ECPS 203
Embedded Systems Modeling and Design
Lecture 5

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Lecture 5: Overview

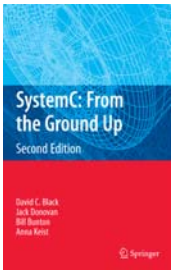
- Introduction to IEEE SystemC
  - Overview
  - Resources
- SystemC: From the Ground Up (Part 1)
  - Introduction to SystemC
  - Core concepts and syntax

SystemC Overview

- SystemC System-Level Description Language
  - C++ class library, layered software architecture
  - Discrete event simulation
  - Hierarchy of *modules* connected by *ports*
  - Communication via *interfaces* and *channels*
  - IEEE Standard 1666-2011
- Abstraction Levels, Modeling Methodology
  - Untimed model
  - Transaction-level model
  - Bus-functional model
  - Cycle-accurate model

SystemC Overview

- Online Resources on ECPS 203 course website
  - Accellera Systems Initiative, SystemC standardization body
  - SystemC Standard Language Reference Manual
    - IEEE 1666-2011 (free download)
  - ➢ *SystemC: From the Ground Up (2nd edition)*
    - ➢ Text book (free download from UCI network)
  - SystemC 2.0, SystemC 2.1
    - Various resources about SystemC history
  - SystemC 2.3.1
    - Current version (installed on EECS servers)
  - SystemC TLM-2.0
    - Introduction, whitepaper, and requirements
  - Quick reference
    - SystemC quick-reference card



IEEE SystemC Language

- SystemC: From the Ground Up (Part 1)
  - **`DAC15_SystemC_Training.pdf`**, slides 1 through 25 by David Black, Doulos
    - SystemC training day at Design Automation Conference 2015

  - *"The Definitive Guide to SystemC: The SystemC Language"*

  - Introduction to SystemC
    - Overview and background
    - Central concepts, SystemC World
  - Core Concepts and Syntax
    - Data
    - Modules and connectivity