openMDM®: A proven software kid for the fast and cost-effective implementation of ASAM ODS based solutions via configuration and administration

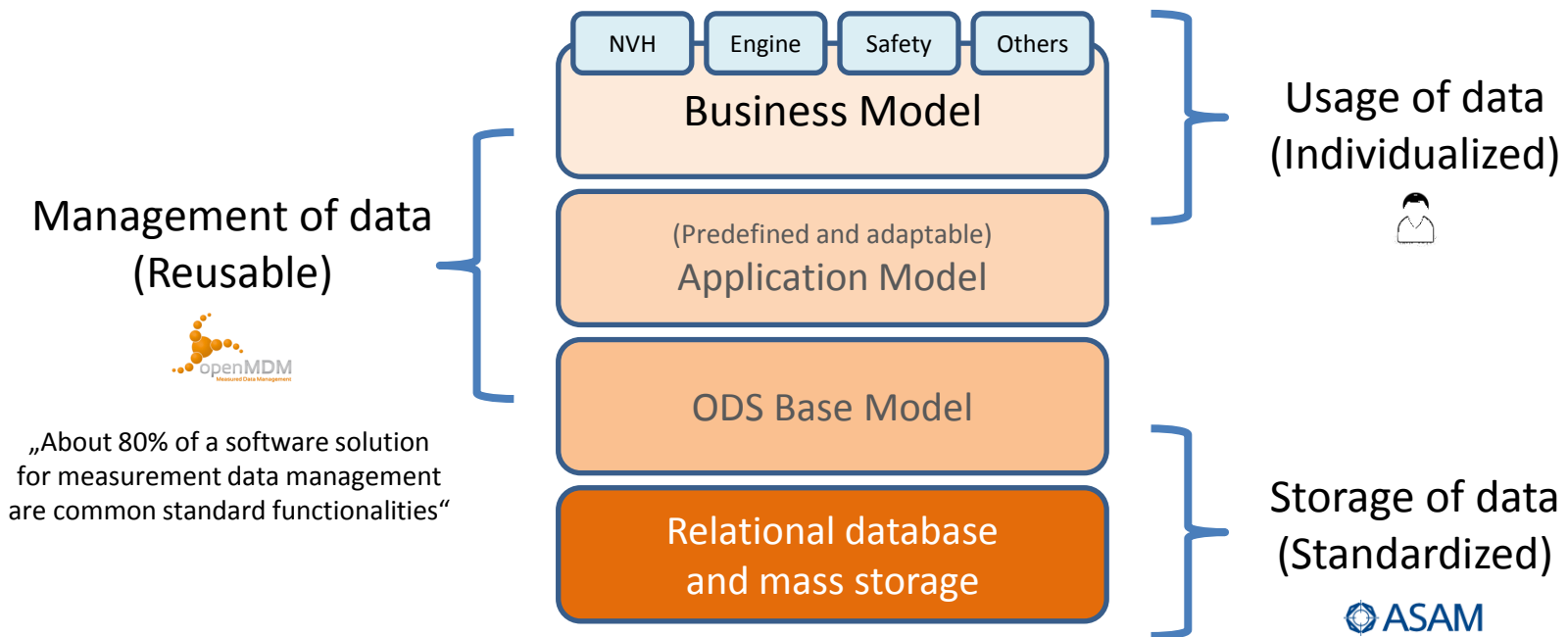# Facts about Peak Solution

Peak Solution and ASAM ODS

- Founded in May 2005
- Headquarter: Nuremberg (GER)
- Test data management project since 2005
- Member of ◈ASAM since 2007
  - Member of Technical Steering Committee
  - Working groups: ODS Maintenance, ODS Webservices
- Worldwide ASAM ODS projects
  - By Subsidiaries
  - By Partners
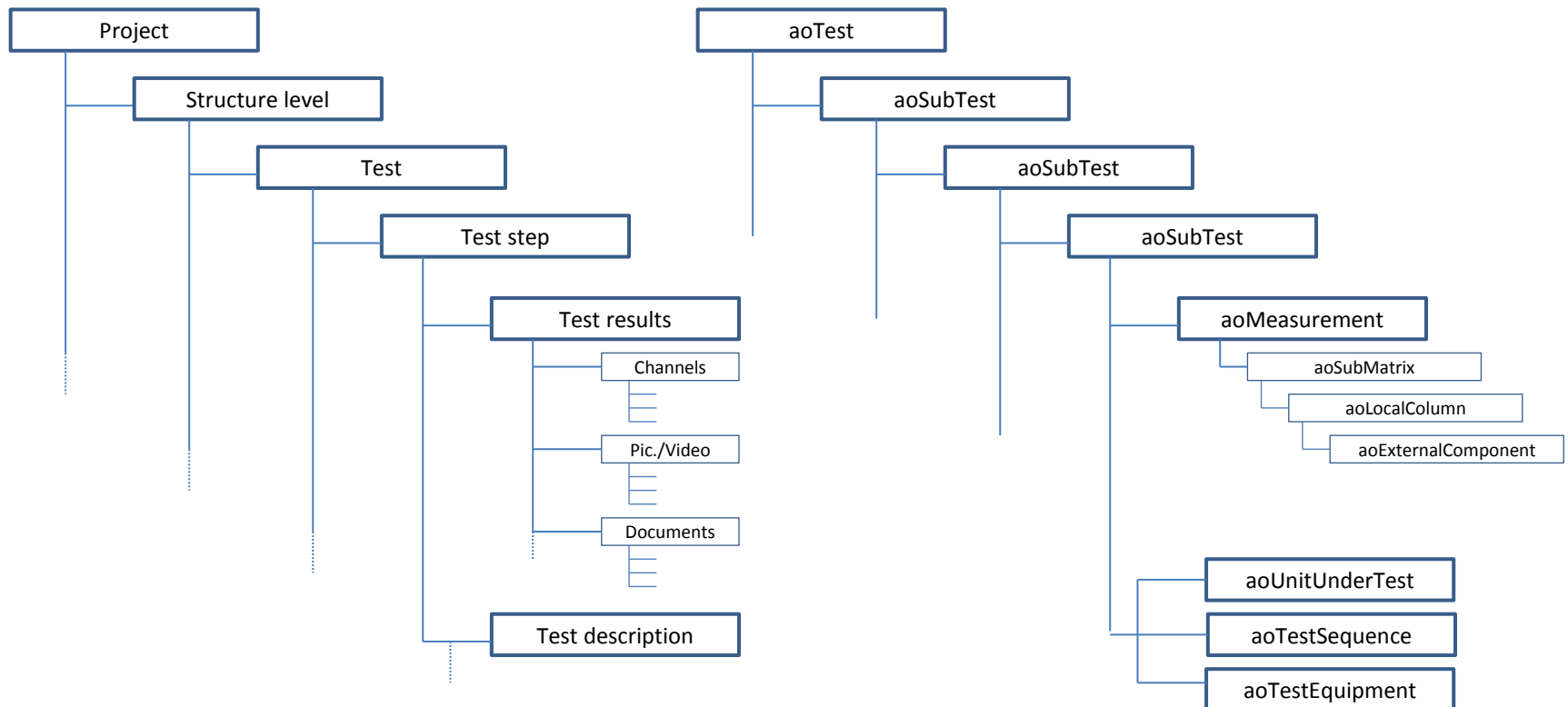
openMDM® Overview

The openMDM® approach

Software framework for the efficient implementation of ASAM ODS-based solutions

| NVH | Engine | Safety | Others |

Business Model — Usage of data (Individualized)

(Predefined and adaptable)
Application Model

Management of data (Reusable)

ODS Base Model

openMDM Measured Data Management

„About 80% of a software solution for measurement data management are common standard functionalities"

Relational database and mass storage — Storage of data (Standardized)

◉ ASAM

openMDM® combines standardization with individuality!

