

# The Evolution of Test Data Management

From data silos to a navigation platform across test domains



## What is test data?

Information, necessary to prepare, re-conduct or interpret a physical or virtual validation (= test run)

- Test Cases
- Test Procedures
- Test Parameters
- Test Models
- Test Items
- Test Equipment
- etc.

### Meta Data

Information, which is created during a test run

- Sensor Data
- Bus Data
- Events
- Image Streams
- Coordinates
- Documents
- etc.

### Bulk Data



## Test domains

A test domain validates certain features of vehicles and their components

- Functionality
- Performance
- Safety
- Reliability
- etc.

### Examples of test domains

- Vehicle Dynamics Testing
- Crash Testing
- Emission Testing
- Noise and Vibration Testing
- Durability and Reliability Testing
- Infotainment Testing
- Advanced Driver Assistant Testing Systems (ADAS) Testing
- etc.



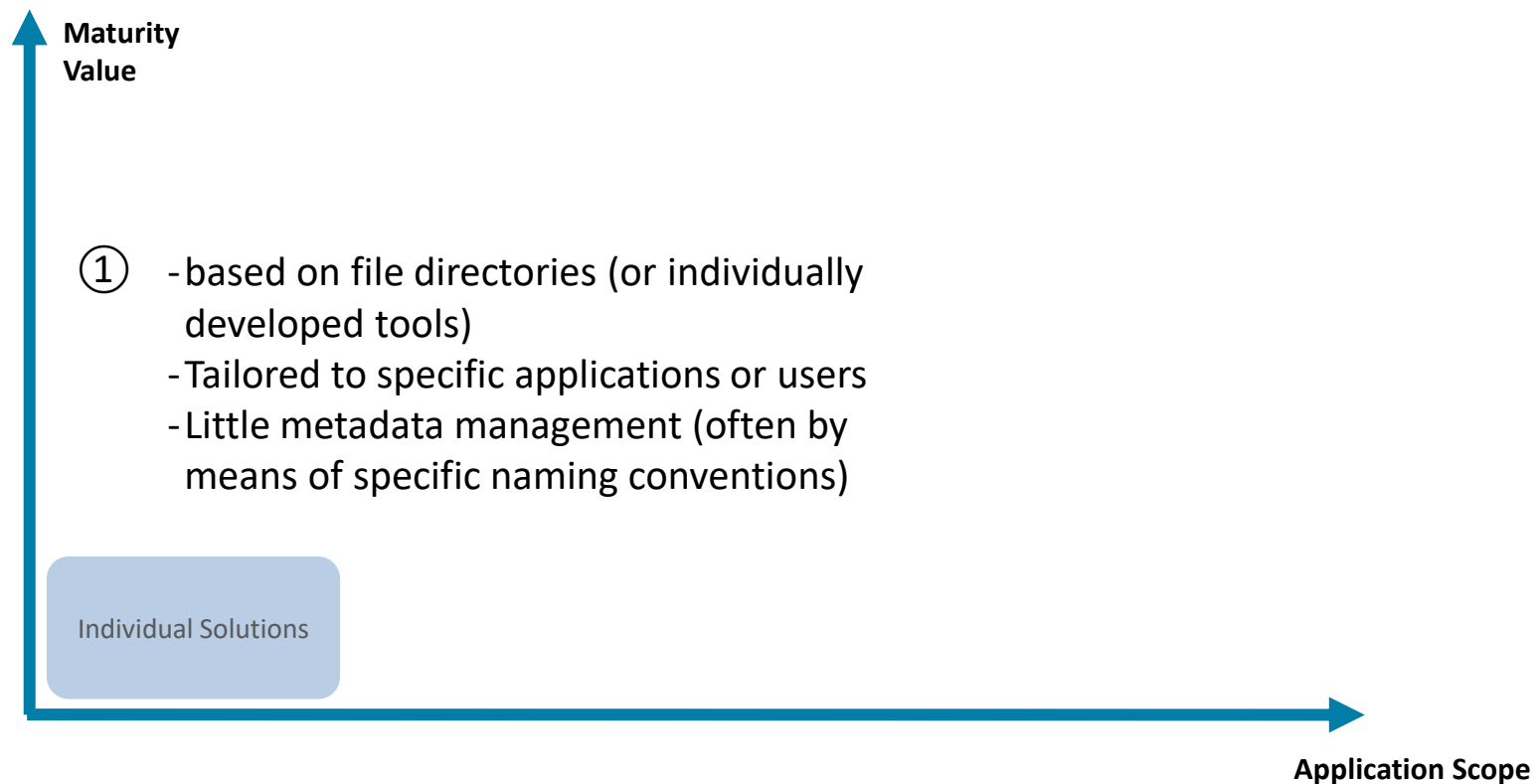
# Test Data Management

Domain specific tools



