

FMI Support in the dSPACE Toolchain

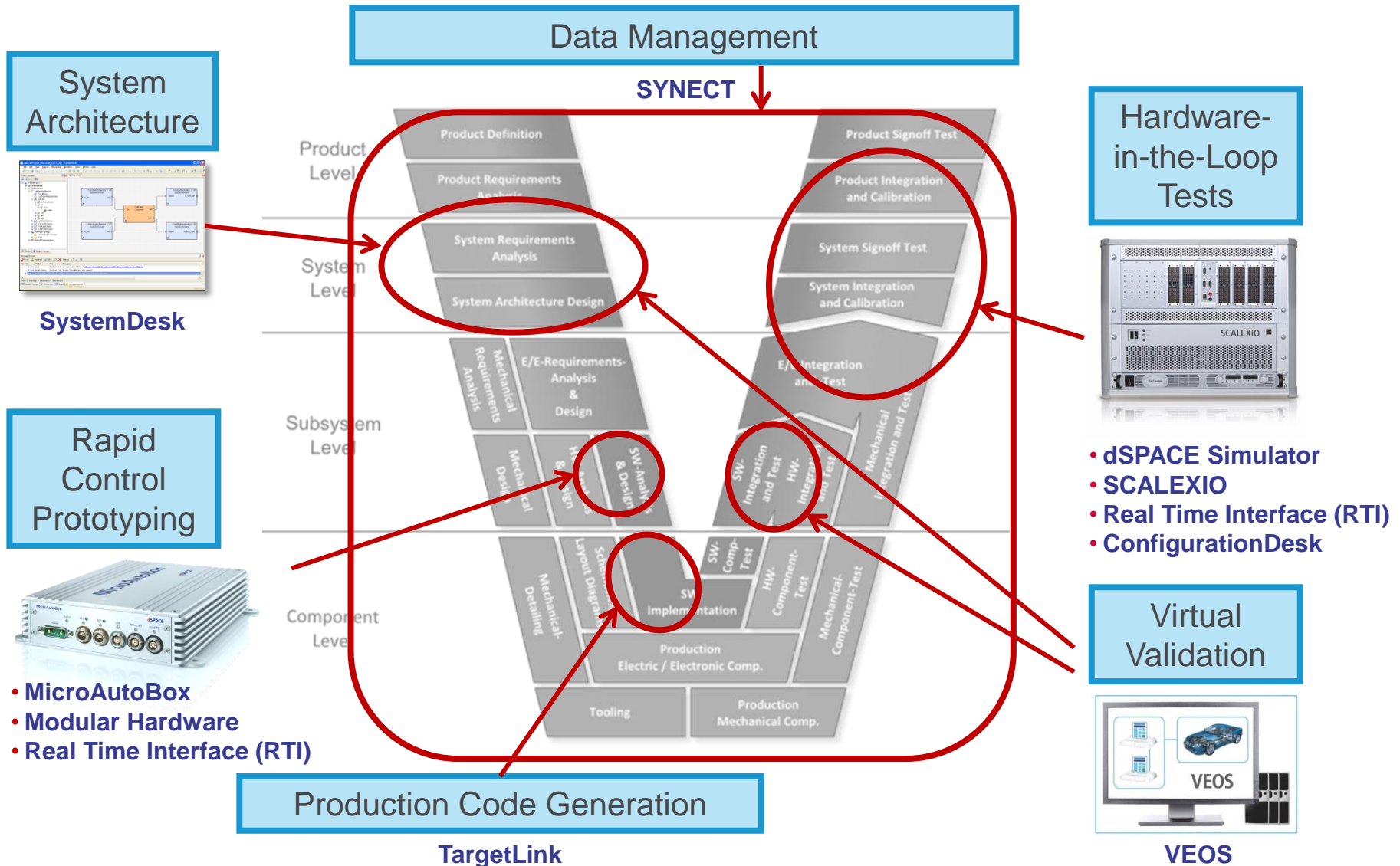


Dr. Andreas Pillekeit

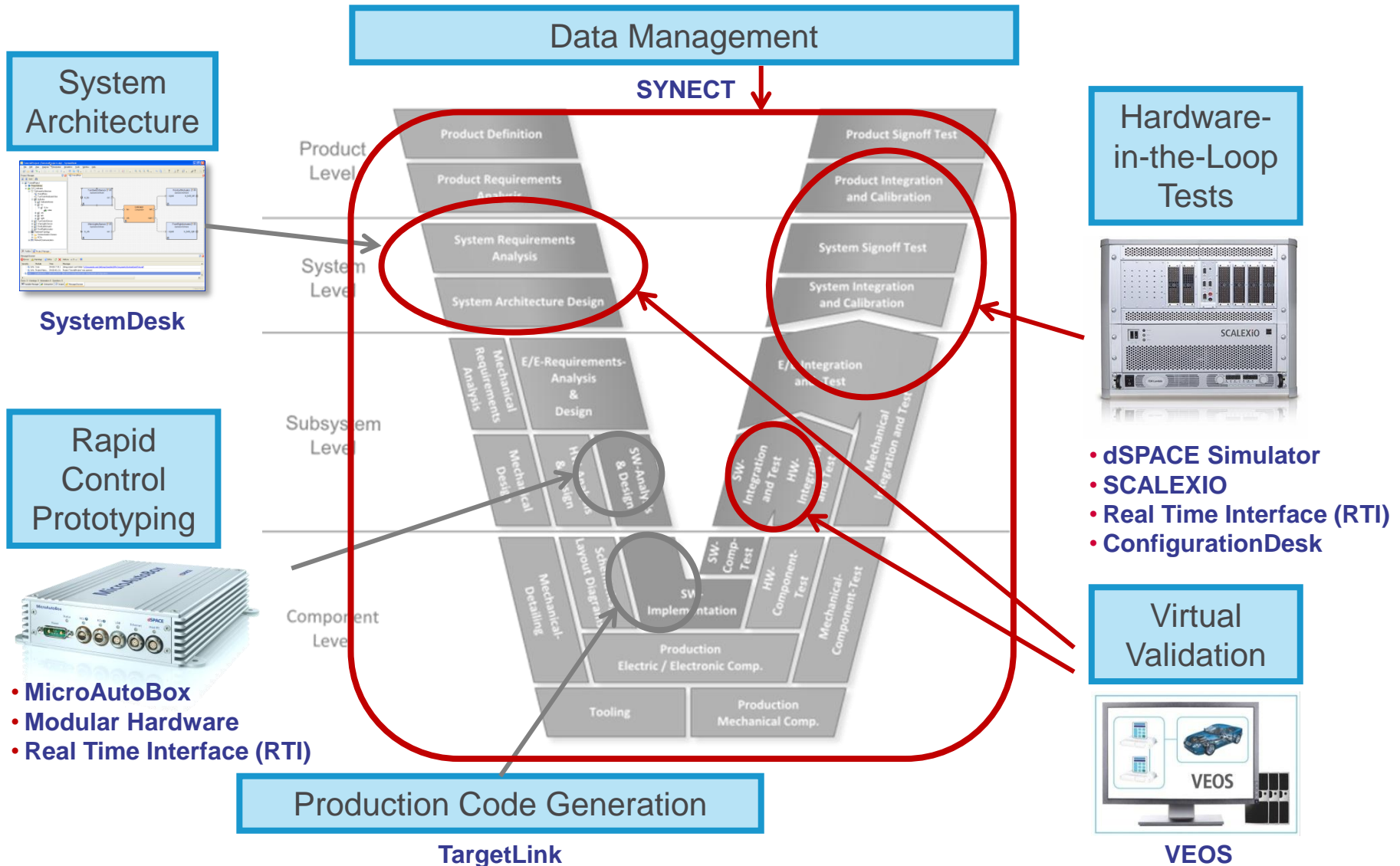
Product Engineer Implementation Software Tools

dSPACE Product Management · Paderborn

dSPACE Products in the Development Process

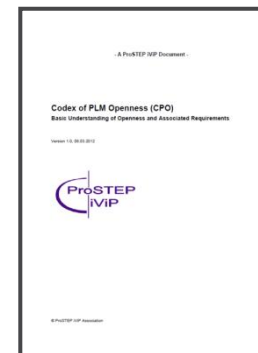


dSPACE Products in the Development Process (FMI)

