

televic

Smart Audio & Control



CONFERENCE

Smart Audio & Control – Beyond Traditional Conferencing

For decades, Televic Conference has provided solutions for large scale institutions for managed meetings at the United Nations, U.S. Department of State, European Union, NATO and many world Government institutions. Most of these institutions require “traditional conferencing” features, such as Voting, Agenda, Request-to-Speak, Speech Timers and Simultaneous Language Interpretation.

Today, the Televic Discussion Microphone has become a new solution for standard AV installations, helping acoustic challenges with tall ceilings, glass or concrete walls, and expanding flex/divided rooms. The Televic Discussion Microphone with a built-in audio speaker at each station became especially valuable during the 2020 Pandemic to overcome social distance requirements, plexiglass workstations, and for hybrid meetings to connect to remote platforms such as Teams and Zoom.



City Government

Hybrid meeting compatibly with City Government application features, including Voting, Agenda, Camera Control, etc.

Corporations

Alternative to ceiling microphones with local audio in front of each participant. Options include flush mount, desktop, and video consoles with built-in web cam.



Courts

New microphone modes to support court applications. In-room and remote audio distributed throughout the courtroom and integrated with any court-recording platform: FTR, Liberty, Soniclear, etc.



Lecture Halls

Televic audio distribution streamlines the installation with redundant loop technology, while maintaining the DSP design requirements and control.





Smart Audio & Control

Presenting the Televic Smart Audio & Control platform - a set of new microphone modes and audio processing and routing technologies.

- + Optimized intelligibility for both in-room and remote participants
- + Consistent audio coverage in any room configuration
- + Reduced acoustic feedback for standalone and integrated systems
- + Hands-free discussion mode for in-person and remote audio
- + Ability to integrate current system with Confero Audio routing and DSP mode

Dynamic Mix Minus

The Dynamic Mix-Minus feature creates a true standalone system. Whether your participants are right next to you or remote on Teams or Zoom, you can count on consistent audio coverage in the entire meeting room so all can hear and be heard.

Traditionally, the built-in loudspeaker of a conference unit is muted when the microphone is activated. Televic has now added Dynamic Mix-Minus capability that allows the audio speaker to remain active when you turn on your microphone to engage the people in the room and remote participants. In other words, the Televic loudspeaker is still active without that local microphone audio and hence preventing feedback.

Having Dynamic Mix-Minus in the system creates more consistent coverage throughout the room regardless of the size of the room.

TRADITIONAL



DYNAMIC MIX-MINUS



A common challenge with City Councilors during a meeting is hearing everyone on the dais and remote participants clearly. The audio from the ceiling speakers is reported to sound distant or “far away;” and when increasing volume when needed, introduces feedback into the room.

With the Televic Dynamic Mix-Minus capability, each person with an active microphone can hear the remote participant and the other people speaking in the room through the built-in audio speaker directly in front of them. Dynamic Mix-Minus allows the Televic system to be a complete standalone solution for small to mid-size City Councils. However, it can be easily integrated into existing room audio and sound systems to cover public galleries and overflow areas.



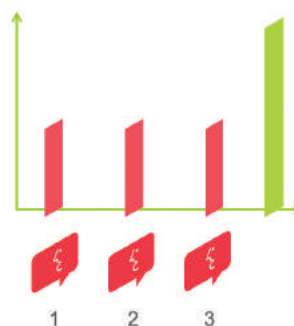
Gain Sharing

All open microphones are dynamically calculated such that the total gain of all open microphones always remains constant, even if at some point more people begin to talk.

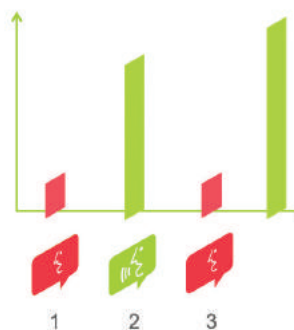
This means that if only one person is speaking, this person has the full gain of the system, while the other microphone gains decrease. This can be seen in the pictures below. Any background noise picked up by the 'silent' microphone does not get amplified as much as a traditional AV system where each microphone has a fixed gain.



If no one is speaking, each microphone gets equal gain.

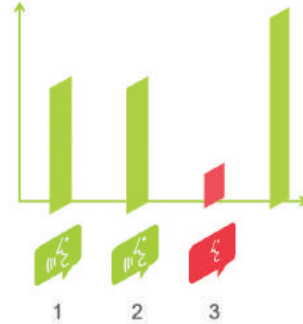


If a participant starts speaking, this speaker gets more gain, while the other microphones are reduced.





