

NFV & MEC Plugtests Event
15 – 19 June 2020
MEC Interoperability Test Plan



ETSI

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Foreword

This Test Plan has been produced by ETSI Centre for Testing and Interoperability during the preparation of the ETSI NFV & MEC Plugtests 2020 for the MEC Interoperability activity.

Introduction

The present document describes the Interoperability Test Plan that was followed during the ETSI NFV & MEC Plugtests held remotely in June 2020.

The Test Plan was developed following the interoperability testing methodology and guidelines defined by ETSI MEC in [MEC003], [MEC017], [MEC025] and [MEC009]. [MEC010], [MEC011].

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2 Scope

The present document defines a test plan with the purpose of supporting the NFV & MEC Plugtests™ event. It contains:

- conventions summarizing all pro-formas and common rules for conduction the Plugtests event;
 - the overall architecture describing the network including controllers, interfaces and applications;
 - the configurations (CFG) summarizing the valid configurations derived from the overall architecture. A valid configuration is a specific subset of the overall architecture to which a given group of test descriptions applies used during test sessions;
 - the Test Summary listing all test objectives. A Test Description (TD) will be developed for each test objective.
 - the Test Descriptions (TD) compiling all the information required to execute a test. They describe all the steps required to achieve a test objective;
 - the Interoperability Feature Statements (IFS) identifying the features which a Device Under Test (DUT) supports, including those which are optional and those which are conditional on the support of other features. The IFS are used to select applicable TDs for each test session.
-

2 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 <http://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.

2.1 Informative references

The following referenced documents assist the user with regard of the Plugtests preparation.

[MEC001]	ETSI GS MEC 001 Terminology 2.1.1 (2019-01)
[MEC002]	ETSI GS MEC 002 Use Cases and Requirements 2.1.1 (2018-10)
[MEC003]	ETSI GS MEC 003 Framework and Reference Architecture 2.1.1 (2019-01)
[MEC0101]	ETSI GS MEC 010-1 System, host and platform management 1.1.1 (2017-10)
[MEC0102]	ETSI GS MEC 010-2 Application lifecycle, rules and requirements management 2.1.1 (2019-11)
[MEC011]	ETSI GS MEC 011 Edge Platform Application Enablement 2.1.1 (2019-11)
[MEC012]	ETSI GS MEC 012 Radio Network Information API 2.1.1 (2019-12)
[MEC013]	ETSI GS MEC 013 Location API 2.1.1 (2019-09)
[MEC017]	ETSI GR MEC 017 Deployment of Mobile Edge Computing in an NFV environment 1.1.1 (2018-02)
[MEC025]	ETSI GR MEC 025 MEC Testing Framework 2.1.1 (2019-06)
[MEC0323]	ETSI GS MEC 032 3 API Conformance Test Specification; Abstract Test Suite (ATS) 0.0.3 (2019-11)

3 Definitions and Abbreviations

3.1 Definitions

None.

3.2 Abbreviations

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

TD	Test Description
SUT	System Under Test

4 Test Suite Structure

4.1 Conventions

The Test Ids of this Test Plan have been created as per the following naming convention:

TEST ID = TD_<ROOT>_<GROUP>_<OPERATION>

Where <ROOT> is "MEC".

4.2 Test Description pro-forma

Test Descriptions compile all the information required to execute a test. They describe all the steps required to achieve a test objective. The following information is provided with each Test Description:

- Identifier: A unique identifier is assigned to each Test Description. The usage of a well-defined naming convention allowing to put the TD into context (Functional Group, Feature, etc.) is recommended.
- Test Objective: Description of the objective of the TD (what).
- Configuration: Reference to the applicable configuration(s).
- References: Reference to the base specification(s) which describe the feature being tested.
- Applicability: List of items in the IFS that need to be supported by the DUTs in order to be able to execute the test.

- Pre-test conditions: Specific conditions that need to be met by the DUT prior to start executing the test sequence. It can include information about configuration, and/or initial state of the DUT.
- Test Sequence: Detailed description of the steps that are to be followed in order to achieve the stated test purpose. These steps are specified in a clear and unambiguous way but without placing unreasonable restrictions on how the step is performed. Clarity and precision are important to ensure that the step can followed exactly. The lack of restrictions is necessary to ensure that the test can apply to a range of different types of implementation.

Table 1: Test Description pro-forma

Interoperability Test Description			
Identifier	Unique test description ID: TD_AB_XXX_00. Follows the naming convention as per clause 4.1		
Test Purpose	A concise summary of the test reflecting its purpose and allowing readers to easily distinguish this test from any other test in the document		
Configuration	Reference to the applicable configuration(s)		
References	List of references to the base specification clause(s), use case(s), requirement(s), etc. which are either used in the test or define the functionality being tested		
Applicability	List of features and capabilities in the IFS which are required to be supported by the FUTs in order to execute this test		
Pre-test conditions	List of test specific pre-conditions that need to be met by the FUT including information about configuration, i.e. precise description of the initial state of the FUTs prior to start executing the test sequence		
Test Sequence	Step	Type	Description
	1	<Request>	Step description
	2		
	3		
	4		
	5		
	6		

The Steps in the Test Sequence can be of different type, depending on their purpose:

- A stimulus corresponds to an event that triggers a specific action on a FUT, like sending a message for instance;
- A configure corresponds to an action to modify the FUT or SUT configuration;
- An IOP check consists of observing that one FUT behaves as described in the standard: i.e. resource creation, update, deletion, etc. For each IOP check in the Test Sequence, a result can be recorded;
- The overall IOP Verdict will be considered OK if all the IOP checks in the sequence are OK.

4.3 Interoperability Feature Statement (IFS)

The Interoperable Feature Statement (IFS) identifies the standardized features of a FUT. These features can be mandatory, optional or conditional (depending on other features), and depend on the role played by the FUT. The IFS can also be used as a pro-forma by a vendor to identify the features that its FUT will support when interoperating with corresponding features from other vendors. Annex A of the present document defines the IFS.

5 Architecture

The generic Interoperability Test Architecture follows recommendations contained in [MEC025] and [NFV-TST002].

