1450.3™

IEEE Standard for Extensions to Standard Test Interface Language (STIL) (IEEE Std 1450™-1999) for Tester Target Specification

IEEE Computer Society

Sponsored by the
Test Technology Standards Committee

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Abstract: The STIL environment supports transferring tester-independent test programs to a specific automated testing equipment (ATE) system. Although native STIL data are tester independent, the actual process of mapping the test program onto tester resources may be critical, and it is necessary to be able to completely and unambiguously specify how the STIL programs and patterns are mapped onto the tester resources. TRC (which stands for either tester resource constraints or tester rules checking, depending on the usage) is an extension to the STIL language to facilitate this operation.

Keywords: Tester rules checking (TRC), tester resource reporting, tester resource targeting, tester resource loading

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Introduction

This introduction is not part of IEEE 1450.3-2007, Standard for Extensions to Standard Test Interface Language (STIL) (IEEE Std 1450™-1999) for Tester Target Specification.

STIL is a collection of standards with the base standard being 1450 and the dotted extensions used to define additional syntax for addressing additional areas; i.e., this standard addresses tester rules.

The extensions follow the same conventions as the base standard. The base and the extensions are developed so as to work together; i.e., STIL is a single language that is defined (and has been developed) as separate IEEE standards.

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Contents

IEEE Standard for Extensions to Standard Test Interface Language (STIL) (IEEE Std 1450^{TM}-1999) for Tester Target Specification

1. Overview

The STIL environment supports transferring tester-independent test programs to a specific automated testing equipment (ATE) system. Although native STIL data are tester independent, the actual process of mapping the test program onto tester resources may be critical, and it is necessary to be able to completely and unambiguously specify how the STIL programs and patterns are mapped onto the tester resources. TRC (which stands for either tester resource constraints or tester rules checking, depending on the usage) is an extension to the STIL language to facilitate this operation.

Figure 1 shows the usage model for tester targeting. The four ways that the TRC statements come into play in the flow of data from design to test are indicated by the circled numbers in the diagram. These four uses are defined as follows:

a) **Tester rules checking:** As early as possible in the process of inserting “Design for Test” logic and generation of test patterns, the rules of the target tester are identified by means of the TRC file defining the target tester.
b) **Tester resource reporting**: As part of the pattern generation process, a report of resources required for the pattern may be created in TRC format. This information is available for test planning purposes, such as 1) when a pattern is for an embedded core to be integrated into a chip or 2) for tester scheduling purposes. Each resource report is associated with a particular STIL file/stream. The resource report data may be a separate file (as implied in the above diagram) or may be included in the STIL pattern file.
c) **Tester resource targeting**: The process of tester targeting is that of adding additional information into the STIL file/streams that specifies how the resources of a given tester are to be assigned. Note the bars on the left side of the diagram, which indicate that this targeting operation can be done in one of three places: 1) by the EDA software that generates the patterns, 2) by software created by the test user, or 3) by the ATE sofware that loads the STIL patterns.
d) **Tester resource loading**: The tester loader is a process that maps the device-oriented STIL data to the resources of the tester. There may or may not be targeting information provided. If targeting information is not present, then the loader is expected to do the job of assigning resources. If targeting information is present, then it is to be used to direct the resource assignment.