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MOXA SOLUTION DAY 2016

Integracja istniejącej infrastruktury do nowego systemu – konwersja protokołów

Michał Łęcki

17/05/2016

Rozwiązania Przemysłowe

MOXA

Core

Industrial Core Switch

10G

Industrial Rackmount Switch

1G Turbo Ring

istribution

Turbo Chain

DIN-Rail Ethernet Switch

Media Converter

DSL Ethernet Extender

Industrial PoE

Serial to Ethernet

Fieldbus Gateway

IP Cameras

Remote I/O

PLC

Meter

I/O

Sensor

Edge

Industrial Network Management

PiNS Professional Industrial Networking Services

Professional Industrial Network Service

Industrial Cyber Security

Internet

VPN

Tunnel

Firewall

PLC

Substation Ethernet Switch

M12 Ethernet Switch

Industrial Wireless

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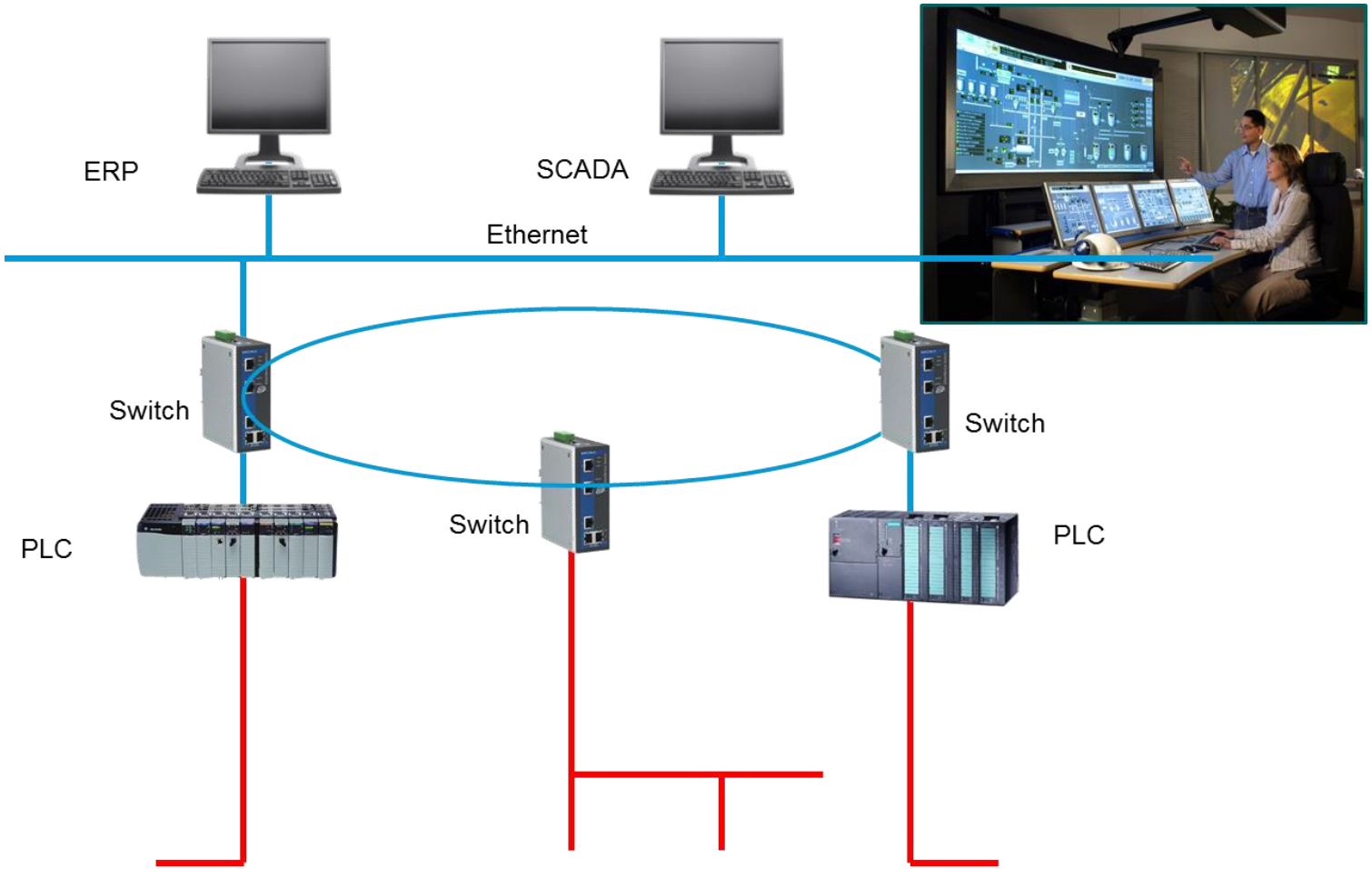
Architektura Industrial IoT - ideał



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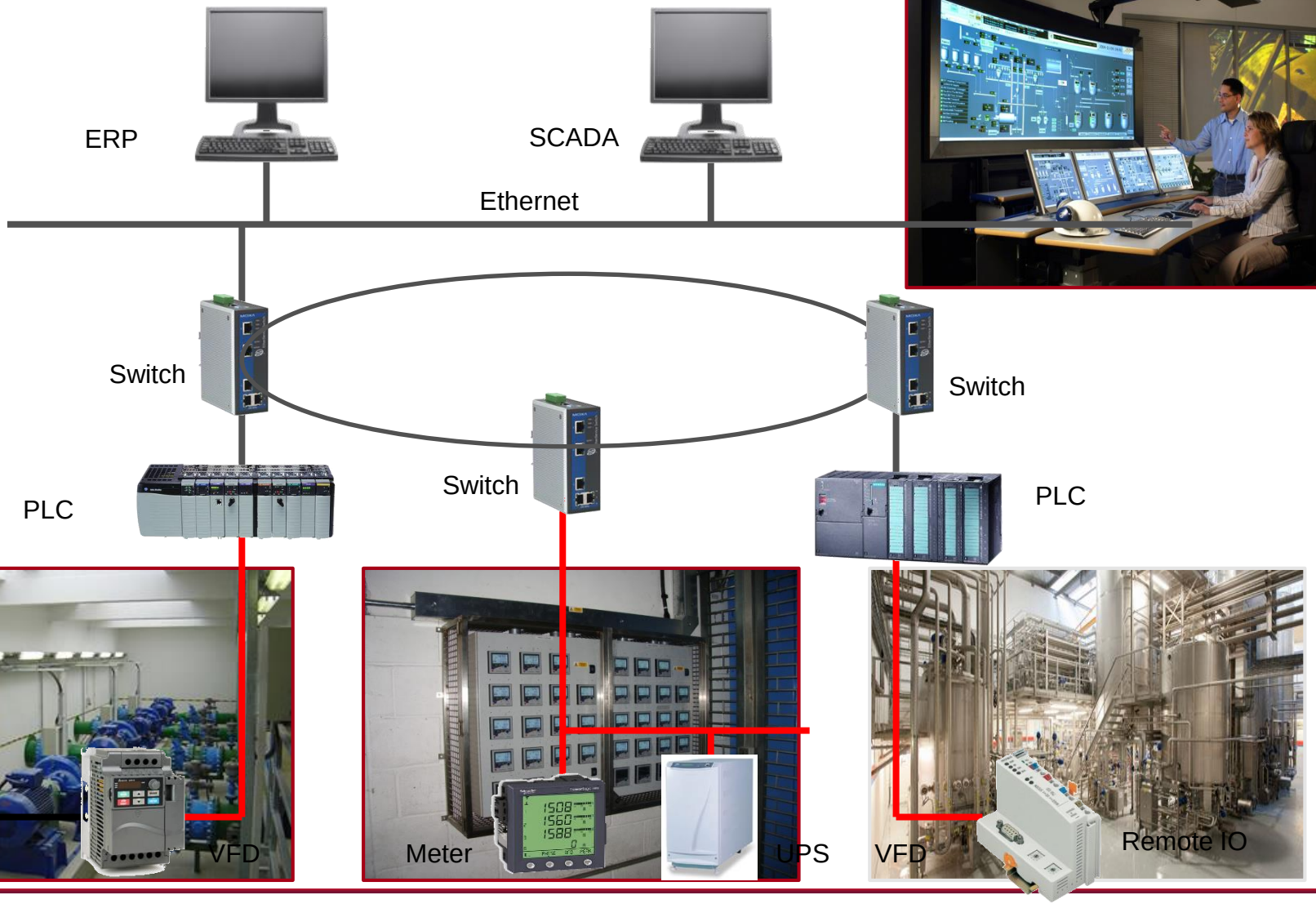

