Systems-on-Chip (SoC) for HW/SW State-Space Co-verification and Architectural Exploration

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What is the Generic Software Adapter?

- Adapter’s are mechanisms of Connecting the Verification environment to a simulation engine:
  - HDL Simulators (Incisive Unified Simulator (IUS), MTI, VCS, etc.)
  - SystemC Simulators (IUS/NC-SystemC, OSCI)
  - SystemVerilog Simulators (IUS, MTI, VCS, etc.)
- Verification environment is constant
  - DUT implementation may change

- Generic Software Adapter (GSA)
  - Provides a connection between CDV IDE & SW running on an embedded CPU

- GSA provides a direct interface between the software eVC and the software running on the Processor
  - Make calls to software routines
  - Monitor software state (global variables)
    - For checking and coverage purposes
  - Implement software routines in the verification environment

- GSA automatically sets up and manages a mailbox in System Memory to communicate with the Software
  - User must define how to communicate with the system memory

- Allows us to use all of the capabilities of a CDV verification tool on HW and SW simultaneously
  - Constrained Randomized stimulus, combined functional coverage, protocol and data checkers