

PI *South East Asia*
PROFIBUS • PROFINET

Changes in Automation Structures

Introduction

Organization

Applications and Solutions

Benefits

Members

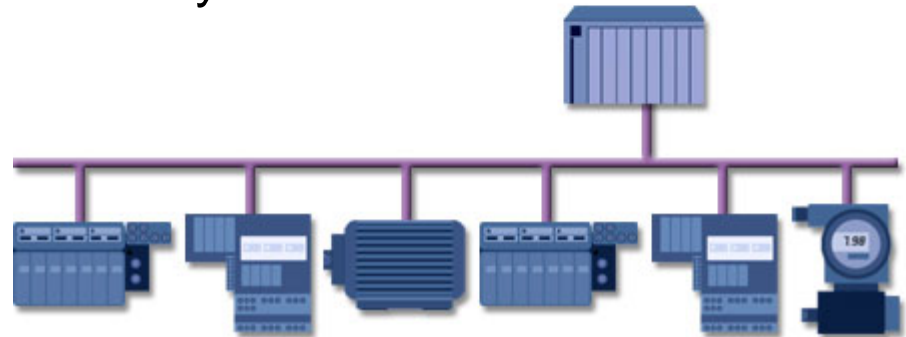
From central automation systems...

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



... over distributed automation systems...

- with a PLC/IPC and
- distributed peripherals
- based on field bus technology



Changes in Automation Structures

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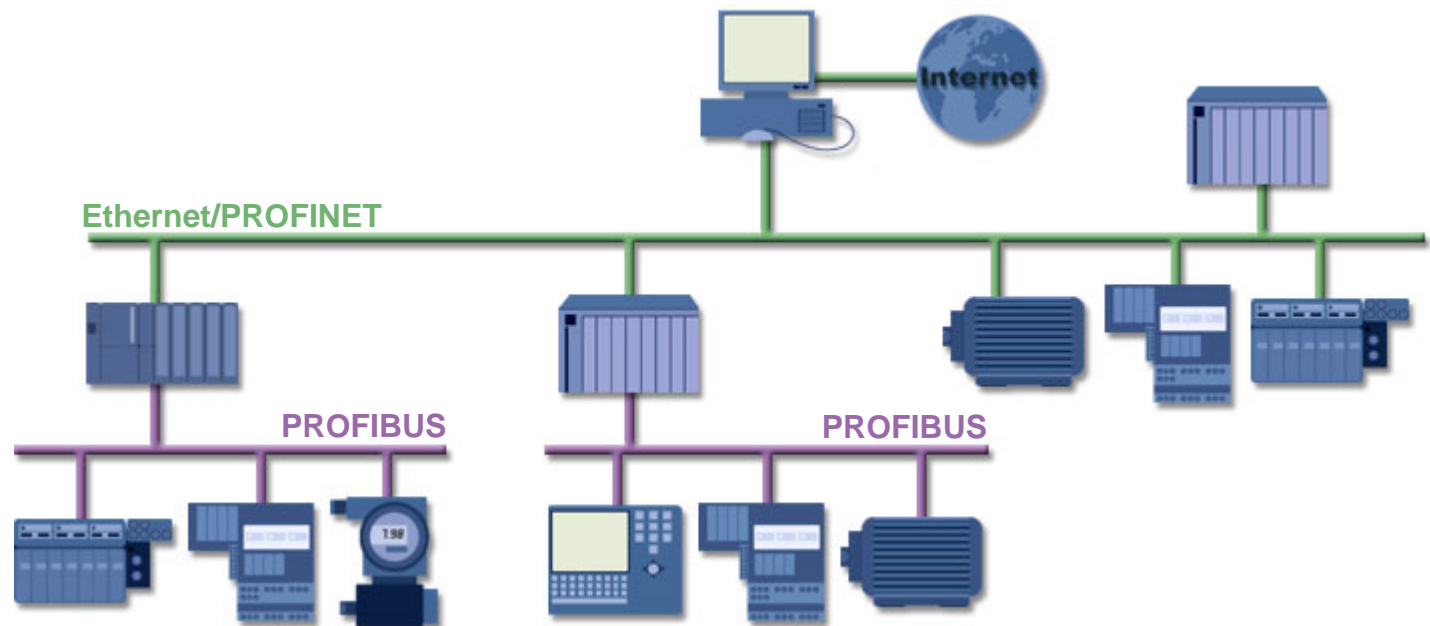
Applications and Solutions

Benefits

Members

... to automation technology with

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



With integrated motion, safety and  applications

- Introduction
- Organization
- Applications and Solutions
- Benefits
- Members

PROFIBUS & PROFINET International (PI)

Regional
Associations
(RPA)

PI Competence
Center (PICC)

PI Test
Laboratories (PITL)

Technologies



**Fieldbus based
Automation Technology**



**Ethernet based
Automation Technology**

Proxy Technology

Introduction

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Benefits

Members

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

PROFIBUS covers all requirements of all branches
of Automation Technology.

PROFIBUS ...

- Is a digital communication system optimized for all automation tasks
- Covers both fast time-critical applications and complex communication tasks, **not just for drives**, for all levels in automation
- Supports numerous Application Profiles



Introduction

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PROFINET is the open
Industrial Ethernet Standard for Automation
of PROFIBUS International.

PROFINET covers all requirements of all branches
of Automation Technology.

PROFINET ...

- Is Based on Industrial Ethernet
- Uses TCP/IP and IT Standards
- Is Automation in Real-Time
- Enables Seamless Integration of other Fieldbusses





PROFISAFE-Profile

7

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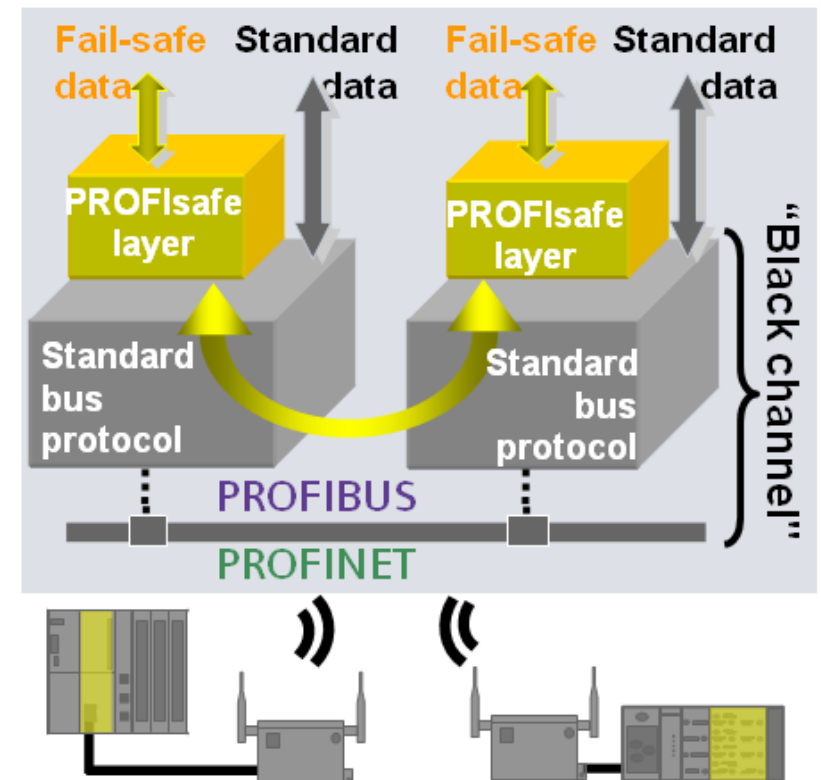
Applications and Solutions

