

ECPS 203

Embedded Systems Modeling and Design

Lecture 14

Rainer Dömer

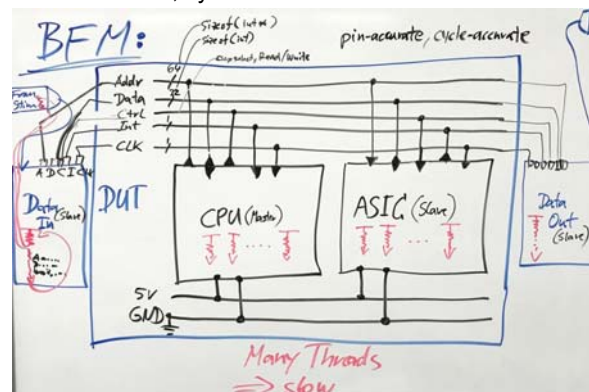
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Lecture 14: Overview

- Communication Modeling with SystemC
 - Traditional Bus Functional Model (BFM)
 - Modules, signals, ports
 - Pin-accurate, cycle-accurate communication



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2

Lecture 14: Overview

- Communication Modeling with SystemC
 - Traditional Bus Functional Model (BFM)
 - Modules, signals, ports
 - Pin-accurate, cycle-accurate communication
 - Slow (1x)
 - Regular Transaction Level Modeling: TLM 1.0
 - Modules, channels, interfaces
 - Method calls into channels
 - Fast (100x)
 - New Transaction Level Modeling: TLM-2.0
 - Initiators, targets, sockets
 - Method calls into targets
 - Supports Direct Memory Interface (DMI)
 - Very fast (1000x)

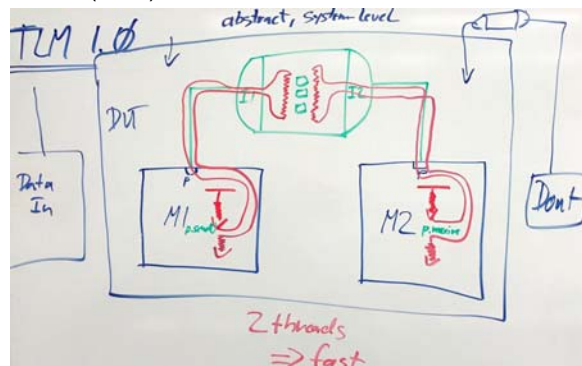
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3

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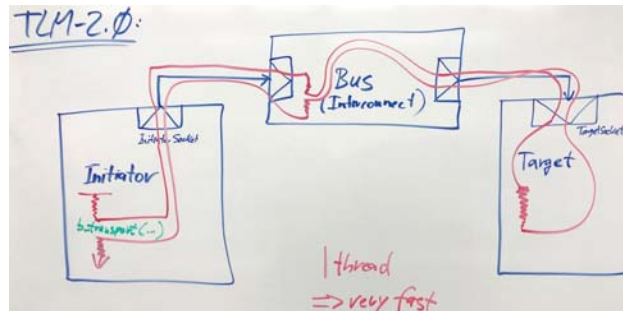
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4

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5

IEEE SystemC Language

- Transaction Level Modeling with SystemC:
 - TLM 1.0 and TLM-2.0
 - **DAC15_SystemC-TLM20_Training.pdf**,
slides 1 through 50
by David Black, Doulos
 - SystemC training day at Design Automation Conference 2015
 - *“The Definitive Guide to SystemC:
TLM-2.0 and the IEEE 1666-2011 Standard”*
 - What is IEEE-1666-2011
 - Transaction Level Modeling
 - The architecture of TLM-2.0
 - Initiator, interconnect, target & sockets
 - The generic payload
 - Loosely-timed coding style
 - Extensions and interoperability

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6