



Figures
PROFIBUS
PROFINET
PROFenergy

Bernd Lieberth
President RPA-SEA

PROFINET from PROFIBUS International

2

Figures
PROFINET
PROFenergy
IO-Link

PROFIBUS & PROFINET International (PI)

27 Regional
Associations
(RPA)

43 PI Competence
Center (PICC)

10 PI Test
Laboratories (PITL)

More than 1,400 members world wide

■ The architecture is being devised by

- 12 work groups
- With 140 employees
- from 60 companies

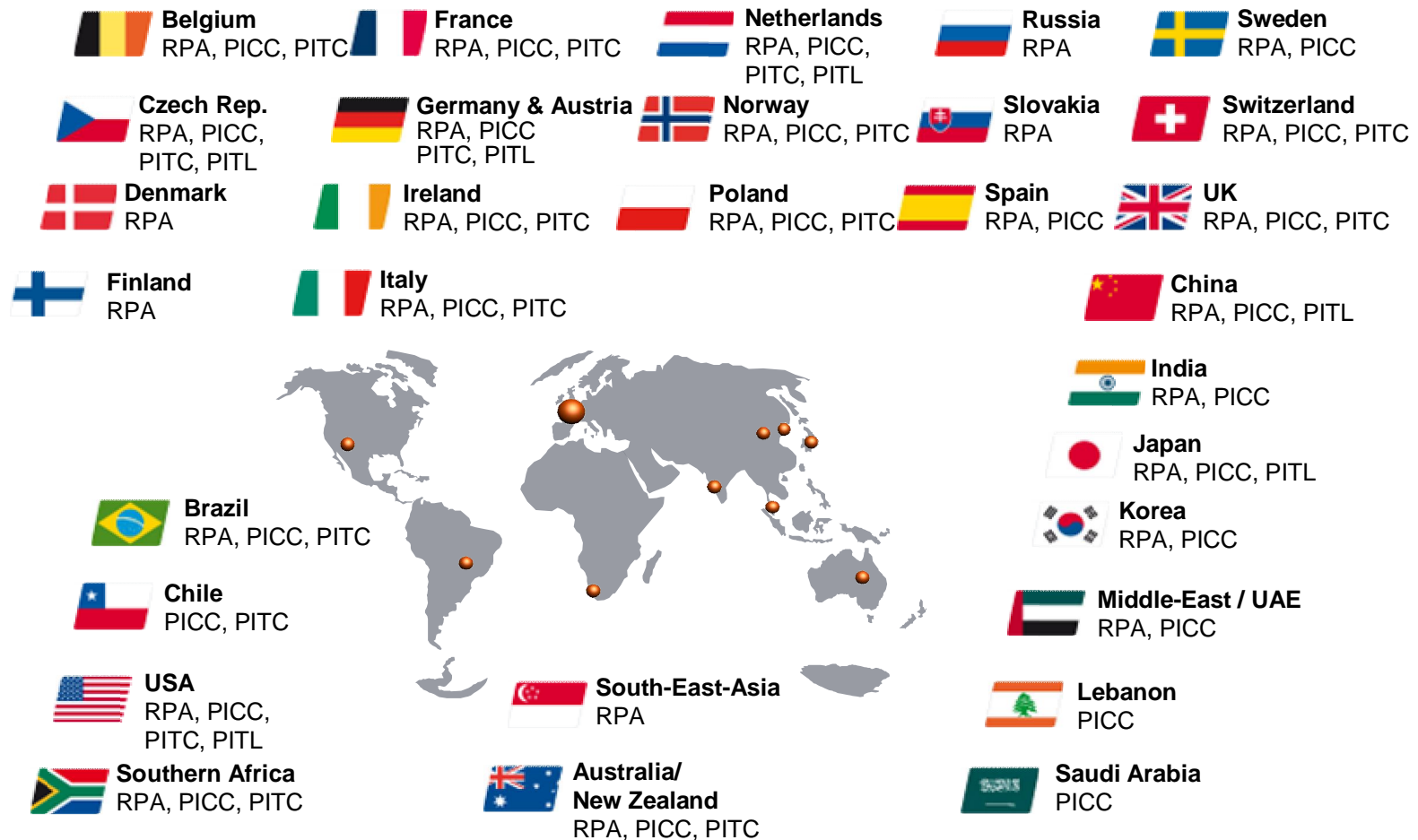
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BUS

PROFINET – from the world's largest fieldbus organization

PI Worldwide Support

3



PI worldwide

27 Regional PI Associations (RPA)

PI Technical Support

43 PI Competence Centers (PICC)
23 PI Training Centers (PITC)
10 PI Test Laboratories (PITL)

What means RPA?

4

Figures

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IO-Link

- **Support** PB/PN vendors and users
- **Provide** access to PB/PN technical documentation
- **Deliver** events focused on PB/PN technologies
- **Develop** Certified Competence & Training centers in the regions
- **Promote** its members
- **Update** the market on products, events & training



New Corporate Design

5

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Organization logo
South East Asia



Technology logo



Profile logo

Members of Southeast Asia

6

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ABB

auma

BARTEC

BELDEN
SENDING ALL THE RIGHT SIGNALS

Endress+Hauser
People for Process Automation

HARTING
Pushing Performance

LAPP KABEL

LEONI
KERPEN

LINK VUE

PEPPERL+FUCHS
PROTECTING YOUR PROCESS

PHOENIX CONTACT

POSITAL
FRABA

PROCENTEC

pteris
Global
harmony in motion

SIEMENS

TURCK
Industrial Automation

VEGA
Level - Switching - Pressure - Flow - Density

Weidmüller



The Development over the years

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- Central automation systems
- with a central PLC and
- sensors/actuators
- based on 4-20 mA or 0-10 V technology



Disadvantage

- A lot of cabling and wiring costs
- A lot of proper solutions (special driver for communication)
- No flexibility
- No standards, mostly depending on one vendor
- High Maintenance demands and costs

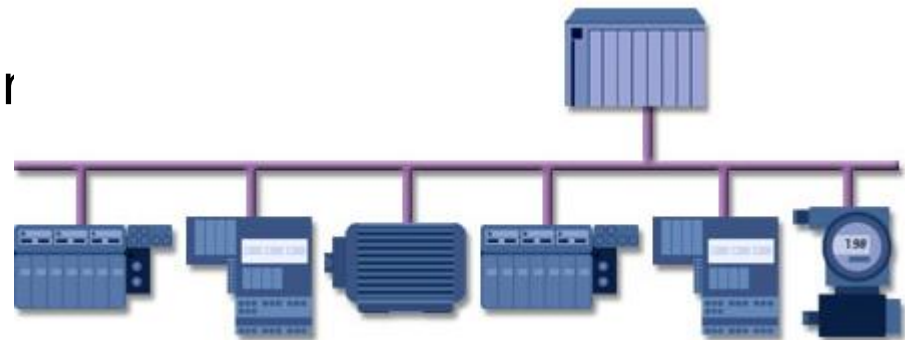
A Standard was needed

9

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■ Out of this demands a Standard was needed to be:

- Flexible
- Cost effective
- Vendor independent
- Standardized

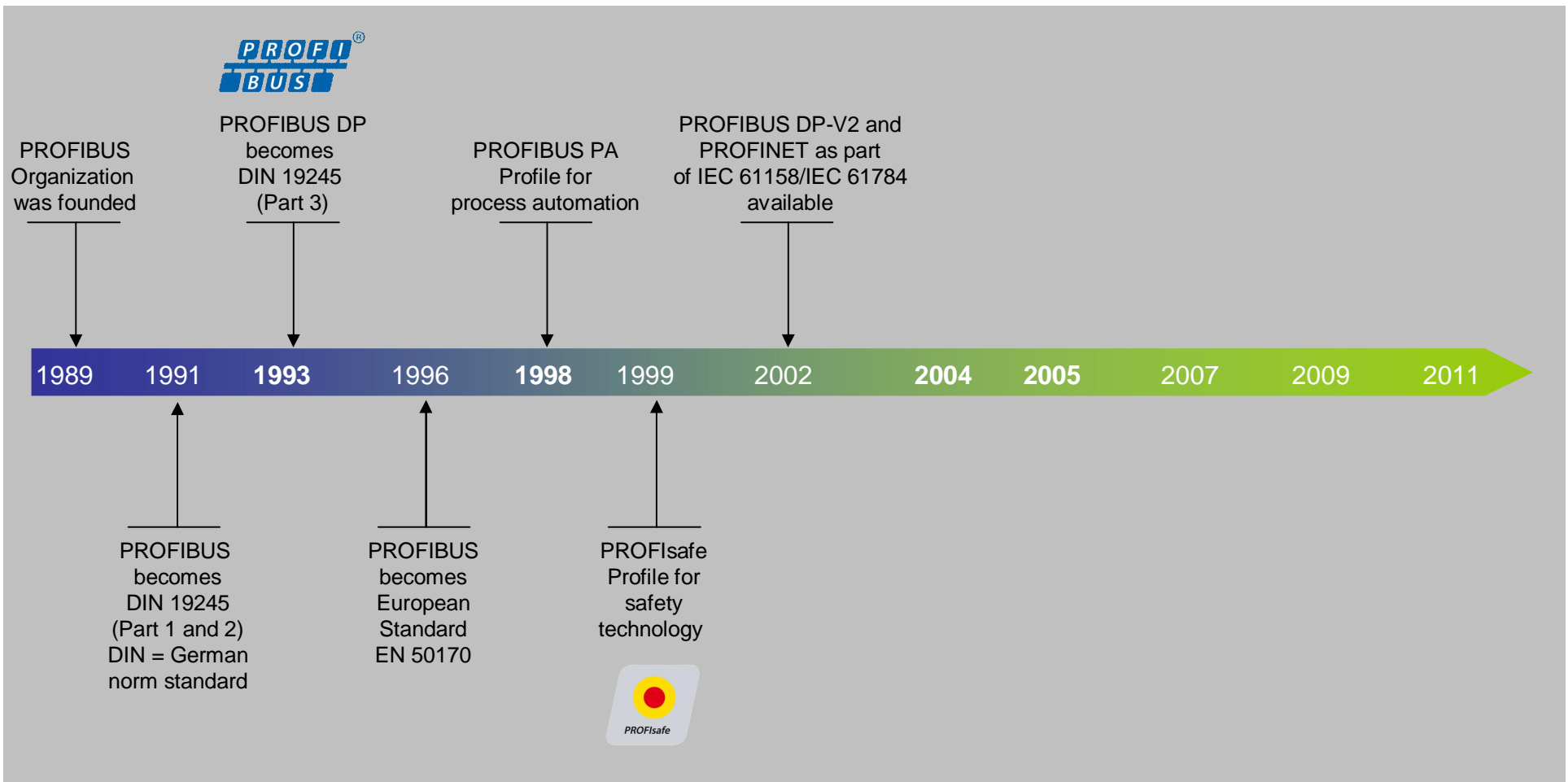


The Answer

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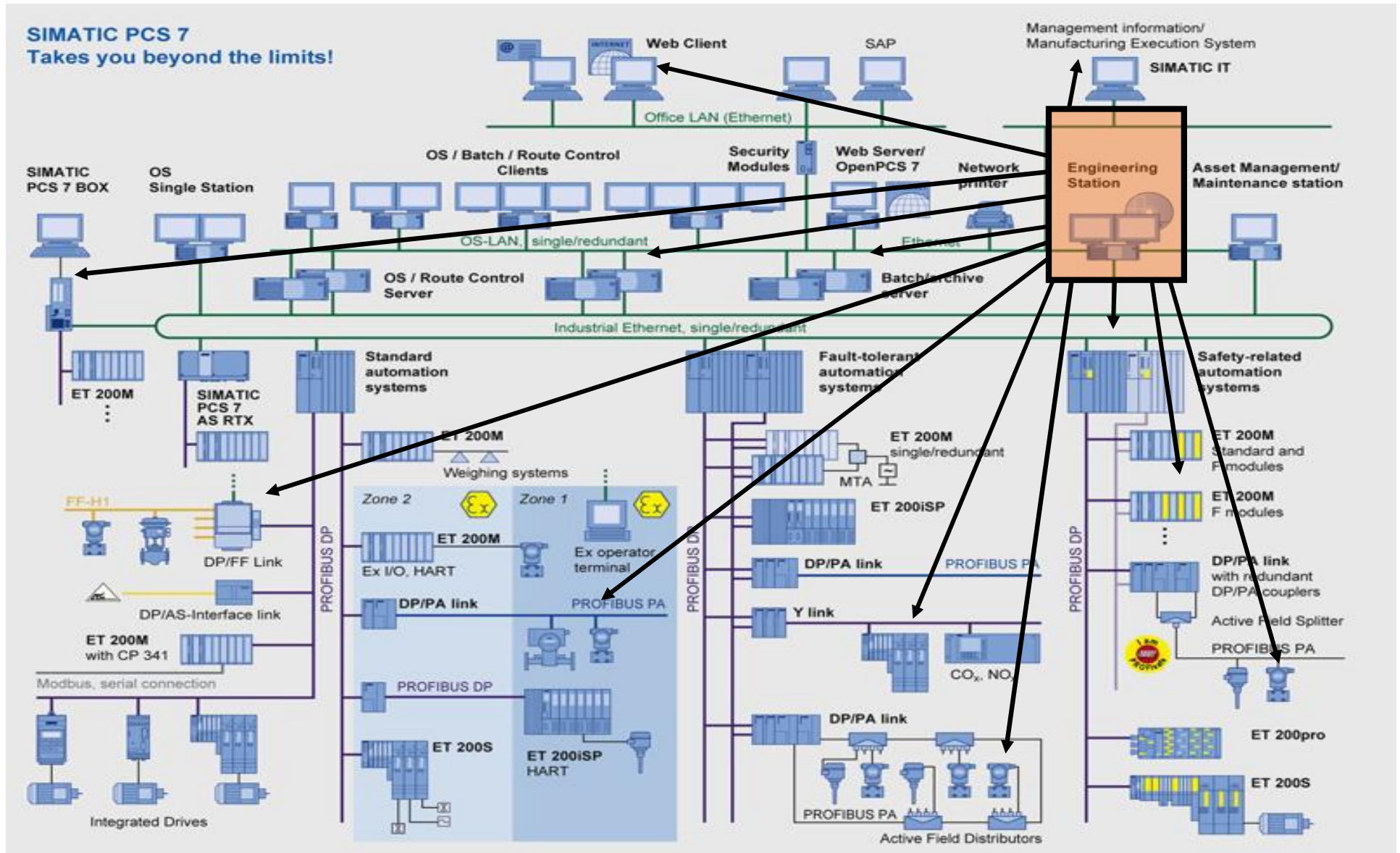
Development of PROFIBUS/PROFINET

