

ETSI GS MEC-DEC 032-2 v2.1.1 (2020-12)



Multi-access Edge Computing (MEC); API Conformance Test Specification; Part 2: Test Purposes (TP)

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The present document is part 2 of a multi-part deliverable. Full details of the entire series can be found in part 1 [i.9].

Modal verbs terminology

In the present document "shall", "shall not", "should", "should not", "may", "need not", "will", "will not", "can" and "cannot" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"must" and "must not" are NOT allowed in ETSI deliverables except when used in direct citation.

1 Scope

Based on the testing methodology guidelines and framework specified in ETSI GR MEC-DEC 025 [i.8], the present document specifies part 2 of a multi-part deliverable test specification for the MEC service APIs (currently ETSI GS MEC 012 [5], ETSI GS MEC 013 [6], ETSI GS MEC 014 [7], ETSI GS MEC 015 [8], ETSI GS MEC 016 [9], ETSI GS MEC 021 [10] and ETSI GS MEC 029 [11]) and the MEC Application Enablement API (ETSI GS MEC 011 [4]).

The present document includes the Test Suite Structure (TSS) and Test Purposes (TPs) using the standardized notation Test Description Language - Test Objectives extension (TDL_TO).

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://docbox.etsi.org/Reference/>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

- [1] ETSI GS MEC 001 (V2.1.1) (01-2019): "Multi-access Edge Computing (MEC); Terminology".
- [2] ETSI GS MEC 009 (V2.2.1) (10-2020): " Multi-access Edge Computing (MEC); General principles, patterns and common aspects of MEC Service APIs".
- [3] ETSI GS MEC 010-2 (V2.1.1) (11-2019): "Multi-access Edge Computing (MEC); MEC Management; Part 2: Application lifecycle, rules and requirements management".
- [4] ETSI GS MEC 011 (V2.1.1) (11-2019): "Multi-access Edge Computing (MEC); Edge Platform Application Enablement".
- [5] ETSI GS MEC 012 (V2.1.1) (12-2019): "Multi-access Edge Computing (MEC); Radio Network Information API".
- [6] ETSI GS MEC 013 (V2.1.1) (09-2019): "Multi-access Edge Computing (MEC); Location API".
- [7] ETSI GS MEC 014 (V1.1.1) (02-2018): "Mobile Edge Computing (MEC); UE Identity API".
- [8] ETSI GS MEC 015 (V1.1.1) (10-2017): "Mobile Edge Computing (MEC); Bandwidth Management API".
- [9] ETSI GS MEC 016 (V2.1.1) (04-2019): "Multi-access Edge Computing (MEC); UE application interface".
- [10] ETSI GS MEC 021 (V2.1.1) (01-2020): "Multi-access Edge Computing (MEC); Application Mobility Service API".
- [11] ETSI GS MEC 029 (V2.1.1) (07-2019): "Multi-access Edge Computing (MEC); Fixed Access Information API".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI GS NFV-TST 002: "Network Functions Virtualisation (NFV); Testing Methodology; Report on NFV Interoperability Testing Methodology".
- [i.2] ETSI EG 202 237: "Methods for Testing and Specification (MTS); Internet Protocol Testing (IPT); Generic approach to interoperability testing".
- [i.3] ETSI EG 202 568: "Methods for Testing and Specification (MTS); Internet Protocol Testing (IPT); Testing: Methodology and Framework".
- [i.4] ETSI GS MEC 003: "Multi-access Edge Computing (MEC); Framework and Reference Architecture".
- [i.5] ISO/IEC 9646-7:1995: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".

NOTE: Available at <https://www.iso.org/standard/3084.html>.

- [i.6] ISO/IEC 9646-1:1994: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 1: General concepts".

NOTE: Available at <https://www.iso.org/standard/17473.html>.

- [i.7] TTCN-3 abstract test language.

NOTE: Available at <http://www.ttcn-3.org/index.php/downloads/standards>.

- [i.8] ETSI GR MEC-DEC 025: "Multi-access Edge Computing (MEC); MEC Testing Framework".

- [i.9] ETSI GS MEC-DEC 032-1: "Multi-access Edge Computing (MEC); API Conformance Test Specification; Part 1: Test Requirements and Implementation Conformance Statement (ICS)".

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the following terms apply:

certification/compliance assessment: major goal of a compliance assessment is to ensure the interoperability of implementations, and the conformance of implementations to the standard

conformance testing: purpose of conformance testing is to determine to what extent a single implementation of a particular standard conforms to the individual requirements of that standard

interoperability testing: purpose of interoperability testing is to prove that end-to-end functionality between (at least) two communicating systems is as required by the standard(s) on which those systems are based

Test Case (TC): complete and independent specification of the actions required to achieve a specific Test Purpose

NOTE: TCs are written in testing languages, e.g. TTCN-3.

Test Descriptions (TD): specification of the sequence of actions required to realize the verdict identified in the TP

NOTE: TDs are primarily intended for use in interoperability test specifications. However, in some instances, particularly where there is a considerable difference in complexity between the TPs and the TCs, it is worthwhile adding TDs as an extra design stage in a conformance test specification.

Test Purpose (TP): definition in broad terms of the goal of a particular test.

