SCADA systems are an enabler for IT/OT connectivity

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The role of SCADA is changing, moving from simply a convenient tool for managing a plant or process to a vital part of the digital make-up of a factory or utility site. This is raising the importance of today's SCADA platforms to a prominent position in the digital transformation of industry and the new business models it creates.

Christian Nomine, Strategic Product Manager Visualization, Factory Automation EMEA, Mitsubishi Electric Europe B.V. comments on the latest trends in SCADA applications that are becoming an important element for IT/OT connectivity in industry.

For many, the primary barrier to digital transformation is the lack of transparent network paths between the operational technology (OT) on the plant floor and the information technology (IT) in the enterprise systems. The commercial success of a business in today's competitive environment depends upon both OT and IT staff having quick and easy access to timely relevant data for efficient plant operation and management decisions.

The question, then, is what will form the bridge between these separate levels of the enterprise, how will it deal with the mix of new and legacy technologies on the plant floor, and how will it interface seamlessly with a range of database technologies and management software platforms such as MES and ERP? How, too, will it interface with the Cloud to enable remote plant monitoring and data analysis?

These are not trivial questions when developing a new bridging technology from scratch. Knowing there are multiple data sources from many different manufacturers that it needs to interface with, might seem an insurmountable challenge. However, to address this part of the challenge SCADA systems have long offered the ability to interact with new and legacy software systems and hardware components. They continue to evolve to meet the interfacing needs of the very latest systems.

Addressing the other part of the challenge, it is becoming clear that OPC UA is the preferred protocol for connectivity between the separate OT and IT worlds. But a conduit without a gateway to manage the data flow would quickly become overwhelmed, particularly given the trend of the Industrial Internet of Things to have all devices linked and communicating. SCADA can provide the bridge between OT and IT, aggregating plant floor data, filtering it and

translating it into the required OPC UA format for transmission to the next level of systems.

So, with its huge library of built-connectivity options for new and legacy components, third party automation controllers and associated systems - plus, its data translation capabilities, SCADA is the enabler for seamless communications between the plant floor and the wider enterprise. As a bridge between the plant floor and the higher-level systems, SCADA provides the means to contextualise data, adding meaning to the raw information. At the same time, it is able to transform that data into an easy-to-understand graphical representation, enabling users to reap the benefits of improved visualisation and enhanced productivity.

The same SCADA bridge can also be an enabler for the transmission of data to and from the Cloud, again taking advantage of OPC UA as the network protocol of choice. Today's SCADA applications can even be hosted in the Cloud, supporting web services plus MQTT and IT connectivity such as SNMP or ICMP to monitor IT assets.

A further challenge of digital transformation is that increased connectivity brings increased cyber risk. But again, the latest trends in security within SCADA can help, enabling system developers to implement a robust defence strategy against cyber-attack. This can be achieved as a natural part of the design process, without any compromise on usability. As a result, SCADA becomes the platform for creating advanced, integrated and secure solutions that deliver real value to the business.

These trends and requirements reflect the development work that singles out Mitsubishi Electric's proven MAPS 4 SCADA platform as a viable foundation for digital transformation. Built on a strong Service Oriented Architecture (SOA), it enables users to develop sophisticated visualisation applications more quickly, while providing optimised features to support IT/OT connectivity.

Image 1: With optimised features to support IT/OT connectivity, Mitsubishi Electric's MAPS 4 SCADA platform enables users to develop sophisticated visualisation applications quickly. [Source: Mitsubishi Electric Europe B.V.]

Image 2: Christian Nomine, Strategic Product Manager Visualization, Factory Automation EMEA, Mitsubishi Electric Europe B.V. [Source: Mitsubishi Electric Europe B.V.]

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Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavours to be a global, leading green company, enriching society with technology.

With around 146,500 employees the company recorded consolidated group sales of 40.9 billion US Dollar* in the fiscal year ended March 31, 2020.

Our sales offices, research & development centres and manufacturing plants are located in over 30 countries.

Factory Automation EMEA

Mitsubishi Electric Europe B.V., Factory Automation EMEA has its European headquarters in Ratingen near Dusseldorf, Germany. It is a part of Mitsubishi Electric Europe B.V. that has been represented in Germany since 1978, a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan.

The role of Factory Automation EMEA is to manage sales, service and support across its network of local branches and distributors throughout the EMEA region.

** At an exchange rate of 109 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2020*

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