



ODVA
2007

CIP Networks Conference
and 12th Annual Meeting

Transparent Enterprise

Cyril Perducat
Schneider Electric

**General Session and
Annual Meeting of Members**

www.odva.org

- Overview of Schneider Electric**
- Overview of Customer Requirements**
- Schneider's Network Strategy**
- Schneider / ODVA Relationship**
 - ▶ Value of ODVA to Schneider
 - ▶ Value of Schneider to ODVA
- Conclusions**



Agenda

Overview of Schneider Electric

Overview of Customer Requirements

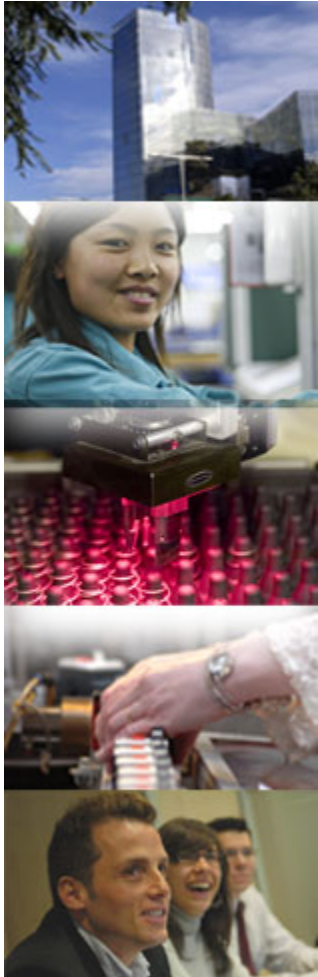
Schneider's Network Strategy

Schneider / ODVA Relationship

- ▶ Value of ODVA to Schneider
- ▶ Value of Schneider to ODVA

Conclusions

A world leader in *Power & Control*



**Electrical
Distribution**
1 worldwide

*“Make power
safe, available
and reliable”*

**Automation
& Control**

*# 2
worldwide*

*“Control and monitor
machines and installations,
protect people”*

Energy management

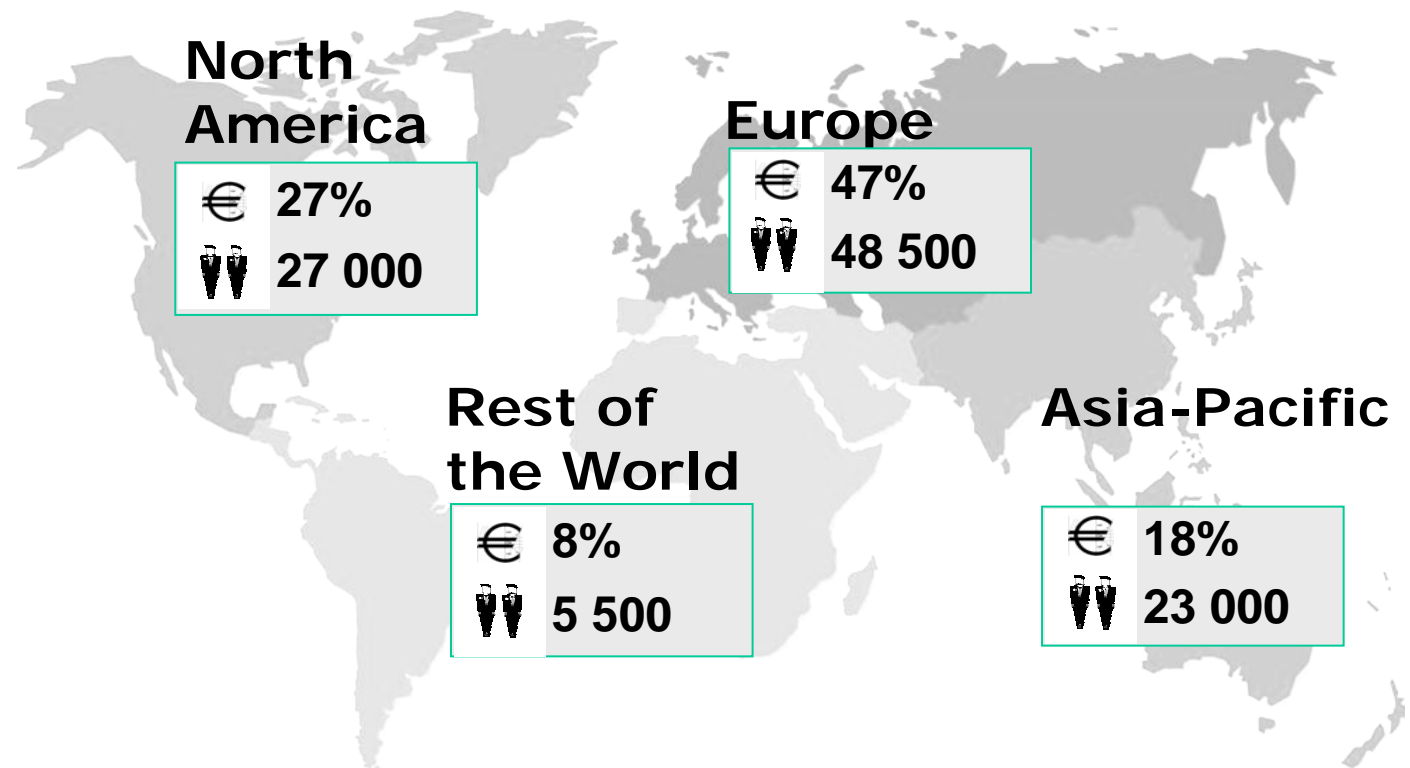
*“ensure uninterrupted and high quality power,
optimise energy consumption”*