If two people are speaking at the same volume, they each get the same gain allocation. The total gain always remains constant.



Applying the Gain Sharing principle offers several benefits:

- + There are often multiple participants speaking at different volumes or distances from the microphone. The Gain Sharing algorithm can automatically adjust the gain of each microphone in real-time, ensuring that the audio levels are consistent and that the loudest and clearest sound sources are prioritized. This results in greater gain before feedback and a more natural and seamless listening experience for conference meeting attendees.
- + A Televic Conference system is often used in settings where clear communication is essential, such as business meetings, council debates, or educational events. Using Gain Sharing, background noise and other distractions are reduced, ensuring that attendees can hear and understand the speakers more easily.
- + A typical system involves many microphones and can be complex to configure, taking into account varying factors such as the number of microphones, room acoustics, and microphone proximity. Televic systems with the Gain Sharing algorithm can help simplify this process by reducing the need for DSP configuration and programming.

Speech Detection

Guarantee vivid engagement without confusing your listeners. With the Televic Speech Detection feature, you will always know exactly who is speaking. Even in discussions with multiple people, you can ensure only the person speaking is displayed. It significantly improves video capture (no need to trigger cameras with a microphone button) and ensures more accurate transcriptions and data reports.

Hands-free Mode 🖐️🖐️

Most in-person meetings happen organically with no time to push a button. The Televic Hands-free Mode is the first to achieve this capability in a conference system.



**Hands-free Mode =
Dynamic Mix Minus + Gain Sharing + Speech Detection**

Increased efficiency: participants can speak freely and spontaneously without the need to interrupt the flow of the conversation by pressing a button to speak. This can lead to more productive and efficient meetings, as participants can share their thoughts and ideas more easily and seamlessly.

Improved collaboration: Removing the need to push a button can foster a more collaborative environment, where participants feel more comfortable and empowered to speak up and contribute to the discussion. This can lead to a more inclusive and dynamic exchange of ideas.

Better engagement: With a more natural conversation flow, participants are more likely to remain engaged and attentive throughout the meeting. This can lead to better comprehension, retention, and follow-through on the topics discussed.

In Hands-free Mode, the microphone button can be configured as a hold-to-mute button, when you need to cough or want to have a side conversation. Televic wired systems can support up to 32 microphones with Hands-free capability, allowing all microphones and speakers to be active. These can also be integrated with remote meeting platforms.

For many years, Voice Activated (VOX) circuitry has been criticized as a poor solution for interactive meetings. The VOX system would chop off the beginning of sentences or not trigger the microphone from someone leaning back in their chair.

In addition, VOX can create disturbances due to noise-triggered activations or poor intelligibility due to slow activation of the microphone. Gain Sharing allows for a natural conversation flow with consistent audio quality.

Voice Activated (VOX) Versus Gain Sharing

Feature	Voice Activated (VOX)	Gain Sharing
Microphone Activation	Only when energy is detected	Active all the time
Background Noise Reduction	False interruption due to noise	Noise is reduced by gain sharing algorithm without microphone cutoff
Audio Quality	Inconsistent audio quality due to microphone cutting	Consistent audio level for all participants
Response Time	Slow response time-	Instantaneous response in gain resulting in natural conversation flow





Microphone Modes

Meeting rooms serve a variety of purposes, catering from those focused on decision-making to those centered around collaboration. These spaces are designed to provide a suitable environment for people to come together, discuss ideas, share information, and work towards a common goal.

The Televic Conference solution has a set of tools to facilitate effective communication and enhance productivity. Pick the microphone mode that suits the type of meeting you're having any time you want. Simply change it with a click of a button in our built-in browser web page.



Open Microphones

All microphone modes, with the exception of hands-free mode, can limit the number of open microphones at one time. While hundreds of Televic wired stations could be deployed in one system, the maximum number of live mics is 25 with 32 in Hands-free mode.

Direct Speak Mode

This mode mimics the action of unmuting your microphone by pressing the microphone button, speaking as needed, then remuting your microphone with another push of the microphone button. This is similar to everyone's experience with Teams and Zoom (latch on/latch off).

Activation Mode Option:

Sets the activation of a microphone to either push and hold while speaking or on/off toggle.

