



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



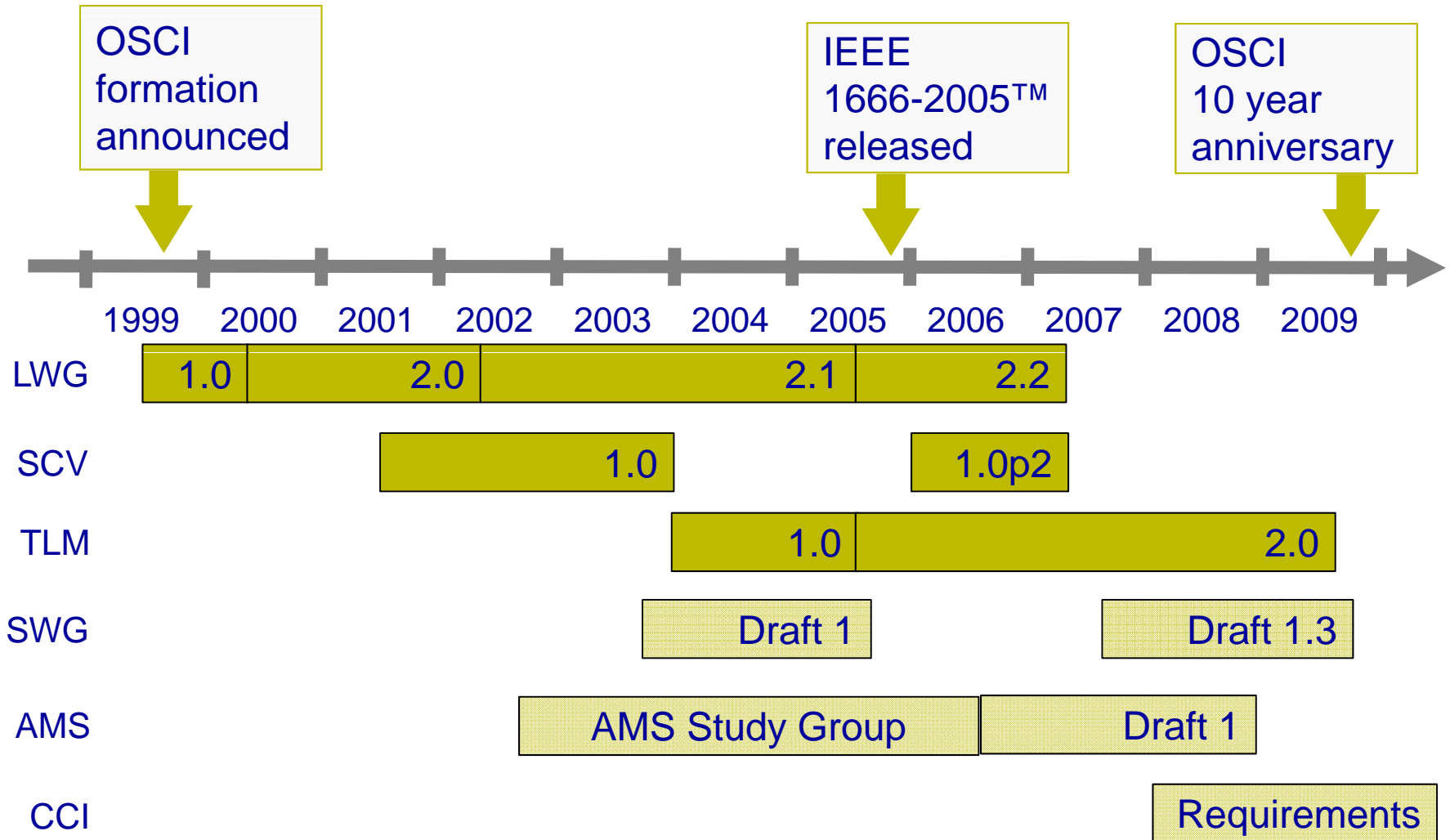
32 members

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

