Figures
PROFINET
PROFIenergy
IO-Link

Bernd Lieberth
President RPA-SEA

PROFINET from PROFIBUS International

Figures
PROFINET
PROFIenergy
IO-Link

PROFIBUS & PROFINET International (PI)

27 Regional Associations (RPA)

43 PI Competence Center (PICC)

10 PI Test Laboratories (PITL)

More then 1,400 members world wide

- **The architecture is being devised by**
  - 12 work groups
  - With 140 employees
  - from 60 companies

PROFINET – from the world's largest fieldbus organization

PI Worldwide Support

Belgium
RPA, PICC, PITC

France
RPA, PICC, PITC

Netherlands
RPA, PICC, PITC, PITL

Russia
RPA

Sweden
RPA, PICC

Czech Rep.
RPA, PICC, PITC, PITL

Germany & Austria
RPA, PICC
PITC, PITL

Norway
RPA, PICC, PITC

Slovakia
RPA

Switzerland
RPA, PICC, PITC

Denmark
RPA

Ireland
RPA, PICC, PITC

Poland
RPA, PICC, PITC

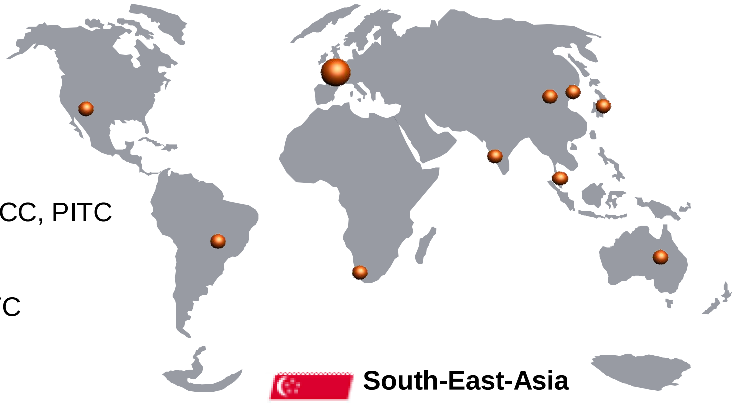
Spain
RPA, PICC

UK
RPA, PICC, PITC

Finland
RPA

Italy
RPA, PICC, PITC

China
RPA, PICC, PITL



India
RPA, PICC

Japan
RPA, PICC, PITL

Brazil
RPA, PICC, PITC

Korea
RPA, PICC

Chile
PICC, PITC

Middle-East / UAE
RPA, PICC

USA
RPA, PICC, PITC, PITL

South-East-Asia
RPA

Lebanon
PICC

Southern Africa
RPA, PICC, PITC

Australia/ New Zealand
RPA, PICC, PITC

Saudi Arabia
PICC

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?

