

CAN Fundamentals

Agenda VectorAcademy

Duration:	1 Day
Target Group:	CAN Users
Prerequisites:	None
Goal:	Knowledge about serial bus systems in motor vehicles, physical characteristics of a CAN network and characteristics of the CAN and CAN FD protocol. Also we introduce the basics of a CAN network description.

1 | Introduction to CAN

1.5 h

- > Electronification of motor vehicles
- > Primary tasks in bus networking
- > Standards and implementation
- > Node architecture, bus-connection and termination
- > Voltage levels and corresponding bit values
- > Physical failures

2 | Characteristics of the CAN Protocol

3.5 h

- > Addressing, message transmission and reception
- > Bus access method and arbitration
- > Message types, detailed description of the structure and functions
- > Increase noise immunity, neutralize errors
- > Error detection mechanisms
- > Error treatment & tracking
- > Motivation for the bit time interval
- > Relation of baud rate and length of the CAN bus
- > Synchronization and resynchronization

3 | CAN FD

1.0 h

- > Motivation for CAN FD
- > Message formats and structure
- > Larger data field and the consequences
- > Bit rate switching

4 | CAN Network Description

1.0 h

- > Usage and content of Network Description
- > Tools and Examples