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| ToR TTF T015 (Ref. Body NFV) |
| Version: 1.2 |
| Author: Pierre Lynch – Date: 2020-12-06 |
| Last updated by: ETSI Secretariat – Date: 2021-03-02 |
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Terms of Reference –Testing Task Force Proposal

TTF T015 (Ref. Body NFV)

NFV API Conformance test specification maintenance and development

Summary information

|  |  |  |
| --- | --- | --- |
| Approval status | Approved by Ref. Body (doc ref: XXXX) | **YES/NO** |
| Reference Body | Ref. Body NFV |
| ETSI Funding | **Maximum budget : 85 000 EUR** |
| Minimum of 4 ETSI Members Support | **YES** |
| Time scale | **From** | 2021-04-29 |
| **To** | 2022-08-01 |
| Work Items  | *DGS/NFV-TST010ed281**DGS/NFV-TST010ed351**DGS/NFV-TST010ed361**DGS/NFV-TST010ed4xx* |
| TTF Roadmap reference |  |

Part I –TTF Technical Proposal

# Rationale & Objectives

## Rationale

ETSI ISG NFV is continuously updating the specifications of a set of critically important APIs as part of the stage 3 work defining the NFV architecture. This is the culmination of thousands of person hours of work by countless participating individuals, companies and is highly anticipated by the industry as a major step forward towards interoperability. It is an actionable result that will impact the community because building NFV components that comply with this work can now begin.

In an effort to support the industry with this endeavor, and to allow companies to accurately measure their progress towards support of the ISG NFV standards, the ISG has constructed a comprehensive compliance test plan (via NFV work item TST010). The test plan allows designers and consumers alike to accurately demonstrate their compliance to the APIs as defined by the ISG. It is vital that the industry has such a standard test plan that is agreed to by the NFV community, and subsequently referred to by the industry at large in order to validate their designs in commercial situations.

The test plan is unique in the sense that it is an immediately usable work item because it also incorporates executable test scripts in addition to the TST010 document. It is agreed to by community consensus, as it greatly helps the adoption of the ISG NFV specifications by allowing a uniform way to prove compliance.

However, since the start of the TST010 test plan work item, the NFV-SOL specifications have not been static. New versions have been developed or are under development, with bug fixes and enhancements. Likewise, the test plan, and associated test scripts, can not stay static. In order to stay relevant, they must also be enhanced in order to reflect the current status of the NFV SOL documents.

Additionally, ISG NFV has added and is continuing to add new features to the NFV architecture with Release 4. These new features are reflected in enhancements to the existing APIs, as well as new APIs. We find it critical to support these new features within the scope of TST010 in order to allow their conformance testing in the industry.

In order to facilitate and accelerate the completion of this work item, we find that the addition of expert(s) from a TTF would be critical. The work item requires some specific expertise to complement the existing expertise of the ISG NFV TST and SOL working groups. In addition, time to completion is of vital importance for this valuable test plan. The faster it is available to the industry after updates of the APIs themselves, the faster the adoption of the API specifications will be.

## Objectives of the work to be executed

The high level objectives of the TTF are:

* Maintenance of test suites for conformance to Release 2 versions of currently supported SOL documents (ie. new editions of documents previously addressed in TST 010 deliverable),
* Maintenance of test suites for conformance to Release 3 versions of currently supported NFV-SOL documents (ie. new editions of documents previously addressed in TST 010 deliverable)
* Development of test suites for conformance to Release 4 NFV-SOL documents
* New Release 4 features
* Enhancements of NFV-SOL compliance verification for currently available set of test cases;
* Test code quality enhancements of currently available supported tests, including reception of collected feedback from early users; specifically:
	+ addressing the feedback received from the Tacker OpenStack projects in contribution NFVTST(20)000029r1, and
	+ addressing the list of open issues reported (available at <https://forge.etsi.org/rep/nfv/api-tests/issues>);

Note: currently supported NFV-SOL documents are listed below. The testing support for some of the editions is currently in progress.

