ProSoft Technology
ControlTech 11.2016

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Regional Sales Manager Central & Eastern Europe, CIS, Finland
ProSoft Technology

ProSoft
TECHNOLOGY®
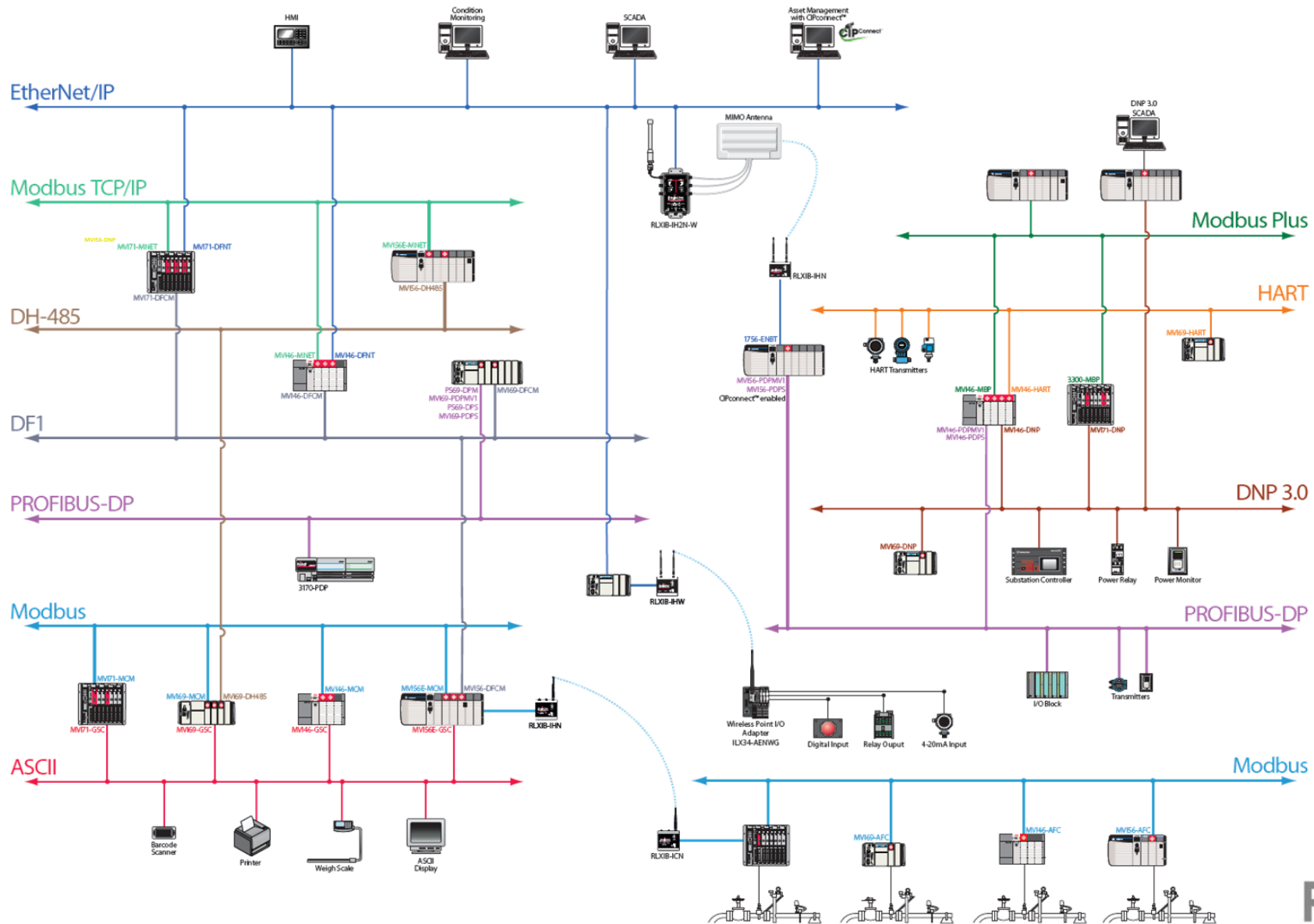
Where Automation Connects.™

General information

Close to your customers

Global HQ:
ProSoft Technology, Inc.
California

North America
8 Sales offices.

Madison
Wireless

Bakersfield (CA)

Worldwide H.Q.

Houston
LA H.Q.

Mexico
Sales

Venezuela
Sales

Latin America

Brazil

Sales & Technical

Argentina

Sales

UK
Sales

Germany
Sales

Toulouse

EMEA H.Q.

Poland
Sales & Technical

Italy
Sales

Europe, Middle East, Africa HQ:
ProSoft Technology SAS
France

UAE

Sales & Technical

Delhi

Sales

Asia Pacific

Kuala Lumpur
AP H.Q.

Singapore
Sales

Japan
Sales

Shanghai
Technical

Technical support included - 3 years warranty - 400+ partners worldwide

ProSoft
TECHNOLOGY

Where Automation Connects.

Hardware Product Solutions

We are <u>Industrial Automation "Translators"</u>

❖ 185+ Plug-In Solutions for Rockwell Automation

❖ 160+ Industrial Gateway Solutions

❖ 40+ Industrial Wireless Solutions

"Where Automation Connects"

Rockwell Automation Solutions

Integrated Interface Modules

AGA/API Gas & Liquid Flow Computer

ASCII

BACnet

Bristol Babcock

DNP 3.0

BASIC

DH-485

'C' Programmable

'C' Programmable over Ethernet

DF1 Master/Slave

Ethernet Global Data

DNP over Ethernet

FA Control/Network

Honeywell DE Master

Generic Ethernet

EtherNet/IP

HART

IEC 60870-5-101

IEC 60870-5-103

IEC 60870-5-104

Limitorque Master
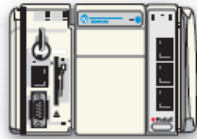
Johnson Controls Metasys

MDA Scientific

LonWorks

Modbus Plus

Modbus

Modbus TCP/IP
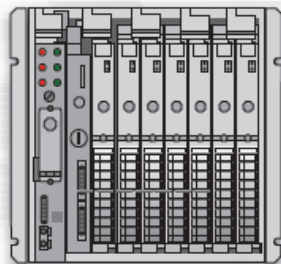
PROFIBUS

Siemens 3964R

SM General

Siemens Industrial Ethernet
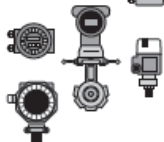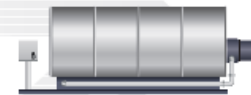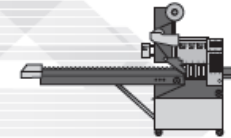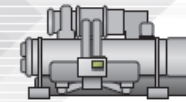
Premier Integration Tools

❖ **AOP – Add on Profile**

❖ **AOI – Add on Instruction**

❖ **Faceplates**

- ♦ Free to customers
- ♦ Displays product diagnostics & configuration for operators and engineers to troubleshoot the process
- ♦ Works with AOIs – Add on Instructions to get display data

EtherNet/IP modules

❖ **EtherNet/IP Client/Server** Network Interface Module for **SLC500, CompactLogix, PLC5, Micrologix 1500** allows**:**

- ♦ PLC processors to interface with EtherNet/IP protocol compatible devices and hosts
- ♦ remote Ethernet programming and troubleshooting
- ♦ SCADA access

❖ Perfect for:

- ♦ data with EtherNet/IP PLC's
- ♦ Adding additional communication channels
- ♦ Adding additional subnet access
- ♦ PLC based interface to DH+/ RIO, DH-485 devices
- ♦ VPN access
- ♦ Ethernet programming
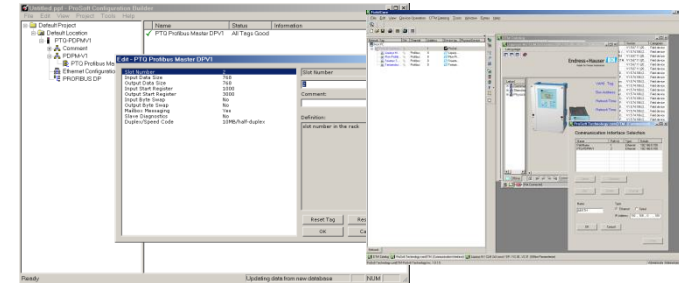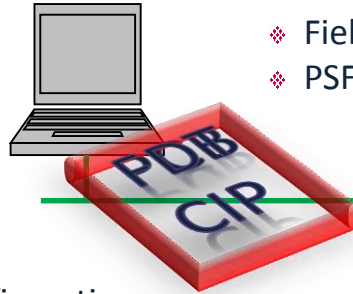- ♦ Building unified network using ethernet

MVI46-DFNT - MVI69-DFNT
MVI71-DFNT

PROFIBUS in-chassis solution

FDT Communication
- FactoryTalk Asset Centre
- FieldCare
- PSFT comDTM

PCB Communication
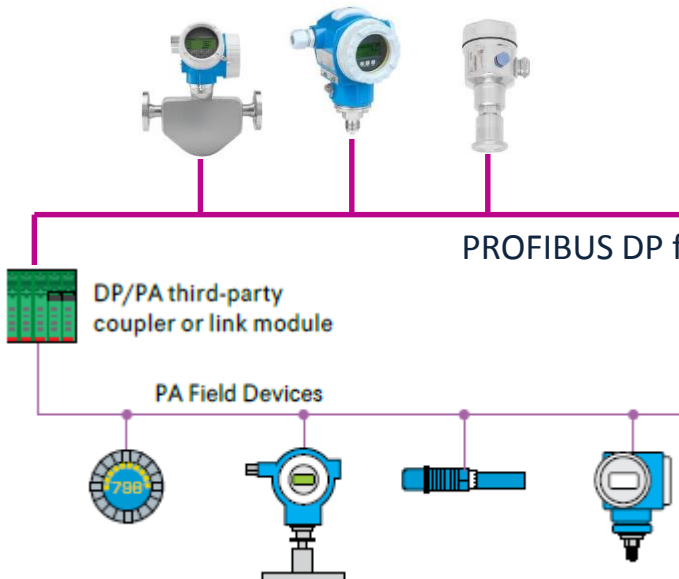- Module & Network Configuration
- Diagnostics
- Network monitoring

EtherNet/IP

CIPConnect®

EtherNet/IP

PROFIBUS DP V1 Master module

PROFIBUS DP field devices

DP/PA third-party coupler or link module

PA Field Devices

PROFIBUS DP Slave Module for CompactLogix, ControlLogix, SLC, Flex I/O, SCANport

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ILX69 Profibus cards for CompactLogix

❖ Programmed by Ethernet
❖ Master supports 5700+ bytes IN/OUT
❖ Slave supports 244 bytes IN/OUT
❖ AOP used for seamless integration