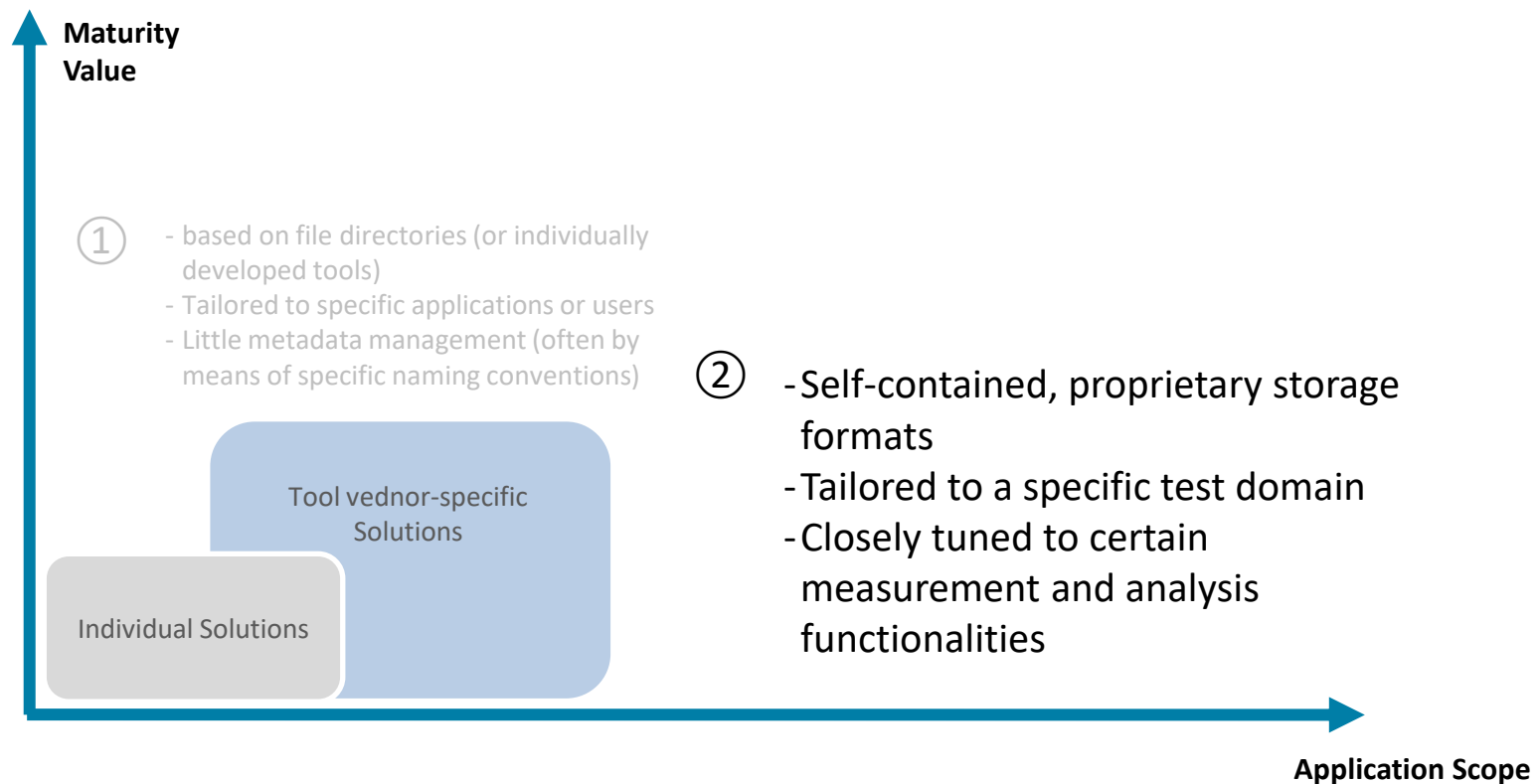
## Test Data Management

### Domain specific tools



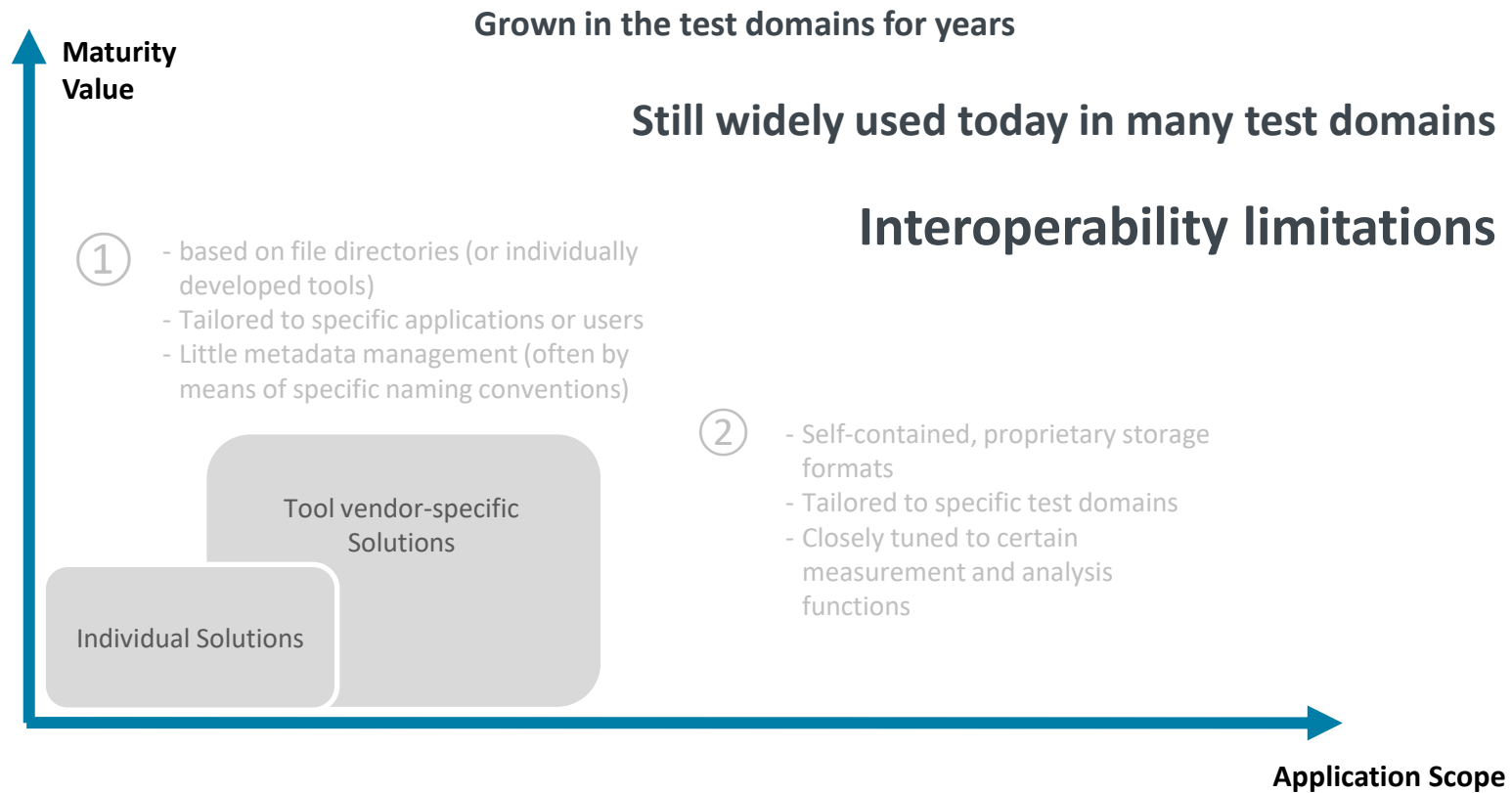
# Test Data Management

## Domain specific tools



# Test Data Management

## Domain specific tools



## Test Data Management

Domain specific tools

Questions arise:

Will tool-specific data silos be sufficient in the future ?

How must test data management evolve to meet future demands ?

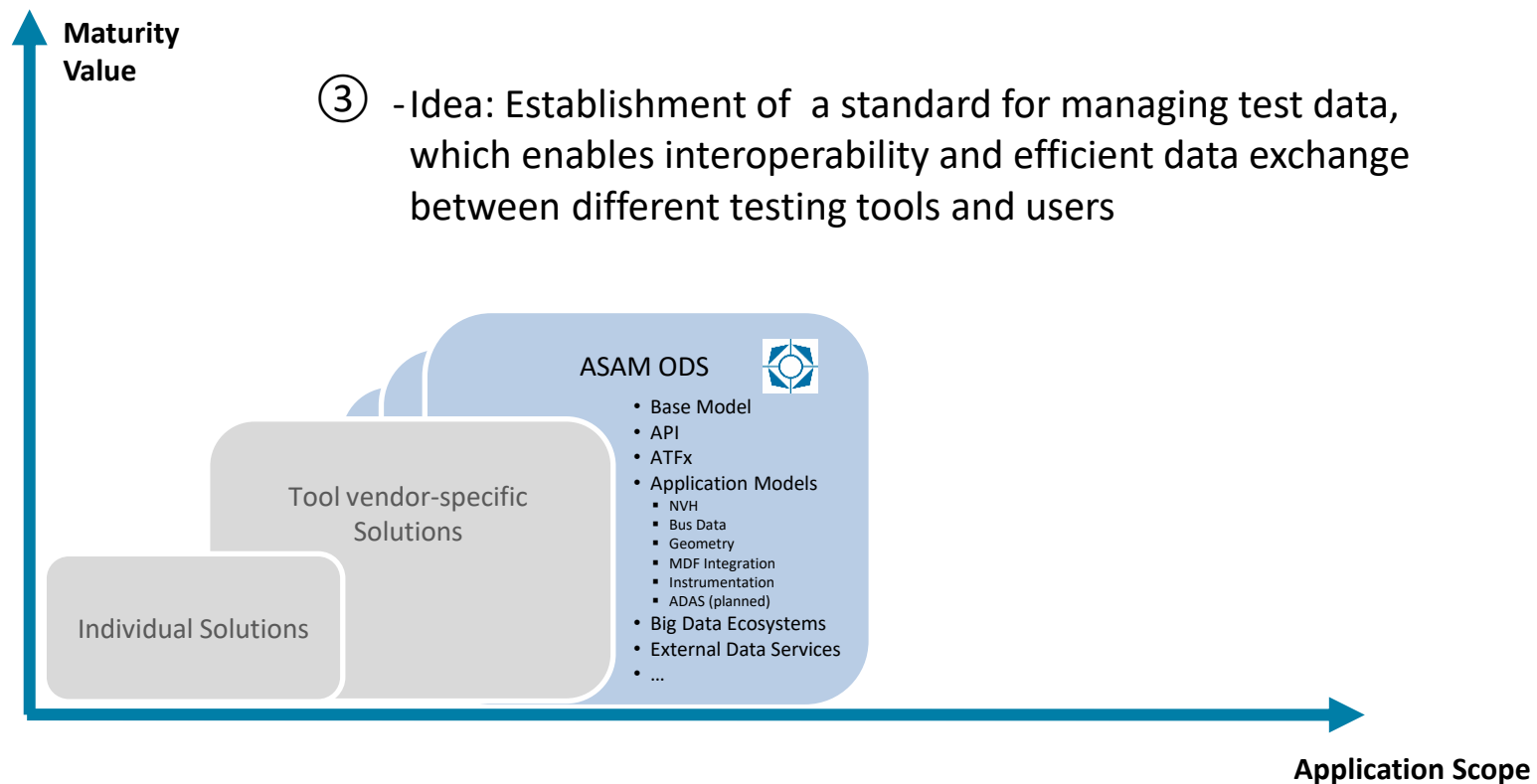
related to the ...