NOTE: A TP should be written for each potential test of each identified requirement. A TP is defined in prose, or in high level languages such as TDL-TO.

test suite: collection of Test Cases

testing framework: guidance for development of conformance and interoperability test strategies, test systems and the resulting test specifications

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI GS MEC 001 [1] apply.

4 Prerequisites and Test Configurations

4.1 Test Configurations

Test configurations capture and describe the components identified in the tests and the connections between them. In particular and as reported in ETSI GR MEC-DEC 025 [18], in the context of conformance testing the test configuration "defines how the test system connects to the SUT".

For the present test suite, six (6) configurations are identified and listed in the present clause.

For each test configuration two (2) main components are identified: the IUT implementing the API provider and the Tester implementing the API consumer. The IUT is part of a SUT (System Under Test), thus the component may be run together with other components of the MEC System that are required to enable the behaviour to be tested. The definition of the other components is out of scope.

Figure 4.1-1 depicts configuration Config_MEC_1 which includes the a MEC Platform as the IUT and a MEC App as the Tester. This configuration is applicable for all test purposes in all subgroups of the SRV Group.

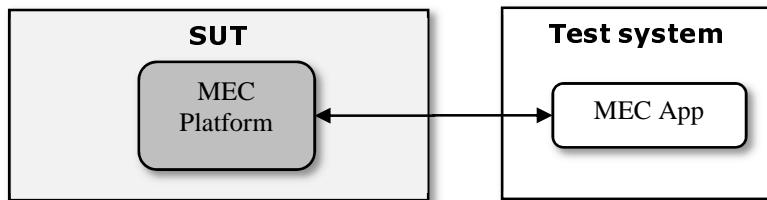


Figure 4.1-1: Config_MEC_1

Figure 4.1-2 depicts configuration Config_MEC_2 which includes a MEO as the IUT and OSS/BSS as the Tester. This configuration is applicable for group MEO, subgroup PKGM.

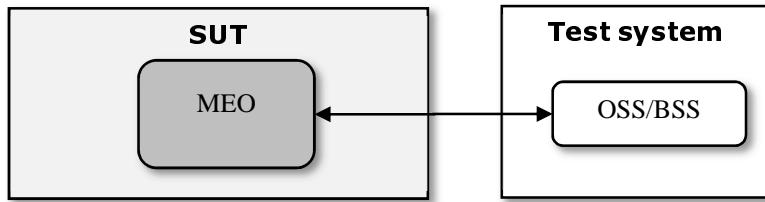


Figure 4.1-2: Config_MEC_2

Figure 4.1-3 depicts configuration Config_MEC_3 which includes the a MEO as the IUT and a MEPM as the Tester. This configuration is applicable for subgroup MEO/GRANT and in subgroup MEPM/PKGM.

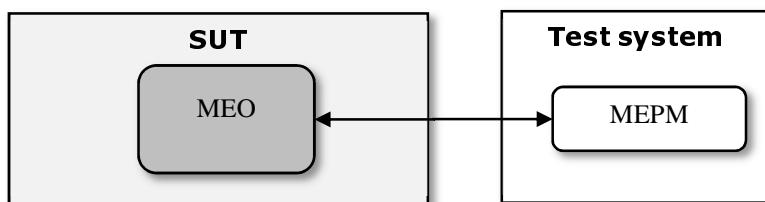


Figure 4.1-3: Config_MEC_3

Figure 4.1-4 depicts configuration Config_MEC_4 which includes the a UALCM Proxy as the IUT and a DEV App as the Tester. This configuration is applicable for group MEO subgroups UEAPPCTX and UEAPPS.

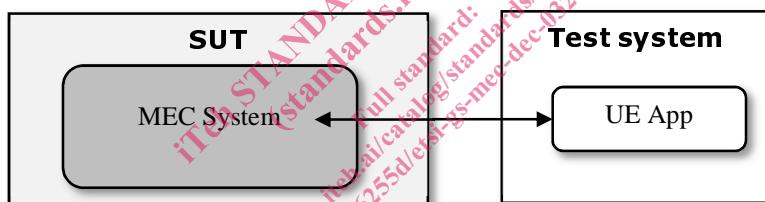


Figure 4.1-4: Config_MEC_4

Figure 4.1-5 depicts configuration Config_MEC_5 which includes the a MEPM as the IUT and a MEO as the Tester. This configuration is applicable for group MEPM, subgroup PKGM.

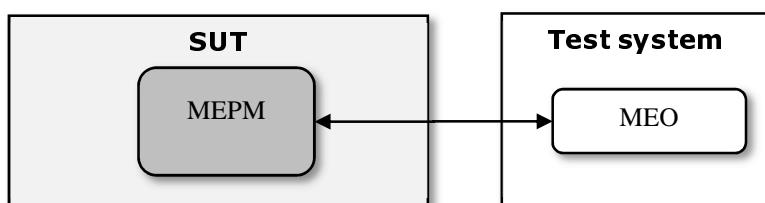


Figure 4.1-5: Config_MEC_5

Figure 4.1-6 depicts configuration Config_MEC_6 which includes the a generic MEC API Provider as the IUT and a generic MEC API consumer as the Tester. This configuration is applicable for test targeting generic API behaviours, thus group MEX , subgroup ANY and LCM.