❖ Training Video
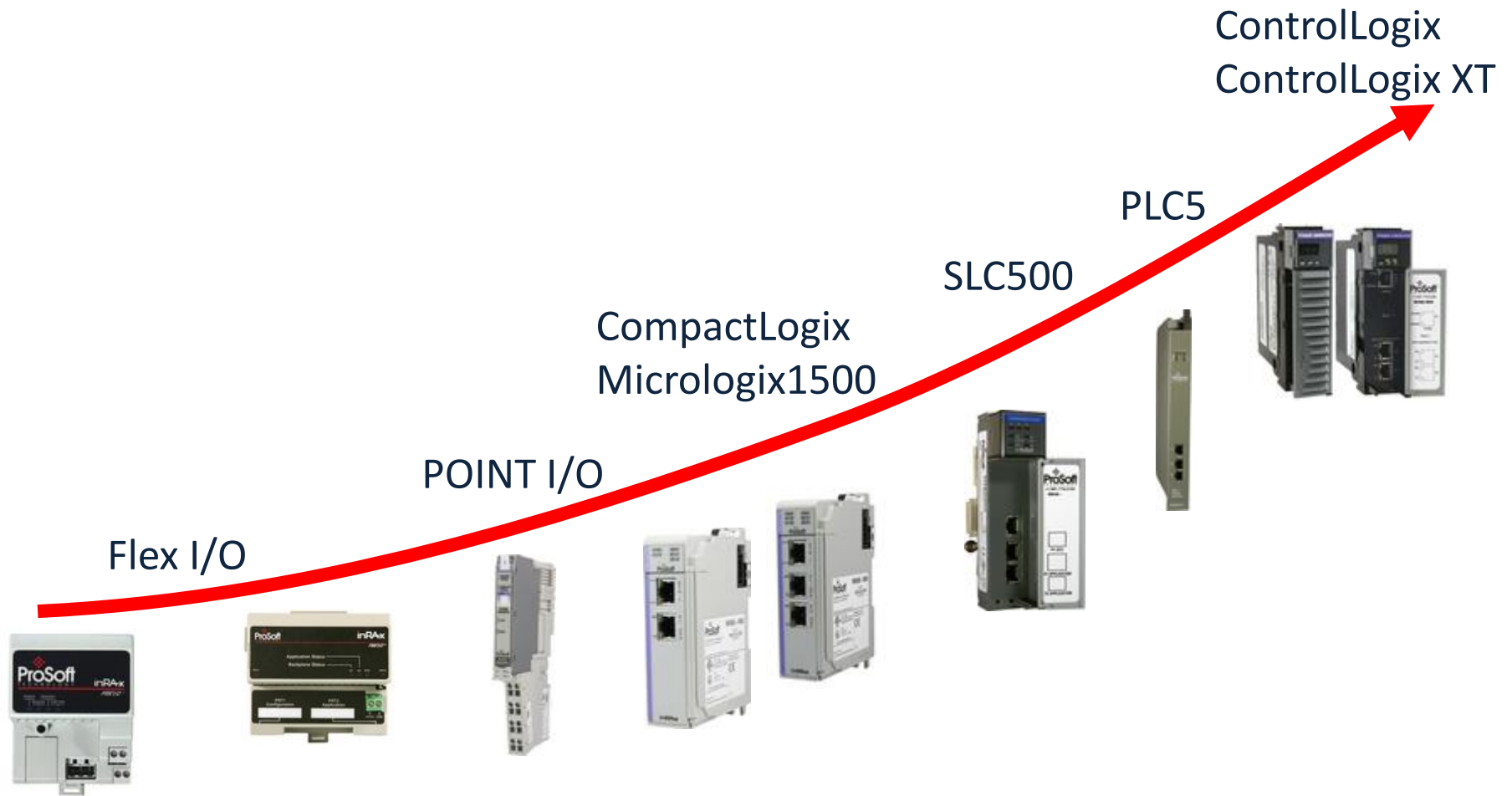❖ Easy setup

MVI69-PDPMV1
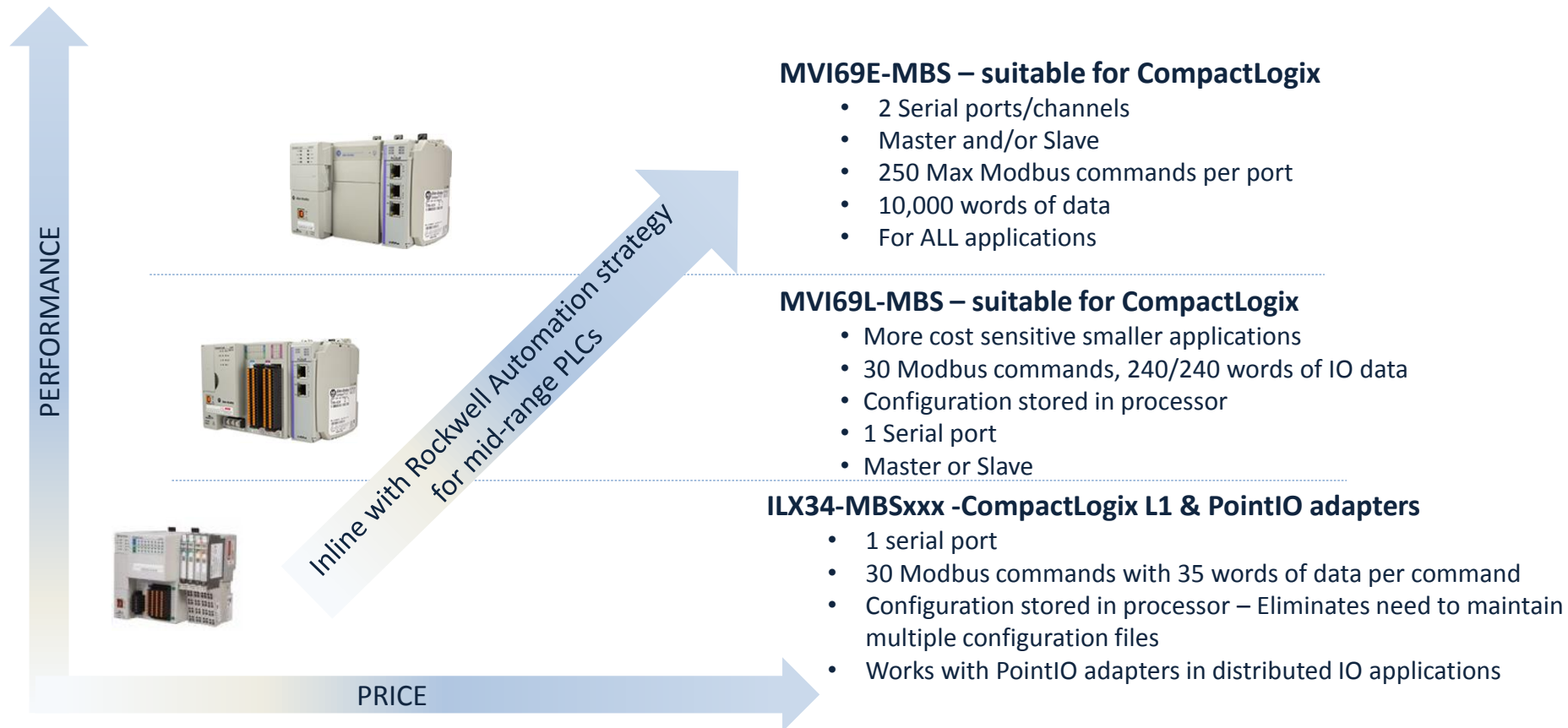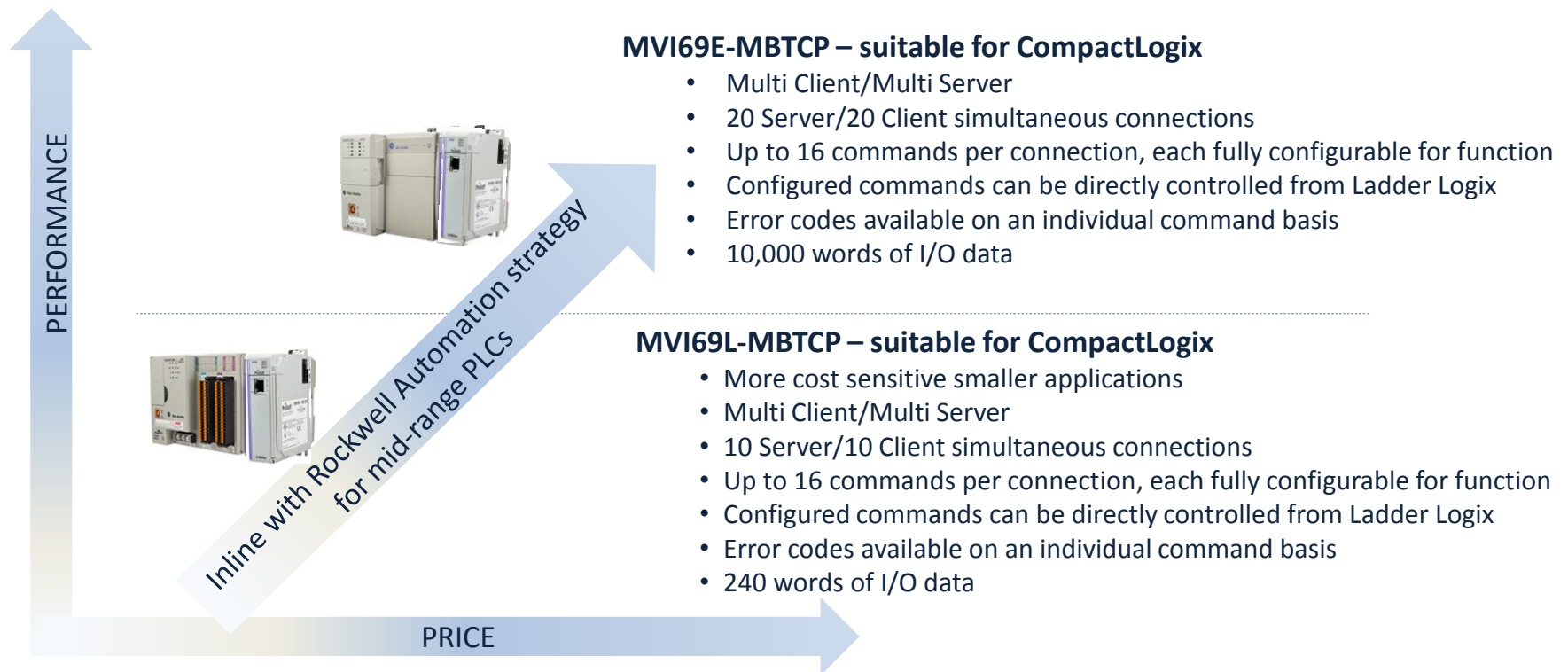PS69-DPM ➡ **ILX69-PBM**

MVI69-PDPS
PS69-DPS ➡ **ILX69-PBS**

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TECHNOLOGY

... and Modbus for all

ControlLogix
ControlLogix XT

PLC5

SLC500

CompactLogix
Micrologix1500

POINT I/O

Flex I/O

ProSoft
TECHNOLOGY

Modbus Serial for CompactLogix

PERFORMANCE

PRICE

Inline with Rockwell Automation strategy for mid-range PLCs

MVI69E-MBS – suitable for CompactLogix
- 2 Serial ports/channels
- Master and/or Slave
- 250 Max Modbus commands per port
- 10,000 words of data
- For ALL applications

MVI69L-MBS – suitable for CompactLogix
- More cost sensitive smaller applications
- 30 Modbus commands, 240/240 words of IO data
- Configuration stored in processor
- 1 Serial port
- Master or Slave

ILX34-MBSxxx -CompactLogix L1 & PointIO adapters
- 1 serial port
- 30 Modbus commands with 35 words of data per command
- Configuration stored in processor – Eliminates need to maintain multiple configuration files
- Works with PointIO adapters in distributed IO applications

ProSoft TECHNOLOGY®

Modbus TCP/IP for CompactLogix

PERFORMANCE

PRICE

Inline with Rockwell Automation strategy for mid-range PLCs

MVI69E-MBTCP – suitable for CompactLogix

- Multi Client/Multi Server
- 20 Server/20 Client simultaneous connections
- Up to 16 commands per connection, each fully configurable for function
- Configured commands can be directly controlled from Ladder Logix
- Error codes available on an individual command basis
- 10,000 words of I/O data

MVI69L-MBTCP – suitable for CompactLogix

- More cost sensitive smaller applications
- Multi Client/Multi Server
- 10 Server/10 Client simultaneous connections
- Up to 16 commands per connection, each fully configurable for function
- Configured commands can be directly controlled from Ladder Logix
- Error codes available on an individual command basis
- 240 words of I/O data

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C/C++ Programmable module

MVI56E-LDM

C programmable modules based on Linux
Key Features:

- ♦ 2 Ethernet Ports
- ♦ Free VMWare image with preconfigured programming environment

C programmable modules based on Linux
Key Features:

- ♦ 2 Serial Ports
- ♦ 1 Ethernet Ports
- ♦ Free VMWare image with preconfigured programming environment

MVI69E-LDM

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TECHNOLOGY

Gateways

Gateways – 60+ protocols

Smart protocol gateways

Features and Benefits:

❖ High performance gateway:

- ◆ Supports multiple IO connections
- ◆ Allows combination of PLC/PAC to communicate with various end devices

❖ Bi-directional data transfer

❖ Cost effective & easy to configure

❖ Built in SD card slot for config.files

Smart protocol gateways

Protocols Supported

ETHERNET/IP	MODBUS TCP/IP
EtherNet/IP to Modbus TCP/IP	Modbus TCP/IP to Modbus Serial
EtherNet/IP to Modbus Serial	Modbus TCP/IP to Modbus Serial 4 Port
EtherNet/IP to Modbus Serial 4 Port	ModbusTCP/IP to SIE (Siemens Industrial Protocol)
EtherNet/IP to ASCII	ModbusTCP/IP to Profinet
EtherNet/IP to ASCII 4 Port	Modbus Serial to Profinet
EtherNet/IP to SIE	Modbus Serial to Profinet 4 Port
EtherNet/IP to Profinet	

Profinet gateway

EtherNet/IP to Profinet Device

❖ Embedded EDS Add-On Profile

❖ No ladder programming is required when using I/O connections.

❖ Multiple I/O connections

❖ Communication via an I/O connection

❖ SD card slot (SD card optional)

❖ Video setup tutorial provided at psft.com/Ap5

EtherNet/IP™ PACs   PLX31-EIP-PND   PROFINET® PACs
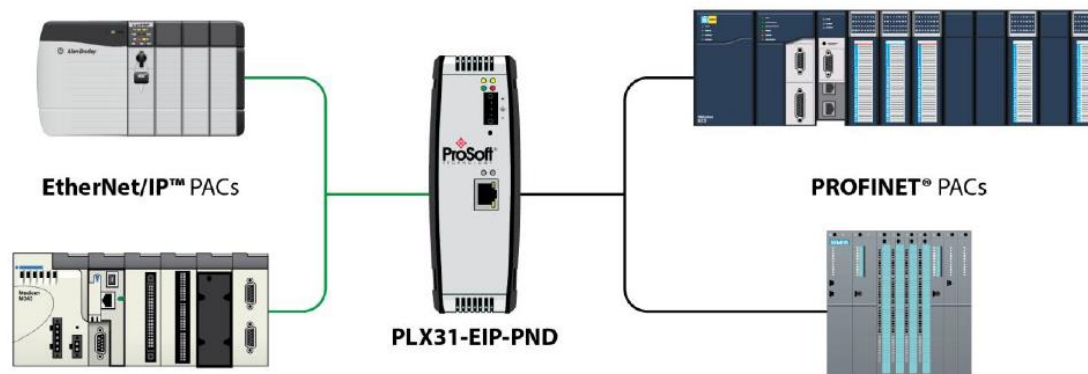
Difference from PLX31

❖ Two Ethernet ports
  ❖ Each Ethernet **port has to operate** on a different network.

