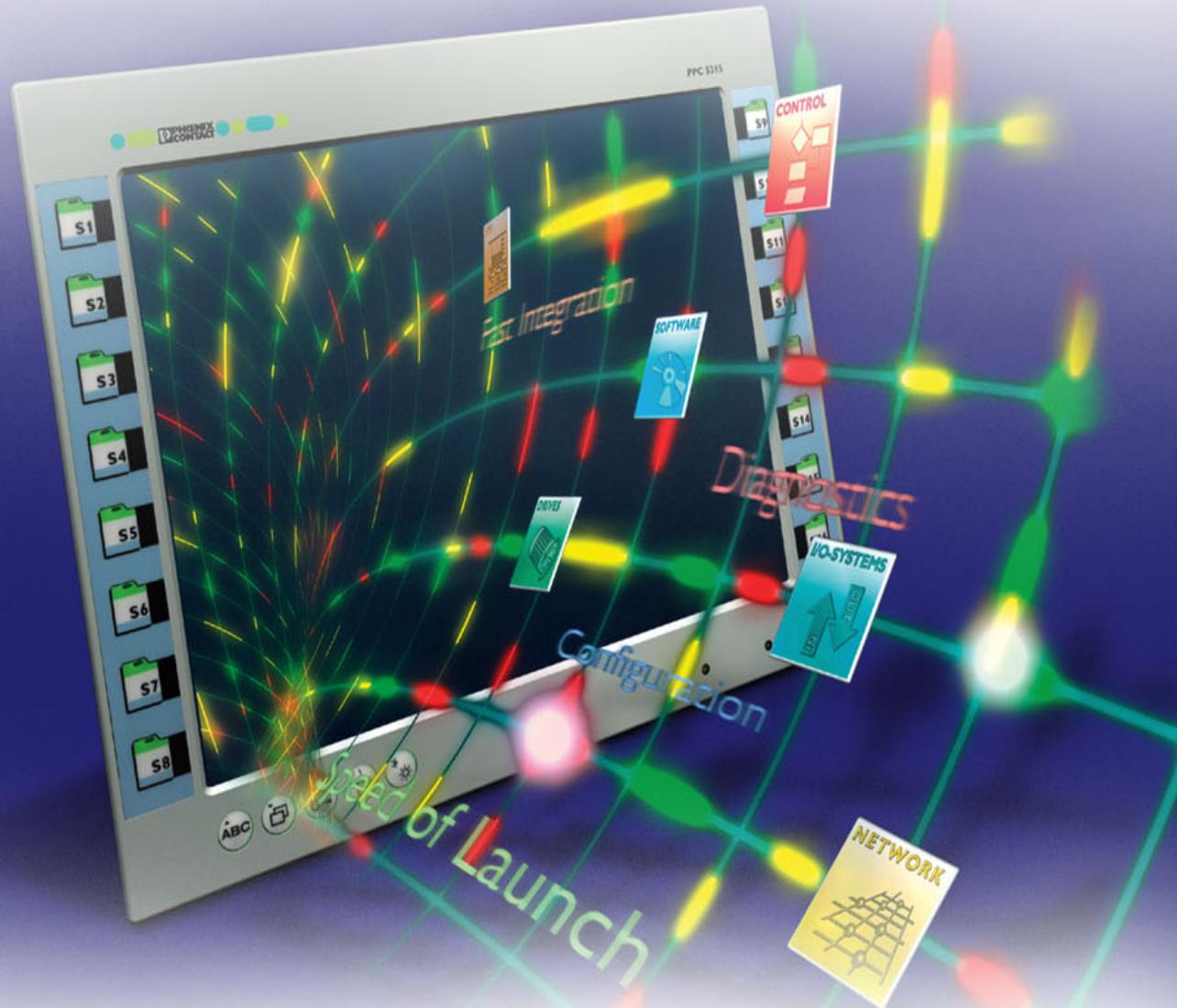
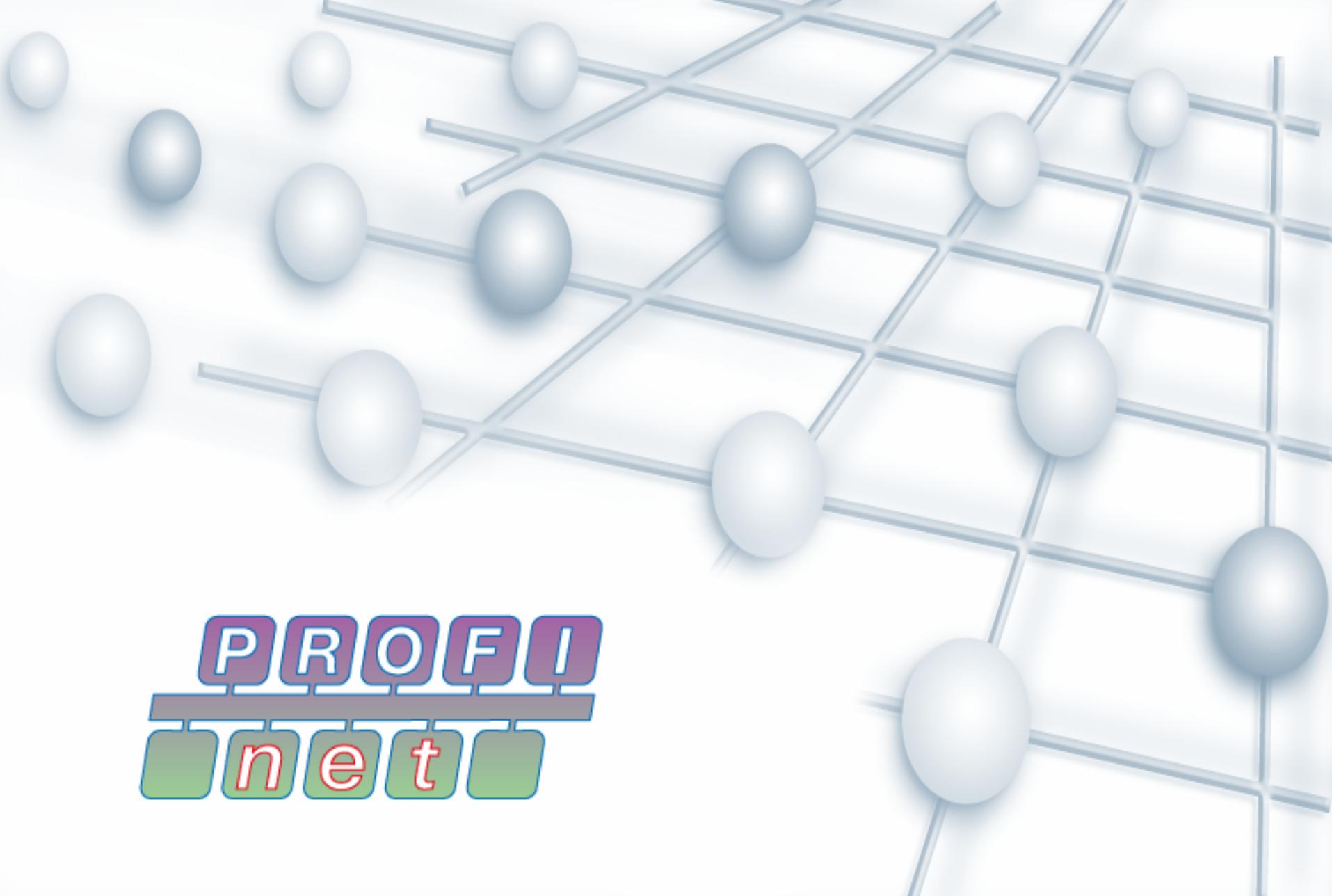


AUTOMATIONWORX

Innovaciones
que
inspiran





PROFINET



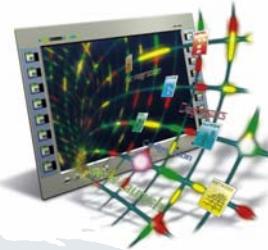
Demandas requeridas a una solución normalizada



- Clara compatibilidad con „Ethernet utilizada en ofimática“ TCP/IP, UDP, SNMP, FTP,...
 - Un modelo de arquitectura que permita inteligencia distribuida
 - Fácil integración de los buses existentes
 - Soluciones escalables en tiempo real
 - Respaldo de empresas líderes



PROFINET en el camino para ser un estándar mundial



1. Independiente del fabricante
2. Soportado por 20.000.000 nodos de bus de campo
3. y por organizaciones de usuarios establecidas en todo el mundo (INTERBUS CLUB, PNO)

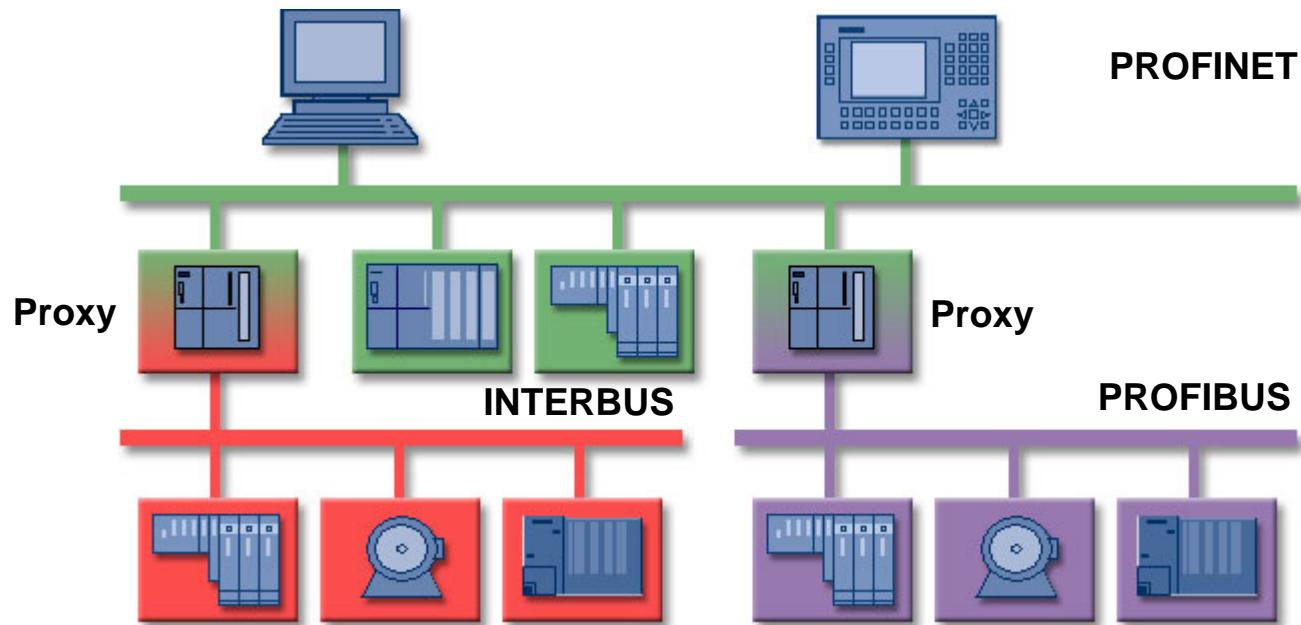


PROFINET tiene para cada
aplicación un canal adecuado!
Escalable y bajo un mismo cable

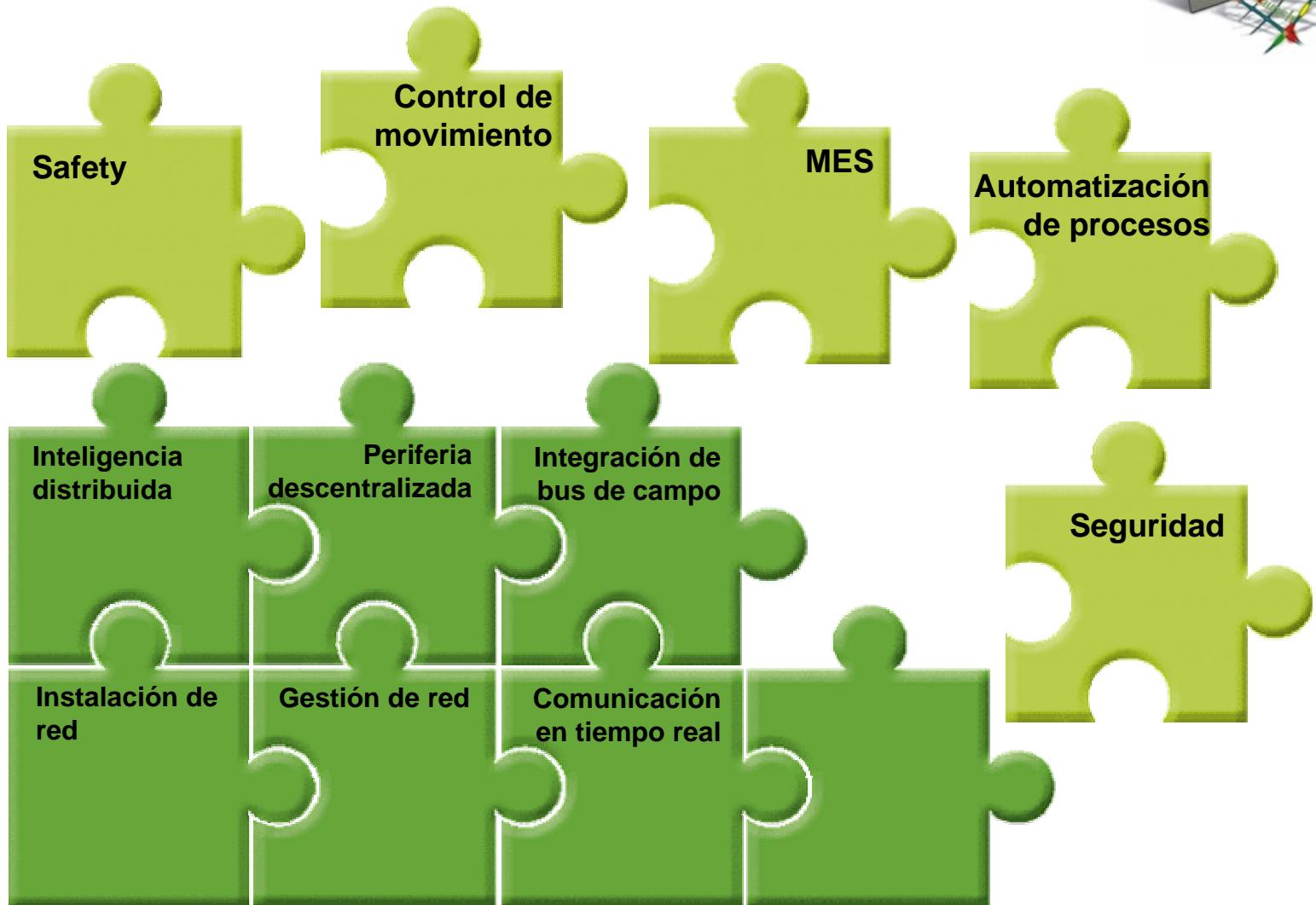
Integración óptima de bus de campo gracias al concepto Proxy



