**3GPP TSG-CT WG1 Meeting #135-eC1-223009**

**E-Meeting, 6th – 12th April 2022**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **24.229** | **CR** |  | **rev** | **1** | **Current version:** | **17.6.1** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  | Annex-V – Verify integrity of SIP header fields based on validated PASSporT claims |
|  |  |
| ***Source to WG:*** | Neustar, Comcast, Oracle, Genband Ireland |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | TEI17\_SAPES |  | ***Date:*** | 2022-03-23 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-17 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | Add functionality described in RFC 8443 and RFC 8224 to improve the capabilities of the verification service.RFC 8443 describes the following security vulnerabilities associated with the Resource-Priority header field:"However, the SIP 'Resource-Priority' header field could be spoofed and abused by unauthorized entities, the threat models and use cases of which are described in [RFC7375] and [RFC7340], respectively. Compromise of the SIP 'Resource-Priority' header field [RFC4412] could lead to misuse of network resources (i.e., during congestion scenarios), impacting the application services supported using the SIP 'Resource-Priority' header field."The "rph" PASSporT protects against this security concern by integrity protecting the Resource-Priority header field with the "rph" claim of the "rph" PASSporT. This CR adds the optional capability for the Annex-V verification API to verify the integrity of the contents of the Resource-Priority header field using the "rph". |
|  |  |
| ***Summary of change:*** | The verification request is updated to enable the client (based on local policy) to include the Resource-Priority header field contents in the verification request. The verification service can then compare the received header field values with the associated claim values in the "rph" PASSporT, and declare a verification failure if a mismatch is found. Likewise, the verification response is updated to enable the verification service (based on local policy) to return the valid claims of a verified "rph" PASSporT to the client. This enables the option where the client performs the integrity check. The API updates are desiged to be sufficiently general to support integrity checking of any header field information protected by PASSporT claims.  |
|  |  |
| ***Consequences if not approved:*** | Malicious entities could spoof the Resource-Priority header field, thus giving them unauthorized access to network resources. This could negatively impact the ability of the network to support legitimate priority services, or in the worst case, its ability to support normal calls. |
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| ***Clauses affected:*** | 2, V.2.6.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | Notes to 24.229 editor:Table V.2.6.2-3 is updated by this CR, and by CR 6556. In order to make it clear what the final table should look like, the updates to Table V.2.6.2-3 for both CRs are shown in CR 6555, and not in this CR.  |
|  |  |
| ***This CR's revision history:*** | Revision 1 (from CI-222706):1. Corrected “TEI17-SAPES” work item code typo
2. In response to comments, added Table V.2.6.2-3 to CR 6555 which includes updates in both CR 6555 and CR 6556
3. In response to comments, re-worded text describing new, optional parameters to avoid describing specific AS behavior
4. Correct reference to SIP Priority header IETF RFC
5. In response to comments, changed “retargets” parameter to “diversions”
6. In response to comments, moved the optional verification response parameters for successes to a separate Table V.2.6.2-5
7. Added reference to SIP Diversion header IETF RFC
8. Corrected several other minor typos on review
 |

\* \* \* First Change \* \* \* \*

# 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".

[1A] 3GPP TS 22.101: "Service aspects; Service principles".

[1B] 3GPP TS 22.003: "Circuit Teleservices supported by a Public Land Mobile Network (PLMN)".

[1C] 3GPP TS 22.011: "Service accessibility".

[2] 3GPP TS 23.002: "Network architecture".

[3] 3GPP TS 23.003: "Numbering, addressing and identification".

[4] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".

[4A] 3GPP TS 23.107: "Quality of Service (QoS) concept and architecture".

[4B] 3GPP TS 23.167: "IP Multimedia Subsystem (IMS) emergency sessions".

[4C] 3GPP TS 23.122: "Non-Access-Stratum (NAS) functions related to Mobile Station (MS) in idle mode".

[4D] 3GPP TS 23.140 Release 6: "Multimedia Messaging Service (MMS); Functional description; Stage 2".

[5] 3GPP TS 23.218: "IP Multimedia (IM) Session Handling; IM call model".

[6] 3GPP TS 23.221: "Architectural requirements".

