**3GPP TSG-CT WG1 Meeting #141eC1-23xxxx**

**Online 17– 21 April 2023 Revision of C1-232104**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
|  |
| *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** |

|  |
| --- |
|  |
| ***Title:***  | Update SBA in IMS for NG\_RTC |
|  |  |
| ***Source to WG:*** | , Huawei, Hisilicon |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | NG\_RTC |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | B |  | ***Release:*** |  |
|  | *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:*** | TS 23.228CR#1263/1264/1267 were agreed in SA#99 to add new services to SBA in IMS for NG\_RTC.It is suggested to update Annex X in TS 24.229 to align to stage 2. |
|  |  |
| ***Summary of change:*** | Update Annex X to align to stage 2. |
|  |  |
| ***Consequences if not approved:*** | NG\_RTC related new services in SBA in IMS haven’t been addressed in stage 3. |
|  |  |
| ***Clauses affected:*** | 2, 3.3, Annex X.1, X.2, X.3 |
|  |  |
|  | **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:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* 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".

[8ZI] 3GPP TS 24.554: "Proximity-service (ProSe) in 5G System (5GS) protocol aspects; 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] IETF RFC 2401 (November 1998): "Security Architecture for the Internet Protocol".

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

[20C] Void.

[20D] Void.

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

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

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

[21] Void.

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

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

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

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

[25A] Void.

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

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

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

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

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

[28A] Void.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[44] Void.

[45] Void.

[46] Void.

[47] Void.

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

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

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

[51] Void.

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

[52A] IETF 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 IETF RFC.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[71] Void.

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

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

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

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

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

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

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

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

[80] Void.

[81] Void.

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

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

[84] IETF RFC 4320 (January 2006): "Actions Addressing Identified Issues with the Session Initiation Protocol's (SIP) Non-INVITE Transaction".

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

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

[89] IETF RFC 6442 (December 2011): "Location Conveyance for the Session Initiation Protocol".

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

[91] IETF RFC 5012 (January 2008): "Requirements for Emergency Context Resolution with Internet Technologies".

[91A] Void.

[92] IETF RFC 5626 (October 2009): "Managing Client Initiated Connections in the Session Initiation Protocol (SIP)".

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

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

[95] Void.

[96] IETF RFC 4168 (October 2005): "The Stream Control Transmission Protocol (SCTP) as a Transport for the Session Initiation Protocol (SIP)".

[97] IETF RFC 5002 (August 2007): "The Session Initiation Protocol (SIP) P-Profile-Key Private Header (P-Header)".

[98] ETSI ES 283 035 (V1.1.1): "Telecommunications and Internet Converged Services and Protocols for Advanced Networks (TISPAN); Network Attachment Sub-System (NASS); e2 interface based on the DIAMETER protocol".

[99] Void.

[100] Void.

[101] Void.

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

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

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

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

[106] IETF RFC 5366 (October 2008): "Conference Establishment Using Request-Contained Lists in the Session Initiation Protocol (SIP)".

[107] IETF RFC 5367 (October 2008): "Subscriptions to Request-Contained Resource Lists in the Session Initiation Protocol (SIP)".

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[109] IETF RFC 5009 (September 2007): "Private Header (P-Header) Extension to the Session Initiation Protocol (SIP) for Authorization of Early Media".

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[111] IETF RFC 4964 (September 2007): "The P-Answer-State Header Extension to the Session Initiation Protocol for the Open Mobile Alliance Push to Talk over Cellular".

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[113] Void.

[114] IETF RFC 4769 (November 2006): "IANA Registration for an Enumservice Containing Public Switched Telephone Network (PSTN) Signaling Information".

