Audio/Visual & Multi-Media Room Standards

Request to provide better baseline for starting projects that could be incorporated into the low-voltage standards kept by WashU IT - University Network Planning and Services.

Provide a standardized approach to A/V and multi-media technology in applicable rooms across campus.

These are applicable for departments / schools where there are no current standards and do not override existing standards. Classrooms that are under the auspices of the Classroom Management Committee and The Teaching Center (http://teachingcenter.wustl.edu) have their own set of standards that apply. Please contact The Teaching Center directly when working with a pooled classroom.
Goals:

- Help professionalize A/V build process, create more realistic expectations and better collaborative partnerships with A/V integrators, designers, engineers, installers, and WUSTL departments/schools by providing equipment packages based upon room size and most likely use-case.
- Use equipment packages to help room owners as a starting point for decision-making process.
- Reduce scope for consultants, engineer design, and vendor programming by providing basic design schematics and programming up front.
- Provide common room-use experience across university.
- Provide better/more realistic A/V budgeting.
Room A/V & Multi-Media Technology Design Considerations

- Deployment of any meeting room audio-visual equipment needs to be carefully planned and engineered. The start of the design and deployment process of audio-visual equipment for a particular location is influenced by room size/occupants and likely use-cases. Recognition also that classrooms could become conference/meeting rooms after hours and vice-versa.

**Room Size:**
- Small: 3-5 occupants
- Medium: 5-20 occupants
- Large: 20-50 occupants
- Stadium Seating: 50-150 occupants
- Auditorium

**Use-Case:**
- Infrequent need for A/V
- Frequent A/V, single input for BYO computer
- Frequent A/V, multiple inputs to include room-based computer
- Classroom / Stadium Seating
- Presentation or Performance

**Other Design Considerations:**
- Interactivity options (video camera and microphone) can be added to any package
- Control System – AMX w/ Resource Management Suite (RMS)
- Basic design schematic for each equipment package provided*
- Basic programming for AMX control systems provided*

* WashU IT - Media Services
Room A/V & Multi-Media Technology Equipment Basics

- **E1 - Infrequent need for AV:**
  - Flat Screen w/ “Bring Your Own” (BYO) computer and wall plate / direct connections

- **E2 - Frequent AV w/ single input:**
  - Flat Screen or Projector, w/ BYO computer, cubby box
  - Option: Resource Management System (RMS)
  - Option: Controllable Zone Lighting and Audio

- **E3 – Frequent AV w/ multiple inputs:**
  - Projector w/ installed computer, cubby box, control panel, room switching
  - Resource Management System (RMS)
  - Option: Controllable Zone Lighting and Audio

- **E4 – Classroom / Stadium Seating:**
  - E3 plus Confidence Monitors, Document Camera

- Auditorium – Presentation or Performance?
  - Most auditoriums require more specialized planning and design
Room A/V & Multi-Media Technology Equipment Options

- Interactivity – Web/Video Conferencing
  - Portable
    - Logitech HD C-series webcam, Jabra 510 Speakerphone, Joby GuerillaPod Tripod, USB 25 foot extender cable
    - ~$300
  - Installed V1
    - USB Camera and USB Microphones
    - ~$5,000
  - Installed V2
    - USB PTZ Camera
    - USB Ceiling Microphones
    - In-Room Audio Processor w/ Noise Cancellation
    - ~$15,000

- A/V Accessories
  - Document Camera
  - DVD Player
  - CATV
# A/V Standards

Revised: 2.20.15

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Small 3-5 occupants</th>
<th>Medium 5-20 occupants</th>
<th>Large 20-50 occupants</th>
<th>Stadium Seating 50-150 occupants</th>
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<td>With installed computer</td>
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<td>Touch panel</td>
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<td>Interactivity option - installed V1 or V2</td>
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<td>Projector</td>
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WUSTL has an approved set of network standards that are applicable towards A/V installations. All network drops, switches, etc... must conform to these standards.

- I.E., it is no longer acceptable for A/V vendors to supply or install any network hub, switch, router, or wireless access point outside a WUSTL TR.

Approval for any exceptions must be coordinated with IS&T during design phase

Wireless networking devices are also included in the approved network standards. All wireless devices must conform to these standards and must be approved during design phase.

Any wired or wireless network equipment required for A/V installations must be designed by IS&T - University Network Planning and Services.
Room A/V & Multi-Media Technology Moving Forward

- Template ‘Look/Feel’ design for classroom control panels
- This is a living document and it is our intention to continually work with groups on campus to get input.
  - Applied to a number of installations over last few months:
    - Brown School Hillman Hall
      - Classrooms, Conference Rooms, Offices, Auditorium
    - Whitaker Auditorium
    - West Campus CIO Conference Room
    - Athletic Director’s Office
  - Classroom Management Committee presentation – Spring
  - Med School Discussions
  - Develop ‘marketing’ pamphlet for room/building owners
Questions - ???

