



VERSION 2

Architectural and Engineering Specifications (A&E)

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1. System description

Technological platform that allows highly efficient meeting planning, management, documentation and follow-up. The system must consist of: a Console, a President Microphone, Delegate Microphones, a PTZ Camera, a Webcam and a fingerprint reader. The system must include the option of connecting the microphones by means of a WiFi wireless interface and an Ethernet wired interface. Each microphone has the capacity for wireless communication with the Conference Console within the 2.4 Ghz and 5 Ghz frequency range.

The system must include a web interface that makes it possible to manage the local conference room configuring the network, the microphone's Conference Mode and the PTZ Camera. Additionally, it must provide functions for evidence generation by means of conference session creation with audio/video recording, biometric identification of participants, minute creation, biometric validation and signature capture directly on the microphone, participant time mark capture per intervention, keyword manual entry, viewing of sessions that have been carried out with videos recorded by the system, minutes created and signed by the participants and fast navigation through the video timeline with the help of a time-marks list created during the sessions. It must be possible to create shared sessions with other Invict Room users via videoconference with other Invict terminals as well as mobile terminals using cellular phones. The system must provide System Use indicators, such as Number of Sessions Created and Date of Use for specific Invict Rooms.

Invict must have a Centralized System which will manage all of the rooms with detailed information about devices associated with each room and geographic location. It must allow the synchronization and centralization of the results of all sessions created by the organization in each of the Invict Rooms. The system will offer a Search Engine that will make searching for sessions easier. There will be a Session Programming Function for the rooms, using an events calendar, it will send invitations to the participants so that they may join the session either using an Invict Room or a Mobile Client using the videoconference function with up to 10 synchronous remote points. The Analytics Section will make it possible to view the total hours invested in meetings, the total cost of meetings classified by department, detailing hours per person, total hours invested in meetings, percentage of user interventions in each conference and cost comparison charts for each of the participants in the sessions.

The system must include the possibility of integration with renowned Communication Solutions such as Skype*, Hangouts*, Go2Meeting*, Zoom* in such a way that voice records may be included in the session recording.

2. Detailed specifications

a. Console Web Software

- Communication via HTTPS protocol
- User management
- Options bar for viewing System Information including Start, Network, Microphone, Conference, PTZ, Session, Configuration and Exit.
- WLAN, WAN and LAN configurations
 - WAN
 - MAC edit field
 - IP edit field

- Subnet Mask edit field
 - SSID Name edit field
 - Password edit field
 - Drop-down menu of encryption options
 - Bandwidth Selector from 2.4GHz to 5GHz
 - Automatic Channel Selector
 - Channel Intensity graph
 - 'Save' button for Settings
 - Button for generating the microphone WiFi configuration file, which is transferred using an USB flash drive
- WAN
 - DHCP selection box
 - Gateway portal edit field
 - Subnet Mask edit field
 - DNS1 edit field
 - DNS2 edit field
 - IP edit field
 - 'Save' button
- LAN
 - MAC edit field
 - IP edit field
 - Subnet Mask edit field
- Administrative User and Operator User control mechanism
- Microphone Status Summary screen including Name, Type, Battery Charge Level and Connection Status
- Access buttons for Create Session, Session Complete, Create Quick Session and View Sessions
- Advanced microphone configuration and status with automatic microphone identifier, send a command to the microphone for it to flash its LEDs when the numerical identifier is clicked, editable microphone name, configurable microphone type with drop-down menu with President and Delegate options, speaker volume with slide control (for microphone versions where this is available), microphone input sensitivity with slide control, battery charge status with level icons, WiFi potency level on the microphone, conference connection status, microphone On/Off button, microphone Restart button, Microphone Synchronization Status notifier, conference room microphone elimination button
- Support for the following conference modes: Free, First In First Out (FIFO) and Limit (See Annex 1 Literal a.)
- For FIFO and Limit modes, box for selecting the maximum number of microphones permitted in the session.

*Skype, Hangouts, GoToMeeting and Zoom are Registered Trademarks, they belong exclusively to their rightful owners.