PLX32-EIP-MBTCP

ControLogix

EtherNet/IP

Modbus TCP

10.1.2.15   ✓   192.168.1.50

10.1.2.15   ✗   10.1.2.105
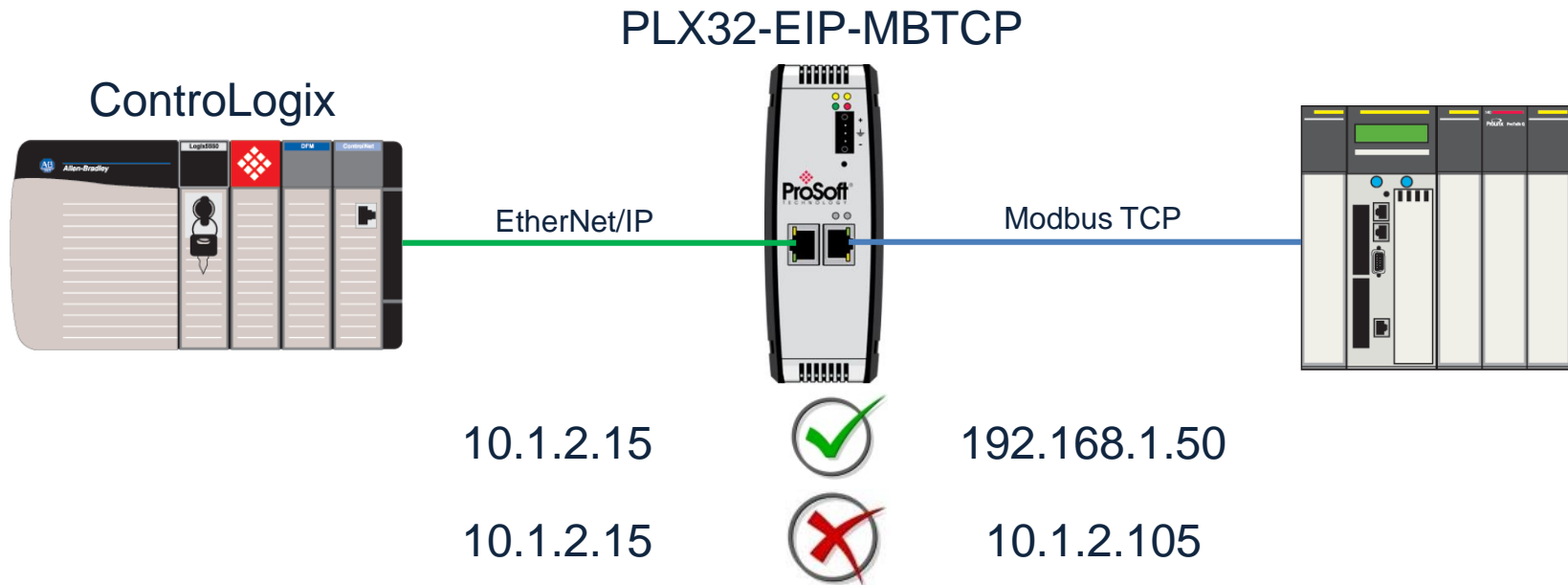
Our PROFIBUS solutions
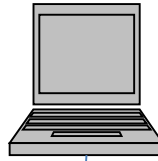
FDT Communication
❖ FactoryTalk Asset Centre
❖ FieldCare
❖ PSFT comDTM
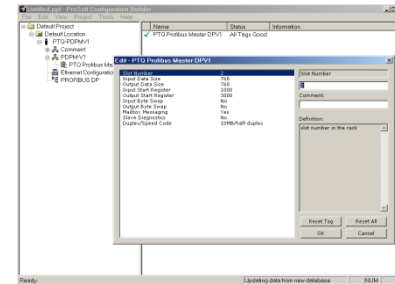
ETHERNET

In-chassis solutions
For Rockwell Automation
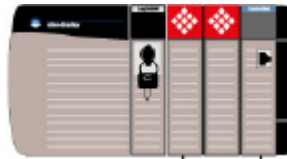
PROFIBUS DP V1 MASTER

Stand alone gateways

PROFIBUS

PROFIBUS DP V0
Slave to:
• HART
• ASCII
• DNP3
• IEC 60870-5-101
• IEC 60870-5-103
• IEC 60870-5-104
• MODBUS
• DH485
• DF-1
• and many more...

PROFIBUS DP V0 Slave to:
• BACnet
• LONworks
• XML
• METASYS
• Controlnet
• DeviceNet
• and many more...

PROFIBUS DP Slave Module
for CompactLogix,
ControlLogix, SLC, Flex I/O,
SCANport

DP/PA third-party
coupler or link module

PA Field Devices
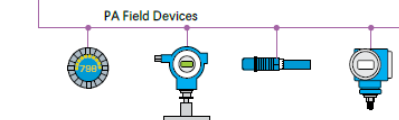
Our Energy Solutions
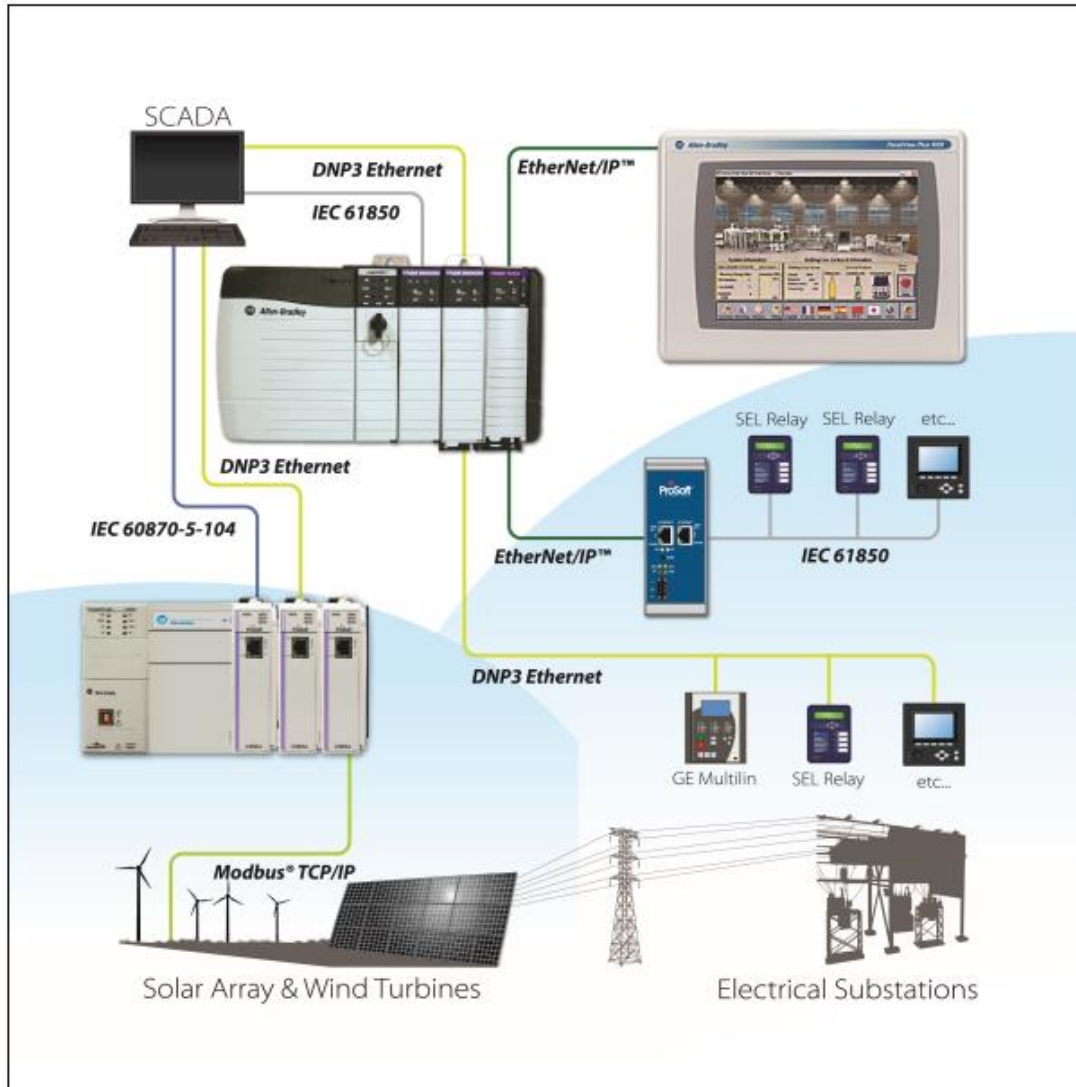
- ❖ IEC 61850
- ❖ DNP 3.0
- ❖ DNP 3.0 over Ethernet
- ❖ IEC 60870-5-101
- ❖ IEC 60870-5-103
- ❖ IEC 60870-5-104
- ❖ Modbus TCP/IP

Application reference - Energy

Application description:

❖ ControlTech

❖ InForm Technologies (IFT), Slovakia

❖ EU mandate 20% of all energy from renewable sources until 2020

❖ Alternative energies: Remote control and data transfer from renewable sources to dispatching distribution companies

Customer needs:

❖ Collect data from electricity meters and other devices using IEC60870-5-101 protocol

❖ Send back all the information to power distribution company

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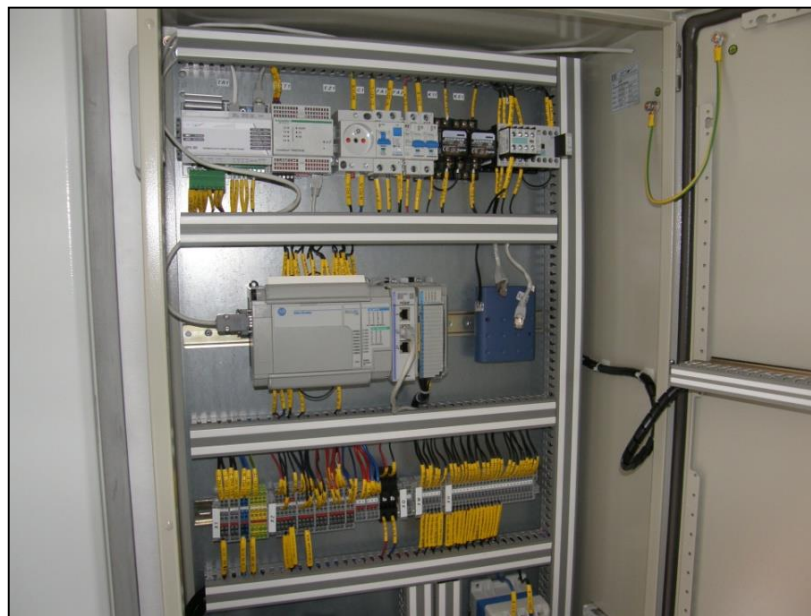
Application reference - Energy

Our solution:

❖ MVI69-101S (IEC 60870-5-101 Slave Communication Module)

Benefits:

❖ Fast Implementation
❖ IEC 60870-5-101 Protocol Compliant
❖ Easy extension for other networks
❖ Energy monitoring certificated
❖ Fully automatic & autonomous

Allen Bradley, Prosoft IEC60870-5-101 Slave Communication Module

MLX1500 or CPX L23

GPRS

GSM Modem

SCADA in distribution company
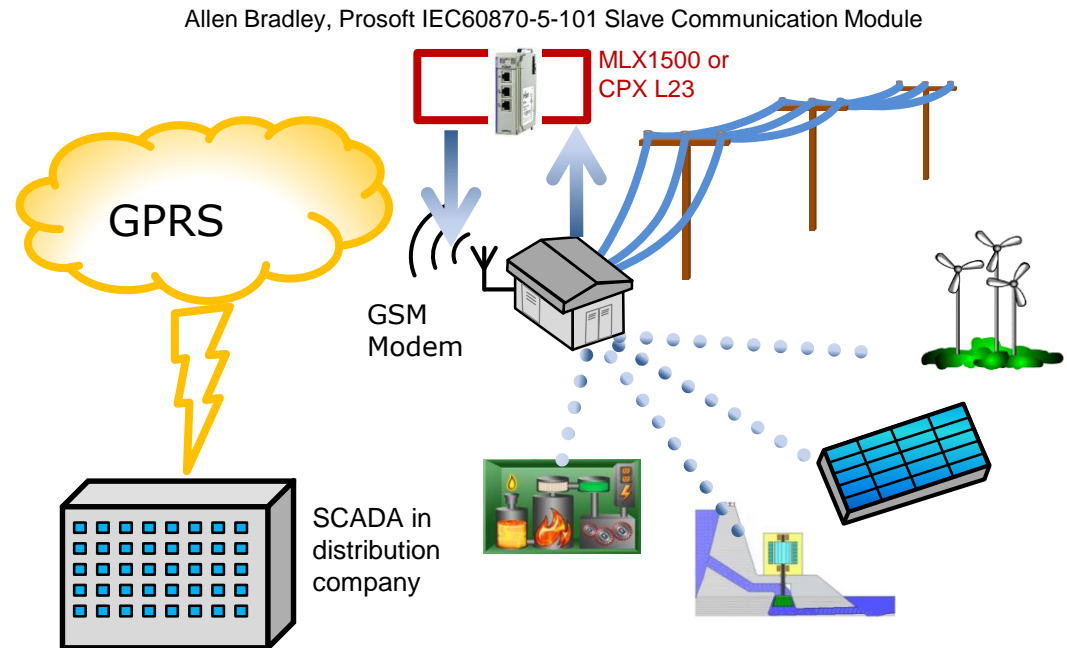
Migration solutions