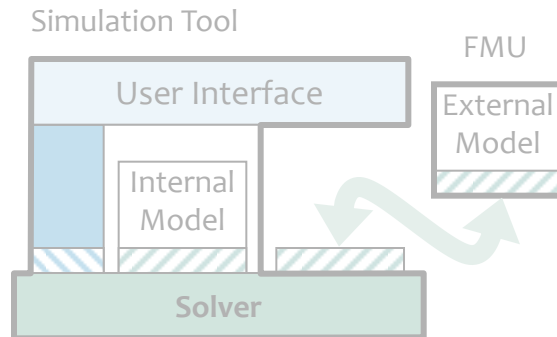


dSPACE supports the integration and usage of different tools on its systems

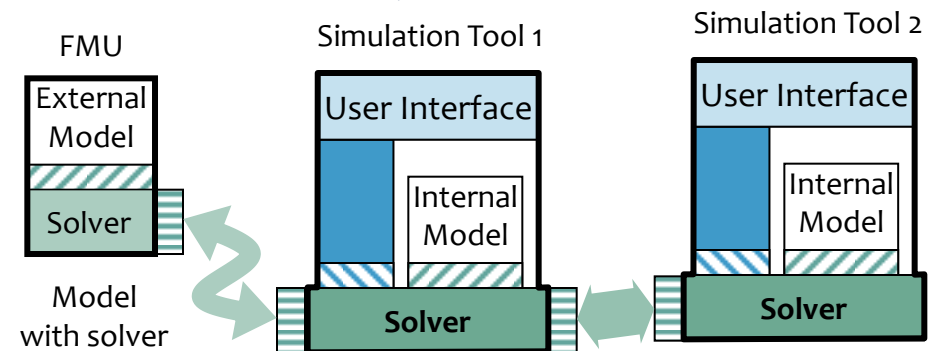
- Market demand for using different tools for certain use cases
 - Exploit advantages of tools for different use cases (e.g. gear shift models via physical modeling)
 - Consistency and reuse of models in different development phases and departments of a company
- FMI is a new open standard and we support it additionally to the established and successful MATLAB / Simulink® based tool chain
- dSPACE has signed the Codex of PLM Openness
 - Active in ASAM XIL API and FMI standardization