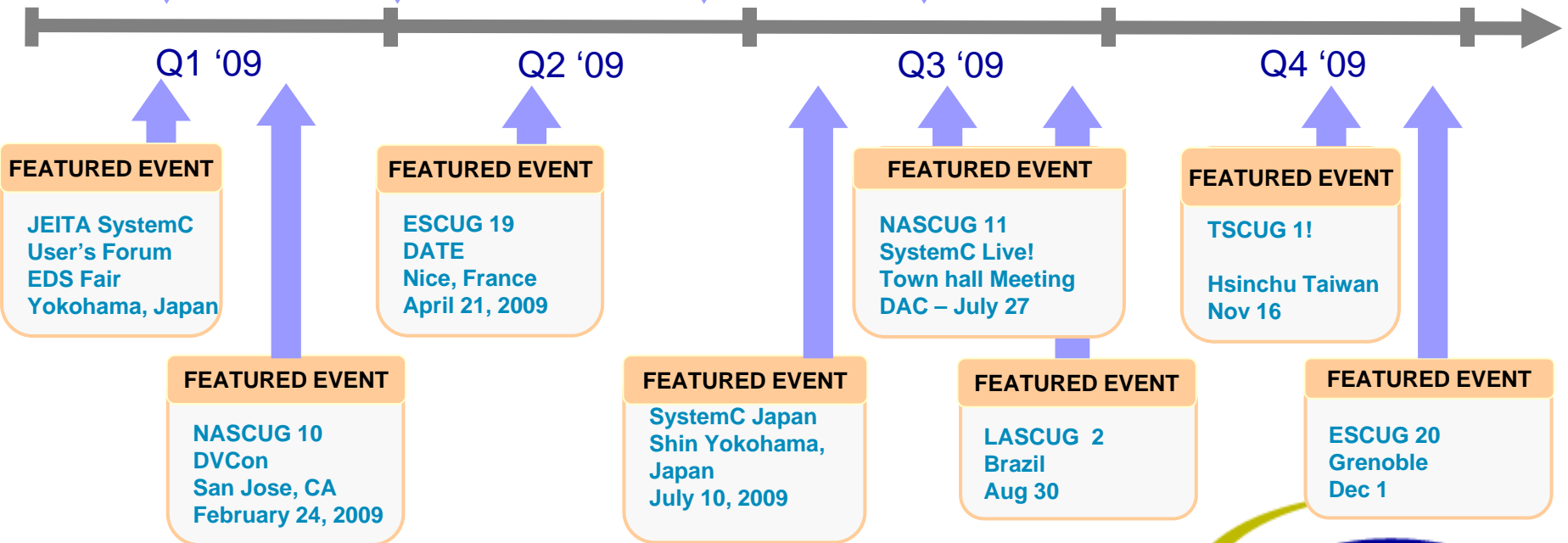
- End Draft 1 AMS public review
- Start Draft 1.2 Synthesis Subset public review

