Driving connectivity

Integrating Time Sensitive Networking into your architecture is what you need

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The Industrial Internet of Things (IIoT), remote control, digital twins and whatnot – small to medium sized companies may fear that the only way of joining the Connected Industries of the Future is to make large-scale investments, but this couldn't be further from the truth. To succeed in the digital transformation and fully reap its benefits, businesses can also move in steps, selecting an enabling network technology where it makes sense, prioritizing the areas that can profit most from optimization.

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 Connected Industries, 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 maximize 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 modernizing 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 digitalization.

As the first commercially available open industrial Ethernet that incorporates TSN and can boast 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 optimizes flexibility and costs for small to medium businesses.

By specifying CC-Link IE TSN to futureproof operations, companies can make sure they are utilizing the most suitable backbone to support any application related to the Connected Industries, such as remote control, IIoT and digital twins. In effect, they can benefit from a considerable leap forward in realizing 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 captions:

Image 1: Time-Sensitive Networking makes it easy to create futureproof Connected Factories and maximize the advantages that they hold.

About The CC-Link Partner Association (CLPA)

The CLPA is an international organization founded in 2000, now celebrating its 20th Anniversary. Over the last 20 years, the CLPA has been dedicated to the technical development and promotion of the CC-Link open industrial network family. 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 4,100 corporate members worldwide, and more than 2,000 compatible products available from over 370 manufacturers. Around 38 million devices using CLPA technology are in use worldwide.

Anyone interested in joining the organization can apply here: https://www.cc-link.org/en/clpa/members/index.html

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