available by means of a menu based user interface at the front panel.

The conference system shall provide six main functions that facilitate the progress of conferences.

Firstly, the conference system shall provide full facilities for sound management, including speech input by delegates, chairman and other participants, and the amplification and relaying of speech to all participants, under the control of the conference chairman and/or the system operator.

Secondly, the conference system shall provide the possibility to connect wireless or wired delegate units.

Thirdly, the conference system shall make it possible for a number of additional electronic functions, such as delegate identification (with a card reader or unique personal identification number for each delegate) to be added. This shall ensure that no unauthorized persons can participate in the proceedings.

Electronic voting, which allows delegates to enter votes discreetly on the individual control devices shall be possible, together with automatic vote totaling presentation of the results to a chairman display, delegate display or hall display.

Fourthly, the conference system shall provide facilities for simultaneous interpretation. These shall include facilities for relaying the floor language to interpreters’ booths, and for distributing the interpreted language(s) and the floor language to delegates requiring them.

Fifthly, the conference system shall provide facilities for camera control. These shall include facilities for automatically switching camera outputs to hall displays or monitors.

Sixthly, the conference system shall have an optical network for advanced audio coupling to infrared language distribution systems, CobraNet network, analog and digital audio input / output devices.

All these functions shall be provided by the conference system. The system shall be simple and logical to operate by all personnel concerned as well as by delegates, interpreters, chairmen and operators, and shall comply with accepted professional standards and practices for all the functions provided.

## System functions

The conference system in its most complete configuration shall provide all of the following functions by means of purpose built professional equipment:

* controlling delegate unit microphones either fully automatically or manually by the chairman and/or system operator
* registering a delegate’s request-to-speak, and automatic handling of the waiting list by means of a queuing procedure, with display of participants speaking and delegates on the waiting list on personal LCD screens, monitors and/or a hall display
* allowing communication between operator, chairman, and/or delegates and interpreters via an intercom channel
* electronic voting by delegates, with or without access control by means of identifying cards, and with facilities for secret or open voting and computing and display of results on individual displays, monitors and/or a hall display
* identifying delegates to the chairman and/or system operator by name and/or seat number
* controlling and distributing simultaneous interpretations in up to 31 different languages plus the original floor language, with language channel allocations under the control of the system operator
* providing interpretation facilities that meet commonly accepted professional standards, and comply with the relevant ISO and IEC standards
* displaying status information by means of the system operator’s monitor, personal displays for chairman, delegates and interpreters, and/or a hall display
* making certain facilities available to other external systems for special purposes, including public address, Cobra net, control of fixed and moveable cameras, data and speech registration, hard-copy printing, and video display facilities
* entering system parameters and delegate database files for pre-selection, control and display of system status and operating modes for all functions carried out by a system operator from a central control position
* configuring and controlling a camera switching system to ensure that speaking delegates are displayed on hall displays and monitors

All equipment shall be capable of being combined as required to reach the desired specification in terms of system size and/or functions, and shall be capable of later field extension by the addition of the required functions and extra devices.

## Compliance

The conference system shall comply with all applicable regulations and standards for equipment of this type, and especially with the ISO 2603 standard for interpretation equipment and IEC 60914 minimum requirements for congress equipment. In addition, the system shall comply with all applicable international, national and local regulations for the design, construction and installation of electrical equipment.

## System configuration

The conference system shall be an integrated modular configuration, with some or all of the following system components:

* a control position comprising a Central Control Unit (or devices) with a personal computer
* interpreter positions with facilities for speech, incoming language selection and outgoing language channel selection
* listeners positions with language distribution facilities, headphones, loudspeakers, etc.
* display facilities with monitors, TVs and hall displays
* interface facilities for external devices and systems such as video cameras, printers, data and speech recorders, and a public address system
* remote control of certain conference system functions via third-party equipment and an TCP/IP connection

## System installation and interconnection

Installation of the system shall be based on a modular concept, controlled by the CCU up to 245 devices.

Additionally multiple CCUs can work as one system for up to 4000 delegate positions.

Wiring to the delegates’ and interpreters’ positions shall be via a special 4-core cable with purpose-designed 6-pole connectors. The connectors shall have a pole configuration that conforms to the DIN specifications for 6-pole connectors. It shall use series cabling (loop-through or series-connected branch topology) for interconnection of the contribution equipment. The contribution equipment shall be free standing (table-top units) or built-in to furnishings (flush-mounted units). The modular principle of system configuration and the loop-though interconnection technique shall remain the same for both types of equipment.

A Trunk-Cable Splitter shall be available for dividing trunk-line cabling, to assist installers in achieving an optimum trunk-line layout. A Tap-Off Unit shall be available for creating short-circuit proof tap-off points on the trunk-line cabling. The installation and interconnection procedure shall feature some or all of the following:

* loop-through or series-connected branch cabling shall be used for connection of the delegate and chairman devices
* loop-through or series-connected branch cabling shall be used for connection of the interpreter and language distribution devices

Wiring to central equipment shall be via a special twin optical fiber plus two copper cores combined in one cable. This cable is terminated with purpose designed connectors. The optical part of the connectors shall be SC compatible. It shall use series cabling with possibility for redundancy (loop-through or series-connected branch topology) for interconnection of the central equipment. The equipment shall be free-standing (table-top devices) or built into 19” racks.

An Optical Network Splitter shall be available for dividing optical network cabling, to assist installers in achieving an optimum optical network layout. A Fiber Interface shall be available for creating long distance connection by converting from plastic to optical fibers. The installation and interconnection procedure shall feature some or all of the following:

* loop-through or series-connected branch cabling shall be used for connection of the central equipment
* interface facilities to Cobranet and Infrared Distribution Systems, analog and digital audio devices

## System operation

Operation and/or control of the system shall be possible at a number of different levels:

* technician, using one or more pre-set modes of operation that give automatic control over conference proceedings. These pre-set modes are selected using a menu based user interface at the front panel of the Central Control Unit.
* delegate, using one or more automatic pre-set modes that give delegates limited control in discussion proceedings;
* system operator(s), using one or more software programs running on a PC(s) connected to the system.
* either single or multi PC systems shall be supported.

Appropriate control facilities shall be provided for each of these levels.

## Conference or discussion units

There shall be four types of delegate- and chairman contribution devices: conference, discussion, flush mount and wireless-discussion. Conference and flush mount devices shall be intended for larger congresses where more facilities are required for participants. Discussion devices shall be intended for smaller-scale discussions and gatherings.

Discussion devices shall be functionally similar to conference devices, but shall not offer LCD screens for information display. Conference, discussion and flush mount devices shall use the same system cabling and shall be fully compatible and interchangeable with each other. Conference and discussion devices shall be suitable for table-top use and flush-mounting.

## First-line system maintenance

The system design shall permit fast and effective fault location and correction by local personnel. This shall be supported by built-in self-diagnostic functions. Spare parts kits and instructions shall be provided.

In the event of a breakdown in system data communication with the PC, the system shall automatically revert to basic operational mode permitting continuance of interpretation.

Pre-selected system status and information entered into the system shall not be lost in the event of mains failure. In such a situation, the system shall automatically and immediately return to its last operating status when power is restored.

# Functional description of the system without PC control

The conference system in a stand-alone configuration (without a PC and software) shall provide the chairman with a high degree of control over conference proceedings and delegate participation.

## Microphone management

Microphone management shall cover the way in which conference system microphones are switched on and off, how many microphones may be simultaneously active, and under which microphone operation mode the system shall operate. Microphone management shall be carried out by the chairman and/or programmed into the Central Control Unit.

### System operator

Selection and pre-setting of the system microphone operating mode shall be under the control of the system operator via the Central Control Unit. A selection of operating modes shall be provided, including:

* open mode (automatic control with up to four simultaneous speakers);
* override mode (‘first-in, first-out’), with up to four simultaneous speakers;
* voice activated mode.
* push-to-talk

In open mode:

delegates can enable their microphones with the

microphone button on their contribution devices. When the maximum number of delegates speak, the next delegate that enables his or her microphone is added to a request-to-speak list. The microphone is not enabled until another delegate disables his or her microphone.

In override mode (‘first-in, first out mode’):

delegates can activate their microphones with

the microphone button on their contribution device. When the maximum number of delegates speak, the next delegate that activates his or her microphone automatically deactivates the microphone that

was activated for the longest time.

In voice activation mode:

delegates can enable their microphones with their voices. The maximum number of delegates that can speak at the same time is the same as the maximum number of enabled microphones. Delegates can mute their microphones with the microphone button on their contribution devices.

In push-to-talk (PTT) mode

the delegates can activate their microphones with the microphone button on their contribution devices. The microphone is activated as long as the microphone button is pushed. When the maximum number of delegates speak, the other delegates cannot activate their microphones.

### Chairman

Control of delegate participation shall be in the hands of the chairman, using the Chairman Unit. The chairman has priority over other participating delegates. There shall be two types of Chairman units:

The Chairman Discussion Unit shall have a priority and a microphone button for speaking. The unit shall incorporate a fixed or pluggable microphone with a flexible stem and a loudspeaker. An illuminated red indicator on the microphone shall indicate that the microphone is active. An additional red LED circular indicator round the microphone button on the chairman unit shall also indicate that the microphone is active. The chairman shall be able to speak at any desired time by activation of his/her microphone. Two headphone sockets shall be available. The Chairman Discussion Unit shall be free standing or flush mountable. It shall be possible to specify a Chairman Discussion Unit with:

* extra-long microphone stem.

It shall be possible to specify a Chairman Discussion Unit with one of the following additions:

* voting with 5 buttons with confirmation LEDs and present indicator
* a channel selector with channel select buttons and LCD screen showing channel number and abbreviated channel name
* voting with 5 buttons with confirmation LEDs and present indicator and a channel selector with channel select buttons and LCD screen showing channel number and abbreviated channel name
* dual channel selector with individual volume control, individual channel select buttons and individual LCD screen showing channel number and abbreviated channel name

The Chairman Conference Unit shall have a priority and a microphone button for speaking and five soft buttons keys for voting and/or control functions. The unit shall incorporate a pluggable microphone with a flexible stem and a fold-away loudspeaker. A red indicator on the microphone on/off button shall indicate that the microphone is active. An additional red LED indicator on the Chairman unit and loudspeaker shall also indicate that the microphone is active. The chairman shall be able to speak at any desired time by activation of his/her microphone. The Chairman Conference unit shall have a graphic LCD screen, a chip-card reader, a channel selector with two volume controls, and two headphone connectors. It shall be possible to connect an Intercom Handset and Cradle for communication with the interpreters, delegates or operator. It shall be possible to connect an external condenser microphone (for example, of a headset). Information on the LCD screen shall be available. It shall be possible to monitor the numbers of participants speaking and delegates waiting to speak. It shall be possible to cancel all requests-to-speak. An external contact shall be available to provide external present and fraud functionality. The Chairman Conference Unit shall be free standing or flush mountable.

### Delegate

There shall be two types of Delegate units:

The Delegate Discussion Unit shall have a button for request-to-speak. The unit shall incorporate a fixed or pluggable microphone with a flexible stem and a loudspeaker. The Delegate Discussion Unit shall have a circular indicator round the request-to-speak button. This indicator shall light green when the delegate is list in the request list; it shall light red when the microphone is on.

The microphone shall have an indicator that lights green when request-to-speak is accepted by the system; it shall light red when the microphone is on. Two headphone sockets shall be available. The Delegate Discussion Unit shall be free standing or flush mountable. It shall be possible to add an auxiliary button that is used for usher call.

It shall be possible to specify a Delegate Discussion Unit with:

* extra-long microphone stem.
* dual use facility with individual full function request-to-speak button

It shall be possible to specify a Delegate Discussion Unit with one of the following:

* voting with 5 buttons with confirmation LEDs and present indicator
* a channel selector with channel select buttons and LCD screen showing channel number and abbreviated channel name
* voting with 5 buttons with confirmation LEDs and present indicator and a channel selector with channel select buttons and LCD screen showing channel number and abbreviated channel name
* dual channel selector with individual volume control, individual channel select buttons and individual LCD screen showing channel number and abbreviated channel name

The Delegate Conference Unit shall have a button for request-to-speak and five soft buttons for voting and response registering functions. The unit shall incorporate a pluggable microphone with a flexible stem and a fold-away loudspeaker.

The Delegate Conference Unit shall have an indicator above the request-to-speak button. This indicator shall light green when the delegate is list in the request list; it shall light red when the microphone is on.

The microphone shall have an indicator that lights green when request-to-speak is accepted by the system; it shall light red when the microphone is on.

When a request-to-speak has been entered, green LEDs shall light to confirm that a request-to-speak has been made. A request-to-speak shall subsequently be cancelled by a second operation of the request-to-speak button.

The green LEDs shall flash when the delegate is first in the request list and shall be the next one to get the floor.

Units with a graphic LCD screen shall display 'request accepted', 'request cancelled' 'speak now', response accepted and response cancelled messages when appropriate.

Information on the LCD screen shall be available. It shall be possible to monitor the numbers of participants speaking and delegates waiting to speak.

Flush mounted Delegate units (other than tabletop units) shall have separate microphones, which may be fixed (stem or goose-neck) or detachable (hand-held).

Facilities shall be provided for the connection and use of other microphone types having the same basic facilities as the delegate units. Participation of a delegate may be via a hand-held microphone, gooseneck microphone, stem microphone or tie-clip microphone which functions as a delegate unit.

Individual request-to-speak button shall be available.

Individual flush-mounted or built-in loudspeaker units shall be provided for speech relay of the floor language to delegate positions. Provision shall be made for the automatic muting of this loudspeaker at a delegate unit whenever the microphone at that delegate unit is activated.

## Vote processing and display

Electronic voting shall allow delegates to cast their votes using four of the five voting buttons on their Delegate Units. The votes shall be automatically totaled up by the system and presented on LCD screens of Chairman Conference Units and Delegate Conference Units, and on hall displays. The parliamentary voting shall be controlled by the chairman.

### Chairman

The Chairman Conference Unit shall have control buttons to page, start, suspend, re-start and stop the parliamentary voting procedure. When the page button is pressed an attention tone is audible to indicate the delegates a voting round is about to start. When the vote start button is pressed, the vote starts. The hold button shall allow voting to be suspended under the chairman’s control. The stop button shall terminate the voting procedure. The chairman shall be able to cast a vote using three soft buttons (Yes, No, Abstain) on the Chairman Unit. These buttons shall have yellow LED indicators. If voting has been suspended, it shall be exclusively possible for the chairman who started the voting procedure to change his/her vote and re-start or stop the voting. The Chairman Conference Unit shall have a graphical LCD screen for display of voting results information.

The Chairman Discussion Unit shall include an integrated electronic voting function. This shall comprise five buttons that allows the chairman to register present and cast votes in parliamentary voting. Yellow LED indicators shall provide confirmation of the vote cast by the chairman.

### Delegate

The Delegate Unit shall include an integrated electronic voting function. This shall comprise five buttons that allow delegates to register present and cast votes in parliamentary voting. Yellow LED indicators shall provide confirmation of the vote cast by a delegate. Delegate Units with an LCD screen shall display the text; ‘present’, ‘yes’, ‘no’ and ‘abstain’ before the delegate has voted, and also show the total number of participants present, ‘yes’ votes, ‘no’ votes, abstentions, and participants who have not voted.

## Interpretation

The system shall include provision for simultaneous interpretation facilities on up to 31 language channels, with a maximum of six interpreter desks able to be connected in each booth.

The interpretation system shall provide control facilities for the routing of floor and relay languages to the interpreters, and for the distribution of interpretation and floor languages to delegates.

### System operator

The interpretation system shall include pre-setting facilities for language channel allocation, routing and interlocks under control of the system operator. This shall be carried out from the install mode of the Interpreter Desk.

It shall be possible for the interpreter to allocate the interpretation languages freely to the 31 interpretation channels, and to edit these language allocations whenever required.

Each Interpreter Desk shall have two language channels, A and B. Channel A shall normally be used for output languages directly interpreted from the floor language, and channel B shall be used for an output language for relay interpretation.

Each interpreter shall be able to pre-set and edit the language channel routings on both A and B channels on his/her Interpreter Desk. The interpreter shall be able to assign free selection of output language channel number on interpretation channel B. Three microphone interlock settings for between booths shall be available on Interpreter Desks. These settings shall determine whether microphones have to be switched off before other microphones can become active, or whether an override facility can be implemented, or neither.

### Interpreter booth equipment

The conference system shall be able to accommodate up to six Interpreter Desks with LCD Screen per booth. Each desk shall be provided with a pluggable cardioid condenser microphone on a flexible stem, two output sockets for connection of a headphone and one for connection of a headset. An illuminated red ring on the microphone shall indicate that the microphone is active. An additional indicator round the microphone button shall light red to show that the microphone is active. It shall light green to show that the booth is not in use. A built-in loudspeaker with volume control and channel selection possibility shall automatically switch off when any microphone in the booth becomes active. A microphone on/off button and a microphone mute key shall be provided. Tone and volume controls shall be provided for the headphone outputs. The number of language channels programmed into the Interpreter Desk during set up shall automatically become the number of channels available on each electronic program selector.

Selection of language output channel under control of the interpreter shall be restricted to the choice of output channels A or B; channel A for normal interpretation of the floor language, and channel B for relay interpretation, which can also be used as ‘auto relay’ language for interpretation from exotic languages.

Selection of channel A or channel B shall be by means of ‘A select’ and ‘B select’ buttons. Whenever channel A or channel B is enabled by the interpreter, the corresponding output language preset for that channel shall be displayed by means of a text display in the Interpreter Desk. This display shall also show language name and language number.

Indicators in the graphical LCD screen above the channel selection buttons shall be provided to indicate the selection of either channel A or channel B and. Yellow LED indicators shall be provided to indicate that the selected output channel is already engaged by another interpreter.

When channel B is selected at a particular interpreter desk, the interpreted language from that desk shall automatically be transmitted to the corresponding distribution channels and to other interpreter booths for relay interpretation into other languages (if the ‘auto relay’ function is enabled).

A green LED indicator shall be provided to show when the ‘auto relay’ function is in operation, that is, the language being received by an interpreter is a relayed interpretation. A select key shall be provided to allow fast switching between the floor language and the ‘auto relay’ language. A green LED indicator shall illuminate to show which has been selected.

When free selection of output language channel B is enabled, the interpreter at that desk shall be able to select any of the available output language channels for his/her interpretation by using a ‘channel select’ button. This status shall be indicated in the graphic LCD screen above the channel select button.

A rotary selector switch shall be provided in each interpreter desk to allow pre-selection of five incoming language channels. Pressing the rotary shall set the selected incoming channel to language number one. The graphical LCD screen shall provide confirmation of the pre-selected language channels or floor language. The graphical LCD screen on the Interpreter Desk shall display an abbreviation of the selected language, the corresponding language number, and an indication of whether the interpretation is direct (shown by a ‘+’) or indirect (shown by a ‘-’). Also the graphical LCD screen shall show an overview of abbreviations of all available languages and an indicator per language of whether the interpretation is direct (shown by a ‘+’) or indirect (shown by a ‘-‘).

When the microphones in a booth are switched off, the floor language will be transmitted into the output channel for which no microphone is switched on. A push button shall be provided to allow two-way voice communication between interpreter and the chairman via an intercom channel. A push button shall be provided to allow two-way voice communication between interpreter and the operator via an intercom channel. A push button shall be provided to request the speaker to slow down the speed of speech. A push button shall be provided to allow the interpreter to request for help. A push button shall be provided to allow the interpreter to read received text message.

When the microphone is switched on while listening to an incoming channel which is the same as the outgoing channel, the incoming audio shall switch automatically to floor.

## Intercom

The conference system network shall allow two intercom channels to be configured for two-way communication between chairman, operator, delegates and interpreters. The intercom handset shall be connected to the Chairman Conference Unit or Delegate Conference Units to use Intercom. The interpreter desk shall use the available microphone and headphones to perform intercom. All communication shall be between the assigned intercom operator or assigned chairman and one other delegate or interpreter.

## Distribution

Distribution of the interpreted languages to the chairman and delegates shall be via the system cabling to Chairman Units, Delegate Units with Channel Selectors, Interpreter Desks or Electronic Channel Selector Panels. There shall also be the possibility to distribute languages via an infrared distribution system.

### Infra-red distribution system

The infra-red distribution system shall use an infra-red transmitter connected to the conference system via an optical cable. The infra-red system shall provide interference-free, high-quality audio distribution, which shall enable delegates to listen to language interpretations at conferences. It shall avoid disturbance from lighting systems by operating in the 2 to 8 MHz frequency band. It shall provide high-quality audio signals by employing advanced digital technology to minimize transmission errors and increase the signal-to-noise ratio. It shall enable the transmission of up to 32 separate channels. It shall also be possible to transmit a lesser number of higher-quality audio signals by 'combining' channels.

The transmitter shall be the central element in the system. It shall accept inputs from either analog or digital sources, modulate these signals on to carrier waves and transmit the waves to infra-red radiators located elsewhere in the conference venue. The transmitter shall be suitable for 19-inch rack or table-top mounting and shall have a dedicated slot for accommodating special interface modules to ensure compatibility with these external signal sources.

The infra-red radiators shall output a modulated infra-red signal which conference delegates shall be able to receive on portable infra-red receivers. This infra-red signal shall be demodulated by the receivers and an audio signal shall be made available at an output that accepts headphones. The delegate shall be able to listen to the audio signal via the headphones. The system shall be wireless and the delegates shall require no physical connection to the system. One or more infra-red radiators shall be installed and positioned in accordance with their technical specifications.

The system shall be of a modular design and it shall be possible to connect various combinations of a system. Systems shall be expanded or reduced in size by adding or removing equipment.

The full range of the infra-red products shall include a transmitter, radiators and receivers. This range shall be complemented by headphones, battery charging equipment and radiator mounting equipment, all of which shall be fully compatible with and easily integrated into the system.

Signal transmission and processing shall be by means of advanced digital audio and infra-red technology. This advanced digital and infra-red technology shall result in high level sound quality and speech intelligibility with no losses in signal quality or level during transmission. There shall be virtually no background noise, interference, cross talk or distortion.

## Connecting peripheral equipment

Provision shall be made for interconnection of the conference system with various external devices and systems as required.

### Hall displays

Provision shall be made for system output to a numeric display panel serving as a hall display. The hall display panel shall comprise an electro-luminescent display, light-emitting diodes, liquid crystal, plasma or incandescent lamp displays, depending on the prevailing conditions in the conference hall.

The Numeric Hall Display shall show the total voting results. System output to the Numeric Hall Display shall be by means of a Data Distribution Board connected to the conference system.

### External system connections

Additional facilities shall be provided for the connection of external system equipment. These facilities shall comprise at least:

* a least two audio line (balanced and unbalanced) outputs for connection to a public address system, audio mixers and/or to a voice logging system for audio registration of all spoken conference proceedings
* at least two audio line (balanced and unbalanced) inputs to allow connection of audio sources
* both analog (balanced and unbalanced) and digital (AES/EBU SPDIF) audio output of all language channels to allow broadcast-, recording- and sound distribution equipment to be connected to the conference system
* both analog (balanced and unbalanced) and digital (AES/EBU SPDIF) input output of all language channels to allow remote interpretation or music distribution
* coupling to CobraNet to allow versatile audio distribution and contribution over long distances
* use of a telephone coupler for connection to a remote participant or Conference system
* insertion of an external sound processing device such as a graphic equalizer in the audio path of the delegate loud-speakers

## Automatic camera control

It shall be possible to use an automatic camera control system to ensure that speaking delegates are automatically displayed on hall displays or monitors. The system shall be controlled by the microphone activity of the delegate- and chair-man units. The system shall allow camera control by means of fixed or moveable cameras with zoom lenses, pan and tilt heads and prepositions. Use of high-speed dome cameras shall be preferred. It shall be possible to connect up to 256 cameras to cover a maximum of 1000 delegate positions. There shall be video outputs for connecting at least one operator monitor and four audience displays. It shall be possible to display the names of speaking delegates in the video picture with one or two text lines comprising 16 characters each. An automatic camera control software application shall be available to configure and control the system. This shall be available in two versions, one for stand-alone systems, and the other for systems with PC control.

### System operator

System configuration shall only require the use of a temporary PC with dedicated software for this camera control application. After downloading the configuration parameters to the central control equipment, the temporary PC shall be removed. The system operator shall be able to override the automatic camera selection and settings by using a control keyboard connected to the video switcher/control device.

# Functional description for system with PC control

The conference system under operator control shall provide the operator with full control over conference proceedings and delegate participation. Operator control of the conference system shall be via one or more PCs running application software modules. The software shall run under Windows® on one or more PCs.

The software applications are modular, and the operator shall be able to configure a control system according to the needs of the congress application. The software modules shall be protected for unauthorized copying by a license key.

## Microphone management

Microphone management shall cover the way in which conference system microphones are switched on and off, how many microphones may be simultaneously active, and under which microphone operation mode the system shall operate. Microphone management shall be carried out by the system operator and chairman. Two software modules, Microphone Management and Synoptic Microphone Control, shall provide the means for almost all microphone management requirements.

### System operator

Setting microphone-related parameters in preparation for a conference and controlling microphone operation during a conference shall be under the control of the system operator via the software running on a PC. The operator shall be provided with visual monitoring facilities via the PC monitor, and audio monitoring facilities via headphones at the operator's position.