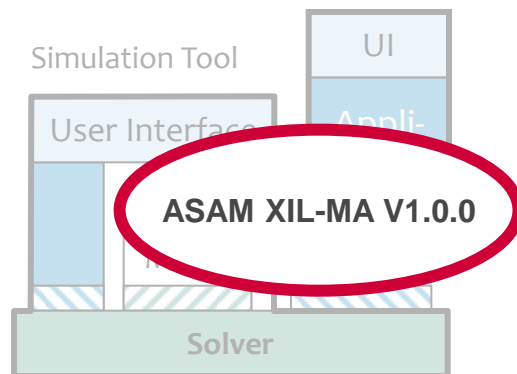
1. FMI for Model Exchange



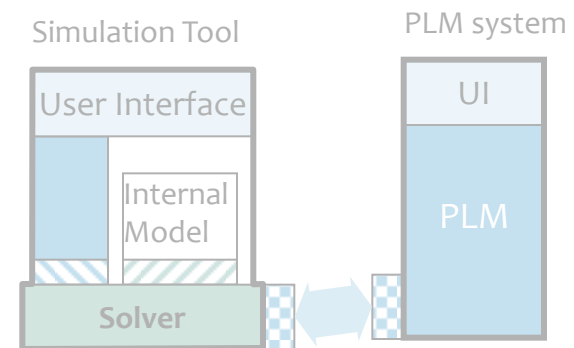
2. FMI for Co-Simulation



3. FMI for Applications



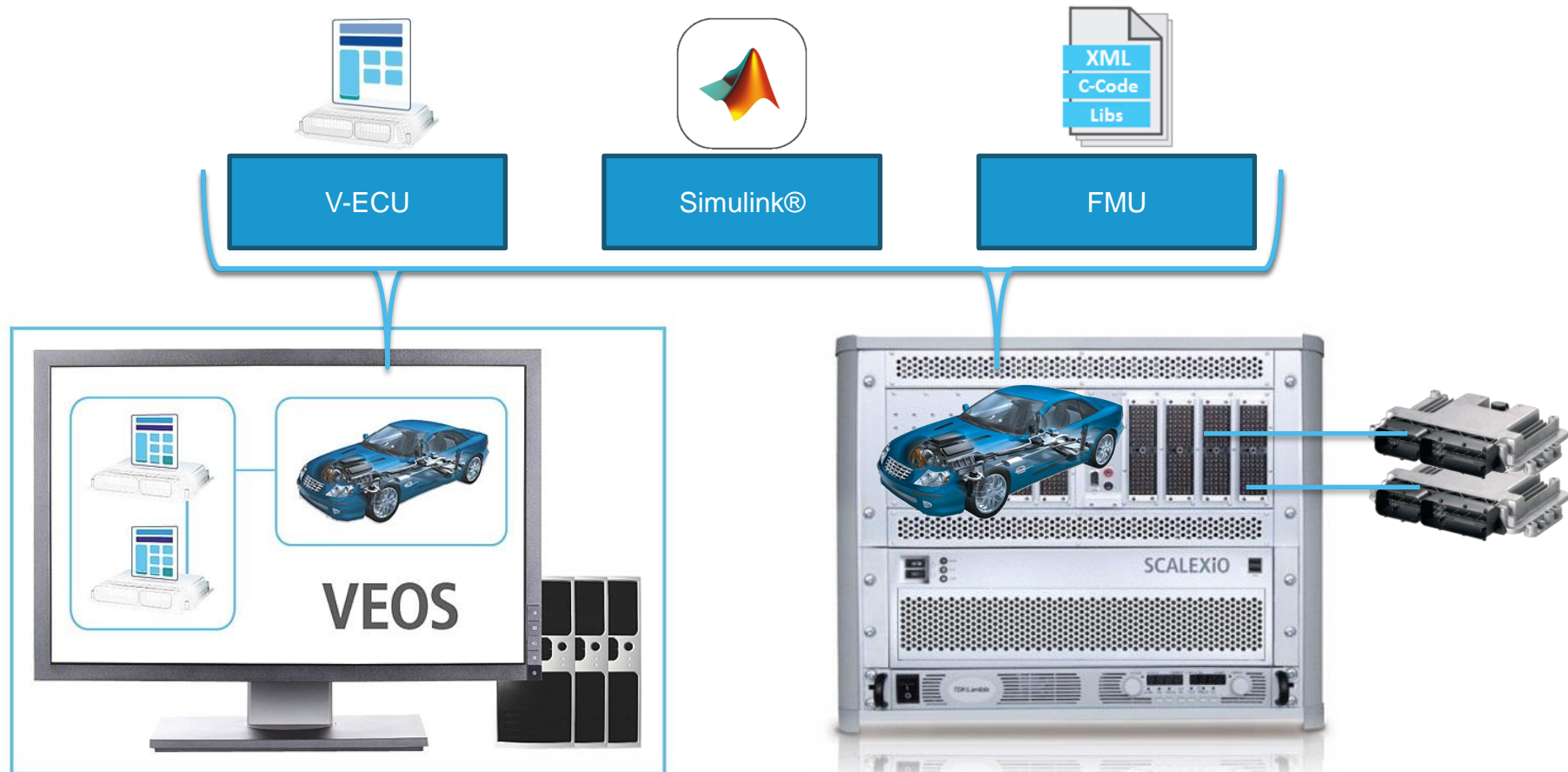
4. FMI for PLM (Product Lifecycle Management)



Source/based on:



- dSPACE supports FMI with release **2014-A**
 - Virtual Validation – **VEOS**
 - Hardware In the Loop – **SCALEXIO**
 - Model Management – **SYNECT (mid/end 2014)**
- Contact to tool vendors for a smooth operation of the FMI workflow
 - e.g. Dassault Systèmes (Dymola), ITI (SimulationX), MapleSoft (MapleSim)
- Contact to OEMs for pilot projects and use case investigations
- Supported FMI versions
 - **FMI 2.0 RC1 for Co-Simulation** and successive versions
 - New features in FMI 2.0 are beneficial for HIL and Virtual Validation use cases
- 3rd Party FMI support for DS1006 (e.g. Modelon FMIT)



