



SystemC Community Update

Eric Lish, OSCI Chairman

SystemC Day
DVCon 2010
San Jose CA
Feb 22, 2010

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Outline

- Update on the OSCI organization, events and activities
- Technical Working Group updates
 - Synthesis
 - Language
 - Transaction-Level Modeling (TLM)
 - Analog/Mixed-Signal (AMS)
 - Configuration, Control and Inspection (CCI)
- Video Tutorials Available
 - TLM-2.0 in Action Video Tutorial



OSCI Membership

Corporate Members



Associate Members



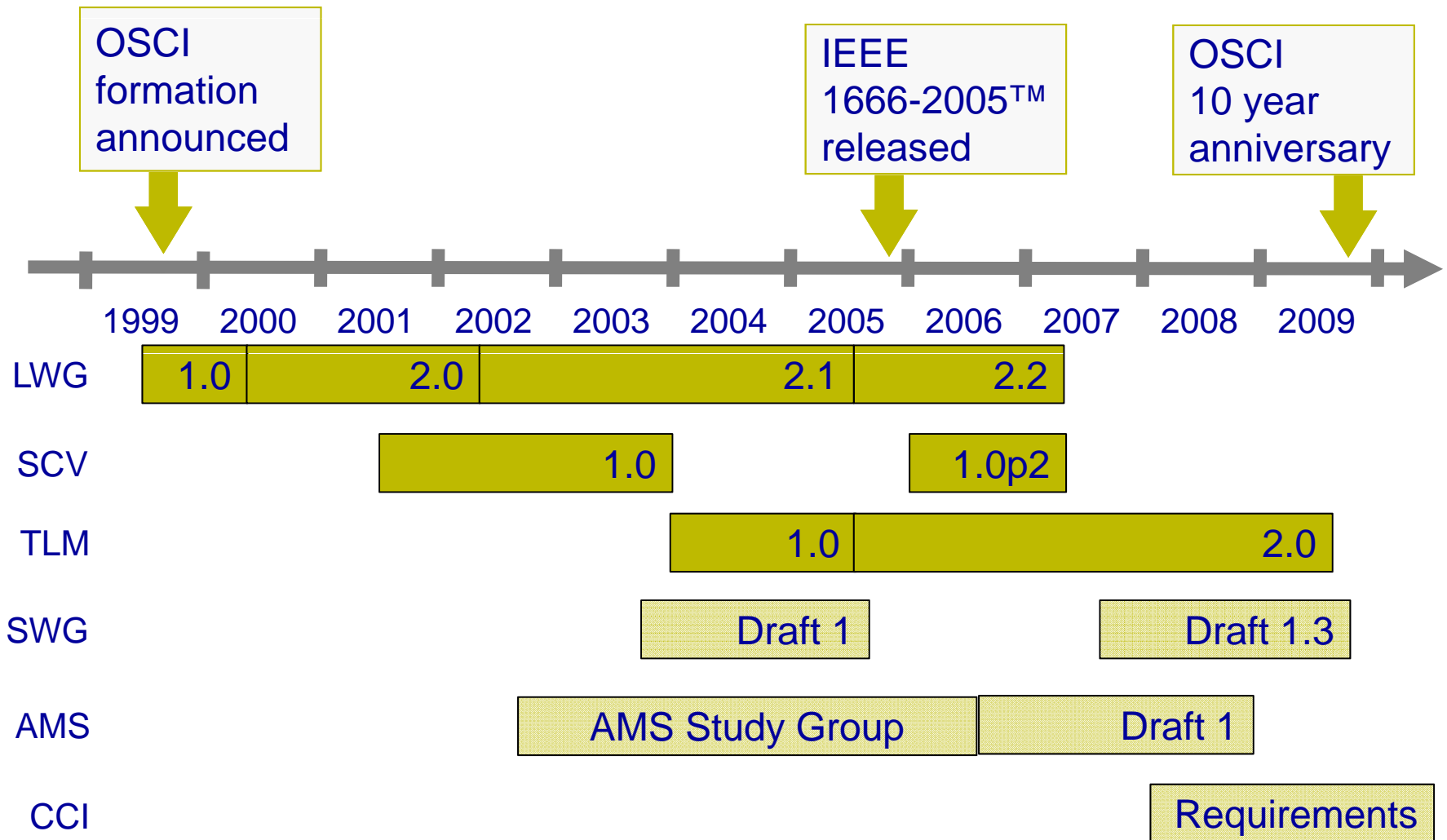
32 members

Broad-based User Community

- SystemC User groups are worldwide
 - European SystemC User Group
 - Annual SystemC Users meeting in Japan
 - ◆ Previously by JEITA
 - ◆ Starting this year by OSCI
 - North America SystemC User Group
 - Latin America SystemC User Group in Brazil
 - India SystemC User Group
 - Taiwan SystemC User Group
 - ◆ First meeting 2009



