HIGH END ATE Systems – A vision of their role and future evolution

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Technology is progressing so rapidly that today’s expensive state-of-the-art CPU or one-chip IC may become tomorrow’s commodity low-cost high-volume embedded device. High-speed test systems are crucially important for testing state-of-the-art products – they need to be modular and scaleable, so they can be kept state of the art – and such fast testers are very expensive. For a mature product, on the other hand, the focus is on test cost reduction.

For a product to remain competitive, it must be possible to rapidly reduce testing cost as the product proceeds along its life cycle. To realize this, future high-end test systems will be designed to permit easy migration of test program resources to low-end test systems. Parallel testing is another cost-reduction strategy: test programs will need to be easy to modify for parallel testing of multiple devices on a wafer.

Yet another cost-reduction strategy will be to incorporate test-support and diagnostic functions on chip – to expedite testing, and so reduce cost – and future test systems, whether high-end or low-end, will need to be designed to utilize such DFT functions.

In conclusion, both high-end and low-end test systems have their place. High-end test systems will need state-of-the-art performance, and the modularity and scaleability to enable them to be kept state-of-the-art. Low-end test systems will facilitate migration to parallel testing. And both high-end and low-end testers will need to support DFT functions.