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Part 1: Protocol Implementation Conformance Statement (PICS)

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Contents

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee IMS Network Testing (INT).

The present document is part 1 of a multi-part deliverable covering the IMS specific use of Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Conformance Testing, as identified below:

Part 1: "Protocol Implementation Conformance Statement (PICS)";

Part 2: "Test Suite Structure (TSS) and Test Purposes (TP)";

Part 3: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification".

Introduction

To evaluate protocol conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a telecommunication specification. Such a statement is called a Protocol Implementation Conformance Statement (PICS).

1 Scope

The present document provides the Protocol Implementation Conformance Statement (PICS) proforma for the IP Multimedia core network Subsystem (IMS) equipment supporting the Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP) as specified in TS 124 229 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [4] and ETS 300 406 [5].

The supplier of a protocol implementation which is claimed to conform to TS 124 229 [1] is required to complete a copy of the PICS proforma provided in annex A of the present document and is required to provide the information necessary to identify both the supplier and the implementation.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

[1] ETSI TS 124 229 (V10.7.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (3GPP TS 24.229 version 10.7.0 Release 10)".

[2] IETF RFC 3261 (2002): "SIP: Session Initiation Protocol".

[3] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[4] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

[5] ETSI ETS 300 406: "Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

[6] IETF RFC 4412: "Communications Resource Priority for the Session Initiation Protocol (SIP)".

[7] IETF RFC 5009: "Private Header (P-Header) Extension to the Session Initiation Protocol (SIP) for Authorization of Early Media".

[8] ETSI TS 133 203: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; 3G security; Access security for IP-based services (3GPP TS 33.203)".

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 124 229 [1] and the following apply:

PICS proforma: document, in the form of a questionnaire, designed by the protocol specifier or conformance test suite specifier, which, when completed for an OSI implementation or system, becomes the PICS

NOTE: See ISO/IEC 9646-1 [3].

Protocol Implementation Conformance Statement (PICS): statement made by the supplier of an Open Systems Interconnection (OSI) implementation or system, stating which capabilities have been implemented for a given OSI protocol

NOTE: See ISO/IEC 9646-1 [3].

static conformance review: review of the extent to which the static conformance requirements are met by the IUT, accomplished by comparing the PICS with the static conformance requirements expressed in the relevant standard(s)

NOTE: See ISO/IEC 9646-1 [3].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TS 124 229 [1] apply.

4 Conformance

A PICS proforma which conforms to this PICS proforma specification shall be technically equivalent to annex A, and shall preserve the numbering and ordering of the items in annex A.

A PICS which conforms to this PICS proforma specification shall:

a) describe an implementation which claims to conform to TS 124 229 [1];

b) be a conforming ICS proforma which has been completed in accordance with the instructions for completion given in clause A.1;

c) include the information necessary to uniquely identify both the supplier and the implementation.

Annex A (normative): PICS proforma

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the PICS proforma in this annex so that it can be used for its intended purposes and may further publish the completed PICS.

A.1 Guidance for completing the ICS proforma

A.1.1 Purposes and structure

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in relevant specifications may provide information about the implementation in a standardised manner.

The PICS proforma is subdivided into clauses for the following categories of information:

- instructions for completing the PICS proforma;
- identification of the implementation;
- identification of the protocol;
- PICS proforma tables (for example: Major capabilities, etc).

A.1.2 Abbreviations and conventions

This annex does not reflect dynamic conformance requirements but static ones. In particular, a condition for support of a PDU parameter does not reflect requirements about the syntax of the PDU (i.e. the presence of a parameter) but the capability of the implementation to support the parameter.

In the sending direction, the support of a parameter means that the implementation is able to send this parameter (but it does not mean that the implementation always sends it).

In the receiving direction, it means that the implementation supports the whole semantic of the parameter that is described in the main part of the present document.

As a consequence, PDU parameter tables in this annex are not the same as the tables describing the syntax of a PDU in the reference specification.

The PICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [4].

Item column

The item column contains a number which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Reference column

The reference column gives reference to the relevant sections in core specifications.

Status column

The various status used in this annex are in accordance with the rules in table A.1.

Table A.1: Key to status codes

Status code	Status name	Meaning
m	mandatory	The capability shall be supported. It is a static view of the fact that the conformance requirements related to the capability in the reference specification are mandatory requirements. This does not mean that a given behaviour shall always be observed (this would be a dynamic view), but that it shall be observed when the implementation is placed in conditions where the conformance requirements from the reference specification compel it to do so. For instance, if the support for a parameter in a sent PDU is mandatory, it does not mean that it shall always be present, but that it shall be present according to the description of the behaviour in the reference specification (dynamic conformance requirement).
o	optional	The capability may or may not be supported. It is an implementation choice.
n/a	not applicable	It is impossible to use the capability. No answer in the support column is required.
c.<integer>	conditional	The requirement on the capability ("m", "o" and "n/a") depends on the support of other optional or conditional items. <integer> is the identifier of the conditional expression.
o.<integer>	qualified optional	For mutually exclusive or selectable options from a set. <integer> is the identifier of the group of options, and the logic of selection of the options.

Mnemonic column

The Mnemonic column contains mnemonic identifiers for each item.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [4], are used for the support column:

Y or y supported by the implementation

N or n not supported by the implementation

N/A, n/a or- no answer required (allowed only if the status is N/A, directly or after evaluation of a conditional status)

References to items

For each possible item answer (answer in the support column) within the PICS proforma there exists a unique reference, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a solidus character "/", followed by the item number in the table.

EXAMPLE: A.5/4 is the reference to the answer of item 4 in table A.5.

A.1.3 Instructions for completing the PICS proforma

The supplier of the implementation may complete the PICS proforma in each of the spaces provided. More detailed instructions are given at the beginning of the different clauses of the PICS proforma.

A.2 Identification of the Network Equipment

Identification of the Network Equipment should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the PICS should be named as the contact person.

A.2.1 Date of the statement

.....

A.2.2 Network Equipment Under Test identification

Name:

.....

.....

Hardware configuration:

.....

.....

.....

Software configuration:

.....

.....

.....

A.2.3 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.2.4 Client

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.2.5 PICS contact person

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

A.3 Identification of the protocol

This PICS proforma applies to the following specification:

TS 124 229 [1].

A.4 Global statement of conformance

The implementation described in this PICS meets all the mandatory requirements of the referenced standard?

[ ] Yes

[ ] No

NOTE: Answering "No" to this question indicates non-conformance to the protocol specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming. Explanations may be entered in the comments field at the bottom of each table or on attached pages.

In the tabulations which follow, all references are to TS 124 229 [1] unless another numbered reference is explicitly indicated.

A.5 PICS proforma tables

A.5.1 Roles

Table A.2: Roles

Item	Roles	Reference	Status	Support
1	P-CSCF	Clause 5.2	o.1	
2	I-CSCF	Clause 5.3	o.1	
3	S-CSCF	Clause 5.4	o.1	
4	IBCF	Clause 5.10	o.1	
5	E-CSCF	Clause 5.11	o.1	
o.1	At least one of these capabilities shall be supported.			

A.5.2 P-CSCF Role

The tables provided in this clause need only to be completed for P-CSCF implementations, where item A.2/1 above is supported.

A.5.2.1 P-CSCF Capabilities

Table A.3: P-CSCF Capabilities

Item	Major capability: Does the implementation support...	Reference	Status	Support
General Capabilities (clause 4)				
1.1	The proxy role with IMS related exceptions and additional capabilities to SIP?	Clauses 4.1, 5.2	m	
1.2	The proxy role with IMS related exceptions and additional capabilities to SDP?	Clauses 4.1, 6.2	m	
1.3	The proxy role with IMS related exceptions and additional capabilities to SigComp?	Clauses 4.1, 8.2	m	
2	the UA role in providing application level gateway functionality (IMS-ALG) (clause 4.1) ...			
2.1	... for subscribing to or the receiving of event information?	Clauses 4.1, 5.2	m	
2.2	... for performing P-CSCF initiated dialog-release?	Clauses 4.1, 5.2	m	
2.3	... for performing NAT traversal procedures?	Clause 4.1, annexes F, G, K	m	
2.4	... for performing media plane security procedures?	Clauses 4.1, 5.2	m	
3	The access technology specific procedures?	Clauses 4.1, 3A, 9.2.2	m	
4	signalling security using (Clause 4.2B.1) ...			
4.1	IMS AKA plus IPsec ESP?	Clauses 4.2B.1, table 4-1, TS 133 203 [8], clause 6	m	
4.2	SIP digest plus check of IP association?	Clause 4.2B.1, table 4-1, TS 133 203 8], annex S	o	
4.3	SIP digest plus Proxy Authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8], annex N	o	
4.4	SIP digest with TLS?	Clause 4.2B.1, table 4-1, TS 133 203 [8], annexes N, O	o	
4.5	NASS-IMS bundled authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex R	o	
4.6	GPRS-IMS-Bundled authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8], annex S	o	
5	End-to-access-edge media security using SDES?	Clause 4.2B.2, table 4-2	m	
6.1	The loose routeing policy?	Clause 4.3, RFC 3261 [2]	m	
6.2	Interoperability with strict routers?	Clause 4.3, RFC 3261 [2] Clauses 12.2.1.1, 16.4	m	
7	Procedures related to charging?	Clause 4.5	m	
8	Procedures related to emergency services?	Clauses 4.7, 5.2.10	m	
9	Tracing of signalling?	Clause 4.8	o	
10	Priority mechanisms?	Clause 4.11	m	
P-CSCF specific application usage of SIP (clause 5.2)				
11	Provision of priority to emergency and priority transactions?	Clause 5.2.1	m	
Registration general (clause 5.2.1)				

