

Partnership of **FUTURE**



Innovation Day: Partners, Seoul 2022

PAC 및 소프트웨어 업데이트 및 전략소개

김건, Operational Offer Manager

Life Is On

Schneider
Electric

MC80, M340, M580 모두 지원하는 단일
프로그래밍 소프트웨어

EcoStruxure™ Control Expert



Modicon PAC family

Positioning

APPLICATION COMPLEXITY

MC80 소형 PLC

- 비용효율적인 컴팩트 PLC
- IO capacity: DI/O 20, AI/O 4, HSC 2
- 지원통신: Ethernet, Modbus RS485, CANopen



MC80 PAC

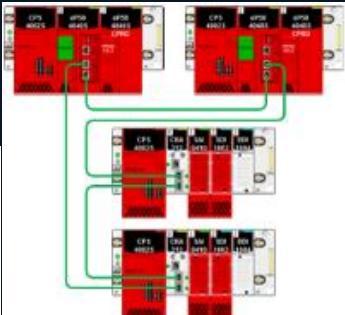
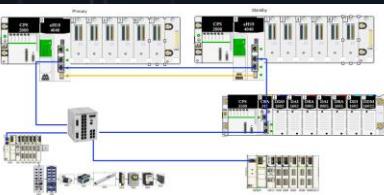
M340 중형 PLC

- 로컬 rack 확장 가능 최대 4개
- IO capacity: DI/O 1024, AI/O 256 포인트
- 지원통신: Ethernet, Modbus RS485, CANopen, AS-Interface, RTU(DNP3, IEC 60870-5-101/104)



M580 대형 PLC

- Remote I/O drop 최대 64개(CPU에서 Remote I/O 간 거리: 100m(Ethernet) or 16km(Fiber optic))
- IO capacity: DI/O 40,000, AI/O 10,000 포인트
- Memory: 최대64MB
- 지원통신: Ethernet, Modbus RS485, AS-Interface, RTU(DNP3, IEC60870), OPC UA, IEC61850(Power), Profibus
- 이중화 CPU, 이중화 Power supply, 이중화 네트워크 지원
- Safety with SIL3 approval



Safety

PLC FOOTPRINT, I/O CAPACITY, TCO, PRICE ...

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2022 IDPAC 제품 출시 로드맵

2022 Q1

PAC

Modicon Switch
Managed/Unmanaged Switch

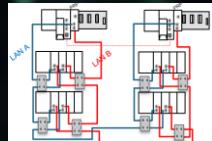


MC80

X80 OPC UA
Module(Version 2)



Dual CRA for High availability



2022 Q2

Modicon Extended
Managed Switch



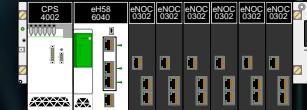
M580 Cyber Certificate
IEC62443 SL2



2022 Q3

2022 Q4

6 NOC modules



Housing Color Change
- Group standard consistency

Grey

DDO 32ch



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바로구매가능!

Modicon MC80

Cost-effective, all-in-one compact controller

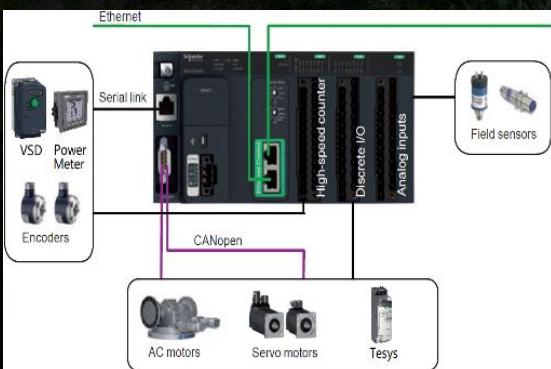
Customer Challenge

- Need for small local controller or remote control unit in EcoStruxure Plant hybrid targeted segments.
- M340 is too big to apply for remote control unit
- Cost-effective controller for Process OEM

Our Value Proposition

- MC80 competitive entry-level controller programmed by EcoStruxure Control Expert engineering software

Our Solution



Technical Highlights

Reference	Description
BMKC8020301	Controller 8 In 12 Out 4 AI
BMKC8020310	Controller, 8 In, 8 Out, 2 HSC
BMKC8030311	Controller 8 In 12 Out 2 HSC 4 AI