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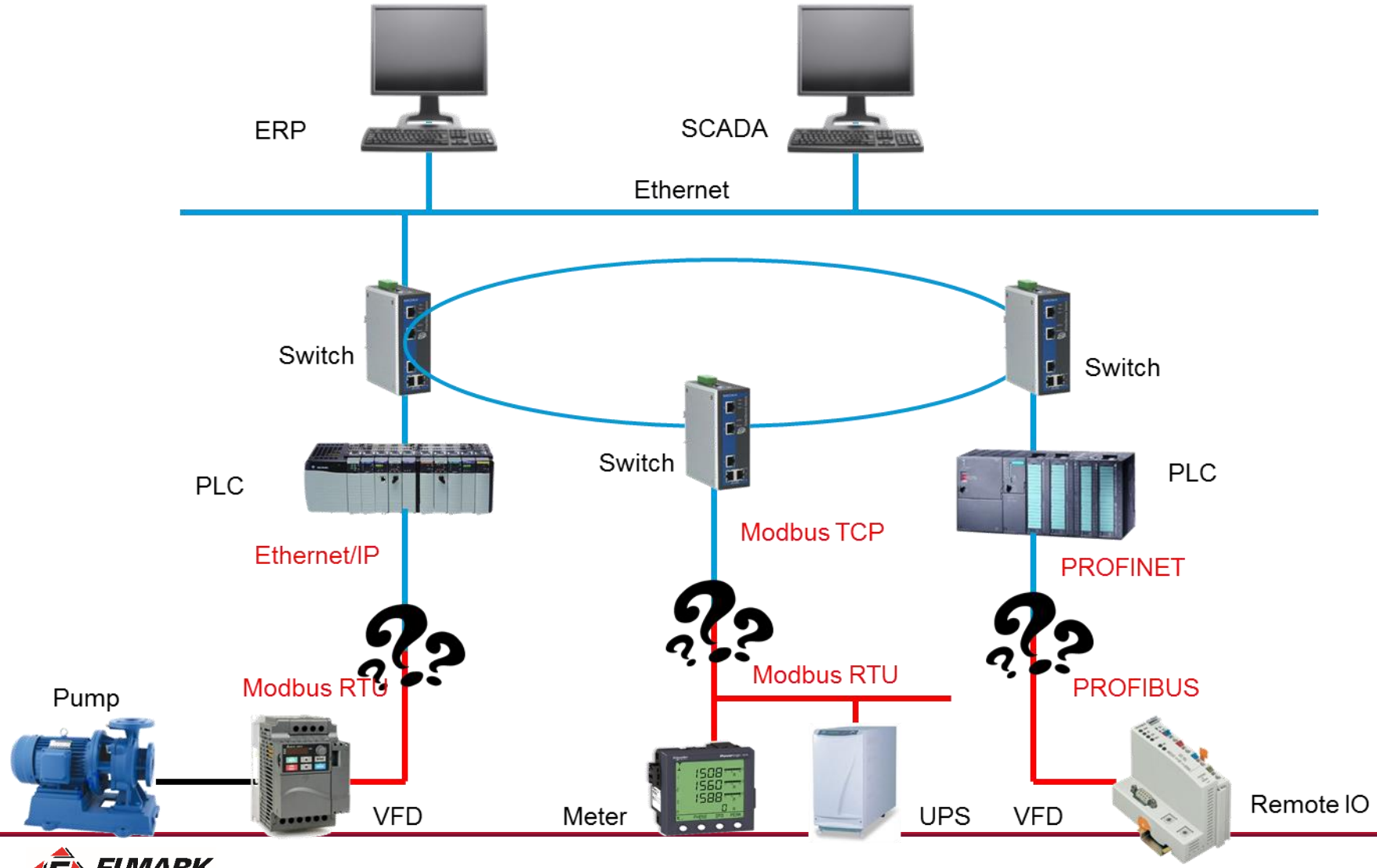
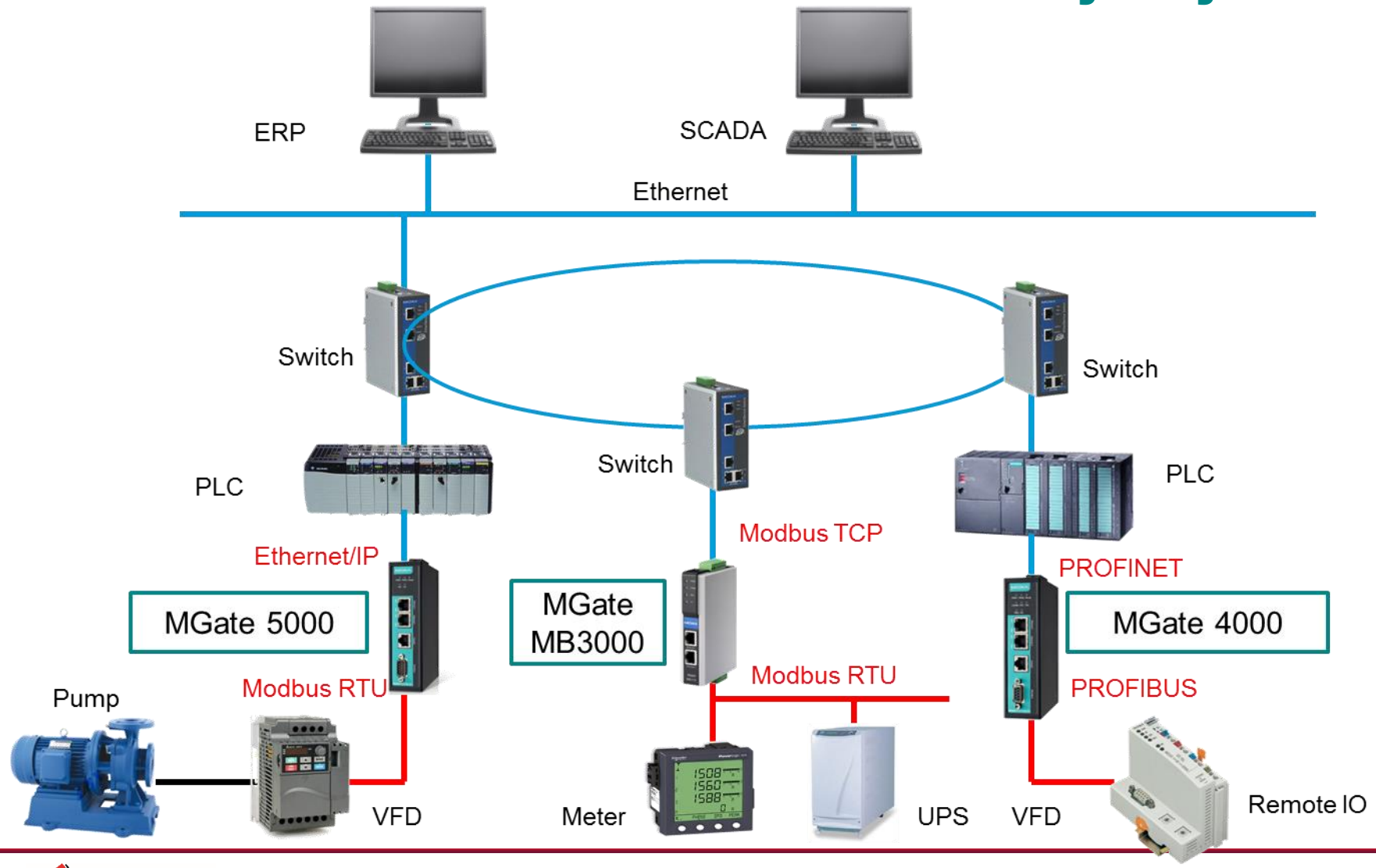
Architektura Industrial IoT – jak jest



