

Solutions and Services

Industrial Communication – Availability of Industrial Networks

INDUSTRIAL COMMUNICATION



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Industrial Communication at a Glance

Availability of
Industrial Networks -
Industrial
Communication
Solutions from
Trebing + Himstedt



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TREBING + HIMSTEDT

Agenda

Welcome

Introduction to Industrial Communications

Solutions

Monitoring your network to prevent problems

- Predicting network failures

Products

**Visibility to multiple protocol networks: Profibus,
Profinet, Ethernet/IP, Modbus TCP**

Live Demonstration

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TREBING  HIMSTEDT

Trebing + Himstedt

The company at a glance

- Headquarters: Schwerin, Germany
- Founded: 1992
- US Subsidiary Founded: 2012
- Employees (global): 40
- Core competence: Optimal use of IT in the production environment
 - Easy-to-use concepts for a targeted access to production and process information

Industrial Communication

- Availability of industrial networks
- Network Diagnostics, Asset Management



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Trebing + Himstedt – Our Competence

Always one step ahead

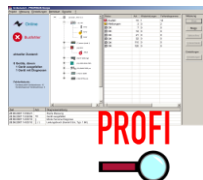
Trebing + Himstedt is innovation leader in PROFIBUS and network diagnostics

1999



PROFIBUS Scope
(FMS/DP) based on
Siemens **standard**
Hardware

2001– 07



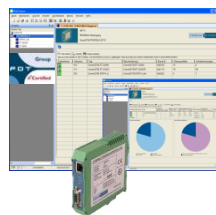
PROFIBUS Scope
diagnosis mode,
later centrally via
Ethernet

2008



Web-based
permanent
monitoring
(xEPI 2)

2009



PROFIBUS
monitoring with
FDT (CommDTM
for xEPI 2)

2010

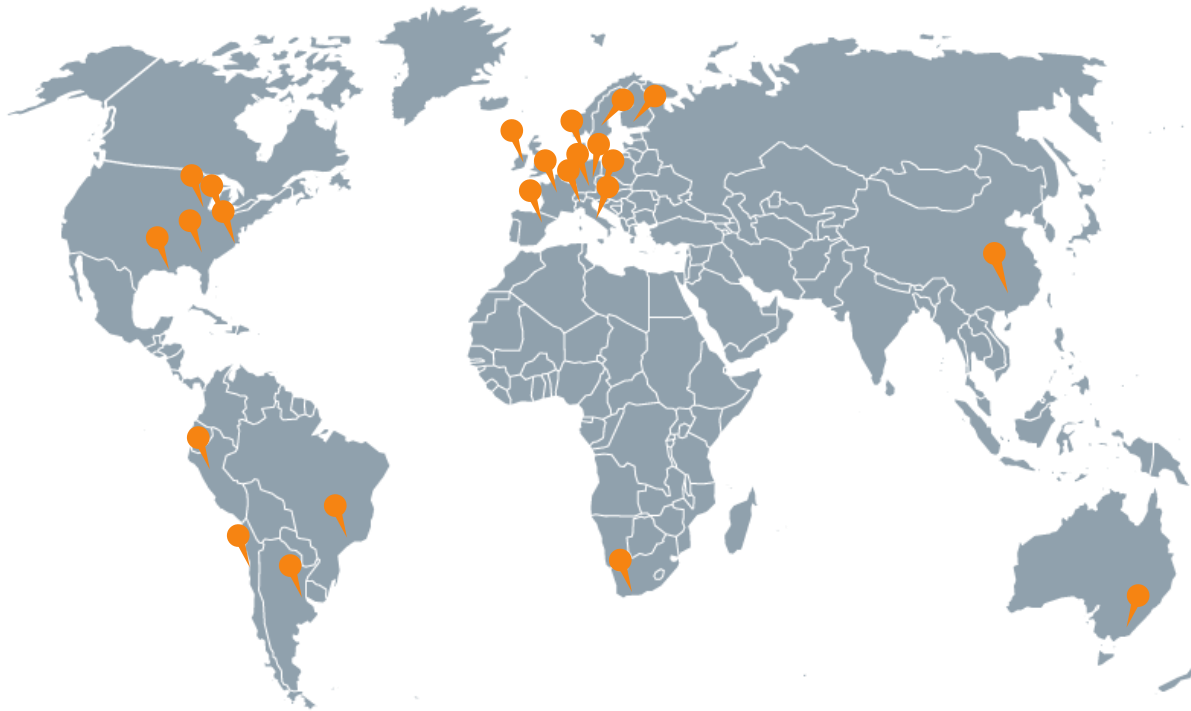


Diagnostics
solution for
PROFIBUS,
PROFINET and
Industrial
Ethernet
(TH SCOPE, TH
LINK)

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International Partners and Customers worldwide

 Distribution Partners Industrial Communication



Safe and Reliable Communication in all Networks

Why care about network monitoring?

