ASAM XIL

Generic Simulator Interface

Part 1 of 2

Specification

Version 3.0.0

Date: 2024-09-30

Base Standard

Table of Contents

Foreword

ASAM e.V. (Association for Standardization of Automation and Measuring Systems) is a non-profit organization that promotes standardization of tool chains in automotive development and testing. Our members are international car manufacturers, suppliers, tool vendors, engineering service providers, and research institutes. ASAM standards are developed by experts from our member companies and are based on real use cases. ASAM is the legal owner of these standards and is responsible for their distribution and marketing.

ASAM standards span a wide range of use cases in automotive development, test, and validation. They define file formats, data models, protocols, and interfaces. The standards enable easy exchange of data and tools within and across tool chains. They are applied worldwide.

ASAM XIL standardizes the communication between test automation software and X-in-the-Loop testbenches. This also applies to Open-loop use cases.

X-in-the-Loop stands for Model-in-the-Loop , Software-in-the-Loop , Hardware-in-the-Loop and others. The different testbenches cover different phases in development:

- MIL testbenches are used to test functional models.
- SIL testbenches are used to test the target software.
- HIL testbenches are used to test the target software in conjunction with the ECU hardware.

The application of the ASAM XIL standard allows users to combine test automation software and virtual or physical testbenches independent of the vendor, and also to enable the reuse of the existing programmed tests for subsequent development stages (for example, reuse of test cases for function models in software tests at a HIL simulator).

Overall, the use of the standard achieves independence from vendor software and hardware and a very high reusability of test cases. This results also in reduced costs for test programming and reduced training costs for testers.

Parts of the standard:

- Specification
  The Specification includes a conceptual description of the Testbench and Framework API.
- C# To Python Mapping Rules
  The mapping rules define the transformation rules of the technology dependent C# definitions into a Python specific representations.