- 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

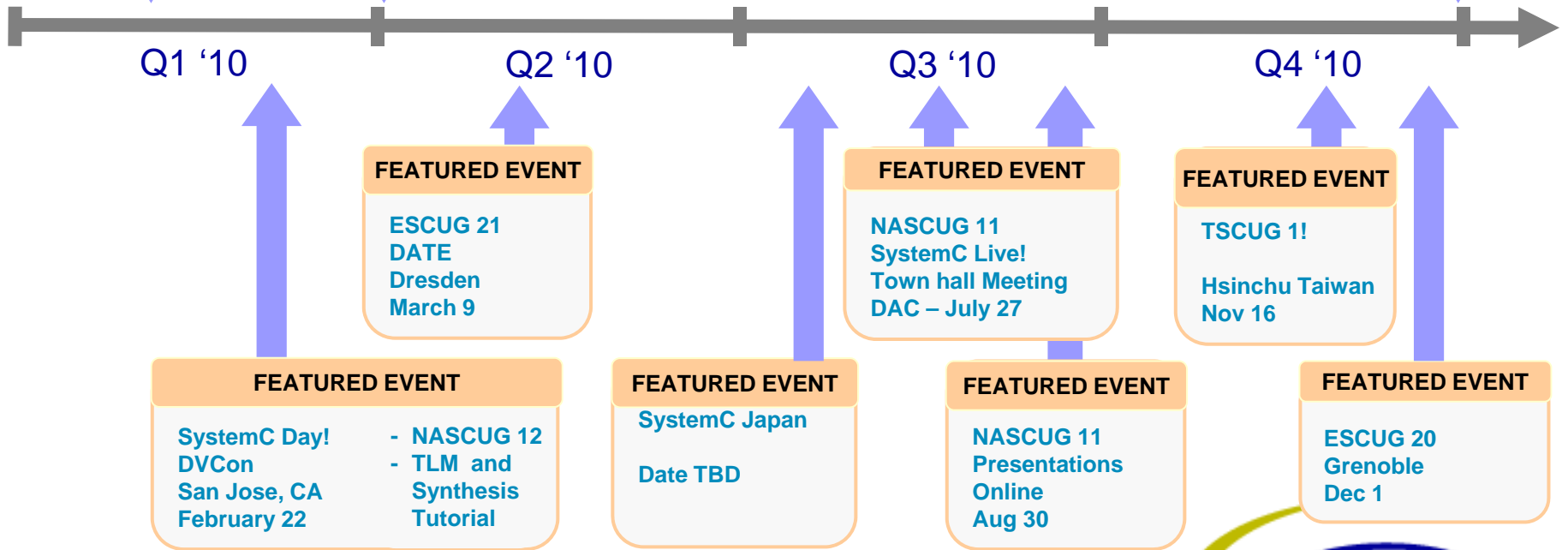


SystemC Events And Activities 2010

- 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

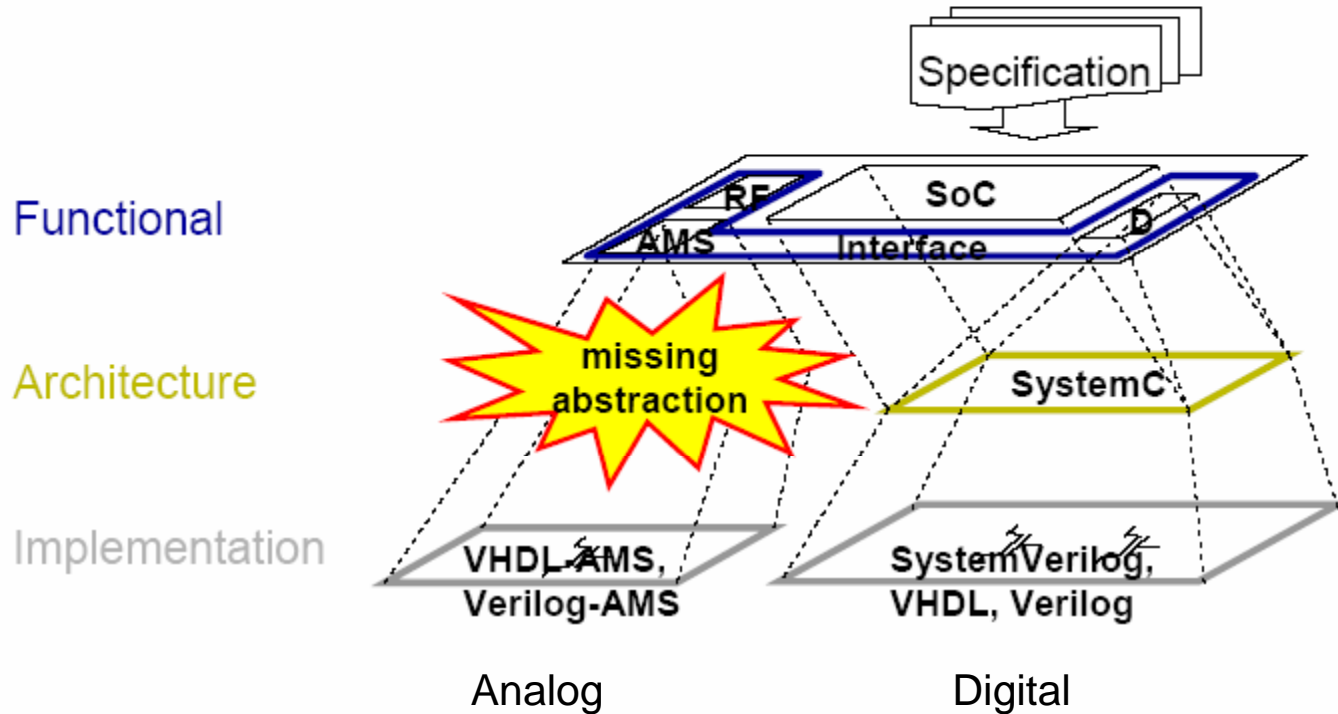
- Public review of the AMS Draft 1 kit completed in March 2009
The kit includes:
 - LRM and requirements specification
 - Whitepaper “An Introduction to Modeling Embedded Analog/Mixed-Signal Systems using SystemC AMS extensions”
- Results of public review
 - WG is enhancing documentation
 - Update to 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