Benefits

Members

- First standard of communication in accordance with safety standard IEC 61508
- PROFIsafe-Profile supports the safe communication for the open standard bus PROFIBUS and PROFINET

Approved by



PROFIsafe supports standard- and failsafe Communication by one medium



Applications and Solutions

Applications

Introduction

Organization

▶ **Applications
and
Solutions**

Benefits

Members

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
- Power stations
- Sewage plants

....et cetera



Drive technology

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

....et cetera



Safety applications

- Vehicle assembly
- Machine tool building

....et cetera



**More than 1 million PROFIBUS systems implemented
with over 30 million nodes**

PROFIBUS & PROFINET

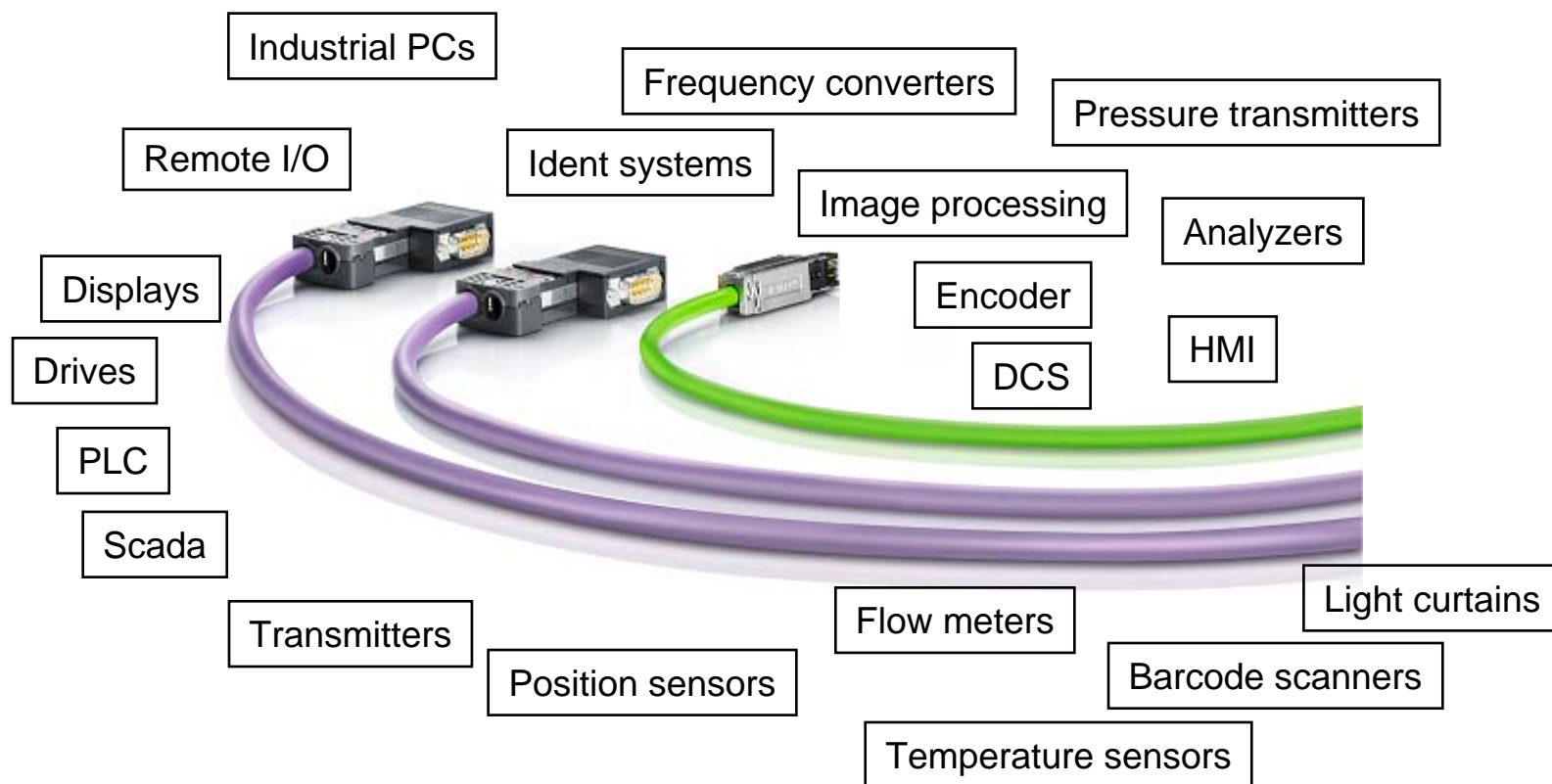
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**More than 2500 products available
from more than 200 manufacturers**

User-friendly search functions

Continuous updates by member companies

PROFIBUS - Plant-Wide Implementation

A single consistent solution for all plant sections,
in hybrid plants, too!