openMDM® Overview

Application model: ASAM ODS compliant test data storage


```
Project
  └─ Structure level
       └─ Test
            └─ Test step
                 └─ Test results
                      ├─ Channels
                      ├─ Pic./Video
                      └─ Documents
                 └─ Test description
```

```
aoTest
  └─ aoSubTest
       └─ aoSubTest
            └─ aoSubTest
                 └─ aoMeasurement
                      └─ aoSubMatrix
                           └─ aoLocalColumn
                                └─ aoExternalComponent
            ├─ aoUnitUnderTest
            ├─ aoTestSequence
            └─ aoTestEquipment
```

# openMDM® Overview

Configuration

- More than 300 reusable, proven, reliable and <u>free available</u> software components:
  - ODS-Browsing (Navigator)
  - ODS-Search (Generic search, Full-text search)
  - ODS-View (Meta data, Measurements)
  - ODS-Attachments (Documents, Pictures, Videos, etc.)
  - ODS-Importer (different file formats)
  - ODS-Exporter (different file formats)
  - Administration (application, application model)
  - and many more…
- Implementation of new, different applications by re-assembling existing software components
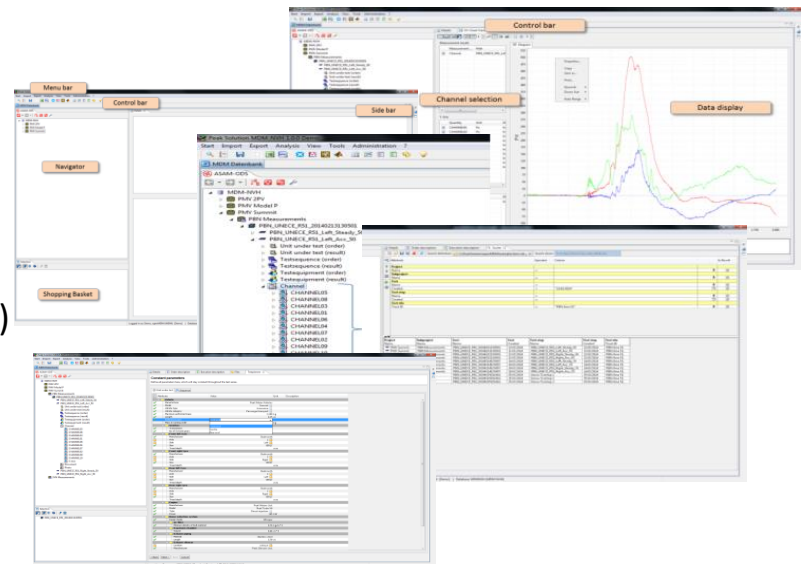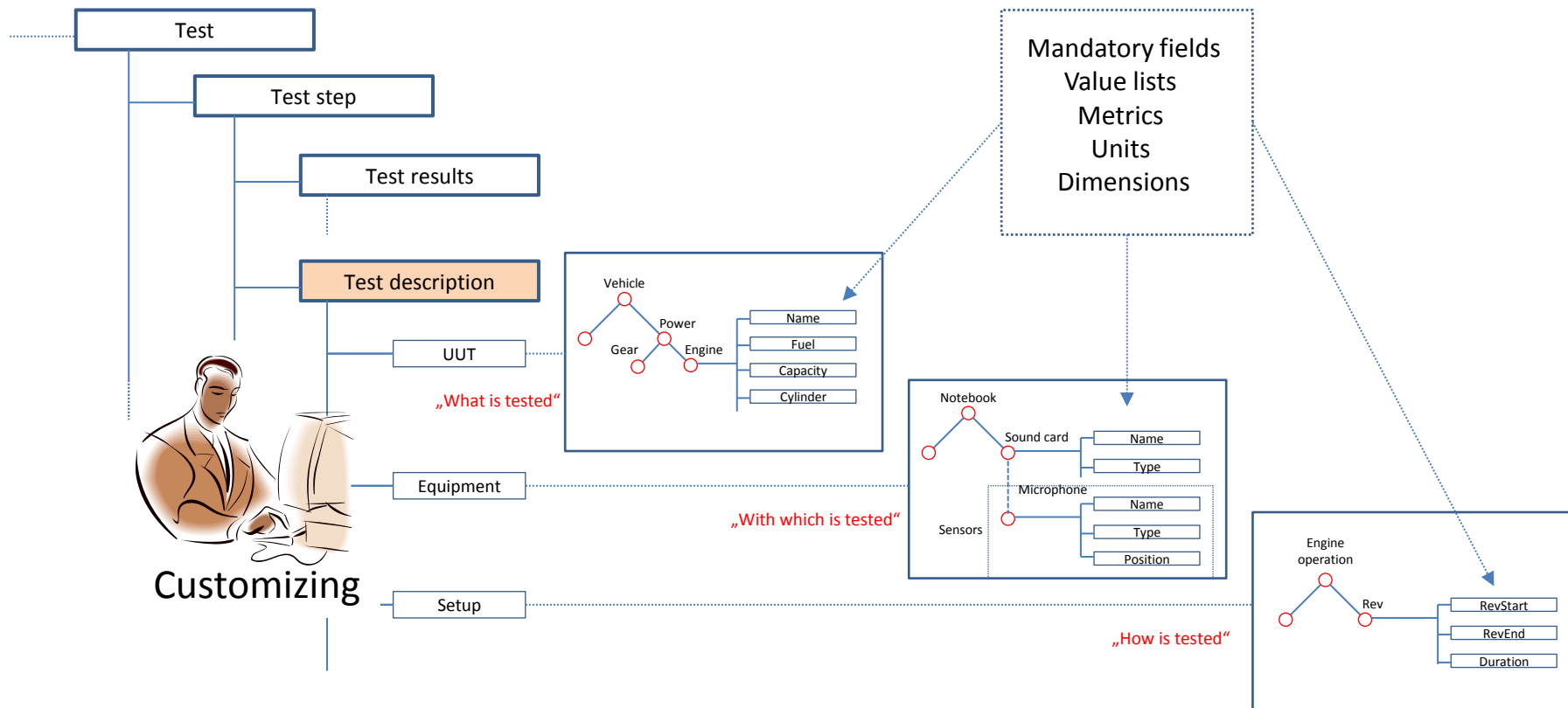
openMDM® Overview

