|  |  |
| --- | --- |
| ETSI_logo_Office_Colour_Small | ToR STF DB (ISG NFV / WG IFA) |
| Version: 0.7 |
| Author: Raquel Morera – Date:01 December 2018 |
| Last updated by: Laurent Vreck – Date:28 March 2019 |
| page 1 of 16 |

Terms of Reference - Specialist Task Force

STF DB (ISG NFV / WG IFA)

Information Model for NFV

Summary information

|  |  |
| --- | --- |
| Approval status | NFV Approved  To be approved by Board#121 (30 January 2019) |
| Funding | **Maximum budget: 31 000 € ETSI FWP** |
| Time scale | April 2019 to February 2020 |
| Work Items | DGR/NFV-IFA015 |
| Board priority | Maintenance of standards in mature domains |

Part I – Reason for proposing the STF

# Rationale

Within the ETSI Industry Specification Group (ISG) on Network Functions Virtualisation (NFV), the Interfaces and Architecture (IFA) working group develops the specifications of descriptors and interfaces for NFV Management and Orchestration.

The Information Model provides a consolidated view on all information elements present in the descriptors and interface specifications. The Information Model is used as a tool to check consistency between information elements as it provides a logical relationship between information elements across different interfaces by the use of UML® associations. Such consolidated view enables a quick identification of gaps and inconsistencies in the implementations of the standard. ETSI NFV Information Model is documented in DGR/NFV-IFA015.

The Information Model details are provided in Papyrus format. Papyrus is a UML® tool widely used in the broader community for Information Modelling. The UML® file is compressed and attached to DCS/NFV-IFA015. Having a consolidated Information Model in a machine-readable format eases the sharing of the model with external SDO’s. Using tools commonly applied in the broader community, facilitates other SDOs and open source projects to use ETSI NFV Information Model as a basis, as it is easy to build on top of it. Clear examples are 3GPP SA5, ETSI OSM and ONAP. Identifying touch points with complementary technologies, e.g. 5G Network slicing in 3GPP SA5, is also much easier with an Information Model. Such touch points are documented in ETSI GR NFV-IFA 024.

Up until May 2018, ETSI NFV IFA working group maintained DGR/NFV-IFA015. After the rapporteur stepped down it has not been possible for ETSI NFV IFA WG to find another rapporteur with the necessary competence. Version 3.2.1 of the interface and descriptor specifications will be published without a companion ETSI GR NFV-IFA 015 v3.2.1. There is certain level of expertise needed (e.g. expert knowledge in Information Modelling, understanding UML® and mastering the use of Papyrus). There are more than 14 different NFV-IFA specifications that provide input to the information model, and the size of the model has grown to more than 160 classes, 200 datatypes and 200 associations. It is expected that the number of entries to the model will increase in Release 3 as new NFV features are specified. The amount of human resources and expertise required to develop, review, and maintain the Information Model are beyond what can be provided on a voluntary basis by the delegates at this time. The creation of an STF will provide the levels of expertise and resources needed that the IFA WG is now lacking.

Failure to maintain and progress DGR/NFV-IFA015 may result in misalignments among information elements in interface specifications and descriptors. Such misalignments could go undetected for a long time limiting the capability to extend the information model, delaying having commercially available products that work and reducing credibility of ETSI NFV specifications. Identifying differences between ETSI NFV information model and other Information Models that build on top of it might be difficult and it could almost be impossible if the latest published version of the DGR/NFV-IFA015 differs from the interface specifications. This could put in jeopardy much of the alignment work currently undertaken by the Industry.

# Objective

The objective of the STF is to maintain DGR/IFA015 NFV Information Model specification throughout ETSI NFV releases. It will be required to update the NFV information model and publish a new version of the information model in Papyrus and the associated GenDoc document alongside the rest of NFV-IFA specifications per maintenance period and active Releases, according to the ETSI NFV Technical Program. Maintenance versions of IFA GSs are typically revised and approved every six (6) months. The Information Model is a tool to validate and check consistency among specifications. Therefore, it will be required to create several draft versions of the Information Model before publication in order to identify potential misalignments and be able to take timely corrective actions towards other NFV-IFA specifications. Reporting Information Model inconsistencies back to IFA WG will be required.

