

FlexRay Fundamentals

Duration:	1 day
Target Group:	FlexRay users
Prerequisites:	Basic knowledge about electronic signal transfer and serial bus systems

1 Introduction to FlexRay (1,5 h)

Objective: Building up understanding of serial communication within a time triggered bus system in vehicles. Gaining an overall view of the major properties of FlexRay

Contents: Comparison of time driven and event triggered bus systems, motivation and objectives for FlexRay, properties of FlexRay, architecture of a FlexRay node, Info about the FlexRay consortium.

2 Fundamentals of the FlexRay Protocol (4,5 h)

Objective: Understanding the fundamentals of the FlexRay protocol

Contents: Communication structure, cycle, dynamic segment, static segment, static slots, dynamic slots, mini slots, frames, network idle time, FlexRay time concept, bus access, action point, coding und decoding (CODEC process), frame format, bit timing, bit synchronisation, cluster synchronisation, wakeup, start-up, exercises

3 Overview of the FlexRay Physical Layer (0,5 h)

Objective: gaining understanding of the mode of operation and the physical connection of a FlexRay-node.

Contents: Different topologies of FlexRay clusters, architecture and tasks of a FlexRay bus driver, physical signal representation.

4 Brief Demonstration of Tools supporting FlexRay (0,5 h)

Objective: Establish a brief overview of Vector Tools supporting FlexRay

5 Questions, Suggestions, Requests

Objective: Clarification of open issues and open discussion as feedback for Vector