Close to you *with strong local operations*

Sales and employees by geographical region

Schneider Electric in figures

- €13.7 billion sales in 190 countries
- 105,000 employees*
- Local presence in 106 countries
- 205 factories
- 6,500 R&D people in 25 countries



Contributing to our customers' performance



Make electricity increasingly safe and easy to use

- ▶ Integrate more intelligence and communication capabilities
- ▶ Guarantee product compatibility
- ▶ Make installation easier
- ▶ Optimise installation upgradeability

Serve market needs more effectively

- ▶ Local presence -> share & understand customer needs
- ▶ Dedicated organisations to develop core competencies
- ▶ End-to-end solutions by type of application (elevators, packaging, textiles, etc.)
- ▶ Customer support throughout installations' life cycles



Offer worldwide availability

- ▶ Compliant with international and local standards (IEC - NEMA - UL - ANSI - BS - CCC - JS)

A unique offer on four markets

Energy & infrastructures

*availability, safety,
operating costs*



**electrical networks,
water treatment,
airports, tunnels,
telecom, data centres**

Industry

*productivity, flexibility,
safety, traceability*



**food & beverage,
automobile,
electronic, packaging,
pharmaceuticals**

Buildings

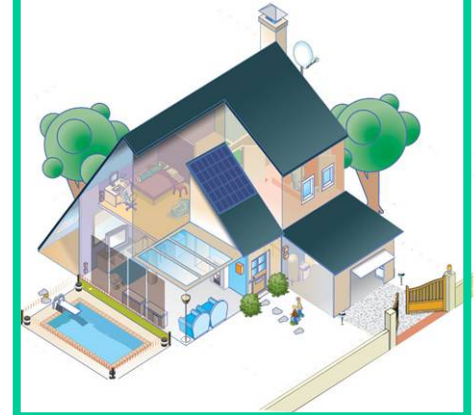
*comfort, communication
safety, operating costs*



**offices, stores,
factories, hotels,
hospitals, museums,
schools, universities**

Residential

*safety, comfort,
communication*



**single-family homes,
apartment buildings**

A unique offer in power and control management

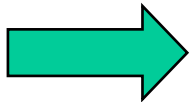
Complementary activities

core and historical
activities

Power	Control
Low & Medium Voltage	Industrial Automation and Control
Installation systems and control	Building Automation
	Home Control

new activities

Energy Management critical power / energy efficiency
Services



integrated, communicating and smart products, equipment and systems

Expanding into new businesses

A targeted acquisitions strategy



MGE
UPS SYSTEMS

Energy management

- ▶ MGE UPS Systems (in 2004)
- ▶ Power Measurement Inc. (in 2005)
- ▶ APC (in 2007)



POWER
MEASUREMENT

Installation systems & control

- ▶ Clipsal, leader in Asia-Pacific (in 2003)
- ▶ Juno Lighting, leader in the US (in 2005)
- ▶ Merten in Germany, OVA in Italy, AEM in Spain (in 2006)



CLIPSAL



t.a.c.

Building automation

- ▶ TAC (in 2003)
- ▶ Abacus Engineered Systems (in 2004)
- ▶ ABS EMEA (in 2005) and IBS (in 2006) in the US



ELAU

Industrial automation

- ▶ Kavlico Corporation in the US (in 2003)
- ▶ Elau AG in Germany (in 2005)
- ▶ BEI Technologies Inc. (in 2005)



BEI TECHNOLOGIES, INC.



