|  |
| --- |
| 3GPP TS 33.533 V0.0.0 (2023-04) |
| Technical Specification |
| 3rd Generation Partnership Project;Technical Specification Group Services and System Aspects;;Security aspects of ranging based services and sidelink positioning(Release 18) |
|   |
|  | 3GPP-logo_web |
|  |
| The present document has been developed within the 3rd Generation Partnership Project (3GPP TM) and may be further elaborated for the purposes of 3GPP.The present document has not been subject to any approval process by the 3GPPOrganizational Partners and shall not be implemented.This Specification is provided for future development work within 3GPPonly. The Organizational Partners accept no liability for any use of this Specification.Specifications and Reports for implementation of the 3GPP TM system should be obtained via the 3GPP Organizational Partners' Publications Offices. |

|  |
| --- |
|  |
| ***3GPP***Postal address3GPP support office address650 Route des Lucioles - Sophia AntipolisValbonne - FRANCETel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16Internethttp://www.3gpp.org |
| ***Copyright Notification***No part may be reproduced except as authorized by written permission.The copyright and the foregoing restriction extend to reproduction in all media.© 2023, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).All rights reserved.UMTS™ is a Trade Mark of ETSI registered for the benefit of its members3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational PartnersLTE™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational PartnersGSM® and the GSM logo are registered and owned by the GSM Association |

Contents

Foreword 4

1 Scope 6

2 References 6

3 Definitions of terms, symbols and abbreviations 6

3.1 Terms 6

3.2 Symbols 6

3.3 Abbreviations 6

4 Overview of security architecture 6

4.1 General 6

4.2 Functional entities and reference points 7

4.2.1 Functional entities 7

4.2.2 Reference points 7

5 Security requirements and procedures 7

5.1 General 7

5.2 Common security 7

5.3 Security for Ranging/SL positioning discovery 7

5.4 Authorization for Ranging/SL positioning service 7

6 Security related services 7

Annex <X> (informative): Change history 8

# 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:

**shall** indicates a mandatory requirement to do something

**shall not** 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.

**should** indicates a recommendation to do something

**should not** indicates a recommendation not to do something

**may** indicates permission to do something

**need not** 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.

**can** indicates that something is possible

**cannot** indicates that something is impossible

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

**will** 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

**will not** 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

**might** 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.

# 1 Scope

The present document specifies the security and privacy aspects of Ranging based services and Sidelink positioning in the 5G System (5GS) for commercial, V2X and public safety use cases, with the UE in coverage, partial coverage, and out-of-coverage of 5G network using 5G NR PC5 RAT, based on the architecture defined in TS 23.586 [x].

Security features for Ranging based services and Sidelink positioning include: authorization for Ranging/SL positioning service, Ranging/SL positioning discovery security.

Editor's Note: More security features are to be included once they are concluded in the study.

# 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".

# 3 Definitions of terms, symbols and abbreviations

## 3.1 Terms

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

**example:** text used to clarify abstract rules by applying them literally.

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

<symbol> <Explanation>

## 3.3 Abbreviations

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

<ABBREVIATION> <Expansion>

# 4 Overview of security architecture

## 4.1 General

Editor's Note: This clause introduces the security architecture supporting the protection of Ranging/SL positioning services, based on the architectural reference model defined in SA2 specification.

## 4.2 Functional entities and reference points

Editor's Note: This clause introduces the security related functional entities involved in the architecture and the reference points supported by the functional entities.

### 4.2.1 Functional entities

Editor's Note: This sub-clause describes the functional requirements supported by the security related entities involved in the architecture.

### 4.2.2 Reference points

Editor's Note: This sub-clause describes the reference points supported by the functional entities introduced in clause 4.2.1.

# 5 Common security

Editor's Note: This clause introduces the new clause and the specific contents to be included in next sub-clauses. The list of contents to be included in the normative text is not closed yet, so the current outline can be extended with new sub-clauses.

# 6 Security for Ranging/SL positioning features

## 6.1 General

Editor's Note: This clause introduces the new clause and the specific contents to be included in next sub-clauses. The list of contents to be included in the normative text is not closed yet, so the current outline can be extended with new sub-clauses.

## 6.2 Security for Ranging/SL positioning discovery

Editor's Note: This sub-clause introduces the security requirements and procedures for protecting Ranging/SL positioning discovery. The list of contents to be included in the normative text is not closed yet, so the current outline can be extended with further sub-clauses.

## 6.3 Authorization for Ranging/SL positioning service

Editor's Note: This sub-clause introduces the security requirements and procedures for authorizing the elements (including the UE, application server, network functions) involved in Ranging/SL positioning services. The list of contents to be included in the normative text is not closed yet, so the current outline can be extended with further sub-clauses.

Editor's Note: This sub-clause may be subject to adjustment of the document structure pending on procedure discussion.

# 7 Security related services

Editor's Note: This clause describes the new network services if they are identified to be introduced based on the security procedures described in clause 5. The clause can be removed if no new security related services are identified.

Annex <X> (informative):
Change history

|  |
| --- |
| **Change history** |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2023-04 | SA3#110-adhoc-e | S3-232195 |  |  |  | Implementation of S3-232028, S3-232194 | 0.0.0 |