

LOCATION: SEMICONDUCTORS NIJMEGEN

Name of department : BL Automotive AMS
Training/education : M.Sc student or Ph.D student
Branch of study : Microelectronics
Differentiation : Evaluate and improve the test coverage for Analogue / Mixed Signal products
Trainee/Graduate : Trainee
Period of time : 6 to 9 months (Prefer as soon as possible before 2011)
Remarks : NXP Nijmegen

Department description:

NXP is a leading semiconductor company founded by Philips more than 50 years ago. Headquartered in Europe, the company has about 33,500 employees working in more than 20 countries.

The Business Line (BL) Automotive Analogue Mixed Signal (AMS) is headquartered in Nijmegen (NL). The BL Automotive AMS focuses on a broad portfolio of semiconductors solutions for In vehicle Network (IVN) transceivers and car access.

The Product Line (PL) Controller Area Network (CAN) / Local Interconnect Network (LIN) transceivers, located in Nijmegen, Netherlands develops and supplies above two types of transceiver products for a world wide car industries. One of the key focus areas for its Test and Product engineering department now is on improving the industrial ability to reduce the test cost with the high quality so that we can supply higher volume products to the market.

Project formulation:

Evaluate and improve the test coverage for Analogue / Mixed Signal products by using NXP internal simulation tool

Project description:

In order to deliver high quality products to our customers, very high test coverage is required for all the products.

For the digital part of the mixed-signal IC, there are quite a few methods available in the IC testing industry to evaluate and improve the test coverage. For the analogue part of the mixed-signal IC, there are still no systematic approaches available to evaluate and improve the test coverage.

Within NXP, an internal simulation tool based on Defect-Oriented Test is available recently, which is called AnalogShell. However the efficiency of this tool is not completely evaluated by industrial design yet. The goal of this assignment is to apply this tool to one of PL CAN/LIN industrial IC to check if this tool could be used as a systematic approach to evaluate and improve the test coverage of the industrial mixed-signal ICs. The project can be divided into the following different subtasks:

- Analogue fault simulation to calculate the test coverage for Analogue ICs
- Fault sensitive simulation to identify the critical internal nodes with high test coverage
- Calculate the analogue voltage stress coverage and adding the suitable observation points
- Evaluate the new fault models such as Open.

Requirements:

- Master or higher education background
- Knowledge of Analog/ Mixed signal IC design
- Experience with Analogue /Mixed signal simulation tools
- Good English
-

For More Information contact:

Said Hamdioui at Computer Engineering, TUDelft.

E-mail: S.Hamdioui@tudelft.nl,

Phone: 015- 278 3643