Administration components

- Definition and maintenance of ODS application models
- Definition and maintenance of templates for test description
- Integration and configuration of specific application components (external systems, Hooks, etc.)
- User and rights management (based on ODS authorization system)
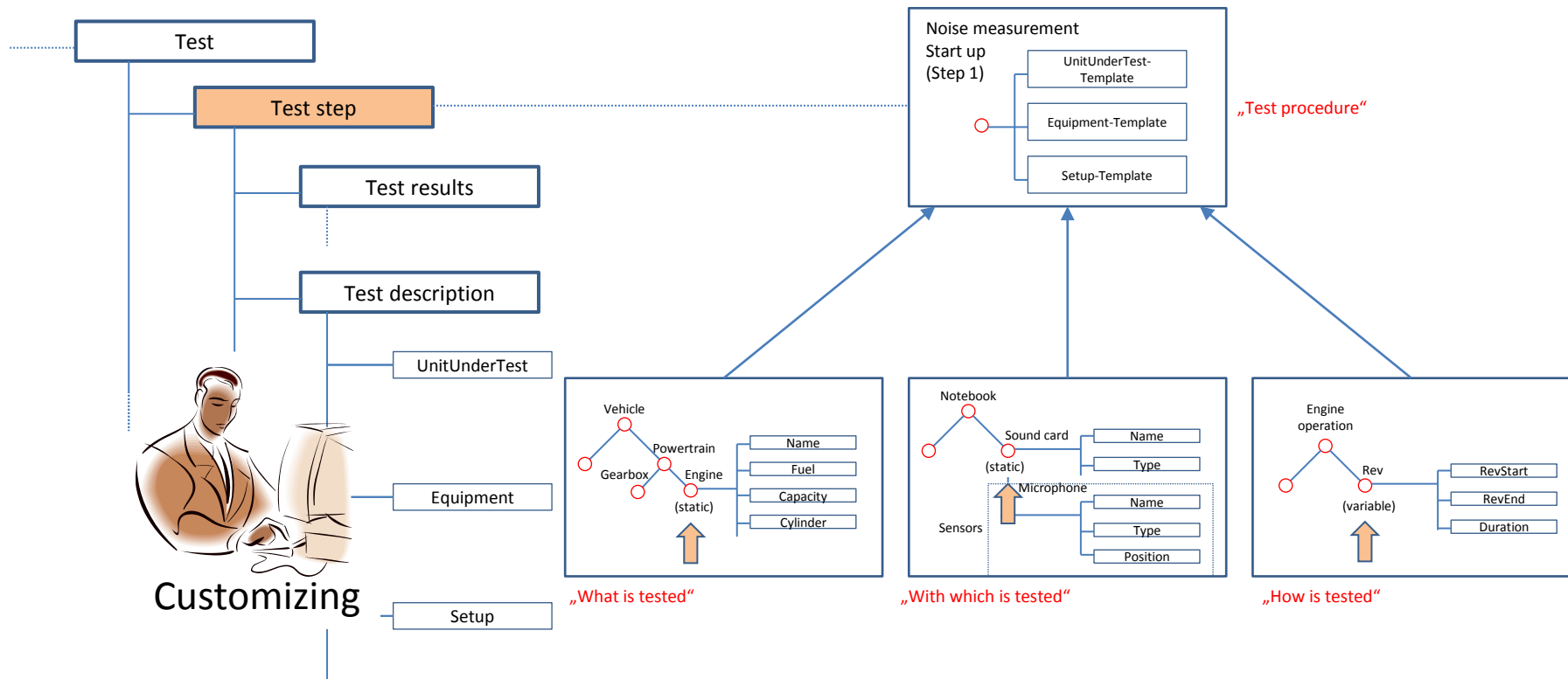- Language (I18N Internationalization)
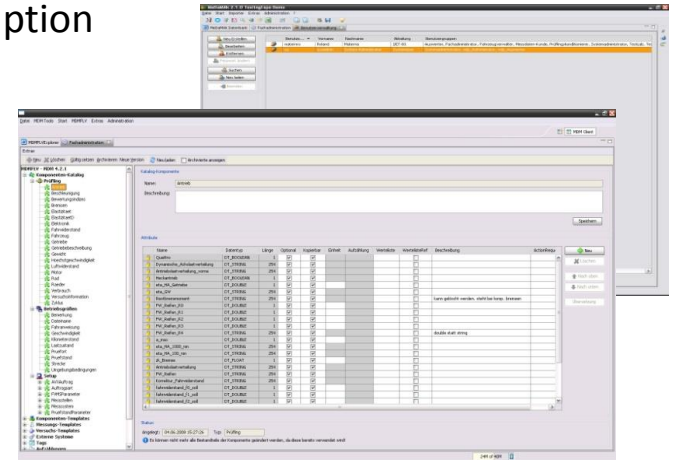
openMDM® Administration

ODS application model: Definition of metadata by customizing

Test

Test step

Test results

Test description

UUT

„What is tested"

Customizing

Equipment

„With which is tested"