Item	Major capability: Does the implementation support...	Reference	Status	Support
12.1	Selection of the security mechanism based on the content of the REGISTER request (Security-Client header field and the Require and Proxy-Require header fields set to "sec-agree") received from the UE?	Clause 5.2.2.1, first numbered list item 1	m	
12.2	Selection of the security mechanism based on the access type when the REGISTER request received from the UE does not contain a Security-Client header field, or contains a Security-Client header field and the Require and Proxy-Require header fields do not contain "sec-agree"?	Clause 5.2.2.1, first numbered list item 2	m	
13	General procedures that apply on receipt of a REGISTER request from the UE?	Clause 5.2.2.1, second numbered list	m	
14	General procedures that apply on receipt of a 200OK response to a REGISTER request?	Clause 5.2.2.1, third numbered list	m	
Registration when IMS AKA as a security mechanism applies (clause 5.2.2)				
15.1	Specific procedures that apply on receipt of a **unprotected** REGISTER request from the UE when IMS AKA as a security mechanism applies?	Clause 5.2.2.2, first numbered list items 1, 2	m	
15.2	Specific procedures that apply on receipt of a **protected** REGISTER request from the UE when IMS AKA as a security mechanism applies?	Clause 5.2.2.2, first numbered list items 1, 3	m	
15.2.1	Rejection of the **protected** REGISTER request in case of failure of the verification of the content of the **Security-Verify headers** and **Security-Client headers**?	Clause 5.2.2.2, first numbered list item 3 a)	o	
15.3	Procedures that apply on receipt of a 401 response to a (unprotected) REGISTER request?	Clause 5.2.2.2, second numbered list	m	
15.4	Procedures that apply on receipt of a 200OK response to a (protected) REGISTER request?	Clause 5.2.2.2, third numbered list	m	
15.5	Parallel management of old and newly established security associations?	Clause 5.2.2.2, fourth and fifth numbered lists, table 5.2.2-1	m	
Registration without TLS as a security mechanism (clause 5.2.3)				
16.1	Specific procedures that apply on receipt of a REGISTER request from the UE when no TLS security mechanism applies?	Clause 5.2.2.3, first numbered list	m	
16.2	Procedures that apply on receipt of a 500 response to a REGISTER request?	Clause 5.2.2.3	m	
16.3	Procedures that apply on receipt of a 200OK response to a REGISTER request?	Clause 5.2.2.3, first alphabetic list	m	
Registration when TLS as a security mechanism applies (clause 5.2.2.4)				
17	TLS as a security mechanism?	Clause 5.2.2.4	o	
17.1	Specific procedures that apply on receipt of a **unprotected** REGISTER request from the UE when TLS as a security mechanism applies?	Clause 5.2.2.4, first numbered list items 1	c.1	
17.2	Specific procedures that apply on receipt of a **protected** REGISTER request from the UE when IMS AKA as a security mechanism applies?	Clause 5.2.2.4, first numbered list item 2	c.1	
17.2.1	Rejection of the **protected** REGISTER request in case of failure of the verification of the content of the **Security-Verify headers** and **Security-Client headers**?	Clause 5.2.2.4, first numbered list items 2 b) and 3 b)	c.2	
17.3	Procedures that apply on receipt of a 401 response to a (unprotected) REGISTER request?	Clause 5.2.2.4, second numbered list	c.1	
17.4	Procedures that apply on receipt of a 200OK response to a (protected) REGISTER request?	Clause 5.2.2.4, dashed list	c.1	
Registration when NASS-IMS bundled authentication as a security mechanism applies (clause 5.2.2.5)				
18.1	Specific procedures that apply on receipt of a request from the UE when NASS-IMS bundled	Clause 5.2.2.5, numbered list	m	

Item	Major capability: Does the implementation support...	Reference	Status	Support
	authentication as a security mechanism applies?			
18.2	Procedures that apply on receipt of a 200OK response to a REGISTER request?	Clause 5.2.2.5, alphabetic list	m	
Registration when GPRS-IMS bundled authentication as a security mechanism applies (clause 5.2.2.6)				
19.1	Specific procedures that apply on receipt of a REGISTER request from the UE when GPRS-IMS bundled authentication as a security mechanism applies?	Clause 5.2.2.6	m	
19.2	Procedures that apply on receipt of a 200OK response to a REGISTER request?	Clause 5.2.2.6, numbered list	m	
Subscription, registration of additional identities, de-registration(clauses 5.2.3 – 5.2.5)				
20	Subscription procedures to a user's registration state event package? (see note 1)	Clause 5.2.3	m	
21	Subscription procedures to a user's debug event package? (see note 2)	Clause 5.2.3A	m	
22	Procedures of registering additional public user identities? (see note 3)	Clause 5.2.4	m	
23.1	Procedures for user-initiated deregistration?	Clause 5.2.5.1	m	
23.2	Procedures for network-initiated deregistration?	Clause 5.2.5.2	m	
Handling of requests other than REGISTER (clause 5.2.6)				
Requests initiated by the UE (clause 5.2.6.3)				
24.1	General handling of initial requests for a dialog or requests for a standalone transaction from a UE?	Clause 5.2.6.3.1	m	
24.1.1	Handling of initial request for a dialog or a request for a standalone transaction from a UE that is **not** considered as privileged sender?	Clause 5.2.6.3.1 dashed list	m	
24.1.2	Handling of initial request for a dialog or a request for a standalone transaction from a UE that is considered as privileged sender?	Clause 5.2.6.3.1 alphabetic and numbered list	m	
24.2	General handling of responses from a UE?	Clause 5.2.6.3.2	m	
24.3	Rejection of requests with restoration procedures?	Clause 5.2.6.3.2A	o	
24.4	Handling of initial requests for a dialog?	Clause 5.2.6.3.3	m	
24.4.1	In case of failure of the verification of the **URIs** in the **Route headers** (clause 5.2.6.3.3 item 2)) …			
24.4.1.1	Rejection of the request?	Clause 5.2.6.3.3 item 2) a)	o.1	
24.4.1.2	Replacement of the **Route headers** with stored values?	Clause 5.2.6.3.3 item 2) b)	o.1	
24.4.2	When building the **Via header** (clause 5.2.6.3.3 item 4)) …			
24.4.2.1	Insertion of the P-CSCF FQDN that resolves to the IP address?	Clause 5.2.6.3.3 item 4) a)	o.2	
24.4.2.2	Insertion of the P-CSCF IP address?	Clause 5.2.6.3.3 item 4) b)	o.2	
24.4.3	When building the **Record-Route header** (clause 5.2.6.3.3 item 5)) …			
24.4.3.1	Insertion of the P-CSCF FQDN that resolves to the IP address?	Clause 5.2.6.3.3 item 5) a)	o.3	
24.4.3.2	Insertion of the P-CSCF IP address?	Clause 5.2.6.3.3 item 5) b)	o.3	
24.5	Handling of 1xx and 2xx responses to initial requests?	Clause 5.2.6.3, second numbered list	m	
24.5.1	In case a security association or a TLS session exists, when rewriting its own Record Route entry (clause 5.2.6.3.4 item 4)) …			
24.5.1.1	Insertion of the P-CSCF FQDN that resolves to the IP address of the security association or the TLS session?	Clause 5.2.6.3.4 item 4) a)	o.4	
24.5.1.2	Insertion of the P-CSCF IP address of the security association or the TLS session?	Clause 5.2.6.3.4 item 4) b)	o.4	
24.6	Handling of target refresh requests?	Clause 5.2.6.3.5	m	
24.6.1	In case of failure of the verification of the **URIs** in the **Route headers** (clause 5.2.6.3.5 item 2)) …			
24.6.1.1	Rejection of the request?	Clause 5.2.6.3.5 item 2) a)	o.5	
24.6.1.2	Replacement of the **Route headers** with stored values?	Clause 5.2.6.3.5 item 2) b)	o.5	
24.6.2	When building the **Via header** (clause 5.2.6.3.5 item 3)) …			
24.6.2.1	Insertion of the P-CSCF FQDN that resolves to the	Clause 5.2.6.3.5	o.6	

