

ASAM CMP V1.0.0

Release Presentation

Andreas Breinbauer, BMW AG
Development Coordinator Measurement and Testing Technology

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Agenda

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Introduction

ASAM Capture Module Protocol

EE development of vehicles requires data recording

- In vehicle communication (LIN, CAN, FlexRay, xBaseT1)
- Sensor data (CAM, LiDAR, Radar)
- Debug data (DLT, ECU internal)
- Reference sensors

Restrictions of actual systems (logger) for data collection

- Low scalability (number and type of Interfaces)
- TIER1 specific interfaces reduces reuse of loggers
- Simultaneously use of different TIER1 measurement in system test vehicle
- Centralized system with high impact on bus physics
- Implement new bus types in existing loggers not possible

Motivation

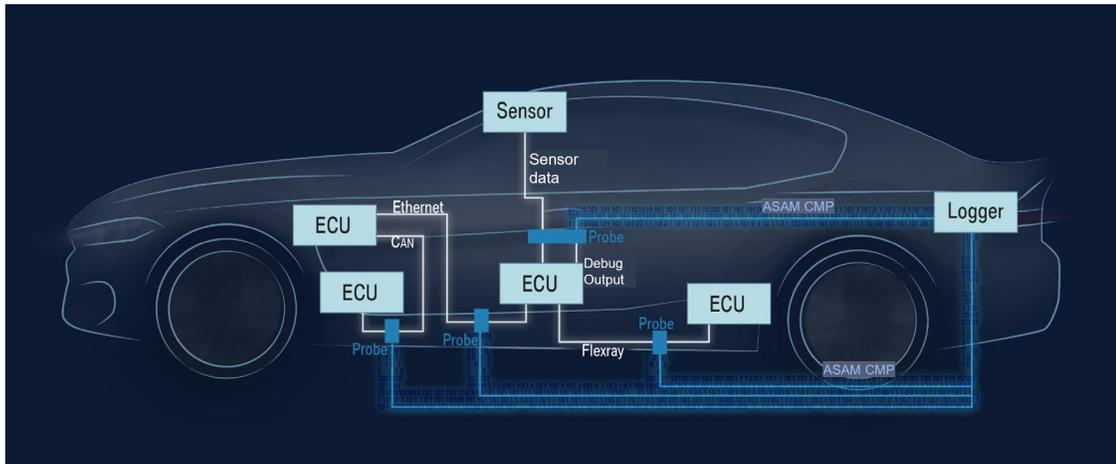
Objectives

Splitting the logging system

- small stand-alone components
- Standardize data transport within the measurement network
 - Standardize translation of vehicle bus communication
 - Standardize TIER1 specific ECU/sensor data output

Use Cases

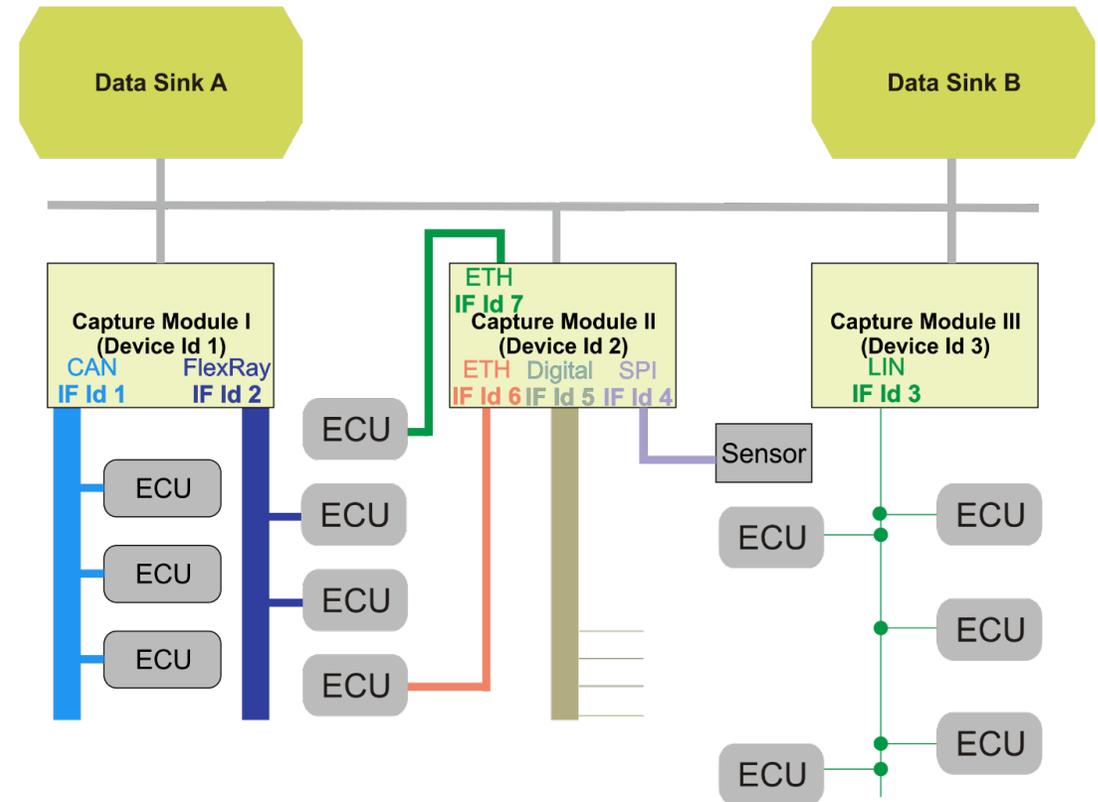
- Scalable reusable measurement components
- Segmentation of large data samples / Packaging of small data samples
- Timestamping
- Controlling, message-loss detection
- Scalable physical layer according to the required bandwidth



