

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

Release Presentation

14.02.2019



Agenda

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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