

# Simple Integration

Enter the new era of connectivity in data center infrastructure (DCI)





## Your Trusted Partner in Automation

Moxa is a leading provider of edge connectivity, industrial computing, and network infrastructure solutions for enabling connectivity for the Industrial Internet of Things (IIoT). With over 35 years of industry experience, Moxa has connected more than 82 million devices worldwide and has a distribution and service network that reaches customers in more than 70 countries. Moxa delivers lasting business value by empowering industries with reliable networks and sincere service. Information about Moxa's solutions is available at [www.moxa.com](http://www.moxa.com).

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# The Need for Efficiency



## Boost Resilience

Modern consumers' demand for large data center reliability has increased from 99.982% to 99.995%. This phenomenon has made 2N+1 power supply systems mainstream. As these systems are driven by net-zero emissions power sources, data centers have integrated renewable energy with their existing power sources. However, this complicated power system design makes it difficult to ensure operations are uninterrupted.



# Evolve Your DCI Connectivity

## From Segregated to Integrated



**To** realize cross-system data analysis and collaboration, DCIs will have to move away from a siloed OT network to one that is fully integrated. Knowing how to remove barriers to integrating multiple OT networks will be key.

## From Tunnel Vision to the Big Picture



**To** successfully optimize PUE in an ever-changing data center, the deployment of monitoring points must be increased tenfold. With massive amounts of data about, efficient data collection is critical to visualize the entire system for optimization.