Architektura Industrial IoT – jak jest



Migracja do Ethernetu

Modbus RTU	→	Modbus TCP
DeviceNet	→	EtherNet/IP
CANopen	→	EtherCAT
SERCOS I / II	→	SERCOS III
PROFIBUS	→	PROFINET

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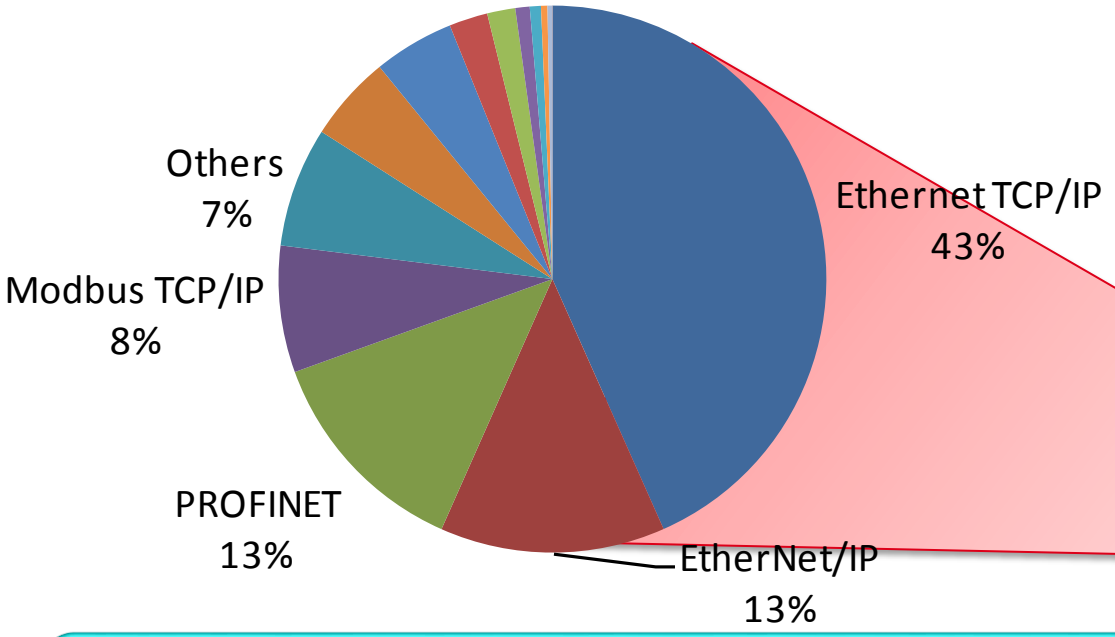
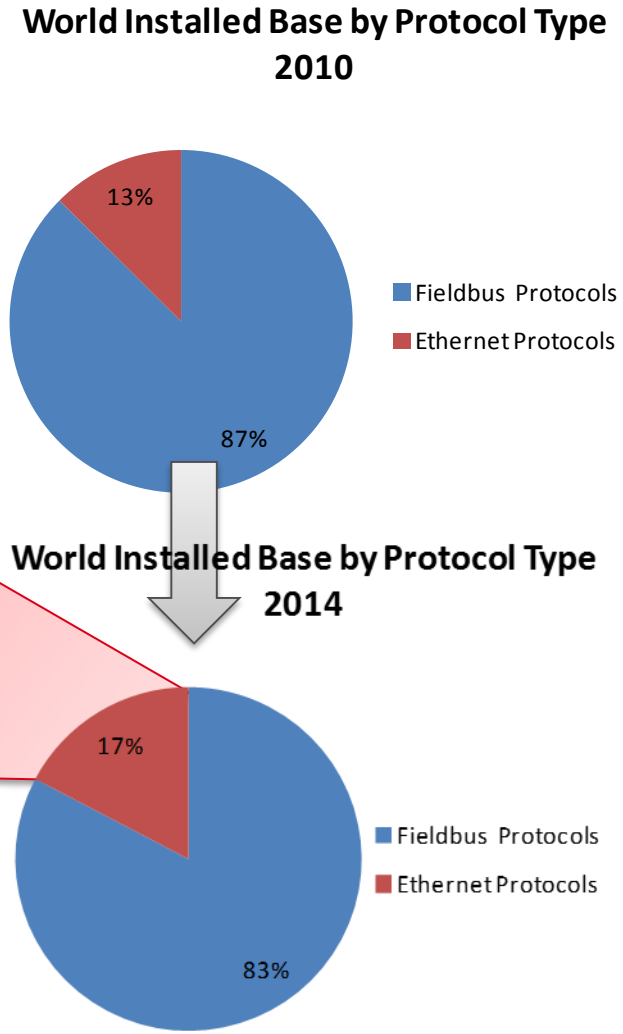
World Installed Base of Industrial Ethernet by Protocol





- Co raz więcej Ethernetu (13%->17%)
  Tradycyjne protokoły (83%*350M)

Oferta

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Ethernet Gateway

Modbus

EtherNet/IP

PROFINET

Modbus TCP

Standard MGate™ MB3180/3280/3480

Advanced MGate™ MB3170/3270

MGate™ 5101-PBM-MN

EtherNet /IP

MGate™ EIP3000

MGate™ 5105-MB-EIP

PROFINET

MGate™ 5102-PBM-PN

Modbus RTU/ASCII

PROFIBUS

DF1

Modbus RTU/ASCII/TCP

Profibus

Fieldbus Gateway

PROFIBUS

MGate™ 4101-MB-PBS

Modbus RTU/ASCII

Co zyskujemy?