Six operating modes shall be provided:

* Control by operator with request‑to‑speak list (manual).
* Control by operator with request‑to‑speak list and response list.
* Control by delegate with request‑to‑speak list (open).
* Control by delegate with override of other delegate microphones (first‑in, first‑out).
* Control by delegate with Push‑To‑Talk.
* Control by delegate with voice activation.

#### In control by operator with request list mode:

provision shall be made for the system operator to pre-select the delegate sequence, activate the microphones of successive delegates in the pre-selected sequence, edit the list of pre-selected delegates during proceedings, and select any delegate for immediate microphone activation. Delegates shall be able to make requests to speak during a conference by activating a key on the delegate unit. Delegate microphones shall only be made active by the system operator. A list of delegates requesting to speak, as well as those currently speaking, shall be displayed on the system operator's monitor (and hall display, if used). It shall be possible for the system operator to cancel all requests-to-speak at any time.

#### In control by operator with request and response list mode:

it shall be possible for delegates to make a response request. This request shall be given temporary priority, and shall appear at the top of the request list. When such a response request is promoted to active status, the current speaker shall be deactivated, but remain on the speakers list, and the response delegate shall be promoted to the 'response' list. The response request list shall be configurable from 1 upto a maximum of 25 response requests, only one of which shall be active at any time.

#### In control by delegate with request list mode:

Delegates requesting to speak shall automatically join a waiting list, and their microphones shall be activated in turn as speaking delegates switch off their microphones. A list of delegates requesting to speak, as well as those currently speaking, shall be displayed on the system operator's monitor (and hall display, if used). It shall be possible for the system operator to cancel all requests-to- speak at any time.

#### In control by delegate with override mode ('first-in, first-out' mode):

Delegates requesting to speak shall immediately join the group of speakers, while at the same time; the current speaker first having joined the group of speakers shall leave it. Provision shall be made for the system operator to preset a limited speaking time from one to 60 minutes, after which the microphone of the following delegate in the waiting list shall automatically be activated and that of the currently speaking delegate switched off.

#### In control by delegate with Push-To-Talk mode:

delegates requesting to speak must press and hold the microphone button.

#### In control by delegate with voice activated mode:

delegates shall activate their microphones automatically by speaking (no on/off key shall be required). They shall automatically be given active status while speaking. No operator action shall be required. Provision shall be made for the system operator to enter the geographical locations of all delegates within the hall so that the locations of those delegates with activated microphones can be shown graphically on the system operator's monitor.

Provision shall be made to allow only authorized delegates having identified themselves as such by means of a card reader or PIN code to participate in the proceedings. It shall be possible to specify a 3-, 4- or 5-digit PIN code.

Provision shall be made for the system operator to enter the names and other details of delegates into the system, so that when they identify themselves to the conference system their names are automatically shown on the monitor or hall display.

Provision shall be made for the entered information and system parameters to be saved. Provision shall be made to print hard copies of certain conference-related parameters.

### Chairman

Control of delegate participation in the conference shall be in the hands of the chairman, using the Chairman Unit. The chairman shall have priority over other delegates in participation in the conference, although a priority status shall also be assignable to other delegates by the system operator, using the appropriate software. It shall be possible to configure special microphone status to any delegate with a valid seat number by entering their details into a notebook. A delegate on the notebook shall be granted immediate access to the speakers list. The delegate unit shall have a yellow indicator, to indicate that the delegate unit is listed in the notebook. Chairmen shall automatically be included in the notebook.

There shall be two types of Chairman units:

The Chairman Discussion Unit shall have a priority and a microphone button for speaking. The unit shall incorporate a fixed or pluggable microphone with a flexible stem and a loudspeaker. An illuminated red indicator on the microphone shall indicate that the microphone is active. An additional red LED circular indicator round the microphone button on the chairman unit shall also indicate that the microphone is active. The chairman shall be able to speak at any desired time by activation of his/her microphone. Two headphone sockets shall be available. The Chairman Discussion Unit shall be free standing or flush mountable. It shall be possible to specify a Chairman Discussion Unit with an extra-long microphone stem.

It shall be possible to specify a Chairman Discussion Unit with one of the following additions:

* voting with 5 buttons with confirmation LEDs and present indicator
* a channel selector with channel select buttons and LCD screen showing channel number and abbreviated channel name
* voting with 5 buttons with confirmation LEDs and present indicator and a channel selector with channel select buttons and LCD screen showing channel number and abbreviated channel name
* dual channel selector with individual volume control, individual channel select buttons and individual LCD screen showing channel number and abbreviated channel name

The Chairman Conference Unit shall have a priority and a microphone button for speaking and five soft buttons keys for voting and/or control functions. The unit shall incorporate a pluggable microphone with a flexible stem and a fold-away loudspeaker. A red indicator on the microphone on/off button shall indicate that the microphone is active. An additional red LED indicator on the Chairman unit and loudspeaker shall also indicate that the microphone is active. The chairman shall be able to speak at any desired time by activation of his/her microphone. The Chairman Conference unit shall have a graphic LCD screen, a chip-card reader, a channel selector with two volume controls, and two headphone connectors. It shall be possible to connect an Intercom Handset and Cradle for communication with the interpreters, delegates or operator. It shall be possible to connect an external condenser microphone (for example, of a headset). Information on the LCD screen shall be available. It shall be possible to monitor the numbers of participants speaking and delegates waiting to speak. It shall be possible to cancel all requests-to-speak. An external contact shall be available to provide external present and fraud functionality. The Chairman Conference Unit shall be free standing or flush mountable.

### Delegate

There shall be two types of Delegate units:

The Delegate Discussion Unit shall have a button for request-to-speak. The unit shall incorporate a fixed or pluggable microphone with a flexible stem and a loudspeaker. The Delegate Discussion Unit shall have a circular indicator round the request-to-speak button. This indicator shall light green when a request-to-speak is accepted by the system; it shall light red when the microphone is on.

The microphone shall have an indicator that lights green when request-to-speak is accepted by the system; it shall light red when the microphone is on. Two headphone sockets shall be available. The Delegate Discussion Unit shall be free standing or flush mountable. It shall be possible to add an auxiliary button that is used for usher call.

It shall be possible to specify a Delegate Discussion Unit with:

* extra-long microphone stem.
* dual use facility with individual full function request-to-speak button

It shall be possible to specify a Chairman Discussion Unit with one of the following additions:

* voting with 5 buttons with confirmation LEDs and present indicator
* a channel selector with channel select buttons and LCD screen showing channel number and abbreviated channel name
* voting with 5 buttons with confirmation LEDs and present indicator and a channel selector with channel select buttons and LCD screen showing channel number and abbreviated channel name
* dual channel selector with individual volume control, individual channel select buttons and individual LCD screen showing channel number and abbreviated channel name

The Delegate Conference Unit shall have a button for request-to-speak and five soft buttons for voting and response registering functions. The unit shall incorporate a pluggable microphone with a flexible stem and a fold-away loudspeaker.

The Delegate Conference Unit shall have an indicator above the request-to-speak button. This indicator shall light green when a request-to-speak is accepted by the system; it shall light red when the microphone is on.

The microphone shall have an indicator that lights green when request-to-speak is accepted by the system; it shall light red when the microphone is on.

When a request-to-speak has been entered, green LEDs shall light to confirm that a request-to-speak has been made. A request-to-speak shall subsequently be cancelled by a second operation of the request-to-speak button.

The green LEDs shall flash when the delegate is first in the request list and shall be the next one to get the floor.

Units with a graphic LCD screen shall display 'request accepted', 'request cancelled' 'speak now', response accepted and response cancelled messages when appropriate.

Information on the LCD screen shall be available. It shall be possible to monitor the numbers of participants speaking and delegates waiting to speak.

Flush mounted Delegate units (other than tabletop units) shall have separate microphones, which may be fixed (stem or goose-neck) or detachable (hand-held).

Facilities shall be provided for the connection and use of other microphone types having the same basic facilities as the delegate units. Participation of a delegate may be via a hand-held microphone, gooseneck microphone, stem microphone or tie-clip microphone which functions as a delegate unit.

Individual request-to-speak button shall be available.

Individual flush-mounted or built-in loudspeaker units shall be provided for speech relay of the floor language to delegate positions. Provision shall be made for the automatic muting of this loudspeaker at a delegate unit whenever the microphone at that delegate unit is activated.

Provision shall be made for up to 15 delegates to be assigned priority status. The designated delegates with priority status shall be able to speak at any desired time by activation of their microphones. The priority status shall be indicated by a yellow LED at the delegate unit.

## Vote processing and display

Electronic voting shall allow delegates to cast their votes using the five soft buttons on their Delegate Units. The votes shall be automatically totaled up by the system and presented on LCD screens of Chairman Conference Units and Delegate Conference Units, and on hall displays. A number of voting modes may be selected by the operator. These are: Parliamentary voting, For/Against voting, Audience Response voting, Rating voting, Multiple Choice voting and Opinion Poll voting. Voting shall be controlled by the system operator and/or chairman.

### System operator

The system operator shall be able to specify the following voting-related parameters:

* voting result display options
* vote type; open or closed
* display of interim results
* required quorum
* required majority
* timed vote

The system operator shall also be able to carry out vote preparation, including the following:

* creating and editing voting scripts
* assigning a name and number to voting motions
* assigning a description to voting motions
* specifying a quorum and/or majority for each voting motion

The following voting mode shall be possible:

* Parliamentary voting - delegates cast their votes simultaneously (present, no, abstain or yes using four of the five soft keys on the delegate unit). All votes shall be totaled up and displayed on personal LCD screens, LCD screens of Chairman Units and Delegate Units, and on hall displays, both during voting and for one minute after voting is completed

### Chairman

The Chairman Conference Unit shall have control buttons to page, start, suspend, re-start and stop the parliamentary voting procedure. When the page button is pressed an attention tone is audible to indicate the delegates a voting round is about to start. When the vote start button is pressed, the pre-selected voting mode will start. The hold button shall allow voting to be suspended under the chairman’s control. The stop button shall terminate the voting procedure. The chairman shall be able to cast a vote using three soft buttons (Yes, No, Abstain) on the Chairman Unit. These buttons shall have yellow LED indicators. If voting has been suspended, it shall be exclusively possible for the chairman who started the voting procedure to change his/her vote and re-start or stop the voting. The Chairman Conference Unit shall have a graphical LCD screen which provides information about the motion number, motion description and voting results.

The Chairman Discussion Unit shall include an integrated electronic voting function. This shall comprise five buttons that allows the chairman to register present and cast votes in parliamentary voting. Yellow LED indicators shall provide confirmation of the vote cast by the chairman.

### Delegate

The Delegate Unit shall include an integrated electronic voting function. This shall comprise five soft buttons that allow delegates to cast votes in parliamentary voting. Yellow LED indicators shall provide confirmation of the vote cast by a dele-gate. Delegate Units with a graphic LCD screen shall display the text; 'present', 'yes', 'no’, and ‘abstain' before the delegate has voted, and also show the total number of participants present, 'yes' votes, ‘no’ votes, abstentions, and participants who have not voted. The LCD screen shall provide information about the motion number and motion description.

Provision shall be made for positive delegate identification in voting. This shall be possible by using the present button on delegate units, by presenting an identification card to a card reader built into specific types of delegate unit or by presenting an identification card and entering a PIN code via the five buttons on delegate units. It shall be possible for the system operator to pre-select a voting procedure in which only delegates who have first identified themselves are able to participate.

## Delegate identification

It shall be possible at the choice of the system operator to pre-set the system so that participation in the conference and/or use of the voting function by delegates are possible only after an authorized delegate has satisfied authorization requirements. This shall be done by using the present button on delegate units, by presenting an identification card to a card reader built into specific types of delegate unit or by presenting an identification card and entering a PIN code via the five buttons on delegate units.

It shall be possible for the names of delegates to be assigned to their respective cards by entry of their names and other details at the operator's position.

When prior delegate identification is required, the Graphic LCD screen on the Delegate Unit shall indicate to the delegate that the identification has been accepted by the conference system, and that the delegate may participate in the subsequent conference procedure.

The delegate identification cards shall be uniquely coded. The PIN codes shall be assigned using the digits 1 to 5. Insertion by a delegate of the identification card (or entering the correct PIN code and identification card) shall indicate presence (if set in voting procedure). It shall be possible to display a list of present or absent delegates and a total list of pre-sent and absent delegates at the operator's position and on hall displays.

## Interpretation

The system shall include provision for simultaneous interpretation facilities on up to 31 language channels, with a maximum of six interpreter desks able to be connected in each booth.

The interpretation system shall provide full control facilities for the routing of floor and relay languages to the interpreters, and for the distribution of interpretation languages to delegates. There shall be facilities for monitoring any language channel in the conference system.

The Simultaneous Interpretation software module shall provide the means for almost all simultaneous interpretation and language distribution requirements.

### System operator

The 31-channel interpretation system shall include pre-setting facilities for language channel allocation and routing under control of the system operator. This shall be carried out from a PC running the Simultaneous Interpretation DCN software module.

It shall be possible for the system operator to allocate the interpretation languages freely to the language channels, and to edit these language allocations whenever required.

Each Interpreter Desk shall have three outgoing language channels, A, B and B-toggle. Channel A shall normally be used for output languages directly interpreted from the floor language, channel B and B-toggle shall be used for an output language for relay interpretation. The B-channel shall be fast changeable between B and B toggle.

The system operator shall be able to pre-set and edit the language channel routings on both A, B and B toggle channels to all Interpreter Desks in the system. The system operator shall be able to assign free selection of output language channel number on interpretation channel A, B and B toggle to any of the Interpreter Desks.

The system operator shall be able to release facilities to the Interpreter Desks in steps according to the requirements of each particular situation, thereby facilitating and clarifying operation by the interpreters. The system operator shall be able to switch on and switch off each individual interpreter microphone.

The system operator shall be able to see a help request of each indivudal interpreter.

The system operator shall be able to see speak requests.

### Interpreter booth equipment

The interpretation system shall be able to accommodate up to six Interpreter Desks with Graphical LCD Screen per booth.

Each desk shall be provided with a pluggable cardioid condenser microphone on a flexible stem, two output sockets for connection of a headphone and one for connection of a headset. An illuminated red ring on the microphone shall indicate that the microphone is active. An additional indicator round the microphone button shall light red to show that the microphone is active. It shall light green to show that the booth is not in use. A built-in loudspeaker with volume control and channel selection possibility shall automatically switch off when any microphone in the booth becomes active. A microphone on/off button and a microphone mute key shall be provided. Tone and volume controls shall be provided for the headphone outputs. The number of language channels programmed into the Interpreter Desk during set up shall automatically become the number of channels available on each electronic program selector.

Selection of language output channel under control of the interpreter shall be restricted to the choice of output channels A, B or B toggle; channel A for normal interpretation of the floor language, and channel B and B toggle for relay interpretation, which can also be used as 'auto relay' language for interpretation from exotic languages.

Selection of channel A, channel B or channel B toggle shall be by means of 'A select' and 'B select' buttons. Whenever channel A, channel B or channel B toggle is enabled by the interpreter, the corresponding output language preset for that channel shall be displayed by means of a text display in the Interpreter Desk. This display shall also show language name and language number.

Indicators in the graphical LCD screen above the channel selection buttons shall be provided to indicate the selection of either channel A, channel B or channel B toggle and. Yellow LED indicators shall be provided to indicate that the selected output channel is already engaged by another interpreter.

When channel B or channel B toggle is selected at a particular interpreter desk, the interpreted language from that desk shall automatically be transmitted to the corresponding distribution channels and to other interpreter booths for relay interpretation into other languages (if the 'auto relay' function is enabled).

A green LED indicator shall be provided to show when the ‘auto relay’ function is in operation, that is, the language being received by an interpreter is a relayed interpretation. A select key shall be provided to allow fast switching between the floor language and the ‘auto relay’ language. A green LED indicator shall illuminate to show which has been selected.

When free selection of output language channel B or channel B toggle is enabled, the interpreter at that desk shall be able to select any of the available output language channels for his/her interpretation by using a ‘channel select’ button. This status shall be indicated in the graphic LCD screen above the channel select button.

A rotary selector switch shall be provided in each interpreter desk to allow pre-selection of five incoming language channels. The graphical LCD screen shall provide confirmation of the pre-selected language channels or floor language. The graphical LCD screen on the Interpreter Desk shall display an abbreviation of the selected language, the corresponding language number, and an indication of whether the interpretation is direct (shown by a ‘+’) or indirect (shown by a ‘-’).

When the microphones in a booth are switched off, the floor language will be transmitted into the output channel for which no microphone is switched on. A push button shall be provided to allow two-way voice communication between interpreter and the chairman via an intercom channel. A push button shall be provided to allow two-way voice communication between interpreter and the operator via an intercom channel. A push button shall be provided to request the speaker to slow down the speed of speech. A push button shall be provided to allow the interpreter to request for help. A push button shall be provided to allow the interpreter to read received text message.

## Distribution

Distribution of the interpreted languages to the chairman and delegates shall be via the system cabling to Chairman Units, Delegate Units with Channel Selectors, Interpreter Desks or Electronic Channel Selector Panels. There shall also be the possibility to distribute languages via an infrared distribution system.

### Infra-red distribution system

The infra-red distribution system shall use an infra-red transmitter connected to the conference system via an optical cable. The infra-red system shall provide interference-free, high-quality audio distribution, which shall enable delegates to listen to language interpretations at conferences. It shall avoid disturbance from lighting systems by operating in the 2 to 8 MHz frequency band. It shall provide high-quality audio signals by employing advanced digital technology to minimize transmission errors and increase the signal-to-noise ratio. It shall enable the transmission of up to 32 separate channels. It shall also be possible to transmit a lesser number of higher-quality audio signals by 'combining' channels.

The transmitter shall be the central element in the system. It shall accept inputs from either analog or digital sources, modulate these signals on to carrier waves and transmit the waves to infra-red radiators located elsewhere in the conference venue. The transmitter shall be suitable for 19-inch rack or table-top mounting and shall have a dedicated slot for accommodating special interface modules to ensure compatibility with these external signal sources.

The infra-red radiators shall output a modulated infra-red signal which conference delegates shall be able to receive on portable infra-red receivers. This infra-red signal shall be demodulated by the receivers and an audio signal shall be made available at an output that accepts headphones. The delegate shall be able to listen to the audio signal via the headphones. The system shall be wireless and the delegates shall require no physical connection to the system. One or more infra-red radiators shall be installed and positioned in accordance with their technical specifications.

The system shall be of a modular design and it shall be possible to connect various combinations of a system. Systems shall be expanded or reduced in size by adding or removing equipment.

The full range of the infra-red products shall include a transmitter, radiators and receivers. This range shall be complemented by headphones, battery charging equipment and radiator mounting equipment, all of which shall be fully compatible with and easily integrated into the system.

Signal transmission and processing shall be by means of advanced digital audio and infra-red technology. This advanced digital and infra-red technology shall result in high level sound quality and speech intelligibility with no losses in signal quality or level during transmission. There shall be virtually no background noise, interference, cross talk or distortion.

## Connecting peripheral equipment

Provision shall be made for interfacing the conference system with various external devices and systems as required.

### Hall displays

Provision shall be made for system output to an numeric display panel serving as a hall display. The hall display panel shall comprise an electro-luminescent display, light-emitting diodes, liquid crystal, plasma or incandescent lamp displays, depending on the prevailing conditions in the conference hall.

The Numeric Hall Display shall show the total voting results and voting countdown time. System output to the Numeric Hall Display shall by means of the Data Distribution Board, connected to the conference system.

### External system connections

Additional facilities shall be provided for the connection of external system equipment. These shall comprise at least:

* a PC-driven interface for control of external equipment such as video cameras (via a video control matrix), video displays
* a least two audio line (balanced and unbalanced) outputs for connection to a public address system, audio mixers and/or to a voice logging system for audio registration of all spoken conference proceedings
* at least two audio line (balanced and unbalanced) inputs to allow connection of audio sources
* both analog (balanced and unbalanced) and digital (AES/EBU SPDIF) audio output of all language channels to allow broadcast-, recording- and sound distribution equipment to be connected to the conference system
* both analog (balanced and unbalanced) and digital (AES/EBU SPDIF) input output of all language channels to allow remote interpretation or music distribution
* coupling to CobraNet to allow versatile audio distribution and contribution over long distances
* use of a telephone coupler for connection to a remote participant or Conference system
* insertion of an external sound processing device such as a graphic equalizer in the audio path of the delegate loudspeakers
* communication port for connecting third-party control equipment.

## Automatic camera control

It shall be possible to use an automatic camera control system to ensure that speaking delegates are automatically displayed on hall displays or monitors. The system shall be controlled by the microphone activity of the delegate- and chair-man units. The system shall allow camera control by means of fixed or moveable cameras with zoom lenses, pan and tilt heads and prepositions. Use of high-speed dome cameras shall be preferred. It shall be possible to connect up to 256 cameras to cover a maximum of 1000 delegate positions.

There shall be video outputs for connecting at least one operator monitor and four audience displays. It shall be possible to display the names of speaking delegates in the video picture with one or two text lines comprising 16 characters each. An automatic camera control software application shall be available to configure and control the system.

# Contribution equipment

## Tabletop discussion units

### Discussion unit with fixed microphone

The Discussion Unit with fixed microphone shall enable participants to speak, register a request-to-speak and listen to the speaker. The microphone stem shall be flexible. The unit shall accommodate two headphone connections, so the speaker can be heard clearly even in situations with excessive background noise. The built-in loudspeaker shall be muted when the microphone is on to prevent acoustic feedback.

Rims shall be available in a range of colors to match the interior.

Provision shall be made so the unit can be used a delegate unit or as a chairman unit. Separate chairman buttons shall be available.

To lock the loop-through cable, a cable clamp shall be available. The unit shall be available with two different microphone lengths and shall be in light- and dark-colored bases.

The unit shall have the following Features and Benefits

* Low susceptibility to mobile phone interference
* Compact, attractive and ergonomic design
* Fixed or pluggable microphone
* Built-in loudspeaker
* Headphone output level reduction to prevent acoustic feedback (active when listening to the floor and when the microphone is on)
* Usable as delegate unit or chairman unit

The unit shall have the following Controls and Indicators

* Microphone with red or green indicator
* Microphone button with a red, green or yellow illuminated ring. Red indicates microphone is active, green indicates request-to-speak accepted, and yellow indicates ‘VIP’.
* VIP indicator is lit when the delegate is part of the notebook (only available if PC Software is used)
* Headphone volume control buttons
* Recessed ‘De-init’ switch

The unit shall have the following Interconnections

* Two 3.5 mm headphone sockets (0.14 in) stereo jack type
* 2 m (78.7 in) cable terminated within a molded six-pole circular connector.
* Six-pole circular connector for loop-through connections

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)
 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 116 mm (2.4 x 7.5 x 4.6 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Microphone lengths

 300 mm or 470 mm

Weight

 880 g (1.94 lb) or 895 g (1.97 lb)

Color top Silver (RAL 9022)

Color base Light Gray (RAL 000 7500) or

 Charcoal (PH 10736)

The product shall be or similar to:

DCN-DISS-L Discussion Unit with Microphone

 short microphone, light base

DCN-DISS-D Discussion Unit with Microphone

 short microphone, dark base

DCN-DISL-L Discussion Unit with Microphone

 long microphone, light base

DCN-DISL-D Discussion Unit with Microphone

 long microphone, dark base

### Basic Discussion unit

The Basic Discussion Unit shall enable participants to speak, register a request-to-speak and listen to the speaker. A socket shall be provided to connect the pluggable microphones. The unit shall also accommodate two separate headphone connections with individual volume control on either side of the unit, allowing one unit to serve two delegates. It shall be convertible to a full dual-use unit by replacing the microphone button with two separated microphone buttons for individual microphone control and individual delegate identification.

The built-in loudspeaker speaker shall be muted when the microphone is on to prevent acoustic feedback.

Different rims shall be available to allow matching with the interior.

Provisions shall be made so the unit can be used as a single delegate unit, as a dual delegate unit, as a chairman unit or as a single delegate unit with auxiliary button. The versatile auxiliary button shall be used as an usher call, for example.

To lock the loop-through cable, a cable clamp shall be available.

The unit shall be available in light- and dark-colored bases.

The unit shall have the following Features and Benefits

* Low susceptibility to mobile phone interference
* Compact, attractive and ergonomic design
* Pluggable microphone
* Built-in loudspeaker
* Headphone output level reduction to prevent acoustic feedback (active when listening to the floor and when the microphone is on) \*
* Usable as delegate unit, dual delegate unit, chairman unit or single delegate unit with auxiliary button

The unit shall have the following Controls and Indicators

* Microphone button with a red, green or yellow illuminated ring. Red indicates microphone is active, green indicates request-to-speak accepted, and yellow indicates ‘VIP’. \*
* VIP indicator is lit when the delegate is part of the notebook (only available if PC Software is used)
* Two individual headphone volume control buttons
* Recessed ‘De-init’ switch

The unit shall have the following Interconnections

* Socket for pluggable microphone
* Two 3.5 mm headphone sockets (0.14 in) stereo jack type
* 2 m (78.7 in) cable terminated within a molded six-pole circular connector.
* Six-pole circular connector for loop-through connections

\* When unit is used in Dual Delegate mode, this function shall be available individually.