[7] 3GPP TS 23.228: "IP multimedia subsystem; Stage 2".

[7A] 3GPP TS 23.234: "3GPP system to Wireless Local Area Network (WLAN) interworking; System description".

[7B] 3GPP TS 23.401: "GPRS enhancements for E-UTRAN access".

[7C] 3GPP TS 23.292: "IP Multimedia Subsystem (IMS) Centralized Services; Stage 2".

[7D] 3GPP TS 23.380: "IMS Restoration Procedures".

[7E] 3GPP TS 23.402: "Architecture enhancements for non-3GPP accesses".

[7F] 3GPP TS 23.334: "IMS Application Level Gateway (IMS-ALG) – IMS Access Gateway (IMS-AGW) interface".

[7G] 3GPP TS 24.103: "Telepresence using the IP Multimedia (IM) Core Network (CN) Subsystem (IMS); Stage 3".

[8] 3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core Network protocols; Stage 3".

[8A] 3GPP TS 24.141: "Presence service using the IP Multimedia (IM) Core Network (CN) subsystem; Stage 3".

[8B] 3GPP TS 24.147: "Conferencing using the IP Multimedia (IM) Core Network (CN) subsystem; Stage 3".

[8C] 3GPP TS 24.234: "3GPP System to Wireless Local Area Network (WLAN) interworking; WLAN User Equipment (WLAN UE) to network protocols; Stage 3".

[8D] Void.

[8E] 3GPP TS 24.279: "Combining Circuit Switched (CS) and IP Multimedia Subsystem (IMS) services, stage 3, Release 7".

[8F] 3GPP TS 24.247: "Messaging service using the IP Multimedia (IM) Core Network (CN) subsystem; Stage 3".

[8G] 3GPP TS 24.167: "3GPP IMS Management Object (MO); Stage 3".

[8H] 3GPP TS 24.173: "IMS Multimedia telephony communication service and supplementary services; Stage 3".

[8I] 3GPP TS 24.606: "Message Waiting Indication (MWI) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification".

[8J] 3GPP TS 24.301: "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3".

[8K] 3GPP TS 24.323: "3GPP IMS service level tracing management object (MO)".

[8L] 3GPP TS 24.341: "Support of SMS over IP networks; Stage 3".

[8M] 3GPP TS 24.237: "IP Multimedia Subsystem (IMS) Service Continuity; Stage 3".

[8N] 3GPP TS 24.647: "Advice Of Charge (AOC) using IP Multimedia (IM) Core Network (CN) subsystem".

[8O] 3GPP TS 24.292: "IP Multimedia (IM) Core Network (CN) subsystem Centralized Services (ICS); Stage 3".

[8P] 3GPP TS 24.623: "Extensible Markup Language (XML) Configuration Access Protocol (XCAP) over the Ut interface for Manipulating Supplementary Services".

[8Q] 3GPP TS 24.182: "IP Multimedia Subsystem (IMS) Customized Alerting Tones (CAT); Protocol specification".

[8R] 3GPP TS 24.183: "IP Multimedia Subsystem (IMS) Customized Ringing Signal (CRS); Protocol specification".

[8S] 3GPP TS 24.616: "Malicious Communication Identification (MCID) using IP Multimedia (IM) Core Network (CN) subsystem".

[8T] 3GPP TS 24.305: "Selective Disabling of 3GPP User Equipment Capabilities (SDoUE) Management Object (MO)".

[8U] 3GPP TS 24.302: "Access to the Evolved Packet Core (EPC) via non-3GPP access networks; Stage 3".

[8V] 3GPP TS 24.303: "Mobility management based on Dual-Stack Mobile IPv6".

[8W] 3GPP TS 24.390: "Unstructured Supplementary Service Data (USSD) using IP Multimedia (IM) Core Network (CN) subsystem IMS".

[8X] 3GPP TS 24.139: "3GPP System-Fixed Broadband Access Network Interworking; Stage 3".

[8Y] 3GPP TS 24.322: "UE access to IMS services via restrictive access networks - stage 3".

[8Z] 3GPP TS 24.371: "Web Real Time Communication (WebRTC) Access to IMS".

