Power over Ethernet (PoE)

Preparing the IT rooms for rolling out PoE services
Description of PoE

Power over Ethernet (PoE) describes any of several standardized or ad-hoc systems which pass electrical power, along with data, through the Ethernet cabling. This allows a single cable to provide both data connection and electrical power to devices. IEEE standards 802.3 is developing standards for power distribution. IOT devices are making more demands of this type of service. ITS currently has limited the use of PoE for surveillance cameras and Wireless Access Points.
History of IT Rooms

- **1990s** Campus Communication Utility Project (CCUP) installing the Cat 5 cable adding fiber optics and securing IT rooms in buildings
- **1999** Power panels, cooling and space requirements for design standards 10x12 room size
- **2000** Changed category cabling to 5E
- **2005** Standard Update to upsize telecom rooms to 10x15
- **2011** Changed category cabling to 6 and using a patch panel solution
- **2019** Changed category cabling to 6A for Wireless Access Points (WAP) and Cameras
Supported Devices (not all inclusive):

- Voice over IP (VoIP) Phones
- Audio Visual Equipment (Encoders and Decoders)
- Intrusion Detection Devices (Motion Detectors and Door Alarms)
- Door Locks
- Timecard Clocks
- Digital Signage

<table>
<thead>
<tr>
<th>Standard</th>
<th>Power at Switch</th>
<th>802.11a/n</th>
<th>802.11ac</th>
<th>802.11ax and beyond</th>
</tr>
</thead>
<tbody>
<tr>
<td>PoE 802.3af</td>
<td>15W</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PoE+ 802.3at</td>
<td>30W</td>
<td></td>
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<tr>
<td>PoE++ 802.3bt*</td>
<td>60W (4-pair)</td>
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<td></td>
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<tr>
<td>PoH 802.3bt*</td>
<td>90W (4-pair)</td>
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Power over Ethernet devices
IT rooms Refresh of Network Equipment

- List of Building that ITS has already refreshed
  - 25%
  - Including: Calvin Hall, Blank Honors. Mossman. North Hall, Phillips Hall, PCO, Sciences Library, Stuit Hall, MRC, MEB,
  - Trowbridge Hall, Theatre, EMRB, Halsey, Dental Science, CMAB, Clinton St. and CRWC
Technology changes
“IT Rooms upgraded to new 9400 switches

61 out of the 262 IT spaces have been refreshed with new 9400 series switch”
“Building Coordinators role come into play

Outages for Buildings to refresh the electronics
30 minutes to 2 hours to refresh
List of Buildings that we will refresh in the next couple of months
MRC, MEB, PBB, Van Allen, Med Labs, BSB and MacLean Hall”
What does outage mean

- Network Connectivity is disconnected
- Usually 45 minutes to 2 hours down time
- Nothing changes for end user
- Schedule in morning starting about 5:30am - 6 am
- Back in operation by 7:30
- All work done inside telecom room
Questions