

oneM2M Test System Validation Procedures

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Abstract:

This document describes policies for procedures of oneM2M Test System validation.

Version History

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Contents

1	Scope.....	5
1.1	Roles	5
1.2	Definitions	5
2	General.....	6
2.1	Overview	6
2.2	Validation Procedures.....	6
3	Preparation.....	7
3.1	Test system validation apply.....	7
3.2	Application confirm/contract.....	7
3.3	Golden sample request.....	7
3.4	Golden sample Acquirement	7
4	Validation.....	8
4.1	Validation Requirements.....	8
4.2	Validation Process	8
4.2.1	Quality Control	8
4.3	Validation Result	8
4.4	Validation Report	8
4.4.1	Test System Information	8
4.4.2	Validation Scope Information	9
4.4.3	Golden Sample Information	9
4.4.4	Validation Evidences.....	9
4.5	Submission	9
5	Assessment.....	10
5.1	Prerequisite.....	10
5.1.1	Integrity of Validation Report.....	10
5.1.2	Start of Assessment.....	10
5.2	Assessment process.....	10
5.2.1	Board of Assessment Members	10
5.2.2	Process details	10
5.3	Approval.....	10
5.3.1	Validation Accepted	10
5.3.2	Validation Accepted with Waiver.....	11
5.3.3	Validation Rejected.....	11
5.4	Particular cases	11
5.4.1	Degradation of Authority	11
5.4.2	Additional Test cases.....	11

Document Terminology

TTA has adopted portions of the IEEE Standards Style Manual, which dictates use of the words **“shall”**, **“must”**, **“will”**, **“should”**, **“may”**, and **“can”** in the development of documentation, as follows:

- The word **“shall”** is used to indicate mandatory requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted (shall equals is required to).
- The use of the word **“must”** is deprecated and shall not be used when stating mandatory requirements; must is used only to describe unavoidable situations.
- The use of the word **“will”** is deprecated and shall not be used when stating mandatory requirements; will is only used in statements of fact.
- The word **“should”** is used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain course of action is deprecated but not prohibited (should equals is recommended that).
- The word **“may”** is used to indicate a course of action permissible within the limits of the standard (may equals is permitted).
- The word **“can”** is used for statements of possibility and capability, whether material, physical, or causal (can equals is able to).

1 Scope

This document describes the procedures of oneM2M conformance test system validation.

1.1 Roles

Roles	Description
Test System Vendor	Manufacturer of a Test System seeking to be recognized as validated. Test System Vendor cannot be a role of ATL in validation process for transparency in testing.
Golden Sample Provider	Manufacturer of a Golden sample used for validation testing procedure.
Certification Body	Body responsible for review of and decision on the validation result of the Test System
Test System User	ATL as potential users of the Test System or a manufacture for internal test purpose of the product.
ATL (Authorized Testing Lab)	Body responsible for final validation policy approval. ATL cannot be Test System vendor for transparency in testing.

1.2 Definitions

Term	Definition
Test System	The complete hardware and software needed to perform oneM2M conformance Test Cases. It consists of a Test Platform and Test Case Implementations.
Golden Sample	<i>TBD</i>

