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CC-Link News

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The Promise of CC-Link IE An independent view from George Turnbull PhD. MIEE. FRSA.

Introduction

In the past I have written several articles and presented numerous presentations on Industrial Networks but have only recently become aware of CC-Link IE, a true contender in the Industrial Ethernet market. I would like to give my initial impressions on CC-Link IE in this short article.

Trends in Industrial Networks

Networks are now commonplace in Industry and have moved from being vendor specific towards shared technologies, usually originating from a large vendor but supported by an independent club. In the case of CC-Link IE the originating vendor is Mitsubishi and the club is the CLPA. The success of the network depends firstly on the vendor - its Status and both with regard to the original design and how it deals with enhancements recommended by the club: also the international marketing strategy of both vendor and club - the membership and its organisation. In general the leading networks have been split by sector - process, manufacturing, buildings etc and by geography - America, Europe and the Far East. Mitsubishi is the dominant player in manufacturing markets in the Far East but is weak in other sectors and parts of the world. The CLP A is new and mirrors its vendor so far in both sectors and geography. The question therefore is "can CC-Link IE improve its position in other market sectors and other regions?"

The strengths and weaknesses of CC-Link

Let us look first at the vendor's strategy:-

Unlike the main competitors, its strategy is to succeed as a products company - which it clearly can - and leave the growing services market to its competitors. In other words, it does not compete with its partners. Extensive in-house use of its products replaces external customer feedback through service contracts.

Next the basic networking product:-

In looking at a network one must always consider the seven-layer model. In each layer sound decisions seem to have been made. As a physical layer the choice of IEEE 802.3z/ 1000BASE-SX - 1GB multi-mode fibre optic - gives ruggedness and speed. On top of this is a token passing datalink layer supporting loop technology. Network shared memory architecture allows N: N real-time communication with high reliability and easy set-up. A transient transmission allows user applications to connect via a common object access. If we couple all this to Mitsubishi's proven reliability and back compatibility, things look good.



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How about the CLPA:-

Despite all the strengths of the product, success will not be achieved without a strong well-organised club. The basic club rules - all CLP A members free to use both real-time and transient communication services on an equal basis - are a good start. This policy will extend as Ethernet-based networks are extended from the controller level network to sensor / device and motion networks. Presumably the safety network will also follow. Hence the CLP A will grow in scope. Strengthening its penetration in European and American manufacturing markets must be the first target. Other sectors like process will require Mitsubishi to get into these markets without changing its non-service model, presumably in the Far East first.

CC-Link IE represents a good start, but both Mitsubishi and the CLPA have a lot of work to do.

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About the CLPA

The CC-Link Partner Association (CLPA) is an international organisation with over 1,330 member companies. The partners' common objective is promotion of the technical development and adoption of the standardised network technologies CC-Link, CC-Link Safety, and CC-Link IE Gigabit Industrial Ethernet.

Over 1,050 certified products are now available for the CC-Link network family from over 220 manufacturers worldwide. Seven million CC-Link devices are installed, increasing at over one million p.a.

CC-Link is now the leading industrial fieldbus protocol in Asia and it is becoming increasingly popular in Europe and America as well. In addition to its European headquarters in Ratingen, Germany, the CLPA also has four regional offices in England, Poland, Turkey and the Ukraine.

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