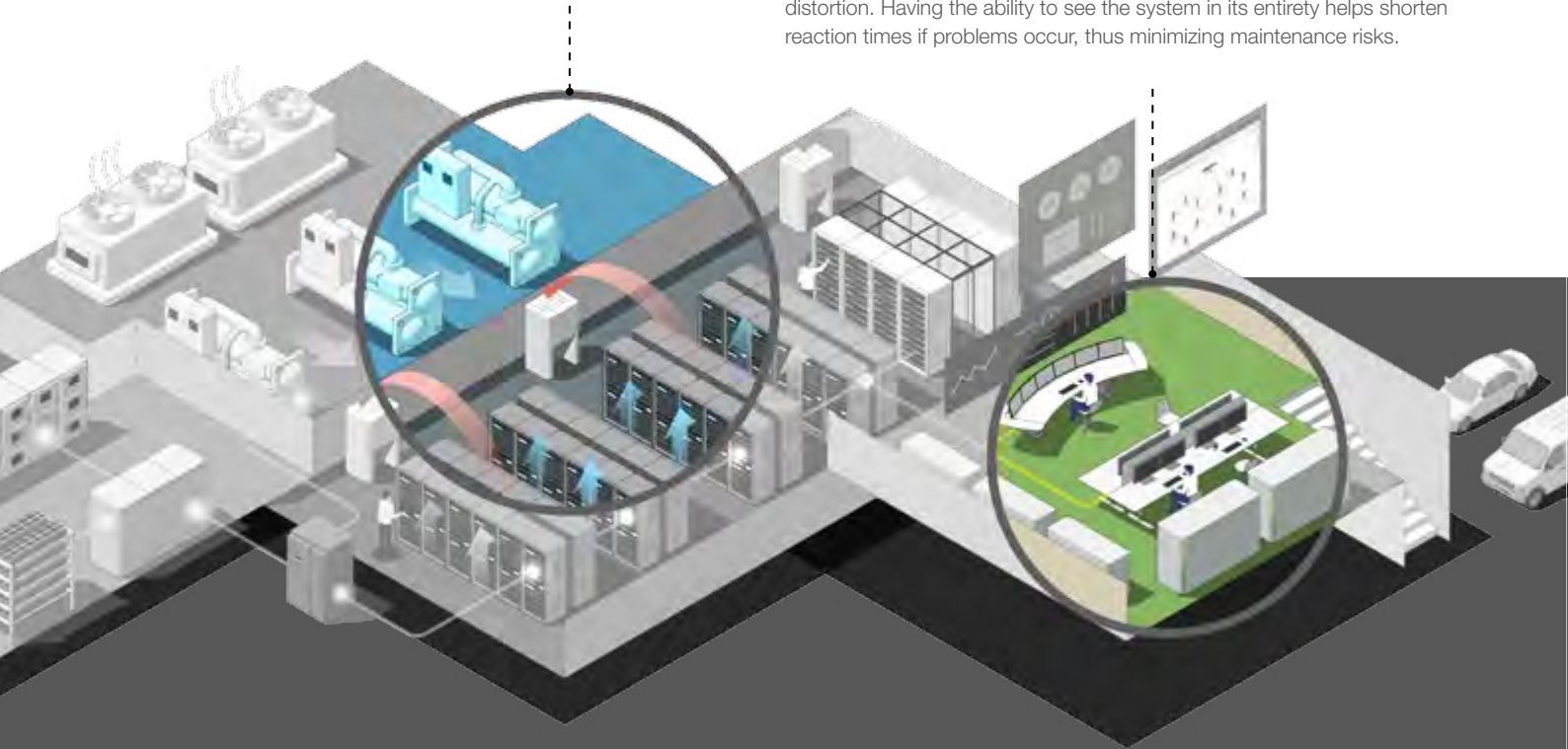
## Gain Full Control

To further optimize energy efficiency, the cooling requirements of the servers must be calculated and controlled precisely. However, because computing needs may vary and the surrounding temperatures and humidity may fluctuate drastically, a better understanding of these variables is necessary to accurately predict the energy required.



## Get the Full Picture

To optimize energy consumption and allow a DCI system, for example, to make automatic adjustments based on AI calculations, OT data from various systems—such as an Electrical Power Management System (EPMS), Building Management System (BMS), or Power