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## 3.3 Abbreviations

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

1xx A status-code in the range 101 through 199, and excluding 100

18x A status-code in the range 180 through 189

2xx A status-code in the range 200 through 299

3xx A status-code in the range 300 through 399

4xx A status-code in the range 400 through 499

5GC 5G Core Network

5GS 5G System

5G-AN 5G Access Network

5xx A status-code in the range 500 through 599

6xx A status-code in the range 600 through 699

AAA Authentication, Authorization and Accounting

ANBR Access Network Bitrate Recommendation

APN Access Point

APN Access Point Name

AS Application Server

ATCF Access Transfer Control Function

AUTN Authentication TokeN

AVP Attribute-Value Pair

B2BUA Back-to-Back User Agent

BFCP Binary Floor Control Protocol

BGCF Breakout Gateway Control Function

c conditional

BRAS Broadband Remote Access Server

BSSID Basic Service Set Identifier

CCF Charging Collection Function

CDF Charging Data Function

CDR Charging Data Record

CH Credentials Holder

CK Ciphering Key

CN Core Network

CPC Calling Party's Category

CLF Connectivity session Location and repository Function

CSCF Call Session Control Function

DCMF Data Channel Media Function

DCSF Data Channel Signalling Function

DHCP Dynamic Host Configuration Protocol

DNN Data Network Name

DNS Domain Name System

DOCSIS Data Over Cable Service Interface Specification

DRVCC Dual Radio Voice Call Continuity

DTD Document Type Definition

DTLS Datagram Transport Layer Security

DTMF Dual Tone Multi Frequency

DVB Digital Video Broadcast

DVB-RCS2 Second Generation DVB Interactive Satellite System

e2ae-security End-to-access edgesecurity

EATF Emergency Access Transfer Function

EC Emergency Centre

ECF Event Charging Function

ECI E-UTRAN Cell Identity

ECN Explicit Congestion Notification

E-CSCF Emergency CSCF

EF Elementary File

eP-CSCF P-CSCF enhanced for WebRTC

ePDG Evolved Packet Data Gateway

EPS Evolved Packet System

FAP cdma2000® 1x Femtocell Access Point

FQDN Fully Qualified Domain Name

GBA Generic Bootstrapping Architecture

GBR Guaranteed Bit Rate

GCID GPRS Charging Identifier

GGSN Gateway GPRS Support Node

GPON Gigabit-capable Passive Optical Networks

GPRS General Packet Radio Service

GRUU Globally Routable User agent URI

GSTN General Switched Telephone Network

HPLMN Home PLMN

HSS Home Subscriber Server

HTTP HyperText Transfer Protocol

i irrelevant

IARI IMS Application Reference Identifier

IBCF Interconnection Border Control Function

ICE Interactive Connectivity Establishment

I-CSCF Interrogating CSCF

ICS Implementation Conformance Statement

ICID IM CN subsystem Charging Identifier

ICSI IMS Communication Service Identifier

ID Identifier

IK Integrity Key

IKEv2 Internet Key Exchange Protocol Version 2

IM IP Multimedia

IMC IMS Credentials

IMEI International Mobile Equipment Identity

IMS IP Multimedia core network Subsystem

IMS-AGW IMS Access Gateway

IMS-ALG IMS Application Level Gateway

IMSI International Mobile Subscriber Identity

IMSVoPS IMS Voice over PS Session

IOI Inter Operator Identifier

IP Internet Protocol

IP-CAN IP-Connectivity Access Network

IPsec IP security

IPv4 Internet Protocol version 4

IPv6 Internet Protocol version 6

ISC IP Multimedia Subsystem Service Control

ISIM IM Subscriber Identity Module

I-WLAN Interworking – WLAN

IWF Interworking Function

KMS Key Management Service

LRF Location Retrieval Function

m mandatory

MAC Message Authentication Code

MBR Maximum guaranteed Bit Rate

MCC Mobile Country Code

MCPTT Mission Critical Push To Talk

MEID Mobile Equipment IDentity

MGCF Media Gateway Control Function

MGW Media Gateway

MNC Mobile Network Code

MRB Media Resource Broker

MRFC Multimedia Resource Function Controller

MRFP Multimedia Resource Function Processor

MSC Mobile-services Switching Centre

MSD Minimum Set of emergency related Data

MSRP Message Session Relay Protocol

n/a not applicable

NAI Network Access Identifier

NA(P)T Network Address (and Port) Translation

NASS Network Attachment Subsystem

NAT Network Address Translation

NCC Network Control Center

NCC\_ID Network Control Center Identifier

NID Network Identifier

