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IEEE Standards Coordinating Committee 20 on Test and Diagnosis for Electronic Systems

Approved 26 March 2015

IEEE-SA Standards Board

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Abstract: An exchange format using extensible markup language (XML) for identifying all of the hardware, software, and documentation associated with a test adapter is specified in this document. This test adapter may be used as a component of a test program set to test and diagnose a unit under test.

Keywords: ATML instance document, automatic test equipment (ATE), automatic test markup language (ATML), automatic test system (ATS), IEEE 1671.5™, interface device (ID), interface test adapter (ITA), test adapter, test fixture, XML schema

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Introduction

This introduction is not part of IEEE Std 1671.5™-2015, IEEE Standard for Automatic Test Markup Language (ATML) Test Adapter Description.

This child, or dot, standard, also known as an ATML component standard, provides for the definition of the Test Adapter XML schemas, and contains references to examples; both of which accompany this standard.

These XML schemas provide for the identification and definition of a test adapter.

ATML's XML schemas define the basic information required within any test application and provide a vehicle for formally defining the test environment by defining a class hierarchy corresponding to these basic information entities and provide several methods within each to enable basic operations to be performed on these entities. ATML component standards within the ATML framework define the particular requirements within the test environment.

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IEEE ~~Trial-Use~~ Standard for Automatic Test Markup Language (ATML) ~~for Exchanging Automatic Test Information via XML: Exchanging~~ Test Adapter ~~Information~~ Description

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1. Overview

1.1 General

~~The family of~~ Automatic test markup language (ATML) is a collection of IEEE standards ~~is being~~ and associated extensible markup language (XML) schemas that allow automatic test system (ATS) and test information to be exchanged in a common format adhering to the XML standard.[1]

[1] This information is given for the convenience of users of this standard and does not constitute an endorsement by IEEE of this consortium standard. Equivalent standards or products may be used if they can be shown to lead to the same results.

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The ATML framework and the ATML family of standards have been developed and are maintained under the guidance of the Test Information Integration (TII) Subcommittee of ~~the~~ IEEE Standards Coordinating Committee 20 (SCC20) to serve as ~~standards for product test.~~ ~~specifies~~ a comprehensive environment for integrating design data, test strategies, test requirements, test procedures, test results management, and test system implementations~~. The ATML framework is defined by IEEE Std 1671™-2006.~~[1] ~~IEEE Std 1671-2006 is therefore a critical part of this ATML component~~, while allowing test program (TP), test asset interoperability, and unit under test (UUT) data to be interchanged between heterogeneous systems.

This ~~trial-use~~ standard (as well as the XML schemas and XML instance document examples[2] that accompany this ~~trial-use~~ standard) is intended to be used in identifying and documenting ~~the~~ test adapters ~~that shall~~ which may be utilized during the testing of a ~~particular~~ unit under test (UUT). This ~~includes~~ information ~~regarding the test adapter hardware,~~ includes the mechanical, electrical, and software~~,~~ interfaces~~, and documentation~~ of the test adapter.

This standard makes use of XML schemas and XML terminology. For readers new to XML, the XML Schema Tutorial [B4] provides a general introduction.

1.2 Application of this document's annexes

This document includes four annexes.

Annex A through Annex D are informative; thus they are provided strictly as information for users, implementers, and maintainers of this document.

[1] ~~Information on references can be found in Clause 2.~~

[2] The XML schemas and examples that accompany this ~~trial-use~~ standard ~~shall be~~ are available at~~:~~ ~~http://standards.ieee.org/downloads/1671/1671.5-2008/ upon publication of this trial-use standard~~ the locations defined in Clause 6.

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1.3 Scope

~~The scope of~~ This ~~trial-use~~ standard ~~is the~~ defines ~~of~~ an exchange format, utilizing XML, for ~~exchanging~~ both the static description of a test adapter ~~information~~ by defining the interface between the UUT and the test station, ~~which includes~~ and the specific description of ~~the~~ test adapter ~~(e.g., physical and electrical characteristics, capabilities/performance, and identification/classification)~~ instance information.

~~1.2 Purpose~~

~~The purpose of this standard is to provide a standardized format to promote and facilitate interoperability between components of non-manual test systems, by allowing the exchange of test adapter information. The test adapter schema becomes a class of information that can be used within the ATML family of standards.~~

~~Each instance document contains the definition of a single test adapter model. The test adapter schema provides a structure for describing test adapter capabilities and structure.~~

~~This standard will allow test adapter information to be transportable across a variety of automatic test equipment (ATE) within the automotive, semiconductor, aerospace, and military industries.~~

1.4 Application

This ~~trial-use~~ standard provides a clear definition of test adapter information that may be exchanged between conformant cooperating software components and applications. This ~~trial-use~~ standard provides a definition that accomplishes the following objectives:

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a) Provide a means of describing the aspects of the test adapter, which is the interface between the test station and the UUT

b) Provide a means of describing simple (e.g., cable only), passive, or active test adapters

c) Provide a means of describing multiple or layered test adapters

The information contained in XML documents conforming to this standard will be useful to:

a) Test program set (TPS) developers

b) TPS maintainers

c) ATE system developers

d) ATE system maintainers

e) Developers of ATML-based tools and systems

f) UUT developers and maintainers

1.5 Conventions used within this document

1.5.1 General

In accordance with the *IEEE Standards Style Manual* [B3],[3] any schema examples will be shown in Courier font. In cases where instance document examples are necessary to ~~clearly~~ depict the use of a schema type or element, such examples will also be shown in Courier font. When the characters "..." appear in an example, it indicates that the example component is incomplete.

[3] The numbers in brackets correspond to those of the bibliography in Annex D.

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