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 116 mm (2.4 x 7.5 x 4.6 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 800 g (1.76 lb)

Color top Silver (RAL 9022)

Color base Light Gray (RAL 000 7500) or Charcoal (PH 10736)

The product shall be or similar to:

DCN-DISD-L Basic Discussion Unit

 pluggable microphone, light base

DCN-DISD-D Basic Discussion Unit

 pluggable microphone, dark base

### Discussion unit with Channel Selector

The Discussion Unit with Channel Selector shall enable participants to speak, register a request-to-speak and listen to the speaker. A socket shall be provided to connect the pluggable microphones. The unit shall have a built-in channel selector that makes it suitable for discussions in which more than one language is used and simultaneous interpretations are available. The channel selector shall include two up and down channel select buttons and a display showing the number and the abbreviation of the languages, enabling rapid selection of the required language channel. The unit shall accommodate two headphone connections.

The built-in loudspeaker speaker shall be muted when the microphone is on to prevent acoustic feedback.

A variety of rims shall be available, so the unit can be matched to the interior.

Provisions shall be made so the unit can be used a delegate unit or as a chairman unit.

To lock the loop-through cable, a cable clamp shall be available.

The unit shall be available in light- and dark-colored bases.

The unit shall have the following Features and Benefits

* Low susceptibility to mobile phone interference
* Compact, attractive and ergonomic design
* Pluggable microphone
* Channel selector with number and abbreviated channel name
* Built-in loudspeaker
* Headphone output level reduction to prevent acoustic feedback (active when listening to the floor and when microphone is on)
* Usable as delegate or chairman unit

The unit shall have the following Controls and Indicators

* Alphanumeric display for language channel selection with number and abbreviated channel name
* Socket for pluggable microphones (DCN-MICS or DCN-MICL)
* Microphone button with a red, green or yellow illuminated ring. Red indicates microphone is active, green indicates request-to-speak accepted, and yellow indicates ‘VIP’.
* VIP indicator is lit when the delegate is part of the notebook (only available if PC Software is used)
* Headphones have volume control buttons
* Recessed ‘De-init’ switch

The unit shall have the following Interconnections

* Socket for pluggable microphone
* Two 3.5 mm headphones sockets (0.14 in) stereo jack type
* 2 m (78.7 in) cable terminated with in a molded six-pole circular connector.
* Six-pole circular connector for loop-through connections

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 116 mm (2.4 x 7.5 x 4.6 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 800 g (1.76 lb)

Color top Silver (RAL 9022)

Color base Light Gray (RAL 000 7500) or

 Charcoal (PH 10736)

The product shall be or similar to:

DCN-DISCS-L Discussion Unit with Channel Selector

 pluggable microphone, light base

DCN-DISCS-D Discussion Unit with Channel Selector

 pluggable microphone, dark base

### Discussion Unit with Dual Channel Selectors

The Discussion Unit with Dual Channel Selectors shall enable participants to speak, register a request-to-speak and listen to the speaker. A socket shall be provided to connect a pluggable microphone. The unit shall have two built-in channel selectors with headphone connections with individual volume controls on either side of the unit, allowing one unit to serve two delegates. The channel selectors shall make it suitable for discussions in which more than one language is used and simultaneous interpretations are available. Each of the channel selectors shall include up and down channel select keys and a display showing the number and the abbreviation of the channel name, enabling rapid selection of the required language channel.

Provisions shall be made so the unit can be a full dual use unit by replacing the microphone button with two separated microphone buttons for individual microphone control and individual delegate identification. The built-in loudspeaker shall be muted when the microphone is on to prevent acoustic feedback.

Different colored rims shall be available to allow matching with the interior.

Provisions shall be made so the unit can be used as a single delegate unit, as a dual delegate unit, as a chairman unit or as a single delegate unit with an auxiliary button. The versatile auxiliary button shall be used as an usher call, for example.

To lock the loop-through cable, a cable clamp shall be available.

The unit shall be available in light- and dark-colored bases.

The unit shall have the following Features and Benefits

* Low susceptibility to mobile phones
* Compact, attractive and ergonomic design
* Pluggable microphone
* Two channel selectors with number and abbreviated channel name
* Built-in loudspeaker
* Headphone output level reduction to prevent acoustic feedback (active when listening to the floor and when the microphone is on) \*
* Usable as delegate unit, dual delegate unit, chairman unit or single delegate unit with auxiliary button

The unit shall have the following Controls and Indicators

* Two alphanumeric displays for language channel selection with number and abbreviated channel name
* Microphone button with a red, green or yellow illuminated ring. Red indicates microphone is active, green indicates request-to-speak accepted, and yellow indicates ‘VIP’. \*
* VIP indicator is lit when the delegate is part of the notebook (only available if PC Software is used)
* Two individual headphone volume control buttons
* Recessed ‘De-init’ switch

The unit shall have the following Interconnections

* Socket for pluggable microphone
* Two 3.5 mm headphones sockets (0.14 in) stereo jack type
* 2 m (78.7 in) cable terminated within a molded six-pole circular connector.
* Six-pole circular connector for loop-through connections

\* When unit is used in Dual Delegate mode, this function shall be available individually.

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 116 mm (2.4 x 7.5 x 4.6 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 800 g (1.76 lb)

Color top Silver (RAL 9022)

Color base

 Light Gray (RAL 000 7500)

 Charcoal (PH 10736)

The product shall be or similar to:

DCN-DISCS-L Discussion Unit with Dual Channel Selector

 pluggable microphone, light base

DCN-DISCS-D Discussion Unit with Dual Channel Selector

 pluggable microphone, dark base

### Discussion Unit with Voting

This Discussion Unit with Voting shall enable participants to speak, register a request-to-speak, listen to the speaker and vote. A socket shall be provided to connect the pluggable microphones. The unit shall have five voting buttons for all types of voting. The yellow indicator rings around the voting buttons shall be used to prompt users to register their presence, to start voting and to confirm their votes. The unit’s attendance LED shall light yellow when the delegate is present.

The unit shall also accommodate two headphone connections, so the speaker can be heard clearly even in situations with excessive background noise.

The built-in loudspeaker speaker shall be muted when the microphone is on to prevent acoustic feedback.

A variety of rims shall be available, so the unit can be matched to the interior. Provisions shall be made so the unit can be used a delegate unit, as a chairman unit or as a delegate unit with auxiliary button. The auxiliary button shall be a versatile function, which can be used as an usher call for example.

To lock the loop-through cable, a cable clamp shall be available.

The unit shall be available in light- and dark-colored bases.

The unit shall have the following Features and Benefits

* Low susceptibility to mobile phone interference
* Compact, attractive and ergonomic design
* Pluggable microphone
* Five voting buttons
* Built-in loudspeaker
* Headphone output level reduction to prevent acoustic feedback (active when listening to the floor and when the microphone is on)
* Usable as a delegate unit or as a chairman unit

The unit shall have the following Controls and Indicators

* Five voting buttons with indicator rings around the buttons
* Unit activity / delegate presence indicator
* Microphone button with a red, green or yellow illuminated ring. Red indicates microphone is active, green indicates request-to-speak accepted, and yellow indicates ‘VIP’.
* VIP indicator is lit when the delegate is part of the notebook (only available if PC Software is used)
* Headphone volume control buttons
* Recessed ‘De-init’ switch

The unit shall have the following Interconnections

* Socket for pluggable microphone
* Two 3.5 mm headphone sockets (0.14 in) stereo jack type
* 2 m (78.7 in) cable terminated within a molded six-pole circular connector.
* Six-pole circular connector for loop-through connections

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 116 mm (2.4 x 7.5 x 4.6 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 800 g (1.76 lb)

Color top Silver (RAL 9022)

Color base

 Light Gray (RAL 000 7500)

 Charcoal (PH 10736)

The product shall be or similar to:

DCN-DISV-L Discussion Unit with Voting

 pluggable microphone, light base

DCN-DISV-D Discussion Unit with Voting

 pluggable microphone, dark base

### Discussion Unit with Voting and Channel Selector

The Discussion Unit with Voting and Channel Selector shall enable participants to speak, register a request-to-speak, and listen to the speaker and vote. A socket shall be provided to connect the pluggable microphones. The unit shall have five voting buttons for all types of voting. The yellow indicator rings around the voting buttons shall be used to prompt users to register their presence, to start voting and to confirm their vote. The unit’s attendance LED shall light yellow when the delegate is present.

The unit shall have a built-in channel selector, which makes it suitable for discussions in which more than one language is used and simultaneous interpretations are available.

The channel selector shall include up and down channel select keys and a display showing the number and the abbreviation of the languages, enabling rapid selection of the required language channel. The unit shall also accommodate two headphones connections.

The built-in loudspeaker shall be muted when the microphone is on to prevent acoustic feedback.

A variety of rims shall be available to allow matching to the interior.

Provision shall be made se the unit can be used as a delegate unit, as a chairman unit or as a delegate unit with auxiliary button.

The versatile auxiliary button shall be used as an usher call, for example.

To lock the loop-through cable, a cable clamp shall be available.

The unit shall be available in light- and dark-colored bases.

The unit shall have the following Features and Benefits

* Low susceptibility to mobile phone interference
* Compact, attractive and ergonomic design
* Channel selector with number and abbreviated channel name
* Built-in loudspeaker
* Headphone output level reduction to prevent acoustic feedback. (active when listening to the floor and when the microphone is on)
* Usable as a delegate unit or as a chairman unit

The unit shall have the following Controls and Indicators

* Five voting buttons with indicator rings around the buttons
* Unit activity / delegate presence indicator
* Alphanumeric display for language channel selection with number and abbreviated channel name
* Microphone button with a red, green or yellow illuminated ring. Red indicates microphone is active, green indicates request-to-speak accepted, and yellow indicates ‘VIP’
* VIP indicator is lit when the delegate is part of the notebook (only available if PC Software is used)
* Headphones volume control buttons
* Recessed ‘De-init’ switch

The unit shall have the following Interconnections

* Socket for pluggable microphone
* Two 3.5 mm headphone sockets (0.14 in) stereo jack type
* 2 m (78.7 in) cable terminated within a molded six-pole circular connector
* Six-pole circular connector for loop-through connections

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 116 mm (2.4 x 7.5 x 4.6 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 800 g (1.76 lb)

Color top Silver (RAL 9022)

Color base

 Light Gray (RAL 000 7500)

 Charcoal (PH 10736)

The product shall be or similar to:

DCN-DISVCS-L Discussion Unit with Voting and Channel Selector

 pluggable microphone, light base

DCN-DISVCS-D Discussion Unit with Voting and Channel Selector

 pluggable microphone, dark base

### Pluggable microphone

The pluggable microphone shall be an innovative, stylish and ergonomically designed microphone with an adjustable stem, which simply plugs and fasten directly into any unit. The microphone shall have a unidirectional response for optimum performance even in noisy conditions, and shall include an indicator that is red when the microphone is on and green when the delegate unit is in the request state. The microphone shall be available with two stem lengths.

The unit shall have the following Features and Benefits

* Uni-directional microphone on adjustable stem
* Built-in plop and windshield

The unit shall have the following Controls and Indicators

* Red or green illuminator. Red indicates microphone is active, green indicates request-to-speak accepted

The unit shall have the following Interconnections

* Connector to plug and fasten the microphone

The unit shall have the following Technical Specifications

Mechanical

Mounting Plug and fasten into any units

Length

 310 mm (12.2 in)

 480 mm (18.9 in)

Weight

 100 g (0.22 lb)

 115 g (0.25 lb)

Color Silver (RAL 9022)

The product shall be or similar to:

DCN-MICS Pluggable Microphone Short stem

DCN-MICL Pluggable Microphone Long stem

### Rims for Discussion Units

A rim shall complete the discussion units. A variety of rims with different finishes shall be are available to allow matching with any interior.

The unit shall have the following Technical Specifications

Mechanical

Mounting Click and fit on any discussion unit

Color

 Silver (RAL 9022) high gloss

 Silver (RAL 9022)

 Charcoal (PH 10736)

 High gloss metal

 Semi gloss metal

The product shall be or similar to:

DCN-DISR-SRH Set of 10 rims for Discussion unit

 Silver, High gloss

DCN-DISR-SR Set of 10 rims for Discussion unit

 Silver

DCN-DISR-D Set of 10 rims for Discussion unit

 Dark

DCN-DISRM-H Set of 10 rims for Discussion unit

 Metal, High gloss

DCN-DISRM-S Set of 10 rims for Discussion unit

 Metal, Semi gloss

### Buttons for Chairman Discussion Unit

The buttons for Chairman Discussion Units shall replace the single microphone button on a Discussion unit when used in chairman mode. These buttons shall also be useable for the Discussion unit in Auxiliary control mode

The unit shall have the following Technical Specifications

Mechanical

Mounting Click and fit on any Discussion unit

Color Silver (RAL 9022)

The product shall be or similar to:

DCN-DISBCM 10 sets of buttons for Chairman Discussion unit

### Buttons for Dual Use Discussion Unit

Buttons for Dual Use Discussion Units shall replace the single microphone button on a discussion unit when used in dual delegate mode.

The unit shall have the following Technical Specifications

Mechanical

Mounting Click and fit on any Discussion unit

Color Silver (RAL 9022)

The product shall be or similar to:

DCN-DISBDD 10 sets of buttons for Dual use Discussion unit

### Cable clamps for Discussion Unit

Cable clamps for Discussion Unit shall secure loop-through cable to next unit.

The unit shall have the following Technical Specifications

Mechanical

Mounting Click and fit on any discussion unit

Color Charcoal (PH 10736)

The product shall be or similar to:

DCN-DISCLM Sets of 25 cable clamps for Discussion unit

### Discussion unit Suitcase

The suitcase shall hold 10 discussion units and microphones. It shall not require unplugging the microphones.

The unit shall have the following Features and Benefits

* Rugged construction with reinforced corners
* Simplifies packing and unpacking
* Easy to carry and store

The unit shall have the following Technical Specifications

Mechanical

Dimensions 430 x 665 x 255 mm

(H x W x D) (16,9 x 26,2 x 10 in)

Weight 9,3 kg (20,5 lb)

Color gray

### Flight Case Discussion Unit

The flight suitcase shall be used for storing and transportation up to 10 discussion units.

The flight case shall have the following physical characteristics:

|  |
| --- |
| Dimensions (H x W x D) 430 x 665 x 255 mm  (16.9 x 26.2 x 10 in) |
| Weight 9.3 kg (20.5 lbs) |
| Finish Dark gray |

The storage suitcase shall be the DCN-FCDIS or similar.

## Tabletop Conference units

### Standard Conference Unit

The standard conference unit shall enable delegates to speak, register a request-to-speak, register a response request, and listen to the speaker and vote. It shall have low susceptibility to interference from mobile phones. A socket shall be provided to connect the pluggable microphones. The flat-panel loudspeaker shall offer superior acoustics with minimal feedback, thus increasing intelligibility. It shall automatically be muted when the microphone is activated. It shall be possible to fold down the loudspeaker. There shall be five voting buttons for all kind of voting. An external contact shall be available to connect external fingerprint readers.

The unit shall have the following Features and Benefits

* Low susceptibility to mobile phones
* Compact, attractive delegate unit
* Built-in fold-away flat-panel loudspeaker
* Five voting buttons
* Cable connections located underneath the unit
* External present and fraud contact

The unit shall have the following Controls and Indicators

* Built-in fold-away flat-panel loudspeaker, automatically muted if a microphone is on
* Microphone ‘on/off ’ or ‘request-to-speak’ button
* ‘Microphone on’ indicator at the top of the loudspeaker
* Tri-color indicator above the microphone button:
	+ - Red microphone-on indicator
		- Green ‘Request-to-speak’ confirmation indicator
		- Yellow ‘VIP’ indicator. ‘VIP’ is lit when the delegate unit is part of the notebook, which is only available when PC control software is used.
* Five voting buttons with yellow LED confirmation indicators. These can be used to register:
	+ PRESENT, YES (+), NO (-), ABSTAIN (X), (parliamentary voting)
	+ Numerals: 1 to 5 (multiple choice or opinion polls)
	+ Rating scale: - -, -, 0, +, ++ (audience response)

The unit shall have the following Interconnections

* Socket for pluggable microphone
* 2 m (78.7 in) cable terminated in a molded six-pole circular connector
* Six-pole circular connector for loop-through connections
* Eight-pole modular jack connector for Intercom Handset and external present and Fraud contact e.g., a fingerprint reader

The unit shall have the following Technical Specifications

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 50 x 275 x 155 mm (2.0 x 10.8 x 6.1

 in)

Flush mounted 30 x 275 x 155 mm (1.2 x 10.8 x 6.1

 in)

Weight 1.4 kg (3.1 lb)

Color top Charcoal (PH 10736) with silver (RAL

 9022) panel

Color base Charcoal (PH 10736)

The product shall be or similar to:

DCN-CON Concentus Unit

 pluggable microphone, voting

### Conference unit with channel selector

The conference unit with channel selector shall be similar to the standard conference unit, but shall include a built-in language channel selector. This shall make it suitable for conferences where more than one language is used and simultaneous interpretations are available. The channel selector shall include up and down select keys and a 2-digit display with backlighting, enabling rapid selection of the required language channel. Channel selection shall be automatically limited to the number of language channels available. The flat-panel loudspeaker shall offer superior acoustics with minimal feedback, thus increasing intelligibility. It shall be possible to fold down the loudspeaker.

The unit shall have the following Features and Benefits

* Low susceptibility to mobile phones
* Compact, attractive delegate unit
* Built-in fold-away flat-panel loudspeaker
* Five voting buttons
* Cable connections located underneath the unit
* External present and fraud contact

The unit shall have the following Controls and Indicators

* Channel selector with channel number display with back lighting and channel select keys (up/down)
* Headphone volume control on each side of the unit
* Built-in fold-away flat-panel loudspeaker, automatically muted if a microphone is on
* Microphone ‘on/off ’ or ‘request-to-speak’ button
* ‘Microphone-on’ indicator at the top of the loudspeaker
* Tri-color indicator above the microphone button:
	+ - Red microphone on indicator
		- Green ‘Request-to-speak’ confirmation indicator
		- Yellow ‘VIP’ indicator. ‘VIP’ is lit when the delegate unit is part of the notebook, which is only available when PC control software is used.
* Five voting buttons with yellow LED confirmation indicators These can be used to register:
	+ PRESENT, YES (+), NO (-), ABSTAIN (X), (parliamentary voting)
	+ Numerals: 1 to 5 (multiple choice or opinion polls)
	+ Rating scale: - -, -, 0, +, ++ (audience response)

The unit shall have the following Interconnections

* Socket for pluggable microphone
* 2 m (74.74 in) cable terminated in a molded six-pole circular connector
* Socket for external microphone or headset microphone
* Six-pole circular connector for loop-through connections
* Eight-pole modular jack connector for Intercom Handset and external present and fraud contact e.g., a fingerprint reader
* Left and right 3.5 mm headphones sockets (0.14 in) stereo jack type
* Connection for external 3.5 mm (0.14 in) microphone or headset microphone stereo jack type.

The unit shall have the following Technical Specifications

Electrical

Headphone connection

Frequency response 30 Hz – 20 kHz

Load impedance > 32 ohm

Output power 2 x 15 mW/32 ohm

Headset connection

Frequency response 30 Hz – 20 kHz

Load impedance > 32 ohm

Output power 2 x 15 mW / 32 ohm

Nominal microphone 7 mVrms

input level

Overload microphone >124 mVrms

input level

Interface data

Recommended external microphone type (or headset microphone)

Element: Electret-condenser

Polar pattern Omni directional

Operating voltage 5 Vdc

Sensitivity 62 dB at 1200 ohm

 (0 dB = 1 V/mbar at 1 kHz)

Frequency response 100 Hz to 14 kHz

Connector 3.5 mm (0.14 in) jack mono or stereo

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 50 x 275 x 155 mm (2.0 x 10.8 x 6.1

 in)

Flush mounted 30 x 275 x 155 mm (1.2 x 10.8 x 6.1

 in)

Weight 1.4 kg (3.1 lb)

Color top Charcoal (PH 10736) with silver (RAL

 9022) panel

Color base Charcoal (PH 10736)

The product shall be or similar to:

DCN-CONCS Concentus Unit with Channel Selector

 pluggable microphone, voting, channel

 selector, 2 headphone connections

### Full Function Conference Unit

The full function conference unit shall be similar to the conference unit with channel selector, but shall also include a chip card reader and a graphic display with backlighting. When a chip card is inserted into the card reader, the graphic LCD screen shall automatically displays user-related information in the language assigned to the delegate chip card. The graphic LCD screen shall have permanent backlighting, and shall be able to display characters from complex European languages or icon-based-scripts such as Chinese. Channel selection shall be automatically limited to the number of language channels available. The flat-panel loudspeaker shall offer superior acoustics with minimal feedback, so increasing intelligibility. It shall be possible to fold down the loudspeaker

The unit shall have the following Features and Benefits

* low susceptibility to mobile phones
* Compact, attractive delegate unit
* Built-in fold-away flat-panel loudspeaker
* Five voting buttons
* Cable connections located underneath the unit
* External present and fraud contact

The unit shall have the following Controls and Indicators

* Channel selector with channel number display with back lighting and channel select keys (up/down)
* Headphone volume control on each side of the unit
* Graphic LCD screen. Typical displays include:
	+ button description
	+ multi-lingual user instructions
	+ information on the number of current speakers
	+ request-to-speak information and confirmation
	+ voting results
	+ remaining/elapsed speech time
	+ public and personal messages
	+ additional user information
* Five button with LED indicators (for use in combination with the graphic LCD screen). The soft buttons can provide users with display information such as messages, conference- and microphone user-related information. Depending on the application software the five soft buttons can be used as voting buttons with confirmation indicators (yellow LEDs), enabling the user to register:
	+ PRESENT, YES(+), NO (-), ABSTAIN (X), (parliamentary
* voting)
	+ Numerals: 1 to 5 (multiple choice or opinion poll
* voting)
	+ Rating scale: - -, - 0, +, ++ (audience response)
* Identification and access control by card reader with or without PIN
* Built-in fold-away flat-panel loudspeaker, automatically muted if a microphone is on
* Microphone ‘on/off ’ or ‘request-to-speak’ button
* ‘Microphone on’ indicator at the top of the loudspeaker
* Tri-color indicator above the microphone button:
	+ - Red microphone on indicator
		- Green ‘Request-to-speak’ confirmation indicator
		- Yellow ‘VIP’ indicator. ‘VIP’ is lit when the delegate unit is part of the notebook, which is only available when PC control software is used

The unit shall have the following Interconnections

* Socket for pluggable microphone
* 2 m (78.7 in) cable terminated in a molded six-pole circular connector
* Socket for external microphone or headset microphone
* Six-pole circular connector for loop-through connections
* Eight-pole modular jack connector for Intercom Handset and external present and fraud contact e.g., a. fingerprint reader
* Left and right 3.5 mm headphones sockets (0.14 in) stereo jack type
* Connection for external 3.5 mm (0.14 in) microphone or headset microphone, stereo jack type

The unit shall have the following Technical Specifications

Electrical

Headphone connection

Frequency response 30 Hz – 20 kHz

Load impedance > 32 ohm

Output power 2 x 15 mW/32 ohm

Headset connection

Frequency response 30 Hz – 20 kHz

Load impedance > 32 ohm

Output power 2 x 15 mW / 32 ohm

Nominal microphone 7 mVrms

input level

Overload microphone >124 mVrms

input level

Interface data

Recommended external microphone type (or headset microphone)

Element: Electret-condenser

Polar pattern Omni directional

Operating voltage 5 Vdc

Sensitivity 62 dB at 1200 ohm

 (0 dB = 1 V/mbar at 1 kHz)

Frequency response 100 Hz to 14 kHz

Connector 3.5 mm (0.14 in) jack mono or stereo

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 50 x 275 x 155 mm (2.0 x 10.8 x 6.1

 in)

Flush mounted 30 x 275 x 155 mm (1.2 x 10.8 x 6.1

 in)

Weight 1.4 kg (3.1 lb)

Color top Charcoal (PH 10736) with silver (RAL

 9022) panel

Color base Charcoal (PH 10736)

The product shall be or similar to:

DCN-CONFF Concentus Unit Full Function

 pluggable microphone, voting, channel

 selector, 2 headphone connections,

 graphical display

### Conference Chairman Unit

The chairman unit shall have all the necessary facilities to enable the user to chair a conference. It shall have low susceptibility to interference from mobile phones. The conference chairman unit shall include a microphone priority button. When pressed, the priority button shall cause all currently active delegate microphones to be temporarily or permanently switched off, allowing the chairman to take control of the meeting. The chairman unit shall be able to be used to start, stop or suspend voting, cancel a request-to-speak, turn off all active microphones and recall messages for display. A graphic LCD screen with permanent backlighting shall be able to display characters from complex European languages or icon-based scripts such as Chinese. Channel selection is automatically limited to the number of language channels available. The flat-panel loudspeaker shall offer superior acoustics with minimal feedback, so increasing intelligibility. It shall be possible to fold down the loudspeaker

The unit shall have the following Features and Benefits

* Low susceptibility to mobile phones
* Compact, attractive delegate unit
* Built-in fold-away flat-panel loudspeaker
* Five voting buttons
* Cable connections located underneath the unit
* External present and fraud contact

The unit shall have the following Controls and Indicators

* Priority key which causes an optional chime tone to sound while temporarily or permanently muting all active delegate units. The chairman microphone remains active as long as the priority button is pressed.
* Channel selector with channel number display with back lighting and channel select keys (up/down)
* Headphone volume control on each side of the unit
* Graphic LCD screen. Typical displays include:
	+ button description
	+ multi-lingual user instructions
	+ information on the number of current speakers
	+ request-to-speak information and confirmation
	+ voting results
	+ remaining/elapsed speech time
	+ public and personal messages
	+ additional user information
* Five button with LED indicators (for use in combination with the graphic LCD screen). The soft buttons can provide users with display information such as messages, conference- and microphone user-related information. Depending on the application software the five soft buttons can be used as voting buttons with confirmation indicators (yellow LEDs), enabling the user to register:
	+ PRESENT, YES(+), NO (-), ABSTAIN (X), (parliamentary
* voting)
	+ Numerals: 1 to 5 (multiple choice or opinion poll
* voting)
	+ Rating scale: - -, - 0, +, ++ (audience response)
* Identification and access control by card reader with or without PIN
* Built-in fold-away flat-panel loudspeaker, automatically muted if a microphone is on
* Microphone ‘on/off ’ or ‘request-to-speak’ button
* ‘Microphone on’ indicator at the top of the loudspeaker
* Tri-color indicator above the microphone button:
	+ - Red microphone on indicator
		- Green ‘Request-to-speak’ confirmation indicator
		- Yellow ‘VIP’ indicator. ‘VIP’ is lit when the delegate unit is part of the notebook, which is only available when PC control software is used.

