CANopen-to-Ethernet gateways

Increasingly, system designers combine CANopen networks with an Ethernet-based backbone network. However, there are many industrial Ethernet solutions fighting for market shares. HMS Networks (Sweden) has developed the Anybus X-gateway CANopen gateway series in order to support several industrial Ethernet solutions. The CANopen interface supports NMT master and NMT slave functionality. It comes with a PC-based configuration tool.

RECENTLY, THE SWEDISH COMPANY with about 350-million SEK net sales has launched the CANopen gateway for EthernetIP. Schneider Electric initiated the development of this device. The French enterprise supports CANopen as the strategic embedded network and has decided to use EthernetIP as the strategic Ethernet-based backbone network. The gateway will be used to connect PLCs from Schneider Electric to sub-layered CANopen networks. The same is possible with PLCs from Rockwell featuring EthernetIP connectivity. The configurable stand-alone gateway mounts to a standard DIN rail and is powered by 24 V. It functions as an adapter (slave) on the EtherNet/IP network and as a CANopen manager (master) on the CAN side. The CANopen master functionality is configured with a Windows-based configuration tool, which is included with the product. After the initial configuration has been downloaded to the gateway, it passes up to 510 byte of input and 510 byte of output data transparently between EtherNet/IP and CANopen. Up to 126 CANopen slaves can be connected to the gateway using a total of up to 128 receive PDOs and 128 transmit PDOs. The gateway is equipped with an integrated 2-port switch on the EtherNet/IP side, enabling EtherNet/IP installations in bus or line topology without the need for external switches. As a result, system integrators can benefit from significantly reduced installation and maintenance costs.

The Anybus X-gateway CANopen for Profinet has been introduced recently, too. It features on the CAN side the same functionality as the EthernetIP and Ethercat versions. The DIN rail mountable device is available in two versions: single-port Profinet (RT) and 2-port Profinet (IRT). The IRT version complies with Profinet conformance class C including IRT (Isochronous Real Time) functions. The IRT version includes an integrated 2-port Profinet IRT switch, which allows installations in line topology without the need for expensive external switches. The Profinet interface incorporates HMS long experience as an approved supplier of Profinet communication interfaces to the AIDA group of automobile manufactures. The 164-employees supplier offers qualified support for users of HMS Profinet products with its global support organization and the accredited Profinet competence centers in Karlsruhe, (Germany) and Chicago (USA).

HMS has subsidiaries (China, France, Germany, Italy, Japan, and USA) and sales partners in more than 44 countries. The establishment of subsidiaries in Denmark, India, and Great Britain has been started already. The company maintains an in-house low-volume production of Anybus products in Sweden (Halmstad) in order to have the ability to produce prototypes. Volume production takes place in close partnership with subcontractors in Europe and Asia.