- **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

- Figures
- PROFINET
- PROFIenergy
- IO-Link

PI South East Asia
PROFIBUS • PROFINET

Organization logo
South East Asia

PROFIBUS® PROFINET®

Technology logo

PROFIdrive PROFIenergy PROFIsafe

Profile logo

Members of Southeast Asia

Figures

PROFINET

PROFIenergy

IO-Link

ABB

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

PHŒNIX CONTACT

POSITAL
FRABA

PROCENTEC

pteris
Global
harmony in motion

SIEMENS

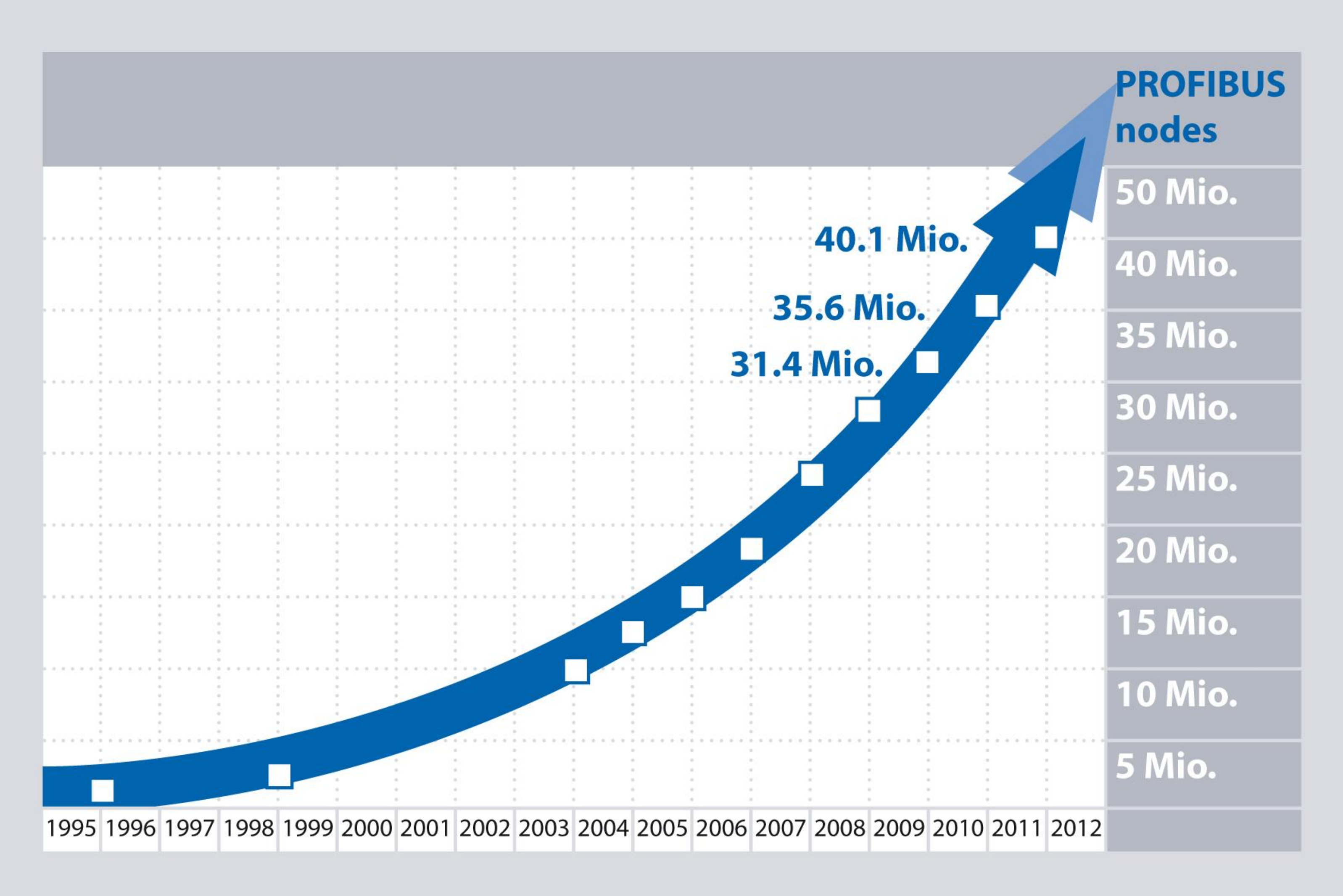
TURCK
Industrial Automation

VEGA
Level – Switching – Pressure – Flow – Density

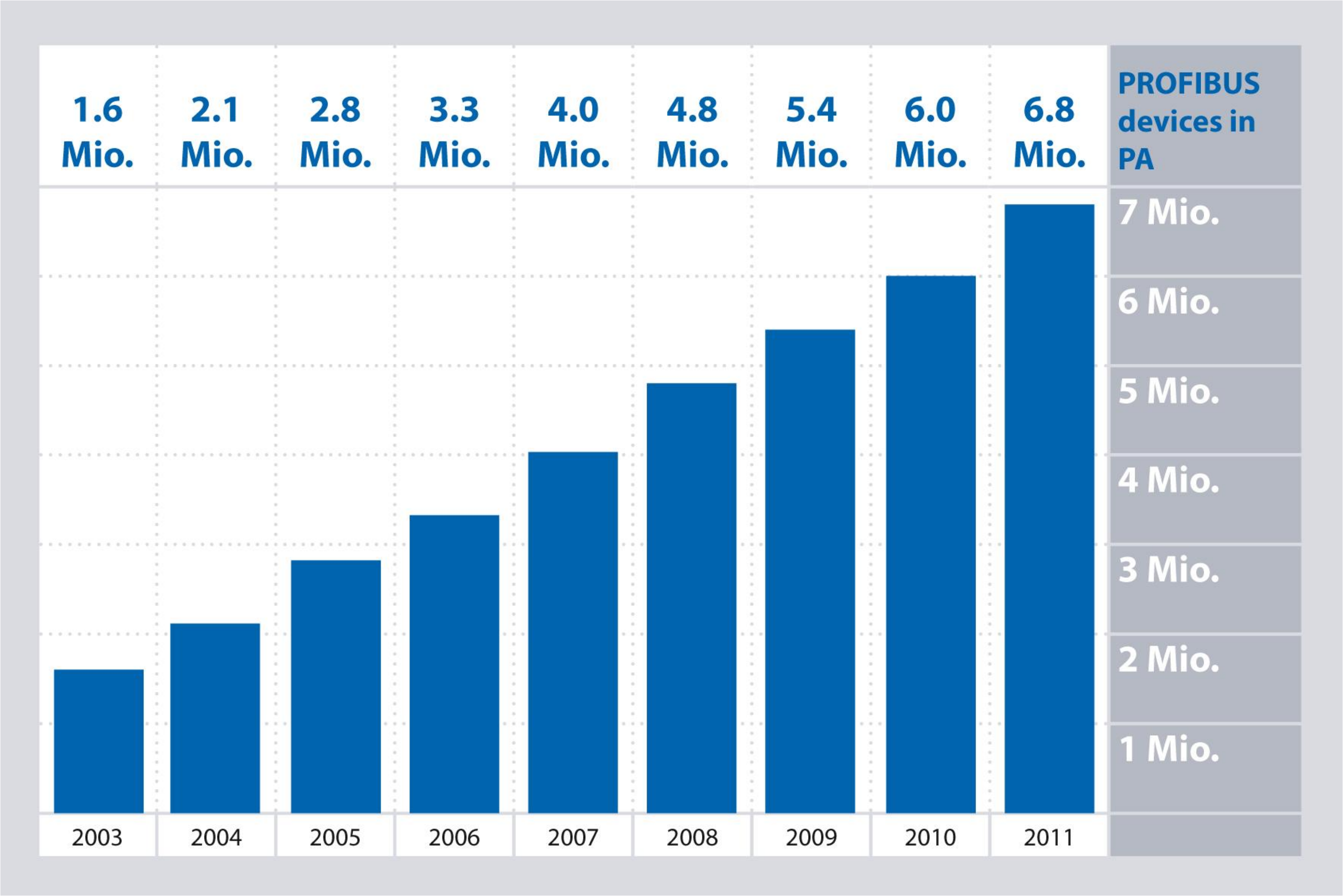
Weidmüller

Installed nodes World wide, new counting

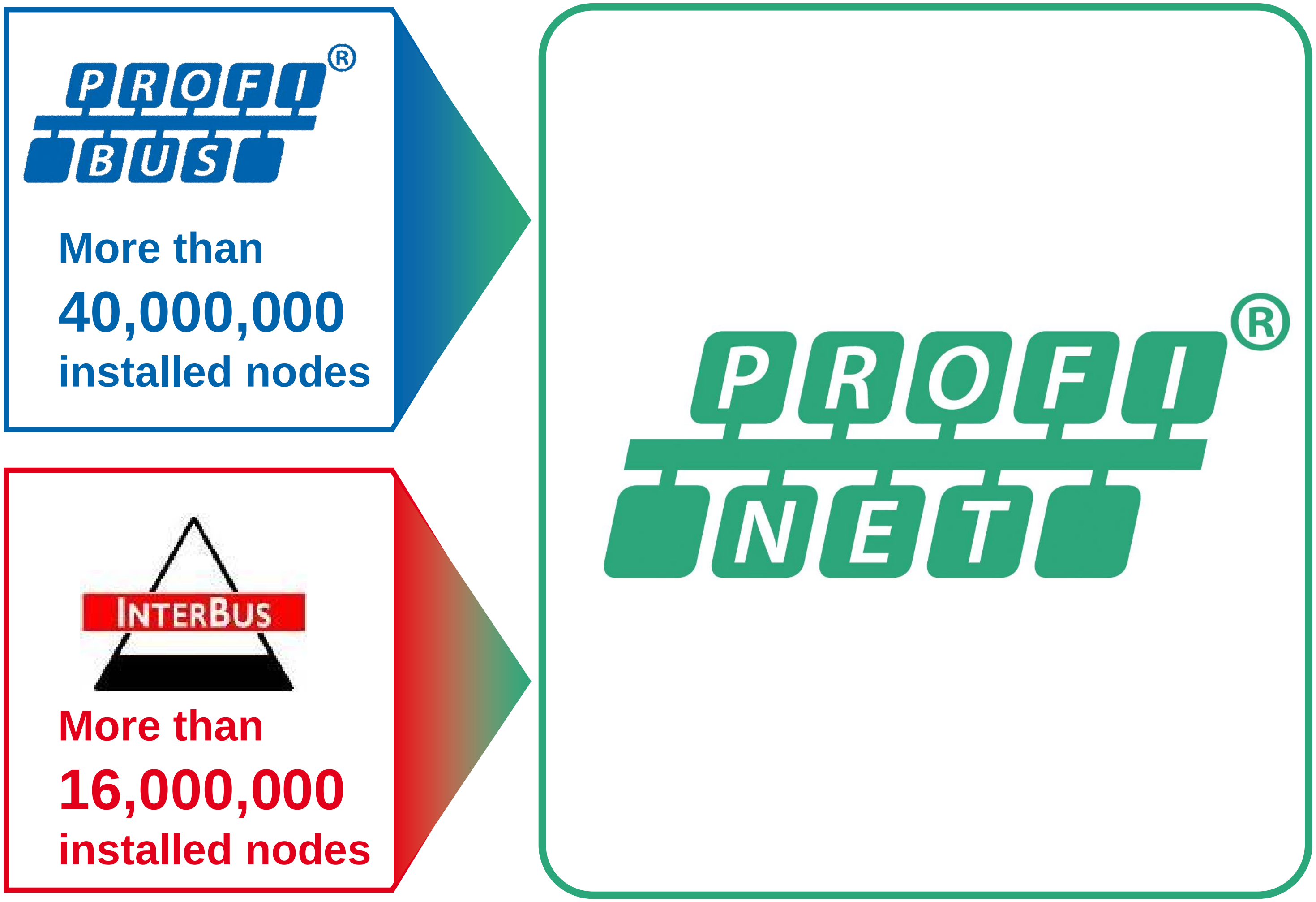
PROFIBUS nodes



PROFIBUS nodes



Commitment of the leading fieldbusses



PROFIBUS®

More than

40,000,000

installed nodes

INTERBUS

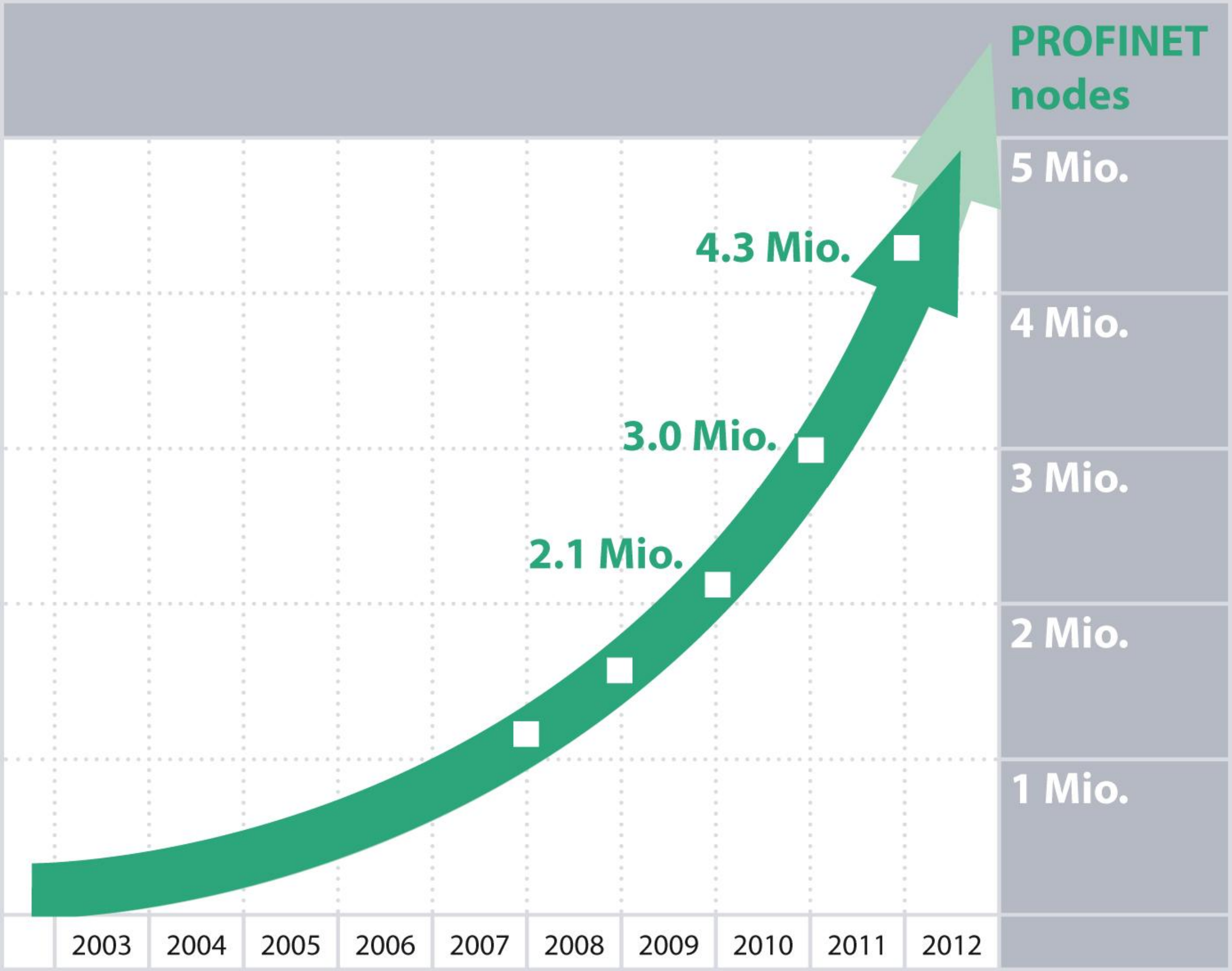
More than

16,000,000

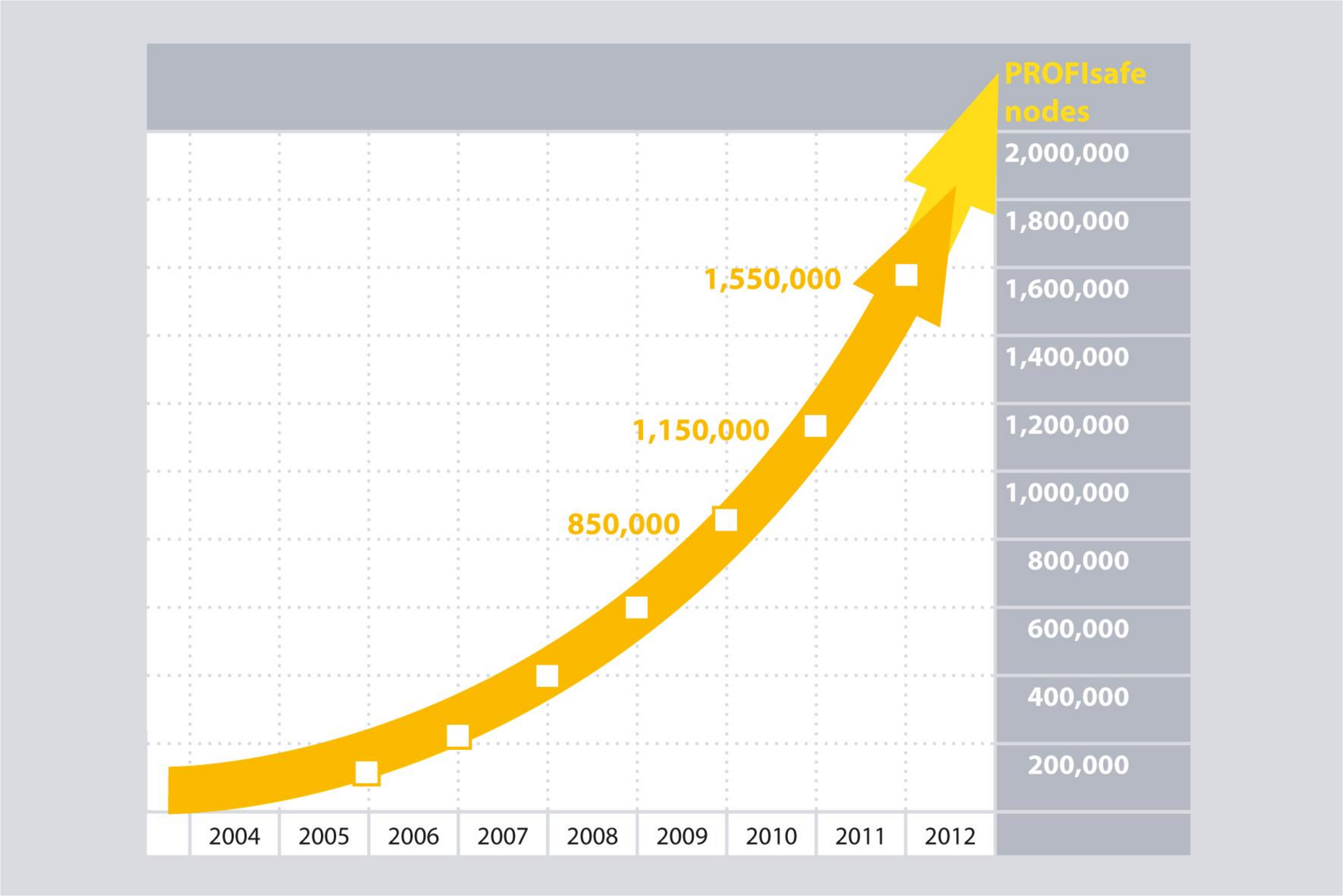
installed nodes

PROFINET®

PROFINET nodes

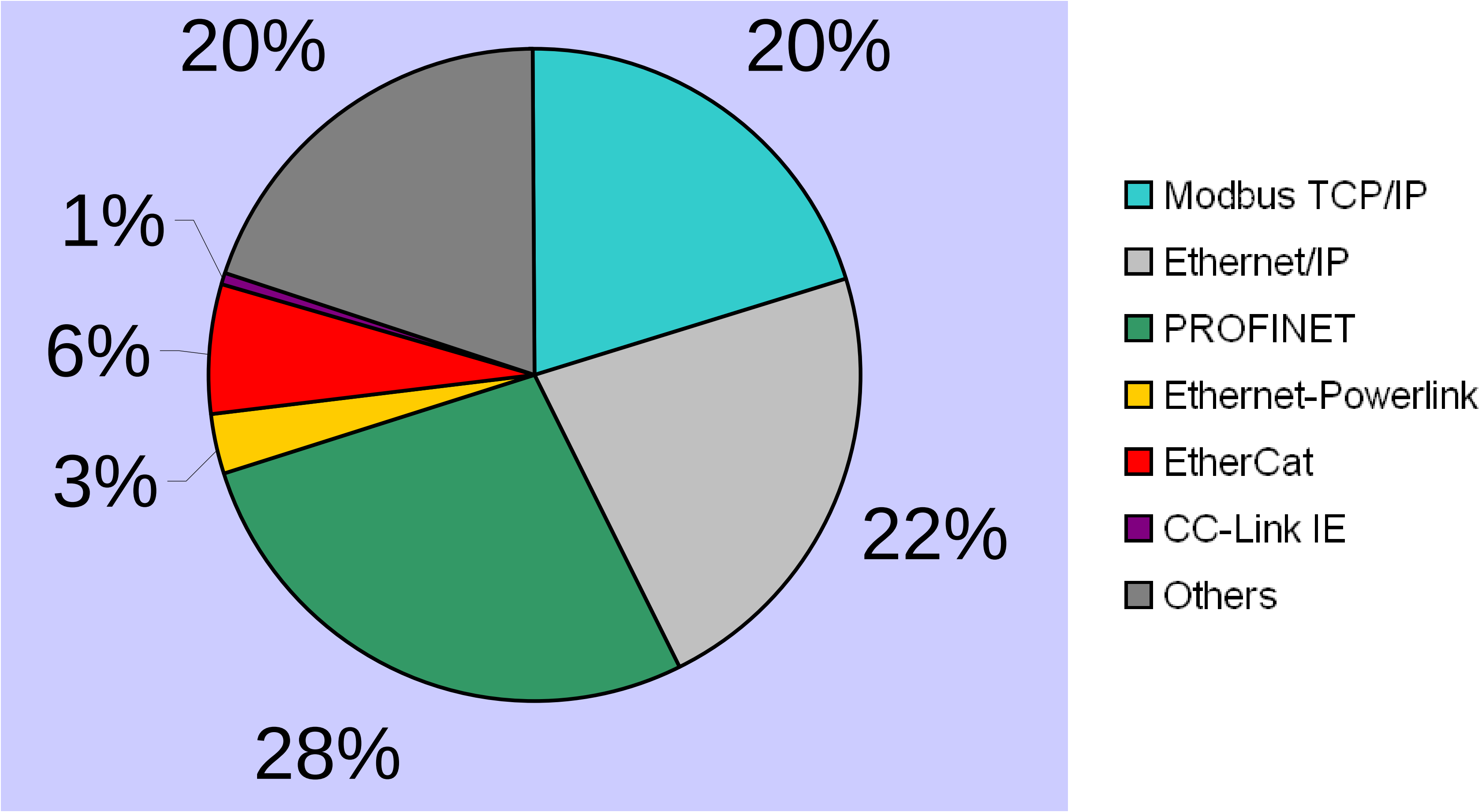


PROFIsafe nodes



IMS Research: pole position in China

Industrial Ethernet by Variant in China (2015)



Successful standardization in Korea

- On December 30, 2011, the Korean Agency for Technology and Standards (KATS) announced both PROFINET and PROFIBUS as Korean standards.

- The standardization comprises PROFIBUS DP, PROFIBUS PA and PROFINET, thus applications for process automation are also covered.

- Korea PROFIBUS Association was founded in 1999 and is with its 44 member companies one of the most active groups in the Asian market.

- PROFIBUS and PROFINET have been among the leading fieldbuses in the Korean automation market for years.