10



Central Engineering

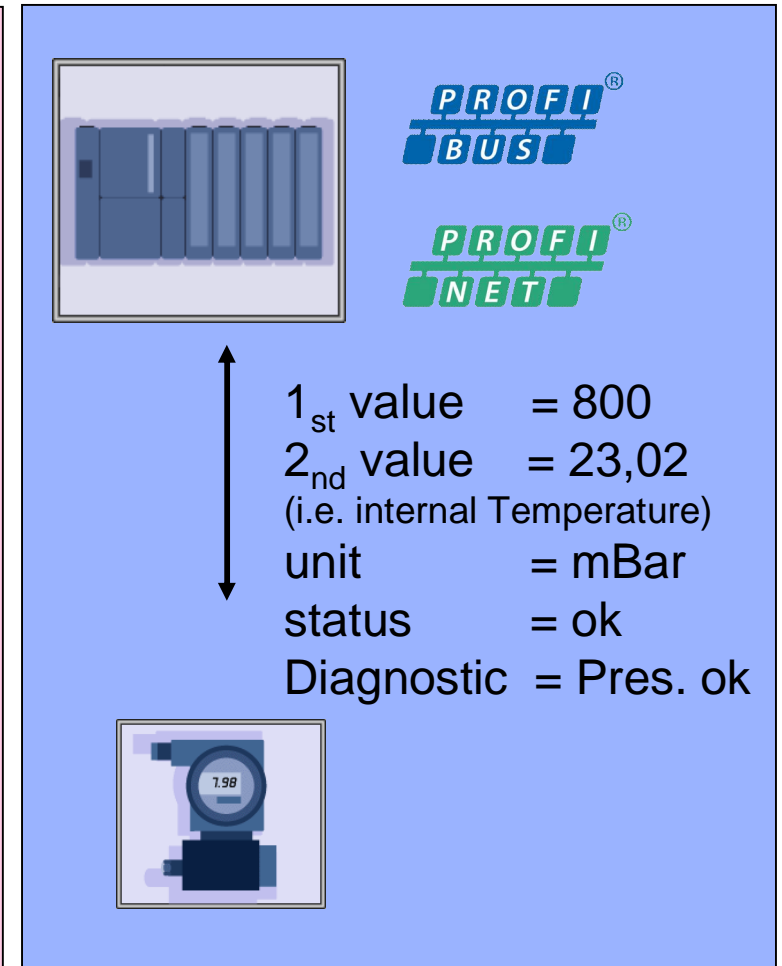
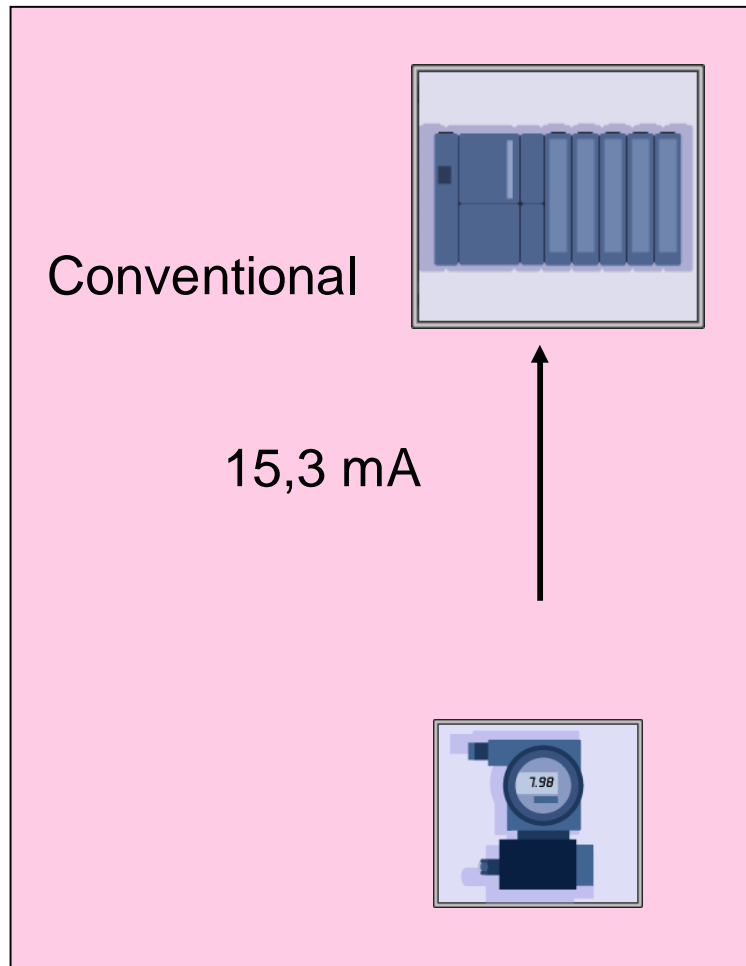
11



Advantages of Digital Communication

12

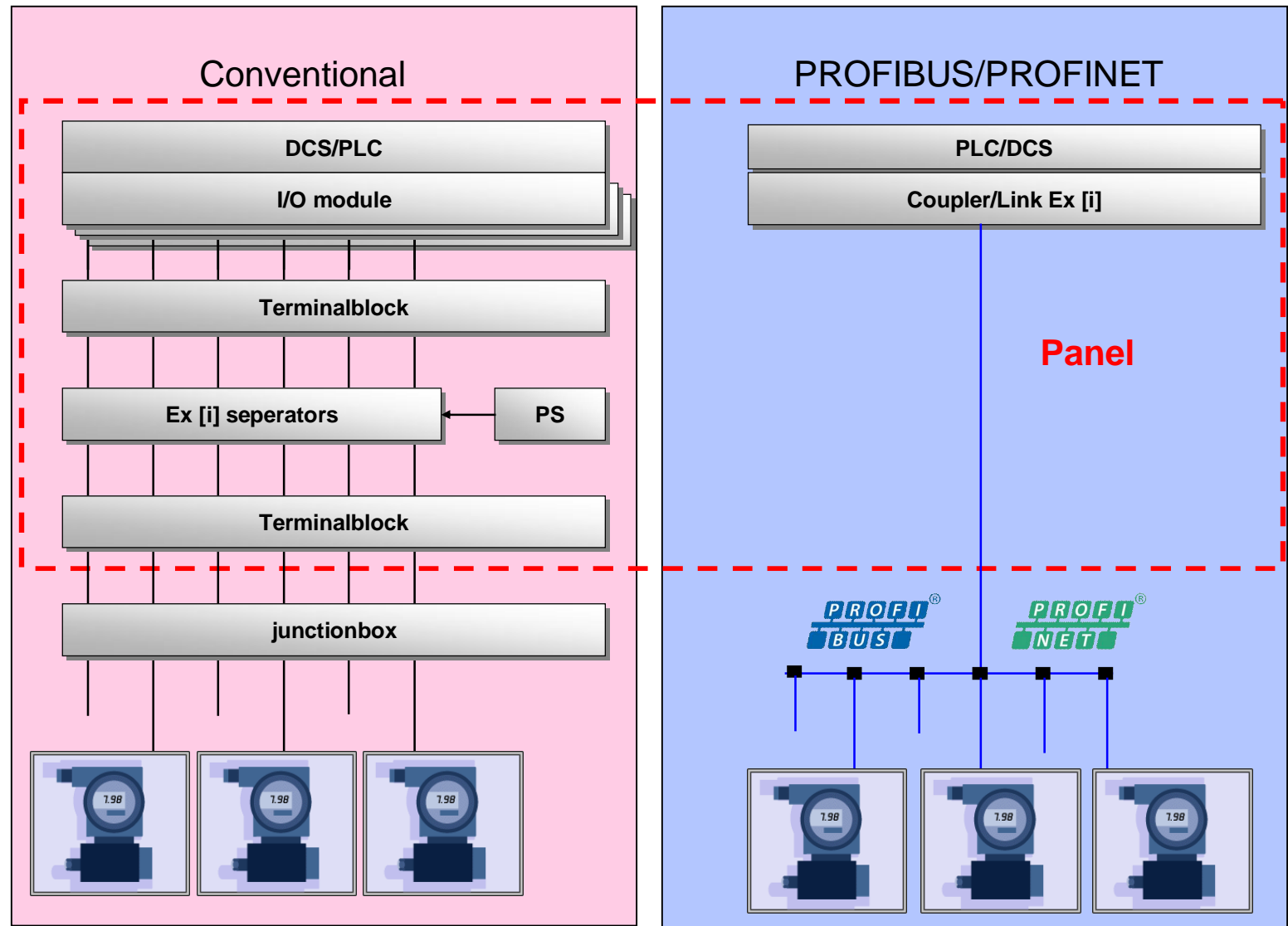
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Easier Cabling

13

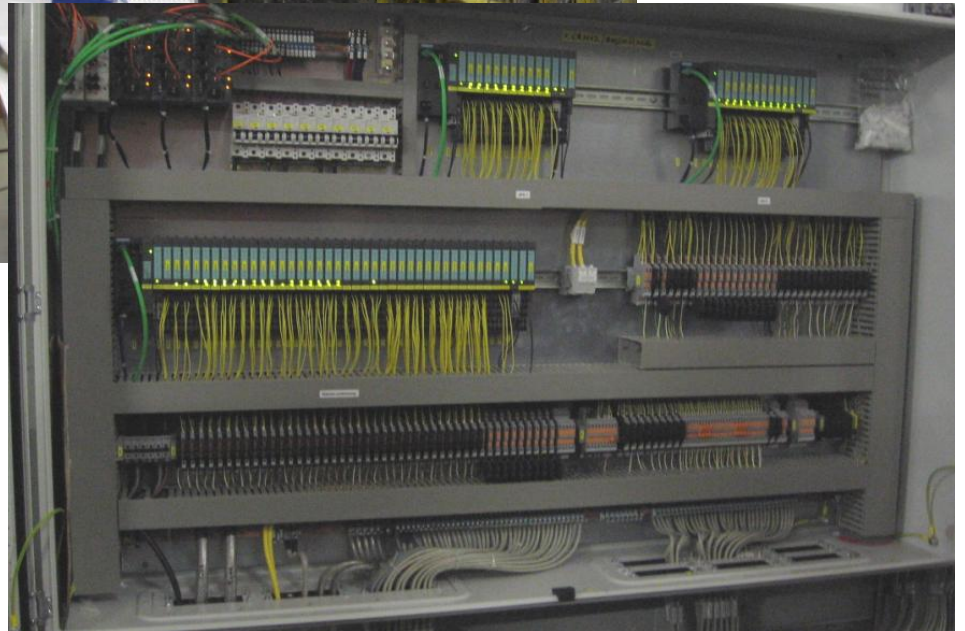
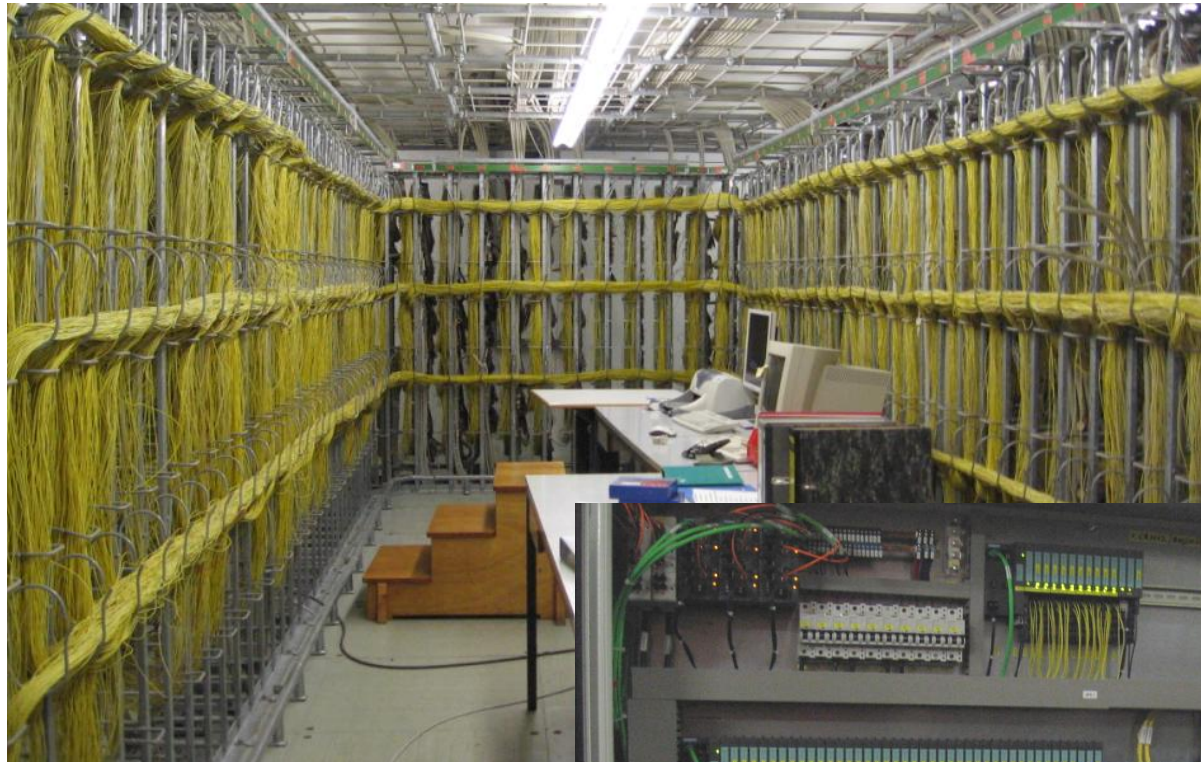
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Example

14

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PROFIBUS ...

