CC-Link Partner Association

Global Activity Report

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CC-Link IE acquires Chinese national standard "GB/T"

Working Group Established for Enhanced Security

Mr. Ouyang Jin-song, a Director of ITEI, announces GB/T acquisition by CC-Link IE at an event in Beijing

CC-Link IE acquires Chinese national standard "GB/T" Increasing industry expectations as a driving force of "Made in China 2025"

The Standardization Administration of the P.R.C. (SAC), which manages Chinese standardization, has accredited CC-Link IE with the Chinese national standard "GB/T". This decision is based on the existing international recognition of CC-Link IE as an international standard as well as its broad-based adoption at Chinese production sites; it is increasingly expected to serve as a driving force for the "Made in China 2025" project, through which the Chinese government intends to enhance the competitive ability of Chinese manufacturing.

The national standards set by China are roughly divided into the mandatory "GB" type, the recommended "GB/T" type and the optional "GB/Z" standards, as well as industry-specific standards. GB/T is a highly influential standard, second only to GB, and is sought by users during product selection. Hence it has become a de-facto requirement for products to be selected for industrial use.

However, standards should not be recommended for industrial promotion if they conflict with national laws and regulations or if long-term supplier support cannot be ensured. In order to be accredited as GB/T, the standard must already be accredited as an international standard and must also have a record of global adoption. ITEI (Instrumentation Technology & Economy Institute), which is responsible for managing standard guidelines for industries under the auspices of SAC, participates in activities of the IEC (International Electrotechnical Commission), which governs international standards for industry, and keeps track of the trends of international standards. The Institute selects standards to be considered for Chinese domestic standards and submits them to SAC. If SAC approves the standard, an ITEI working group consisting of product vendors, users and designers etc. is formed to consider certification.

CC-Link IE has gone through this process and is officially accredited as the recommended domestic standard "GB/T33537.1~.3-2017". In addition to CC-Link IE having acquired IEC international standards, the evaluation showed widespread usage not only in China but all across Asia.

"Meets Made in China 2025 Expectations"

"With CC-Link IE it is possible to seamlessly connect various system layers in manufacturing, from upper management divisions through to production sites. CC-Link IE is also continuing to realize interoperability with PROFINET and other industrial networks, as well as expanding connectivity both horizontally and vertically, which is expected to be significantly effective for Chinese manufacturing." These are the words of Mr. Ouyang Jin-

Approximately 100 people from different manufacturing industries attended the GB/T certification announcement ceremony in Beijing

song, a Director of ITEI and Ministry of Science and Technology of the People's Republic of China "intelligent manufacturing" expert and working group member.

The reason why Mr. Ouyang regards seamless connectivity in manufacturing as so important is because of the manufacturing project "Made in China 2025" which is in process at the national level. By making full use of its abundant labor force and relatively low labor costs, China has become a globally recognized location for industrial production, but recently other emerging countries have been challenging its position. This is where Made in

China 2025 will come in, to achieve value-added manufacturing across the entire country.

Achieving this added-value requires optimization of not only the production sites, but also the layers of management. As such, the enhanced connectivity functions of CC-Link IE "comply with the requirements of Made in China 2025" (Mr. Ouyang). The many vendors supporting CC-Link IE together with the already established CC-Link IE Test Center in China were also factors leading to the decision to accredit CC-Link IE as a national standard.

Utilized for handling LCD Panels

CC-Link IE acquired GB/T accreditation at an announcement event held at the Diaoyutai State Guesthouse in Beijing, hosted by ITEI and others on April 19, 2017. Approximately 100 people from different manufacturing industries participated in the event, together with approximately 20 media companies. Media interest was high, as the announcement related directly to the national level project "Made in China 2025".

The event included not only presentations from ITEI and the CC-Link Partner Association, but also case study presentations from users of CC-Link IE. One such company, Nanjing Panda Electronics Co., Ltd., utilizes CC-Link IE for transporting LCD panels at their Beijing factory, realizing an intelligent transport system.

ITEI is not only responsible for formulating standards but also has a role in their widespread promotion, and is working in collaboration with CC-Link Partner Association to create a model production line. CC-Link IE currently boasts a high market share among Chinese production sites; with domestic standard acquisition and the ITEI promotion as an ally, it is expected that further widespread adoption will accelerate.

Introducing a case study utilizing CC-Link IE for handling LCD panels at Nanjing Panda Electronics Co., Ltd.
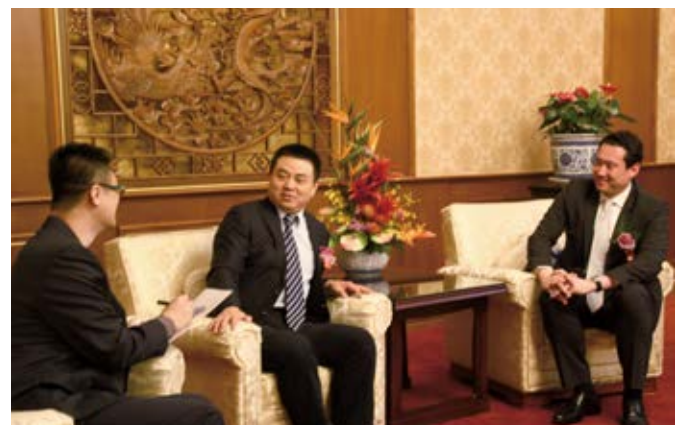
CC-Link IE GB/T acquisition drew close attention from Chinese media as well. The photo shows ITEI Director Ouyang Jinsong (center) and CC-Link Partner Association Director Takeshi Tominaga (right) during an interview

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Working Group Established for Enhanced Security Guideline Formulation based on International Standards

Aiming at enhanced CC-Link IE security, the CC-Link Partner Association has established an expert working group to formulate guidelines. The guidelines are intended to realize not only safety countermeasures for the network itself, but also a format of multi-layer defense, including physical control, while achieving highly secure communication on a general-purpose IP base.

The newly established Security Working Group includes members from Belden-Hirschmann, Cisco Systems, Hilscher, HMS, MIND, Mitsubishi Electric, MOXA, and Panduit. The initial work involves creating guidelines for access control, information completeness and increased confidentiality for the protocols that enable cyclic communication of field equipment with general-purpose IP communication, namely CC-Link IE Field Network Basic and SLMP (Seamless Message Protocol) used as a common protocol for connecting Ethernet devices with CC-Link IE.

Industrial Ethernet using general-purpose IP communication for industrial networks has provided great benefits from maintenance and cost perspectives, but is also more susceptible to external attacks compared to dedicated protocols, due to its widely known structure. The Working Group aims to secure industrial Ethernet to the same level of security found with dedicated protocols, while maximizing the benefits of open access for users.

Equivalent Security to Dedicated Protocols

The guidelines are to be formulated based on International Standard IEC62443. IEC62443 is a standard defined for control system security, not only for field equipment or controllers but also the coverage of entire control systems including upper-level management systems. To achieve total security, the Working Group is taking a multi-layer defense approach, combining several countermeasures including physical access control. Specific examples of routers and switches as well as organization of usage applications are also under consideration.

The Working Group is involved in creating guidelines for achieving security with SLMP communication over general-purpose IP and CC-Link IE Field Basic