A novel approach to standardize reusable Modular Plug and Play Skeleton Structure (MPPSS) to expedite verification closure

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INTRODUCTION

Divide the design into logical sub-systems

Analyze dependency of scenarios on different SoC modules

Analyze reusability and sim speed optimizations

91% optimization of scenarios at SoC level, saved ~70000 hours of sim time

Build wrappers around DV blocks for direct reuse

Sub-modules integrated directly in SoC

PROBLEM STATEMENT

Run more tests than what is norm for SoC

Write easily reusable sequences & monitors

Figure 1. Overall approach and architecture

IMPLEMENTATION

Initial estimates of required effort to close the DV was lower by about 75% in comparison to full SoC abstraction

Reusable

Non-reusable

Figure 2. Problem > Requirement

Figure 3. Feature classification

Figure 4. Sub-system testbench environment

Figure 5. MPPSS architecture

Table 1. Design related scenario combinations

Table 2. SoC simulation vs. Sub-system simulation time

REFERENCES AND ACKNOWLEDGEMENTS


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