[8ZA] 3GPP TS 24.525: "Business trunking; Architecture and functional description".

[8ZB] 3GPP TS 24.244: "Wireless LAN control plane protocol for trusted WLAN access to EPC; Stage 3".

[8ZC] 3GPP TS 24.337: "IP Multimedia (IM) Core Network (CN) subsystem IP Multimedia Subsystem (IMS) inter-UE transfer; Stage 3".

[8ZD] 3GPP TS 24.334: "Proximity-services (ProSe) User Equipment (UE) to Proximity-services (ProSe) Function Protocol aspects; Stage 3".

[8ZE] 3GPP TS 24.379: "Mission Critical Push To Talk (MCPTT) call control; Stage 3".

[8ZF] 3GPP TS 24.628: "Common Basic Communication procedures using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification".

[8ZG] 3GPP TS 24.604: "Communication Diversion (CDIV) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification".

[8ZH] 3GPP TS 24.174: "Support of multi-device and multi-identity in the IP Multimedia Subsystem (IMS); Stage 3".

[9] 3GPP TS 25.304: "User Equipment (UE) procedures in idle mode and procedures for cell reselection in connected mode".

[9A] 3GPP TS 25.331: "Radio Resource Control (RRC); Protocol Specification".

[9B] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction".

[9C] 3GPP TS 26.267: "eCall Data Transfer; In-band modem solution; General description".

[10] Void.

[10A] 3GPP TS 27.060: "Mobile Station (MS) supporting Packet Switched Services".

[11] 3GPP TS 29.061: "Interworking between the Public Land Mobile Network (PLMN) supporting Packet Based Services and Packet Data Networks (PDN)".

[11A] 3GPP TS 29.162: "Interworking between the IM CN subsystem and IP networks".

[11B] 3GPP TS 29.163: "Interworking between the IP Multimedia (IM) Core Network (CN) subsystem and Circuit Switched (CS) networks".

[11C] 3GPP TS 29.161: "Interworking between the Public Land Mobile Network (PLMN) supporting Packet Based Services with Wireless Local Access and Packet Data Networks (PDN)"

[11D] 3GPP TS 29.079: "Optimal Media Routeing within the IP Multimedia Subsystem".

[12] 3GPP TS 29.207 Release 6: "Policy control over Go interface".

[12A] 3GPP TS 29.273: "Evolved Packet System (EPS); 3GPP EPS AAA interfaces".

[13] Void.

[13A] 3GPP TS 29.209 Release 6: "Policy control over Gq interface".

[13B] 3GPP TS 29.212: "Policy and Charging Control (PCC); Reference points".

[13C] 3GPP TS 29.213: "Policy and charging control signalling flows and Quality of Service (QoS) parameter mapping".

[13D] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point".

[14] 3GPP TS 29.228: "IP Multimedia (IM) Subsystem Cx and Dx Interfaces; Signalling flows and message contents".

[15] 3GPP TS 29.229: "Cx and Dx Interfaces based on the Diameter protocol, Protocol details".

[15A] 3GPP TS 29.311: "Service Level Interworking for Messaging Services".

[15B] 3GPP TS 31.103: "Characteristics of the IP multimedia services identity module (ISIM) application".

[15C] 3GPP TS 31.102: "Characteristics of the Universal Subscriber Identity Module (USIM) application".

[15D] 3GPP TS 31.111: "Universal Subscriber Identity Module (USIM) Application Toolkit (USAT)".

[16] 3GPP TS 32.240: "Telecommunication management; Charging management; Charging architecture and principles".

[17] 3GPP TS 32.260: "Telecommunication management; Charging management; IP Multimedia Subsystem (IMS) charging".

[17A] 3GPP TS 32.422: "Telecommunication management; Subscriber and equipment trace; Trace control and configuration management".

[18] 3GPP TS 33.102: "3G Security; Security architecture".

[19] 3GPP TS 33.203: "Access security for IP based services".

[19A] 3GPP TS 33.210: "3G security; Network Domain Security (NDS); IP network layer security".

[19B] 3GPP TS 36.304: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) procedures in idle mode".