APC
Legendary Reliability™



A company program to constantly improve *for 2005-2008*



growth

Growth

- ▶ Capitalise on our commercial excellence
- ▶ Boost innovation and new products
- ▶ Grow new businesses: energy management, services, ultra terminal distribution and automation



efficiency

Efficiency

- ▶ Deliver outstanding customer service
- ▶ Build a world class IT system with uniform processes
- ▶ Produce closer to the customer



people

People

- ▶ Improve workplace health and safety
- ▶ Develop our people
- ▶ Unleash entrepreneurship

A “sustainable” commitment for all our stakeholders



For our customers

- ▶ RoHS program: www.rohs.schneider-electric.com
- ▶ Eco-design & Eco-production

For the environment

- ▶ Energy efficiency
- ▶ Drastic reduction our sites' energy consumption

For our people

- ▶ Health care: our main objective
- ▶ Diversity is our strength
- ▶ Substantial & sustained investment in training

For our host communities

- ▶ Education and training for young people
- ▶ Schneider Electric Foundation, donations and reconstruction programs



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Customer requirements

Cost-effective networking solution from plant floor to board room

Access to plant floor process and equipment information for:

- ▶ Remote Process Status & Diagnosis
- ▶ Asset Management
- ▶ Quality Control



Easy migration from legacy installed systems

Future-proof assurance while they make today's purchase decisions

Broad selection of interoperable products to solve demanding control applications

Plant floor networking trends

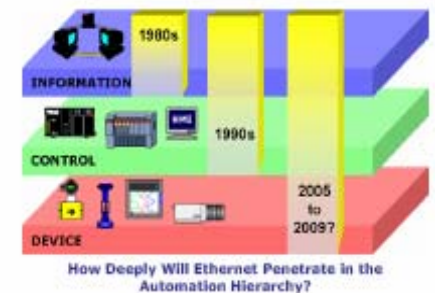
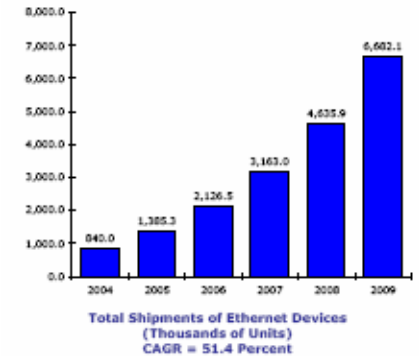
Today, information and control level communications take advantage of Ethernet and IP-based networking.

Ethernet and IP-based networks will be the future fieldbus:

- ▶ IT industry continues to drive lower component cost.
- ▶ Control systems are taking advantage of standard Ethernet services.
- ▶ IP-based networks (Internet Protocol) provide best opportunity.

New solutions, taking advantage of standard Ethernet capabilities, will solve even the most demanding applications:

- ▶ Real time interlocking
- ▶ Motion control





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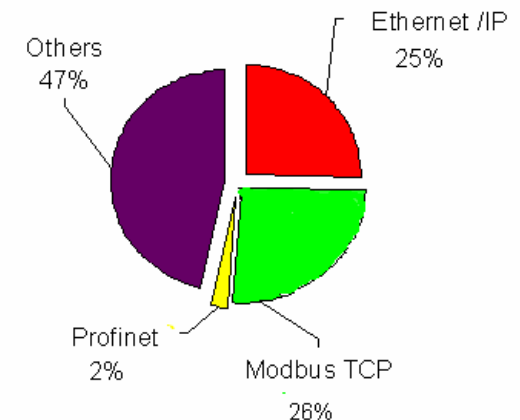
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Today's Situation

Nearly all automation providers support Ethernet-enabled controllers; devices becoming more prevalent

Industry is fragmented by application protocol. Leaders:

- ▶ Modbus®/TCP
- ▶ EtherNet/IP™
- ▶ Many Ethernet-based specialty and vendor-driven solutions; esp. real time for Motion Control



Customers want clarity on future of Industrial Ethernet before committing to it as a fieldbus

