TLM-Serial
Status and future work

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SYSTEMC™ EVOLUTION DAY
OCT 23, 2018 | MUNICH | GERMANY

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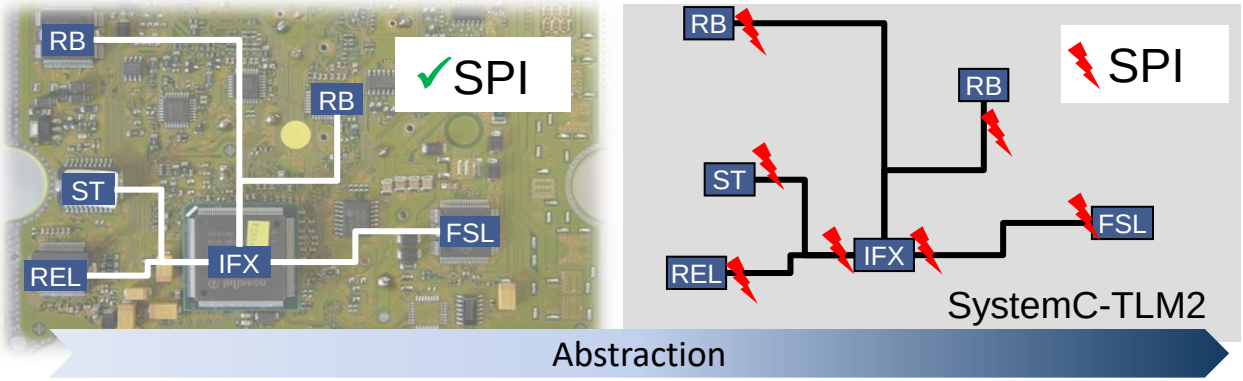
TLM-serial: The Past

Problem Statement

- Electronic Control Units (ECUs) rely on serial on/off-chip interfaces to connect to IP and ECU networks
  Assembling **virtual** ECUs can introduce high effort due to proprietary abstract serial interface implementations



Goal

- Establish modeling standard for serial on/off ECU interfaces to enable quick and easy assembly of VPs

TLM-serial: The Past

- Why a new serial standard?
  - Defined scenarios and use-cases
    - Based on identified industry needs and real-world problems
  - CAN, SPI, I2C taken as starting points
    - As most experience by parties and concrete need
  - Implemented and proven with prototypes and examples
  - Definition of rules per serial protocol
  - Key elements:
    - Simplicity
    - Connection to RTL
    - Definition of Corner Cases (e.g. reset)

TLM-serial: The Present

- Dedicated implementations per serial protocol
  - Each protocol needs dedicated rules
  - Implementation is re-used where possible
- Ready-to-use TLM-CAN protocol and implementation of TLM-CAN(-FD) available
  - Supports all defined CAN scenarios shared here: https://workspace.accellera.org/apps/org/workgroup/tlmwg/download.php/14231/SerialTLM_requirements_and_scenarios.doc
  - Donated to Accellera and available to members at: https://github.com/OSCI-WG/tlm-serial/tree/master/tlm-can Implementation can be shared with interested parties
- Working prototypes for TLM-SPI and TLM-I2C

TLM-serial: The Future

- Bosch will demand TLM-CAN from suppliers
  - Own models already prepared
- Continue work in 2019
  - Finalize SPI and I2C
  - New protocol candidates: LIN, SENT, MSC
  - Workshop for discussing scenarios and collaboration in spring 2019
- Looking for contributors
  - With relevant scenario and business need
  - From different domains

INTERESTED?
PLEASE CONTACT US AND DISCUSS WITH US!