The design platform COSIDE® by Fraunhofer IIS/EAS is the perfect tool to develop and design innovative heterogeneous hardware and software systems. This software tool is the first commercial design environment based on the SystemC and SystemC AMS standards to model and simulate highly complex analog and digital systems.

Reasons for SystemC AMS and COSIDE®
- High modeling and verification efficiency
- Higher model quality
- Reusability of models
- Low entry level due to the automation of the design process
- Enables system analysis and optimization before the availability of real hardware
- Improves collaboration of SW and HW teams
- Higher customer satisfaction due to the creation of an executable specification
- Extremely fast simulation through improved algorithms
- Easy handling of even the largest and most complex models
- Discovering critical design failures at an early stage of the development cycle
- Rapid debugging of HW/SW models
- Simulation free of charge

Closing the Gap

The modeling language SystemC AMS is closing the gap between the analog and digital world and between idea, concept and implementation in the design process of complex electronic systems within a heterogeneous environment. It allows a holistic design approach by considering the different worlds of development jointly. SystemC AMS enables overall system modeling and virtual prototyping. COSIDE® is the way to benefit from it.
Current Applications:

- Safety critical automotive systems (TIER1 and TIER2)
- Communication and RF systems
- Control systems
- High speed interfaces

Main Features of COSIDE®:

- Combination of analog and mixed-signal HW and SW
- Simple and fast model export to numerous simulation tools (Matlab, Cadence, Synopsys, etc.)
- Available for Windows as well as for Linux workstations
- Automates the process of creating a virtual prototype
- System integration and block-level verification
- Easy to use schematic design entry
- Wide selection of predefined basic library elements
- Extremely fast simulation capabilities
- Support of an ISO 26262 conform design process
- Automated code generation
- Scriptable mixed signal wave viewer
- Support of hardware-in-the-loop simulation and testing
- Integrated version control
- Generation of IP-protected customer models (black-box-executable model)
- Monte Carlo simulation on system-level
- UVM and assertion based mixed-signal verification and regression test
- Formal verification
- SystemC AMS Spice integration
- IEEE 1666-2011 SystemC TLM 2.0 standards and Spice 3 based environment

Motivation for Using COSIDE®

- Time and cost reductions combined with a significant increase of quality improvement are the key benefits for users of the SystemC AMS platform. SystemC AMS in combination with COSIDE® is an approach for solving highly complex industrial tasks and academic problems.

- Time to market reduction is a significant competitive advantage over all industries. Parallel development of hard- and software components and a significant reduction of the simulation time are just two important reasons.

- Cost reduction manifests as a result of a shorter development time and, moreover, in a simple PC setup instead of complex physical test equipment.

- Quality improvement is the result of verification enhancement. The new possibilities of verification of software components, analog/mixed-signal systems and complex hard-/software systems are one of the greatest benefits of COSIDE®.

With Fraunhofer to SystemC AMS

The Fraunhofer Institute for Integrated Circuits IIS with its Design Automation Division EAS in Dresden offers the design environment COSIDE® for building and evaluating virtual prototypes. With our support you can incorporate SystemC AMS into your processes and benefit from its advantages.

Customer proximity is our strength. Our experienced service team is focused on individual needs and can react with a maximum of flexibility. We accompany the whole implementation process and offer additional service contracts and training possibilities.

Check and Conception:

The division EAS demonstrates the performance of the platform within the process of an evaluation to show its feasibility.

Concretization and Implementation:

We provide comprehensive technical assistance to accompany the transfer and to guarantee an efficient implementation of COSIDE®.

After-Sales Service:

We offer individual and customer specific services. The customer has the option to take advantage of technical support for new developments and tools.

Trainings and Workshops:

Our division offers additional workshops and custom trainings to qualify designers for the latest solutions as well as for future tasks in system-level design.