- PTZ preset position configuration, available microphone list panel and Whole-Room Position (Home) preset, camera visualization box, Zoom In and Zoom Out buttons, Up, Down, Left, Right buttons, Preset Position Reset button, 'Save Position' button
- Productivity Functions Screen with Create Session, Create Quick Session and View Session buttons
- Complete Session Function includes user biometric enrolment and identification, minute signing and intervention timemark capture
 - Session Name prompt screen, label indicating available recording time in the console, 'Close' and 'Create' button
 - Participant enrolment and identification screen, fingerprint and photograph capture, name, surname and ID document entry, add participant, clear data and continue session buttons
 - Notification screens to warn the user when the Add Participant screen is closed
 - Notification Screen asking if video recording should start
 - Screen alerting about the impossibility of starting video recording if participants are not added to the session
 - Session Screen with editable fields: Title, Session Date & Time, Place, 'Start Recording' button, modal screen video visualization, new tab video visualization and participants. Text editor with 'Edit' tool for minute generator, field for manual Tag entry with 'Add' button, 'End Session' button and label with Available Recording Time information
 - 'Participant' button that deploys the list of the participants identified in the session including Name, Document, Microphone Terminal Identification Status and 'Request Signature' button, button for displaying Participant Enrolment and Identification Screen, button for massive request
- Quick Session for session in which only video and participation timemark capture are required
 - Session Name prompt screen, label indicating available recording time in the console, 'Close' and 'Save' button
 - Session Recording Start Screen with 'Yes' and 'No' options
 - Quick Session Screen with Title, field for entering timemarks manually, 'Add Tag' button, video visualization screen, 'Start Recording' and 'Video Stop' buttons, full size video visualization in new tab, label with Available Recording Time information
- Session Visualization
 - Left Sidebar with Search Field and Directory Tree
 - Name option for Session Search
 - Directory Tree with Session Names
 - Session Folder containing PDF of session minute, mp4 file of session video and Timemark File for Video Indexation
 - Session Video Modal Screen with embedded player

- Field with Timemarks, when clicking on the mrks the video moves automatically to the corresponding moment in the recording
- Field displaying the PDF generated in the session
- All files can be downloaded independently or as together as a compressed file
- Basic Set-up Drop-down Menu
 - Console with 'On' and 'Shutdown' options
 - Graphic Language Interface for English, Spanish and Portuguese
 - 'About' field with product information
 - Date & Time with pop-up modal window, with Calendar Control and Slide Controls for hours and minutes
 - Biometric Reader Driver download button
 - Service Tab displaying screen with the setup of the different services that support the system's operation
 - Biometric Engine IP and Port
 - Biometric Bridge IP and Port
 - User IP and Port
 - Minute IP and Port
 - Notifier IP and Port
 - Webcam for face capture selection and resolution
 - Browser camera selection
 - Captured Video Stream URL
 - Video Screen to monitor the video captured by the camera selected for the browser
 - 'Save' button for configuration settings
- Indicators
 - Summary of created sessions
 - Dates of use
 - Enrolled users
 - User Session Intervention Frequency
 - Session Cost as derived from the cost of the staff present
- Videoconference
 - Conference Room management
 - Invitation Send option for Remote Rooms
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 - Audio and Video Terminal Recording
 - Conference result synchronization with the Central Server
- b. Conference Server
 - PTZ Conference Camera Management
 - Management using Pelco P Protocol via RS232 and USB interface
 - Video Camera connection via USB interface
 - High quality audio and video recording directly on the Hard Drive of the device

- Web Server
 - Voice Conference Server
 - Video Streaming Server
 - Channel Encryption for communication between the Server and the AES-128 microphones
 - Microphone message management
 - Shutdown
 - Restart
 - Speaker volume Up and Down
 - Microphone sensitivity Up and Down
 - Audio Playback Mute
 - Audio Capture Mute
 - Time on device
 - Battery Charge Level
 - WiFi Signal Level
 - Bluetooth Status
 - Conference Connection Status
 - Channel request 'Priority' button
 - Channel request 'Speak' button
 - Fingerprint image
 - Identified User Information
 - Identified User Photograph
 - Signature request
 - Image of captured signature
 - Flash LED request for physical microphone identification
 - Conference Mode Management
 - Wireless Access Point Management at 2.4 GHz and 5 GHz
 - Ethernet Network Management
 - External solution video-stream recording
 - Skype*
 - GoToMeeting*
 - Webex*
 - Hangouts*
 - Timemark indexation when an external user speaks
 - Skype*
 - GoToMeeting*
 - Webex*
 - Hangouts*
- c. Microphone Software
- Audio Client for reception and capture of audio streams
 - Server based message management
 - Shutdown
 - Restart
 - Speaker volume Up and Down
 - Microphone sensitivity Up and Down
 - Audio Playback Mute
 - Audio Capture Mute

