



CC-Link streamlines energy costs at world leading wind tunnel facility

The CC-Link open fieldbus is managing the vital energy efficiency systems at the heart of a giant wind tunnel on the campus of the prestigious Tongji University in Shanghai, China. The Shanghai Automotive Wind Tunnel Center (SAWTC) as it is known, represents a 490 million yuan (approx. 57 million euros) investment in the future of the Chinese automotive industry and forms part of a larger "constellation" of world class automotive test facilities in the Shanghai area. Together, these facilities are intended to provide the Chinese automotive industry with an R&D base equal to that found anywhere else in the world.

The SAWTC is capable of testing every size of ground vehicle from a moped to a high speed train, for aerodynamics, acoustics, and climatic performance. It sits alongside a clean energy vehicle laboratory, workshops, rolling road, computer suite, office and catering units and a proving ground to provide a complete research and testing facility for the burgeoning automotive manufacturing sector.

It's said that the wind produced in a wind tunnel is the most expensive in the world, averaging out to about 1 euro per second. Considering that a typical suite of tests on a single vehicle could easily run to 100 hours, energy management and optimisation was a key consideration for the designers of the tunnel's control system.

The CC-Link fieldbus forms the heart of a Mitsubishi Electric energy management system based on their "EcoWebServer II" system. The network is used to monitor over 100 separate circuits, which includes 5 substations, each handling 1600 kVA. It can be seen that were it not for the decision to use CC-Link, the design could have lead to a massively complicated communications network. The data collected by CC-link is fed back to a higher level energy data collection server that makes information available to facility staff using web based tools. The end result is a system that enables staff to keep energy usage to set levels.

CC-Link is a high speed, high performance industrial network technology that enables devices from numerous manufacturers to communicate freely with one another over a common fieldbus. CC-Link has many characteristics that have helped make the wind tunnel a world-class facility. Firstly it is fast, allowing data to be collected even from the furthest test station in real time. Secondly it is deterministic, meaning that system operation occurs exactly as intended, an essential requirement for such critical operating conditions. Thirdly it has sufficient flexibility to allow easy reconfiguration of the network – a characteristic that is much appreciated by test engineers who need to reconfigure subsystems as required.

Finally, for a facility such as the SAWTC, availability is a critical issue. CC-Link, with its ability to operate in the electrically noisy high voltage substation and switchgear environment, is a major contributor to achieving high levels of uptime. The efficient way it allows data to be collected over hundreds of metres around the facility and makes it available to users on-site and remotely via secure internet connections also helps ensure the efficient completion of complex multi-faceted testing programmes.

CC-Link is an open-architecture technology managed by the CC-Link Partner Association, which has offices throughout the world. There are more than 1,500 association partners, who between them offer more than 1,100 CC-Link compatible products, such as energy meters, industrial PCs, PLCs, robots, servos, drives, valve manifolds, digital & analog I/O modules, temperature controllers, flow controllers, and many others. There are approximately nine million CC-Link enabled products installed in control networks around the world, a figure that is constantly growing.

About the CLPA

The CC-Link Partner Association (CLPA) is an international organisation with over 1,500 member companies worldwide. The partners' common objective is promotion and technical development of the family of CC-Link open network technologies. Over 1,100 certified products are now available from over 250 manufacturers. CC-Link is the leading industrial fieldbus in Asia and is becoming increasingly popular in Europe and the Americas. The European headquarters is in Germany, with offices throughout the continent.



Editor Contact

DMA Europa Ltd : Bob Dobson

Tel: +44 (0)1798 861677

Fax: +44 (0)1299 403092

Web: www.dmaeuropa.com

Email: bob@bobdobson.com

Company Contact

CLPA Europe : John Browett

Tel: +44-(0)776 833 8708

Fax: +49 (0)2102 532 9740

Web: www.the-non-stop-open-network.com

Email: John.browett@clpa-europe.com