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The most current version of this document is available on our website:

WWW.PURDUE.EDU/TELECOMMUNICATIONS
ITIS (Information Technology Infrastructure Services)

About our Team:
ITIS (Information Technology Infrastructure Services) is one of the largest departments within ITaP. (http://www.purdue.edu/cio/docs/org/ITIS_Org_Chart.pdf) The Telecommunications Team is a subset of ITIS and is under the direction of Gary English. Our team consists of the voice services, data networks, and telecom infrastructure groups. We are responsible for the design, installation, activation, configuration, and maintenance of the telephone systems and data network on Purdue’s West Lafayette campus. We also provide engineering support for all construction projects that involve telecommunications. We are not only concerned about the telecommunications aspect of the construction projects but every discipline that relates to our infrastructure (Architectural layout and locations of telecom rooms, Civil for underground pathways, HVAC for cooling, and Electrical for power). Below you will find a list of our staff and their responsibilities as they interact with your Project Managers and Observers. We are here to support your staff and outside design/construction firms so that each construction project is a success while ensuring the quality of our telecommunications services.

Telecommunications Design & Engineering:
Contacts: Ron Lehman, Kaye Libby, Daniel Pierce

- Create telecommunications budgets for large construction projects to be included as a line item in the overall project budget. This includes network hardware, wireless access points, telephone line cards and phone installations, outside plant copper and fiber cabling feeding the building, and the associated engineering time and materials. Example attached.
- Review all Capitol, JOC, SPW, and In-House projects to ensure all disciplines associated with telecommunications meet Purdue’s infrastructure requirements.
- Maintain Purdue’s telecommunications specifications (Division 27) and standard CAD details and provide them to A&E firms to be used on projects.
- Establish a close relationship with different A&E firms to answer questions related to telecommunications.
- Attend progress meetings to answer telecommunications related questions and concerns. Toward the end of the project we discuss timelines for critical circuit installations.
- Meet with construction inspectors, observers and contractors on the project sites to address issues in a timely manner.
- Visit construction jobsites to make sure telecommunications related items are installed properly.
- Review telecom sheets on architectural drawings to determine placement of telephones and critical circuits in the building.
- Design all outside plant copper and fiber optic cabling feeding buildings. The installation of the outside plant cabling is typically performed by in-house crews as a separate line item in the project budget.
 Verification of Telecommunications Installations:
Contacts: Ashley Burgess, Adam Helfrich

- Perform verification testing and inspection on newly installed telecommunications infrastructure to ensure it meets ANSI/EIA/TIA standards.
- Assist in creating punch list items for construction projects.
- Visit construction jobsites to make sure telecommunications related items are installed properly.
- Inspect the telecommunications rooms to make sure everything is installed according to the drawings and specifications before installing equipment and activating voice/data outlets.
- Attend progress meetings to answer telecommunications related questions and concerns. Toward the end of the project we discuss timelines for critical circuit installations.
- Meet with construction inspectors, observers and contractors on the project sites to address issues in a timely manner.
- Ensure project as-builts meet project requirements and match telecommunication test results.

Activations of Critical Circuits and Telephones:
Contacts: Sue Lakin, Kris Hoggatt, Theresa Mowery, Shelly Fields, Joel Corbin, Sara Coapstick, Eric Pfeiffer, Deb Cronkhite

- Meet with the Purdue Project Manager early in the project to determine client contacts, and to discuss installation costs on the project account number. When the Project Manager is involved with any project involving telephones, they should send an e-mail to the Physical Facilities Business Office, with the project WBS account, requesting submission of a TEL Services Request Form (https://www.itap.purdue.edu/telephone/request/index.cfm) Example on Page 10
- Meet with the client regularly to discuss telephone equipment, software needs, applications, auxiliary services and accounts numbers for the project
- Provides project budget information for telephone services
- Prepare spreadsheets that are continually updated to keep the client, Project Manager, and computer support staff working in tandem
- On behalf of the client, we work with furniture vendors and moving companies to coordinate services for a successful move
- Attend progress meetings to discuss timelines, and coordinate installation of critical circuits and telephones

Activation and Maintenance of the Purdue Data Networks:
Adam Helfrich, Ashley Burgess, Brian Clark

- Coordination of the ITIS student installation and maintenance team
- Activation, deactivation, and modification of data network service through the Risque ticketing system (available online at: http://www.itap.purdue.edu/telecommunications)
- Coordination of repair for broken customer PICs
- Maintenance and upgrade of the Purdue data network equipment
- Installation and activation of data network equipment to new buildings
- Activation and hardware repair of the Purdue Air Link (PAL) wireless service
ITIS (Information Technology Infrastructure Services)

