The PlantPAx Distributed Control System is a modern DCS which is scalable, flexible, and open while providing the reliability, functionality, and performance expected from a DCS. The PlantPAx System is capable of integrating control systems on process skidded equipment, process instrumentation, intelligent motor control and intelligent electrical protection devices. This drawing depicts a typical reference architecture for the PlantPAx System.

Virtual LANs will provide the proper automation system segmentation, where the critical communications should be in the subnet. Process Controllers will be responsible to handle Process I/O and Motor Control Center.

Network Time Protocol (NTP) source can be internal or external, the GPS source (internal) is preferable in system where the time synchronization is critical. Skids of electrical protection devices can now be easily integrated into the PlantPAx System providing a holistic view of your plant's operations from power infrastructure through process control equipment.

The Domain Controller is responsible for propagating the system time to computers and network infrastructure devices.

The PlantPAx System is capable of providing the reliability, functionality, scalability, flexibility, and openness. The PlantPAx Distributed Control System is a modern DCS which is scalable, flexible, and open while providing the reliability, functionality, and performance expected from a DCS. The PlantPAx System is capable of integrating control systems on process skidded equipment, process instrumentation, intelligent motor control and intelligent electrical protection devices. This drawing depicts a typical reference architecture for the PlantPAx System.
The dashed box represents the InteliCENTER Integration Unit, a configured to order product provided by Rockwell Automation to interface the plant control system with the power distribution system via the IEC 61850 standard. The integration unit is flexible and configurable based upon the needs for your power management and electrical SCADA system. For more information on the configuration options for the InteliCENTER Integration Unit, please see http://literature.rockwellautomation.com/idc/groups/literature/documents/rm/3300a-rm011-en-p.pdf or your local distributor or Rockwell Automation representative. This architecture drawing represents the InteliCENTER Integration Unit interfacing over a trusted network to the larger control system.

The Allen-Bradley® Stratix 5700™ is a compact, scalable Layer 2 managed switch with embedded Cisco technology for use in applications with small isolated, to complex networks. With integration into Studio 5000 Automation Engineering and Design Environment™, you can leverage FactoryTalk® View Faceplates and Add-on Profiles for simplified configuration and monitoring. By choosing a switch co-developed by Rockwell Automation and Cisco, your Operations Technology (OT) and Information Technology (IT) professionals leverage tools and technology that are familiar to them. This collaboration can also help to reduce configuration time and cost.

The ProSoft PLX82-EIP61850 is a stand-alone gateway module that is capable of converting IEC 61850 traffic to EtherNet/IP traffic to be consumed by the Rockwell Automation control system. This module acts as an IEC 61850 MMS client and IEC 61850 GOOSE Subscriber. The IEC 61850 information is configured and exports Add On Instructions (AOIs) that are consumed by the controller. For sizing of the ProSoft Modules see the InteliCENTER Integration Unit Reference Manual. For more information on the ProSoft Gateway Module see: https://www.prosoft-technology.com/Products/Gateways/EtherNet-IP/EtherNet-IP-Server-to-IEC-61850-Client-Gateway


IEDs or Intelligent Electrical Devices are devices that have protective electrical functions or metering capabilities. These devices then communicate this information via an Ethernet network. This drawing represents IEDs communicating to the InteliCENTER Integration Unit via the IEC 61850 standard. The PlantPAx Library for Electrical Protection Devices hosts a variety of faceplates that visually represent IEDs. This library can be found at http://literature.rockwellautomation.com/idc/groups/literature/documents/rm/process-rm011-en-p.pdf/
In a typical untrusted Wide Area Network, the network infrastructure between Point A and Point B is not owned by the user. This media is often shared with other network traffic and therefore is known as an untrusted network. The IntelliCENTER Integration Unit can be configured to handle this network topology by adding a Stratix 5950 Security Appliance as the interface between the Integration Unit and the untrusted network.

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The Allen-Bradley® Stratix® 5950 security appliance combines several enhanced security functions into a single appliance to help protect your industrial automation infrastructure.

The Stratix 5950 security appliance leverages Cisco ASA Firewall technology, which provides the ability to control network traffic through configured security rules. Cisco FirePOWER™ technology in the Stratix 5950 provides an Intrusion Prevention System (IPS) used to detect and control application-level network communications and potentially malicious traffic communicating through the network.

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