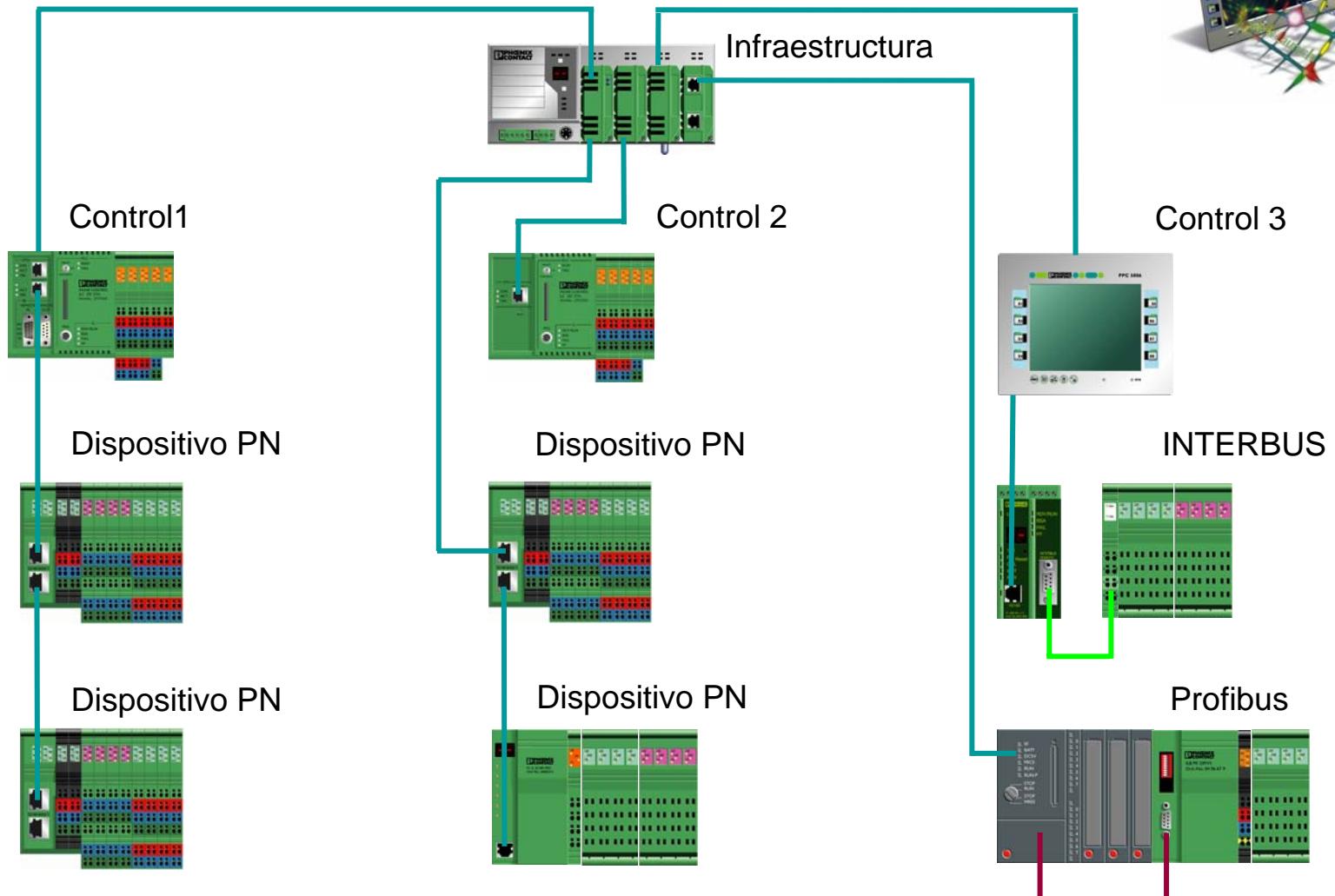
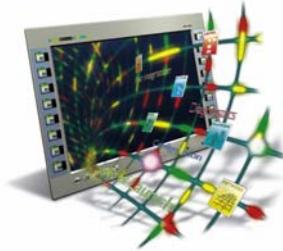
PROFINET ofrece la apertura para la integración de sistemas de bus de campo



Escalable y modular



PROFINET : Terminología



PROFINET-I/O : Equipos y funcionalidad



Software

Software de ingeniería (STEP7, PC WORX, Etc.)

- Configuración de la red
- Asignación de E/S
- Parametrización
- Descargas de programación

IO-Supervisor (Monitor, Diagnóstico,OPC)

- HMI
- PC's
- Equipos de monitorización
- Equipos de diagnóstico

Equipos

IO-Controller (PLC, PC, Etc.)

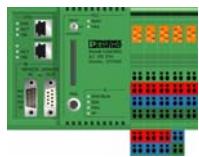
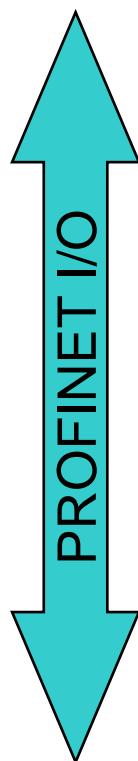
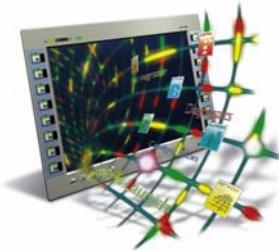
- Gestión de red
- Consumidor datos entrada
- Proveedor de datos salida
- Transmisión de parámetros
- Recepción de alarmas
- Evaluación de diagnóstico

IO-Device (equipos de campo)

- Proveedor de datos de entrada
- Consumidor datos salida
- Envío alarmas
- Envío de señales diagnóstico

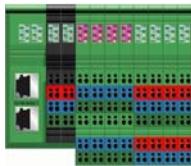
Ethernet

PROFINET Terminología

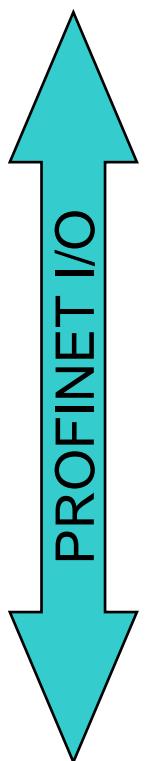
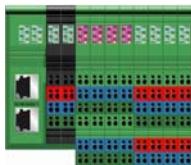


Control 1

Dispositivo PN

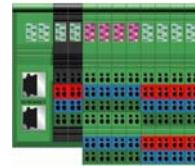


Dispositivo PN

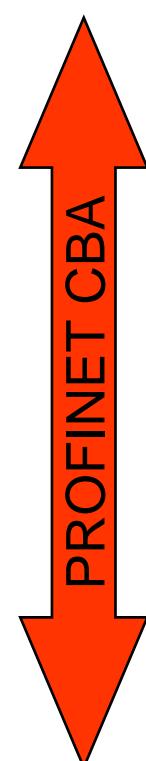
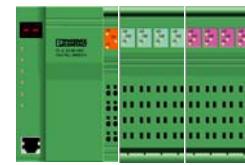


Control 2

Dispositivo PN

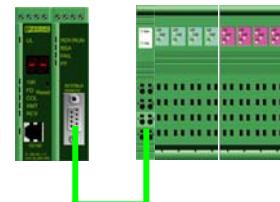


Dispositivo PN

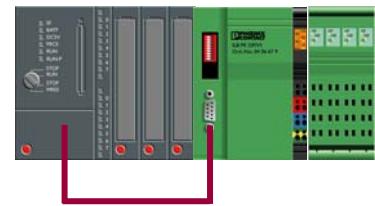


Control 3

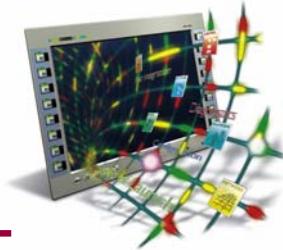
INTERBUS



Profibus

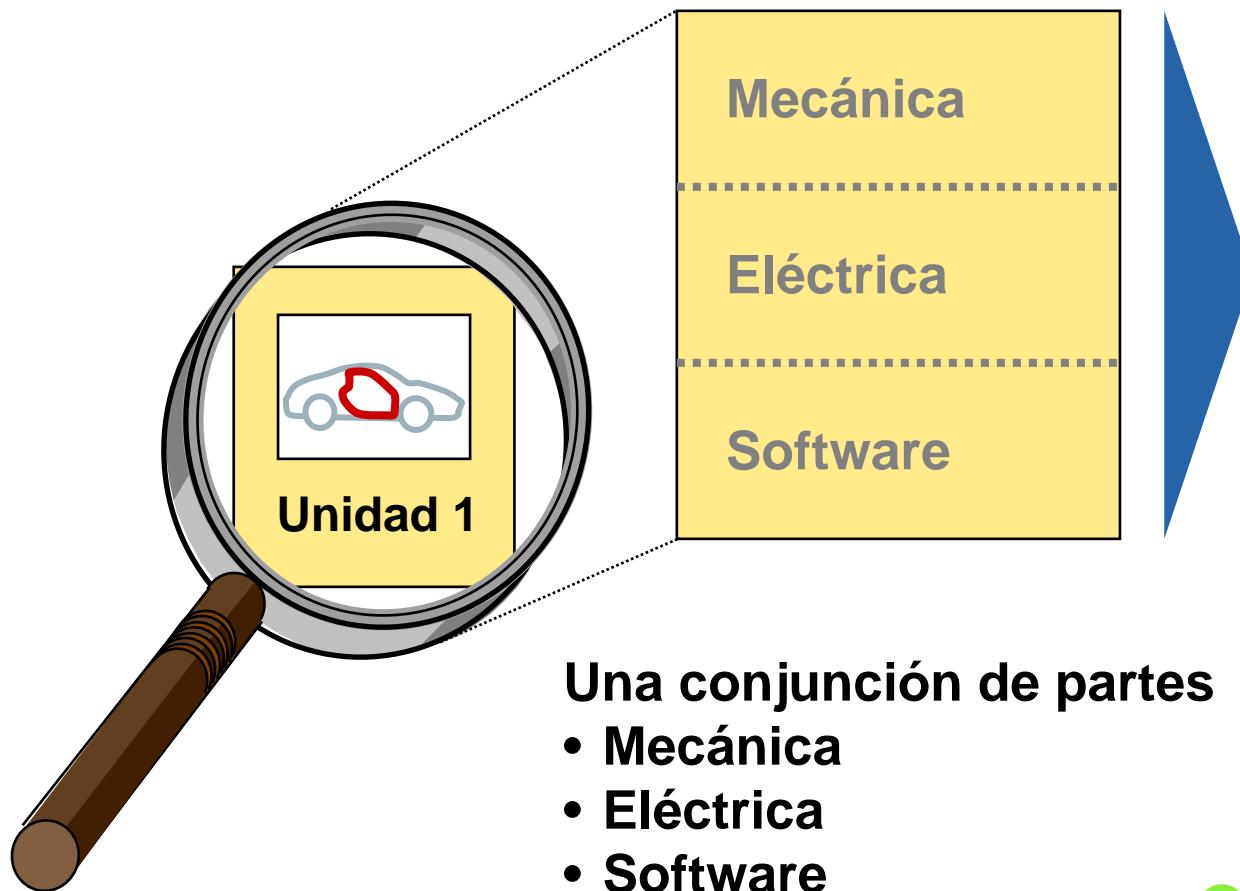


PROFINET-Modelo componentes CBA



Módulos tecnológicos

PROFINET-Componentes



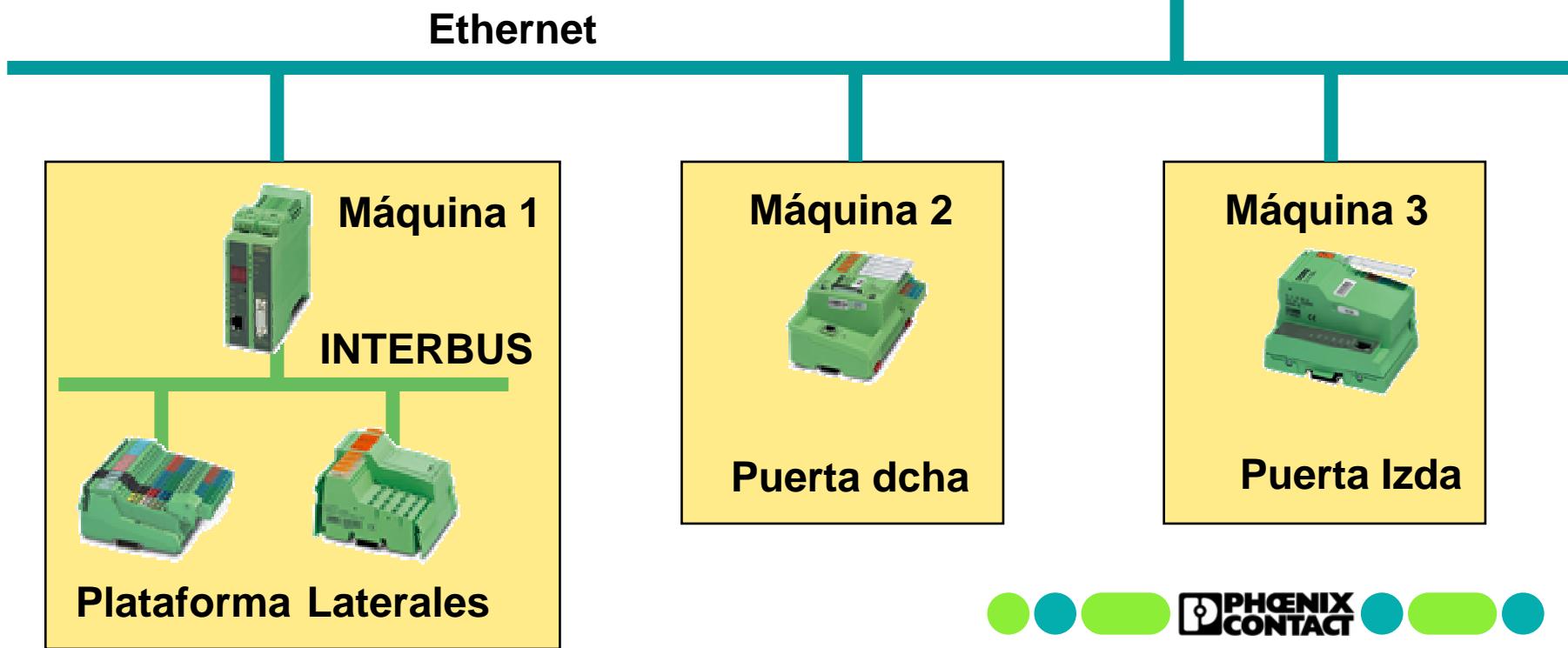
UNIDAD 1	
Reset	marcha
libre	listo
Start	libre
Stop	error

