

# FMI for physical models on automotive embedded targets

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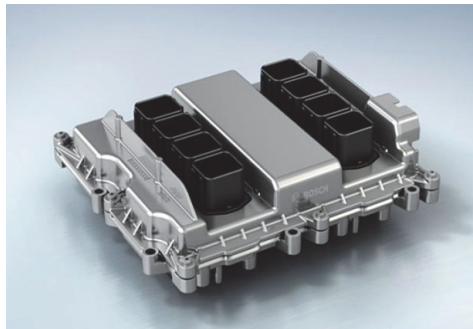
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From the beginning in the MODELISAR project, a wide range of possible simulation target platforms for FMI (Blochwitz et al. 2011) was foreseen, ranging from offline simulation platforms over Hardware-in-the-Loop (HiL) real-time systems to embedded systems. While in the offline simulation world FMI is well-established, this is not the case for embedded applications.

This paper presents results of a prototypical FMI implementation for physical models on automotive embedded targets. Especially, the possibility to include and execute source code functional mockup units on Bosch electronic control units is explored. After giving an overview of the state of the art of physical models on real-time systems, a prototype implementation of FMI on a Bosch MDG1 Electronic Control Unit (Rüger et al. 2014) is introduced. Assumptions and limitations are documented and special emphasis is laid on requirements for the contained C-code.



**Figure 1.** Bosch MDG1 ECU

As an outlook, aspects for an adaptation of the FMI standard to the usage on automotive embedded real-time systems are proposed.

## References

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