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  314.935.3899
### A/V Standards

Revised: 2.20.15

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### Notes:
- **Infrequent need for A/V:** Users 'bring your own' (BYO) computer/technology as needed to connect to room A/V.
- **Frequent A/V with Single Input:** Flat Screen or Projector, Single Input Cubby Box for BYO computer.
- **Frequent A/V with Multiple Inputs:** Installed Computer, Room-Controlled A/V w/ RMS.
- **Classroom / Stadium Seating:** Installed Computer, Room-Controlled A/V w/ RMS, Classroom Technology Included.
- **Auditorium:** Emerson Auditorium, Whitaker Auditorium.
- LTMU display mount or Media Services approved alternative
- PAC-526 back box (on suitable walls) is required
- Extron AAP 102 Series wall plate required
- CATV/LAN to be provided by WUSTL or approved Network vendor
- All cables from wall will be no longer than 25' and are to be flexible and easy to manage (Liberty E-HDVAM-M-19 or approved alternative)
- In wall cables will not exceed 50' and must be able to pass all EDID and HDCP information
Notes:

- RPMA projector mount or Media Services approved alternative
- Extron AAP 102 Series wall plate required
- LAN to be provided by WUSTL or approved Network vendor
- All cables from wall will be no longer than 25' and are to be flexible and easy to manage (Liberty E-HDVAM-M-19 or approved alternative)
- In wall cables will not exceed 50' and must be able to pass all EDID and HDCP information
Content to display via DLINK Receiver.
Wall plate input with VGA and HDMI inputs. (optional Table input)
Room can be connected to an AMX master and RMS.

Notes:
- LTMU display mount or Media Services approved alternative
- PAC-526 back box (on suitable walls) is required
- CATV/LAN to be provided by WUSTL or approved Network vendor
- NEC preferred display, Professional series displays required
- Infocomm standard display sizing rules are to be followed

Extron Cable Cubby 700 w/ retractable cables
Part list:
1x70-1046-02
1x60-1384-01
1x70-100-11
1x70-678-11
1x70-679-12
1x70-678-08

Wall system will require POE injector for power to plate (located in the ceiling box)
- RPMA projector mount or Media Services approved alternative
- FSR, Legrand, Chief or Middle Atlantic ceiling equipment box for future expansion
- The table configuration or Wall Plate options are based on room needs
- Speakers and amplifier are optional additions based on user needs and space considerations
- Laser Phosphor Projector recommendations: Panasonic PT-RZ470UK
- Other Projector Options: NEC NP-PA622 U-13ZL, Christie LWU501i

Extron Cable Cubby 700 w/ retractable cables
- Part list:
  1x70-1044-02
  1x60-1384-01
  1x70-100-11
  1x70-678-04
  1x70-678-11
  1x70-678-08

Wall system will require POE injector for power to plate (located in the ceiling box)
- LTMU display mount or Media Services approved alternative
- PAC-526 back box (on suitable walls) is required
- CATV/LAN to be provided by WUSTL or approved Network vendor
- Lock for mount and MacCuff are to be specified by owner
Notes:

- LTMU display mount or Media Services approved alternative
- PAC-526 back box (on suitable walls) is required
- CATV/LAN to be provided by WUSTL or approved Network vendor
- NEC preferred display, Professional series displays required, contact Media Services for recommendations
- Infocomm standard display sizing rules are to be followed
- Speakers may be optional in smaller spaces
- CATV tuner may be optional in certain spaces
- FSR, Legrand, Chief or Middle Atlantic ceiling equipment box for future expansion
- The table configuration or Wall Plate options are based on room needs
- Lutron Pieces can be substituted with QS series controllers, wired OCC sensors and QS Shading systems if required
Notes:

- RPMA projector mount or Media Services approved alternative
- FSR, Legrand, Chief or Middle Atlantic ceiling equipment box for future expansion
- The table configuration or Wall Plate options are based on room needs
- Speakers and amplifier are optional additions based on user needs and space considerations
- Laser Phosphor Projector recommendations: Panasonic PT-RZ470UK
- Other Projector Options: NEC NP-PA622 U-13ZL, Christie LWU501i
- In larger rooms, other projector options might need consideration. Contact Media Services for list of approved projectors
- Lutron Pieces can be substituted with QS series controllers, wired OCC sensors and QS Shading systems if required
- Motorized screen is optional, manual screens are also acceptable from Da-Lite and Draper
- Optional CATV tuner must have an HDMI output, RS-232 control and be QAM and ATSC compatible