**3GPP TSG-CT WG1 Meeting #125-eC1-204756**

**Electronic meeting, 20-28 August 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **24.587** | **CR** | **0081** | **rev** | **1** | **Current version:** | **16.1.1** |  |
|  |
| *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:***  | Handling of T5003 |
|  |  |
| ***Source to WG:*** | vivo |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | eV2XARC |  | ***Date:*** | 2020-08-08 |
|  |  |  |  |  |
| ***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 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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)* |
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| ***Reason for change:*** | 1. The value of timer T5003 has been defined in table 10.3.1, so the following EN can be removed in clause 6.1.2.8.2:

*Editor's note: How the value of the keep-alive timer T5003 is set is FFS*.1. Updates to the timers in figure 6.1.2.8.2, Txxx->T5003, Tyyy->T5004 and Tzzz->T5005.
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| ***Summary of change:*** | * Updates to the timers in figure 6.1.2.8.2, Txxx->T5003, Tyyy->T5004 and Tzzz->T5005
* Remove the following EN in clause 6.1.2.8.2:

*Editor's note: How the value of the keep-alive timer T5003 is set is FFS*. |
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| ***Consequences if not approved:*** | Timer in figure 6.1.2.8.2 is not correct;The EN in clause 6.1.2.8.2 still needs to be resolved |
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| ***Clauses affected:*** | 6.1.2.8.2 |
|  |  |
|  | **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:*** |  |

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

##### 6.1.2.8.2 PC5 unicast link keep-alive procedure initiation by the initiating UE

The initiating UE shall meet the following pre-condition before initiating the PC5 unicast link keep-alive procedure:

a) there is a PC5 unicast link between the initiating UE and the target UE.

The initiating UE shall manage a keep-alive timer T5003 and a keep-alive counter for the PC5 unicast link keep-alive procedure. Timer T5003 is used to trigger the periodic initiation of the PC5 unicast link keep-alive procedure. The UE shall start or restart timer T5003 whenever the UE receives a PC5 signalling message or PC5 user plane data from the target UE over this PC5 unicast link. The UE shall set the keep-alive counter to an initial value of zero after PC5 unicast link establishment.

Editor's note: Other conditions to restart the keep-alive timer T5003 are FFS.

Editor's note: Whether the keep-alive timer T5003 value needs to be included or negotiated as part of the PC5 unicast link establishment procedure is FFS.

The initiating UE shall initiate the PC5 unicast link keep-alive procedure when:

a) timer T5003 for this link expires;

b) optionally, a request from the lower layers to check the viability of the PC5 unicast link is received; or

NOTE 1: Whether the lower layers can request the initiation of the PC5 unicast link keep-alive procedure, and what the triggers for the lower layers are to request the initiation of the PC5 unicast link keep-alive procedure, are UE implementation specific.

c) optionally, a request from the upper layers to check the viability of the PC5 unicast link is received.

NOTE 2: Whether the upper layers can request the initiation of the PC5 unicast link keep-alive procedure, and what the triggers for the upper layers are to request the initiation of the PC5 unicast link keep-alive procedure, are UE implementation specific.

In order to initiate the PC5 unicast link keep-alive procedure, the initiating UE shall stop timer T5003, if running, and shall create a DIRECT LINK KEEPALIVE REQUEST message. In this message, the initiating UE:

a) shall include the keep-alive counter for the PC5 unicast link; and

b) may include a maximum inactivity period to indicate the maximum inactivity period of the initiating UE over this PC5 unicast link.

NOTE 3: The value chosen for the maximum inactivity period of the initiating UE is UE implementation specific with the objective to minimize the number of keep-alive procedures as much as possible. It is desirable to have the maximum inactivity period value to be slightly higher than the value of keep-alive timer T5003.

After the DIRECT LINK KEEPALIVE REQUEST message is generated, the initiating UE shall pass this message to the lower layers for transmission along with the initiating UE's layer-2 ID for unicast communication and the target UE's layer-2 ID for unicast communication, and start timer T5004. The UE shall not send a new DIRECT LINK KEEPALIVE REQUEST message to the same target UE while timer T5004 is running.



Figure 6.1.2.8.2: PC5 unicast link keep-alive procedure

\* \* \* End of Change \* \* \* \*