- Is a digital communication system optimized for all automation tasks
- Covers both fast time-critical applications and complex communication tasks
- Supports numerous Application Profiles



PROFIBUS is the open
Fieldbus Standard for Automation
of PROFIBUS International.

PROFIBUS covers all requirements of all branches of
Automation Technology.

Applications

16

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Factory automation

- Vehicle manufacture
- Bottling plants
- Warehousing systems
- Switchgear
- Hollow glass production

....et cetera



Process automation

- Chemical industry
- Petrochemical industry
- Paper and textile industry
- Foodstuffs
- Glas
- Water

....et cetera



Drive technology

- Machine tools
- Packaging machines
- Pressing plants
- Paper production

....et cetera



Safety applications

- Vehicle assembly
- Machine tool building

....et cetera



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**Want to know more about
PROFIBUS and how handle it?**

Come back tomorrow!

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■ History

- The specification of the PROFIBUS standard was a research project (1987-1990) and started with the following 12 members:

- | | |
|---------------------|------------------|
| ■ ABB | - AEG |
| ■ Bosch | - Honeywell |
| ■ Kloeckner-Moeller | - Landis & Gyr |
| ■ Phoenix Contact | - Rheinmetall |
| ■ RMP | - Sauter-Cumulus |
| ■ Schleicher | - Siemens |

- Five German research institutes also participated:

- | | |
|-----------------|--------|
| ■ FZI Karlsruhe | - IITB |
| ■ LPR | - LRT |
| ■ WZL | |

The PROFIBUS Association was founded in 1989

EN 50170 Volume 1 - 2

General purpose field communication system;
Volume 2 : Physical Layer Specification & Service Definition

Factory Automation

PROFIBUS-DP **RS 485 / FO**

Fast

- Plug and play
- Efficient and cost effective

Process Automation

PROFIBUS-PA **IEC 61158-2**

Application Oriented

- Powering over the bus
- Intrinsic safety

RS 485
RS 485-IS Intrinsic Safety

Fiber Glass Multi Mode
Optics: Glass Single Mode
 PCF / Plastic Fiber

MBP Manchester Bus Powered
MBP-IS Intrinsic Safety

Changes in Automation Structures

20

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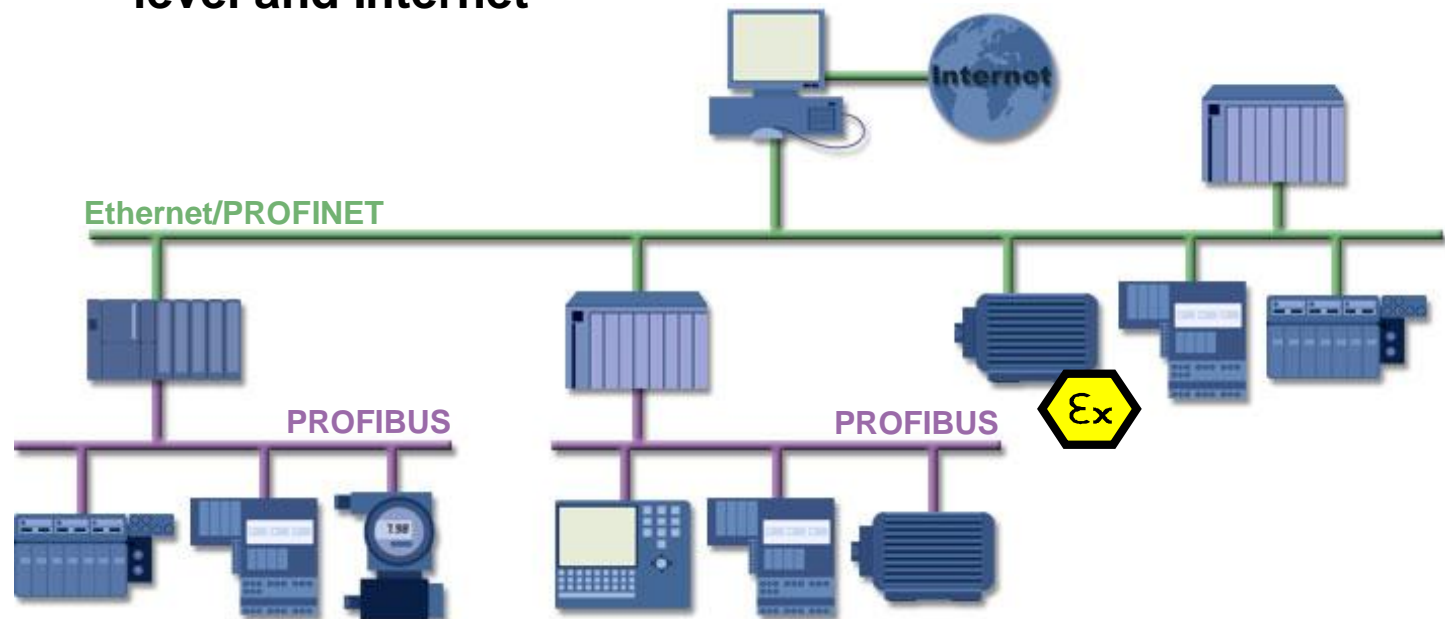
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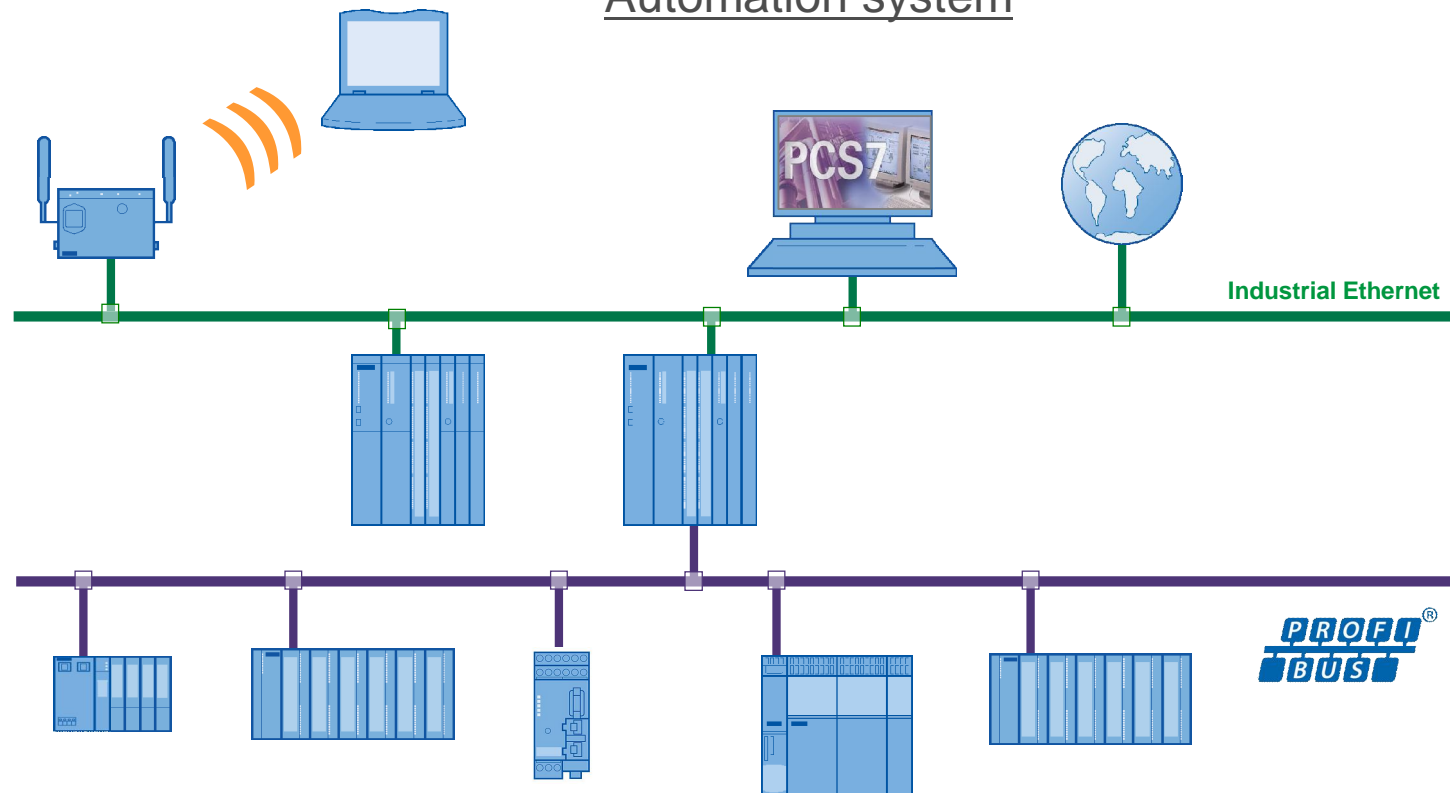
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Over the years Ethernet became more and more available in

- **Automation**
- **distributed intelligence (intelligent field devices)**
- **distributed peripherals**
- **symbiotic interaction of field bus and Ethernet communication**
- **consistency right through to corporate management level and Internet**