PROFINET on the rise

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

PROFI
NET
PROFI
NET

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

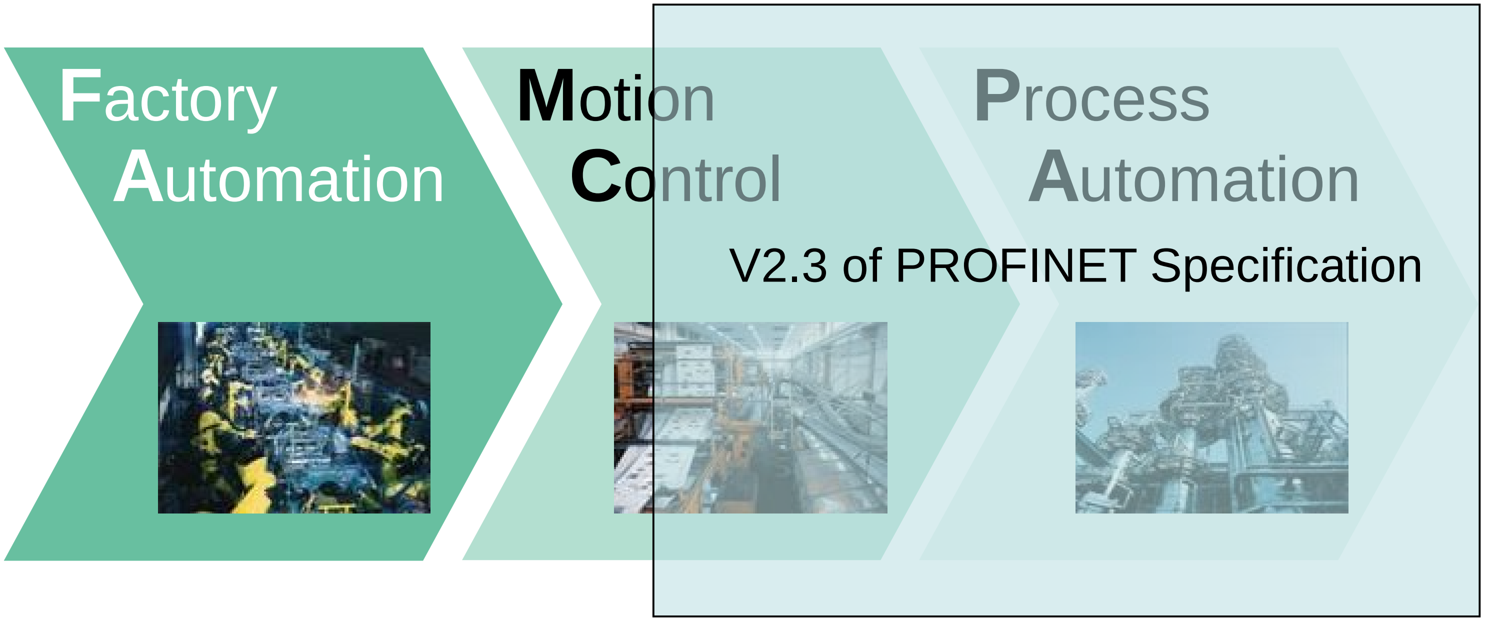
PROFINET – for all applications

Figures

PROFINET

PROFIenergy

IO-Link



Factory Automation

Motion Control

Process Automation

V2.3 of PROFINET Specification

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?

Figures
PROFINET
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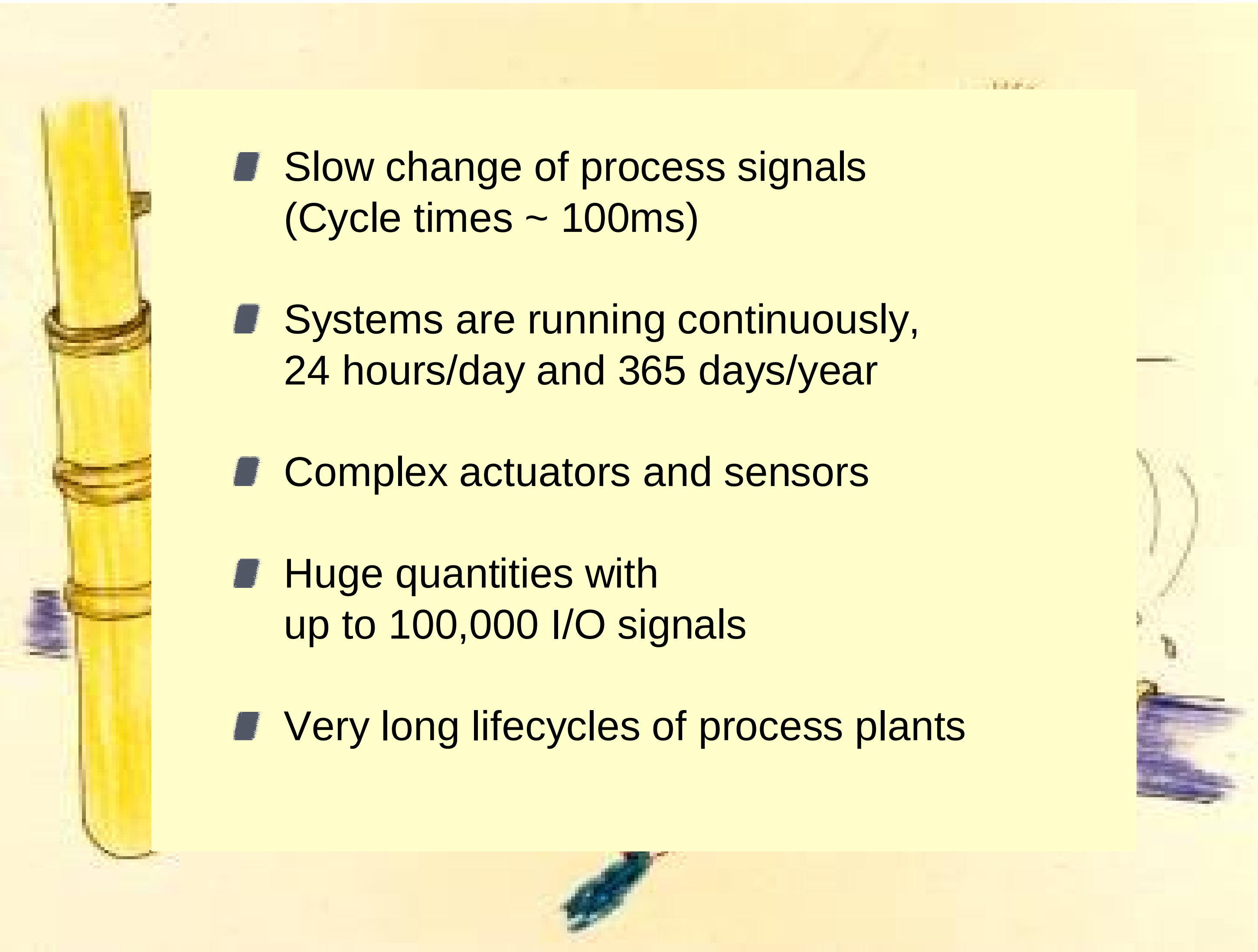

- Slow change of process signals (Cycle times ~ 100ms)
- Systems are running continuously, 24 hours/day and 365 days/year
- Complex actuators and sensors
- Huge quantities with up to 100,000 I/O signals
- Very long lifecycles of process plants

Enhancements for PROFINET in PA

Figures

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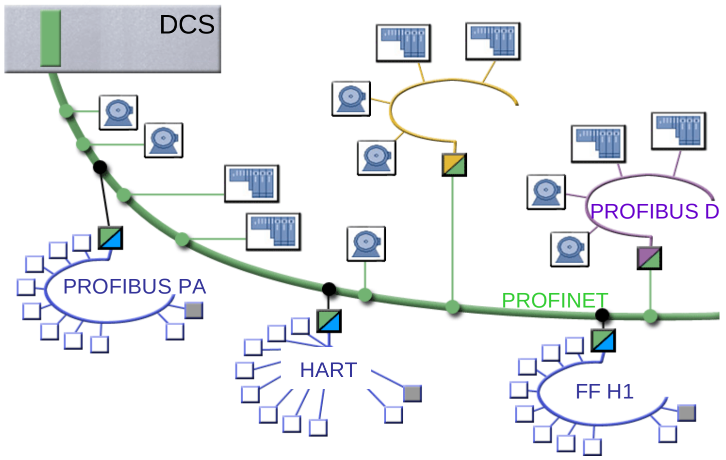
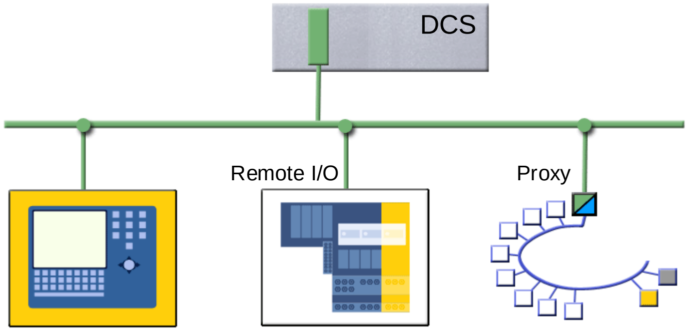
PROFIenergy

IO-Link

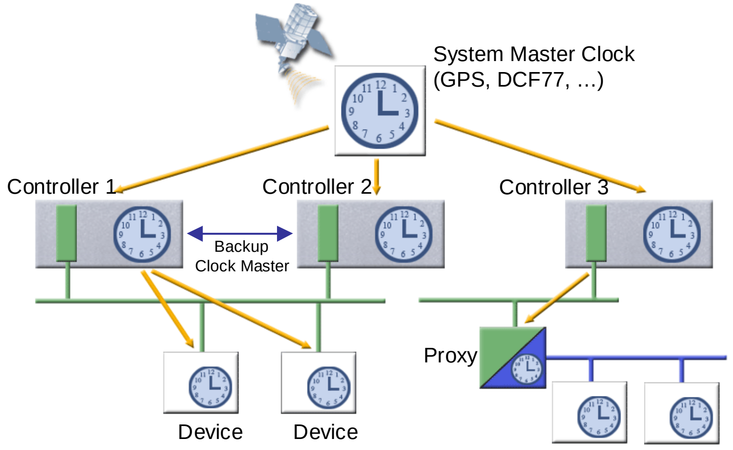
Fieldbus Integration


DCS
PROFIBUS D
PROFIBUS PA
PROFINET
HART
FF H1

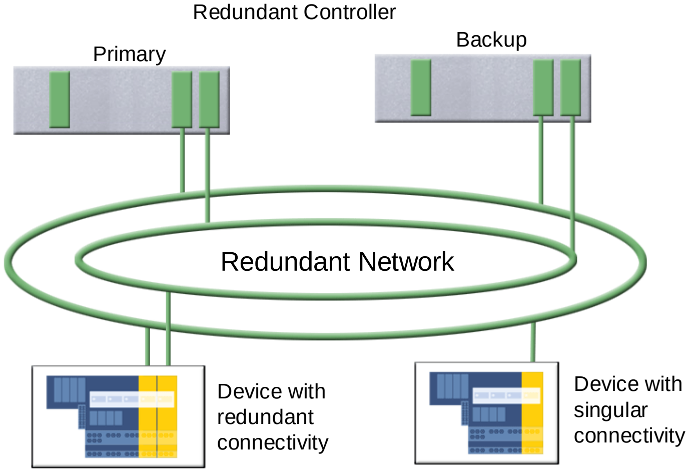
Configuration in Run (CiR)


DCS
Remote I/O
Proxy

Time sync / stamping


System Master Clock
(GPS, DCF77, …)
Controller 1
Controller 2
Controller 3
Backup
Clock Master
Proxy
Device
Device

Scalable Redundancy


Redundant Controller
Primary
Backup
Redundant Network
Device with
redundant
connectivity
Device with
singular
connectivity

