**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* |
| **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** |

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|  |
| ***Title:***  | SMF enhancement for LI for 5G ProSe Communication via 5G ProSe UE-to-Network Relay - Stage 3 |
|  |  |
| ***Source to WG:*** | SA3LI (Ministère Economie et Finances) |
| ***Source to TSG:*** | SA3 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | Absence of LI for 5G ProSe Communication via 5G ProSe UE-to-Network Relay - Stage 3 |
|  |  |
| ***Summary of change:*** | SMF enhancement for LI for 5G ProSe Communication via 5G ProSe UE-to-Network Relay - Stage 3 |
|  |  |
| ***Consequences if not approved:*** | LI for 5G ProSe Communication via 5G ProSe UE-to-Network Relay - Stage 3 would still be missing |
|  |  |
| ***Clauses affected:*** | 6.2.3.2.1; 6.2.3.7; Attachment TS33128Payloads.asn |
|  |  |
|  | **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:*** | Schema changes for this CR can be found on the Forge:Merge Request: <https://forge.3gpp.org/rep/sa3/li/-/merge_requests/307>Commit Hash: [https://forge.3gpp.org/rep/sa3/li/-/commit/6d5aef1897cb38d69275a3d365e1e2131aa5dffd](https://forge.3gpp.org/rep/sa3/li/-/commit/4d944d5cca55ba158a4c3e1e071ea01d1fe4009f) |
|  |  |
| ***This CR's revision history:*** | S3i250019 |

 START OF FIRST CHANGE

#### 6.2.3.7 Generation of IRI over LI\_HI2

When an xIRI is received over LI\_X2 from the IRI-POI in the SMF or the IRI-POI in the UPF, the MDF2 shall send the IRI message over LI\_HI2 without undue delay. The IRI message shall contain a copy of the relevant record received from LI\_X2. The record may be enriched by other information available at the MDF (e.g. additional location information).

The ETSI TS 102 232-1 [9] *@LI-PS-PDU.pSHeader.timeStamp* field shall be set to the time at which the SMF event was observed (i.e. the timestamp field of the xIRI).

The *@LI-PS-PDU.payload.iRIPayloadSequence.iRIType* parameter (see ETSI TS 102 232-1 [9] clause 5.2.10) shall be included and coded according to table 6.2.3.7-1.

Table 6.2.3.7-1: IRI type for IRI messages

|  |  |
| --- | --- |
| Record type | IRI Type |
| SMFPDUSessionEstablishment | BEGIN |
| SMFPDUSessionRelease | END |
| SMFPDUSessionModification | CONTINUE |
| SMFStartOfInterceptionWithEstablishedPDUSession | BEGIN |
| SMFUnsuccessfulProcedure | REPORT |
| SMFMAPDUSessionEstablishment | BEGIN |
| SMFMAPDUSessionRelease | END |
| SMFMAPDUSessionModification | CONTINUE |
| SMFStartOfInterceptionWithEstablishedMAPDUSession | BEGIN |
| SMFMAUnsuccessfulProcedure | REPORT |
| SMFPDUtoMAPDUSessionModification | CONTINUE |
| PDHeaderReport | REPORT |
| PDSummaryReport | REPORT |
| SMFRemoteUEReport | REPORT |
| SMFStartOfInterceptionWithAlreadyConnectedRemoteUE | REPORT |
| SMFUEToNetworkRelayWithRemoteUEsReport | REPORT |
| SMFStartOfInterceptionForUEToNetworkRelay | REPORT |

IRI messages associated with the same PDU Session shall be assigned the same CIN (see ETSI TS 102 232-1 [9] clause 5.2.4).

The *@LI-PS-PDU.payload.iRIPayloadSequence.iRIContents.threeGPP33128DefinedIRI* field (see ETSI TS 102 232-7 [10] clause 15) of the LI\_HI2 message shall be populated with the BER-encoded *IRIPayload*.

When an additional warrant is activated on a target UE and the LIPF uses the same XID for the additional warrant, the MDF2 shall be able to generate and deliver the IRI message containing the SMFStartOfInterceptionWithEstablishedPDUSession record and the SMFStartOfInterceptionWithEstablishedMAPDUSession record to the LEMF associated with the additional warrant without receiving a corresponding xIRI. The payload of the SMFStartOfInterceptionWithEstablishedPDUSession record is specified in table 6.2.3.2.5-1, while the payload of the SMFStartOfInterceptionWithEstablishedMAPDUSession record is specified in table 6.2.3.4-1. The MDF2 shall generate and deliver the IRI message containing the SMFStartOfInterceptionWithEstablishedPDUSession record for each of the established PDU sessions to the LEMF associated with the new warrant. The MDF2 shall generate and deliver the IRI message containing the SMFStartOfInterceptionWithEstablishedMAPDUSession record for each of the established MA PDU sessions to the LEMF associated with the new warrant.