Estructura de automatización

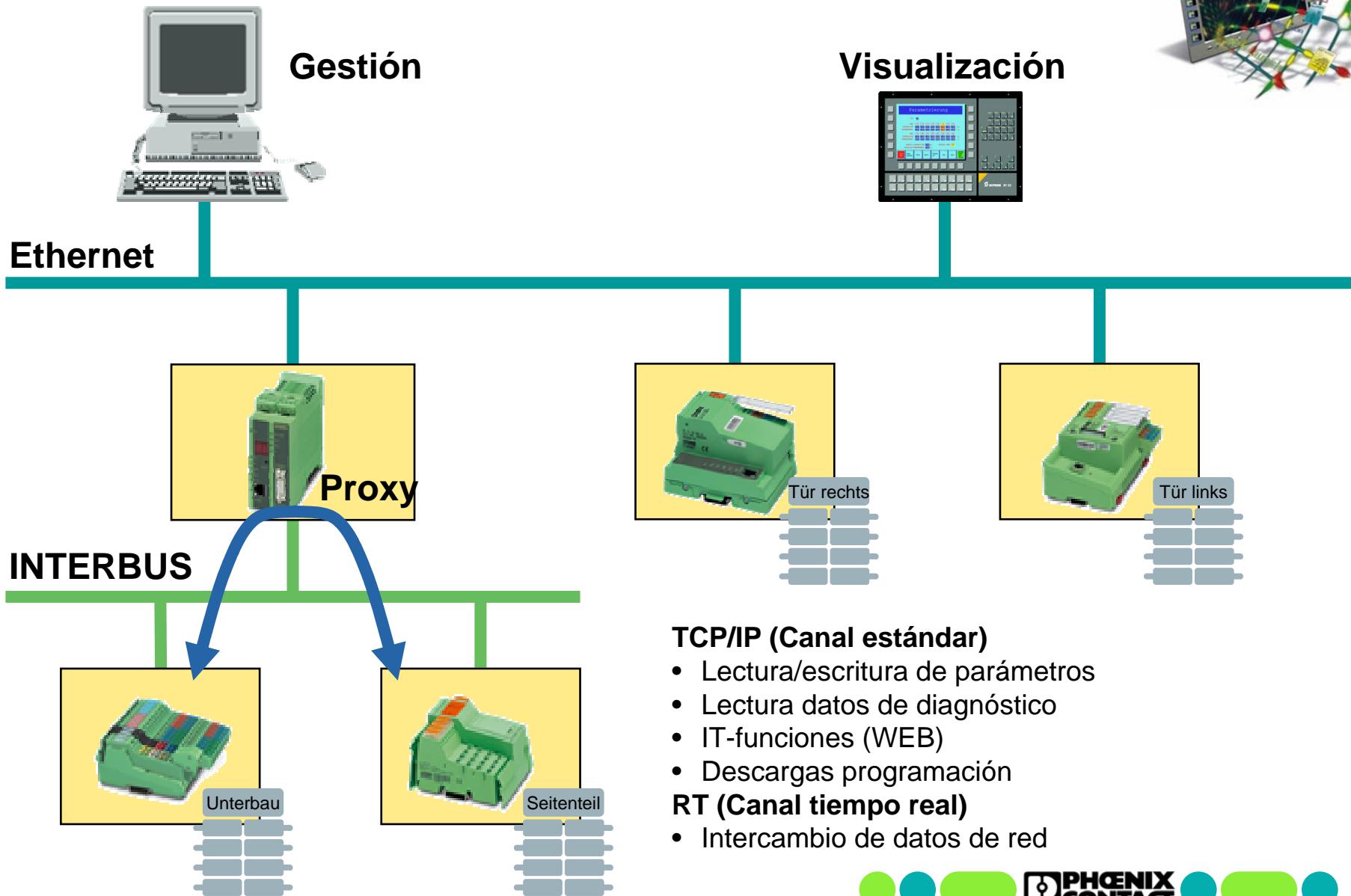


Conjunción de dispositivos

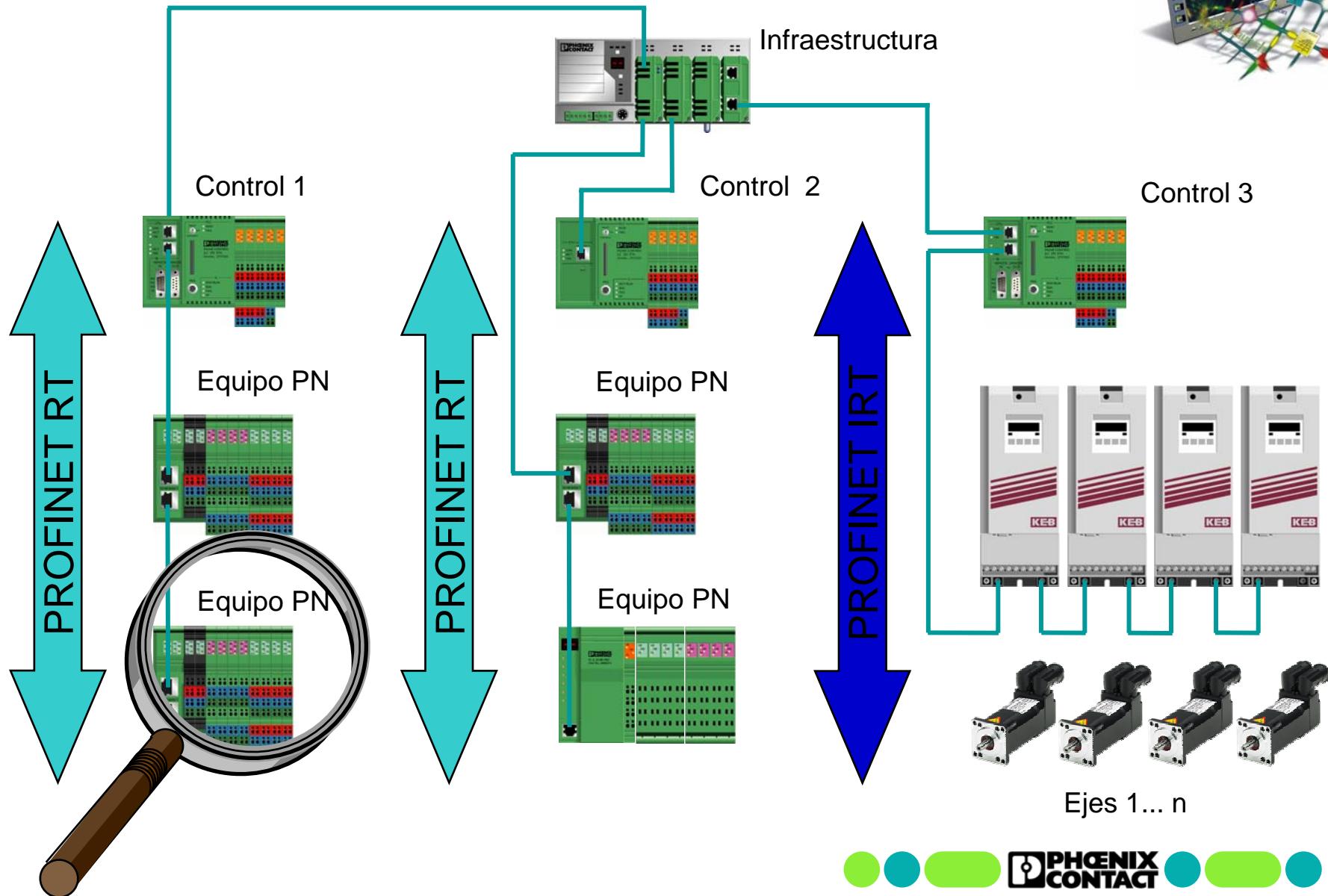
- Ethernet
- INTERBUS



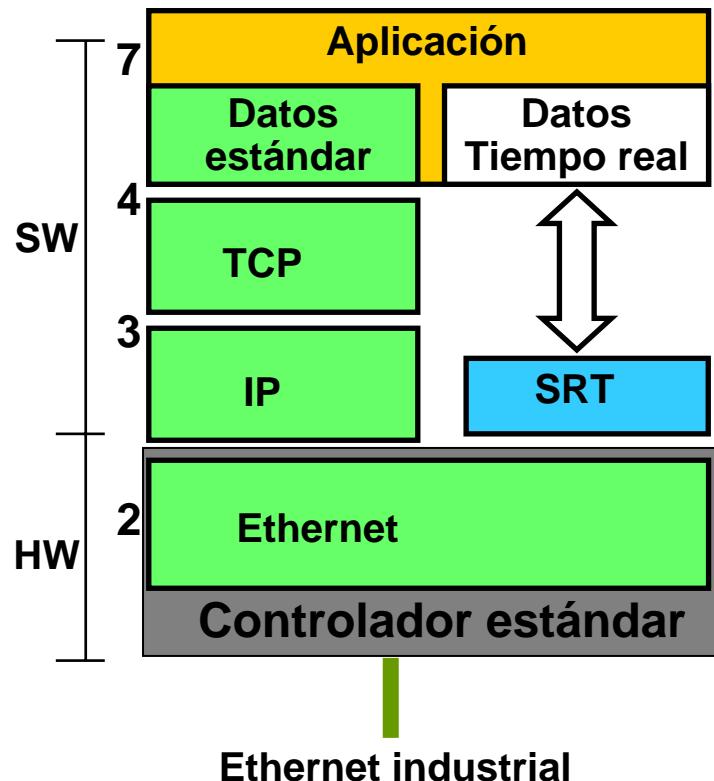
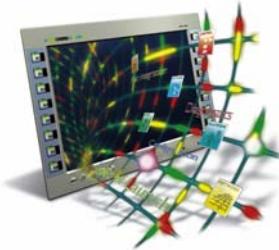
Comunicación



PROFINET I/O – RT / IRT



PROFINET IO Tiempo Real (RT)

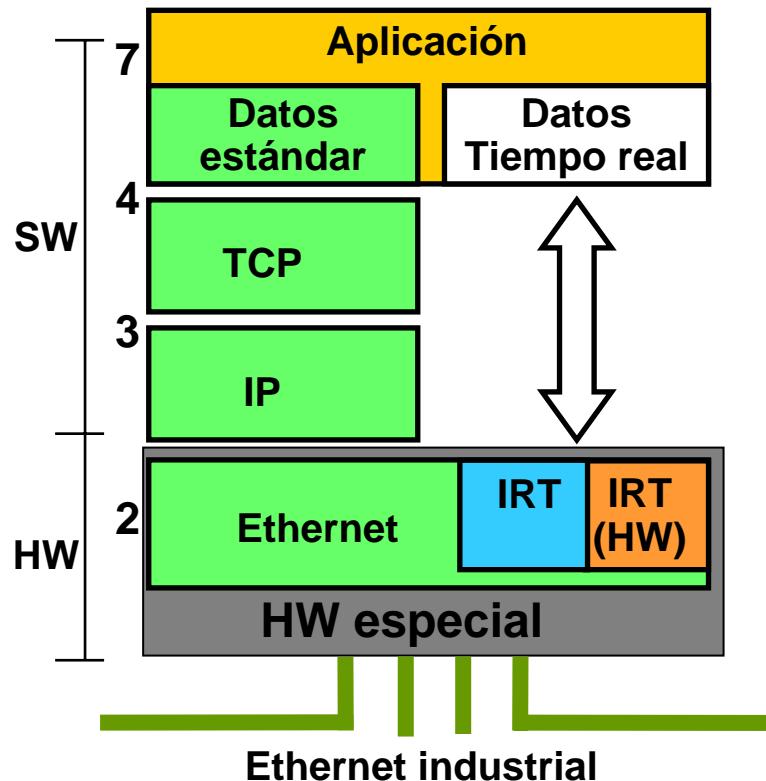
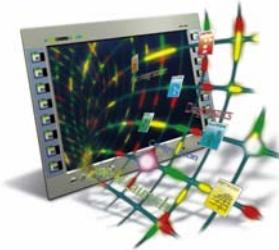


FL MMS
(Infraestructura estándar)

Los switches gestionan la transmisión de datos en tiempo real, aplicando mecanismos de priorización. Esto se realiza por software

PROFINET IO

Tiempo Real Isócrono (IRT)

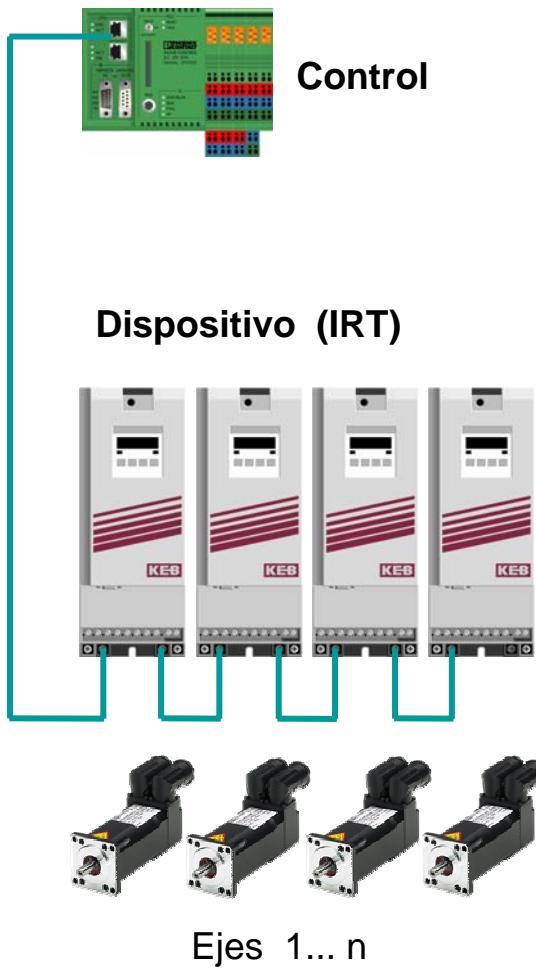
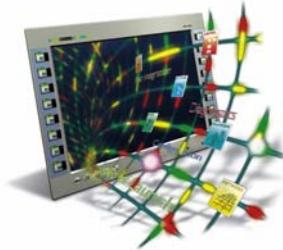


FL MMS

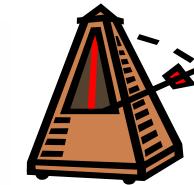
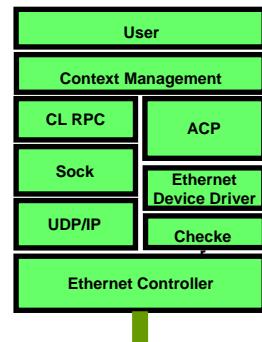
(Infraestructura ampliada)

Tiempo real estricto.
Próximo desarrollo, solo es posible mediante la implementación de un hardware especial (ASIC)

¿ Cómo se implementa PROFINET IRT?

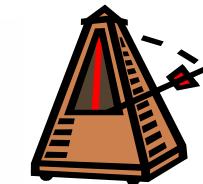
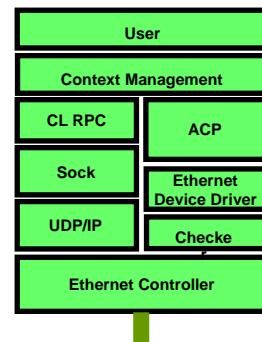