- Cost effective controller for Control Expert lovers
- Advanced Connectivity : Dual Ethernet RSTP ports, USB, CANOpen, Serial
- Robust design (-25 / +70°C)
- Same engineering platform as other core Modicon PAC

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Main Features of Modicon MC80

Cost-effective, all-in-one compact controller



High performance processor

- 100% Boolean: 16.7K inst/ms
- 65% Boolean + 35% fixed arithmetic: 12.5K inst/ms



Integrated multiple communication

- Ethernet
- Modbus serial link Master/Slave
- CANopen Master
- USB



Integrated I/O

- 8 DI, 8/12 DO, 4 AI, and/or 2 HSC



Embedded switch

- Dual Ethernet port
- Native high network availability (RSTP)



Robust with **extended operation temperature**

- One version: -25°C +70°C



Cyber Security function embedded

- Access protection against unauthorized remote connections via an editable control access list
- Protection against remote programming changes via a password
- Enable/disable FTP service for firmware changes



Powerful **EcoStruxure Control Expert** engineering software

- Same engineering platform as other core Modicon PAC
- Easy knowledge sharing and applications migration



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바로구매가능!

Modicon Switch

Renew of switch range with renaming from 'Connexium' to 'Modicon' & color change

Customer Challenge

- Growing Ethernet architectures need more and more infrastructure devices
- Growing Cyber Security concerns
- Configuring and maintaining complex infrastructure devices can be costly
- Switches need to be easy to configure and maintain

Our Value Proposition

- Modicon Managed switches are an easy to use solution that addresses the needs of complex Ethernet architectures

Our Solution



Modicon Managed
Switch Offer

Technical Highlights

- Managed Switch up to 24 ports
 - Connectivity – PoE, Gigabit, USB-C
 - IIoT – IPv6 Management, TSN support
 - Increased Cyber Security – MAC based port security, Port-based access control, Automatic Denial-of-Service Prevention, Different privilege levels, Configurable password policies, and more
 - Web interface – New more modern version of the switch configuration tool to work on modern browsers
 - Configuration conversion tool – Easing the transition to the new offer
- Unmanaged Switch up to 8 port

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New Modicon Switch Family (in Grey6)

24
20
16
12
10
9
8
6
5
4



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Part Numbering Convention for Modicon Switch

MCSES M 05 3 F 1 C U 0

Modicon or Telemecanique
Cabling
System
Ethernet
Switch

B: Basic
L: Lite
M: Managed
U: Unmanaged

Total Qty of ports
04/05/06/08/09/10/12/16/18/24

Port type
1: M12
3: RJ45/Fiber Optic

Port gender
F: female

Qty of
Uplinks

0: Regular
1: Extended (DRS)

Port gender or fiber type
U: Multimode
S: Single mode
X: Mixed fiber
G: Gigabit
F: Female

Port type
C: SC
L: LC (SFP)
3: RJ45

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OPC UA module

OPC UA 'Client' available

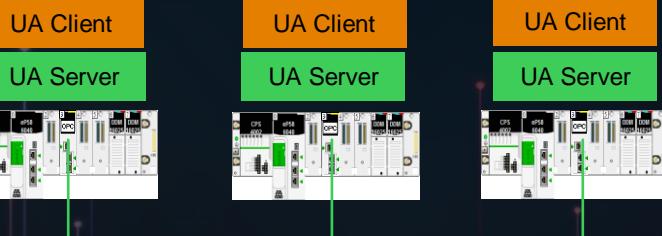
OPC UA client use cases:

- PLC-to-PLC communications
- Aggregation of data
- Connection to MES
- Communications managed **by Function Blocks** in Controller application (M580 CPU)
- Function Blocs following the **PLC Open standard**
- Access to any OPC UA server via CPU built-in Ethernet port (any OPC UA device in the RIO architecture) or via communication modules such as BMENUA front port (any OPC UA device in control or SCADA network)
- Access to data from server via explicit Read/Write or via subscriptions (Monitored items)

BMENUA0100(H)



