

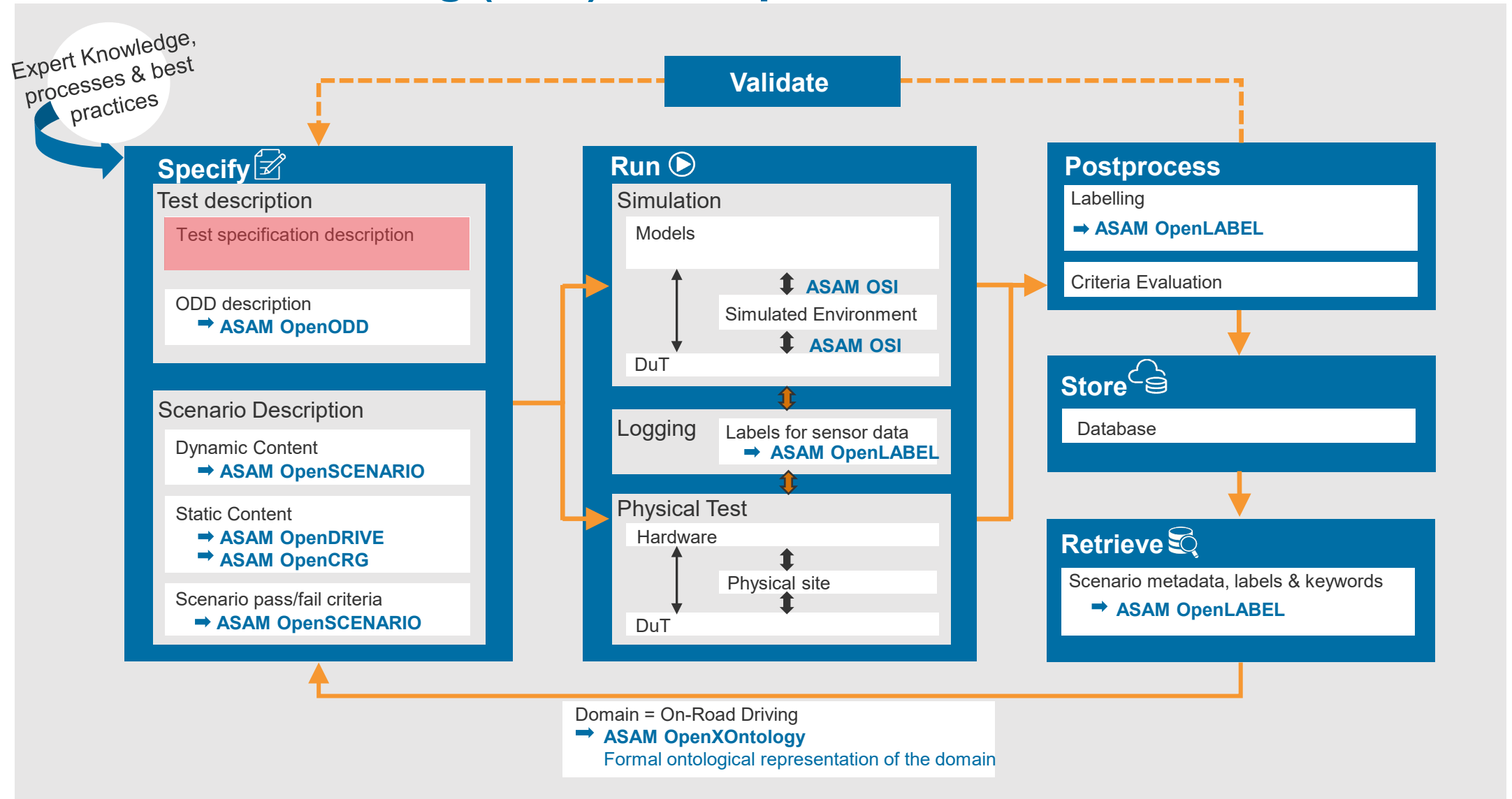
ASAM Test Specification Study Group

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Scenario-Based Testing (SBT) with OpenX



Test Specification Study Group

MISSION STATEMENT

- Examine the relevant test techniques and use cases for testing and homologation of the ADAS/AD Domain in automotive in detail.
→ Identify relevant standards, potential workflows and their variants, and the overall interplay between these parts to form a cohesive whole.
- Output: Documented set of overall use case for testing and homologation, a set of potential workflows implementing these, together with an overview of relevant users, standards and their application.
- Additionally, we will identify gaps in the workflows, leading to the identification of potentially needed additions to existing standards, liaisons between standards, or even the need for completely new standards.
- Recommendations for these standards or additions shall be collected and documented. The goal is to define a valid basis for follow up activities and projects

What is a Test Specification?

ISO/IEC/IEEE 29119

- *complete documentation of the test design, test cases and test procedures for a specific test item*

A Test Specification can be broken down into three components :

1. Test model
 - Describing the target of testing and the model used by the tester to derive test cases: traditionally „feature sets“ and „test coverage items“, more recently „test models“
2. Test case
 - Describing test cases – Specify preconditions, inputs, actions & expected results
3. Test procedure
 - Describing how test cases are grouped, plus additional information necessary to perform testing

Test Cases in Scenario-Based Testing

- Scenarios can be used as part of a testing approach to satisfy a test specification to varying degrees.
- So what is the relationship between a scenario and a test [case]?
 - Test input is scenario input road network, actors, trajectories
 - Test actions are scenario actions (what happens in a scenario)
 - Test results are a part of sceenario results

Test Cases in Scenario-Based Testing

- Which information goes into the test case? What goes into the scenario?
- Dependent on testing methodology → spectrum ranges from loosely to tightly coupled relationship
 - A scenario can include:
 - Behavioral definition
 - Sampling & calculation of complex parameters defined in the test
 - Expected results
- Trade-off between mixing information and re-use of scenarios across tests
→ Ideally, aim for maximum reuse...

What is still to Come?

- Fully fledged report and analysis of the testing landscape
- Lots more detail on the various relationships between the components of tests
- Detailed definitions of relevant terms that take most perspectives into account
- Commentary by Technical Services on current and future regulation for testing and type approval
- User journeys → What methodologies are used to achieve which test goals? Testing Strategy Blueprint for e.g.:
 - Requirements-based HIL and SIL Testing
 - Scenario-based Testing on Proving Grounds
 - Test Data Management
 - Vehicle in the Loop
 - ...
- Recommendations to the industry and standardization bodies – Where are there gaps in the workflows and how can these be harmonized?

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