P1500

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Type of Project: Revision to IEEE Standard 1500-2005
PAR Request Date: 08-May-2019
PAR Approval Date: 05-Sep-2019
PAR Expiration Date: 31-Dec-2023
Status: PAR for a Revision to an existing IEEE Standard
Root Project: 1500-2005

1.1 Project Number: P1500
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard Testability Method for Embedded Core-based Integrated Circuits


Contact Information for Working Group Chair
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None

3.2 Sponsoring Society and Committee: IEEE Computer Society/Test Technology (C/TT)

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None

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 11/2020
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 05/2021

5.1 Approximate number of people expected to be actively involved in the development of this project: 35

5.2 Scope: IEEE Std 1500 is a standard design-for-testability method for integrated circuits (ICs) containing embedded nonmergeable cores. This method is independent of the underlying functionality of the IC or its individual embedded cores. The method supports the necessary requirements for the test of such ICs, while allowing for ease of interoperability of cores that may have originated from different sources. This method is usable for all classes of digital cores, including hierarchical cores.

Changes in scope: IEEE Std 1500 has developed a standard design-for-testability method for integrated circuits (ICs) containing embedded nonmergeable cores. This method is independent of the underlying functionality of the IC or its individual embedded cores. The method supports the necessary requirements for the test of such ICs, while allowing for ease of interoperability of cores that may have originated from different sources. This method is usable for all classes of digital cores, including hierarchical cores.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: The aim of IEEE Std 1500 is to provide a consistent scalable solution to the test reuse challenges specific to the reuse of nonmergeable cores, while preserving the IP aspects that are often associated with these cores. This objective is achieved through provision of a core-centric methodology that enables successful integration of cores into SoCs.

Changes in purpose: The aim of IEEE Std 1500 is to provide a consistent scalable solution to the test reuse challenges specific to the reuse of nonmergeable cores, while preserving the IP aspects that are often associated with these cores. This objective is achieved through provision of a core-centric methodology that enables successful integration of cores into SoCs. IEEE Std 1500 provides a bridge between core providers and core users and also facilitates the automation of test data transfer and reuse between these two entities via the use of the IEEE P1450.6 CTL. This automation relies on...
5.5 Need for the Project: IEEE Std 1500 provides a bridge between core providers and core users and also facilitates the automation of test data transfer and reuse between these two entities. This automation relies on information requirements (the information model) placed on the core provider to ensure that the core can be successfully integrated by the core user. The result is shorter time to market for core providers and core users.

The data transfer and reuse from the core provider to the core user are based on the premise that the core test data are left unchanged, while the test protocol is adapted from the IEEE 1500 hardware interface to the SoC.

5.6 Stakeholders for the Standard: IP and core providers, core users and SoC integrators, design automation providers, manufacturing and test engineers, and test equipment providers

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

7.1 Are there other standards or projects with a similar scope?: No
7.2 Joint Development
   Is it the intent to develop this document jointly with another organization?: No

8.1 Additional Explanatory Notes: IEEE Std 1500-2005 (Reaffirmed 2011): Standard Testability Method for Embedded Core-based Integrated Circuits is being revised because it is due to expire in 2021. The sponsor (C/TT) has voted to keep 1500 active and have the new working group consider some changes. There is a short list of proposed changes that was recently collected from current users of the standard and presented to the sponsor in support of the revision.

IEEE Std 1500-2005 (Reaffirmed 2011): Standard Testability Method for Embedded Core-based Integrated Circuits is a widely used C/TT test standard and has broad industry support, including by EDA companies. 1500 is referenced in four other active C/TT standards: 1149.1, 1149.10, 1687 and 1838. 1500 has also been adopted as the mandated test access architecture for the JEDEC-JESD235 HBM (High Bandwidth Memory - DRAM) standard.