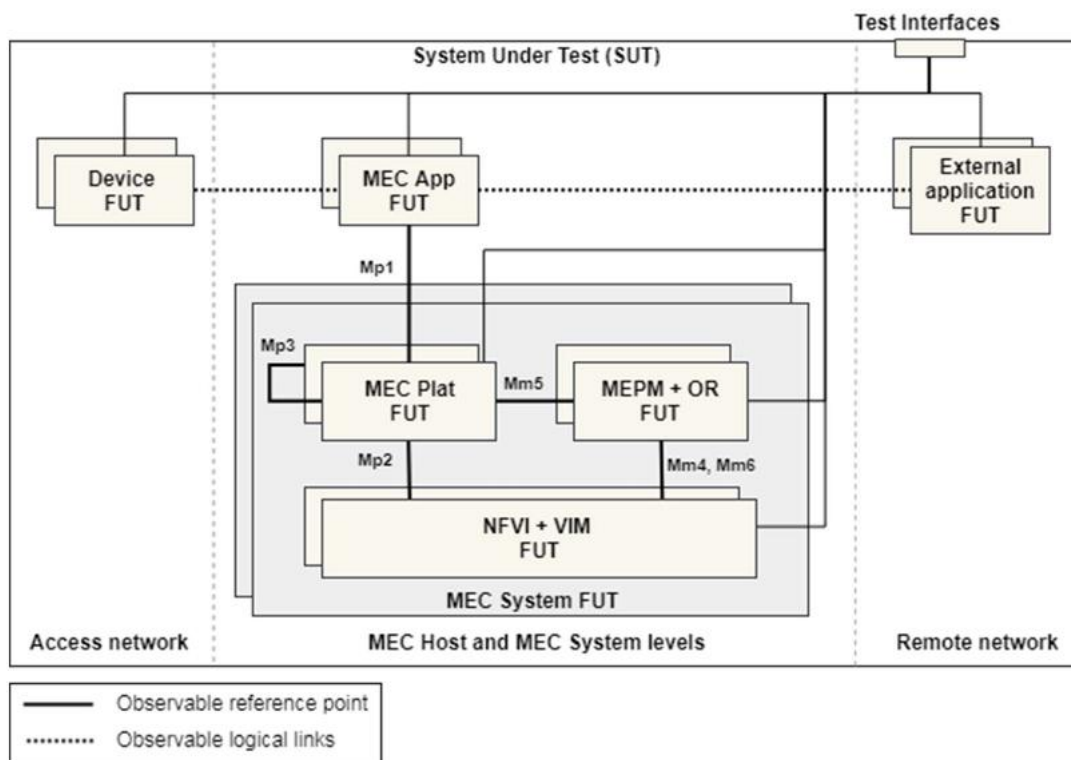


Figure 1 Generic Interoperability testing architecture as reported in [MEC025]

6 Configurations

6.1 SUT_MEC_BASIC

The SUT_MEC_BASIC test configuration includes a single MEC application along with a MEC platform. In this configuration, the term “MEC Platform” is used to indicate any of the following components: MEC platform, MEC orchestrator or MEC platform manager. The providers of other components of the MEC system such as MEO or MEPM are out of scope. The MEC application runs – together with the MEC Platform - on the MEC host or the NFVI.

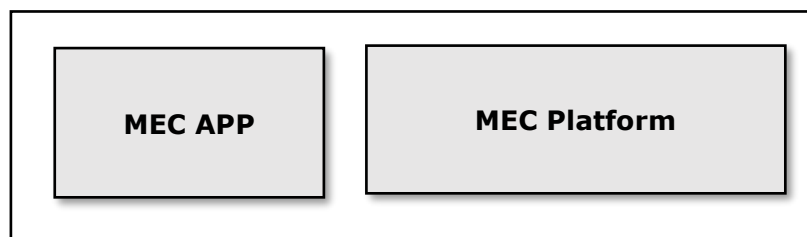


Figure 2: SUT_MEC_BASIC test configuration

6.2 SUT_MEC_SERVICES_SINGLE_APP

The SUT_MEC_SERVICES_SINGLE_APP test configuration is similar to the configuration SUT_MEC_BASIC, with a difference on the integration between the two elements. In this configuration, one (1) MEC application runs with in the MEC Host alongside the MEC platform. The configuration focuses on the capabilities around MEC Services such as the capability of applications and the platform to provide and register. The service is registered and available for discovery through the service registry in the MEC platform.

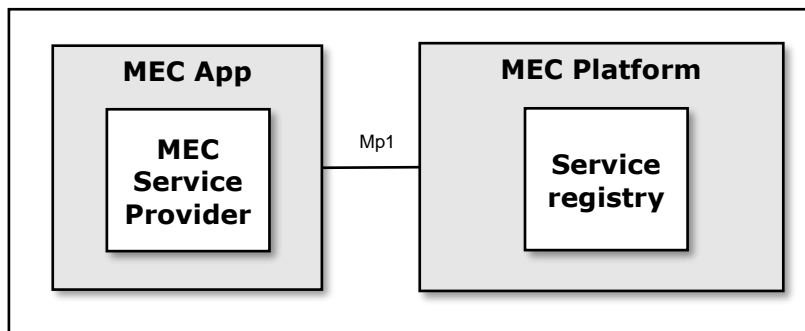


Figure 3 SUT_MEC_SERVICES_SINGLE_APP test configuration

6.3 SUT_MEC_SERVICES_MULTI_APP

The SUT_MEC_SERVICES_MULTI_APP configuration is similar to the configuration SUT_MEC_SERVICES_SINGLE_APP, with a difference on the integration between both elements. In this configuration, two (2) MEC applications run together alongside the MEC Platform. The configuration focuses on the capabilities around MEC Services such as the capability of applications and the platform to provide, discover or consume MEC services.

