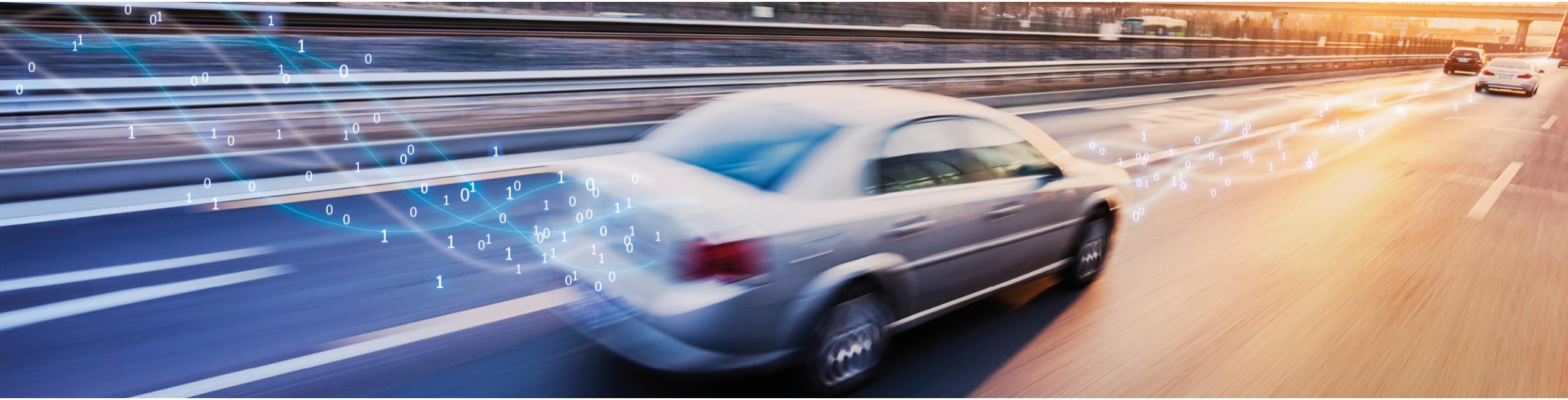
High-Speed Automation-Access-Protocol for MC-Server

Release Presentation

14.02.2019



ASAM Association for Standardization of Automation and Measuring Systems

Agenda

1. Introduction
2. Motivation for New Release
3. New Features
4. Backward-Compatibility
5. Deliverables

Introduction

- The focus of the standard is to extend the existing standard with new data types and to improve the measurement and calibration performance for the test bench

- Main Topics
  - Add missing data types in the ASAP3 specification
  - Extend the data exchange performance by introduction of iLinkRT at ASAM
  - Improve the measurement configuration
  - Keep compatibility to former versions

Motivation

- The ASAP3 V3 version can be used without modifying existing tool chains
- Adding a high speed iLinkRT connection for the data transfer improves the performance
- Compatible to former versions
- Compatible to solutions that already implemented iLinkRT

New Features

ASAP3 – Calibration Page handling

- Command to request the calibration page information
  - The test bench may detect how many pages are available
  - It is possible to detect the current calibration page before switching to another page

New Features

ASAP3 – Raster Overview

- Command to request the defined raster
  - The test bench may select dedicated raster for measurement out of the defined raster
- Specific ECU raster can be selected
  - The measurement data is captured synchronous to the data generation on the ECU
- Default raster selection
  - Beside the concrete raster selection the test bench can use the default raster described in the A2L file.

New Features

ASAP3 – Measurement Info

- Important meta data on signal level is available
  - Available raster for each measurement signal
  - Limits
  - Unit

- The "Available Raster" information of XCP devices is supported
  - ECU with multi cores may not allow to measure each signal in each raster

New Features

ASAP3 – 64 Bit Integer Data Types

- Error and status information often use bit arrays.
  - These arrays must be transferred as integers as with FLOAT representation rounding destroys the information

- INTEGER Data Types
  - 8, 16, 32 an 64 Bit supported

New Features

ASAP3 – Calibration of CUBOID till 5 Dimensions

- Single command to calibrate all types of characteristics
  - Generic handling of types with and without axes
  - Generic handling of different dimensions
- ID for all kind of characteristics
  - The new calibration commands use an ID for all kind of characteristics
  - Necessary to address characteristics via the iLinkRT
- Read / Write characteristic values
  - Commands to read / write complete characteristics
  - Commands to read / write parts of complex characteristics
- Physical or Hex data transfer
  - The new calibration commands support the data type mechanism of the already existing extended commands

New Features

iLinkRT – Transfer to ASAM

- High speed measurement
  - Event driven measurement data transfer over Ethernet
  - DAQ mechanism to transfer the measurement signals in the same raster as the ECU generates the data

- Calibration in parallel to measurement
  - Calibration commands are handled on a separate logical connection

- Multi Client / Multi Server Measurement
  - Multi clients listen to the measurement signals configured by one client
  - Multi server can be active on the same Ethernet
- Independent of XCP Specification
  - Easier to implement
  - Independent of XCP releases

New Features

iLinkRT – Configuration via ASAP3

- The configuration is done in the same way as for ASAP3
  - The MC Server uses implicitly ASAP3 configuration commands to configure iLinkRT in parallel to ASAP3
  - Easy extension of existing solutions with iLinkRT

- Additional chapter in ASAP3 specification for iLinkRT configuration
  - Implicit usage of existing ASAP3 commands

- ASAP3 command to select a group of characteristics
  - Alternative to the individual selection of single characteristics

Backward Compatibility

- Downward compatible to earlier ASAP3 versions
  - All former keywords are supported
  - Only compatible extensions

Deliverables

Documents

- ASAP3 V3.0.0
- iLinkRT V2.0.0