[19C] 3GPP TS 33.328: "IP Multimedia Subsystem (IMS) media plane security".

[19D] 3GPP TS 33.310: "Network Domain Security (NDS); Authentication Framework (AF)".

[19E] 3GPP TS 36.413: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); S1 Application Protocol (S1AP)".

[19F] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".

[19G] 3GPP TS 38.331: " NR; Radio Resource Control (RRC); Protocol specification".

[20] 3GPP TS 44.018: "Mobile radio interface layer 3 specification; Radio Resource Control (RRC) protocol".

[20A] RFC 2401 (November 1998): "Security Architecture for the Internet Protocol".

[20B] RFC 1594 (March 1994): "FYI on Questions and Answers to Commonly asked "New Internet User" Questions".

[20C] Void.

[20D] Void.

[20E] RFC 2462 (November 1998): "IPv6 Stateless Address Autoconfiguration".

[20F] RFC 2132 (March 1997): "DHCP Options and BOOTP Vendor Extensions".

[20G] RFC 2234 (November 1997): "Augmented BNF for Syntax Specification: ABNF".

[21] Void.

[22] RFC 3966 (December 2004): "The tel URI for Telephone Numbers".

[23] RFC 4733 (December 2006): "RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals".

[24] RFC 6116 (March 2011): "The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application (ENUM)".

[25] RFC 6086 (October 2009): "Session Initiation Protocol (SIP) INFO Method and Package Framework".

[25A] Void.

[26] RFC 3261 (June 2002): "SIP: Session Initiation Protocol".

[27] RFC 3262 (June 2002): "Reliability of provisional responses in Session Initiation Protocol (SIP)".

[27A] RFC 3263 (June 2002): "Session Initiation Protocol (SIP): Locating SIP Servers".

[27B] RFC 3264 (June 2002): "An Offer/Answer Model with Session Description Protocol (SDP)".

[28] RFC 6665 (July 2012): "SIP Specific Event Notification".

[28A] Void.

[29] RFC 3311 (September 2002): "The Session Initiation Protocol (SIP) UPDATE method".

[30] RFC 3312 (October 2002): "Integration of resource management and Session Initiation Protocol (SIP)".

[31] RFC 3313 (January 2003): "Private Session Initiation Protocol (SIP) Extensions for Media Authorization".

[32] RFC 3320 (March 2002): "Signaling Compression (SigComp)".

[33] RFC 3323 (November 2002): "A Privacy Mechanism for the Session Initiation Protocol (SIP)".

[34] RFC 3325 (November 2002): "Private Extensions to the Session Initiation Protocol (SIP) for Network Asserted Identity within Trusted Networks".

[34A] RFC 3326 (December 2002): "The Reason Header Field for the Session Initiation Protocol (SIP)".

[35] RFC 3327 (December 2002): "Session Initiation Protocol Extension Header Field for Registering Non-Adjacent Contacts".

[35A] RFC 3361 (August 2002): "Dynamic Host Configuration Protocol (DHCP-for-IPv4) Option for Session Initiation Protocol (SIP) Servers".

[36] RFC 3515 (April 2003): "The Session Initiation Protocol (SIP) REFER method".

[37] RFC 3420 (November 2002): "Internet Media Type message/sipfrag".

[37A] RFC 3605 (October 2003): "Real Time Control Protocol (RTCP) attribute in Session Description Protocol (SDP)".

[38] RFC 3608 (October 2003): "Session Initiation Protocol (SIP) Extension Header Field for Service Route Discovery During Registration".

[39] RFC 4566 (June 2006): "SDP: Session Description Protocol".

[40] RFC 3315 (July 2003): "Dynamic Host Configuration Protocol for IPv6 (DHCPv6)".

[40A] RFC 2131 (March 1997): "Dynamic host configuration protocol".

[41] RFC 3319 (July 2003): "Dynamic Host Configuration Protocol (DHCPv6) Options for Session Initiation Protocol (SIP) Servers".

[42] RFC 3485 (February 2003): "The Session Initiation Protocol (SIP) and Session Description Protocol (SDP) static dictionary for Signaling Compression (SigComp)".

