



**LTE;  
Telecommunication management;  
Performance Management (PM) for mobile networks that  
include virtualized network functions;  
Stage 2  
(3GPP TS 28.522 version 19.0.0 Release 19)**



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# Foreword

This Technical Specification has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP).

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Version x.y.z

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# Introduction

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

- |                   |                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| TS 28.520:        | Telecommunication management; Performance Management (PM) for mobile networks that include virtualized network functions; Requirements.   |
| TS 28.521:        | Telecommunication management; Performance Management (PM) for mobile networks that include virtualized network functions; Procedures.     |
| <b>TS 28.522:</b> | <b>Telecommunication management; Performance Management (PM) for mobile networks that include virtualized network functions; Stage 2.</b> |
| TS 28.523:        | Telecommunication management; Performance Management (PM) for mobile networks that include virtualized network functions; Stage 3.        |

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# 1 Scope

The present document is the Performance Management stage 2 specification for mobile networks that include virtualized network functions.

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# 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 32.412: "Telecommunication management; Performance Management (PM) Integration Reference Point (IRP); Information Service (IS)".
- [3] 3GPP TS 28.520: "Telecommunication management; Performance Management (PM) for mobile networks that include virtualized network functions; Requirements".
- [4] ETSI GS NFV IFA 008 V2.1.1 (2016-10): "Network Functions Virtualisation (NFV); Management and Orchestration; Ve-Vnfm reference point – Interface and Information Model Specification".
- [5] 3GPP TS 28.500: "Telecommunication management; Management concept, architecture and requirements for mobile networks that include virtualized network functions".
- [6] 3GPP TS 32.302: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP); Information Service (IS)"

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# 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], in 3GPP TS 28.500 [3] 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 [3].

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1], in 3GPP TS 28.500 [3] 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 [3].

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## 4 General descriptions

For the stage 2 solution of Performance Management for mobile networks that include virtualized network functions over Itf-N, the PM IRP IS (TS 32.412 [2]) is applicable. For the purpose of notification, Notification IRP [6] is needed.

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## 5 Information Model Definition

### 5.1 Itf-N

For Performance Management for 3GPP Network Function over Itf-N, the IOCs defined by PM IRP specified in clause 6 of 3GPP TS 32.412 [2] are reused.

### 5.2 Os-Ma-nfvo

None.

### 5.3 Ve-Vnfm-em

For Ve-Vnfm-em Performance Management, the information elements and notifications which are specified in subclause 9.7 of ETSI GS NFV-IFA 008 [4] for VNF Performance Management shall be used.

### 5.4 Ve-Vnfm-vnf

None

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## 6 Interface Definition

### 6.1 Itf-N

For the stage 2 solution of Performance Management for mobile networks that include virtualized network functions over Itf-N, the operations and notifications defined by PM IRP specified in 3GPP TS 32.412 [2] are reused.

### 6.2 Os-Ma-nfvo

None.

### 6.3 Ve-Vnfm-em

For Ve-Vnfm-em performance management, the operations defined in clause 7.4 of ETSI GS NFV-IFA 008 [4] for VNF Performance Management interface shall be used, and the information elements and notifications which are specified in subclause 9.7 of ETSI GS NFV-IFA 008 [4] for VNF performance management shall be used.

### 6.4 Ve-Vnfm-vnf

None.

Annex A (informative):

Change history

| Change history |         |           |      |     |     |                                   |             |
|----------------|---------|-----------|------|-----|-----|-----------------------------------|-------------|
| Date           | Meeting | TDoc      | CR   | Rev | Cat | Subject/Comment                   | New version |
| 2017-06        | SA#76   |           |      |     |     | Upgrade to change control version | 14.0.0      |
| 2017-06        | SA#80   | SP-180417 | 0001 | 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      |

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# History

| Document history |              |             |
|------------------|--------------|-------------|
| V19.0.0          | October 2025 | Publication |
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