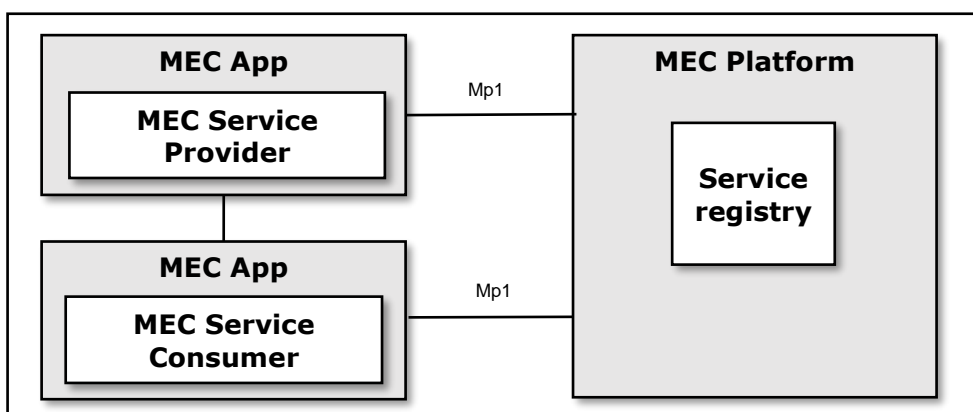


Figure 4 SUT_MEC_SERVICES_MULTI_APP test configuration

6.3 SUT_MEC_NFVI

The SUT_MEC_NFVI configuration, the MEC platform and the MEC application(s) are hosted and executed by a third party NFV Infrastructure. The focus is on interoperability of virtualization technologies and VIM APIs in a multivendor scenario.

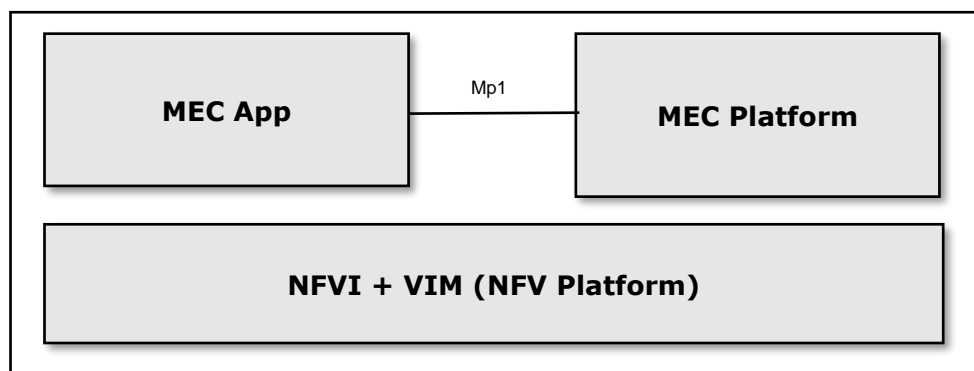


Figure 5 SUT_MEC_NFVI test configuration

6.4 SUT_MEC_MANO

The SUT_MEC_MANO focuses on the MEC-in-NFV scenario. In this scenario the MEC application(s) and the MEC platform are packaged as VNFs and are managed by a third-party MANO platform in an NFV infrastructure. The availability of other components of the MEC system (such as MEAO, MEPM and specific VNFM) is out of scope.

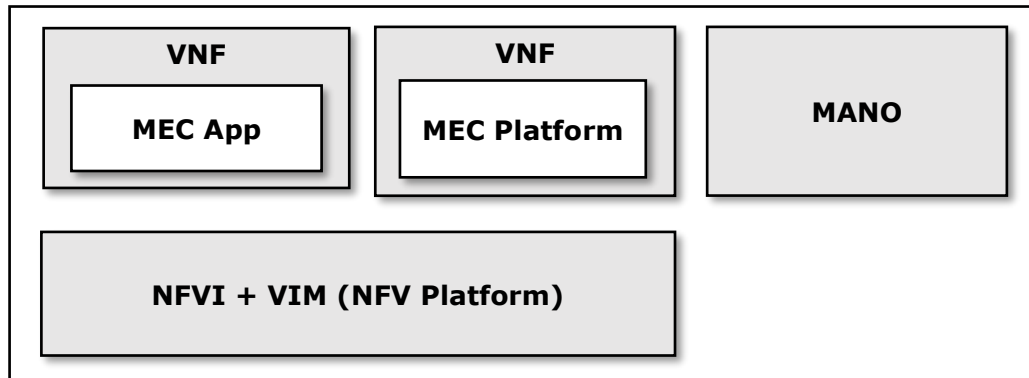


Figure 6 SUT_MEC_MANO test configuration

7 Test Summary

7.1 Test group 1 - MEC Application lifecycle

7.1.1 Applicable configurations

The configurations applicable to the test group 1 are:

- SUT_MEC_BASIC
- SUT_MEC_SERVICES_SINGLE_APP
- SUT_MEC_NFVI
- SUT_MEC_MANO

7.1.2 List of objectives

Table 2: Test Objectives for group 1 – MEC Application lifecycle

Test ID	Objective
TD_MEC_APP_ONBOARD	Verify that a MEC application can be successfully onboarded in a MEC System.
TD_MEC_APP_START	Verify that a MEC application can be successfully started in a MEC Host.
TD_MEC_APP_STOP	Verify that a MEC application running in a MEC Host can be stopped.
TD_MEC_APP_STATUS	Verify that the status of a MEC application running in a MEC Host can be queried.
TD_MEC_APP_CHANGE	Verify that the status of a MEC application running in a MEC Host may be changed.

7.2 Test group 2 – MEC Services

7.2.1 Applicable configurations

The configurations applicable to the Services tests are:

- SUT_MEC_SERVICES_SINGLE_APP
- SUT_MEC_SERVICES_MULTI_APP

7.2.2 List of objectives

Table 3: Test objectives for Group 2 – MEC Services

Test ID	Objective
TD_MEC_SVC_QUERY	Verify that a MEC App successfully retrieves the list of available services from the MEC Platform.
TD_MEC_SVC_REGISTER	Verify that a MEC App successfully registers a new service in the MEC Platform Service Registry.
TD_MEC_SVC_UPDATE	Verify that a MEC App successfully updates an existing service in the MEC Platform Service Registry.
TD_MEC_SVC_DEREGISTER	Verify that a MEC App successfully deregisters a service existing in the MEC Platform Service Registry.
TD_MEC_SVC_CONSUME	Verify that a MEC App successfully consumes a service exposed by a different MEC App and registered in the MEC Platform Service Registry.
TD_MEC_SVC_TRANSPORTS	Verify that a MEC App successfully queries the list of available transports from the MEC Platform.
TD_MEC_SVC_QUERYTIME	Verify that a MEC App successfully queries the time information from the MEC Platform.