[43] RFC 3680 (March 2004): "A Session Initiation Protocol (SIP) Event Package for Registrations".

[44] Void.

[45] Void.

[46] Void.

[47] Void.

[48] RFC 3329 (January 2003): "Security Mechanism Agreement for the Session Initiation Protocol (SIP)".

[49] RFC 3310 (September 2002): "Hypertext Transfer Protocol (HTTP) Digest Authentication Using Authentication and Key Agreement (AKA)".

[50] RFC 3428 (December 2002): "Session Initiation Protocol (SIP) Extension for Instant Messaging".

[51] Void.

[52] RFC 7315 (July 2014): "Private Header (P-Header) Extensions to the Session Initiation Protocol (SIP) for the 3GPP".

[52A] RFC 7976 (September 2016): "Updates to Private Header (P-Header) Extension Usage in Session Initiation Protocol (SIP) Requests and Responses".

[52B] draft-jesske-update-p-visited-network-01 (March 2019): "Update to Private Header Field P-Visited-Network-ID in Session Initiation Protocol (SIP) Requests and Responses".

Editor's note (WI: IMSProtoc9, CR#5979): The above document cannot be formally referenced until it is published as an RFC.

[53] RFC 3388 (December 2002): "Grouping of Media Lines in Session Description Protocol".

[54] RFC 3524 (April 2003): "Mapping of Media Streams to Resource Reservation Flows".

[55] RFC 3486 (February 2003): "Compressing the Session Initiation Protocol (SIP)".

[55A] RFC 3551 (July 2003): "RTP Profile for Audio and Video Conferences with Minimal Control".

[56] RFC 3556 (July 2003): "Session Description Protocol (SDP) Bandwidth Modifiers for RTP Control Protocol (RTCP) Bandwidth".

[56A] RFC 3581 (August 2003): "An Extension to the Session Initiation Protocol (SIP) for Symmetric Response Routing".

[56B] RFC 3841 (August 2004): "Caller Preferences for the Session Initiation Protocol (SIP)".

[56C] RFC 3646 (December 2003): "DNS Configuration options for Dynamic Host Configuration Protocol for IPv6 (DHCPv6)".

[57] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".

[58] RFC 4028 (April 2005): "Session Timers in the Session Initiation Protocol (SIP)".

[59] RFC 3892 (September 2004): "The Session Initiation Protocol (SIP) Referred-By Mechanism".

[60] RFC 3891 (September 2004): "The Session Inititation Protocol (SIP) "Replaces" Header".

[61] RFC 3911 (October 2004): "The Session Inititation Protocol (SIP) "Join" Header".

[62] RFC 3840 (August 2004): "Indicating User Agent Capabilities in the Session Initiation Protocol (SIP)".

[63] RFC 3861 (August 2004): "Address Resolution for Instant Messaging and Presence".

[63A] RFC 3948 (January 2005): "UDP Encapsulation of IPsec ESP Packets".

[64] RFC 4032 (March 2005): "Update to the Session Initiation Protocol (SIP) Preconditions Framework".

[65] RFC 3842 (August 2004) "A Message Summary and Message Waiting Indication Event Package for the Session Initiation Protocol (SIP)"

[65A] RFC 4077 (May 2005): "A Negative Acknowledgement Mechanism for Signaling Compression".

[66] RFC 7044 (February 2014): "An Extension to the Session Initiation Protocol (SIP) for Request History Information".

[67] RFC 5079 (December 2007): "Rejecting Anonymous Requests in the Session Initiation Protocol (SIP)".

[68] RFC 4458 (January 2006): "Session Initiation Protocol (SIP) URIs for Applications such as Voicemail and Interactive Voice Response (IVR)".

[69] RFC 5031 (January 2008): "A Uniform Resource Name (URN) for Emergency and Other Well-Known Services".

[70] RFC 3903 (October 2004): "An Event State Publication Extension to the Session Initiation Protocol (SIP)".

[71] Void.

[72] RFC 3857 (August 2004): "A Watcher Information Event Template Package for the Session Initiation Protocol (SIP)".

[74] RFC 3856 (August 2004): "A Presence Event Package for the Session Initiation Protocol (SIP)".

