The Best Fit for Your Control Cabinets

A unique type of Ethernet switch that is smarter and simpler to set up

MOXA®

What is the Smart Switch?

The SDS-3000 Series of 8/16 port industrial smart switches are some of the smallest in the world that can be monitored on HMI/SCADA systems, while keeping the configuration and operation easy and flexible. The slim, simple, and smart design makes the smart switch the best fit for control cabinets in smart manufacturing.

Smart Switch Product Family

3 industrial protocols
supported with one-click setup, allowing you to manage it on SCADA systems.

2 installation options
DIN-rail and rack-mounting suitable for different types of cabinets.

1-page dashboard
for easy navigation and set up, and the UI supports six different languages.

PROFI NET®

Modbus

EtherNet/IP™

MOXA®

Industrial Backbone Network for Mining Wastewater Treatment Process Control System

Requirements:

A diamond mining customer built a wastewater treatment plant for their process control system at the mine. The plant deployed PROFINET networks consisting of PLCs and remote I/Os for control and monitoring. To ensure reliable communications, they looked for industrial Ethernet switches that support PROFINET and Media Redundancy Protocol (MRP: IEC 62439-2) for enhanced network redundancy. The customer needed robust devices with a high port count and a compact design to ensure operational reliability and future scalability while being able to fit into space-constraint cabinets.

Control/SCADA Station

MRP Ring

HMI

PROFIBUS Gateway

SDS-3016 Smart Switch

I/O
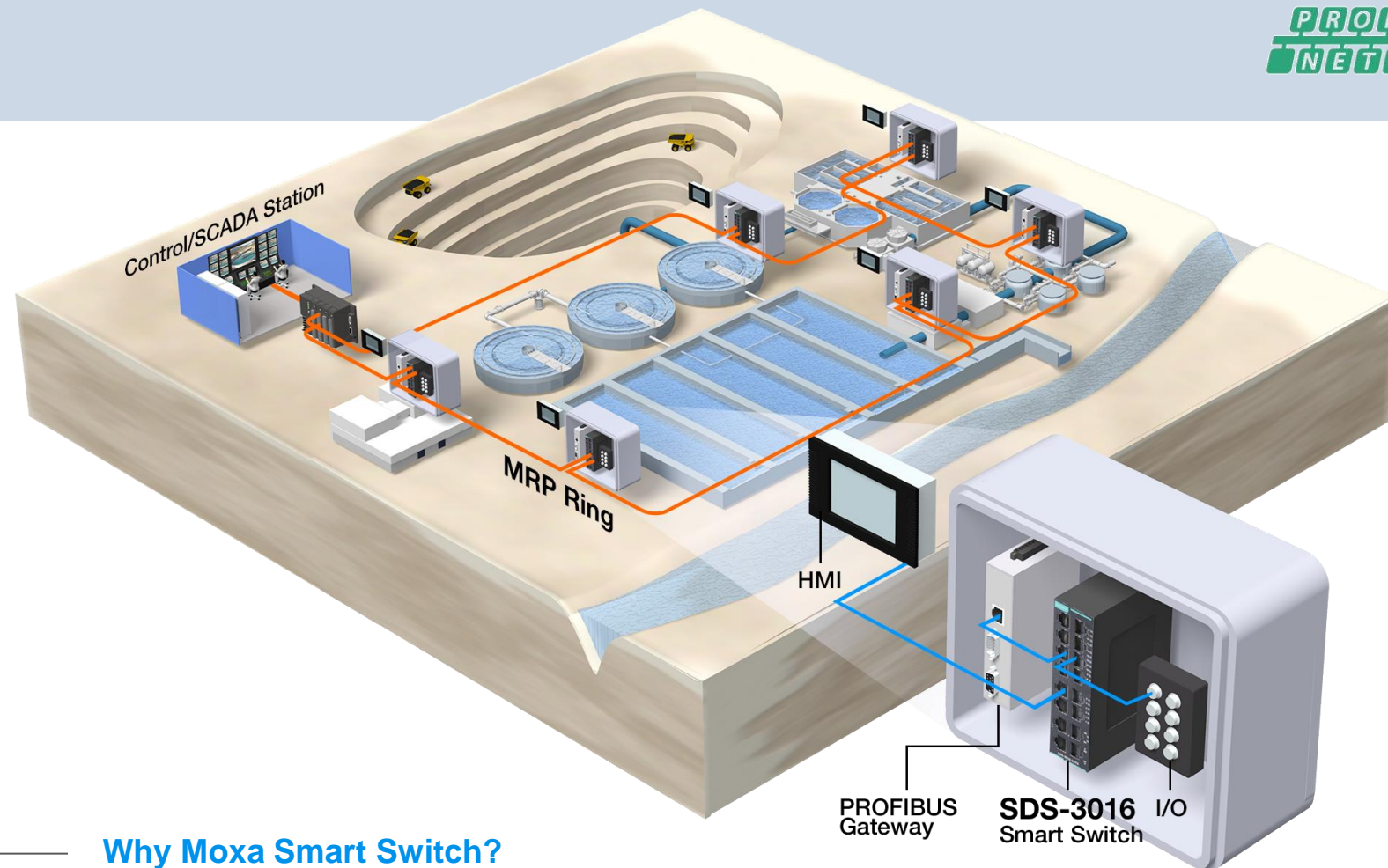
Why Moxa Smart Switch?

