AS I SEE IT

TAKING ADVANTAGE OF EXISTING HART DATA WITH MINIMAL EXPENSE

The Fieldcomm Group asserts that with 40?million HART instruments installed, HART is by far the most dominant communications protocol?used in?process manufacturing facilities around the world. However, users often state that they only use HART for setting up their instrumentation and valves. This widely held perception of the purpose for using HART means that users are not taking advantage of the powerful features that the protocol offers.

In addition, many existing control and monitoring systems do not support HART communication for 4–20 mA devices. For many end users this leaves a void between the intelligence available in HART-enabled devices and the DCS, PLC/RTU or plant asset management system that is not able to accept and handle the valuable data that HART delivers. The challenge facing users with these systems is how to tap into a wealth of device diagnostic information now largely stranded within these intelligent devices without requiring a major upgrade or migration project.

HART gateways with 4–20 mA inputs and Ethernet outputs allow end users to interface their installed base of HART devices to their control systems progressively. Including such implementation into maintenance budgets negates the need to allocate capital funds, enabling engineers to strategically select those devices that add the most value to their operations and immediately start using the HART diagnostic data and additional process variables included on the HART data string — delivering the primary, secondary tertiary and quaternary variables (PV, SV, TV and QV).

This new HART communication channel provides transparent access to existing HART field devices via Ethernet and is easily integrated into higher layers for further processing and analysis in downstream applications, leaving the core automation tasks unaffected. Enabling the migration of these assets begins the affordable and effective transformation into the age of?digitalisation with continuous data flow, inherently establishing a seamless plant floor-to-Ethernet backbone.

In the current business climate, environmental impact and water use have become increasingly important considerations, leading major companies to establish and promote their 'green' credentials. However, many industries rely on the availability of significant water usage for their processes.

Mining, manufacturing and other industries use about 20% of all water consumed in Australia. Traditionally there is a high demand for water in minerals processing since water is favoured for its low cost and low energy requirements for transporting materials between processes, mineral separation and dust suppression.

The primary water source in mining is saline water from underground bores, and the process owner is accountable for the water use. Monitoring the digital data that HART delivers provides an improvement in accuracy over the existing 4–20 mA loop from the magnetic flowmeters to their PLC, where they have also identified the totalisation of the pulse count from the meter is not accurate.

With an existing magnetic flowmeter, the user can tap into the improved digital resolution of the meter using HART. The HART Gateway is connected in parallel with the existing 4–20 mA loop, and reads the volume flow as the PV and a totaliser value as the SV.

Many sites today use a variety of instrument manufacturers within their processes with a common theme amongst them: the majority are HART-based. HART gateways can assist in delivering an immediate and impactful Ethernet-based solution without affecting capital budgets or the existing control and monitoring systems reliability, regardless of which vendor's products are installed.

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