Other work to be accomplished include maintenance of the UML®Modelling Guidelines and Papyrus Guidelines, i.e. DGR/NFV-IFA016 and DGR/NFV-IFA017. Unlike DGR/IFA015, these specifications do not have a pre-defined maintenance schedule. Maintenance of these specifications will only be needed if there is any change in the guidelines. As those guidelines are shared between ETSI NFV and other organizations, it will be required to share any needed changes with those organizations.

# Relation with ETSI strategy and priorities

The activity to be performed by this STF directly relates to the ISG mission of enabling the creation of an open industry ecosystem for NFV.

This action supports the ETSI Long Term Strategy item(s) to:

* create high quality standards for global use and with low time-to-market, and
* establish leadership in key areas impacting members’ future activities.

This activity falls into the category of maintenance of standards and standards enablers category identified in BOARD(12)88\_030r1. The availability of Information Model is a major enabler for interoperability in a multi-vendor NFV ecosystem, checking consistency of the specifications, as well as a major enabler for interoperability with other SDO’s and open source projects working on complementary technologies.

# Context of the proposal

## ETSI Members support

|  |  |  |
| --- | --- | --- |
| **ETSI Member** | **Supporting delegate** | **Motivation** |
| Verizon | Raquel Morera | Verizon believes that an Information Model is key to create high quality standards, facilitating the alignment and consistency among the different information elements spread over more than 10 specifications. Having a consolidated view of the IM is extremely valuable to fully understand the structure and architecture of the interfaces and therefore perform a proper implementation. Verizon believes that in the upcoming years having commercial products that are interoperable is crucial to the commercial success of ETSI NFV and equally important the alignment of ESTI NFV specifications with open source and other standards. DGR/NFV-IFA015 is a key enabler, therefore Verizon supports the creating of this STF. |
| Ericsson | Cristina Badulescu | Despite not being a model-driven standard, an up-to-date Information Model for ETSI NFV is useful in identifying touchpoints from external standards and management entities. Given the current workload and competence in NFV IFA WG, keeping DGR/NFV-IFA015 updated with latest development in ETSI NFV releases is a good candidate activity for an STF. |
| Orange | Bruno Chatras | Creating and maintaining of NFV Information Model is a basic characteristic of developed technology. It helps with keeping consistency and maturity of family of NFV standards. It also is a tool to harmonize the use of NFV within other standardized technologies including open source projects. IM maintenance is important for service provider to assure interoperability of different components and services used as parts of products delivered for customers. Therefore Orange recommends to accept the DGR/IFA015 maintenance as an STF. |
| Telefónica | Diego López | The NFV ISG has committed from the beginning to use state-of-the-art tools to improve the quality and usability of the standards it produces. Once of the first steps in this direction was the use of formal, machine-readable representation of the information models. This approach has been essential to increase ISG credibility and to influence other communities, maximizing impact and contributing to the adoption of open solutions.  We believe continuing this work is essential to guarantee further influence of the ISG specifications. |
| DOCOMO Communications Lab. | Gerald Kunzman | ETSI NFV standards are regarded by NTT DOCOMO as a key instrument to facilitate the introduction of network virtualization in operators’ network. The NFV Information Model, which depicts an overview of the full set of information elements from NFV interface and descriptor specifications, is a very important tool that helps all industry stakeholder (operators, vendors, and other organizations) understand the relationship among the different sets of NFV concepts. Ensuring that the NFV Information Model is maintained and kept in sync with the rest of specifications is crucial, and a necessary step towards ensuring high quality specification outputs that facilitate the adoption of ETSI NFV by small and large players in the NFV ecosystem. |

## Market impact

The size of the NFV market is large and is expected to continue growing (e.g. ABI Research estimates that total NFV market revenues will reach $38 billion in 2022). The impact of ETSI NFV specifications on this market is undisputable.