* SOL002, SOL003 and SOL005 editions 2.4.1, 2.6.1, 2.7.1, and 3.3.1
* SOL009, SOL011 and SOL012 editions 3.3.1

## Previous funded activities in the same domain

ETSI NFV ISG STF557

This STF started the activity for TST010 and provided the initial revision (2.4.1) and tests for SOL002, SOL003 and SOL005.

ETSI NFV ISG STF583

This STF continued the activity started with STF557, and enhanced the tests for new Release 2 and 3 versions of SOL002, SOL003 and SOL005, and also added support for SOL009, SOL011 and SOL012.

##

## Consequences if not agreed

The production of test specifications as described in the present document is key to the testing and potential certification activities that should assure the conformance (and thus interoperability) of NFV implementations. The production of conformance test specifications will not be possible or will be significantly delayed, at the risk of making them irrelevant to the industry. Without a standard test plan to demonstrate API compliance in a uniform way, there is a risk that implementations will not be interoperable. This can lead to much longer integration times for operators as they look to piece together an NFV system, and a general loss of confidence in the industry of the NFV system itself.

# ETSI Members Support

|  |  |  |
| --- | --- | --- |
| **#** | **ETSI Member** | **Supporting delegate** |
| 1 | Orange | Bruno Chatras |
| 2 | DOCOMO Communications Lab | Takaaki Matsuura  |
| 3 | Keysight Technologies | Pierre Lynch |
| 4 | Telefonica | Diego Lopez |

# Deliverables

## Base documents

|  |  |  |
| --- | --- | --- |
| **Document** | **Title** | **Status** |
| ETSI GS NFV-SOL 002 | Network Functions Virtualisation (NFV) Release 2; Protocols and Data Models; RESTful protocols specification for the Ve-Vnfm Reference Point | Published(v2.8.1) |
| ETSI GS NFV-SOL 002 | Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the Ve-Vnfm Reference Point | Published(v3.3.1)Work Items to be created(v3.5.1)(v3.6.1) |
| ETSI GS NFV-SOL 002 | Network Functions Virtualisation (NFV) Release 4; Protocols and Data Models; RESTful protocols specification for the Ve-Vnfm Reference Point | Work Items to be created(v4.x.x) |
| ETSI GS NFV-SOL 003 | Network Functions Virtualisation (NFV) Release 2; Protocols and Data Models; RESTful protocols specification for the Or-Vnfm Reference Point | Published(v2.8.1) |
| ETSI GS NFV-SOL 003 | Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the Or-Vnfm Reference Point | Published(v3.3.1)Work Items to be created (v3.5.1)(v3.6.1) |
| ETSI GS NFV-SOL 003 | Network Functions Virtualisation (NFV) Release 4; Protocols and Data Models; RESTful protocols specification for the Or-Vnfm Reference Point | Work Items to be created(v4.x.x) |
| ETSI GS NFV-SOL 005 | Network Functions Virtualisation (NFV) Release 2; Protocols and Data Models; RESTful protocols specification for the Os-Ma-nfvo Reference Point | Published(v2.8.1) |
| ETSI GS NFV-SOL 005 | Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the Os-Ma-nfvo Reference Point | Published(v3.3.1)Work Items to be created(v3.5.1)(v3.6.1) |
| ETSI GS NFV-SOL 005 | Network Functions Virtualisation (NFV) Release 4; Protocols and Data Models; RESTful protocols specification for the Os-Ma-nfvo Reference Point | Work Items to be created(v4.x.x) |
| ETSI GS NFV-SOL 009 | Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the management of NFV-MANO | Published(v3.3.1)Work Items to be created(v3.5.1)(v3.6.1) |
| ETSI GS NFV-SOL 009 | Network Functions Virtualisation (NFV) Release 4; Protocols and Data Models; RESTful protocols specification for the management of NFV-MANO | Work Items to be created(v4.x.x) |
| ETSI GS NFV-SOL 011 | Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the Or-Or Reference Point | Published(v3.3.1)Work Items to be created(v3.5.1)(v3.6.1) |
| ETSI GS NFV-SOL 011 | Network Functions Virtualisation (NFV) Release 4; Protocols and Data Models; RESTful protocols specification for the Or-Or Reference Point | Work Items to be created(v4.x.x) |
| ETSI GS NFV-SOL 012 | Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the Policy Management Interface | Published(v3.3.1)Work Items to be created(v3.5.1)(v3.6.1) |
| ETSI GS NFV-SOL 012 | Network Functions Virtualisation (NFV) Release 4; Protocols and Data Models; RESTful protocols specification for the Policy Management Interface | Work Items to be created(v4.x.x) |
| ETSI GS NFV-SOL 013 | Network Functions Virtualisation (NFV) Release 2; Protocols and Data Models; Specification of common aspects for RESTful NFV MANO APIs | Published(v2.8.1) |
| ETSI GS NFV-SOL 013 | Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; Specification of common aspects for RESTful NFV MANO APIs | Published(v3.3.1)Work Items to be created(v3.5.1)(v3.6.1) |
| ETSI GS NFV-SOL 013 | Network Functions Virtualisation (NFV) Release 4; Protocols and Data Models; Specification of common aspects for RESTful NFV MANO APIs | Work Items to be created(v4.x.x) |