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

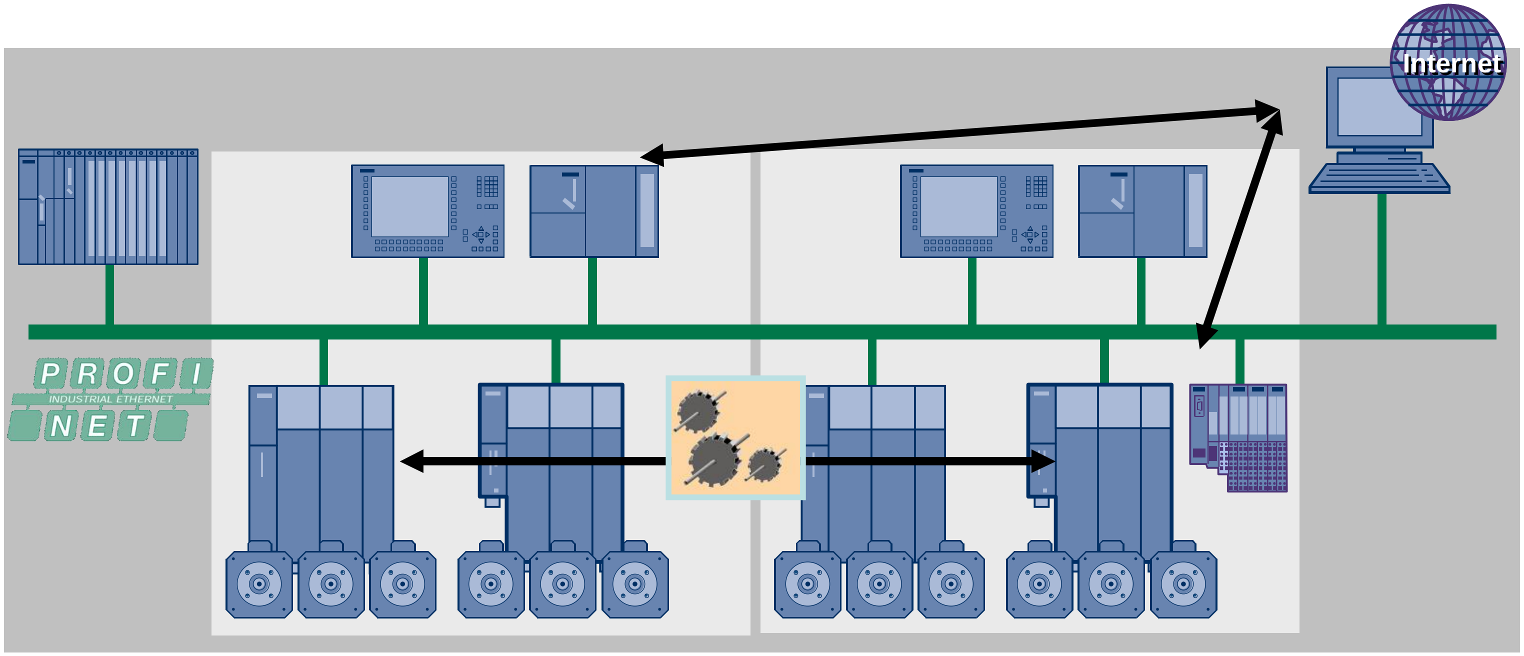
High Speed Applications with IRT

Figures

PROFINET

PROFIenergy

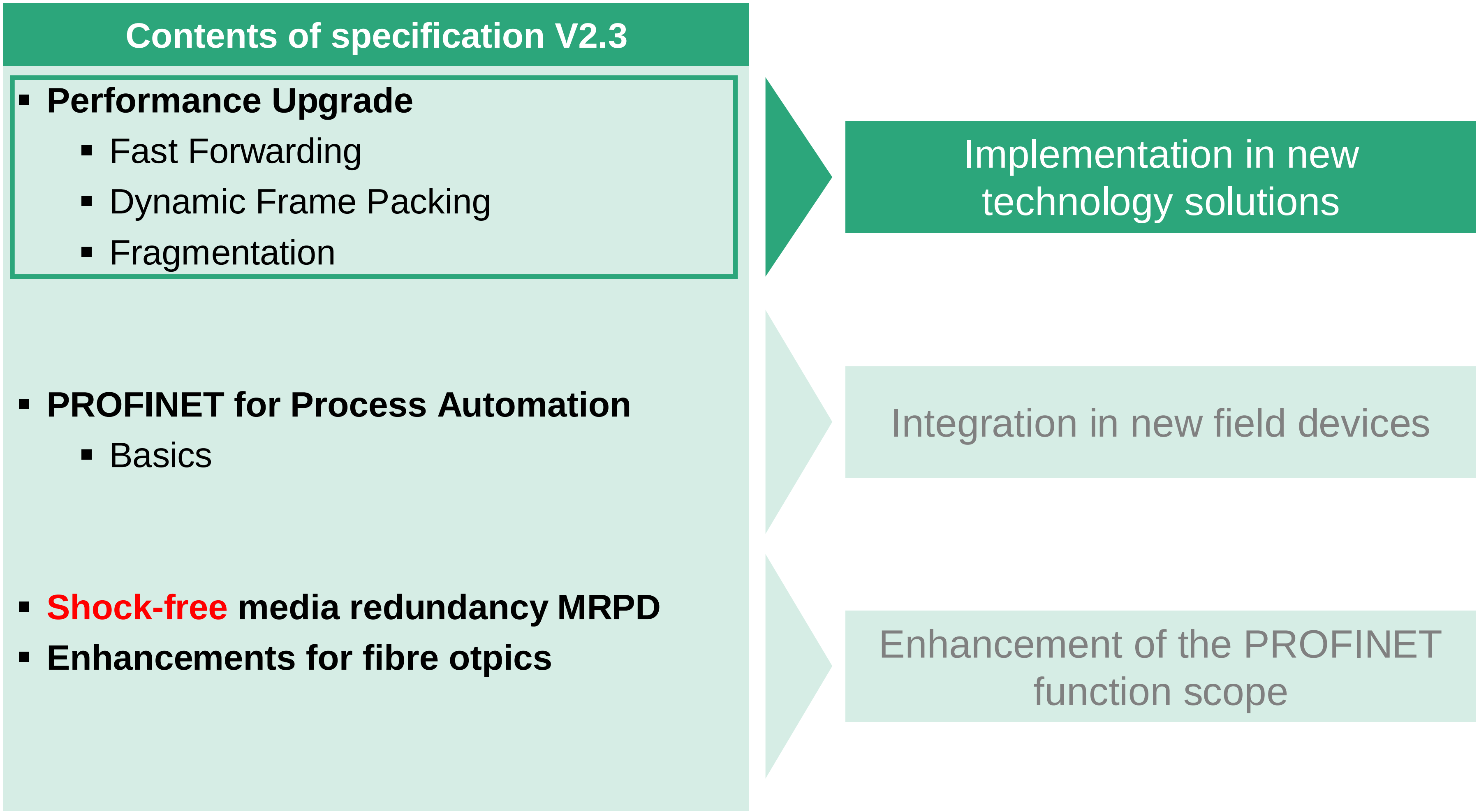
IO-Link



- **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

What‘s new in the specification V2.3?



Contents of specification V2.3

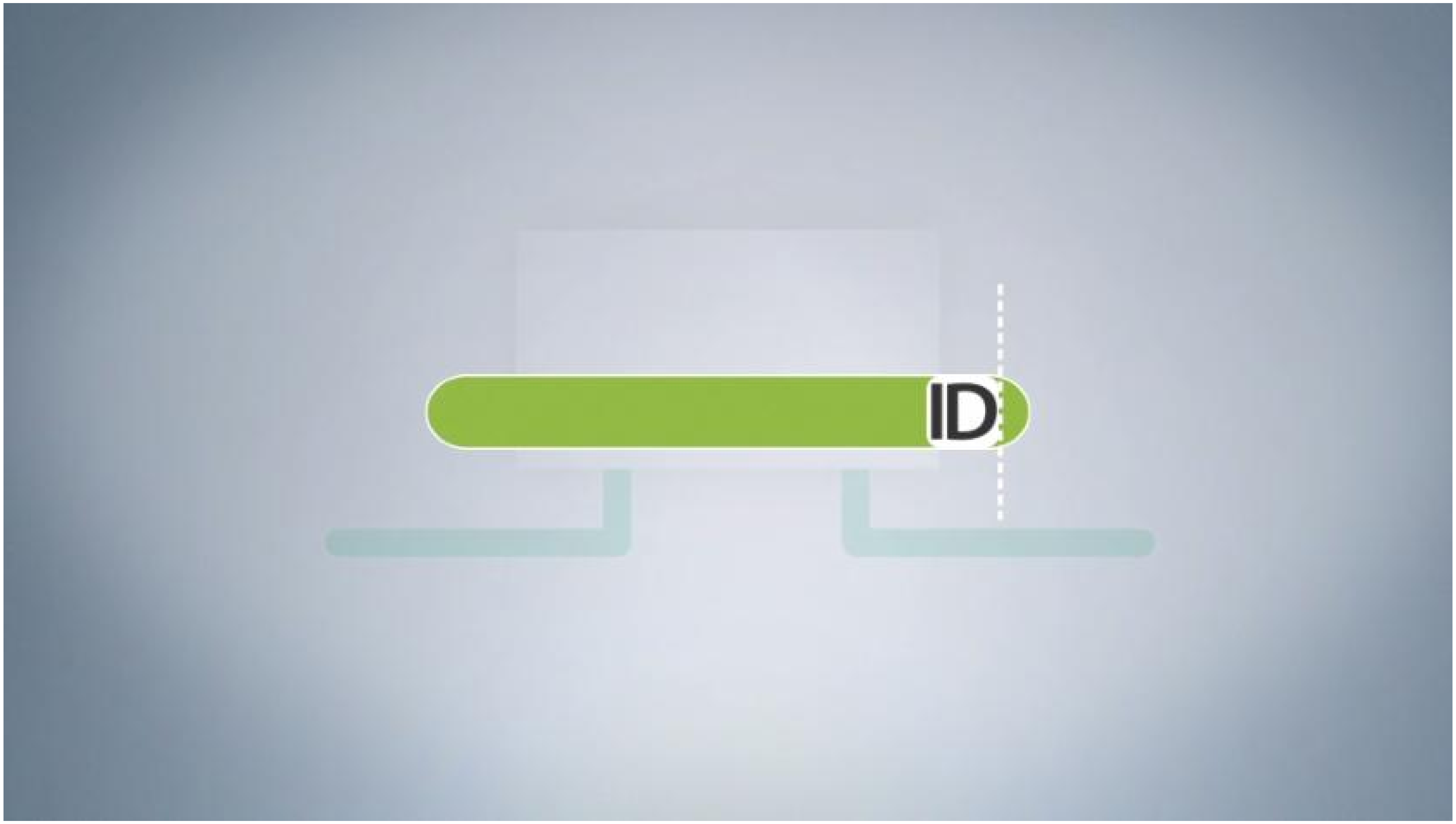
- **Performance Upgrade**
    - Fast Forwarding
    - Dynamic Frame Packing
    - Fragmentation
- **PROFINET for Process Automation**
    - Basics
- **Shock-free media redundancy MRPD**
- **Enhancements for fibre otpics**

Implementation in new technology solutions

Integration in new field devices

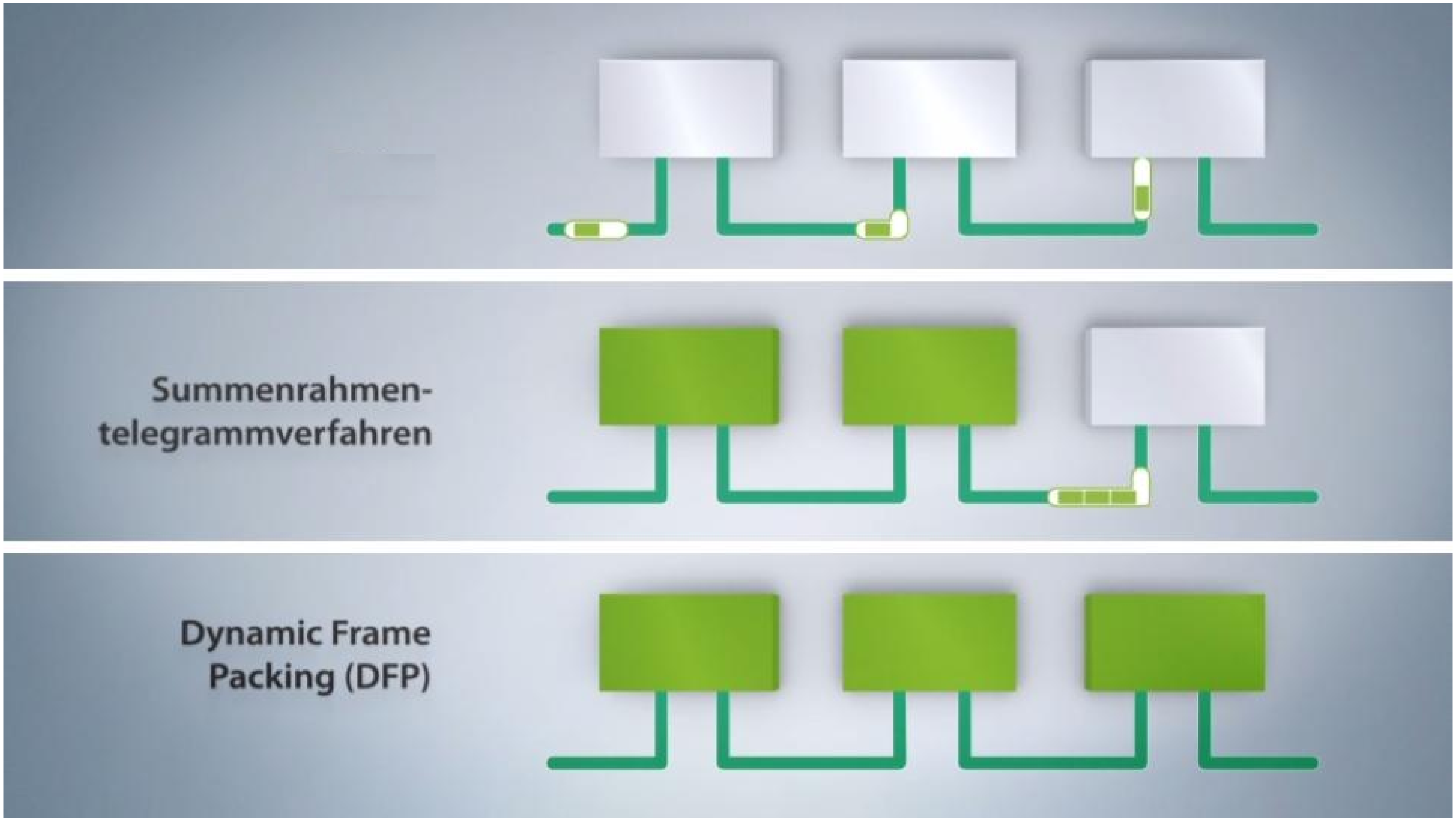
Enhancement of the PROFINET function scope