- One-click industrial protocol setup to enable PROFINET interoperability and integration
- MRP-compliant industrial network switches to adapt to the customer's MRP redundant network
- Three installation options and a slim design that fits into most cabinets
- 16-port capacity for flexible connectivity and future expansion and scalability
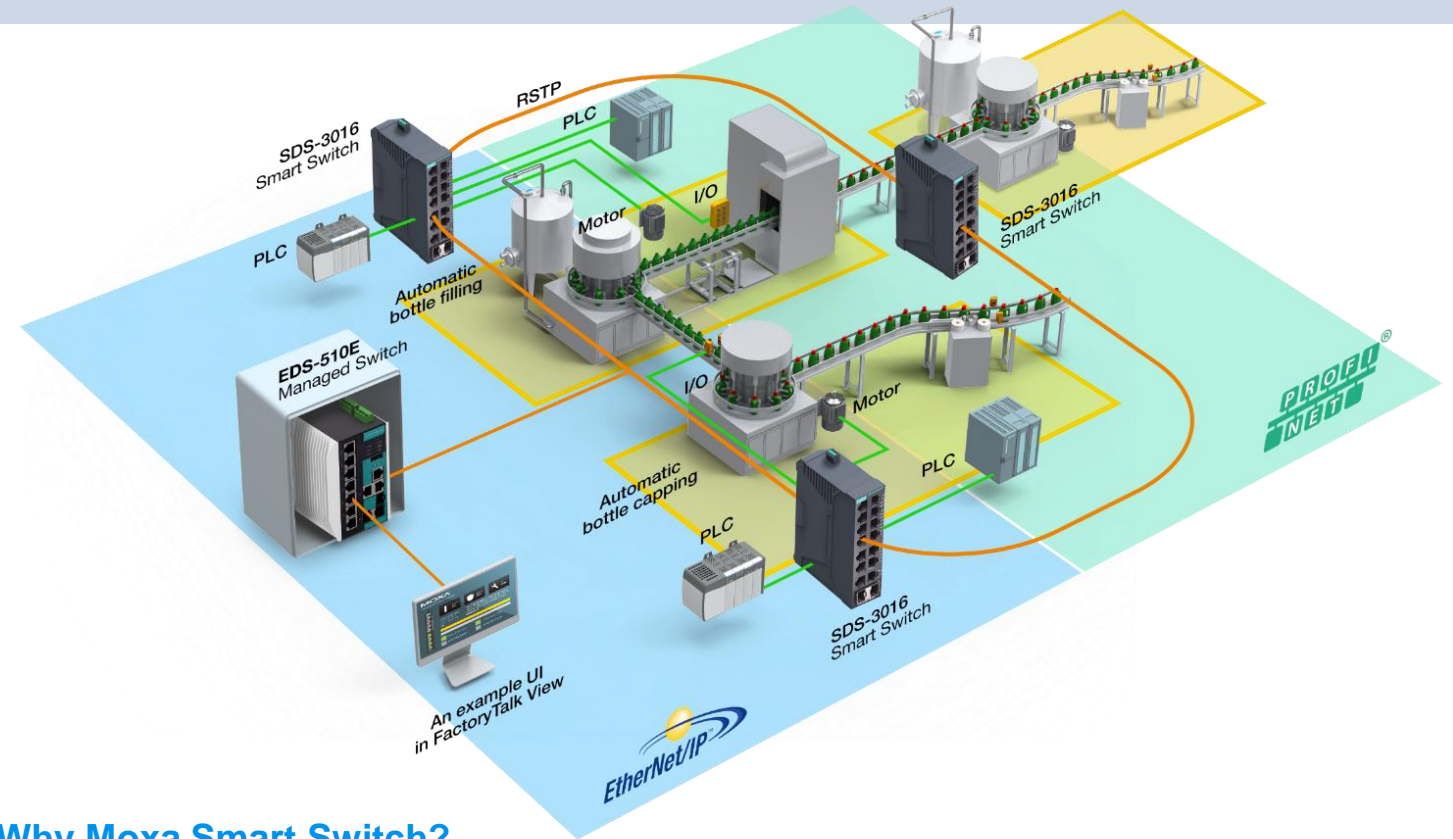
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Cross-system Manufacturing