Activation and Maintenance of the Purdue Wireless Networks:
Gary Stair, Doug Magers

- Coordination of the Purdue Wireless Network
- Activation, deactivation, and modification of Wireless network service through the Risque ticketing system (available online at: http://www.purdue.edu/telecommunications)
- Provides project budget information for Wireless Equipment
- Coordination of repair for broken APs
- Maintenance and upgrade of Wireless Equipment
- Coordination of activation of Wireless to new buildings
- Activation and hardware repair of the Purdue Air Link (PAL) wireless service

Telecommunications Website Resources:
ITIS maintains a website with valuable resources provided by the Voice, Data, and Telecom Infrastructure teams. This website is located at http://www.purdue.edu/telecommunications

The website includes:
- Specifications, Guidelines, and Details for all telecom installations
- Links to the Data & Voice Request Forms
- Information specifically provided by each team to support customer’s inquiries
Telecommunications Staff Directory

Ron Lehman, RCDD/OSP
Manager of Cable Plant Operations
rwlehman@purdue.edu
Office: 765-496-7914

Kaye Libby
Telecommunications Design Engineer
klibby@purdue.edu
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Daniel Pierce
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danielpierce@purdue.edu
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Ashley Burgess
Telecommunications Records Administrator
anburges@purdue.edu
Office: 765-494-7062

Sue Lakin
Manager, Telecommunications
salakin@purdue.edu
Office: 765-494-6300

Kristine Hoggatt
Telecommunications Systems Specialist
khoggatt@purdue.edu
Office: 765-494-7846

Adam Helfrich
Student Coordinator
ahelfric@purdue.edu
Office: 765-496-6504

Joel Corbin
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Office: 765-494-7845
Telecommunications Staff Directory

Shelly Fields
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shellyfields@purdue.edu
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scbest@purdue.edu
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pfeiffe@purdue.edu
Office: 765-494-5491

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Tom Ketterer
Telecommunications Design Engineer
tjketter@purdue.edu
Office: 765-496-2823

Ron “Rocky” Carte
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rcarte@purdue.edu
Office: 765-496-2877

Ralph Levy
Telecommunications Specialist
relevy@purdue.edu
Office: 765-496-3776
Telecommunications Estimate Process for Construction Projects

1. ITIS provides a preliminary outside plant telecommunications cable estimate as part of the overall utilities estimate for new buildings. The goal of the estimate is to determine the cost of utilities serving each potential site option.

2. ITIS will provide a preliminary telecommunications estimate for the schematic design phase based on ASF of the construction. This estimate includes network hardware, wireless access points, telephone line cards and phone installations, outside plant copper and fiber cabling feeding the building, and the associated engineering labor. These shall be line items in the project budget. Please refer to the example on Page 10.

3. ITIS will provide a secondary telecommunications estimate for the design development phase. This estimate might be better defined depending on the level of telecommunications detail.

4. ITIS will provide a third telecommunications estimate for the final design phase. This estimate will be based on the number of telecom rooms and the number of telecommunications outlets. ITIS will also develop an electronic wireless site survey based on the architectural drawings showing floor layouts, wall construction material, ceiling material and heights. The Purdue Project Manager is responsible for obtaining these drawings from the A&E firm. Once we have developed the wireless site survey, ITIS will provide the A&E firm with the approximate locations of the PICs needed for the wireless access points. These locations should be incorporated into the bid documents.

5. ITIS will review and adjust the final telecommunications estimate for the bid documents.

6. ITIS will provide the Purdue Project Manager with a bill of materials list toward the end of the project. The Purdue Project Manager will work with the Physical Facilities Business Office to procure the telecommunications equipment and have it delivered to ITIS. There is a fee for phone installations but there is no cost associated with the installation of the data network equipment.

7. The Purdue Project Manager will issue a RFS to the Physical Facilities PIC Team to install the wireless access points.

