SystemC and SystemC AMS Advanced Modelling in COSIDE®

What is COSIDE®?

The electronic system level tool **COSIDE®** is the first commercial available environment fully supporting the SystemC & SystemC AMS language standards. COSIDE® enables overall system modeling and simulation for analog and digital as well as for hard- and software.

What is SystemC / SystemC AMS?

The language **SystemC** has been developed to support system level design. It is applied for system-level modeling, architectural exploration, performance modeling, software development and functional verification.

Its analog extension **SystemC AMS** enables designers to model and simulate particularly complex heterogeneous systems for digital as well as for analog applications. SystemC and SystemC AMS in combination with C/C++ are typically used to model systems that have both hardware and software content.

What will you learn?

After completion of this training you know how to make complex system-level models in COSIDE® by using advanced programming skills. During the training you will gain deep knowledge about the different modelling capabilities and principles of the modelling language C / C++ / SystemC and its analog extension SystemC AMS.

You gain the ability to write and execute complex models in COSIDE® as well as to debug and analyze them. You become familiar with the analysis, debug, and introspection features of modelling and design environment COSIDE®. You understand how to apply those principles to real world modelling and simulation problems and how to make best use of COSIDE® and the SystemC AMS simulator to debug and validate your models.

Who should attend?

- Hardware design-, concept-, system-, verification- engineers who are dealing with complex analog and digital systems, have basic knowledge with COSIDE® and wish to further deepen their skills in the practical use of COSIDE® & SystemC / SystemC AMS
- Embedded software engineers who already have a basic knowledge of C/C++ and who like to extend their knowledge in the direction of hardware modelling

Training Agenda

This agenda is to be seen as a proposal of the potential range of content. We will provide tailored COSIDE® as well as SystemC / SystemC AMS training tuned to your specific needs and according to your previous knowledge. Our training contains a significant individual part, which will be customized to fit the content, scope and duration needed to best-fit your specific requirements. We are also open to discuss your own project examples within our exercises to provide a specific recommendation for your current project challenge.

1st Day

Short (re-)introduction of SystemC and COSIDE®

- Introduction
- Recap of SystemC Modelling in COSIDE®

C++ Object Oriented Programming (accompanied with Lab)

- Basics: Classes, Functions, Operators
- Polymorphism
- Templates
- Exception handling
- Using external libraries

2nd Day

In-depth SystemC Modelling (accompanied with Lab)

- Introduction
- Virtual platforms using TLM 2.0
- Fault injection
- Regression test setup

3rd Day

In-depth SystemC AMS Modelling (accompanied with Lab)

- Introduction
- Piece-Wise-Linear
- AC-Simulation
- Multi-Domain simulation
- Dynamic TDF and multi rate systems

4th Day

Advances Modelling Features in COSIDE® (accompanied with Lab)

- Creating own model libraries
- Architecture switching
- COSIDE® simulator coupling (focused on Cadence target)
- Performance analysis
- Discussion of current user problems

Software Used in This Course

COSIDE® 2.2 - The Design Environment for Heterogeneous Systems

Training Materials

Our comprehensive and user friendly training materials are included within the training fees.

Duration and Place

The duration of the trainings will be 4 days. The training will take place at your side or at our training center in Dresden, Germany.

Prerequisites

- Basic knowledge modelling and simulation
- Basic knowledge of one Hardware description language
- Basic knowledge C and/or C++
- Basic knowledge of COSIDE®

Offered Languages

English, German

Training Prices

Prices are on request

Please contact us for more information:

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