The unit shall have the following Interconnections

* Socket for pluggable microphone
* 2 m (78.7 in) cable terminated in a molded six-pole circular connector
* Socket for external microphone or headset microphone
* Six-pole circular connector for loop-through connections
* Eight-pole modular jack connector for Intercom Handset and external present and fraud contact e.g., fingerprint reader
* Left and right 3.5 mm (0.14 in) headphones sockets, stereo jack type
* Connection for 3.5 mm (0.14 in) external microphone or headset microphone stereo jack type

The unit shall have the following Technical Specifications

Electrical

Headphone connection

Frequency response 30 Hz – 20 kHz

Load impedance > 32 ohm

Output power 2 x 15 mW/32 ohm

Headset connection

Frequency response 30 Hz – 20 kHz

Load impedance > 32 ohm

Output power 2 x 15 mW / 32 ohm

Nominal microphone 7 mVrms

input level

Overload microphone >124 mVrms

input level

Interface data

Recommended external microphone type (or headset microphone)

Element: Electret-condenser

Polar pattern Omni directional

Operating voltage 5 Vdc

Sensitivity 62 dB at 1200 ohm

 (0 dB = 1 V/mbar at 1 kHz)

Frequency response 100 Hz to 14 kHz

Connector 3.5 mm (0.14 in) jack mono or stereo

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 50 x 275 x 155 mm (2.0 x 10.8 x 6.1

 in)

Flush mounted 30 x 275 x 155 mm (1.2 x 10.8 x 6.1

 in)

Weight 1.4 kg (3.1 lb)

Color top Charcoal (PH 10736) with silver (RAL

 9022) panel

Color base Charcoal (PH 10736)

The product shall be or similar to:

DCN-CONCM Concentus Chairman Unit

 pluggable microphone, voting, channel

 selector, 2 headphone connections,

 graphical display, priority key

### Pluggable microphone

The pluggable microphone shall be an innovative, stylish and ergonomically designed microphone with an adjustable stem, which simply plugs and fasten directly into any unit. The microphone shall have a unidirectional response for optimum performance even in noisy conditions, and shall include an indicator that is red when the microphone is on and green when the delegate unit is in the request state. The microphone shall be available with two stem lengths.

The unit shall have the following Features and Benefits

* Uni-directional microphone on adjustable stem
* Built-in plop and windshield

The unit shall have the following Controls and Indicators

* Red or green illuminator. Red indicates microphone is active, green indicates request-to-speak accepted

The unit shall have the following Interconnections

* Connector to plug and fasten the microphone

The unit shall have the following Technical Specifications

Mechanical

Mounting Plug and fasten into any units

Length

 310 mm (12.2 in)

 480 mm (18.9 in)

Weight

 100 g (0.22 lb)

 115 g (0.25 lb)

Color Silver (RAL 9022)

The product shall be or similar to:

DCN-MICS Pluggable Microphone Short stem

DCN-MICL Pluggable Microphone Long stem

### Suitcase for Conference units

This suitcase shall accommodate 10 conference units. There shall also be a special cover compartment for housing 10 microphones (standard and long).

The unit shall have the following Features and Benefits

* Rugged construction with reinforced corners
* Simplifies packing and unpacking
* Easy to carry and store

The unit shall have the following Technical Specifications

Mechanical

Mounting Mounting six-pole mini XLR connector

Dimensions 430 x 665 x 255 mm

(H x W x D) (16.90 x 26.20 x 10.00 in)

Weight 9.3 kg (20.50 lb)

Color dark gray

### Intercom Handset

The Intercom Handset shall be a lightweight, compact and robust handset with a cradle. It shall enable private 2-way conversation between conference participants. The handset shall be hard-wired to the cradle by a coiled cable, 0.5 m (19.6 in) long when coiled, and 2 m (78.7 in) uncoiled. The cable shall be terminated with a six-pole RJ45 connector for connection to conference and flush mounted units. The unit shall be easily mounted to a tabletop or wall.

The unit shall have the following Features and Benefits

* Ideal for intercom applications
* For use with all Concentus and Dual Delegate Interface
* Can be permanently mounted to wall, chair or tabletop

The unit shall have the following Interconnections

* Six-pole RJ45 socket

The unit shall have the following Technical Specifications

Mechanical

Mounting tabletop or wall-mounted using
 the 2 screw holes on the cradle

Dimensions (H x W) 53 x 210 mm (2.08 x 8.26 in)

Weight 250 g (0.55 lb)

Colorcharcoal (PH 10736)

The product shall be or similar to:

LBB 3555/00 Intercom Handset and Cradle

### Flight Case Conference Unit

The flight suitcase shall be used for storing and transportation up to 10 conference units including microphones.

The flight case shall have the following physical characteristics:

|  |
| --- |
| Dimensions (H x W x D) 430 x 665 x 255 mm  (16.9 x 26.2 x 10 in) |
| Weight 9.3 kg (20.5 lbs) |
| Finish Dark gray |

The storage suitcase shall be the DCN-FCCON or similar.

## Flush-mounted units

### Flush mount interface

The flush shall enable a number of functions to be added, making it suitable for chairmen and delegates. Such functions shall include facilities for connecting a Voting Panel, with or without a Card reader. In addition, two separate audio inputs shall be provided, each selectable for use with or without phantom supplied microphones such as condenser or dynamic types.

Both inputs shall be useable as a line inputs. Each input shall be assigned its own seat number, allowing serving two delegate positions.

The unit shall be suitable for Hand-Held Microphones or Pluggable Microphones. In addition, the unit shall provide a single connection for an Intercom Handset.

Settings shall be available to assign the interface for use as a delegate unit, a dual delegate, chairman unit, entrance/exit unit or ambient microphone. The ambient microphone is located in the conference venue, and shall automatically switch on when no other delegate unit or chairman unit microphones are active.

Two 3.5 mm (0.14 in) stereo jack sockets shall be provided for connection to headphones or to loudspeaker panel (DCN-FLSP). The loudspeaker output shall switch off when the corresponding input is switched on. The unit shall be mounted free-standing on a tabletop, mounted on a wall, or discreetly mounted into tabletops or into the arm rests of chairs etc.

The unit shall have the following Features and Benefits

* Dual Delegate mode for two microphones and two voting and card panels
* Two microphone/line inputs
* Outputs to headphones or loudspeakers
* Range of mounting options
* Use for entrance/exit registration
* Shared microphone with dual microphone control

The unit shall have the following Controls and Indicators

* Three Switches per input with the following possibilities:
	+ Microphone or line selection
	+ Asymmetrical microphone input, symmetrical microphone/ line input, or symmetrical microphone input with phantom power selection
	+ Input attenuation selection of 0, 6, 12 or 18 dB +/- 3 dB input level fine adjustment potentiometer per input Interconnection
* Two balanced audio inputs for line (0 dB) or microphone (-60 dB) sources with or without a phantom power supply. (2 x eight-pole 262° DIN-type socket)
* Remote control inputs (switches) and outputs (LEDs) matching the microphones and control panels-
* Two 3.5 mm (0.14 in) loudspeaker or headphone output connectors stereo jack socket
* 2 m (78.7 in) cable terminated with a molded six-pole circular connector
* Six-pole circular connector for loop-through system
* Switch to select the different modes of the interface: Dual delegate, Chairman, Dual delegate, one microphone, Dual delegate, muted loudspeakers, Single delegate, Entrance/Exit unit, Ambient microphone

The unit shall have the following Interconnections

* Two RJ11 connectors for Microphone Control Panel, Priority Panel, Voting Panel and Voting and Card Panel
* RJ11 connector for Intercom Handset
* Two balanced audio inputs for microphones
* Phantom power supply (2 x eight-pole 262° DIN-type socket)
* Remote control inputs (switches) and outputs (LEDs) matching
* Six-pole circular connector for loop-through system cabling
* 2 m (78.7 in) cable terminated with a molded six-pole circular connector

The unit shall have the following Technical Specifications

Mechanical

Mounting on wall, under tabletop or seat, in
 arm rest or in cable duct

Dimensions 35 x 100 x 170 mm (1 .37 x 3.93

(H x W x D) x 6.69 in) (excl. cables)

Weight 500 g (1.10 lb)

Color charcoal (PH 10736)

The product shall be or similar to:

DCN-DDI Dual Delegate Interface

### Hand-held microphone

The hand-held microphone shall be is a uni-directional, condenser microphone with built-in plop and windshield. It shall fit comfortably into the hand and is ideal for applications where the speaker is not stationary. A microphone on/off button and LED indicator lamps shall be built into the microphone housing. Two of these microphones shall be able to connect to the flush mount interface. The unit shall be available with a strait or with a coiled cable.

The unit shall have the following Features and Benefits

* Light, portable microphone
* Built-in plop and windshield
* On/off switch and LED status indicators
* 5 m (196.8 in) cable

The unit shall have the following Controls and Indicators

* Condenser microphone with built-in plop and windshield
* Microphone on/off or request-to-speak button
* ‘Microphone on’ indicator (red LED)
* ‘Request-to-speak’ confirmation indicator (green LED)

The unit shall have the following Interconnections

* cable terminated with an eight-pole 262° DIN-type plug

The unit shall have the following Technical Specifications

Mechanical

Mounting using a clamp the

 microphone may be mounted on a

 stand, wall or on a chair

Dimensions 215 x 30 mm (8.46 x 1 .18 in)

(H x W)

Cable length

 5 m

 coiled 0.4 m, un-coiled 1.4 m

Weight 350 g

Color Charcoal (PH 10736)

The product shall be or similar to:

DCN-FHH Hand-held microphone

DCN-FHH-C Hand-held microphone with coiled cable

### Microphone Connection Panel

The microphone connection panel shall connect pluggable microphones to one of the audio inputs to the flush mount interface.

The microphone connection panel shall have an output, which controls the output level of the channel selector. This means that when the microphone is active the output level of the channel selector shall be reduced to prevent acoustic feedback.

The unit shall have the following Features and Benefits

* IF design award
* Channel selector output level control.

The unit shall have the following Interconnections

* 2 m cable (78.7 in) terminated with eight-pole 2620 DIN-type plug.
* Connector to control output level reduction of the channel selector (AMP173977-2 socket).

The unit shall have the following Technical Specifications

Mechanical

Mounting In combination with couplings and

 end caps in any surrounding

Dimensions 40 x 50 x 50 mm

(H x W x D)

Weight 10 g

Color DCN-FMIC, silver (RAL 9022),

 DCN-FMIC-D, dark (graphite gray).

The product shall be or similar to:

DCN-FMIC and DCN-FMIC-D Microphone Connection Panel

### Microphone Control Panel

The Microphone Control Panel shall be connected to the flush mount interface via one of the RJ11 control inputs.

The unit shall have the following Features and Benefits

* IF design award
* Microphone on/off button
* Red Microphone on indicator
* Green request indicator
* Orange VIP indicator

The unit shall have the following Controls and Indicators

* One microphone control button
* Three color illuminated ring around the microphone button The illuminated ring around the button can operate in several states:

Red.

Microphone is active

Flashing red\*

Last minute of speech time is active.

Green

The delegate is listed in the request list.

Flashing green

The delegate is the first in the request list and the next one to get the floor.

Yellow

The delegate is part of the Notebook and can control its microphone without interaction of the operator.

The unit shall have the following Interconnections

* Two RJ11 connectors, one for connection to flush mount Interface and one for loop through.

The unit shall have the following Technical Specifications

Mechanical

Mounting Click-to-fit in a metal panel with a

 thickness of 2 mm or in combination

 with couplings and end caps in any

 surrounding

Dimensions 40 x 50 x 50 mm

(H x W x D)

Weight 200 g

Color DCN-FMICB, silver (RAL 9022)

 DCN-FMICB-D, dark (graphite gray)

The product shall be or similar to:

DCN-FMICB and DCN-FMICB-D Microphone Control Panel

### Priority Panel

The Priority Panel shall be connected to the flush mount interface to one of the RJ11 control inputs.

The unit shall have the following Features and Benefits

* IF design award
* Priority on/off button
* Red Microphone on indicator

The unit shall have the following Controls and Indicators

* One microphone control button
* Red color illuminated ring around the microphone button

The unit shall have the following Interconnections

* two RJ11 connectors one for connection to DCN-DDI Dual Delegate Interface and one for loop through

The unit shall have the following Technical Specifications

Mechanical

Mounting Click-to-fit in a metal panel with a

 thickness of 2 mm or in combination

 with couplings and end caps in any

 surrounding

Dimensions 40 x 50 x 50 mm

(H x W x D)

Weight 200 g

ColorDCN-FPRIOB, silver (RAL 9022)

 DCN-FPRIOB-D, dark (graphite gray)

The product shall be or similar to:

DCN-FPRIOB and DCN-FPRIOB-D Priority Panel

### Loudspeaker Panel

This loudspeaker panel shall be intended for use in combination with the flush mount interface. It shall consist of a loudspeaker behind a round grille. Also shall be included is a 2 m cable, terminated with a 3.5 mm stereo jack plug.

The unit shall have the following Features and Benefits

* IF design award
* Angled for better intelligibility

The unit shall have the following Interconnections

* 2 m (78.7in) cable terminated with 3.5mm (0.14 in) stereo jack.

The unit shall have the following Technical Specifications

Mechanical

Mounting Click-to-fit in a metal panel with a

 thickness of 2 mm or in combination

 with couplings and end caps in any

 surrounding

Dimensions 40 x 100 x 100 mm

(H x W x D)

Weight 203 g

Color DCN-FLSP, silver (RAL 9022)

 DCN-FLSP-D, dark (graphite gray)

The product shall be or similar to:

DCN-FLSP and DCN-FLSP-D Loudspeaker Panel

### Voting Panel

The unit shall allow attendance registration and six types of voting: parliamentary, audience response, multiple choice, opinion poll, rating and for/against.

The yellow LED confirmation indicators shall be used to prompt the user to indicate presence and to vote and to confirm registration of what is voted.

The unit shall have an external present contact, which can be used for an external present or fraud switch. Fingerprint readers are typical for the external present contact use.

The blue LED unit active indicator shall show that the system is in normal operation.

Provision shall be made so the unit can be click-to-fit mounted in a metal panel with a thickness of 2 mm or can be mounted in combination with couplings and end caps in any surface.

The combination of the voting unit with the end caps shall be very stylish, and shall fit in both modern and traditionally designed meeting rooms.

The unit shall be connected to the flush mount interface.

The unit shall have the following Features and Benefits

* IF design award
* External Present contact
* LED vote confirmation indicators
* LED unit active indicator

The unit shall have the following Controls and Indicators

* Five voting buttons with yellow confirmation indicators to register: Present, yes (+), no (-) and abstain (x) (attendance registration, parliamentary voting and for/against) Numerals: 1 to 5 (multiple choice or opinion polls, rating) Rating scale: - -, -, 0, +, ++ (audience response).
* One unit active indicator. The blue LED indicates that the system is in normal operation.
* One de-init/init button (rear side of the unit).

The unit shall have the following Interconnections

* Two RJ11 connectors, one for connection to DCN-DDI Dual Delegate Interface and one for loop through.
* Connector for an external present contact (AMP173977-3 socket).

The unit shall have the following Technical Specifications

Mechanical

Mounting Click-to-fit in a metal panel with a

 thickness of 2 mm or in combination

 with couplings and end caps in any

 surrounding

Dimensions 40 x 100 x 82 mm

(H x W x D)

Weight 81 g

ColorDCN-FV, silver (RAL 9022)

 DCN-FV-D, dark (graphite gray)

The product shall be or similar to:

DCN-FV and DCN-FV-D Voting Panel

### Voting and Card Panel

The Voting and Card Panel shall have the same functionality as the voting panel and shall be extended with an ID card reader.

The ID card reader shall enable identification of delegates to the conference system as well as providing a convenient facility that shall ensure only authorized delegates can participate in voting sessions or general conference proceedings such as microphone use.

The Yellow unit active indicator shall indicate the validity of the ID card.

The unit shall be connected to the flush mount interface.

The unit shall have the following Features and Benefits

* IF design award
* Identification with ID card
* External Present contact
* LED vote confirmation indicators
* LED unit active indicator

The unit shall have the following Controls and Indicators

* Five voting buttons with yellow confirmation indicators to register: Present, yes (+), no (-) and abstain (x) (attendance registration, parliamentary voting and for/against) Numerals: 1 to 5 (multiple choice or opinion polls, rating) Rating scale: - -, -, 0, +, ++ (audience response).
* One unit active indicator. The blue LED indicates that the system is in normal operation. The yellow LED indicates the validity of the ID card.
* One de-init/init button (rear side of the unit).

The unit shall have the following Interconnections

* Two RJ11 connectors, one for connection to DCN-DDI Dual Delegate Interface and one for loop through.
* Connector for an external present contact (AMP173977-3 socket).

The unit shall have the following Technical Specifications

Mechanical

Mounting Click-to-fit in a metal panel with a

 thickness of 2 mm or in combination

 with couplings and end caps in any

 surrounding

Dimensions 40 x 100 x 82 mm

(H x W x D)

Weight 104 g

ColorDCN-FVCRD, silver (RAL 9022)

 DCN-FVCRD-D, dark (graphite gray)

The product shall be or similar to:

DCN-FVCRD and DCN-FVCRD-D Voting and Card Panel

### Blank Panel

The blank panel shall neatly closes off a slot in a flush mounted unit that is not in use. Provisions shall be taken so the panel can be removed if a future expansion requires the available slot.

The unit shall have the following Features and Benefits

* IF design award

The unit shall have the following Technical Specifications

Mechanical

Mounting Click-to-fit in a metal panel with a

 thickness of 2 mm or in combination

 with couplings and end caps in any

 surrounding

Dimensions 40 x 100 mm

(H x W)

Weight 17 g

ColorDCN-FBP, silver (RAL 9022)

 DCN-FBP-D, dark (graphite gray)

The product shall be or similar to:

DCN-FBP and DCN-FBP-D Set of 10 Blank Panels

### End Caps

Matching end caps shall give a finishing touch to the flush mounted devices. Two end caps shall be needed per flush mount position.

The unit shall have the following Features and Benefits

* IF design award

The unit shall have the following Technical Specifications

Mechanical

Mounting Click-to-fit in DCN-FCOUP couplings

Dimensions 40 x 100 x 82 mm

(H x W)

Weight 2 g

ColorDCN-FEC, silver (RAL 9022)

 DCN-FEC-D, dark (graphite gray)

The product shall be or similar to:

DCN-FEC and DCN-FEC-D Set of 50 End Caps

### Couplings

The couplings shall be used to flush mount and connect flush mount panels and ends caps.

The unit shall have the following Technical Specifications

Mechanical

Mounting screw in cut out in table top

Dimensions 40 x 100 x 82 mm

(H x W)

Weight 12 g

Color Black

The product shall be or similar to:

DCN-FCOUP Set of 50 couplings

### Flush Positioning Tools

The flush mount elements shall be positioned easily by using flush positioning tools.

The unit shall have the following Technical Specifications

Mechanical

Weight 31 g

Color Charcoal (PH 10736)

The product shall be or similar to:

DCN-FPT Flush Positioning Tool

### Flush Extraction Tools

The flush mount elements shall be removed easily by using flush extraction tools.

The unit shall have the following Technical Specifications

Mechanical

Weight 26 g

Color Charcoal (PH 10736)

The product shall be or similar to:

DCN-FET Flush Extraction Tools

### Intercom Handset

The Intercom Handset shall be a lightweight, compact and robust handset with a cradle. It shall enable private 2-way conversation between conference participants. The handset shall be hard-wired to the cradle by a coiled cable, 0.5 m (19.6 in) long when coiled, and 2 m (78.7 in) uncoiled. The cable shall be terminated with a six-pole RJ45 connector for connection to conference and flush mounted units. The unit shall be easily mounted to a tabletop or wall.

The unit shall have the following Features and Benefits

* Ideal for intercom applications
* For use with all Concentus and Dual Delegate Interface
* Can be permanently mounted to wall, chair or tabletop

The unit shall have the following Interconnections

* Six-pole RJ45 socket

The unit shall have the following Technical Specifications

Mechanical

Mounting tabletop or wall-mounted using
 the 2 screw holes on the cradle

Dimensions (H x W) 53 x 210 mm (2.08 x 8.26 in)

Weight 250 g (0.55 lb)

Colorcharcoal (PH 10736)

The product shall be or similar to:

LBB 3555/00 Intercom Handset and Cradle

### Table Top Housings

This housing shall enable the flush mounted panels to be used in tabletop applications. The panel shall simply click into place in the housing. It shall be for use with the voting unit, but it can also be used for other flush mounted unit such as the channel selector unit.

Provision shall be made so for permanent applications, the housing can be fixed to the tabletop.

The unit shall have the following Technical Specifications

Mechanical

Mounting free-standing or fixed on the table top

Dimensions 40 x 100 x 82 mm

(H x W)

Weight 243 g

Color Charcoal (PH 10736)

The product shall be or similar to:

DCN-TTH Set of 10 Table Top Housings

### Voting Unit

The unit shall allow attendance registration and six types of voting: parliamentary, audience response, multiple choice, opinion poll, rating and for/against.

The yellow LED confirmation indicators shall prompt the user to indicate presence and to vote and to confirm registration of what is voted.

The blue LED unit active indicator shall show that the system is in normal operation. The blue LED shall flash when the unit detects a communication fault.

The combination of the voting unit with the end caps shall form a very stylish design, which shall fit in both modern and traditional meeting rooms.

The direct connection to the network cable shall results into an economic solution for positions, which only require voting facilities.

The unit shall have the following Features and Benefits

* IF design award
* Allows parliamentary voting, numerals and rating scale
* LED vote confirmation indicators
* LED unit active indicator
* Easily mountable
* Stylish design, which fits both modern and traditional meeting rooms
* Direct loop through connection to the network
* Economic solution for positions, which only require voting facilities.

The unit shall have the following Controls and Indicators

* Five voting buttons with yellow confirmation indicators to register: Present, yes (+), no (-) and abstain (x) (attendance registration, parliamentary voting and for/against) Numerals: 1 to 5 (multiple choice or opinion polls, rating) Rating scale: - -, -, 0, +, ++ (audience response)
* One unit active indicator. The blue LED indicates that the system is in normal operation. The blue LED flashes when the unit detects a communication fault.
* One de-init/init button (rear side of the unit)

The unit shall have the following Interconnections

* 1 m (39.4 in) cable terminated with a molded six-pole male circular connector
* 1 m (39.4 in) cable terminated with a molded six-pole female circular connector for loop-through connection to the network

The unit shall have the following Technical Specifications

Mechanical

Mounting Click-to-fit in a metal panel with a

 thickness of 2 mm or in combination

 couplings and end caps in any

 surrounding

Dimensions 40 x 100 x 82 mm

(H x W x D)

Weight 250 g

Color DCN-FVU, silver (RAL 9022)

 DCN-FVU-D, dark (graphite gray)

The product shall be or similar to:

DCN-FVU and DCN-FVU-D Voting Unit

### Voting Unit Chinese

The unit shall be used for attendance registration, parliamentary voting and for/against voting. It shall be provided with colored voting buttons and Chinese text. The texts shall be: present, yes, no and abstain and the colors shall be respectively: white, green, red and yellow. The yellow LED confirmation indicators shall be used to prompt the user to indicate presence and to vote and to confirm registration of what is voted.

The blue LED unit active indicator shall show that the system is in normal operation. The blue LED shall flash when the unit detects a communication fault.

The combination of the voting unit with the end caps shall form a very stylish design, which shall fit in both modern and traditional meeting rooms.

The direct connection to the network cable shall be an economic solution for positions that only require voting facilities.

The unit shall have the following Features and Benefits

* IF design award
* Colored voting buttons
* Chinese text
* LED unit active indicator
* Stylish design, which fits both modern and traditional meeting rooms
* Direct loop through connection to the network
* LED vote confirmation indicators
* Allows parliamentary voting
* Economic solution for positions that only require voting facilities.