SCADA—must be integrated into Data Center Infrastructure Management (DCIM). This allows IT staff to get a more precise view of all the subsystems in the data center while avoiding PUE distortion. Having the ability to see the system in its entirety helps shorten reaction times if problems occur, thus minimizing maintenance risks.



# Solution For Better Efficiency

### From Reactive to Proactive



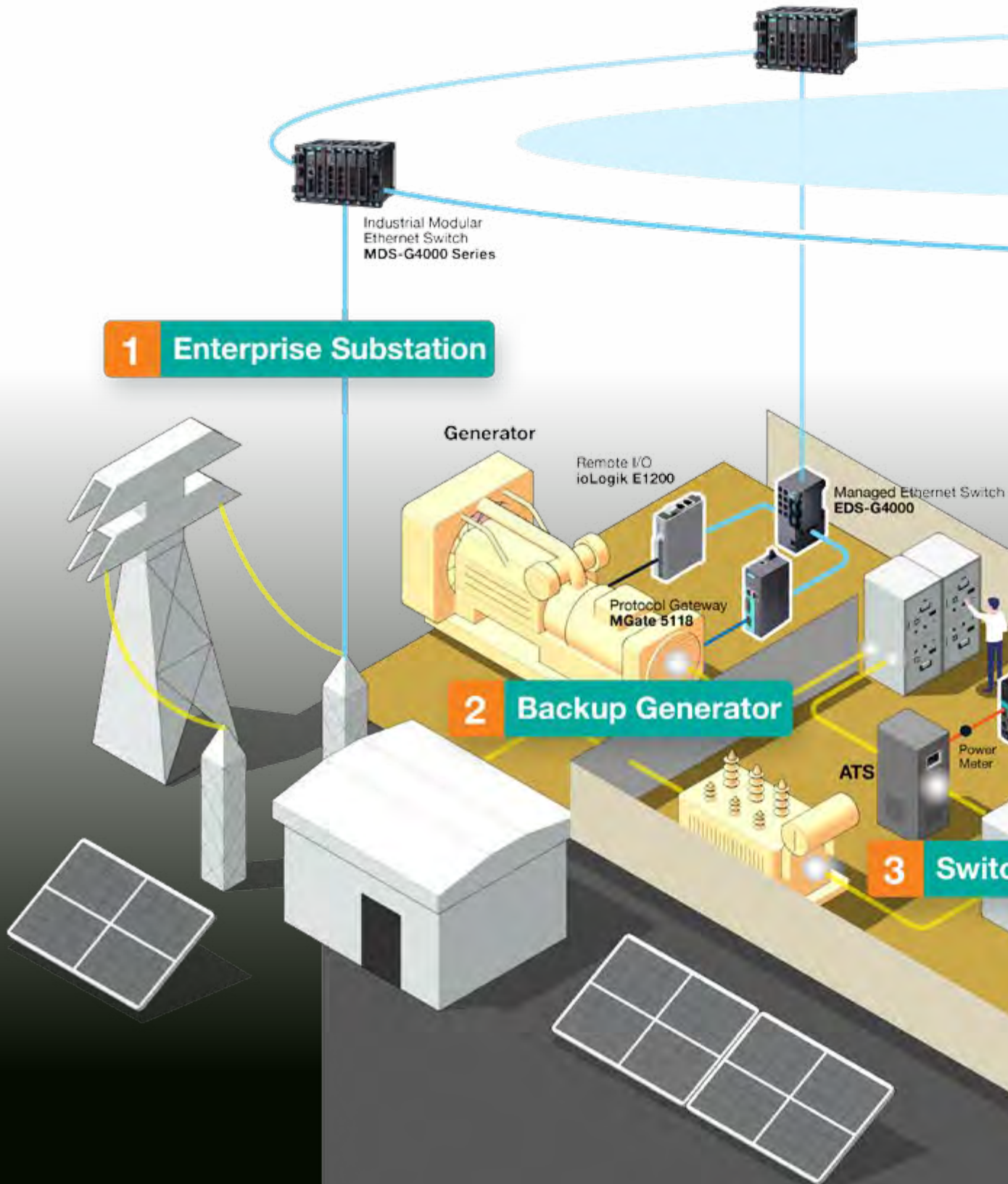
**To** ensure a continuous and stable supply of power for an increasingly complex system, equipment must respond to the EPMS system immediately. Ensuring responses are proactive instead of reactive requires a reliable facility network.