PN Software-Stack



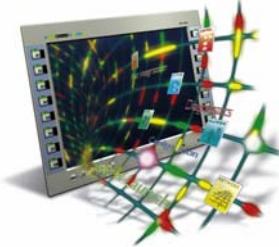
IRT ASIC y sincronización de equipos

PN Software-Stack



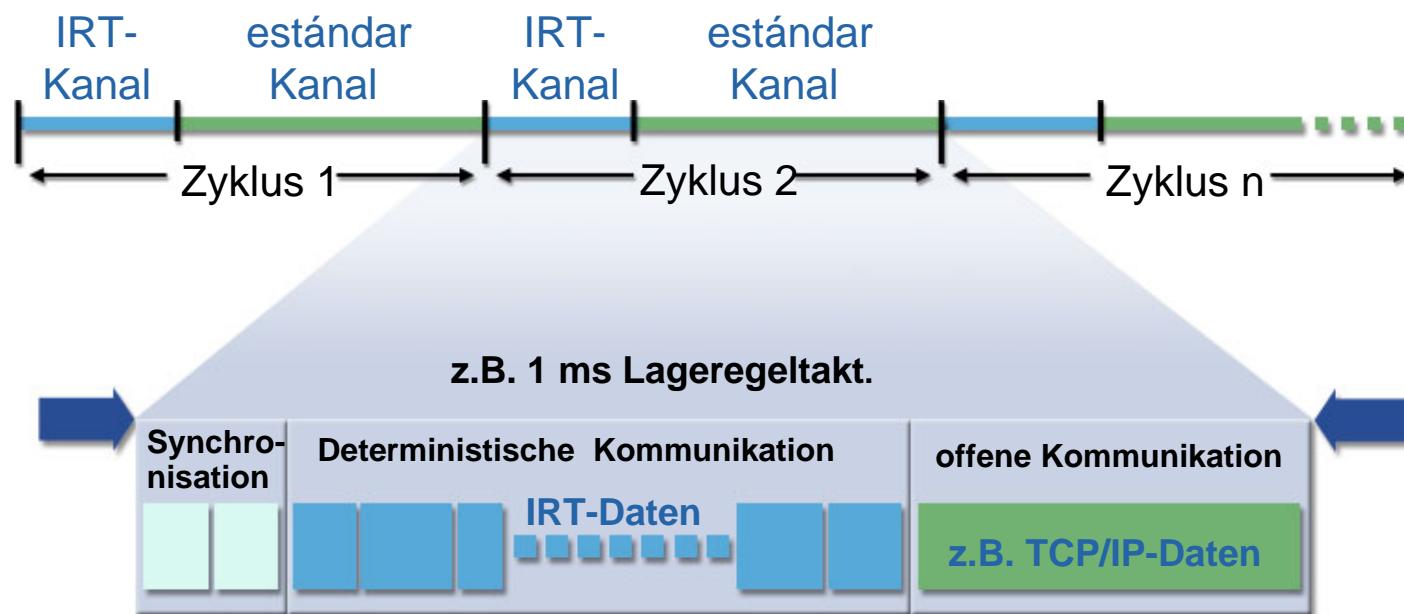
IRT ASIC y sincronización de equipos

Isochrones Real-Time-Ethernet

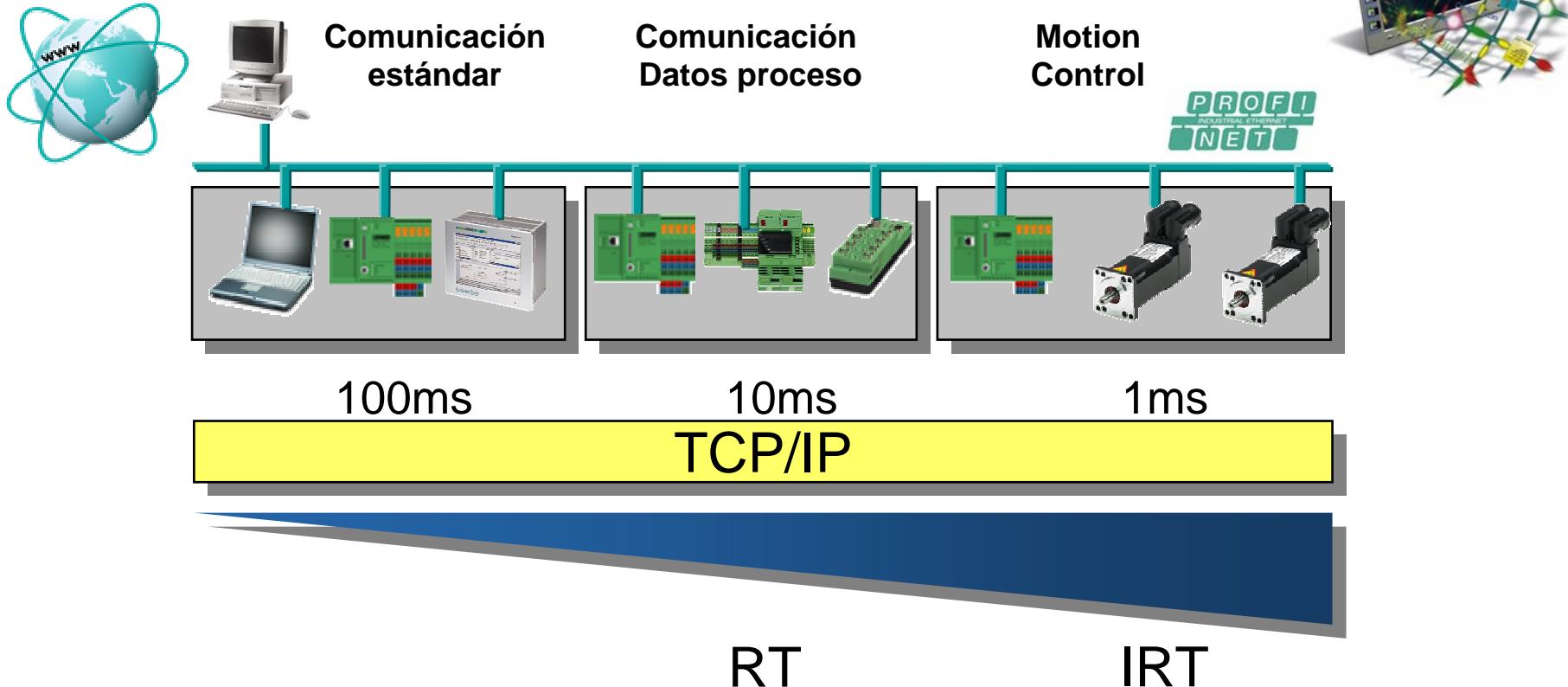


Transferencia con control de intervalo de tiempo

- Sincronización temporal de equipos
- Parte determinista , parte abierta



Comunicación en tiempo real



Una comunicación que cubre todas las demandas

- **Comunicación escalable en tiempo real**
- **Apertura sin límites a TCP/IP y servicios**
- **Todo sobre un único cable**

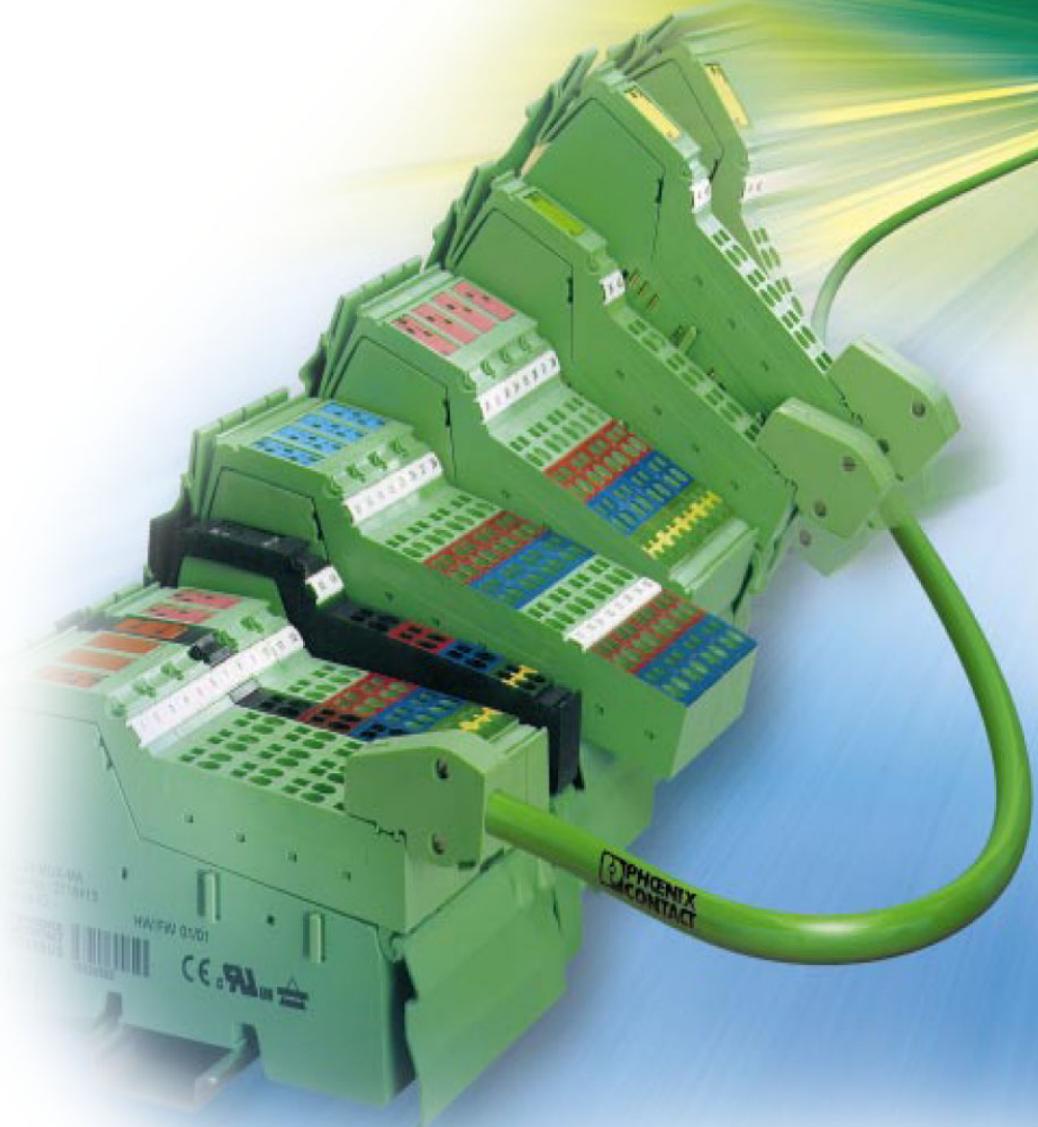


PROFINET tiene para cada
aplicación un canal adecuado!
Escalable y común bajo un mismo
cable

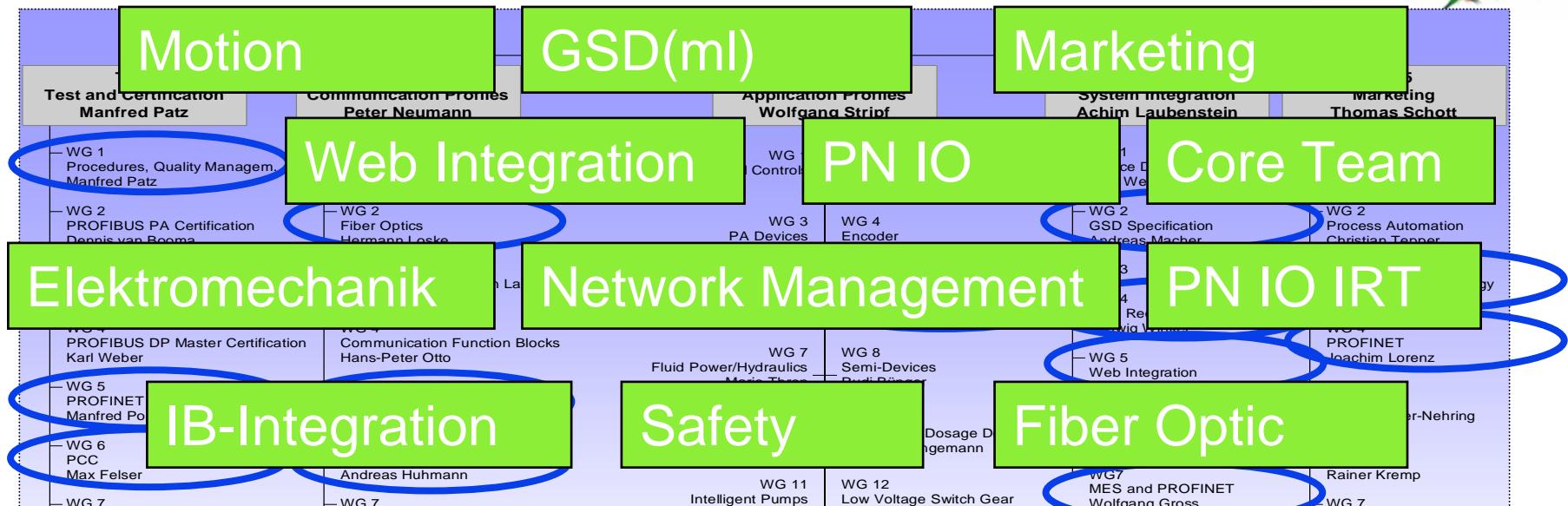
PHOENIX CONTACT

y

PROFINET



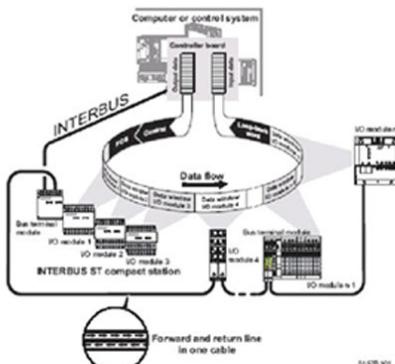
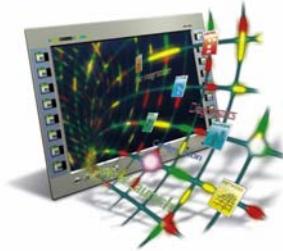
PROFINET Grupos de trabajo con participación de Phoenix Contact



Presentes en 12 grupos de trabajo

- Conocimiento de los desarrollos desde el inicio
- Participación en el diseño
- Creación del Know-How
- Presencia en el mercado más rápida

PHOENIX CONTACT colabora en diseño PROFINET



Whitepaper

INTERBUS in PROFINET

INTERBUS Linking-Device				
Vendor ID Device ID	Slot 0: (Proxy)	Slot 1: (INTERBUS Master)	Slot 2...n: (INTERBUS Device 1...n-1)	IB-Ident
Input- Data	Slot 0: (Link-Dev)	Subslot 0 (INTERBUS-Master)	Diagnostic/Status Registers IOPs/Iocs	Subslot 1 (INTERBUS-Device)
Output- Data			Control Registers IOPs/Iocs	Device Inputs IOPs/Iocs
Channel Diag			Master Errors User Errors Unlocalized Bus Errors	Device Outputs IOPs/Iocs Real Channel Errors Peripheral Errors Localized Bus Errors INTERBUS Basic PROFILE
All Data			Diagnosis	Diagnosis IB-Ident (GSD) PD-Length (GSD) Buslevel (GSD) Alternative Number (GSD) MAU-Type (GSD) I&M PCP Device Parameters (GSD, Runtime)
Record-Data				

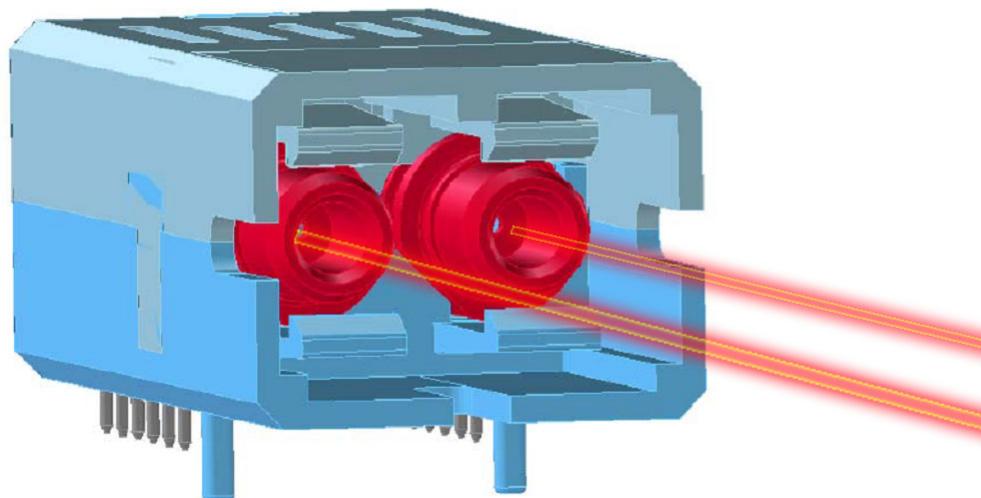
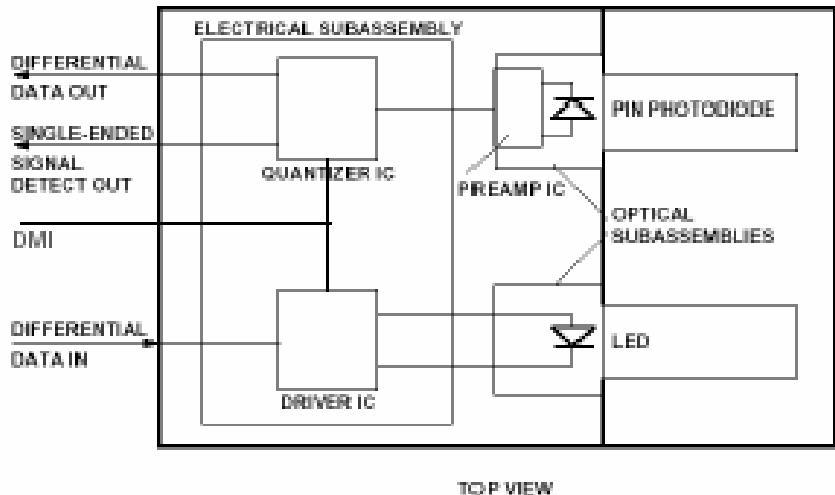
INTERBUS System Property Device Property