Why we migrate to new…

Warranty

Spare parts not available

Modern programming software

New media has to be connected

Spare parts expensive

New possibilities

New OS support

Lack of interfaces

Migration solutions

❖ Phase migration

❖ Life cycle extension
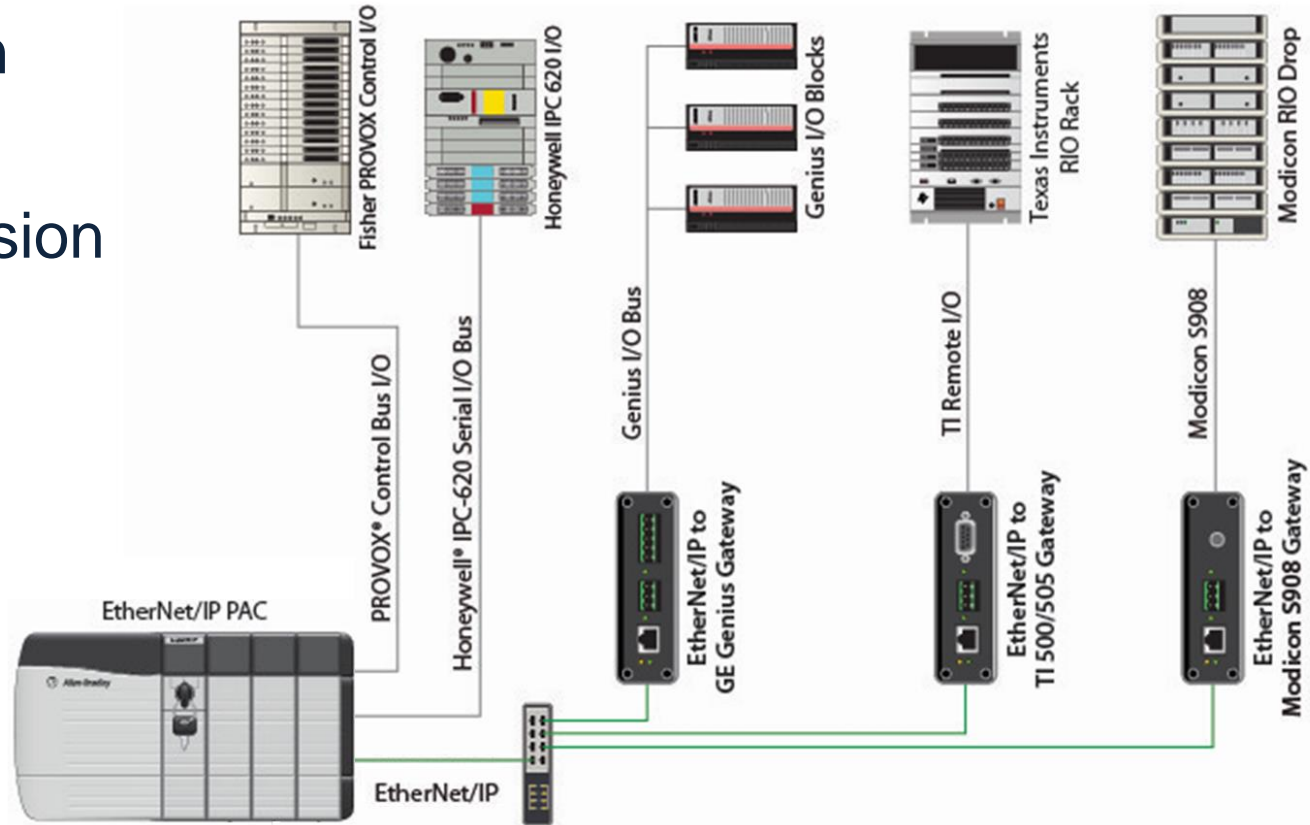
DH+ & RIO solutions
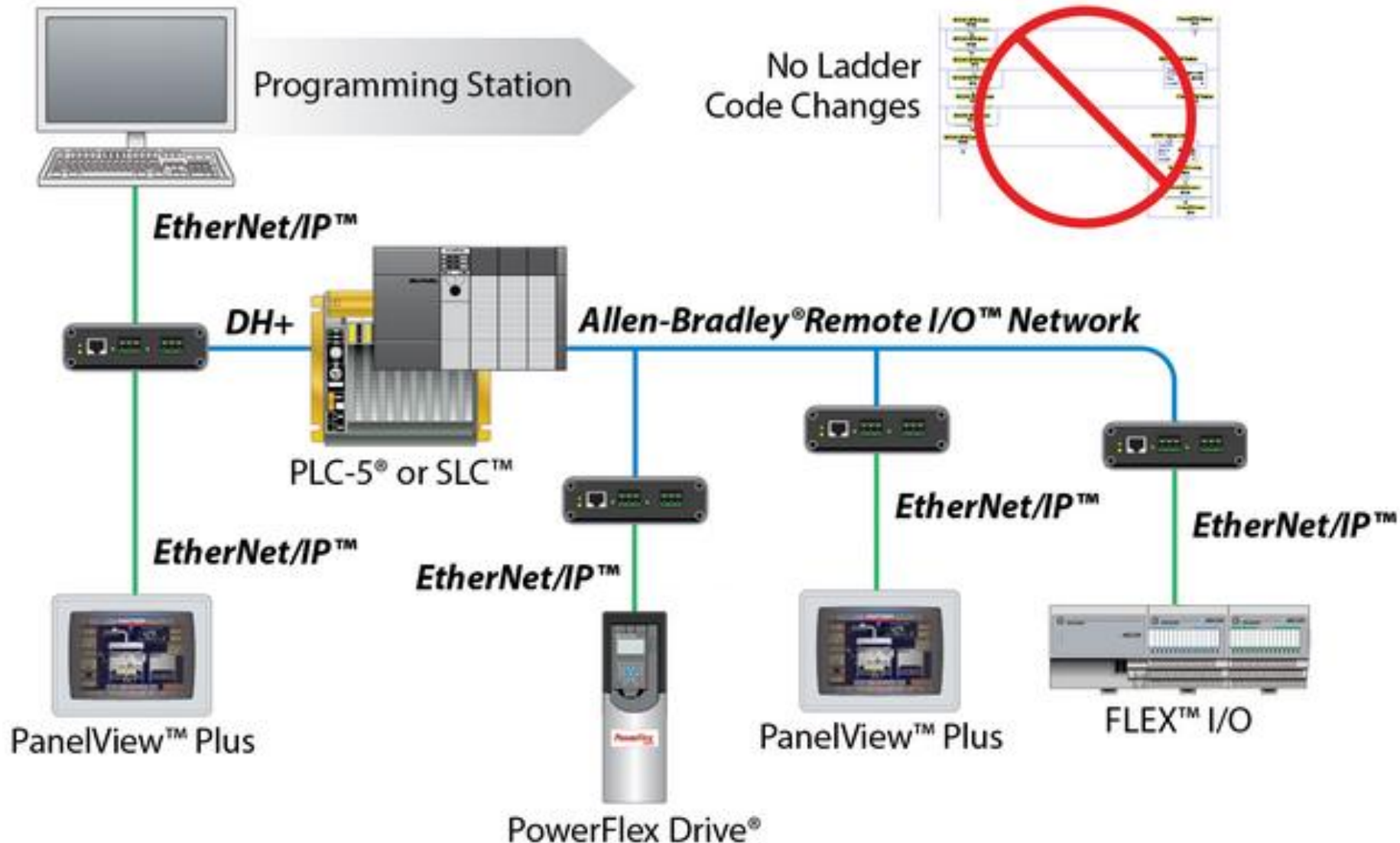
DH+ programming

❖ Connect a Data Highway Plus Network to EtherNet/IP PLC

RSLogix5
Programming station

ControlLogix®

CompactLogix

AN-X2-AB-DHRIO

EtherNet/IP

DH+

PLC-5
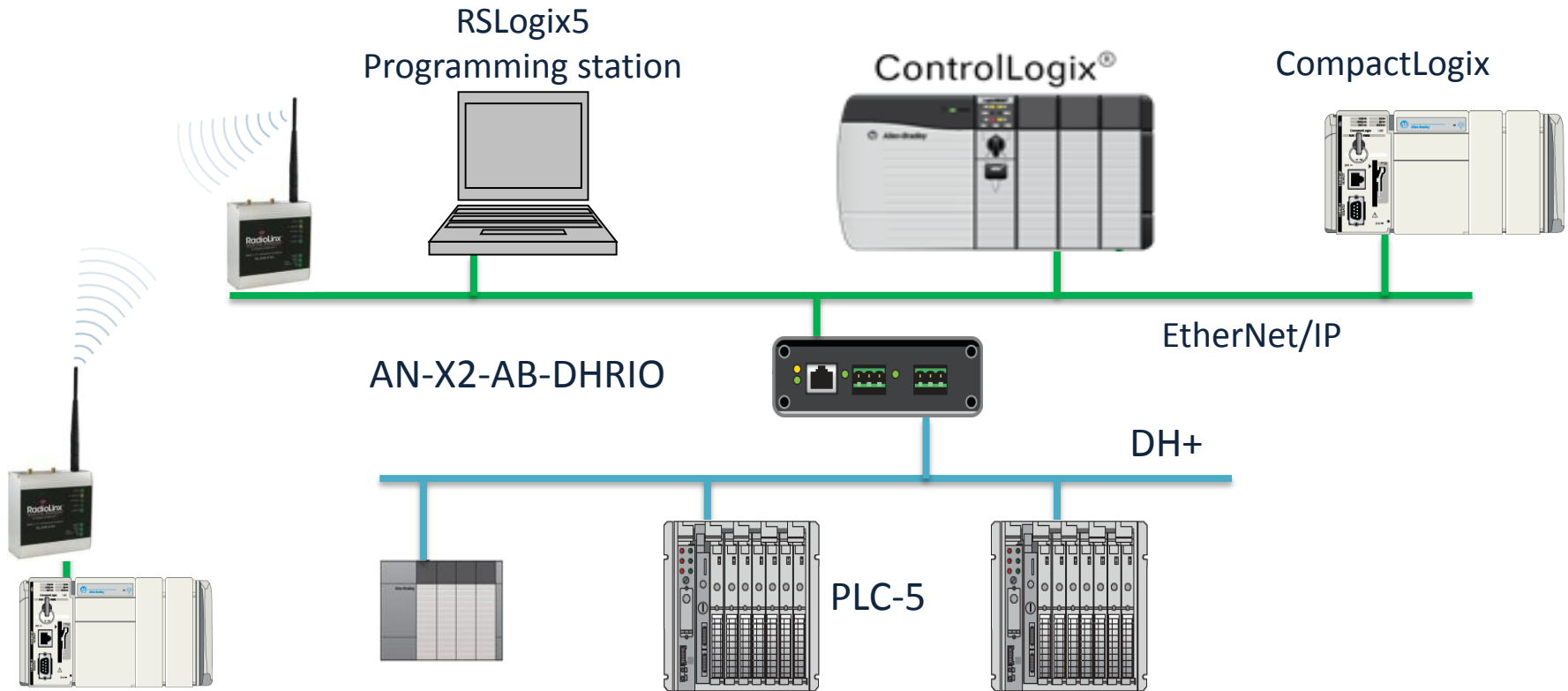
HMI over DH+

❖ DH+ to Ethernet/IP HMI

❖ Upgrade your HMIs without replacing your Control System

　　❖ Migrate to the latest PanelView Plus 6/7 products

PanelView Plus 6**　　　　　　　　　　　　　　　　　　　　PLC5

AN-X2-AB-DHRIO

Blue Hose

DH+

EtherNet/IP
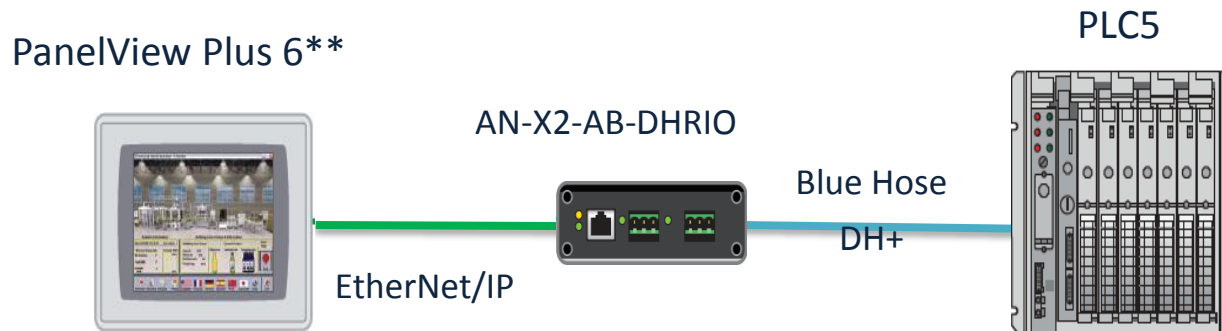
**PanelView Standard in Silver Series
　　End of year deadline