How are networks serviced and maintained today?

What are the characteristics of effective network diagnostics?

What are the most frequently occurring error causes?

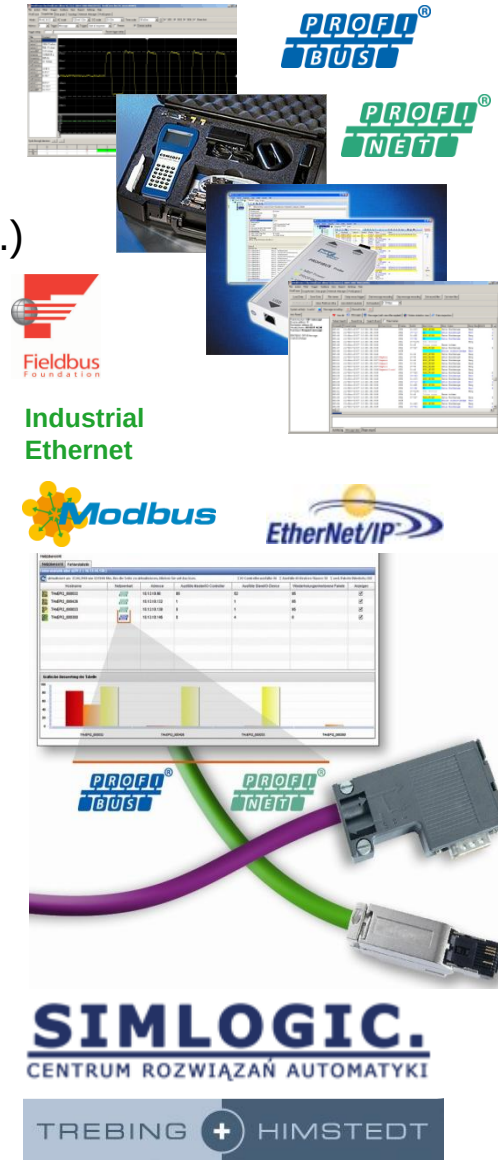
Network Diagnostics - Challenges

Network Diagnostics Today

- Many diagnostics tools – at least one tool per network
- Diagnostics tools are very sophisticated – by experts for experts
- Limited application (downtime required, individual segments, etc.)
- New requirements for Industrial Ethernet diagnostics

But what do YOU want?

- ONE leading system for all networks
- Easy application –
quick installation, comprehensive diagnostics information
- Always available, universally applicable solution
 - Permanent network monitoring
 - Applicable for commissioning, operation, maintenance, troubleshooting and inventory takings
- Switch easily between fieldbus and Ethernet diagnostics