## New deliverables

|  |  |  |  |
| --- | --- | --- | --- |
| **Deliv.** | **Work Item code****Standard number** | **Working title** | **Expected date for publication** |
| D1 | DGS/NFV-TST010ed281 | **Working title**: Network Function Virtualisation (NFV) Release 2; Testing; API Conformance Testing Specification.**Scope**: Test descriptions, procedures, methods and test configurations, along with precise expected outcomes that will comprise a conformance test plan for the APIs exposed on the following reference points: Os-Ma-Nfvo, Or-Vnfm, and Ve-Vnfm, NFV MANO management, Or-Or reference point, policy management defined in ETSI GS NFV-SOL 005, ETSI GS NFV-SOL 003, ETSI GS NFV-SOL 002, respectively. Where possible, the tests will be specified using means to facilitate automation of the testing. | June 2021 |
| D2 | DGS/NFV-TST010ed351 | **Working title**: Network Function Virtualisation (NFV) Release 3; Testing; API Conformance Testing Specification.**Scope**: Test descriptions, procedures, methods and test configurations, along with precise expected outcomes that will comprise a conformance test plan for the APIs exposed on the following reference points: Os-Ma-Nfvo, Or-Vnfm, and Ve-Vnfm, NFV MANO management, Or-Or reference point, policy management defined in ETSI GS NFV-SOL 005, ETSI GS NFV-SOL 003, ETSI GS NFV-SOL 002, GS NFV-SOL 009, GS NFV-SOL 011, GS NFV-SOL 012 respectively. Where possible, the tests will be specified using means to facilitate automation of the testing. | Sept 2021 |
| D3 | DGS/NFV-TST010ed361 | **Working title**: Network Function Virtualisation (NFV) Release 3; Testing; API Conformance Testing Specification.**Scope**: Test descriptions, procedures, methods and test configurations, along with precise expected outcomes that will comprise a conformance test plan for the APIs exposed on the following reference points: Os-Ma-Nfvo, Or-Vnfm, and Ve-Vnfm, NFV MANO management, Or-Or reference point, policy management defined in ETSI GS NFV-SOL 005, ETSI GS NFV-SOL 003, ETSI GS NFV-SOL 002, GS NFV-SOL 009, GS NFV-SOL 011, GS NFV-SOL 012 respectively. Where possible, the tests will be specified using means to facilitate automation of the testing. | Nov 2021 |
| D4 | DGS/NFV-TST010ed4xx | **Working title**: Network Function Virtualisation (NFV) Release 4; Testing; API Conformance Testing Specification.**Scope**: Test descriptions, procedures, methods and test configurations, along with precise expected outcomes that will comprise a conformance test plan for the APIs exposed on the following reference points: Os-Ma-Nfvo, Or-Vnfm, and Ve-Vnfm, NFV MANO management, Or-Or reference point, policy management defined in ETSI GS NFV-SOL 005, ETSI GS NFV-SOL 003, ETSI GS NFV-SOL 002, GS NFV-SOL 009, GS NFV-SOL 011, GS NFV-SOL 012 respectively. Where possible, the tests will be specified using means to facilitate automation of the testing. | Dec 2021 |

