

Integrating Time Sensitive Networking into your architecture is what you need

Small to medium sized companies that are looking at how to embark on digital transformation projects may fear that the large-scale investments may be required to implement all the key technologies. This couldn't be further from the truth. To succeed in their digitalisation, businesses should move in steps, selecting an enabling network technology where it makes sense and prioritising the areas that can profit most from optimisation.

Mariana Alvarado, Marketing Specialist at CC-Link Partner Association (CLPA - Mexico), looks at how easy it is to create futureproof Connected Factories and the advantages that they hold.

When it comes to discussions around the Connected Industries of the future, a number of buzzwords are generally included, making it seem like an endless number of high-tech devices are required to make factories smart. However, at the core of most digital transformation journeys lies an open high-speed industrial network architecture. In effect, future-oriented operations need a suitable data flow to connect different parts and players within an enterprise to generate data-driven, actionable insights and offer advanced control.

Having every single asset communicating with the enterprise is the ultimate goal, at least in theory. However, in practice this may not seem feasible, because of the time and cost involved as well as company specific cybersecurity protocols. In most cases, it is advisable to 'start small', focusing on enhancing the connectivity of a machine or process that can deliver a quick return on investment (ROI).

An example could be providing remote access to a machine on the shop floor, enabling operators to monitor or control different elements. For example, cameras and other internal sensors, not just the controller, can be installed and connected to receive notifications in case of anomalies as well as interact with assets to maximise uptime, productivity and efficiency. Once this project is successfully completed, then it is possible to move on to the next area, identifying where more value could be added to a process.

Connecting the dots

This approach is therefore ideal for small to medium enterprises, as it offers a sustainable pathway to drive continuous improvement and competitiveness in a fast-paced marketplace. When implementing a stepwise strategy, it is fundamental to select suitable solutions that support it by offering the level of flexibility and scalability required. More precisely, specifying a network technology for future machines that can support interoperability and interconnectivity on small and large scale is key.

A hot technology is Time Sensitive Networking (TSN). Choosing this is highly recommended when embarking on a digital transformation journey and modernising the architecture of your machines. By doing so, companies can make sure they will be able to support both information technology (IT) and operational technology (OT) communications on the same network while delivering reliable, unmatched performance in data sharing. This means that they will be able to smoothly integrate any asset they want at any stage of their digitalisation.

As the first commercially available open industrial Ethernet to combine gigabit bandwidth with TSN and offering a wide and rapidly expanding range of compatible products, CC-Link IE TSN is ideal. This solution is a future-oriented platform for industrial communications that can help companies create Connected Factories. As an open technology, it offers maximum compatibility and interoperability, so that devices, machines or lines can be connected to each other, regardless of their vendor. This capability further optimises flexibility and costs for small to medium businesses.

By specifying CC-Link IE TSN to futureproof operations, companies can make sure they are utilising the most suitable backbone to support any application related to the Connected Industries, such as remote control, the Industrial Internet of Things (IIoT) and digital twins. In effect, they can benefit from a considerable leap forward in realising smart operations where data-driven insights are used to improve productivity, efficiency, flexibility and responsiveness. Even more, businesses can do this in a stepwise approach making targeted investments in terms of cost, time and resources while considerably enhancing their competitiveness.

Image caption: Time-Sensitive Networking makes it easy to create futureproof Connected Factories and maximise the advantages that they hold.

Keywords: Time-Sensitive Networking (TSN), Connected Industries, digital transformation, digitalisation, Industrial Internet of Things (IIoT)

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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