Libro blanco Integración de INTERBUS en PROFINET

PHOENIX CONTACT colabora en diseño PROFINET

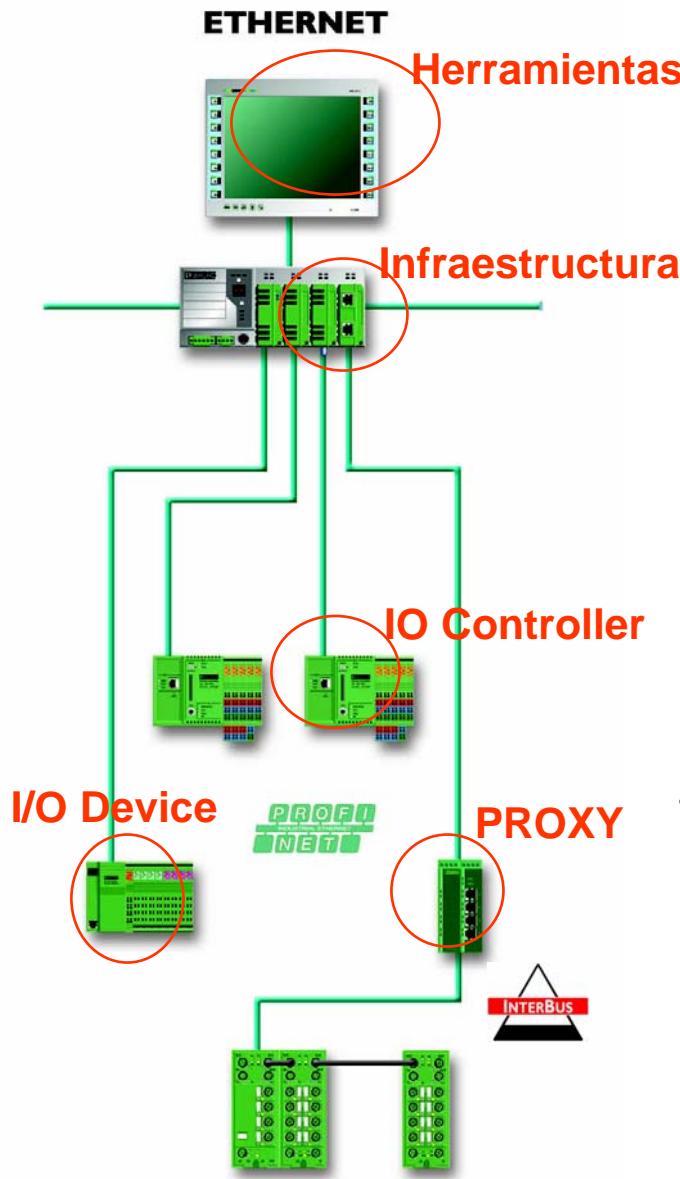
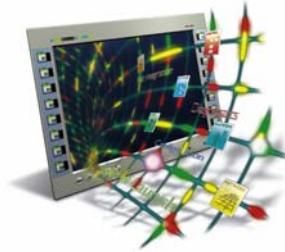


Agilent Technologies



Desarrollo de un transceiver PROFINET FO

AUTOMATIONWORX con PROFINET



Componentes Profinet

Herramientas, parametrización PROFINET IO

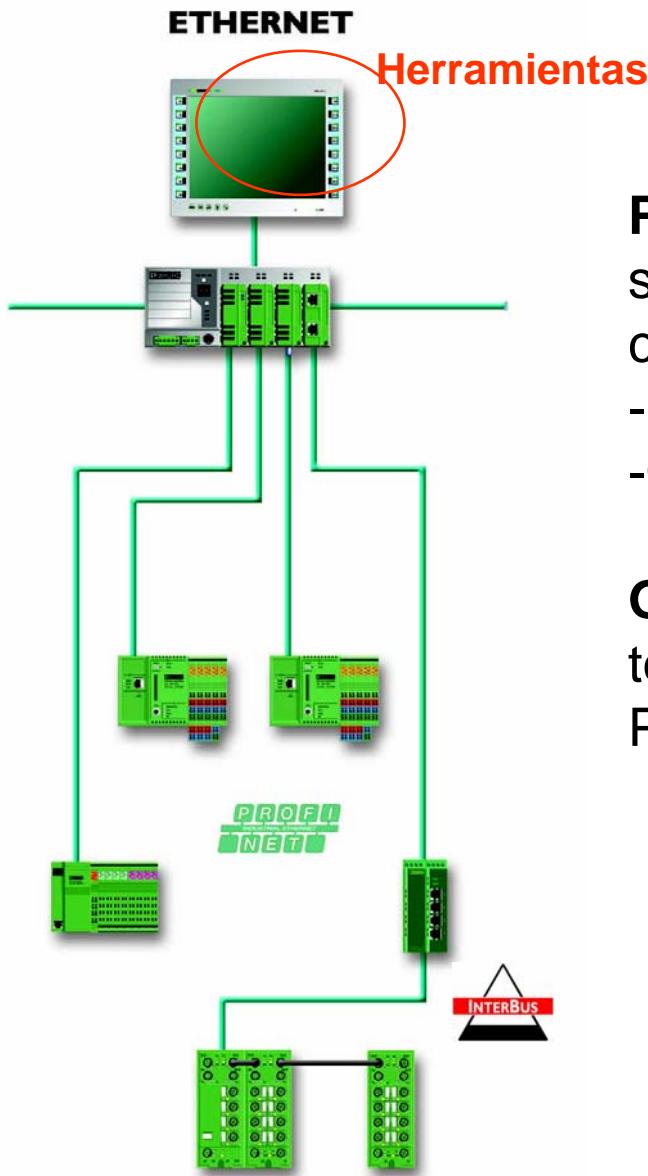
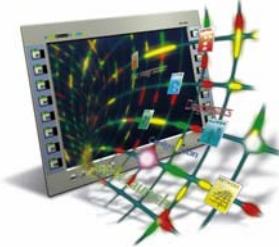
Infraestructura, Soluciones para instalación en redes Ethernet

IO Controller, Controlador compacto con E/S modulares y conexión a INTERBUS

IO Device, Cabecera de bus modular o en formato bloque

Proxy, I/O-Server como equipo PROFINET y maestro INTERBUS

AUTOMATIONWORX con PROFINET

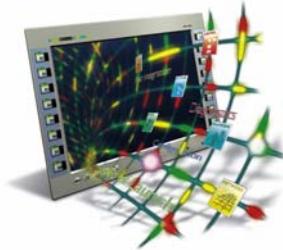


PC Worx 5, El sistema de programación de sistemas de control en AUTOMATIONWORX que configura :

- Maestros INTERBUS
- Controladores PROFINET IO

GSDML como descripción de equipos, para todos los componentes AUTOMATIONWORX en PROFINET , como por ejemplo en STEP7.

PHOENIX CONTACT y Tecnología PROFINET



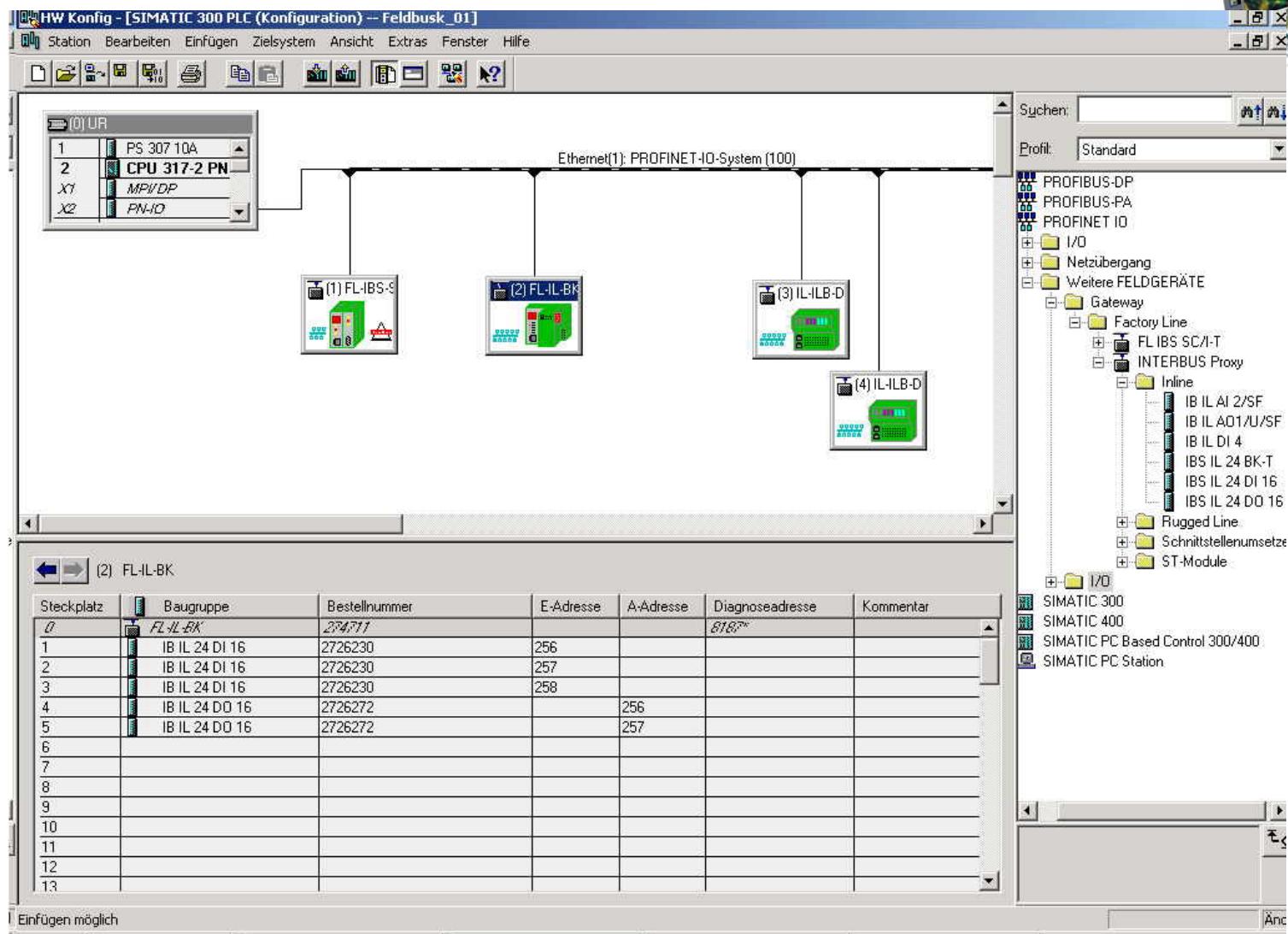
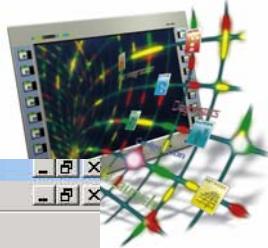
The screenshot shows two windows from a software application:

- Busaufbau (Bus Structure) window:** Displays the hierarchical structure of the bus. It includes a tree view of resources and specific components like "PNIO IL 24 BK-PAC".
 - PNIOTest2
 - ILC 350 PNIO
 - Ressource ILC350ET
 - PNIO IL 24 BK-PAC
 - IB IL 24 DI 2
 - IB IL 24 DO 16
 - PNIO IBS SC/I-T
 - IBS RL 24 DI 16/8-LK
 - IBS RL 24 DO 8/8-2A-LK
 - IB IL 24 DI 4
 - IB IL 24 DO 2
 - Nicht verbunden
- Gerätedetails (Device Details) window:** Shows detailed configuration settings for the "PNIO IL 24 BK-PAC (PROFINET Einstellungen)".

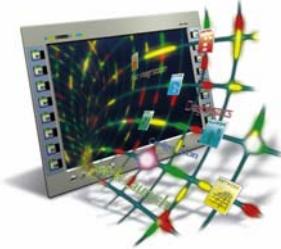
Bezeichnung	Wert
Hersteller	Phoenix Contact
Vendor ID	0x00B0
Produktbezeichnung	PNIO IL 24 BK-PAC
Device ID	0xAFEE
Funktionsbeschreibung	PROFINet I/O - INTERBUS-Inline Buskopp
Gerätetyp	I/O Device
Gerätefamilie	PROFINet I/O
Bestellnummer	2862314
Revision: HW / Master FW (JCop FW)	10/1.21
D_MACAddress	00.A0.45.00.32.52
D_IPAddress	192.168.101.001
D_SubNetMask	255.255.255.0
D_DefaultGateWay	192.168.101.0
Domain Prefix	IL24BK_PNIO
D_DNSName	IL24BK_PNIO8.PROFINET.PXC
DHCP unterstützt	TRUE
WBM unterstützt	FALSE
D_IsDeActivated	nein
ObjectUUID Local Index	65535
ObjectUUID Major Version	1
ObjectUUID Minor Version	1
unterstützte AR Typen	SingleAR
max. ARs	2
D_SupervisorTakeOverAllowed	nein
D_CRTTransport	SRT
Datenrate	100 Mbit/s
Echtzeitklasse	SRT
SoftSync unterstützt	Ja
SendClock Eingänge	32 ms
Untersetzungsverhältnis Eingänge	32 ms
SendClock Ausgänge	32 ms

Integración PROFINET en
el software de automatización

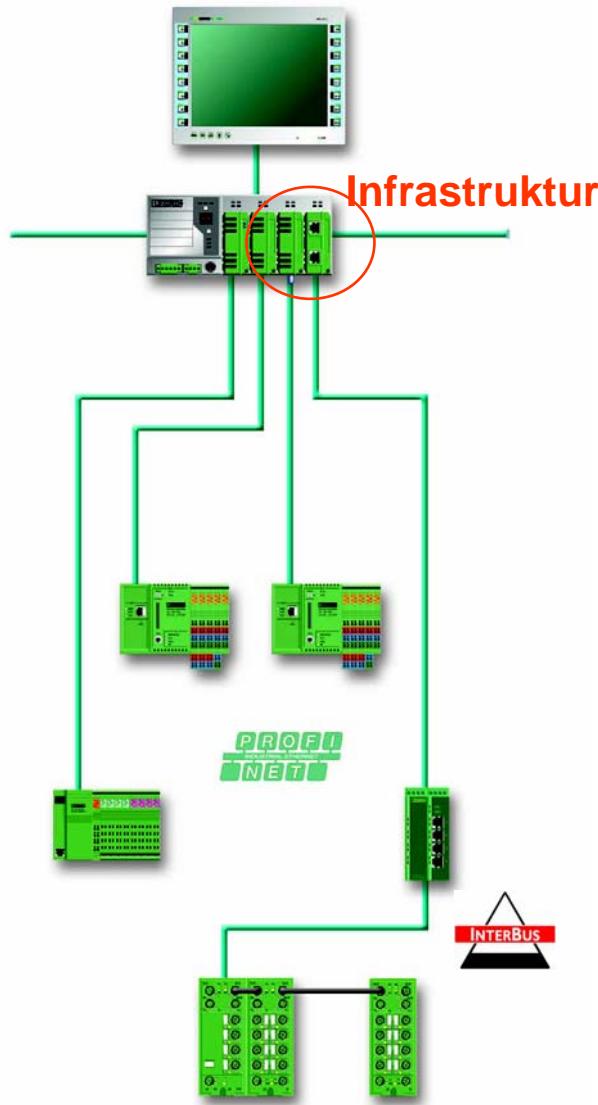
Integración en Step 7



AUTOMATIONWORX con PROFINET



ETHERNET



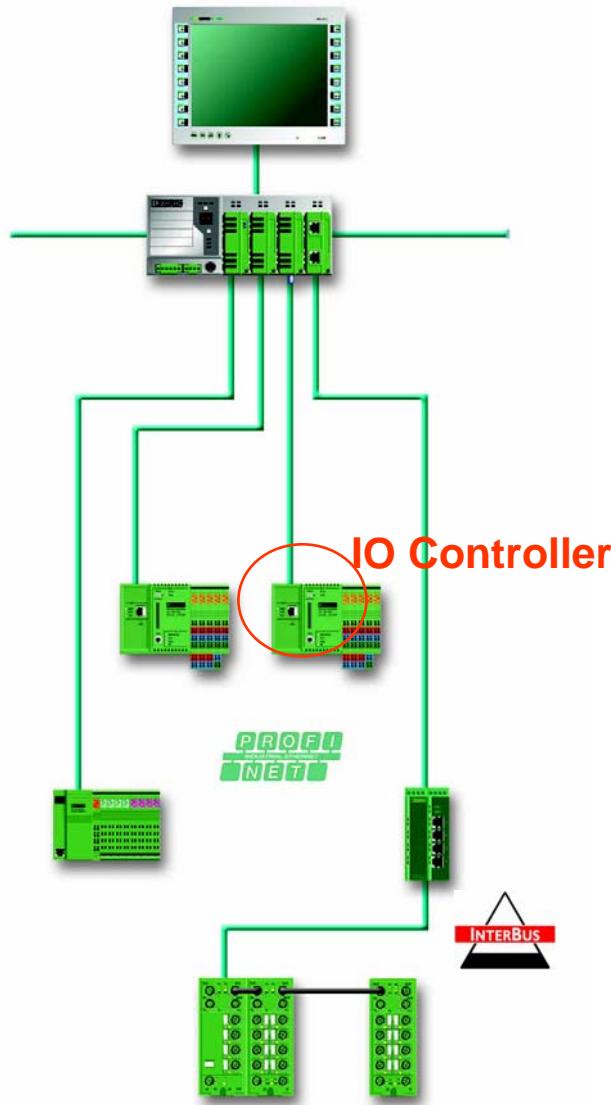
**Componentes de infraestructura
(MMS,MCS),**
Para una mejor estructuración de la red.



