

ASAM MDF

Image, Radar, Lidar, Sensor Logging

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ASAM MDF

About Myself

Tobias Langner

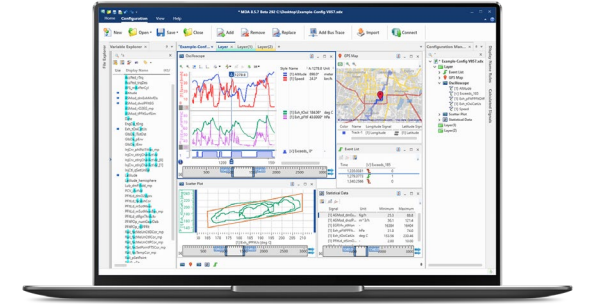
ETAS GmbH

- **Software Architect**
- **Expert for MDF**
- **> 10 years part of ASAM MDF**
- **Current workgroup leader**



ASAM MDF

What is MDF4



- **Compact binary file format**
- **Stores measured data from the car**
- **For interactive analysis & storage**

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What is MDF4

- **Built on the principles of MDF3**
- **Extended to meet future space requirements**
- **Maintained with backwards compatibility in mind for over a decade**
- **With known semantics for automotive use-cases**
- **Carefully expanded to increase usefulness**



The workgroup

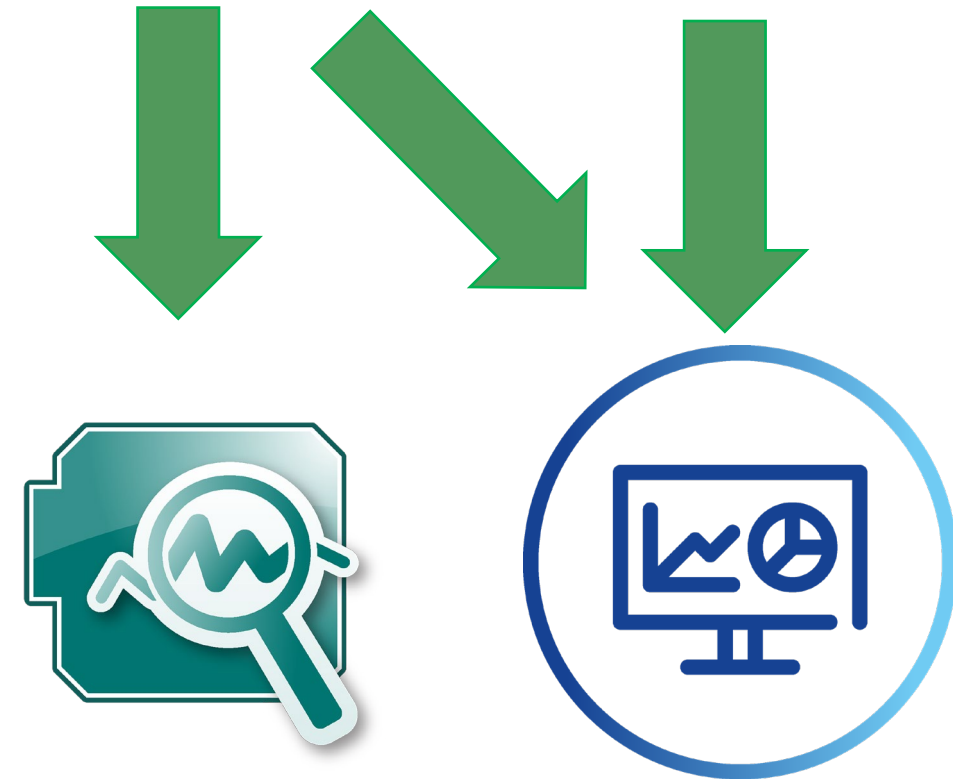
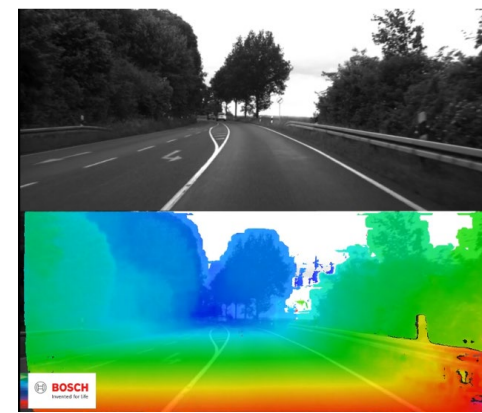
Image, Radar, Lidar, Sensor Logging

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The current state

- MDF4 can store arbitrary data
- Everything that can be expressed as C-structs can be represented in a way that is trivially accessible for tools
- Other types of data is also possible
 - But multiple mappings create ambiguity and thus reduce the usefulness of the standard regarding the interchangeability of data

```
struct LinearConversion  
{  
    double p1;  
    double p2;  
};
```



