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ETSI GS NFV-SOL 019 V0.0.4 (2023-05)

**Group Specification**

Network Functions Virtualisation (NFV) Release 4;

Protocols and Data Models;

Profiling specification of solutions for Multi-site Connectivity Services based on Abstraction and Control of TE Networks (ACTN)

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# Foreword

This Group Specification (GS) has been produced by ETSI Industry Specification Group Network Functions Virtualisation (NFV).

# Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](https://portal.etsi.org/Services/editHelp%21/Howtostart/ETSIDraftingRules.aspx) (Verbal forms for the expression of provisions).

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# 1 Scope

The present document specifies a profile of IETF ACTN specifications as NFV protocol and data model solution for multi-site connectivity services based on the analysis done in ETSI GR NFV-SOL 017.

The present document also addresses some of the gaps detected in ETSI GR NFV-SOL 017 and specifies the applicability of ACTN architecture and IETF data models to address the functional, interface and descriptor requirements specified in NFV specifications, for the management and support of multi-site connectivity services.

Finally, the present document also includes guidelines and rules on how the profiled and referenced solutions can be adopted in a way that facilitates their integration with NFV-MANO framework solutions.

# 2 References

## 2.1 Normative references

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

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

[1] <Standard Organization acronym> <document number>: "<Title>".

[2] <Standard Organization acronym> <document number>: "<Title>".

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

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

[i.1] ETSI GR NFV 003: "Network Functions Virtualisation (NFV); Terminology for Main Concepts in NFV"..

[i.2] etc.

# 3 Definition of terms, symbols and abbreviations

## 3.1 Terms

For the purposes of the present document, the terms given in ETSI GS NFV 003 [i.1] and the following apply:

NOTE: A term defined in the present document takes precedence over the definition of the same term, if any, in ETSI GS NFV 003 [i.1].

## 3.2 Symbols

For the purposes of the present document, the [following] symbols [given in ... and the following] apply:

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI GS NFV 003 [i.1] and the following apply:

# 4 Overview of related deliverables for network connectivity

Editor Notes: This clause shall include a brief overview of ETSI GS NFV-IFA 032, ETSI GR NFV-SOL 017, and the latest IETF data models.

## 4.1 Summary of NFV-IFA032 management Interfaces

Editor Note: This clause shall provide a brief summary of ETSI GS NFV-IFA 032.

## 4.2 Summary of IETF ACTN data models

Editor Note: This clause shall provide updates on the progress of IETF ACTN data models development.

## 4.3 Summary of NFV-SOL017 gaps and requirements

Editor Note: This clause shall provide a summary of clause 5 of ETSI GR NFV-SOL 017, and also highlighting additional gaps.

# 5 Profiling of ACTN specifications for NFV MSCS

Editor Note: This clause will provide normative profiling of the IETF Protocols and ACTN data models with reference to the 4 interfaces defined in ETSI GS NFV-IFA032.

## 5.1 Profiling for NFV MSCS Management Interface

A list of potential related data model specified in IETF:

*Layer 2 network model in* [*https://datatracker.ietf.org/doc/html/draft-ietf-opsawg-l2nm*](https://datatracker.ietf.org/doc/html/draft-ietf-opsawg-l2nm) *:*

* iana-bgp-l2-encaps,
* iana-pseudowire-types,
* ietf-ethernet-segment and ietf-l2vpn-ntw.

*Layer 3 network model in RFC9182:*

* ietf-l3vpn-ntw

*Transport Network Client Signal models in* [*https://datatracker.ietf.org/doc/draft-ietf-ccamp-client-signal-yang/*](https://datatracker.ietf.org/doc/draft-ietf-ccamp-client-signal-yang/):

* ietf-eth-tran-service,
* ietf-eth-tran-types,
* ietf-trans-client-service,
* ietf-trans-client-svc-types

*TE Tunnel models in* [*https://datatracker.ietf.org/doc/html/draft-ietf-teas-yang-te*](https://datatracker.ietf.org/doc/html/draft-ietf-teas-yang-te)*:*

* ietf-te

ACTN virtual network model in <https://datatracker.ietf.org/doc/html/draft-ietf-teas-actn-vn-yang>:

* ietf-vn

TE service mapping model in <https://datatracker.ietf.org/doc/html/draft-ietf-teas-te-service-mapping-yang>:

* ietf-te-service-mapping-types,
* ietf-l3nm-te-service-mapping,
* ietf-l2nm-te-service-mapping.

Also to discuss whether the SMs are related.

<Question>: What information is expected to be provided? A) parameters in the model and their specification; B) functionality descriptions of the models; C) applicability on MSCS?

## 5.2 Profiling for NFV Capacity Management Interface

Topology model:

*Network Topology in RFC8345:*

* ietf-network,
* ietf-network-topology,

*TE Topology in RFC8795:*

* ietf-te-topology,

*Layer 3 TE topology in* [*https://datatracker.ietf.org/doc/draft-ietf-teas-yang-l3-te-topo/*](https://datatracker.ietf.org/doc/draft-ietf-teas-yang-l3-te-topo/) *:*

* ietf-l3-te-topology,
* ietf-te-packet-types,
* ietf-te-topology-packet.

## 5.3 Profiling for NFV Fault management interface

*Alarm module in RFC8632:*

* ietf-alarms

## 5.4 Profiling for NFV Performance management interface

A list of performance monitoring model as follow:

*VPN PM models in* [*https://datatracker.ietf.org/doc/draft-ietf-opsawg-yang-vpn-service-pm/*](https://datatracker.ietf.org/doc/draft-ietf-opsawg-yang-vpn-service-pm/) *:*

* ietf-network-vpn-pm

*TE and VN Telemetry in* [*https://datatracker.ietf.org/doc/html/draft-ietf-teas-actn-pm-telemetry-autonomics*](https://datatracker.ietf.org/doc/html/draft-ietf-teas-actn-pm-telemetry-autonomics) *:*

* ietf-te-telemetry,
* ietf-vn-telemetry,

*Transport client signals PM in* [*https://datatracker.ietf.org/doc/draft-zheng-ccamp-client-pm-yang/*](https://datatracker.ietf.org/doc/draft-zheng-ccamp-client-pm-yang/) *:*

* ietf-service-pm,
* ietf-eth-service-oam,

.

# 6 Usage guidelines for the profile

Editor Notes: This clause shall provide more detailed description, including the guidance and processing rules based on the profile created in this project. A few use cases are expected to be used as examples, with the detailed procedural description.

# 7 Conclusion

Editor’s Note: The purpose of this clause is to provide concluding remarks once the GS draft is about to be completed.

Annex A (informative):
NFV MSCS Interfaces fulfilment

Editor Notes: it is expected to track how the gaps are solved and profiled into section 5 in this section. It is temporarily used as a tracking list for open issues, and may be removed for release, or kept as further gap analysis. The first step is to create the open issue list, input by the gap analysis SOL017 and other contributions

## A.1 Fulfilment of NFV MSCS Management Interface

## A.2 Fulfilment of NFV Capacity Management Interface

## A.3 Fulfilment of NFV Fault management interface

## A.4 Fulfilment of NFV Performance management interface

Annex B (normative or informative):
Title of annex

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## B.1.1 First subdivided clause of the annex

Annex (informative):
Bibliography

Annex (informative):
Change History

| Date | Version | Information about changes |
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