

# Coaching UVM Projects

## An Individual Approach

### Part 2

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UVM Coach

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- How to start working with the customer
- Levels of Support
- Executing Verification Planning
- How to introduce Verification Management
- Project Reviews
- Listen to the customer needs
- Redefining Project Objectives
- Tracking the project progress



# How to start working with the customer (1)

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- Kickoff-Meeting
  - Set the right expectations
  - Explain the main project steps
  - Provide a preliminary Schedule
  - Get the support of the customer's management
- Working Phase1
  - Get the driving part of the UVM testbench running as soon as possible
  - Activate the SV and base UVM knowledge
  - Provide implementation support



# How to start working with the customer (2)

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## ➤ Working Phase 2

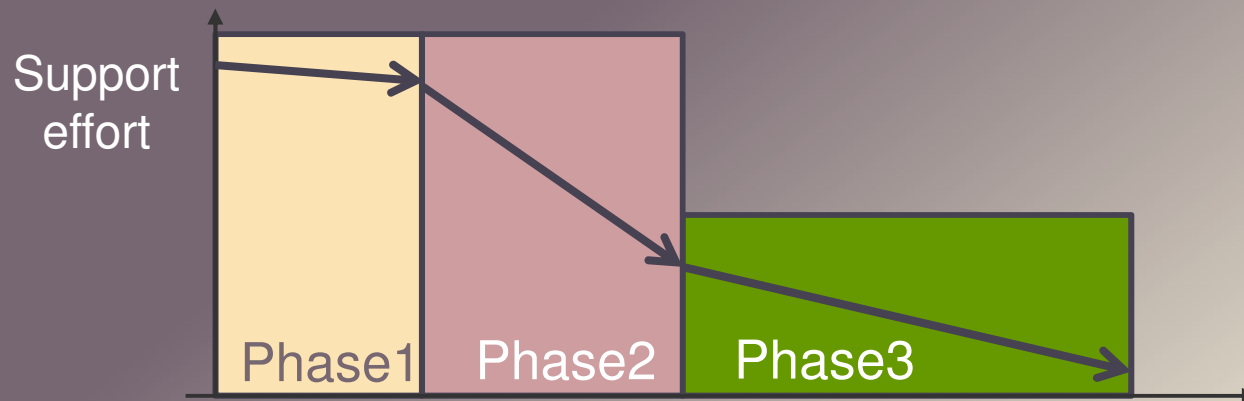
- Start Verification Planning
- Implementation of the analysis part of the UVM testbench
  - Functional coverage
  - Scoreboarding
- Linking testbench constructs to the verification plan
- Verification Management

## ➤ Working Phase 3 - Final Phase

- Summarizing the effort spend
- Reviews
- Define status (what was reached so far, what is still open)
- Compare results with the plan/objectives
- Align your mind with the customer one's

# Levels of Support - Phased Approach

- Objective is to teach the customer in UVM
- Taking care for
  - Quick success at the beginning
  - Continuous learning curve
  - Ability to formulate the right questions
  - Ability to gather the information needed
  - Ability to know where to look for
  - Learning/adopting new debug strategies



# Levels of Support - Phased Approach

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- Phase 1 - Shortest but most intensive phase (high effort)
  - Provide implementation (coding) support
  - Answer implementation questions
    - 80 -90% of support is related to SystemVerilog
    - 10 - 20 % of support is related to UVM



# Levels of Support - Phased Approach

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- Phase 2 - Customer has to takeover implementation responsibility
  - Length depends on the complexity of the design
  - Longer than phase 1
  - Reduce coding effort
  - Help customer to work with
    - SV Standard
    - UVM documents (reference manual, User Guide)
  - Help to clarify and formulate the issue
  - Focus your support on very specific UVM topics
    - Formulate problem
    - Provide solution
    - Present solution
    - Implement solution



# Levels of Support - Phased Approach

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- Phase 3 - Customer has to work on his own
  - Help to formulate
  - Point him to the support sources
    - UVM cookbook
    - Verification Academy
    - Discussion threads
    - Code examples etc.
  - Let him find a solution





# Executing Verification Planning

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- After driving of the chip works, start with Verification Planning
- Raise awareness for verification planning
- Ask for existing verification planning material (Excel sheets)
- Ask for the right people (system architects, concept engineers ...)
- Bring all resources (people and material) together
- Have in mind: too much documents are never accepted by a customer
- Verification Planning Meeting
  - Show how the planning data are processed and contribute to the verification process
  - Explain and demonstrate the benefits of a good verification planning
  - Collect all verification planning data in a format your simulator can process

# Executing Verification Planning

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- There is no need to spend time for any ‘Verification Planning and Management Workshop’
- Have in mind your customer is familiar with the verification process
- Almost all customers have a certain kind of ‘Verification Planning’ in place
- Start there. Do not re-invent the wheel !
- Avoid the generation of more or less useless documents, like ‘Verification Infrastructure Document’ (VID) etc

# How to introduce Verification Management

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- Start as early as possible
- Setup your simulation command to save always a ucdb
- Automate the verification management: develop a script for r
- Show the customer the verification results



# Project Reviews

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- Code Reviews
  - For UVM compliance
  - For clean SV code
  - Implementation status
- Review of the verification plan and the verification results
  - Complete the verification plan
  - Investigate verification results
  - Identify verification gaps
  - Define new tests
- Review of the project objectives
  - See later ‘Redefining Project Objectives’



