**3GPP TSG-CT WG1 Meeting #131-eC1-21xxxx**

**E-meeting, 19-27 August 2021 (was C1-214369)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.501** | **CR** | **3444** | **rev** | **1** | **Current version:** | **16.9.0** |  |
|  | | | | | | | | |
| *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:*** | Signalling support for UPIP for UEs not supporting standalone NR connected to 5GCN | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Qualcomm Incorporated, Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GProtoc16 | | | | |  | ***Date:*** | | | 2021-08-19 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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 can be 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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | At SA2#145-e, SA2 agreed CR 2929 to TS 23.501 Rel-16 (S2-2104799) which specifies that UEs not supporting NR as primary RAT and supporting E-UTRA (UEs not supporting standalone NR connected to 5GCN) shall set the Integrity protection maximum data rate IE to NULL instead of 64 kbps.  The CR was approved at SA#92-e. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | TS 24.501 was updated such as that Rel-16 UEs which do not support standalone NR connected to 5GCN shall set the Integrity protection maximum data rate IE to NULL instead of 64 kbps.  Backward compatibility analysis:  The CR is backward compatible:   * A UE not supporting standalone NR connected to 5GCN and implementing this CR in a network not implementing this CR will set the Integrity protection maximum data rate IE to NULL. The SMF will not activate UPIP for the UE not supporting UPIP * A UE not supporting standalone NR connected to 5GCN and not implementing this CR in a network implementing this CR will set the Integrity protection maximum data rate IE to 64 kbps. The SMF may activate UPIP for the UE not supporting UPIP. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | There will be disruption of service and interoperability issues in handover scenarios. The stage 3 will be misaligned with the stage 2 requirements. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 9.11.4.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*

#### 9.11.4.7 Integrity protection maximum data rate

The purpose of the integrity protection maximum data rate information element is for the UE to indicate to the network the maximum data rate per UE for user-plane integrity protection for uplink and the maximum data rate per UE for user-plane integrity protection for downlink that are supported by the UE.

The integrity protection maximum data rate is coded as shown in figure 9.11.4.7.1 and table 9.11.4.7.2.

The integrity protection maximum data rate is a type 3 information element with a length of 3 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Integrity protection maximum data rate IEI | | | | | | | | octet 1 |
| Maximum data rate per UE for user-plane integrity protection for uplink | | | | | | | | octet 2 |
| Maximum data rate per UE for user-plane integrity protection for downlink | | | | | | | | octet 3 |

Figure 9.11.4.7.1: Integrity protection maximum data rate information element

Table 9.11.4.7.2: Integrity protection maximum data rate information element

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Maximum data rate per UE for user-plane integrity protection for uplink (octet 2) | | | | | | | | | |
| Bits | | | | | | | | | |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |  |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 64 kbps (NOTE 3) |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |  | NULL (NOTE 1) |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  | Full data rate (NOTE 2) |
| All other values are spare and shall not be used by a UE compliant to the present version of this specification. If received they shall be interpreted as "64 kbps". | | | | | | | | | |
|  | | | | | | | | | |
| Maximum data rate per UE for user-plane integrity protection for downlink (octet 3) | | | | | | | | | |
| Bits | | | | | | | | | |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |  |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 64 kbps (NOTE 3) |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |  | NULL (NOTE 1) |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  | Full data rate (NOTE 2) |
| All other values are spare and shall not be used by a UE compliant to the present version of this specification. If received they shall be interpreted as "64 kbps". | | | | | | | | | |
| NOTE 1: This value shall be used when N3 data transfer is not supported by the UE or when the UE does not support standalone NR connected to 5GCN. | | | | | | | | | |
| NOTE 2: If the UE supports N3 data transfer and supports standalone NR connected to 5GCN (this includes UEs supporting NR-NR dual connectivity, NR-E-UTRA dual connectivity with MN terminated bearers or both of them as described in 3GPP TS 37.340 [51]), then the UE shall use this value. | | | | | | | | | |
| NOTE 3: The network can receive this value from a UE compliant to an earlier version of this specification. | | | | | | | | | |

\*\*\* End of changes \*\*\*