8. The Purdue Project Manager will submit a RPS for the outside plant telecommunications cabling feeding new buildings.
**Construction Project Lifecycle**

**Prior to Construction:**
- ITIS needs to be invited to project kick-off, design, and design progress meetings
- ITIS should be included in discussions regarding space allocation for the building in order to ensure sufficient space to meet the building’s telecommunications requirements
- ITIS will collaborate with other disciplines in the planning stages of the construction process throughout the life of the project to ensure successful and complimentary project design

**Beginning of Construction:**
- ITIS needs to be invited to pre-construction meetings and progress meetings. We do not have the manpower to attend every meeting so we will prioritize based on the scope of the telecommunications work being performed. We would like to be copied on any meeting minutes taken.
- ITIS needs to review all product submittals for telecommunications material.
- Purdue’s Project Manager shall submit a RPS for the installation of Outside Plant cabling by the Physical Facilities PIC Team for new buildings
- Purdue’s Project Manager should contact the Physical Facilities Business Office to submit a TEL Services Request Form ([https://www.itap.purdue.edu/telephone/request/index.cfm](https://www.itap.purdue.edu/telephone/request/index.cfm)) on the WBS account for the construction project

**During Construction:**
- ITIS is always available to answer questions from Project Managers, A&E Firms, Consultants, Contractors, and End Users regarding telecommunications infrastructure
- ITIS will perform periodic visits to construction sites to ensure our telecommunications infrastructure is installed properly
- ITIS needs to be invited to progress meetings

**Toward the End of Construction:**

Items that MUST be complete BEFORE installing Outside Plant (OSP) copper and fiber to a new building:
- Telecommunications main grounding busbar must be installed and tied to the building grounding system
- Telecommunications room where OSP cables terminate must have sufficient lighting (temporary or permanent) in order to terminate cabling
- Telecommunications room where OSP cables terminate must have electrical power (temporary or permanent) in order to terminate/splice cabling
- Telecommunications room must be clean and remain clean
- Telecommunications room must be accessible
- Telecommunications room must be locked for security
Items that MUST be complete BEFORE activating voice and data services:
- All electronic test reports and red-lined as-builds submitted to ITIS
- PIC verification testing complete by ITIS Team and punch list items addressed by Contractor
  - PICs shall be labeled properly (both in the telecommunications room and at customer end)
  - PICs pass ANSI/EIA/TIA-568C standards
  - Locations of PICs and cable pathways need to be accurately depicted on as-builds
  - Labeling of PICs match SMAS room numbers
  - Cable management installed properly in telecom rooms and building distribution system
  - Telecommunications room must be accessible

Items that MUST be complete BEFORE installing network gear in new telecom rooms:
- Telecommunications rooms must have a lockable door (limited access)
- Telecommunications rooms must be clean and remain clean
- Telecommunications rooms must have permanent lighting
- Telecommunications rooms must have permanent electrical power
- Telecommunications rooms must have permanent HVAC system installed and operational
- Telecommunications room must be accessible

Telecom Service Request Timelines:
- Data Network Services
  - Timeline for activation of a New Building or Major Renovation:
    - 2 days standard for network equipment installation in a Telecom Room
    - (Plus) ½ day standard for network installation in each additional new Telecom Room within the same building
    - (Plus) 3 days standard to work Risque Tickets within the building and activate PICs
  - Timeline for activation of an existing building with working Telecom Rooms
    - 3 days standard to work Risque Tickets and activate services
- Voice Services
  - Timeline for activation of a New Building or Major Renovation:
    - 2 weeks standard for coordination of service order requests and activation of PICs
      - It should be noted that customers should begin collaborating with Voice Services early on in a construction project to achieve optimal success in moving phone numbers, locating phones, configuring voicemail services and options, selecting phone types, etc.
  - Timeline for activation of an existing building with working Telecom Rooms
    - 3-5 days standard to activate telephones within the building
Example of Telecommunications Estimate for New Construction:

<table>
<thead>
<tr>
<th>Building Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Building Name:</strong> PURDUE Information Technology at Purdue</td>
</tr>
<tr>
<td><strong>Type of Building:</strong> AD</td>
</tr>
<tr>
<td><strong>Assignable Sq. Footage:</strong> 27376</td>
</tr>
<tr>
<td><strong>Number of TRs:</strong> 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimated Telecommunications Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Network Electronic Costs</strong></td>
</tr>
<tr>
<td>Network Electronics: Network equipment required in telecom rooms for Purdue data services.</td>
</tr>
<tr>
<td><strong>Telephone Node Electronic Costs</strong></td>
</tr>
<tr>
<td>Telephone Node Equipment required in nodes for customer phones (not located within the building)</td>
</tr>
<tr>
<td><strong>PAL Wireless Costs</strong></td>
</tr>
<tr>
<td>PAL Wireless: Wireless access point equipment and antennas (covers labor to install equipment but not PICs)</td>
</tr>
<tr>
<td><strong>Telephone Installation Costs</strong></td>
</tr>
<tr>
<td>Telephone Installation Costs: Costs for Purdue's Verizon Technicians to install jumpers in telecom rooms and phones on desks</td>
</tr>
<tr>
<td><strong>OSP Installation Costs</strong></td>
</tr>
<tr>
<td>OSP Installation: Costs of shops installing copper and fiber cabling to the building (does not include the conduit pathway)</td>
</tr>
<tr>
<td><strong>ITNS OSP design costs</strong></td>
</tr>
<tr>
<td>ITNS OSP Installation: Cost of ITNS performing engineering and producing CAD drawings for Outside Plant cable installation</td>
</tr>
</tbody>
</table>

