

Friends reunited

You no longer need to spend a fortune integrating or upgrading disparate plant automation, monitoring and control equipment. Chris Rowlands reports on the new age of 'open' plant connectivity

Pointers

- "We're helping businesses achieve seamless, inexpensive integration of data with business systems," says Dave Hammond of Mac.
- "We can help them visualise data right across the business, using presentation methods appropriate to each user, such as web browsers, PDF reports, CSV files, SMS text messaging and email.
- "Any information can be available network-wide, including machine efficiencies, machine faults, downtime and energy usage."

Most manufacturers, process plant operators and utilities that have invested in PLCs, legacy systems and the like for monitoring and controlling machines, plant and equipment must, at some time, have considered a wholesale upgrade to common systems to get over the communication problem.

The benefits: better, faster management information, as well as reduced production costs, energy usage and downtime. But a cursory look at the costs of replacement systems, networks and support tools almost always makes it unrealistic.

Not any more. So-called 'open' systems that allow connection between different vendors' systems have been around for some time, but technology has moved on. Engineers and managers need to know that intermediary devices are also now available to connect PLCs of whatever type to a universal plant network based on Ethernet and TCP/IP (Internet Protocol).

What's more, they're low-risk, inexpensive and non-invasive – meaning that most organisations could now reconsider moving to an 'open manufacturing' nirvana, where machines can talk to machines, send electronic condition alerts (by SMS text, or whatever) and transmit filtered data to the business systems too.

It is no longer necessary to rip out and replace all that old kit (unless it is no longer fit for purpose). Existing plant systems can now share their data

and make it readily visible to managers and/or engineers who need to see it, whoever the supplier – Siemens, Rockwell, Schneider Electric, Mitsubishi Electric, you name it.

Transco, the company responsible for gas transfer across 200,000 miles of pipeline to 20 million commercial, industrial and domestic consumers, recently proved the concept. The organisation had inherited an automation, control and communications infrastructure from the regional gas boards, based on a mix of ageing and expensive technologies, many incompatible. So its project Ulysses was about developing a unified generation of telemetry and control fit for the future.

Transco transformation

A review of Transco requirements concluded that a network based on IP should be implemented, along with a satellite wide area network (WAN) connecting remote locations to cut out its leased phone lines. But while the serial control and communications devices at the outstation sites were perfectly workable, they were not ideal for rapid and reliable transmission across the IP-based network.

It was at this stage that Transco and industrial connectivity specialist MAC Solutions commenced discussions, and the solution was an Industrial Ethernet Device Server (IEDS) to span the divide. MAC Solutions general manager Tim Ricketts explains: "To facilitate the use of a more IP-compatible protocol, an intermediate communications device was developed by telemetry engineers at Transco to translate between the proprietary serial protocol of the legacy outstations and the new protocol."

In fact, MAC proposed Lantronix Micro IAP, a matchbox-sized, embedded system to form the basis of its IEDS. Following prototype testing, it has been connected between the outstation systems and the satellite WAN – and Transco telemetry engineer Keith Hand says it's been outstanding.

"We send more than 100,000 messages over our WAN to old outstations via the new Micro IAP and Transco device set-up. Guess how many failed message we've experienced? None! We were delighted with the performance of the new system." So delighted that the system is now being rolled out across the UK, with views to adopting similar strategies for other legacy installations. **PE**