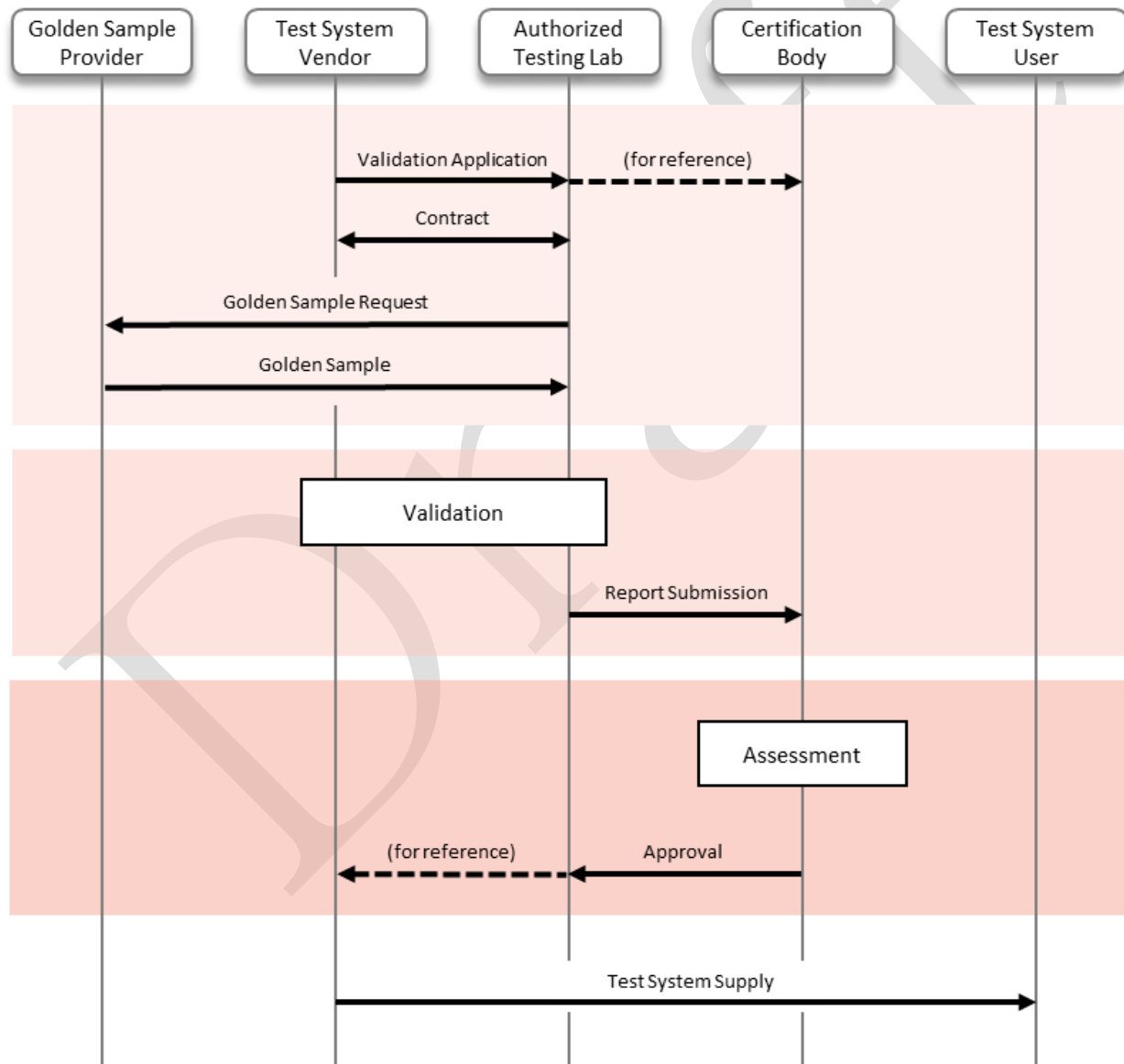
2 General

2.1 Overview

Validation demonstrates that a test system is in compliance with the implemented oneM2M components of an IoT platform and is able to perform the conformance test case scope.

To achieve validation, the ATL prepares and conducts testing according to the policies in Section 3 and 4. Certification Body reviews the validation result submitted by ATL. If the review is successful according to the policies in Section 5, the test system may be considered validated.

2.2 Validation Procedures



Picture 1: Test System Validation Procedure

3 Preparation

Test System Vendor sends validation request to ATL (Authorized Test Lab as a Validation Organization) and ATL reports the request **to CB (Certification Body) for the record**. When it is decided that validation is ready to proceed, Test System Vendor can fill out and send Test System Validation Application to the ATL. A copy of Test System Validation Application is also submitted to **CB to keep the record**. **When Test System Validation Application is submitted and confirmed**, the ATL will request a golden sample selected by the CB for the validation procedure.

3.1 Test system validation apply

When a test system vendor decides to apply for Test system validation, it can apply for the test system validation. During this process, Test System Validation Application form shall be filled out and submitted to the ATL. When the ATL receives an application form, the ATL shall inform CB that an application has been received and they will proceed the application.

Please refer to Annex(A) for the Test System Validation Application form.

3.2 Application confirm/contract

After an application has been received, ATL can confirm the application, if necessary, under an agreement between an ATL and Test System Vendor, contract may be included during this process. As already defined in 1.1, Test System Vendor and an ATL shall not be an identical company/institute for transparency issue that might be caused during a testing procedure.

3.3 Golden sample request

When application is confirmed and approved to proceed Test System Validation (with or without a contract), ATL shall request a golden sample to a golden sample provider.

This process shall be negligible if an ATL already acquired Golden Sample approved by the CB.

3.4 Golden sample Acquirement

ATL shall acquire Golden sample to be used as a testing system before the validation process.

4 Validation

In this section, it describes requirements, practical process, report and submission of the validation.

4.1 Validation Requirements

The ATL shall establish validation environment in space of harmless with no physical damage could occur. This condition includes human security, power safety, etc.

The ATL shall establish golden sample and raw packet data gathering system before the validation process.