All AN-X2-AB-DHRIO will have chance to be upgraded
It works with PLC5 only

ProSoft
TECHNOLOGY

Keep RIO IO's

❖ Ghost mode

❖ Tag generation

❖ Automated baud rate detection

CompactLogix

AN-X2-AB-DHRIO

Remote I/O

ProSoft®
TECHNOLOGY
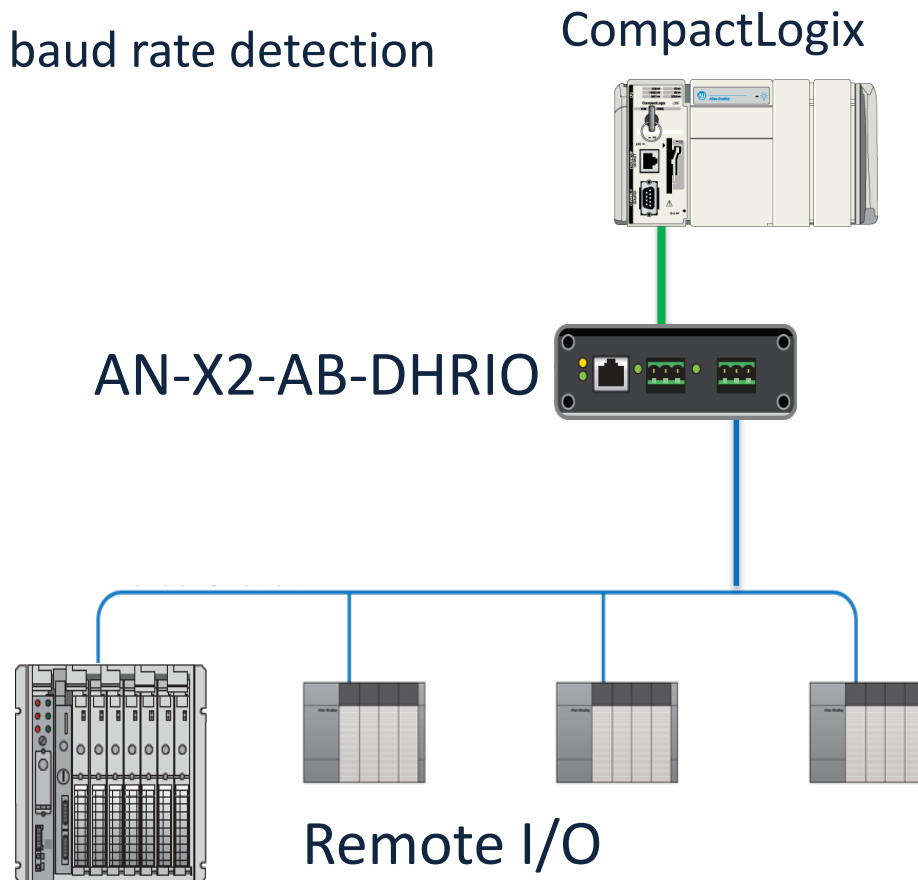
New PVP or PF over RIO

❖ Remote I/O Adapter to Ethernet/IP HMI

❖ Upgrade your HMIs without replacing your Control System

  ❖ Migrate to the latest PanelView Plus 6 products

PanelView Plus 6/7 — AN-X2-AB-DHRIO — Blue Hose / AB Remote I/O — PLC5
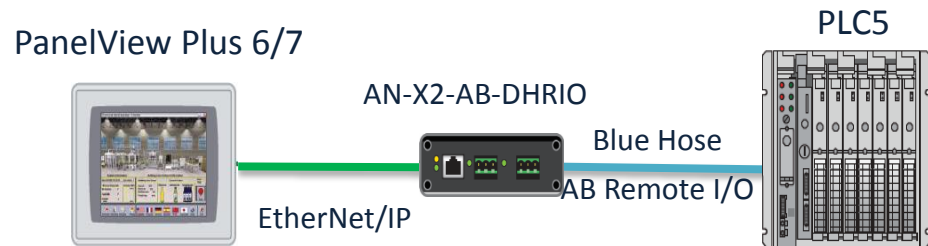
EtherNet/IP

❖ A-B Remote I/O Adapter to EtherNet/IP Drives

❖ Connect up to 4 EtherNet/IP drives to an existing Remote I/O Network

PowerFlex Drive — AN-X2-AB-DHRIO — Blue Hose / AB Remote I/O — PLC5
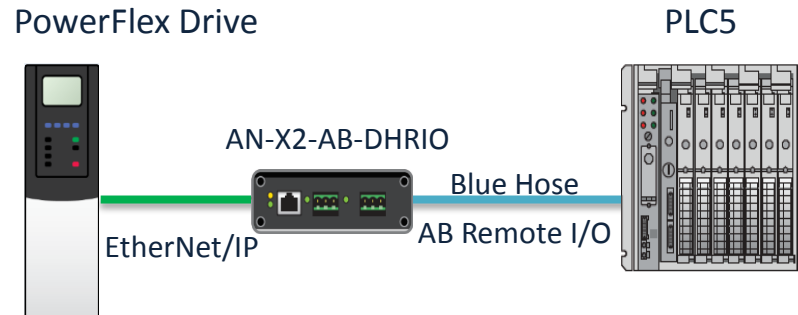
EtherNet/IP

RIO Flex I/O

❖ 1794-ASB (Remote I/O Flex adapter) has been discontinued by Rockwell. The replacement 1794-AENT/R is an EtherNet/IP adapter.

AN-X2-AB-DHRIO

Blue Hose
AB Remote I/O

EtherNet/IP

1794-ASB

1794-AENT
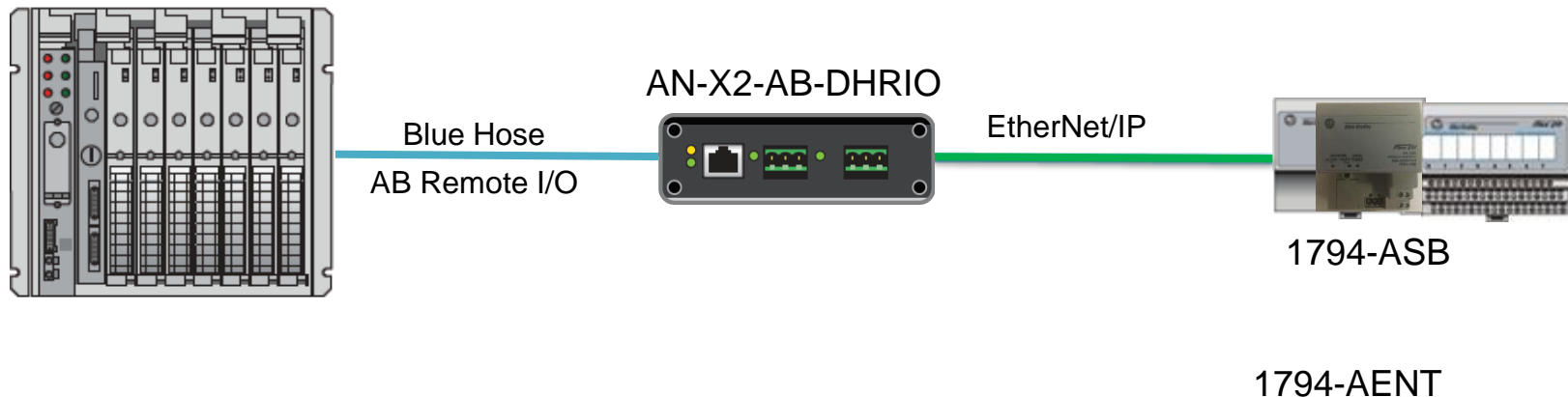
Specifications

- ❖ Flex I/O Migrations only
  - ♦ Does not work with SLC I/O, 1771 I/O, Point I/O, etc.
- ❖ Supports the following Flex I/O modules
  - ♦ AENT, OW8, IA8I, OA8I, OB8, OB16, OB16P, IB16, IE8, IE4XOE2, OE4, IR8, IRT8, OA8, OA16, OB8EP, OB16D, OB32P, OC16, OG16, OM8, OM16, OV16, OV16P, OV32, IA8, IA16, IC16, IB32, IV32, IB8, IB8S, IM8, IG16, IH16, IM16, IB16D, IV16, IB16XOB16P, IB10XOB6, IE12, OE12, IE8XOE4, IR8B, IT8
- ❖ Supports up to 16 EtherNet/IP Connections
  - ♦ Each adapter and up to 8 (*)discreet I/O modules count as a single connection
    - – *32 point discrete modules each counts as a single connection
  - ♦ Each analog module counts as a single connection

Examples

- 1 analog input, 1 analog output, 2 digital inputs, 1 digital output
  - 3 connections
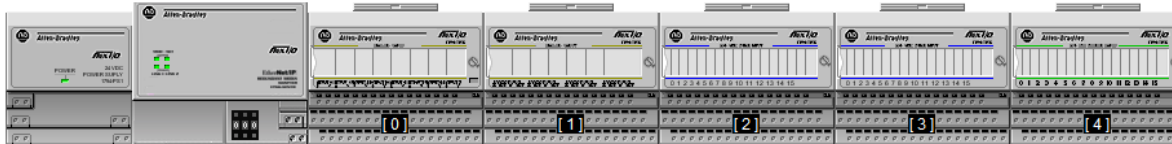
- 3 digital inputs, 2 digital output
  - 1 connections
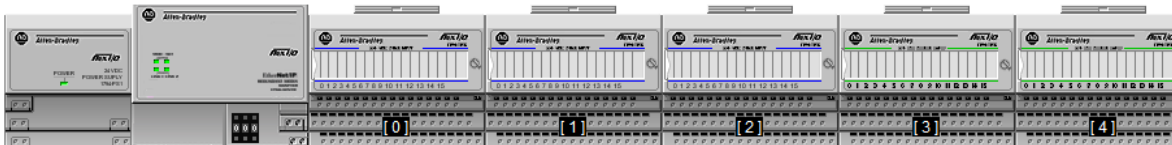
- 2 Analog input, 1 Analog output
  - 4 connections

Wireless solutions

Industrial wireless solutions

WHY USE WIRELESS?
Save money by saving time
Save money reducing plant wiring costs
Communication to moving/spinning equipment
Harsh environment communications
Remote access for mobile workers
Wireless as an alternative to Leased Telephone Line
Remote access for data recording, alarms follow-up, programming

Don't say NO to wireless just because you don't KNOW wireless…Talk to ProSoft Technology!

ProSoft
TECHNOLOGY

Introducing a NEW antenna

- RF transmitted through slots cut into the shield (under the insulation)

- Acts as a long, flexible antenna

- Provides uniform RF signaling along monorail tracks

- Solves line-of-sight challenges in corridors and tunnels

- Supports 802.11 2.4 GHz and 5 GHz wireless systems
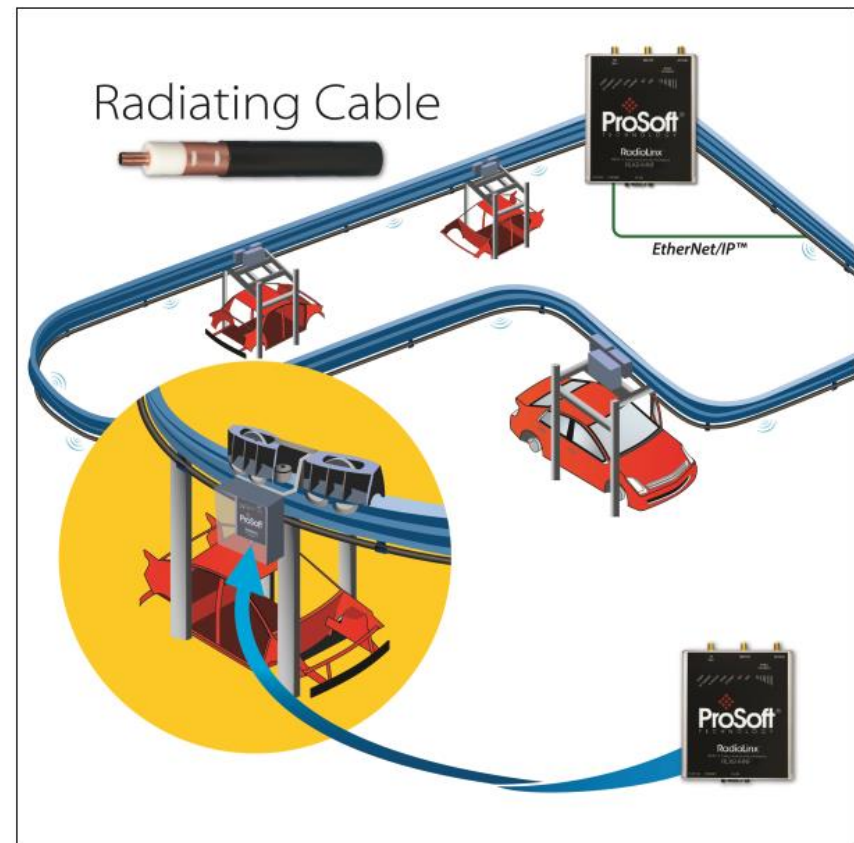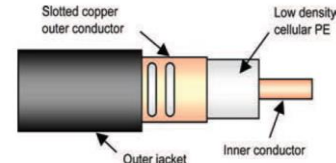
Radiating Cable Applications

ProSoft®
T E C H N O L O G Y
Where Automation Connects.