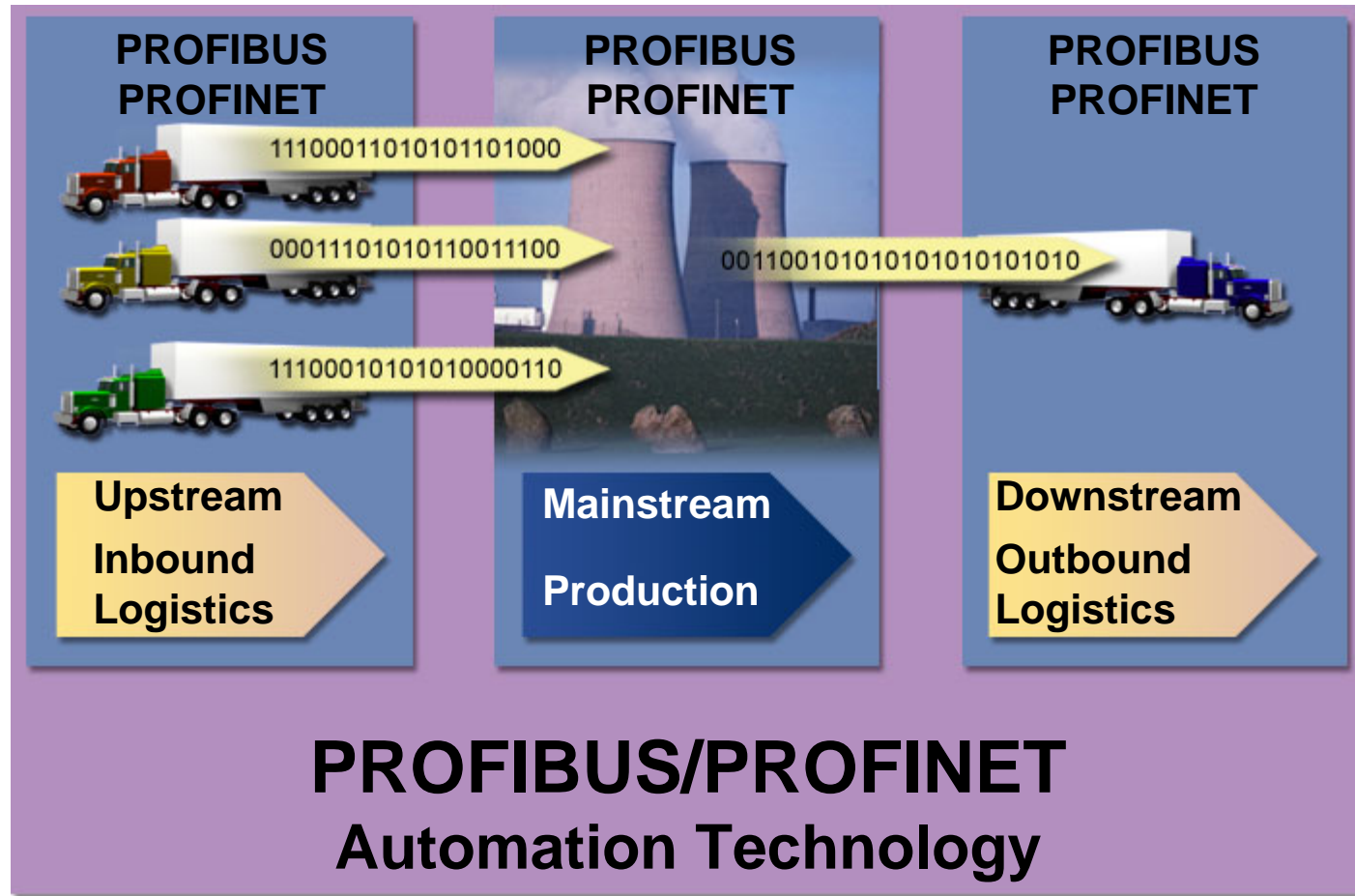
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PROFIBUS/PROFINET in Applications

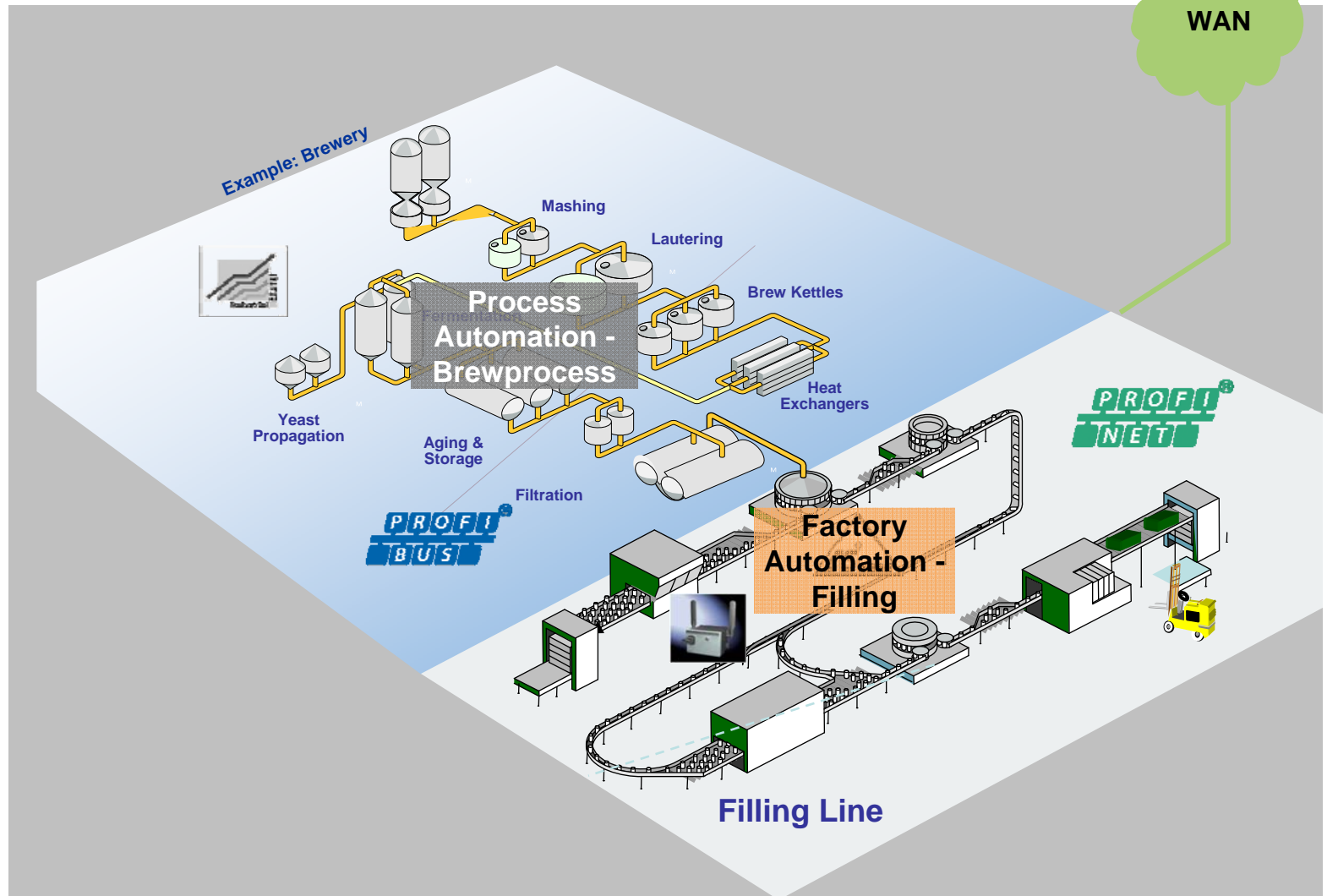
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PROFIBUS/PROFINET in Applications

