**3GPP TSG-CT WG4 Meeting #111-eC4-224xxx**

**E-Meeting, 18th – 26th August 2022 Revision of C4-224222**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  | **29.500** | **CR** | **0345** | **rev** | **1**  | **Current version:** | **17.7.0** |  |
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| *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:***  | Asserted source network ID |
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| ***Source to WG:*** | Nokia, Nokia Shanghai Bell, Huawei |
| ***Source to TSG:*** | CT4 |
|  |  |
| ***Work item code:*** | SBIProtoc17, eNPN |  | ***Date:*** | 2022-07-01 |
|  |  |  |  |  |
| ***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:*** | 1) Clause 5.2.3.2.1 contains one remaining editor's note regarding which entity inserts the 3gpp-Sbi-Asserted-Plmn-Id header.CT4 has received an LS in [S3-221214](https://www.3gpp.org/ftp/TSG_SA/WG3_Security/TSGS3_107e/Docs/S3-221214.zip) attaching an approved draftCR ([S3-221213](https://www.3gpp.org/ftp/TSG_SA/WG3_Security/TSGS3_107e/Docs/S3-221213.zip)) defining corresponding requirements. It is expected that this contribution is further revised (solving editor's notes) and formally approved as a CR at SA3#108-e.2) N32 can be used between an SNPN and another SNPN or PLMN, see e.g. clause 5.30.2.9.3 of TS 23.501 and clause 5.9.3.2 of TS 33.501. Accordingly, for an HTTP request originated by an SNPN, it should be possible to identify the SNPN ID of the NF sending the request. See TS 33.501 clause 5.9.3.2:*"…**The receiving SEPP shall be able to verify whether the sending SEPP is authorized to use the PLMN ID or SNPN ID in the received N32 message**…*" |
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| ***Summary of change:*** | 1) The header identifying the source network id shall be inserted in the HTTP request by the sending NF. For legacy NFs, it shall be inserted by the sending SCP, the sending SEPP or the receiving SEPP respectively, if they can determine the source network ID. A reference is added to TS 33.501 where details about the handling of the header are being specified. 2) The header is renamed to 3gpp-Sbi-Asserted-Network-Id and its ABNF definition extended to support encoding a PLMN ID or a SNPN ID.  |
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| ***Consequences if not approved:*** | Incomplete specification, misalignment with stage 2 from SA3. SNPN scenarios from SA2 and SA3 cannot be supported either.pSEPP and the target NF are not able to get the asserted PLMN ID or SNPN ID of the NF sending a request.  |
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| ***Clauses affected:*** | 5.2.3.2.1, 5.2.3.2.15 |
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|  | **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:*** | Rev. 1: merge with Huawei CR |

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

##### 5.2.3.2.1 General

The 3GPP NF Services shall support the HTTP custom headers specified in Table 5.2.3.2.1-1 below. A description of each custom header and the normative requirements on when to include them are also provided in Table 5.2.3.2-1.