7.3 Test group 3 – MEC Traffic

7.3.1 Applicable configurations

The configurations applicable to the Network tests are:

- SUT_MEC_BASIC
- SUT_MEC_SERVICES_SINGLE_APP
- SUT_MEC_NFVI
- SUT_MEC_MANO

7.3.2 List of objectives

Table 3: Test Objectives for Group 3 - Traffic and DNS rules

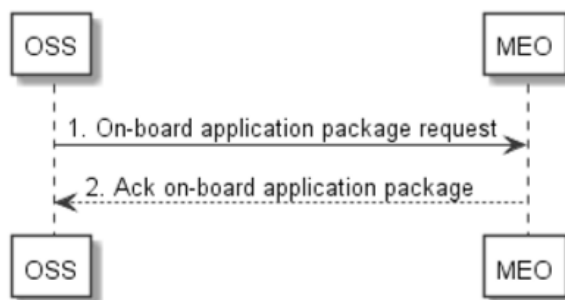
Test ID	Objective
TD_MEC_NTW_ACTIVATE	Verify that a MEC application successfully requests a rule to be activated in the MEC Platform.
TD_MEC_NTW_UPDATE	Verify that a MEC application successfully requests an update to an existing rule in the MEC Platform.
TD_MEC_NTW_DEACTIVATE	Verify that a MEC application successfully requests a rule to be deactivated in the MEC Platform.
TD_MEC_NTW_DNS_ACTIVATE	Verify that a MEC application successfully requests a DNS rule to be activated in the MEC Platform.
TD_MEC_NTW_DNS_DEACTIVATE	Verify that a MEC application successfully requests a DNS rule to be deactivated in the MEC Platform.

8 Test Descriptions MEC

8.1 Test group 1- MEC Application Lifecycle Management

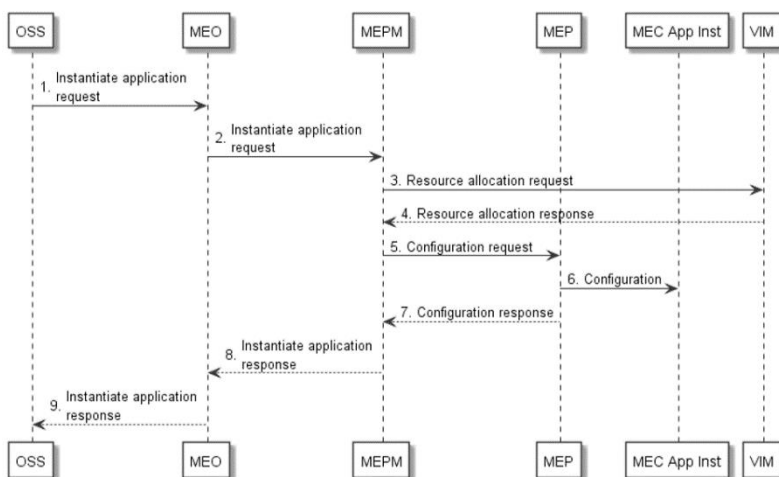
8.1.1 Onboard an application

Interoperability Test Description			
Identifier	TD_MEC_APP_ONBOARD		
Test Objective	Verify that a MEC application can be successfully onboarded in a MEC System.		
Configuration	SUT_MEC_BASIC SUR_MEC_SERVICES_SINGLE_APP SUT_MEC_NFVI		
References	[MEC0102], "Onboarding Application Package" (section 5.2.2)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1		
Pre-test conditions	MEC Platform running MEC application descriptor available (AppD as defined in [MEC0102]) MEC application image available by the MEC Platform OSS (real or simulated) connected to the MEC platform		
Test Sequence	Step	Type	Description
	1	Stimulus	OSS platform sends an on-board application package request to the MEC system (or to MEO if present).
	2	Response	MEC Platform acknowledges the application package on-boarding to the OSS.
	3	IOP Check	Verify that the MEC application has been onboarded successfully in the MEC system.



8.1.2 Start an application instance

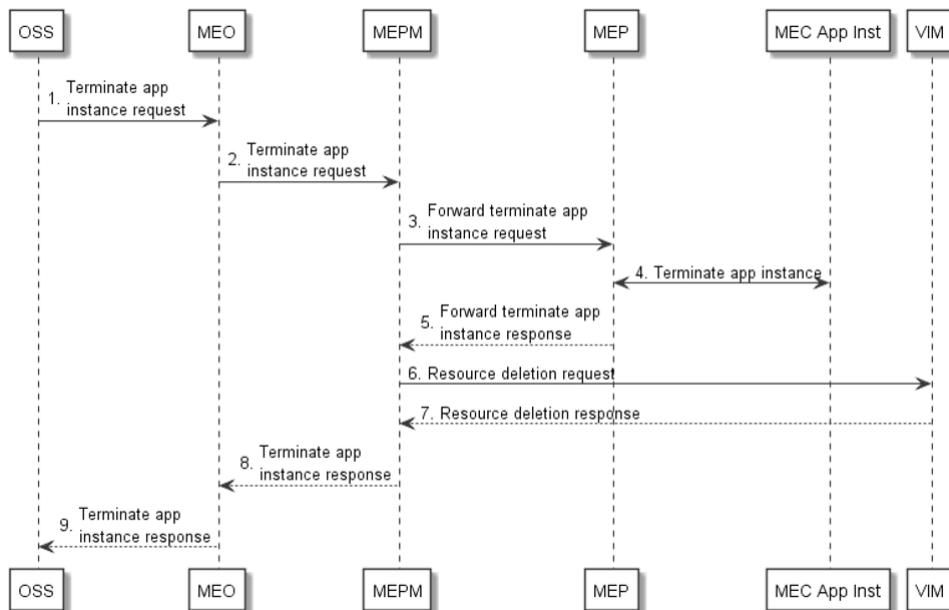
Interoperability Test Description			
Identifier	TD_MEC_APP_START		
Test Objective	Verify that a MEC application can be started in a MEC Platform.		
Configuration	SUT_MEC_BASIC SUR_MEC_SERVICES_SINGLE_APP SUT_MEC_MANO		
References	[MEC0102] "Application Instantiation Operation". Section 5.3.1		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1		
Pre-test conditions	MEC Platform running MEC application onboarded in MEC Platform (or MEO) OSS (real or simulated) connected to the MEC platform		
Test Sequence	Step	Type	Description
	1	Stimulus	OSS platform sends a start instance request to the MEC Platform (or MEO)
	2	Response	MEC platform sends an instantiate application response to the OSS with the result of the instantiation operation.
	3	IOP Check	Verify that the MEC application has been started successfully.
	4	IOP Check	Verify that the MEC platform sends the right configuration to the MEC application instance.