Item	Major capability: Does the implementation support...	Reference	Status	Support
	IP address?	item 3) a)		
24.6.2.2	Insertion of the P-CSCF IP address?	Clause 5.2.6.3.5 item 3) b)	o.6	
24.7	Handling of responses to target refresh requests?	Clause 5.2.6.3.6	m	
24.8	Handling of requests for a standalone transaction?	Clause 5.2.6.3.7	m	
24.8.1	In case of failure of the verification of the **URIs** in the **Route headers** (clause 5.2.6.3 item 2)) …			
24.8.1.1	Rejection of the request?	Clause 5.2.6.3.7 item 2) a)	o.7	
24.8.1.2	Replacement of the **Route headers** with stored values?	Clause 5.2.6.3.7 item 2) b)	o.7	
24.9	Handling of responses to standalone requests?	Clause 5.2.6.3.8	m	
24.10	Handling of subsequent (other than target refresh) requests?	Clause 5.2.6.3.9	m	
24.10.1	In case of failure of the verification of the **URIs** in the **Route headers** (clause 5.2.6.3.9 item 2)) …			
24.10.1.1	Rejection of the request?	Clause 5.2.6.3.9 item 2) a)	o.8	
24.10.1.2	Replacement of the **Route headers** with stored values?	Clause 5.2.6.3.9 item 2) b)	o.8	
24.11	Handling of requests for unknown method that do not relate to an existing dialog?	Clause 5.2.6.3.11	m	
24.11.1	In case of failure of the verification of the **URIs** in the **Route headers** (clause 5.2.6.3.11 item 1)) …			
24.11.1.1	Rejection of the request?	Clause 5.2.6.3.11 item 1) a)	o.9	
24.11.1.2	Replacement of the **Route headers** with stored values?	Clause 5.2.6.3.11 item 1) b)	o.9	
Requests terminated by the UE (clause 5.2.6.4)				
25.1	General handling of initial requests for a dialog or requests for a standalone transaction terminated by the UE?	Clause 5.2.6.4.1	m	
25.2	General handling of responses destined to a UE?	Clause 5.2.6.4.2	m	
25.3	Handling of initial requests for a dialog destined for a UE?	Clause 5.2.6.4.3	m	
25.3.1	When building the **Record-Route header** (clause 5.2.6.4.3 item 4)) …			
25.3.1.1	Insertion of the P-CSCF FQDN that resolves to the IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.3 item 4) a)	o.10	
25.3.1.2	Insertion of the P-CSCF IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.3 item 4) b)	o.10	
25.3.2	When building the **Via header** (clause 5.2.6.4.3 item 6)) …			
25.3.2.1	Insertion of the P-CSCF FQDN that resolves to the IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.3 item 6) a)	o.11	
25.3.2.2	Insertion of the P-CSCF IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.3 item 6) b)	o.11	
25.4	Handling of 1xx and 2xx responses to initial requests?	Clause 5.2.6.4.4	m	
25.4.1	In case of failure of the verification of the **Via headers** (clause 5.2.6.4.4 item 2)) …			
25.4.1.1	Discarding the response?	Clause 5.2.6.4.4 item 2) a)	o.12	
25.4.1.2	Replacement of the **Via header** values with stored values?	Clause 5.2.6.4.4 item 2) b)	o.12	
25.4.2	In case of failure of the verification of the **URIs** in the **Route headers** (clause 5.2.6.4.4 item 3)) …			
25.4.2.1	Discarding the response?	Clause 5.2.6.4.4 item 3) first a)	o.13	
25.4.2.2	Replacement of the **Record-Route header** values with stored values?	Clause 5.2.6.4.4 item 3) first b)	o.13	
25.4.2.2	When replacing build the **Record-Route header** with (clause 5.2.6.4.4 item 3) first b)) …			
25.4.2.2.1	The P-CSCF FQDN that resolves to its IP address?	Clause 5.2.6.4.4 item 3) first b)	c.1	
25.4.2.2.2	The P-CSCF IP address?	Clause 5.2.6.4.4 item 3) first b)	c.1	
25.4.3	When building the **Record-Route header** in case of success of the verification of the **URIs** in the **Route headers** (clause 5.2.6.4.4 item 3) second alphabetic list) …			

Item	Major capability: Does the implementation support...	Reference	Status	Support
25.4.3.1	The P-CSCF FQDN that resolves to its IP address?	Clause 5.2.6.4.4 item 3) second a)	o.14	
25.4.3.2	The P-CSCF IP address?	Clause 5.2.6.4.4 item 3) second b)	o.14	
25.5	Handling of responses (other than 1xx and 2xx) to initial requests?	Clause 5.2.6.4, third numbered list	m	
25.5.1	In case of failure of the verification of the **Via headers** (clause 5.2.6.4.4 third alphabetic list) …			
25.5.1.1	Discarding the response?	Clause 5.2.6.4.4 third a)	o.15	
25.5.1.2	Replacement of the **Via header** values with stored values?	Clause 5.2.6.4.4 third b)	o.15	
25.6	Handling of target refresh requests?	Clause 5.2.6.4.5	m	
25.6.1	When building the **Via header** (clause 5.2.6.4.5 item 1)) …			
25.6.1.1	Insertion of the P-CSCF FQDN that resolves to the IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.5 item 1) a)	o.16	
25.6.1.2	Insertion of the P-CSCF IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.5 item 1) b)	o.16	
25.6.2	When building the **Record-Route header** (clause 5.2.6.4.5 item 3)) …			
25.6.2.1	Insertion of the P-CSCF FQDN that resolves to the IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.5 item 3) a)	o.17	
25.6.2.2	Insertion of the P-CSCF IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.5 item 3) b)	o.17	
25.7	Handling of 1xx and 2xx responses to target refresh requests?	Clause 5.2.6.4.6, first numbered list	m	
25.7.1	In case of failure of the verification of the **Via headers** (clause 5.2.6.4.6 first 1)) …			
25.7.1.1	Discarding the response?	Clause 5.2.6.4.6 first 1) a)	o.18	
25.7.1.2	Replacement of the **Via header** values with stored values?	Clause 5.2.6.4.6 first 1) b)	o.18	
25.8	Handling of responses (other than 1xx and 2xx) to target refresh requests?	Clause 5.2.6.4.6, second numbered list	m	
25.8.1	In case of failure of the verification of the **Via headers** (clause 5.2.6.4.6 second 1)) …			
25.8.1.1	Discarding the response?	Clause 5.2.6.4 second 1) a)	o.19	
25.8.1.2	Replacement of the **Via header** values with stored values?	Clause 5.2.6.4 second 1) b)	o.19	
25.9	Handling of requests for standalone transactions or unknown methods?	Clause 5.2.6.4.7	m	
25.9.1	When building the **Via header** (clause 5.2.6.4.7 item 2)) …			
25.9.1.1	Insertion of the P-CSCF FQDN that resolves to the IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.7 item 2) a)	o.20	
25.9.1.2	Insertion of the P-CSCF IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4 item 2) b)	o.20	
25.10	Handling of all responses to requests for standalone transactions or unknown methods?	Clause 5.2.6.4.8	m	
25.10.1	In case of failure of the verification of the **Via headers** (clause 5.2.6.4.8 item 1)) …			
25.10.1.1	Discarding the response?	Clause 5.2.6.4.8 item 1) a)	o.21	
25.10.1.2	Replacement of the **Via** values with stored values?	Clause 5.2.6.4.8 item 1) b)	o.21	
25.11	Handling of subsequent (other than target refresh) requests?	Clause 5.2.6.4.9	m	
25.11.1	When building the **Via header** (clause 5.2.6.4.9 item 1)) …			
25.11.1.1	Insertion of the P-CSCF FQDN that resolves to the IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.9 item 1) a)	o.22	