Table 5.2.3.2.1-1: Mandatory HTTP custom headers

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| --- | --- | --- |
| Name | Reference | Description |
| 3gpp-Sbi-Message-Priority | Clause 5.2.3.2.2 | This header is used to specify the HTTP/2 message priority for 3GPP service based interfaces. This header shall be included in HTTP/2 messages when a priority for the message needs to be conveyed (e.g. HTTP/2 messages related to Multimedia Priority Sessions). |
| 3gpp-Sbi-Callback | Clause 5.2.3.2.3 | This header is used to indicate if a HTTP/2 message is a callback (e.g. notification).This header shall be included in HTTP POST messages for callbacks towards NF service consumer(s) in another PLMN via the SEPP (See 3GPP TS 29.573 [27]).This header shall also be included in HTTP POST messages for callbacks in indirect communication (See clause 6.10.7).This header should also be included in the HTTP POST message of any event notification request for direct communications.If the header is included in received HTTP request, the SEPP or SCP shall include this header in the HTTP request forwarded to next hop. (NOTE) |
| 3gpp-Sbi-Target-apiRoot | Clause 5.2.3.2.4 | This header is used by an HTTP client to indicate the apiRoot of the target URI when communicating indirectly with the HTTP server via an SCP. This header is also used by SCP to indicate the apiRoot of the target URI, if a new HTTP server is selected or reselected and there is no Location header included in the response.This header may also be used by an HTTP client towards its local SEPP to indicate the apiRoot of the target URI towards HTTP server in another PLMN.This header may also be used between SEPPs to indicate the apiRoot of the target URI towards HTTP server in another PLMN, when TLS security with the 3gpp-Sbi-Target-apiRoot header is used between the SEPPs. |
| 3gpp-Sbi-Routing-Binding | Clause 5.2.3.2.5 | This header is used in a service request to signal binding information to direct the service request to an HTTP server which has the targeted NF Service Resource context (see clause 6.12). |
| 3gpp-Sbi-Binding | Clause 5.2.3.2.6 | This header is used to signal binding information related to an NF Service Resource to a future consumer (HTTP client) of that resource (see clause 6.12). |
| 3gpp-Sbi-Discovery-\* | Clause 5.2.3.2.7 | Headers beginning with the prefix 3gpp-Sbi-Discovery- are used in indirect communication mode to allow the discovery and selection of a suitable NF service producer (e.g. in case of service requests) or NF service consumer (e.g. in case of notifications or callbacks) by the SCP, as specified in clause 5.2.3.2.7, clause 6.5.3 and clause 6.10. Such headers may be included in any SBI message and include information allowing an SCP to find a suitable NF service producer or NF service consumer, as per the discovery and selection parameters provided respectively by the NF service consumer or the NF service producer. |
| 3gpp-Sbi-Producer-Id | Clause 5.2.3.2.8 | This header is used in a service response from the SCP to the NF Service Consumer, when using indirect communication, to identify the NF service producer. See clause 6.10.3.4. |
| 3gpp-Sbi-Oci | Clause 5.2.3.2.9 | This header may be used by an overloaded NF Service Producer in a service response, or in a notification request to signal Overload Control Information (OCI) to the NF Service Consumer.This header may also be used by an overloaded NF Service Consumer in a notification response or in a service request to signal Overload Control Information (OCI) to the NF Service Producer. |
| 3gpp-Sbi-Lci | Clause 5.2.3.2.10 | This header may be used by a NF Service Producer to send Load Control Information (LCI) to the NF Service Consumer. |
| 3gpp-Sbi-Client-Credentials | Clause 5.2.3.2.11 | This header may be used by an NF Service Consumer to send Client Credentials Assertion to the NRF or to the NF Service Producer. See clause 6.7.5. |
| 3gpp-Sbi-Nrf-Uri | Clause 5.2.3.2.12 | This header may be used to indicate the NRF API URIs to be used for a given service request, e.g. in indirect communication with delegated discovery as a result of an NSSF query. It may also indicate whether OAuth2 based authorization is required for accessing the NRF services.This header may also be used to indicate the NRF API URI to be used for a given notification request, e.g. if the NF service producer has received NRF API URI from the NF service consumer and the NF producer delegates NF consumer reselection to the SCP in indirect communication, |
| 3gpp-Sbi-Target-Nf-Id | Clause 5.2.3.2.13 | This header is used in a 307 Temporary Redirect or 308 Permanent Redirect response, to identify the target NF (service) instance towards which the request is redirected. See clause 6.10.9.1. |
