**3GPP TSG-CT WG1 Meeting #134-eC1-221378**

**E-Meeting, 17th – 25th February 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.501** | **CR** | **4043** | **rev** | **-** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | The handling of eDRX in the AMF | | | | | | | | | |
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| ***Source to WG:*** | vivo, Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GProtoc17 | | | | |  | ***Date:*** | | | 2022-02-05 |
|  |  | | | |  | |  | | |  |
| ***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 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:*** | | Per subclause 5.31.7.2.2.1 in 23.501,  ++  *A Hyper-SFN (H-SFN) frame structure is defined on top of the SFN used for regular idle mode DRX. Each H-SFN value corresponds to a cycle of the legacy SFN of 1024 radio frames, i.e. 10.24s. When extended idle mode DRX is enabled for a UE, the UE is reachable for paging in specific Paging Hyperframes (PH), which is a specific set of H-SFN values. The PH computation is a formula that is function of the extended idle mode DRX cycle, and a UE specific identifier, as described in TS 36.304 [52] and TS 38.304 [50]. This value can be computed at all UEs and AMFs without need for signalling. The AMF includes the extended idle mode DRX cycle length and the PTW length in paging message to assist the NG-RAN nodes in paging the UE.*  ++  the AMF includes the eDRX cycle length and the PTW length in the paging message.  The specification of stage 3 omits such behaviour of AMF. | | | | | | | | |
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| ***Summary of change:*** | | The AMF should request the lower layers to include the eDRX cycle length and PTW length in the paging message. | | | | | | | | |
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| ***Consequences if not approved:*** | | Not align with stage2. | | | | | | | | |
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| ***Clauses affected:*** | | 5.6.2.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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

#### 5.6.2.1 General

The paging procedure is performed only in 3GPP access and used by the network to request the establishment of a NAS signalling connection to the UE. The paging procedure is also used by the network to request the UE to re-establish the user-plane resources of PDU sessions for downlink user data transport. Another purpose of the paging procedure is to request the UE to re-establish the user-plane resources of PDU session(s) associated with non-3GPP access over 3GPP access.

Additionally, the network can use the paging procedure to initiate the mobile terminating SMS.

For the UE using eDRX, the network initiates the paging procedure when NAS signalling messages or user data is pending to be sent to the UE within the paging time window and requests the lower layers to include the eDRX cycle length and paging time window length in the paging message. If NAS signalling messages or user data is pending to be sent to the UE outside the paging time window and the eDRX value that the network provides to the UE in the Negotiated extended DRX parameters IE during the last registration procedure indicates:

a) the eDRX cycle length duration of the E-UTRA cell connected to 5GCN, is higher than 5.12 seconds; or

b) the eDRX cycle length duration of the NR cell connected to 5GCN, is higher than 10.24 seconds,

the network initiates the paging procedure at T time ahead of the beginning of the next paging time window.

NOTE: T time is a short time period based on implementation. The operator can take possible imperfections in the synchronization between the 5GCN and the UE into account when choosing T time.

If the network detects that the pending user data to be sent to the UE is related to the voice service as specified in 3GPP TS 23.502 [9] and the network decides to initiate the paging procedure based on the stored paging restriction information, if any, the AMF should request the lower layer to include the Voice Service Indication in the paging message when the UE and the network support the paging cause feature.

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