Correct by construction DFT or make it work DFT
– where are we today?

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DFT is a well-known and accepted concept. Normally, however, DFT is synonymous with scan insertion while keeping performance degradation and area in check. This is only partly correct.

Integrated circuits and design technology have changed over the past decade. Specifically, the strong level of automation in modern design flows has caused design methodology and test methodology to become inseparable. This causes the well-known structure-insertion view of DFT to be incomplete. Today, rather than challenging the need, since the efficiency of a design process can be affected, the mechanics of DFT insertion as it integrates into or intrudes into a design system, warrants constant scrutiny. This exposes often under-quantified penalties related to effort, schedule and opportunity, and can even affect the acceptability and evolution particular DFT strategies. Here, new relevant questions are, “How does it fit into the flow?” and “How do I make it work?”

Indeed, a smooth and efficient overall design methodology is important. In terms of money, every manager dreams of pooling the weeks lost fighting with bugs and methodology to instead create another multi-million dollar chip – that’s the cost of clunky DFT insertion. Time is revenue!

DFT circuits tackle the testability issue but DFT integration can add delay to the design cycle. However, when such impact is recognized and analyzed, DFT can also be used to mitigate introduced complexity and associated risk – but it is important to recognize and act upon it. One problem, however, is that a DFT practice could be difficult to change should the method exist in a comfortable “if it ain’t broke don’t fix it” design environment.

The panel will consider how DFT affects a generic design flow. Using this as the major criterion, they will challenge each other and the audience to determine which type of DFT solutions are under-performing, can be improved with current technology, obsolete, or still doing better than the “new stuff.”

Organizer: Fidel Muradali – Agilent Technologies
Moderator: Mike Ricchetti - Intellitech

Panelists:
Rob Aitken – Agilent Technologies
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