OSCI Standards History



SystemC Events And Activities 2009

- End Draft 1 AMS public review
- Start Draft 1.2 Synthesis Subset public review

- TLM-2.0 Reference Manual
- Synthesis Subset Draft
- Results of AMS Draft 1 Public Review

CCI WG formed

Public reviews of:

- AMS Draft 1 std.
- CCI requirements

Q1 '09

Q2 '09

Q3 '09

Q4 '09

FEATURED EVENT

JEITA SystemC
User's Forum
EDS Fair
Yokohama, Japan

FEATURED EVENT

ESCUG 19
DATE
Nice, France
April 21, 2009

FEATURED EVENT

NASCUG 11
SystemC Live!
Town hall Meeting
DAC – July 27

FEATURED EVENT

TSCUG 1!
Hsinchu Taiwan
Nov 16

FEATURED EVENT

NASCUG 10
DVCon
San Jose, CA
February 24, 2009

FEATURED EVENT

SystemC Japan
Shin Yokohama,
Japan
July 10, 2009

FEATURED EVENT

LASCUG 2
Brazil
Aug 30

FEATURED EVENT

ESCUG 20
Grenoble
Dec 1

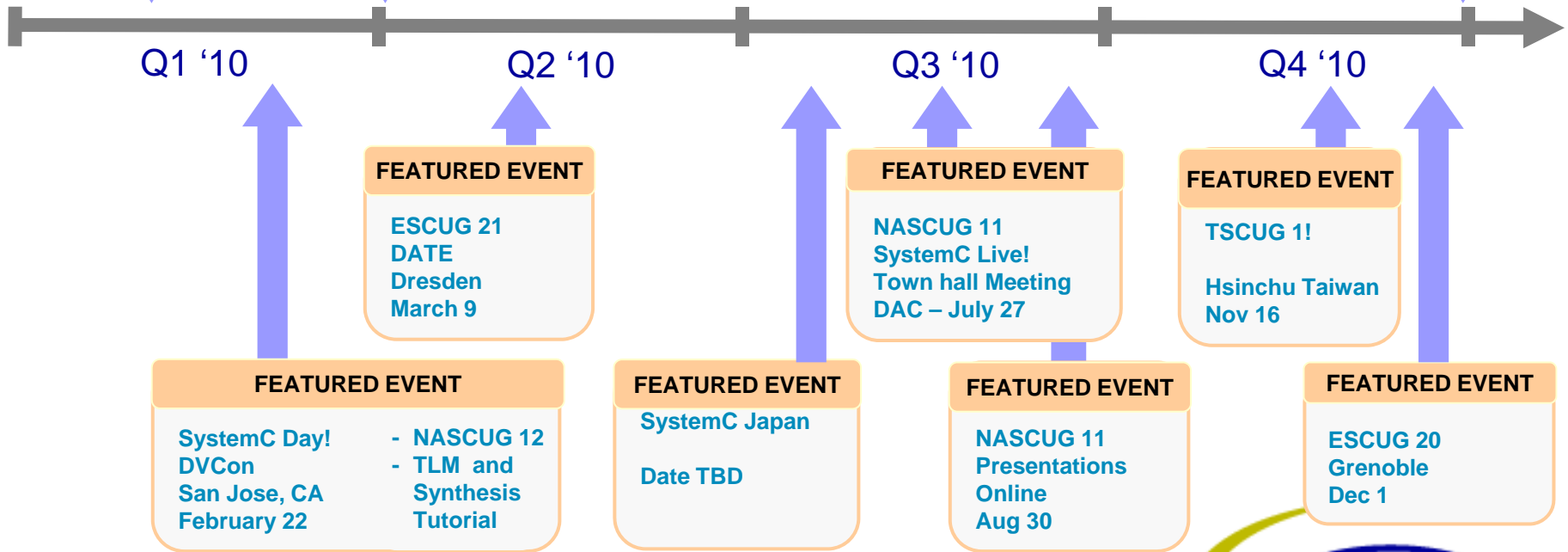


SystemC Events And Activities 2010

- AMS Standard1.0 (planned)

- IEEE 1666™- 2010 (planned)

CCI
Requirements



Synthesis WG Update

- Public review of draft 1.3 underway! Updates include:
 - Supported language constructs established
 - Added section on processes, clocks, resets
 - Added discussion on abstraction levels to introduction
 - Simplified and clarified
- Tutorial at DVCon Feb 22 San Jose CA

