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Status Report


P1500 Compliance Definition Task Force

Erik Jan Marinissen
Philips Research Laboratories
Eindhoven, The Netherlands

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Task Force Organization

- **Mission**
 - Definition of two (if possible verifiable) compliance levels: 'Unwrapped' and 'Wrapped'
 - Guaranteeing interoperability to both core provider and core user in use scenarios
 - Write Compliance Definition descriptions to go into draft standard
- **Members**

– Karim Arabi (PMC-Sierra)	– Maurice Lousberg (Philips)
– Rohit Kapur (Synopsis)	– Erik Jan Marinissen* (Philips)
– Brion Keller (IBM)	– Jon Udell (Palmchip)
– Bernd Koenemann (IBM)	– Yervant Zorian (LogicVision)
- **Meetings**
 - Weekly teleconference meetings of 1 hour started in June 2001
Thanks to IBM (Bernd) for providing facilities!
 - Password-protected web site at IEEE computer

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Dual Compliance Concept

- **IEEE 1500 Unwrapped**
 - Core which does not have a complete IEEE 1500 wrapper, but does have an IEEE 1500 CTL description on the basis on which the core could be made 'IEEE 1500 Wrapped' (either manually or automatically by tools)
- **IEEE 1500 Wrapped**
 - Incorporates complete IEEE 1500 wrapper function
 - Complete IEEE 1500 CTL description describing how to test the core (including how to operate the wrapper)

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P1500 Use Scenario 1

- Core Provider delivers 'IEEE 1500 Unwrapped' core. CTL description that comes with it contains all relevant core test knowledge, including core-related data for generation of the IEEE 1500 wrapper
- Core User makes core 'IEEE 1500 Wrapped'
 - Adding IEEE 1500 wrapper
 - Upgrading CTL description from bare core terminals to wrapper terminals
- Can take data specific to particular system-chip into account while instantiating the wrapper (e.g., #TAMs, width of TAMs, 'safe' state)
- 'IEEE 1500 Unwrapped' guarantees fast and reliable route to 'IEEE 1500 Wrapped'

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P1500 Use Scenario 2

- Core Provider delivers 'IEEE 1500 Wrapped' core, of which the wrapper is built-to-order on customer specification
- Similar to Scenario 1, except conversion done by Core Provider
- Requires cooperative information exchange!
- Core Provider might have experts / tools for conversion

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P1500 Use Scenario 3

- Core Provider offers a catalogue of off-the-shelf 'IEEE 1500 Wrapped' cores with fixed wrapper parameters
- Core User selects the core which best matches the system chip needs
- Allows to integrate wrapper with core, in order to minimize costs
- Scenario might be popular especially for hard cores
- Large catalogue:
more work for Core Provider, but more choice for Core User

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Usage of Dual Compliance Levels

- Full benefits of test interoperability are only obtained from a fully compliant '1500-Wrapped' Core
- Two compliance levels provide two options
 1. Make a core '1500-Wrapped' compliant directly
 2. Make an intermediate stop at '1500-Unwrapped'

Benefits of One-Step Approach

- Integrate wrapper functionality with core itself
- Minimize impact on performance and area

Benefits of Two-Step Approach

- Adapt wrapper parameters to particular SOC environment
- Minimize SOC-level impact on area and/or test application time

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List of Topics

- Use cases: what falls under P1500 and what not?
- Structural definition of the wrapper necessary for ExTest
- CTL info needed for wrapper generation should be easy to find (e.g., not spread over entire CTL program, but together)
- Terminal types (+ active state?) of the naked core plus other information necessary for wrapper generation
- Data on test patterns:
fault model, fault coverage, application time
- Constraints: wrapper constraints, TAM constraints, source/sink (=ATE or BIST) constraints
- CTL constraints (e.g., separation of protocol and data)
- Hierarchy
- Diagnostics

(List established at P1500 WG meeting at VTS'01 (May 3+4, 2001))

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