# Maximum budget

## Task summary/Manpower Budget

|  |  |
| --- | --- |
| **Task short description** | Budget (EUR) |
|
| Project Management | 5K |
| Update existing TST010 Test Descriptions to NFV-SOL 2.8.1 versions | 16666 |
| Update existing TST010 Test Descriptions to NFV-SOL 3.5.1 versions | 25000 |
| Update existing TST010 Test Descriptions to NFV-SOL 3.6.1 versions | 16667 |
| *Update existing TST010 Test Descriptions to NFV-SOL 4.x.x versions* | 16667 |
| **TOTAL** | 80000 |

## Travel budget

5 000 EUR to travel to up to (potentially, given Covid) 3 NFV ISG meetings: 2 in Europe + 1 overseas (US or Asia) during 2Q2021, 3Q2021 and 4Q2021.

## Other budget line

None.

Part II – Details on TTF Technical Proposal

# Tasks, Technical Bodies and other stakeholders

## Organization of the work

A Steering Group will be formed. It will meet regularly every two weeks or as needed.

One member of the experts team will be designated as the lead expert, and will organize the experts team.

The same process as STF583 for approving the work of the experts team will be used. The work will be done directly in the ETSI Forge repository, where the TST working group members will have the opportunity to comment and provide input to the tests. Once the input is resolved, a TST contribution (towards the deliverable document) will be constructed by the TTF lead and will be submitted to the TST working group for formal approval.

The process is described in the following contributions (which may be revised in the future):

* [https://docbox.etsi.org/ISG/NFV/TST/05-CONTRIBUTIONS/2019//NFVTST(19)000300r2\_Updated\_proposal\_for\_contribution\_process\_via\_ETSI\_Forge.zip](https://docbox.etsi.org/ISG/NFV/TST/05-CONTRIBUTIONS/2019//NFVTST%2819%29000300r2_Updated_proposal_for_contribution_process_via_ETSI_Forge.zip)
* <https://nfvwiki.etsi.org/images/NFVTST%2820%29000015r1CoverPage.docx>

## Other interested ETSI Technical Bodies

Other interested ETSI Technical Bodies are:

* ETSI MEC
* ETSI ZSM
* ETSI MTS

For all the above bodies, the communication will be in the form of information dissemination. These bodies will likely be interested in our progress because they have (or might have) activities of their own that resembles the activity of the present TTF. The dissemination of information will be via liaisons.

## Other stakeholders

The main other stakeholders in the present TTF activity is the ONAP (Open Network Automation Platform) open source community, hosted by the Linux Foundation and ETSI OSM OSG. The communication will be in the form of information dissemination.

The ONAP community is building support for the ETSI NFV-MANO APIs, and many of its contributors have already expressed interest in the MANO API test suite. Since the open source community does not maintain official avenues of communications with other organizations (ie. liaisons), the communication will remain informal, as it is now, via the ETSI NFV TST WG chair, who is also responsible for open source communities relationships.

The ETSI OSM community is also building support for the ETSI NFV-MANO APIs. The communications for this community can take the form of formal liaisons, but also via several informal avenues as well, including ETSI NFV Plugtests.

Part III: Execution of Work

# Work plan, time scale and resources

## Task description

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| --- | --- |
| **Task 0** | **Project Management** |
| **Objectives** | * Technical lead of the STF
* Manage the resources assigned to this project
* Chair periodic meetings of the STF
* Ensure that the project stays on track and meets all milestone delivery dates
* Identify if/when there are impediments that may affect the delivery of the project at an early stage so that stakeholders can help mitigate potential risks
 |
| **Input** | * Periodic meetings of this STF, reflecting interactions
* The tasks and schedule in this STF.
 |
| **Output** | * Progress reports, including report to the SOL WG after each Steering Committee meeting summarizing the current status of this STF
* Intermediate reports to the STF Steering Committee
* Final report
 |
| **Interactions** | * The Steering Committee for this STF will be consulted for guidance throughout the STF. There will be regular interactions between the experts and the STF Steering Committee.
* The SOL WG will review the progress of the ToR tasks.
 |
| **Resources required** | * Team management ability, reporting ability (written and oral)
 |