| Total Telecommunications Costs: 372,720.33 | 0 |

TEL Services Request Form Example: – To be submitted by Physical Facilities Business Office

<table>
<thead>
<tr>
<th>Who is requesting the services:</th>
<th>Date = 08/07/2012</th>
<th>TrackingID = 24803</th>
</tr>
</thead>
<tbody>
<tr>
<td>beverly jones</td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:bbjones@purdue.edu">bbjones@purdue.edu</a></td>
<td>47176</td>
<td>Department: physical facilities fiscal affairs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Building: FREH 2nd Floor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action</th>
<th>Tel Num</th>
<th>Equip/Serv</th>
<th>VM</th>
<th>Name</th>
<th>Present Jack</th>
<th>New Jack</th>
<th>Billing Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td>Rustin Meister</td>
<td></td>
<td></td>
<td>I 82012677-C4002790</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M 82012677-C4002790</td>
</tr>
</tbody>
</table>

Attn: Sue Lakin. COSTS MUST BE DIVIDED 3 Ways Do not charge these accounts for monthly or annual billing. 82012677-C4002790 / 82012803-C4002957 / 82013350-C4003601
Flow Chart for Telecommunications Moves and Adds in Capital Projects

Project is classified as Capital, SPW (Small Public Works), or JOC (Job Order Contracting)

PM Coordinates existing PIC removal info with Departmental TDC and Departmental Data Coordinator

Departmental TDC and Departmental Data Coordinator submits web requests for removal of existing voice/data

PM instructs Contractor to provide ITIS Records Admin with as-built and PIC change and removal info for existing PICs altered by construction

ITIS Records Admin coordinates moves & removals with data/voice services and changes records

No

Telephone Web Requests and Risque Tickets Submitted?

Yes

New Construction Commences

Telecom installations are completed and Test Results and Asbuilds submitted to PM and ITIS Records Admin

Punch list is compiled and given to contractor to correct

Rejects

ITIS Records Administrator Approves or Rejects Test Results and Asbuilds

Approves

New Telecom Equipment is installed and technicians are sent to work the orders

PICs are activated

See Telecom Service Request Timelines on Page 9 for time frames of activation

It is assumed that the Customer has been coordinating their voice service requests with ITIS Telecom System Specialists

ITIS (Information Technology Infrastructure Services):

Voice Services: Requests to remove or change Telephone equipment/features must be submitted by authorized users on a Web Services Request. This may be done through the following website:
http://www.itsap.purdue.edu/telephones/request

Data Services: Requests to remove or change data connections must be submitted by authorized users on a Data Risque Ticket request. This may be done through the following website:
https://risque.itsis.purdue.edu/RisqueTickets/

Departmental Contacts:

Cable Plant Operations:
Ron Lehman, Manager – 49-67914
Kaye Libby, Telecommunications Engineer – 49-69494
Daniel Pierce, Telecommunications Engineer – 49-68562
Ashley Burgess, Records Administrator – 49-47062
Adam Heinrich, Student Coordinator – 49-66504

Voice Services:
Sue Lakin, Manager – 49-67247
Shelly Fields, Telecommunications System Specialist – 49-67249
Joel Corbin, Telecommunications System Specialist – 49-47845
Kris Hoggatt, Telecommunications System Specialist – 49-47846
Theresa Mowery, Telecommunications System Specialist – 49-43050
Eric Pfeiffer, Telecommunications System Specialist – 49-45491
Sara Coapsick, Training Coordinator – 49-61968

Data Services:
Brian Clark, Network Engineer – 49-40114
Duane Kiburg, Network Engineer – 49-68226
Greg Lafoon, Network Engineer – 427-6323
Doug Magers, Network Engineer – 49-68286
Brandon Case, Network Engineer – 49-67096
Jon Voss, Network Engineer – 49-40031
Casey Carlson, Research Network Engineer – 49-48561
Gary Stair, Network Operations Administrator – 49-68245
Brad Devine, Senior Network Engineer – 49-40575