Automation system



Network standard Ethernet

- ▶ High transmission rate
- ▶ Wireless
- ▶ Flexible topologies

Fieldbus standard PROFIBUS

- ▶ High-speed IO communication
- ▶ Safety
- ▶ Diagnostics

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NET

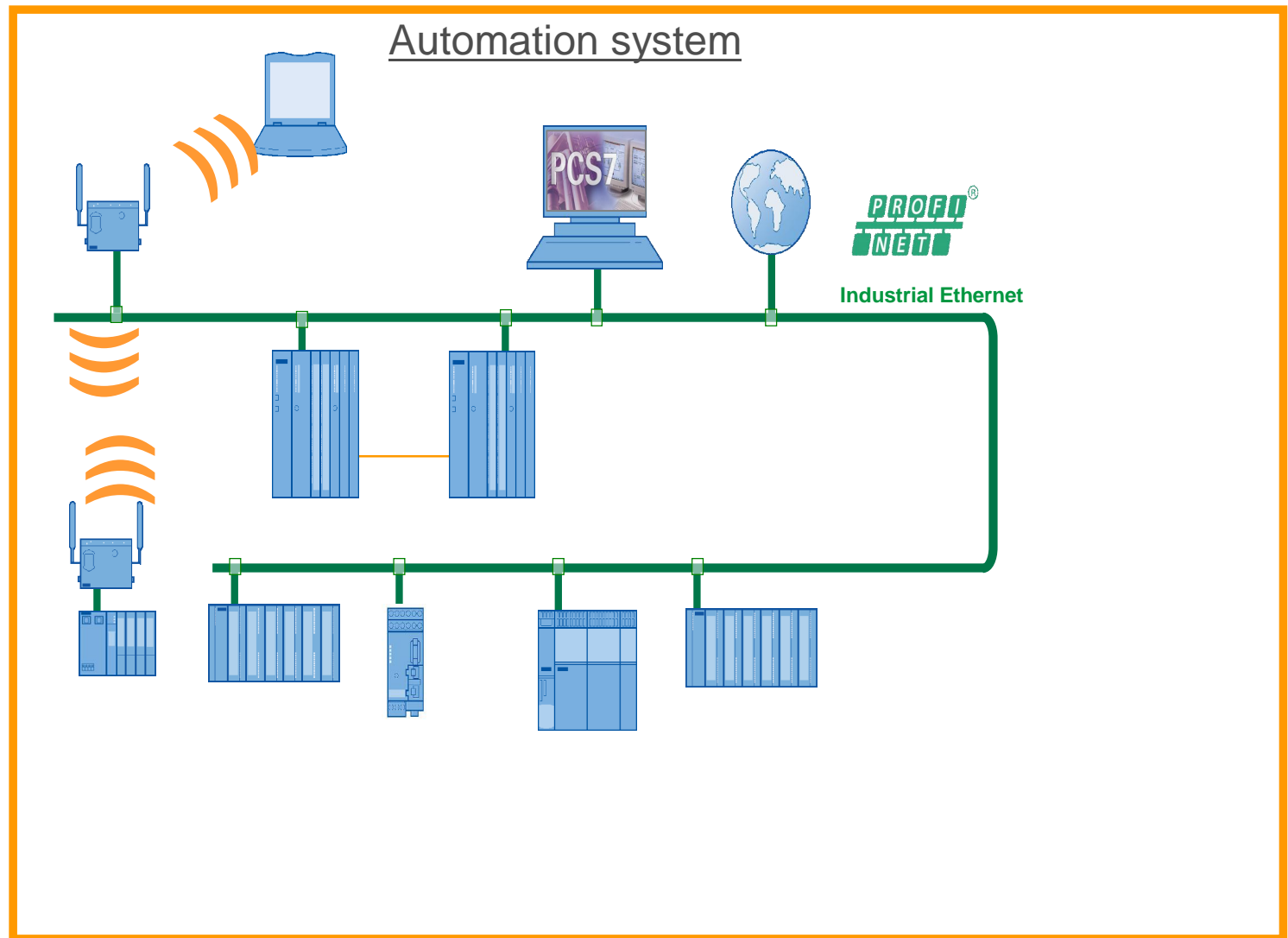
Industrial Ethernet

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Automation Structure

23

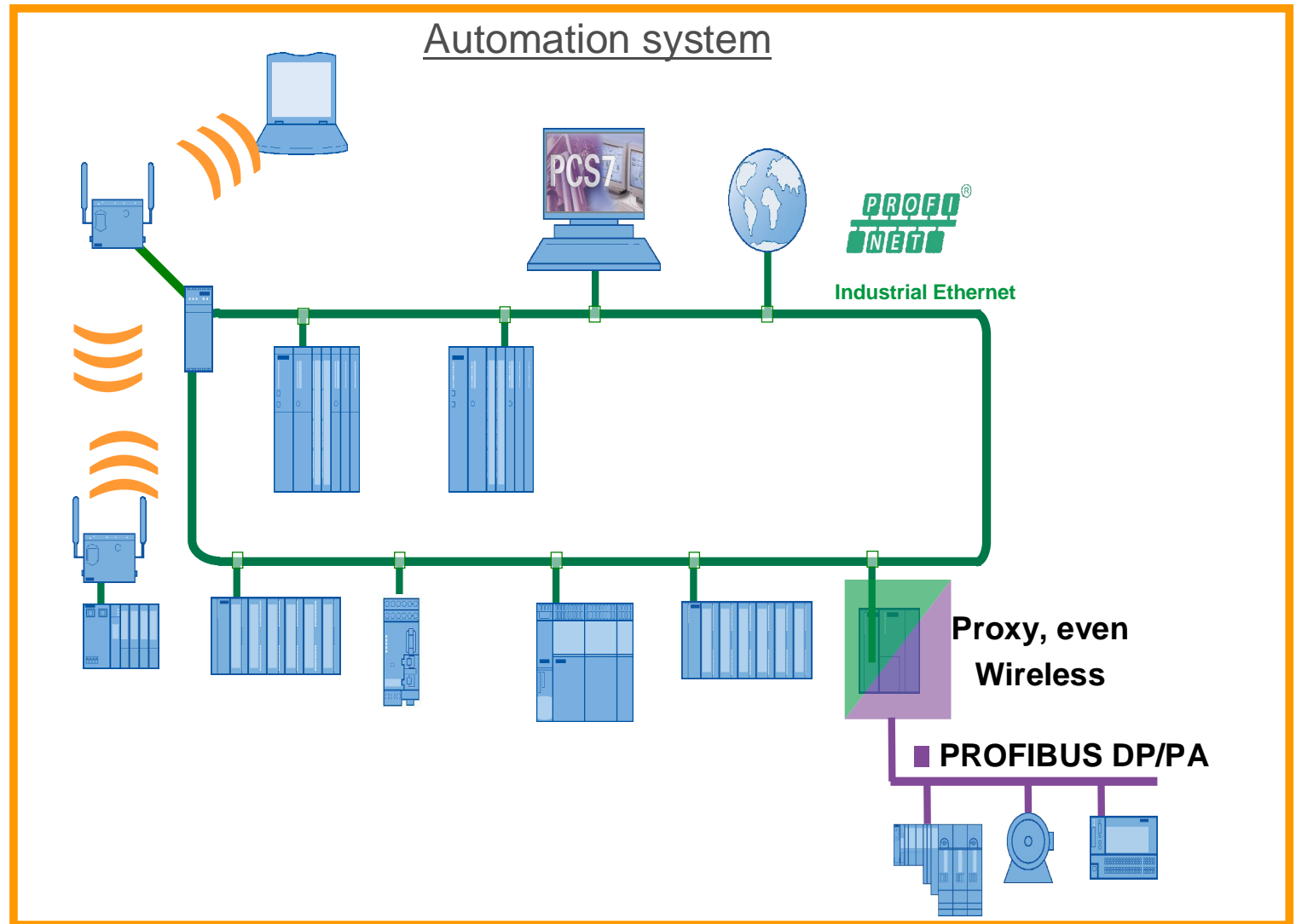
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Automation Structure – higher availability with Fieldbus integration

24

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Simple redundancy structure
Simple integration of existing Fieldbus systems, even Wireless

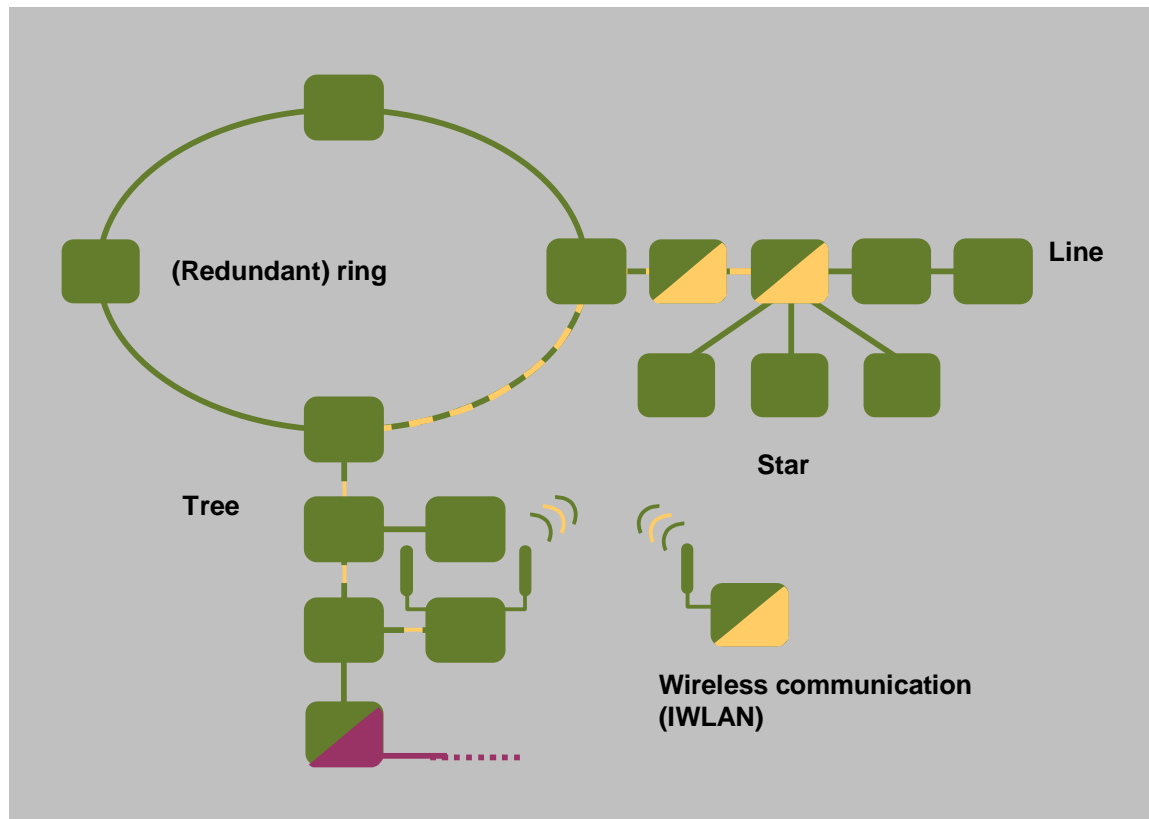
PROFINET is ... more Flexibility

25

Flexibility

Tailor-made plant concepts

- ▶ Industrial Wireless LAN
- ▶ Safety
- ▶ Flexible topologies
- ▶ Open standard
- ▶ Web tools
- ▶ Expandability
- ▶ Fieldbus Integration



Maximum flexibility enables tailor-made machine and plant concepts

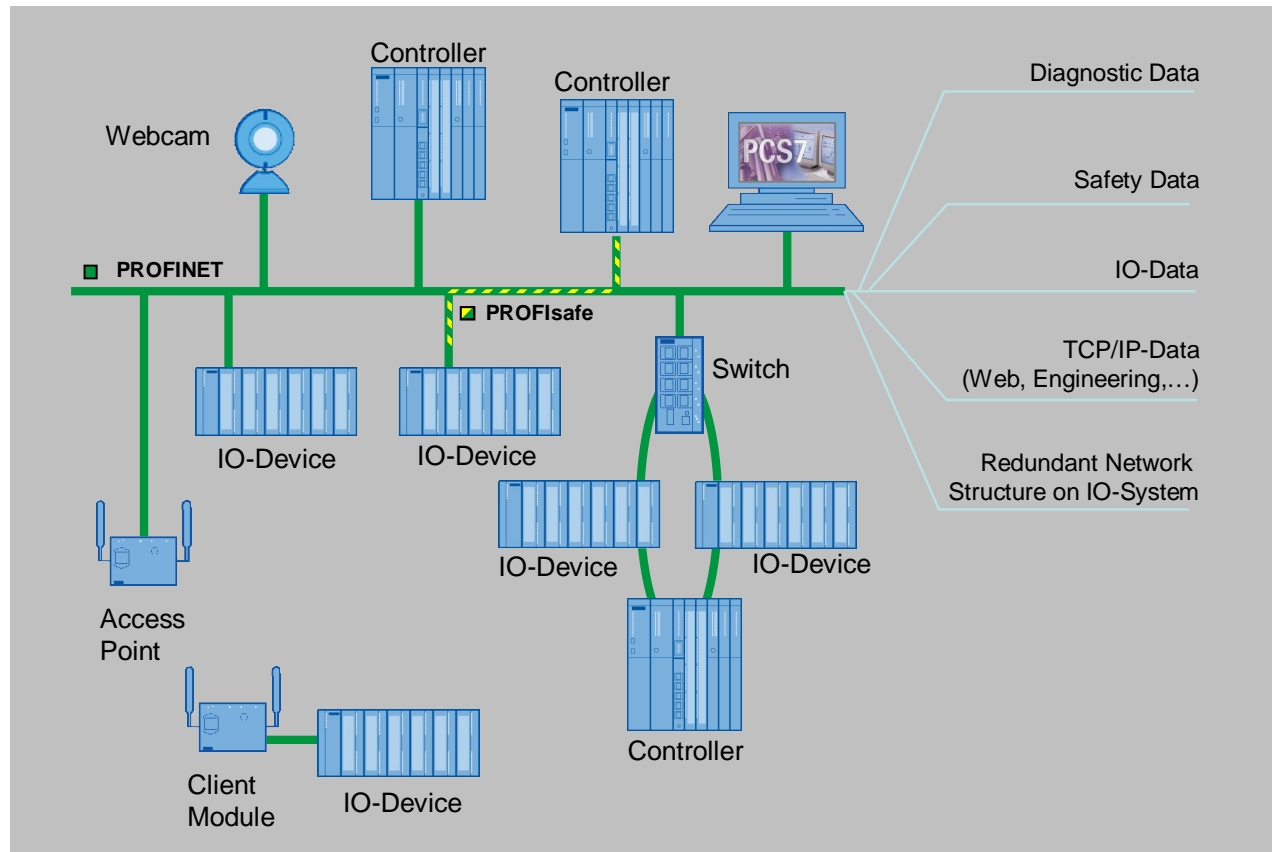
PROFINET offers more possibilities!