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| **Task 1** | **Update existing TST010 Test Descriptions to NFV-SOL 2.8.1 versions** |
| **Objectives** | * Collect and document all requirements from the base specifications.
* Update existing Robot Test Description implementations to match version 2.8.1 of the applicable SOL specifications from section 3.1 of the present document.
* Make available the Robot Test Description implementations to the ETSI Forge.
* Validate modified Robot Test Description implementations.
 |
| **Input** | * Deliverables of GS NFV-SOL specifications indicated in Sect. 3.1., version 2.8.1
* OpenAPI definitions of the NFV APIs in scope
* Existing TST010 Test Descriptions and Robot implementations
* The list of open issues reported (available at https://forge.etsi.org/rep/nfv/api-tests/issues)
 |
| **Output** | * Updated and validated Robot implementations of the Test Descriptions and test cases
* Updated Robot documentation of the changed Test Descriptions on ETSI Forge.
* List of SOL requirements supported by Robot implementations of the Test Descriptions and Test case.
 |
| **Interactions** | * Regular interaction between the experts and the STF Steering Committee.
* Regular interaction between the lead TTF expert and the TST WG
 |
| **Resources required** | Conformance test development expertise (requirements collection, test definitions); Robot Framework and Python development expertise; REST API execution and validation expertise; |

|  |  |
| --- | --- |
| **Task 2** | **Update existing TST010 Test Descriptions to NFV-SOL 3.5.1 versions** |
| **Objectives** | * Collect and document all requirements from the base specifications.
* Update existing Robot Test Description implementations to match version 3.5.1 of the applicable SOL specifications from section 3.1 of the present document.
* Create new or Update existing Robot Test Description implementations to support the existing requirements which was not supported by previous release of the Robot Test Description implementations. (as possible by prioritization after TTF start, via the steering group consensus)
* Make available the Robot Test Description implementations to the ETSI Forge.
* Validate modified Robot Test Description implementations.
* Test code quality enhancements of currently available supported tests, including reception of collected feedback from early users
 |
| **Input** | * Deliverables of GS NFV-SOL specifications indicated in Sect. 3.1., version 3.5.1
* OpenAPI definitions of the NFV APIs in scope
* Existing TST010 Test Descriptions and Robot implementations
* Feedback received from the Tacker OpenStack projects in contribution NFVTST(20)000029r1, NFVTST(20)000043r2 and NFVTST(20)000095
* The list of open issues reported (available at https://forge.etsi.org/rep/nfv/api-tests/issues)
 |
| **Output** | * Updated and validated Robot implementations of the Test Descriptions and test cases
* Updated Robot documentation of the changed Test Descriptions on ETSI Forge.
* List of SOL requirements supported by Robot implementations of the Test Descriptions and Test case.
 |
| **Interactions** | * Regular interaction between the experts and the STF Steering Committee.
* Regular interaction between the lead TTF expert and the TST WG
 |
| **Resources required** | Conformance test development expertise (requirements collection, test definitions); Robot Framework and Python development expertise; REST API execution and validation expertise; |

