**3GPP TSG-CT WG1 Meeting #137-eC1-22xxxx**

**E-Meeting, 18th – 26th August 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.501** | **CR** | **4551** | **rev** | **1** | **Current version:** | **v17.7.1** |  |
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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 | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:***  | Clarification of interworking between N1 mode over non-3GPP access and ePDG |
|  |  |
| ***Source to WG:*** | Google, Ericsson |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GProtoc18 |  | ***Date:*** | 2022-08-19 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | 3GPP has not defined any procedures for interworking between N1 mode over non-3GPP access (e.g., N3IWF) and ePDG connected to EPC, e.g.* in TS 23.502 sub-clause 4.11.4.1 Handover from EPC/ePDG to 5GS, the scenario is only for interworking from EPS/ePDG to 5GC/3GPP access (in step 1)
* in TS 23.502 sub-clause 4.11.4.2 Handover from 5GS to EPC/ePDG, the initial status is only for PDU sessions established via NG-RAN (in Initial Status).

Therefore clarification is needed.  |
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| ***Summary of change:*** | * Clarify the interworking scenario is between N1 mode over 3GPP access and ePDG connected to EPC.
* Add a note to clarify that interworking between N1 mode over non-3GPP access and ePDG connected to EPC is not speficied in this release of specification.
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| ***Consequences if not approved:*** | It is unclear whether interworking between N1 mode over non-3GPP access and ePDG connected to EPC is supported or not. |
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| ***Clauses affected:*** | 4.10, 6.1.5 |
|  |  |
|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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

## 4.10 Interworking with ePDG connected to EPC

In order to interwork with ePDG connected to EPC, the UE shall operate as specified in either subclause 4.8.2.3 or subclause 4.8.3. Which subclause the UE follows is chosen by the UE irrespective of the interworking without N26 interface indicator.

The UE shall not attempt to transfer PDU sessions with PDU session type "Ethernet" or "Unstructured" to an ePDG connected to EPC.

NOTE 1: PDU sessions with PDU session type "Ethernet" or "Unstructured" cannot be transferred to an ePDG connected to EPC because PDN connections with PDN type "non-IP" or PDN type "Ethernet" are not supported over ePDG connected to EPC.

NOTE 2: Interworking between N1 mode over non-3GPP access and ePDG connected to EPC is not specified in this release of the specification.

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

### 6.1.5 Coordination for interworking with ePDG connected to EPC

When the UE establishes a new PDN connection via an ePDG connected to EPC, to enable the transfer of the PDN connection to N1 mode over 3GPP access in case of inter-system change, the UE allocates a PDU session identity and indicates its value in the PDU session ID field in the N1\_MODE\_CAPABILITY Notify payload of the IKE\_AUTH request message (see 3GPP TS 24.302 [16]). The network provides the UE with an S-NSSAI in the N1\_MODE\_INFORMATION Notify payload of the IKE\_AUTH response message (see 3GPP TS 24.302 [16]).

NOTE: Interworking between N1 mode over non-3GPP access and ePDG connected to EPC is not specified in this release of the specification.

Upon inter-system change to N1 mode over 3GPP access, for PDN connection(s) established via an ePDG connected to EPC, if present, the UE may:

a) keep some or all of these PDN connections still via ePDG connected to EPC, if supported;

b) release some or all of these PDN connections explicitly by initiating the UE initiated tunnel disconnection procedure(s) as specified in 3GPP TS 24.302 [16]; or

c) attempt to transfer some or all of these PDN connections to N1 mode over 3GPP access using the parameters of the PDN connection for which the UE has allocated a PDU session identity by initiating the PDU session establishment procedure(s) with the PDU SESSION ESTABLISHMENT REQUEST message created. In that case, for each and every PDN connection to be transferred:

1) if the PDN connection is for emergency bearer services, the request type shall be set to "existing emergency PDU session". Otherwise the request type shall be set to "existing PDU session";

2) if the previously allocated home address information for a PDN connection consists of an IPv4 address only for an ePDG connected to EPC according to 3GPP TS 24.302 [16], the PDU session type shall be set to "IPv4";

3) if the previously allocated home address information for a PDN connection consists of an IPv6 prefix only for an ePDG connected to EPC according to 3GPP TS 24.302 [16], the PDU session type shall be set to "IPv6";

4) if the previously allocated home address information for a PDN connection consists of both an IPv4 address and an IPv6 prefix for an ePDG connected to EPC according to 3GPP TS 24.302 [16], the PDU session type shall be set to "IPv4v6";

5) the APN of the PDN connection shall be mapped to the DNN of the PDU session;

6) the PDU session ID shall be set to the PDU session identity in the N1\_MODE\_CAPABILITY Notify payload of the IKE\_AUTH request message establishing IPsec tunnel of the PDN connection; and

7) if the PDN connection is not for emergency bearer services, the S-NSSAI of the PDU session shall be set to the S-NSSAI associated with the PDN connection as specified in 3GPP TS 24.302 [16]. The UE shall not request to perform handover of an existing PDN connection to N1 mode over 3GPP access if the associated S-NSSAI is not included in the allowed NSSAI for 3GPP access.

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