Solidne wykonanie

- Przemysłowe wykonanie
- Certyfikacja

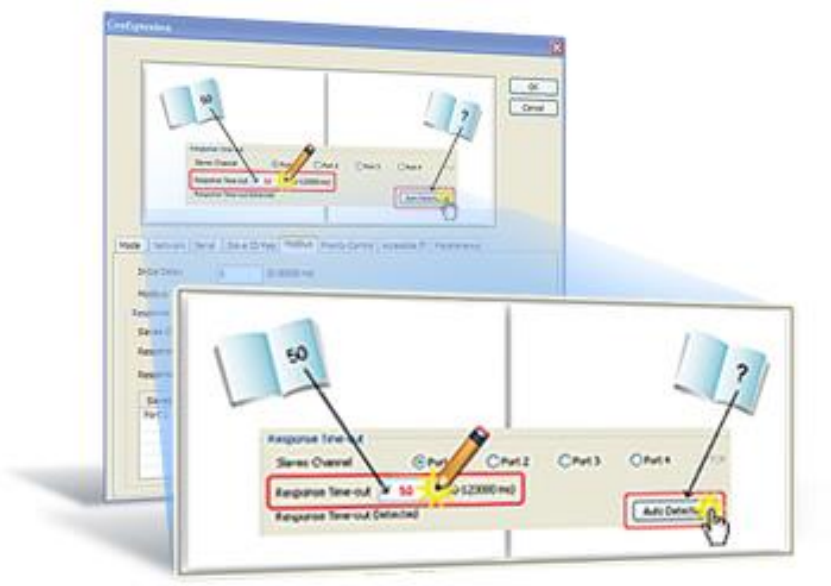
Szybka instalacja

- Autokonfiguracja
- Analiza protokołów

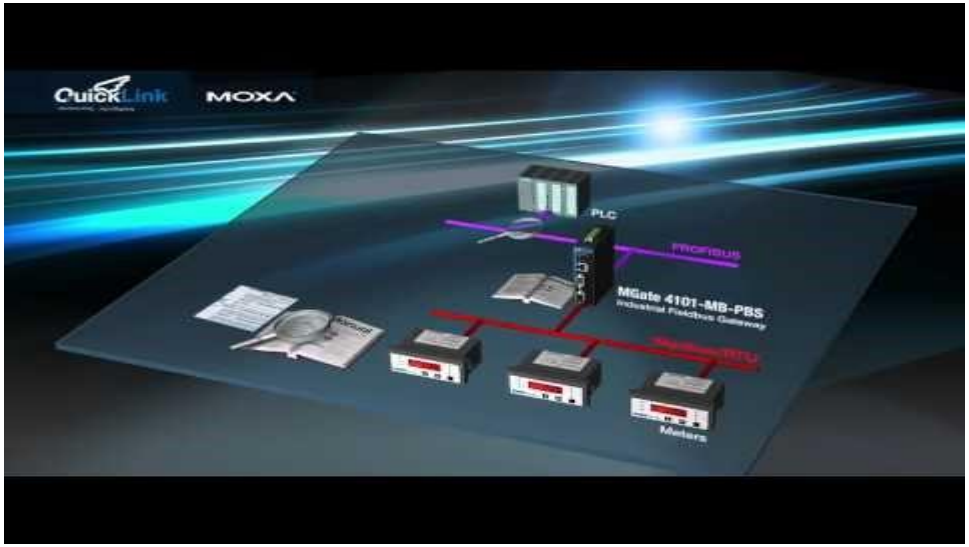
Łatwe zarządzanie

Innowacyjna technologia do szybkiej konfiguracji

- **AutoCalibration:**
  One-click detection of response timeout

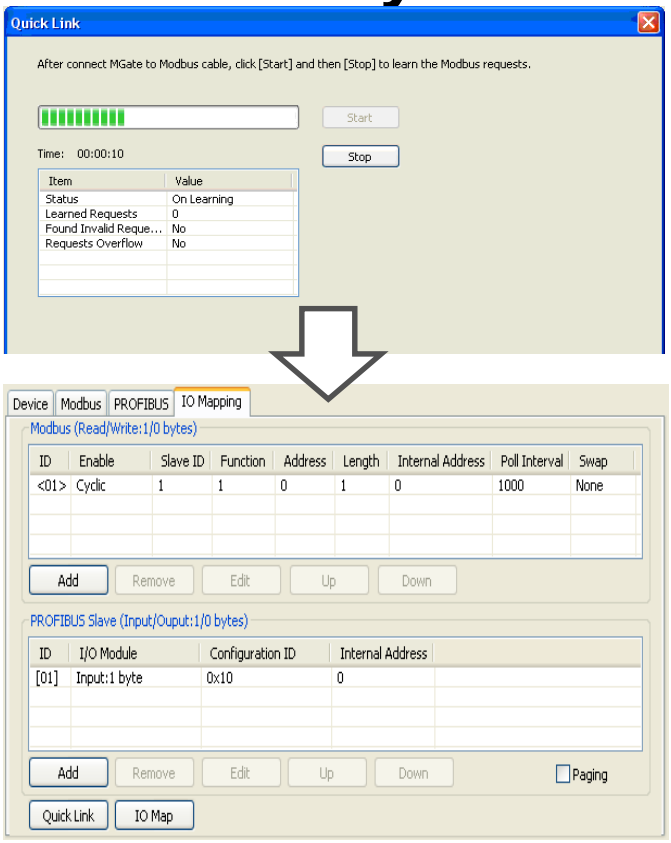


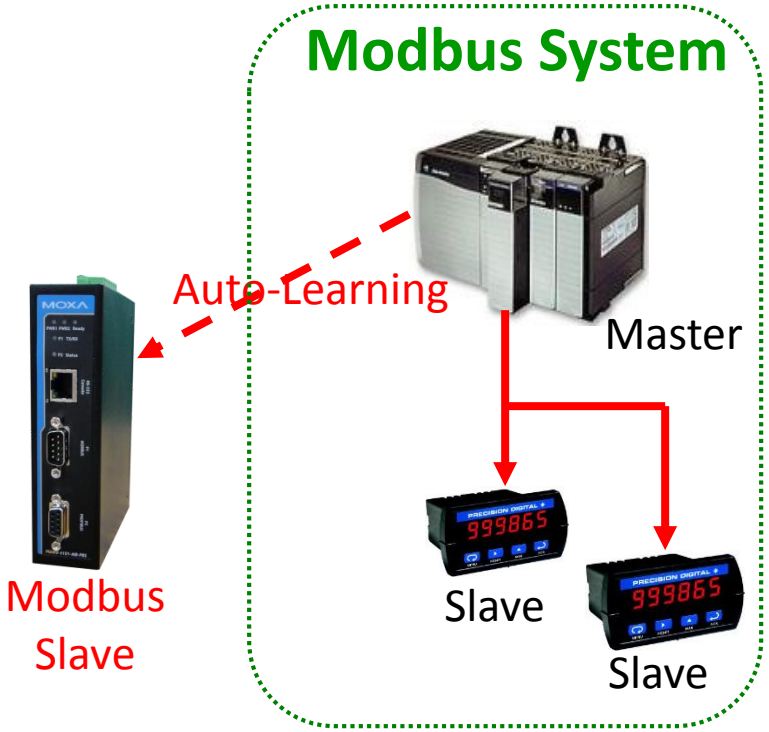
- **QuickLink (AutoLearning/AutoMapping):**
  Passively detects Modbus requests for automatic and error-free PROFIBUS I/O mapping



