

Functional Description

For

AUDIO/VISUAL SYSTEM DESIGN & INSTALLATION SERVICES

Next Gen GA Classroom Flex+

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EXECUTIVE SUMMARY

This document will serve as the general description of the next generation of classroom design for rooms with 41 seats or more. This new classroom AV design will be referred to as a “Flex+” room.

This design is intended to provide wireless connectivity from any in-room user or remote participant's laptop via Zoom Screen Share, as well as partial native Zoom Room control of the rooms' cameras and ceiling microphones (additional control will be done via Extron Control System). This design provides 2 (or more) permanently installed beamforming microphones to provide voice lift capability, which will eliminate the need to always use a lapel mic or pass a handheld around a large audience. This design also offers a single large LCD screen in the rear of the room to serve as a line-of-site confidence monitor of the output of the capture agent.

The following are the intended feature highlights:

- System will be entirely based around a Zoom Room Appliance/PC and a single 24” control panel, in addition to an Extron control system.
- Wireless screen sharing will be accomplished via Zoom (using “Share Screen” as a host or participant of the meeting)
- As this design is intended for rooms with 41 seats or more, at least 2 (and possibly more) microphones would be installed to cover the entire audience as best as possible.
 - On the Extron touch panel, users will be able to control which part of the room is captured by these microphones. We will offer both a “Stage Mode” which will only capture audio from the stage area, and a “Room Mode” which will capture audio from anywhere within the classroom.
 - We will continue to provide speech reinforcement, as well as add a minor amount of voice lift from the ceiling microphones (amount will be determined by the room acoustics and speech speaker layout).
- 1x large format LCD screen installed in the rear of each room (this requires additional Electrical trade work) to provide users with a confidence monitor in line-of-site above students. This monitor will always show a Picture-by-Picture output of the SMP Capture agent. The left image will be larger and will always display what is being projected, and the right side will be smaller and will always show the stage facing camera.
- 1x 24” Touch LCD installed near the AV rack, which will act as both the primary output of the Zoom Room Appliance/PC, as well as the Zoom Room touch interface providing meeting controls, whiteboard, and chat. This touch interface does not provide any of the core controls of the AV system (eg. projectors on/off, wireless mic gain/mute, ceiling mic zones, etc.), so an Extron 7” touch panel will be provided for this purpose.
- Users will be able to capture their lecture either via the installed SMP capture agent, or via the Zoom “Record Meeting” function on their personal device.
 - Ad-hoc Zoom recordings will be available to users only on their personal device, and only when hosting the meeting or when granted co-host by a meeting started in the room. Resultant recordings will be located either locally on the user's device or in the user's Zoom cloud depending on their account settings, and can then be uploaded to Kaltura from there.
- 2x cameras will be provided in each room, with one mounted on the rear wall or projector downpole, facing the stage, and one mounted on the front wall facing the audience. This is to allow full



video-conference capability primarily for users who wish to communicate with other zoom rooms or guest lecturers.

- With the audience facing cameras being spec.ed in this space, users will have some level of Zoom Room camera tracking and framing typical of an All-in-One zoom device. Users will also be able to manually control these cameras via the Zoom Room interface.
- Note that the audience facing camera will default to off (neither displayed, nor captured) when starting up the system, but can be enabled for both display and capture by users via the camera controls page within the Zoom Room interface.
- USB-C Jack installed on user I/O plate will allow users to share screen, charge their device, and receive wired ethernet over a single cable (requires that user devices have integrated USB-C support)
- Dante and USB enabled Audio DSP will be installed to support all of the required audio connections within the rack and to the Zoom Appliance/PC and Ceiling Microphone.
- New Aux IO Input plate will provide HDMI In, Wired Mic In, Line Out, Network Jack, and USB-C Input/Charging
- Increased resolution to 1080p to all display and capture destinations
- ALS (Assistive Listening Systems) will remain in classrooms with 50+ seats. RTL is currently investigating the need for ALS systems in smaller classrooms. RTL is also investigating alternative solutions to the current IR based ALS systems installed in 50+ seat classrooms.

Known Limitations of Design

- Zoom Room Centric Design will totally rely on a specific Zoom Room Appliance/PC. This may cause substantial difficulty in replacing the unit if the device is EOLed.
- Only a single HDMI and a single USB-C port will be provided for video (no VGA or Composite AV). These ports would be the only display options for user devices without Zoom capability, doc cams, and portable media players.
- The 24" touch panel does not provide control of the non-Zoom devices at this time (although we are investigating solutions to this), so an Extron 7" touch panel is needed to supplement the Zoom Interface. Some examples of controls accessed from the Extron TP are:
 - Projector On/Off
 - Rear Display On/Off
 - Stage Facing Camera Control
 - Mic Levels/Mutes
- Remote access to Audience Facing cameras can only be done via the Zoom Room Admin Control Panel. No direct web access to this stream is available.

AV Functional Schematic:

- Flex+ (Voice Lift)_AV Functional_10:10:24-Layout1.pdf
- Flex+ (PC BASED)_AV Functional_10:10:24-Layout1.pdf

AV Cost Estimate/BOM:

- Flex+ BoM/Cost Estimate (from scratch)

Flex/Flex+ Aux Input Panel:

- FLEX:FLEX+ Rack Panel_OCT. 2024-Arch D.pdf