If the MDF2 did not receive a previous *SMFStartOfInterceptionWithEstablishedPDUSession.timeOfSessionEstablishment* or *SMFStartOfInterceptionWithEstablishedMAPDUSession*.*timeOfSessionEstablishment* for the same session from the IRI-POI, , the MDF2 shall set the value of the *SMFStartOfInterceptionWithEstablishedPDUSession.timeOfSessionEstablishment* or *SMFStartOfInterceptionWithEstablishedMAPDUSession*.*timeOfSessionEstablishment* to the time provided in the timestamp previously received in the header of the related SMFPDUSessionEstablishment or SMFMAPDUSessionEstablishment xIRI.

When the delivery of packet header information is authorised and approach 2 described in clause 6.2.3.9.1 is used, the MDF2 shall generate the IRI message and send it over LI\_HI2 without undue delay when xCC is received over LI\_MDF from the MDF3. The MDF2 shall generate packet header information reporting as described in clause 6.2.3.5.

 END OF THIRD CHANGE

 START OF CHANGE 1

---a/33128/r19/TS33128Payloads.asn
+++b/33128/r19/TS33128Payloads.asn

@@ -304,7 +304,13 @@ XIRIEvent ::= CHOICE

304 304 iMSHSSSubscriberRecordChange [174] IMSHSSSubscriberRecordChange,

305 305

306 306 -- AMF events, see clause 6.2.2.2.14, continued from tag 147

307 - aMFUEContextUpdate [175] AMFUEContextUpdate

 307 + aMFUEContextUpdate [175] AMFUEContextUpdate,

 308 +

 309 + -- SMF events, see clause 6.2.3.2 continued from tag 61

 310 + sMFRemoteUEReport [176] SMFRemoteUEReport,

 311 + sMFStartOfInterceptionWithAlreadyConnectedRemoteUE [177] SMFStartOfInterceptionWithAlreadyConnectedRemoteUE,

 312 + sMFUEToNetworkRelayWithRemoteUEsReport [178] SMFUEToNetworkRelayWithRemoteUEsReport,

 313 + sMFStartOfInterceptionForUEToNetworkRelay [179] SMFStartOfInterceptionForUEToNetworkRelay

308 314 }

309 315

310 316 -- ==============

@@ -592,7 +598,13 @@ IRIEvent ::= CHOICE

592 598 iMSHSSSubscriberRecordChange [174] IMSHSSSubscriberRecordChange,

593 599

594 600 -- AMF events, see clause 6.2.2.3, continued from tag 147

595 - aMFUEContextUpdate [175] AMFUEContextUpdate

 601 + aMFUEContextUpdate [175] AMFUEContextUpdate,

 602 +

 603 + -- SMF events, see clause 6.2.3.7 continued from tag 61

 604 + sMFRemoteUEReport [176] SMFRemoteUEReport,

 605 + sMFStartOfInterceptionWithAlreadyConnectedRemoteUE [177] SMFStartOfInterceptionWithAlreadyConnectedRemoteUE,

 606 + sMFUEToNetworkRelayWithRemoteUEsReport [178] SMFUEToNetworkRelayWithRemoteUEsReport,

 607 + sMFStartOfInterceptionForUEToNetworkRelay [179] SMFStartOfInterceptionForUEToNetworkRelay