Quick Link

- **Bramu uczą się hierarchii w komunikacji automatycznie**





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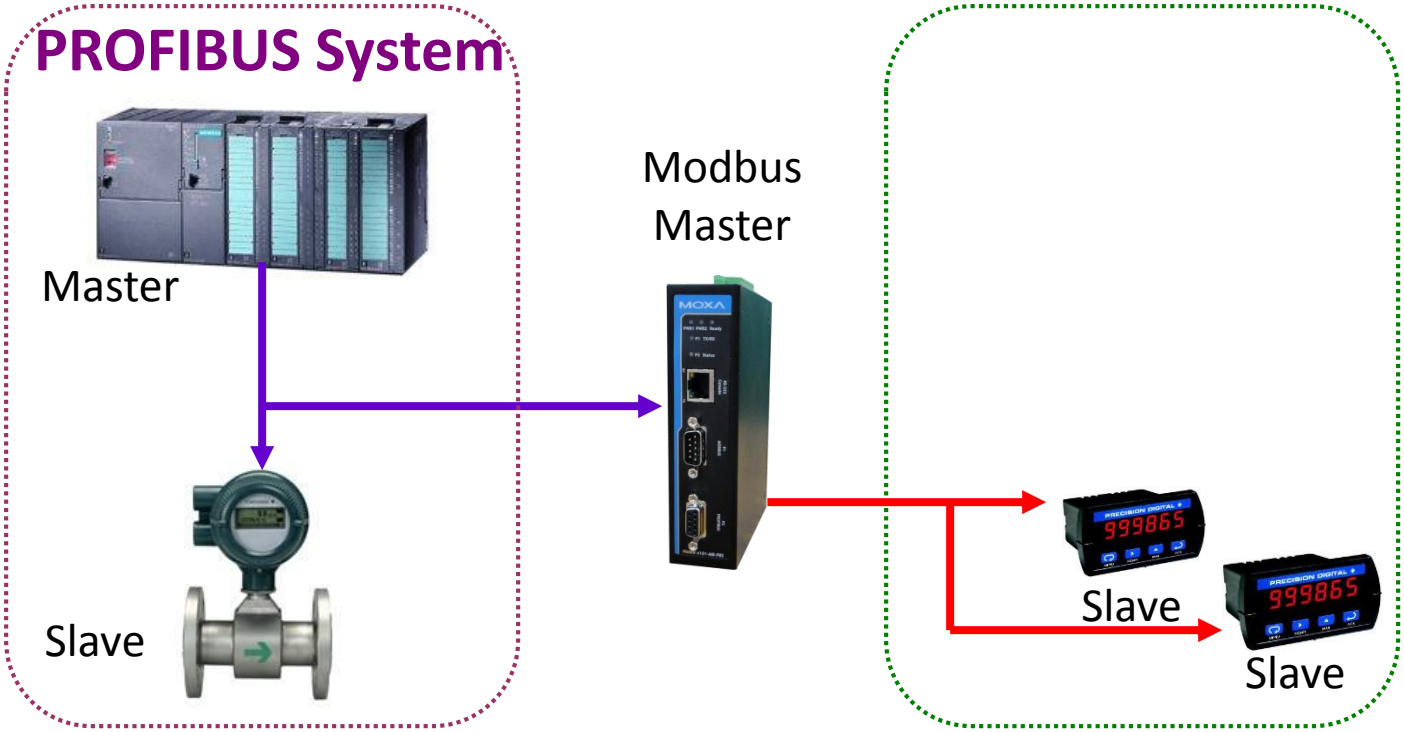
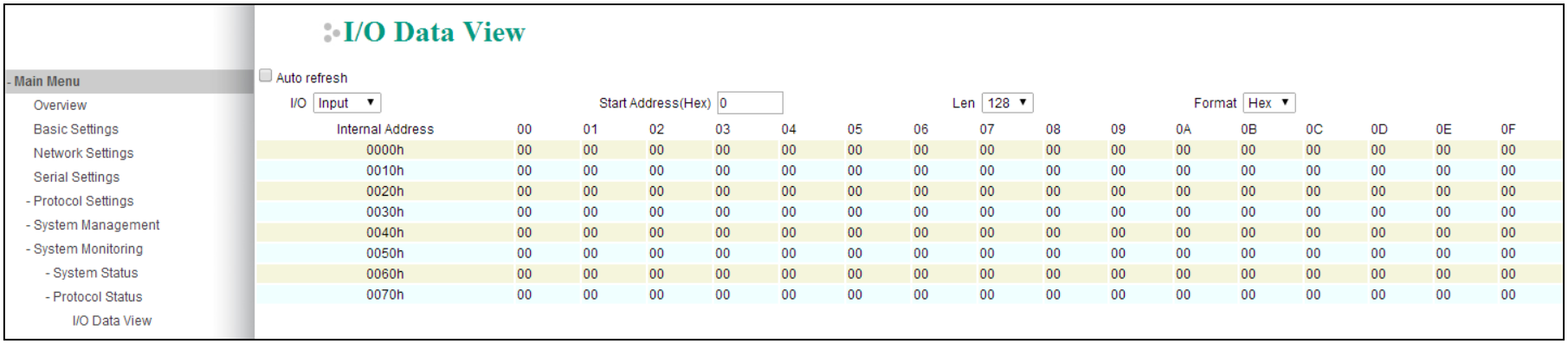
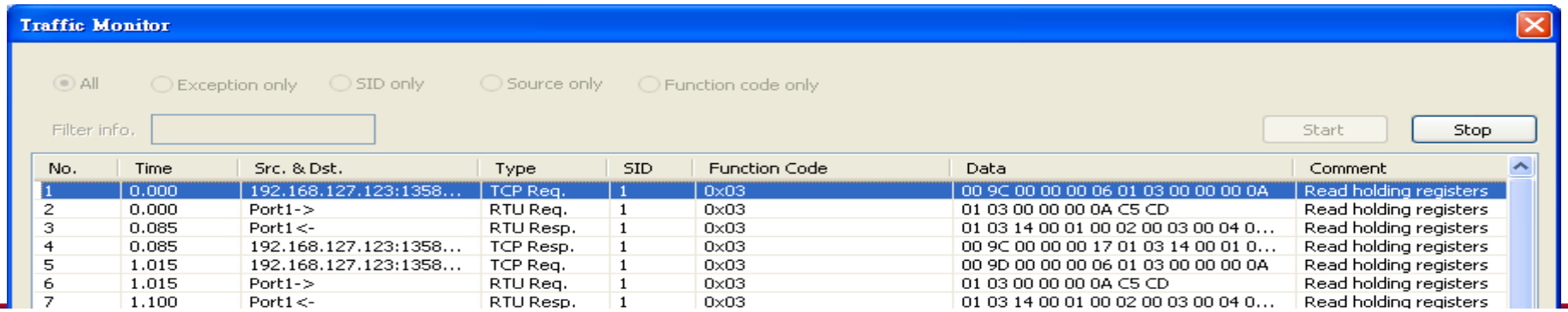