Setup

Vehicle

Power

Gear Engine

Name

Fuel

Capacity

Cylinder

Mandatory fields
Value lists
Metrics
Units
Dimensions

Notebook

Sound card

Name

Type

Microphone

Sensors

Name

Type

Position

Engine operation
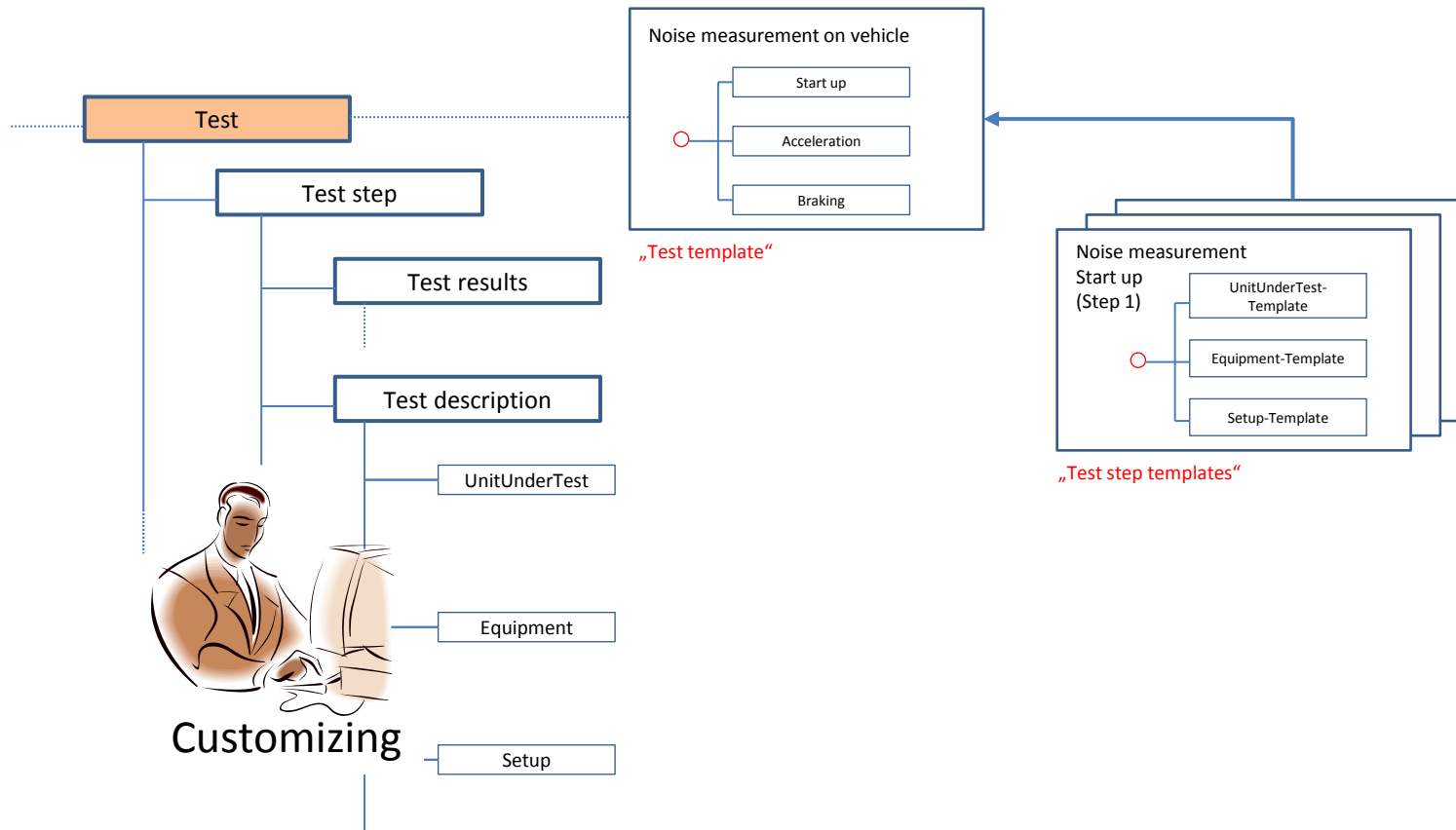
Rev

RevStart

RevEnd

Duration

„How is tested"

openMDM® Administration

Definition of templates for test description

openMDM® Administration

Definition of templates for test description

Test template diagram: "Noise measurement on vehicle" containing Start up, Acceleration, Braking — labeled „Test template"

Hierarchy: Test → Test step → Test results → Test description → UnitUnderTest, Equipment, Setup — labeled Customizing