Fast Forwarding



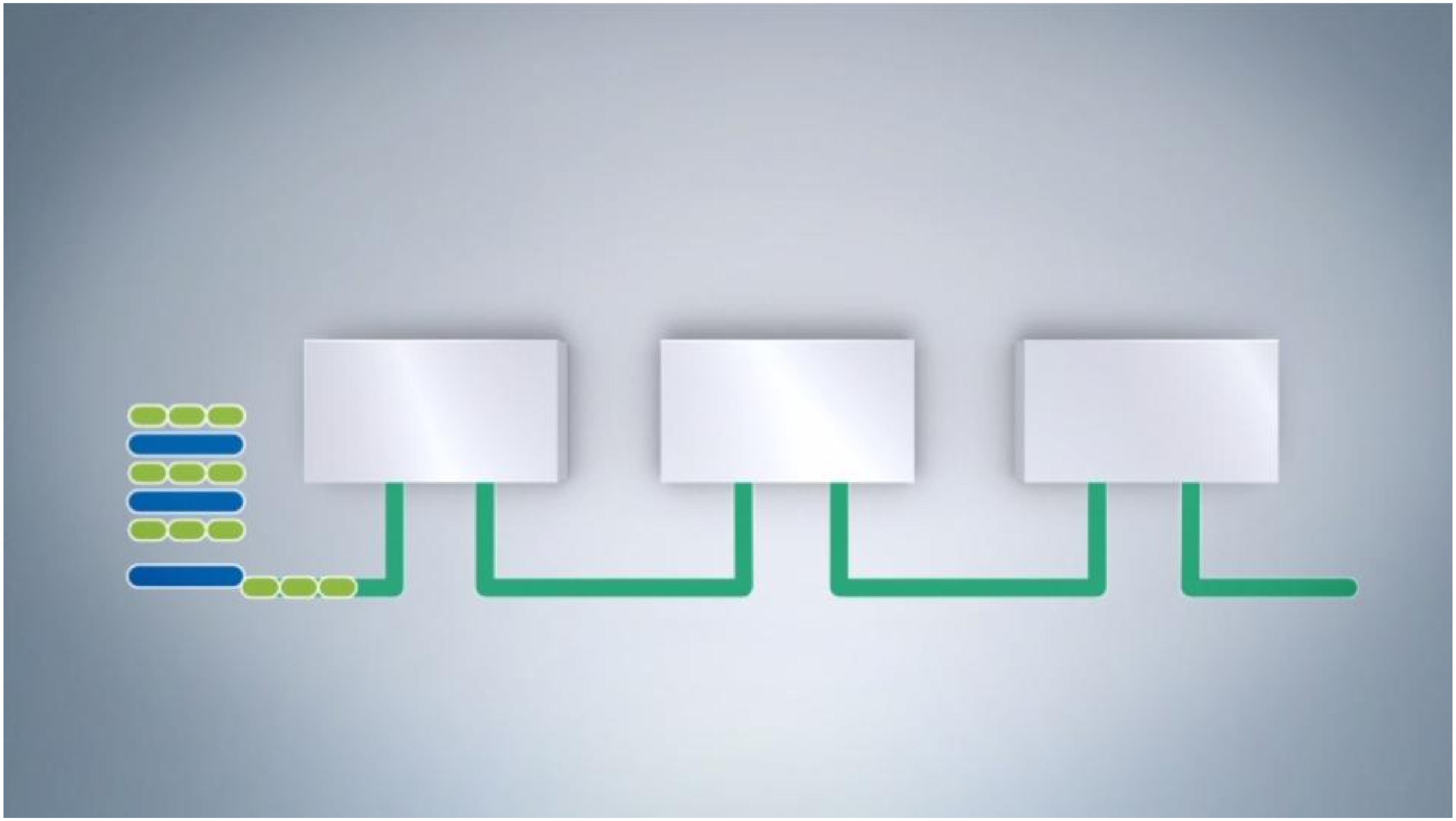
- Fast Forwarding reduces the through put time in Switches
- Especially in longer line structures you will have th benefit of Fast Forwarding

Dynamic Frame Packing (DFP)


Summenrahmen-
telegrammverfahren
Dynamic Frame
Packing (DFP)

- Dynamic Frame Packing reduces the overhead in short IO-userpackages
- Extremely efficient bandwidth utilization and increased performance

Fragmentation



- With Fragmentation extremely short cycle times of 31.25 µs can be realized
- Time uncritical TCP/IP Frames will be split in short packages and does not influence the PROFINET communication

PN products from more than 100 vendors

PROFINET
The leading Industrial Ethernet Standard
PROFI NET

PN products from more than 100 vendors

PROFINET
The leading Industrial Ethernet Standard
PROFINET
The leading Industrial Ethernet Standard

ABB
AGILCOM
BALLUFF
Baumer
BECKHOFF
Rexroth Bosch Group
COGNEX
COMSOFT
Comtrol
Danfoss
EUCHNER
FESTO
Fuji Electric
HIRSCHMANN
HMS
Innovasic Semiconductor
IXXAT
KW Software
LEINE LINDE
Lenze
molex
MURR elektronik
PEPPERL+FUCHS
PHOENIX CONTACT
POSITAL FRABA
SEW
SICK
SIEMENS
softing
STÖBER
ST
SUTRON
Relectronic
TWK ELEKTRONIK
VIPA
WAGO
Weidmüller
wenglor
YASKAWA
zh aw

Benefits for users and vendors

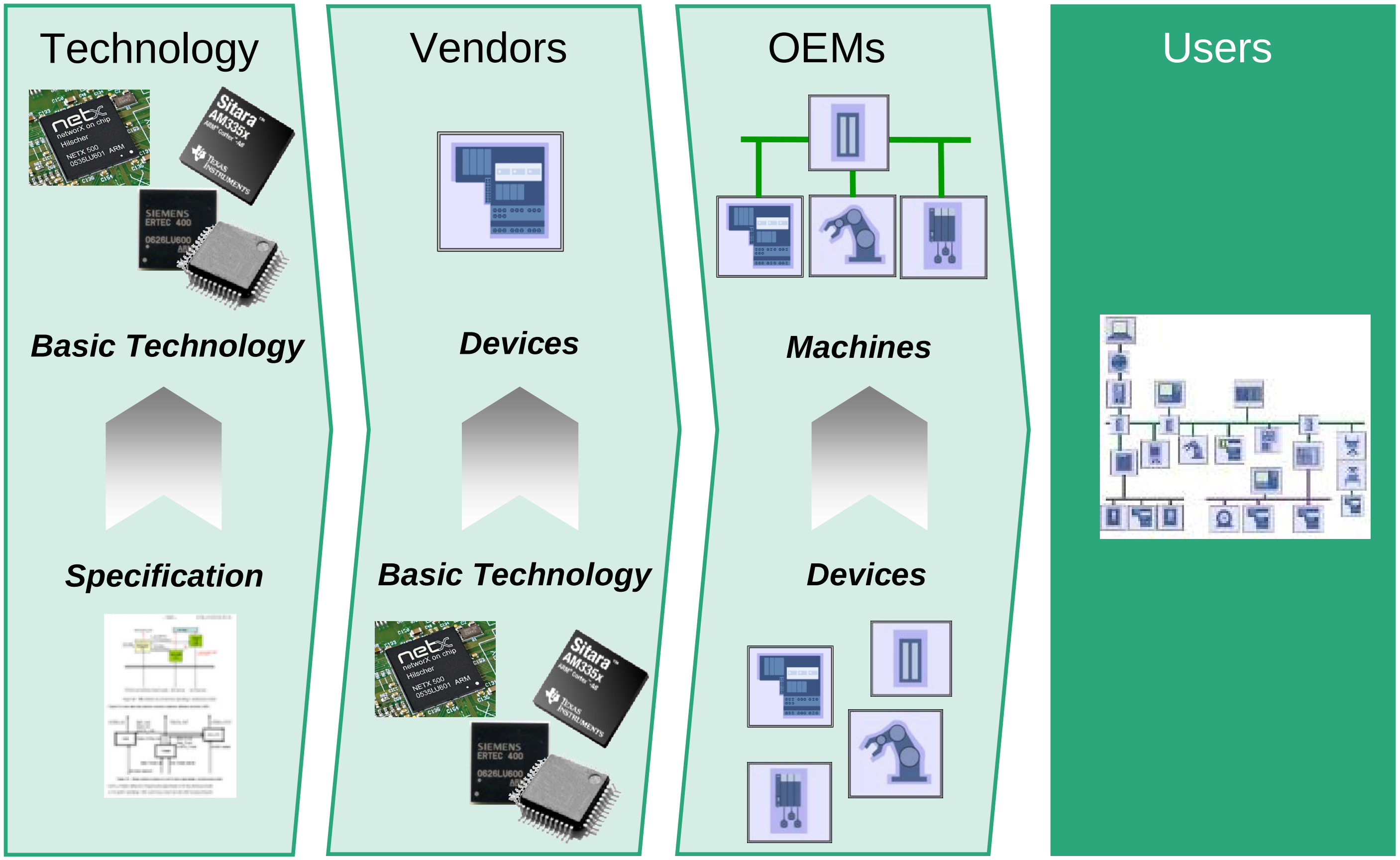
Users

- 100 % investment protection (seemless complement for PROFIBUS)
- Cost reduction by ONE plantwide communication system
- Network management / diagnosis with standard Ethernet-Tools
- Higher performance for high speed applications
- Larger quantities
- New scalable and highly available architectures

Vendors

- Focus on ONE plantwide communication system
- Flexibility in device development (enhancements optional)

The simple way to PROFINET



Technology

Basic Technology

Specification

Vendors

Devices

Basic Technology

OEMs

Machines

Devices

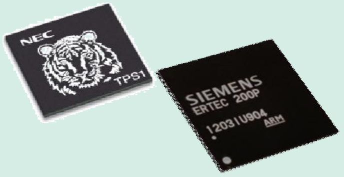
Users

All basic technologies are available

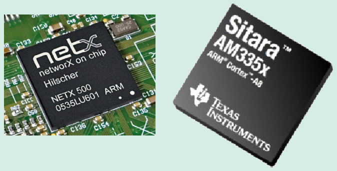
Software stack
for different operating systems

ASICs

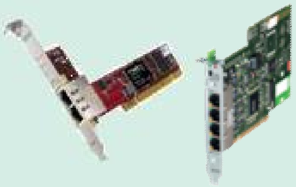
for an optimum integration


NEC
TPS1
SIEMENS
ERTEC 200P
1203 I U904
ARM

Standard Network Controller
for a fast and simple integration


netx
networX on chip
Hilscher
NETX 500
ARM
Sitara
AM335x
ARM Cortex-A8
Texas Instruments

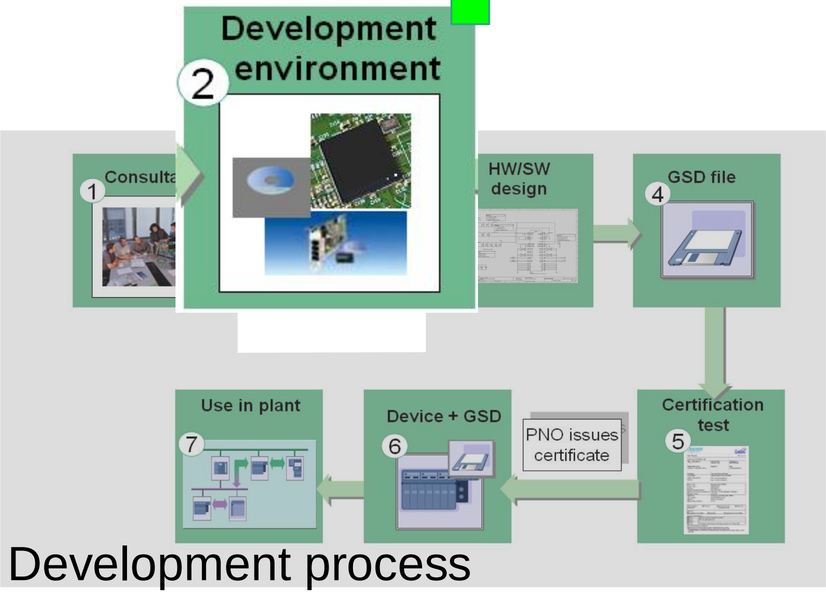
PC Boards
for the implementation on a PC



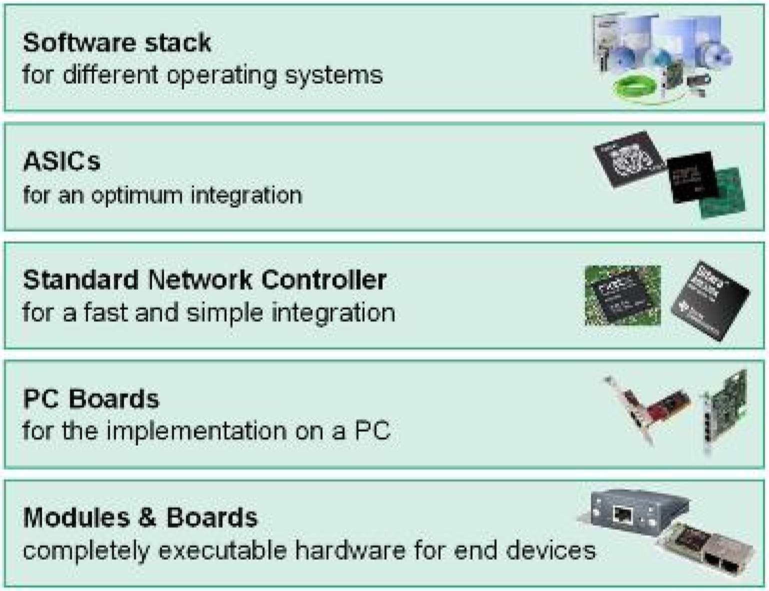
Modules & Boards
completely executable hardware for end devices

