

Support for CANopen FD

Version 2.0 of the Emtas CANopen stack supports CANopen FD or CiA 301 V 5.0 for CANopen master and slave applications.

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Andreas Boebel of Emtas and Holger Zeltanger of CiA with the CAN FD network at Embedded World (Photo: Emtas)

AFTER INTENSIVE WORK WITHIN THE CiA SIG application layer, the German company completed the CAN FD extension to its CANopen protocol stack just in time for the Embedded World 2015. When using suitable CAN controllers, the advantages of the new definitions apply to PDO and SDO transfer. PDOs are possible up to a length of 64 bytes. SDOs can make use of the 64-byte CAN FD frame too. This reduces the protocol overhead of SDO transfers dramatically. Both services profit automatically by the increased bit-rate in the data section of the CAN frame.

For both CAN FD features, preliminary measurements have shown a 5-fold higher data throughput in communication. First real implementations were done for Windows with the PCAN-USB FD and for Linux with SocketCAN and can4linux (both Linux drivers support CAN FD). A first embedded implementation runs on the Infineon Tricore controller with MultiCAN+.

At Embedded World 2015, the communication of CANopen FD was shown at the CiA booth in a real CAN FD network between the CAN-FD-capable configuration tool CANopen Device Explorer and an Infineon Tricore implementation. Support for additional controllers is planned. Interested parties can view the solution at the CAN FD Tech Day in Munich on March 15, 2015.