Requirements:

A bottling plant with an automatic bottle filling production line deployed both PROFINET and EtherNet/IP protocol programmable logic controllers (PLCs) to control factory processes. The solution provider also required switches to support both protocols and allow engineers to perform IA profile configurations quickly to reduce manufacturing downtime. In addition, the switches should fit into the existing cabinet and integrate easily into the SCADA system.
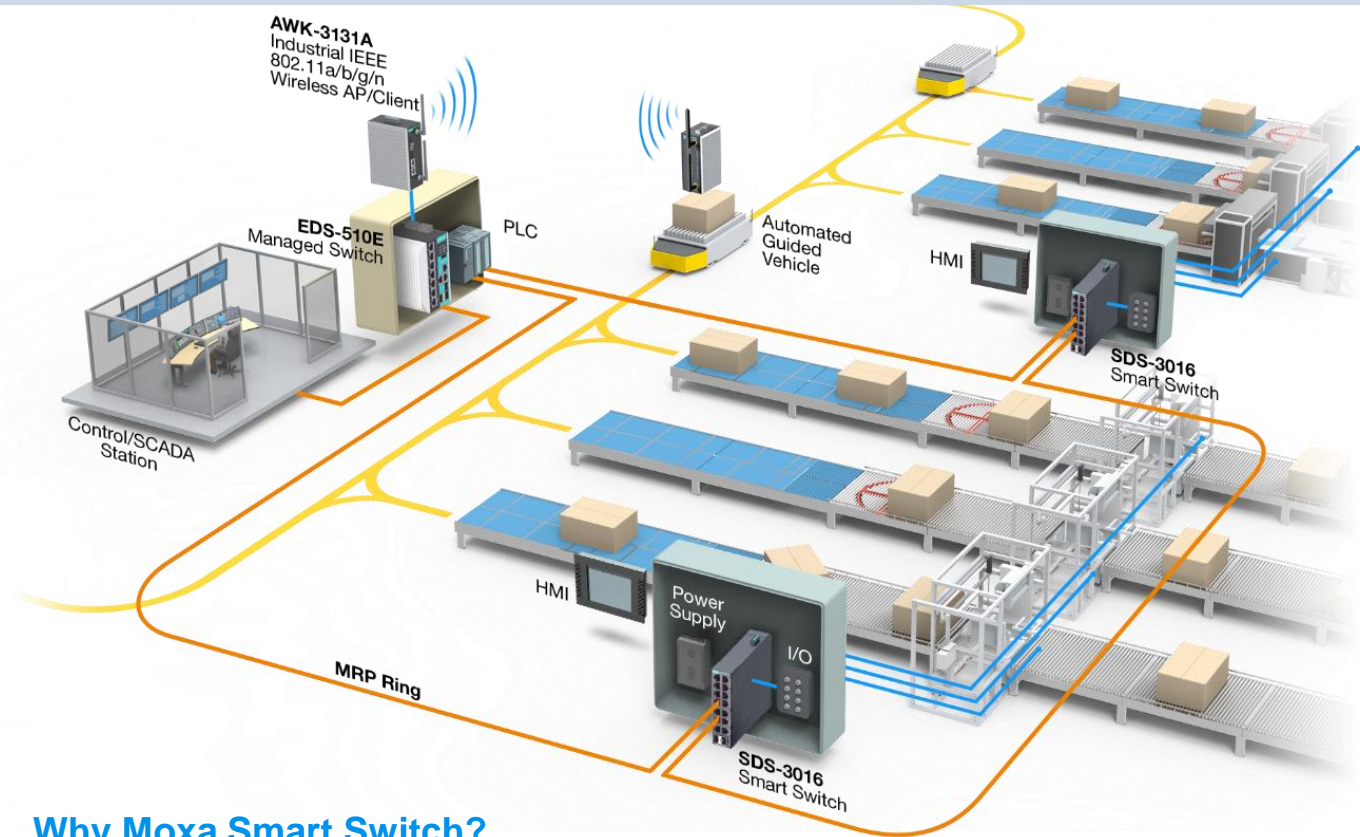

