# CAN *Newsletter Online*

CANopen DRIVE

With integrated PLC functions

CMZ Sistemi Elettronici, a long-term CiA member, introduced the SBD standalone brushless drive available in two versions both supporting CANopen connectivity.

The two drive versions are:

- SBD/CAN version is suited for typical applications with a controller. It supports the CiA 402 CANopen profile for drives and motion control. The drive implements such modes of operation as position profile mode, velocity profile mode, cyclic synchronous position mode, cyclic synchronous velocity mode, cyclic synchronous torque mode, interpolated position mode, and homing mode.
- SBD/PLC Smartdrive version with an integrated PLC is dedicated for managing the whole application. In some applications, it can be deployed for independent management of the complete machine automation, making a main controller useless. Via the CANopen network, the SBD/PLC can control other devices such as, for example, other SBD drives and remote I/Os. Moreover, the SBD/PLC used as a CANopen controller, implements the CiA 314 (former CiA 405) functions for enabling NMT (network management), synchronization, node guarding, and SDO (service data object) services. In such contexts, an HMI (human-machine interface) is necessary. For this reason, the SBD/PLC is equipped with an EIA-485 (RS-485) interface.
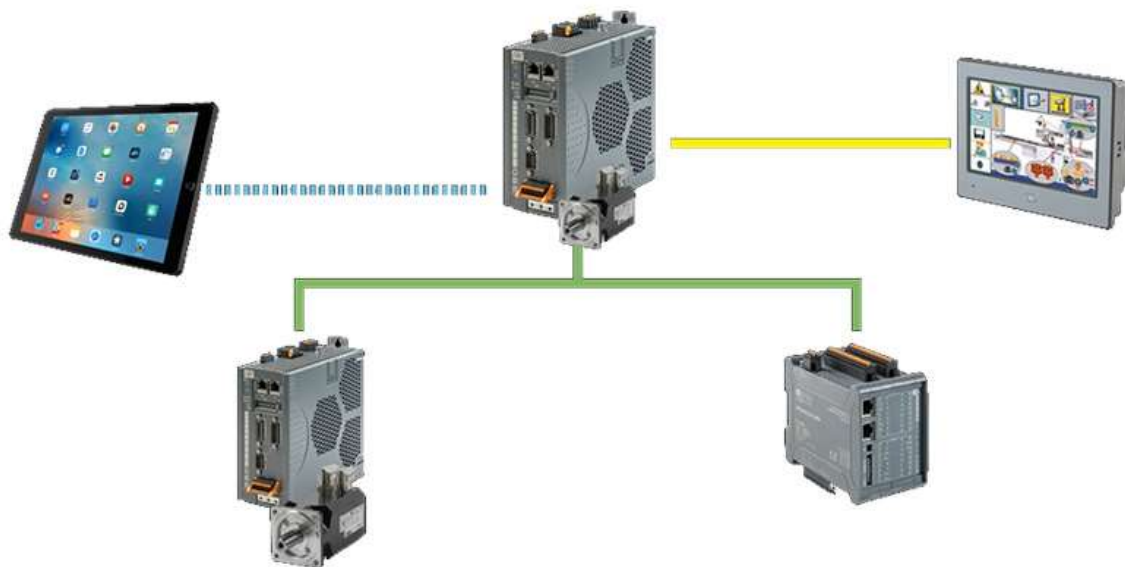
SBD/PLC can be configured to control a second SBD drive and further devices via CANopen (Source: CMZ Sistemi Elettronici)

IT/OT convergence

Digital drives typically provide connections for the communication network(s) and a debug channel for a commissioning tool. The network interface (e.g. CANopen) is used for the drive's interconnection with the machine controller, other drives, and further devices (e.g. sensors, I/Os). For years, the developments focused on the improvements of the communication interface. The debug channel has mostly been neglected. Each drive has had its own debug channel type, protocol, as well as adapter boxes.

According to today's requirements, the drive should not only put the motor in motion and be programmable. It is often required to exchange the drive's operation information to the outer world, for example, via an operator panel or other company's infrastructures, beyond the CANopen communication network. A programmable drive has to be able to be debugged at any time. Sharing the debug channel with an HMI terminal (or a similar connection) becomes necessary.

The Bluetooth interface included in the SBD/PLC enables a wireless connection of the commissioning and debugging tools, whenever a wired debugging is impossible: for instance, on a rotating machine such as a labeling carousel. The Bluetooth connection can also be used to access the drive from operator's smartphone or tablet. Here, different Apps can be used to create convenient and personalized user interfaces. Thus, the drive's connections bridge the world of Information Technology (IT) and Operation Technology (OT), enabling the OEMs (original equipment manufacturers) and system integrators to design Industry 4.0 capable machine automation applications.

Due to the included Bluetooth interface, the SBD/PLC can be wirelessly accessed via a tablet or smartphone (Source: CMZ Sistemi Elettronici)