Item	Major capability: Does the implementation support...	Reference	Status	Support
25.11.1.2	Insertion of the P-CSCF IP address of the security association or TLS session established from the UE to the P-CSCF?	Clause 5.2.6.4.9 item 1) b)	o.22	
25.12	Handling of 1xx and 2xx responses to subsequent requests?	Clause 5.2.6.4.10	m	
25.12.1	In case of failure of the verification of the **Via headers** (clause 5.2.6.4.10 item 1)) …			
25.12.1.1	Discarding the response?	Clause 5.2.6.4.10 item 1) a)	o.23	
25.12.1.2	Replacement of the **Via header** values with stored values?	Clause 5.2.6.4.10 item 1) b)	o.23	
Additional requirements *for INVITE Request, session termination and subsequent requests (clauses 5.2.7, 5.2.8, 5.2.9)*				
26.1	Additional requirements for UE-originated INVITE requests?	Clause 5.2.7.2	m	
26.1.1	Application of periodic session refreshment on receipt of UE-originated INVITE requests?	Clause 5.2.7.2	o	
26.2	Additional requirements for UE-terminated INVITE requests?	Clause 5.2.7.3	m	
26.2.1	Application of periodic session refreshment on receipt of UE-terminated INVITE requests?	Clause 5.2.7.3	o	
27.1	P-CSCF initiated call release (clause 5.2.8.1) ...			
27.1.1	Cancellation of a session currently being established?	Clause 5.2.8.1.1	m	
27.1.2	Release of an existing session?	Clause 5.2.8.1.2	m	
27.2	Call release initiated by other entities?	Clause 5.2.8.2	m	
27.3	Call release due to session expiry?	Clause 5.2.8.3	m	
28.1	Additional requirements for subsequent requests (UE-originating case)?	Clause 5.2.9.1	m	
28.2	Additional requirements for subsequent requests (UE-terminating case)?	Clause 5.2.9.2	m	
Emergency service (clause 5.2.10) (see note 4)				
29.1	Handling of emergency session establishment within a non-emergency registration?	Clause 5.2.10.1	m	
29.2	Emergency registrations?	Clause 5.2.10.1	m	
29.3	Requests for all dialogs and standalone transactions (other than REGISTER) **from** an unregistered user?	Clause 5.2.10.2	m	
29.3.1	When building the **URI** (clause 5.2.10.2 item 1)) …			
29.3.1.1	Inclusion of the **URI** received from the UE?	Clause 5.2.10.2 item 1) first dash	o.24	
29.3.1.2	Inclusion of a **URI** deduced from the **URI** received from the UE?	Clause 5.2.10.2 item 1) second dash	o.24	
29.4	Delivery of responses for all dialogs and standalone transactions (other than REGISTER) **to** an unregistered user?	Clause 5.2.10.2	m	
29.5	Treatment for all dialogs and standalone transactions (other than REGISTER) related to requests **to** an unregistered user?	Clause 5.2.10.2.A	m	
29.6	Requests for all dialogs and standalone transactions (other than REGISTER) from an emergency-registered user?	Clause 5.2.10.3	m	
29.6.1	When building the **URI** (clause 5.2.10.3 item 1)) …			
29.6.1.1	Inclusion of the **URI** received from the UE?	Clause 5.2.10.3 item 1) first dash	o.25	
29.6.1.2	Inclusion of a **URI** deduced from the **URI** received from the UE?	Clause 5.2.10.3 item 1) second dash	o.25	
29.7.1	Requests for all dialogs and standalone transactions (other than REGISTER) from an non-emergency-registered user?	Clause 5.2.10.4	m	
29.7.1.1	When building the **URI** (clause 5.2.10.4 item 1)) …			
29.7.1.1.1	Inclusion of the **URI** received from the UE?	Clause 5.2.10.4 item 1) first dash	o.26	
29.7.1.1.2	Inclusion of a **URI** deduced from the URI received from the UE?	Clause 5.2.10.4 item 1) second dash	o.26	
29.8	Abnormal and rejection cases?	Clause 5.2.10.5	m	
P-CSCF specific application usage of SDP (clause 6.2)				

Item	Major capability: Does the implementation support...	Reference	Status	Support
30.1	Handling of requests including SDP offers?	Clause 6.2 second and third paragraphs	m	
30.1.1	Rejection of requests including encrypted SDP offers?	Clause 6.2, third paragraph	o	
30.2	Handling of responses (other than 200OK) including SDP offers?	Clause 6.2, fifth paragraph	m	
30.2.1	Rejection of requests following non-200OK responses including encrypted SDP offers?	Clause 6.2, fifth paragraph	o	
30.3	Handling of 200OK responses including SDP offers?	Clause 6.2, sixth paragraph	m	
30.3.1	Session termination on receipt of encrypted SDP offers in 200OK responses?	Clause 6.2, sixth paragraph	o	
30.4	Inspection of b=RS and b=RR lines within an SDP offer?	Clause 6.2, ninth paragraph	o	
IMS-ALG in P-CSCF (clause 6.7.2)				
31	IMS-ALG functionality within the P-CSCF?	Clause 6.7.2	o	
31.1	General procedures for the support of SDP in IMS-ALG within the P-CSCF?	Clause 6.7.2.1	c.2	
31.2	IMS-ALG in P-CSCF procedures for media plane security?	Clause 6.7.2.2	c.2	
31.3	IMS-ALG in P-CSCF procedures for explicit congestion control support?	Clause 6.7.2.3	c.2	
31.4	IMS-ALG in P-CSCF procedures for Optimal Media Routeing (OMR)?	Clause 6.7.2.4	c.2	
31.5	IMS-ALG in P-CSCF procedures for NA(P)T and NA(P)T-PT controlled by the P-CSCF?	Clause 6.7.2.5	c.2	
31.6	IMS-ALG in P-CSCF procedures for support of hosted NAT?	Clause 6.7.2.6	c.2	
31.7	IMS-ALG in P-CSCF procedures for support of ICE?	Clause 6.7.2.7	c.2	
31.8	IMS-ALG in P-CSCF procedures for transcoding?	Clause 6.7.2.8	c.2	
SIP compression (clause 8.2)				
32	SIP compression?	Clauses 8.2.1, 8.2.2	m	
32.1	The negative acknowledgement mechanism for compression?	Clause 8.2.1	o	
32.3	The presence specific dictionary for compression?	Clause 8.2.1	o	
32.4	Compression of requests and responses to a UE?	Clause 8.2.2	o	
32.4	Decompression of requests and responses from a UE?	Clause 8.2.3	m	
IP-Connectivity Access Network specific concepts when using GPRS to access IM CN subsystem (Annex B)				
33	Application usage of SIP when using GPRS to access IM CN subsystem?	Clause B.3.2	m	
IP-Connectivity Access Network specific concepts when using xDSL to access IM CN subsystem (Annex E)				
34	Application usage of SIP when using xDSL access to IM CN subsystem?	Clause E.3.2	m	
34.1	Insertion of the **P-Access-Network-Info header** for location information handling?	Clause E.3.2.2	o	
Additional procedures in support for hosted NAT (Annex F)				
35	Additional procedures in support for hosted NAT?	Annex F	o	
35.1	Usage of SIP in support for hosted NAT?	Clause F.2.2	c.3	
35.1.1	Rejection of integrity protected REGISTER requests in case the comparison of the **Security-Verify header** and the **Security-Server header** with stored values fails?	Clause F.2.2, item (3 (b, third dash	o	
35.2	Usage of SIP in support for hosted NAT in case UDP encapsulated IPsec is not employed?	Clause F.4	c.3	
IP-Connectivity Access Network specific concepts when using DOCSIS to access IM CN subsystem (Annex H)				
36	Usage of SIP when DOCSIS to access to the IM CN subsystem was requested?	Clause H.3.2	m	
36.1	Insertion of the **P-Access-Network-Info header** for location information handling?	Clause H.3.2.2	o	
Additional procedures in support of UE managed NAT traversal (Annex K)				
37	Application usage of SIP for UE managed NAT traversal?	Clause K.2.2	m	

Item	Major capability: Does the implementation support...	Reference	Status	Support
37.1	Additional procedures to registration with security association set-up for UE managed NAT traversal?	Clause K.2.2.2	m	
37.2	Additional procedures to handling of requests (other than REGISTER) initiated or terminated by a UE for UE managed NAT traversal?	Clause K.2.2.3	m	
37.3	Additional procedures to the emergency service for UE managed NAT traversal?	Clause K.2.2.5	m	
38	Application usage of SDP for UE managed NAT traversal?	Clause K.3.2	m	
39	Application usage of ICE for UE managed NAT traversal?	Clause K.5.3	m	
IP-Connectivity Access Network specific concepts when using EPS to access IM CN subsystem (Annex L)				
40	Application usage of SIP when using EPS access to IM CN subsystem?	Clause L.3.2	m	
IP-Connectivity Access Network specific concepts when using cdma2000® packet data subsystem to access IM CN subsystem (Annex M)				
41	Application usage of SIP when using cdma2000® packet data subsystem access to IM CN subsystem?	Clause M.3.2	m	
IP-Connectivity Access Network specific concepts when using the EPC via cdma2000® HRPD to access IM CN subsystem (Annex O)				
42	Application usage of SIP when using the EPC via cdma2000® HRPD access to IM CN subsystem?	Clause O.3.2	m	
IP-Connectivity Access Network specific concepts when using cdma2000® 1x Femtocell Network to access IM CN subsystem (Annex Q)				
43	Application usage of SIP when using cdma2000® 1x Femtocell Network access to IM CN subsystem?	Clause Q.3.2	m	