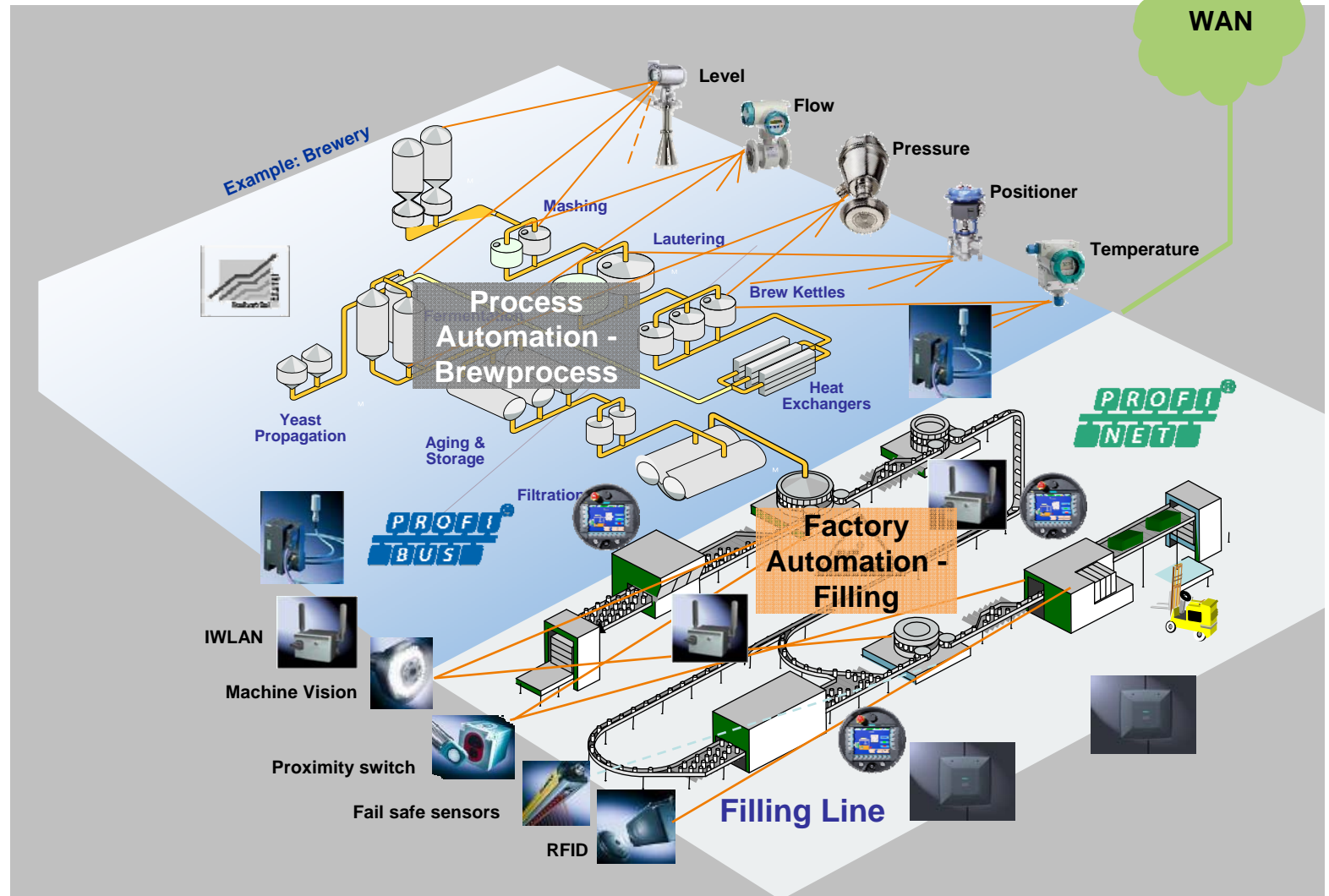
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Distributed Architecture – Automation

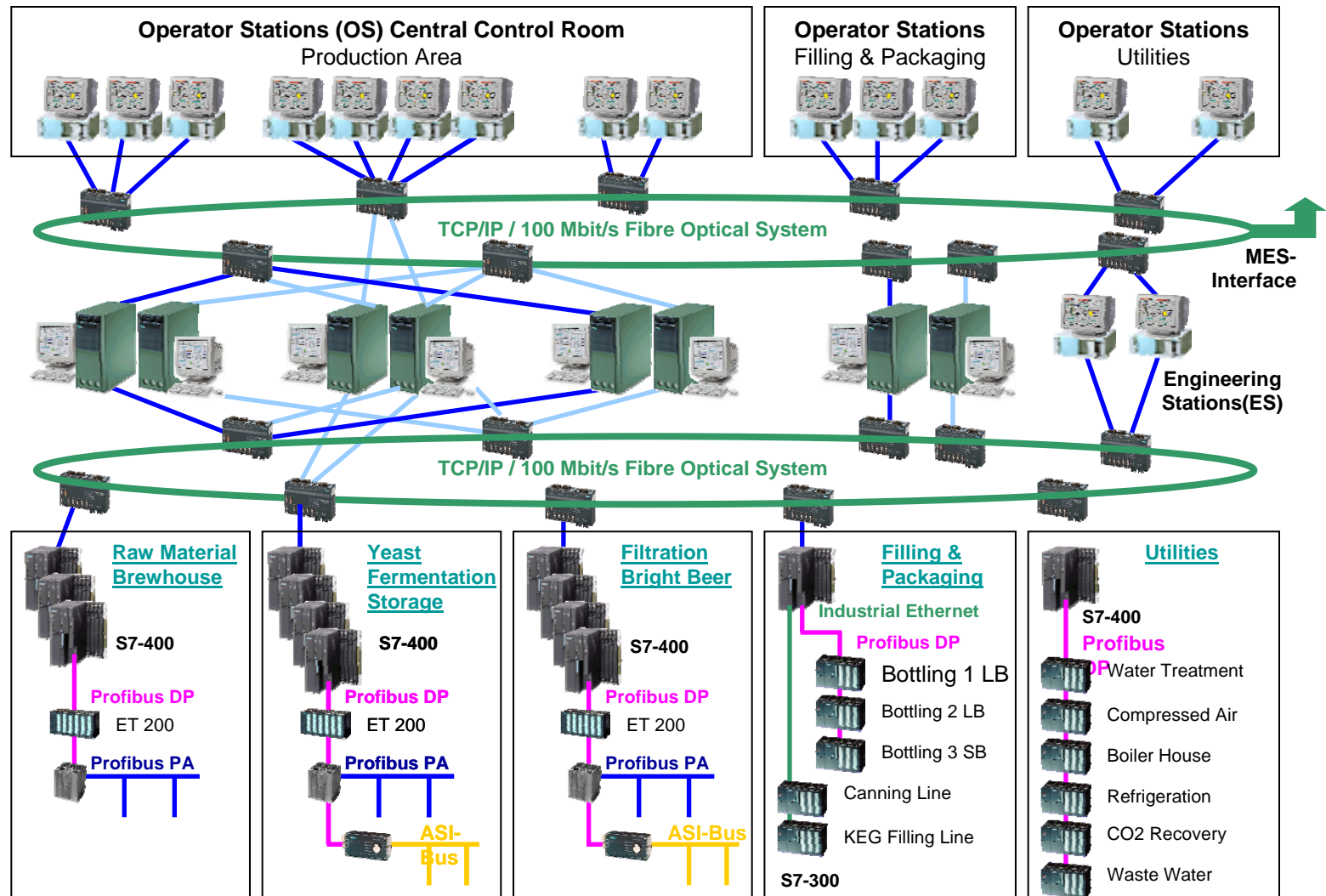
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Remote Access and Control