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| --- | --- |
| **Task 3** | **Update existing TST010 Test Descriptions to NFV-SOL 3.6.1 versions** |
| **Objectives** | * Collect and document all requirements from the base specifications.
* Update existing Robot Test Description implementations to match version 3.6.1 of the applicable SOL specifications from section 3.1 of the present document.
* Create new or Update existing Robot Test Description implementations to support the existing requirements which was not supported by previous release of the Robot Test Description implementations. (as possible by prioritization after TTF start, via the steering group consensus)
* Make available the Robot Test Description implementations to the ETSI Forge.
* Validate modified Robot Test Description implementations.
* Test code quality enhancements of currently available supported tests, including reception of collected feedback from early users
 |
| **Input** | * Deliverables of GS NFV-SOL specifications indicated in Sect. 3.1., version 3.6.1
* OpenAPI definitions of the NFV APIs in scope
* Existing TST010 Test Descriptions and Robot implementations
* Feedback received from the Tacker OpenStack projects in contribution NFVTST(20)000029r1, NFVTST(20)000043r2 and NFVTST(20)000095
* The list of open issues reported (available at https://forge.etsi.org/rep/nfv/api-tests/issues)
 |
| **Output** | * Updated and validated Robot implementations of the Test Descriptions and test cases
* Updated Robot documentation of the changed Test Descriptions on ETSI Forge.
* List of SOL requirements supported by Robot implementations of the Test Descriptions and Test case.
 |
| **Interactions** | * Regular interaction between the experts and the STF Steering Committee.
* Regular interaction between the lead TTF expert and the TST WG
 |
| **Resources required** | Conformance test development expertise (requirements collection, test definitions); Robot Framework and Python development expertise; REST API execution and validation expertise; |

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| --- | --- |
| **Task 4** | **Update existing TST010 Test Descriptions to NFV-SOL 4.x.x versions****(the most suitable Rel 4 version to target will be identified by the Steering Committee and the experts team, according to the timeplan of T4 and the delivery date for the related Milestone(s). It may be that a new base specification be available if the SOL WG chooses a new specification)** |
| **Objectives** | * Collect and document all requirements from the base specifications.
* Update existing Robot Test Description implementations to match version 4.x.x of the applicable SOL specifications from section 3.1 of the present document.
* Create new or Update existing Robot Test Description implementations to support the existing requirements which was not supported by previous release of the Robot Test Description implementations. (as possible by prioritization after TTF start, via the steering group consensus)
* Make available the Robot Test Description implementations to the ETSI Forge.
* Validate modified Robot Test Description implementations.
* Test code quality enhancements of currently available supported tests, including reception of collected feedback from early users
 |
| **Input** | * Deliverables of GS NFV-SOL specifications indicated in Sect. 3.1., version 4.x.x
* OpenAPI definitions of the NFV APIs in scope
* Existing TST010 Test Descriptions and Robot implementations
* Feedback received from the Tacker OpenStack projects in contribution NFVTST(20)000029r1, NFVTST(20)000043r2 and NFVTST(20)000095
* The list of open issues reported (available at https://forge.etsi.org/rep/nfv/api-tests/issues)
 |
| **Output** | * Updated and validated Robot implementations of the Test Descriptions and test cases
* Updated Robot documentation of the changed Test Descriptions on ETSI Forge.
* List of SOL requirements supported by Robot implementations of the Test Descriptions and Test case.
 |
| **Interactions** | * Regular interaction between the experts and the STF Steering Committee.
* Regular interaction between the lead TTF expert and the TST WG
 |
| **Resources required** | Conformance test development expertise (requirements collection, test definitions); Robot Framework and Python development expertise; REST API execution and validation expertise; |

## Milestones

**Milestone A: Start of work**

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| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **A** | Start of work | 2021-04-29 |
| Reference Body Deliverable | Kickoff meeting  |
| ETSI Deliverable |  |

**Milestone B: Robot code for applicable NFV-SOL 2.8.1 versions is available**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **B** | Robot code for applicable NFV-SOL 2.8.1 versions is available | 2021-07-01 |
| Reference Body Deliverable | GS NFV-TST 010 v2.8.1 stable draft This milestone is related to task 1.  |
| ETSI Deliverable |  |

**Milestone C: TST010 v2.8.1 ISG approved. TTF progress report #1 approved by the steering committee**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **C** | TST010 v2.8.1 ISG approved. TTF progress report #1 approved by the steering committee | 2021-08-15 |
| Reference Body Deliverable | GS NFV-TST 010 v2.8.1 |
| ETSI Deliverable | TTF progress report #1 approved by the steering committee |

**Milestone D: Robot code for applicable NFV-SOL 3.5.1 versions is available**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **D** | Robot code for applicable NFV-SOL 3.5.1 versions is available | 2021-11-01 |
| Reference Body Deliverable | GS NFV-TST 010 v3.5.1 stable draftThis milestone is related to task 2  |
| ETSI Deliverable |  |

