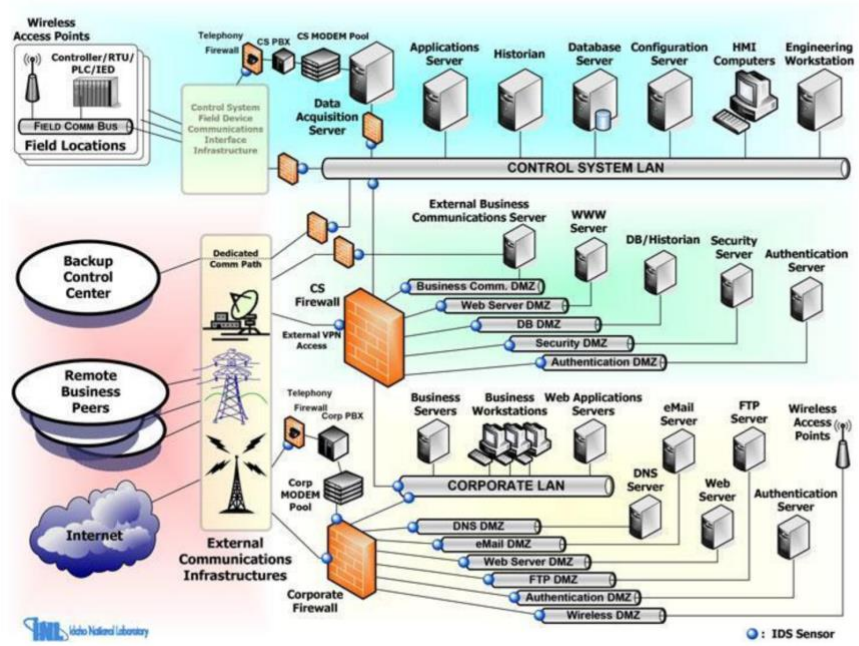
Purdue Model Class Project and Weekly Assignments

See below within the course to get to the links

Secure Architecture Design

This secure architecture design is the result of an evolutionary process of technology advancement and increasing cyber vulnerability presented in the Recommended Practice document, *Control Systems Defense in Depth Strategies*.

Hover over the various areas of the graphic and click inside the Box for additional information associated with the system elements.



https://us-cert.gov/ics/Secure-Architecture-Design

Purdue Model

- Level 0 – Actual physical process – I/O Field Devices
- Level 1 – Intelligence Sensing Unit - Control: PLCs and RTUs
- Level 2 – Process: Hardware/capability to monitor and control that process (PLC, RTU)
- Level 3 – Control Systems Operation: Historians, network services and Adv Control
  Level 3.5 – DMZ
- Level 4 – Business Side (separate from Control Center Applications)
- Level 5 – Enterprise IT Assignment Breakdown

Each week your readings and research assignment is to “design” a layer in a mock company’s Secure Architecture Design. Will you be able to **build** your own SCADA system, no. But hopefully you’ll be able to understand where it fits into the bigger picture of IT and OT and what is required to design and secure it.

You can work alone or connect with other students in the class to make 2 to 3 member teams. Each week you’ll study materials, research, design, select brands or types of equipment,

diagram and write up a summary. In the best case you'd divide up the work but I'll leave that up to you. That's why the group part is optional but for those that feel like ducks out of water you can group together and work through those areas together you don't understand.

<table>
<tr><th>Dates</th><th>Activities</th><th>Deliverable for Grading</th></tr>
<tr><td>Module 3</td><td>1. Organize your group
2. Decide the process or industry you are going to work with</td><td>Written proposal which includes:
• Team members (1 report per group/solo person
• Industry and process your SCADA will monitor (Instructor reserves the right to adjust selections is too light – not enough data, etc.)</td></tr>
<tr><td colspan="3">Resources for All Weeks
• Internet
• The Science Channel – How Things are Made
• Family/Friend that works in IT or OT</td></tr>
<tr><td>Module 3</td><td>Purdue Model Level 0, 1</td><td>• Diagram of proposed Levels 0 and 1
• Equipment Lists with $$
• Software if appropriate</td></tr>
<tr><td>Module 4</td><td>Purdue Model Level 2</td><td>• Diagram of proposed Level 2
• Equipment Lists with $$
• Software if appropriate</td></tr>
<tr><td>Module 5</td><td>Purdue Model Level 3</td><td>• Diagram of proposed Level 3
• Equipment Lists with $$
• Software if appropriate</td></tr>
<tr><td>Module 6</td><td>Purdue Model Level 4</td><td>• Diagram of proposed Level 4
• Equipment Lists with $$
• Software if appropriate</td></tr>
<tr><td>Module 7</td><td>Purdue Model Level 5</td><td>• Diagram of proposed Level 5
• Equipment Lists with $$
• Software if appropriate</td></tr>
<tr><td>Module 8</td><td colspan="2">Final Report that includes the final diagram, software, total cost of equipment, etc.</td></tr>
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