Hold to Mute Option:

A new microphone mode option when in Hands-free mode. The microphone is always live until you press and hold to mute (momentary latch).

Override Option:

When the designated number of open microphones is reached, the next participant pushing the microphone button to join the conversation will be added. This will automatically deactivate the first microphone in the group (first in/first out).



Request Mode

This mode is typically used for meetings that require more structure or have a certain protocol to follow. These types of meetings require moderation capabilities and request mode suits this need perfectly.

With Request activated, participants don't have a live microphone and their microphone lights up a different color and they are put into the request queue.

A chairperson or operator can add participants to the conversation by pressing the "next-in-line" button, resulting in adding the person who is on top of the Request queue.

With the use of Televic's software, a chairperson can decide which participant from the complete queue list to add to the conversation, also called "jump the queue". The reordering of the request list is also possible using a simple drag and drop principle.

An option is also available to notify the person on top of the queue to be ready to join the conversation. The LED of the microphone blinks, giving an indication of who will speak next and will change color when the microphone is active.



Group Mode

Group Mode is a semi-automatic mode for meetings that need focused conversations but less protocol, or are conducted without an operator.

Pressing the microphone button adds participants to the conversation unless the maximum amount of open microphones is reached. If that's the case, the next participant will be added to the request queue. When any participant with an active microphone turns it off, the participant on top of the request queue will be added automatically.



Operator Mode

In Operator Mode, participants cannot activate their own microphone. Only a chairperson or Operator using the Confero 360 web-based software can activate microphones. In the software, a representation of the room layout can be built, making it easy to navigate for smoother flow of specific participants. Participants can decide to leave the conversation by pressing the microphone button.



Hands-free Mode **NEW!**

This is an automatic mode where no buttons need to be pushed. All microphones are active and gain is automatically controlled and optimized based on the ongoing conversation.

Moreover, an algorithm defines who actively speaks so this information can be used for signage applications, reporting, fine grained time stamping and automatically trigger the camera system in the room to take the speaker into picture without the need for a camera operator. Participants can mute their microphone to cough or have a side conversation with the mute-to-hold feature.



*Gooseneck microphone recommended for Hands-free Mode

Microphone Status Mode

The conference units have LED status indicators on the microphone button, backside of the unit, and microphone ring. These indicators can be programmed to be off, red, or green to represent the active, muted, or request state of a microphone station. Using the web browser, full flexibility for LED configurations is available.