Introduction

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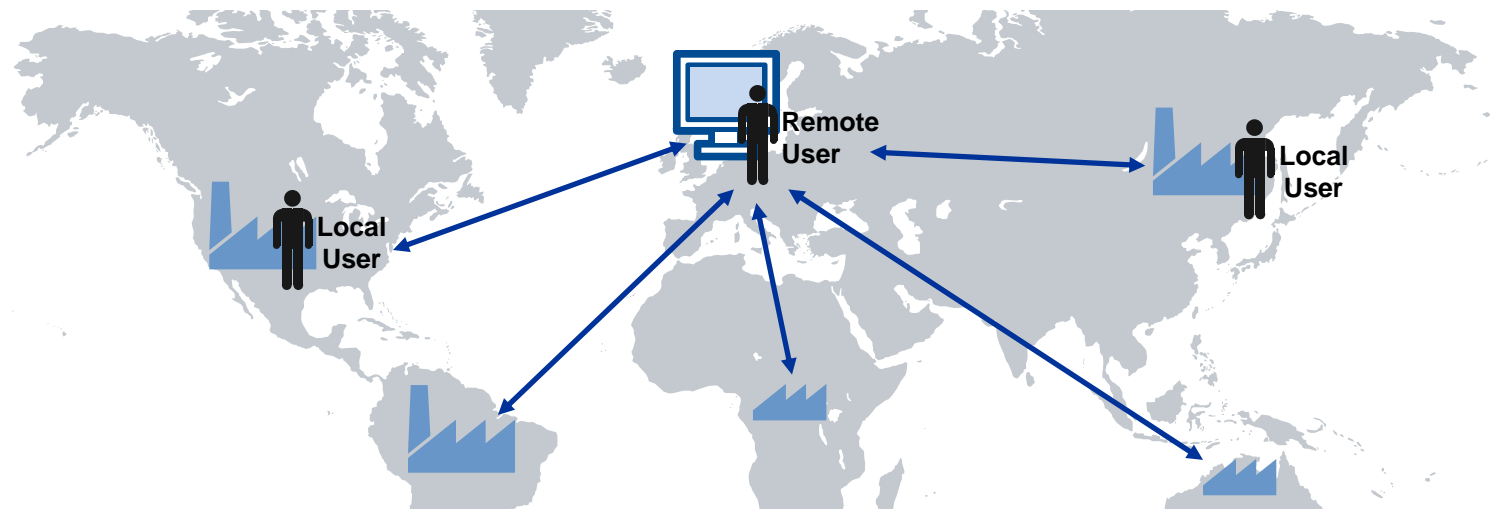
- **Remote access. Both safe and efficient**

- Entire plants can be operated remotely

- **Long-term** – Process control via remote access

- **Temporary** – Support from experienced operators at other plants

- **Safe** – Network technology has proven itself in sensitive industries



Guaranteed Investment Protection

Introduction

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Benefits

Members

PROFIBUS provides investment protection



A communications protocol for all applications
Standardized in IEC 61158 / IEC 61784



Innovations together with users
Fully compatible with existing technology
Binding specifications



Tried and tested technology through over
35 million devices installed worldwide



**Benefits for
customer**

Introduction

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Benefits

Members

Planing

Engineering

Installation & IBS

Production

Total Cost of Ownership



Faster Planning to Operation

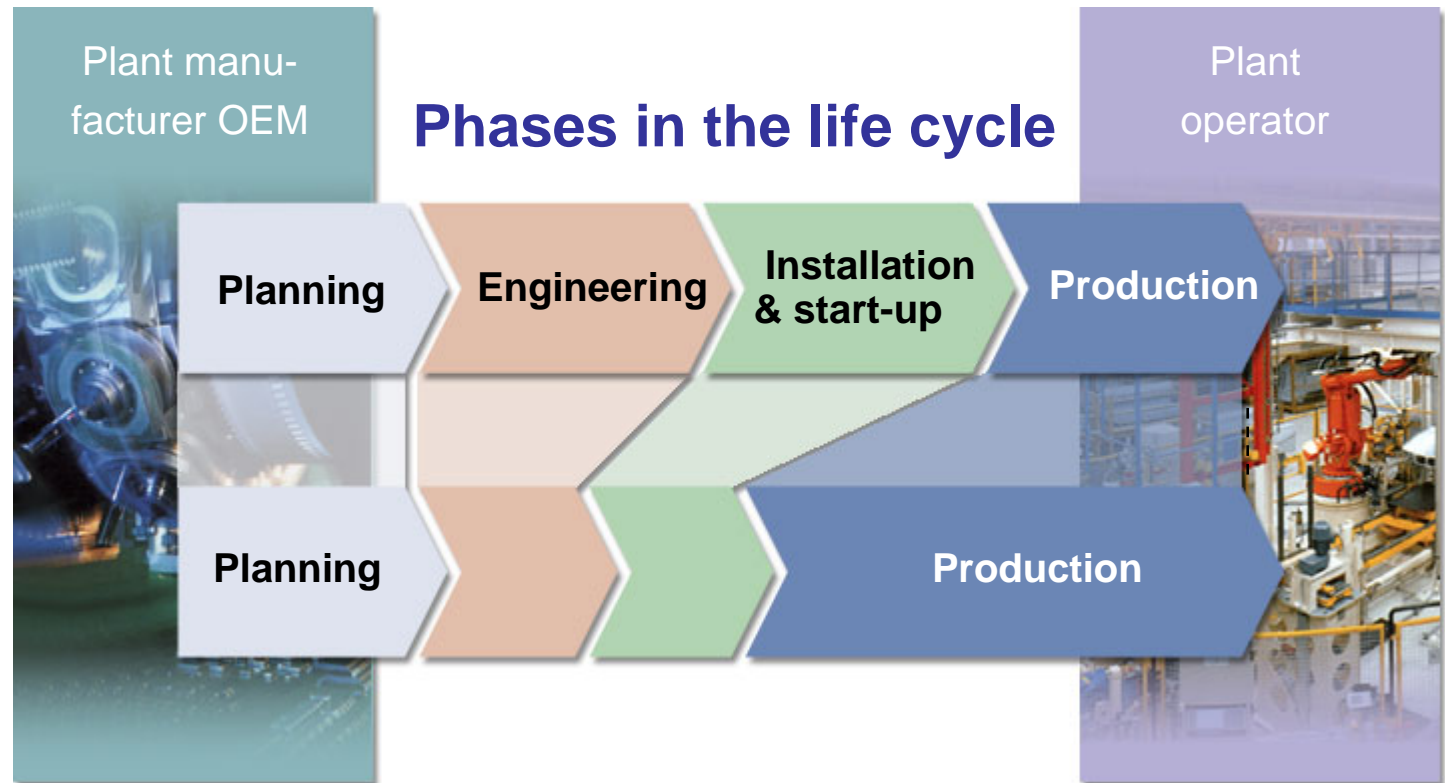
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Benefits