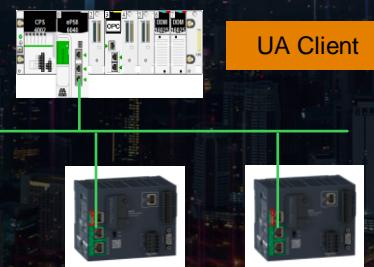
OPC UA



PLC-to-PLC communications



UA Server



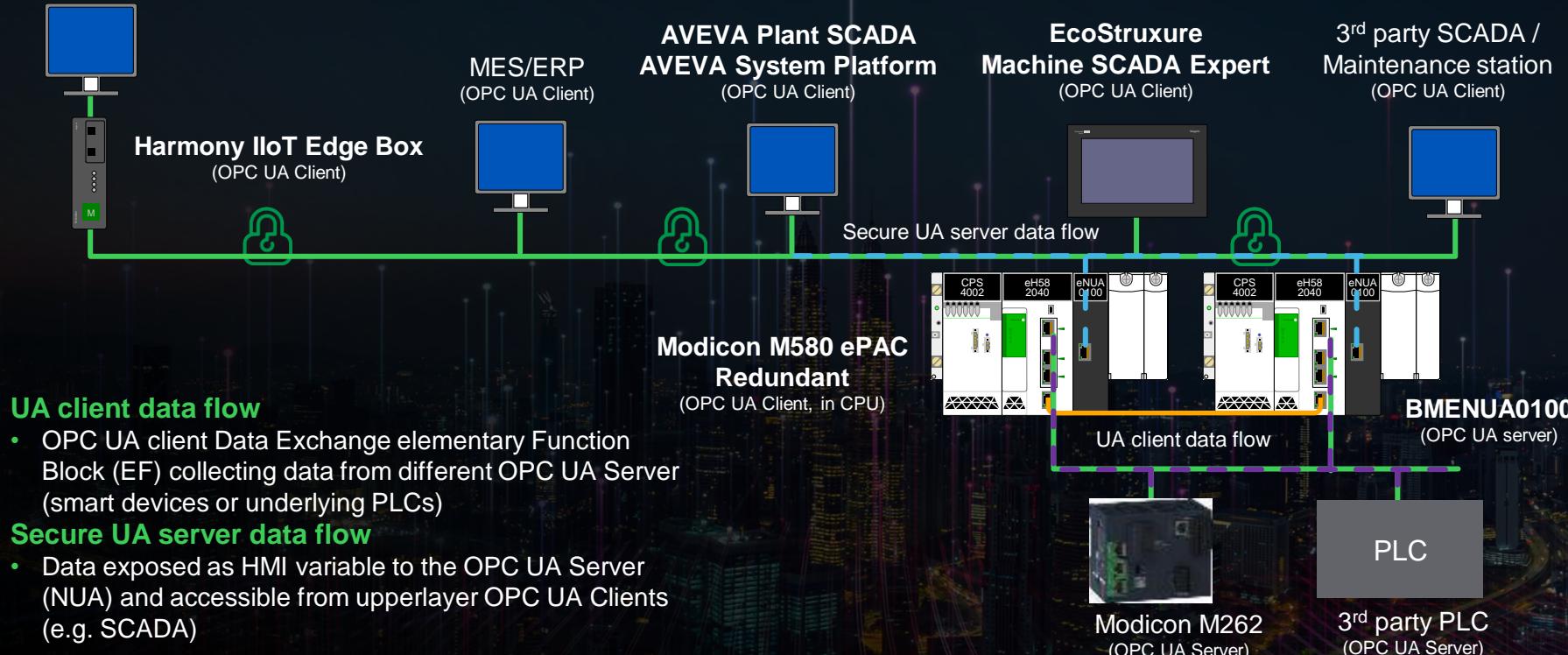
Data aggregation

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Data aggregation



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Dual CRA

Redundant network from CPU to Remote I/O

Customer Challenge

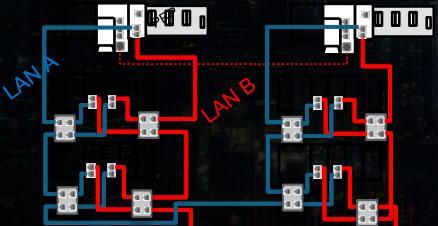
- Safety of people, Service continuity for critical segments
- Eliminate any risk to Health or the Environment on my site
- Protect my Assets from damages
- Reduce Production shutdown due to default or maintenance
- Modernization of I/O Quantum (coaxial redundant S908)

Our Value Proposition

- Increase availability, no single point of failure, multi-faults tolerant and reparability to maximize uptime using standard x80 I/O

