Migrating Existing AVM- and URM-based Testbenches to OVM-based Testbench

The OVM is the result of joint development by Cadence and Mentor Graphics. It combines the Cadence incisive Plan-to-Closure Universal Reuse Methodology (URM) and the Mentor Advanced Verification Methodology (AVM).

As a user of both AVM and URM methodologies, we have existing test-benches that were developed for each individual methodology. During the process of migrating from our existing AVM-only and URM-only test-bench to OVM test-bench, we were able to understand better on how the two methodologies complement each other in the OVM.

Using the same design under verification, we will describe the testbench setup process in each methodology and compare the similarities and differences between them. We will specifically discuss aspects of stimulus generation, response checking, scoreboarding, and testbench architecture in each of these methodologies.

We will briefly discuss some areas that are not covered by OVM but are useful for testbench methodology and reusability, such as hierarchical directory structure, systematic simulation termination (shutdown manager) methodology.

Finally, we will talk about generating an OVM based testbench automatically using a template generator. The template generator allows users to generate a customized OVM-based environment, it enforces a consistent look and feel, and it enables rapid development and maintenance of the verification code across multiple-sites and cultural barriers.