[74A] RFC 3603 (October 2003): "Private Session Initiation Protocol (SIP) Proxy-to-Proxy Extensions for Supporting the PacketCable Distributed Call Signaling Architecture".

[74B] RFC 3959 (December 2004): "The Early Session Disposition Type for the Session Initiation Protocol (SIP)".

[75] RFC 4662 (August 2006): "A Session Initiation Protocol (SIP) Event Notification Extension for Resource Lists".

[77] RFC 5875 (May 2010): "An Extensible Markup Language (XML) Configuration Access Protocol (XCAP) Diff Event Package".

[78] RFC 4575 (August 2006): "A Session Initiation Protocol (SIP) Event Package for Conference State".

[79] RFC 5049 (December 2007): "Applying Signaling Compression (SigComp) to the Session Initiation Protocol (SIP)".

[80] Void.

[81] Void.

[82] RFC 4457 (April 2006): "The Session Initiation Protocol (SIP) P-User-Database Private-Header (P-header)".

[83] RFC 4145 (September 2005): "TCP-Based Media Transport in the Session Description Protocol (SDP)".

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[85] 3GPP2 C.S0005-D (March 2004): "Upper Layer (Layer 3) Signaling Standard for cdma2000 Standards for Spread Spectrum Systems".

[86] 3GPP2 C.S0024-B v3.0 (September 2009): "cdma2000 High Rate Packet Data Air Interface Standard".

[86A] 3GPP2 C.S0084-000 (April 2007): "Overview for Ultra Mobile Broadband (UMB) Air Interface Specification".

[86B] 3GPP2 X.S0060-0 v1.0: "HRPD Support for Emergency Services".

[86C] 3GPP2 X.S0057-B v2.0: "E-UTRAN - eHRPD Connectivity and Interworking: Core Network Aspects".

[86D] 3GPP2 C.S0014-C v1.0: "Enhanced Variable Rate Codec, Speech Service Options 3, 68, and 70 for Wideband Spread Spectrum Digital Systems".

[86E] 3GPP2 X.S0059-200-A v1.0: "cdma2000 Femtocell Network: 1x and IMS Network Aspects".

[86F] 3GPP2 S.R0048-A v4.0: "3G Mobile Equipment Identifier (MEID) - Stage 1".

[87] ITU-T Recommendation J.112, "Transmission Systems for Interactive Cable Television Services"

[88] PacketCable Release 2 Technical Report, PacketCable™ Architecture Framework Technical Report, PKT-TR-ARCH-FRM.

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[90] RFC 4119 (December 2005) "A Presence-based GEOPRIV Location Object Format".

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[93] RFC 5627 (October 2009): "Obtaining and Using Globally Routable User Agent URIs (GRUUs) in the Session Initiation Protocol (SIP)".

[94] RFC 5628 (October 2009): "Registration Event Package Extension for Session Initiation Protocol (SIP) Globally Routable User Agent URIs (GRUUs)".

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[100] Void.

[101] Void.

[102] RFC 5768 (April 2010): "Indicating Support for Interactive Connectivity Establishment (ICE) in the Session Initiation Protocol (SIP)".

[103] RFC 4967 (July 2007): "Dial String Parameter for the Session Initiation Protocol Uniform Resource Identifier".

[104] RFC 5365 (October 2008): "Multiple-Recipient MESSAGE Requests in the Session Initiation Protocol (SIP)".

[105] RFC 5368 (October 2008): "Referring to Multiple Resources in the Session Initiation Protocol (SIP)".

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\* \* \* Next Change \* \* \* \*

### V.2.6.2 Data types

Table V.2.6.2-1 specifies the data types included in the verification request.