Application 1

Application 2

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The current state

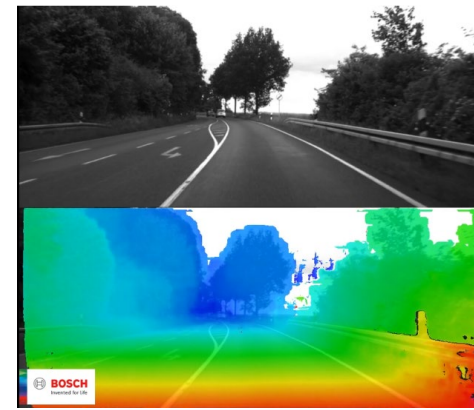
```
struct LinearConversion  
{  
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```



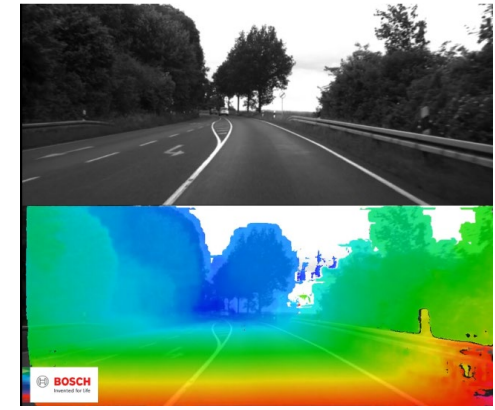
Application 1



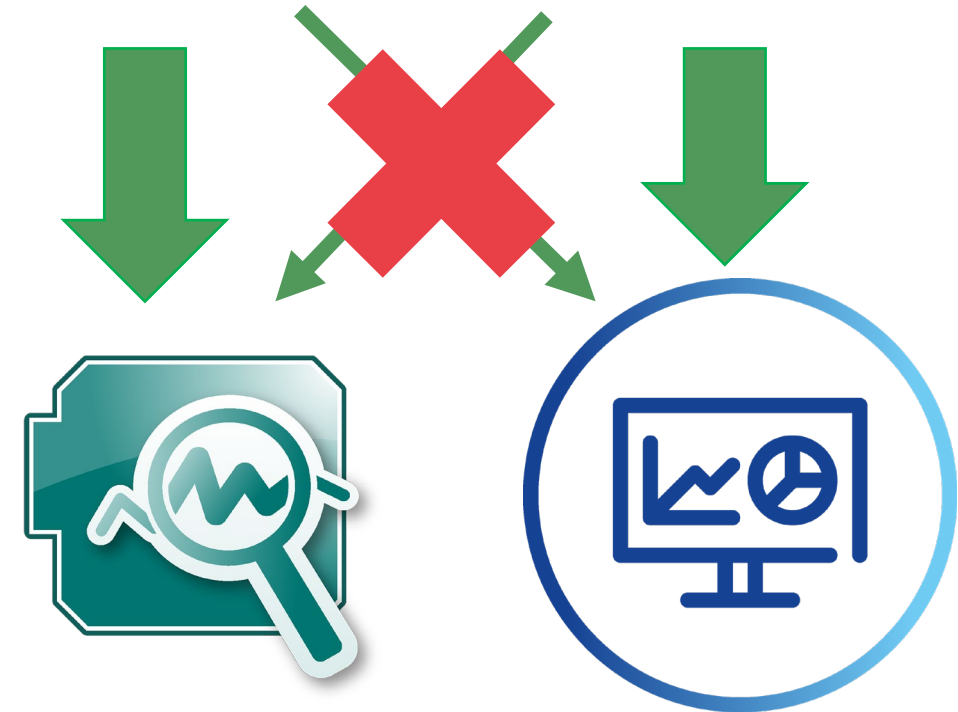
Application 2



In-File Representation 1



In-File Representation 2



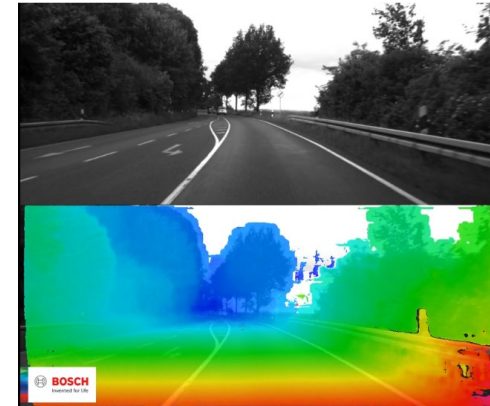
Application 1

Application 2

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The Goals

- Standardize the storage of complex data like
 - GPS
 - Radar
 - Lidar
 - Cameras
- By (mainly) using existing mechanisms and providing the necessary metadata for decoding



Application 1



Application 2

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Current Progress

- Advanced proposal for an associated standard for storing GPS data available
- Proposal for storing meta-data related to raw sensor data under discussion
- Bugfixes in the existing standard and smaller extensions unrelated to sensor data (e.g. new compression methods)
- Additional topics on the list to be evaluated (e.g. improvements to the semantics of unsorted data for replay purpose)



MDF 4.3 with minor improvements



One or multiple associated standards that define the storage of sensor data, ideally compatible to older MDF4 versions.

Thank you for your attention

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