

Creating competitive automation devices with TSN

Automation device vendors need to keep pace with the latest technologies more than anyone else in order to deliver competitive products that address market requirements. As an enabler for Industry 4.0 applications, Time-Sensitive Networking (TSN) is quickly becoming a must-have to deliver state-of-the-art connectivity.

John Browett, General Manager of CLPA Europe, looks at why device vendors should act now to implement TSN in their products.

TSN is a major development in industrial Ethernet communications with tremendous potential for end users, OEMs and device vendors interested in futureproofing their facilities and solutions, respectively. In effect, this technology is key to creating automation networks that can handle multiple types of traffic while addressing the need for deterministic data transfer, i.e. for control communications on the shop floor. The level of network convergence created offers several benefits.

Firstly, the possibility to convey different traffic types onto a single cable reduces network costs and complexity, as it is possible to rely on a simplified architecture. This, in turn, can streamline maintenance and troubleshooting activities.

Secondly, these capabilities improve the integration of information technology (IT) and operational technology (OT) processes in order to create responsive Industrial Internet of Things (IIoT) frameworks that are at the core of Industry 4.0 applications.

Thirdly, this leads to enhanced process transparency across the enterprise to assist optimisation of manufacturing operations.

Finally, the result of these enhancements is a higher level of productivity, meaning companies can be more responsive to customer demands and more effective against competitors.

When looking at automation devices compatible with TSN, these can more effectively share key information with any other device within the network, delivering next-level flexibility and responsiveness to maintain peak productivity. Therefore, they will be able to outperform existing solutions.

Recognising the commercial value of TSN

These considerable advantages have not gone unnoticed by companies in a variety of sectors, which are beginning to implement key systems that feature TSN functions to succeed in their digital transformation. In particular, a number of projects are being carried out or planned in fast-paced sectors, such as the semiconductor and automotive industries. Similarly, lithium battery manufacturers and leading players in packaging and food and beverage are also driving the wave of TSN adoption.

By embedding TSN in their automation devices, vendors can therefore meet the

market opportunity for highly connected, data-driven solutions. This means that companies can provide end users and OEMs with precisely the tools they are looking for and address the demand in the industry towards this technology.

To successfully tap into this market, it is important for product vendors to act quickly to serve this growing and partially unaddressed segment. By doing so, they can provide better solutions that more effectively address their customers' needs.

The tools at hand

To add TSN functions to their solutions, device vendors can rely on CC-Link IE TSN. Developed by the CLPA, this is the first gigabit open industrial Ethernet that incorporates the technology's key capabilities to offer combined deterministic and convergent capabilities. In addition to being a must for TSN implementations, CC-Link IE TSN also offers an ideal platform, as it features a broad development ecosystem to help automation specialists create advanced TSN-compatible solutions in line with their established engineering processes.

With leading industry players in the automation sector, such as Mitsubishi Electric, leveraging CC-Link IE TSN to deliver innovative products, the technology continues to gain momentum. As more and more ground-breaking devices are introduced, end users and OEMs are showing ever-increasing interest. Therefore, device vendors adding TSN to their solutions now can rapidly grow their business and increase their competitiveness with a reliable, future-oriented open industrial Ethernet that is accepted globally.

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CLPA379 Why should businesses implement TSN now and who is already doing it?

Caption: In addition to being a must for TSN implementations, CC-Link IE TSN also offers an ideal platform, as it features a broad development ecosystem to help automation specialists create advanced TSN-compatible solutions in line with their established engineering processes.

Keywords: TSN, Time-Sensitive Networking, CC-Link IE TSN, CLPA, CC-Link Partner Association, TSN product development

About The CC-Link Partner Association (CLPA)

The CLPA is an international organisation 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 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 almost 3,800 member companies worldwide, and more than 2,000 compatible products available from over 340 manufacturers. Around 30 million devices using CLPA technology are in use worldwide.

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Further Information:

Website: eu.cc-link.org

LinkedIn: <https://www.linkedin.com/company/cc-link-partner-association-europe/>

Twitter: twitter.com/cc_linknews

YouTube: youtube.com/user/CLPAEurope

Editorial contact: DMA Europa Ltd. : Jennifer Mesa Canales

Tel: +44 (0)1562 751436 Fax: +44 (0)1562 748315

Web: www.dmaeuropa.com

Email: jennifer@dmaeuropa.com

Address: Progress House, Great Western Avenue, Worcester, WR5 1AQ, UK

Reader contact: CLPA-Europe : John Browett

Tel: +44 (0) 7768 338708 Fax: +49 (0) 2102 532 9740

Web: eu.cc-link.org

Email: john.browett@eu.cc-link.org

Address: Postfach 10 12 17 40832 Ratingen Germany