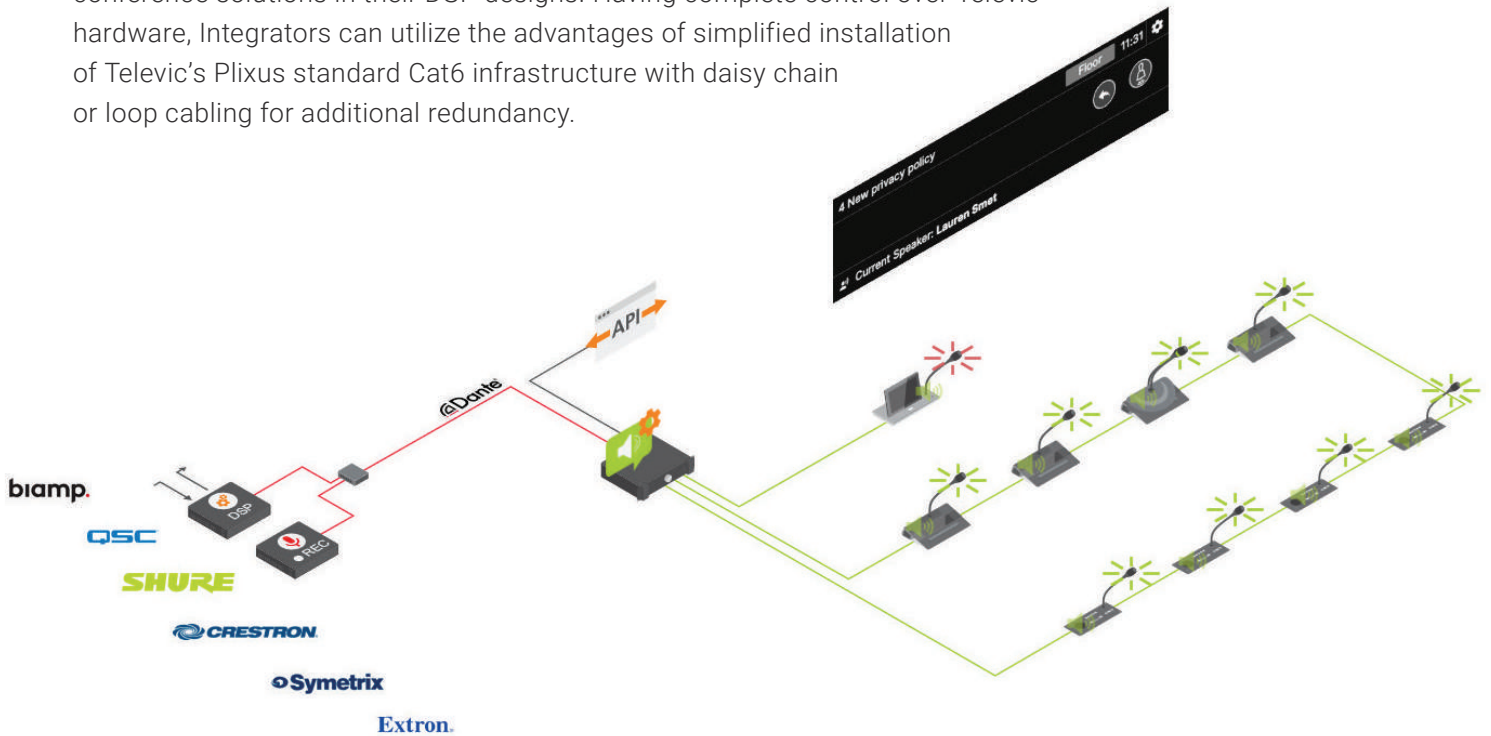




Advanced Integration Tools

Traditionally, conference systems were self-contained ecosystems that provided a summed output of the microphones from the entire system. While this is a viable solution in certain circumstances, many AV designs need more fine grained audio processing and control capabilities.

Our Integrator partners who install Televic solutions worldwide can now use Televic conference solutions in their DSP designs. Having complete control over Televic hardware, Integrators can utilize the advantages of simplified installation of Televic's Plixus standard Cat6 infrastructure with daisy chain or loop cabling for additional redundancy.