# Listen to the customer needs

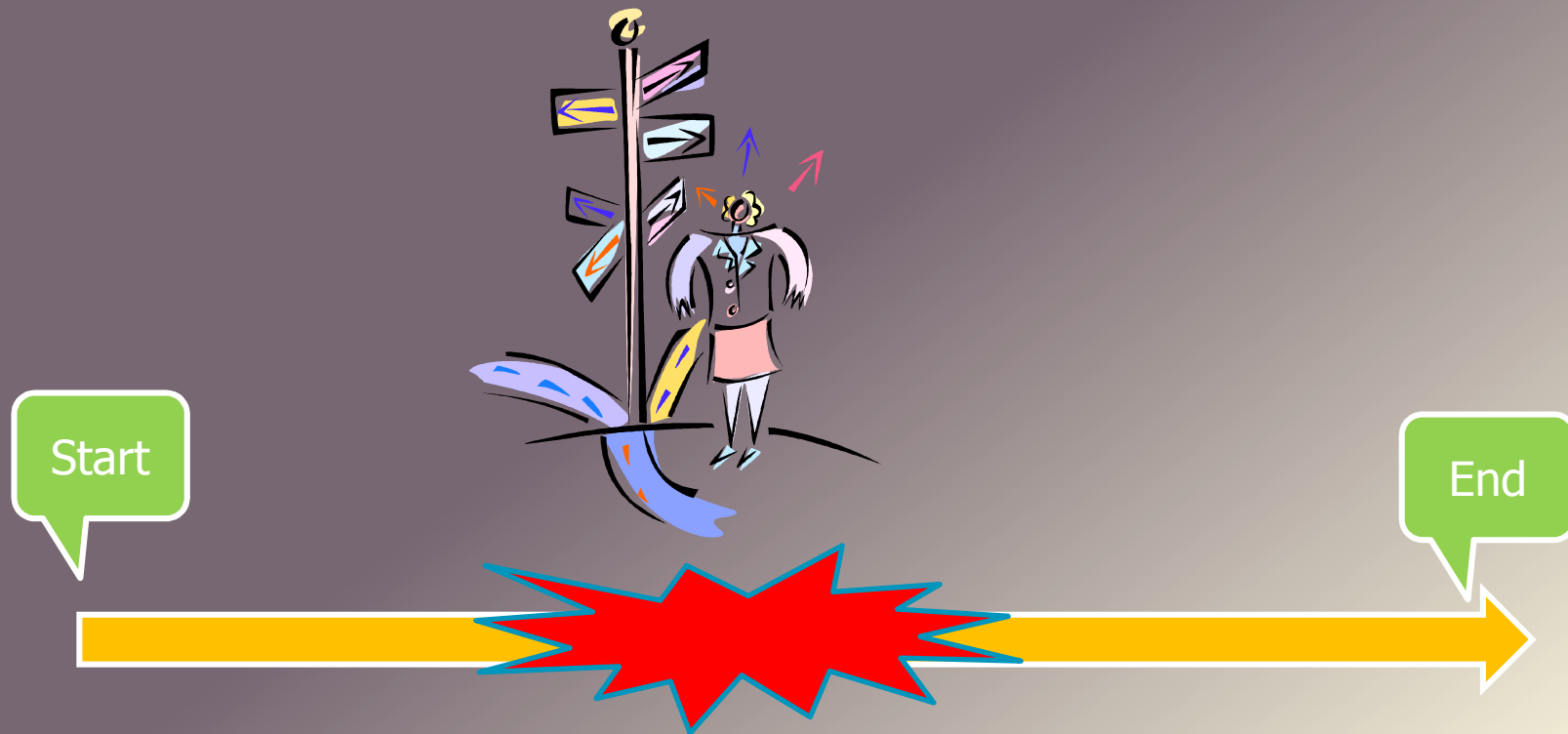
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- Note the customer is new to SystemVerilog, UVM, object-oriented programming etc.
- Might be afraid of the project is failing
- Might not be able to express his needs with the right words and in clear terms
- Listen always to the customer, he'll express his expectations and goals quite often
- Ask back to what he has said to get confirmation
- Make the best out of his words



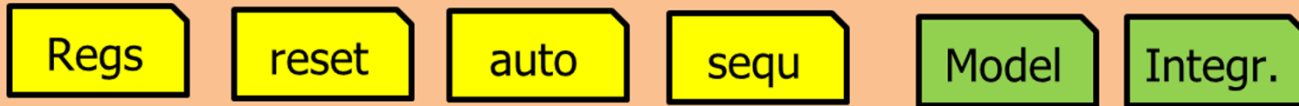
# Tracking the project progress

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# Tracking the project progress: How to do

Andreas



Bruno



Christoph



# Tracking the project progress: What to do

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- Evaluate what has been done so far
- Map results to the schedule
- Measure if you are on schedule
- Define new tasks for the next planning period
- Do this best on a weekly basis
- At on-site support phases do this together with your customer





# Redefining Project Objectives

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- Reflect the project goals against the current status
- Identify
  - Other priorities
  - New objectives
  - Release objectives not of interest anymore
  - Schedule issues
- Align your findings with the customer's project manager
- Update project objectives

