

COSIDE® Training

What is COSIDE®?

The electronic system level tool **COSIDE®** is the first commercially available environment that fully supports 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 in combination with C/C++ is typically used to model systems that have both hardware and software content.

What will you learn?

After completion of this training you will know how to make system-level models in COSIDE® without the need for high programming skills. You will also gain some basic knowledge about the different modeling capabilities and principles of the modeling language C / C++ / SystemC and its analog extension SystemC AMS.

You will gain the ability to write and execute simple models in COSIDE® as well as to understand and analyze complex SystemC / SystemC AMS models. You will become familiar with the modeling and design environment COSIDE® and with the application of using library components. You will understand how to apply those principles to real world modeling 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 and wish to become skilled in the practical use of COSIDE®. They will learn to create basic SystemC as well as SystemC AMS models, while no high programming skills are required.
- Embedded software engineers & System architects who already have a basic knowledge of C/C++ and who would 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

C/C++ short introduction for SystemC

- Introduction
- C++ Concepts (Classes, Operators, ...)
- Preprocessor Commands
- Dos and Don'ts
- Compiling and Linking

SystemC introduction

- Introduction
- SystemC Example
- SystemC Simulation Cycle
- Writing SystemC Models
- First exercise

COSIDE® Introduction

- Getting started with COSIDE®

SystemC Basic Lab

- Write and run your first SystemC model using COSIDE®

2nd Day

Fundamentals of SystemC AMS

- SystemC AMS Model of Computation
- Timed Dataflow (TDF)
- Linear Signalflow (LSF)
- Electrical Linear Networks (ELN)
- Time domain simulation

SystemC AMS Basic Lab

- Create and run your first SystemC AMS model

Advanced SystemC / SystemC AMS topics

- Testbenches / sc_main
- Tracing
- TLM introduction

- Frequency domain and noise analysis
- Modelling methods

SystemC / SystemC AMS Lab

- Example with SystemC and SystemC AMS modules

3rd Day**COSIDE® Functionality**

- COSIDE® concepts
- COSIDE® editors
- COSIDE® codegeneration
- Project structure
- Compile flow
- Documentation / Help
- Examples
- Debug tools
- COSIDE® configuration
- StateCharts
- Piece wise linear modelling
- COSIDE® Spice integration
- COSIDE® TLM Modelling
- COSIDE® Testbenches
- Formal verification

COSIDE® Lab

- Practice the use of COSIDE® tools and feature

COSIDE® Libraries

- Module Libraries
- Utility Libraries

COSIDE® Complex Lab

- Complex Example with COSIDE® Library usage
- Example from daily work

Discussion of current projects (optional)

- Discussion of modelling approaches for your first real life project
- Discussion of special modelling problems

Software Used in This Course

COSIDE® - 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 3 days. The training will take place at your site or at our training center in Dresden, Germany.

Prerequisites

- Basic knowledge of modeling and simulation
- Basic knowledge of one hardware description language
- Basic knowledge C and/or C++

Offered Languages

English, German

Training Prices

Prices are on request

Please contact us for more information:

COSEDA Technologies GmbH

Koenigsbruecker Str. 124
01099 Dresden, Germany

Karsten Einwich CEO karsten.einwich@coseda-tech.com +49-351-321 490 11	Thomas Hartung Marketing & Sales thomas.hartung@coseda-tech.com +49-351-321 490 31
--	--