- Increasing importance of data ?
- Increasing importance of collaboration ?
- Increasing importance of traceability ?
- Increasing importance of information security ?



# Test Data Management

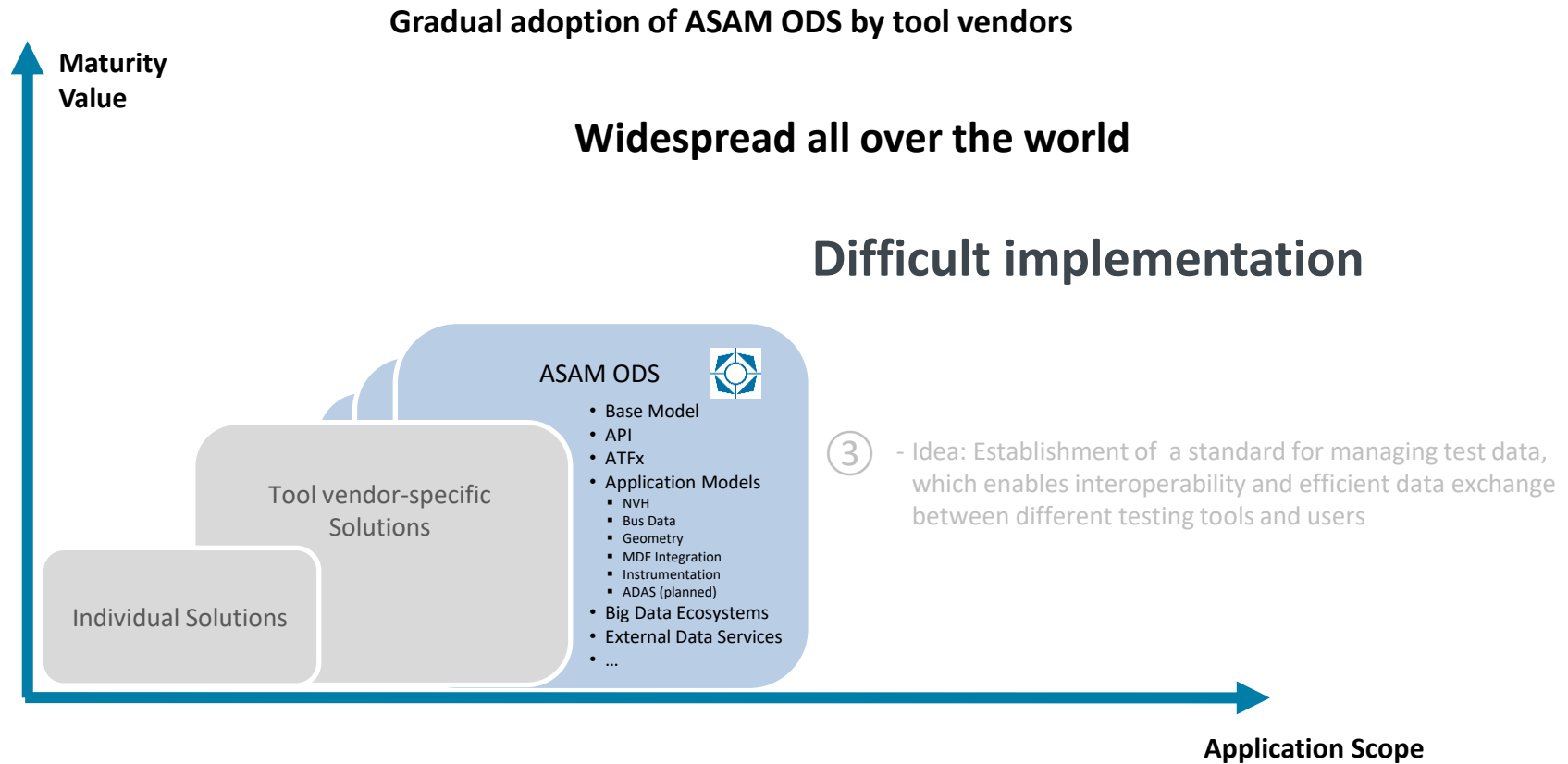
## Standardization



③ - Idea: Establishment of a standard for managing test data, which enables interoperability and efficient data exchange between different testing tools and users

