**3GPP TSG-CT WG1 Meeting #136-eC1-22XXXX**

**E-Meeting, 12th – 20th May 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.571** | **CR** | **0013** | **rev** | **1** | **Current version:** | **17.1.0** |  |
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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:***  | Handling of Scheduled Location Time by UE |
|  |  |
| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5G\_eLCS\_ph2 |  | ***Date:*** | 2022-05-05 |
|  |  |  |  |  |
| ***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 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:*** | In SA2 specification TS 23.273, support of “Schduled Location Time” is documented in clause 4.1C and impacts procedures i.e. MO-LR, 5GC-MT-LR, 5GC-MO-LR or deferred 5GC-MT-LR for periodic or triggered location events.In case of 5GC-MT-LR (for commercial use), it is stated in TS 23.273 sub 6.1.2 as below:*"12. When sending a location request to the UE, the LMF may include the scheduled location time.**…**NOTE 6: The LMF may send a location request to the UE at step 12 containing the scheduled location time sometime before the scheduled location time to allow the UE to enter CM Connected state shortly before the scheduled location time.".*In case of deferred 5GC-MT-LR procedure for Periodic, Triggered and UE Available Location Events, it is stated in TS 23.273 sub 6.3.1 as below:*"…When a scheduled location time is provided for periodic location request at step 16, a UE* ***should*** *perform steps 23-25 some time in advance of the scheduled location time for the first periodic event report or some time in advance of the periodic interval expiration for each succeeding periodic event report in order to enable location measurements at step 23 or step 27 to occur near to each of these times, respectively.".*Finally, RAN2 TS 37.355 has specified LMF uses LPP message to deliver the Schduled Location Time to UE.Note that the above UE behavior on moving to RRC-connected mode in advance of the scheduled location time is mainly to reduce the latency when the time at which a UE location needs to be obtained is known in advance.Hence, the related UE bevahior on the received scheduled location time needs to be specified in stage 3 specification in TS 24.571 in order to implement the stage 2 requirements. |
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| ***Summary of change:*** | It proposes to specify the UE behavior on the received scheduled location time during the network initiated LPP procedure and LCS PeriodicTriggered Invoke procedure. |
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| ***Consequences if not approved:*** | The stage 2 requirement is not fully implemented in stage 3.  |
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| ***Clauses affected:*** | 5.2.1.2, 5.2.1.3.1 |
|  |  |
|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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

#### 5.2.1.2 Positioning Information Transport

The AMF sends an LPP message and an associated Correlation Identifier in the DL NAS Transport message (refer to 3GPP TS 24.501 [3] and 3GPP TS 23.273 [2] clause 6.11.1). Figure 5.2.1.2.1 illustrates an example of the NAS signalling transport for downlink LPP messages.



Figure 5.2.1.2.1: NAS signalling transport for downlink LPP messages

NOTE: If a scheduled location time is received in the LPP message, the UE in 5GMM-IDLE mode can initiate a service request procedure shortly before the scheduled location time.

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

##### 5.2.1.3.1 General

The supplementary services LCS PeriodicTriggered Invoke operation enables the LMF to initiate periodic or triggered location event reporting by a target UE as described in clause 6.3.1 of 3GPP TS 23.272 [2]. The supplementary services LCS PeriodicTriggered Invoke message is transferred to the target UE via the serving AMF in a DL NAS Transport message. A response from the target UE is similarly returned to the LMF via the serving AMF and is transferred to the AMF in an UL NAS Transport message. If the LCS PeriodicTriggered Invoke message in the Payload container IE of a DL NAS TRANSPORT message includes the deferred routing identifier, the UE shall include the deferred routing identifier in the Additional Information IE of a UL NAS TRANSPORT message during the subsequent procedures as specified in clause 5.2.2.

Figure 5.2.1.3.1.1 illustrates an example of the NAS signalling transport for initiation of periodic or triggered location,



Figure 5.2.1.3.1.1: NAS signalling transport for LCS PeriodicTriggered messages

NOTE: If a scheduled location time is received in the LCS PeriodicTriggered Invoke message, the UE in 5GMM-IDLE mode can initiate a service request procedure shortly before the scheduled location time.

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