

## ABB BRINGS ETHERNET-APL TO HAZARDOUS AREAS

Since 2011, ABB has been working within a consortium of process automation industrial partners, backed by industry standard development organizations, to drive the standardization of Ethernet-Advanced Physical Layer (APL). Ethernet-APL extends Ethernet by combining the simplicity of 4–20 mA wiring with a swifter Ethernet-type of bandwidth and protocol support; and yet is simple and robust enough for use in Hazloc areas. With their domain expertise in the Industrial Internet of Things (IIoT) devices, ABB is able to leverage the benefits of Ethernet, such as the multi-protocol capability, to provide connectivity with broadly distributed two-wire, loop-powered field instruments for use in potentially hazardous environments.

ABB's research has focused on OPC UA technology, a new universally applicable communication protocol that provides heightened levels of cyber security, semantics and information models that obviate the need for descriptions. By making OPC UA technology usable for small resource-constrained field devices, ABB is dissolving the border between Operation Technology (OT) and Information Technology (IT).

Successful tests of ABB's OPC UA solutions for a flowmeter, conducted in 2017, and level and pressure transmitters equipped with APL evaluations boards, conducted in 2019, demonstrated just how well Ethernet-APL and OPC UA integrate with modern process plant architectures as defined by standardization organizations, eg, NAMUR Open Architecture (NOA), Module Type Packages (MTP) or Open Group, O-PAS (Open Process Automation System).

With the expected 2021 release of Ethernet-APL standard with the underlying IEEE802.3cg (10BASE T1L) standard, the IEC standard 2-wire intrinsically safe Ethernet (2WISE) for Ex-protection and the release of definitions for Ethernet-APL implementation, the adoption of field-level communication supported with Ethernet communication protocols, eg, OPC UA, among others, is just around the corner. The targeted launch of Ethernet-APL in June at the ACHEMA 2021 trade show will be accompanied by ABB and other automation suppliers who will introduce the first Ethernet-APL products, thereby initiating a new phase of safe, secure and practical field-level communication for process plants. •