Our Solution

New redundant x80 RIO Drop adapter and PRP Network Option Module



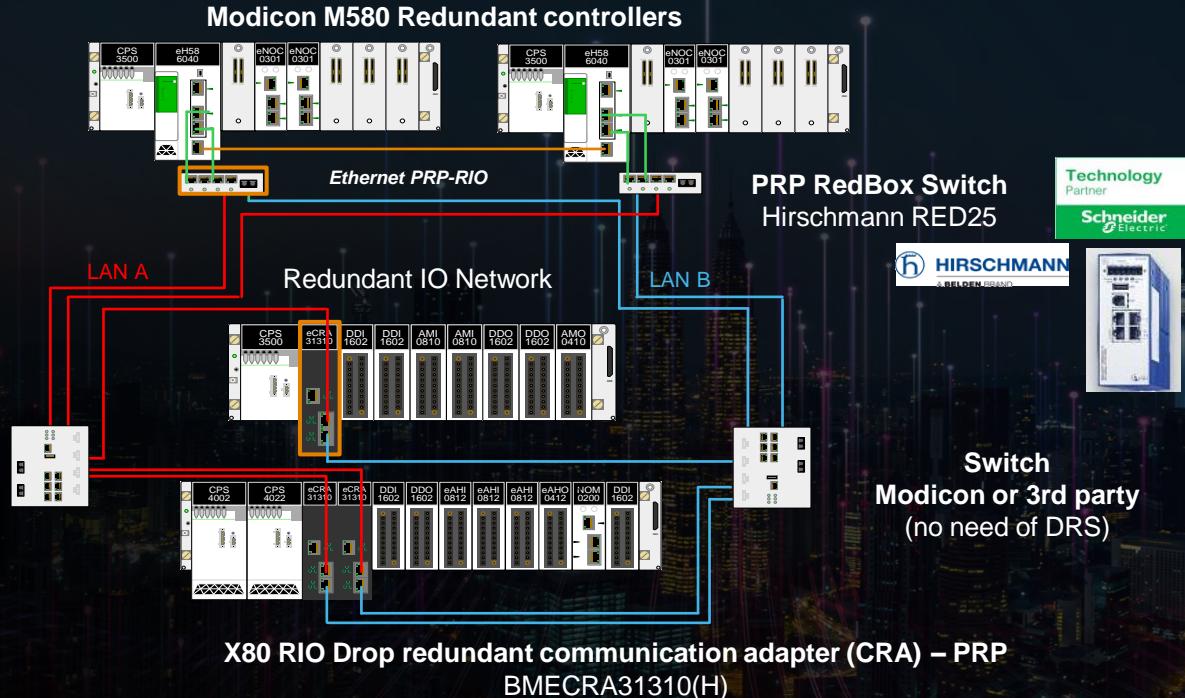
Technical Highlights

- Rely on a industry standard protocol (**PRP**) for sustainable and open solution (duplicate Network **LAN A & LAN B**)
- 0 ms recovery time in case of any cable break
- **New** PRP CRA head in x80 drop with redundancy option , Standard & Harsh version
- **New** PRP NOY communication module in local rack
- Extension to **64 drops**
- Native configuration in Control Expert

NO CONTENT ZONE

Modicon M580 High-availability IO network architecture

Redundant IO network architecture



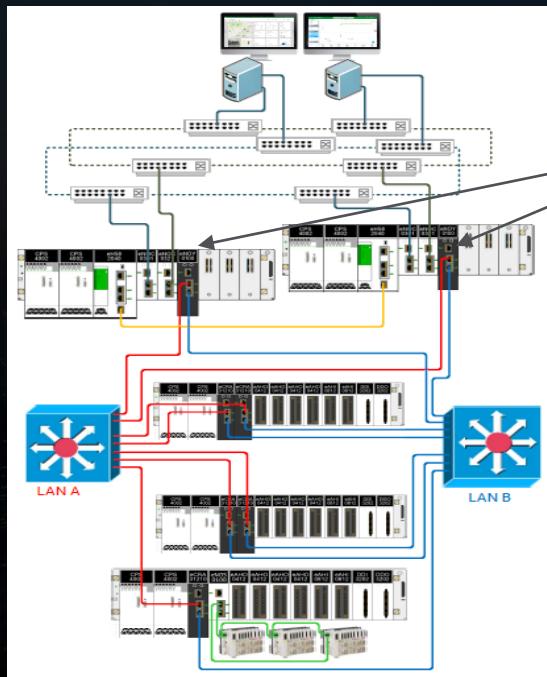
NO CONTENT ZONE

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Modicon M580 High-availability IO network architecture