New Features

Measurement Setup Structure

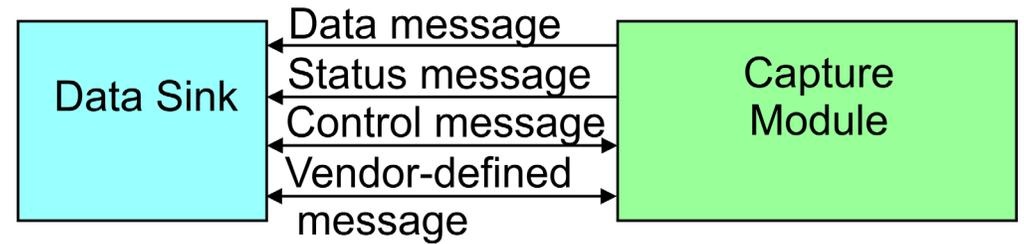
- Recording of the data of in-vehicle communication
- Remote monitoring and control of data captured
- The Capture Module captures data to be recorded.
- Capture Module Protocol is used between Data Sinks and the Capture Modules



New Features

Protocol Basics

- Transport based on Ethernet MAC Layer (EtherType 0x99FE)
- optionally UDP
- Messages dedicated to streams
- Protocol for Time synchronization IEEE 802.1AS-2020
- Segmentation
- Packaging