The unit shall have the following Controls and Indicators

* Four voting buttons with yellow confirmation indicators to register: present, yes, no and abstain
* One unit active indicator. The blue LED indicates that the system is in normal operation. The blue flashes when the unit detects a communication fault.
* One de-init/init button (rear side of the unit)

The unit shall have the following Interconnections

* 1 m (39.4 in) cable terminated with a molded six-pole male circular connector
* 1 m (39.4 in) cable terminated with a molded six-pole female circular connector for loop-through connection to the network

The unit shall have the following Technical Specifications

Mechanical

Mounting Click-to-fit in a metal panel with a

 thickness of 2 mm or in combination

 couplings and end caps in any

 surrounding

Dimensions 40 x 100 x 82 mm

(H x W x D)

Weight 250 g

Color DCN-FVU-CN, silver (RAL 9022)

 DCN-FVU-CN-D, dark (graphite gray)

The product shall be or similar to:

DCN-FVU-CN and DCN-FVU-CN-D Voting Unit Chinese

## Wireless discussion units

### Wireless Discussion Unit

Wireless discussion unit for use as delegate or chairman unit.

The Wireless Discussion Unit shall offer the following features and benefits:

* It can be used as delegate or chairman unit. The unit has easy replaceable microphone control buttons to convert from delegate to chairman unit.
* Main functions are to speak when the microphone is active or to listen to a speaker via the built-in loudspeaker or via connected headphones.
* Microphone activity is operator controlled or manually by the delegate when the microphone control button is pressed. Depending on system settings, the delegate is put on the request-to-speak-list when the maximum of active microphones is reached.
* When used in chairman mode, the unit has an extra main function by means of the priority button.
* With the priority button the chairman can temporarily deactivate the microphones of all delegates and activate his own microphone. Depending on system settings a chime-tone can be played when the button is pressed and the speakers- and request-to-speak list can be erased.
* The unit shall have two headphone connections, one on either side of the unit.
* The unit shall have headphone volume control.
* Pluggable microphone with short or long stem, respectively 310 mm, 480 mm (12.2 in, 18.9 in).
* Easy removable and rechargeable Lithium-Ion battery pack.
* Easy place-able rims available in a range of colors to match interior
* It operates in the 2.4 GHz (license free) band with high signal-to-noise ratio.
* It is digital protected against interference from other external wireless equipment and against unauthorized eavesdropping.
* When the automatic microphone-off function is enabled, the microphone will be switched off 30 seconds after the delegate has stopped speaking.
* The unit shall search automatically for its own wireless network.
* The unit shall switch-off automatically when it is out of system range for more than 15 minutes.
* The headphones and built-in loudspeaker have volume mute function to prevent acoustic feedback when microphone is on.

The unit shall have the following controls and indicators:

* Microphone button with illuminated ring; red (active) or green (request-to-speak accepted)
* Priority button (available when used as chairman unit)
* Headphone volume control buttons

LED indicators on rear:

* Out-of-range
* Battery low

Controls under base:

* Mode select switches.

The unit shall have the following Interconnection:

* socket to connect short stem (310 mm (12.2 in)) or long stem (480 mm (18.9 in)) pluggable microphone
* 2 x 3.5 mm (0.14 in) headphone sockets (stereo jack type)
* DC power input (accessible when battery pack is removed for external power supply)

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 160 mm (2.4 x 7.5 x 6.3 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 700 g (1.54 lb) with battery

Color top Silver (RAL 9022)

Color base Light Gray (RAL 000 7500) or Charcoal (PH 10736)

The product shall be or similar to:

Bosch DCN-WD-D Wireless Discussion Unit

### Wireless Discussion Unit with Channel Selector

Wireless discussion unit for use as delegate or chairman unit.

The unit shall offer the following features and benefits:

* It can be used as delegate or chairman unit. The unit has easy replaceable microphone control buttons to convert from delegate to chairman unit.
* Main functions are to speak when the microphone is active or to listen to a speaker via the built-in loudspeaker or via connected headphones.
* Microphone activity is operator controlled or manually by the delegate when the microphone control button is pressed. Depending on system settings, the delegate is put on the request-to-speak-list when the maximum of active microphones is reached.
* When used in chairman mode, the unit has an extra main function by means of the priority button.
* With the priority button the chairman can temporarily deactivate the microphones of all delegates and activate his own microphone. Depending on system settings a chime-tone can be played when the button is pressed and the speakers- and request-to-speak list can be erased.
* The unit shall have a built-in channel selector that makes it suitable for discussions in which more than one language is used and simultaneous interpretations are available.
* The channel selector shall include two up and down channel select buttons and a display showing the number and the abbreviation of the languages, enabling rapid selection of the required language channel.
* The unit shall have two headphone connections, one on either side of the unit.
* The unit shall have headphone volume control.
* Pluggable microphone with short or long stem, respectively 310 mm, 480 mm (12.2 in, 18.9 in).
* Easy removable and rechargeable Lithium-Ion battery pack.
* Easy place-able rims available in a range of colors to match interior
* It operates in the 2.4 GHz (license free) band with high signal-to-noise ratio.
* It is digital protected against interference from other external wireless equipment and against unauthorized eavesdropping.
* When the automatic microphone-off function is enabled, the microphone will be switched off 30 seconds after the delegate has stopped speaking.
* The unit shall search automatically for its own wireless network.
* The unit shall switch-off automatically when it is out of system range for more than 15 minutes.
* The headphones and built-in loudspeaker have volume mute function to prevent acoustic feedback when microphone is on.

The unit shall have the following controls and indicators:

* Microphone button with illuminated ring; red (active) or green (request-to-speak accepted)
* Priority button (available when used as chairman unit)
* Headphone volume control buttons
* Channel Selector up / down control buttons
* Alphanumeric display for language channel selection with number and abbreviated channel name

LED indicators on rear:

* Out-of-range
* Battery low

Controls under base:

* Mode select switches.

The unit shall have the following Interconnections:

* socket to connect short stem (310 mm (12.2 in)) or long stem (480 mm (18.9 in)) pluggable microphone
* 2 x 3.5 mm (0.14 in) headphone sockets (stereo jack type)
* DC power input (accessible when battery pack is removed for external power supply)

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 160 mm (2.4 x 7.5 x 6.3 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 710 g (1.57 lb) with battery

Color top Silver (RAL 9022)

Color base Light Gray (RAL 000 7500) or Charcoal (PH 10736)

The product shall be or similar to:

Bosch DCN-WDCS-D Wireless Discussion Unit with Channel

### Wireless Dual Discussion Unit

Wireless discussion unit for use as delegate, dual-delegate or chairman unit.

The unit shall offer the following features and benefits:

* It can be used as delegate, dual delegate or chairman unit. The unit has easy replaceable microphone control buttons to convert from delegate, to dual-delegate, or to chairman unit.
* Main functions are to speak when the microphone is active or to listen to a speaker via the built-in loudspeaker or via connected headphones.
* Microphone activity is operator controlled or manually by the delegate when the microphone control button is pressed. Depending on system settings, the delegate is put on the request-to-speak-list when the maximum of active microphones is reached.
* When used in chairman mode, the unit has an extra main function by means of the priority button.
* With the priority button the chairman can temporarily deactivate the microphones of all delegates and activate his own microphone. Depending on system settings a chime-tone can be played when the button is pressed and the speakers- and request-to-speak list can be erased.
* When used in dual-delegate mode, the system will recognize that two delegates are sharing the unit. One delegates uses the left microphone button, the other uses the right microphone button.
* When used in single delegate with auxiliary mode, the delegate can use the left but to activate auxiliary and the right button for microphone control.
* The unit shall have two headphone connections, one for each delegate individually.
* The unit shall have two headphone volume controls, one for each delegate individually.
* Pluggable microphone with short or long stem, respectively 310 mm, 480 mm (12.2 in, 18.9 in).
* Easy removable and rechargeable Lithium-Ion battery pack.
* Easy place-able rims available in a range of colors to match interior
* It operates in the 2.4 GHz (license free) band with high signal-to-noise ratio.
* It is digital protected against interference from other external wireless equipment and against unauthorized eavesdropping.
* When the automatic microphone-off function is enabled, the microphone will be switched off 30 seconds after the delegate has stopped speaking.
* The unit shall search automatically for its own wireless network.
* The unit shall switch-off automatically when it is out of system range for more than 15 minutes.
* The headphones and built-in loudspeaker have volume mute function to prevent acoustic feedback when microphone is on.

The unit shall have the following controls and indicators:

* Microphone button with illuminated ring; red (active) or green (request-to-speak accepted)
* Priority button (available when used as chairman unit)
* Two individual sets of headphone volume control buttons

LED indicators on rear:

* Out-of-range
* Battery low

Controls under base:

* Mode select switches

The unit shall have the following Interconnections:

* socket to connect short stem (310 mm (12.2 in)) or long stem (480 mm (18.9 in)) pluggable microphone
* 2 x 3.5 mm (0.14 in) headphone sockets (stereo jack type)
* DC power input (accessible when battery pack is removed for external power supply)

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 160 mm (2.4 x 7.5 x 6.3 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 715 g (1.57 lb) with battery

Color top Silver (RAL 9022)

Color base Light Gray (RAL 000 7500) or Charcoal (PH 10736)

The product shall be or similar to:

Bosch DCN-WDD-D Wireless Dual Discussion Unit

### Wireless Discussion Unit with Dual Channel Selector

Wireless discussion unit for use as delegate, dual delegate or chairman unit.

The unit shall offer the following features and benefits:

* It can be used as delegate, dual delegate or chairman unit. The unit has easy replaceable microphone control buttons to convert from delegate to chairman unit.
* Main functions are to speak when the microphone is active or to listen to a speaker via the built-in loudspeaker or via connected headphones.
* Microphone activity is operator controlled or manually by the delegate when the microphone control button is pressed. Depending on system settings, the delegate is put on the request-to-speak-list when the maximum of active microphones is reached.
* When used in chairman mode, the unit has an extra main function by means of the priority button.
* With the priority button the chairman can temporarily deactivate the microphones of all delegates and activate his own microphone. Depending on system settings a chime-tone can be played when the button is pressed and the speakers- and request-to-speak list can be erased.
* When used in dual-delegate mode, the system will recognize that two delegates are sharing the unit. One delegates uses the left microphone button, the other uses the right microphone button.
* When used in single delegate with auxiliary mode, the delegate can use the left but to activate auxiliary and the right button for microphone control.
* The unit shall have two built-in channel selectors that makes it suitable, to serve two delegates, for discussions in which more than one language is used and simultaneous interpretations are available.
* Both channel selectors shall include two up and down channel select buttons and a display showing the number and the abbreviation of the languages, enabling rapid selection of the required language channel.
* The unit shall have two headphone connections, one for each delegate individually.
* The unit shall have two headphone volume controls, one for each delegate individually.
* Pluggable microphone with short or long stem, respectively 310 mm, 480 mm (12.2 in, 18.9 in).
* Easy removable and rechargeable Lithium-Ion battery pack.
* Easy place-able rims available in a range of colors to match interior
* It operates in the 2.4 GHz (license free) band with high signal-to-noise ratio.
* It is digital protected against interference from other external wireless equipment and against unauthorized eavesdropping.
* When the automatic microphone-off function is enabled, the microphone will be switched off 30 seconds after the delegate has stopped speaking.
* The unit shall search automatically for its own wireless network.
* The unit shall switch-off automatically when it is out of system range for more than 15 minutes.
* The headphones and built-in loudspeaker have volume mute function to prevent acoustic feedback when microphone is on.

The unit shall have the following controls and indicators:

* Microphone button with illuminated ring; red (active) or green (request-to-speak accepted)
* Priority button (available when used as chairman unit)
* Two individual sets of headphone volume control buttons
* Two individual sets of Channel Selector up / down control buttons
* Two alphanumeric displays for language channel selection with number and abbreviated channel name

LED indicators on rear:

* Out-of-range
* Battery low

Controls under base:

* Mode select switches.

The unit shall have the following Interconnections:

* socket to connect short stem (310 mm (12.2 in)) or long stem (480 mm (18.9 in)) pluggable microphone
* 2 x 3.5 mm (0.14 in) headphone sockets (stereo jack type)
* DC power input (accessible when battery pack is removed for external power supply)

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 160 mm (2.4 x 7.5 x 6.3 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 730 g (1.61 lb) with battery

Color top Silver (RAL 9022)

Color base Light Gray (RAL 000 7500) or Charcoal (PH 10736)

The product shall be or similar to:

Bosch DCN-WDDCS-D Wireless Discussion Unit with Dual Channel Selector

### Wireless Discussion Unit with Voting

Wireless discussion unit for use as delegate or chairman unit.

The unit shall offer the following features and benefits:

* It can be used as delegate or chairman unit. The unit has easy replaceable microphone control buttons to convert from delegate to chairman unit.
* The unit shall have five voting buttons with illuminated confirmation ring around the buttons.
* Main functions are to speak when the microphone is active or to listen to a speaker via the built-in loudspeaker or via connected headphones.
* Microphone activity is operator controlled or manually by the delegate when the microphone control button is pressed. Depending on system settings, the delegate is put on the request-to-speak-list when the maximum of active microphones is reached.
* When used in chairman mode, the unit has an extra main function by means of the priority button.
* With the priority button the chairman can temporarily deactivate the microphones of all delegates and activate his own microphone. Depending on system settings a chime-tone can be played when the button is pressed and the speakers- and request-to-speak list can be erased.
* The unit shall have two headphone connections, one on either side of the unit.
* The unit shall have headphone volume control.
* Pluggable microphone with short or long stem, respectively 310 mm, 480 mm (12.2 in, 18.9 in).
* Easy removable and rechargeable Lithium-Ion battery pack.
* Easy place-able rims available in a range of colors to match interior
* It operates in the 2.4 GHz (license free) band with high signal-to-noise ratio.
* It is digital protected against interference from other external wireless equipment and against unauthorized eavesdropping.
* When the automatic microphone-off function is enabled, the microphone will be switched off 30 seconds after the delegate has stopped speaking.
* The unit shall search automatically for its own wireless network.
* The unit shall switch-off automatically when it is out of system range for more than 15 minutes.
* The headphones and built-in loudspeaker have volume mute function to prevent acoustic feedback when microphone is on.

The unit shall have the following controls and indicators:

* Microphone button with illuminated ring; red (active) or green (request-to-speak accepted)
* Priority button (available when used as chairman unit)
* Five voting buttons with illuminated confirmation ring around the buttons
* Presence confirmed indication LED (for Voting)
* Headphone volume control buttons

LED indicators on rear:

* Out-of-range
* Battery low

Controls under base:

* Mode select switches.

The unit shall have the following interconnections:

* socket to connect short stem (310 mm (12.2 in)) or long stem (480 mm (18.9 in)) pluggable microphone
* 2 x 3.5 mm (0.14 in) headphone sockets (stereo jack type)
* DC power input (accessible when battery pack is removed for external power supply)

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 160 mm (2.4 x 7.5 x 6.3 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 720 g (1.58 lb) with battery

Color top Silver (RAL 9022)

Color base Light Gray (RAL 000 7500) or Charcoal (PH 10736)

The product shall be or similar to:

Bosch DCN-WDV-D Wireless Discussion Unit with Voting

### Wireless Discussion Unit with Voting and Channels Selector

Wireless discussion unit for use as delegate or chairman unit.

The unit shall offer the following features and benefits:

* It can be used as delegate or chairman unit. The unit has easy replaceable microphone control buttons to convert from delegate to chairman unit.
* The unit shall have five voting buttons with illuminated confirmation ring around the buttons.
* Main functions are to speak when the microphone is active or to listen to a speaker via the built-in loudspeaker or via connected headphones.
* Microphone activity is operator controlled or manually by the delegate when the microphone control button is pressed. Depending on system settings, the delegate is put on the request-to-speak-list when the maximum of active microphones is reached.
* When used in chairman mode, the unit has an extra main function by means of the priority button.
* With the priority button the chairman can temporarily deactivate the microphones of all delegates and activate his own microphone. Depending on system settings a chime-tone can be played when the button is pressed and the speakers- and request-to-speak list can be erased.
* The unit shall have a built-in channel selector that makes it suitable for discussions in which more than one language is used and simultaneous interpretations are available.
* The channel selector shall include two up and down channel select buttons and a display showing the number and the abbreviation of the languages, enabling rapid selection of the required language channel.
* The unit shall have two headphone connections, one on either side of the unit.
* The unit shall have headphone volume control.
* Pluggable microphone with short or long stem, respectively 310 mm, 480 mm (12.2 in, 18.9 in).
* Easy removable and rechargeable Lithium-Ion battery pack.
* Easy place-able rims available in a range of colors to match interior
* It operates in the 2.4 GHz (license free) band with high signal-to-noise ratio.
* It is digital protected against interference from other external wireless equipment and against unauthorized eavesdropping.
* When the automatic microphone-off function is enabled, the microphone will be switched off 30 seconds after the delegate has stopped speaking.
* The unit shall search automatically for its own wireless network.
* The unit shall switch-off automatically when it is out of system range for more than 15 minutes.
* The headphones and built-in loudspeaker have volume mute function to prevent acoustic feedback when microphone is on.

The unit shall have the following controls and indicators:

* Microphone button with illuminated ring; red (active) or green (request-to-speak accepted)
* Priority button (available when used as chairman unit)
* Five voting buttons with illuminated confirmation ring around the buttons
* Presence confirmed indication LED (for Voting)
* Headphone volume control buttons
* Channel Selector up / down control buttons
* Alphanumeric display for language channel selection with number and abbreviated channel name

LED indicators on rear:

* Out-of-range
* Battery low

Controls under base:

* Mode select switches.

The units shall have the following interconnection facilities:

* socket to connect short stem (310 mm (12.2 in)) or long stem (480 mm (18.9 in)) pluggable microphone
* 2 x 3.5 mm (0.14 in) headphone sockets (stereo jack type)
* DC power input (accessible when battery pack is removed for external power supply)

The unit shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Tabletop (portable or fixed mounting)

 and flush mounting

Dimensions (H x W x D) (without microphone)

Tabletop 61 x 190 x 160 mm (2.4 x 7.5 x 6.3 in)

Flush mounted 6 x 190 x 120 mm (0.2 x 7.5 x 4.7 in)

Weight 735 g (1.62 lb) with battery

Color top Silver (RAL 9022)

Color base Light Gray (RAL 000 7500) or Charcoal (PH 10736)

The product shall be or similar to:

Bosch DCN-WDVCS-D Wireless Discussion Unit with voting and Channel Selector

### Short Pluggable Pluggable microphone

The pluggable microphone shall be an innovative, stylish and ergonomically designed microphone with an adjustable stem, which simply plugs and fasten directly into any unit. The microphone shall have a unidirectional response for optimum performance even in noisy conditions, and shall include an indicator that is red when the microphone is on and green when the delegate unit is in the request state. The microphone shall be available with two stem lengths.

The unit shall have the following Features and Benefits

* Uni-directional microphone on adjustable stem
* Built-in plop and windshield

The unit shall have the following Controls and Indicators

* Red or green illuminator. Red indicates microphone is active, green indicates request-to-speak accepted

The unit shall have the following Interconnections

* Connector to plug and fasten the microphone

The unit shall have the following Technical Specifications

Mechanical

Mounting Plug and fasten into any units

Length

 310 mm (12.2 in)

 480 mm (18.9 in)

Weight

 100 g (0.22 lb)

 115 g (0.25 lb)

Color Silver (RAL 9022)

The product shall be or similar to:

DCN-MICS Pluggable Microphone Short stem

DCN-MICL Pluggable Microphone Long stem

### Rims for Discussion Units

A rim shall complete the discussion units. A variety of rims with different finishes shall be are available to allow matching with any interior.

The unit shall have the following Technical Specifications

Mechanical

Mounting Click and fit on any discussion unit

Color

 Silver (RAL 9022) high gloss

 Silver (RAL 9022)

 Charcoal (PH 10736)

 High gloss metal

 Semi gloss metal

The product shall be or similar to:

DCN-DISR-SRH Set of 10 rims for Discussion unit

 Silver, High gloss

DCN-DISR-SR Set of 10 rims for Discussion unit

 Silver

DCN-DISR-D Set of 10 rims for Discussion unit

 Dark

DCN-DISRM-H Set of 10 rims for Discussion unit

 Metal, High gloss

DCN-DISRM-S Set of 10 rims for Discussion unit

 Metal, Semi gloss

### Buttons for Chairman Discussion Unit

The buttons for Chairman Discussion Units shall replace the single microphone button on a Discussion unit when used in chairman mode. These buttons shall also be useable for the Discussion unit in Auxiliary control mode

The unit shall have the following Technical Specifications

Mechanical

Mounting Click and fit on any Discussion unit

Color Silver (RAL 9022)

The product shall be or similar to:

DCN-DISBCM 10 sets of buttons for Chairman Discussion unit

### Buttons for Dual Use Discussion Unit

Buttons for Dual Use Discussion Units shall replace the single microphone button on a discussion unit when used in dual delegate mode.

The unit shall have the following Technical Specifications

Mechanical

Mounting Click and fit on any Discussion unit

Color Silver (RAL 9022)

The product shall be or similar to:

DCN-DISBDD 10 sets of buttons for Dual use Discussion unit

###  Battery Pack for Wireless Discussion Unit

The lithium-ion battery is the power source for the wireless discussion units. The unit shall have the following characteristics:

* It allows up to 20 hours typical use from a full charge, with listen to speech ratio of 80/20.
* It shall be fully charged from empty in 3 hours.
* It shall have lithium-ion cells to avoid charge degradation.
* It shall provide maximum flexibility for scheduling recharges (no need to fully discharge batteries before recharging).
* It shall have a built-in microprocessor to control charging current and prevent overloading.

The unit shall have the following Controls and Indicators:

* push-to-test button and 5 charge capacity LEDs, to test remaining capacity

The unit shall have the following Technical Specifications

Electrical

Output Voltage 7.2VDC

Capacity 4800 mAh

Output power 2 x 15 mW/32 ohm

Mechanical

Dimensions (Height x Width x Depth) = 61.5 x 136 x 22 mm (2.4 x 5.5 x 0,9 in)

Weight 215 g (0.47 lb)

Color Charcoal (PH 10736)

The product shall be or similar to:

Bosch DCN-WLIION-D BatteryPack

### Power Adaptor for Wireless Discussion Unit

The power supply enables wireless discussion units to be used without a battery.

The unit shall have the following Technical Specifications

Electrical

Input Voltage 100-240 VAC (50 – 60 Hz), 150mA

Output Voltage 9VDC (500mA)

Mechanical

Dimensions (Height x Width x Depth) = 65.5 x 57 x 28 mm (2.56 x 2.24 x 1.1 in)

Weight 100 g (0.22 lb)

The power product shall or similar to:

DCN-WPS Power Supply for Wireless Discussion unit

### Wireless Battery Charger

The charger is used to charge batteries of wireless discussion units.

The unit shall offer the following features and benefits:

* Simultaneous charging of up to 5 lithium-ion battery packs
* It shall have loop-through mains connector, to cascade more chargers to one mains socket
* It shall have an auto-ranging PSU, from 100 – 240 VAC
* The charging status of each pack is shown on individual charge capacity indicator LEDs
* Mains power indicator LED
* The unit is suitable for tabletop use, or can be wall mounted with a bracket

The unit shall have the following Technical Specifications

Electrical

Supply Voltage 100-240 VAC (50 – 60 Hz)

Maximum power consumption 190W

Mechanical

Dimensions (H x W x D) 340 x 195 x 82 mm (13.4 x 7.6 x 3.2 in)

Weight 1.4 kg (3.08 lb)

Color Charcoal (PH 10736)

The product shall be or similar to:

DCN-WCH05 Wireless Battery Charger

### Flight Case for WCCU and WAP

This flight case is used for transportation and storage of a central control unit and a wireless access point.

The product shall comply with the following characteristics:

* It shall have a robust construction with reinforced corners
* It shall have a shaped interior to hold a central control unit, a wireless access point and a network cable
* It shall have a dividing foam partition, when removed the flight case can hold two central control units

The unit shall have the following Technical Specifications

Mechanical

Dimensions (H x W x D) 480 x 510 x 295 mm (18.9 x 20.1 x 11.46 in)

Weight 6 kg (13.2 lb)

Color Light grey

The product shall be or similar to:

DCN-WFCCCU Flight Case for Wireless CCU and WAP

### Roller Case for 10 wireless discussion units

This roller case is used for transportation and storage of 10 wireless discussion units and two wireless battery chargers.

The unit shall comply with the following characteristics:

* It shall have a robust construction with reinforced corners
* It shall have a shaped interior to hold 10 wireless discussion units, including short or long microphones
* It shall also holds 2 battery chargers and 10 batteries
* It shall have fitted wheels for easily transportation

The unit shall have the following Technical Specifications

Mechanical

Dimensions (H x W x D) 695 x 765 x 500 mm (27.4 x 30.1 x 19.7 in)

Weight 26.4 kg (58.2 lb)

Color Light grey

The product shall be or similar to:

DCN-RCWD10 Roller Case for 10 Wireless Discussion Units

### Flight Case for 10 wireless discussion units

This flight case is used for transportation and storage of ten wireless discussion units and two wireless battery chargers.

