



**LTE;
Telecommunication management;
Fault Management (FM) for mobile networks that include
virtualized network functions;
Stage 3
(3GPP TS 28.518 version 19.0.0 Release 19)**



ReferenceRTS/TSGS-0528518vj00

KeywordsLTE

ETSI

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Foreword

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Version x.y.z

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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part of a TS-family covering the 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management, as identified below:

TS 28.515 "Fault Management (FM) for mobile networks that include virtualized network functions; Requirements".

TS 28.516 "Fault Management (FM) for mobile networks that include virtualized network functions; Procedures".

TS 28.517 "Fault Management (FM) for mobile networks that include virtualized network functions; Stage 2".

TS 28.518 "Fault Management (FM) for mobile networks that include virtualized network functions; Stage 3".

1 Scope

The present document is Fault Management stage 3 specification for mobile networks that include virtualized network functions which can be part of EPC or IMS.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 32.111-2 "Telecommunication management; Fault Management; Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)".
- [3] 3GPP TS 32.111-6 "Telecommunication management; Fault Management; Part 6: Alarm Integration Reference Point (IRP): Solution Set (SS) definitions".
- [4] 3GPP TS 28.500: "Telecommunication management; Management concept, architecture and requirements for mobile networks that include virtualized network functions".
- [5] ETSI GS NFV-SOL 002 (V2.3.1): "Network Function Virtualisation (NFV) Release 2; Protocols and Data Models; RESTful protocols specification for the Ve-Vnfm Reference Point".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and in 3GPP TS 28.500 [4] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1] or in 3GPP TS 28.500 [4].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and in 3GPP TS 28.500 [4] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1] or in 3GPP TS 28.500 [4].

IS	Information Service
SOAP	Simple Object Access Protocol
SS	Solution Set

4 General descriptions

For VNF Fault Management Stage 3 solution over Itf-N, the Alarm IRP SS is applicable. The overall description of Alarm IRP SS is specified in TS 32.111-6 [3]. The semantics of Alarm IPR SS are specified in Alarm IRP Information Service TS 32.111-2 [2]. Three solution sets are contained in [3], which are the CORBA Solution Set, the XML definitions and the SOAP Solution Set.

For VNF Fault Management Stage 3 solution over Ve-Vnfm reference point, the corresponding RESTful solution of ETSI GS NFV-SOL 002 [5] shall be used as specified in clause 5.2.

5 Solution Set Definitions

5.1 Itf-N

For Itf-N VNF alarm management, the following Solution Set Definitions defined by AlarmIRP which is specified in 3GPP TS 32.111-6 [3] shall be used:

Annex A of 3GPP TS 32.111-6 [3] provides the CORBA Solution Set.

Annex B of 3GPP TS 32.111-6 [3] provides the XML Definitions.

Annex C of 3GPP TS 32.111-6 [3] provides the SOAP Solution Set.

5.2 Ve-Vnfm-em

For Ve-Vnfm-em VNF alarm management, the following shall be used:

- the RESTful API URI structure and supported content formats specified in clause 4.2 of ETSI GS NFV-SOL 002 [5], and
- the RESTful API common procedures specified in clause 4.3 of ETSI GS NFV-SOL 002 [5], and
- the RESTful API common data types specified in clause 4.4 of ETSI GS NFV-SOL 002 [5], and
- the VNF FM RESTful API resource structure, methods, resources, data model and handling of errors specified in clause 7 of ETSI GS NFV-SOL 002 [5].

Annex A (informative): Change history

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2018-01	SA#78	SP-170964	0001	-	F	Update the reference to ETSI GS NFV-SOL 002	14.1.0
2018-06	SA#80	SP-180417	0002	1	B	Scope extension to cover RAN	15.0.0
2020-07	-	-	-	-	-	Update to Rel-16 version (MCC)	16.0.0
2022-03	-	-	-	-	-	Update to Rel-17 version (MCC)	17.0.0
2024-04	-	-	-	-	-	Update to Rel-18 version (MCC)	18.0.0
2025-09	SA#109	-	-	-	-	Update to Rel-19 version (MCC)	19.0.0

History

Document history		
V19.0.0	October 2025	Publication