SE Current Network Strategy

EtherNet/IP and Modbus/TCP

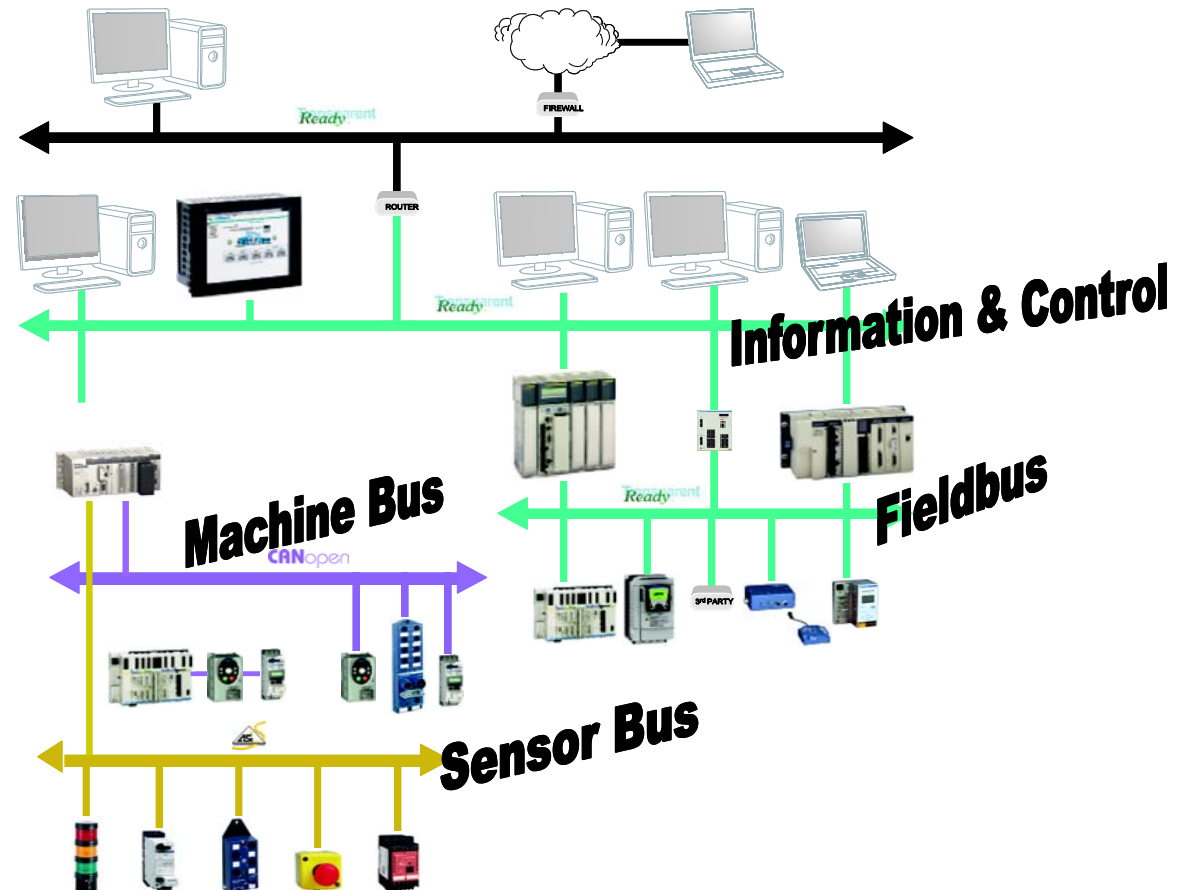
- ▶ Info & Ctrl
- ▶ Fieldbus

CANopen

- ▶ Machine bus

AS Interface

- ▶ Sensor bus
- ▶ Safety bus



Schneider Electric's Previous Industrial Network Strategy

Transparent Ready

- ▶ Develop and promote solutions leveraging Ethernet and Web technologies
- ▶ Integration of SCADA/HMI, PLC, I/O, Motor Control into coherent system

Add value through standard technologies; real time data exchange, diagnostics & maintenance, and transparent access

Support for special machine and sensor level communications leveraging CANopen and AS Interface-based solutions.

Partner with other best-in-class product providers through standards organizations:

- ▶ Modbus-IDA
- ▶ CAN in Automation
- ▶ AS International

Modbus-IDA
the architecture for distributed automation

CiA





Transparent Ready Value Propositions

Transparent Ready

Ethernet and TCP/IP Services

- ▶ A single network across all enterprise levels simplifies architectures
- ▶ Powerful capabilities for addressing and routing - enables easy remote access
- ▶ Use of IT standards and services reduces cost and specialized know-how

Web Technologies

- ▶ Web browser provides low cost visualization platform
- ▶ Web services simplify IT connectivity

Open industrial protocols

- ▶ Ensures interoperability and investment protection for legacy systems



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Cooperation To Accelerate Transparent Ready

Schneider Electric wants to accelerate customer adoption of Transparent Ready.