Why Moxa Smart Switch?

- Supports both PROFINET and EtherNet/IP and has a user-friendly UI to allow engineers to change IA profile settings quickly.
- Allows engineers to easily monitor the status of existing automation SCADA and HMI systems.
- Supports RSTP/STP for rapid network redundancy.
- Compact and flexible housing that easily fits into confined spaces, such as control cabinets.

Network Monitoring for Material Handling

Requirements:

For automated material handling systems that use the PROFINET protocol, it is advantageous to deploy PROFINET-enabled switches as engineers can quickly view the data and the network status on SCADA systems. In addition, the ability to integrate SCADA systems easily and quickly will also speed up troubleshooting and reduce system downtime, resulting in more reliable plant operations.
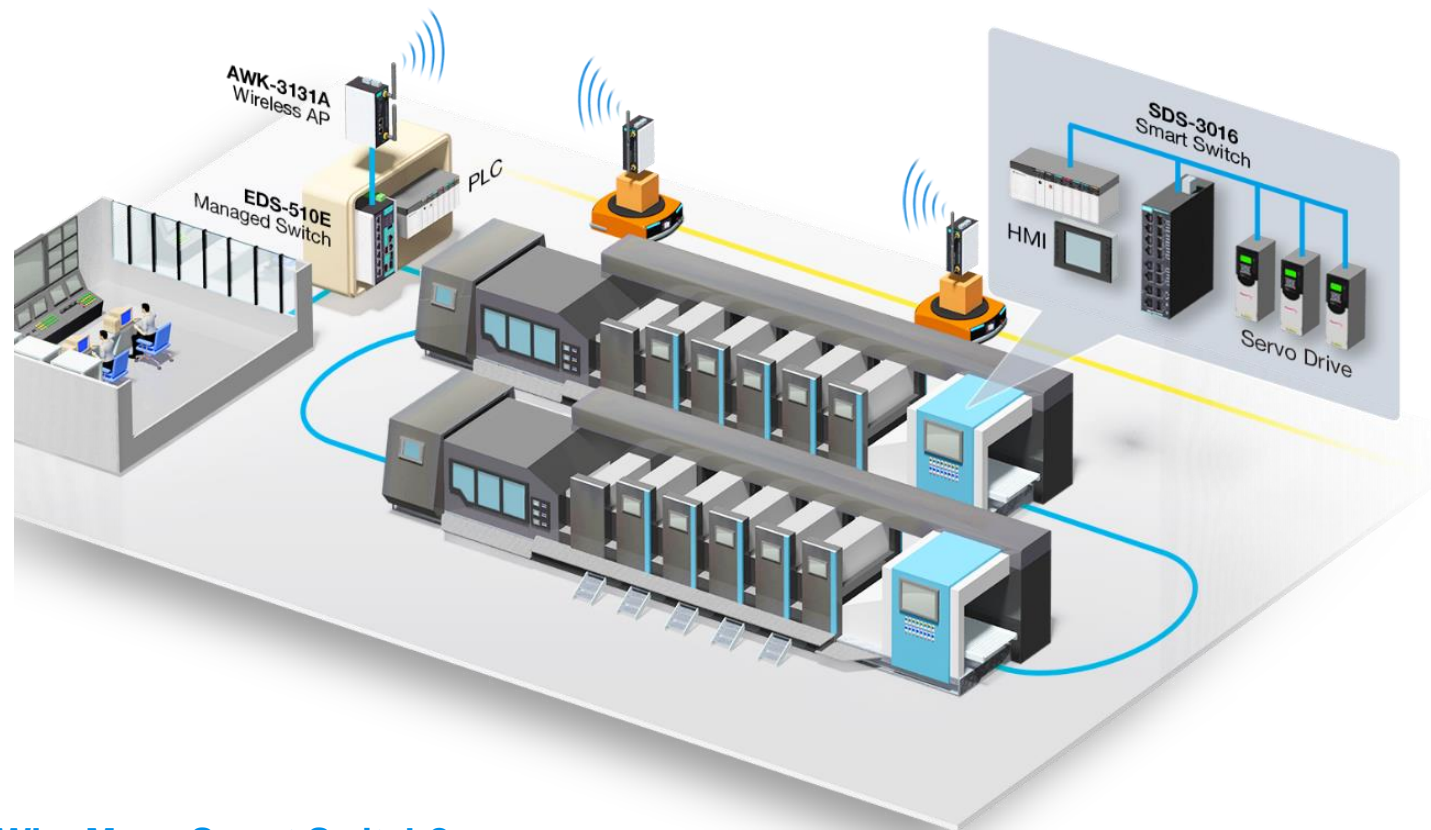