Quick Link

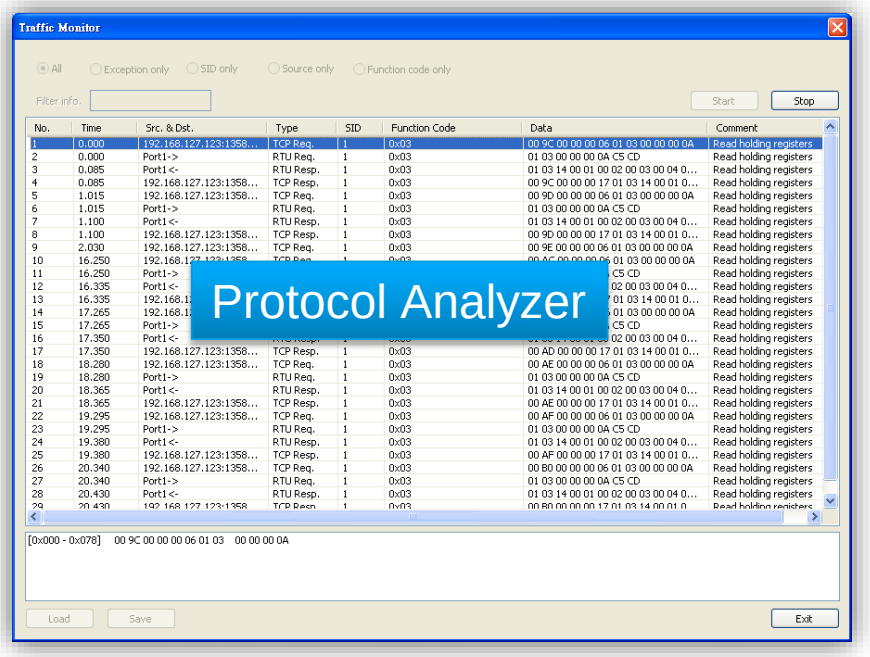
- **Bramy zapewniają narzędzia analizy transmisji celem debugowania**

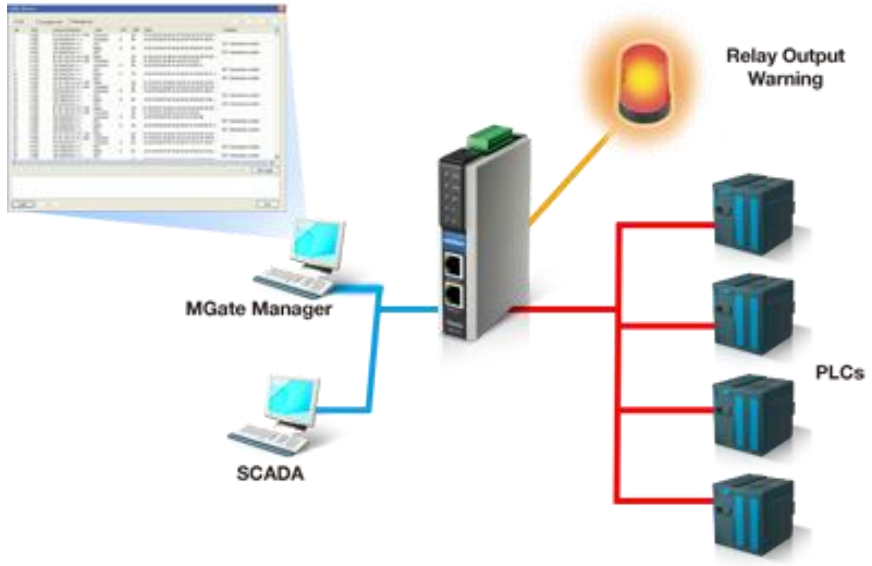




Łatwe monitorowanie i troubleshooting

- **MGate Manager: monitoring ruchu oraz zawartości danych celem szybkiego rozwiązywania problemów**
- **Relay output warning: daje szybką informację do utrzymania ruchu**





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MGate zestawienie

Model	MGate MB3170	MGate 4101-MB-PBS	MGate 5101-PBM-MN	MGate 5102-PBM-PN	MGate 5105-MB-EIP
Appearance					 Preliminary
Serial Protocol	Modbus RTU/ASCII	Modbus RTU/ASCII PROFIBUS	PROFIBUS	PROFIBUS	Modbus RTU/ASCII
Ethernet Protocol	Modbus TCP		Modbus TCP	PROFINET	EtherNet/IP
Quick Installation					
AutoCalibration	•				
QuickLink		•			•
AutoScan			•	•	
Easy Management					
Protocol Analyzer	•	•	•		•
I/O Monitoring			•	•	•
Relay	•	•	•	•	•
Active Alarm				•	•
Event Log			•	•	•

