

## CANopen for beginners and CiA 447 seminars

CAN in Automation, the international users' and manufacturers' group, organizes a CANopen seminar for beginners as well as a CANopen application profile for special-purpose car add-on devices seminar. The seminar is going to take place in Germany, Nuremberg.

THE EVENTS ARE AIMED AT DEVELOPMENT ENGINEERS, system designers as well as decision-makers. The CANopen seminar for beginners is going to take place on November 5, 2013. And the seminar for CANopen special-purpose car add-on devices on November. 12, 2013.

### About CiA 447

The CiA 447 four-part application profile specifies the virtual control network for the add-on devices used in special-purpose passenger cars such as taximeter, roof bar, etc. Add-on devices communicate with the car's IVN (in-vehicle network) gateway, which provides IVN-signals in pre-defined manner and serves as NMT master in the add-on network. Part 1 specifies general definitions (connectors, boot-up procedure, some common communication parameter objects). Annex A specifies services and protocols for power management (sleep and wake-up mechanisms). Annex B specifies the timely relationship of the protocols used in CiA 447. Part 2 gives an overview about configuration and process parameters used by certain virtual devices (indivisible functionality of a device e.g. IVN gateway, taximeter, printer). Detailed process data and parameters of the virtual devices are defined in part 3. Part 4 specifies pre-defined CAN-IDs and communication objects (PDOs). Number of devices in the car add-on network is limited to 16. Thus full meshed SDO communication (each device communicates with all other devices via SDO) is possible. CAN-IDs for all SDO channels are pre-defined. For extended diagnostic functions communicating via ISO 15765-3 (ISO-TP) with data content according to ISO 14229-1 (UDS) and ISO 15765-3, further CAN-IDs are specified. Virtual devices (except the IVN gateway) may be implemented in multiple physical devices. The defined CAN-IDs for PDO communication are calculated dependent on the assigned virtual device number and the device's node-ID. Only TPDO-related parameters are defined in the profile. The adjustment of CAN-IDs for the RPDOs takes place during the start-up phase of the network. During this phase a CANopen device gathers information about virtual devices located on other CANopen devices. Based on this information the activation of the corresponding RPDOs may occur. The informative annex A provides the calculation methods for the pre-defined CAN-IDs.