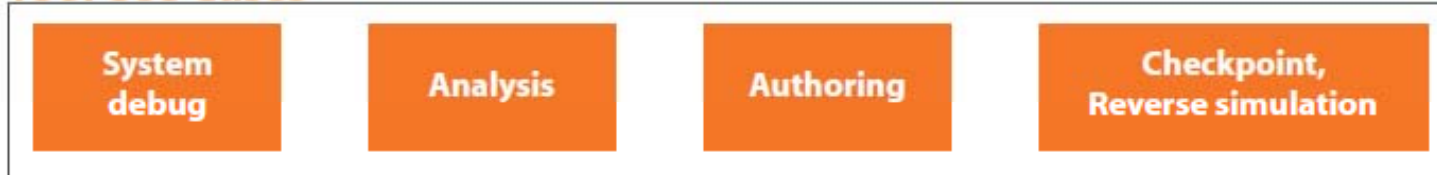
SystemC-AMS Will Supply The Missing Abstraction



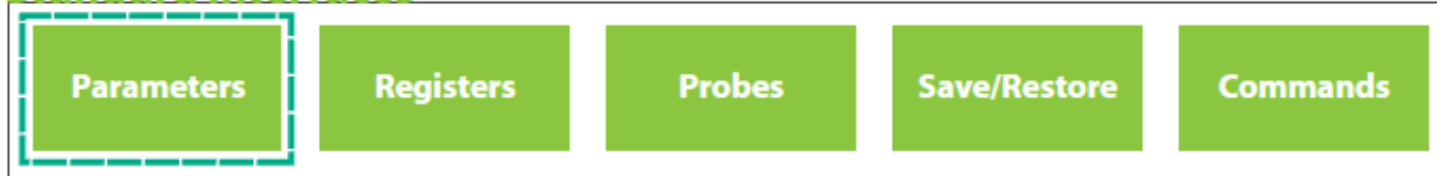
Configuration, Control & Inspection WG

Standardizing interfaces between models and tools

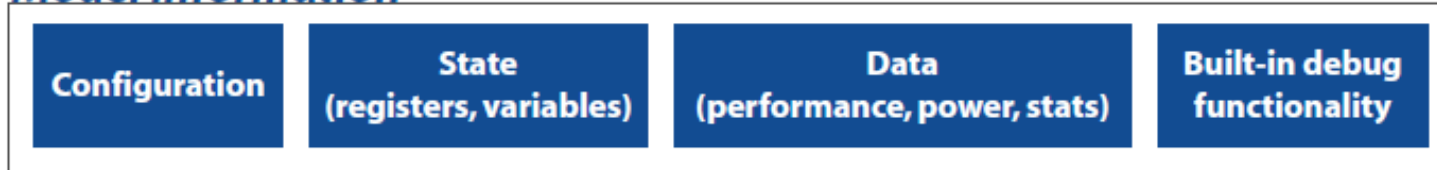
Tool Use Cases



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



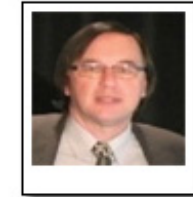
John Aynsley
Doulos



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!