ETSI TS 133 520 V18.1.0 (2024-07)

TECHNICAL SPECIFICATION

**5G;
Security Assurance Specification (SCAS)
for Non-3GPP InterWorking Function (N3IWF)
(3GPP TS 33.520 version 18.1.0 Release 18)**

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 the
ETSI Search & Browse Standards application.

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 on ETSI deliver.

Users should be aware that the present document may be revised or have its status changed, this information is available in the Milestones listing.

If you find errors in the present document, please send your comments to
the relevant service listed under Committee Support Staff.

If you find a security vulnerability in the present document, please report it through our
Coordinated Vulnerability Disclosure (CVD) program.

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.

ETSI

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

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.

1 Scope

The present document contains objectives, requirements and test cases that are specific to the Non-3GPP InterWorking Function (N3IWF) network product class. It refers to the Catalogue of General Security Assurance Requirements and formulates specific adaptions of the requirements and test cases given there, as well as specifying requirements and test cases unique to the N3IWF 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 33.501: "Security architecture and procedures for 5G System".

[3] 3GPP TR 33.926: "Security Assurance Specification (SCAS) threats and critical assets in 3GPP network product classes".

[4] 3GPP TS 33.117: "Catalogue of general security assurance requirements".

3 Definitions of terms and abbreviations

3.1 Terms

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

3.2 Abbreviations

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

4 N3IWF-specific security requirements and related test cases

4.1 Introduction

N3IWF specific security requirements include both requirements derived from N3IWF-specific security functional requirements in relevant specifications as well as security requirements introduced in the present document derived from the threats specific to N3IWF network product classes as described in TR 33.926 [3].

4.2 N3IWF-specific security functional adaptations of requirements and related test cases

4.2.1 Introduction

Present clause contains N3IWF-specific security functional adaptations of requirements and related test cases.

4.2.2 Security functional requirements on the N3IWF deriving from 3GPP specifications and related test cases

4.2.2.1 Security functional requirements on the N3IWF deriving from 3GPP specifications – TS 33.501 [2]

4.2.2.1.1 Handling of EAP-Identity Request message

Requirement Name: Handling of EAP-Identity Request message

Requirement Reference: TS 33.501 [2], clause 7.2.1

Requirement Description: The N3IWF refrains from sending an EAP-Identity request. The UE may ignore an EAP Identity request or respond with the SUCI it sent in the Registration Request, as specified in TS 33.501 [2], clause 7.2.1.

Threat Reference: TR 33.926 [3], clause M.Y.2, N3IWF sends EAP-Identity Request

Test Name: TC_N3IWF_REFRAIN_SEND_IDENTITY_REQUEST

 Purpose:

Verify that the N3IWF will not send an EAP-Identity request message, and if the N3IWF sends EAP-Identity Request message, whether the N3IWF will conintue to proceed the EAP-5G procedure.

Pre-Conditions:

- The AMF network product shall be connected in emulated/real network environments. UE may be simulated.

- A document describes whether the N3IWF will send an EAP-Identity Request message.

Execution Steps

1. The UE initiates IKE_SA_INIT procedure without UE identity.

2. The N3IWF responses an EAP message

Expected Results:

If the EAP message is EAP-5G start, then it is ok.

If the EAP message is EAP-Identity Request meesage, then check whether the N3IWF sends a N2 msg to the AMF, and whether the procedure in 7.2 of TS 33.501[2] runs successfully.

Expected format of evidence:

Save the logs and the communication flow in a .pcap file.

4.2.3 Technical Baseline

4.2.3.1 Introduction

The present clause provides baseline technical requirements.

4.2.3.2   Protecting data and information

4.2.3.2.1   Protecting data and information – general

There are no N3IWF-specific additions to clause 4.2.3.2.1 of TS 33.117 [4].

4.2.3.2.2   Protecting data and information – unauthorized viewing

There are no N3IWF-specific additions to clause 4.2.3.2.2 of TS 33.117 [4].

4.2.3.2.3   Protecting data and information in storage

There are no N3IWF-specific additions to clause 4.2.3.2.3 of TS 33.117 [4].

4.2.3.2.4   Protecting data and information in transfer

There are no N3IWF-specific additions to clause 4.2.3.2.4 of TS 33.117 [4].

4.2.3.2.5   Logging access to personal data

There are no N3IWF-specific additions to clause 4.2.3.2.5 of TS 33.117 [4].

4.2.3.3   Protecting availability and integrity

There are no N3IWF-specific additions to clause 4.2.3.3 of TS 33.117 [4].

4.2.3.4   Authentication and authorization

There are no N3IWF-specific additions to clause 4.2.3.4 of TS 33.117 [4].

4.2.3.5   Protecting sessions

There are no N3IWF-specific additions to clause 4.2.3.5 of TS 33.117 [4].

4.2.3.6   Logging

There are no N3IWF-specific additions to clause 4.2.3.61 of TS 33.117 [4].

4.2.4   Operating Systems

There are no N3IWF-specific additions to clause 4.2.4 of TS 33.117 [4].

4.2.5   Web Servers

There are no N3IWF-specific additions to clause 4.2.5 of TS 33.117 [4].

4.2.6   Network Devices

There are no N3IWF-specific additions to clause 4.2.6 of TS 33.117 [4].

4.3   N3IWF-specific adaptations of hardening requirements and related test cases.

4.3.1   Introduction

The present clause contains N3IWF-specific adaptations of hardening requirements and related test cases.

4.3.2 Technical Baseline

There are no N3IWF-specific additions to clause 4.3.2 of TS 33.117 [4].

4.3.3 Operating Systems

There are no N3IWF-specific additions to clause 4.3.3 of TS 33.117 [4].

4.3.4 Web Servers

There are no N3IWF-specific additions to clause 4.3.4 of TS 33.117 [4].

4.3.5 Network Devices

There are no N3IWF-specific additions to clause 4.3.5 of TS 33.117 [4].

4.4 N3IWF-specific adaptations of basic vulnerability testing requirements and related test cases

There are no N3IWF-specific additions to clause 4.4 of TS 33.117 [4].

Annex A (informative):
Change history

Change history							
Date	**Meeting**	**TDoc**	**CR**	**Rev**	**Cat**	**Subject/Comment**	**New version**
2024-03	SA#103	SP-240221				Presented for information and approval	1.0.0
2024-03	SA#103					Upgrade to change control version	18.0.0
2024-07	SA#104	SP-240656	0002	1	F	Corrections to N3IWF SCAS	18.1.0

History

Document history		
V18.0.0	May 2024	Publication
V18.1.0	July 2024	Publication