- Time on device
- Battery Charge Level
- WiFi Signal Level
- Bluetooth Status
- Conference Connection Status
- Channel request 'Priority' button
- Channel request 'Speak' button
- Fingerprint image
- Identified User Information
- Identified User Photograph
- Signature request
- Image of captured signature
- Flash LED request for physical microphone identification
- Graphic User Interface
 - Customizable background adaptable to the Logo and Corporate Image of the entity where the system is installed
 - Time
 - Microphone 'Mute' button; the microphone can only be muted while the microphone has a channel assigned
 - 'Volume Up' button
 - 'Volume Down' button
 - Numerical Speaker Volume Level Indicator (only for versions with in-built speakers)
 - Speaker 'Mute' button (only for versions with in-built speakers)
 - Microphone 'Off' button
 - Conference Connection Status Indicator displaying two options: 'Connected' or 'Not connected'
 - Bluetooth Connection Status Indicator displaying two options: 'Connected' or 'Not connected'
 - WiFi Connectivity Level Indicator displaying several options: Full, Medium-High, Medium, Medium-Low and No Signal
 - Battery Charge Level Indicator displaying several options: Full, Medium-High, Medium, Medium-Low and No Charge
- USB flash drive update mechanisms
- USB flash drive WiFi configuration mechanisms

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d. Centralized System Software

- Key Performance Indicators: KPI

- Total Meeting Hours Comparative Indicator for the most recent Time Period classified by company, department or area
- Total Man-Hours Invested in Meetings Comparative Indicator for the most recent Time Period classified by company, department or area
- Total Meeting Cost Comparative Indicator for the selected time period classified by company, department or area
- Meeting Cost-per-Hour Comparative Indicator and Total Cost Tendency for the selected time period
- Total Meeting Time and Man-Hours Invested Comparative Indicator
- Top User Meeting Time and Cost Comparison Table
- User Management System
 - Registered User Visualization
 - User Information Visualization
 - Filters for limiting the number of visible users
 - New User creation
 - User photograph capture
 - User fingerprint capture
 - User Basic Information capture
 - Name
 - Surname/Last Name
 - ID Document Type
 - ID Number
 - Nationality
 - E-Mail
 - Cost per hour
 - Currency
 - Company
 - Departament
 - Area
 - User Profile
- Room Management
 - Visualization of conference rooms linked to the system
 - Conference Room Information visualization
 - Conference Room Creation with basic room information
 - Room Name
 - Company
 - Country
 - Departament
 - City
 - Post Code
 - Address
 - Telephone
 - Add Device option

3. Security Specifications

- a. Communication between the Console and the Web Clients must be secured using HTTPS/SSL protocol
- b. Data communication between the Console and the Microphones must be encrypted using AES-128
- c. WiFi connectivity secured using WEP, WPA, WPA2
- d. Communication between the Console and the Centralised Management System must be secured using AES-128
- e. Videos captured by the System, must contain a Watermark that make it possible to verify the authenticity of the video and that it's a faithful copy of what was captured during the recording
- f. The Watermark must be customizable and it must conform to the needs of each organization

4. Technical Specifications

a. Console

Physical	Aluminum housing
	Fanless
	2 HDMI 1920x1200 Ports
	2 RJ45 10/100/1000 Ports
	1 USB 3.0 Port, 3 USB 2.0 Ports
	9-24 VDC Voltage Input
	Line Out 3,5mm Optic & Analog SPDIF
	2 Antenna SMA type connectors
	Power Indicator LED
	RS232/485/422 Serial Communication Port
	2 x 5 dBi antennas
	Operating Temperature 0°C - 35°C
	Storage Temperature -20°C - 85°C
	Security Slot
Average power Consumption: 40W	
Technical	Internal Storage
	Operation Modes: Station, AP, IBSS, Monitor, Mesh point, WDS, MASTER
	Operating System: Linux 64 bits
	Dual Band
Connectivity	Transfer Rate: up to 300 Mbps
	Wifi 2.4 GHz and 5 GHz 802.11 a/b/g/n
Security	WEP, WPA, WPA2

b. Microphones

Physical	2 buttons, 'Priority' and 'Speak'
	2 LED status indicators, Red and Green