NOTE 1: The P-CSCF has to send a SUBSCRIBE request to the home domain in which the user's public user identity resides upon receipt of a 200OK response to the first initial REGISTER request.
NOTE 2: The P-CSCF has to send a SUBSCRIBE request to the home domain in which the user's public user identity resides upon receipt of a 2xx response to a registration that contained an empty P-Debug-ID header field.
NOTE 3: The P-CSCF is informed of additional public user identities by the registrar via NOTIFY requests.
NOTE 4: See also PICS item A.3/8.
o.n At least one of these capabilities shall be supported.
c.1 o, if A.3/25.4.2.2 is supported, else n/a
c.2 o, if A.3/31 is supported, else n/a
c.3 m, if A.3/35 is supported, else n/a

A.5.2.2 P-CSCF header handling

Table A.4: P-CSCF Header Handling

Item	Header handling: Does the implementation support...	Reference	Status	Support
1	Insertion or modification of the **Resource-Priority header** to give priority to emergency or priority transactions?	Clause 5.2.1, RFC 4412 [6]	c.1	
2	The **Path header** in REGISTER request and related 200OK response messages?	Clause 5.2.1	m	
3	The **Service-Route header** in 200OK response messages to REGISTER requests?	Clause 5.2.1	m	
4.1	Removal of the **P-Charging-Function-Addresses header** from requests and responses to be sent to the UE?	Clause 5.2.1	m	
4.2	Removal of the **P-Charging-Vector header** from requests and responses to be sent to the UE?	Clause 5.2.1	m	
5.1.1	Removal of the **P-Charging-Function-Addresses header** from requests and responses received from the UE?	Clause 5.2.1, numbered item 1	m	
5.1.2	Insertion of saved **P-Charging-Function-Addresses header** into requests and responses from the UE to be forwarded?	Clause 5.2.1 numbered item 2	o	
5.2.1	Removal of the **P-Charging-Vector header** from requests and responses received from the UE?	Clause 5.2.1 numbered item 1	m	
5.2.2	Insertion of saved **P-Charging-Vector header** into requests and responses from the UE to be forwarded?	Clause 5.2.1 numbered item 2	o	
5.3.1	Removal of the **P-Access-Network header** with "network provided" parameter?	Clause 5.2.1 numbered item 3	m	
5.3.2	Insertion of the **P-Access-Network header** with parameters set to the appropriate (access technology dependent) values?	Clause 5.2.1 numbered item 4	o	
6	Removal of the **P-Media-Authorization header** from requests and responses to be sent to the UE?	Clause 5.2.1	m	
7	Removal, insertion and modification of the **P-Early-Media header**?	Clause 5.2.1, RFC 5009 [7]	o	
c.1	o, if A.3/11 is supported, else n/a			

A.5.3 I-CSCF Role

The tables provided in this clause need only to be completed for I-CSCF implementations, where item A.2/2 above is supported.

A.5.3.1 I-CSCF Capabilities

Table A.5: I-CSCF Capabilities

Item	Major capability: Does the implementation support...	Reference	Status	Support
General Capabilities (clause 4)				
1.1	The proxy role with IMS related exceptions and additional capabilities to SIP?	Clauses 4.1, 5.3	m	
1.2	The UA role when providing server functionality to return a final response?	Clause 4.1	o	
2	Signalling security using (Clause 4.2B.1) ...			
2.1	IMS AKA plus IPsec ESP?	Clause 4.2B.1, table 4-1, TS 133 203 [8] clause 6	m	

Item	Major capability: Does the implementation support...	Reference	Status	Support
2.2	SIP digest plus check of IP association?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex S	o	
2.3	SIP digest plus Proxy Authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex N	o	
2.4	SIP digest with TLS?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex N, O	o	
2.5	NASS-IMS bundled authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex R	o	
2.6	GPRS-IMS-Bundled authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex S	o	
2.7	Trusted node authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex U	o	
3.1	The loose routeing policy?	Clause 4.3, RFC 3261 [2]	m	
3.2	Interoperability with strict routers?	Clause 4.3, RFC 3261 [2] Clauses 12.2.1.1, 16.4	m	
4	Procedures related to charging?	Clause 4.5	m	
5	Tracing of signalling?	Clause 4.8	o	
6	Procedures related to overlap sending?	Clause 4.9	m	
I-CSCF specific application usage of SIP (clause 5.3)				
7.1	Procedures that apply on receipt of a REGISTER request? (see note 1)	Clause 5.3.1.2	m	
7.2	Procedures that apply on receipt of a user registration status query response? (see note 2)	Clause 5.3.1.2 first and second numbered list	m	
7.2.1	Insertion of the Redirect-Host AVP into the **P-User-Database header** of the REGISTER request to be sent to the S-CSCF?	Clause 5.3.1.2 first 2), second 3)	o	
7.3.1	Procedures that apply in case the user registration status query procedure fails?	Clause 5.3.1.3	m	
7.3.2	Procedures that apply on receipt of no response or a response other than 200OK from the S-CSCF?	Clause 5.3.1.3	m	
8.1	Stateful proxy behaviour for initial requests?	Clause 5.3.2.1 first sentence	o.1	
8.2	Stateless proxy behaviour for initial requests?	Clause 5.3.2.1 complement of first sentence	o.1	
8.3	Handling of initial requests not containing the "orig" parameter in the topmost **Route header**?	Clause 5.3.2.1	m	
8.3.1	Application of periodic session refreshment on receipt of INVITE requests?	Clause 5.3.2.1	o	
8.3.2	Insertion of the Redirect-Host AVP into the **P-User-Database header** of INVITE requests to be forwarded to the S-CSCF?	Clause 5.3.2.1 second 3)	o	
8.4	Originating procedures for requests containing the "orig" parameter in the topmost **Route header**?	Clause 5.3.2.1A	m	
8.4.1	Application of periodic session refreshment on receipt of INVITE requests?	Clause 5.3.2.1A	o	
8.4.2	Insertion of the Redirect-Host AVP into the **P-User-Database header** of INVITE requests to be forwarded to the S-CSCF?	Clause 5.3.2.1A first 3)	o	

Item	Major capability: Does the implementation support...	Reference	Status	Support
8.5	Abnormal cases related to Initial requests (clause 5.3.2.2) ...			
8.5.1	Procedures for successful user location query when the S-CSCF cannot be contacted?	Clause 5.3.2.2	m	
8.5.2	Procedures for unsuccessful outcome of request processing?	Clause 5.3.2.2	m	
Additional routeing capabilities in support of transit and interconnection traffics in IM CN subsystem (Annex I)				
9	Additional routeing capabilities?	Annex I	o	
NOTE 1: The I-CSCF has to start the user registration status query procedure on receipt of the REGISTER request from the P-CSCF. The I-CSCF shall behave as a stateful proxy. NOTE 2: If the user registration status query procedure succeeds, the I-CSCF has to forward the REGISTER request to the S-CSCF. The 200OK response from the S-CSCF has to be proxied to the P-CSCF. o.n At least one of these capabilities shall be supported.				

A.5.4 S-CSCF Role

The tables provided in this clause need only to be completed for S-CSCF implementations, where item A.2/3 above is supported.

