Industrial networks make digitalisation work

Embarking on a digitalisation journey to build Industry 4.0 applications needs more than simply automating manufacturing lines. It requires accurate digital models of physical assets and processes in order to predict outcomes and optimise operations in near-real-time. The successful migration from conventional automation frameworks to futureproof, cyber-physical systems requires state-of-the-art network technologies that connect the actual factory floor to its digital counterparts for closed-loop control.

John Browett, General Manager of the CC-Link Partner Association (CLPA) – Europe, looks at why industrial communications are a must in the digital migration and what to look for when choosing one

A growing number of businesses are developing and implementing digital models that closely match assets, machines, systems and processes used on their manufacturing lines. These virtual replicas provide a unique tool for control and product lifecycle management (PLM) or to simulate what could happen in the real world, e.g. interactions between components or component wear rate and failure.

In both cases, the digitalisation process allows manufacturers to build transparency and manage plants in a more effective way, by getting meaningful information and actionable insight into their operations. Therefore, while digital models do not necessarily need to be connected to their physical counterparts to support industries, near-real-time feedback loops between these two worlds greatly contribute to the creation of smart, responsive factories.

In fact, only by allowing the virtual and physical worlds to communicate, it is possible to check if what is happening on the factory floor matches with what models are predicting. Therefore, manufacturers need to consider implementing suitable industrial network technologies in their digital migration strategies towards Industry 4.0.

By choosing leading experts in networks for industrial automation, such as the CLPA, and their products, manufacturers can rely on state-of-the-art technologies that address evolving needs, empowering them to grow accordingly. Over the years, the CLPA has supported industries in shifting from fieldbus to Ethernet - and now - to the future: Time Sensitive Networking (TSN).

The association's most recent open technology, CC-Link IE TSN, can handle the large volume of data generated by sensors and models in cyber-physical systems in a timely manner by combining innovative Time Sensitive Networking (TSN) technology with gigabit Ethernet. These two key elements also offer businesses a way to migrate existing, fully operational automation solutions to the future. Ultimately, such network lets manufacturers prepare for the future whilst enabling them to run their current processes with maximum compatibility.

Caption: John Browett, General Manager, CLPA Europe

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About The CC-Link Partner Association (CLPA)

The CLPA is an international organisation founded in 2000 dedicated to the technical development and promotion of the CC-Link family of open automation networks. The CLPA's key technology is CC-Link IE TSN, the world's first open industrial Ethernet to combine gigabit bandwidth with Time Sensitive Networking (TSN), making it the leading solution for Industry 4.0 applications. Currently the CLPA has over 3,800 member companies worldwide, and more than 2,000 compatible products available from over 300 manufacturers. Over 26 million devices using CLPA technology are in use worldwide.

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