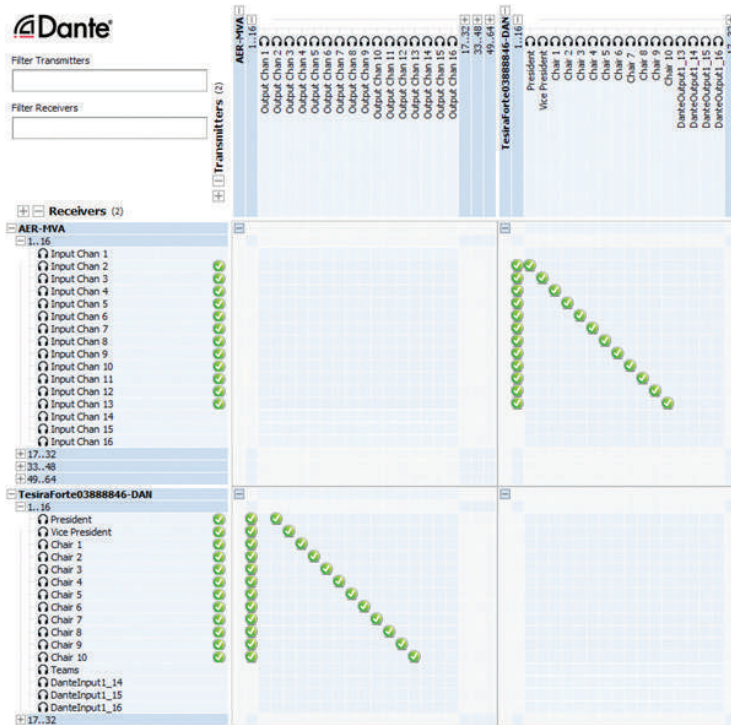


DSP Mode

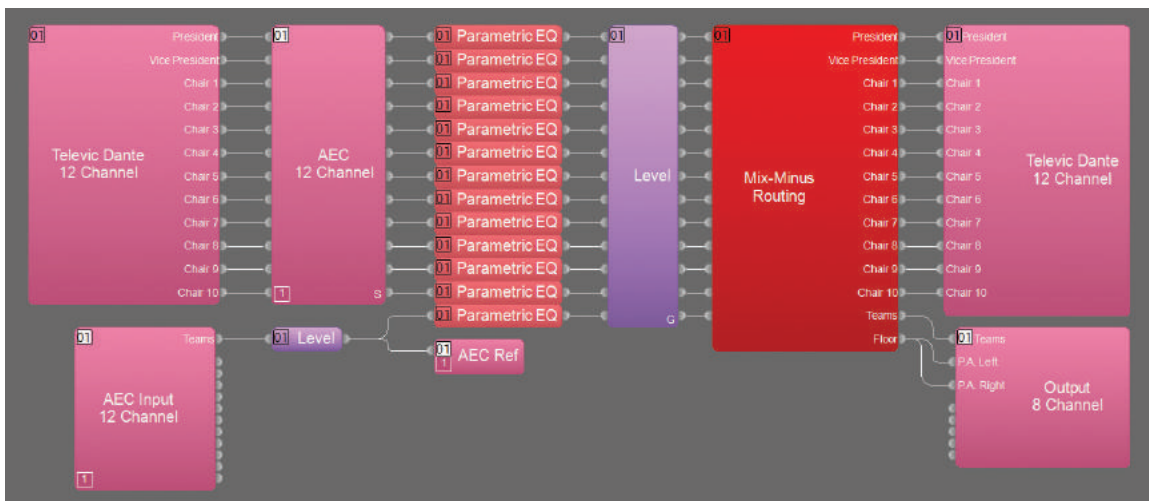
DSP mode automatically assigns individual microphones and loudspeakers up to 32 wired conference units to individual Dante channels. All microphones are active in the conference solution and releases unprocessed audio to Dante channels so it can be sent to your DSP for processing as required. Individual Dante channels are provided for each built-in loudspeaker of the conference units.

This allows designers to process each Televic microphone and speaker as if it were any standard microphone and audio ceiling speaker. With this, designers can apply AEC to each microphone, EQ specific microphones, group speakers as a zone, and more from their DSP.

This is an example of the routing of Dante controller between a Plexus system and a Biamp Tesira Forte and a Biamp design file providing AEC, EQ, mix-minus matrix mixing.



DANTE CONTROLLER ROUTING



BIAMP DESIGN FILE



Audio Configuration

The Televic Confero Audio software offers the capability to quickly and easily group and route audio in the Televic system. This software allows total control of Televic microphones and speakers to be assigned and grouped as needed to minimize Dante flow and channel count in your DSP.

- + Creating groups of audio input and output components (microphones, auxiliary input/output, Dante input/output etc.)
- + Visualizing the various routing groups as a matrix within the Televic system
- + Unified communications routing with Teams and Zoom for hybrid meeting applications
- + Controlling the routing via API
- + Configuration of interpreter channels to external channels
- + Integration with Remote Simultaneous Interpretation platforms
- + Discreet audio routing for court applications



Confero Audio

The Confero Audio interface is web-based so any computer with a browser can be used to create or adapt configuration so there is no need to load software on a dedicated PC.

The screenshot shows the 'Audio configurator' web interface. On the left, a sidebar lists configuration options: Normal configuration (Active), Distance conferencing, Hybrid conferencing, External equalizer, DSP, and My custom config. The main area displays 'Normal configuration' (Active) with tabs for Audio settings, Routing, and Pre-processing. The Routing tab shows a grid of inputs and outputs. Inputs include Floor IN, 01 ENG IN, 02 NL IN, 03 DE IN, 04 FR IN, 05 ENG IN, 06 PL IN, 07 GE IN, and 01 Custom IN. Outputs include Floor OUT, 01 ENG OUT, 02 NL OUT, 03 DE OUT, 04 FR OUT, 05 ENG OUT, 06 PL OUT, 07 GE OUT, 01 Custom OUT, and Floor ID. A legend indicates Link (green) and Backup (orange). Routing options include Microphones are always active (selected), Loudspeakers are always active, and Mix minus. Callouts point to: 'Configuration status indication' (Active status), 'Exchange configurations between different installations' (Import/Export buttons), 'Create new audio configuration' (+ Add new configuration button), 'Overview of configurations' (left sidebar), 'Operators: activate Technicians: edit' (bottom left), and 'Activate an audio configuration' (Activate button).