A.5.4.1 S-CSCF Capabilities

Table A.6: S-CSCF Capabilities

Item	Major capability: Does the implementation support...	Reference	Status	Support
General Capabilities (clause 4)				
1.1	The proxy role with IMS related exceptions and additional capabilities to SIP?	Clauses 4.1, 5.4	m	
1.2	The proxy role with IMS related exceptions and additional capabilities to SDP?	Clauses 4.1, 6.3	m	
2	The UA role with IMS related exceptions and additional capabilities? (see note 1)	Clauses 4.1, 5.4	m	
3	Signalling security using (Clause 4.2B.1) ...			
3.1	IMS AKA plus IPsec ESP?	Clause 4.2B.1, table 4-1, TS 133 203 [8] clause 6	m	
3.2	SIP digest plus check of IP association?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex S	o	
3.3	SIP digest plus Proxy Authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex N	o	
3.4	SIP digest with TLS?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex N, O	o	
3.5	NASS-IMS bundled authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex R	o	
3.6	GPRS-IMS-Bundled authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex S	o	
3.7	Trusted node authentication?	Clause 4.2B.1, table 4-1, TS 133 203 [8] annex U	o	
4.1	The loose routeing policy?	Clause 4.3, RFC 3261 [2]	m	

Item	Major capability: Does the implementation support...	Reference	Status	Support
4.2	Interoperability with strict routers?	Clause 4.3, RFC 3261 [2] Clauses 12.2.1.1, 16.4	m	
5	Procedures related to charging?	Clause 4.5	m	
6	Procedures related to emergency services?	Clauses 4.7, 5.4.8	m	
7	Tracing of signalling?	Clause 4.8	o	
8	Procedures related to overlap sending?	Clause 4.9	m	
9	Priority mechanisms?	Clause 4.11	m	
S-CSCF specific application usage of SIP (clause 5.4)				
10	Provision of priority to emergency registrations and calls?	Clauses 5.4.0, 5.4.1.1	m	
Registration general (clause 5.4.1)				
11	Selection of the authentication mechanism based on the contents of the REGISTER request (Authorization header and/or P-Access-Network-Info header)?	Clause 5.4.1.1	m	
Unprotected REGISTER and challenges (clause 5.4.1.2.1)				
11.1	Procedures that apply on receipt of an unprotected REGISTER request for an already registered public user identity?	Clause 5.4.1.2.1 first numbered list	m	
11.2	Procedures that apply on receipt of an unprotected REGISTER request for a not yet registered public user identity?	Clause 5.4.1.2.1 second numbered list	m	
12.1	Provision of challenges with IMS AKA as security mechanism in the 401 response?	Clause 5.4.1.2.1A	m	
12.2	Provision of challenges with SIP digest as security mechanism in the 401 response?	Clause 5.4.1.2.1B	c.1	
12.3	Provision of challenges with SIP digest with TLS as security mechanism in the 401 response?	Clause 5.4.1.2.1C	c.2	
13.1	Procedures for initial registration and user-initiated reregistration for NASS-IMS bundled authentication?	Clause 5.4.1.2.1D	c.3	
13.2	Procedures for initial registration and user-initiated reregistration for GPRS-IMS bundled authentication?	Clause 5.4.1.2.1E	c.4	
Protected REGISTER (clause 5.4.1.2.2)				
14.1	Procedures that apply on receipt of a protected REGISTER request when IMS AKA as security mechanism applies?	Clauses 5.4.1.2.2, 5.4.1.2.2F	m	
14.2	Procedures that apply on receipt of a protected REGISTER request when SIP digest as security mechanism applies?	Clauses 5.4.1.2.2A, 5.4.1.2.2F	c.1	
14.3	Procedures that apply on receipt of a protected REGISTER request when SIP digest with TLS as security mechanism applies?	Clauses 5.4.1.2.2B, 5.4.1.2.2F	c.2	
14.4	Procedures that apply on receipt of a protected REGISTER request for which authentication is already performed?	Clauses 5.4.1.2.2E, 5.4.1.2.2F	m	
Registration abnormal cases (clause 5.4.1.2.3)				
15.1	General procedures for handling of abnormal cases related to initial registration and user-initiated re-registration?	Clause 5.4.1.2.3	m	
15.2	Procedures for handling of abnormal cases related to initial registration and user-initiated re-registration when IMS AKA as security mechanism applies?	Clause 5.4.1.2.3A	m	
15.2.1	On receipt of a REGISTER request, indicating that the SQN was deemed to be out of range by the UE (clause 5.4.1.2.3A, second dashed list) ...			
15.2.1.1	Sends a 401 response?	Clause 5.4.1.2.3A, second dashed list, first dash	o.1	
15.2.1.2	Sends a 403 response?	Clause 5.4.1.2.3A, second dashed list, second dash	o.1	

Item	Major capability: Does the implementation support...	Reference	Status	Support
15.3	Procedures for handling of abnormal cases related to initial registration and user-initiated re-registration when SIP digest as security mechanism applies?	Clause 5.4.1.2.3B	c.1	
15.3.1	On receipt of a REGISTER request, that contains the authentication challenge response from the UE that does not match with the expected REGISTER request (clause 5.4.1.2.3B, first dashed list) ...			
15.3.1.1	Sends a 403 response?	Clause 5.4.1.2.3B, first dashed list, first dash	o.2	
15.3.1.2	Sends a 401 response?	Clause 5.4.1.2.3B, first dashed list, second dash	o.2	
15.4	Procedures for handling of abnormal cases related to initial registration and user-initiated re-registration when SIP digest with TLS as security mechanism applies?	Clauses 5.4.1.2.3C	c.2	
15.4.1	On receipt of a REGISTER request, that contains the authentication challenge response from the UE that does not match with the expected REGISTER request (clause 5.4.1.2.3B, first dashed list) ...			
15.4.1.1	Sends a 403 response?	Clause 5.4.1.2.3B, first dashed list, first dash	o.3	
15.4.1.2	Sends a 401 response?	Clause 5.4.1.2.3B, first dashed list, second dash	o.3	
Deregistration, re-authentication, registration status notification, service profile updates (clauses 5.1.4 - 5.1.8)				
16.1	Procedures for handling of normal cases related to user-initiated deregistration?	Clause 5.4.1.4.1	m	
16.2	Procedures for handling of abnormal cases related to user-initiated deregistration when IMS AKA as security mechanism applies?	Clause 5.4.1.4.2	m	
16.3	Procedures for handling of abnormal cases related to user-initiated deregistration when SIP digest as security mechanism applies?	Clause 5.4.1.4.3	c.1	
16.4	Procedures for handling of abnormal cases related to user-initiated deregistration when SIP digest with TLS as security mechanism applies?	Clause 5.4.1.4.4	c.2	
17	Network-initiated deregistration?	Clause 5.4.1.5	m	
18	Network-initiated re-authentication?	Clause 5.4.1.6	m	
19	Notification of AS about registration status?	Clauses 5.4.1.7, 5.4.1.7A	m	
19.1	When building the **To header** of the REGISTER request to the AS (clause 5.4.1.7 c)) …			
19.1.2	Insertion of a public user identity as contained in the REGISTER request received from the UE?	Clause 5.4.1.7 c)	o.4	
19.1.2	Insertion of an implicitly registered public user identities from the service profile?	Clause 5.4.1.7 c)	o.4	
20	Service profile updates?	Clause 5.4.1.8	m	
20.1	When receiving a service profile modifying Push-Profile-Request (clause 5.4.1.8, item 4)) …			
20.1.1	Procedures for notification of the reg-event subscribers about the registration state?	Clause 5.4.1.8, item 4) first dash	o.5	
20.1.2	Shortening the life time of the current registration?	Clause 5.4.1.8, item 4) second dash	o.5	
Subscription and notification (clause 5.4.2)				
21	Subscriptions to S-CSCF events?	Clause 5.4.2.1	m	
21.1	Procedures that apply on receipt of SUBSCRIBE request related to event providing registration state?	Clause 5.4.2.1.1	m	
21.2	Transmission of notifications about the event providing registration state?	Clause 5.4.2.1.2	m	
21.3	Procedures that apply on receipt of SUBSCRIBE request related to event providing debug state?	Clause 5.4.2.1.3	m	
21.4	Transmission of notifications about the debug configuration?	Clause 5.4.2.1.4	m	
22	Other subscriptions?	Clause 5.4.2.2	o	

