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## Foreword

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

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- 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.

In the present document, modal verbs have the following meanings:

- |                  |                                                         |
|------------------|---------------------------------------------------------|
| <b>shall</b>     | indicates a mandatory requirement to do something       |
| <b>shall not</b> | indicates an interdiction (prohibition) to do something |

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

- |                   |                                                |
|-------------------|------------------------------------------------|
| <b>should</b>     | indicates a recommendation to do something     |
| <b>should not</b> | indicates a recommendation not to do something |
| <b>may</b>        | indicates permission to do something           |
| <b>need not</b>   | indicates permission not to do something       |

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

- |               |                                        |
|---------------|----------------------------------------|
| <b>can</b>    | indicates that something is possible   |
| <b>cannot</b> | indicates that something is impossible |

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

- |                 |                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>will</b>     | indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document     |
| <b>will not</b> | indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document |
| <b>might</b>    | indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document           |

**might not** indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

**is** (or any other verb in the indicative mood) indicates a statement of fact

**is not** (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

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# 1 Scope

The present document specifies the stage 3 protocol and data model for the Nnrf Service Based Interface. It provides stage 3 protocol definitions and message flows, and specifies the API for each service offered by the NRF.

The 5G System stage 2 architecture and procedures are specified in 3GPP TS 23.501 [2] and 3GPP TS 23.502 [3].

The Technical Realization of the Service Based Architecture and the Principles and Guidelines for Services Definition are specified in 3GPP TS 29.500 [4] and 3GPP TS 29.501 [5].

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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 23.501: "System Architecture for the 5G System; Stage 2".
- [3] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".
- [4] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".
- [5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".
- [6] 3GPP TS 29.518: "5G System; Access and Mobility Management Services; Stage 3".
- [7] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".
- [8] ECMA-262: "ECMAScript® Language Specification", <https://www.ecma-international.org/ecma-262/5.1/>.
- [9] IETF RFC 9113: "HTTP/2".
- [10] OpenAPI Initiative, "OpenAPI Specification Version 3.0.0", <https://spec.openapis.org/oas/v3.0.0>.
- [11] IETF RFC 9457: "Problem Details for HTTP APIs".
- [12] 3GPP TS 23.003: "Numbering, Addressing and Identification".
- [13] IETF RFC 6902: "JavaScript Object Notation (JSON) Patch".
- [14] IETF RFC 6901: "JavaScript Object Notation (JSON) Pointer".
- [15] 3GPP TS 33.501: "Security architecture and procedures for 5G system".
- [16] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".
- [17] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".
- [18] IETF RFC 4122: "A Universally Unique Identifier (UUID) URN Namespace".
- [19] Void.
- [20] IETF RFC 9111: "HTTP Caching".