NP Number Portability

o optional

OCF Online Charging Function

OLI Originating Line Information

OMR Optimal Media Routeing

PCC Policy and Charging Control

PCF Policy Control Function

PCO Protocol Configuration Options

PCRF Policy and Charging Rules Function

P-CSCF Proxy CSCF

PDG Packet Data Gateway

PDN Packet Data Network

PDP Packet Data Protocol

PDU Protocol Data Unit

P-GW PDN Gateway

PICS Protocol Implementation Conformance Statement

PIDF-LO Presence Information Data Format Location Object

PLMN Public Land Mobile Network

PSAP Public Safety Answering Point

PSI Public Service Identity

PSTN Public Switched Telephone Network

QCI QoS Class Identifier

QoS Quality of Service

RAND RANDom challenge

RCS Return Channel via Satellite

RCST Return Channel via Satellite Terminal

RES RESponse

RLOS Restricted Local Operator Services

RTCP Real-time Transport Control Protocol

RTP Real-time Transport Protocol

SAC Service Area Code

SAI Service Area Identifier

SBA Service Based Architecture

SBI Service Based Interface

S-CSCF Serving CSCF

SCTP Stream Control Transmission Protocol

SDES Session Description Protocol Security Descriptions for Media Streams

SDP Session Description Protocol

SDU Service Data Unit

SIP Session Initiation Protocol

SLF Subscription Locator Function

SNPN Stand-alone Non-Public Network

SNR Serial Number

SQN SeQuence Number

SRVCC Single Radio Voice Call Continuity

STUN Session Traversal Utilities for NAT

SVN Satellite Virtual Network

SVN-MAC SVN Medium Access Control label

TAC Type Approval Code

TFT Traffic Flow Template

TP Telepresence

TLS Transport Layer Security

TRF Transit and Roaming Function

TURN Traversal Using Relay NAT

TWAG Trusted WLAN Access Gateway

TWAN Trusted WLAN

UA User Agent

UAC User Agent Client

UAS User Agent Server

UDM Unified Data Management

UDPTL UDP Transport Layer

UDVM Universal Decompressor Virtual Machine

UE User Equipment

UICC Universal Integrated Circuit Card

URI Uniform Resource Identifier

URL Uniform Resource Locator

URN Uniform Resource Name

USAT Universal Subscriber Identity Module Application Toolkit

USIM Universal Subscriber Identity Module

VPLMN Visited PLMN

WebRTC Web Real-Time Communication

WIC WebRTC IMS Client

WLAN Wireless Local Area Network

x prohibited

xDSL Digital Subscriber Line (all types)

XGPON1 10 Gigabit-capable Passive Optical Networks

XMAC expected MAC

XML eXtensible Markup Language

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

Annex X (informative):
Support of SBA in IMS

# X.1 Scope

This annex describes support for SBA for IMS nodes.

IMS nodes can use the SBA interfaces described in the present Annex as an alternative to the Diameter Rx and Cx and Sh reference points based on configuration. To support co-existence of IMS nodes supporting SBA services and IMS nodes not supporting SBA services SBI, enabled IMS nodes can support both SBI and non-SBI interfaces.

While the main body of the present document only describes usage of Diameter Rx and Cx and Sh reference points, the usage of the equivalent SBA services is a valid option.

NOTE 1: This version of the specification does not specify the details for usage of SBIs by P-CSCF, S-CSCF, I-CSCF and AS in the main body of the specification.

NOTE 2: This annex is intended to be used in conjunction with 5GC, see Annex U and Annex W.

IMS nodes can use the SBA interfaces to support data channel management in IMS network.

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

# X.2 Reference points to support SBA in IMS

The following IMS related reference points are realized by service-based interfaces:

**- N5**: Reference point between the PCF and an AF.

NOTE 1: The P-CSCF acts as an AF from the PCF point of view. The N5 Reference point is defined in 3GPP TS 23.501 [257] and the related protocol specification is in 3GPP TS 29.514 [273]. It provides equivalent functionality to the Diameter-based Rx reference point.

**- N70**: Reference point between an SBI capable I/S-CSCF and an SBI capable HSS.

NOTE 2: The N70 Reference point is defined in 3GPP TS 23.228 [7] and the related protocol specification is in 3GPP TS 29.562 [274]. It provides equivalent functionality to the Diameter-based Cx reference point.