Redundant IO network architecture



In-Rack Type PRP Module(BMENOY) will be launched
In 2023

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M580 High Performances Ethernet module

Addressing increasing ethernet devices count, modernization, network segmentation and more cybersecurity

Customer Challenge

- Connect up to 6 networks on a Modicon M580 system
- Increase performance for IO scanning and messaging
- Install my full PAC system in harsh environments (+NOC)
- Keep network segmentation in Quantum/Premium modernizations
- Risk-free migration from existing BMENOC0301/311

Our Value Proposition

- Reduced cybersecurity risk by physical network segregation
- Improved operational performance
- Release full power of Ethernet Backplane
- Connect more Ethernet devices for Industry 4.0 applications

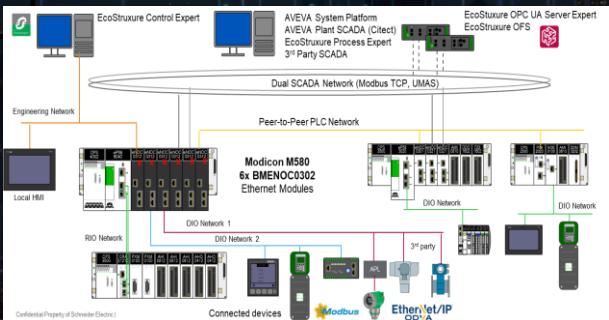
Our Solution

BMENOC0302(H)

Quantum/Premium



Modicon M580



Technical Highlights

Step1

- up to 6 NOCs in main local rack
- Increased NOC as Server perf (32 msg per cycle)
- Improved cybersecurity (SNMP V3, IPSEC initiator, secure boot)
- Extended temperature range (H version)
- Native modernization from Quantum NOEs via UMAC

Step2

- New direct PTP CPU/NOC ethernet connection (layer 2 SNAP protocol) on backplane
- Increased IO scanning memory (16kB)
- Increased explicit client perf (32 sim. connections)

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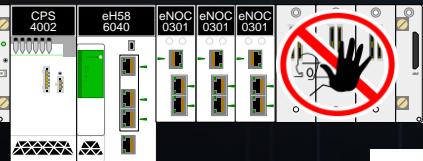
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Value proposition

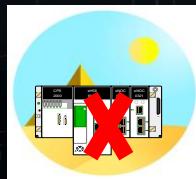
Addressing increasing ethernet devices count, modernization, network segmentation and more cybersecurity

Existing offer BMENOC0301/311

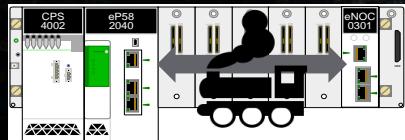
- Up to 3* ethernet modules only (limited network segmentation & isolation)



- No extended temperature



- PAC backplane architecture constraints



New offer BMENOC0302

- Connecting up to 6 ethernet modules



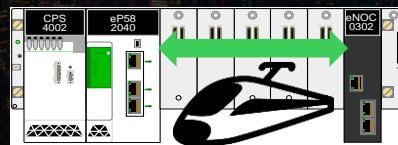
More nodes + Segmentation

- Extended Temperature + *Conformal Coating*

Hardened version



- Exploiting full Ethernet backplane capabilities



More Performance
IO scanning + messaging



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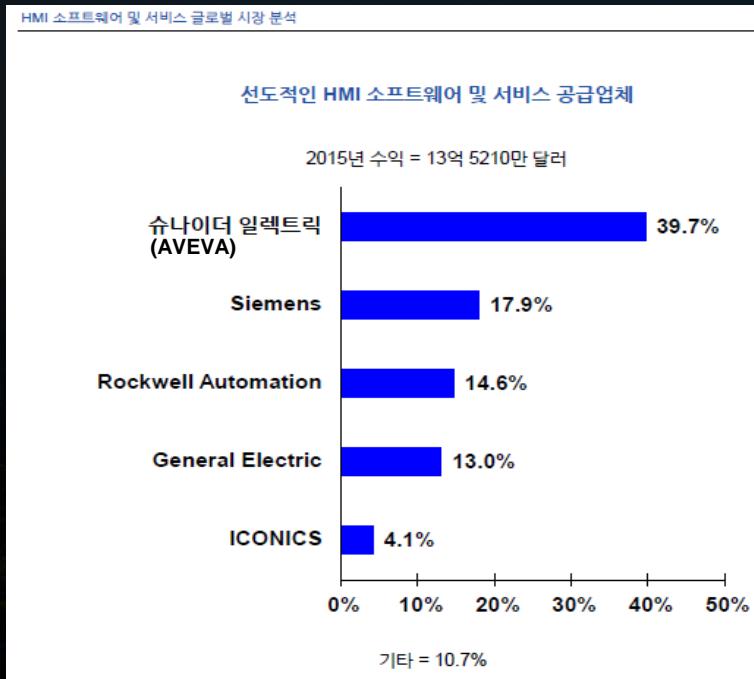
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AVEVA