Download: http://www.systemc.org/downloads/drafts_review/

Feedback: http://www.systemc.org/Discussion_Forums/synthesis_forum/

Chair: Andres Takach, Mentor

Vice-Chair: Mike Meredith, Forte

Language WG Update

- Interest in IEEE 1666 Standard continues strong
 - 27,793 total downloads of IEEE 1666-2005 LRM
 - 4217 downloads Jan 1, 2009 to May 31, 2009
- Current LWG activity
 - Preparing a bug-fix release, focusing on incompatibilities between SystemC 2.2 and IEEE 1666-2005 LRM
 - Members and non-members can report these at:
 - ◆ http://www.systemc.org/about/contact_us/

Chair: Mike Meredith, Forte



Transaction-Level Modeling WG Update

- TLM-2.0 released June 9, 2008; experiencing rapid adoption
 - 8,818 downloads as of 6/25/09
 - Includes Users Guide, implementation and examples
 - Encompasses:
 - ◆ Approximately Timed (AT) & Loosely Timed (LT) modeling
 - ◆ Temporal Decoupling
 - ◆ Direct Memory Interface
 - ◆ Debug Transactions
 - ◆ Extensible Base Protocol for modeling memory mapped buses
- Public release of TLM-2.0 Reference Manual
 - Accompanied by TLM library: release 2.0.1.



Chair: Bart Vanthournout, CoWare Vice-Chair: James Aldis, Texas Instruments

Analog/Mixed-Signal WG Update

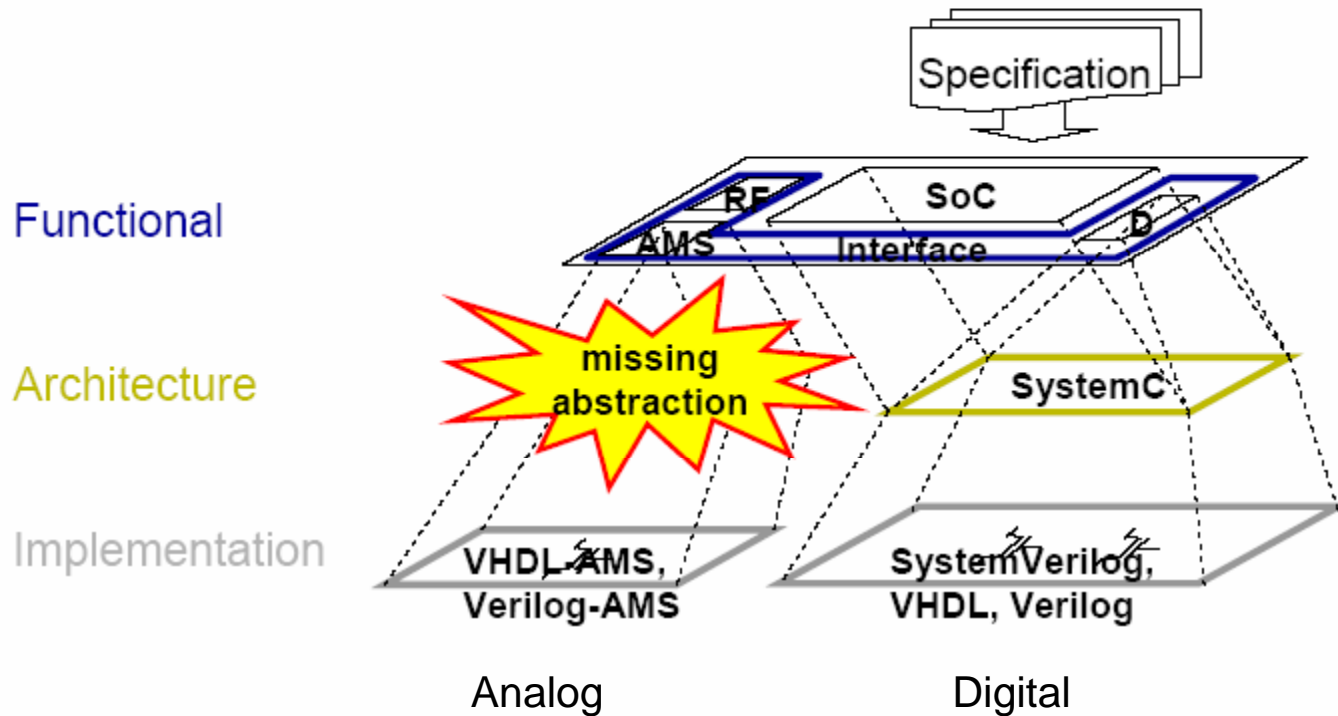
- Public review of the AMS Draft 1 kit completed in March 2009
The kit includes:
 - LRM and requirements specification
 - Whitepaper “An Introduction to Modeling Embedded Analog/Mixed-Signal Systems using SystemC AMS extensions”
- Results of public review
 - WG is enhancing documentation
 - Update to AMS LRM in the works
 - Next: users’ guide for SystemC AMS extensions
- Steady membership growth: 53 individuals from 19 organizations
 - Solid support from semi industry, universities and EDA/ESL vendors