4.5.2-1 1 Instantiation of a MEC App, as defined in the base standards. In the Context of the Plugtests, MEO, MEPM and MEP maybe be bundled therefore their exchanges will not be performed in the tests.

8.1.3 Stop an application instance

Interoperability Test Description			
Identifier	TD_MEC_APP_STOP		
Test Objective	Verify that a MEC application can be stopped in a MEC Platform		
Configuration	SUT_MEC_BASIC SUR_MEC_SERVICES_SINGLE_APP SUT_MEC_NFVI SUT_MEC_MANO		
References	Stop a MEC application already running in a MEC Platform. Based on MEC 010-2 V2.1.1, "Application instance terminate operation". (Section 5.3.2)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1		
Pre-test conditions	MEC Platform running MEC application instance running in MEC Platform (or MEO) OSS (real or simulated) connected to the MEC platform		
Test Sequence	Step	Type	Description
	1	Stimulus	OSS platform sends a termination request for a specific instance to the MEC Platform. This request includes the instance id.
	2	Response	The MEC Platform sends a terminate application instance response to the OSS.
	3	IOP Check	Verify that the MEC application has been stopped successfully.
	4	IOP Check	Verify that a terminate app instance message is sent to the MEC application instance.



8.1.4 Retrieve application instance status

Interoperability Test Description			
Identifier	TD_MEC_APP_STATUS		
Test Objective	Verify the status of a MEC Application running in a MEC Platform is reported successfully.		
Configuration	SUT_MEC_BASIC SUR_MEC_SERVICES_SINGLE_APP SUT_MEC_NFVI SUT_MEC_MANO		
References	Query a MEC application running in a MEC Platform. Based on MEC 010-2 V2.1.1, "Query application instance information operation". (Section 6.3.1.5)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1		
Pre-test conditions	MEC Platform running MEC application instance running in MEC Platform (or MEO) OSS (real or simulated) connected to the MEC platform		
Test Sequence	Step	Type	Description
	1	Stimulus	OSS platform sends a status request for a specific instance to the MEC Platform. This request includes the instance id.
	2	Response	The MEC Platform (or MEO) replies back to OSS with the status of the instance.
	3	IOP Check	Verify the status of the MEC application instance. Since the MEC application instance was running before, it should report back that it is running.

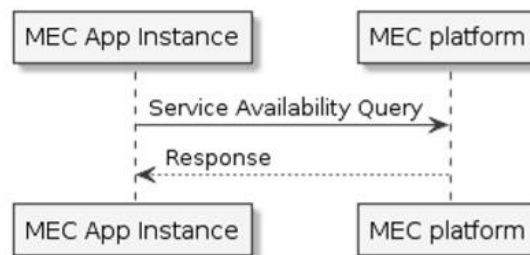
8.1.5 Change application instance status

Interoperability Test Description			
Identifier	TD_MEC_APP_CHANGE		
Test Objective	Verify that a request made to the MEC platform to change the state of a specific instance will result in the instance changing status.		
Configuration	SUT_MEC_BASIC SUR_MEC_SERVICES_SINGLE_APP SUT_MEC_NFVI SUT_MEC_MANO		
References	Change the status of a MEC application already running in a MEC Platform. Based on MEC 010-2 V2.1.1, "Change application instance operational state operation". (section 6.3.1.4)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1		
Pre-test conditions	MEC Platform running MEC application instance running in MEC Platform (or MEO) OSS (real or simulated) connected to the MEC platform		
Test Sequence	Step	Type	Description
	1	Stimulus	OSS platform sends a status change request for a specific MEC application running in a MEC platform. This is done through sending the instance id with the request.
	2	Response	The MEC Platform, after changing the MEC application instance status, is replying back to the OSS with the operation outcome.
	3	IOP Check	Verify that the MEC application's status has changed according to the request made.

8.2 Test group 2 - MEC Services

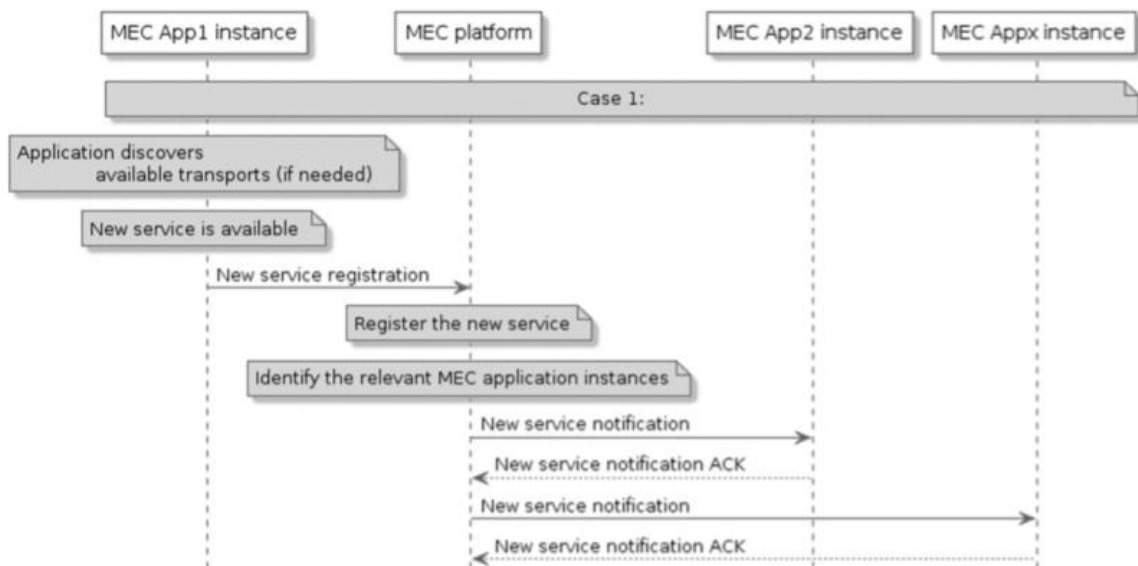
8.2.1 Query existing services

Interoperability Test Description			
Identifier	TD_MEC_SVC_QUERY		
Test Objective	Verify that MEC application can successfully query which service are available in a MEC platform.		
Configuration	SUT_MEC_SERVICES_SINGLE_APP SUT_MEC_SERVICES_MULTI_APP		
References	Retrieve the list of available services. MEC 011, "Service availability Query". (Section 5.2.5)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_5		
Pre-test conditions	MEC Platform running MEC application instance running At least one (1) MEC application service registered in the MEC platform		
Test Sequence	Step	Type	Description
	1	Stimulus	MEC application instance to request the available service through a service availability query, to the MEC platform.
	2	Response	MEC Platform respond back with a list of available services in the MEC platform.
	3	IOP Check	Verify that the MEC application instance received the list of available services in the MEC platform.