Configuration status indication

Exchange configurations between different installations

Create new audio configuration

Overview of configurations

Operators: activate
Technicians: edit

Activate an audio configuration

City Government Configuration

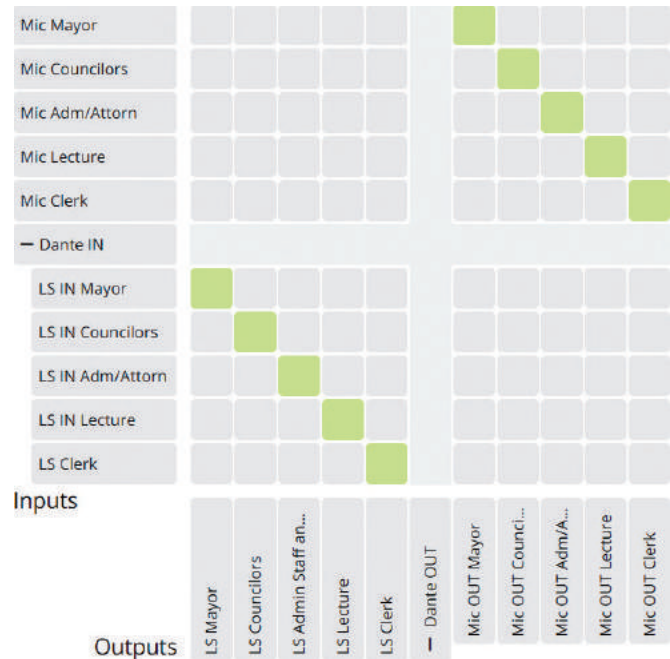
Confero Audio provides many options to manage the audio paths between the Televic system and a DSP. In the example to the right, Confero Audio allows the grouping of several stations into functional groups and have the DSP process them together when appropriate.

For example, the MIC Councilors group is a mix of all eight councilors and the MIC Mayor is an individual microphone. The group of eight Councilors is assigned to one Dante channel and the Mayor station is assigned to another Dante channel. Visa versa, Dante channels can be routed to the loudspeakers of individual groups.

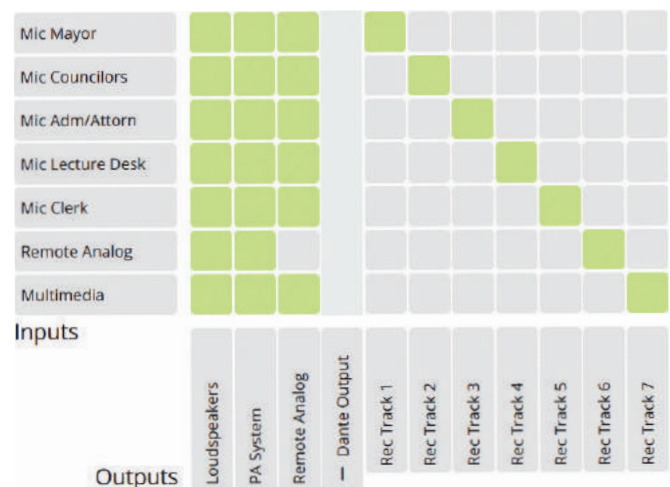
In the second chart, Confero Audio offers the mix of Televic internal routing for analog I/O and Dante DSP routing. Within the Televic system, the microphones are routed to the Televic internal speakers, the room audio system, and the computer for remote participants. In addition, the microphones are routed to dedicated Dante channels for other applications such as assisted listening, meeting recording, live streaming, and more.

Televic Confero Audio routing allows total flexibility when needed for AV designers who have challenges with room acoustics and overall budget.