| 3gpp-Sbi-Max-Forward-Hops | Clause 5.2.3.2.14 | This header may be used to indicate the maximum number of allowed hops with specified node type to relay the request message to the target HTTP server.If node type is "scp", its value indicates the maximum number of allowed SCP hops to relay the request message to the target NF as HTTP server when indirect communication is used. |
| 3gpp-Sbi-Asserted-Network-Id | Clause 5.2.3.2.15 | This header shall be inserted by an NF service consumer or an NF service producer originating an HTTP request message towards a different PLMN or SNPN.It shall be inserted by the sending SCP, the sending SEPP or the receiving SEPP in an outgoing SBI HTTP message towards the target PLMN or SNPN, if the header is not present in the incoming SBI HTTP message and the SCP, the sending SEPP or the receiving SEPP (respectively) can determine the PLMN ID or SNPN ID of the source PLMN or SNPN. It shall indicate the PLMN-ID or the SNPN-ID of the source PLMN or SNPN of the HTTP request message (i.e. the PLMN ID or the SNPN ID of the NF Service Consumer or NF Service Producer).See clause 5.9.3.2 of 3GPP TS 33.501 [17] for the handling of this header by the sending NF, the sending SCP, the sending SEPP and the receiving SEPP. |
| 3gpp-Sbi-Access-Scope | Clause 5.2.3.2.16 | This header is used in a service request for Indirect Communication to indicate the access scope of the service request for NF service access authorization. See clauses 6.7.3 and 6.10.11.  |
| 3gpp-Sbi-Access-Token | Clause 5.2.3.2.17 | This header is used in a service response forwarded by the SCP to an NF service consumer to provide an access token for possible re-use in subsequent service requests. See clause 6.10.1. |
| 3gpp-Sbi-Target-Nf-Group-Id | Clause 5.2.3.2.19 | This header is used in a service response from the SCP to the NF Service Consumer, when using indirect communication with delegated discovery, to indicate the NF Group ID of the NF service producer selected by the SCP. See clause 6.10.3.4. |
| 3gpp-Sbi-Nrf-Uri-Callback | Clause 5.2.3.2.20 | This header may be included in service request (e.g. subscription creation request) from the NF service consumer to the NF service producer, to indicate the NRF API URI to be used to discover an alternative NF service consumer for callback, e.g. during NF service consumer reselection for callback when the original NF service consumer is no longer available.For indirect communication, if the NF service producer delegates NF service consumer reselection to the SCP, the NF service producer should include 3gpp-Sbi-Nrf-Uri header with received NRF API URI in the notification requests to the NF service consumer. |
| 3gpp-Sbi-NF-Peer-Info | Clause 5.2.3.2.21 | This header is used in HTTP requests and responses to indicate the sender and receiver of the message.The HTTP client and server should include this header in every HTTP request and response messages.HTTP intermediaries (e.g. SCP) should forward this header, when relaying HTTP messages to next hop, and may update the destination in the header if the receiver NF of the message is (re)selected. |
| NOTE: The callback URI for event subscription may receive event notifications from different NF producers, e.g. UDM may subscribe to AMF/SMF on behalf of NEF with directly reporting mode for certain UDM events in the subscription, which should be inspected with corresponding OpenAPI schema where the notification is defined. For both direct and indirect communications, to include this header in all event notification requests can help NF consumer to identify the type of event notification and select corresponding schema to perform OpenAPI inspection. |

Editor's Note: For the 3gpp-Sbi-Asserted-Network-Id header, it's FFS whether the sending SEPP and receiving SEPP inserts a default PLMN ID if they cannot determine the specific PLMN ID to insert in scenarios where the source PLMN owns multiple PLMN IDs.

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

##### 5.2.3.2.15 3gpp-Sbi-Asserted-Network-Id

The header contains the PLMN Identity (MCC-MNC) of the source PLMN or the SNPN ID (MCC-MNC-NID) of the source SNPN of the received HTTP messages.

The encoding of the header follows the ABNF as defined in IETF RFC 7230 [12].

3gpp-Sbi-Asserted-Network-Id = "3gpp-Sbi-Asserted-Network-Id" ":" RWS 3\*3DIGIT "-" 2\*3DIGIT ["-" 11\*11HEXDIGIT]

EXAMPLE 1: For a source PLMN: 3gpp-Sbi-Asserted-Network-Id: 123-45

EXAMPLE 2: For a source SNPN: 3gpp-Sbi-Asserted-Network-Id: 123-45-000007ed9d5

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