Device Integration – Basic technology development

Support Technology supplier


Development environment
2
Consulta
1
HW/SW design
GSD file
4
Certification test
5
PNO issues certificate
Device + GSD
6
Use in plant
7

Development process



Software stack
for different operating systems

ASICs
for an optimum integration

Standard Network Controller
for a fast and simple integration

PC Boards
for the implementation on a PC

Modules & Boards
completely executable hardware for end devices

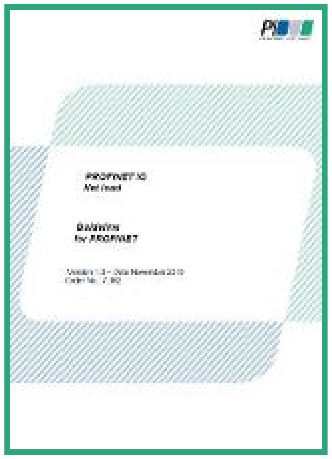
Proven and new Integration

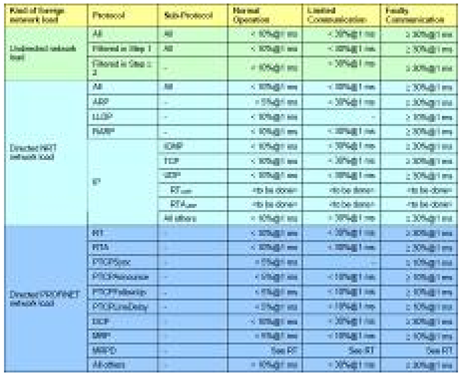
Deutschmann
hilscher COMPETENCE IN COMMUNICATION
SIEMENS
HMS
Innovasic Semiconductor Extended Life Semiconductor Solutions
KW software
Technologie Management Gruppe Technologie und Engineering
MESCO Engineering
molex
TREBING + HIMSTEDT
Texas Instruments
softing
IXXAT
KUNBUS industrial communication
port

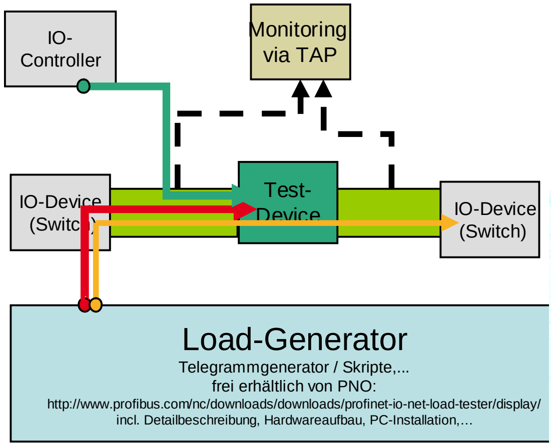
15 Technology supplier

Device Integration – Security test

- Net load: different scenarios
  - telegram types
  - telegram length
  - repetition
  - quantity / time
- Definition of Tests: Guideline / Tester
  - uniform
  - repeatable
  - simple test
- Mandatory Test in 2013!
- Further development according definitons of the security Working Group






IO-Controller
Monitoring via TAP
Test-Device
IO-Device (Switch)
IO-Device (Switch)

Load-Generator
Telegrammgenerator / Skripte,...
frei erhältlich von PNO:
http://www.profibus.com/nc/downloads/downloads/profinet-io-net-load-tester/display/
incl. Detailbeschreibung, Hardwareaufbau, PC-Installation,…

Ensuring the highest quality to serve the market with the best in class products! *This certification tests are unique!*

Benefits: Tools for PROFINET

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 protocoll analyzer
- easy readout of PROFINET telegrams

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

PROFINET has even more

PROFINET is fast ...

… and has even more …

- **PROFIdrive** – for the drive of the plant
- **PROFIsafe** – for the safety of the plant

And – last but not least:

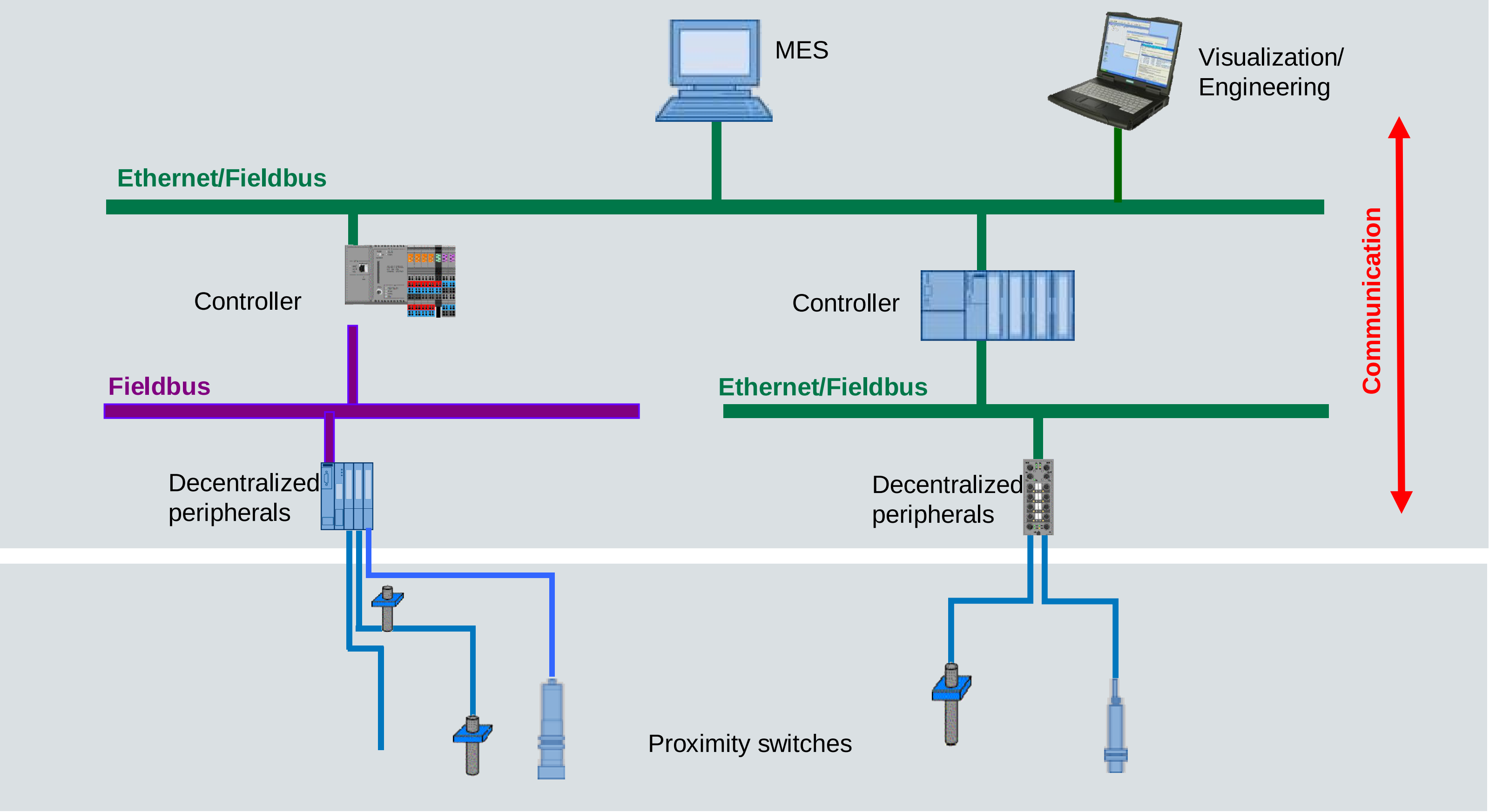
- **PROFIenergy** – for the energy saving of the plant

… and everything is vendor-neutral!

IO-Link goes IEC

Current automation structure

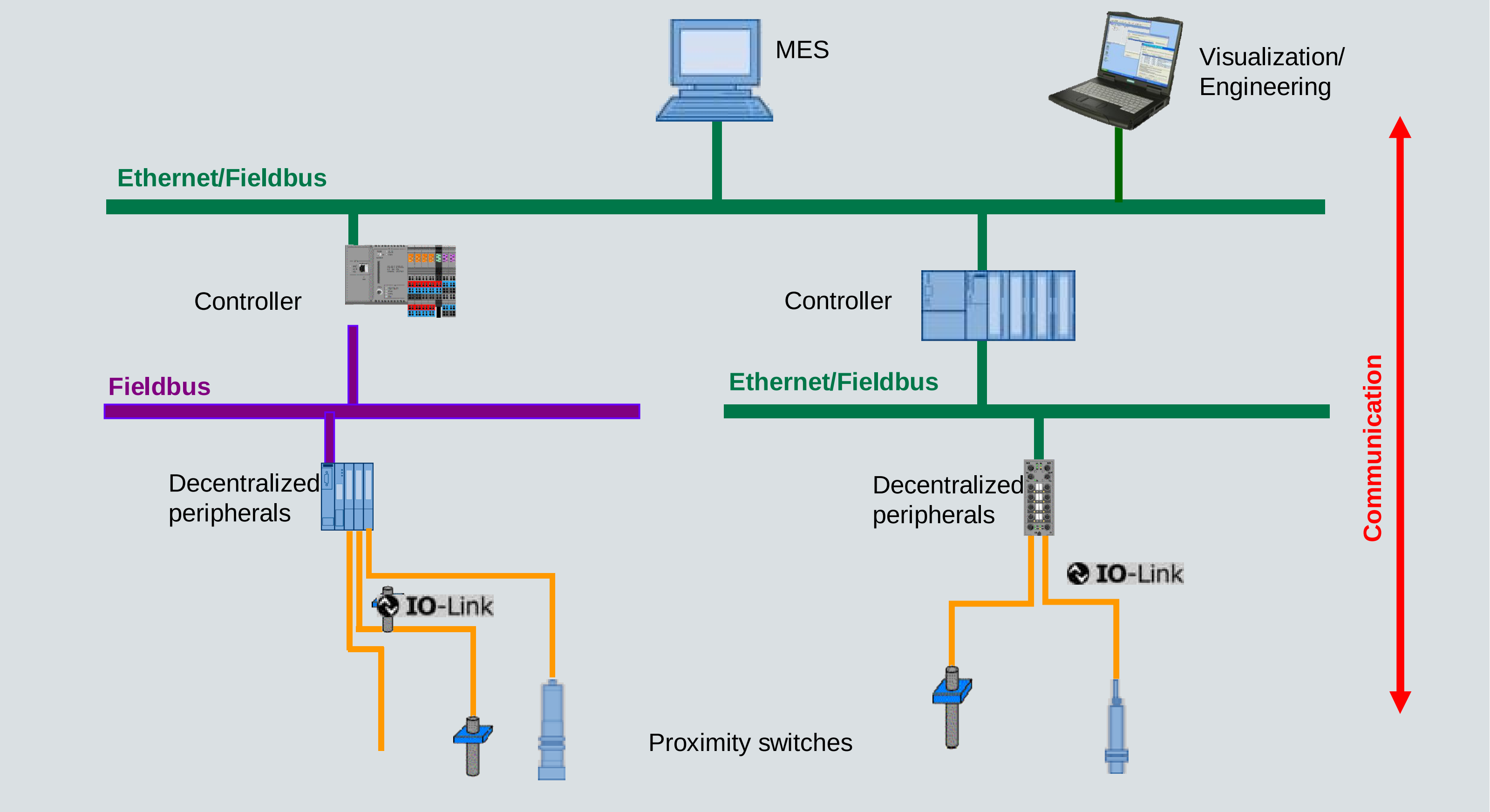
- Figures
- PROFINET
- PROFIenergy
- IO-Link


MES
Visualization/
Engineering
Ethernet/Fieldbus
Controller
Controller
Fieldbus
Ethernet/Fieldbus
Communication
Decentralized
peripherals
Decentralized
peripherals
Proximity switches

Existing network topologies only reach the I/O level

Future automation structure

- Figures
- PROFINET
- PROFIenergy
- IO-Link


MES
Visualization/ Engineering
Ethernet/Fieldbus
Controller
Controller
Fieldbus
Ethernet/Fieldbus
Decentralized peripherals
Decentralized peripherals
IO-Link
IO-Link
Proximity switches
Communication

With IO-Link, the ability to communicate extends over the entire automation environment

Technology development status

- IEC Standardization
  - IO-Link standardization application accepted within IEC by vote
  - Publication as IEC 61131-9 (Comittee Draft)

IO-Link goes IEC

- Specification supplemented upwards compatible, now V1.1
  - Optimization of performance for large data quantities
  - Saving of device parameters for easy device swapping without tool
  - Improved diagnosis