26

Efficiency

Optimum utilization of resources

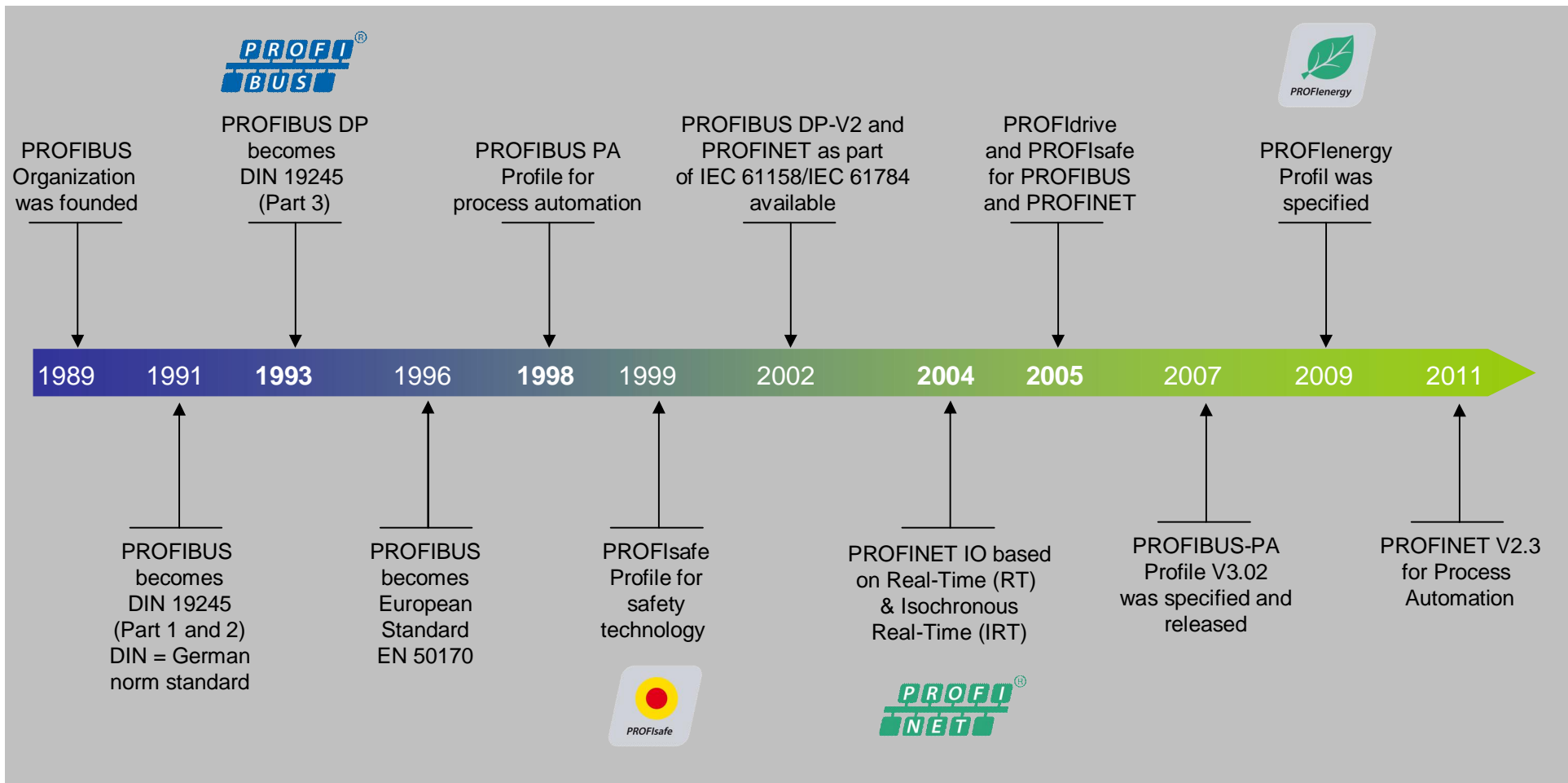
- ▶ One cable for all purposes
- ▶ Device/network diagnosis
- ▶ Multimaster System
- ▶ Easy cabling
- ▶ Fast device replacement
- ▶ Ruggedness/stability



Maximum efficiency ensures optimal utilization of resources

Development of PROFIBUS/PROFINET

27



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PROFINET and how handle it?**

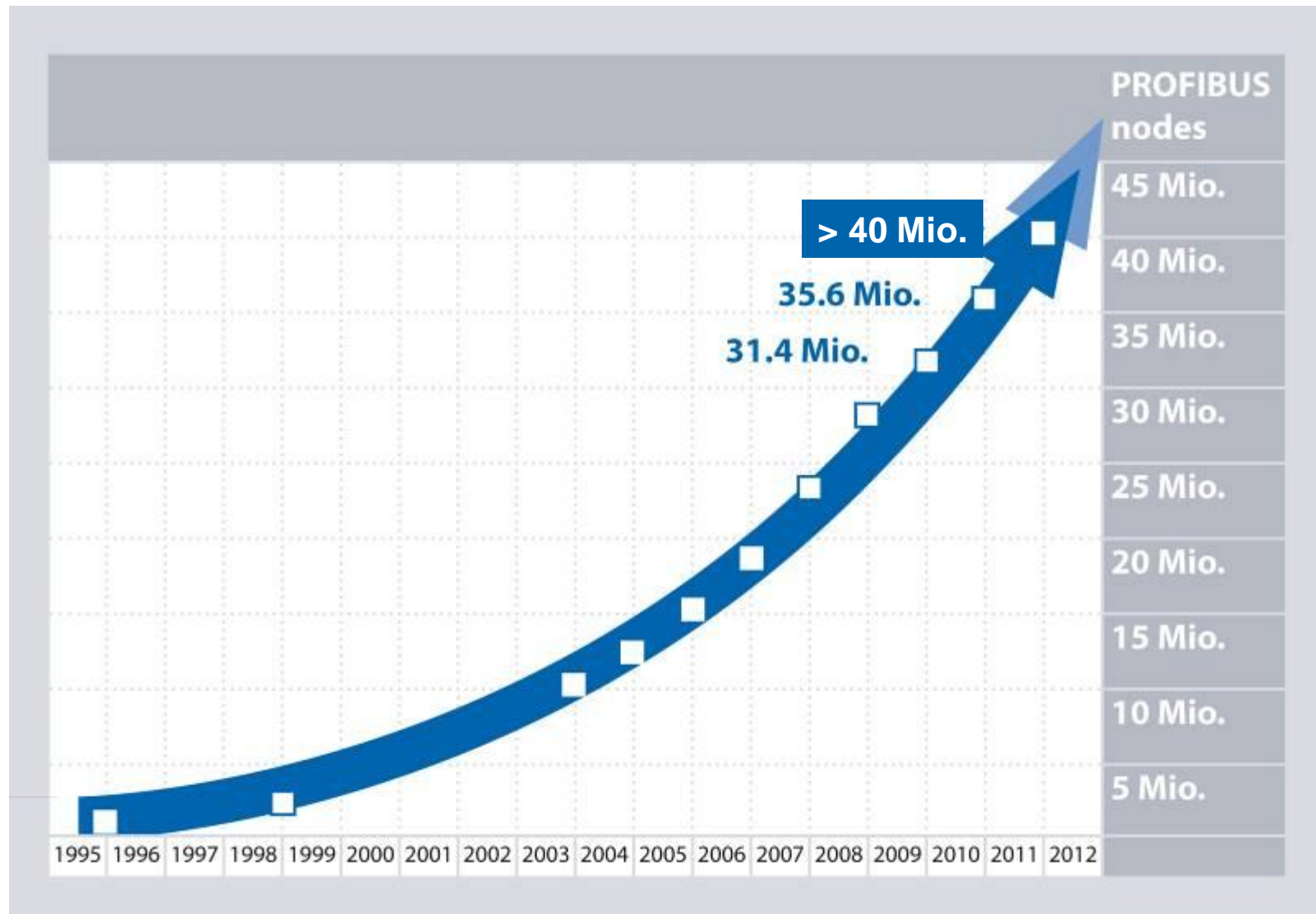
Come back tomorrow!



Installed nodes World wide, new counting

PROFIBUS Nodes

30



Commitment of the leading fieldbusses

31



More than
40,000,000
installed nodes

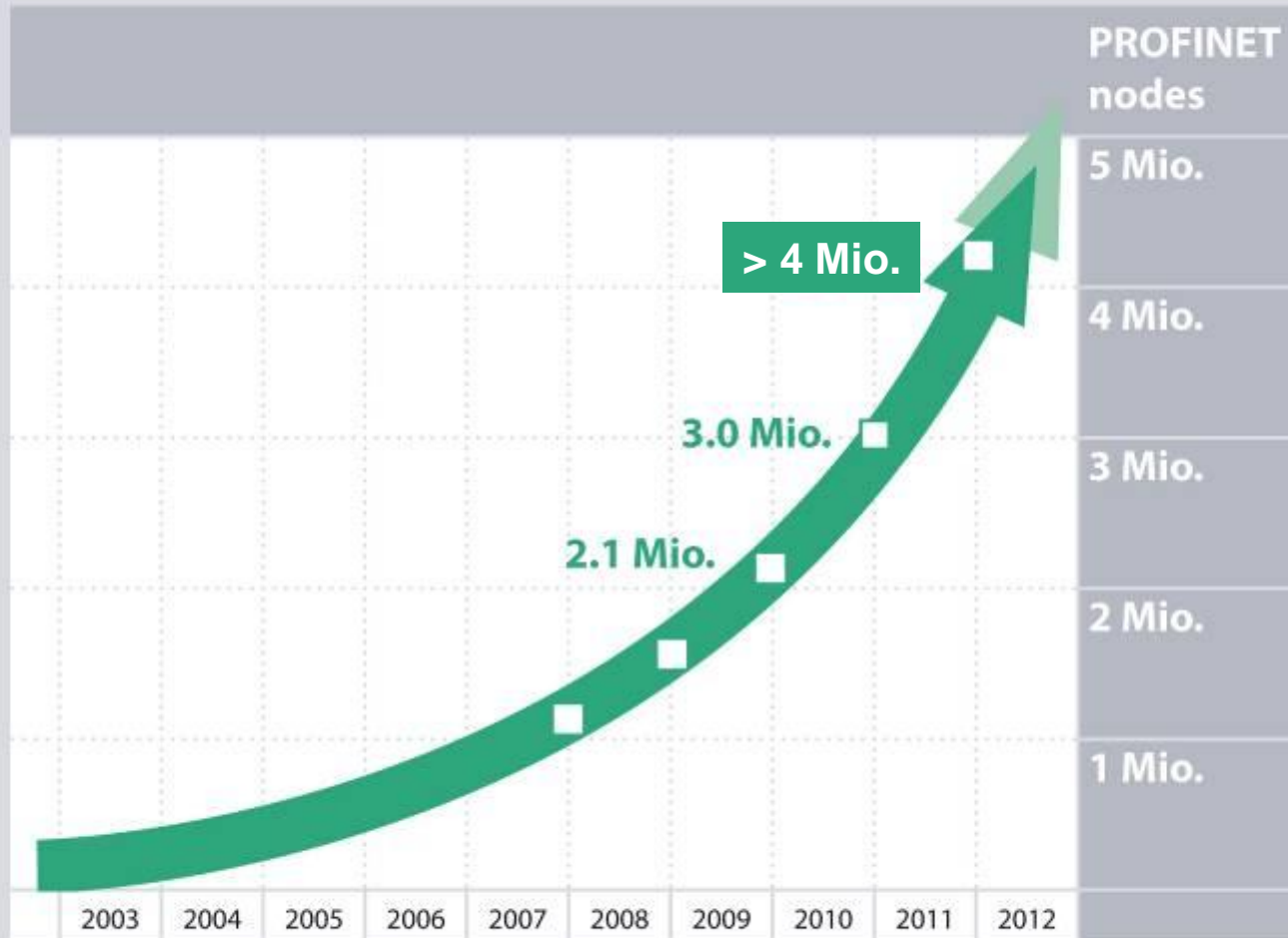


More than
16,000,000
installed nodes

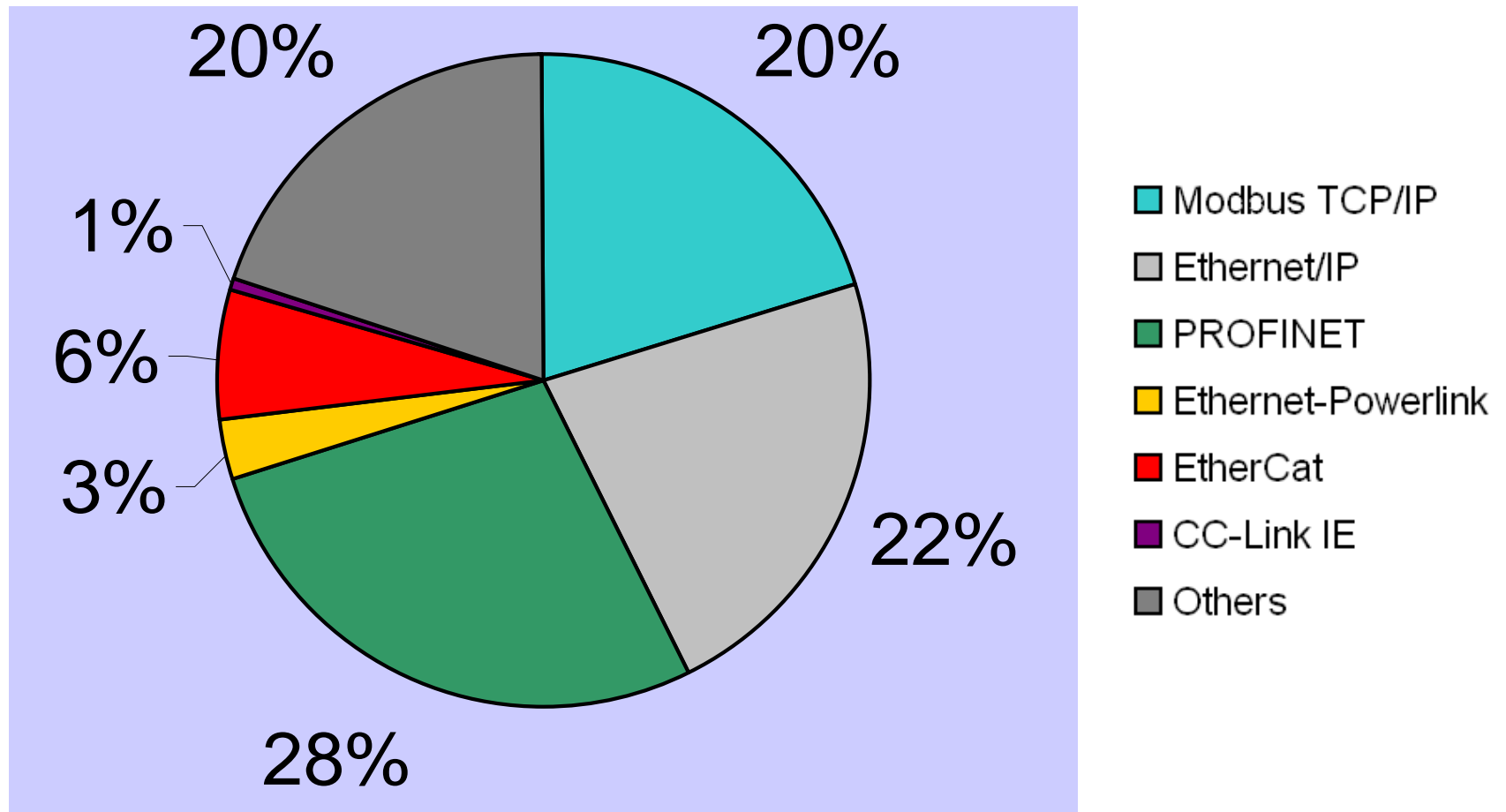


PROFINET Nodes

32



Industrial Ethernet by Variant in China (2015)