The product shall comply with the following characteristics:

* It shall have a robust construction with reinforced corners
* It shall have a shaped interior to hold 10 wireless discussion units
* It shall hold 10 pluggable microphones, short or long
* It shall also holds 2 battery chargers and 10 batteries
* It shall have two fitted wheels and an extra handgrip for easily transportation

The unit shall have the following Technical Specifications

Mechanical

Dimensions (H x W x D) 820 x 500 x 300 mm (32.3 x 19.7 x 12 in)

Weight 13.8 kg (30.4 lb)

Color Light grey

The product shall be or similar to:

DCN-FCWD10 Flight Case for 10 Wireless Discussion Units

# Interpretation and Language Distribution Equipment

## Interpreter Desk

The interpreter desk shall be a single-user interpreter desk with a stylish and modern design. It shall fully conform to internationally agreed standards. Clear positioning per functional area of the desk controls shall allow intuitive operation without mistakes. The interpreter desk shall be available with a light- and a dark-colored base

The product shall have the following Features and Benefits

* Low susceptibility to mobile phones
* Ergonomic design and features for visually impaired
* Up to 31 interpretation channels and the original floor language with an audio bandwidth of 20 kHz
* A graphic LCD with backlighting for bright information display under low light level conditions
* 5 pre-select keys for relay languages with activation indication at the display
* Microphone push button with a red or green illuminated ring
* Light- or dark-colored base

The product shall have the following Controls and Indicators

* A and B output channel with status and selection indication at the display
* All channels have channel number, language names and quality level indicated at the display
* Ergonomic design and features for visually impaired such as a pimple at the middle button and beeps to indicate microphone on / off and double relay selected
* Built-in loudspeaker with language channel selector
* Speech timer to indicate elapsed time of interpretation
* Speak slowly facility to alert the current speaker to slow down
* Help request to an operator or usher
* Booth telephone and intercom indicator
* A maximum of six desks can be installed in per booth
* Table top and flush mountable
* Pluggable microphone
* Automatic headset selection when headset connected
* Easy programming via menus on the display after entering the programming mode
* Microphone key with surrounding red “on-air” indicator and green for “booth not in use”
* Mute key
* Help key
* Slow (speak slowly) key
* Operator and chairman intercom call keys (for future use)
* Message key with yellow LED indicator (for future use)
* Telephone and Intercom call yellow LED indicators
* A and B channel engaged yellow LED indicators
* Rotary step control for channel settings (and other functions)

Pressing this button sets the selection to the first available channel

* LCD with backlighting showing selected and activated output channel with channel numbers and abbreviated language names
* Loudspeaker rotary volume control
* Headphone rotary volume control
* Headphone rotary bass and treble tone controls
* Beep on/off key
* Five Relay language pre-select keys
* Floor/auto-relay key with green LED indicators
* Rotary step control (same as for speaking section) to select the relay languages for the relay pre-select keys and the loudspeaker channel. Pressing this button sets the selection to the first available channel
* LCD with backlighting, showing selected relay language with channel numbers, abbreviated names and quality indicators. Also the selected loudspeaker channel with abbreviated name is shown

The product shall have the following Interconnections

* Six-pole microphone socket
* Headphone or headset connector five-pole 180° Din type socket wired according to IEC 574-3)
* 6.3 mm (0.25 in) and 3.5 mm (0.14 in) stereo jack headphone connectors
* 2 m 78.8 in) cable with molded six-pole circular connector
* Six-pole circular socket for loop-through connection to the network
* Eight-pole modular jack connector for connection to booth telephone, intercom and booth on-air sign

The product shall have the following Technical Specifications

Electrical

Headphone connection

Frequency response 30 Hz – 20 kHz

Load impedance > 32 ohm

Output power 2 x 30 mW/32 ohm

Headset connection

Frequency response 30 Hz – 20 kHz

Load impedance > 32 ohm

Output power 60 mW / 32 ohm

Nominal microphone 7 mVrms

input level

Overload microphone >124 mVrms

input level

Mechanical

Mounting Free-standing or mounted on a table

Dimensions 82 x 330 x 170 mm (3.2 x

(H x W x D) 13 x 6.7 in) (with microphone)

Slope 25 degrees

Weight 1.3 kg (2.87 lbs)

Color top Silver (RAL 9022)

Color base

 Light Gray (RAL 000 7500)

Color base

 Charcoal (PH 10736)

The product shall be or similar to:

DCN-IDESK-L Interpreter Desk with light base

DCN-IDESK-D Interpreter Desk with dark base

## Interpreter Headphones

The interpreter headphones shall be lightweight, dynamic headphones.

The product shall have the following Features and Benefits

* Replaceable ear pads

The product shall have the following Interconnections

* 1.5 m (59.0 in) cable terminated with a 6.3 mm (0.25 in) stereo jack plug

The product shall have the following Technical Specifications

Electrical

Impedance 2 x 720 ohm

Frequency response 250 Hz to 13 kHz (-10 dB)

Power handling capacity 200 mW

Sensitivity (1 kHz) 97 dB SPL/earpiece at0

 dBV/system

 96 dBSPL/earpiece at

 1 mW/earpiece

Mechanical

Weight 78 g (0.17 lb)

Color Black/gray

The product shall be or similar to:

LBB 9095/30 Interpreter Headphones

LBB 9095/50 Set of 25 pairs of replacement ear pads

Suitcase for interpreter desk

The suitcase for the interpreter desk shall accommodate 2 desks, 2 microphones and accessories such as headsets, headphones and tabletop reading-lights.

The product shall have the following Features and Benefits

* Rugged construction with reinforced corners
* Simplifies packing and unpacking
* Easy to carry and store

The product shall have the following Technical Specifications

Mechanical

Dimensions (H x W x D) 235 x 530 x 385 mm

 (9.3 x 20.9 x 15.2 in)

Weight (empty) 6 kg (13 lbs)

Color Dark Gray

## Channel Selector unit

The channel selector unit shall be a compact and stylish single-user audio channel selector for listening by headphone. It shall provide a choice of up to 32 high-quality audio channels used for distribution of interpretation and floor channels.

The product shall have the following Features and Benefits

* No audio output until the headphone is connected.
* Automatically adapts to available channels
* Stylish and modern design
* Built-in “Silent” function; no audio output until one of the keys has been pressed to eliminate audible noise from the headphones when not in use.
* Upon insertion of a headphone the default “floor” channel (channel 0) is selected with a comfortable headphone volume and the dimmed backlighting is activated.
* Flush mountable in tabletops, on top or at the front, or in arm rests of seats.
* Two push-buttons (up/down) for channel selection
* Two push-buttons (up/down) for headphone volume control
* Backlit 2-digit LCD for channel number indication

The product shall have the following Interconnections

* 3.5 mm (0.14 in) mm stereo jack headphone connector
* Connector for external headphone
* 2 m (78.7 in) cable with a molded six-pole circular connector
* Six-pole circular connector for loop-through interconnection

The product shall have the following Technical Specifications

Electrical

Frequency response 30 Hz – 20 kHz

Headphone load > 32 ohm < 1k ohm

impedance

Output power 2 x 15 mW/32 ohm

Mechanical

Mounting Flush mounted

Dimensions (H x W x D) 40 x 100 x 100 mm

 (1 .6 x 3.9 x 3.9 in)

Weight 0.3 kg (0.66 lb)

Color Silver (RAL 9022)

The product shall be or similar to:

DCN-FCS Channel Selector unit for 32 channels

## Table Top Housings

This housing shall enable the flush mounted panels to be used in tabletop applications. The panel shall simply click into place in the housing. It shall be for use with the voting unit, but it can also be used for other flush mounted unit such as the channel selector unit.

Provision shall be made so for permanent applications, the housing can be fixed to the tabletop.

The unit shall have the following Technical Specifications

Mechanical

Mounting free-standing or fixed on the table top

Dimensions 40 x 100 x 82 mm

(H x W)

Weight 243 g

Color Charcoal (PH 10736)

The product shall be or similar to:

DCN-TTH Set of 10 Table Top Housings

## Lightweight Stereo Headphones

Lightweight stereo headphones shall offer high quality sound reproduction.

The product shall have the following Features and Benefits

* Replaceable ear pads
* Separate available solid washable ear pads

The product shall have the following Interconnections

* 1 .3 m (51.2 in) cable terminated with 3.5 mm (0.14 in) angled stereo jack plug

The product shall have the following Technical Specifications

Electrical

Impedance 32 ohm per earpiece

Audio frequency response 50 Hz to 20 kHz (-10 dB)

Power handling capacity 50 mW

Sensitivity (1 kHz) 98 dB SPL/earpiece at

 1 mW/earpiece

Mechanical

Weight 70 g (0.16 lb)

Finish Charcoal (PH 10736)

 with silver

The product shall be or similar to:

LBB 3443/00 Lightweight Stereo Headphones

LBB 3443/50 Set of 100 pairs of replacement ear pads

HDP-LWSP Set of 50 pairs solid ear pads

## Under-the-Chin Stereo Headphones

The product shall have the following Features and Benefits

* Ergonomic design for use under the chin
* Replaceable ear tips

The product shall have the following Interconnections

* 1 .2 m (47.3 in) cable terminated with 3.5 mm (0.14 in) angled stereo jack plug

The product shall have the following Technical Specifications

Electrical

Impedance 150 ohm per earpiece

Audio frequency response 50 Hz to 5 kHz (-10 dB)

Power handling capacity 60 mW

Sensitivity (1 kHz) 107 dB SPL/earpiece at

 1 mW/earpiece

Mechanical

Weight 33 g (0.07 lb)

Finish Black

The product shall be or similar to:

LBB 3441/10 Under-the-Chin Stereo Headphones

LBB 3441/50 Set of 1.000 replacement ear tips

## Single Earphone

The product shall have the following Features and Benefits

* Ergonomic design for use under the chin
* Replaceable ear tips

The product shall have the following Interconnections

* 1 .2 m (47.2 in) cable terminated with 3.5 mm (0.14 in) stereo jack plug

The product shall have the following Technical Specifications

Electrical

Impedance 32 ohm

Audio frequency response 100 Hz to 5 kHz (-10 dB)

Power handling capacity 5 mW

Sensitivity (1 kHz) 114 dB SPL/earpiece at 1

 mW/earpiece

Mechanical

Weight 25 g (0.06 lb)

Finish Dark gray

The product shall be or similar to:

LBB 3442/00 Single Earphone

## High Quality Dynamic Headphones

This high quality dynamic microphone shall be a durable dynamic headphones offering high-quality sound reproduction.

The product shall have the following Features and Benefits

* Replaceable ear pads

The product shall have the following Interconnections

* 1 .2 m (47.2 in) cable terminated with 3.5 mm (0.14 in) stereo jack plug

The product shall have the following Technical Specifications

Electrical

Impedance 720 ohm per earpiece

Audio frequency response 250 Hz to 13 kHz (-10 dB)

Power handling capacity 200 mW

Sensitivity (1 kHz) 96 dB SPL/earpiece at

 1 mW/earpiece

Mechanical

Weight 25 g (0.06 lb)

Finish Dark gray

The product shall be or similar to:

LBB 3015/04 High Quality Dynamic Headphones

LBB 9095/50 Set of 25 pairs of replacement ear pads

## Induction Loop Neckband

The induction loop neckband shall be suitable for use with the receivers.

The induction loop neckband shall have the following physical and electrical characteristics:

|  |
| --- |
| Connection 0.9 m (3 ft) cable with 3.5 mm  (0.14 in) gold-plated jack plug  |
| Impedance 28 ohms at 1 kHz |
| Magnetic Field Strength 100 mA/m 15 cm (6 in) above loop at  85 μW at 1 kHz input (IEC 60118-4) |
| Weight 45 g (0.10 lb) |
| Finish Charcoal with silver |

The induction loop neckband shall be the HDP-ILN or similar.

## Flight Case

The flight suitcase shall be used for storing and transportation up to 2 interpreter desks.

The flight case shall have the following physical characteristics:

|  |
| --- |
| Dimensions (H x W x D) 235 x 530 x 385 mm  (9.3 x 20.9 x 15.2 in) |
| Weight 6 kg (13 lbs) |
| Finish Dark gray |

The storage suitcase shall be the DCN-FCIDSK or similar.

# Central Control Equipment

## Basic Central Control Unit

The basic central control unit (CCU) shall include features for controlling delegate microphones, distributing simultaneous interpretation and conducting voting sessions, all without an operator.

The product shall have the following Features and Benefits

* IF design award
* Control for up to 245 wired Contribution units
* Control facilities for an unlimited number of channel selectors
* 2 x 32 high-quality audio channels
* Basic microphone management facilities
* Four operational microphone modes:
* Open: microphone button control with request-to-speak (Auto)
* Override: microphone button with override of activated microphones (FIFO)
* Voice: voice activated microphones
* Push-to-talk (push and hold button to speak)
* Number of open microphones between 1 and 25
* Basic voting control for parliamentary voting procedure. Delegates can register ‘Present’, ‘Yes’, ‘No’ and ‘Abstain’. The Concentus Chairman unit can start, stop and suspend the voting. The total results can be displayed on hall displays and on the LCD screens of the units. Also included is a page function, which activates a voting tone. The chairman can use this tone to indicate that a voting round is about to start.
* Basic simultaneous interpretation function with as many as 31 language channels plus one floor channel
* Basic intercom function with a function to assign intercom operator and intercom chairman (both can be called from the interpreter desk)
* Automatic camera control
* 2 audio line inputs and 2 audio line outputs
* Adjustable sensitivity for the audio inputs
* Adjustable level for the audio outputs
* Audio insertion facility to connect external audio processing devices or telephone couplers
* Configuration of CCU and system via a display and a single rotary push button
* Each CCU can be assigned a unique name by the installer for easy identification
* VU meter readings to monitor audio inputs and audio outputs. The audio can be monitored using headphones
* 19” (2U) housing for table top or rack mounting
* Handgrips for easy transportation
* 19” rack mounting brackets, detachable feet and mounting accessories included
* System installation and user instruction on DVD ROM

The product shall have the following Controls and Indicators

* Power on/off switch at the front
* 2 x 16 Character LCD display at front for status information and CCU configuration
* Rotary control at front to navigate through the LCD menus
* Three red LED overload indicators for the DCN network outputs at the rear

The product shall have the following Interconnections

* Euro mains socket with built-in fuse, matching mains cable (1.7 m [5.58 ft]) included
* Three DCN outlet sockets including locking facility for connection of units
* Two stereo Cinch unbalanced audio line inputs
* One three-pole XLR balanced audio line output
* Two stereo Cinch unbalanced audio line outputs
* 1 x headphone output 3.5 mm (0.14 in) stereo
* One Ethernet connection for Control PC or Open Interface
* One RS-232 serial data connector for Camera control

The product shall have the following Technical Specifications

Electrical

Supply voltage 100/240 Vac 50-60 Hz

Power consumption 295 W

DCN system supply 40 VDC, max 85 W per DCN socket

Total supply power 255 W

RS-232 connection nine-pole Sub-D female socket

Frequency response 30Hz – 20 kHz (-3dB at nominal level)

THD at nominal level < 0.5 %

Cross talk attenuation > 85 dB at 1 kHz

Dynamic range > 90 dB

Signal–to-noise ratio > 87 dBA

Audio inputs

Cinch nominal input 24 dBV (+/- 6dB)

Cinch maximum input +0 dBV

Audio outputs

XLR nominal output 12 dBV (+6/- 24 dB)

XLR maximum output +12 dBV

Cinch nominal output 24 dBV (+6/- 24 dB)

Cinch maximum output +0 dBV

Mechanical

Mounting Free-standing or mounted

 in a 19”-rack

Dimensions (H x W x D) 88 x 483 x 350 mm

 (with brackets, without

 feet)

 92 x 440 x 350 mm

 (without brackets, with

 feet)

Weight 7.9 kg

Color Charcoal (PH 10736) with

 silver

The product shall be or similar to:

DCN-CCUB2 Basic Central Control Unit

## Central control unit

In combination with a PC, the central control unit (CCU) shall bring greater sophistication to conference control. Users shall be able to access an extensive range of software modules, each with a specific function in controlling and monitoring a conference. These modules shall expand the capacity to manage a conference. In the event of PC failure, this Central Control Unit shall revert to its stand-alone operation mode, enabling the conference to proceed.

The product shall have the following Features and Benefits

* IF design award
* Control for up to 245 wired and 245 wireless Contribution units
* Control facilities for an unlimited number of channel selectors
* 2 x 32 high quality audio channels
* Optical network for coupling the CCU to Integrus transmitter for Infra Red languages distribution, Wireless Access Point for wireless discussion units and to Audio Expanders and Cobranet Interfaces to allow a variety of audio contribution and distribution facilities
* Optical network designed for redundant cabling. Can be either single branch or redundant loop
* Basic microphone management facilities
* Four operational microphone modes:
	+ Open: microphone button control with request-to-speak (Auto)
	+ Override: microphone button with override of activated microphones (FIFO)
	+ Voice: voice activated microphones
	+ Push-to-talk (push and hold button to speak)
* Number of open microphones between 1 and 25
* Basic voting control for parliamentary voting procedure. Delegates can register ‘Present’, ‘Yes’, ‘No’ and ‘Abstain’. The Concentus Chairman unit can start, stop and suspend the voting. The total results can be displayed on hall displays and on the LCD screens of the units. Also a page function is included which activates a voting tone. With this tone the chairman can indicate that a voting round is about to start.
* Basic simultaneous interpretation function with as many as 31 language channels plus one floor channel
* Basic intercom function with function to assign intercom operator and intercom chairman (both can be called from the interpreter desk)
* Automatic camera control
* Extended conference facilities when using control PC software or remote controllers
* 2 audio line inputs and 2 audio line outputs
* Adjustable sensitivity for the audio inputs
* Adjustable level for the audio outputs
* Audio insertion facility to connect external audio processing devices or telephone couplers
* Configuration of CCU and system via a display and a single rotary push button
* Each CCU can be assigned a unique name by the installer for easy identification
* VU meter readings to monitor audio inputs and audio outputs. The audio can be monitored using a headphone
* 19” (2U) housing for table top or rack mounting
* Handgrips for easy transportation
* 19” rack mounting brackets, detachable feet and mounting accessories included
* System installation and user instruction on DVD ROM

The product shall have the following Controls and Indicators

* Power on/off switch at front
* 2 x 16 Character LCD display at the front for status information and CCU configuration
* Rotary control at the front to navigate through the LCD menus
* Three red LED overload indicators for the DCN network outputs at the rear
* Two red LED overload indicators for the optical connections at the rear

The product shall have the following Interconnections

* Euro mains socket with built-in fuse, matching 1.7 m mains cable ( (66.9 in) included
* Three DCN outlet sockets including locking facility for connection of units
* Two optical network connections for connection of Integrus transmitters, various Audio Expanders, CobraNet interfaces and Wireless Access Point
* Two three-pole XLR balanced audio line inputs with optional galvanic separation.
* Two stereo Cinch unbalanced audio line inputs
* Two three-pole XLR balanced audio line output with galvanic separation.
* Two stereo Cinch unbalanced audio line outputs
* 1 x headphone output 3.5 mm (0.14 in) stereo
* One Ethernet connection for Control PC, Open Interface or slave CCU
* One RS‑232 serial data connectors for controlling cameras

The product shall have the following Technical Specifications

Electrical

Supply voltage 100/240 Vac 50-60 Hz

Power consumption 295 W

DCN system supply 40 VDC, max 85 W per DCN socket

Optical network supply 40 VDC, max 85 W

Total supply power 255 W

RS-232 connection 2 x nine-pole Sub-D female socket

Frequency response 30Hz – 20 kHz (-3dB at nominal level)

THD at nominal level < 0.5 %

Cross talk attenuation > 85 dB at 1 kHz

Dynamic range > 90 dB

Signal–to-noise ratio > 87 dBA

Audio inputs

XLR nominal input 12 dBV (+/- 6dB)

XLR maximum input +12 dBV

Cinch nominal input 24 dBV (+/- 6dB)

Cinch maximum input +0 dBV

Audio outputs

XLR nominal output 12 dBV (+6/- 24 dB)

XLR maximum output +12 dBV

Cinch nominal output 24 dBV (+6/- 24 dB)

Cinch maximum output +0 dBV

Mechanical

Mounting Free-standing or mounted

 in a 19”-rack

Dimensions (H x W x D) 88 x 483 x 350 mm

 (with brackets, without

 feet)

 92 x 440 x 350 mm

 (without brackets, with

 feet)

Weight 7.9 kg

Color Charcoal (PH 10736)

 with silver

The product shall be or similar to:

DCN-CCU2 Central Control Unit

## Wireless Access Point

The wireless access point (WAP) shall link the central control unit with wireless discussion units.

The wireless access point shall offer the following features and benefits:

* It shall have secure wireless communication between the WAP and the wireless discussion units is in the 2.4 GHz band, which is license-free worldwide.
* To ensure security, the communication with wireless discussion units shall be digitally protected.
* It shall be able to cover at least an area of 900 square meters (10.000 square ft).
* It shall be powered and it shall communicate with the central control unit via a single network.
* It shall have two optical network connectors, so it can be used in a single branch or redundant loop configuration.
* It shall be possible to mount it to a wall, ceiling, or floor-stand by using the universal bracket.
* It shall have LED indicators to show the status of the wireless discussion system.

The product shall have the following Technical Specifications

Mechanical

Mounting Free-standing or mounted

 in a 19”-rack

Dimensions 59 x 284.5 x 201 mm

(H x W x D) (2.3 x 11.2 x 7.9 in)

 (with bracket)

Weight 907 g (2 lb) with bracket

 643 g (1.4 lb) without bracket

Color Light grey (RAL 000 7500)

The product shall be or similar to:

DCN-WAP Wireless Access Point

## Extension Power Supply

The Extension Power Supply unit shall be used in combination with a CCU to supply extra power to the network.

The product shall have the following Features and benefits

* Easy to connect to the network
* Maximum supply power of 255 W
* Installable at any convenient point in the system cabling due to its built-in network splitter
* Using loop-through cabling
* Switches on automatically when the CCU is switched on
* All outputs are protected against short circuit
* Freestanding on a tabletop or mounted in a 19” rack

The product shall have the following Controls and Indicators

* “Power on” LED indicator
* Three indicators to indicate network outlet overload (red LEDs)

The product shall have the following Interconnections

* Euro-mains socket with built-in fuse holder, mains cable 1.7 m (66.9 in) included
* 2 m (78.7 in) DCN cable with molded six-pole circular connector
* Six-pole circular socket for loop-through connection to the network
* Three outlet sockets for connection of units, plus extension power supplies. Each socket is protected against short-circuit (3 x six-pole circular sockets)

The product shall have the following Technical Specifications

Electrical

Supply voltage 105, 115, 125, 220, 230,

 240 Vac., 50/60 Hz

Power consumption 350 W

System supply 40 VDC, max 85W per socket

Mechanical

Mounting Free-standing on a table top

 or mounted in a 19” rack unit

 (requires 2U, \_19” width)

Dimensions 100 x 220 x 308 mm

(H x W x D) (3.9 x 8.7 x 12.1 in)

Weight 8.3 kg (18.3 lbs)

Color cabinet Light gray (PH 10736)

Color handles Dark gray (PH 10736)

The product shall be or similar to:

DCN-EPS Extension Power Supply

DCN-EPS-UL Extension Power Supply UL/CSA

 intended for North-America region

## Digital Audio Expander

The digital audio expander shall contribute digital audio to and distribute digital audio from the system.

The product shall have the following Features and Benefits

* IF design award
* Room coupling facility
* Versatile audio distribution facility
* Optical network for coupling to the CCU
* AES/EBU or SPDIF
* Sample-rate converters (8 – 96 kHz)
* Automatic Gain Control
* Designed for redundant network cabling. The network can be either single branch or redundant loop.
* Four audio channels in for floor and interpretation channels
* Four audio channels out for floor and interpretation channels (16-bit 44.1 kHz)
* Flexible routing of floor and interpretation channels
* Configuration of the Digital Audio Expander via a display and a single rotary push button
* Each Digital Audio Expander can be assigned a unique name by the installer for easy identification
* VU meter readings to monitor audio inputs and audio outputs. The audio can be monitored using headphones
* 19” (2U) housing for table top or rack mounting
* Handgrips for easy transportation
* 19” rack mounting brackets, detachable feet and mounting accessories included
* Unit is powered from the network

The product shall have the following Controls and Indicators

* 2 x 16 Character LCD display for status display and configuration of the Audio Expander
* Rotary control at the front to navigate through the LCD menus

The product shall have the following Interconnections

* Two optical network connections for connecting to CCU
* Two 3-pole XLR AES/EBU stereo inputs for 2 audio channels per input
* Two Cinch SPDIF stereo inputs for 2 audio channels per input
* Two 3-pole XLR AES/EBU stereo outputs for 2 audio channels per output
* Two Cinch SPDIF stereo outputs for 2 audio channels per output
* 8 x control inputs to enable audio inputs and audio outputs
* 5 x control outputs to indicate channel engaged state • 1 x headphone output 3.5 mm (0.14 in) stereo

The product shall have the following Technical Specifications

Electrical

Supply voltage 24 – 48 Vdc

Power consumption 6 W

Frequency response 30 Hz – 20 kHz

THD at nominal level < 0.5 %

Mechanical

Mounting Free-standing or mounted

 in a 19”-rack

Dimensions (H x W x D) 88 x 483 x 350 mm

 (with brackets, without

 feet)

 92 x 440 x 350 mm

 (without brackets, with

 feet)

Weight 6 kg

Color Charcoal (PH 10736)

 with silver

The product shall be or similar to:

PRS-4DEX4 Digital Audio Expander

## Audio Expander

The audio expander shall contribute audio to and distribute audio from the system.