PI
South East Asia
PROFIBUS • PROFINET

New Webside

Entry to the Web side

Figures

PROFINET

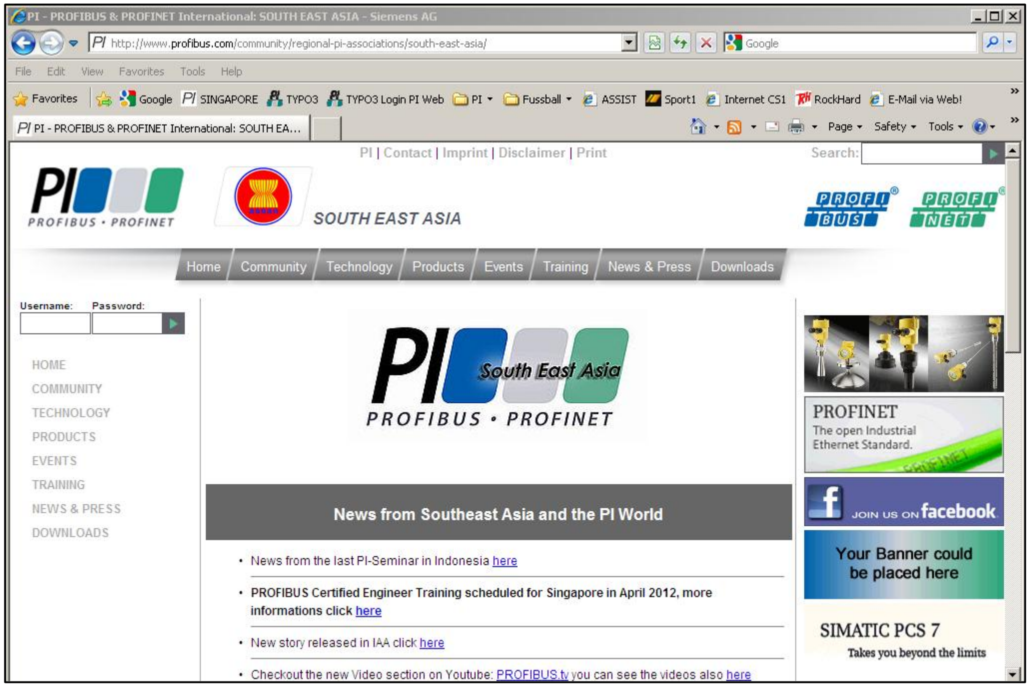
PROFIenergy

IO-Link

- www.sea.profibus.com

- www.sea.profinet.com

- **SEA = South East Asia**



PI - PROFIBUS & PROFINET International: SOUTH EAST ASIA - Siemens AG

http://www.profibus.com/community/regional-pi-associations/south-east-asia/

News from Southeast Asia and the PI World

- News from the last PI-Seminar in Indonesia here
- PROFIBUS Certified Engineer Training scheduled for Singapore in April 2012, more informations click here
- New story released in IAA click here
- Checkout the new Video section on Youtube: PROFIBUS.tv you can see the videos also here

Google
File
Edit
View
Favorites
Tools
Help
Favorites
Google
SINGAPORE
TYPO3
TYPO3 Login PI Web
PI
Fussball
ASSIST
Sport1
Internet CS1
RockHard
E-Mail via Web!
PI - PROFIBUS & PROFINET International: SOUTH EA...
Page
Safety
Tools
PI | Contact | Imprint | Disclaimer | Print
Search:
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SOUTH EAST ASIA
PROFIBUS
PROFINET
Home
Community
Technology
Products
Events
Training
News & Press
Downloads
Username:
Password:
HOME
COMMUNITY
TECHNOLOGY
PRODUCTS
EVENTS
TRAINING
NEWS & PRESS
DOWNLOADS
South East Asia
PROFIBUS • PROFINET
PROFINET
The open Industrial Ethernet Standard.
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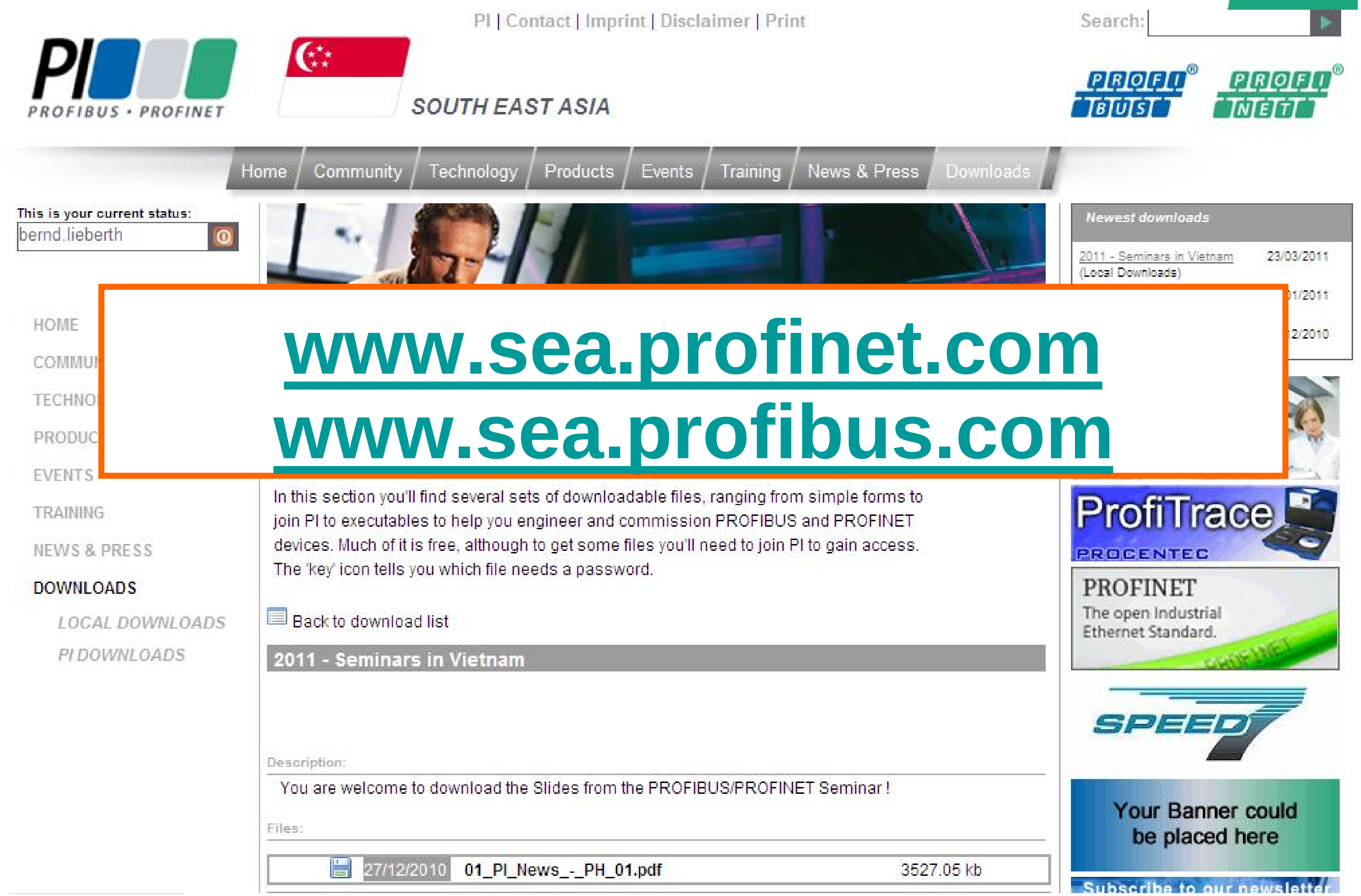
SIMATIC PCS 7
Takes you beyond the limits

Download all slides!!!

www.sea.profinet.com

www.sea.profibus.com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PROFIBUS
PROFINET
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Technology
Products
Events
Training
News & Press
Downloads
This is your current status:
bernd.lieberth
HOME
EVENTS
TRAINING
NEWS & PRESS
DOWNLOADS
LOCAL DOWNLOADS
PI DOWNLOADS
Newest downloads
2011 - Seminars in Vietnam
23/03/2011
(Local Downloads)
ProfiTrace
PROCENTEC
PROFINET
The open Industrial Ethernet Standard.
SPEED7
Your Banner could be placed here
Subscribe to our newsletter

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

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:

PI South East Asia
PROFIBUS • PROFINET

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

PROFIBUS®

PROFINET®

Profibus is based on modularity and standards; the benefits are flexibility and ease of use. The use of a single communication protocol enables continuous,

Profinet satisfies a wide range of requirements with its integrated, Ethernet-based communication, ranging from data-intensive parameter assignment up to fast I/O signal

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

PROFIsafe

Standard and safety-related

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 management strategies.

PROFIenergy

is easy and trouble free. Users can satisfy their requirements for energy management in a targeted manner, with multi-

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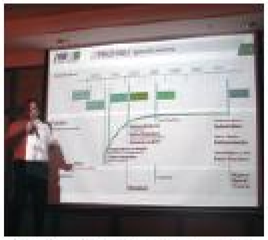
EVENT REVIEW

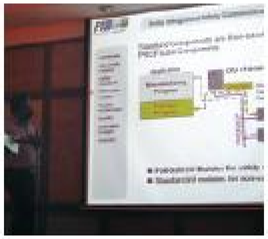
Profibus Seminar in KL

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.

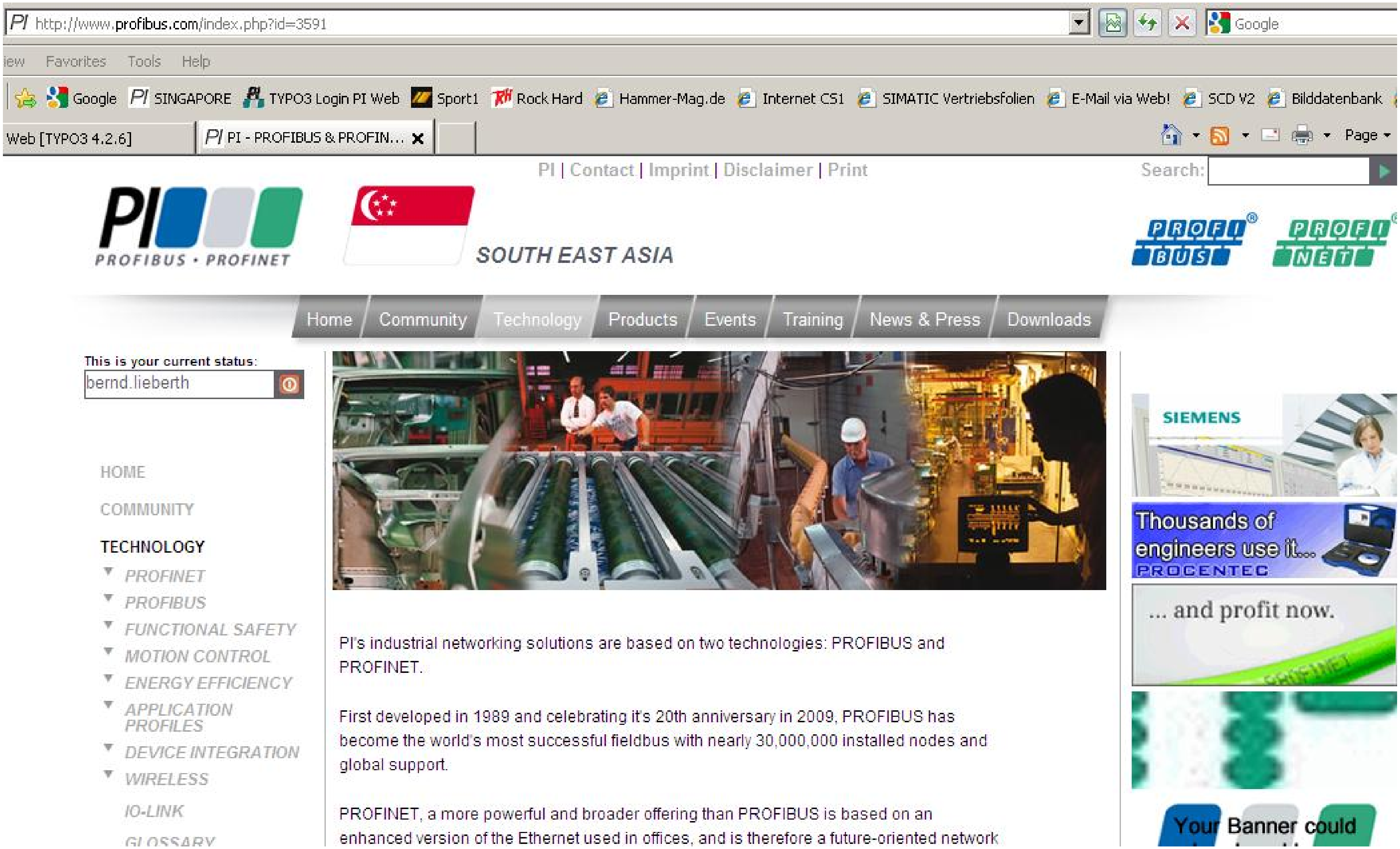

The 'Profinet for PA' application profile included in Version 2.3 means that Profinet can meet the needs of process automation.