AUTOMATIONWORX con PROFINET



ETHERNET

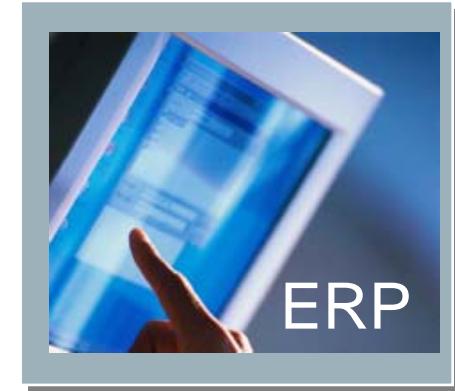
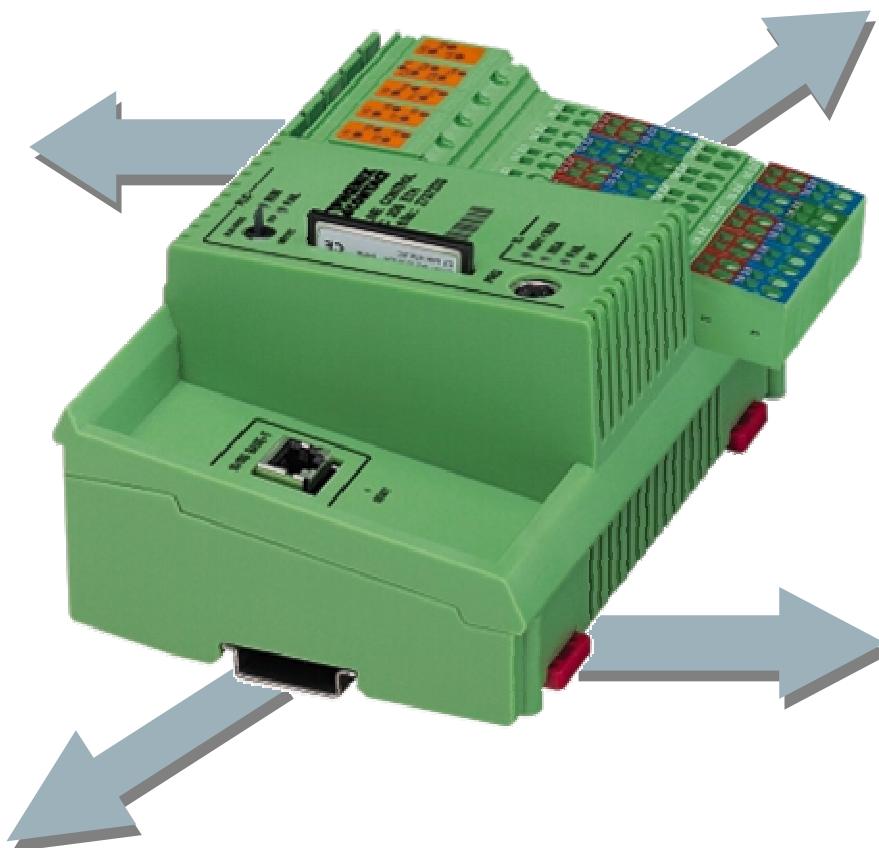


ILC 350 PN, compacto controlador con E/S
y conexión PROFINET / INTERBUS

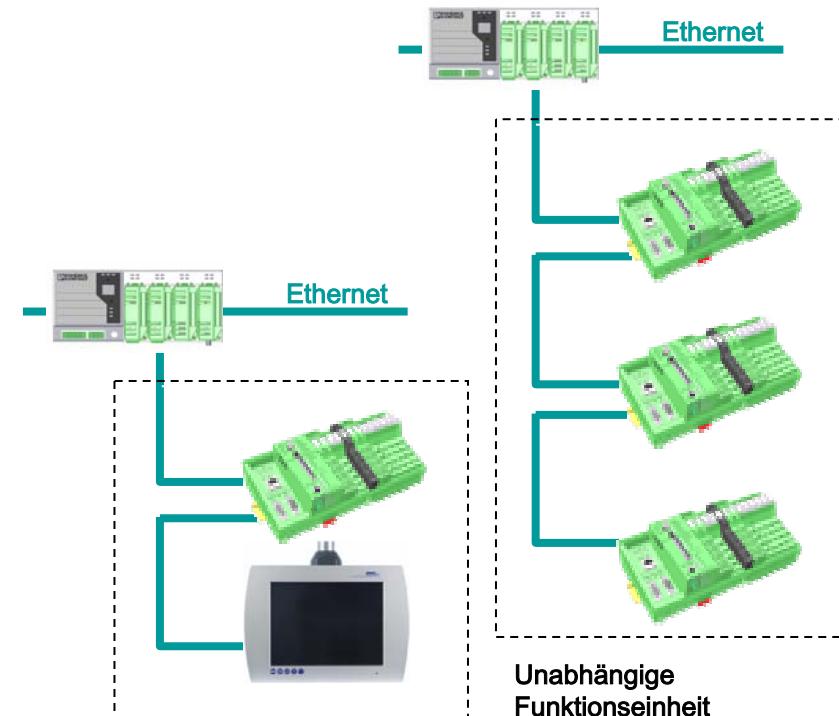
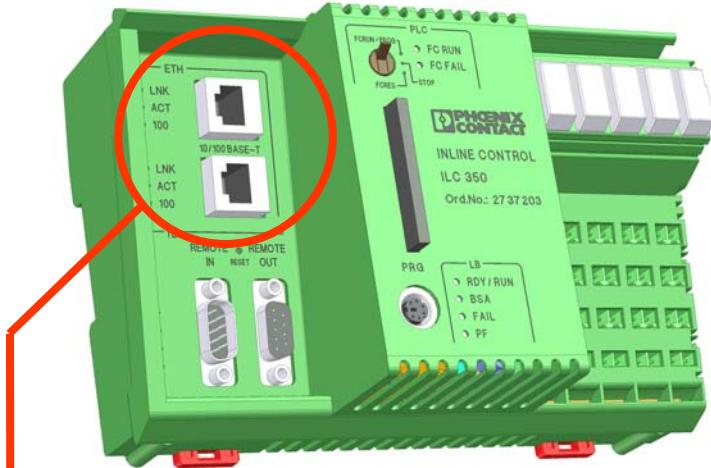
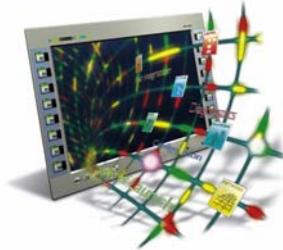


PC WORX

Un controlador descentralizado como plataforma de integración



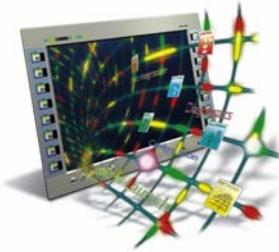
ILC 370 – con 2 Ethernet-Ports



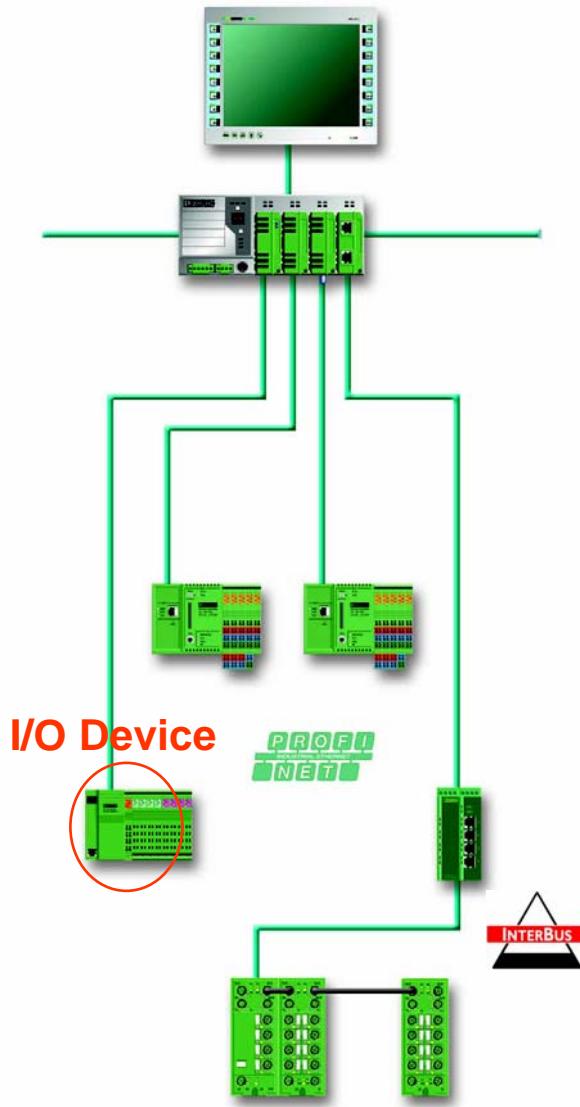
Ideal para :

- Instalación Ethernet en línea
- 10 / 100 Mbit/s

AUTOMATIONWORX con PROFINET

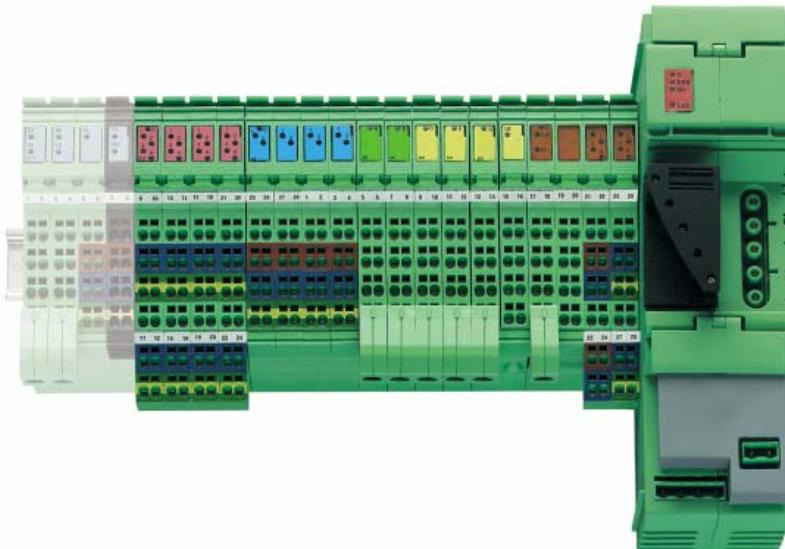


ETHERNET

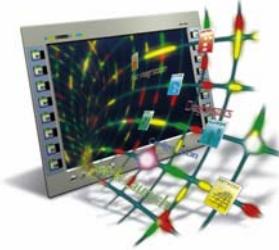


FL IL 24 BK, Cabecera para conexión modular de E/S

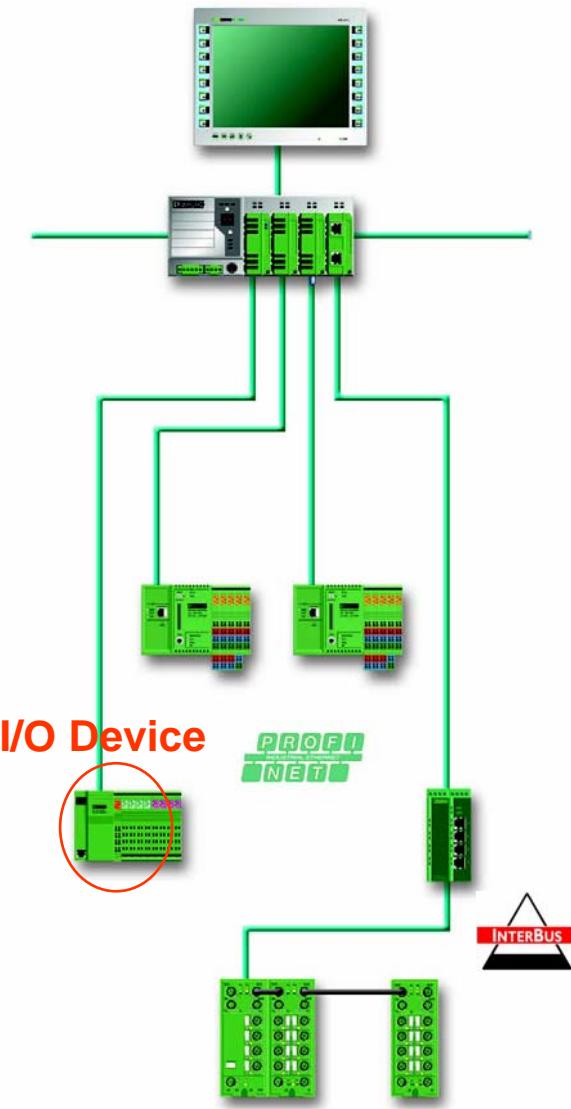
- 63 Slots



AUTOMATIONWORX con PROFINET



ETHERNET

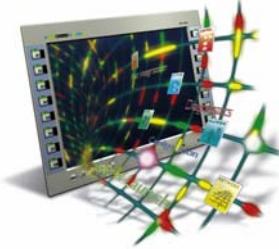


ILB PN 24 DI16 DIO16, PROFINET Compacto

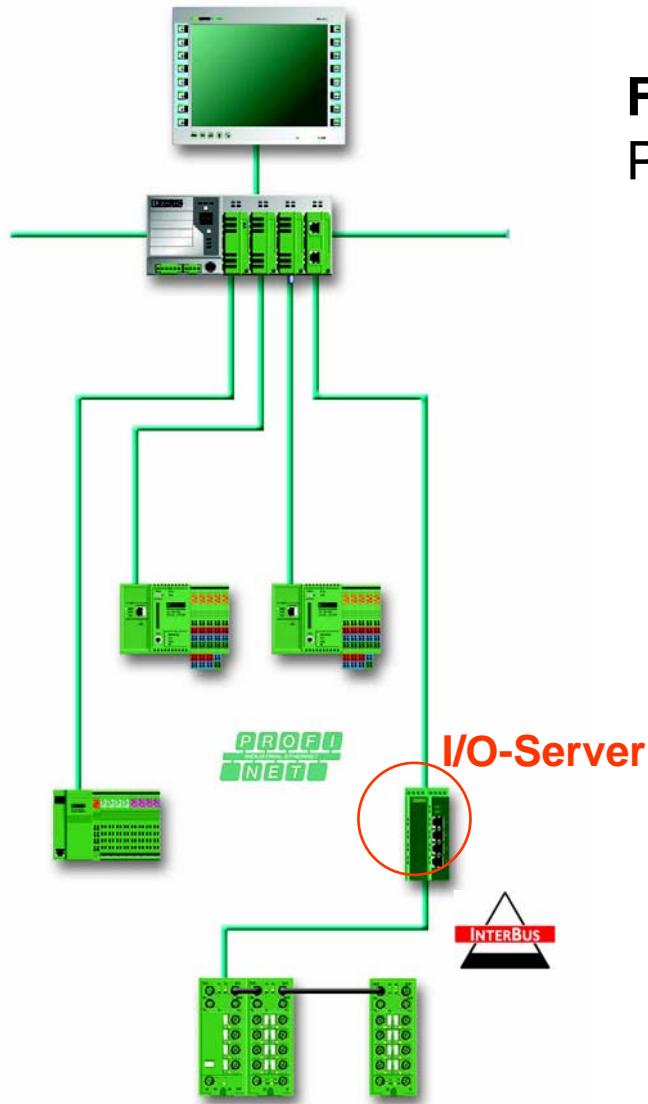
- 16 Señales entrada y 16 configurables como E/S
- Configuración en línea sin necesidad de un switch