DSP MODE WITH GROUP ROUTING



TELEVIC AUDIO MANAGEMENT WITH DANTE OUTPUT

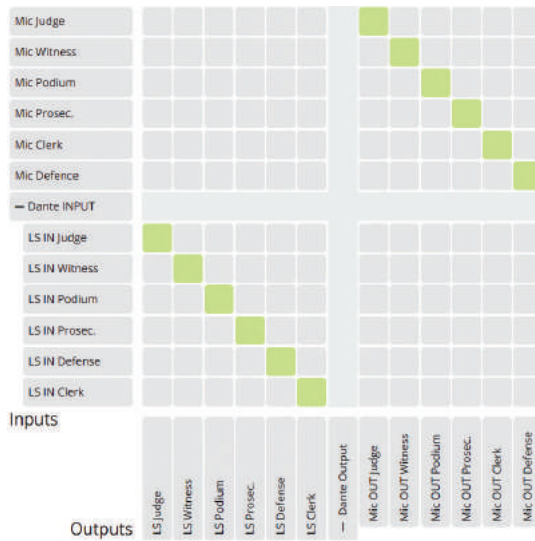


Court Configuration

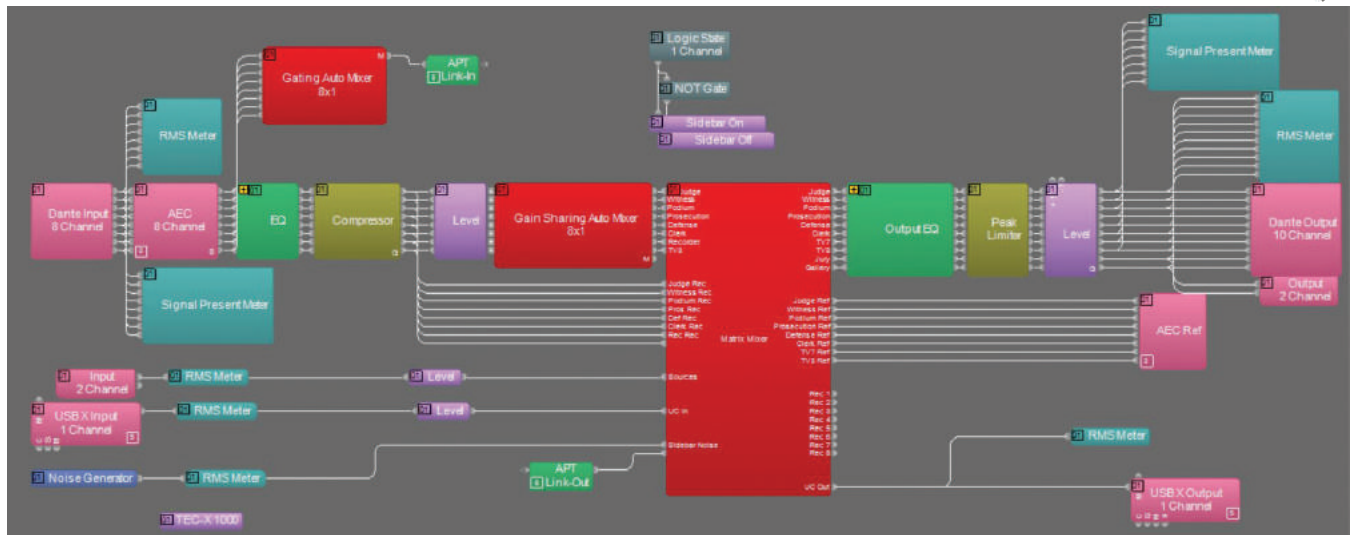
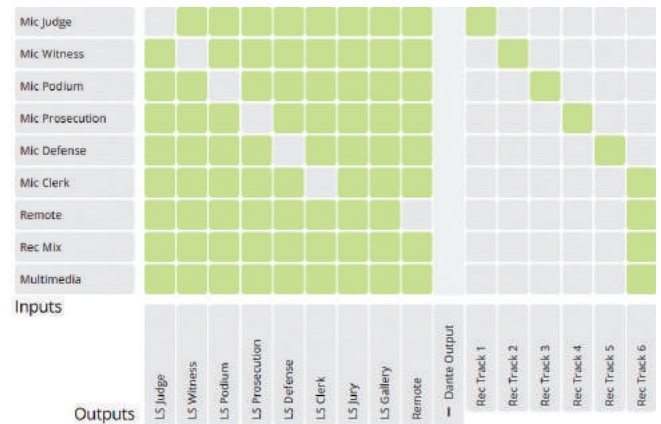
The Court application below shows using standard DSP mode where all Televic microphones and built-in speakers are assigned to individual Dante channels. In the second table, the groups of microphones and Mix-Minus channels are created internally in the Televic conference solution, while still providing the routing of the different microphones as individual Dante channels to send to recording applications.

As discrete recording channels are required in many states and jurisdictions, the microphones for the judge, witness, prosecution, defense and podium are routed to different Dante channels for isolated recording. The other microphones and inputs are then combined onto on different Dante output for a separate recording track.

DSP MODE - DANTE FOR EACH MIC/SPEAKER TO DSP



TELEVIC AUDIO MANAGEMENT WITH DANTE OUTPUT





API Expansion

Full control of all Televic components and features are now available. Third party control is required for many corporate, education, and court applications. Televic Conference's API is designed to create custom solutions and integrate with your own API with actions of subscribe and control.