Members



Savings in the life cycle

- Reduction of time prior to start of production
- Reduction of costs
- Reduction of failure risk

Savings with Planning (Design and Aquisition)

Introduction

Organization

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Benefits

Members

Simple topology

- Fewer devices, cables and cabinets
- Less documentation
- Reduced space requirements

Intelligent field devices

Central components

Central, uniform
management

Tools

Wide range of appli

production and process tasks

- For safety and motion tasks

Wide variety of products
Worldwide support

- Broad selection of devices
- Vendor independence
- Worldwide and cost-effective support

**Shortened design
phase means lower
costs**
-
**Fewer components
mean lower costs**

Savings on Engineering

Introduction

Organization

Applications
and
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Benefits

Members

Simple topology

- Faster engineering,
- Fewer programming requirements,
- simple structures and documentation

Intelligent field devices

instead of programming

Central and unit
management

environment

Wide range of app

- Engineering know how
for production and process tasks
and safety and motion tasks

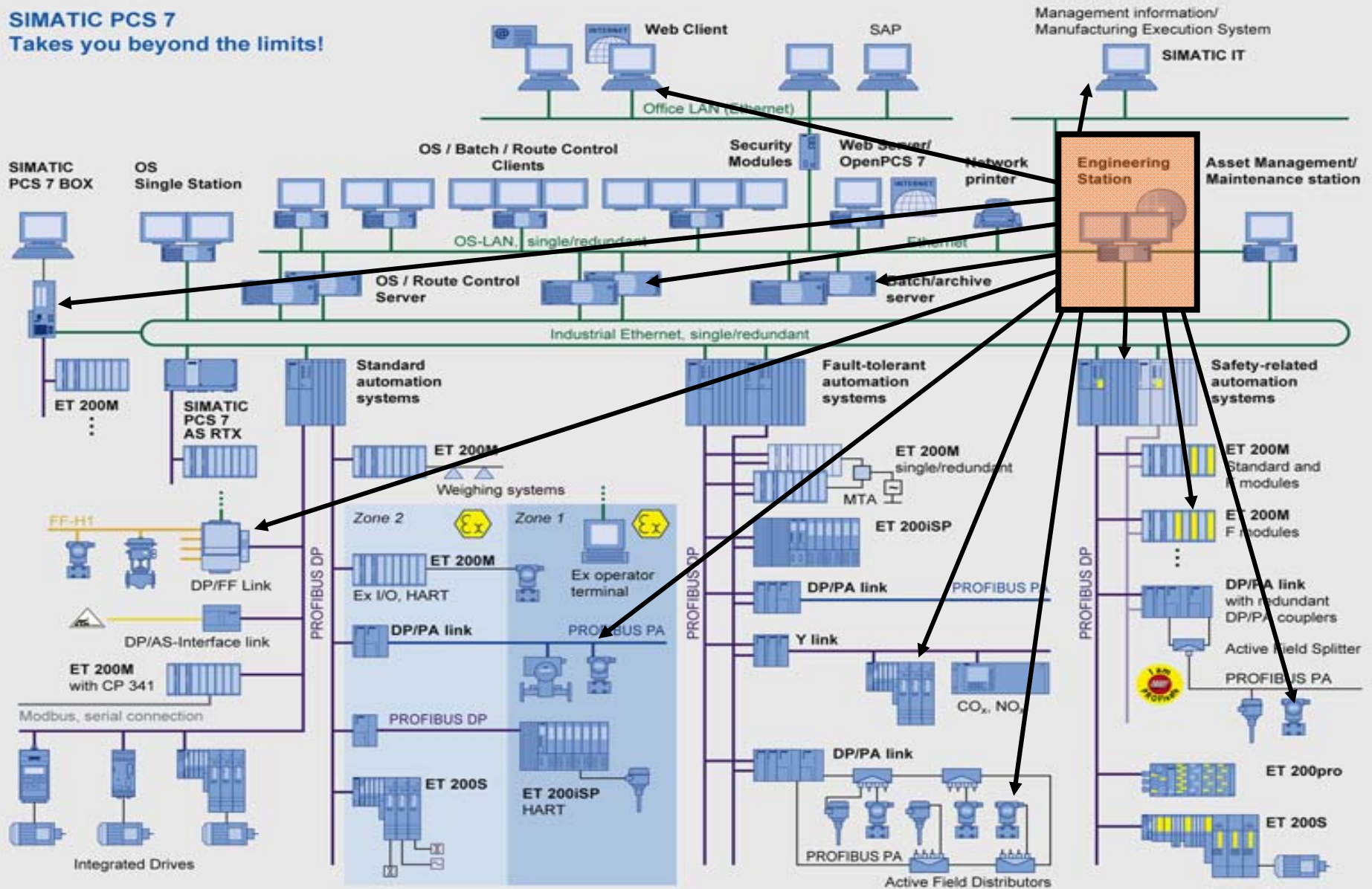
Wide variety of products
Worldwide support

- Broad selection of devices
- Vendor independence
- Worldwide and cost-effective support

**Faster engineering means
lower costs**
-
**Fewer components mean
fewer chances of error
during engineering**

Central Engineering

SIMATIC PCS 7 Takes you beyond the limits!