- ▶ Reduce the risk of making a decision to use today's Industrial Ethernet solutions.
- ▶ Protect investment for existing users

To achieve this, Schneider Electric has decided to pursue a partnership agreement

Key partner criteria:

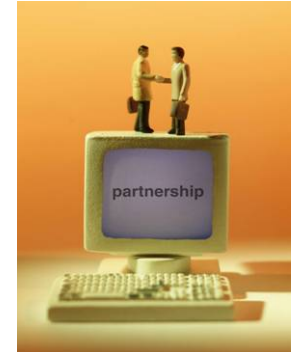
- ▶ Shares philosophy around "standard" Ethernet
- ▶ Collaborative Organization – not single vendor driven
- ▶ Appreciation for Schneider Electric's commitment to installed base and forward migration



Schneider Electric / ODVA Cooperation

Customers want a cost-effective, coherent networking solution from plant floor to boardroom

Customers want an industrial Ethernet solution that provides interoperability of multi-vendor systems and protects their investment.



Schneider Electric has formed a new cooperation with ODVA to combine the two most successful Industrial Ethernet solutions into a defacto standard

This alliance delivers on the promise of a broad, standard and unmodified Ethernet-based fieldbus for the plant floor and access to that information for the rest of the enterprise

Multi-vendor, open, standard solution to compete with closed solutions, like Profinet.

Why a Network Cooperation With ODVA

Cooperation combines Modbus/TCP and EtherNet/IP

- ▶ Brings together the market power of the two most successful protocols.
- ▶ Both protocols are based on standard Ethernet technology

ODVA Vendors can take advantage of Modbus/TCP

- ▶ Leverages Modbus installed base & market share

Schneider Electric can easily take advantage of EtherNet/IP services

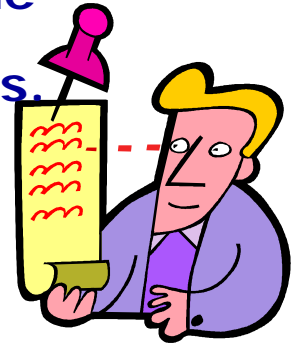
- ▶ No custom hardware required
- ▶ Existing products can be migrated
- ▶ Unique values of EtherNet/IP complement simplicity of Modbus



Nature of Cooperation

ODVA announces that Schneider Electric will be invited to become an ODVA Principal Member, joining Rockwell, Eaton, OMRON, and Cisco, and provide individuals to serve on the ODVA Board of Directors and the Technical Review Board along with active participants in other key ODVA activities.

Schneider Electric will expand its Transparent Ready architecture by supporting both Modbus/TCP and EtherNet/IP protocol and services.



ODVA's EtherNet/IP technology will be enhanced to support the Modbus/TCP protocol.

ODVA's technical work will protect the investment of existing Modbus/TCP and EtherNet/IP device vendors and customers.

Technical solution summary

CIP standard will be enhanced to provide seamless access to Modbus/TCP devices

Solution Requirements and Commitments:

- ▶ The solution will fit within the ODVA framework
- ▶ No change for Modbus/TCP target devices
- ▶ No change for EtherNet/IP target devices



Schneider Electric will upgrade its PLC modules to incorporate EtherNet/IP protocol while ensuring compatibility with existing Modbus/TCP devices and systems

Other Areas of Cooperation

Schneider's Global Presence; esp. Europe and Asia-Pac

Technology Standards & Enhancements:

- ▶ Security
- ▶ High Availability
- ▶ Wireless
- ▶ Process Instrumentation Connectivity

Schneider's Presence in Power and Building Automation markets



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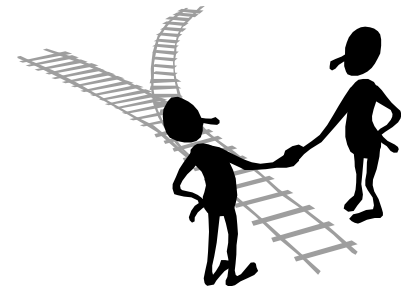
Conclusion

Cooperation will merge values of the two largest Industrial Ethernet protocols:

- ▶ Reduce confusion and create de-facto standard for industrial Ethernet
- ▶ Protect customers' investments and installed base

Schneider Electric provides a path forward to its customers:

- ▶ Consistent with Transparent Ready strategy
- ▶ Accelerating development of Ethernet solutions



Combination of EtherNet/IP and Modbus TCP will deliver the fieldbus services necessary to achieve the promise of Ethernet from plant floor to the board room