### From Intranet to the Internet



**To** effectively monitor devices, data centers now need to move from a conventional intranet to the Internet. With the possibility of cyberattacks always lurking, the security management of OT devices has also become a key focal point.

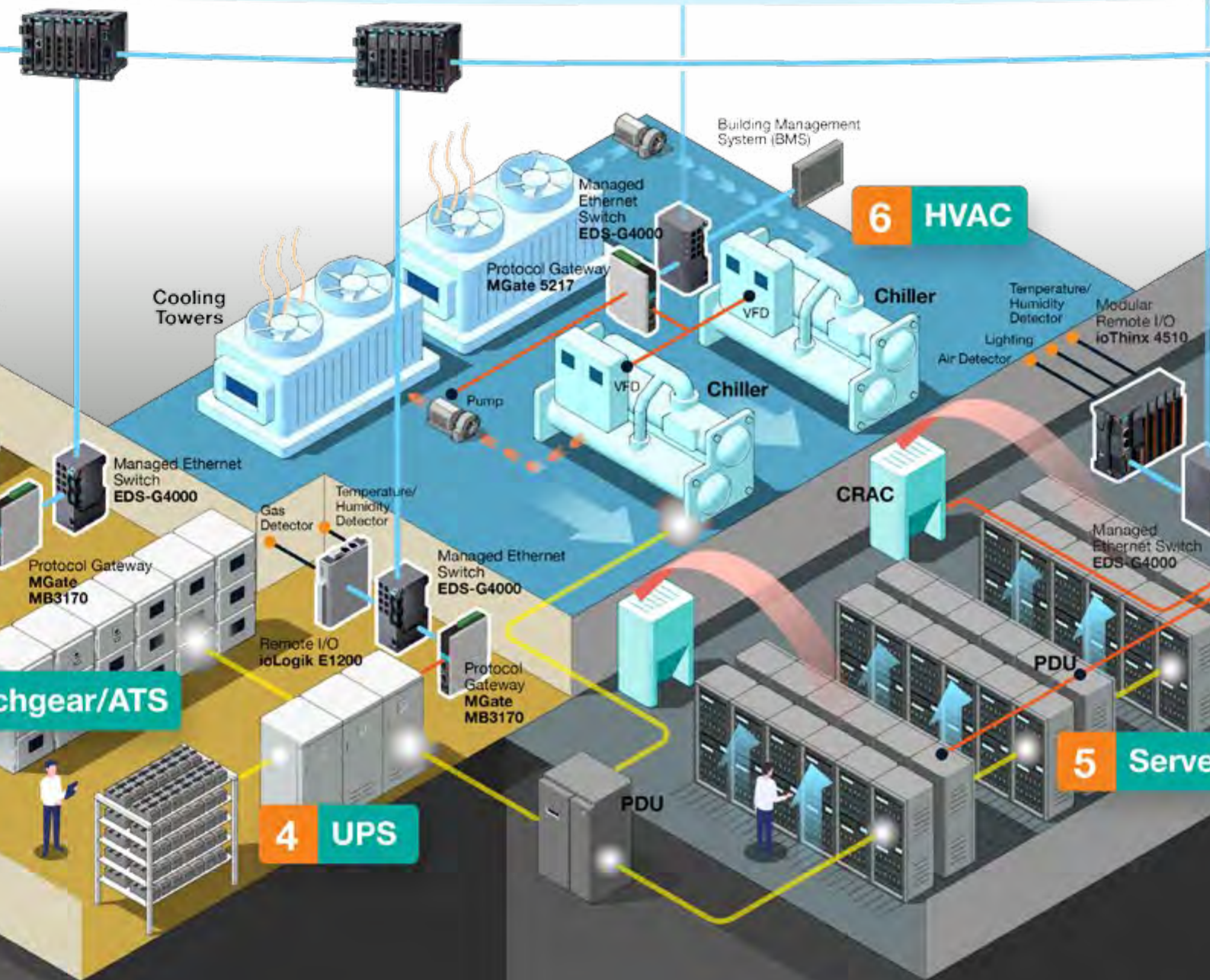
# A Single Integrated Network





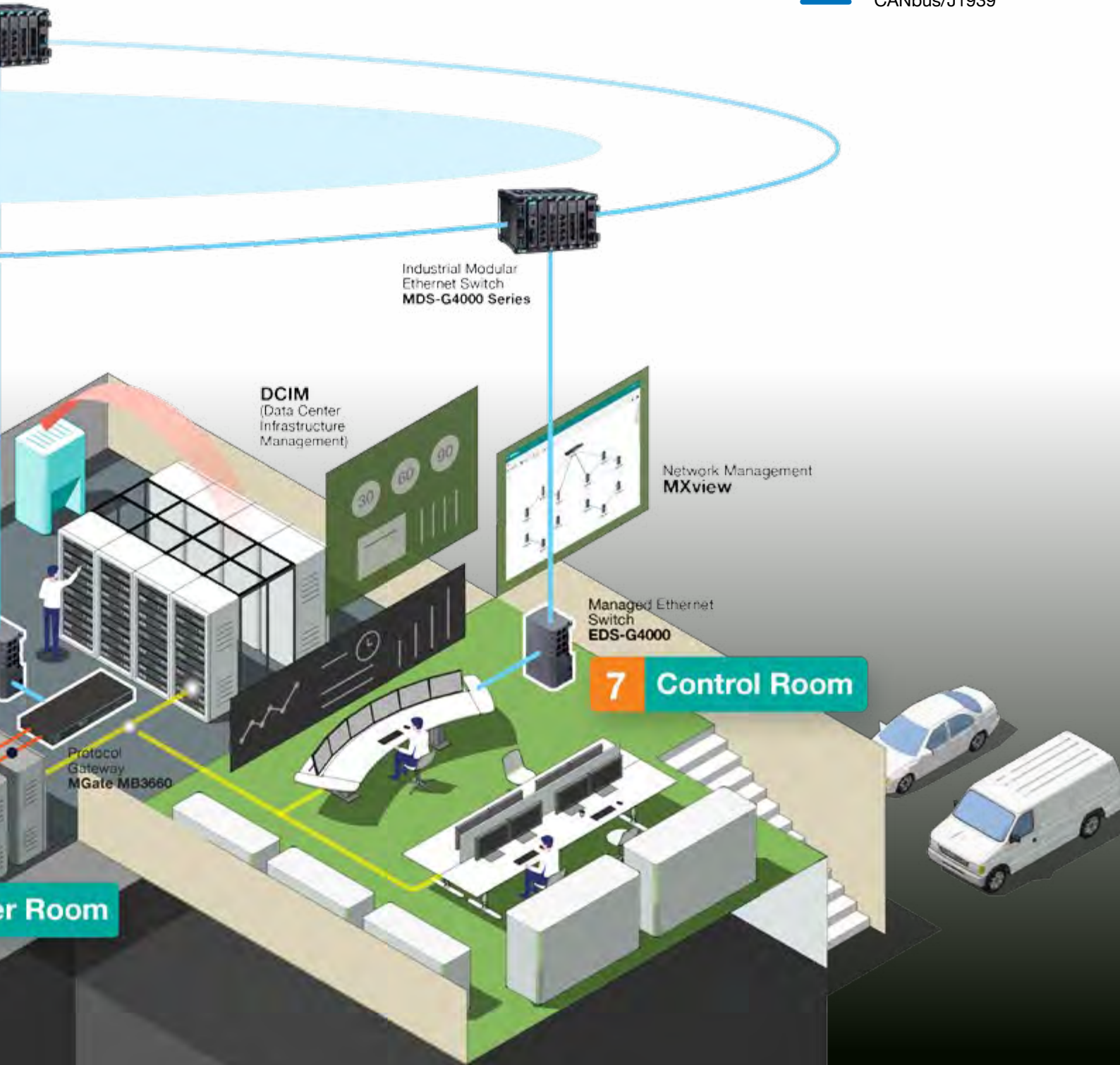
# for Data Center Infrastructure

## Turbo Ring (recovery time < 20 ms)



Our Successes Around the World

- Power
- Serial/Modbus
- I/O
- Ethernet
- CANbus/J1939



**35+ years**

of Experience in Critical Infrastructure Automation

**Top 3**

Cloud Service Providers Use Moxa Products in Their Data Centers






**100,000+**

Moxa Products Installed in Data Centers



# Complete Portfolio for Reliable DCI Connectivity

## 1 IEC 61850-3 Enterprise Substation

|  |   |   |  |   |   |
|--|---|---|--|---|---|
|  |  |  |  |  |  |
| <b>SCADA Computer</b><br>DA Computer   | <b>Ethernet Switch</b><br>PT-G500/G7000   | <b>Protocol Gateway</b><br>MGate 5119   | <b>Ethernet Switch</b><br>EDS-2000/4000/<br>G4000                                  | <b>Protocol Gateway</b><br>MGate 5118   | <b>Remote I/O</b><br>ioLogik E1200  |
| PRP/HSR  | IEC 61850 MMS<br>PRP/HSR  | Modbus<br>DNP3/101/104<br>IEC 61850 MMS   |  | Modbus<br>J1939   | Modbus  |