Why Moxa Smart Switch?

- Just one click to enable PROFINET mode on the switches, allowing the network to be monitored through SCADA/HMI.
- Supports MRP Client for rapid network redundancy.
- A higher port count allows more data to be collected from machines.
- Compact and flexible mounting design that fits easily into small cabinets.

Printing Automation

Requirements:

A printing plant required the automatic paper printing and cutting process line to run on the EtherNet/IP protocol. One of the goals from the plant operator was that engineers could monitor the data and the networks on the SCADA system to ensure reliable operations. EtherNet/IP-enabled switches were seen as the best option to facilitate this. In addition, the customer requested an easy way to back up and restore configuration files, and to perform troubleshooting in order to minimize downtime.
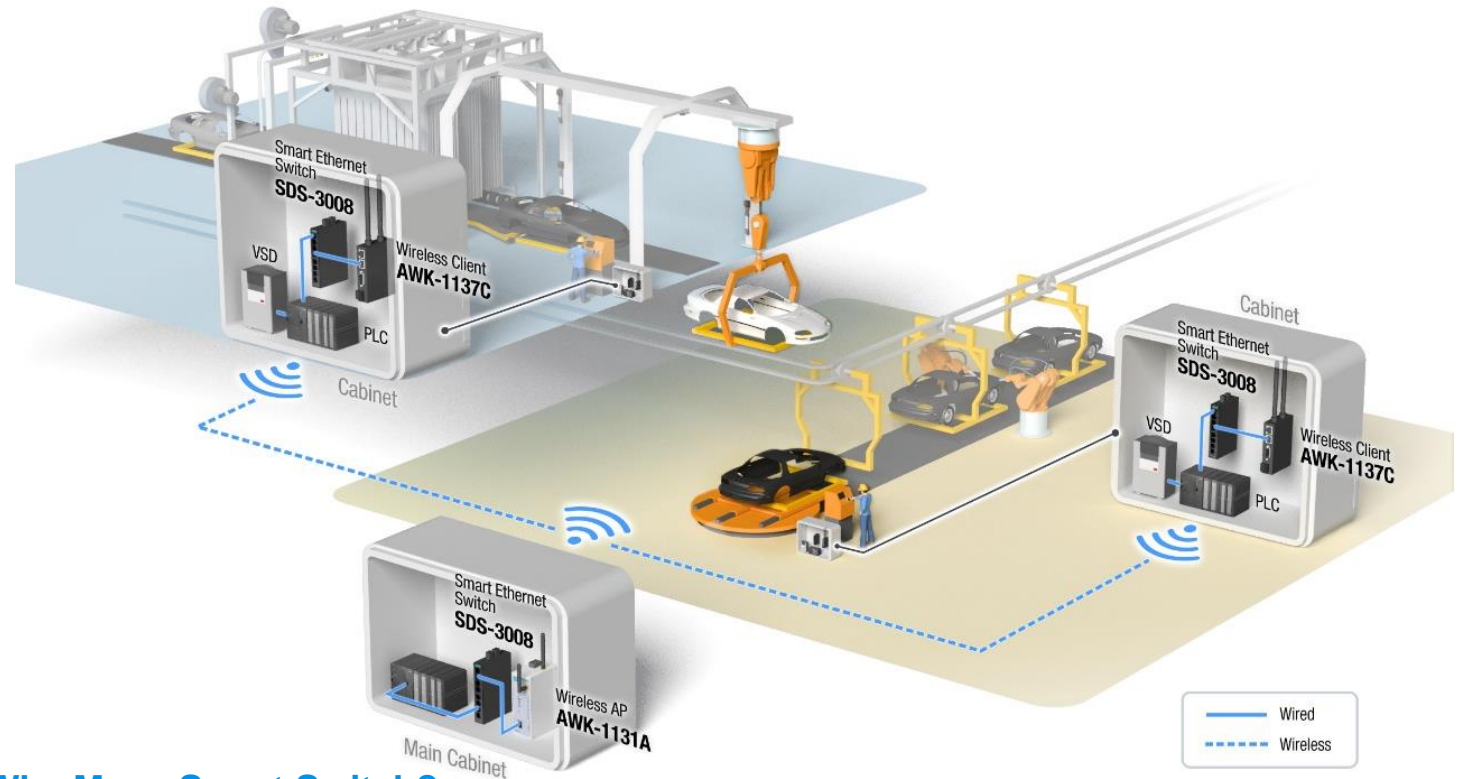

Why Moxa Smart Switch?

- Supports the profile-based EtherNet/IP protocol, which enables fast deployment, saving time and effort.
- Compact and flexible housing options to fit into confined spaces, such as control cabinets.
- The ABC-02 automatic backup configurator can save and load configuration files and back up event logs.
- Plug-and-play functionality to assign IP addresses to devices on the network.

Overhead Transfer System

Requirements:

An acclaimed automotive manufacturing facility in South Africa needed an overhead transfer system (OTS) to move vehicles through the production processes. The project had three key requirements. First, a reliable network to ensure that vehicles can be transferred efficiently. Second, devices that can be easily viewed from the HMI. Third, all devices that are deployed must have compact form factors so that they can be installed in confined spaces.
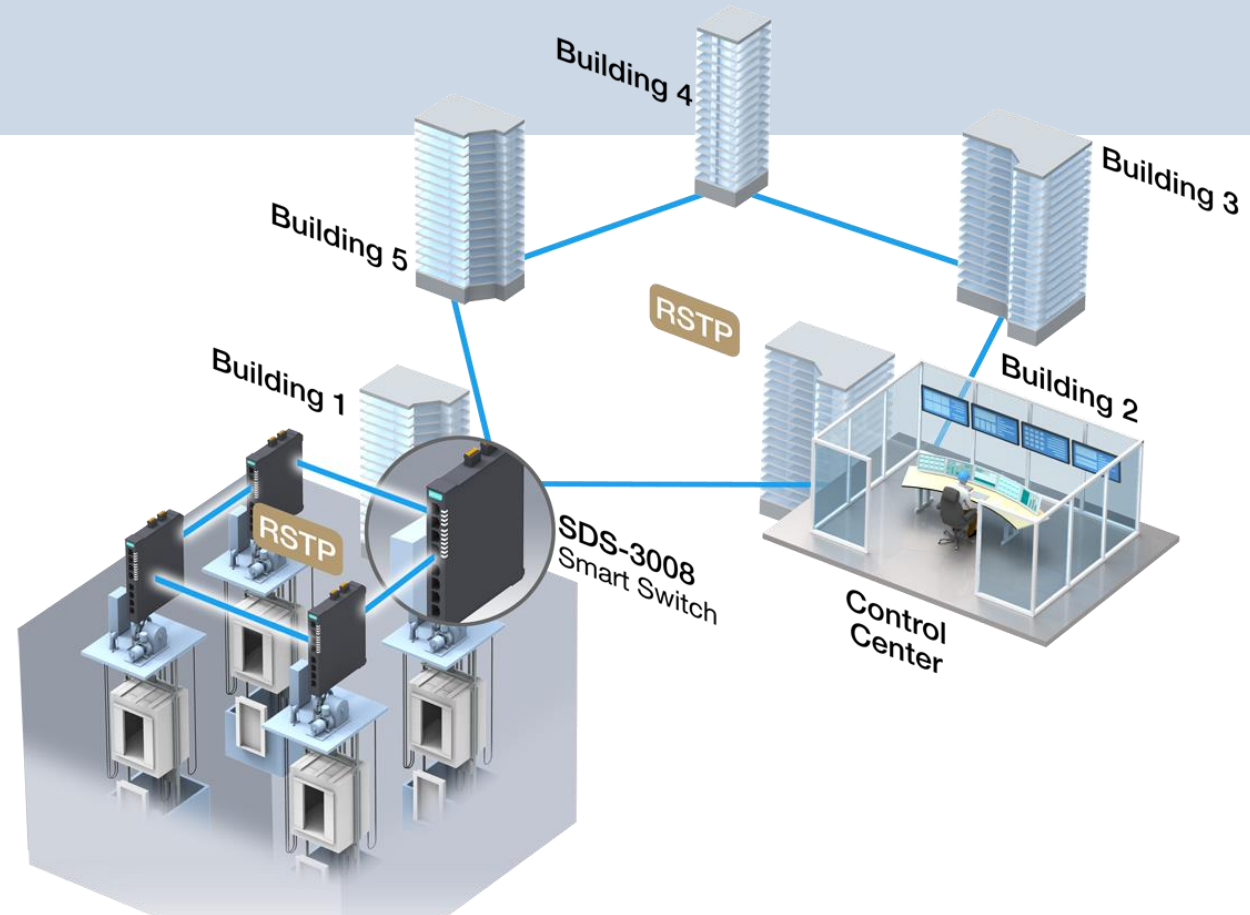

Why Moxa Smart Switch?

- Our smart switch has tailor-made traffic management functions that met the operator's requirement to simplify communication between the operator and machines.
- Our switch has the three most commonly used IA protocols embedded in the device, which allows the operator to view the network from the HMI.
- Moxa's smart switch has a palm-sized form factor and flexible mounting options, which means it can fit into almost any industrial cabinet.

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Elevator

Requirements:

Switches are one of the components of an elevator system, but many elevator site service engineers have a mechanical background and don't have much knowledge about switches or networks. Therefore, when the engineers visit the site, if installing the switch or performing maintenance requires minimal technical knowledge, this will allow the process to be quicker. In addition, remote monitoring to allow users to see the site status from a central location is often requested in order to reduce unscheduled calls.
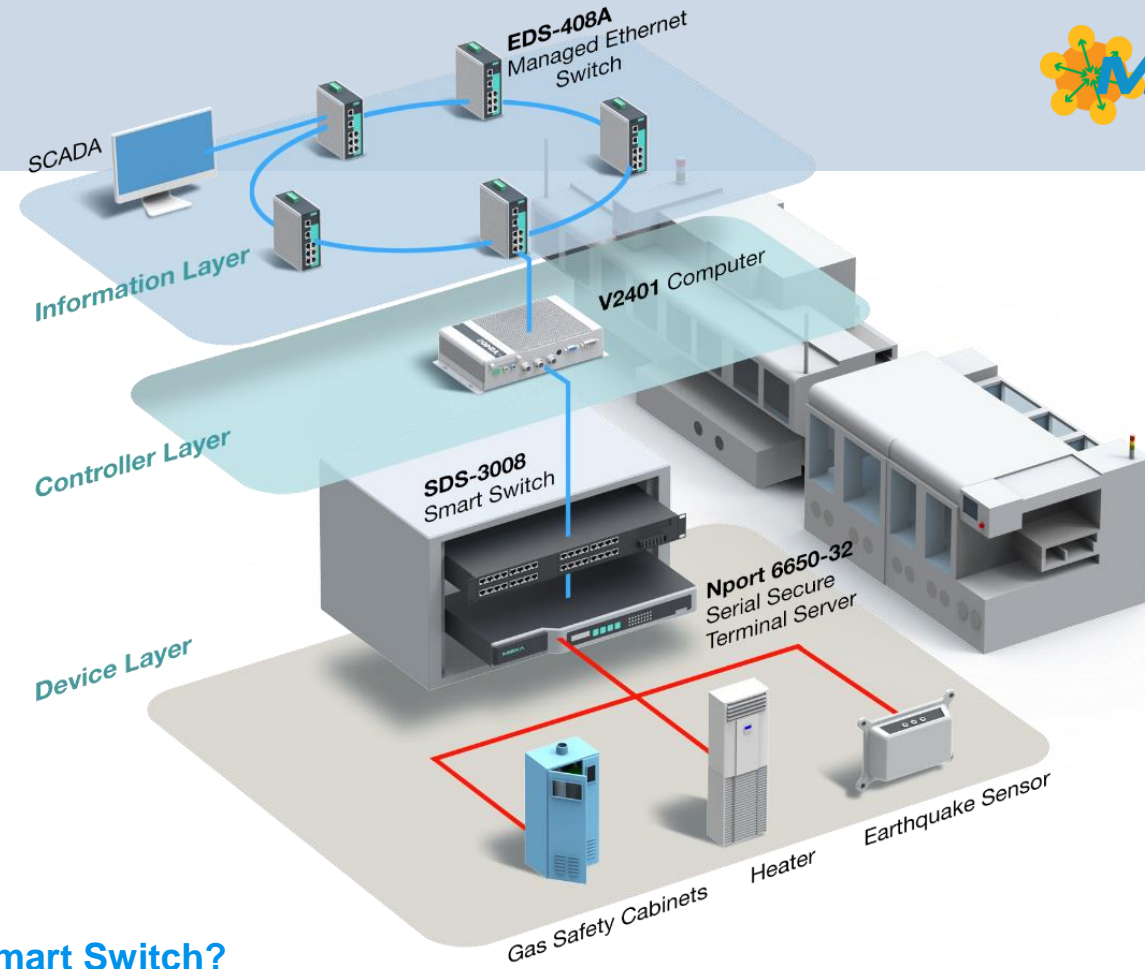

Why Moxa Smart Switch?

- The smart switch's intuitive UI (user interface) simplifies device configuration and management.
- The slim size and DIN-rail mounting option make it suitable for cabinet installation, and easier for engineers to prepare spare parts for different types of cabinet.
- Supports one-click configuration of EtherNet/IP, PROFINET, and Modbus/TCP to achieve fast configuration and flexible deployment.
- Supports ABC-02 automatic backup configurator for quick event logging and configuration backup.

FMCS

Requirements:

Facility management and control systems (FMCSs) are built to collect critical field data and ensure a smooth production process. For example, semiconductor manufacturers would install sensors to detect the status of the assets and environmental conditions and enable big data analytics. Ensuring data integrity and precise decision making requires a reliable network for data to be transmitted to the control center for monitoring and analysis. For the plant floor, Modbus TCP is the most common protocol, so using a Modbus-enabled switch allows engineers to monitor the network status of the existing SCADA system, and quickly act on it.

Why Moxa Smart Switch?

- Modbus/TCP, EtherNet/IP, and PROFINET industrial protocols are supported for easy integration and monitoring in automation HMI/ SCADA systems.
- Supports RSTP/STP for rapid network redundancy.
- Supports a range of useful management functions, including IEEE 802.1Q VLAN, port mirroring, SNMP, and warning by relay.
- Security features based on the IEC 62443 standard.
- Supports 19-inch rackmount cabinets with the 1 U rack accessory.