Early, PC-based validation of ECU software and functions

Seamless reuse of tools, models, tests, layouts, data, etc. in real ECU testing

Integrated Tool Chain – Reuse of Tests and Data



ControlDesk
Next Generation

Instruments and
simulation control



AutomationDesk

Test automation and
evaluation



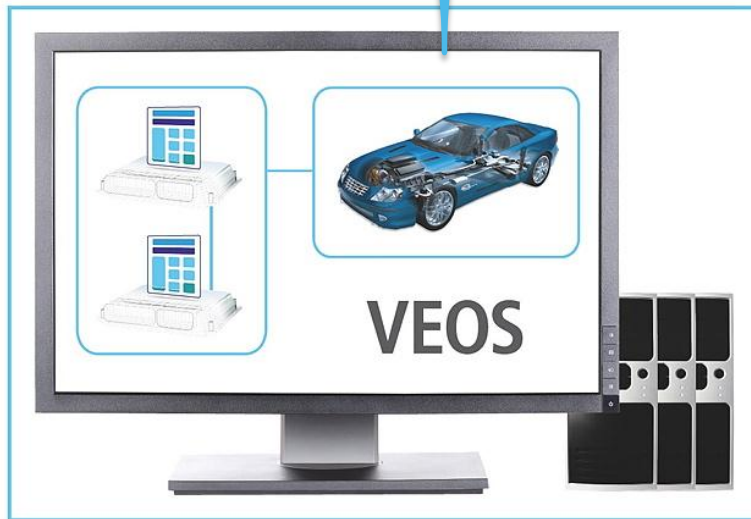
ModelDesk

Road and maneuver
definition



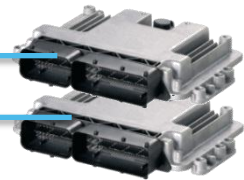
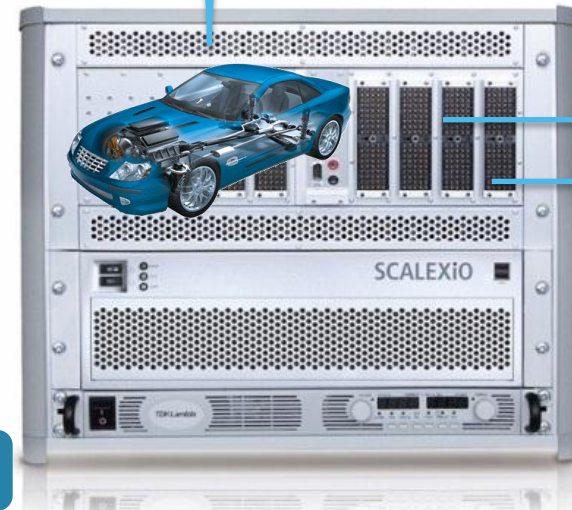
MotionDesk

Visualization and
animation



VEOS

XIL API



Third-Party Test Tools

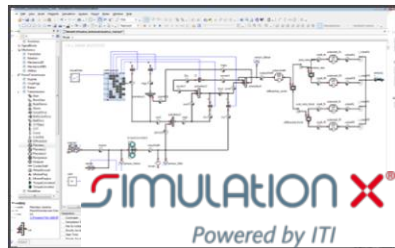
Early, PC-based validation of ECU
software and functions

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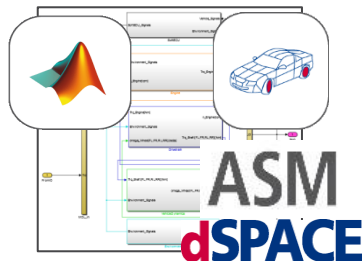
Modeling



Engine

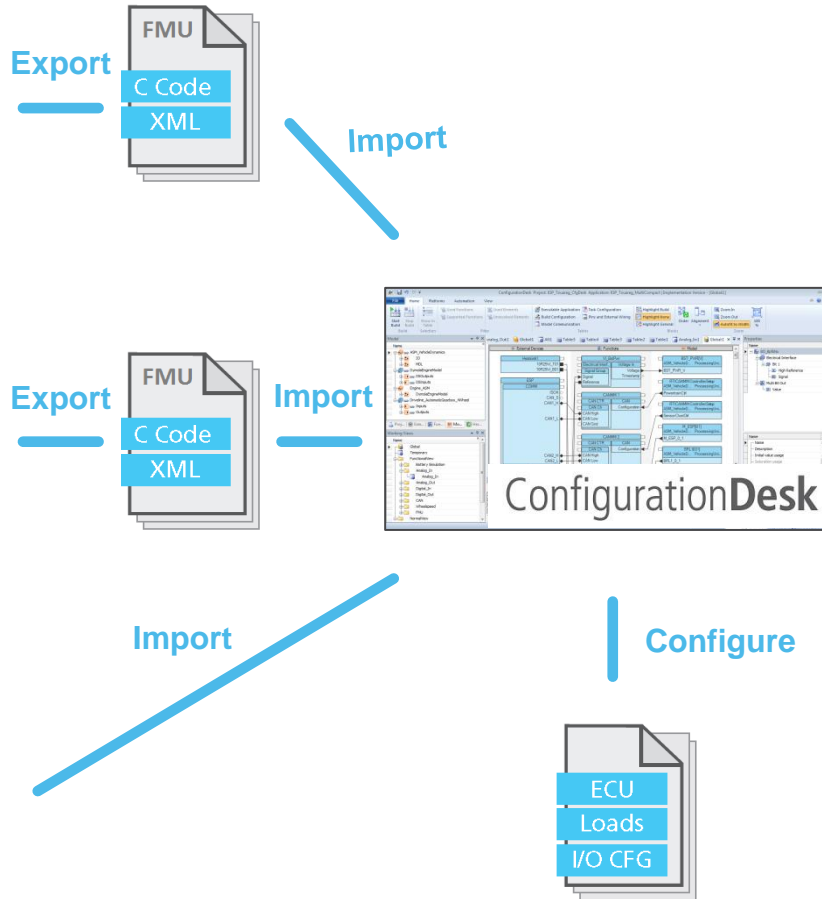


Drivetrain



Vehicle Dynamics

Integration



HIL Simulation



Download

Access



Connect



ESP ECU

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