4.2 Validation Process

The ATL shall execute all test cases in the scope of validation. If test system supports and includes more than one functionalities impacting the test cases based on configuration, all test cases shall be performed in each configuration.

The ATL shall run test cases with prepared golden sample to get the results. Proper configuration and environment shall be set up to the golden sample by ATL to ensure operating correctly.

During the validation process, the raw packet data for all performed test cases shall be stored. To keep neutrality, the raw data capturing action shall be operated in 3rd party professional device which is not relevant to test system H/W or golden sample H/W.

4.2.1 Quality Control

Quality control of the validation is managed by **golden sample selection policy [?]**. Certification body shall manage the quality and the consistency of the golden sample to keep the quality of the validation process.

4.3 Validation Result

The minimum requirement of the validation result to be submit is passing all test cases in the scope of validation. **If any of the test case is failing during the validation, ATL shall analysis the issue and report to a proper entity. The detailed information on the issue reporting is described in section X.X.X. (undecided)**

4.4 Validation Report

This clause describes the requirements for submitting the result of validation. After performing all validation process, ATL shall submit the information and evidence to Certification Body by Validation Report (Annex B). Each sub section describes the detail requirements

4.4.1 Test System Information

The ATL shall declare all of the following information of the test system:

- Test System Manufacturer
- Test System Model Name
- Test System Model Number
- Test System Serial Number (,if applicable)

- Test System H/W information
- Test System Operating system (S/W) information
- Supported test cases (ATS) and capabilities

4.4.2 Validation Scope Information

The ATL shall declare the scope of validation to be submitted:

- oneM2M release information
- oneM2M ATS information (tag name)
- Test System functionality (binding protocols, serializations)

4.4.3 Golden Sample Information

The ATL shall declare the golden sample information used in validation:

- Company Name
- Product Name
- Product Model Number

4.4.4 Validation Evidences

The ATL shall include all of the following evidence materials:

- Valid Test Report from test system.
- Test logs from test system.
- Packet raw data.
- Notes and comments (including test setup information).

4.5 Submission

The ATL shall submit the validation report after all requirements are prepared. The submission shall be done within **60 calendar days** from the test report creation date and **45 calendar days** prior to the next target release certification program update. The certification update plan will be announced by certification body **60 calendar days** before the launch.

5 Assessment

This section describes how to assess the validation report submitted by ATL.

5.1 Prerequisite

5.1.1 Integrity of Validation Report

At the time of receiving the validation report, CB must check the integrity of the validation report. The validation report shall include:

- General information on the ATL
- General information on the DUT vendor
- A list of test cases on which validation testing is fulfilled
- Configurations of DUT on each test cases
- Configurations of the golden sample on each test cases
- Verdict on each test cases (verdict is chosen among PASS, FAIL, and INCONCLUSIVE)
- Evidence on verdict, e.g., logs and raw packet data

5.1.2 Start of Assessment

Assessment starts with the notification from CB to ATL that the validation report contains every information for CB to perform assessment.

5.2 Assessment process

5.2.1 Board of Assessment Members

CB can convene a series of board meeting which consists of oneM2M expertise, to manage assessment.

5.2.2 Process details

CB and the board members process the assessment through reviewing the Validation Report with the attached evidences.

5.3 Approval

CB shall make a decision on the approval of the validation report and inform ATL within **30 calendar days**. CB shall decide whether the validation report is accepted, accepted with waiver, or rejected, according to verdict and evidence on each test cases.

5.3.1 Validation Accepted

Provided that the validation report meets the requirement, CB decides that DUT is approved for an authorized test system. CB then notify the assessment result to ATL with the term of *validation accepted*. Test system vendor generally can get the assessment result through ATL.

CB may announce in public the status of DUT through any type of media, immediately or release embargo.

5.3.2 Validation Accepted with Waiver

Provided that the validation report meets the requirement but includes verdict with inconclusive, CB decides that DUT is approved for an authorized test system. CB then notifies the assessment result to ATL with the term of *validation accepted with waiver*.

In this case, CB shall report the problem revealed during validation procedure to oneM2M TST.

5.3.3 Validation Rejected

Provided that the validation report doesn't meet the requirement, CB decides that DUT is not ready to be approved for an authorized test system. CB then notify the assessment result to ATL with the term of *validation rejected*.

In this case, ATL can make a version to the validation report within **30 calendar days**. Or, ATL can make statement of opinion to CB on the assessment result.

5.4 Particular cases

5.4.1 Degradation of Authority

An authorized test system shall lose its status of authorized test system if:

- A defect in the authorized test system is identified and confirmed

5.4.2 Additional Test cases

In the case when an authorized test system wants to be validated with some additional features, the previous validation report is effective on the assessment.