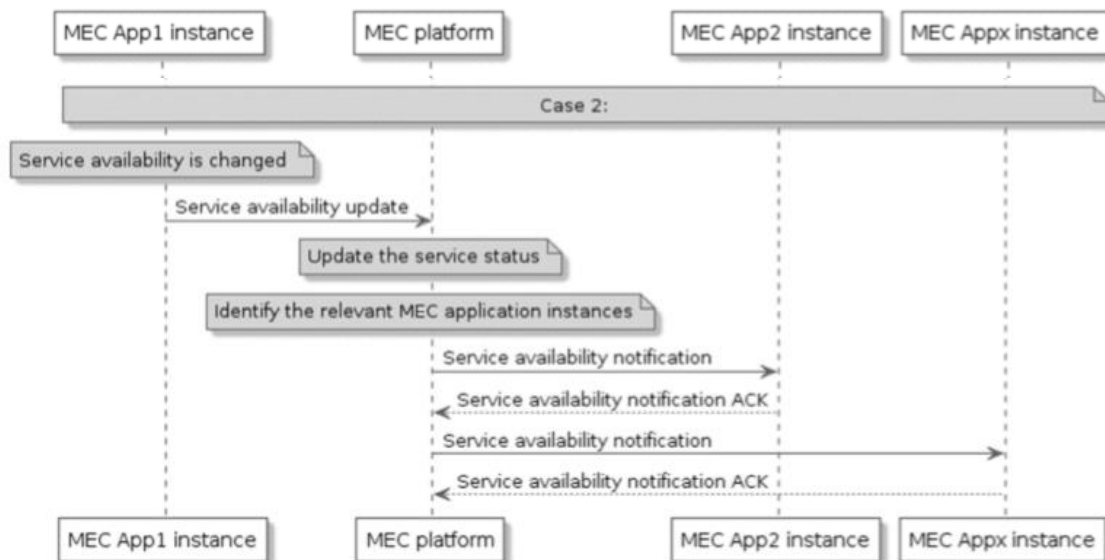
8.2.2 Register a new service

Interoperability Test Description			
Identifier	TD_MEC_SVC_REGISTER		
Test Objective	Verify a MEC service produced by a MEC application can be successfully registered in a MEC Platform		
Configuration	SUT_MEC_SERVICES_MULTI_APP		
References	Register a new service. MEC 011, "Service registration". (Section 5.2.4)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_5, IFS_MEC_APP_3		
Pre-test conditions	MEC Platform running MEC application instance providing a MEC service MEC Application instance registered to receive service notification		
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC application instance to send a new service registration message to the MEC platform
	2	Response	The MEC platform respond back with a successful registration.
	3	IOP Check	Verify that the MEC application instance registered the MEC service successfully.
	4	IOP Check	Verify that a notification is sent about the new service to the MEC application instance.



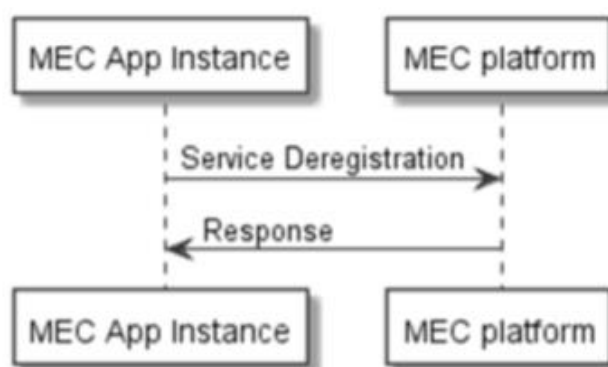
8.2.3 Update an existing service

Interoperability Test Description			
Identifier	TD_MEC_SVC_UPDATE		
Test Objective	Verify an existing MEC service in a MEC platform can be updated successfully.		
Configuration	SUT_MEC_SERVICES_MULTI_APP		
References	Update an existing service. MEC 011, "Service availability update" (Section 5.2.4)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_5, IFS_MEC_APP_3		
Pre-test conditions	MEC Platform running MEC application instance providing a MEC service MEC Application instance registered to receive service notification		
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC service sends a service availability update message to the MEC platform to change its availability.
	2	Response	The MEC platform respond back with a notification change.
	3	IOP Check	Verify that the MEC service availability has changed in the MEC platform.
	4	IOP Check	Verify that a notification is sent about the availability change to the MEC application instance.



8.2.4 Deregister a service

Interoperability Test Description			
Identifier	TD_MEC_SVC_DEREGISTER		
Test Objective	Verify a MEC service produced by a MEC application instance can be successfully deregistered from a MEC Platform		
Configuration	SUT_MEC_SERVICES_MULTI_APP		
References	Service deregistration. MEC 011, "Service deregistration". (Section 5.2.11)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_5, IFS_MEC_APP_3		
Pre-test conditions	MEC Platform running MEC application instance providing a MEC service MEC Application instance registered to receive service notification		
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC application instance sends a request to the MEC platform to deregister the MEC service it provides.
	2	Response	The MEC platform deregisters the MEC service and returns a service deregistration acknowledgement.
	3	IOP Check	Show that the MEC service is no longer registered in the MEC platform.
	4	IOP Check	Verify that a notification is sent about the availability change to the MEC application instance.



8.2.5 Consume a service

Interoperability Test Description			
Identifier	TD_MEC_SVC_CONSUME		
Test Objective	Verify that a MEC service can be consumed by another MEC application.		
Configuration	SUT_MEC_SERVICES_MULTI_APP		
References			
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_5, IFS_MEC_APP_3, IFS_MEC_APP_2		
Pre-test conditions	MEC Platform running MEC service is available (either by the MEC platform or a MEC application) (MEC service provider) MEC service consumer has already discovered the service endpoint. MEC application instance consuming the MEC service (MEC service consumer)		
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC application instance (MEC service consumer) request for the service.
	2	Response	The MEC service provider provides such service as requested.
	3	IOP Check	Verify that the MEC service is provided, and consumed by the respective component.

