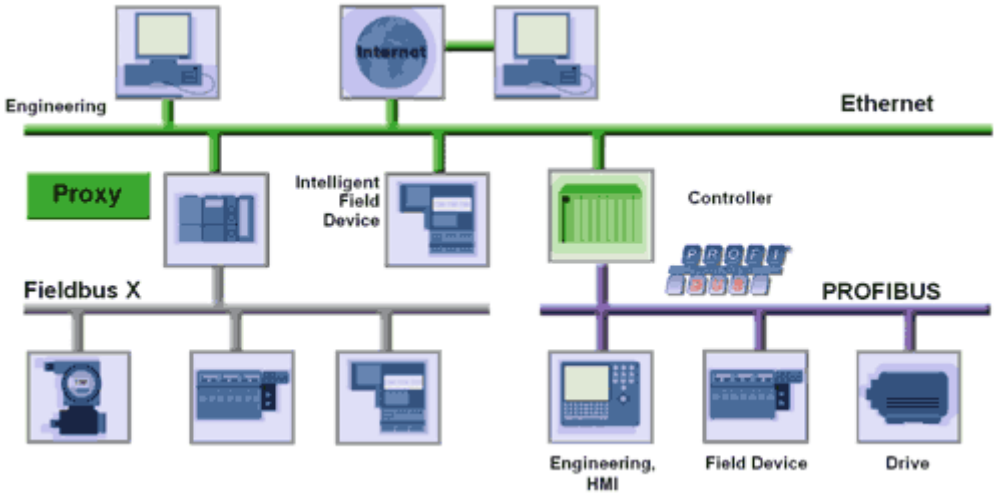
PROFINET is a new Ethernet based Communication System, that is under development by Siemens and the Profibus User Organisation (PNO). PROFINET is designed as a cross-vendor communications, automation and engineering model, and is optimized for the requirements of an automation system with distributed intelligence. Its use results in major savings for the configuring and commissioning of machines and plants. PROFINET systems integrate Profibus based systems, and offer therefore comprehensive protection of investments made in existing systems. They are additionally able to integrate other field busses.

PROFINET technology defines three classes:

- PROFINET 1.0 Component based system dedicated to Controller ↔ Controller communication
- PROFINET-SRT Soft-Real Time system for Controller ↔ I/O Device communication
- PROFINET-IRT Hard Real Time system for motion control applications



PROFINET is a high level communication system that supports distributed automation. In addition to the communication features, PROFINET includes the specification of an engineering concept for distributed automation environments which is based on a vendor independent object and connection editor and device descriptions in XML language. Ethernet-TCP/IP is used only for non-time critical communication between the intelligent devices. All time-critical real-time data is transmitted via the standard Profibus-DP technology. Data from the Profibus-DP network may be integrated into the PROFINETsystem via a proxy. PROFINET is exclusively using established IT-Standards and does not define an own industrial application protocol. The object model is based on Microsoft's Component Object Model (Com) technology. For all interactions between the distributed objects over the network, Microsoft's DCOM wire protocol and the standard TCP and UDP protocols are used.

In the PROFINET concept, machines and plants are spitted into technology modules, each consisting of mechanics, electronics and application software. The application software of these components is developed today – and in future - with proprietary programming tools and downloaded locally into the related controllers. The proprietary software tools must implement the PROFINET Component software interface to be able to export PROFINET conformant object definitions in XML language. These XML files are used as input into the vendor independent PROFINET connection editor which generates the PROFINET components out of the information from the XML files. Via the connection editor, the interactions between the PROFINET components over the network are defined. Finally, the connection information is downloaded via Ethernet-TCP/IP into the PROFINET devices.

PROFINET Facts

Network Size:	Scalable and nearly unlimited
Network Length:	10/100 Base-T = 100m Fiber Optic media 35-2000m depending on type and speed
Data Rate:	167kbit/s10, 100, 1000 MBits/s
Bus Topology:	Star
Addressing:	Distributed on several decentralized controllers
System Feature:	Uses vendor independent object and connection editor and device descriptions in XML. Ethernet-TCP/IP only used for non-time critical communication. Critical real-time data is transmitted via Profibus-DP. Data between Profibus-DP and PROFINET via a proxy.

PROFINET Anybus Products

Embedded Products
- Anybus-S PROFINET-IO

Networking Products
- Anybus-Communicator Serial Gateway

Networking Products
- Anybus-X Bridge/Gateway

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