FMI Add-on for NI VeriStand for HiL Simulation

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This paper describes the implementation of the Modelisar Functional Mock-up Interface (FMI) support in NI VeriStand, a commercial software environment suitable for real-time testing applications.

This paper presents the work conducted to implement the FMI Add-on for NI-VeriStand, which is available as a commercial product, and the process to make hardware in the loop simulation starting from a Model Based Development environment compliant with the FMI for Co-Simulation standard for model export and using it in NI VeriStand environment with National Instruments real-time hardware.

The aim of this work is to enable NI VeriStand to support the FMI standard for Co-Simulation. This in order to perform rapid-prototyping and hardware in the loop simulations using National Instruments hardware directly from Modelica models exported using the FMU standard. With the FMI Add-on it is possible to use FMU models in Windows and /or in National Instruments RT Targets like NI PXI and NI CompactRIO.

In this paper, we will present:

- A description of the activity carried out for the implementation of the FMI Add-on for NI-VeriStand.
- A detailed description of the steps that are to be performed in order to use FMUs in National Instruments PXI RT Targets.
- A validation test for the FMI Add-on performed with Dymola and National Instruments PXI RT Target based on the detailed model of a 6 dof manipulator.
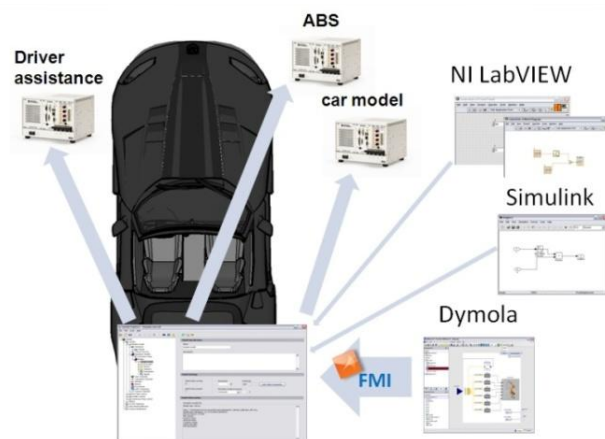
References

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