	2 Built-in Speakers
	XLR 4 pin microphone input
	RJ45 LAN connector
	2x USB 2.0 Ports
	DC 10A 5V connector
	LED power indicator
	On/Off switch
	3,5mm Jack audio output
	Micro USB 3A 5V connector
Fingerprint reader	Thermal Sensor
	Active area 11,9mmx16,9mm
	256 Greyscale levels
	Scan time: 0.45 seg
	Mechanical durability 1.000.000 touches
	ESD 8KV Protection (contact discharge) y 16 KV (air discharge)
Microphone	Gooseneck
	Condenser type
	Red LED indicator
	Frequency Response: 40Hz - 16KHZ
	Supercardioid polar pattern
	Output Impedance: 75 ohm
	Sensitivity -40 dB
	Length 40 cm
	Balanced Output
	'Pop' Filter
Screen	TFT 3.5"
	Type: Resistive
	320x480 pixels
	16.7 M Colors
	Active area 49mm x 73mm
Power	Li-ion Battery 20.4 Ah at 3.7V
	Duration 22 Hours
	Charge time: 4H, DC connector @ 10A 5V
Connectivity	Wifi 2,4 GHz and 5GHz

c. Camera

Physical	Sensor: 1 / 2.9" CMOS color
	Effective pixels: 2.1 Megapixel
	Minimum illumination 0.1 Lux @ F1.2
	Lens: 5-50 mm
	Field of view 56°

	Zoom: 10X Optic	
	Pan: 360°	
	Tilt: -45° +90° (270 ° total)	
	Automatic pan	
	Pan speed 1-60°/ Sec	
	Tilt speed 1-60°/Sec	
	Mount Type: Ceiling / Wall / Table	
	Temperature 0-50°C	
	Relative Humidity 0-95% (non-condensing)	
	Dimensions: 145 x 125 x120 mm	
	Weight 730 Gr	
	Technical	White Balance Automatic / Manual
		BLC Compensation
Gain Control: Automatic		
Resolution: 1080p@30, 720P@30		
Signal Noise >50db		
USB 2.0 Video Output		
Presets: 64		
Communication: RS-232, RS-485, USB		
Protocol: VISCA / PELCO-D		
Speed: 9600 / 38400 bps		
Remote Control: Yes. Pan/Tilt/Zoom. 3m		
Power Input 12VDC, 1.2A. Power supply included..		

Annex 1.

a. Supported Conference Modes

Limit: In this Conference Mode the maximum number of participants that may intervene at any given time is established, if the maximum number is reached the system will not allow the intervention of any further participants. For example, if the system consists of 4 microphones and the limit is set at 2 microphones, only two participants, out of the possible four, may intervene in the conference at any given time; if a third participant tries to intervene in the conference they will not be given the floor until one of the two active speakers yields the floor.

FIFO: First In, First Out: In this Conference Mode the maximum number of participants that may intervene at any given time is established, if the maximum number of active participants is reached and an additional participant tries to intervene in the conference, the system will force out the first participant to become active and will allow the intervention of the last participant. For example, if the system consists of 4 microphones and the limit is set at 2 microphones, only two participants, out of the possible four, may intervene in the conference at any given time; if a third participant tries to intervene in the conference the first participant will be removed and the floor shall be yielded to the last participant.

Free: In this Conference Mode there is no limit to the number of active participants, allowing all participants to intervene in the conference at the same time. The only limit will be determined by the number of microphones available in the system. For example: if the system consists of 4 microphones, all 4 may intervene contemporaneously.

- NOTE: In all Conference Modes, the President Microphone will have priority over the other microphones.

Invict Inc reserves the right to change products or specifications without notice