PROFINET on the rise

34

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2007: Every **15th** device sold with
PI technology (PB/PN) is PROFINET

2008: Every **12th** device sold with
PI technology (PB/PN) is PROFINET

2009: Every **7th** device sold with
PI technology (PB/PN) is PROFINET

2010: More than every **6th** device sold with
PI technology (PB/PN) is PROFINET



PROFINET ready for Process Automation and increase the Speed
– Specification V2.3 – Released in 2011

PROFINET – for all applications

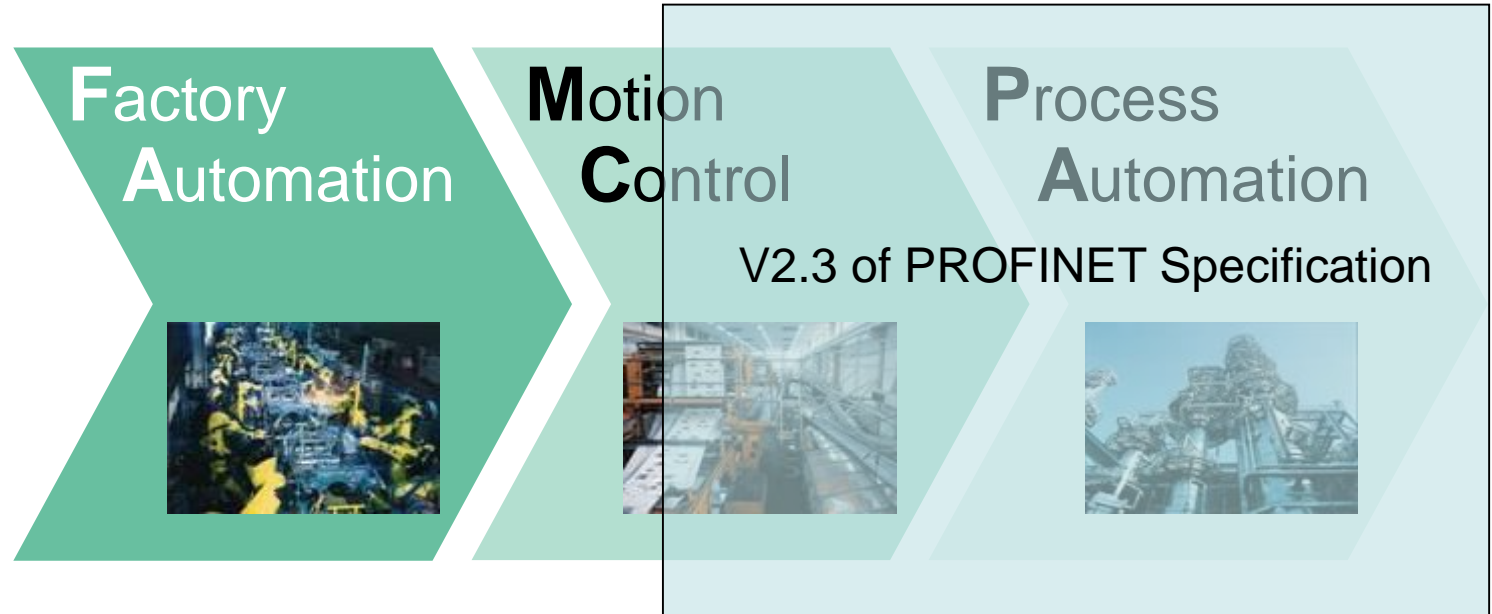
36

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PROFINET

- Worldwide established in Factory Automation and Motion Control
- Already used in Process Automation for In-/Outbound
- Standardization activities for primary processes finalized

One system for all applications

What does process automation mean?


37

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- 
- Slow change of process signals
(Cycle times ~ 100ms)
 - Systems are running continuously,
24 hours/day and 365 days/year
 - Complex actuators and sensors
 - Huge quantities with
up to 100,000 I/O signals
 - Very long lifecycles of process plants

Enhancements for PROFINET in PA

38

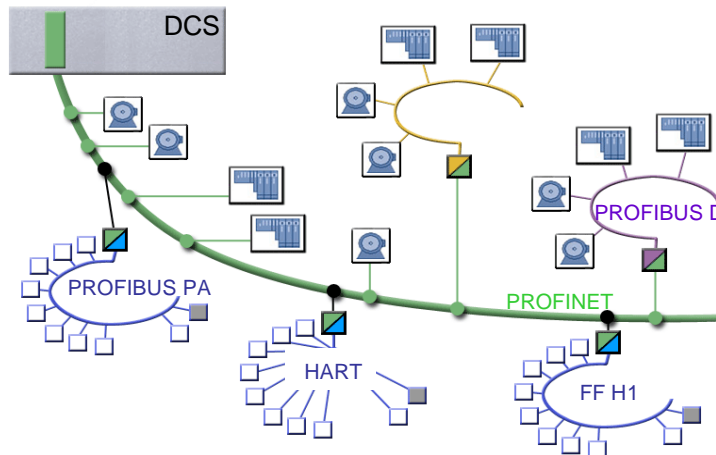
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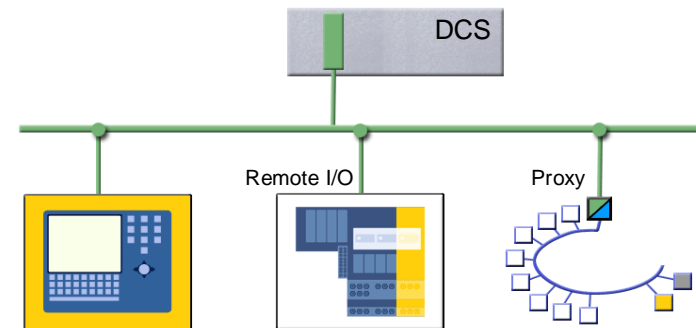
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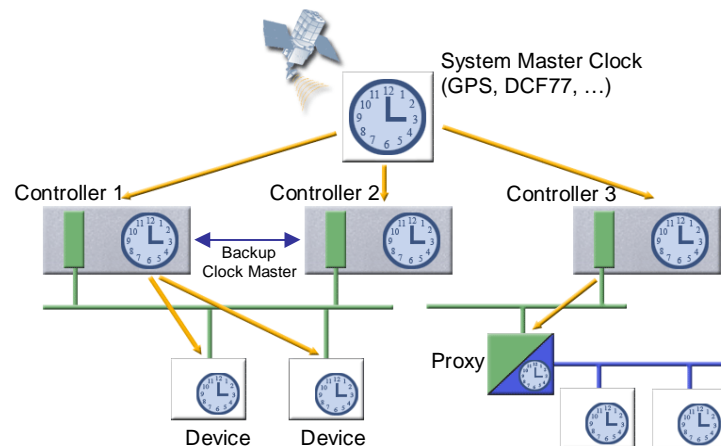
Fieldbus Integration



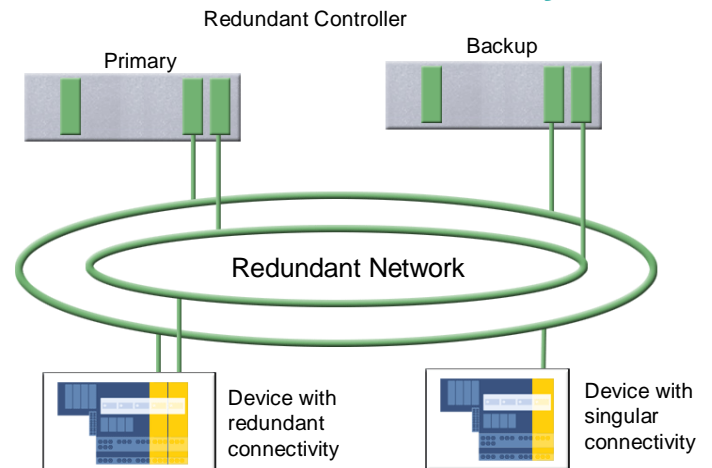
Configuration in Run (CiR)



Time sync / stamping



Scalable Redundancy

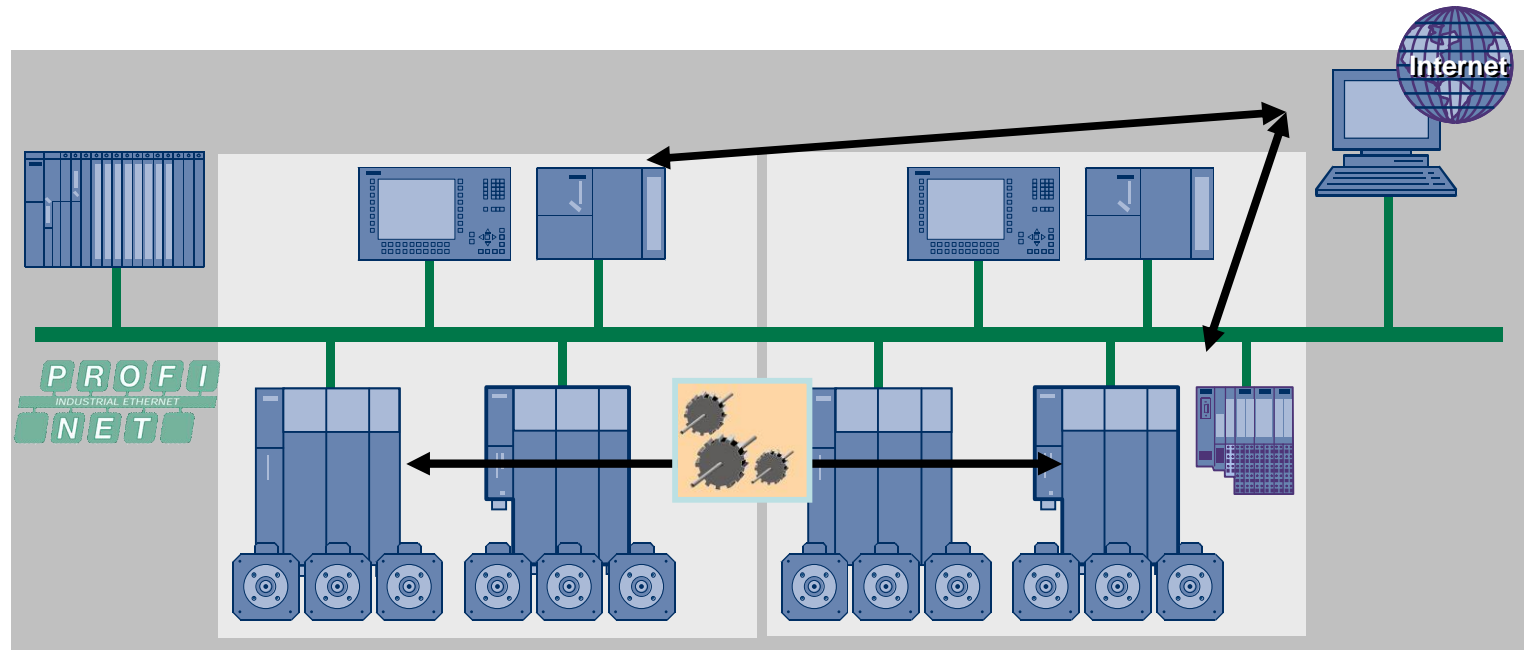


PROFINET ready for Process Automation – Specification V2.3 – Released in 2011

High Speed Applications with IRT

39

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- **Isochronous Real Time (IRT) communication for Motion Control Applications with PROFIdrive-profile**
- **With PROFINET Specification V2.3 we can achieve short and deterministic reaction time: up to 31.25μs, Jitter < 1μs**
- **Integration of distributed field devices**
- **TCP/IP for engineering, diagnosis and HMI-connection**



PROFINET enables the simultaneous realization of Real-Time and IT-communications on one cable

