

ETSI TS 133 528 V18.0.0 (2024-05)



**5G;
Security Assurance Specification (SCAS)
for the Policy Control Function (PCF)
(3GPP TS 33.528 version 18.0.0 Release 18)**



Reference

DTS/TSGS-0333528vi00

Keywords

5G,SECURITY

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from:

<https://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

If you find a security vulnerability in the present document, please report it through our
Coordinated Vulnerability Disclosure Program:

<https://www.etsi.org/standards/coordinated-vulnerability-disclosure>

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2024.
All rights reserved.

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

Legal Notice

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

The present document may refer to technical specifications or reports using their 3GPP identities. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 3GPP and ETSI identities can be found under <https://webapp.etsi.org/key/queryform.asp>.

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](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
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 PCF-specific security requirements and related test cases	7
4.1 Introduction	7
4.2 PCF-specific adaptations of security functional requirements and related test cases	7
4.3 PCF-specific adaptations of hardening requirements and related test cases.....	7
4.4 PCF-specific adaptations of basic vulnerability testing requirements and related test cases.....	7
4.4.1 Introduction.....	7
4.4.2 Port Scanning.....	7
4.4.3 Vulnerability scanning.....	7
4.4.4 Robustness and fuzz testing	7
Annex A (informative): Change history	8
History	9

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 contains requirements and test cases that are specific to the PCF network product class. It refers to the Catalogue of General Security Assurance Requirements [2] and formulates specific adaptations of the requirements and test cases given there, as well as specifying requirements and test cases unique to the PCF network product class.

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 33.117: "Catalogue of general security assurance requirements".

[3] 3GPP TS 23.501: "System Architecture for 5G System (5GS)".

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].

3.2 Symbols

Void.

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].

PCF Policy Control Function

4 PCF-specific security requirements and related test cases

4.1 Introduction

The present document contains objectives, requirements and test cases that are specific to the PCF network product class. It refers to the Catalogue of General Security Assurance Requirements and formulates specific adaptations of the requirements and test cases given there, as well as specifying requirements and test cases unique to the PCF network product class.

4.2 PCF-specific adaptations of security functional requirements and related test cases

There are no PCF-specific additions to clause 4.2 of TS 33.117 [2].

4.3 PCF-specific adaptations of hardening requirements and related test cases.

There are no PCF-specific additions to clause 4.3 of TS 33.117 [2].

4.4 PCF-specific adaptations of basic vulnerability testing requirements and related test cases

4.4.1 Introduction

There are no PCF specific additions to clause 4.4.1 of TS 33.117 [2].

4.4.2 Port Scanning

There are no PCF specific additions to clause 4.4.2 of TS 33.117 [2].

4.4.3 Vulnerability scanning

There are no PCF specific additions to clause 4.4.3 of TS 33.117 [2].

4.4.4 Robustness and fuzz testing

The test cases under clause 4.4.4 of TS 33.117 [2] are applicable to PCF.

According to clause 4.4.4 of TS 33.117 [2], the transport protocols available on the interfaces providing IP-based protocols need to be robustness tested. The interface defined for the PCF in clause 4.2.3 of TS 23.501 [3] is Npcf.

Following TCP/IP layer model and considering all the protocols over transport layer, for PCF, the following interface and protocols are under testing:

- For Npcf: The TCP, HTTP2 and JSON protocols.

NOTE: There could be other interfaces and/or protocols requiring testing under clause 4.4.4 of TS 33.117 [2].

Annex A (informative): Change history

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2023-04	SA3#110 Adhoc-e	S3-231759				TS skeleton	0.1.0
2023-05	SA3#111 Berlin	S3-233209		r1		draft TS, adding scope, introduction and clause 4 content	0.2.0
2023-05	SA3#111 Berlin	S3-233209		r2		adding clause 4.4 content from Keysight	0.3.0
2023-05	SA3#111 Berlin	S3-233209		r3		editorial changes of 4.4.4 content	0.3.0
2023-05	SA3#111 Berlin	S3-233209		r4		editorial changes of 4.4.4 NOTE	0.3.0
2024-03	SA#103	SP-240220				EditHelp review and presented for information and approval	1.0.0
2024-03	SA#103					Upgrade to change control version	18.0.0

History

Document history		
V18.0.0	May 2024	Publication