

Name and abbreviation

Test Assertions Guideline TC, or TAG TC

Purpose

The design of Test Assertions (TAs) associated with a specification or standard – **referred to in this document as *target specification*** - has the following recognized benefits: (i) it improves the quality of this specification during its design, and (ii) it reduces the lead time necessary to create a test suite for this specification.

A test assertion (TA), also sometimes defined as test specification, is understood in this charter with the following general meaning:

A TA is an independent, complete, testable statement for requirements in the specification.

A TA always refers to an item under test (IUT), which is assumed to implement all or parts of the target specification, so that it is concerned with the requirements addressed by the TA. This reference is either implicit or explicit if it is necessary that the TA identifies the item under test in some unambiguous manner. A TA describes the expected output or behavior for the item under test within specific operation conditions, in a way that can be measured or tested. **A TA may refer to a test harness architecture, of which a description limited to the interactions between its components and the IUT may be sufficient.** Test assertions are generally different from test cases, which are more detailed and contingent to a concrete test framework: TAs are the basis to write test cases, and relate the latter to the narrative of the target specification.

The general objective served by this TC is to facilitate the creation and usage of test assertions by any group involved in designing a specification or standard of which software implementations are expected to be developed, with a focus on OASIS technical committees.

The first step in achieving this is to establish a common and reusable model, metadata, methodology and representation for TAs.

This is aligned with the intent of the former OASIS Conformance TC, although the focus in the current initiative is not on the various aspects of quality and conformance, but on a specific one, namely test assertions.

This TC will submit its deliverables to the OASIS Technical Advisory Board (TAB) for recommendation to the OASIS Board. The TC would accept feedback and recommendations from the TAB and OASIS Board, so that its output can be considered by the OASIS Board for inclusion in a future revision of the OASIS general TC process, aiming at improving the quality and adoption of OASIS output.

The TC will also facilitate the promotion of its deliverables and give them the visibility necessary to reach potential users in other standard organizations.

Scope

The scope of activity for this TC must be within the following topics:

- **TA model:** A model for designing Test Assertions (TA model), that is independent from any particular target specification or standard, but that may recognize different types of test assertions, and may accommodate these in a specific way. Test assertions may be for verifying conformance of an implementation to a specification, or interoperability between implementations of the same specification. The TA model may address any useful relationship identified between TAs, such as pre-requisites or pre-conditions. It

may include support for grouping several TAs - or grouping entities -, but will not pretend to fully model such entities as conformance profiles, specification modules or implementation roles.

- **Test Environment modeling:** Guidelines for characterizing the test environment or test harness assumed by the test assertions, as well as the item under test or IUT (an implementation of all or part of the target specification). Such characterization may remain abstract by just focusing on the interaction between test environment and IUT. This characterization may state the expected properties and mode of operation required from the test environment in order to verify the TAs. It may be seen as some of the requirements for a real test harness intended to process test cases based on these TAs .
- **Related Notions:** Within scope is the selection and/or refinement of definitions of concepts expected to be related to TAs, even if not directly targeted by the modeling and methodology work of this TC. Such concepts may include: test case, conformance profile or level, test environment / harness, test execution.
- **Methodology:** A methodology to make use of this model. This may include examples derived from applying the above TA model to particular specifications or standards.
- **XML Mark-up:** An XML representation for TAs and – if appropriate – for their grouping entities. Additional notations supporting the modeling of TAs (e.g. UML) are also within scope. The intent of the XML representation is left at the discretion of the TC. It could be intended as an exchange format for editing tools, or as a source for rendering/publishing, or as an input for a test tool, or a combination of these.
- **Case Studies:** Investigation of current practices in other OASIS TCs or other organizations which have already written test assertions for their specifications.
- **Liaison and Promotion:** Within scope are efforts to liaise with other organizations than OASIS, and cooperation with external contributors and groups that can provide input to the TC as well as become users of its deliverables. Joint deliverables are within scope.

The following documents are input material to this TC, that will deserve prime attention from the TC assuming their IP status is compatible with the IPR mode of the TC:

- the Test Assertion Guideline draft, (originally initiated within OASIS TAB, 2004-2005)
http://www.oasis-open.org/committees/document.php?document_id=20661&wg_abbrev=ebxml-iic
- Conformance requirements for Specifications (OASIS, March 2002)
http://www.oasis-open.org/committees/download.php/305/conformance_requirements-v1.pdf
- Conformance testing and Certification Framework (OASIS, Conformance TC, June 2001)
http://www.oasis-open.org/committees/download.php/309/testing_and_certification_framework.pdf
- QA Framework: Specification Guidelines (W3C, November 2004)
<http://www.w3.org/TR/qaframe-spec/>
- Variability in Specifications, WG note (W3C, 2005)
<http://www.w3.org/TR/2005/NOTE-spec-variability-20050831/>
- Test Assertion Documents for WS-I profiles (2003-2005).
http://www.ws-i.org/Testing/Tools/2005/01/BP11_TAD_1-1.htm
- Test Metadata, QA Interest Group note, (W3C, September 2005)
<http://www.w3.org/TR/2005/NOTE-test-metadata-20050914/>

Other documents may be considered by the TC, depending on a TC decision.

Explicitly Out-of-scope:

- Defining test case metadata or representation. (Several developments are occurring in this area.)
- Modeling or methodology of dimensions of variability such as conformance profiles / levels / modules / discretionary items. Substantial prior work exists in these areas. However the TC may use this prior work as a foundation and may also accommodate these constructs when designing an XML mark-up for TAs.

Deliverables

The TC will produce the following deliverables, in this order:

- (a) Test Assertions Guideline document, including definitions, abstract model / structure not excluding the use of a modeling notation (e.g. UML), methodology and examples showing how to extract TAs from a target specification.
- (b) A representation of TAs in XML, that refers to and supports the TA model of (a).

Timeline:

The TC will aim at a Public Review draft of the Test Assertions Guideline (a) before end of 2007. The guideline will be processed at least to Committee Specification level, and up to OASIS standard if considered appropriate by the TC.

The TC will aim at a Public Review draft of the TA XML Mark-up (b) within first half of 2008 at the latest. The TA Mark-up will be processed at least to Committee Specification level, and up to OASIS standard if considered appropriate by the TC

IPR Mode

- Royalty-Free on limited terms

Audience

- Members of any OASIS technical committee
- Members already involved in defining specifications, standards and/or tests in other organizations.

Language

- English

References