

# MAKE WAY FOR THE BENEFITS OF DIGITISATION



There are many benefits to be had from deploying a digital strategy in the industrial environment. **Stephen B. Harrison, from sbh4, outlines the digital advances in FTIR instrumentation and gas detection**

On the 29th of August 2018 the US technology stock index, the NASDAQ Composite, reached a new all-time high at just above 8109. The world is going digital and there is money to be made by those that are winning the race to innovate with the right ideas.

Refineries can now detect gas leaks in the knowledge that their wireless sensor network will function with utmost reliability. Service engineers can travel to engagements with the right spare parts in their van, having received diagnostic information prior to leaving their depot. The result is increased efficiency, and improved safety and environmental benefits.

One area where digitisation is proving beneficial is in the use of QR codes to help CEMS service engineers get it right first time. The holy grail of any CEMS installation is to achieve 100% measurement accuracy 100% of the time. FTIR instrumentation is commonly used for the most complex CEMS applications, for example waste incineration or the co-combustion of fossil fuels with biomass or waste. A blue-chip standard in this sector could arguably be the ACF5000 from ABB. With more than 1700 installed units worldwide and an average availability exceeding 98%, this technology is on the way towards the 100% uptime target.

Digital advances are playing a role in the next step up the ladder to 100% availability of the CEMS. The ABB FTIR instrumentation is often supplied to the end user with a maintenance contract. Much of the service work can be done

using a planned preventative maintenance schedule to ensure that problems are avoided. However, on occasions there are also reactive call outs for the service team and a rapid response on site with the right spare parts can mean the difference between 97 and 98% uptime... a small change in the performance but a big difference in terms of legislative compliance for the CEMS system operator.

Dynamic QR codes are making this step change in performance possible. Marjus Seubert, Head of Product Management for Continuous Gas Analyzers at ABB Automation GmbH explained how: "We can display Dynamic QR codes on the control panel of our latest FTIR instrumentation and all products of our complete portfolio. In addition to static information for system identification, the Dynamic QR code displays the latest system configuration data and the real-time analyser health status. It is compatible with standard QR code reader APPs that end users will have on their



The UEC Vanguard WirelessHART gas detector

Dynamic QR codes, such as those displayed on ABB panels, are instrumental in the drive to achieve 100% uptime of FTIR instrumentation



mobile phone or tablet. It also communicates with our proprietary APP called 'my Installed Base (myIB)'. The idea is that the instrument owner can send our service team real time information so that our engineer can respond immediately with remote support or with a site visit and fix the issue."

Some of the most hotly debated topics in this digital age are the issues of data privacy and data security. Seubert reflects on how the ABB technology is sensitive to this issue: "There is no permanent data transfer from the FTIR unit to our systems. We are not collecting data about emissions levels and the operator is fully in control of the information that they share with us through this Dynamic QR code system."

In another area of digital development, the WirelessHART open protocol networking technology has been implemented into commercial products by several leading process automation companies. One such firm is United

Electric Controls (UEC) of Massachusetts in the USA, who has integrated WirelessHART into its Vanguard range of wireless gas detectors. This takes process safety gas detection one step further up the ladder of reliability because the WirelessHART network of multiple wireless gas detectors can transmit data in all directions and to and through all devices in the mesh. The implication is that if one device fails, or is taken out of service for routine maintenance, the data from the network of Vanguard detectors will flow through an alternative route to ensure the security of gas detector data transfer and the safety of the operation. The resultant mesh of sensors can therefore be both large and complex.

Product Manager for the Gas Detection Product line at UEC, Andrew Liptak, said: "When refineries and gas storage terminals want to monitor for Methane and Hydrogen Sulphide they do so for good reasons: a gas leak can be toxic or cause an explosion. So, the combination of the gas detectors with this self-repairing wireless network mesh is the optimal solution to monitor for gas leaks in their hydrocarbon processing facilities. Furthermore, with a data transmission frequency of 8 seconds and a guaranteed battery life of more than 5 years, we have broken new ground in the realm of operational longevity."

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