8.2.6 Query available transports service

Interoperability Test Description			
Identifier	TD_MEC_SVC_TRANSPORTS_QUERY		
Test Objective	Verify that a MEC App can successfully query the list of available transports layers from the MEC Platform.		
Configuration	SUT_MEC_SERVICES_SINGLE_APP SUT_MEC_SERVICES_MULTI_APP		
References			
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_5, IFS_MEC_APP_3, IFS_MEC_APP_2		
Pre-test conditions	MEC Platform running Time service is available through the MEC Platform MEC application is running in MEC Platform		
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC application instance (MEC service consumer) requests for the transport information from the MEC platform
	2	Response	The MEC platform provides the list of transports available.
	3	IOP Check	Verify that the MEC application received the transports information properly.

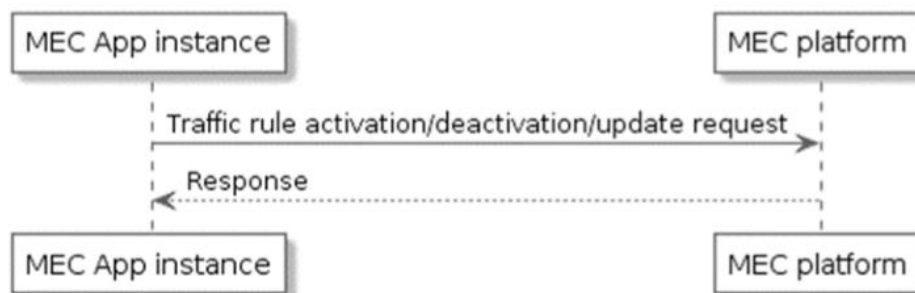
8.2.7 Query time service

Interoperability Test Description			
Identifier	TD_MEC_SVC_TIMEQUERY		
Test Objective	Verify that a MEC App can successfully query the time information from the MEC Platform.		
Configuration	SUT_MEC_SERVICES_SINGLE_APP SUT_MEC_SERVICES_MULTI_APP		
References			
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_5, IFS_MEC_APP_3, IFS_MEC_APP_2		
Pre-test conditions	MEC Platform running Time service is available through the MEC Platform MEC application is running in MEC Platform		
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC application instance (MEC service consumer) request for the time from the MEC platform
	2	Response	The MEC platform provides accurate time based on location/format.
	3	IOP Check	Verify that the MEC application received the time properly.

8.3 Test group 3 - MEC Traffic

8.3.1 Traffic rule activation

Interoperability Test Description			
Identifier	TD_MEC_NTW_ACTIVATE		
Test Objective	Verify a MEC application can activate a traffic rule in the MEC platform successfully		
Configuration	SUT_MEC_BASIC SUT_MEC_SERVICES_SINGLE_APP SUT_MEC_NFVI SUT_MEC_MANO		
References	The MEC application request a rule to be activated in the MEC Platform. MEC 011, "Traffic rule activation". (Section 5.2.7)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_6, IFS_MEC_PLAT_2		
Pre-test conditions			
MEC Platform running MEC application instance running			
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC application instance sends a traffic rule activation request to MEC platform.
	2	Response	The MEC platform sends a response to the MEC application instance to indicate the results of the operation.
	3	IOP Check	Verify that the traffic rule was activated successfully in the MEC platform. The selected traffic type coming in the MEC platform is steered accordingly.



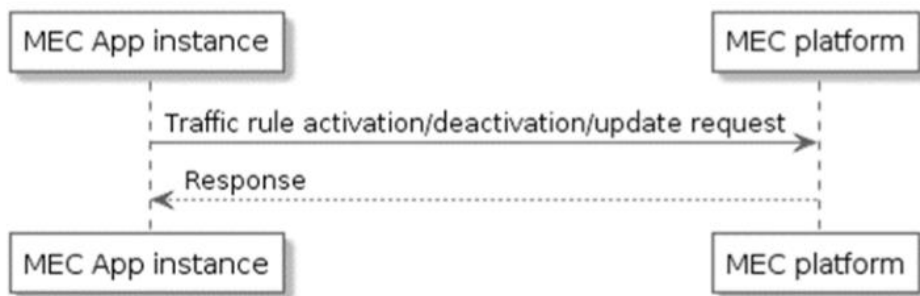
8.3.2 Traffic rule update

Interoperability Test Description			
Identifier	TD_MEC_NTW_UPDATE		
Test Objective	Verify a MEC application can update a traffic rule in the MEC platform successfully		
Configuration	SUT_MEC_BASIC SUT_MEC_SERVICES_SINGLE_APP SUT_MEC_NFVI SUT_MEC_MANO		
References	The MEC application request a rule to be updated in the MEC Platform. MEC 011, "Traffic rule update". (Section 5.2.7)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_6, IFS_MEC_PLAT_2		
Pre-test conditions	MEC Platform running MEC application instance running A traffic rule applied in the MEC platform, impacted specific set of traffic.		
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC application instance sends a traffic rule update request to MEC platform.
	2	Response	The MEC platform sends a response to the MEC application instance to indicate the results of the operation.
	3	IOP Check	Verify that the traffic rule was updated successfully in the MEC platform. The initially impacted traffic is now affected differently based on the requested update.