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 **Electric**

HMI/SCADA – Global Market share

HMI/SCADA 소프트웨어



선도적인 HMI 소프트웨어 및 서비스 공급업체

- 5대 HMI 소프트웨어 및 서비스 공급업체가 시장의 약 90%를 점유하고 있습니다. 이들 공급업체에는 슈나이더 일렉트릭, Siemens, Rockwell Automation, General Electric, ICONICS가 포함됩니다.
- HMI 소프트웨어 및 서비스 시장의 4대 공급업체인 슈나이더 일렉트릭, Siemens, Rockwell Automation, General Electric은 두 자릿수의 시장 점유율을 기록하고 있으며 이들의 수익을 합하면 전체 수익의 85%를 넘어섭니다. 이 4대 공급업체는 광범위한 제품군을 갖추고 하드웨어 및 소프트웨어 솔루션을 제공하는 자동화 공급업체이기도 합니다.
- ICONICS는 한 자릿수의 HMI 소프트웨어 및 서비스 시장 점유율을 기록하고 있지만 여전히 확고한 입지를 확보하고 있습니다. 그러나 이 회사의 자동화 제품 오퍼링은 소프트웨어 전용 솔루션으로 한정되어 있습니다.
- 슈나이더 일렉트릭의 시장 점유율은 그 뒤를 바짝 짖고 있는 경쟁업체인 Siemens의 두 배가 넘으며 모든 지역에서 HMI 소프트웨어 및 서비스 시장을 선도하고 있습니다.

*ARC Report(2017) - P.5

슈나이더 일렉트릭은 수익 점유율 1위를 기록한 HMI 소프트웨어 공급업체인 Invensys를 2014년 1월에 인수하면서 HMI 소프트웨어 제품 시장 점유율 1위인 Wonderware InTouch를 통해 글로벌 HMI 소프트웨어 및 서비스 수익 점유율 1위로 올라섰습니다. Invensys를 인수하면서 과거에 시장 점유율 7위였던 HMI 소프트웨어 공급업체인 InduSoft도 보유하게 되었습니다. 슈나이더 일렉트릭은 2006년에 Citect도 인수한 바 있습니다. 이러한 인수를 통해 슈나이더 일렉트릭은 이제 수익 점유율 면에서 명실상부 최고의 HMI 소프트웨어 및 서비스 공급업체가 되었으며, 나머지 주요 HMI 소프트웨어 공급업체보다 시장 점유율이 월등히 높습니다.

*ARC Report(2017) - P.23

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Monitor & Control Portfolio

Positioning

- Machine/Line SCADA에 적합
- Indusoft/Machine Edition의 새이름
- 150tag부터 시작(150->300->up to 60,000)
- Linux OS지원

Historian

- Object기반
- 복잡한 Network, Multisite Level에 적합
- 100,000 Tag 이상

System Platform

ADAPTIVE
Level 5

InTouch HMI

PREPARED

CONSISTENT
Level 3

InTouch Edge HMI

MANUAL
Level 0

ACTIVE
Level 1

PREPARED
Level 2

CONSISTENT
Level 3

ADAPTIVE
Level 5

- 전세계 점유율 1위 SCADA/HMI소프트웨어
- Plant Level, Single site에 적합
- 60,000 Tag 이상

MANUAL
Level 0

ACTIVE
Level 1

PREPARED
Level 2

CONSISTENT
Level 3

ADAPTIVE
Level 5



No Automation

Edge & Machines / OEM

Single to Multi-node

Client / Server

Client / Server with Redundancy

Distributed system

Enterprise OMNI (Operations Management Interface)



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AVEVA Software

1. 등록된 파트너사들은 슈나이더 일렉트릭으로부터 직접 구매
2. 기술지원, 가격 지원 가능
3. 신규시장에 SE Modicon PAC + AVEVA SW가 함께 적용 될 경우 특별 프로모션 가 제공



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