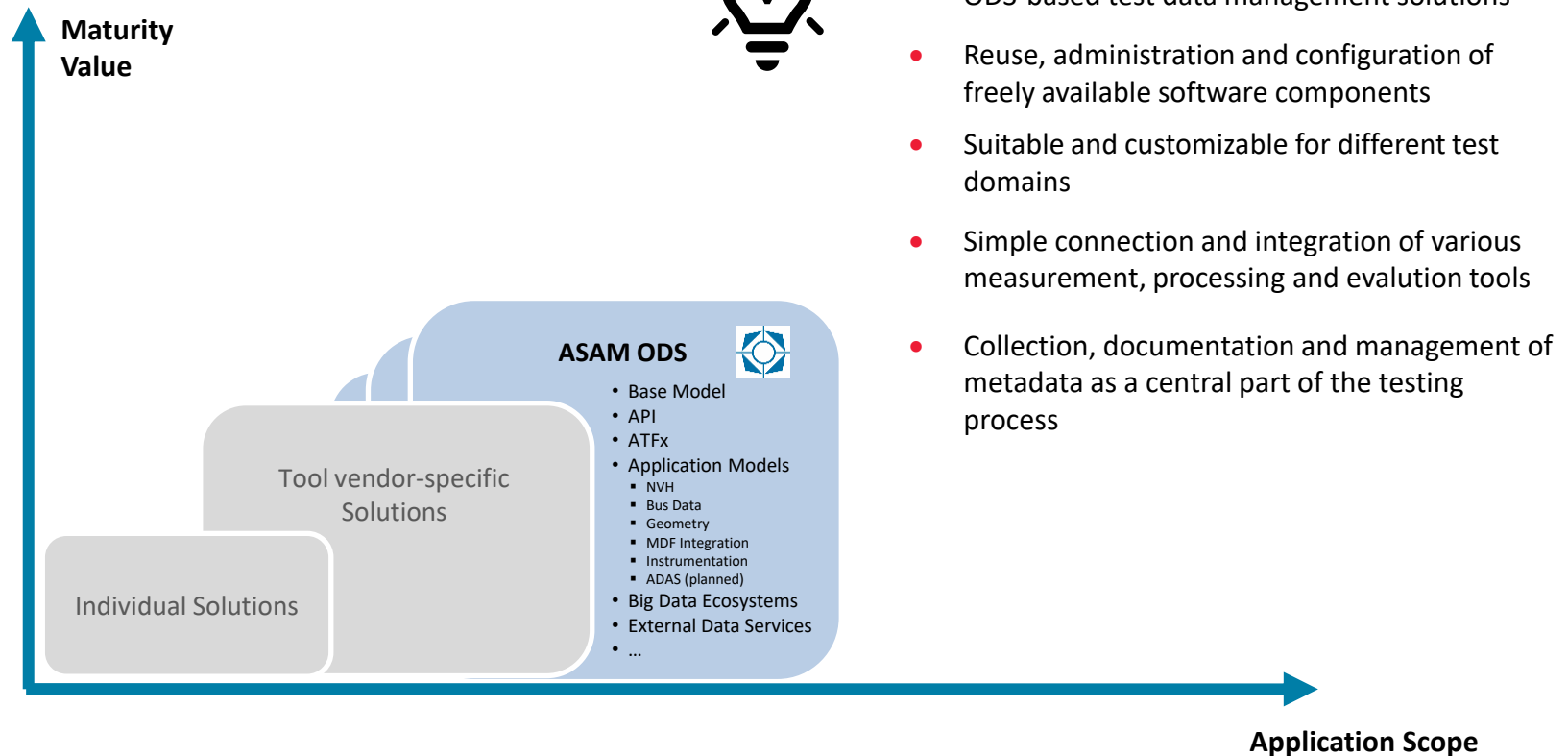
# Test Data Management

## Standardization



# Test Data Management

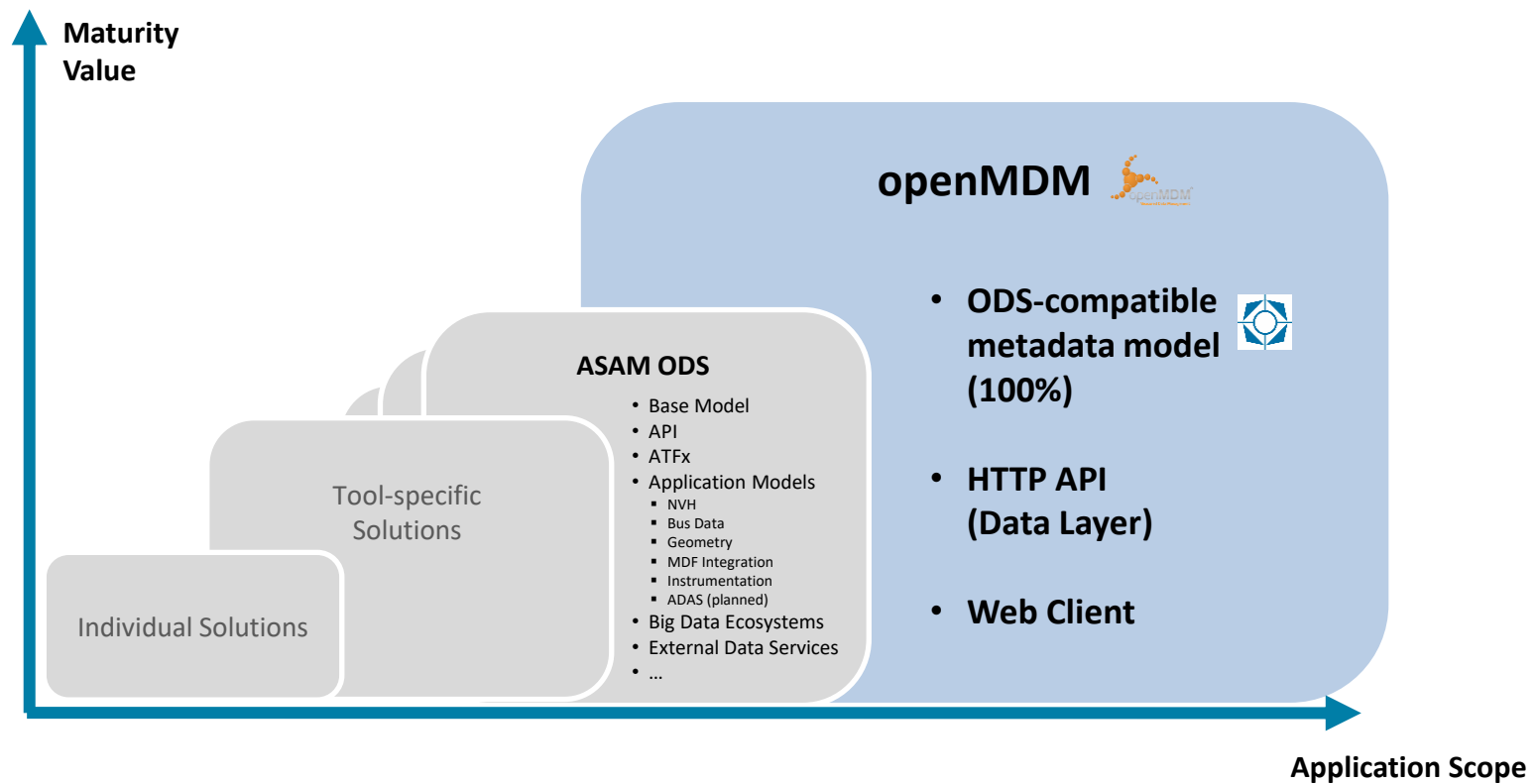
## Strategic Approach



- Framework for the efficient implementation of ODS-based test data management solutions
- Reuse, administration and configuration of freely available software components
- Suitable and customizable for different test domains
- Simple connection and integration of various measurement, processing and evaluation tools
- Collection, documentation and management of metadata as a central part of the testing process

