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FOR IMMEDIATE RELEASE   **No. 3232**

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Mitsubishi Electric to Launch CC-Link IE TSN Compatible Factory Automation Products

Will contribute to smart factory construction by realizing e-F@ctory solution with TSN technology

TOKYO, November 27, 2018 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that it will launch factory automation products, such as programmable controllers, industrial PCs, servo amplifiers, GOT human-machine interfaces, inverters, and robots that are compatible with CC-Link IE TSN, the world's first industrial open network to utilize time sensitive networking (TSN)* technology. CC-Link IE TSN supports TSN technology that ensures real-time control communication on the manufacturing communications layer, even when integrated with the upper level IT system and mixed with other open networks. The launch of these new product will further enhance the integrated factory automation solution *e-F@ctory*** by utilizing Industrial Internet of Things (IIoT) and edge-computing, accelerating the realization of a smart factory solution.

  * Enhanced version of standard Ethernet that realizes mixing of different protocols using the time sharing method.
**Integrated factory automation solution using a combination of factory automation and IT technologies, offering solutions to reduce the total cost of development, production, and maintenance.

CC-Link IE TSN logo mark

Main Features

1) *Factory automation with TSN technology realizes flexible IIoT system architecture*

- Utilizing TSN technology enables integration of machine control and information communications on one Ethernet cable, allowing a flexible system configuration using standard Ethernet devices. TSN enables deterministic messaging of control communication requiring real-time control while performing information communication using general Ethernet, easily realizing large-scale industrial network systems.

- TSN enables communication with the IT system, without affecting control of the overall production system, to support the establishment of an edge-computing system that cooperates with Edgecross and the IIoT system through seamless communication with the upper IT system.

2) ***High-speed, high-accuracy motion control contributes to productivity improvement***

- High-speed control communication realized with the CC-Link IE TSN protocol further reduces equipment and system cycle time for substantially improved productivity. In addition, high-accuracy motion control improves production quality.
- Slave-to-slave communication function realizes synchronous communication between slave devices*** without using a control master. High accuracy synchronous control without dead time is possible.

   *** Drive-related products such as servo amplifiers and inverters, together with remote I/Os

*3)* ***Easier system configuration realized with proprietary technology***

- Intuitive engineering tool automatically detects TSN-compatible products on the network, substantially reducing system setup time.
- Automatic parameter registration from the master station to slave stations reduces setup time when expanding the system, adding connected devices and when replacing modules, thereby reducing overall maintenance cost.

Release Schedule

Mitsubishi Electric will continue to develop compatible products, some of which will start shipping in spring 2019.

Overview of CC-Link IE TSN

CC-Link IE TSN is an Ethernet-based industrial open network communication standard promoted by the CC-Link Partner Association. Various standard Ethernet devices, general I/O control, motion functions and safety communication functions can be realized on one network, enabling simplified system construction and lower overall costs. CC-Link IE TSN as the backbone of Mitsubishi Electric's e-F@ctory solution will contribute to manufacturing in the IIoT era.
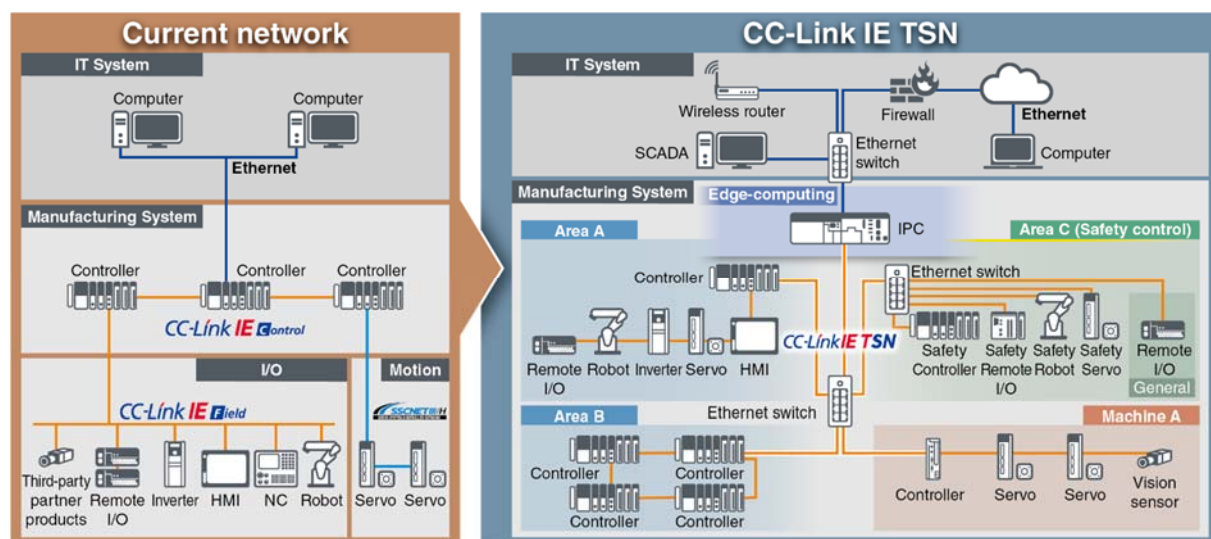
(a) CC-Link IE   (b) CC-Link IE TSN

System configuration (example)

Background

As manufacturing continues to shift toward smart factories utilizing IIoT, high-speed and high-accuracy industrial networks are needed to support the increased use of connected factory automation devices and data collection from shop floors. Specific needs include real-time data collection, primary processing of machine data by edge-computing, and seamless transfer of data to IT systems. Industrial open networks that realize low-cost system configuration and easy integration/setup of devices are required to reduce overall costs in increasingly competitive global markets.

To date, Mitsubishi Electric has sold a variety of connectable factory automation products, such as CC-Link IE-compatible modules. To further respond to market needs, Mitsubishi Electric is strongly supporting smart factories and manufacturing competitiveness with its e-F@ctory solution.

Ethernet is a registered trademark of Xerox Corporation.
e-F@ctory is a registered trademark of Mitsubishi Electric Corporation.
Edgecross Consortium is currently applying to register the Edgecross trademark.

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About Mitsubishi Electric Corporation
With nearly 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,444.4 billion yen (in accordance with IFRS; US$ 41.9 billion*) in the fiscal year ended March 31, 2018. For more information visit:
www.MitsubishiElectric.com
*At an exchange rate of 106 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2018