Table V.2.6.2-1: Data types for the verificationRequest

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Type; Value | Presence | Description |
| identityHeader | string; Identity header field value for the originating identity as specified in RFC 8224 [252]. | M | This string cannot be NULL |
| IdentityHeaders | array of string; Identity header field values as specified in RFC 8224 [252]. One identityHeader claim per received Identity header field is sent. | O | Identity headers containing the div, rph or sph claims to be verified. |
| to | String; identity claim JSON object; tn or uri | M | The destination identity taken from the To header field. Used when no div claim is included. |
| dest | string; identity claim JSON object; tn or uri | O | The destination identity taken from the R-URI in the incoming request. Used when div claim is included. |
| time | integer; Numeric date format defined in RFC 7519 [235] | M | Time based on the Date header field in the incoming request. |
| from | string; identity claim JSON object; tn or uri | M | The asserted identity, taken from the P-Asserted-Identity or the From header field of the incoming request |
| diversions | array of one or more div parameters defined in Table V.2.5.2-1 | O | Contains the retargeting identities (TN or URI) in Diversion and History-Info header fields defined in RFC 5806 [294] and RFC 7044 [66] respectively. |
| rph | array of strings corresponding to the r-values contained in the SIP Resource-Priority header field | O | Contains the Resource-Priority header field values as specified in RFC 4412 [116] and RFC 7135 [197]. |
| sph | string; corresponding to the value contained in the Priority header field | O | Contains the SIP Priority header field value as specified in RFC 3261 [26] and RFC 7090 [209]. |
| protectedHeaders | array of string; header field(s) | O | Contains the SIP header field(s) protected by claims in the PASSporT(s) of the IdentityHeaders array. |
| Notes:Invocation of the verification request results in the verification of the Identity header fields in the identityHeader and IdentityHeaders parameters. In addition, based on local policy, a verification request invocation can verify the integrity of SIP header fields protected by the "div" and "rph" PASSporTs. Specifically, local policy can dictate that the verification request checks that the History-Info and Diversion header field values match the associated "div" PASSporT claim values, and/or the Priority and Resource-Priority header field values match the associated "rph" PASSporT claim values. This local policy can be applied selectively, e.g., it could dictate that the integrity of the Priority and Resource-Priority header fields but not the History-Info and Diversion header fields. If local policy dictates that the verification request is to verify the integrity of any of these header fields, and the IdentityHeaders array contains a PASSporT type that provides the required integrity protection, then the verification request must convey the integrity protected header field information to the AS for verification using one of the following mechanisms: - Convey the protected header field values in the appropriate diversions, rph, and sph parameters; or- Convey the protected header fields in the protectedHeaders parameter.The above header field information is conveyed in the verification request only if the integrity check of the protected header field is required per local policy, and only if the IdentityHeaders array contains a PASSporT type providing the required integrity protection. For example, if local policy dictates verification of the integrity of the Diversion, History-Info, Priority, and Resource-Priority header fields, but the verification request does not contain an IdentityHeaders parameter (i.e., no "div" or "rph" PASSporTs are conveyed in the verification request), then none of the above header field information is included in the verification request. |

Table V.2.6.2-2 specifies the data types included in the verification response.

Table V.2.6.2-2: Data types for the verificationResponse

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Type; Value | Presence | Description |
| divResult | array of one or more [div, verstatValue] tuples | O | Parameter informing of the result of the verification of diverting identities. For each verified identity the verstat parameter is added to the verified identity. |
| verstatValue | string; set to a value defined in table 7.2A.20.3-1 | O | Parameter informing of the result of the verification of originating identity. To be used in the verstat parameter added to the verified identity. The parameter is mandatory if the request contained a PASSporT SHAKEN JSON Web Token. |
| verstatPriority | string; set to a value defined in table 7.2.21-1 | O | Parameter informing of the result of the verification of the Resource-Priority header field and optionally the header field value "psap-callback" of the Priority header field. |

Table V.2.6.2-5 specifies the additional data types included in the verification response when the status parameter contains a value of "pass".

Table V.2.6.2-5: Data types of additional verifyResults parameter for status of "pass"

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Type; Value | Presence | Description |
| validClaims | JSON object | O | The validClaims parameter is containing the payload of the verified PASSporT. |
| Note:Based on local policy, the validClaims information can be used in one of two ways:* To verify the integrity of SIP header field information associated with the validated claims, where a mismatch results in a verification failure); or
* To ensure that header field contents contain the information authorized by the validated claims, where a mismatch is resolved by updating the unprotected SIP header field to match the validated claims.
 |

\* \* \* End of Changes \* \* \* \*