PN products from more than 60 vendors

40



PN products from more than 60 vendors

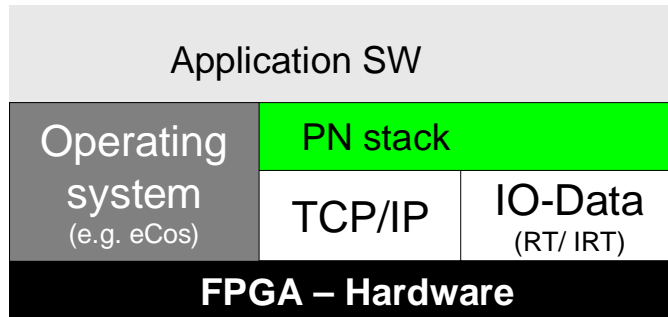
41



Implementation: free choice

42

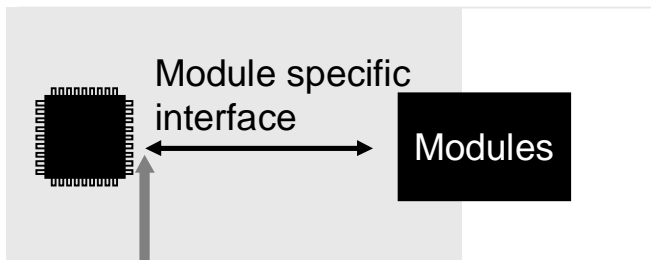
FPGA



Standard Microcontroller

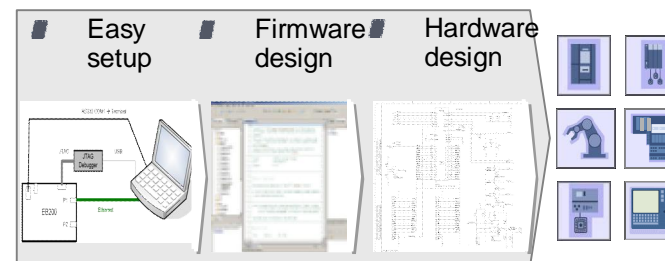


Modules and Boards



Driver SW from module manufacturer

ASIC and Development Kits



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PROFINET Tester

- <http://www.profibus.com/nc/downloads/downloads/profinet-io-tester/display/>
- can be used for preparing certification

GSD Checker

- <http://www.profibus.com/nc/downloads/downloads/profinet-xml-viewer-v22/display/>
- verifies if a GSD complies with the specification

Wireshark

- <http://www.profibus.com/nc/downloads/downloads/ethereal-wireshark/display/>
- well-known network protocol analyzer
- easy readout of PROFINET telegrams

**Free downloads on PI website
to support the efficient development
of PROFINET interfaces**



PROFlenergy

An Example From The Automotive Industry

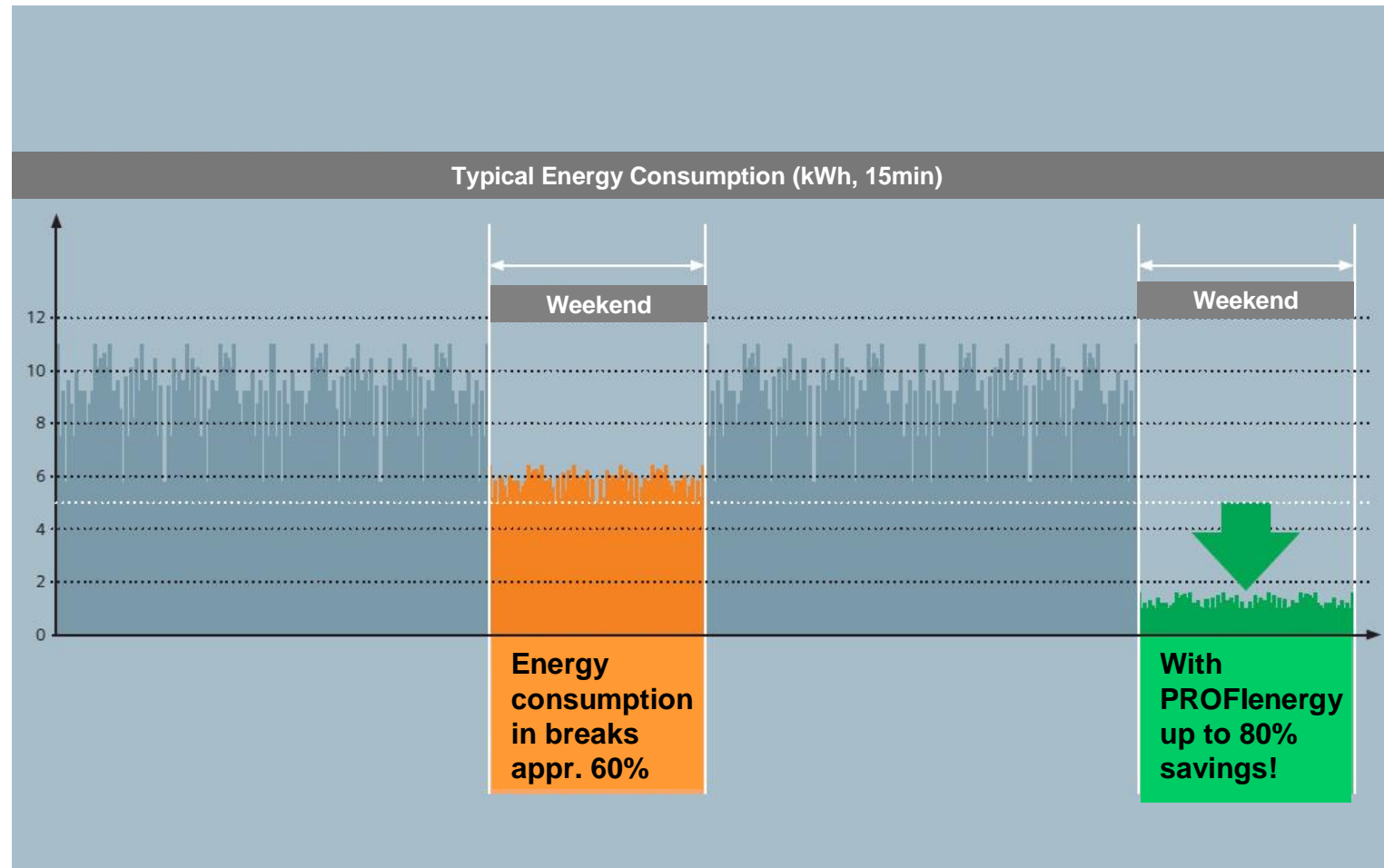
45

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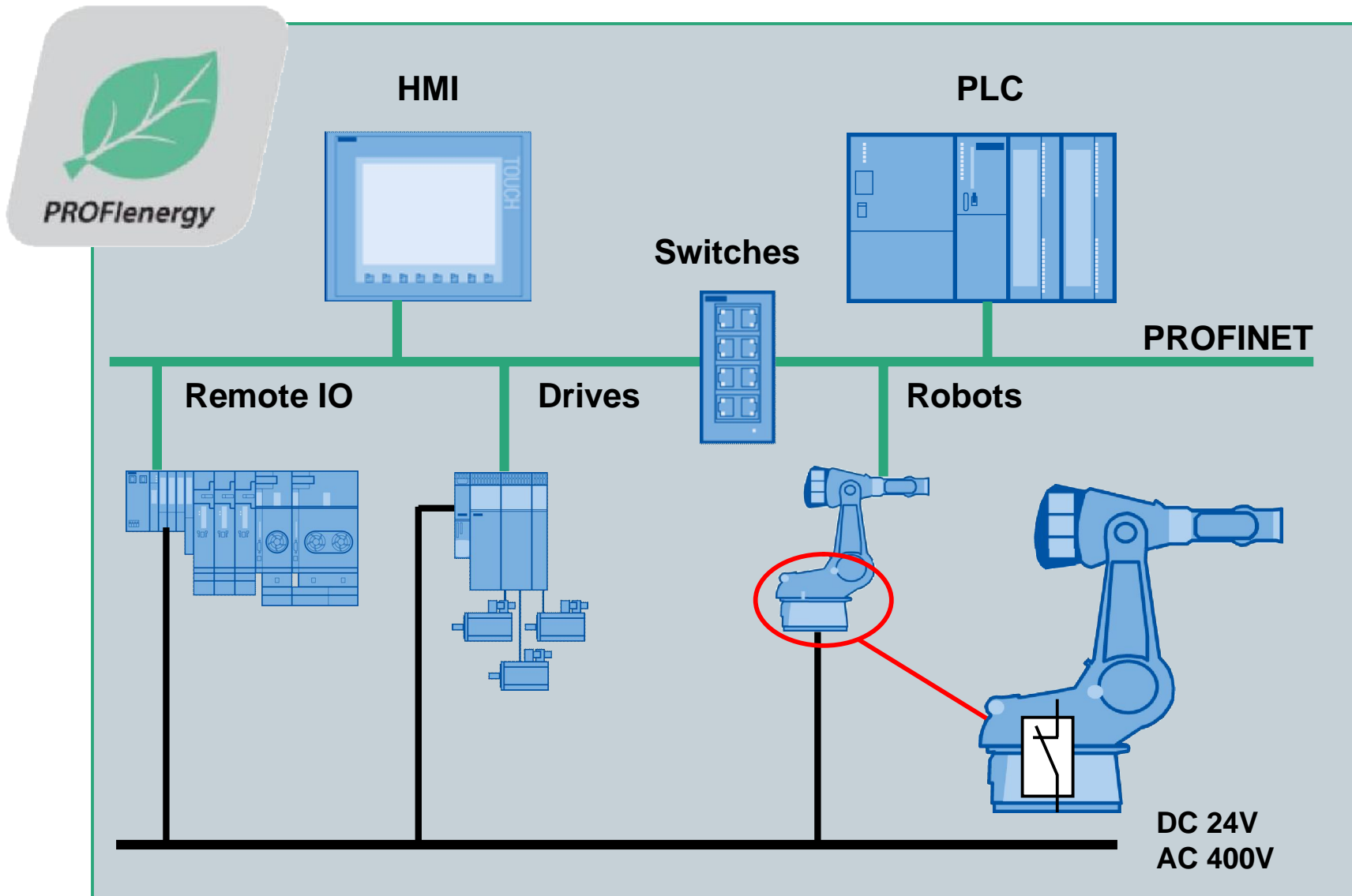
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Energy consumption during breaks appr. 60%!

PROFenergy Profile

46



The PROFlenergy working group

47

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**PHOENIX
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Bosch Group

**MURR
ELEKTRONIK**
stay connected

Lenze

ABB



**SEW
EURODRIVE**

 **BOSCH**

Danfoss

SCA
SCHUCKER


hilscher
COMPETENCE IN
COMMUNICATION

AIT Institut für
Automation & Industrial IT
FH Köln

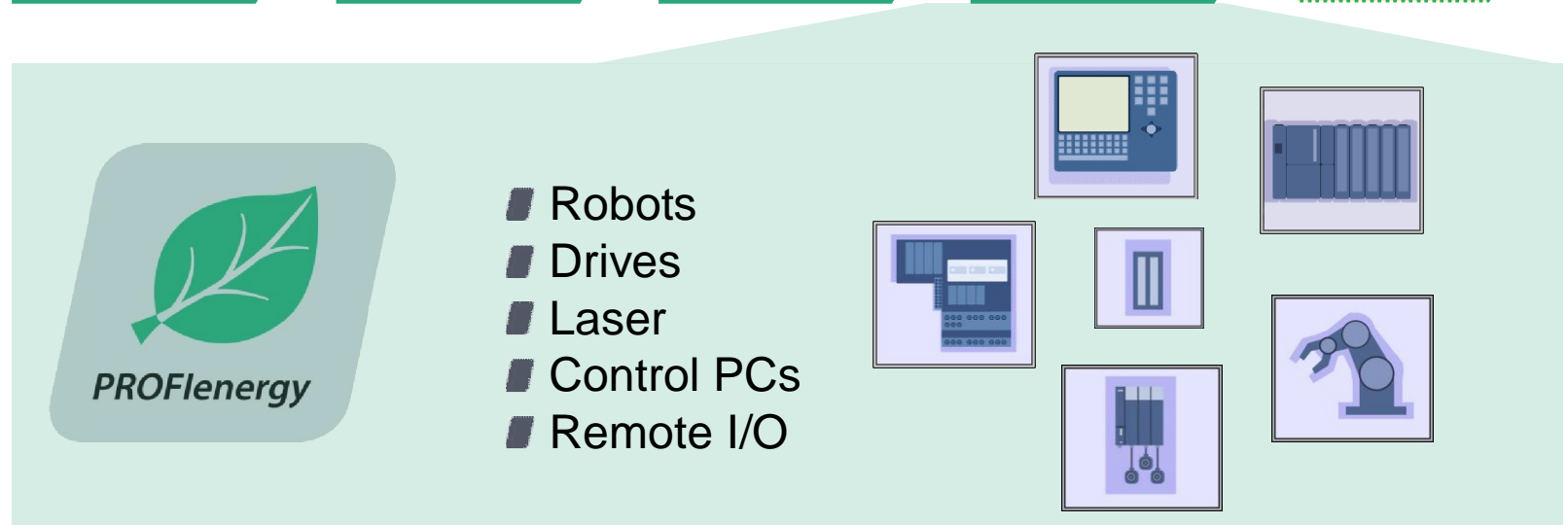
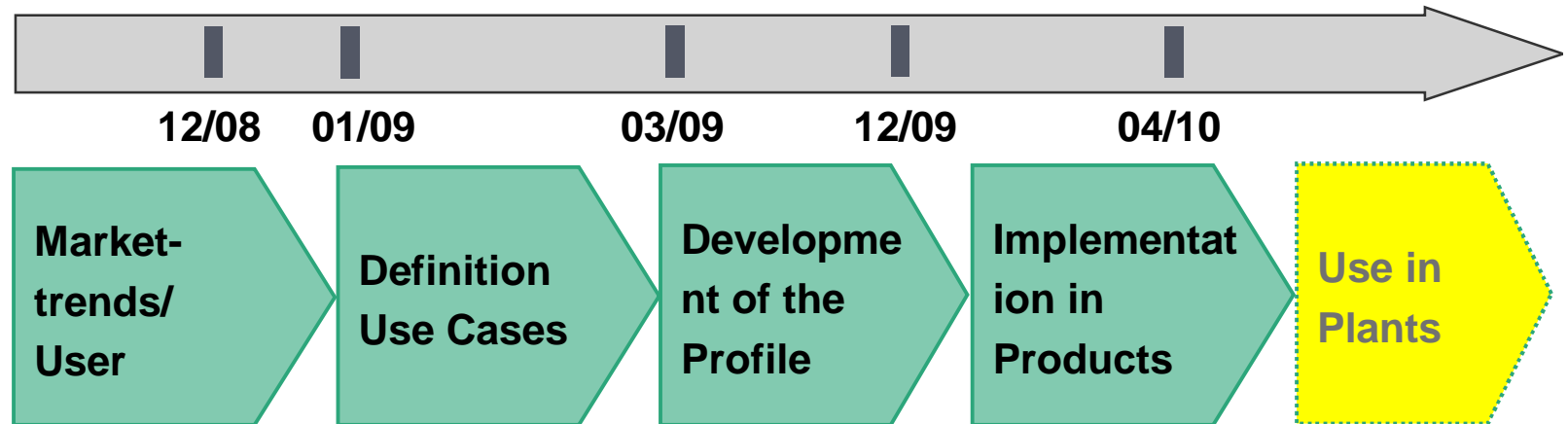
ifak

