MDF4 Virtual File Server

**A comprehensive approach for the integration of
MDF4 file format into ASAM ODS standard**
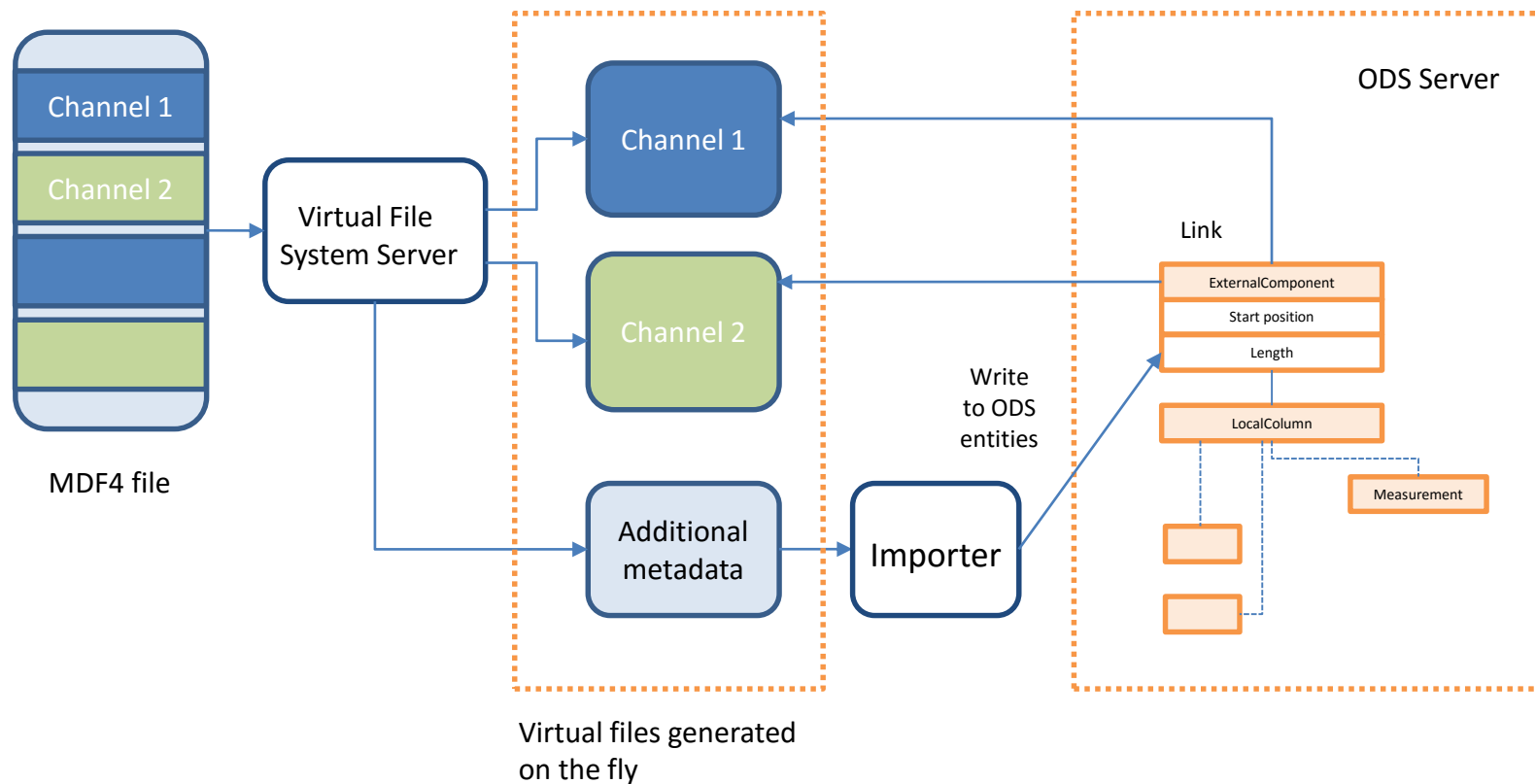
Motivation

Integration of ASAM MDF4 in ASAM ODS

- Different approaches to the problem
  - Full import of the MDF4 into ODS
  - Extensions to the ODS standard and reference MDF4 files
  - Extensions to the ODS standard and presorting MDF4 files

- First approach
  - Specification of an interface between ODS server and a custom server for external formats
  - Interface looked similar to file access APIs
- Idea
  - Use a virtual file system to expose MDF4 files as ODS external component files
  - Import MDF4 metadata into ODS
  - ODS server can access MDF4 massdata as if it was stored as native ODS data

Referencing MDF4 through Virtual File System

MDF4 file

Channel 1
Channel 2

Virtual File System Server

Channel 1

Channel 2

Additional metadata

Importer

Virtual files generated on the fly

ODS Server

Link

ExternalComponent
Start position
Length

LocalColumn

Measurement

Write to ODS entities

MDF4 file in Virtual File System

- MDF4 files are listed as folders
- MDF4 file metadata is parsed, when „MDF4 folder" is accessed
  - Available groups and channels
  - Channel lengths and data types
- „MDF4 folder" contains its own folder hierarchy based on parsed metadata
- Channel data is provided as files in ODS external component format
- Example:

```
Measurement.mf4
└──ChannelGroup1
│   └──Channel1
│   └──Channel2
└──ChannelGroup2
│   └──Channel1
│   └──Channel2
└──Metadatafile
```

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Conclusion

- ODS physical storage acts as an interface

- Existing ODS servers have not to be modified

- Existing application models do not have to be modified

- MDF4 Files are not required to be sorted

- No duplication of mass data, if original MDF4 file as to be kept

- Possibility to integrate other file formats

Thank you for your attention!