The ETSI NFV specifications are referenced and/or used by operators, vendors and open source communities involved in NFV deployments. However, the availability of the ETSI NFV Information Model representation is essential for the quick development of high-quality specifications and making ETSI NFV the industry reference for management and orchestration standards. Furthermore, it also helps faster adoption of ETSI specifications by other standards organizations and open source projects as it offers a well-defined “entry point” to understand the relationship among the different concepts, artefacts, functionality, interfaces, etc specified by ETSI NFV.

## Tasks for which the STF support is necessary

Experience during the development of DGR/NFV-IFA015 has shown that the translation of descriptor and interface specifications into an UML® Information Modelling tool using Papyrus requires highly specialised knowledge and significant, concentrated effort. The involvement of STF resources is needed to help ensure effective maintenance of DGR/NFV-IFA015.

The ISG NFV IFA working group cannot perform this work in a reasonable timeframe on the sole basis of voluntary resources.

## Related voluntary activities in the TB

The development and maintenance of the parent GSs from which the Information Model is derived will continue to be performed using voluntary resources provided by the IFA WG delegates.

## Previous funded activities in the same domain

The specifications of conformance tests for ETSI NFV APIs are being developed by the ISG with the support of STF 557 on “NFV API conformance test specification”. STF 557 commenced in July 2018. The current status is that STF 557 has selected the Robot Framework as the test automation language to be used. The initial test cases for SOL002 and SOL003 have almost been completed, and validation will begin soon. SOL005 test cases will begin once the Open APIs have been approved by SOL.

Future versions of the OpenAPI representations of the ETSI NFV-MANO APIs will be produced and updated with the support of an STF (STF563). The STF work is expected to start beginning of January 2019. The main task of the STF is to produce and maintain the OpenAPI representations throughout NFV releases.

## Consequences if not agreed

The lack of resources will lead to significant delays in developing and maintaining high-quality interface and descriptor specifications, at the risk of making them irrelevant to the industry, thereby leading to much longer integration times for operators as they look to piece together an NFV system. This would likely deviate into a general loss of confidence in the industry of the NFV system itself. Inconsistencies in the information elements that encompass the information model could go undetected for long. Further, the adoption of ETSI NFV Information Model by external entities could be halted and the divergence of the information model used by different systems increased, reducing the possibilities of interoperability.

Part II - Execution of the work

# Technical Bodies and other stakeholders

## Reference ISG

ISG NFV

Within the ISG NFV, the Interfaces and Architecture (IFA) working group is responsible for the activities to be performed by this STF.

## Other interested ETSI Technical Bodies

ETSI OSM, ETSI MEC, and ETSI ZSM will be made aware of the maintenance of the NFV Information Model and encouraged to provide feedback.

## Other stakeholders

Open source communities involved in the development of NFV management and orchestration solutions will be aware of the maintenance of the NFV Information Model and encouraged to provide feedback. For example, ONAP has taken ETSI NFV Information Model as the basis for their Information Model. Having both Information Models in Papyrus makes it very easy to identify the discrepancies and to work on alignments.

Other stakeholders that will benefit from maintaining ETSI NFV Information Model Specifications are 3GPP SA5, ONAP, TMForum Zoom Project, ONF. It is worth highlighting that the ETSI GR NFV-IFA 024 depicts the “touchpoints” in between the NFV Information Model (from the DGR/NFV-IFA015) and other organizations’ information models.