Radiating Cable Typical applications

❖ Communication inside a rail tunnel, road tunnel, subway

But today leaky cable is also used for other types of mobile applications :

♦ Distribution warehouse ♦ Cranes in aluminum plant ♦ Baggage handling system ♦ Funiculars ♦ Trolleys ♦ Monorail ♦ Conveyors ♦ Rotating machines ♦ Slip ring communication replacement ♦ Mobile application with I/O communication ♦ …

Rackstacker
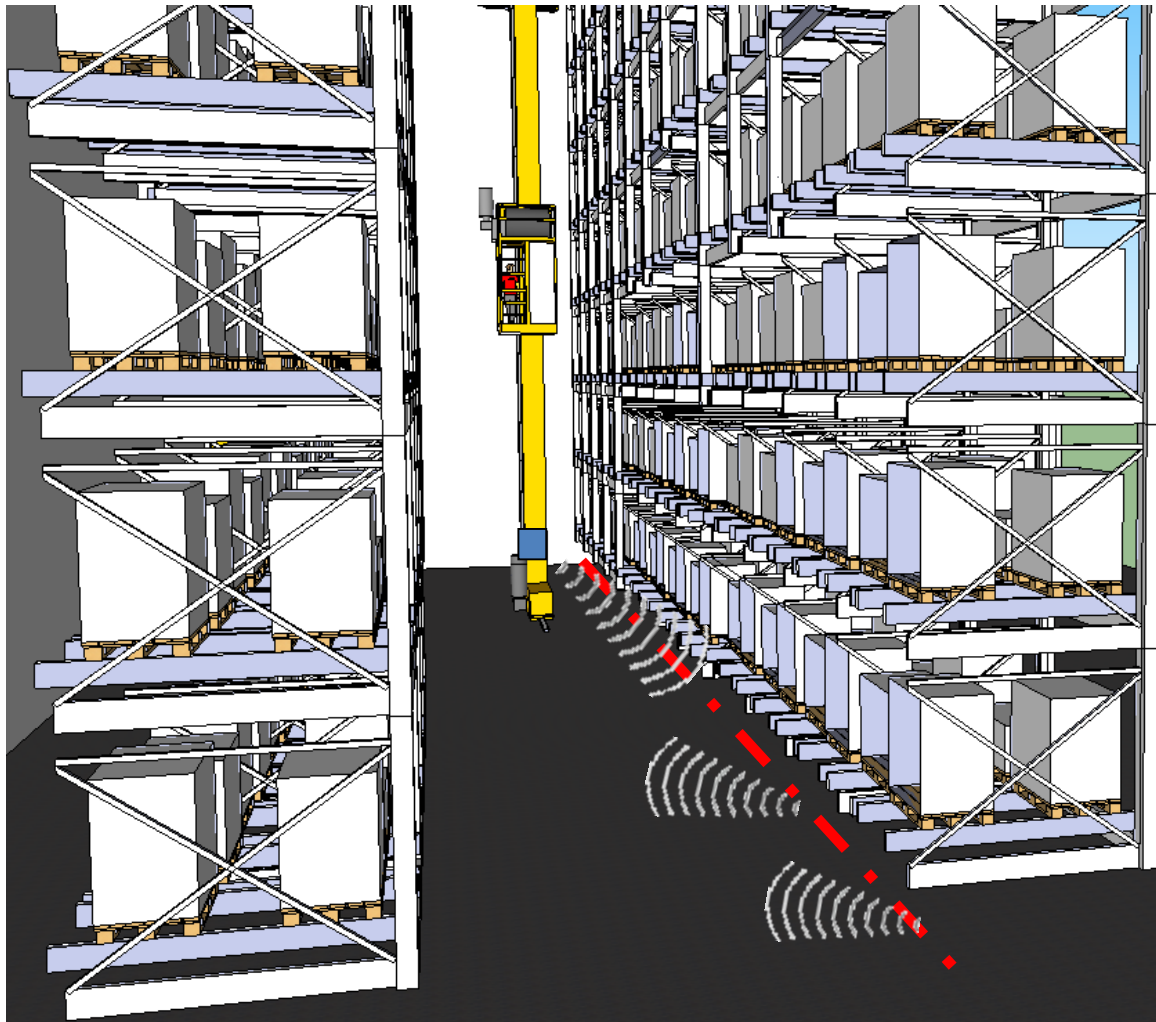
Patch Antenna Solution

Radiating Cable

Easier to implement

❖ **Application description**

- ◆ **Material handling for warehouses and stocks.**

❖ **Application requirements**

- ◆ **A lot of metal frames**
- ◆ **Moving part**
- ◆ **Metal moving parts (cabinets) between rows of the warehouse)**
- ◆ **Reliability, availability (moving cabinet must not lose connection when at stop points).**

❖ **Location**

- ◆ **Dornach, Switzerland**

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Replace old DH+ netwwork

120 m

100 m

Process building

Load

Monorail System

Unload

20 carriers

carriers

Monorail track

EtherNet/IP

20x

Stationary cabinet

RadioLinx

PLC

Carrier cabinet

RadioLinx

Serial / Ethernet

PLC

SLC 5/05
EtherNet/IP
RadioLinx

SLC 5/04
DH+ to EtherNet/IP Gateway
RadioLinx
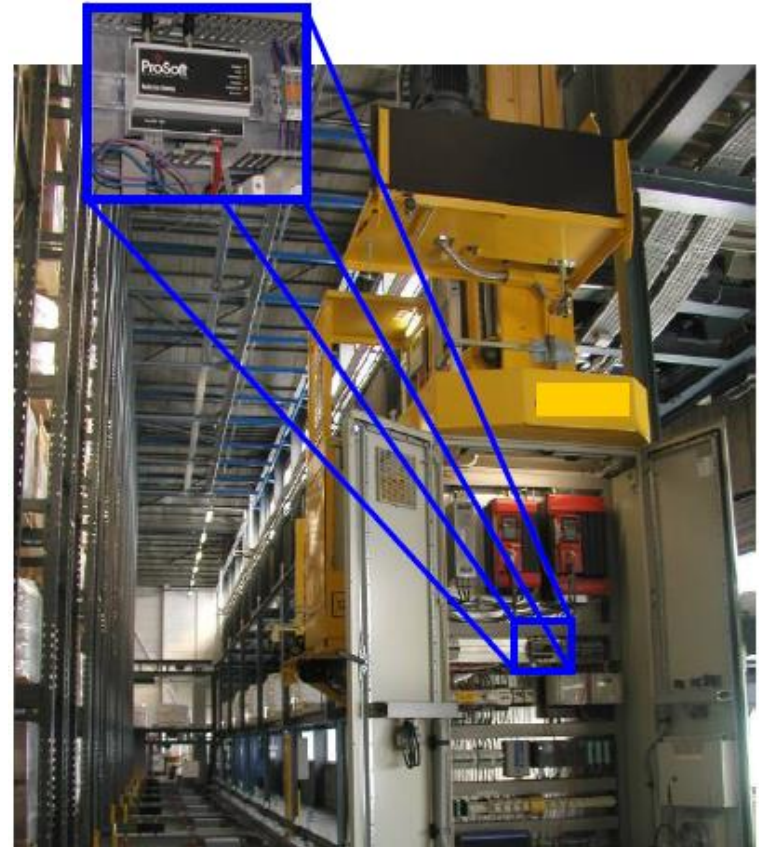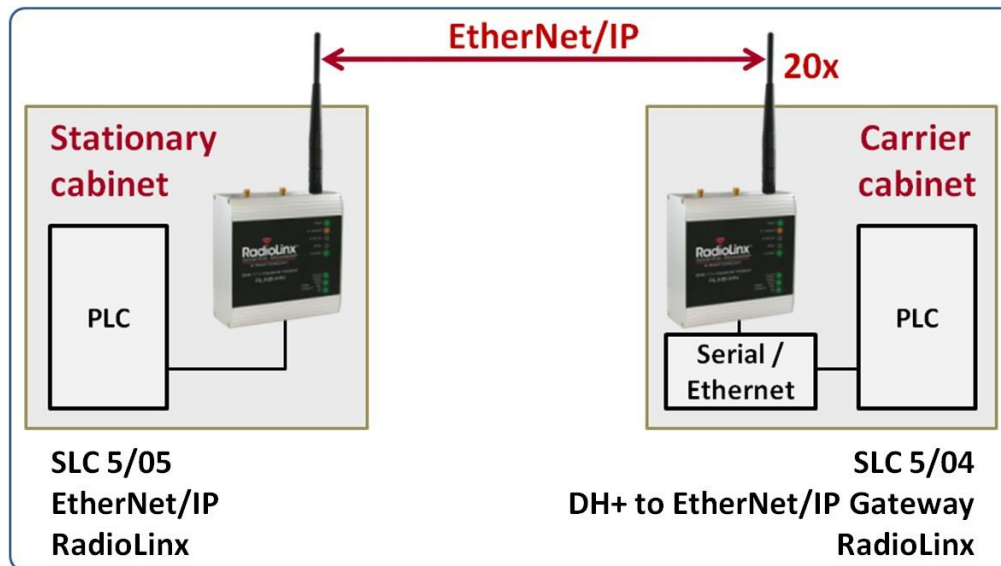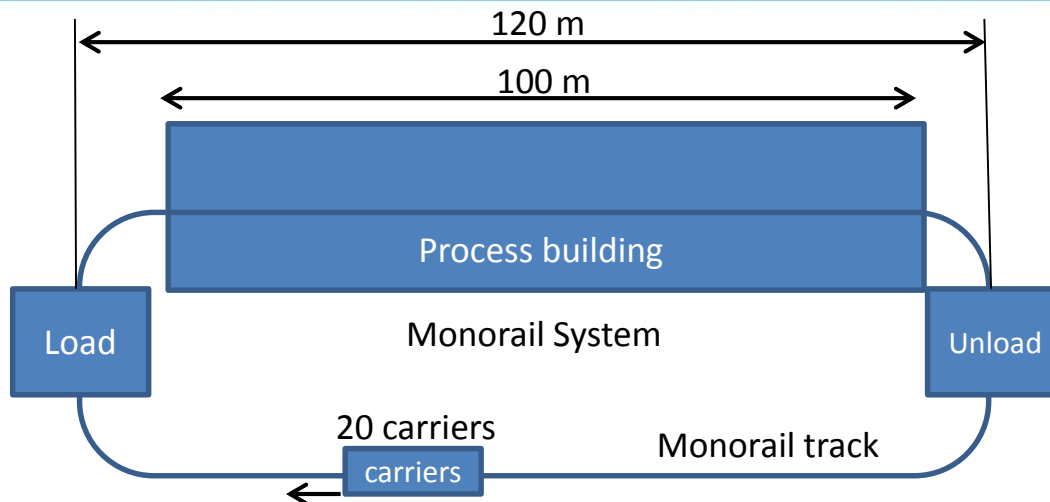
Ford St Petersburg Vsevolozhsk facility.
The RadioLinx Automation-class wireless solution from ProSoft Technology, allowed the number of carriers simultaneously in use over the loop in the paint-shop, to grow from 13 up to 20. Almost 54% increase!

Migrating **DH+** to **EtherNet/IP** and **slip-ring** to **RadioLinx** network

ProSoft
TECHNOLOGY

Rotating machines

❖ All types of rotating machines : carousels, entertainment equipments, typical applications with slip ring communication replacement
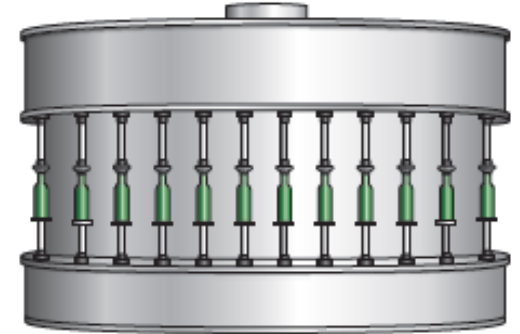
Rotating
Bottling Line

Benefits :

Near field application : only few centimeters between mobile antenna and the leaky cable.
→ clear line of sight guaranteed !