596 608 }

597 609

598 610 IRITargetIdentifier ::= SEQUENCE

@@ -2609,6 +2621,47 @@ SMFMAUnsuccessfulProcedure ::= SEQUENCE

2609 2621 sMPDUDNRequest [17] SMPDUDNRequest OPTIONAL

2610 2622 }

2611 2623

 2624 + SMFRemoteUEReport ::= SEQUENCE

 2625 + {

 2626 + sUPI [1] SUPI,

 2627 + gPSI [2] GPSI OPTIONAL,

 2628 + pEI [3] PEI OPTIONAL,

 2629 + pDUSessionID [4] PDUSessionID,

 2630 + remoteUEContextConnected [5] RemoteUEContext OPTIONAL,

 2631 + remoteUEContextDisconnected [6] RemoteUEContext OPTIONAL,

 2632 + location [7] Location OPTIONAL

 2633 + }

 2634 +

 2635 + SMFStartOfInterceptionWithAlreadyConnectedRemoteUE ::= SEQUENCE

 2636 + {

 2637 + sUPI [1] SUPI,

 2638 + gPSI [2] GPSI OPTIONAL,

 2639 + pEI [3] PEI OPTIONAL,

 2640 + pDUSessionID [4] PDUSessionID,

 2641 + remoteUEContextConnected [5] RemoteUEContextList OPTIONAL,

 2642 + location [6] Location OPTIONAL

 2643 + }

 2644 +

 2645 + SMFUEToNetworkRelayWithRemoteUEsReport ::= SEQUENCE

 2646 + {

 2647 + uEToNetworkRelaySUPI [1] SUPI,

 2648 + uEToNetworkRelayGPSI [2] GPSI OPTIONAL,

 2649 + uEToNetworkRelayPEI [3] PEI OPTIONAL,

 2650 + pDUSessionID [4] PDUSessionID,

 2651 + remoteUEsContextConnected [5] RemoteUEContextList OPTIONAL,

 2652 + remoteUEsContextDisconnected [6] RemoteUEContextList OPTIONAL,

 2653 + location [7] Location OPTIONAL

 2654 + }

 2655 +

 2656 + SMFStartOfInterceptionForUEToNetworkRelay ::= SEQUENCE

 2657 + {

 2658 + uEToNetworkRelaySUPI [1] SUPI,

 2659 + uEToNetworkRelayGPSI [2] GPSI OPTIONAL,

 2660 + uEToNetworkRelayPEI [3] PEI OPTIONAL,

 2661 + pDUSessionID [4] PDUSessionID,

 2662 + remoteUEsContextConnected [5] RemoteUEContextList OPTIONAL,

 2663 + location [6] Location OPTIONAL

 2664 + }

2612 2665

2613 2666 -- =================

2614 2667 -- 5G SMF parameters

@@ -2918,6 +2971,92 @@ EASServerAddress ::= SEQUENCE

2918 2971 -- See table 5.4.2.1 of TS 29.571 [17]

2919 2972 GEOSatelliteID ::= UTF8String

2920 2973

 2974 + RemoteUEContextList ::= SEQUENCE

 2975 + {

 2976 + numberOfRemoteUEContexts [1] INTEGER,

 2977 + remoteUEContexts [2] SET OF RemoteUEContext

 2978 + }

 2979 +

 2980 + RemoteUEContext ::= SEQUENCE

 2981 + {

 2982 + remoteUEIDFormat [1] RemoteUEIDFormat,

 2983 + remoteUEIDType [2] RemoteUEIDType,

 2984 + remoteUEID [3] RemoteUEID,

 2985 + uDPPortRangeIndicator [4] BOOLEAN,

 2986 + tCPPortRangeIndicator [5] BOOLEAN,

 2987 + protocolUsedByRemoteUE [6] ProtocolUsedByRemoteUE,

 2988 + addressInformation [7] AddressInformation OPTIONAL,

 2989 + hPLMNID [8] PLMNID OPTIONAL

 2990 + }

 2991 +

 2992 + ProtocolUsedByRemoteUE ::= ENUMERATED

 2993 + {

 2994 + noIPInfo(1),

 2995 + iPv4(2),

 2996 + iPv6(3),

 2997 + unstructured(4),

 2998 + ethernet(5)

 2999 + }

 3000 +

 3001 + RemoteUEIDFormat ::= ENUMERATED

 3002 + {

 3003 + nAI(1),

 3004 + sixtyFourBitString(2)

 3005 + }

 3006 +

 3007 + RemoteUEIDType ::= ENUMERATED

 3008 + {

 3009 + uPPRUKID(1),

 3010 + cPPRUKID(2),

 3011 + iMEI(3),

 3012 + iMEISV(4)

 3013 + }

 3014 +

 3015 + RemoteUEID ::= CHOICE

 3016 + {

 3017 + uPPRUKIDNAI [1] NAI,

 3018 + uPPRUKID64BitString [2] BIT STRING (SIZE(64)),

 3019 + cPPRUKIDNAI [3] NAI,

 3020 + cPPRUKID64BitString [4] BIT STRING (SIZE(64)),

 3021 + iMEI [5] IMEI,

 3022 + iMEISV [6] IMEISV

 3023 + }

 3024 +

 3025 + AddressInformation ::= CHOICE

 3026 + {

 3027 + iPv4Address [1] IPv4Address,

 3028 + iPv4AddressUDPPortRange [2] IPv4AddressUDPPortRange,

 3029 + iPv4AddressTCPPortRange [3] IPv4AddressTCPPortRange,

 3030 + iPv4AddressUDPTCPPortRange [4] IPv4AddressUDPTCPPortRange,

 3031 + iPv6Address [5] IPv6Address,

 3032 + ethernetAddress [6] MACAddress

 3033 + }

 3034 +

 3035 + IPv4AddressUDPPortRange ::= SEQUENCE

 3036 + {

 3037 + iPv4Address [1] IPv4Address,

 3038 + uDPPortRange [2] PortRange

 3039 + }

 3040 +

 3041 + IPv4AddressTCPPortRange ::= SEQUENCE

 3042 + {

 3043 + iPv4Address [1] IPv4Address,

 3044 + tCPPortRange [2] PortRange

 3045 + }

 3046 +

 3047 + IPv4AddressUDPTCPPortRange ::= SEQUENCE

 3048 + {

 3049 + iPv4Address [1] IPv4Address,

 3050 + uDPPortRange [2] PortRange,

 3051 + tCPPortRange [2] PortRange

 3052 + }

 3053 +

 3054 + PortRange ::= SEQUENCE

 3055 + {

 3056 + portStart [1] INTEGER (0..65535),

 3057 + portEnd [2] INTEGER (0..65535)

 3058 + }

 3059 +

2921 3060 -- ================================

2922 3061 -- PGW-C + SMF PDNConnection Events

2923 3062 -- ================================

 END OF CHANGE 1

 END OF LAST CHANGE