Modbus Automatic Learning

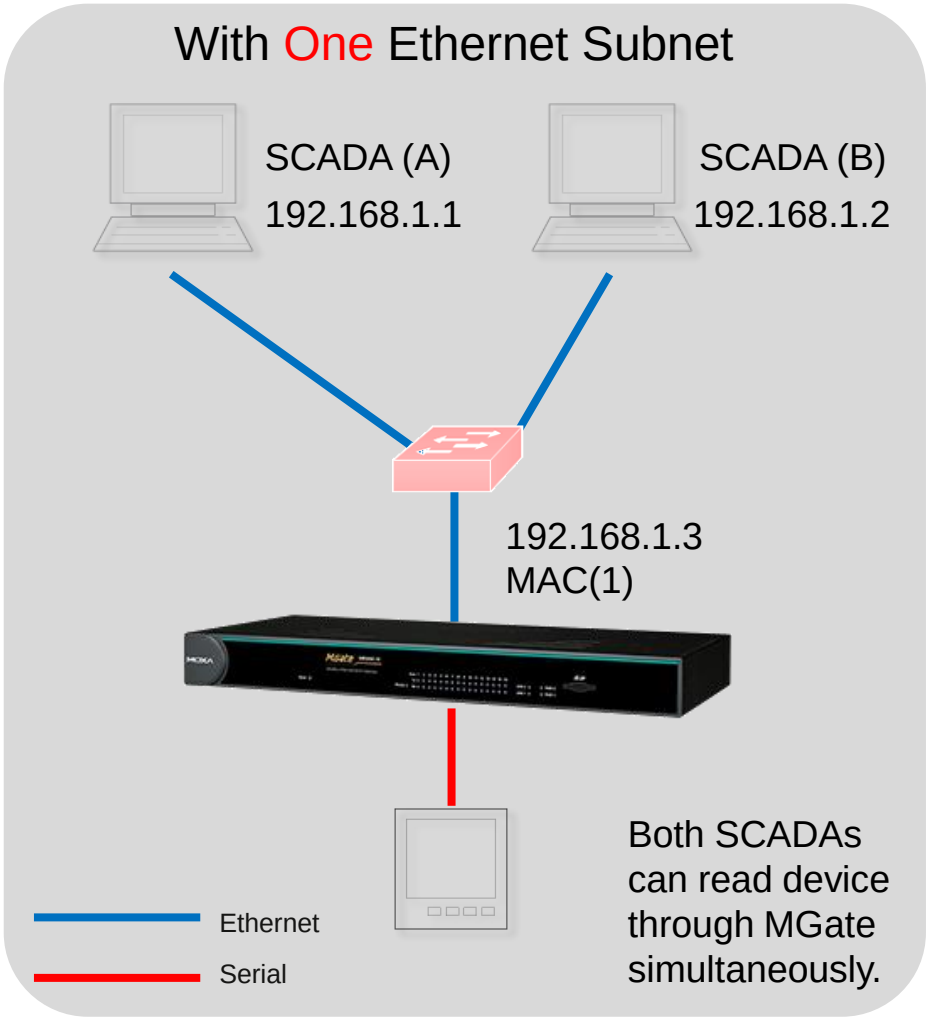
PROFIBUS Automatic Scanning

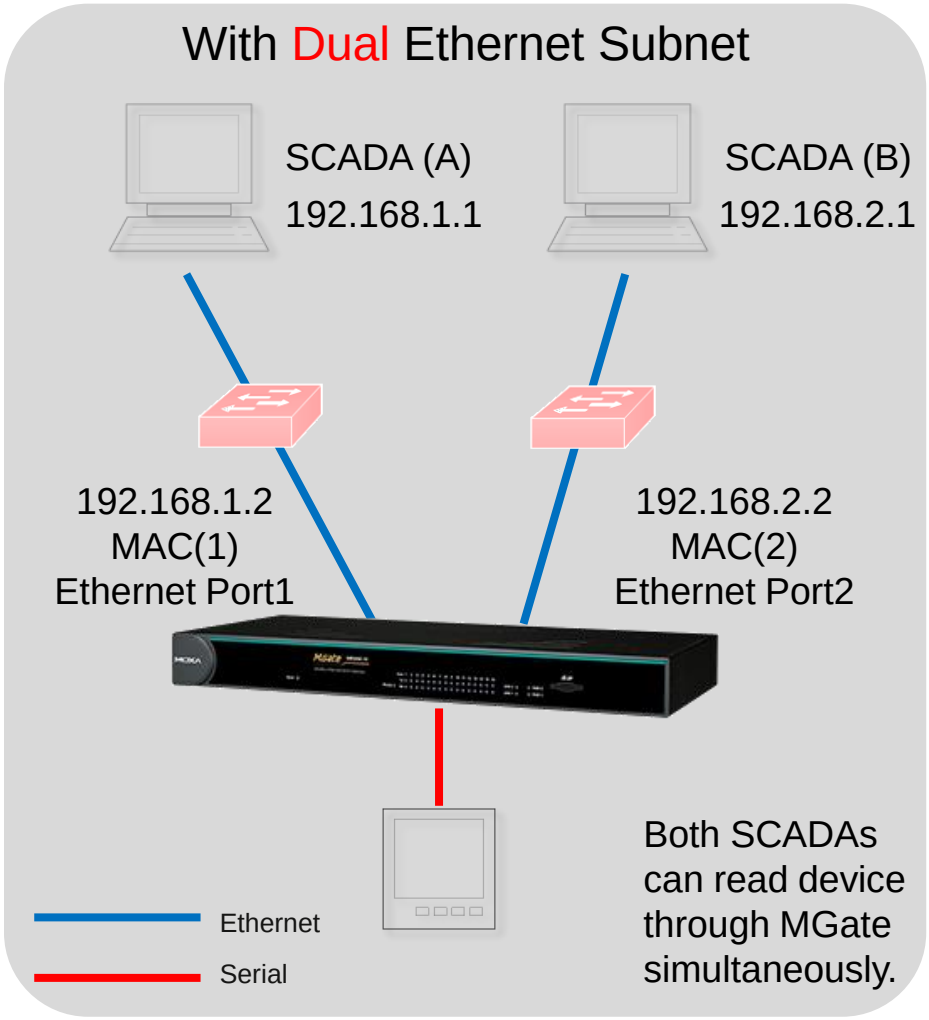
MGate MB3660

- **High Density Modbus Conversion**
  - Supports up to 16 serial interface for Modbus RTU devices.
  - Access by up to 256 TCP master/client devices, or connect to 128 TCP slave/server devices
- **High Performance**
  - Innovative command learning eliminates the need to key-in SCADA Modbus commands (acts as an agent gateway)
  - High performance through active and parallel polling of serial devices
- **High Availability**
  - Dual VDC or VAC power input modules with wide power input range
  - 2 Ethernet ports with the same IP or dual IP addresses
- **Other Features**
  - 3-pin fault relay circuit for event alarms
  - 2 kV isolation protection (for "-I" models)
  - SD card for configuration backup

Models	Description
MGate MB3660-8-2AC	8 ports Modbus gateway, dual AC power input.
MGate MB3660-8-2DC	8 ports Modbus gateway, dual DC power input
MGate MB3660I-8-2AC	8 ports Modbus gateway, dual AC power input, 2kV isolation
MGate MB3660-16-2AC	16 ports Modbus gateway, dual AC power input.
MGate MB3660-16-2DC	16 ports Modbus gateway, dual DC power input.