Test step templates diagram: "Noise measurement Start up (Step 1)" containing UnitUnderTest-Template, Equipment-Template, Setup-Template — labeled „Test step templates"
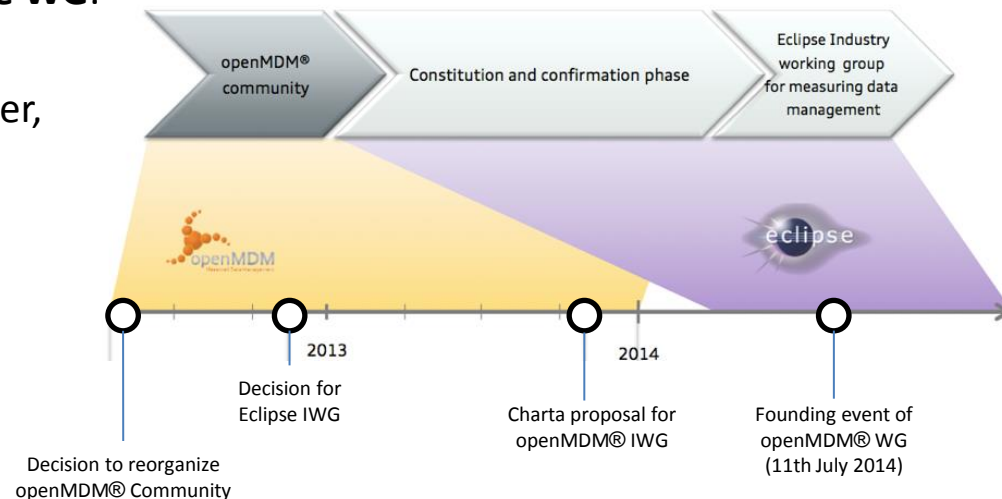
From openMDM® Community to Eclipse working group

Joint development and exchange of software components

- 2005: Start of development on behalf of Audi (Peak Solution was a development partner "from the very beginning")

- Since 2007: Collaboration of about 30 vehicle manufacturers, Tier-1 supplier, tool vendors and service providers (openMDM Community)

- Since 2012: Transformation into an Eclipse Working Group (WG)

- Official founding of **openMDM® Eclipse WG**: 11th July 2014

- Founding members: Audi, BMW, Daimler, HighQSoft, Gigatronik, s+c, Canoo and Peak Solution

- Further companies (OEMs, solution vendors and service providers) have already joined or expressed their will for participation...

openMDM® community

Constitution and confirmation phase

Eclipse Industry working group for measuring data management

openMDM

eclipse

2013

2014

Decision to reorganize openMDM® Community

Decision for Eclipse IWG

Charta proposal for openMDM® IWG

Founding event of openMDM® WG (11th July 2014)

openMDM® Community

Scope of openMDM Eclipse WG

- Canaling the diverse requirements regarding openMDM®
- Initiation, planning and jointly funding
  - Development of new components and improvements **(currently openMDM® 5.0)**
  - Maintenance of existing components
- Publishing of <u>common</u> developments under **Eclipse Public Licence (EPL)**
- Extensive quality assurance as well as reliable configuration and version management for <u>all published</u> openMDM® components
- Members of the openMDM WG have the possibility to influence the further development of openMDM®
  - You don't have to be a member of openMDM WG to use and adopt published openMDM® components

openMDM®

Conclusion

- The adaptability of the openMDM® toolkit is sufficient for easy and rapid prototyping of fully functional measured data management systems
- openMDM® solutions can be customized / adapted to specific use cases by
  - Customizing the underlying ODS application model
  - Recombining / reconfiguration existing components
  - Development of own, new components
  - Integration of 3rd party software
- A big part of openMDM® implementation is configuration and customization (not software development)
- The implementation of openMDM® do not require ASAM ODS or database expert knowledge
- openMDM Eclipse WG ensures an ongoing further development and maintenance of the openMDM® framework – Take part!

openMDM® Benefits

Maturity – Cost-effectiveness – Independence – Future-proof

openMDM® is on the way to become a worldwide, leading industry standard for measurement data management!