The future of wireless is still up in the air

The European Commission has recognised that industrial applications of wireless communications need special consideration, and is organising a workshop to discuss this contentious issue. Gambica technical executive Andrew Evans* updates us on recent developments.

Gambica estimates that there are at least 40,000 industrial wireless networks installed worldwide. Industrial radio technology has been available for around 10 years now and has mainly been used in areas that were previously out of physical or economic reach, opening the door for new possibilities in process improvement. Remote locations, physical obstructions, high installation costs or lack of existing infrastructure are no longer the barriers that they once were.

But wireless technology has had to overcome several barriers – a perceived lack of reliability, its suitability for use in control applications, and its ability to transmit in a busy environment, have all hindered its adoption. However, as the technology has matured, user acceptance has grown.

Since the publication of the article on industrial wireless on page 5 of the June issue of *Drives & Controls*, I have been to a meeting of TCAM (Telecommunications Conformity Assessment and Market Surveillance Committee) in Brussels.

On behalf of industry, Gambica has argued that while radio interference may be a problem with consumer electronics in public areas, it is not a problem within private industrial premises. In such premises, "coexistence management" is used to avoid interference. This has to be implemented by the plant manager to ensure that the plant runs efficiently.

To preserve battery life, wireless devices are inherently low-power, typically needing less power than a wireless laptop. They are therefore short-range devices and do not create interference outside the industrial perimeter.

The problem revolves around the fact that radio equipment sold in the EU must comply with national legislation described by the R&TTE (Radio & Telecommunications Terminal Equipment) Directive. In particular, article 3.2 of this Directive states that:

"In addition, radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communication and orbital resources so as to avoid harmful interference."

One way of obtaining "presumption of conformity" to the Directive is to manufacture devices according to ETSI's harmonised standard, *EN300328: Data transmission equipment operating in the 2.4GHz ISM band and using wide band modulation techniques; Harmoni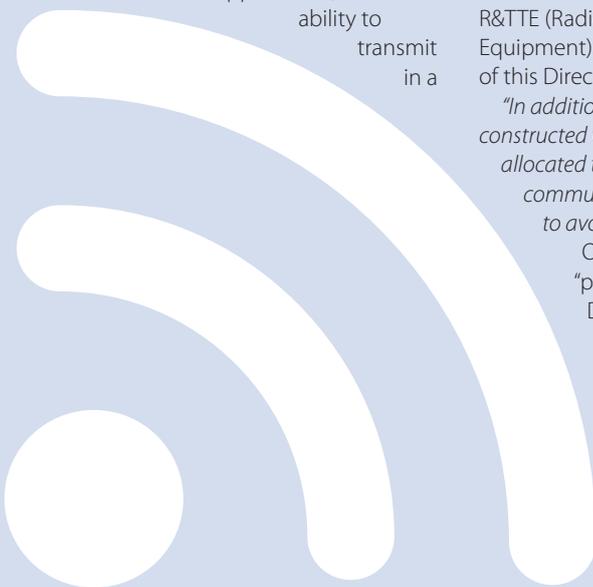zed EN covering the essential requirements of article 3.2 of the R&TTE Directive.* This standard describes a mechanism called "listen before talk" which is impractical for industrial radio applications.

Following some strong lobbying by Gambica and the German electrical trade association, ZVEI, at the TCAM meeting in July, the Directorate-General for Enterprise and industry (the relevant European Commission department) recognised that a solution for industrial radio needs to be found and agreed to organise a workshop in November 2014.

Work is already underway to find a compromise between ETSI's ERM TG11 and Cenelec's TC65X WG1. Whether the protocol used is ISA100.11a, WirelessHart or another protocol, Gambica strongly believes that we need a united front from industrial wireless manufacturers to find an acceptable solution to propose before the November workshop.

The German ministry had a meeting with ZVEI last month to discuss the issue and is urging TG11 to find alternative bandwidth preservation mechanisms for automation applications. The first Cenelec TC65X WG1 meeting will be later this month in Germany.

If you wish to get involved, please contact Andrew Evans at the email address below. ∎