



Training on OpenVera - basic + advanced + methodology (RVM)

Duration: 4 days

- OpenVera Basics – 2 days
- Advanced Vera + RVM - 2 days

Schedule:

February 2008

Comprehensive Functional Verification Using OpenVera & RVM

Table of Contents

Introduction

- Introduction to OpenVera
- Course Objective
- What's and what's not covered

OpenVera Basics

- Data types
- Program Block
- Procedural constructs
- Task and functions
- Arrays

OpenVera Interface & Virtual Port

- Interfacing with DUT
- Sample and Hold spec

Office:

1777/42/1/, Ground Floor, Gangothri, 28th 'B' Main, 40th 'A' Cross,
JayaNagar 9th Block, Bangalore - 560069. Ph.No. 41495572

**CONTEMPORARY VERIFICATION CONSULTANTS
PRIVATE LIMITED**



- Modeling asynchronous interface
- Void Drives
- Virtual Ports
- Port Bind

OpenVera IPC

- Threads
- Semaphores
- Mailbox
- Synchronization of threads

Class and OOP

- Class
- Inheritance
- Polymorphism

Random Generation and constraints

- Random vs Direct testing
- Need for random testing
 - Constraints in OV
 - Class constraint
 - Randomize success / fail
 - Inheritance
 - Randomize.with()
 - Distribution
 - Function calls in constraints
 - Array constraints

Functional Coverage

- Motivation

Office:

**1777/42/1/, Ground Floor, Gangothri, 28th 'B' Main, 40th 'A' Cross,
JayaNagar 9th Block, Bangalore - 560069. Ph.No. 41495572**



- Introduction
- Types of coverage
- Functional coverage process
- Coverage group
- Concept of binning
- Cross
- Sampling event

OpenVera Advanced Topics

Predefined procedures

- Class methods (advanced)
- String methods
- File IO
- System interface routines (get_env etc.)
- Random generators, seed control
- Error handling
- Coverage API

RVM - Get Up To Speed (GUTS)

Introduction to RVM

- Motivation
- Brief background history & next generation evolutions of RVM

Office:

1777/42/1/, Ground Floor, Gangothri, 28th 'B' Main, 40th 'A' Cross,
JayaNagar 9th Block, Bangalore - 560069. Ph.No. 41495572



- Key features of RVM

Transaction Based Verification (TBV)

- Definition
- Components of a TBV environment

Modeling Transactions & channel

- What makes a transaction
- Rand qualifier, data type usage guidelines
- Methods of a rvm_data object
- What's a channel?
- Using rvm_channel

Modeling Transactors

- What's a transactor
- Types of transactor
- Predefined methods of rvm_xactor
- Using channels with rvm_xactor

Effective Stimulus generation using Atomic generator

- Considerations for designing a robust generator
- Using rvm_atomic_gen macro

RVM log - Unified messaging

- Motivation
- rvm_log base class
- Macros for messaging

Office:

1777/42/1/, Ground Floor, Gangothri, 28th 'B' Main, 40th 'A' Cross,
JayaNagar 9th Block, Bangalore - 560069. Ph.No. 41495572



- Verbosity control, format control

RVM Env - putting it all together

- Using rvm_env base class
- The 9-step test flow
- Writing tests using rvm_env

Advanced RVM

Scenario Generator

- Background on Scenarios, motivation
- Using rvm_scenario_gen macro
- Controlling Scenario generator

Callbacks

- Motivation
- 4-step callback approach

Office:

1777/42/1/, Ground Floor, Gangothri, 28th 'B' Main, 40th 'A' Cross,
JayaNagar 9th Block, Bangalore - 560069. Ph.No. 41495572