Savings on Assembly

Introduction

Organization

Applications
and
Solutions

Benefits

Members

Simple topology

- Reduced outlay for assembly and commissioning; smaller footprint
- Fewer errors during wiring

Intelligent field de

atic and simulation options

Central and uniform
device management

ering possible from any

Wide range of application

on and process tasks
safety and motion tasks

Wide variety of products
Worldwide support

- Broad selection of devices
- Vendor independence
- Worldwide and cost-effective support

**Less cable to lay
and install means
lower costs**

**Pre-start-up and a
single engineering
environment
means
shorter start up**

Savings on Production (Operation and Maintenance)

Introduction

Organization

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and
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Benefits

Members

Simple topology

- Simple maintenance due to clear arrangement
- Hot-swapping of devices

Intelligent field devices

- In-plant availability (requirements indication)
- Optimization (higher accuracy)
- Asset management

Central and unit management

on and maintenance
and documentation

Wide range of appl

uniformity of overall

**Wide variety of produ
Worldwide support**

- Wide availability of training, service and know how

Field devices report their own maintenance requirements
This enables maintenance dependent upon use
Higher accuracy improves efficiency of the plant

Introduction

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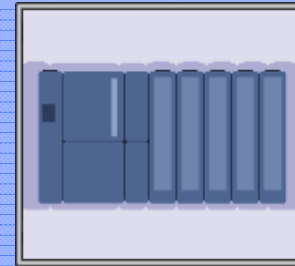
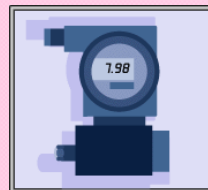
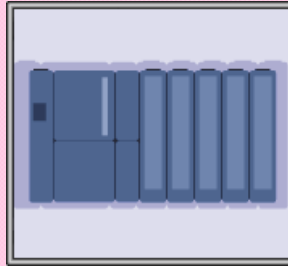
Applications
and
Solutions

Benefits

Members

Conventional

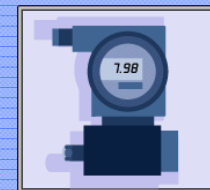
15,3 mA



PROFI
BUS

PROFI
NET

1_{st} value = 800
2_{nd} value = 23,02
unit = mBar
status = ok
diagnose = Pres. ok



Easier Cabeling

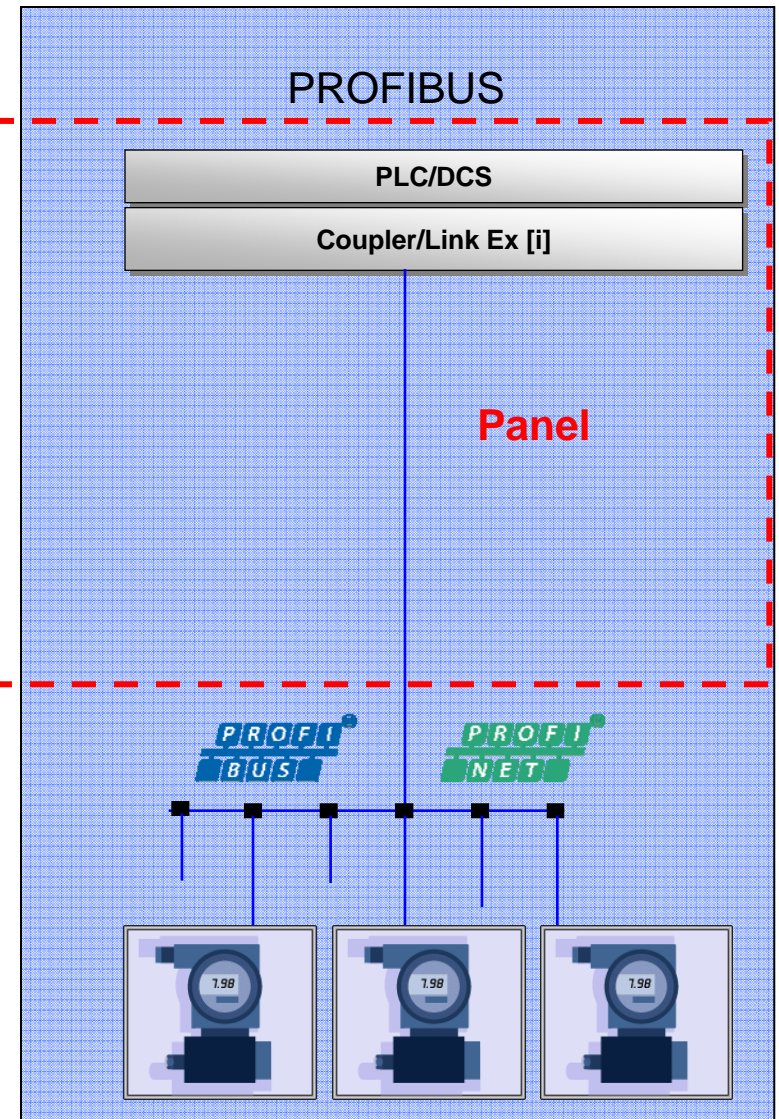
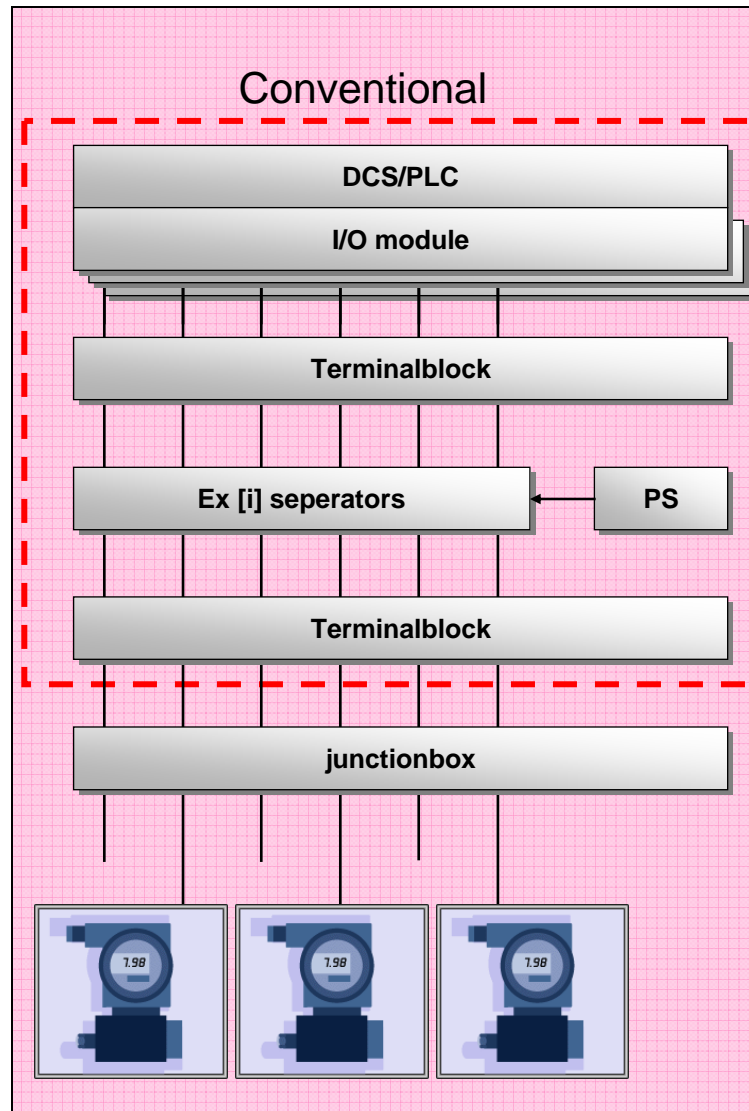
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Example

