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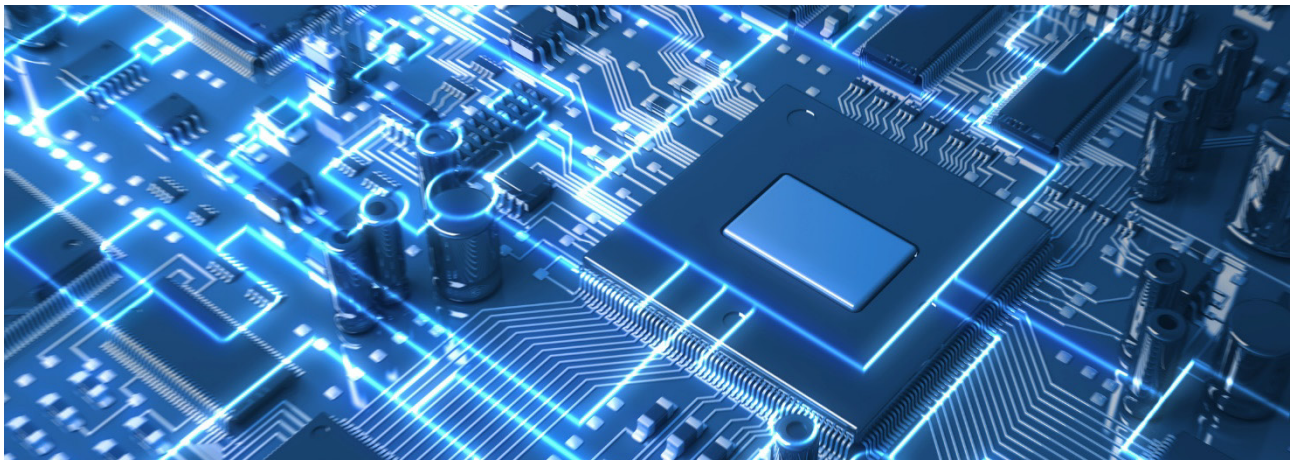
IIS

Fraunhofer Institute for Integrated Circuits IIS
Division Engineering of Adaptive Systems EAS

FUNCTIONAL MODELING AND VERIFICATION



New fields of application for electronics are not only demanding advanced performance and energy efficiency, but also call for higher reliability and robustness of components. However, with the growing complexity, especially of programmable systems, also the range of potential failures has increased. Developers are forced to verify and certify the functional safety of their design across several levels of abstraction and in accordance with norms as IEC EN 61508 or ISO26262. Fraunhofer IIS/EAS is offering different tools and services to master these challenges. Based on our longstanding experience in system development and verification, we have developed innovative methods that ensures a consistent design and verification flow for complex and safety critical electronics.

Your benefits

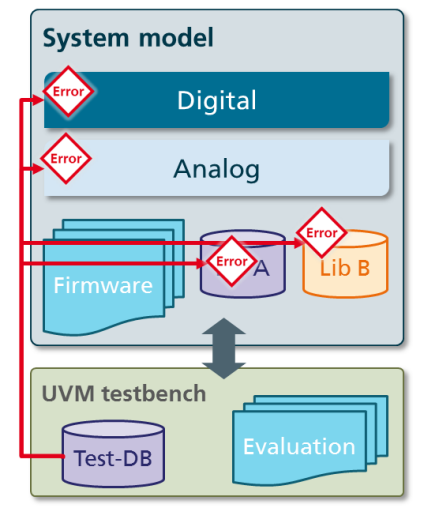
- Integrated verification of functional safety requirements
- Close link between ESL modeling, fault injection and HiL simulation
- Consistent design and verification flow
- Shorter turnaround times in system development
- Avoidance of re- and overdesign
- Adherence to qualification requirements

Our Services

- Comprehensive modeling support
- Cross-domain system level modeling
- Hardware-in-the-loop simulation and test
- Verification using UVM-SystemC
- Safety integrity verification by fault simulation
- Consulting to improve verification processes

Applying dynamic fault injection

- Overcomes the traditional disadvantages that the DUT has to be changed by externally inserting faults during runtime
- Provides flexible fault configuration (location, kind, rate, effect) for different abstraction levels
- Automatic distribution of faults over the system model enables coverage of unforeseen fault locations
- Massive parallelization improves check of diagnostic coverage needed for functional safety
- Different faults can be combined in libraries and re-used in future projects
- Basic fault models are provided out-of-the-box
- Efficient evaluation and report generation



About Fraunhofer IIS/EAS

The Fraunhofer Institute for Integrated Circuits IIS is one of Germany's most important research facilities for the development of microelectronic systems. The scientists in the Division Engineering of Adaptive Systems EAS in Dresden develop methods and tools to reliably design increasingly complex electronic and heterogeneous systems. The result is an optimized and accelerated implementation of product requirements in integrated circuits, complex heterogeneous systems or devices. One essential claim applicable to all these activities is to close the gap between new manufacturing technologies and system design.

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