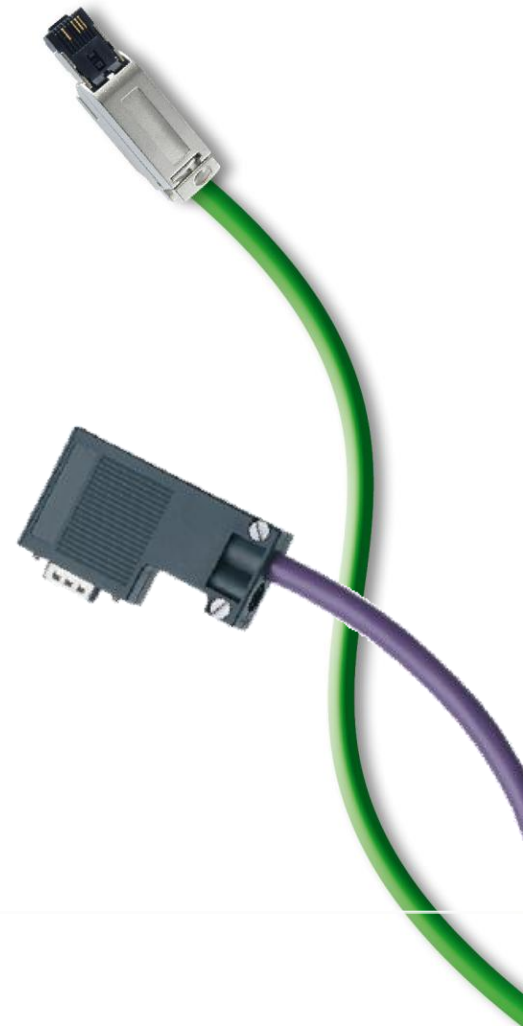
Typical Error Causes

PROFIBUS

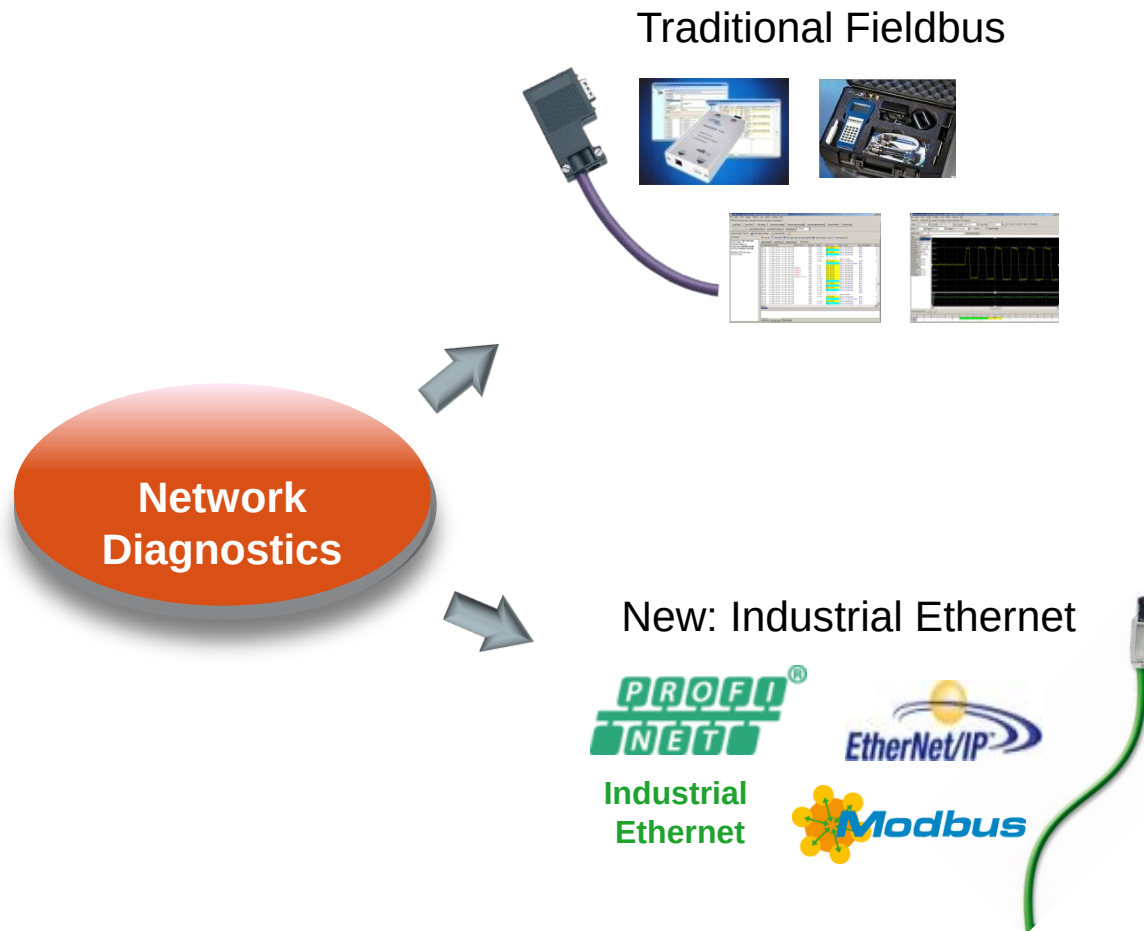
- Wrong or missing bus termination
- Contact faults, loose screws/connectors or plugs/clamps (short-time failures)
- Missing grounding/shielding connection

PROFINET / Industrial Ethernet

- Network configuration (wrong subnet mask, IP addresses)
- Unknown network stations
- Differences between planned and real installation
- Old/wrong firmware versions