**WZL
RWTHAACHEN**

Products with PROFlenergy

48

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**Products with “PROFlenergy” onboard
Will be already available in the Market in 2011**

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- PROFIBUS/PROFINET Technology is the most establish technology in the industry supported by all the leading automation vendors
- PROFINET/PROFIBUS is the only technology which can cover Factory Automation with high speed, deterministic communication and Process Automation with all the requirements like Redundancy, Configuration in Run, Time stamping,...
- Safety and Wireless Communication
- PROFINET is the first Fieldbus standard which supports a profile for energy management.
- PROFINET is open for TCP/IP communication and high speed communication at the same time over standard switches!
- PI is the strongest community in the world



New Website

Entry to the Web side

51

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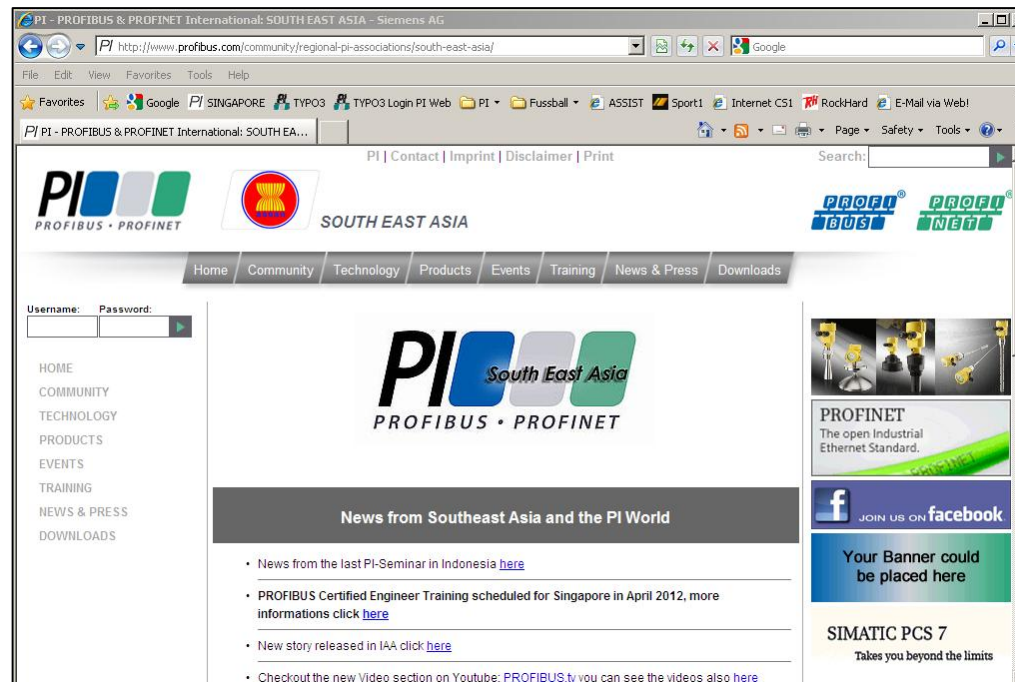
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 www.sea.profibus.com

 www.sea.profinet.com

 **SEA = South East Asia**



Download all slides!!!

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In this section you'll find several sets of downloadable files, ranging from simple forms to join PI to executables to help you engineer and commission PROFIBUS and PROFINET devices. Much of it is free, although to get some files you'll need to join PI to gain access. The 'key' icon tells you which file needs a password.

[Back to download list](#)

2011 - Seminars in Vietnam

Description:

You are welcome to download the Slides from the PROFIBUS/PROFINET Seminar!

Files:



27/12/2010

01_PI_News_-_PH_01.pdf

3527.05 kb



PROFINET
The open Industrial
Ethernet Standard.



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Automating Processes

BOTH process and discrete manufacturing enterprises have to stay competitive in today's global marketplace. That means automating as many production processes as possible, and effectively linking them to IT management systems – so that timely and useful data reaches the right places quickly, allowing managers to make the decisions that lead to 'results'.

Since 1989, PI (Profibus & Profinet International) has been supporting that vision with the automation technology.

Mission: To deliver maximum business advantage.

The twin networking protocols Profibus and Profinet are technologies that are designed to support demanding manufacturing environments and deliver business benefits.

Profibus is a RS485 based communication standard and Profinet is an industrial ethernet based communication standard.

Besides these standards PI also has profiles which are running on these two protocols. These profiles include: Profisafe, Profidrive and Profienergy.

The PI logo has three colors:



- Blue represents Profibus
- Green represents Profinet
- Grey represents the profiles which are running in the Profibus/Profinet standards, such as Profisafe and Profidrive.



Profibus is based on modularity and standards; the benefits are flexibility and ease of use. The use of a single communication protocol enables continuous, discrete, and safety-related processes to run on the same bus, thereby eliminating the need for separate systems. The PA device profile ensures compatible device behavior on the bus; the user is free to choose any 'profile device'. Diagnostic data display is sorted according to the NAMUR NE 107 standard. The equipment operator can detect the status reliably and react appropriately.

Profibus is known for its degree of innovation: User requests are gathered and implemented rapidly. Profile 3.02 with its NAMUR-compliant diagnostics concept is an example of this. Other examples are the high effective redundancy solutions and the proxy technology for connecting Profibus systems to the Ethernet level (Profinet).

At the same time, existing plants can be modernised and expanded at any time with Profibus: Hart technology can be integrated without difficulty, and safety related and drive tasks are resolved with Profisafe and Profidrive.



Profinet satisfies a wide range of requirements with its integrated, Ethernet-based communication.

Profinet enables data-intensive assignment up to transmission, takes place over in all applications, simple control demanding applications. In interface to the always available Profinet c in application automatic automation, or without fu It is found in as automot building, food and logistics. its way into use, such as applications a day operation shop. And, the Profienergy improve energy production pr

Profisafe is a safety technology for manufacturing automation. It is a profile Profinet and I 61508-compliant international has been evalu

IFA and TÜV. It has also become an international standard (IEC 61784-3-3).



when replacing existing relay technology and when retrofitting existing installations. The use of certified devices simplifies system acceptance.

Profienergy uses existing Profinet mechanisms, which ensure fast and simple implementation. The former's commands can be transferred throughout the latter Network, enabling individual field devices or whole production cells to participate in smart energy



is easy and trouble free. Users can satisfy their requirements for energy management in a ed manner, with multi- choice – leading to lower and a better environmental ce.

EVENT REVIEW

Profibus Seminar in KL

Lots to see, hear and learn when this year's regional Profibus roadshow rolled into Kuala Lumpur, Malaysia, to give some 80 participants the update on the increasing functionality and scope of the industrial communications technology.



Bernd Lieberth, secretary of the Profibus Association South East Asia, revealing that the installed base of Profibus devices now exceeds 35 million.



Explaining how application profiles fit into the Profibus architecture.



The 'Profinet for PA' application profile included in Version 2.3 means that Profinet can meet the needs of process automation.



Siemens safety expert Stanley Joseph detailing how safety fieldbus via Profisafe provides distinct advantages over hardwired solutions.



Seminar concepts reinforced by practical demonstrations of Profibus and Profinet technology.



Lucky draw winner takes home a copy of 'Milestones: Profibus - 20 Years of Standards for Industrial Communication'.

Infos of all the technology

54

PI http://www.profibus.com/index.php?id=3591

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- ▼ APPLICATION PROFILES
- ▼ DEVICE INTEGRATION
- ▼ WIRELESS

IO-LINK

GLOSSARY



PI's industrial networking solutions are based on two technologies: PROFIBUS and PROFINET.

First developed in 1989 and celebrating its 20th anniversary in 2009, PROFIBUS has become the world's most successful fieldbus with nearly 30,000,000 installed nodes and global support.

PROFINET, a more powerful and broader offering than PROFIBUS is based on an enhanced version of the Ethernet used in offices, and is therefore a future-oriented network

SIEMENS

Thousands of engineers use it...
PROCENTEC

... and profit now.

PROFINET

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PI South East Asia
PROFIBUS • PROFINET

Info Bearbeiten

With over 35 Mio installed nodes on PROFIBUS and over 3 Mio nodes on PROFINET...

Mehr

128
gefällt das

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Aktualisierungen via RSS erhalten
Gefällt mir nicht mehr
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Pinnwand Profibus/Profinet South E... • Alle (Neueste Beiträge)

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Schreib etwas ...

Profibus/Profinet South East Asia
One more day to the Seminar in Surabaya, still time to register under
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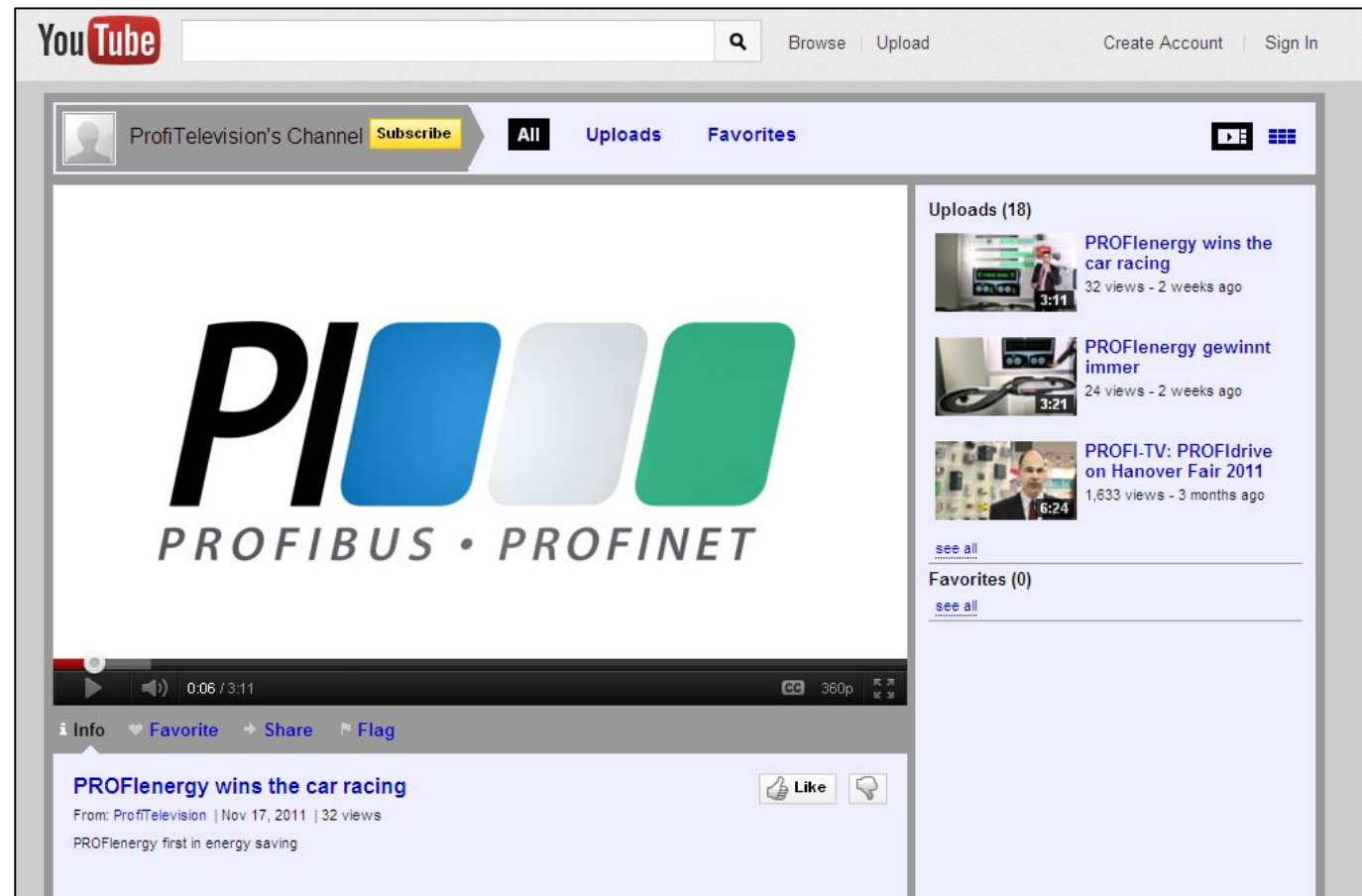


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56

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- PROFINET Flyer
- PROFINET System description
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- Cabling and Assembly
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58



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