



VIDEO CONFERENCING ROOM DESCRIPTION AND REQUIREMENTS INDIANA UNIVERSITY, BLOOMINGTON

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DEFINITION

This room type supports the use of interactive video for meetings and conferences. It will originate audio and video to be sent to a remote site, and will receive and display video and other content from that remote site. This room is typically a small to medium size room with a moderately low acoustic tile ceiling. It typically includes a large flat panel display, a whiteboard and a laptop interface. Control system usually consists of a simple handheld remote to control the video conferencing codec. Professional staff will not be required to operate the system.

The system will use one or two cameras to capture live video of the conference room table and/or participants in the room. The ability to transmit content from a laptop or document camera will also be included. The Picture-in-picture capability of the codec will allow users to see both the incoming video from the remote site and the shared content, usually either the local or remote laptop. Microphone(s) will be located on the tabletop and/or the ceiling, depending on the room configuration. A wireless lavalier mic for the main presenter is also usually included. Local audio will have a mute function.

Videoconferencing address locations will be both pre-programmed through central scheduling systems and manually managed from the room. Room systems will be permanently installed, and all user equipment will be available with minimum setup.

SPECIAL ROOM REQUIREMENTS

Architectural

- Generally the display is mounted such that the bottom of the display is near the height of the tabletop. A camera is typically mounted on top of the display, ideally no higher than 7 ft. high. If the room design dictates, the camera can be mounted at the bottom of the display, but this is not ideal.
- Depending on size and shape of room, an additional camera may be desirable
- Use non-reflective, uniform texture, non-patterned backgrounds, walls and tabletops
- Use neutral (halfway between dark and light) colors for walls, floors and tabletops (avoid white and other light shades)
- Use neutral (halfway between dark and light) colors for table surfaces (avoid white and wood grain)
- Avoid dark backgrounds, wood grain and wood paneling
- Limit the use of glass due to acoustic degradation and light infiltration
- Avoid reflective objects (glass, mirrors, whiteboards) in the camera field of view. *[NOTE that this specification may be in conflict with instructor need to write on board at front of room; see note at end of addendum.]*
- Carpet should be used throughout.
- Seating should be cushioned/upholstered whenever possible.



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- If outside windows are present, the design must include total blackout shades or drapes
- Blocking is required at the flat panel display location to support the mounting hardware
- A conference room table, when required, will be bullet, trapezoidal or boat-shaped, depending on intended use. If a flat panel display is to be used, its in-wall box is usually mounted such that the bottom of the box is around 8 inches above tabletop height. Power, data, and laptop-input connections are installed in the tabletop, either using manufacturer's standard product or a flush-mount lift-lid box such as Extron Cable Cubby 600. Vertical power plug-in connections are preferred. Laptop-input connections will be loose cables that extend to all locations on table top, so the tabletop box needs to be large enough to house cables when not in use. Microphone for video conferencing is also served from the table box.

Electrical

- Provide (1) 1 ½ " conduit from a 2-gang junction box from optional second camera position to display location.
- Provide a duplex receptacle, a 2-port IU Information Outlet, and a 1 ½" conduit for AV cabling at the flat panel display location. The AV conduit may connect to the AV closet or optionally be stubbed into the ceiling if accessible.
- Provide a floor box under the conference table at a suitable location to allow cables to be dressed alongside or inside a table leg or pedestal. Provide 2 (two) 1 1/2" conduits from this floor box to the display location. Provide a duplex receptacle at this location, to be same circuit as the receptacle for display power. Provide a 1-port IU Information Out let at this location.
- Conduit may be placed in a slab-on-grade, but must never be placed below the slab for any reason. Avoid placing conduit inside a slab-on-grade when possible.

Lighting

- Lighting should be a uniform color temperature (2800-4100K, 3200K recommended). If windows exist, shades should have the ability to completely block outside light.
- 75-100 footcandles light intensity (750 to 1,100 lux)
- Provide even lighting, 3 ft ahead and above participants
- Use light lenses to avoid shadows
- Pendant lights will interfere with camera sightlines, so they should be avoided.
- Total blackout shades are required for any outside windows. Half-blackout shades are recommended for interior glass walls

Acoustics

- High-end acoustic characteristics are absolutely critical to room design, since average room acoustics will cause intelligibility problems for both local and remote listeners. Absorptive floors, ceilings and furniture are strictly required.
- Use acoustic ceiling tiles with an NRC rating of 1 or more (e.g Armstrong #3253)
- Limit the ceiling height to 9-10 ft. and limit the room size so that it's no larger than needed.
- Avoid or minimize the use of glass.



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- Use anti-static wall-to-wall carpeting.
- Use of drapes and absorptive wall treatments is highly recommended.
- Provide microphone placement so that all participants can be heard; typically this would include one or more tabletop mics, a wireless lavalier mic, ceiling mounted mics, or some combination of these.