# Base documents and deliverables

## Base documents

|  |  |  |
| --- | --- | --- |
| **Document** | **Title** | **Current Status (\*)** |
| ETSI GS NFV-IFA 011 | Network Functions Virtualisation (NFV) Release 3;  Management and Orchestration;  VNF Descriptor and Packaging Specification | v3.1.5 – latest draft  v3.2.1 – to be published in Feb. 2019  v3.3.1 and v3.4.1 – NWIs planned for completion in July 2019 and Jan. 2020. |
| ETSI GS NFV-IFA 014 | Network Functions Virtualisation (NFV) Release 3;  Management and Orchestration;  Network Service Templates Specification | v3.1.4 – latest draft  v3.2.1 – to be published in Feb. 2019  v3.3.1 and v3.4.1 – NWIs planned for completion in July 2019 and Jan. 2020. |
| ETSI GS NFV-IFA 007 | Network Functions Virtualisation (NFV) Release 3;  Management and Orchestration;  Or-Vnfm reference point - Interface and Information Model Specification | v3.1.3 - latest draft  v3.2.1 – to be published in Feb. 2019  v3.3.1 and v3.4.1 – NWIs planned for completion in July 2019 and Jan. 2020. |
| ETSI GS NFV-IFA 008 | Network Functions Virtualisation (NFV) Release 3;  Management and Orchestration;  Ve-Vnfm reference point - Interface and Information Model Specification | v3.1.3 – latest draft  v3.2.1 – to be published in Feb. 2019  v3.3.1 and v3.4.1 – NWIs planned for completion in July 2019 and Jan. 2020. |
| ETSI GS NFV-IFA 013 | Network Functions Virtualisation (NFV) Release 3;  Management and Orchestration;  Os-Ma-Nfvo reference point - Interface and Information Model Specification | v3.1.4 – latest draft  v3.2.1 – to be published in Feb. 2019  v3.3.1 and v3.4.1 – NWIs planned for completion in July 2019 and Jan. 2020. |
| ETSI GS NFV-IFA 005 | Network Functions Virtualisation (NFV) Release 3;  Management and Orchestration;  Or-Vi reference point - Interface and Information Model Specification | v3.1.3 - latest draft  v3.2.1 – to be published in Feb. 2019  v3.3.1 and v3.4.1 – New Work Items (NWI) planned for completion in July 2019 and Jan. 2020. |
| ETSI GS NFV-IFA 006 | Network Functions Virtualisation (NFV) Release 3;  Management and Orchestration;  Vi-Vnfm reference point - Interface and Information Model Specification | v3.1.2 - latest draft  v3.2.1 – to be published in Feb. 2019  v3.3.1 and v3.4.1 – NWIs planned for completion in July 2019 and Jan. 2020. |
| ETSI GS NFV-IFA 031 | Network Functions Virtualisation (NFV) Release 3;  Management and Orchestration;  Requirements and interfaces specification for management of NFV-MANO | v3.1.3 – latest draft  v3.2.1 – to be published in Feb. 2019  v3.3.1 and v3.4.1 – NWIs planned for completion in July 2019 and Jan. 2020. |
| ETSI GS NFV-IFA 032 | Network Functions Virtualisation (NFV) Release 3;  Management and Orchestration;  Interface and Information Model Specification for Multi-Site Connectivity Services | v0.7.0 – latest draft  v3.1.1 – to be published in Feb. 2019  v3.3.1 and v3.4.1 – NWIs planned for completion in July 2019 and Jan. 2020. |
| ETSI GS NFV-IFA 030 | Network Functions Virtualisation (NFV) Release 3;  Management and Orchestrations;  Multiple Administrative Domains Aspect Interfaces Specification | v3.1.3 – latest draft  v3.2.1 – to be published in Feb. 2019  v3.3.1 and v3.4.1 – NWIs planned for completion in July 2019 and Jan. 2020. |

(\*) : higher versions of the deliverable are marked as « NWIs planned for completion ». New revision work items are approved on a 6-month cadence as per the ETSI NFV maintenance work programme and release plan.