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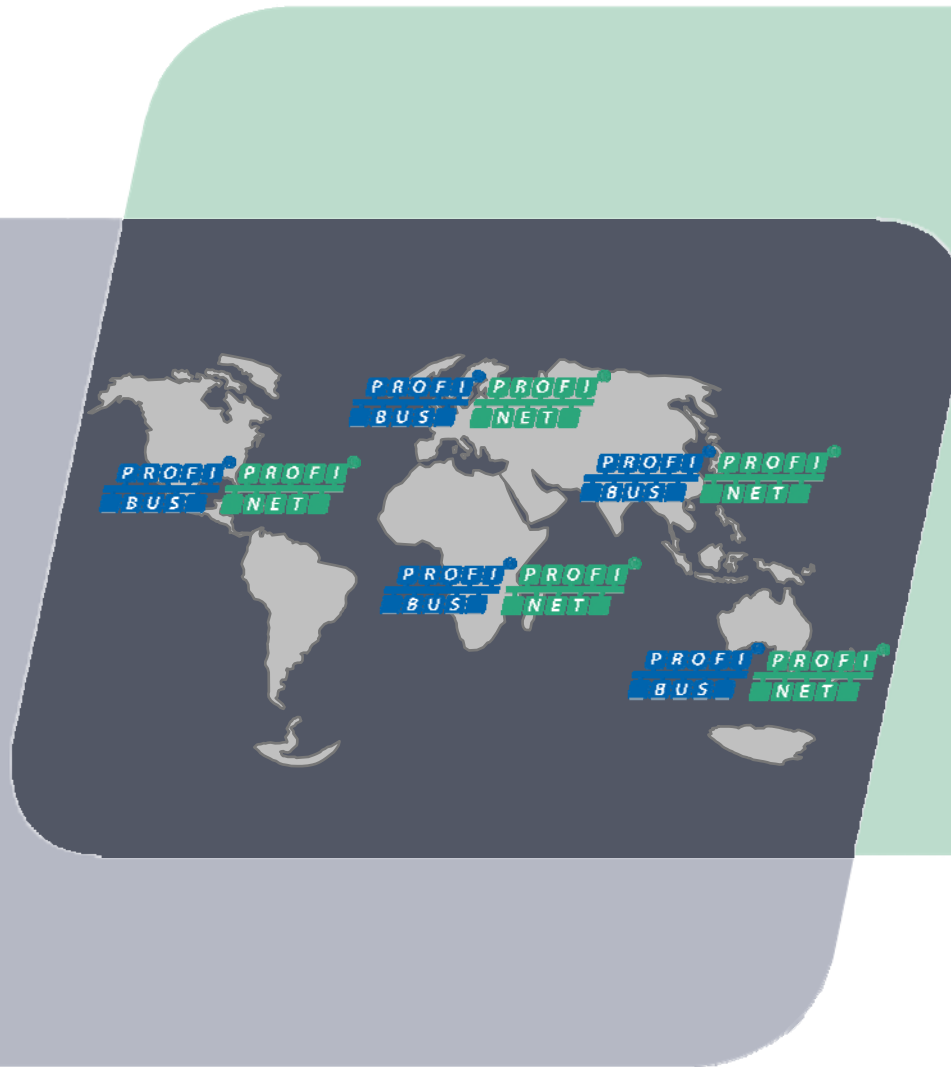
Organization

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▶ Benefits

Members





**Want to be a
part of it?**

A Strong Community

Introduction

Organization

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Benefits

Members

- PI is a non profit association and a the community of
 - End Users
 - System Integrators
 - Vendors
 - Research Institutes
- which are interested in PROFIBUS and PROFINET communication technologies.
- Membership in PI offers you a large choice of benefits

Member Benefits

Introduction

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Benefits

Members

- Receive actual information about all PROFIBUS/PROFINET news
- All members are permitted to enter descriptions of their PROFIBUS and PROFINET products and services in the Online Product Guide, free of charge.
- All members may publish the GSD/GSDML-Files for their Devices in the Online Product Guide for free.
- Hotlinks from Members List: All members are entitled to install a hotlink to their Homepage from the list of members page.
- Free Publication of Product Information and Application Stories in PROFINEWS, which is the official worldwide newsletter of PI.



Member Benefits

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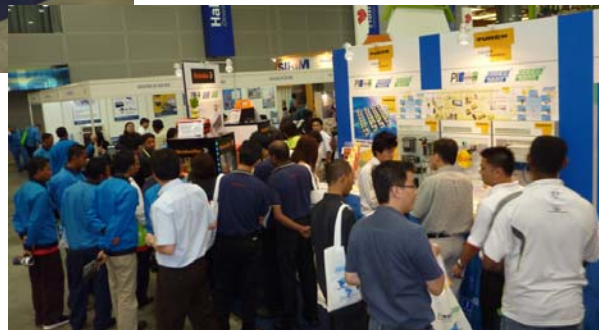
Organization

Applications and Solutions

Benefits

Members

- Join Roadshows and fairs, organization is done by the PI-Association.
- Create new customer contacts
- Present your technologies at Roadshows and Fairs
- Promotion of company logo on fairs, Roadshows and news



Member Benefits

Introduction

Organization

Applications and Solutions

Benefits

Members

- **Free Access to Profiles and Guidelines via Download:**
With your member password, you can access and download PROFIBUS and PROFINET literature for free.
- **Discount on Training courses:**
Members of PI profit from discounts on PROFIBUS and PROFINET certified training fees from many PI Training centers.
- **Use of the PROFIBUS and PROFINET logo:**
The PROFIBUS and PROFINET logos are registered trademarks. Members of PI are entitled to use the logo in all their written or electronic publications and promotional material. Request a copy from your RPA.



Thank you for your attention!

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