# Test Data Management

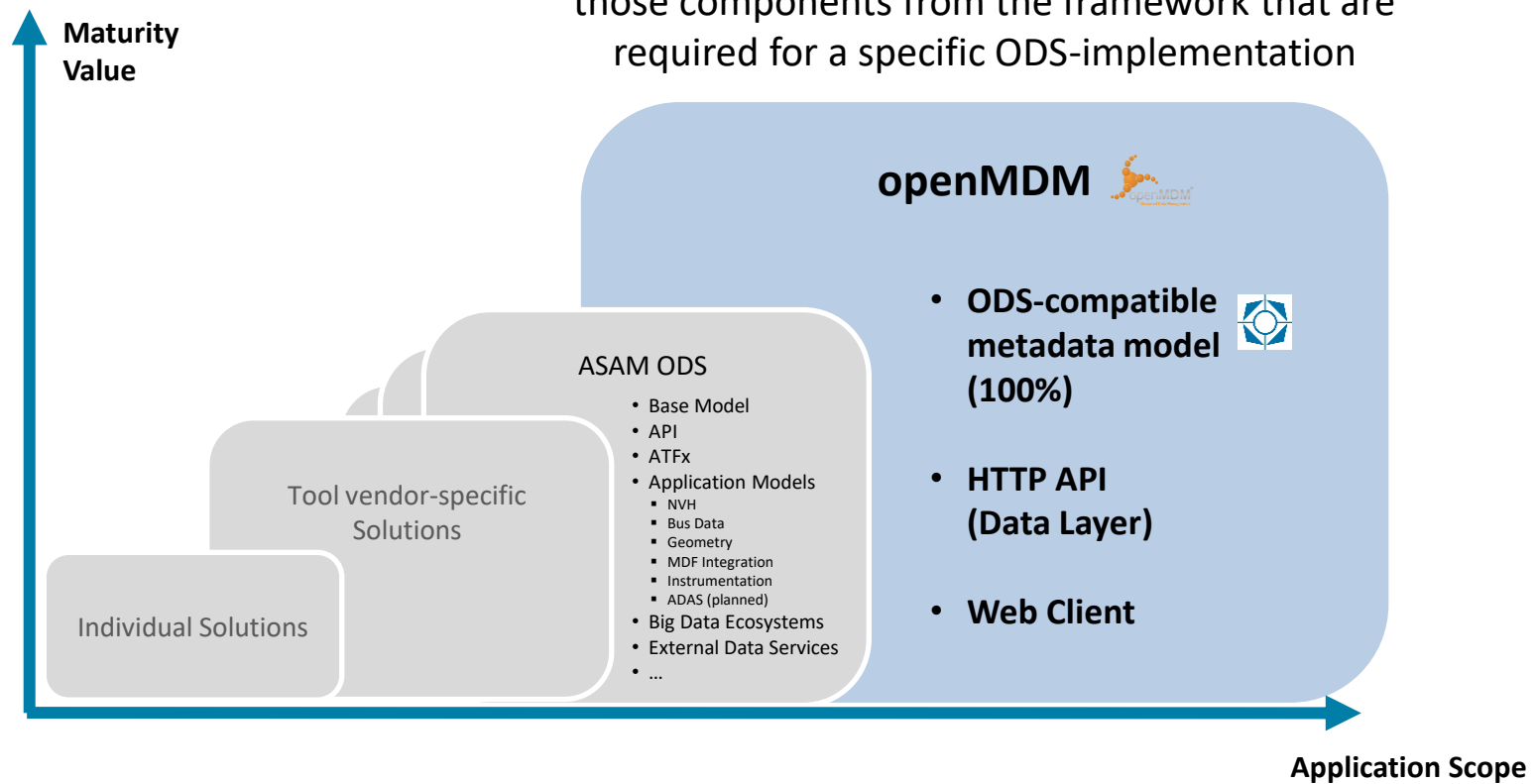
## Strategic Approach



# Test Data Management

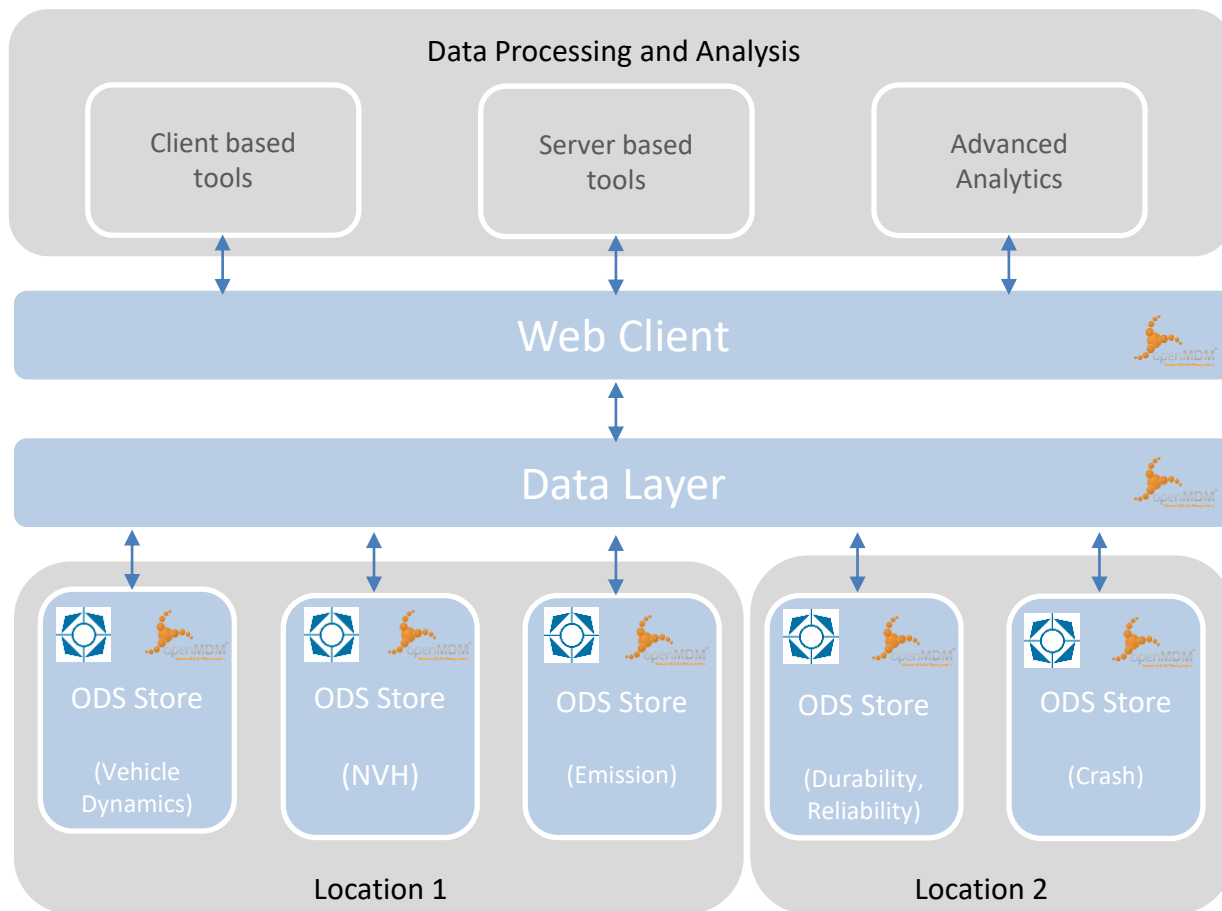
## Strategic Approach

Each user company or tool provider can select and adapt those components from the framework that are required for a specific ODS-implementation