New Challenges for Network Diagnostics



Current Issues

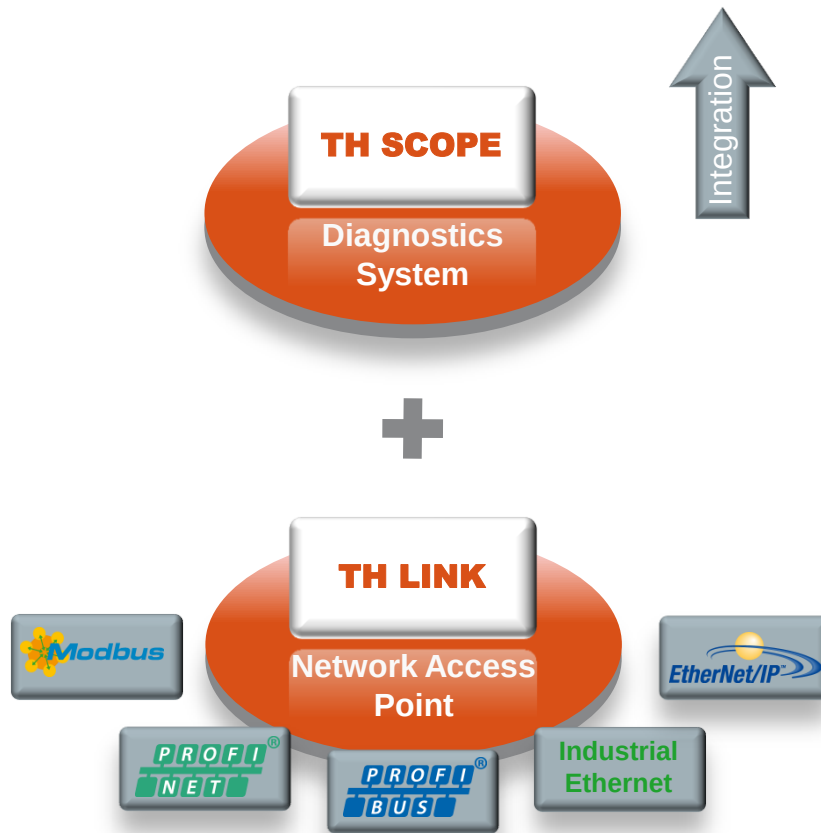
- Diverse and complex tools
- Expertise required
- Predictive maintenance concept – resolve issues during scheduled downtimes

Transition to Industrial Ethernet

- More devices per network
- Designed for scalability
- Fieldbus diagnostics principles not directly transferrable

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Network Diagnostics – Concept



**Unified monitoring of
PROFIBUS,
PROFINET and
Industrial Ethernet
networks**

- Web-based TH SCOPE diagnostics software
- TH LINK network access point, fix or mobile applications
- Integration of diagnostics information in higher-level systems

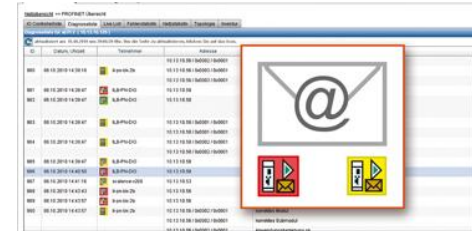
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Network Diagnostics – Benefits

Benefits

- Unified solution for cross-protocol network monitoring
- Short response time in case of failures due to alert functions
- Intuitive operational concept
- Flexible supply of diagnostics information
- Quick installation – modular extension
- Support of commissioning, operation and inventory management



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TH LINK Features

PROFINET

- PROFINET supervisor / SNMP client
- Active component – no “port mirroring“, no TAPs
- Scan of the entire network
- Protocols: LLDP, SNMP and other
- No projecting, no engineering
- Installation at any time during the lifecycle (non-intrusive esp. during plant operation)

PROFIBUS

- Passive listener or acyclic Master (if required)
- No station address required
- No engineering (e.g., Step7)
- Installation at any time during the lifecycle (non-intrusive esp. during plant operation)



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More Transparency of Your Network

Network Overview

- The whole network visible at one time

Trend Dashboard

- Displays fault history over a specific time period

Diagnostics History

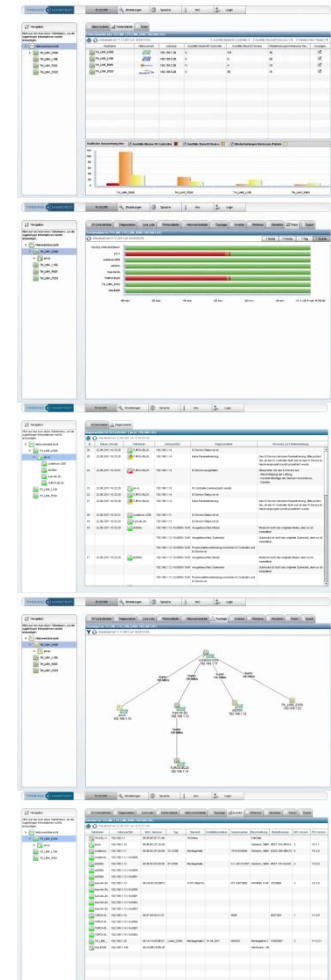
- Displays standard diagnostic messages with troubleshooting tips