**Milestone E: TST010 v3.5.1 ISG approved. TTF progress report #2 approved by the steering committee**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **E** | TST010 v3.5.1 ISG approved. TTF progress report #2 approved by the steering committee | 2021-12-01 |
| Reference Body Deliverable | GS NFV-TST 010 v3.5.1 |
| ETSI Deliverable | TTF progress report #2 approved by the steering committee |

**Milestone F: Robot code for applicable NFV-SOL 3.6.1 versions is available**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **F** | Robot code for applicable NFV-SOL 3.6.1 versions is available | 2022-02-01 |
| Reference Body Deliverable | GS NFV-TST 010 v3.5.1 stable draftThis milestone is related to task 3 |
| ETSI Deliverable |  |

**Milestone G: TST010 v3.6.1 ISG approved. TTF progress report #3 approved by the steering committee**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **G** | TST010 v3.6.1 ISG approved. TTF progress report #3 approved by the steering committee | 2022-03-15 |
| Reference Body Deliverable | GS NFV-TST 010 v3.6.1 |
| ETSI Deliverable | TTF progress report #3 approved by the steering committee |

**Milestone H: Robot code for applicable NFV-SOL 4.x.x versions is available**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **H** | Robot code for applicable NFV-SOL 4.x.x versions is available | 2022-05-15 |
| Reference Body Deliverable | GS NFV-TST 010 v4.x.x stable draftThis milestone is related to task 4 |
| ETSI Deliverable |  |

**Milestone I: TST010 4.x.x ISG approved**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **I** | TST010 4.x.x ISG approved | 2022-06-30 |
| Reference Body Deliverable | GS NFV-TST 010 v4.x.x |
| ETSI Deliverable |  |

**Milestone J: Final TTF report approved by the ISG**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **J** | Final TTF report approved by the ISG | 2022-07-15 |
| Reference Body Deliverable |  |
| ETSI Deliverable | TTF Final Report  |

**Milestone K: Deliverables published, TTF closed**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **K** | Deliverables published, TTF closed | 2022-08-01 |
| Reference Body Deliverable |  |
| ETSI Deliverable |  |

## Task summary

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **Task / Milestone**  | Target Date | Estimated Cost (EUR) |
| From | To |
| Milestone A | Start of work | April 29 2021 |  |  |
| T0 | Project Management  | April 29 2021 | Jul 2022 | 5000 |
| T1 | Update existing TST010 Test Descriptions to NFV-SOL 2.8.1 versions | April 29 2021 | June 30 2021 | 16666 |
| Milestone B | Robot code for applicable NFV-SOL 2.8.1 versions is available  |  | July 1 2021 |  |
| Milestone C | TST010 v2.8.1 ISG approved. TTF progress report #1 approved by the steering committee  |  | Aug 15 2021 |  |
| T2 | Update existing TST010 Test Descriptions to NFV-SOL 3.5.1 versions | July 1 2021 | Nov 1 2021 | 25000 |
| Milestone D | Robot code for applicable NFV-SOL 3.5.1 versions is available  |  | Nov 1 2021 |  |
| Milestone E | TST010 v3.5.1 ISG approved. TTF progress report #2 approved by the steering committee |  | Dec 1 2021 |  |
| T3 | Update existing TST010 Test Descriptions to NFV-SOL 3.6.1 versions | Nov 1 2021 | Feb 1 2022 | 16667 |
| Milestone F | Robot code for applicable NFV-SOL 3.6.1 versions is available  |  | Feb 1 2022 |  |
| Milestone G | TST010 v3.6.1 ISG approved. TTF progress report #3 approved by the steering committee  |  | Mar 15 2022 |  |
| T4 | *Update existing TST010 Test Descriptions to NFV-SOL 4.x.x versions* | Feb 1 2022 | May 15 2022 | 16667 |
| Milestone H | Robot code for applicable NFV-SOL 4.x.x versions is available |  | May 15 2022 |  |
| MilestoneI | TST010 4.x.x ISG approved |  | Jun 30 2022 |  |
| MilestoneJ | Final TTF report approved by the ISG |  | Jul 15 2022 |  |
| MilestoneK | Deliverables published, TTF closed |  | Aug 1 2022 |  |
|  | **80000** |

