New IIoT building blocks with OPC UA

OMAC, the Organization for Machine Automation & Control, and OPC Foundation have signed a Memorandum of Understanding to proliferate communications standards crucial to the success of the Industrial IoT. While much of the Industrial IoT talk has been about big data up in the cloud, the fact is that good data starts at the machine and production line level. That's where the two organizations had previously been working in parallel.

↓

Companion specification for TR88 and OPC UA

OMAC is perhaps best known for developing ISA TR88.00.02-2015. Better known as PackML, TR88 is now finding broader application throughout manufacturing. It defines machine modes, states and tag naming conventions.

TR88 does not, however, specify a communications protocol. That's where OPC UA comes in. In Spring of 2016, Sari Germanos, open automation manager for B&R USA, volunteered to organize a task group of OMAC and OPC Foundation members to develop a companion specification for TR88 and OPC UA by the end of the year.

At the Automation Conference in May 2016, Germanos met with OPC Foundation president and executive director Thomas Burke, standards consultant Dennis Brandl and OMAC chair Dr. Bryan Griffen of Nestlé Foods to kick off the cooperative effort.

Eelco van der Wal
Managing Director, PLCopen

"The combination of OPCF, OMAC and PLCopen promises transparent communication 'right out of the box' and independent from network architecture and protocol, using TR88 tag naming and machine states, providing standardized access between any OPC client and server via a secure channel."

OMAC, OPCF and PLCopen join forces

PLCopen worked with OPCF to define a set of IEC 61131-3 compliant function blocks providing OPC UA client functionality and mapping the IEC 61131-3 software model to the OPC UA information model. The latest version was released in 2016.

Since most automation controllers support the IEC languages, it makes sense for the three organizations to get together and avoid redundant developments. OMAC has for many years recognized IEC 61131-3 as the preferred programming language standard in its Packaging Guidelines document.

Flatter architectures needed for network communication

At the same time, it's clear that standards are needed to support communications from the plant floor up to the interface standards that will be established for big data analytics as well as those de facto interfaces that are in place today. OMAC, OPCF and PLCopen are well positioned to serve in this capacity, working alongside organizations like the Industrial Internet Consortium, which recently launched a Smart Factory Task Group. These organizations share a dedication to international standards and a hands-on approach – which the Smart Factory Task Group seeks to define as building blocks for IIoT architecture requirements specific to automated manufacturing.

Today, there is more reason than ever to believe that open communications standards will proliferate, as the IoT drives the need to flatten network communication architectures. These organizations are actively engaged to do just that. ←

Thomas J. Burke
Foundation President & Executive Director, OPC UA

"The value of our organizations' collaboration will be to provide simple building blocks for suppliers facilitating seamless interoperability for the end users. In this world of continual technology advancement, by working together, the organizations will allow legacy systems to be easily integrated with systems of the future – which is the key to the Internet of Everything."

Dr. Bryan Griffen
Chairman, OMAC

"A standard communication protocol, used consistently across the industry, is vital for the implementation of automation standards such as TR88.00.02-2015 (PackML) that will feed data into the IIoT. A companion specification between TR88 and OPC UA will fill this need."