AUTOMATIONWORX con PROFINET



ETHERNET



FL PN IBS, PROXY como equipo PROFINET y maestro INTERBUS

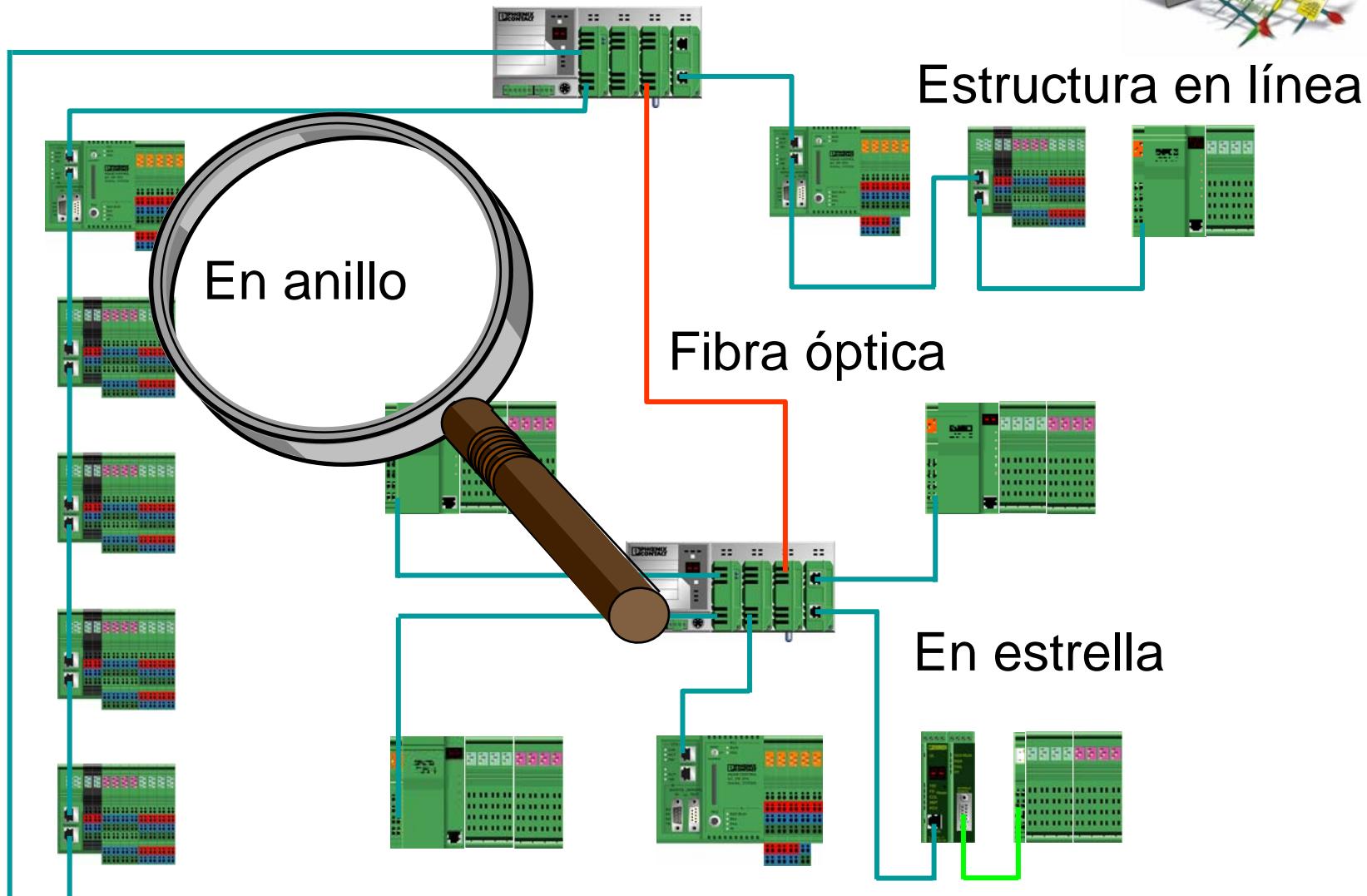
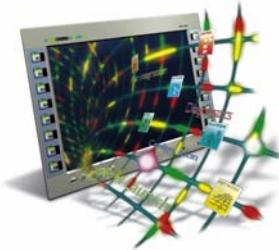


Asegura las inversiones tanto de usuarios como fabricantes

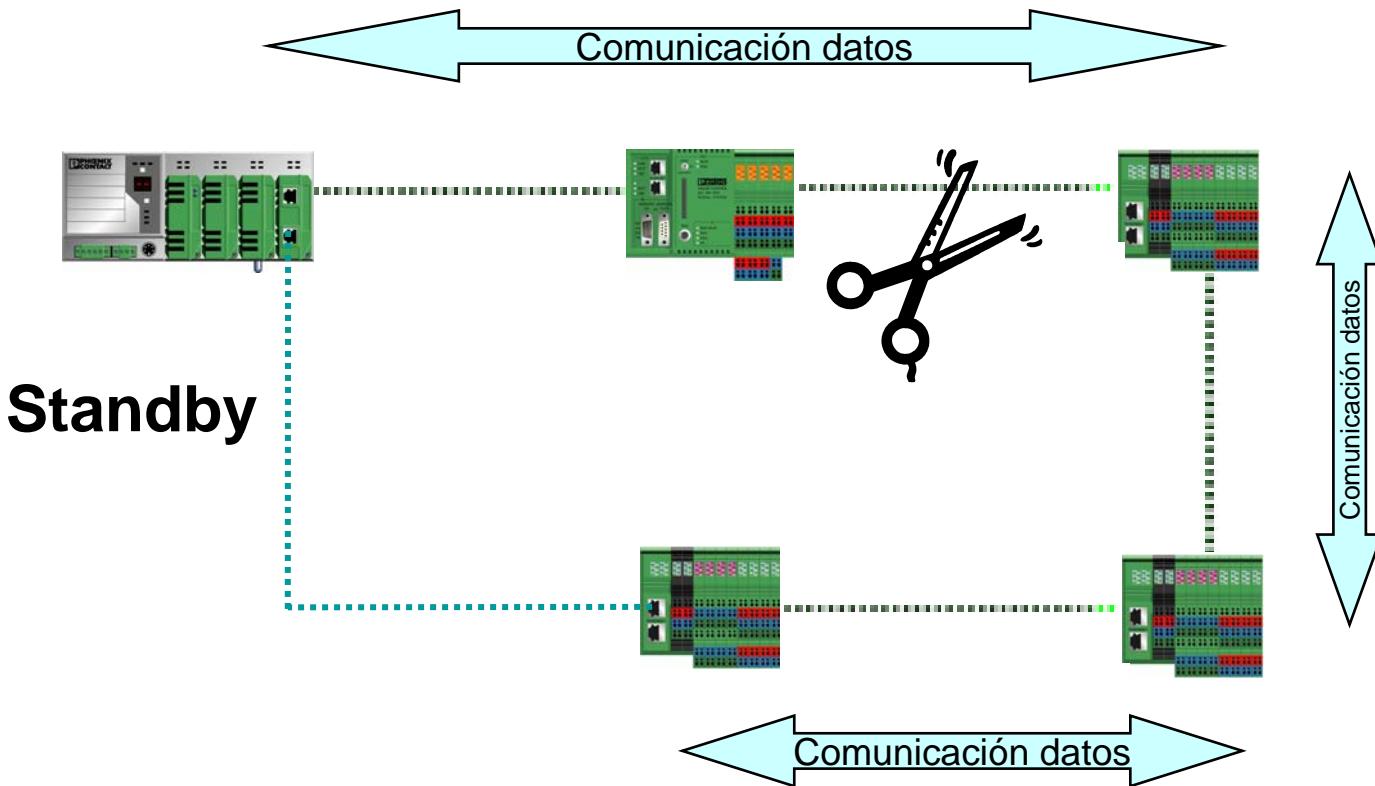
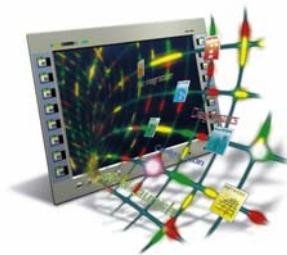
VENTAJAS con PROFINET



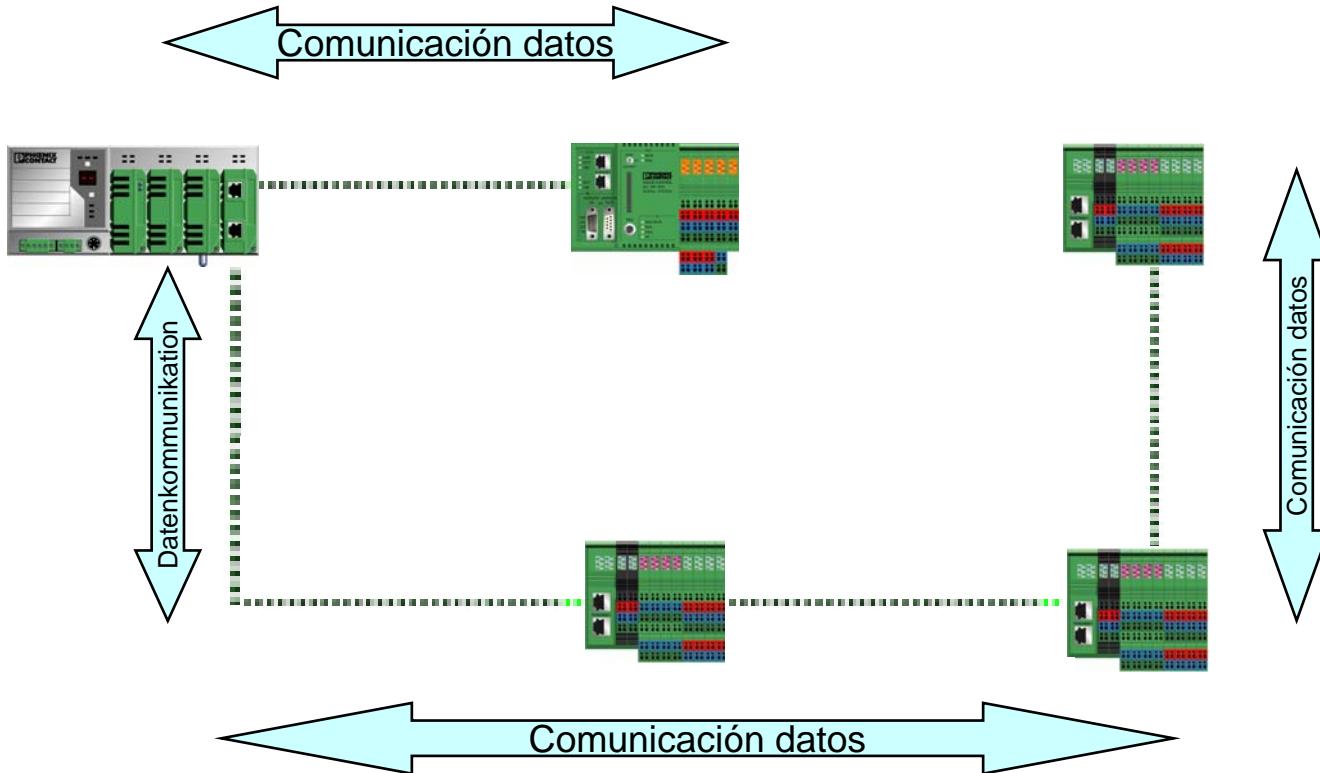
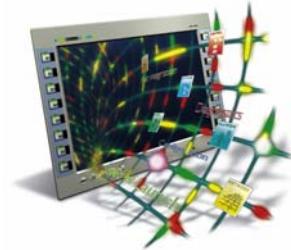
PROFINET : Topologías



Ventaja: redundancia

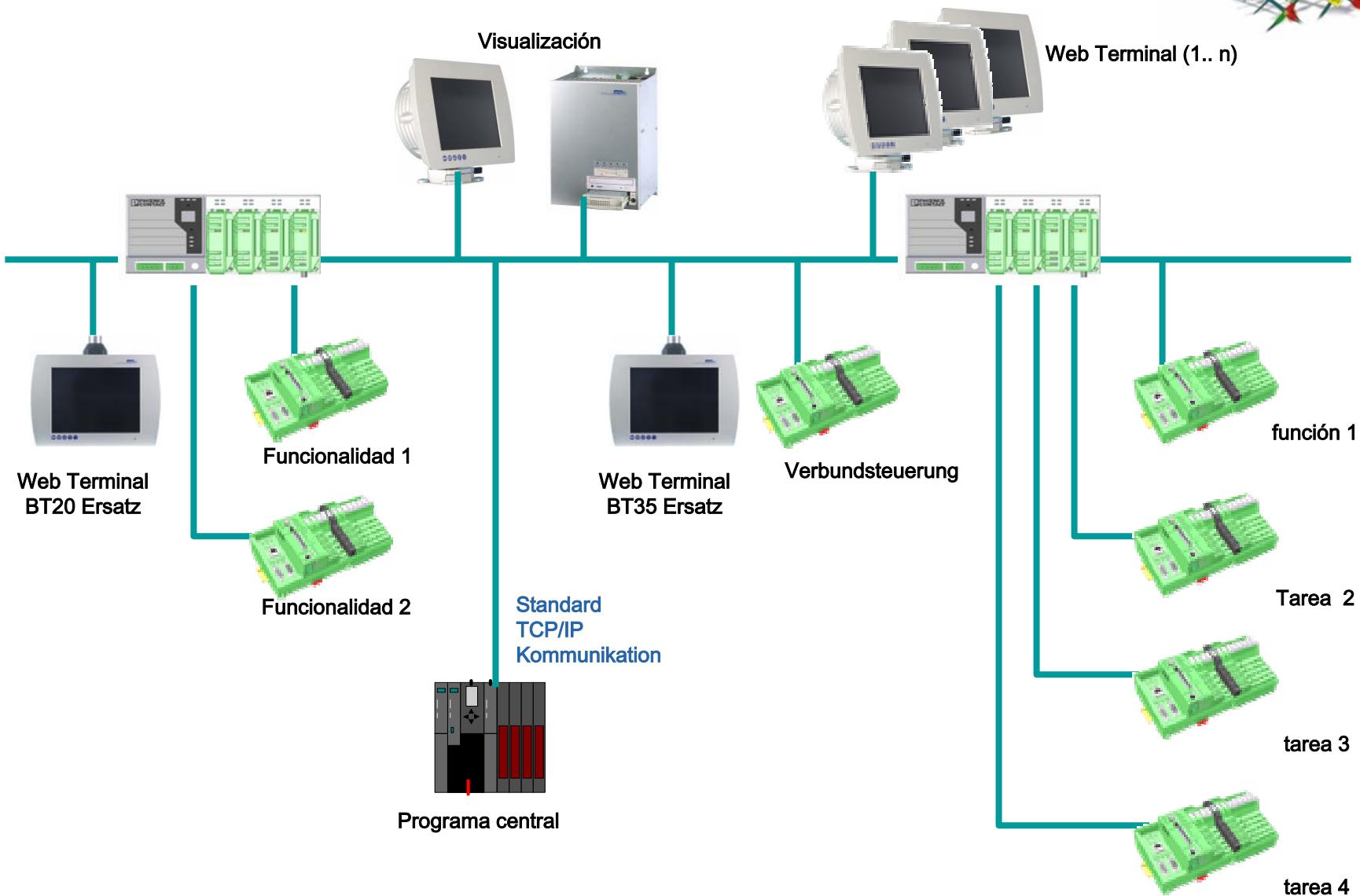
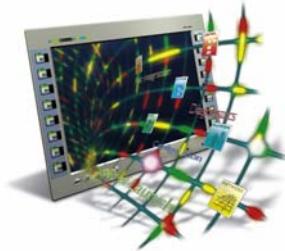