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| **Task/ Mil.** | **J** | **F** | **M** | **A** | **M** | **J** | **J** | **A** | **S** | **O** | **N** | **D** |  | **J** | **F** | **M** | **A** | **M** | **J** | **J** | **A** | **S** | **O** | **N** | **D** |
| MA |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MB |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ME |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MF |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MG |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MH |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MJ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MK |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# Expertise required

## Team structure

(Up to) 3 participants to ensure the following mix of competences:

|  |  |
| --- | --- |
| **Priority** | **Qualifications and competences** |
| High | Knowledge of OpenAPI  |
| High | Knowledge of Robot Framework programming  |
| High | Knowledge of ETSI NFV SOL APIs  |
| High | Knowledge in REST API design and their testing |
| High | Knowledge of ETSI Standardization processes |

Part IV: TTF performance evaluation criteria

# Performance Indicators

Contribution from ETSI Members to TTF work

* Contributions/comments received from the TTF steering committee.

Contribution from the TTF to ETSI work

* Contributions to ISG/TST meetings (number of documents / meetings / participants).
* Usage of deliverable in the Plugtests™ events.

Quality of deliverables

* Approval of deliverables according to schedule.
* Respect of time scale, with reference to start/end dates in the approved ToR.
* Comments from Quality review by TTF steering committee.
* Comments from Quality review by ETSI Secretariat.

Time recording

For reporting purposes the TTF experts shall fill in the time sheet provided by ETSI with the days spent for the performance of the services.

In the course of the activity, the TTF Leader will collect the relevant information, as necessary to measure the performance indicators. The result will be presented in the Final Report.

|  |
| --- |
| **Select relevant Performance indicators applicable for these ToR (X)** |
| Contribution from ETSI Members to TTF work |
| Direct financial contribution (co-funding) |  |
| Support to the TTF work (e.g., provision of test–beds, organization of workshops, events) | X |
| Steering Group meetings (number of meetings / participants / duration) | X |
| Number of delegates directly involved in the review of the deliverables | X |
| Contributions/comments received from the Reference Bodies |  |
| Contributions/comments received from other Reference Bodies |  |
|  |  |
| **Contribution from the TTF to ETSI work** |
| Contributions to Reference Body meetings (number of documents / meetings / participants) | X |
| Contributions to other Reference Bodies |  |
| Presentations in workshops, conferences, stakeholder meetings | X |
|  |  |
| **Liaison with other stakeholders** |
| Stakeholder participation in the project (category, business area) | X |
| Cooperation with other standardization bodies | X |
| Potential interest of new members to join ETSI | X |
| Liaison to identify requirements and raise awareness on ETSI deliverables  |  |
| Comments received on drafts (e.g. on WEB site, mailing lists, etc.) | X |
|  |  |
| **Quality of deliverables** |
| Approval of deliverables according to schedule | X |
| Respect of time scale, with reference to start/end dates in the approved ToR | X |
| Comments from Quality review by Reference Body | X |
| Comments from Quality review by ETSI Secretariat | X |
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# Document history

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Date** | **Author** | **Status** | **Comments** |
| 0.1 | 2020-12-06 | P.Lynch | Initial Draft  |  |
| 0.2 | 2020-12-07 | P. Lynch | Initial Draft  | Based on review during TST#154-eMeeting |
| 0.3 | 2020-12-15 | P. Lynch | Stable draft for final WG review | Based on review during TST#155 |
| 0.4 | 2020-12-17 | P. Lynch | Stable draft for final WG review | Comments received during WG review  |
| 1.0 | 2020-12-17 | P. Lynch | Final draft for ISG review |  |
| 1.1  | 2020-12-17  | P. Lynch | Final draft for ISG review | Revised for comments during WG review  |
| 1.2 | 2021-03-02 | ETSI Secretariat | Board Approved | Update before CL publication |