Item	Major capability: Does the implementation support...	Reference	Status	Support
Handling of requests for all dialogs and standalone transactions (clause 5.4.3)				
23.1	General handling of requests initiated by the served user?	Clause 5.4.3.2, before first numbered list	m	
23.2	Handling of the receipt of initial requests for a dialog or a standalone transaction from the served user?	Clause 5.4.3.2, first numbered list	m	
23.3	Handling of the receipt of initial requests for a dialog or a standalone transaction from an AS acting on behalf of an unregistered user?	Clause 5.4.3.2, second numbered list	m	
23.4	Rejection with retention procedure of initial requests for a dialog or a standalone transaction from the served user (without or with untrusted profile) upon failure of profile retrieval?	Clause 5.4.3.2 third numbered list	o	
23.5	Handling of the responses (or the absence of responses) to initial requests for a dialog or a standalone transaction?	Clause 5.4.3.2, all text between third and fifth numbered list	m	
23.6	Handling of the receipt of target refresh requests from the served user?	Clause 5.4.3.2, fifth numbered list	m	
23.7	Handling of the 1xx and 2xx responses to target refresh requests?	Clause 5.4.3.2, sixth and seventh numbered list	m	
24.1	General handling of requests terminated by the served user?	Clause 5.4.3.3, before first numbered list	m	
24.2	Handling of the receipt of initial requests for a dialog or a standalone transaction for a registered user?	Clause 5.4.3.3, first numbered list	m	
24.3	Specific handling of the responses (or the absence of responses) to initial requests for a registered user?	Clause 5.4.3.3, all text between first and third numbered list	m	
24.4	Handling of the receipt of initial requests for a dialog or a standalone transaction for an unregistered user?	Clause 5.4.3.3, third numbered list	m	
24.5	General handling of the responses to initial requests for a registered or unregistered user?	Clause 5.4.3.3, fourth numbered list	m	
24.6	General handling of the responses to requests for standalone transaction for a registered or unregistered user?	Clause 5.4.3.3, fifth and sixth numbered list	m	
24.7	Handling of the receipt of target refresh requests for the served user?	Clause 5.4.3.3, seventh numbered list	m	
24.8	General handling of the 1xx and 2xx responses to target refresh requests for a registered or unregistered user?	Clause 5.4.3.3, eighth numbered list	m	
24.6	Handling of the receipt of subsequent requests (other than target refresh) for the served user?	Clause 5.4.3.3, ninth numbered list	m	
24.7	Handling of the 1xx and 2xx responses to subsequent requests?	Clause 5.4.3.3, tenth numbered list	m	
25	Encoding of the original dialog identifier?	Clause 5.4.3.4	m	
SIP digest authentication procedures				
26	General procedures for SIP digest authentication for all requests other than REGISTER?	Clause 5.4.3.6.1	c.5	
26.1	Rejection of requests with a 400 response in case of mismatching public user identity?	Clause 5.4.3.6.1, first numbered list, item 2)	c.6	
26.2	In case of receipt of a mismatching challenge response (clause 5.4.3.6.1, second numbered list) ...			

Item	Major capability: Does the implementation support...	Reference	Status	Support
26.2.1	Rechallenging of requests with a 407 response?	Clause 5.4.3.6.1, second numbered list, item 1)	c.7	
26.2.2	Rejection of requests with a 403 response?	Clause 5.4.3.6.1, second numbered list, item 2)	c.7	
26.2.3	Rejection of requests without a response?	Clause 5.4.3.6.1, second numbered list, item 3)	c.7	
27	Procedures for abnormal cases within SIP digest authentication for all requests other than REGISTER?	Clause 5.4.3.6.2	m	
Call initiation (clause 5.4.4)				
28.1	Additional requirements for INVITE requests from the served user?	Clause 5.4.4.1	m	
28.2	Additional requirements for INVITE requests for the served user?	Clause 5.4.4.1	m	
28.2.1	Application of periodic session refreshment on receipt of INVITE requests?	Clause 5.4.4.1	o	
28.2.2	Examination of the contents of the SDP offer within the INVITE requests for the served user?	Clause 5.4.4.1, alphabetic list	o	
28.2.2.1	On detection of an unsupported IP address type (clause 5.4.4.1, dashed list)…			
28.2.2.1.1	Rejection of the requests with a 305 response towards the I-CSCF?	Clause 5.4.4.1, first dash	c.8	
28.2.2.1.2	Acceptance and forwarding of the request towards the IBCF?	Clause 5.4.4.1, second dash	c.8	
29.1	Additional requirements for subsequent requests (UE-originating case)?	Clause 5.4.4.2.1	m	
29.1.1	Insertion of previously saved values into the **P-Charging-Vector header** and **P-Charging-Function-Addresses header** of requests and responses (other than ACK and CANCEL)?	Clause 5.4.4.2.1, third paragraph	o	
29.2	Additional requirements for subsequent requests for the served user (UE-terminating case)?	Clause 5.4.4.2.2	m	
29.2.1	Insertion of previously saved values into the **P-Charging-Vector header** and **P-Charging-Function-Addresses header** of requests and responses (other than ACK and CANCEL)?	Clause 5.4.4.2.2, third paragraph	o	
Call release (clause 5.4.5)				
30.1	S-CSCF initiated call release (clause 5.4.5.1) ...			
30.1.1	Of sessions currently being established?	Clause 5.4.5.1.1	m	
30.1.2	Of existing sessions?	Clause 5.4.5.1.2	m	
30.1.3	Of existing dialogs due to registration expiration?	Clause 5.4.5.1.2A	m	
30.1.4	Including abnormal cases?	Clause 5.4.5.1.3	m	
30.2	Call release initiated by other entities?	Clause 5.4.5.2	m	
30.3	Call release due to session expiry?	Clause 5.4.5.3	m	
Call-related requests (clause 5.4.6)				
31.1	Additional requirements for ReINVITE and UPDATE requests (UE-originating case)?	Clause 5.4.6.1.2	m	
31.2	Additional requirements for ReINVITE and UPDATE requests for the served user (UE-terminating case)?	Clause 5.4.6.1.3	m	
GRUU management (clause 5.4.7A)				
32	GRUU management?	Clause 5.4.7A	m	
32.1	Construction of public GRUUs?	Clause 5.4.7A.2	m	
32.2	Construction of temporary GRUUs?	Clause 5.4.7A.3	m	
32.2.1	Temporary GRUUs without the need for extra states?	Clause 5.4.7A.3	o.8	
32.2.2	Stateful representation of temporary GRUUs?	Clause 5.4.7A.3	o.8	
32.3	GRUU recognition and validity checking?	Clause 5.4.7A.4	m	

Item	Major capability: Does the implementation support...	Reference	Status	Support
Emergency service (clause 5.4.8) (see note 2)				
33.1	Additional procedures for requests for initial emergency registration or user-initiated emergency reregistration?	Clause 5.4.8.2	m	
33.2	Rejection of user-initiated emergency deregistration requests?	Clause 5.4.8.3		
S-CSCF specific application usage of SDP (clause 6.3)				
34.1	Handling of requests including SDP offers?	Clause 6.3	m	
34.1.1	Rejection of requests including encrypted SDP offers?	Clause 6.3, first paragraph	o	
34.2	Handling of responses (other than 200OK) including SDP offers?	Clause 6.2, second paragraph	m	
34.2.1	Rejection of requests following non-200OK responses including encrypted SDP offers?	Clause 6.3, second paragraph	o	
34.3	Handling of 200OK responses including SDP offers?	Clause 6.2, third paragraph	m	
34.3.1	Session termination on receipt of encrypted SDP offers in 200OK responses?	Clause 6.2, third paragraph	o	
Additional routeing capabilities in support of transit and interconnection traffics in IM CN subsystem (Annex I)				
35	Additional routeing capabilities?	Annex I	o	
IP-Connectivity Access Network specific concepts when using cdma2000® packet data subsystem to access IM CN subsystem (Annex M)				
36	Additional procedures for notification of the AS about the registration status?	Clause M.3.3.1	m	
IP-Connectivity Access Network specific concepts when using the EPC via cdma2000® HRPD to access IM CN subsystem (Annex O)				
37	Additional procedures for notification of the AS about the registration status?	Clauses O.3.3, M.3.3.1	m	
NOTE 1: The S-CSCF shall provide the UA role when acting as registrar or notifier of event information, when providing a messaging mechanism by sending the MESSAGE method and when performing S-CSCF initiated dialog release. NOTE 2: See also PICS item A.6/6. o.n At least one of these capabilities shall be supported. c.1 m, if A.6/3.2 or A.6/3.3 is supported, else o c.2 m, if A.6/3.4 is supported, else o c.3 m, if A.6/3.5 is supported, else o c.4 m, if A.6/3.6 is supported, else o c.5 o, if 6/3.2 or A.6/3.3 or A.6/3.4 is supported, else n/a c.6 o, if 6/3.26 is supported, else n/a c.7 o.6, if 6/3.26 is supported, else n/a c.8 o.7, if A.6/28.2.2 is supported, else n/a				

A.5.4.2 S-CSCF header handling

Table A.7: S-CSCF Header Handling

Item	Header handling: Does the implementation support...	Reference	Status	Support
1	The **Path header** in REGISTER request and related 200OK response messages?	Clause 5.4.1.1	m	
2	The **Service-Route header** in 200OK response messages to REGISTER requests?	Clause 5.4.1.1	m	
3	The **Require header**?	Clause 5.4.1.1	m	
4	The **Supported header**?	Clause 5.4.1.1	m	

A.5.5 IBCF Role

The tables provided in this clause need only to be completed for IBCF implementations, where item A.2/4 above is supported.