Chair: Martin Barnasconi, NXP Semiconductors

Vice-Chair: Christoph Grimm, Vienna University of Technology



SystemC-AMS Will Supply The Missing Abstraction



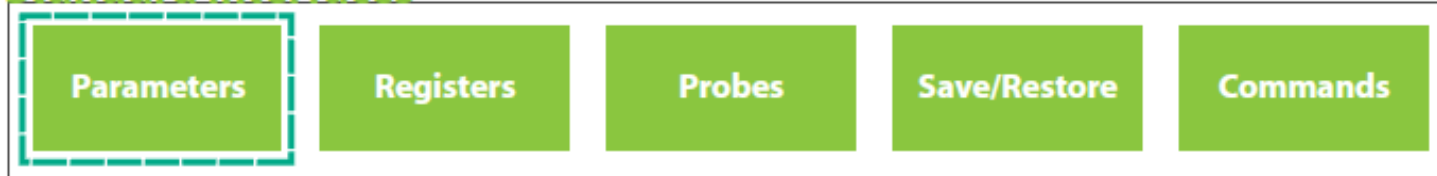
Configuration, Control & Inspection WG

Standardizing interfaces between models and tools

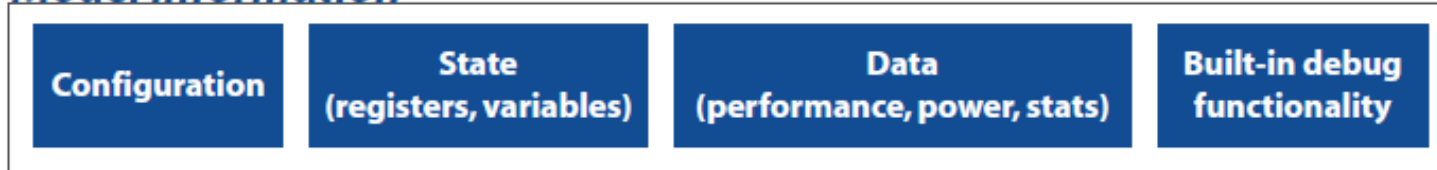
Tool Use Cases



Standard Interfaces



Model Information



Chair: Trevor Wieman, Intel. Vice-Chair: Bart Vanthournout, CoWare

Configuration Parameter Requirements



- Available for public review Feb. 22, 2010
- A sampling of key requirements:
 - Parameter information (type, description, default value, value's origin, etc.)
 - Parameter lookup
 - Parameter types (immutable, elaboration-time, mutable)
 - Parameter lifetimes
 - Precedence for overriding parameter values
 - Notification of parameter value changes
 - Locking parameter values
 - Parameter access control (read-only, hidden, etc.)
 - Portable parameter value encoding
- Feedback and discussion highly encouraged via the `cci_forum`

IEEE P1666 Activity

- SystemC standards activity outside OSCI
- IEEE P1666 has begun meetings to discuss an update to IEEE™ 1666-2005 Standard for SystemC
- Items under consideration include
 - Errata
 - Incorporation of TLM-2 API
- Interested parties should contact IEEE P1666 chair: Stan Krolikoski stanleyk@cadence.com

Video Tutorials



■ TLM-2 In Action Tutorial

- From DVCon 2009
- 5 Technical presentations
- Examples and in-depth details
- Benefits new and experienced designers



David Black
XtremeEDA



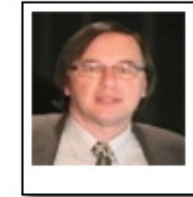
John Aynsley
Doulos



Zhu Zhou
Intel



Frank Schirmeister
Synopsys



Jack Donovan
XtremeEDA

■ NASCUG 11 Presentations

- 4 technical presentations
- Tutorial: Using TLM-2 extensions



Luca Ferro
TIMA Laboratory



Karsten Einwich
Fraunhofer IIS/EAS



David Black
XtremeEDA



William Gnad
Lockheed Martin

■ DVCon 2010 sessions coming soon!

Available at: <http://www.systemc.org/news/videos>



Summary

- OSCI continues to advance the ESL industry with SystemC standards
- Synthesis Subset draft 1.3 in public review now
- TLM-2.0 is seeing rapid adoption across the ecosystem
 - New TLM-2.0 in Action video tutorial
 - TLM-2.0 OSCI Reference Manual is now available
- SystemC AMS draft 1 has now completed public review
- Configuration, Control & Inspection WG released requirements
 - Still time to get in on the ground floor!

Visit www.systemc.org for details!