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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PI - PROFIBUS & PROFIN...
Page

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

This is your current status: bernd.lieberth

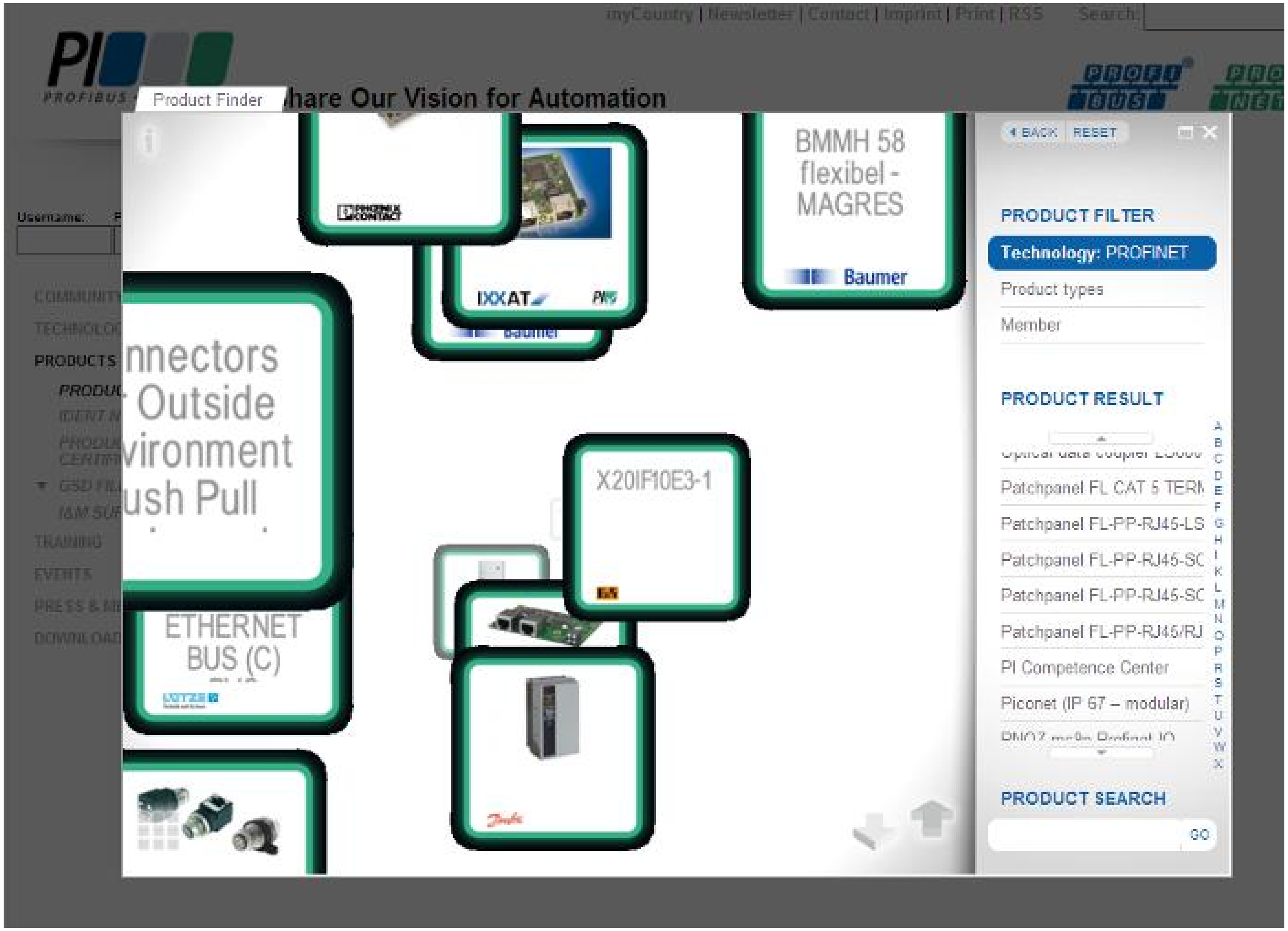
PI's industrial networking solutions are based on two technologies: PROFIBUS and PROFINET.

First developed in 1989 and celebrating it's 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

PI Product Finder

- New interface
  - look&feel
  - interaction
  - ➔ many devices/ vendors
- Simple to integrate new devices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PI Competence Center
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http://www.profibus.com/products/product-finder/

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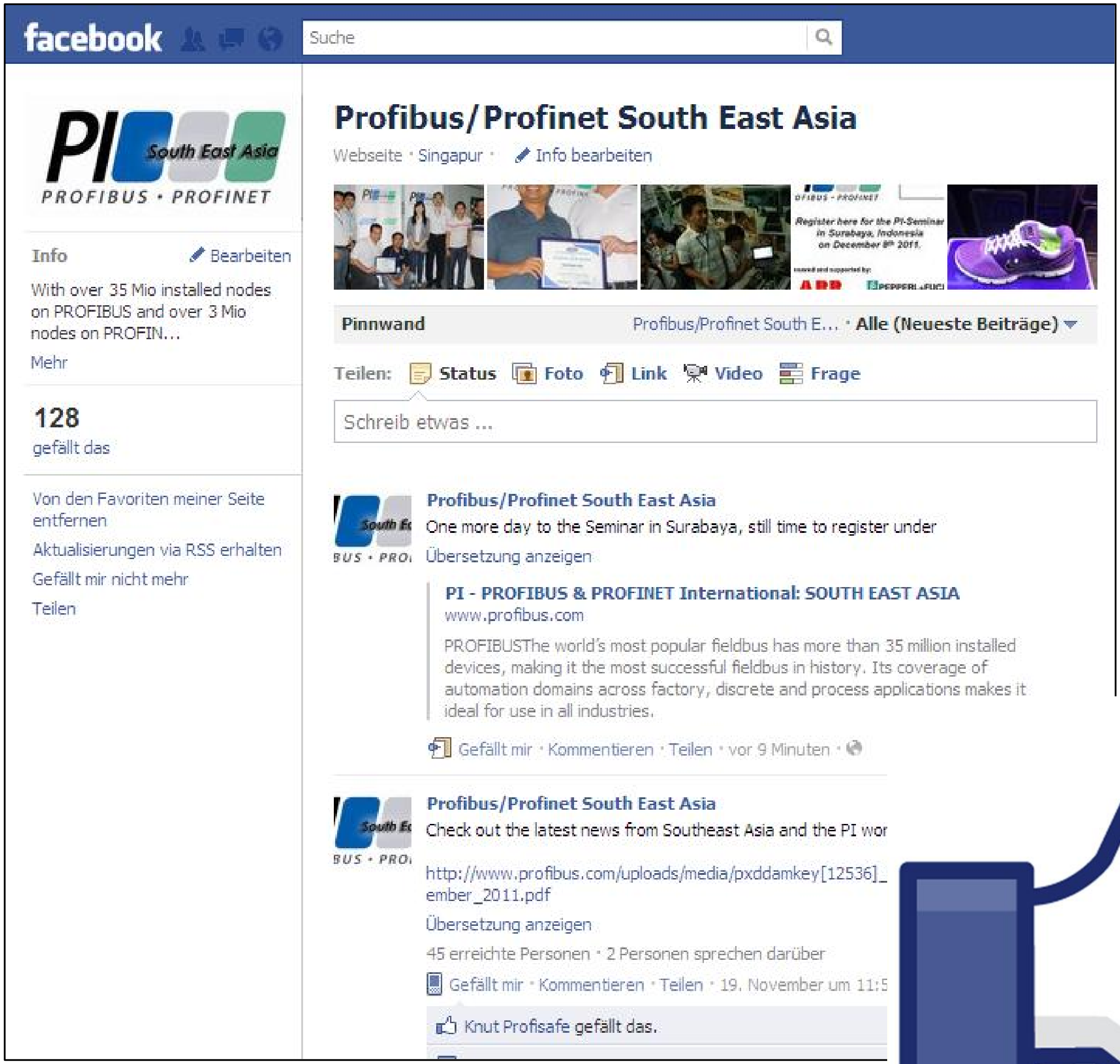
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Register here for the PI-Seminar in Surabaya, Indonesia on December 8th 2011.

Profibus/Profinet South East Asia

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Info · Bearbeiten

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

Mehr

128 gefällt das

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Gefällt mir nicht mehr

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Pinnwand · Profibus/Profinet South E... · Alle (Neueste Beiträge)

Teilen: Status · Foto · Link · Video · Frage

Schreib etwas ...

Profibus/Profinet South East Asia

One more day to the Seminar in Surabaya, still time to register under

Übersetzung anzeigen

PI - PROFIBUS & PROFINET International: SOUTH EAST ASIA

www.profibus.com

PROFIBUSThe world's most popular fieldbus has more than 35 million installed devices, making it the most successful fieldbus in history. Its coverage of automation domains across factory, discrete and process applications makes it ideal for use in all industries.

Gefällt mir · Kommentieren · Teilen · vor 9 Minuten ·

Profibus/Profinet South East Asia

Check out the latest news from Southeast Asia and the PI wor

http://www.profibus.com/uploads/media/pxddamkey[12536]_ember_2011.pdf

Übersetzung anzeigen

45 erreichte Personen · 2 Personen sprechen darüber

Gefällt mir · Kommentieren · Teilen · 19. November um 11:5

Knut Profisafe gefällt das.

Channel on Youtube

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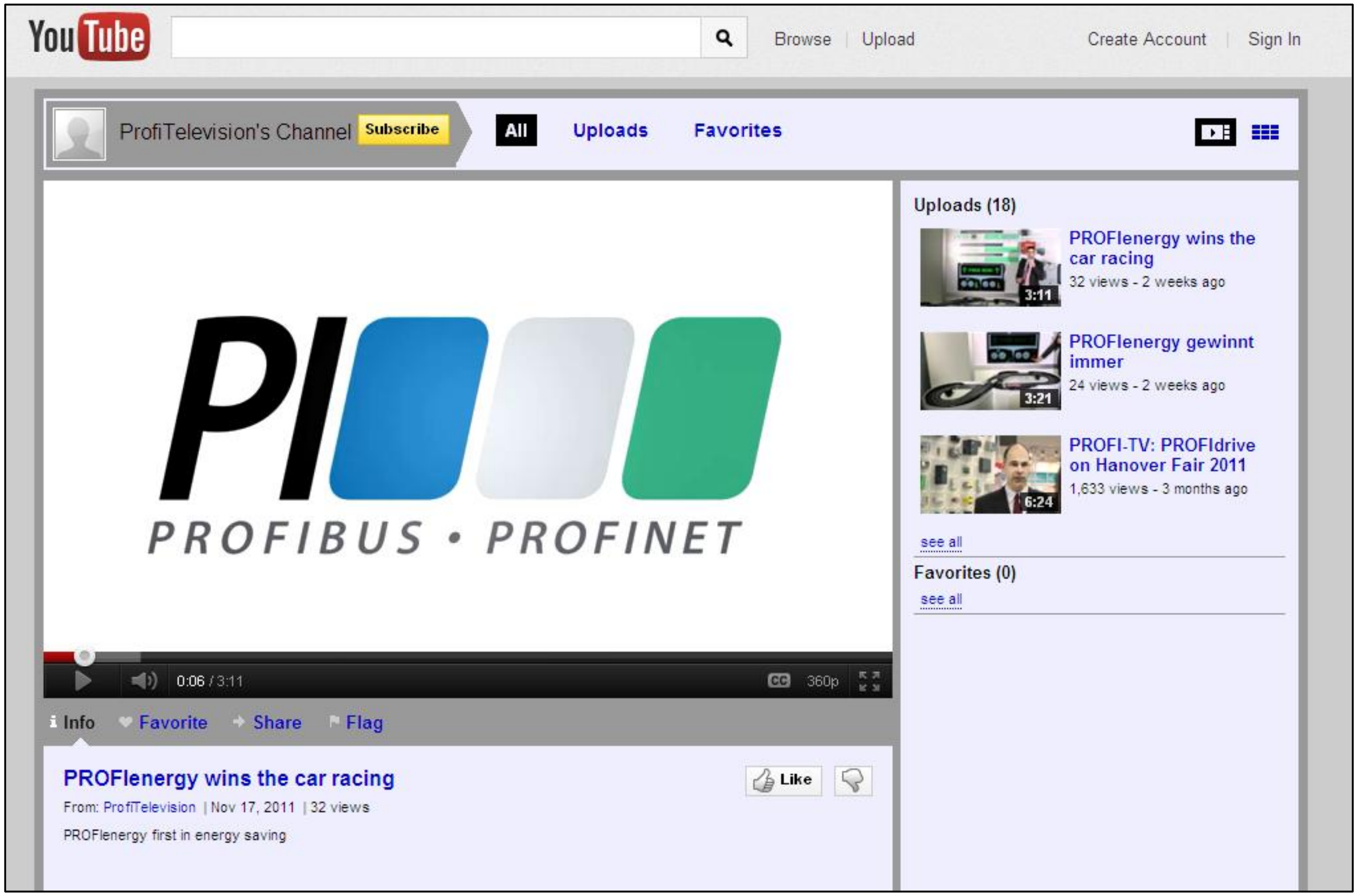
- http://www.youtube.com/user/ProfiTelevision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PROFIenergy first in energy saving

Example “Minute of PROFINET`”

PROFINET Support

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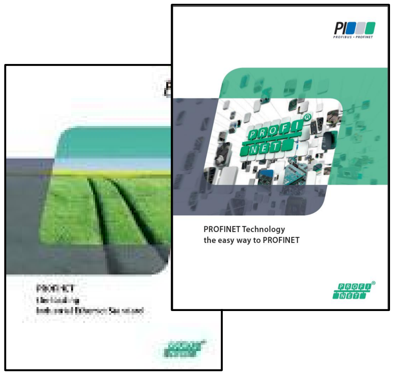
Internet

- www.sea.profinet.com

Flyer

- PROFINET Flyer
- PROFINET System description
- PROFINET Technology brochure



PROFINET Technology
the easy way to PROFINET

Guidelines

- Design
- Cabling and Assembly
- Commissioning

PROFINET
Design Guideline

Version 1.04
November 2010

PROFINET
Installation Guideline
for Cabling and
Assembly

PROFINET
Installation Guideline
for Commissioning

Version 1.01
July 2010

Support

- Training Programs (Certified PROFINET Engineer/Installer)

Thank you for your attention!

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PROFIBUS • PROFINET

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