Telecommunications requirements

- A dedicated information outlet for the CODEC is required, usually at the display location
- Additional voice outlets as needed (telephone, fax)

EQUIPMENT REQUIREMENTS

- CODEC and integrated camera(s)
- Microphones
- Programmable automixer: Echo-cancelling feature in either videoconferencing codec or audio mixer required
- Flat panel monitor
- Document camera

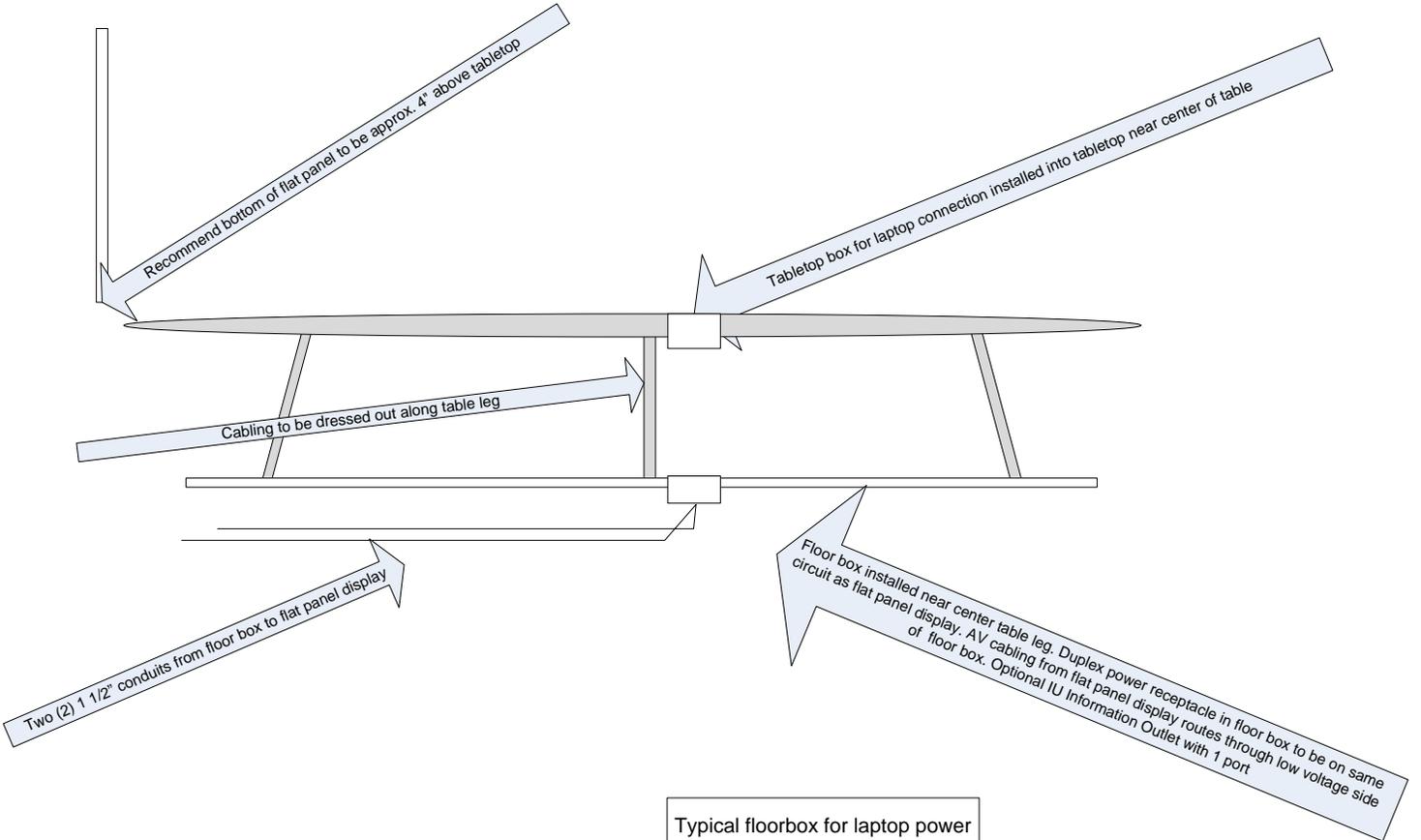
LOCATION

Avoid noisy, busy traffic areas, work areas, and offices. Location must be secured during non-use.

Note on use of whiteboards:

Use of a gray rather than white writing surface and a matte marker board, combined with setting the lights at 45 degree angles minimizes glare. If white surfaces must be used, careful positioning of the lights is required.

**Videoconferencing:
Flush-mount Tabletop box and Floor box**



If a videoconferencing room has conduit for a camera location, then 16 gauge sheet metal blocking 6"H x 18"W should be installed directly below the camera box. This specification should be referenced on the architectural as well as electrical drawing.

Typical floorbox for laptop power and AV cabling



Devices shown in photo are not supplied.

Typical tabletop box for laptop power and AV cabling



**VIDEOCONFERENCING:
BOARDROOMS**



In general, a room larger than 12 x 16 is not ideal for a videoconferencing room. A ceiling height of more than 10 feet is not ideal for videoconferencing. The use of glass should be limited or avoided altogether. The room should have some absorptive materials such as acoustic ceiling tile and/or wall panels, and neutral wall colors (not too light).

Cabling from the display is routed via conduit under the floor to a floor box installed below the center of the table. The floor box has a section for power and another section for AV and data cabling.



The AV cabling for displaying a laptop is routed through the floor box and a flush-mounted tabletop box to the top of the table. This cabling can be stowed inside the tabletop box when not in use



In a larger boardroom, it may be advisable to install a flat panel display on the sidewall for videoconferencing. This allows the presenter to display source material on the projected image, and display the far-site video on the flat panel display at the same time. It is also convenient for videoconferencing with a small (3 or 4) number of users.

A second camera is installed below the screen and above the tabletop to allow a camera shot of the entire table