## Deliverables

|  |  |  |
| --- | --- | --- |
| **Deliv.** | **Work Item code**  **Standard number** | **Working title**  **Scope** |
| D1 | DGR/NFV-IFA015ed331  ETSI GR NFV-IFA 015 v3.3.1 | **Working title:** Network Functions Virtualisation (NFV) Release 3;  Management and Orchestration; Report on NFV Information Model  **Scope:** This revision of NFV-IFA 015 conducts NFV Release 3 maintenance. It corrects errors, ambiguities, misalignments, and applies editorial modifications (i.e. Corrections of category F and D as described in ETSI TWPs Annex L). This edition does not add or modify features, nor does it extend the scope of the former Release 3 edition summarized hereafter: IFA 015 provides an NFV Information Model consolidating information elements from the ETSI NFV IFA specifications listed in the reference section.  (For reference below is the scope of v3.1.1.)  This revision of NFV-IFA 015 propagates the deliverable into NFV Release 3. This edition will add the information model to support the Release 3 features, and it will extend the scope of the former Release 2 edition summarized hereafter: This Work Item will build upon the Information Elements developed in IFA Work Items IFA004, IFA005, IFA006, IFA007, IFA008, IFA011, IFA012, IFA013 and IFA014 and translate them into a UML NFV Information Model. The NFV Information Model will present a consolidated view of NFV Management and Orchestration model. It will use information from:  - Network Service Templates information elements, produced by IFA014  - VNF Descriptor information elements produced by IFA011  - Information elements related to acceleration resource management produced by IFA004  - Information elements produced by IFA005, IFA006, IFA007, IFA008, IFA012 and IFA013.  The WI deliverable shall be informative even it consolidates the normative information elements from the Work Items listed above. The output deliverable will include the UML NFV Information Model as an electronic attachment. The format of the model will be the Papyrus Open Source format. |
| D2 | DGR/NFV-IFA015ed341  ETSI GR NFV-IFA 015 v3.4.1 | This revision of NFV-IFA 015 conducts NFV Release 3 maintenance. It corrects errors, ambiguities, misalignments, and applies editorial modifications (i.e. Corrections of category F and D as described in ETSI TWPs Annex L). This edition does not add or modify features, nor does it extend the scope of the former Release 3 edition summarized hereafter: IFA 015 provides an NFV Information Model consolidating information elements from the ETSI NFV IFA specifications listed in the reference section. |
| D3 | DGR/NFV-IFA016ed321  ETSI GR NFV-IFA 016  v3.2.1 | **Working title:** Network Functions Virtualisation (NFV) Release 3; Information Modeling; Papyrus Guidelines  **Scope:** This Work Item will produce guidelines for the development of a protocol-neutral UML (Unified Modeling Language) information model for ETSI NFV. This Work Item will build upon the internal document NFV Papyrus Guidelines developed as part of IFA015. This Work Item will address closer alignment with corresponding UML modelling guidelines from ONF and may be influenced by other partners cooperating with NFV. The deliverable will be informative. |
| D4 | DGR/NFV-IFA017ed321  ETSI GR NFV-IFA 017 v3.2.1 | **Working title:** Network Functions Virtualisation (NFV) Release 2; Information Modeling; UML Modeling Guidelines  **Scope:** This Work Item will produce guidelines for the development of a protocol-neutral UML (Unified Modeling Language) information model for ETSI NFV. This Work Item will build upon the internal document NFV UML Modeling Guidelines developed as part of IFA015. This Work Item will address closer alignment with corresponding UML modelling guidelines from ONF and may be influenced by other partners cooperating with NFV. The deliverable will be informative |

## Deliverables schedule:

DGR/NFV-IFA015ed331 Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Report on NFV Information Model

* Start of work 01-April-2019
* Stable draft 30-June-2019
* WG approval 15-July-2019
* TB approval 15-August-2019
* Publication 15-September-2019

DGR/NFV-IFA015ed341 Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Report on NFV Information Model

* Start of work 16-August-2019
* Stable draft 31-December-2019
* WG approval 15-January-2020
* TB approval 15-February-2020
* Publication 15-March-2020

DGR/NFV-IFA016ed321 Network Functions Virtualisation (NFV) Release 3; Information Modeling; Papyrus Guidelines

* Start of work 01-April-2019
* Stable draft 31-December-2019
* WG approval 01-February-2020
* TB approval 01-March-2020
* Publication 31-March-2020

DGR/NFV-IFA017ed321 Network Functions Virtualisation (NFV) Release 3; Information Modeling; UML Modeling Guidelines

* Start of work 01-April-2019
* Stable draft 31-December-2019
* WG approval 01-February-2020
* TB approval 01-March-2020
* Publication 31-March-2020

# Work plan, time scale and resources

## Organization of the work

A Steering Committee will be created to assist the STF experts in understanding the GSs to help ensure the Information Model they produce are an accurate translation of the contents of these GSs. The Steering Group will be composed as follows:

* A representative from ETSI CTI
* The Rapporteurs of the relevant GSs for ETSI NFV Releases 3 (i.e., DGS/NFV-IFA005, DGS/NFV-IFA006, DGS/NFV-IFA007, DGS/NFV-IFA008, DGS/NFV-IFA011, DGS/NFV-IFA013, DGS/NFV-IFA014, DGS/NFV-IFA030, DGS/NFV-IFA031 and DGS/NFV-IFA032)
* Designated experts from the ETSI NFV IFA working group currently involved in the development of the specifications

The Steering Committee will meet once at the start of the effort and at least once every two months to guide STF experts on the relationship of individual specifications with DGR/NFV-IFA015 and monitor progress. STF members will report to IFA WG their findings at the designated milestones through regular contributions. Feedback will be discussed at the working group meetings and STF experts will take it into consideration. In case changes need to be made to any GS as a result of the validation of the NFV Information Model, changes will be discussed in the IFA WG meetings and mailing lists and a way forward should be agreed. GS Rapporteurs will then create contributions against their GS if needed. STF will update the Information Model accordingly.

## Task description

Task 0 – Project Management

Objectives

Manage the STF.

Input

Goals stated in this ToR and additional guidelines produced by the steering committee and IFA WG.

Output

Successful delivery of all deliverables contained in this ToR.

Interactions

Steering committee, IFA WG officials and STF members will coordinate for a successful outcome of this STF.

Resources required

See task 1

Task 1 – Participate in IFA conference calls

Objectives Participate in IFA conference calls to align schedules with IFA WG, provide feedback.

Input

n/a

Output

n/a

Interactions

STF members will participate regularly in IFA conference calls to provide feedback and to learn about IFA WG schedules and progress made on interfaces and descriptor specification. It is not necessary to participate on every IFA WG conference call. Participation can be arranged ahead of time with IFA WG chairs based on agenda.

Resources required

1 expert with significant knowledge of Information Modelling, Papyrus, Gendoc, Git

Task 2 – Provide feedback to IFA WG and maintenance of modelling guidelines

Objectives Provide feedback to IFA WG on misalignments found during the maintenance of the information model and update the modelling guidelines which are used for the development of the information models.

Input

Validation of Information Model

Published versions DGR/NFV-IFA016 and DGR/NFV-IFA017 v3.1.1.

Output

Contributions (and their revisions) to IFA WG meetings describing misalignments and errors found during the validation of the information model.

Contributions (and their revisions) to update the modelling guidelines documented in the DGR/NFV-IFA016 and DGR/NFV-IFA017.

Final version of DGR/NFV-IFA016ed321 and DGR/NFV-IFA017ed321.

Interactions

STF will create contributions to be discussed during IFA WG meetings. STF will take feedback from the WG and will update the NFV IM and the modelling guidelines accordingly.

Resources required

(Same as Task 1)

Task 3 – Participate in ETSI NFV Plenary meetings

Objectives Provide feedback to ETSI NFV ISG on Information Model

Input

IFA015 drafts

Output

Presentations to ETSI NFV meetings

Interactions

The STF will provide overview of the status of the IM to the ISG as well as will provide updates on misalignments and errors addressed.

Resources required

(Same as Task 1)

Task 4 – Create DGR/NFV-IFA015ed331

Objectives Create DGR/NFV-IFA015ed331and prepare it for publication

Input

IFA015 v3.1.1,

IFA005, IFA006, IFA007, IFA008, IFA011, IFA013, IFA014, IFA030 and IFA031: v3.2.1, v3.3.1 and interim drafts,

IFA032: v3.1.1, v3.3.1 and interim drafts.

Output

Final version of DGR/NFV-IFA015ed331

Interactions

The STF will create DGR/NFV-IFA015ed331 by incorporating changes introduced in versions 3.2.1 and 3.3.1 of the interface and descriptor specifications. The information model will be validated and inconsistencies identified. DGR/NFV-IFA015ed331 annexes are the UML®model created in Papyrus, the associated Gendoc file and the generated Microsoft Word document of the model. The STF will review intermediate drafts with IFA WG looking for feedback and it will create the final version to be handed over to edit help. The STF will also respond to any questions edit help might have when preparing the final version.