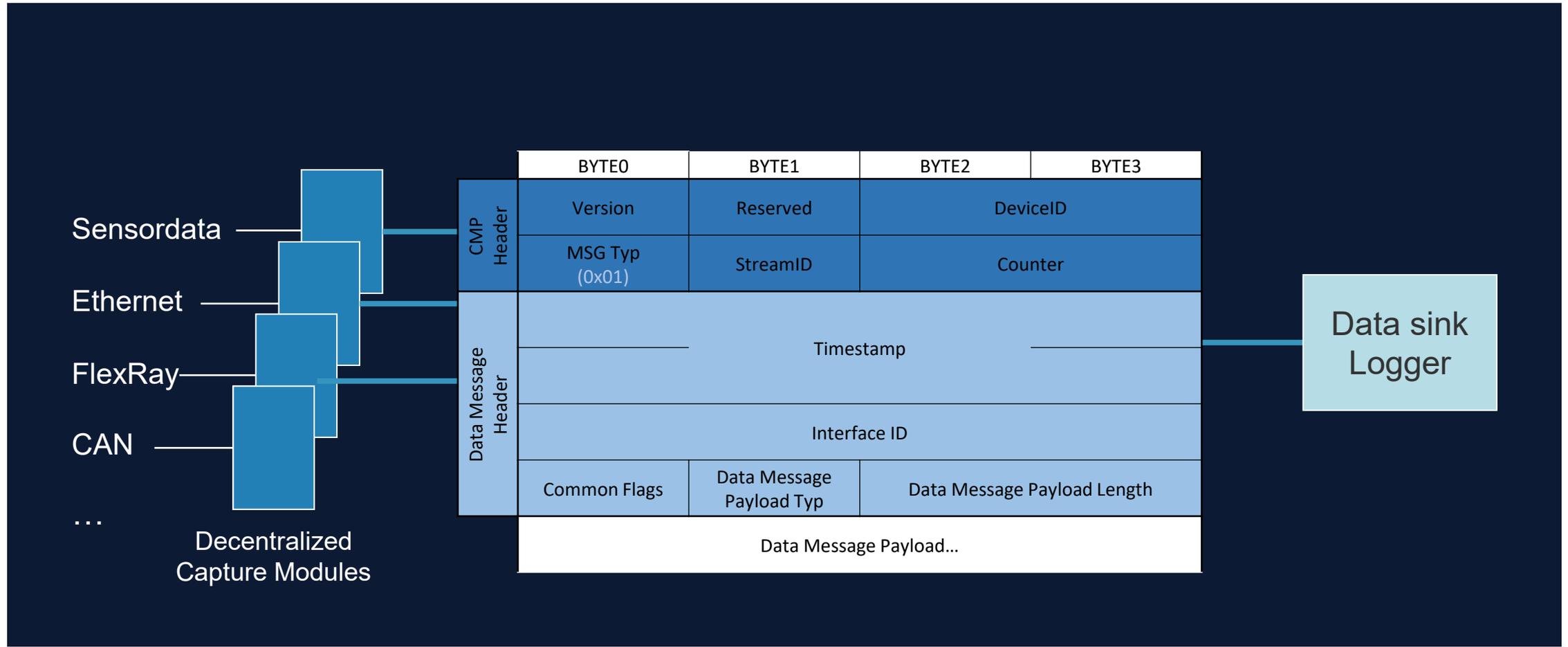


*1 ET = EtherType



New Features

Example CMP Data Message

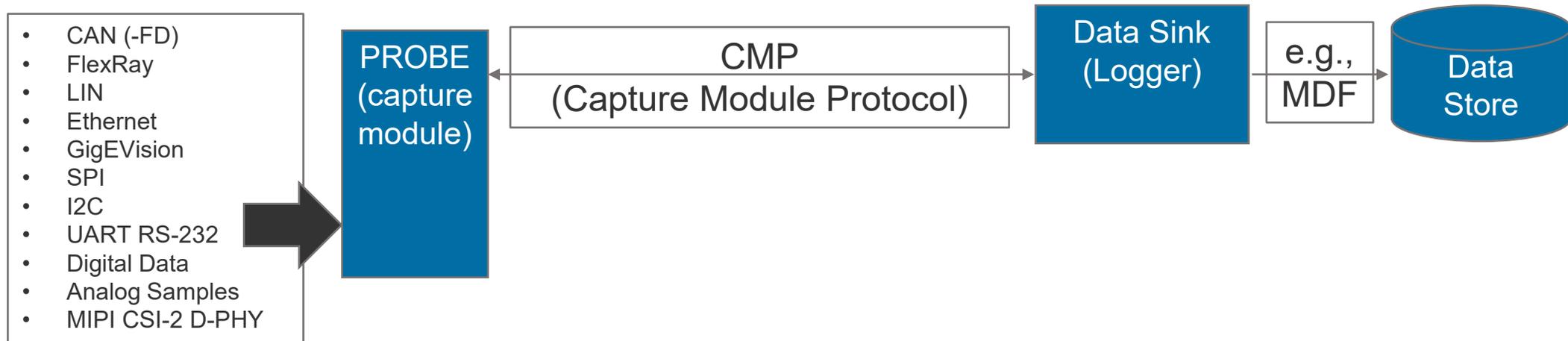


New Features

Supported Bus Types

There will be a variety of Capture Modules and Data sinks (e.g. Loggers) to be supported

- Some that tap into the in-vehicle communication for layer-2 communication protocols (e.g., CAN, LIN, CAN-FD, FlexRay, Ethernet, etc.)
- Some that tap into the Interfaces for Lidar, Cameras, RADAR (e.g., MIPI CSI-2 D-PHY, GigEVision, etc.)
- Some that tap into sensor busses for SPI, I2C, Digital



- In future versions of this standard the transport of further bus systems may be added.

Relation to Other Standards

Standard

MIPI Alliance, Inc.; Specification for Camera Serial Interface 2 (CSI-2), Version 4.0

- MIPI CSI-2 is the intellectual property of the MIPI Alliance, Inc.
- The access to the MIPI CSI-2 specification or an implementation requires a MIPI membership.

Deliverables

Documents

- ASAM_CMP_BS_V1-0-0