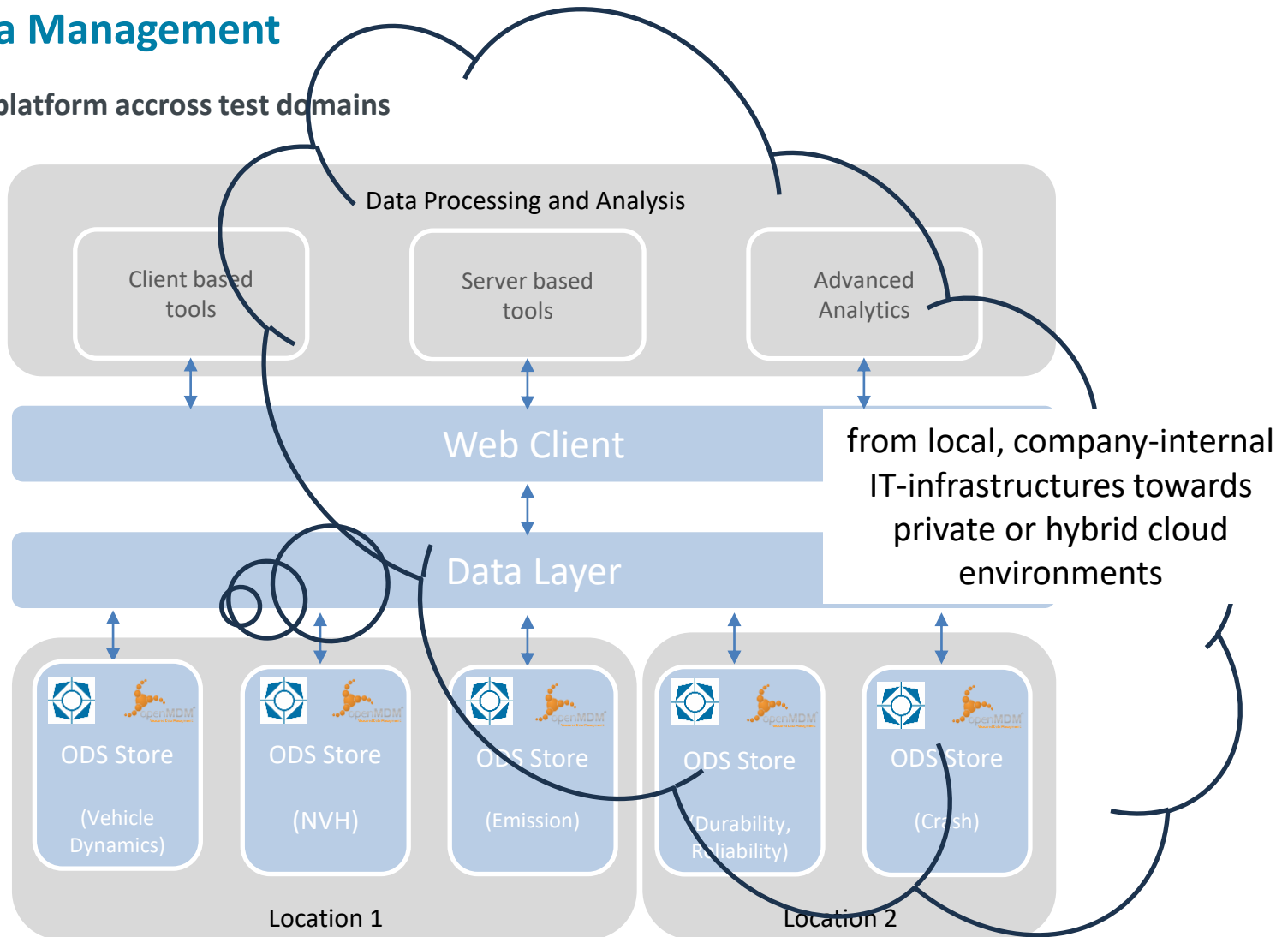
# Test Data Management

Navigation platform across test domains



# Test Data Management

Navigation platform across test domains



## Test Data Management

### Conclusion

Self-contained, proprietary or tool-focused solutions for Test Data Management will reach their limits in the long term

Using the standard ASAM ODS facilitates interoperability between validation systems coming from different vendors

openMDM Framework helps both tool providers and user companies with the efficient implementation of ODS-based Test Data Management solutions

For user companies pursuing a strategic approach for Test Data Management:

openMDM Framework is a good basis for the implementation of an uniform (cloud-based) test data navigation platform across tools, teams, test domains and locations