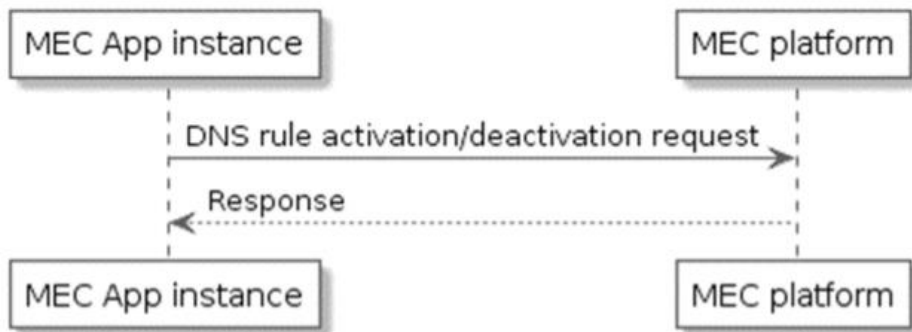
8.3.3 Traffic rule deactivation

Interoperability Test Description			
Identifier	TD_MEC_NTW_DEACTIVATE		
Test Objective	Verify a MEC application can deactivate a traffic rule in the MEC platform successfully		
Configuration	SUT_MEC_BASIC SUT_MEC_SERVICES_SINGLE_APP SUT_MEC_NFVI SUT_MEC_MANO		
References	The MEC application request a rule to be deactivated in the MEC Platform. MEC 011, "Traffic rule update". (Section 5.2.7)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_6, IFS_MEC_PLAT_2		
Pre-test conditions	MEC Platform running MEC application instance running A traffic rule applied in the MEC platform, impacted a specific set of traffic		
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC application instance sends a traffic rule deactivate request to MEC platform.
	2	Response	The MEC platform sends a response to the MEC application instance to indicate the results of the operation.
	3	IOP Check	Verify that the traffic rule was deactivated successfully in the MEC platform. The initially impacted traffic is no longer affected by the traffic rule.



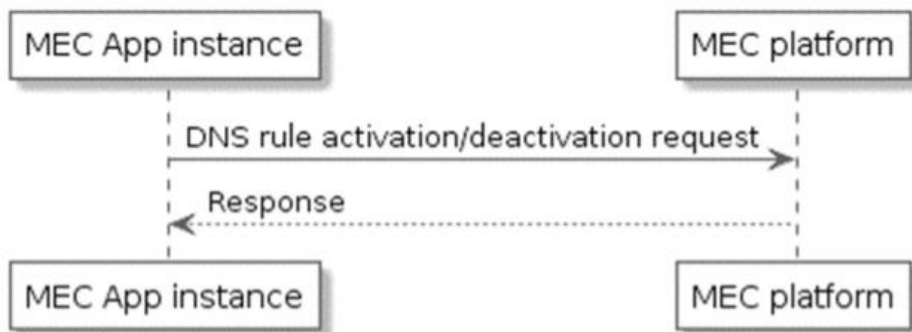
8.3.4 DNS rule activation

Interoperability Test Description			
Identifier	TD_MEC_NTW_DNS_ACTIVATE		
Test Objective	Verify a MEC application can activate a DNS rule in the MEC platform successfully		
Configuration	SUT_MEC_BASIC SUT_MEC_SERVICES_SINGLE_APP SUT_MEC_NFVI SUT_MEC_MANO		
References	The MEC application request a DNS rule to be activated in the MEC Platform. MEC 011, "DNS rule activation". (Section 5.2.8)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_7, IFS_MEC_PLAT_3		
Pre-test conditions	MEC Platform running MEC application instance running		
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC application instance sends a DNS rule activation request to MEC platform.
	2	Response	The MEC platform sends a response to the MEC application instance to indicate the results of the DNS rule activation.
	3	IOP Check	Verify that the DNS rule activation was successful and the MEC platform routes DNS request accordingly.



8.3.5 DNS rule deactivation

Interoperability Test Description			
Identifier	TD_MEC_NTW_DNS_DEACTIVATE		
Test Objective	Verify a MEC application can deactivate a DNS rule in the MEC platform successfully		
Configuration	SUT_MEC_BASIC SUT_MEC_SERVICES_SINGLE_APP SUT_MEC_NFVI SUT_MEC_MANO		
References	The MEC application request a DNS rule to be deactivated in the MEC Platform. MEC 011, "DNS rule activation". (Section 5.2.8)		
Applicability	IFS_MEC_APP_1, IFS_MEC_PLAT_1, IFS_MEC_APP_7, IFS_MEC_PLAT_3		
Pre-test conditions	MEC Platform running MEC application instance running A DNS rule activated in the MEC platform		
Test Sequence	Step	Type	Description
	1	Stimulus	The MEC application instance sends a DNS rule deactivation request to MEC platform.
	2	Response	The MEC platform sends a response to the MEC application instance to indicate the results of the DNS rule deactivation.
	3	IOP Check	Verify that the DNS rule deactivation was successful and the MEC platform does not route DNS request anymore.



Annex A Interoperability Feature Statement

A.1 Entities

Table 4: Entities

Item	Which entity do you support?	Status	Support
1	MEC App	Available	Optional
2	MEC Platform	Available	Optional
3	NFV Platform (NFVI + VIM)	Available	Optional
4	MANO	Available	Optional

NOTE: At least one shall be supported.

A.2 MEC App

Table 5: MEC App Features

Item	Feature	ID	Status	Support
1	App Descriptor	IFS_MEC_APP_1	Available	Mandatory
2	MEC Service API consumer	IFS_MEC_APP_2	Available	Optional
3	MEC Service API producer	IFS_MEC_APP_3	Available	Optional
4	Packaged as VNF	IFS_MEC_APP_4	Available	Optional
5	Able to discover services through Service Enablement API over Mp1	IFS_MEC_APP_5	Available	Optional
6	Able to request traffic rules support	IFS_MEC_APP_6	Available	Optional
7	Able to request DNS rules support	IFS_MEC_APP_7	Available	Optional

A.2 MEC Platform

Item	Feature	ID	Status	Support
1	Implements Service Enablement API	IFS_MEC_PLAT_1	Available	Optional
2	Implements Traffic Rules feature of Application Enablement API	IFS_MEC_PLAT_2	Available	Optional
3	Implements DNS Rules feature of Application Enablement API	IFS_MEC_PLAT_3	Available	Optional

A.2 NFV Platform

None.

A.2 MANO

None.

Annex B FUT Specific Information Pro-Forma

In this Annex each Vendor can list any specific implementation-dependent details, which may be necessary to correctly implement the test procedures.

B.1 MEC App

	Description	Value
App descriptor		
NSD or VNFD		

B.2 MEC Platform

	Description	Value
Platform Service Enablement API endpoint		

B.3 NFV Platform

	Description	Value
Virtualization technologies	E.g. (KVM, VMWare, Docker, LXD, ...)	
Image format		
VIM API exposed	E.g. Openstack APIs	

B.4 MANO

None.

Change History

Document history		
0.1	23.03.2020	Template draft
1.0	01.06.2020	Final version

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