- + Subscribing to events coming from the Conference Controller
- + Controlling the meeting hosted on the Conference Controller





Secure Communication

- + The Confero 360 API is a secure API and communication is encrypted via HTTPS, which helps guarantee confidentiality, authenticity, and privacy of the user. To get proper encryption, a certificate (Self-Signed or CA Certificate) must be uploaded.
- + A token is a unique identifier that allows you to authenticate to the API. It is secure information that will prevent other people who knows the API from executing calls without a token.

API Modules

- + Audio: module to configure general system-wide audio settings
- + Discussion: module with operator functionality for changing and retrieving microphone states, or changing conference settings
- + Meeting: module for meeting control
- + Recording: module for controlling recording on a system which supports it
- + Room: module to access the room settings
- + Wireless: module for retrieving and controlling the wireless functions of a wireless system

API Modules That Make Easy Integration

Description	Confero				D-Cerno
	 Extron	 CRESTRON	 Symetrix	 Q-SYS	
Connectivity Via HTTPS REST API or TCP	✓	✓	✓	✓	✓
Microphone control	✓	✓	✓	✓	✓
Loudspeaker volume control	✓	✓	✓	✓	✓
Headphone volume control	✓	✓	✓	✓	✓
Meeting control	✓	✓	✓	✓	
Speaker list	✓	✓	✓	✓	
Request list	✓	✓	✓	✓	
Recording control	✓	✓	✓	✓	✓

Advanced API List*

Room controls by API

- Room information's
- Synoptic , Seats , Booth controls

Discussion control

- Full control of the microphones
- Activation types

Agenda controls

- Add, edit , remove
- Active , move

Voting

- Add , Edit, Active voting items
- Public & Secret Voting templates
- Over all result
- Individual voting result

Timer control

- Meeting , Delegate and Group timer
- Advance timer

Delegate

- Add, Edit and remove
- Clear all Delegate & Group

Interactive (Multimedia units)

- Control multimedia screen
- Custom screen and button on screen
- Lock , reset , disable screen

Audio configuration

- Real time change audio matrix
- Easy to change audio presets

Interpretation

- Add, remove Language
- Add, edit and delete channels
- Set Display text
- Activate preset
- Get real time interpretation data

Button LED

- Voting , Next and Prior button and LED control

External

- Send message to Operator
- Notification External call

CU configuration

- Get and set CU IP
- Restart Room server

Wireless coupling

- Couple wireless system
- Get all connected access point's information

Operator Customization

- Custom buttons , Labels

Video

- Full control of video IN & OUT parts
- Control Video configurations
- Real time video stream control

Intercom

- Configure and control the Intercom

*The list above includes API's from Confero360 and/or CoCon software platforms. Verify with Televic which platform is best for your project.



Hybrid Meetings

Teams/Zoom Integration

Many Televic wired and wireless systems have been interfaced with computers for Teams and Zoom via either the balanced analog I/O or Dante channels. Configuration within the Televic system provides “distance conferencing” or “hybrid conferencing” settings for seamless hybrid meetings.

Depending on the number of open microphones required, a Televic system can be a standalone solution using the AEC from the remote platform to manage the meeting. If a large number of open microphones are required, it is recommended you use the DSP mode in conjunction with an external DSP.



uniCOS-TT (Tabletop)

The uniCOS-TT is the new standalone AV station for Corporate and City applications. It eliminates clutter by incorporating a microphone, audio speaker, video touch panel and built-in webcam all in one device.

- + Easy integration to meeting platform of choice (Teams/Zoom, etc.)
- + Solution for room line of site issues with location of video display and/or location of PTZ video cameras
- + Configurable to have local webcam join a Teams/Zoom meeting when mic is activated
- + Hands-free Mode is available up to 32 uniCOS-TT stations

The Televic system can send up to six simultaneous high def 1080P video streams on the standard shielded Cat5 or better wire structure. The most popular video streams integrated are the Teams/Zoom remote computers for hybrid meetings, but the system can also select and view the in-room camera system, laptop sharing, streaming solutions, etc. The uniCOS-TT can be expanded with traditional conference features at anytime, including Voting, Agenda, Timers, Document, and more.



Confero CAM

In addition to third party camera controls with our speech detection API, Televic Confero CAM works natively with Televic systems. Expandable from one simple wide camera shot to 8 PTZ cameras are all possible with Confero CAM.



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