Podłączenie do sieci redundantnych

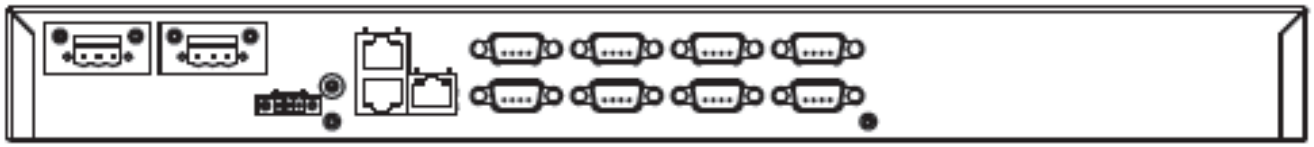


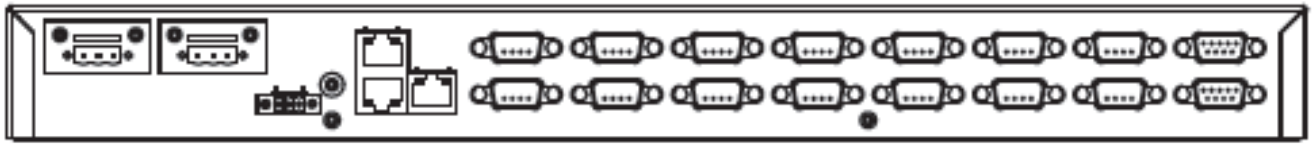


Redundant Power Module

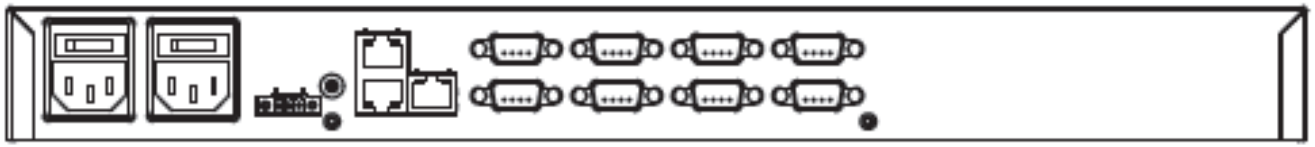
Independent power input module

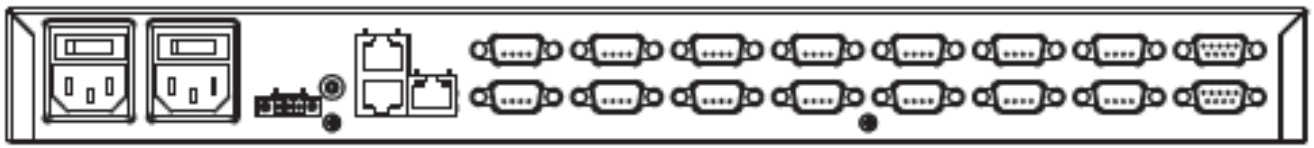
DC Models





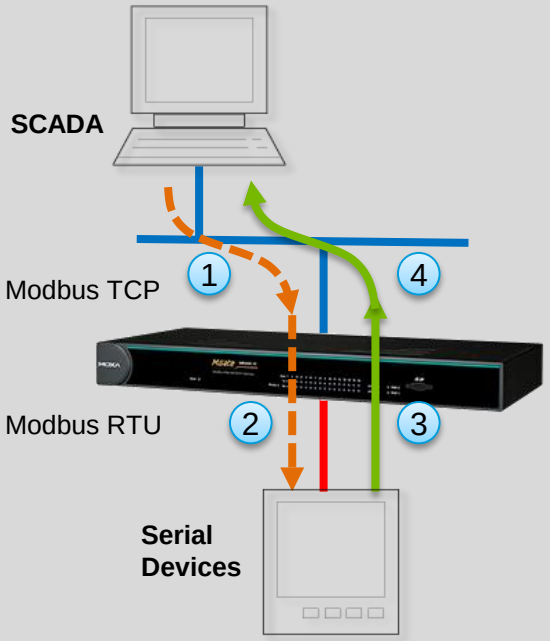
AC Models





High Performance: Intelligent Mode

Transparent Mode



Same as other MB3000 gateways

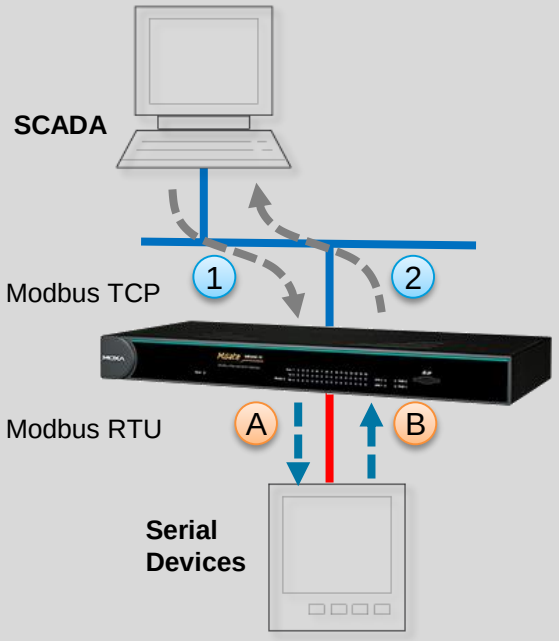
Easy configuration but **long query time** in large-scale application

Enable "Intelligent Mode"

MGate will learn the Modbus "READ command "

MGate will work as "Agent Mode" by command learning

Intelligent Mode

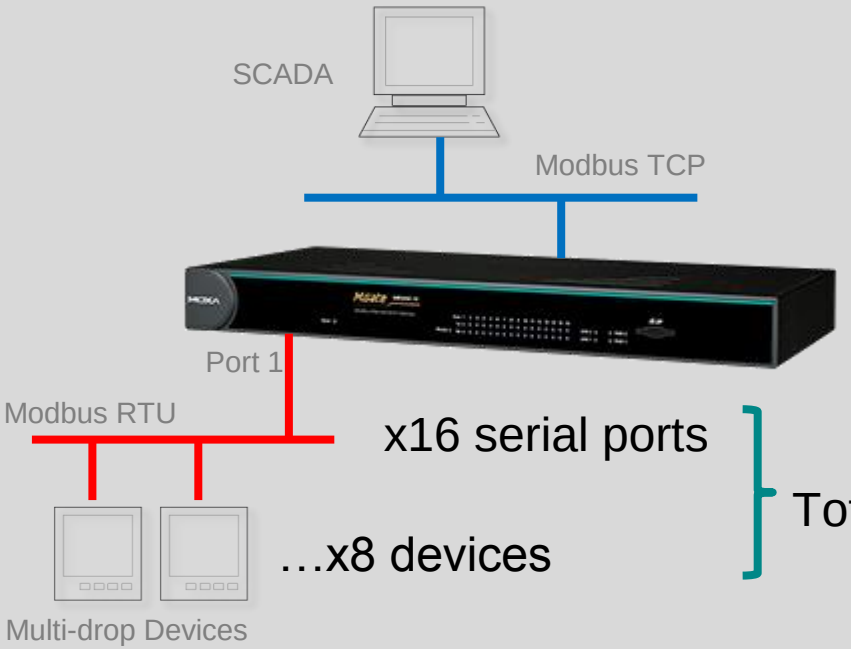


MOXA's Innovative Technology

Easy Configuration with **short query time** in large-scale application

10-Times-Faster Modbus Gateways

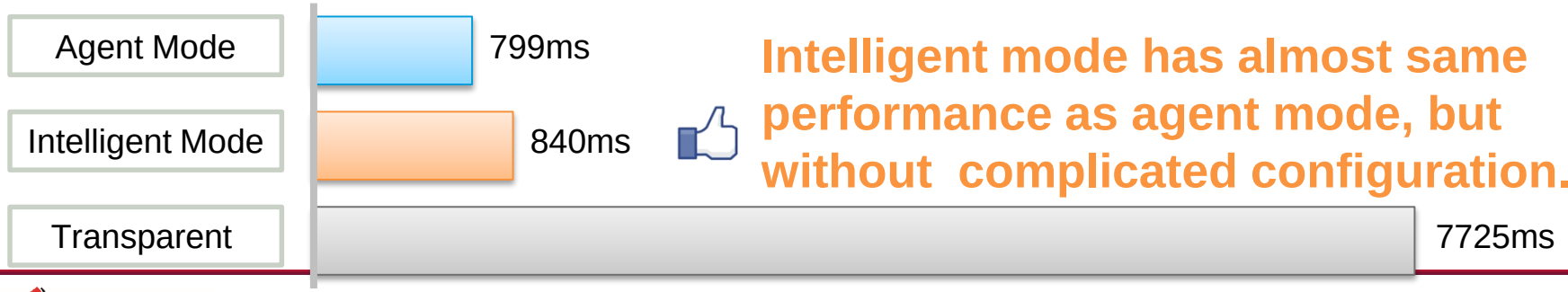
Performance Comparison
Read 128 Devices



Parameters:
9600bps, N81
Modbus Read Holding Register, 16bytes
Single Modbus TCP Connection in SCADA

Total = 8x16 =128 devices

Ethernet
Serial



Intelligent mode has almost same performance as agent mode, but without complicated configuration.