ProSoft®
TECHNOLOGY

Zamperla - Italy

ProSoft Technology Solution	
Our solution	• Radiating Cable • RLX2-IHNF (Industrial radio)
Customer benefits	• Allow moving communication between Safety devices • Data transfer improved • Increasing reliability • Secure and stable communication
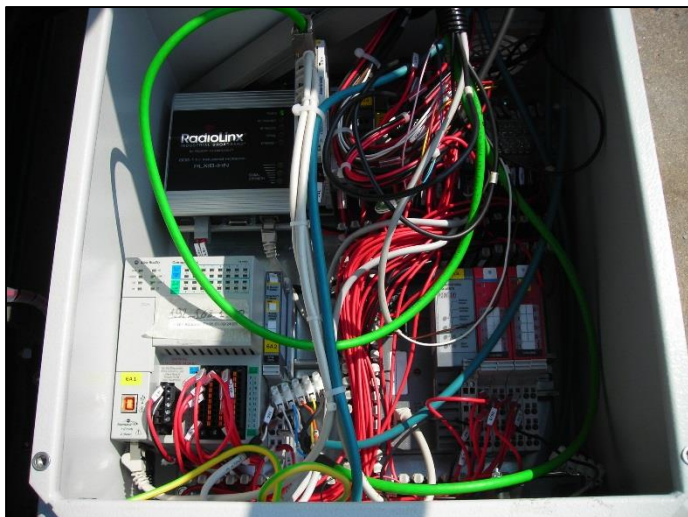
RLX2
radio family

802.11n Fast Industrial Hotspot

❖ High speed 802.11n technology

◆ Channel Bonding & MIMO Antenna (2 streams)

◆ Up to 300 Mbps RF data rate

◆ 2.4 GHz or 5 GHz band – including DFS channels

❖ Optimized for Ethernet IO & Producer/Consumer systems

Multiple Data Streams (MIMO)

Stream 1

Stream 2
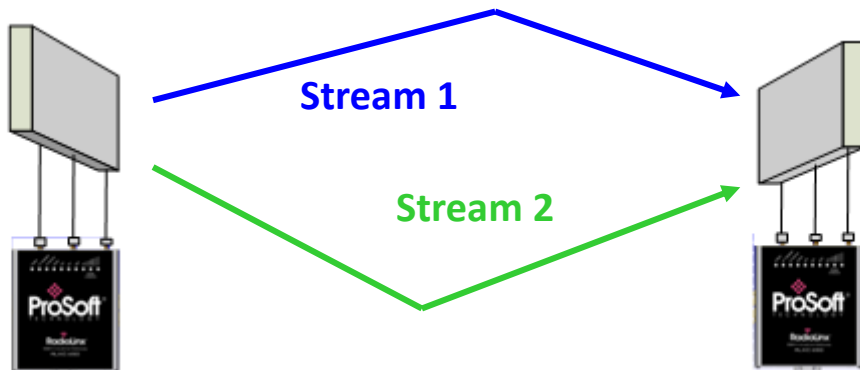
Multiple Channels (Bonding)

40MHz

Bonded

Ch. 36   Ch. 40

20MHz   20MHz

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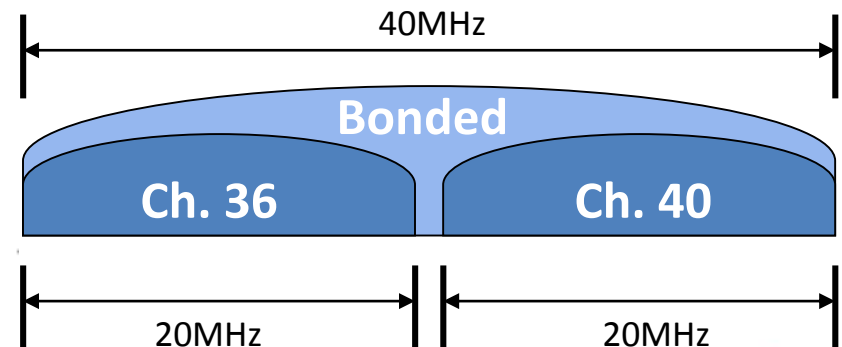
RLX2 Family Features

❖ Fast roaming with full bridging

❖ Diagnostic by free OPC server, EtherNet/IP or Modbus TCP/IP

❖ IGMP snooping/packet filtering

❖ Serial communication transparent or with Modbus and DNP ethernet encapsulation

❖ SD recovery card

ProSoft FAST ROAM Technology

❖ *Fast 10ms Roam* between Access Points
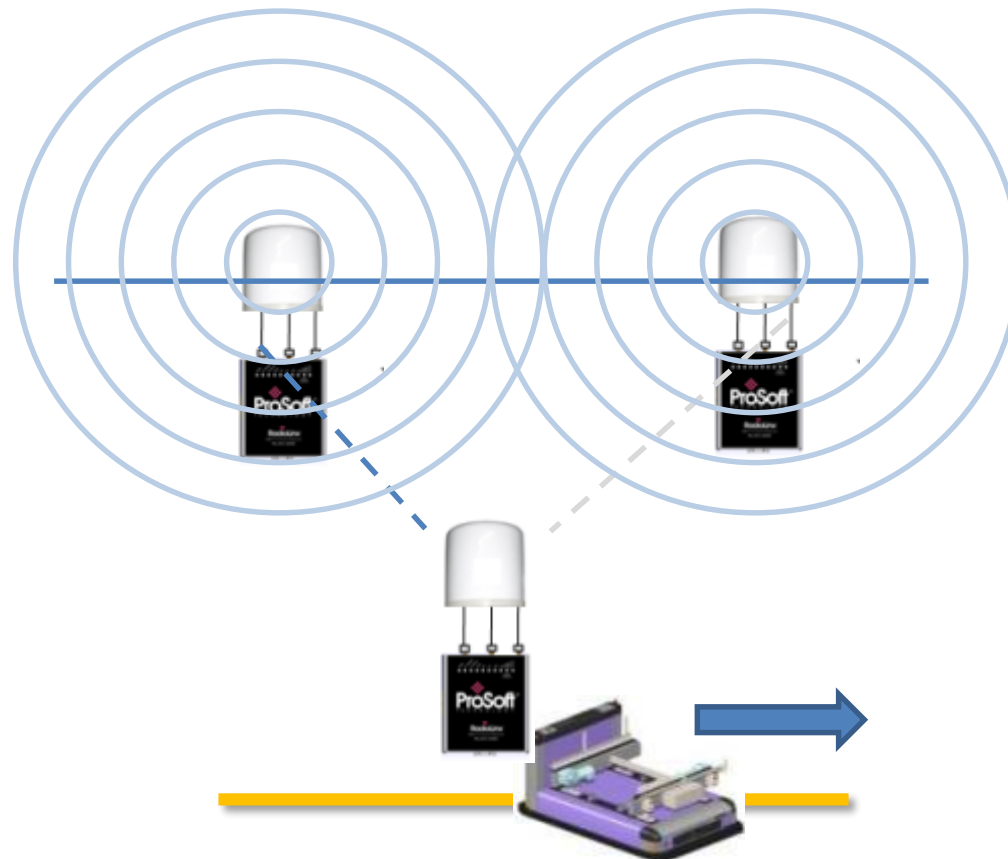
Radiating Cable System

❖ 802.11abgn Fast Industrial Hotspot Performance

♦ 2 RC segments per radio (up to 125m per segment)

♦ Fast Roam support

♦ Less than 10 ms transfer time between masters

♦ Up to 150 Mbps
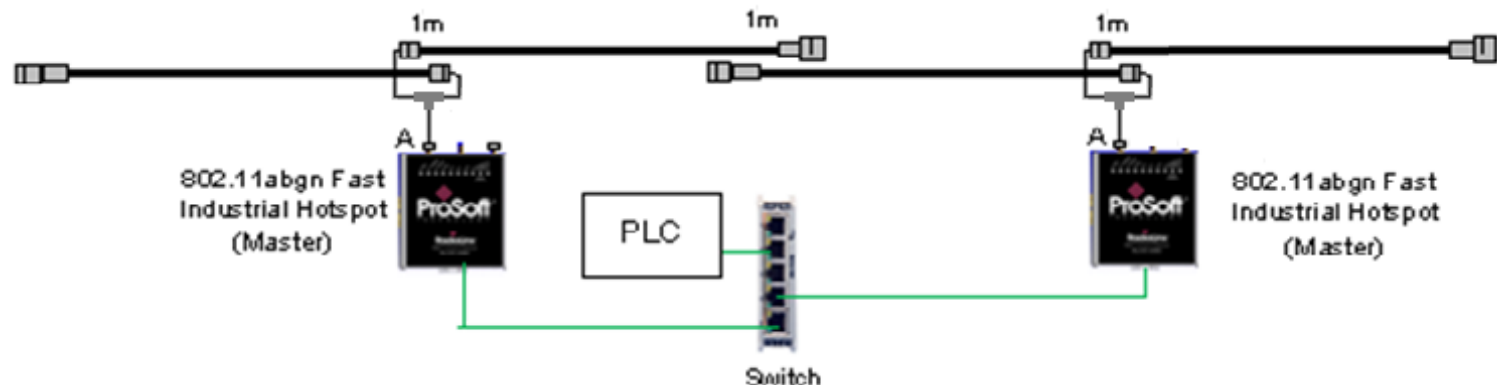
ProSoft Connect
future of Remote Access

EasyBridge™ - Advanced Networking

❖ **EasyBridge™ is the easiest way to connect to remote automation devices**

Cell Carrier to Internet

Drive

192.168.0.251
Remote PC Address

ProSoft CONNECT

192.168.0.250

192.168.0.050

192.168.0.20

192.168.0.30
HMI

Firewall

10.12.1.103

PAC/PLC

ProSoft TECHNOLOGY®
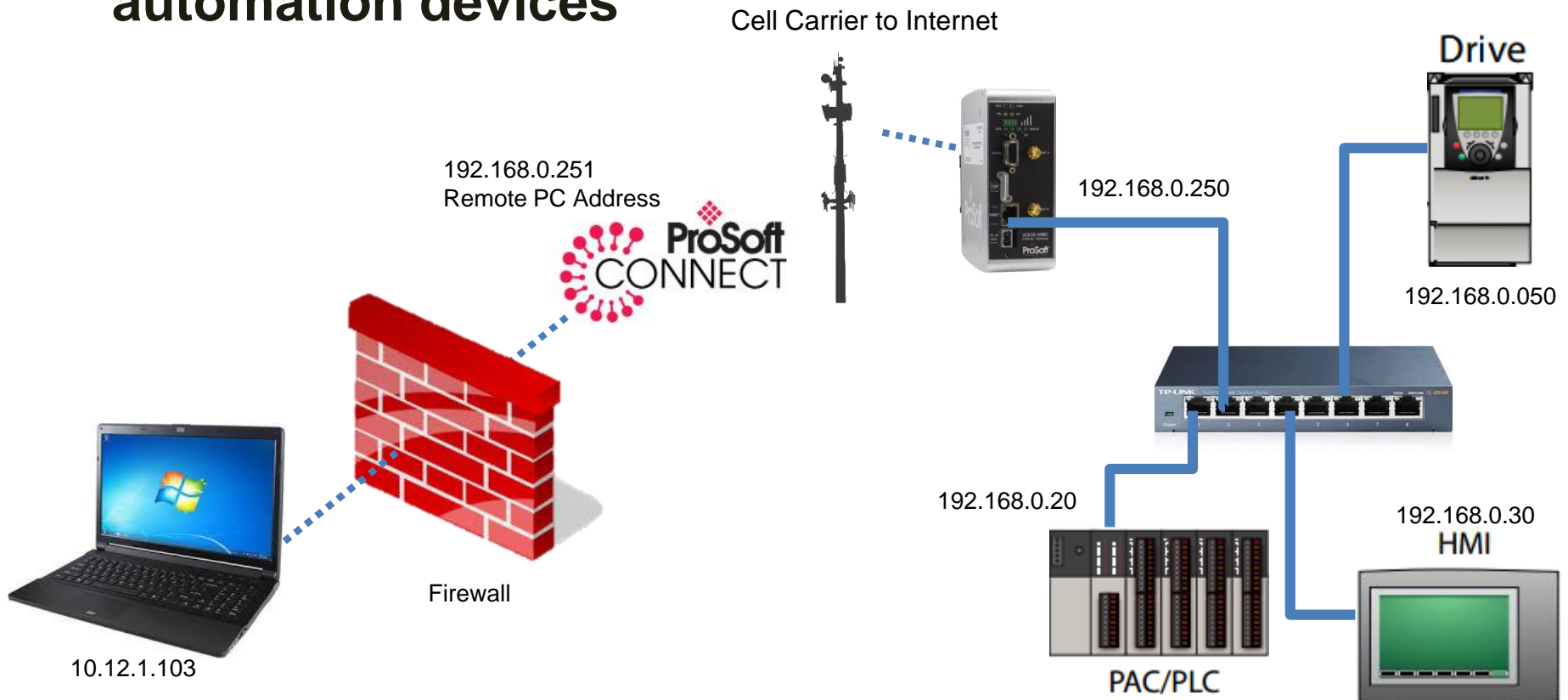
ProSoft Connect–Secure Remote Access

❖ Access Industrial Control Systems from Anywhere

❖ State-of-the-Art Cloud Native Technology
  ◆ Best User Experience
  ◆ Higher Level of Security

❖ Layer 2 VPN Connection
  ◆ Better than routed services used by competition
  ◆ Use Discovery Tools like RSWho, ProSoft Discovery Service, etc.
  ◆ Same as being connected to local switch = works with AB, SE, Siemens…

❖ No User-Installed Software
  ◆ Eliminates major security flaw of other services
  ◆ Web interface works from any computer

❖ <u>No static, public IP addresses needed</u>

❖ <u>GSM router configuration stored at the cloud</u>

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ProSoft Connect Account Overview

❖ ProSoft Connect Standard Subscription

- ♦ **<u>Free</u>** Secure Remote Access and Device Mgmt.
- ♦ 1GB VPN data use per month, per account
- ♦ Basic user access controls

❖ Create multiple users per account

- ♦ Standard Subscription – up to 12 users per account
- ♦ Unlimited number of ICX35 devices per account
- ♦ One VPN connection at a time

ProSoft Connect – Live Now

Want to test?