**- N71**: Reference point between an SBI capable IMS AS and an SBI capable HSS.

NOTE 3: The N71 Reference point is defined in 3GPP TS 23.228 [7] and the related protocol specification is in 3GPP TS 29.562 [274]. It provides equivalent functionality to the Diameter-based Sh reference point.

**- DC1**: Reference point between an SBI capable IMS AS and an SBI capable DCSF.

NOTE 4: The DC1 Reference point is defined in 3GPP TS 23.228 [7] and the related protocol specification is in 3GPP TS 29.175 [xxx].

**- DC2**: Reference point between an SBI capable IMS AS and an SBI capable DCMF.

NOTE 5: The DC2 Reference point is defined in 3GPP TS 23.228 [7] and the related protocol specification is in 3GPP TS 29.176 [yyy].

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

# X.3 Services to support SBA in IMS

If a P-CSCF uses the Npcf\_PolicyAuthorization service, it will apply Npcf\_PolicyAuthorization service operations (defined in 3GPP TS 29.514[273]) instead of Rx procedures (defined in 3GPP TS 29.214[13D]) and will interact with the PCF instead of the PCRF.

**- Npcf\_PolicyAuthorization**: This service is provided by the PCF. This service is to authorise an AF request and to create policies as requested by the authorized AF for the PDU Session to which the AF session is bound. This service also allows the NF service consumer to subscribe/unsubscribe the notification of events.

NOTE 1: The P-CSCF acts as an AF from the PCF point of view. The Npcf\_PolicyAuthorization service is defined in 3GPP TS 23.502 [275] and the related protocol specification is in 3GPP TS 29.514 [273]. It provides equivalent functionality to the Diameter-based Rx reference point.

If an I-CSCF or an S-CSCF uses the Nhss\_ims services, it will apply Nhss\_ims service operations instead of Cx procedures mentioned throughout the present document and will interact with an SBI capable HSS.

**- Nhss\_imsUEContextManagement**: This service is provided by an SBI capable HSS. It enables service operations related to the management of a UE context.

**- Nhss\_imsSubscriberDataManagement**: This service is provided by an SBI capable HSS. It enables service operations related to subscriber data management.

**- Nhss\_imsUEAuthentication**: This service is provided by an SBI capable HSS. It enables a service operation related to the authentication between the end user and the home IMS network.

NOTE 2: The Nhss\_imsUEContextManagement, Nhss\_imsSubscriberDataManagement, and Nhss\_imsUEAuthentication services are defined in annex AA of 3GPP TS 23.228 [7] and the related protocol specification is in 3GPP TS 29.562 [274]. They provide equivalent functionality to the Diameter-based Cx and Sh reference point.

NOTE 3: The Nhss\_imsUEAuthentication service is not consumed by I-CSCF.

NOTE 4: The Nhss\_imsUEAuthentication and Nhss\_imsUEContextManagement services are not consumed by AS.

If an I-CSCF or an S-CSCF uses the Nnrf\_NFDiscovery service, it will apply Nnrf\_NFDiscovery service operations instead of Cx procedures mentioned throughout the present document and will interact with an SBI capable NRF.

NOTE 5: The Nnrf\_NFDiscovery service is defined in 3GPP TS 23.502 [275] and the related protocol specification is in 3GPP TS 29.510 [288].

If a DCSF uses IMS AS services, it will apply Nimsas service operations (defined in 3GPP TS 29.175 [xxx]).

**- Nimsas\_SessionEventControl**: This service is provided by an SBI capable IMS AS. It enables a DCSF to be notified about session events when served IMS subscribers take part in IMS sessions.

**- Nimsas\_MediaControl**: This service is provided by an SBI capable IMS AS. It enables a DCSF to control IMS AS handling of media flow within an IMS session.

If an IMS AS uses DCMF services, it will apply Ndcmf service operations (defined in 3GPP TS 29.176 [yyy]).

**- Ndcmf\_MediaResourceManagement (MRM)**: This service is provided by a DCMF. It enables an IMS AS to create, update and delete media resources related to IMS Data Channel.

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