

What does automation mean to you?

People from outside of the industrial community have a variety of interpretations of what “automation” means. Steve Brambley, deputy director of Gambica*, believes that the term is widening to encompass a wider spectrum of activities and technologies.

One of Gambica’s primary roles is to represent our industry to stakeholders such as government, standards bodies and the manufacturing community. In most of these circles, the concept of automation is already understood, and we can often take for granted that those already familiar with industry and technology will understand the terminology and acronyms in common use.

This is not always the case however, and even experts will have different definitions, depending on their experience. It is when communicating with a broader audience that we need to take care to take a step back and ensure that

even the basics are understood.

When I meet people from outside the industrial community, if I say that I work in the automation industry, then I can expect a range of responses. A surprising number confuse “automation” with “automotive” and assume I work in the car industry. Agreed, they are similar words with roots in Greek and Latin, “automation” being derived from automatic meaning “self-acting” – a term Homer was using 3,000 years ago to describe self-opening doors. It maybe isn’t surprising to mix our autos up, in a world that contains automated factories, automatic gearboxes and autonomous vehicles.

Another common reaction is “Oh, is that robots?” to which I reply “... sort of, but much more besides”.

If we look at estimates of the robotics industry in the UK, it equates to less than 5% of the value of the total automation basket, which includes many other components, such as PLCs, drives, controlgear, sensors, safety equipment and more. The prominence of robots as the poster children for automation is probably due to the fact that you can see what they do. A short clip of a robot arm welding or painting a car (to a classical music soundtrack for added effect) is enough to figure out what it is doing. It

is not so simple to understand at a glance what that rectangular plastic moulding with some blinking LEDs is doing.

Here we can use the human body as an illustration. Automation can be largely equated to the brain and nervous system, hidden from view, yet performing essential computing and communication tasks.

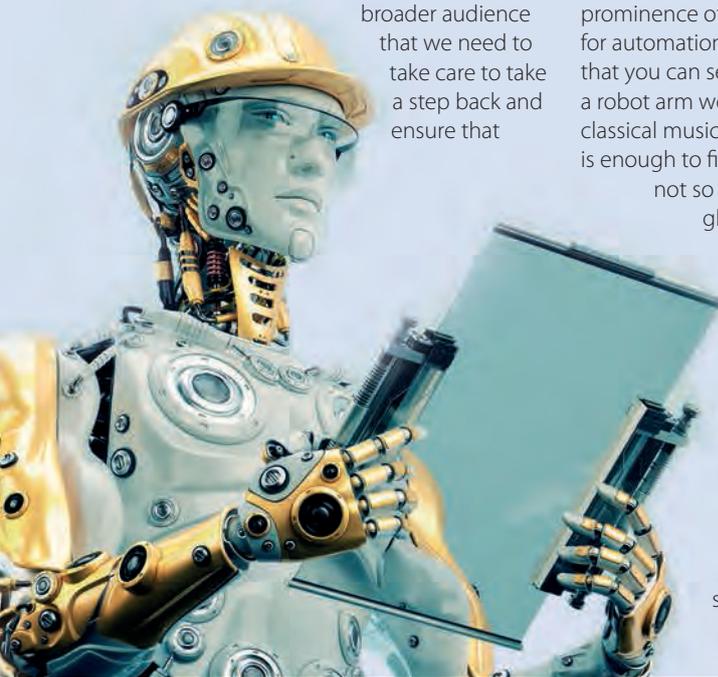
Taking inputs from various sensors / senses, it makes real-

time decisions and sends messages to the body to act accordingly. The robot arm is, well, your arm. A very useful limb that would be a lot less useful without the automation to control it.

If we come back to the meaning of the word, “self-acting” is a pretty good way to sum up automation. It is essentially providing the intelligence to a manual process to be able to monitor, decide and act accordingly. Whether that is simply turning a conveyor on and off as needed, or managing the continuous process of an oil refinery, the same principles of sensors, processors and actuators are used to automate what would otherwise be a manual task.

I think that, in future, the term *automation* will broaden to even more than the equipment in production lines and process plants, to integrate other systems into intelligent decision-making and reaction. One of the goals of Industry 4.0 is to network manufacturing equipment with material ordering, machine planning, people management, stock management and logistics planning. This integration of various systems means that a trigger in one area could generate a chain of automated decisions across all of the other systems. A raw material shortage, for example, could initiate an automatic re-planning of production, personnel and logistics to deal with the problem in the most effective way.

Whether the actions are taken in the real world, the virtual world or both, at the centre it is the automation system that is the brains of the operation, making the decisions and sending out the messages. ■



* Gambica is the trade association for the automation, control, instrumentation and laboratory technology sectors in the UK. For more information, please contact the deputy director, Steve Brambley, on 020 7642 8090 or via sbrambley@gambica.org.uk www.gambica.org.uk