❖ Go to www.prosoft.io and sign up for free account

❖ On first log-in, take the "guided tour"

❖ Use the Support function to request a virtual ICX35 gateway

♦ Step through device activation process

♦ Try out device management features

♦ Configure and connect VPN

❖ ICX35-HWC cellular gateways with firmware version 1.1 can now connect!

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ICX35 without Connect

❖ Diagnostic and SMS feature

Private server

Computer IP addresses from 10.10.2.xxx

Computer or router working as VPN server
On one port open for External connections

GSM

Internet

GSM

SIM card with no external IP
Machine Network IP addresses
PLC 192.168.1.1

SIM card with no external IP
Machine Network IP addresses
PLC 192.168.1.1

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Server at server farm

Computer IP addresses
from 10.10.2.xxx

VPN server

GSM

GSM

SIM card with no external IP
Machine Network IP addresses
PLC 192.168.1.1

SIM card with no external IP
Machine Network IP addresses
PLC 192.168.1.1

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Technical Support

Wireless is easy ...

❖ The solution is **not only radio module**

Remote RadioLinx

Exterior Wall or Enclosure

10-24 VDC Power

Master RadioLinx

Interface Cable
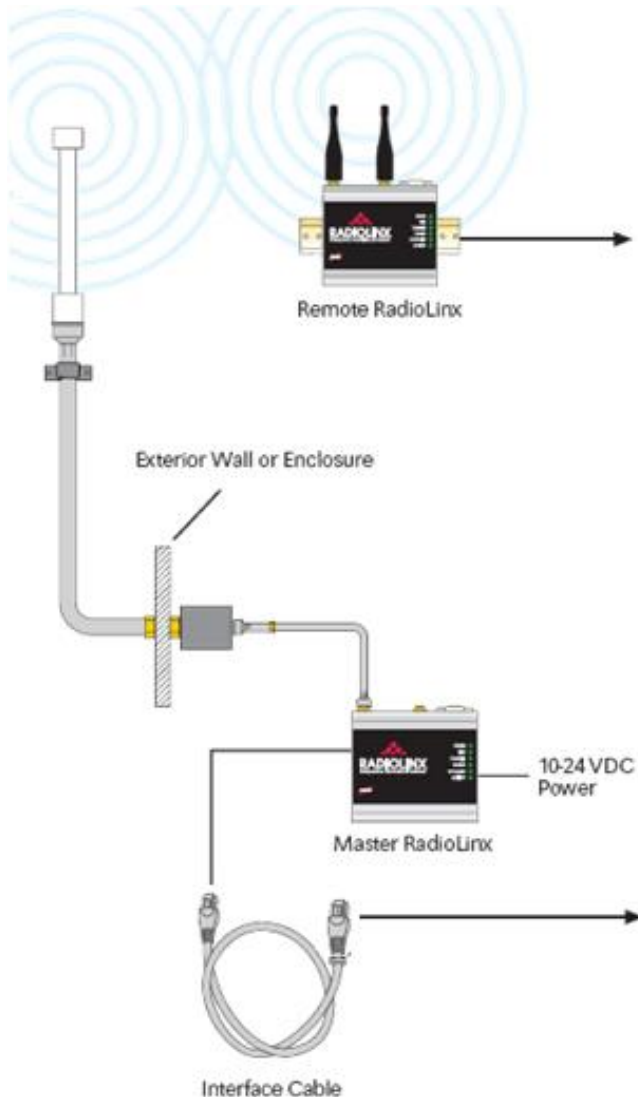
The solution is not only solved by choosing the radio module.

Cables,
Antennas,
Splitters,
Lightning Protection,
etc.,
build the whole solution.

Wrong choices can generate a lot of problems.

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Where to start?

❖ <u>Collect the information on the application:</u>

- ♦ Simple word doc – Customer to complete
- ♦ Get a plant layout
- ♦ Google Earth
- ♦ Drawings/sketches

What's next? Wireless designer

❖ <u>ProSoft Technology Wireless Designer (PWD):</u>

- ◆ Help you in defining the architecture

- ◆ Data from the collection form

- ◆ BOM generator

Part #	Quantity	Description
RLX-FHE-EU	2	2.4 GHz Frequency Hopping Wireless Ethernet Switch
LP-24002	6	N jack --> N jack BH lightning protection w/hardw
A2408NJ-DP	4	8 dBi Directional patch panel N jack, 2.4GHz
C19M10-40-002	6	2ft LMR 195 RA RP-SMA --> N plug cable
C40M40-40-080	6	80ft LMR 400 N Plug --> N plug cable
RLX-IHW-E	4	2.4 GHz/5.8 GHz High Speed Wireless Ethernet "Industrial Hotspot"
A2415NJ-OC	2	15 dBi omnidirectional N jack collinear, 2.4GHz
RLX-WPK001	1	RF Connector Weatherproofing Kit

What's next? Site study

❖ <u>Site study:</u>

- ♦ Can be done by non radio expert.

- ♦ To identify antennas position, numbers of repeaters, feasibility, power requirements...

- ♦ Guide for the design of the network, bill of materials, report...

TIP:
- Clear Line of sight – KEY POINT
- inSSIDer from MetaGeek
- Radio Browser – available parents
- Take pictures of the positions
- Record the information
- Write the report
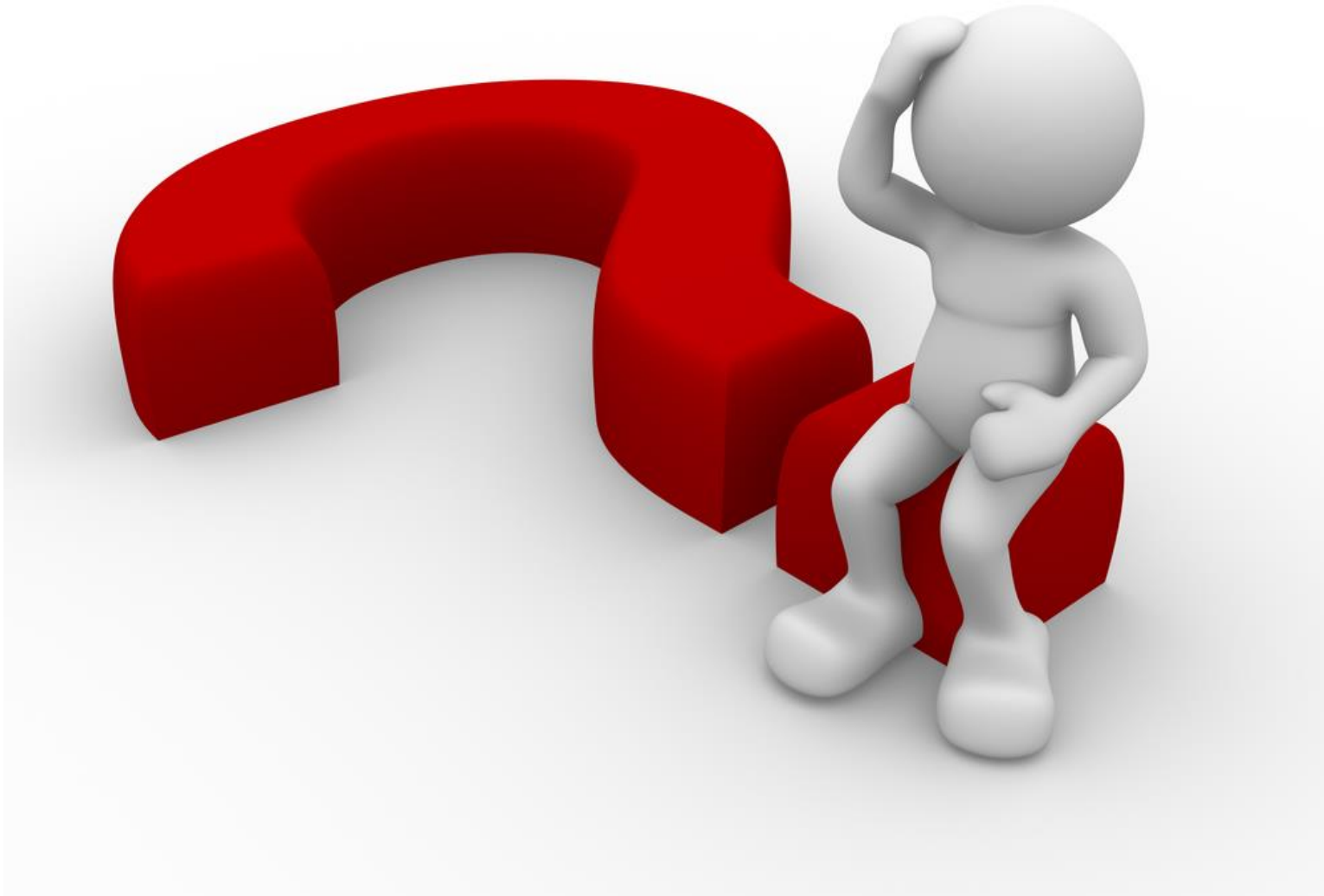
What next? Site Survey

❖ <u>Site survey:</u>

◆ Requires a radio expert with the specific measuring systems

◆ Analyse frequency bandwidth, signals, networks…

❖ On site assistance during your project commissioning
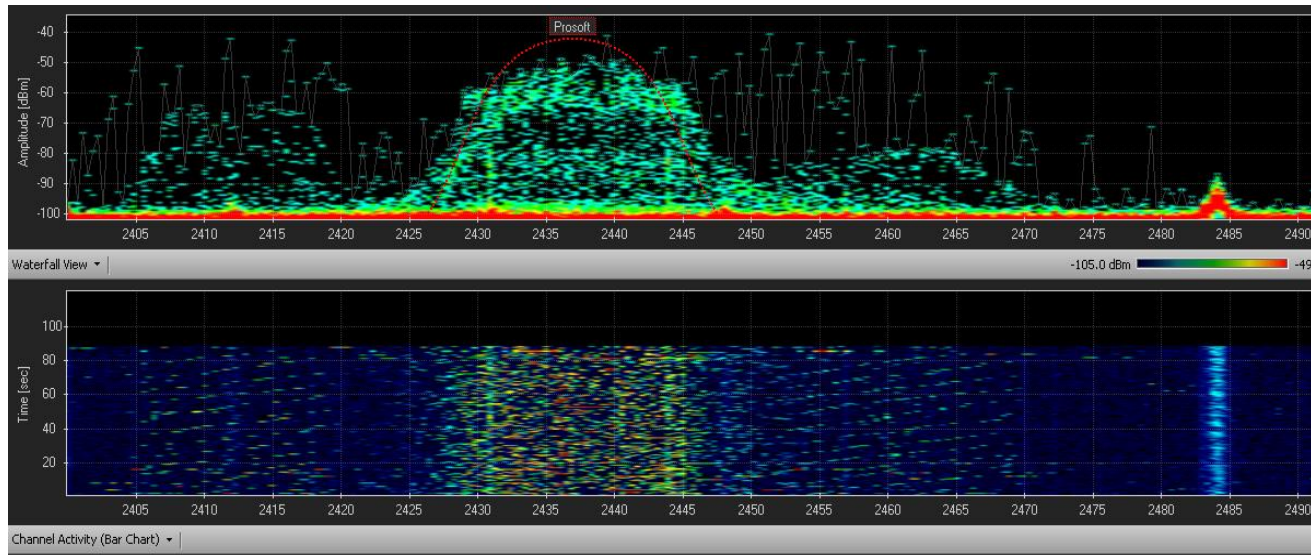
Questions?

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