Work on DGR/NFV-IFA015ed331 will start before the publication of v3.3.1 of the interfaces and descriptor specifications, therefore interim versions will need to be taken into account when approved by the IFA WG. This allows for dynamic feedback from the Information Model to the interfaces and descriptor specifications to correct inconsistencies.

Resources required

(see Task 1)

Task 5 – Create DGR/NFV-IFA015ed341

Objectives Create DGR/NFV-IFA015ed341 and prepare it for publication

Input

IFA015 v3.3.1,

IFA005, IFA006, IFA007, IFA008, IFA011, IFA013, IFA014, IFA030, IFA031, IFA032: v3.4.1 and interim drafts.

Output

Final version of DGR/NFV-IFA015ed341

Interactions

The STF will create DGR/NFV-IFA015ed341 by incorporating changes introduced in version 3.4.1 of the interface and descriptor specifications. The information model will be validated and inconsistencies identified. DGR/NFV-IFA015ed341 annexes are the UML®model created in Papyrus, the associated Gendoc file and the generated Microsoft Word document of the model. The STF will review intermediate drafts with IFA WG looking for feedback and it will create the final version to be handed over to edit help. The STF will also respond to any questions edit help might have when preparing the final version.

Work on DGR/NFV-IFA015ed341 will start before the publication of v3.4.1 of the interfaces and descriptor specifications, therefore interim versions will need to be taken into account when approved by the IFA WG. This allows for dynamic feedback from the Information Model to the interfaces and descriptor specifications to correct inconsistencies.

Resources required

(Same as Task 1)

## Milestones

Milestone 1 (M1) – IFA015 v3.3.1 ready for ETSI NFV ISG approval

Task 4 completed. Final draft approved by ETSI NFV ISG (August 2019) and accepted by the ETSI Secretariat for publication.

Milestone 2 (M2) – IFA015 v3.4.1 ready for ETSI NFV ISG approval

Task 6 completed. Final draft approved by ETSI NFV ISG (February 2020) and accepted by the ETSI Secretariat for publication.

**Milestone 3 (M3) – STF final report approved; STF Closed**

Planned by March 2020.

## Task summary

|  |  |  |
| --- | --- | --- |
| **N** | **Task / Milestone / Deliverable** | Target date |
| EUR |
| M0 | Start of work | date |  |
| T0 | Project Management | 1 April 2019 – 31 March 2020 | 600 |
| T1 | Participate in IFA conference calls | April 2019 – March 2020 | 4 800 |
| T2 | Provide feedback to IFA WG and maintenance of modelling guidelines | April 2019 – March 2020 | 3 600 |
| T3 | Participate in ETSI NFV Plenary meetings | 2Q 2019, 4Q 2019 | 2 400 |
| T4 | Create DGR/NFV-IFA015ed331 | April 2019 –July 2019 | 8 400 |
| M1 | IFA015 v3.3.1 ready for ETSI NFV ISG approval | July 2019 |  |
| T5 | Create DGR/NFV-IFA015ed341 | August 2019 – February 2020 | 4 200 |
| M2 | IFA015 v3.4.1 ready for ETSI NFV ISG approval | January 2020 |  |
| M3 | Deliverables Published, STF Closed | March 2020 |  |
| **Total** | | | **24 000** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Task Milest.** | **Description** | **J** | **F** | **M** | **A** | **M** | **J** | **J** | **A** | **S** | **O** | **N** | **D** | **J** | **F** | **M** | **A** |
| T0 | Project Management |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T1 | Participate in IFA conference calls |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T2 | Provide feedback to IFA WG and maintenance of modelling guidelines |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T3 | Participate in ETSI NFV Plenary meetings |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T4 | Create draft of IFA015 v3.3.1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M1 | IFA015 v3.3.1 ready for ETSI NFV ISG approval |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T5 | Create draft of IFA015 v3.4.1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M2 | IFA015 v3.4.1 ready for ETSI NFV ISG approval |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M3 | Deliverables Published, STF Closed |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Working methods and travel cost

All tasks can be performed 100% remotely. There is a requirement on the STF experts to participate in IFA WG conference calls and at least 2 ETSI NFV plenaries in 2019 to report and review progress on the tasks and milestones in this ToR.

