Always in Control

The next step forward

Industry 4.0 is reported to be the next major revolution in industrialisation. The main focus is to take all the individual processes and systems that are used in manufacturing to manage and control production, and import them into a cloud-based system This allows the workflow, product changes and the management of each and every individual machine or a series of machines can be controlled remotely. Cloud computing and the internet of things are the two main components needed to introduce industry 4.0 into a business. The Cloud is hosted on the internet or company intranet and allows for remote access to applications, services, and data.

The internet of things builds on this concept by using the cloud to store and automate processes and components that are linked and sequenced on the internet. A simple example of this process is the new generation of fridges that can scan your products, then let you know when you need to re order or when the use by dates are close and send these messages directly to your smart phone, or alternately order the products direct from your chosen supplier. Industry 4.0 utilises both cloud computing and the internet of things to take processes that are normally managed internally by both people and machines and move them into the cloud where they can be managed from anywhere in the world.

As we look into the application of these systems at a factory level, they are often called manufacturing execution systems (MES) and are the computerised systems used in manufacturing, to track and document the transformation of raw materials in to finished goods and logistics. MES provides information in real time that helps manufacturing decision makers understand how current conditions on the factory floor can be optimised to improve production output.

MES can operate across multiple function areas, for example: management of products across the whole of its lifecycle, resource scheduling, order execution, dispatch and logistics, production analysis and downtime management. All this information can then be used for the process of overall equipment effectiveness (OEE), where product quality, or material traceability is constantly monitored. MES creates the "as-built" record, capturing the data, processes and outcomes of the manufacturing process. This can be especially important in regulated industries, such as food, beverage and pharmaceutical, where documentation and proof of processes can be a statutory requirement.

MES can also be seen as a means of bringing together an enterprise resource planning (ERP) system and a supervisory control and data acquisition (SCADA) process control system on the other. SCADA uses networked data communications and graphical user interfaces for high-level process supervisory management, but it also uses other integrated systems such as programmable logic controllers often known as PLC's and PID controllers to interface with the process plant or machinery.

SHAPA members have an extensive knowledge of using these systems for the control and management of factory and production systems, more information can be gained by visiting the technical section on the SHAPA website at www.shapa.co.uk . All this data is available free as part of SHAPA's mission to benefit the whole of the industry at large.

Should you need to speak with someone about a specific enquiry on how you can increase the effectiveness of your processes, please send and enquiry in to info@shapa.co.uk or call 01904 373040. All enquiries will be actioned quickly and passed onto member companies best able to deal with your enquiry. Of course, if you are a supplier within solids and bulk handling industries, the next step should be to enquire about whether SHAPA membership could benefit your organisation.

Since 1981 SHAPA has existed to be the focus of excellence within our industries and be the association of choice for its manufacturers and suppliers. 2019 sees the Association going from strength to strength with many long-standing members and actively attracting new companies. The SHAPA website, showcases the continuing advantages of SHAPA to its members and industry at large. Visit www.shapa.co.uk or for further information email info@shapa.co.uk or call 01904 373040