SystemC Evolution Day
Theme 2022: Evolution and Ecosystem

Martin Barnasconi
Accellera Technical Committee Chair

accellera.org
In Memoriam

Andres Takach passed away in 2022

- Chair of the SystemC Synthesis Working Group, since the Open SystemC Initiative (OSCI)
- Recognized for his contributions to the SystemC Synthesizable Subset standard
- Driving High Level Synthesis (HLS) methodology and technology developments
- Key contributor to the Algorithmic C (AC) Datatypes
Outline

• Welcome
• History
• Agenda
• Theme: Evolution and Ecosystem
Welcome

• Welcome to the 7th SystemC Evolution Day!
• Main theme today: **Evolution and Ecosystem**
  – Evolution: Discuss developments, standardization and common practices around SystemC
  – Ecosystem: Exploring and understanding *the bigger ecosystem*, and the role (if any) of SystemC in such ecosystem
• Format: *interactive event*
  – We encourage **YOU** to ask questions, give recommendations or make proposals how to evolve SystemC
  – We reserved some ‘extra time’ (Q&A slots) for open discussions
Organizing team

• Ola Dahl, Ericsson (chair)
• Mark Burton, Qualcomm
• Martin Barnasconi, NXP
• Christian Sauer, Cadence
• Peter de Jager, Intel
• Jerome Cornet, STMicroelectronics
• Lynn Garibaldi, Accellera
• Laura LeBlanc, Conference Catalysts

Special thanks to
Panelists
  Mark Burton, Qualcomm Inc.
  François-Frédéric Ozog, Shokubai
  Manfred Thanner, NXP
  Bart Vanthournout, Synopsys
Moderator
  Jakob Engblom, Intel
Special thanks to the SystemC Evolution Day event sponsors:
History

European SystemC User Group 2013 2014

SystemC 2015 BoF 2016

SystemC Evolution Day 2017

DVCon Europe

SystemC Fika 2021

Today

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## Agenda

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Evolution and Ecosystem

Smart Cities

Smart Industries / Factories

Smart Mobility

Smart Energy / Grid

Smart Mobility

Model Based Systems Engineering (MBSE)

Digital Twin / Digital Thread

Federated Simulations of Systems of Systems

Software-defined Everything

AMS

TLM

CCI

SCP

SCV

Synthesis

Verification

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DDS  UML  OSI  TLM  SysML  AMS  CCI  QEMU  FMI / FMU  SCP  SCV  Synthesis  Veriﬁcation  SMP2  DCP  ED247 VISTAS  DCP  UML  OSI  TLM  SysML  AMS  CCI  QEMU  FMI / FMU  SCP  SCV  Synthesis  Veriﬁcation  SMP2  DCP  ED247 VISTAS
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Application context, Use Cases, Requirements, ...

SystemC modeling (abstraction) / and simulation concepts

DDS, UML, SysML, OSI, TLM, AMS, CCI, QEMU, SCP, SMP2, SCV, ED247, VISTAS, DCP, FMI, FMU, OSI, SMP2
Some SystemC evolution themes and questions…

- What will the (new) SystemC standard bring? ... and what is still open?
- What should be added to SystemC to improve its usage and adoption for the next 10+ years?
- How do we increase the turnaround time of updates or fixes in the SystemC reference implementation or its associated libraries?

Some of these questions will be answered today…
Some ecosystem themes and questions...

- How to establish a tighter integration between SystemC and the SW development ecosystem (incl HW and OS Virtualization)?
- What is the role of SystemC in a Federated Simulation environment?
- How does SystemC fit in a modern product creation process following a Product Lifecycle Management (PLM) and/or Model Based Systems Engineering (MBSE) approach?
- Could / should SystemC be used in the creation of Digital Twins?

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  – Bart Vanthournout, Synopsys
• Moderator
  – Jakob Engblom, Intel
Logistics – Coffee and Lunch

• SystemC Event in **Forum 8**
• Coffee and Lunch served in **Foyer Forum 8** (in front of this room)