Task 1: 100% remote. There is no need to attend all IFA conference calls. Attendance can be coordinated with IFA WG chairs based on agenda.

Task 2: 100% remote. Feedback will be presented at IFA conference calls.

Task 3: Minimum attendance to two/three ETSI NFV ISG plenaries (human resources cost included in contract, travel budget included in travel budget section 9)

Task 4: 100% remote, multiple versions of the draft will need to be created and shared with IFA WG before the final version, following IFA guidelines

Task 5: 100% remote, multiple versions of the draft will need to be created and shared with IFA WG before the final version, following IFA guidelines

# Expertise required

## Team structure

1 participants with the following competences:

* Expert knowledge in UML®Information Modelling
* Expert knowledge of ETSI NFV Group Specifications listed in clause 6.1
* Expert knowledge of NFV management and orchestration
* Expert knowledge of Papyrus, Gendoc, Git and Information Model tools

Part III: Financial conditions

# Maximum budget

## Manpower cost

24 000 EUR.

## Travel cost

7 000 EUR to travel to 2 or 3 NFV ISG meetings in Europe during 2Q2019, and 4Q2019.

|  |  |
| --- | --- |
| **Expected travels** | **Cost estimate** |
| 3 ETSI NFV ISG Meeting in Europe | 7 000€ |
| **Total cost** | 7 000€ |

Part IV: STF performance evaluation criteria

# Key Performance Indicators

Contribution from ETSI Members to STF work

* Direct financial contribution (co-funding)

Support to the STF work (provide feedback on IFA015 interim drafts)

* Support to start up the STF in tool setup and model basics
* Steering Group meetings (2 meetings / participants (see section 7.1) / 2 hours)
* The entire IFA WG and ETSI NFV ISG will be involved in the review of the deliverables
* Contributions/comments received during IFA WG meetings, ETSI NFV meetings and corresponding mailing lists
* Contributions/comments received from other SDO’s via liason’s

Contribution from the STF to ETSI work

* Contributions to IFA WG and ETSI NFV Plenary meetings (draft versions of DGR/NFV-IFA015, contributions to identify misalignments, presentations on IM at plenary meetings and IFA WG meetings)
* Presentations to other ETSI teams, other SDO’s and Opensource on ETSI NFV IM
* Presentations in workshops, conferences, stakeholder meetings

Liaison with other stakeholders

* Stakeholder participation in the project (category, business area)
* Cooperation with other standardization bodies
* Potential interest of new members to join ETSI
* Liaison to identify requirements and raise awareness on ETSI deliverables
* Comments received on drafts (e.g. on WEB site, mailing lists, etc.)

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 TB
* Comments from Quality review by ETSI Secretariat

Time recording

For reporting purposes the STF 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 STF Leader shall collect the relevant information, as necessary to measure the performance indicators. The result will be presented in the Final Report.

# Document history

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Date** | **Author** | **Status** | **Comments** |
| 0.1 | 03-December-2018 | Raquel Morera | Draft | To be discussed at IFA WG meeting  Version endorsed by IFA WG with comments |
| 0.2 | 04-December-2018 | Raquel Morera | Draft | Includes comments from Cristina Badulescu (Ericsson) |
| 0.3 | 06-December-2018 | Raquel Morera | Draft | Incorporates comments received during NFV# 24 from Bruno Chatras (Orange), Diego Lopez (Telefonica), Peter Worndle (Ericsson), Gerald Kunzman (Docomo), Joan Triay (Docomo) |
| 0.4 | 18-December-2018 | Raquel Morera | Draft | Incorporates comments received during RC  Removing deliverable of IFA015ed021 as the STF once created can start working on IFA015ed031. Adding deliverables for IFA016 and IFA017 maintenance. |
| 0.5 | 21-December-2018 | Youssouf Sakho | Draft | Consistency Check |
| 0.6 | 07 January 2019 | Youssouf Sakho | Draft | Change status |
| 0.7 | 28 March 2019 | Laurent Vreck | Draft | Change in base documents order and change in Travels required |