

FULL CHIP VERIFICATION OF A STORAGE AREA NETWORK (SAN) SOC

The Customer:

Customer is a world leader of enterprise-class products that intelligently connect storage, servers and networks.

The Application:

It is a multi-million gate storage processor chip which supports multiple protocols and had applications in intelligent storage I/O, server clustering, high performance data networking and intelligent storage platform solutions, including storage virtualization. It is a complex chip with 15 different blocks, 7 processors at 350 MHz, with multiple clock domains.

Mirafra's Responsibility:

- Functional verification of five blocks.
- Part of system level verification.

The Challenge:

- Defining verification methodology for each block.
- Ever changing specs and interfaces across various blocks.
- Short ramp-up time to understand the complex DUT.
- Micro architecture was evolving.
- Communicating across the globe as Architect and Designers were sitting in USA.

The Solutions:

Verification Environment Development

- A Vera based verification environment was proposed and developed for each block.
- The test bench development was carried out in Vera using knobs to support the random stimulus. generation. Test-cases and test bench were made compatible for Gate-level simulation.
- Constrained random scenarios were identified.
- Few directed scenarios were identified.
- All test benches were made fully regression able.

Test case development and analysis:

- Test cases were developed as per test plan.
- Test cases were analyzed using Virsim and Debussy.
- Design bugs were reported and tracked to their resolution using Bugtracks.

Bug Report:

- Bugs were reported with clear documentation of bug, seed, priority & CVS Tag to reproduce the bug, with path where to look for logs/dump.

Summary & Achievements:

The Mirafra team of 7 Engineers finished this 40 million gates verification effort in 18 months.

Following was the comments from VP of Engineering:

“Mirafra has an exceptional team that owned and delivered our complex verification needs. We are very pleased with the quality of their work and the dedication shown by their team. We will not hesitate to use their services for our future verification needs”.

Engagement Model:

A team of 8 people for 9 months on site based on Turnkey with fixed cost.