Camino alternativo

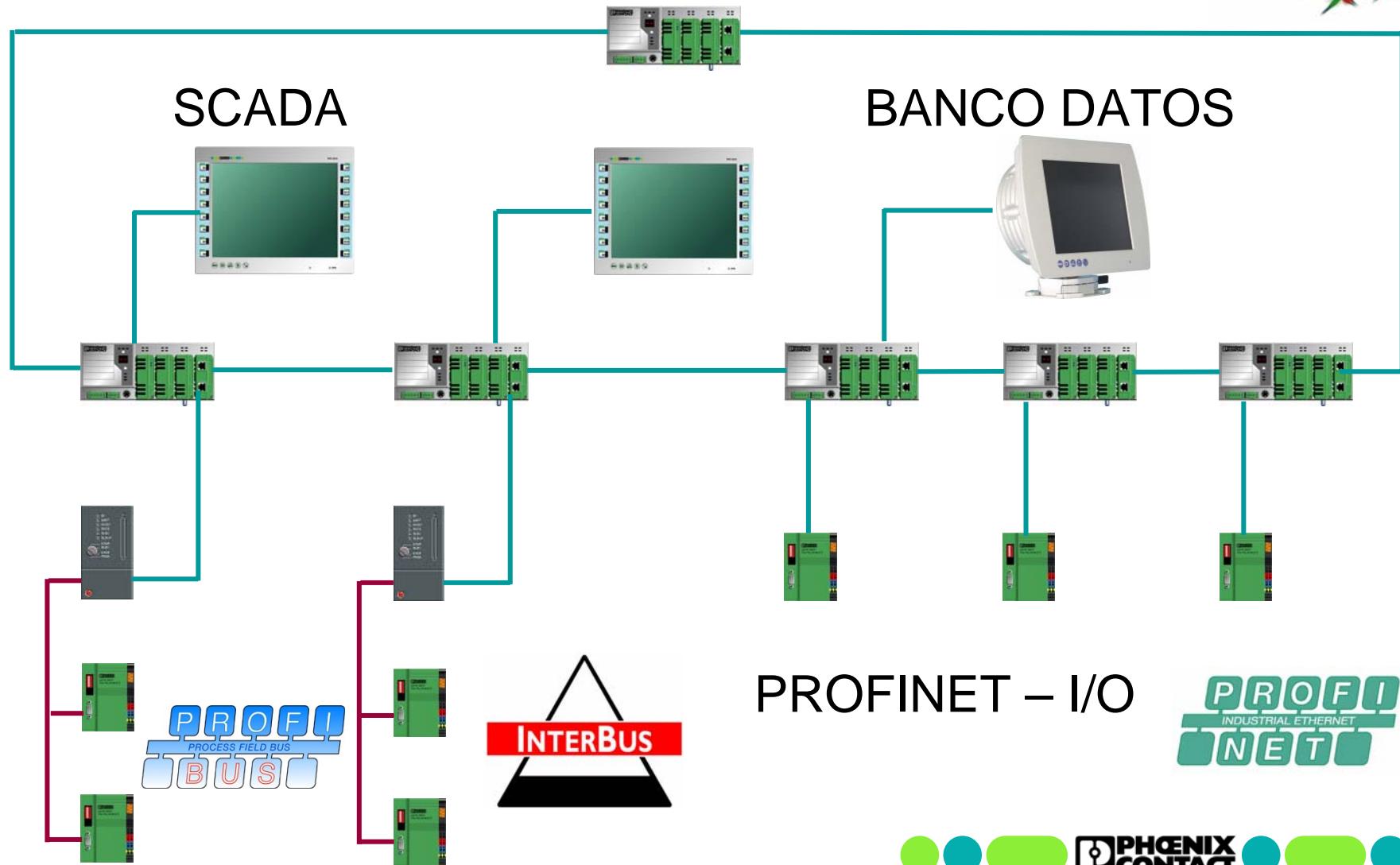


**El switch reconfigura la red
Activando un camino alternativo**

Ventajas: Control distribuido



Ventaja: Aplicaciones descentralizadas

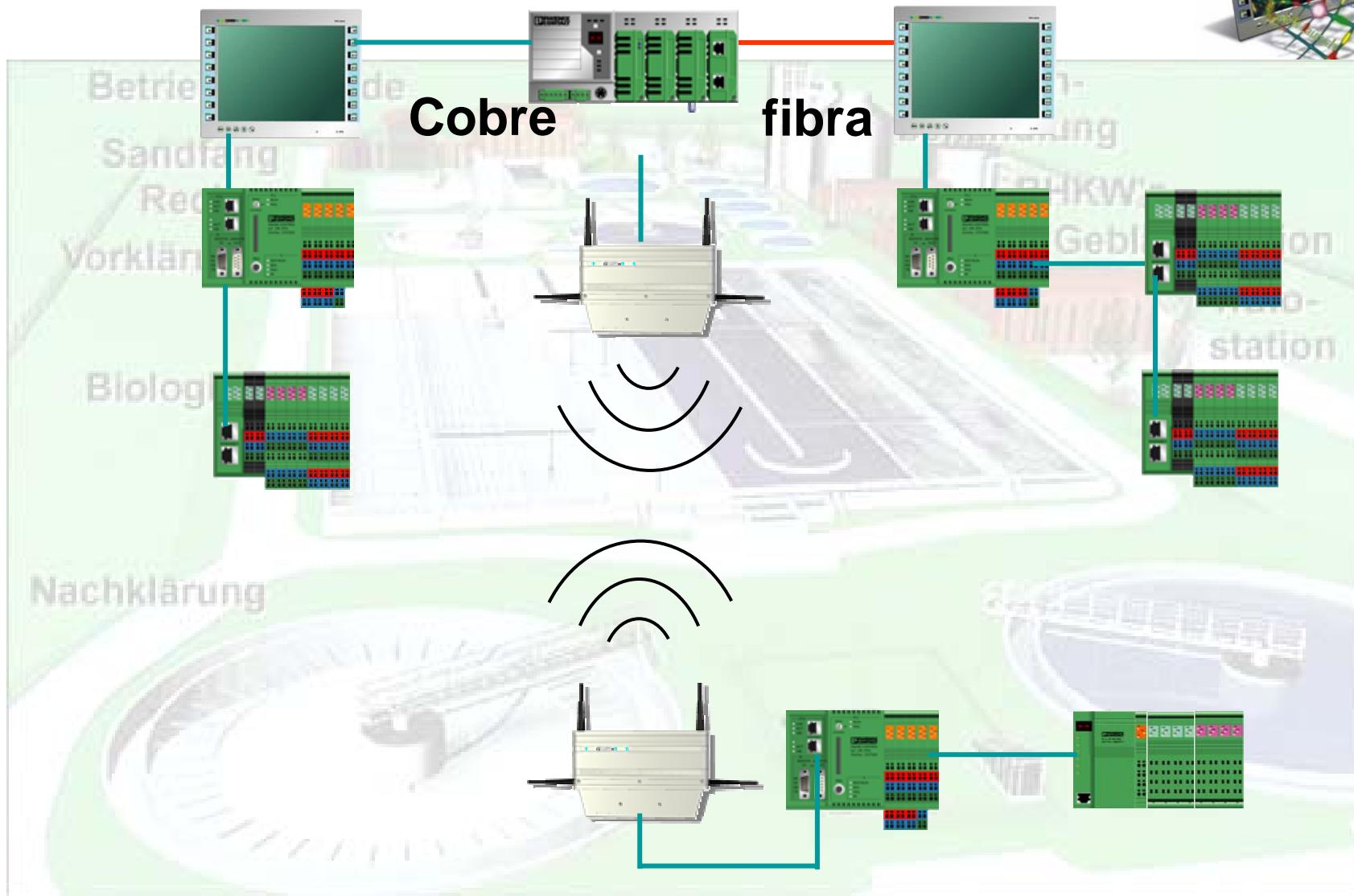


PROFINET – I/O

PROFINET
INDUSTRIAL ETHERNET



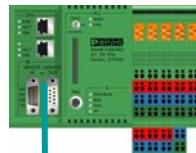
Ventajas: diferentes medios transmisión



Comunicación Bluetooth

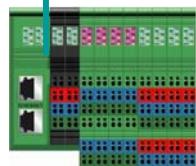


Hasta 7 „esclavos“

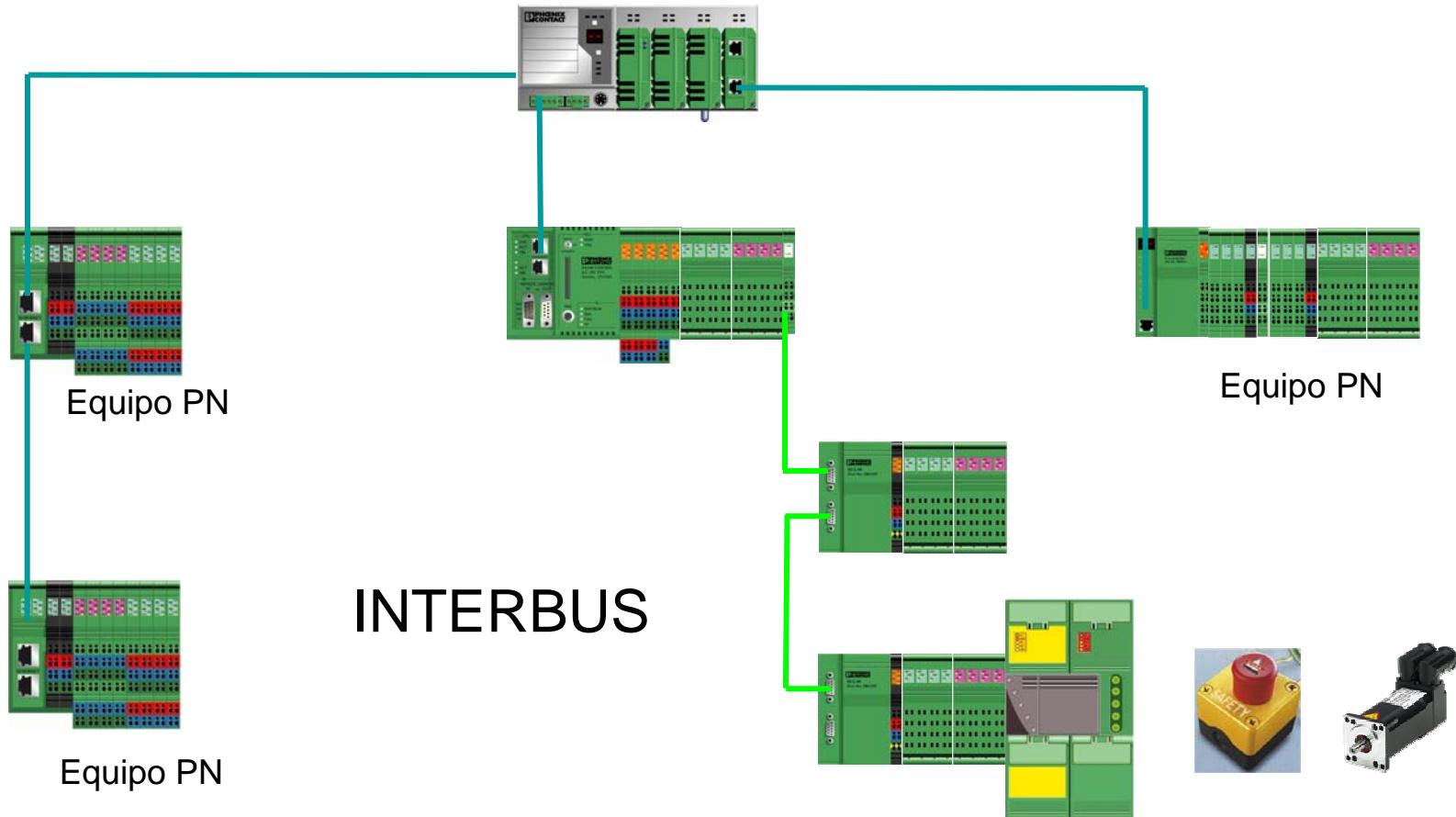
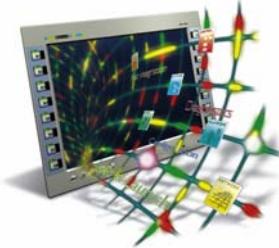


PROFINET

„Master“



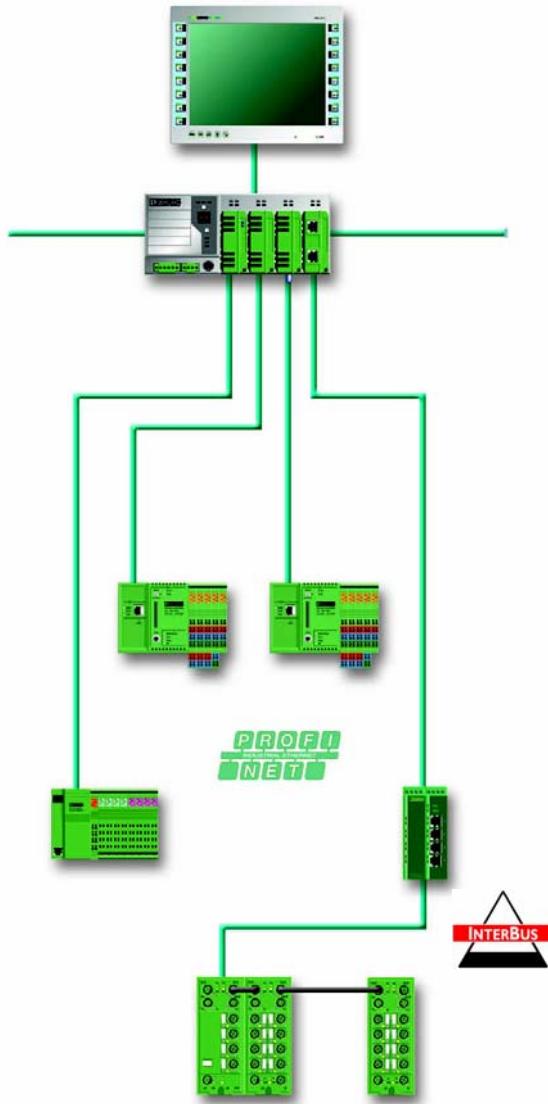
Ventaja: PROFINET e INTERBUS



AUTOMATIONWORX con PROFINET



ETHERNET



Lo mejor de ambos sistemas

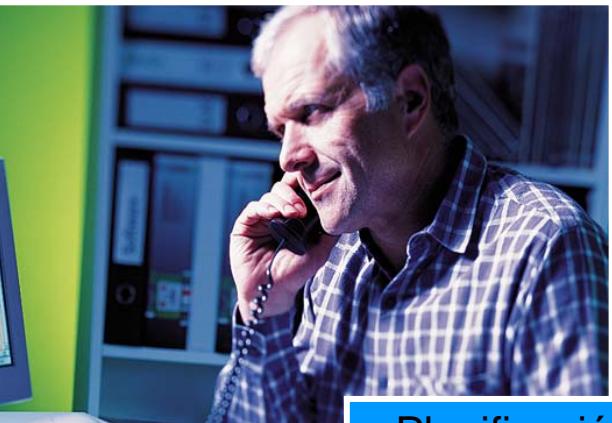
Con AUTOMATIONWORX Phoenix Contact ofrece una plataforma de automatización flexible, abierta y escalable , todo bajo estándares internacionales



Diagnóstico / Gestión de red



INTEGRACION VERTICAL



Planificación

Producción



Administración



Aprovisionamiento
Entrega
Mantenimiento