A.5.5.1 IBCF Capabilities

Table A.8: IBCF Capabilities

Item	Major capability: Does the implementation support...	Reference	Status	Support
General Capabilities (clause 4)				
1	The proxy role with IMS related exceptions and additional capabilities to SIP?	Clauses 4.1, 5.10	m	
2	Provision of application level gateway functionality?	Clause 4.1	o	
3	Provision of screening functionality?	Clause 4.1	o	
4.1	The UA role with IMS related exceptions and additional capabilities to SIP?	Clauses 4.1, 5.10	c.1	
4.2	The UA role with IMS related exceptions and additional capabilities to SDP?	Clauses 4.1, 6.7	c.2	
5.1	The loose routeing policy?	Clause 4.3, RFC 3261 [2]	m	
5.2	Interoperability with strict routers?	Clause 4.3, RFC 3261 [2] and clauses 12.2.1.1, 16.4	m	
6	Procedures related to emergency services?	Clause 4.7	m	
7	Tracing of signalling?	Clause 4.8	o	
8	Priority mechanisms?	Clause 4.11	m	
IBCF specific application usage of SIP (clause 5.10)				
9	Procedures when acting as exit point (clause 5.10.2) ...			
9.1	Procedures that apply on receipt of a REGISTER request when acting as exit point?	Clause 5.10.2.1	m	
9.2	Provision of priority over other transactions or dialogs based on the Resource-Priority header for all request types when acting as exit point?	Clause 5.10.2.1A	c.3	
9.3	Procedures that apply on receipt of initial requests, standalone requests (other than REGISTER) and unknown method requests when acting as exit point?	Clause 5.10.2.2	m	
9.3.1	Application of periodic session refreshment on receipt of INVITE requests when acting as exit point?	Clause 5.10.2.2	o	
9.4	Procedures that apply on receipt of a responses to initial requests when acting as exit point?	Clause 5.10.2.2	m	
9.5	Procedures that apply on receipt of subsequent requests when acting as exit point?	Clause 5.10.2.3	m	
9.6	Procedures that apply on receipt of responses to subsequent requests when acting as exit point?	Clause 5.10.2.3	m	
9.7	Provision of transport plane control functionality when acting as exit point?	Clause 5.10.2.4	o	
9.7.1	IBCF-initiated call release in case of receipt of an indication of a transport plane related error when acting as exit point?	Clause 5.10.2.4	c.4	
10	Procedures when acting as entry point (clause 5.10.3) ...			
10.1	Procedures that apply on receipt of a REGISTER request when acting as entry point?	Clause 5.10.3.1	m	
10.2.1	Provision of priority over other transactions or dialogs based on the Resource-Priority header for all request types when acting as entry point?	Clause 5.10.3.1A	c.3	
10.2.1	Provision of priority over other transactions or dialogs based on the alternative mechanism to recognize the need for priority treatment for all request types when acting as entry point?	Clause 5.10.3.1A	c.3	

Item	Major capability: Does the implementation support...	Reference	Status	Support
10.3	Procedures that apply on receipt of initial requests, standalone requests (other than REGISTER) and unknown method requests when acting as entry point?	Clause 5.10.3.2	m	
10.3.1	Application of periodic session refreshment on receipt of INVITE requests when acting as entry point?	Clause 5.10.3.2	o	
10.4	Procedures that apply on receipt responses to initial requests when acting as entry point?	Clause 5.10.3.2	m	
10.5	Procedures that apply on receipt of subsequent requests when acting as entry point?	Clause 5.10.2.3	m	
10.6	Procedures that apply on receipt of responses to subsequent requests when acting as entry point?	Clause 5.10.3.3	m	
10.7	Provision of transport plane control functionality?	Clause 5.10.3.4	o	
10.7.1	IBCF-initiated call release in case of receipt of an indication of a transport plane related error?	Clause 5.10.3.4	c.5	
11	Procedures for network topology hiding?	Clause 5.10.4	m	
11.1	Inclusion of a direction identifier to an IBCF-inserted SIP **URI**?	Clauses 5.10.4.1, 5.10.2.1 and 5.10.3.1	o	
11.2	Encryption for network topology hiding?	Clause 5.10.4.2	m	
11.3	Decryption for network topology hiding?	Clause 5.10.4.3	m	
12	IMS-ALG functionality?	Clauses 5.10.5, 6.7	o	
13	Screening of SIP signalling?	Clause 5.10.6	m	
13.1	B2BUA functionality when performing screening of the SIP signalling?	Clauses 5.10.6.1, 5.10.5	o	
13.2	Omission or modification of received **SIP headers** prior to forwarding SIP messages? (see note)	Clause 5.10.6.2	o	
13.3	Omission or modification of received SDP bodies prior to forwarding SIP messages?	Clause 5.10.6.3	o	
14	Media transcoding control?	Clause 5.10.7	o	
14.1	Addition one or more codecs at the end of the codec list in the selected media of request before forwarding the request to the answerer?	Clause 5.10.7.1	c.6	
14.2	Inspection and treatment of codec entries in responses received from the answerer?	Clause 5.10.7.1	c.7	
15	Privacy protection at the trust domain boundary?	Clause 5.10.8	m	
16	procedures for the support of ICE in IMS-ALG within the IBCF?	Clause 6.7.1.2	c.8	
16.1	Procedures for the support of ICE in IMS-ALG within the IBCF?	Clause 6.7.1.2.1	c.9	
16.1.1	Procedures when no TrGW is inserted?	Clause 6.7.1.2.1	c.9	
16.1.2	Procedures when a TrGW is attached?	Clause 6.7.1.2.1	c.9	
16.2	IMS-ALG in IBCF full ICE procedures for UDP based streams?	Clause 6.7.1.2.2	c.9	
16.3	IMS-ALG in IBCF lite ICE procedures for UDP based streams?	Clause 6.7.1.2.3	c.9	
16.4	IMS-ALG in IBCF ICE procedures for TCP based streams?	Clause 6.7.1.2.4	c.9	
Additional routeing capabilities in support of transit and interconnection traffics in IM CN subsystem (Annex I)				
17	Additional routeing capabilities?	Annex I	o	

NOTE: The modification of the following headers is discouraged by TS 124 229 [1]: **Authorization**, **WWW-Authenticate**, **Path** and **Service-Route headers**.

c.1 m, if A.8/2 is supported, else o
c.2 m, if A.8/2 is supported, else n/a
c.3 m, if A.8/8 is supported, else o
c.4 o, if A.8/9.7 is supported, else n/a
c.5 o, if A.8/10.7 is supported, else n/a
c.6 o, if A.8/14 is supported, else n/a
c.7 m, if A.8/14 is supported, else n/a
c.8 o, if A.8/12 is supported, else n/a
c.9 o, if A.8/16.1 is supported, else n/a

A.5.6 E-CSCF Role

The tables provided in this clause need only to be completed for E-CSCF implementations, where item A.2/5 above is supported.

A.5.6.1 E-CSCF Capabilities

Table A.9: E-CSCF Capabilities

Item	Major capability: Does the implementation support...	Reference	Status	Support
General Capabilities (clause 4)				
1.1	The proxy role with IMS related exceptions and additional capabilities to SIP?	Clauses 4.1, 5.11	m	
1.2	The UA role when providing server functionality to return a final response?	Clause 4.1	m	
2.1	The loose routeing policy?	Clause 4.3, RFC 3261 [2]	m	
2.2	Interoperability with strict routers?	Clause 4.3, RFC 3261 [2] and clauses 12.2.1.1, 16.4	m	
3	Procedures related to charging?	Clause 4.5	m	
6	Procedures related to emergency services?	Clauses 4.7, 5.11	m	
7	Tracing of signalling?	Clause 4.8	o	
E-CSCF specific application usage of SIP (clause 5.11)				
8	General procedures related to emergency services?	Clause 5.11.1	m	
8.1	Acceptance and onwards routeing of requests (initial requests for a dialog, for a standalone transaction, or for an unknown method) for emergency services? (see note)	Clause 5.11.2	m	
8.2	Rejection of requests for non-emergency services? (see note)	Clause 5.11.2	m	
8.3	Insertion of previously saved values into the **P-Charging-Vector** and **P-Charging-Function header** of requests and responses (other than CANCEL and ACK) to be forwarded?	Clause 5.11.2	o	
8.4	Procedures that apply on receipt of responses to requests (initial requests for a dialog, for a standalone transaction, or for an unknown method) for emergency services?	Clause 5.11.2	m	
8.5	Application of periodic session refreshment on receipt of INVITE requests?	Clause 5.11.2	o	
9	Emergency services procedures that require the use of an LRF?	Clause 5.11.3	m	
10	Procedures for subscriptions to E-CSCF events?	Clause 5.11.4	m	
10.1	Processing of subscriptions to the event providing dialog state?	Clause 5.11.4.1	m	
10.2	Provision of notifications about dialog states?	Clause 5.11.4.2	m	
NOTE: Request for emergency services contain an URN with a top-level service type of "sos".				

History

Document history		
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