The product shall have the following Features and Benefits

* IF design award
* Room coupling facility
* Versatile audio distribution facility
* Optical network for coupling to the CCU
* Designed for redundant network cabling. The network can be either single branch or redundant loop
* Four audio line inputs (of which 2 can be configured as microphone input) for floor and interpretation channels
* Four audio line outputs for floor and interpretation channels
* Flexible routing of floor and interpretation channels
* Adjustable sensitivity for the audio inputs
* Adjustable level for the audio outputs
* Configuration of the Audio Expander via a display and one single rotary push button
* Each Audio Expander can be assigned a unique name by the installer for easy identification
* VU meter readings to monitor audio inputs and audio outputs. The audio can be monitored using a headphone
* 19” (2U) housing for table top or rack mounting
* Handgrips for easy transportation
* 19” rack mounting brackets, detachable feet and mounting accessories included
* The unit is powered from the network

The product shall have the following Controls and Indicators

* 2 x 16 Character LCD display for status display and configuration of the Audio Expander
* Rotary control at the front to navigate through the LCD menus

The product shall have the following Interconnections

* Two optical network connections for connecting to the CCU
* Four three-pole XLR balanced audio line inputs with galvanic separation
* Four stereo Cinch unbalanced audio line inputs
* Four three-pole XLR balanced audio line output with galvanic separation
* Four stereo Cinch unbalanced audio line outputs
* 8 x control inputs to enable audio inputs and audio outputs
* 5 x control outputs to indicate channel engaged state
* 1 x headphone output 3.5 mm (0.14 in) stereo

The product shall have the following Technical Specifications

Electrical

Supply voltage 24 – 48 Vdc

Power consumption 7.6 W

Frequency response 30 Hz – 20 kHz (-3dB at

 nominal level)

THD at nominal level < 0.5 %

Cross talk attenuation > 85 dB at 1 kHz

Dynamic range > 90 dB

Signal–to-noise ratio > 87 dBA

Audio line inputs

XLR nominal input 0 dBV (±6 dB)

XLR maximum input + 12 dBV

Cinch nominal input 12 dBV (±6 dB)

Cinch maximum input + 0 dBV

Audio microphone inputs

Nominal input 57 dBV (±6 dB)

Maximum input 26 dBV

Phantom supply 12 V ± 1 V @ 15 mA

Audio line outputs

XLR nominal output 12 dBV (+ 6/- 24 dB)

XLR maximum output + 12 dBV

Cinch nominal output 24 dBV (+ 6/- 24 dB)

Cinch maximum output + 0 dBV

Mechanical

Mounting Free-standing or mounted

 in a 19”-rack

Dimensions 88 x 483 x 350 mm

(H x W x D) (with brackets, without

 feet)

 92 x 440 x 350 mm

 (without brackets, with

 feet)

Weight 6 kg (13 lbs)

Color Charcoal (PH 10736)

 with silver

The product shall be or similar to:

LBB 4402/00 Audio Expander

## Cobranet Interface

The Cobranet Interface shall interface audio from the conference system to a CobraNet network using standard Ethernet networks.

The product shall have the following Features and Benefits

* IF design award
* Room coupling facility
* Versatile audio distribution facility
* CobraNet compatible using Ethernet
* Optical network for coupling to the CCU
* Automatic Gain Control
* Designed for redundant network cabling. The network can be either single branch or redundant loop.
* Four audio inputs for floor and interpretation channels
* Four audio outputs for floor and interpretation channels
* Flexible routing of floor and interpretation channels
* Configuration of the Cobranet Interface audio channel routing via a display and a single rotary push button
* Configuration of the Cobranet Interface with software tools included
* Each Cobranet Interface can be assigned a unique name by the installer for easy identification
* VU meter readings to monitor audio inputs and audio outputs. The audio can be monitored using a headphone.
* 19” (2U) housing for table top or rack mounting
* Handgrips for easy transportation
* 19” rack mounting brackets, detachable feet and mounting accessories included
* The unit is powered from the network.

The product shall have the following Controls and Indicators

* 2 x 16 Character LCD display for status display and audio channel routing of the Cobranet Interface.
* Rotary control at front to navigate through the LCD menus

The product shall have the following Interconnections

* Two optical network connections for connecting to the CCU.
* Two RJ45 Ethernet connectors for the CobraNet.
* 8 x control inputs to enable audio inputs and audio outputs
* 5 x control outputs to indicate channel engaged state
* 1 x headphone output 3.5 mm (0.14 in) stereo

The product shall have the following Technical Specifications

Electrical

Supply voltage 24 – 48 Vdc

Power consumption 10.5 W

Frequency response 30 Hz – 20 kHz

THD at nominal level < 0.5 %

CobraNet

Physical layer Ethernet

Channels 4 in / 4 out per device. Max

 64 on CobraNet

Compliance IEEE 802.3

Audio transport 16-, 20-, 24-bit

Sample rate 48 kHz

Latency 5.33 ms

Mechanical

Mounting Free-standing or mounted

 in a 19”-rack

Dimensions 88 x 483 x 350 mm

(H x W x D) (with brackets, without feet)

 92 x 440 x 350 mm

 (without brackets, with feet)

Weight 7 kg

Color Charcoal (PH 10736)

 with silver

The product shall be or similar to:

LBB 4404/00 Cobranet Interface

## Feedback Suppressor

The feedback suppressor shall use a powerful DSP with a patented algorithm to suppress acoustic feedback. It shall eliminate feedback by actively filtering out the unwanted room reverb using an echo-cancellation and de-reverberation algorithm. By adding masked (inaudible) noise to the output signal or by shifting the frequency of the output signal by 5 Hz, the feedback suppressor shall be able to detect the reverb component of the signal and shall remove it before feedback occurs, leaving the original signal intact.

The product shall have the following Features and Benefits

* Patented feedback suppression algorithm
* Suppresses feedback before it occurs
* Automatically adapts to the acoustical situation
* Up to 12 dB additional gain before feedback occurs
* Balanced line or microphone input with phantom supply
* Second microphone input with automatic mixer

The product shall have the following Functions

The adaptive filter shall be able to switch between fast mode and accurate mode. The fast mode shall be used for situations where the microphone position changes over time, like in a discussion system with multiple switching microphones. The accurate mode shall be for situations with a fixed microphone position, such as on a pulpit where the acoustical environment is more stable. The adaptive filter shall allow converging more slowly to suppress the reverb components even more. Depending on the acoustical environment and the chosen mode of operation, up to 12dB of additional gain shall be possible before acoustic feedback occurs.

The feedback suppressor shall feature a built-in automatic mixer for the two microphone inputs. In many situations, like on a rostrum, pulpit or conference table, two microphones shall be used to better capture the voice of a moving speaker, although this often increases the risk of acoustic feedback. To counter this, the automatic mixer in the feedback suppressor shall automatically reduce the gain of the microphone with the lowest signal input and increases the gain of the microphone with the highest signal input. This way, it shall ‘track’ the moving speaker for optimum speech intelligibility, and the maximum feedback margin is maintained by keeping the summed gain constant. Even when the feedback suppressor is switched to ‘bypass’, the automatic mixer function shall remain operational.

The product shall have the following Controls and Indicators

* Power switch
* Bypass / Active switch with yellow / green LED
* Calibrate button. To start fast calibration cycle
* Signal indicators
	+ - Overload @ 0 dBFS, red
		- Present @ -40 dBFS, green
		- Auto Mix enabled, green
		- Calibrate, yellow

Certifications and Approvals

EMC emission acc. to EN 55103-1

EMC immunity acc. to EN 55103-2

The product shall have the following Technical Specifications

Electrical

Mains voltage 230 Vac/115 Vac, ±10%,

 50/60Hz

Max power consumption 50 VA

Max mains inrush current 1 .5A @ 230 Vac / 3A @

 115 Vac

Sample rate (fs) 32 kHz

Frequency response 125 Hz – 15 kHz

Distortion <0.1% @ 1 kHz

Gain (bypass mode) 0 dB Line, in 24/36/48

 dB

 Mic in

Gain (active mode) 0 dB Line in

 24/36/48 dB Mic in

S/N >90 dB

Signal delay < 11 ms

Decorrelator Frequency shift, 5 Hz

 up

 Masked noise

Line / Mic input 1 (3-pin XLR, 5-pin DIN, balanced)

Max input level 18 / 6 / -6 dBV Line in

 -18 / -30 / -42 dBV

 Mic in

Impedance 10 kohm / 2 kohm

 (Line / Mic)

CMRR >25 dB (50 Hz-20

 kHz)

Phantom power 16 V (Mic only,

 switchable)

Priority control Loop through of pin 4

 and 5 of DIN

Mic input 2, Mic (3-pin XLR, 5-pin DIN, balanced)

Max input level 18 / -30 / -42 dBV

Impedance 2 kohm

Phantom power 16 V (switchable)

Priority control Loop through of pin 4

 and 5 of DIN

Line input 3, Line (Cinch, unbalanced)

Max input level 18 / 6 / -6 dBV

Impedance 20 kohm

Line output 1 (3-pin XLR, balanced)

Max output level 18 / 6 / -6 dBV (Line

 in) 6 dBV (Mic in)

Impedance <100 ohm

Line output 2 (Cinch, unbalanced)

Max output level 8 / 6 / -6 dBV (Line in)

 6 dBV (Mic in)

Impedance <100 ohm

Mic output 3 (5-pin DIN, balanced)

Max output level 22 / -34 / -46 dBV

 (Line in) 34 dBV (Mic

 in)

Impedance <100 ohm

Priority control Loop through of pin 4

 and 5 of DIN from

 inputs

Mechanical

Dimensions 56 x 430 x 270 mm with

 feet, without mounting

 brackets

 19” 1U with mounting

 brackets, without feet

Weight 3 kg

Environmental

Operating temperature

range 10°C to +55°C

Storage temperature

range 40°C to +70°C

Relative humidity <95%

The product shall be or similar to:

LBB 1968/00 Plena Feedback Suppressor

## ID Card Encoder

ID card encoder shall be used in combination with the ID Card Encoder software. The ID card encoder shall encode delegate ID cards

The product shall have the following Technical Specifications

Mechanical

Dimensions 90x 70 x 16.5 mm

Weight 145 g

The product shall be or similar to:

LBB 4157/00 ID Card Encoder

## ID Cards

IC cards shall be standard credit-card format ID cards. The ID cards shall be used by delegates to identify them to the conference system.

The product shall have the following Features and Benefits

* Attractive design
* Ample space for a name or other delegate personal information.
* Clear instructions showing how to insert the card into a reader.

The product shall have the following Technical Specifications

Mechanical

Dimensions (HxW) 85 x 54 mm

The product shall be or similar to:

LBB 4159/00 Set of 100 ID Cards

# Application software

## Introduction

The application shall be modular and shall support the following operating systems:

* Windows 7 Home Premium (32 or 64 bits) or above.
* Windows 8.1 Pro (64 bits) or above.

Any combination of the module shall be possible to activate depending on the required functionality.

The software modules shall be protected for copying by a license key.

The software shall be prepared for all languages supported by the Microsoft Windows operating system.

## PC Control Software

The control software shall be the main module and shall be used as a platform on which all other modules run.

The product shall have the following Features and Benefits

* Meeting and agenda support
* User management
* Client server solution.
* Off-line configuration
* Multi PC
* Support for wired and wireless contribution equipment
* On screen help facility
* Split configuration and operating applications
* Setting master volume levels
* Single and multi point control of system installation
* In-conference warning message when installation configuration changes or when errors appear
* User management to assign functionality to individual system users
* SQL database to store and retrieve all configuration data and settings.

The product shall consist of four software components:

* Server which shall manage, control and monitor the conference system
* Configuration application which shall provide system installation and meeting preparation
* Operator application which shall provide system monitoring and meeting control
* Print application which shall provide printing of voting results

### Server application

The server shall have the following Functions

* Monitor and control of the conference data.
* It runs on the background and links all applications.
* SQL database stores all data and settings.
* Status report of database connection and system connection.
* Error logging for quick diagnostics.

### Configuration

The configuration application shall be a powerful and effective module for installers and system operators configuring and setting up the system.

The configuration application shall have the following Features and Benefits

* Easy step‑by‑step pre‑configuration which makes it exceptionally ergonomic.
* Off‑line system configuration.
* Administrator user management: defining users and user groups with group privileges like view‑ and control rights.
* Installer system setup: defining seats and synoptic layouts.
* Operator meeting preparation: voting templates, participating delegates, authorizations for each meeting, the agenda, lists of speakers and voting scripts.
* System channel and language definition
* Microphone and channel tests

### Operator application

The operator application shall be a powerful and effective module for system operators to control the meeting

The operator application shall have the following Features and Benefits

* Full meeting control.
* Touch screen optimized.
* Ribbon technology giving the user a graphical representation of all main functions, which makes it very intuitive to use.
* Functionality depending on user rights and system license.
* Synoptic microphone control, voting results, Individual microphone sensitivity control, battery status and signal status.
* Ergonomically designed synoptic shapes and shadings help the color‑impaired people to distinguish different statuses.
* Quick‑links to jump instantaneously to configuration application to make adjustment to the pre‑configuration.

### Print application

The print application shall be a powerful and effective module for vote results printing

The print application shall have the following Features and Benefits

* Automatic print of vote results

The product shall be or similar to:

DCN-SW Conference Software Main Module

## Microphone Management

The Microphone Management module shall provide the user with a powerful and easy-to-use tool that shall bring all aspects of microphone management to a single point of control.

The product shall have the following Features and Benefits

* Prepare request-to-speak lists
* Group and individual speech timers
* Notebook
* Various microphone control options
* Extensive range of options for microphone-related parameters

The product shall have the following Functions

Microphones shall be controlled using the name (or device number) of the delegate. The user shall be able to select microphones for the speakers list (active microphones) or prepare a request list.

It shall be possible to give notebook status to delegates, which means they shall not have to join the request list and shall enjoy specific privileges not granted to other delegates. The microphone type shall be specifiable for the notebook. The possibilities shall be:

* ‘Button’ where delegates activate their microphones by pressing their microphone buttons. (In this mode, the ‘VIP’ LED of the contribution units is illuminated.)
* ‘Operator’ where the microphones of active delegates are activated by the operator
* ‘Voice’ where the microphones of the delegates are voice-controlled

The conference system shall automatically recognize an assigned chairman unit and shall automatically add it to the notebook.

Microphone Management shall offer a number of microphone control options. These options are:

* Control by operator with request‑to‑speak list (manual).
* Control by operator with request‑to‑speak list and response list.
* Control by delegate with request‑to‑speak list (open).
* Control by delegate with override of other delegate microphones (first‑in, first‑out).
* Control by delegate with voice activation.
* Control by delegate with Push‑To‑Talk.

Each mode allows a different level of both operator and delegate microphone control, so all general conferences can be covered. For example, smaller, informal discussions require very little operator microphone control, so a mode such as microphone control by delegate would be ideal. For a full‑scale international conference with hundreds of participants, control by operator with request‑to‑speak list would be more appropriate. The operator can specify whether one, two, three or four normal delegate microphones can be active simultaneously. It is also possible to specify whether delegates are allowed to cancel requests‑to‑speak or switch their microphones off. The amount of time delegates are allowed to speak can be defined for the current speaker, response speaker, individual delegates and for delegate groups.

It shall also possible to give delegates additional microphone activation privileges, which means they do not have to join the request list and can enjoy certain other privileges not granted to other delegates. The microphone type must be specified for the notebook. The possibilities shall be:

* ‘Chair’ for chairman microphones.
* ‘Button’ where delegates activate their microphones by pressing their microphone button (in this mode the‘VIP’LED of the contribution units is illuminated).
* ‘Operator’ where the microphones of more active delegates are activated by the operator.
* ‘Voice’ where the microphones are voice activated.
* ‘PTT’ where microphones are activated by using
* Push‑To‑Talk.

Both DCN Next Generation and DCN Wireless systems

automatically recognize an assigned chairman unit and

will automatically add it to the notebook.

The product shall be or similar to:

DCN-SWMM Microphone Management

## Delegate Database

The Delegate Database module shall allow users to compile a comprehensive database of information relating to participants at a conference or meeting.

The product shall have the following Features and Benefits

* Comprehensive database creation for all delegates
* Re-use of delegate information across meetings
* Define vote and microphone authorization for each individual participants

The product shall allow users to compile a comprehensive database of information relating to delegates. During the meeting preparation stage the delegates can be assigned to the meeting as participants. The advantage of this method is that delegates participating in multiple meetings only need to be entered once and can be assigned to any desired meeting without re‑entering the same delegate information again.

All information will be entered via the configuration application, before or during conference proceedings. A considerable amount of data can be specified for each conference participant. All delegate specific information like: delegate name, delegate country, delegate group and delegate unit display language, can be re-used and does not need to be re‑entered for every meeting. At meeting preparation it is possible to grant or deny authorization to individual delegates in a specific meeting for microphone, and voting use; also the voting weight can be defined.

All delegate information will be input via the configuration application. For some entries (first name, last name) the only restriction is the number of characters entered. For other entries (country, group, etcetera.), the input can easily be selected from a list of options that is presented by the system. This option list is automatically controlled by the system. When the user enters a text it is automatically added to the list.

By defining the correct user rights a delegate information entry PC client can be created. This entry client can be placed at the lobby of a conference hall entrance, where the registration officer can enter delegate information and assigning the delegate to the desired meeting.

The product shall be or similar to:

DCN-SWDB Delegate Database

## Parliamentary Voting

The Parliamentary Voting module shall allow users to compile voting scripts and control voting.

The product shall have the following Features and Benefits

* Complete operator control of parliamentary voting sessions
* Extensive motion preparation facilities
* Output voting results to printers
* Wide range of vote‑related parameter options

The product shall cover a number of functions including vote preparation, specifying vote-related parameters, and starting and controlling voting.

In the configuration application voting is prepared as in the operator application the voting can be started and results can be shown.

Voting is an optional part of every agenda entry. Voting can consist of a number of proposals or motions, each of which will be voted on.

The preparation of the voting is done in two steps. First a template needs to be defined. The template contains more general settings like automatic print, secret, majority and many more. Secondly a single vote can be created. Now the number, name subject, template and answer set must be defined. Also a link to a document can be defined which can be activated from the operator application. This document can be used as extra information for a specific vote.

It shall be possible for the operator to select the desired vote from the prepared voting list and starts the vote; participants can use their units to register votes. The operator has full control over the voting procedure, and can stop or suspend a vote at any time. It is also possible to start a vote which is not prepared before (ad‑hoc voting).

The software program shall offer the possibility of displaying cast answers and the final result of a vote on the PCs screens. Optional delegate units with a display facility can display the vote results. There is also a facility of automatically print‑out the vote results once the vote is completed.

The product shall be or similar to:

DCN-SWPV Parliamentary Voting

## Multi Voting

The Multi Voting module shall allow users to compile voting scripts and control voting.

The product shall have the following Features and Benefits

* Complete operator control of parliamentary, opinion poll and audience response voting sessions
* Extensive motion preparation facilities
* Output voting results to printers
* Wide range of vote‑related parameter options

The product shall cover a number of functions including vote preparation, specifying vote-related parameters, and starting and controlling voting.

In the configuration application voting is prepared as in the operator application the voting can be started and results can be shown.

Voting is an optional part of every agenda entry. Voting can consist of a number of proposals or motions, each of which will be voted on.

The preparation of the voting is done in two steps. First a template needs to be defined. The template contains more general settings like automatic print, secret, majority and many more. Secondly a single vote can be created. Now the number, name subject, template and answer set must be defined. Also a link to a document can be defined which can be activated from the operator application. This document can be used as extra information for a specific vote.

The following voting modes will be supported:

Parliamentary voting:

In a Parliamentary voting, participants vote about a motion. They can agree (Yes), disagree (No) or stay neutral (Abstain). They can also not vote at all (Not voted). A special type of parliamentary vote is with DNPV as a forth option. DNPV means that the delegate doesn’t want to participate in the vote.

Audience Response voting:

In an audience response voting, participants give their opinion about a statement. They use a rating system to indicate how much they agree with the statement. There are five possible answers: Very much against (--), Against (-), Neutral (0), For (+) and Very much for (++).

Opinion Poll:

In an opinion poll, participants choose from a number of 5 answers: 1, 2, 3, 4 and 5.

It shall be possible for the operator to select the desired vote from the prepared voting list and starts the vote; participants can use their units to register votes. The operator has full control over the voting procedure, and can stop or suspend a vote at any time. It is also possible to start a vote which is not prepared before (ad‑hoc voting).

The software program shall offer the possibility of displaying cast answers and the final result of a vote on the PCs screens. Optional delegate units with a display facility can display the vote results. There is also a facility of automatically print‑out the vote results once the vote is completed.

The product shall be or similar to:

DCN-SWMV Multi Voting

## Attendance Registration and Access Control

The Attendance Registration & Access Control software module shall be used to register attendance of delegates in a conference meeting, and to control access to the conference facilities in the conference room.

The product shall have the following Features and Benefits

* Attendance Registration using ID‑card with or without PIN‑code, or present button
* Access Control using ID‑card with or without PINcode or PIN‑code only
* All data instantly available to operator
* Print function to reproduce data

The functionality of the software shall fall into two categories:

Attendance Registration:

It shall be possible to specify entrance requirements that delegates have to meet before entering the meeting. This normally means delegates have to insert an ID‑card in a card reader, either at the entrance to the meeting or at the conference unit. Registration at a conference unit can also be done by pressing the ‘Present’ button. It is possible to display lists on-screen of all ‘present’ and ‘absent’ delegates, and print hard copies.

Access Control:

The settings specified for Attendance Registration shall be able to be used for access control. This means that although delegates can enter the meeting, they cannot use any of the conference unit’s facilities (such as microphone and voting) without access requirements. Access is controlled by means of ID‑ cards, with or without PIN‑code (free seating). There is an option whereby delegates register attendance at the entrance using an ID‑card reader, and a specific conference unit is than made available for them (fixed seating).

Access control shall be able to do on the conference unit only by ID‑card with or without PIN‑code or PIN‑code only (fixed seating).

The product shall be or similar to:

DCN-SWAT Attendance Registration and Access Control

## Application Programmable Interface

The Application Programmable Interface module shall be deployed as Microsoft.Net components to be used by 3rd party applications to modify, add, remove and update a subset of the application software configuration data.

The product shall have the following Features and Benefits

* Control meeting, session, discussion and voting
* Exchange and synchronize delegate and participants information with 3rd party systems
* Import of vote scripts
* Encoding ID cards solution for 3rd party systems
* C‑Sharp source code example available

It shall be possible to connect a 3rd party application to the Conference Software server as a client in the same way as the Configuration Application and the Operator Application do. All changes applied through the Application Programmable Interface module affect the meeting- configuration and currently active meeting immediately. All changes applied to the configuration data of a currently active meeting, will be actualized immediately to the operational state of the system.

The product shall offer the following control and configuration functions via the API.

Control functions available via the API:

* Control of the system
	+ Stop and start meetings
	+ Stop and start sessions
	+ Control participants microphones
	+ Control request and response lists
	+ Control prepared and adhoc votings and summon participants for the voting

Configuration functions available via the API:

* Add or remove delegates to the system. This implies per delegate:
	+ Definition of title, first, middle and last name
	+ ID‑card assignment
	+ Assignment to a group (e.g. political party)
	+ Language assignment
* Update delegate information
* Encode ID-card for a delegate
* Assign or remove delegates as participant to or from a prepared or active meeting. This implies per participants:
	+ Assignment to the meeting
	+ Assignment to a seat
* Add or remove votes to/from a voting script of a prepared or active meeting. This implies per voting:
	+ Assignment to voting script
	+ Definition of voting template to use
	+ Definition of voting answer set to use
	+ Definition of voting 100% setting
* Update voting information in a voting script of a prepared or active meeting
* Example C‑Sharp source code and extensive software developer manual available on DCN‑SW DVD

The product shall be or similar to:

DCN-SWAPI Application Programmable Interface

## Streaming Meeting Data

The Streaming Meeting Data module shall act as an interface to provide meeting data such as current speakers, request lists, vote results and other information to video screens or video projectors.

The product shall have the following Features and Benefits

* XML streams for easy processing and logging
* Interface to video client applications to display meeting data by using video screens or video projectors
* Video client application available
* Example C‑Sharp source code
* Software developer manual available

The product shall not require any user interaction of an operator; it shall consist of a software interface from the Conference Software Server to any number of client applications.

The interface shall consist of streams containing meeting data in XML format. Every time an activity (e.g. microphone on/off, start/stop vote) takes place data is send over the XML stream.

The stream can be picked up by a video client application which is connected to a video screen or a video projector to display the meeting data.

The product shall be or similar to:

DCN-SWSMD Streaming Meeting Data

## ID Card Encoding

The ID Card Encoding module shall be used for encoding ID‑cards. ID‑cards are used to identify delegates during a meeting.

The product shall be or similar to:

DCN-SWID ID Card Encoding

## Simultaneous Interpretation

The Simultaneous Interpretation module shall be used to prepare simultaneous interpretation, control facilities and monitor interpreter activities during a conference. It accommodates 31 interpreter booths, each with up to 6 interpreter desks.

The software shall offer a number of options. These options are:

* Operator control of interpreter microphones
* Configure and control interpretation facilities
* Monitor interpreter activities
* Adjust individual microphone sensitivity of interpreter desks

In the configuration application, it shall be possible for the operator to define the maximum number of system channels to be used for interpretation. The operator can prepare the interpretation settings for each meeting. These settings consist of the following: number of interpretations, language channel names, interpreter microphone interlock mode, enabling / disabling of speak slowly, and floor distribution.

Icons representing the interpreter desk and the booths can be placed on the synoptic layout for controlling and status information.