## 2 Backup Generator

## 3 Switchgear/ATS (Automatic Transfer Switch)

|  |  |  |   |  |
|--|--|--|---|--|
|  |  |  |  |  |
| <b>Ethernet Switch</b><br>EDS-2000/4000/<br>G4000                                  | <b>Protocol Gateway</b><br>MGate MB3000/3000I                                      | <b>Ethernet-to-Fiber<br/>Media Converter</b><br>IMC-21                             | <b>Remote I/O</b><br>ioLogik E1200  | <b>Panel Computer</b><br>MPC-2070  |
|  | Modbus   |  | Modbus<br>SNMPv2c   |  |






## 4 UPS

## 5 Server Room

|   |   |   |   |   |
|---|---|---|---|---|
|  |  |  |  |  |
| <b>Serial Device<br/>Server</b><br>NPort 5000                                       | <b>Protocol Gateway</b><br>MGate MB3000   | <b>Protocol Gateway</b><br>MGate MB3660   | <b>Serial Device<br/>Server</b><br>NPort 5000   | <b>Modular Remote I/O</b><br>ioThinX 4510   |
| RS-232/422/485  | Modbus  | Modbus  | RS-232/422/485  | Modbus<br>SNMPv3  |

## 6 HVAC

## 7 Control Room

|   |   |   |  |   |
|---|---|---|--|---|
|  |  |  |  |  |
| <b>Ethernet Switch</b><br>EDS-2000/4000/<br>G4000                                   | <b>Protocol Gateway</b><br>MGate 5217   | <b>Network Management<br/>Software</b><br>MXview                                    | <b>Ethernet Switch</b><br>MDS-G4000  | <b>Secure Router</b><br>EDR-G9000   |
|   | Modbus<br>BACnet/IP   |   |  |   |