Topology

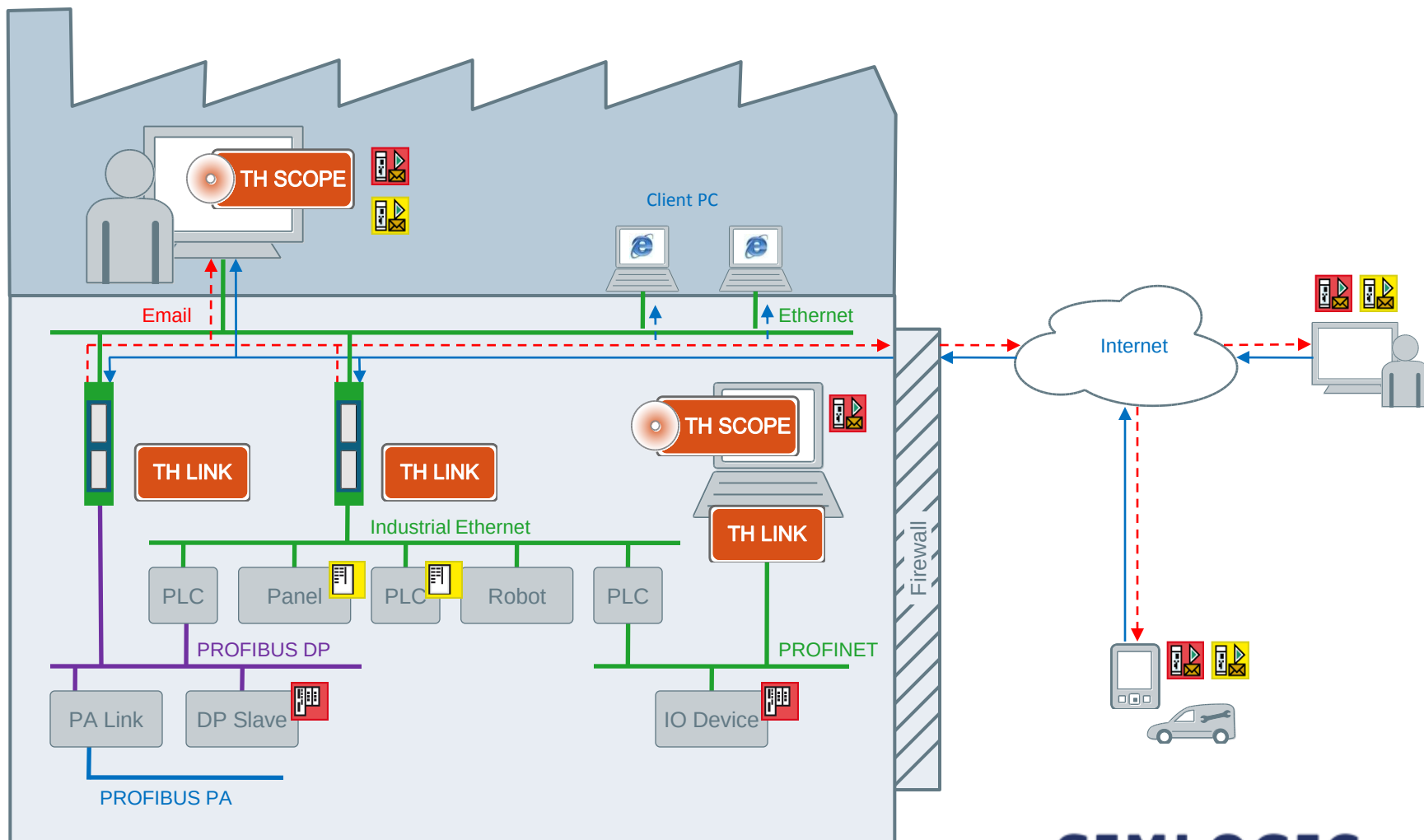
- Graphic view of the infrastructure

Inventory

- Visibility of all available components at one time



Network Diagnostics – Application Scenario



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Competence On-site

PROFIBUS Workshop

PROFINET Workshop

Hands-on Training for
Network Diagnostics
and Asset Management

On-site Measurement
Services (e.g.,
Acceptance Testing,
Service –Agreements,
etc.)

Live Demonstration



Thank You!

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