It shall be possible for the operator to view the status of the interpretation in two ways. One is the Interpretation Distribution status list. This list is an overview of all interpretation languages, and contains the following: channel number, translating booth and desk number, and channel quality. Operators may also use the synoptic layout, which features interpreter desk and booth icons. The operator may control the microphone and microphone sensitivity of interpreter desks via the synoptic layout.

The product shall be or similar to:

DCN-SWSI Simultaneous Interpretation

## Voice activated microphone logging

Voice activated microphone logging enables the logging of who speaks while the system is in voice mode. This enables automatic camera control using camera control software or recording speaker‑names while the system is in voice‑activated mode.

The product shall enable the following Features and Benefits

* Log microphone activity to third party applications during Voice mode
* Use automatic camera control in Voice mode
* Record speaker information in Voice mode
* See who speaks during Voice mode

The following functions shall be configurable:

* Microphone logging:
	+ The logging can be enabled to start the monitoring of microphone activity during voicemode.
	+ The audio level, at which the microphone is regarded as being on, can be set via audio threshold.
	+ The time the microphone stays on, after the audio level drops below the threshold, can be set via release time.
* Chairman priority:
	+ The priority can be enabled to mute other microphones based on the audio on the chairman unit.
	+ The priority chime can be enabled to automatically sound the priority chime when the chairman speaks.
	+ The audio level, at which the chairman microphone is regarded as being on, can be set via audio threshold.
	+ The time the chairman microphone stays on, after the audio level drops below the threshold, can be set via release time.

The product shall be or similar to:

DCN-SWVAML Voice Activated Microphone Logging

## Individual Channels

The Individual Channels software shall be used to route individual delegate microphone audio signals to the system audio channels. These individual audio channels can be received by Audio Expanders or Cobranet Interfaces.

The product shall have the following Features and Benefits

* Easy routing of individual audio channels
* Up to 26 Individual Channels can be defined

The product shall be or similar to:

DCN-SWIND Individual Channels

## Stand Alone Camera Control

The Stand Alone Camera Control software shall interface with an analog video matrix and fixed and movable camera’s.

The product shall have the following Features and Benefits

* On‑screen Pan, Tilt and zoom control
* For use with wired and wireless systems
* Print‑out of configuration setting
* On‑screen help facility

The application shall shall support the following operating systems:

* Windows 7 Home Premium (32 or 64 bits) or above.
* Windows 8.1 Pro (64 bits) or above.

The camera assigned to the position shall be activated when the corresponding chairman or delegate microphone is activated. When none of the microphones are active, an overview camera will be automatically selected. The image can be displayed on projectors or other screens together with information about the current speaker if required (such as delegate identification). The system operator has a dedicated screen, which also displays information about which camera is active. This system provides an extra dimension to conference proceedings.

The software will run on a PC which is temporarily connected to configure the wired or wireless conference system and the analog video matrix or movable camera.

With this PC the camera positions can be defined using the on-screen Pan, Tilt and Zoom control and stored as prepositions in the Autodome camera. At the same time a delegate position is linked to a camera preposition.

When all delegate positions are linked to camera prepositions the configuration needs to be uploaded to the conference system where it will be stored persistent in the central control unit.

It shall be possible to print and store the configuration file on the temporarily PC for later use. In case help or more information is needed the on‑screen help can be activated from the software. After configuration the PC will be removed and video matrix or Autodome is directly connected to the conference system.

The product shall be or similar to:

DCN-SWSACC Stand Alone Camera Control

## Synoptic Microphone and Voting

The Synoptic Microphone and Voting software shall provide a range of conference facilities when

used in combination with a wireless or wired conference system. The available functions shall include automatic seat assignment, synoptic microphone monitoring and control, and voting management.

The product shall have the following Features and Benefits

* Synoptic room overview for monitoring and controlling the microphones
* Voting control with individual results
* Real-time voting results displayed in Microsoft PowerPoint®
* On-screen help in many languages

The application shall shall support the following operating systems:

* Windows 7 Home Premium (32 or 64 bits) or above.
* Windows 8.1 Pro (64 bits) or above.

The user interface shall be based on a graphical representation of the conference venue. When a device is connected to the system it is automatically recognized and an icon is created for it on the on-screen room layout. The icons display information about device status and can be used by the operator to select individual devices for remote control functions. If a device becomes disconnected from the system, a red cross is displayed on top of its icon to alert the operator.

The Synoptic Microphone and Voting Software shall be able to operate in the following modes, depending on the required task:

* Assignment mode allows you to assign names to microphone icons. The positions of the icons on the room layout can also be changed using the standard windows ‘drag & drop’.
* Microphone control mode allows you to observe and control the state of each individual microphone. Microphones can be switched on and off, or placed in the ‘request to speak’ queue.
* Battery and signal view mode shows the remaining battery charge time and the signal strength for each wireless discussion unit
* Voting result mode shows individual results in different colors according to votes cast

The application shall provide parliamentary voting functionality. The system operator can summon delegates to vote, as well as starting and stopping voting sessions. Final vote results can be automatically printed or exported to a file; the software can also be configured to send realtime voting information to Microsoft PowerPoint® for display.

The product shall be or similar to:

DCN-SWSMV Synoptic Microphone and Voting Software

# Cameras and accessories

## Video Switcher

The video switcher shall provide automatic camera switching in conference venues. It shall be easily configured using the conference system software and a video switcher keyboard. It shall ensure that cameras are automatically switched to cover the speaking delegate in conferences.

Either fixed or dome cameras shall be able to be connected. There shall be five video outputs used to connect hall displays or monitors.

The product shall have the following Features and Benefits

* 16 camera inputs and five video outputs
* Control of AutoDome Series dome cameras
* 48-character on-screen display
* Compact single bay construction

The product shall have the following Interconnections

* BNC Video inputs and monitor outputs
* Console, RS232 port for external PC or control interface (CCU of DCN system) - 9-pin D-type connector
* Biphase out, multiple ports (12 for LTC 8200) for camera control - removable screw terminal connection blocks.
* Keyboards, Multiple ports (4 for LTC 8200) for keyboard connection - 6-pin RS485 ports for Allegiant Keyboard use.

The product shall have the following Technical Specifications

Electrical

Rated voltage 220 to 240 Vac. (50/60

 Hz)

Voltage range 198 to 264 Vac.

Power consumption 50 W

or

Rated voltage 120 Vac. (50/60 Hz)

Voltage range 100 to 140 Vac.

Power consumption 50 W

Video input signal 0.5 Vpp to 2 Vpp

 (composite negative

 sync.)

Gain Unity ± 2 % (75 W)

Video bandwidth (-3 dB) 25 MHz

Mechanical

Dimensions (W x D x H) 440 x 305 x 40 mm

 (17.3 x 12 x 1 .7 in)

Weight 4 kg (8.8 lb)

Mounting Rack mounting brackets

 included

The product shall be or similar to:

|  |  |  |  |
| --- | --- | --- | --- |
| Type number  | No. of video inputs | No. of video outputs | Max. No. of keyboards |
|  |  |  |  |
| LTC 8100 | 8 | 2 | 2 |
| LTC 8200 | 16 | 5 | 3 |
| LTC 8300 | 32 | 6 | 4 |

## Video Switcher Keyboard

The keyboard shall be used with video switcher. It shall provide a convenient means of operating and configuring the switcher. It shall be equipped with a variable-speed pan and tilt joystick control for positioning cameras, and shall have an attractive screen for displaying camera information.

The product shall have the following Features and Benefits

* Full-function, ergonomically-designed keyboard
* Variable speed joystick control
* 48-character on-screen display

The product shall have the following Technical Specifications

Mechanical

Dimensions 220 x 51 x 155 mm

(W x D x H) (8.7 x 2 x 6.11 in)

Weight 0.55 kg (1 .2 lb)

The product shall be or similar to:

LTC 8555/00 Allegiant Keyboard

## AutoDome Controller

This AutoDome Controller shall have the same functionality as a video switcher keyboard and video switcher to configure and control an AutoDome system. It shall be required in the conference systems with direct camera control to pre-position an AutoDome system. The AutoDome shall be temporarily connected for this purpose to the AutoDome Controller for setting the pre-positions as required for the different microphone units. After this, setting the AutoDome system shall be connected to the central control unit. The AutoDome Controller shall be needed to change the programmed pre-positions when required.

The product shall have the following Technical Specifications

Electrical

Rated voltage 220 to 240 Vac. (50/60

 Hz)

Voltage range 195.5 to 253 Vac.

Power consumption 6 W

or

Rated voltage 120 Vac. (50/60 Hz)

Voltage range 105 to 132 Vac.

Power consumption 6 W

Mechanical

Dimensions 220 x 101 x 155 mm

(W x D x H) (8.7 x 4 x 6.11 in)

Weight 0.55 kg (1 .2 lb)

The product shall be or similar to:

LTC 5136/51 AutoDome Controller

 230Vac

LTC 5136/61 AutoDome Controller

 120Vac

## AutoDome System

The AutoDome system shall allow total observation of a large area with a single camera system. The system, with its built-in camera, driver and integral high-speed pan and tilt shall provide 360° observation. It shall be possible to program the system with up to 99 pre-positions.

The product shall have the following Features and Benefits

* Integral camera pan/tilt and receiver/driver system
* 360 degrees observation
* High-speed pan/tilt operation
* Up to 99 pre-positions

The product shall have the following Functions

The AutoDome system shall be ideal for conference venues. Its powerful auto-focus zoom lens shall allow it to produce clear, close-up shots of speaking delegates, in all sizes of congress venue. The high-speed pan-tilt shall quickly switch positions, and the 360° angle of operation shall cover all microphone positions can be covered.

The dome system shall be compact, lightweight system and shall contain a high-performance 1/4-inch color CCD camera with an 26:1 auto-iris, auto-focus zoom lens. Additional zoom power shall be provided by a 12 x digital electronic zoom.

Integral high-speed pan/tilt and variable speed operation shall allow accurate, high-speed camera positioning. The camera, lens and pan/tilt module shall be able to easily be removed from the domed enclosure to simplify installation and service.

The cameras shall be either suspended or in a pendant mount.

The product shall be or similar to:

|  |  |  |
| --- | --- | --- |
|  | VG4-313-CCS0 | VG4-323-CCS0 |
| Camera type | In-ceiling | In-ceiling |
| TV standard | PAL | NTSC |
| Power | 24 Vac/50 Hz | 24 Vac/60 Hz |
| Clear bubble | Yes | Yes |
| Power supply | No transformer included. | No transformer included.  |
|  |  |  |
|  | VG4-313-PCS2W | VG4-323-PCS2W |
| Camera type | Pendant | Pendant |
| TV standard | PAL | NTSC |
| Power | 230 Vac/50 Hz | 120 Vac/60 Hz |
| Clear bubble | Yes | Yes |
| Power supply  | Transformer included in Wall mount | Transformer included in Wall mount |

## Color Camera

The color camera shall be compact rugged, 1/3-inch image format digital color CCD cameras.

The cameras shall come with a lens wizard that automatically detects the type of lens installed and shall provide an OSD guide that allows the installer to easily adjust the lens level and focus without special tools or filters.

The product shall have the following Features and Benefits

* 1/3-inch format CCD imager
* High sensitivity
* Easy to install
* Accepts AC or DC voltages

The product shall have the following Functions

The cameras shall incorporate a bi-directional communication capability embedded in the video signal. This communication shall create the possibility so technicians can check status, change camera settings and update firmware.

The product shall have the following Technical Specifications

Electrical

Power Consumption 4 W, excluding lens.

Imager Interline transfer CCD 1/3-inch image

 format.

Active Picture Elements

PAL Models 752 H x 582 V.

NTSC Models 768 H x 494 V.

Mechanical

Connectors Video Output Video/DC-IRIS

 connector BNC 4-pin EIA-J

Camera mounting Top and Bottom, 1/4-inch 20 UNC.

Lens mounting C and CS.

Dimensions 58 x 66 x 122 mm (2.28 x 2.6 x

(H x W x D) 4.8 inch).

Weight 0.45 kg (0.99 lb).

The product shall be or similar to:

LTC 0455/10 Series Color Camera

 12 V, PAL

LTC 0455/20 Series Color Camera

 12 V, NTSC

LTC 0455/50 Series Color Camera

 230 V, PAL

LTC 0455/60 Series Color Camera

 230 V, NTSC

## HD Conference Dome

The HD Conference Dome shall be an extremely compact and easy to install PTZ camera with an industry

standard HD-SDI output for superb HD quality video.

The camera shall provide complete network-based control of all dome functionality including pan/tilt/zoom

operation, presets as well as web-based configuration

of all dome settings.

The product shall have the following Features and Benefits

* HD 1080p and 720p resolutions
* 160x zoom (10x optical, 16x digital)
* Industry standard HD-SDI output
* Control and configuration via Ethernet
* Screen line option for displaying delegate names up to 16 characters

Despite its compact design, the HD Conference Dome shall deliver state-of-the-art technology and features that are rare to most compact PTZ cameras. It shall have variable pan and tilt speeds and AutoPivot to ensure optimal camera control and viewing at all zoom levels. It shall incorporate high-performance 160x (10x optical/16x digital) zoom autofocus camera and the latest digital imaging technology with excellent sensitivity and resolution. It shall have 99 user-defined presets.

The HD Conference Dome PTZ camera shall have a 1/2.5-inch progressive scan CMOS sensor. With up to 1080p resolution and sensitivity to below 1.0 lux. Pan and tilt preset repeatability shall be accurate to within

±0.1 degrees to ensure that the correct scene is captured every time. The HD Conference Dome shall deliver variable pan/tilt speeds from a crawl speed of only 1 degree per second up to an ultra-quick 120 degrees per second. The dome shall be capable of pan speeds of 360 degrees per second and tilt speeds of 100 degrees per second between prepositions. The HD Conference Dome shall provide a tilt range of 0 to 94 degrees, and a pan range of up to 360 degrees continuous rotation.

It shall contain AutoScaling (proportional zoom) and AutoPivot (automatically rotates and flips the camera) features to ensure optimal control.

The product shall be or similar to:

|  |  |  |
| --- | --- | --- |
|  | VCD-811-IWT | VCD-811-ICT |
| Camera type | Surface mount | Surface mount |
| Video standard | HD-SDI SMPTE 292M | HD-SDI SMPTE 292M |
| Power | 24 Vac/50 Hz | 24 Vac/50 Hz |
| Bubble | Tinted | Tinted |
| Housing | White | Charcoal |

## LCD Monitor

The monitor shall be is a high-resolution, high performance liquid crystal display (LCD) video monitor. It shall be possible to be used as an operator display with the conference system software. The monitor shall include a 48-cm (19-inch) color thin film transistor (TFT) active matrix LCD panel with 1280 by 1024 pixels.

The product shall have the following Features and Benefits

* High‑resolution–500 TVL, 1280 x 1024–image
* Picture‑in‑Picture or split screen function for viewing video on the PC screen
* Analog RGB, digital DVI, and digital HDMI inputs Space-saving, compact design
* Two (2) composite BNC inputs and loop‑through outputs
* Y/C (S-video) and loop‑through video and audio inputs
* Long-life fluorescent backlight maintains optimal screen brightness (300 cd/m2) throughout monitor life
* 3-D comb filter and de-interlace circuitry for high quality video
* Trigger and Auto Switching features allow the monitors to change input sources
* Easy to use controls with remote and on-screen menu display Front panel control lockout

The product shall have the following Technical Specifications

Electrical

Rated Voltage 110/230 VAC, 50/60 Hz

Voltage Range 90 to 256 VAC

Power at Rated Voltage <50W

Sync Format PAL/NTSC

LCD Panel TFT LCD

Screen Size 376 (H) x 301 (V) mm

 (14.8 x 11.9 in)

Viewable Picture 483mm (19 in) measured diagonally Area

Pixel Pitch 0.294 (H) x 0.294 (V) mm

Resolution 1280 x 1024 pixels; 500

 TVL Typical

Aspect Ratio 5:4

Mechanical

Cabinet electrolytic galvanized iron

 Charcoal black

Dimensions

LCD Panel 428.5 x 379.0 x 79.5 mm

(WxDxH) (16.6 x 14.9 x 3.3 in)

Weight 6.36 kg (14.0 lb)

The product shall be or similar to:

UML-192-90

# Installation Equipment

## Trunk Splitter

The Trunk Splitter shall be used in conjunction with the system installation to divide the trunk-line cabling, thus it shall allow system installers to optimize layout of the trunk-line and contribution equipment to suit the conference venue. The Trunk Splitter shall come complete with cable restraining clamps and includes mounting holes for fixing to a floor or wall.

The product shall have the following Interconnections

* 2 m (78.7 in) long cable terminated with a molded six-pole circular connector
* Six-pole circular connector for loop-through connections
* 2 x six-pole circular connector for trunk cable splitting and pulse regeneration purposes

The product shall have the following Technical Specifications

Mechanical

Mounting Floor, cable duct or wall

 mounting

Dimensions (H x W x D) 35 x 49 x 140 mm

 (1 .4 x 1 .9 x 5.5 in)

Weight 0.3 kg (0.66 lb)

Color Charcoal (PH 10736)

The product shall be or similar to:

LBB 4114/00 Trunk splitter

## Tap-Off Unit

The Tap-Off Units shall create short-circuit proof tap-off points on the trunk line cabling. Each tap-off point shall allow for connection of up to five channel selector panels or one contribution unit. A Tap-Off Unit shall consist of two tap-off points. The Tap-Off Unit shall come complete with cable restraining clamps and shall include mounting holes for fixing purposes.

The product shall have the following Interconnections

* 2 m (78.7 in) long cable terminated with a molded six-pole circular connector
* Six-pole circular connector for loop-through connections
* 2 x six-pole circular connector for trunk cable splitting and pulse regeneration purposes
* Short-circuit proof tap-off points at the system cable

The product shall have the following Technical Specifications

Electrical

Max power at Tap-offs 4.5 W each

Mechanical

Mounting Floor, cable duct or wall

 mounting

Dimensions (H x W x D) 35 x 49 x 140 mm

 (1 .4 x 1 .9 x 5.5 in)

Weight 0.3 kg (0.66 lb)

Color Charcoal (PH 10736)

The product shall be or similar to:

LBB 4115/00 Tap-Off Unit

## Extension Cable

The product shall have the following Technical Specifications

Mechanical

Gray PVC sheath 6 mm (0.24 in) dia.

The product shall be or similar to:

LBB 4116/00 100mm DCN installation cable

 without connectors

LBB 4116/02 Extension Cable 2 m (6.6 ft)

 terminated with connectors

LBB 4116/05 Extension Cable 5 m (16.0 ft)

 terminated with connectors

LBB 4116/10 Extension Cable 10 m (33.0 ft)

 terminated with connectors

LBB 4116/15 Extension Cable 15 m (49.2 ft)

 terminated with connectors

LBB 4116/25 Extension Cable 20 m (66.0 ft)

 terminated with connectors

LBB 4116/25 Extension Cable 25 m (82.0 ft)

 terminated with connectors

## cable locking clamps

The product shall be or similar to:

LBB 4117/00 Set of 25 cable locking clamps

## Termination plug for cable

The termination plug shall be used with opened-ended system cabling.

The product shall be or similar to:

LBB 4118/00 Termination plug for cable

## Optical network Splitter

The optical network splitter shall be used in conjunction with the system installation to tap off two branches from the optical network cable run.

The product shall have the following Features and Benefits

* Redundant network connection
* Power on indicator
* Error indication
* Powered externally (48 V DC) or from the CCU
* External power is not fed into the main cable run
* Automatically powered from the external power supply
* Maximum power feed to tap-off outlets can be reduced
* Repeater function to extend the cable length with
* 50 meter (164 ft)

The product shall have the following Controls and Indicators

* 2 LEDs for diagnostics
* Jumpers to select maximum power fed to the tap offs Interconnection
* 2 optical network connection for main run
* 2 optical network connection for tap off
* External power supply connector

The product shall have the following Technical Specifications

Mechanical

Mounting By 2 screws in bracket

Dimensions (H x W x D) 200 x 82.5 x 28.9 mm

(with and without bracket) (7.8 x 3.2 x 1 .1 in)

Weight 0.3 kg (0.66 lb)

Color Charcoal gray

The product shall be or similar to:

LBB 4410/00 Optical network Splitter

## Fiber interface without Address

The fiber interface shall be used in conjunction with the system installation and shall convert from plastic optical network cable to glass optical fiber and vice versa.

The product shall have the following Features and Benefits

* Redundant network connection
* Power on indicator
* Error indication
* Powered externally (48 V DC) or from the CCU
* Automatically powered from the external power supply

The product shall have the following Controls and Indicators

* 2 LEDs for diagnostics
* 2 control inputs (for future use)

The product shall have the following Interconnections

* 1 optical network connection for plastic optical fiber
* 1 optical network connection for glass optical fiber
* External power supply connector

The product shall have the following Technical Specifications

Mechanical

Mounting By 2 screws in bracket

Dimensions (H x W x D) 200 x 82.5 x 28.9 mm

(with and without bracket) (7.8 x 3.2 x 1 .1 in)

Weight 0.3 kg (0.66 lb)

Color Charcoal gray

The product shall be or similar to:

LBB 4414/10 Fiber interface without Address

## Optical Network Cables

This shall be a special cable with 2 plastic fibers for data and audio communication and 2 copper cores for the power supply. The cable shall be supplied with the network connectors fitted. This cable shall be used to connect the CCU to audio expanders.

The network cables shall be supplied in different lengths. The extension (/xx) on the type number indicates the length of the cable.

The product shall be or similar to:

LBB 4416/00 100 installation network cable

 without connectors

LBB 4416/01 Optical Network cable 0.5 m (1 .6 ft)

 terminated with connectors

LBB 4416/02 Optical Network cable 2 m (6.6 ft)

 terminated with connectors

LBB 4416/05 Optical Network cable 5 m (16 ft)

 terminated with connectors

LBB 4416/10 Optical Network cable 10 m (33 ft)

 terminated with connectors

LBB 4416/20 Optical Network cable 20 m (66 ft)

 terminated with connectors

LBB 4416/50 Optical Network cable 50 m (164 ft)

 terminated with connectors

## Optical cable & connector tool kit

The tool kit contains the following items:

* Standard cutting pliers
* Stripping pliers
* Crimping pliers
* POF cutting/stripping tool
* POF positioning and indent tool
* Torx screw driver
* Spare cutting system

The product shall be or similar to:

LBB 4418/00 Optical cable & connector tool kit

## Optical cable couplers

Cable couplers shall be used to couple optical network cable assemblies for extension.

The product shall be or similar to:

LBB 4419/00 Set of 10 optical cable couplers

# Technical Data

The conference system shall be conformed to the international standard IEC 60914, the international standard for conference systems.

The conference system shall have the following technical specification.



Microphone polar pattern

Microphone frequency response

Microphones

Frequency response 100 Hz to 16 kHz

Transducer type condenser

Directional pattern cardioid

Sensitivity 9.3mV at 85dB SPL

 (Rl=3k3, U=5V)

Max. SPL for THD <3% 110 dB

Equivalent input noise level 24 dB lin, 21 dBA

Transmission links

* From delegate to interpreter
* From delegate to delegate
* From interpreter to delegate
* From interpreter to interpreter
* From auxiliary input to delegate
* From auxiliary input to interpreter
* From delegate to auxiliary output
* From interpreter to auxiliary output

Frequency response 125 Hz to 20 kHz\*

Harmonic distortion <0.5%

Harmonic distortion <1%

at overload

Crosstalk attenuation >80 dB

at 4 kHz

Dynamic range >90 dB

\*Intercom links 125 Hz to 5 KHz

Combined units

* Delegate microphone with transmission link to interpreter headphone
* Delegate microphone with transmission link to delegate headphone
* Delegate microphone with transmission link to auxiliary output
* Interpreter microphone with transmission link to interpreter headphone
* Interpreter microphone with transmission link to delegate headphone
* Interpreter microphone with transmission link to auxiliary output

Typical frequency 125 Hz (-8 dB) to 16

response kHz (-8 dB)

Front-to-random >4.6 dB

sensitivity index

Rated equivalent sound <24 dB (A)

pressure level due to

inherent noise

Total harmonic <1%

distortion at overload

Crosstalk attenuation >96 dB

System electrical and electro-acoustic characteristics

Nominal input level 85 dB SPL

Overload input level 110 dB SPL

Automatic gain reduction 25 dB interpretation

at Overload input level channels, 21 dB delegate

(not for PA-floor output) loudspeaker channel

Operator master gain 24 x 1 dB and OFF (Mute)

control

System environmental conditions

Working conditions Fixed/stationary/

 transportable

Temperature range

- transport 20 °C to +55 °C (-4 °F to 131 °F)

- operating +5 °C to +45 °C (41 °F to 113 °F)

Relative humidity 15 - 90% max.

Safety According to IEC 60065, and according to CAN/CSA-E65 (Canada

 and USA) and UL6500

EMC emission According to harmonized standard EN 55103-1

 and FCC Rules (Part 15) complying with the limits for a class A digital device

EMC immunity According to harmonized standard EN 55103-2

EMC approvals Affixed with the CE mark.

ESD According to harmonized
 standard EN 55103-1

Mains harmonics According to harmonized
 standard EN 55103-1

Other legal requirements No cadmium used other than in the Nickel-Cadmium battery housed in the central unit

Shock resistance According to IEC 60069 - 2

 - 29 Eb

Vibration resistance According to IEC 60068 – 2

 - 6 Fc

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| --- |
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| For more information please visit [www.boschsecurity.com](http://www.boschsecurity.com) |
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