



Introduction to SystemC (C103)

This 2-day 'Introduction to SystemC' training module is designed to give an overview of the SystemC language, its history and basic constructs and how it can be used within the design and verification of next generation devices.

Who should attend this course?

- Hardware engineers with an interest in using SystemC for block level modelling
- System engineers with an interest in using SystemC for architecture modelling
- Students looking to acquire knowledge in the area of Transaction Level Modelling (TLM)
- Verification engineers looking to speed up the verification process

Prerequisites

- Delegates should be familiar with using Object Orientated Design (OOD) techniques but an in-depth knowledge is not necessary
- Attendees should be active users of either a high-level software programming language (e.g. C++) or a hardware description language (e.g. VHDL or Verilog)

What will you learn?

- The C++ language features used within the SystemC language
- Object orientated programming techniques as used by the SystemC class libraries
- SystemC language constructs, data types and channels
- The transition from RTL modelling to TLM
- Process definition and concurrency
- The compilation and execution process
- How to use interfaces and channels

Course Material

- Training slides will be provided in paper format for the training session
- All laboratory examples will be included

Full Agenda (C103)

A brief history of SystemC:

- Background
- Why SystemC?
- The benefits of SystemC

Getting started:

- SystemC structure
- File organisation
- Compile and execution
- Modules and hierarchy

Processes and time:

- Concurrency
- SC_METHOD
- SC_THREAD
- Events

SystemC data types:

- Bit accurate and hardware modelling data types
- Signed and unsigned integers
- Type conversion
- Concatenation
- Bit/Logic vectors

Interfaces and channels:

- Creating fast simulation models
- Hierarchical, primitive, and minimal channels
- SystemC interfaces
- The class SC_PORT

Transaction Level

Modelling:

- OSI TLM standards
- TLM method call
- Abstraction levels
- Use cases
- Coding styles

For more information please visit:

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