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Ethernet Software Development Kits (Stacks) for PROFINET®
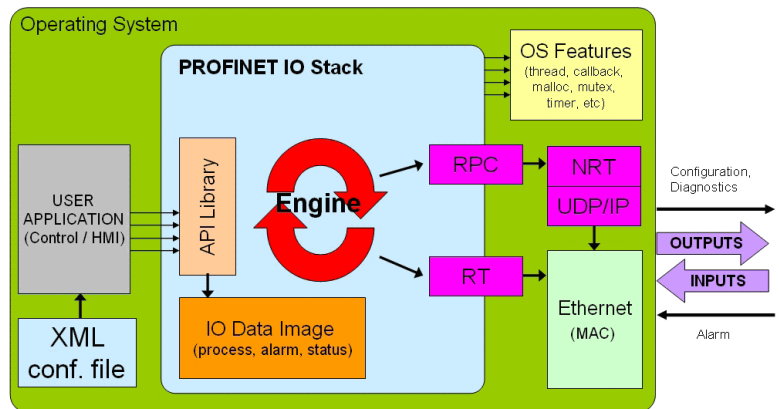
Brad® Ethernet Protocol Stacks are the most open, powerful and cost-effective solutions for customers who want to embed PROFINET® protocol into industrial controllers and field devices.*

112106 Protocol Software Stack

PROFI ®
INDUSTRIAL ETHERNET
NET

Promoted by PROFIBUS®* International, PROFINET®* is an Ethernet-based networking solution for industrial automation. PROFINET protocol capitalizes on the advantages that industrial Ethernet brings to the automation environment and has a broader reach than PROFIBUS to enable better networking plant-wide.

Brad® protocol-software development kits, (also known as stacks) enable customers to quickly embed PROFINET protocols for both master and slave devices thereby reducing their costs and time-to-market. The kits enable customers to design PROFINET IO-Controller (master) stack devices such as PLC couplers, PC-based interface cards, Panel PC and Robot controllers or, by using the IO-Device (slave) stack, products such as IO modules, robots, field instruments, regulators and hardware platforms (both little and big-endian memory format) can be developed.

Brad® protocol stacks are completely hardware independent and support 32-bit microprocessors (Intel, PowerPC, ARM, etc) running operating systems real-time or not (Windows, VxWorks, QNX, RTX, Linux, etc). The deliverable development kit package includes: ANSI C source code, user reference guide and samples of implementation in various Operating Systems (OS).

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FEATURES AND BENEFITS

- Master and slave protocol stacks can address both controller (master) or device (slave) manufacturers who want to implement PROFINET networks
- Brad stacks have no hardware and OS dependencies and can be easily implemented on a large range of hardware system platforms or software operating systems

- OEM engineering console software to quickly create configuration files to initialize the stack and perform commissioning and diagnostic of connected devices (this tool is protected by a USB dongle and can be customer branded)
- Sample applications with source codes are provided and can be quickly and easily implemented

- Brad stacks are successfully tested with PNO conformance test tools
- Molex can provide stack training, technical support and engineering development for both hardware and software design

MARKETS AND APPLICATIONS

- Industrial automation manufacturers
  - Controllers (PLC), PC-based controllers (Soft PLC)
  - I/O devices, sensor/actuators, vision systems, displays
  - Process instruments
  - Drives
  - Network interfaces (PC card, gateways)
  - Industrial Ethernet switches

- Robot manufacturers
  - Robot tooling
  - Robot controller
  - Robot monitoring

- Machine builders
  - All types of complex machines having Ethernet connectivity (e.g. packaging, textile, printing etc.)
- Industrial PC manufacturers
  - Machine control
  - Process control
  - Industrial manufacturing
  - Warehouse and logistics

- Supervision software edition
  - Monitoring of process control
  - Diagnostic tools

- Non-automotive transportation
  - Vehicle infrastructure (railways, subways)
  - Cranes
  - Agricultural equipment

- Electronic manufacturers
  - Ethernet connectivity
  - Product bundling

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112106 Protocol Software Stack

IO-CONTROLLER STACK

- PROFINET specifications:
  - PROFINET IO v2.1 (July 06)
  - PROFINET IO v2.3 (due by Dec/2009)
- Real-time communication
  - RT (Class-1 and Class-2)
  - No IRT
- Context Management: Yes
- IP Service configuration: DCP / Local / DHCP
- Hardware: Compatible with 32-bit microprocessors

- IO Data:
  - Yes (cyclic data exchange) in various data format (Bit, Byte, Cord, Dword and Float)
  - 128 IO-devices with up to 1440 In and 1440 Out
- Services
  - LLDP - PROFINET mandatory MIB
  - MRP - Media Redundancy
- Operating System: Portable on any real-time or not multi-thread OS

IO-DEVICE STACK

- PROFINET specifications:
  - PROFINET IO v2.1 (July 06)
  - PROFINET IO v2.3 (due by Dec/2009)

- Real-time communication
  - RT (Class-1 and Class-2)
  - No IRT
- IO Data: up to 1440 In and 1440 Out
- GSD file: Yes
- IP Device configuration: DCP / Local / DHCP

- Services
  - LLDP - PROFINET mandatory MIB
- Hardware: Compatible 32-bit microprocessors
- Operating System: Portable on any real-time or not multi-thread OS

OEM ENGINEERING CONSOLE

- Windows 32-bit (XP,Vista)
- Generate IO-Controller stack configuration files (XML format)
- GSD device library management

- IO-Device commissioning (Automatic device detection, Set Name, Device blinking etc.)
- Integrated diagnostic

- OEM customization
- Sample of user controller application
- USB dongle protection

ORDERING INFORMATION

Order No.	Engineering No.	Description
112106-5005	SDK-PFN-CON	PROFINET IO-Controller SDK
112106-5010	SDK-PFN-CON-L	PROFNET IO-Controller License Fee
112106-5006	SDK-PFN-CON-UDP	PROFINET IO-Controller SDK Annual Maintenance Update
112106-5012	SDK-PFN-CON-CNF-U	PROFINET IO-Controller OEM Engineering Console
112106-5001	SDK-PFN-DEV	PROFINET IO-Device SDK
112106-5002	SDK-PFN-DEV-UPD	PROFINET IO-Device SDK Annual Maintenance Update
112106-5007	SDK-PFN-MRP	Client/Manager Media Redundancy Protocol for PROFINET

SUPPORT/TRAINING INFORMATION

Order No.	Engineering No.	Description
8600000142	SDK-PFN-EDS	Engineering Support for PROFINET SDK
8600000144	SDK-PFN-TRN	PROFINET SDK Training

Stacks also available from Molex: EtherNet/IP Scanner and Adapter, EtherNet/IP Adapter, EtherNet/IP OEM Engineering Console, EtherNet/IP Services (training and engineering support)

www.molex.com/link/bradinethernet.html