**3GPP TSG-CT WG1 Meeting #134-eC1-22abcd**

**E-Meeting, 17th – 25th February 2022 (was C1-221184)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.301** | **CR** | **3687** | **rev** | **1** | **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 | **x** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Addition of extended NAS timers via a satellite access | | | | | | | | | |
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| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | IoT\_SAT\_ARCH\_EPS | | | | |  | ***Date:*** | | | 2022-02-10 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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:*** | | Following feedback from RAN2 the additional delay introduced when using satellite access for IoT does require further NAS timer extension than what is specified for NB-S1 mode and WB-S1 mode for IoT. It is therefore proposed to maintain specified NAS timer values for these IoT cases also at satellite access.  For a UE using satellite E-UTRAN access extended NAS timers shall always be applied and no excepetion based on CE mode is needed in this case  It is proposed to add a note to clarify the IoT NAS timer applicability at satellite access for NB-S1 mode.  For WB-S1 mode for IoT it is proposed to separate the satellite access case using separate clauses and specify that timer values for WB-S1/CE mode are always applied at satellite access. | | | | | | | | |
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| ***Summary of change:*** | | A note are added to clarify the IoT NAS timer applicability at satellite access at in NB-S1 mode in NB-S1 mode.  A new clause for WB-S1 mode for IoT at access using satellite is added with requirements that timer values for WB-S1/CE mode are always applied in this case  Additions in WB-S1 mode for IoT not using satellite access to exclude access via satellite case. | | | | | | | | |
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| ***Consequences if not approved:*** | | Unclear specification what NAS timers to apply at IoT satellite access. | | | | | | | | |
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| ***Clauses affected:*** | | 4.7, 4.8, 4.8.1 (new), 4.8.2 (new) | | | | | | | | |
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|  | | **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 \* \* \* \*

## 4.7 EPS mobility management and EPS session management in NB-S1 mode

A UE in NB-S1 mode (see 3GPP TS 36.331 [22]) shall calculate the value of the applicable NAS timer:

- indicated in table 10.2.1 plus 240s; and

- indicated in table 10.3.1 plus 180s.

The timer value obtained is used as described in the appropriate procedure clause of this specification. The NAS timer value shall be calculated at start of a NAS procedure and shall not re-calculate the use of the NAS timer value until the NAS procedure is completed, restarted or aborted.

When an MME that supports NB-S1 mode performs NAS signalling with a UE, which is using NB-S1 mode, the MME shall calculate the value of the applicable NAS timer:

- indicated in table 10.2.2 plus 240s; and

- indicated in table 10.3.2 plus 180s.

The timer value obtained is used as described in the appropriate procedure clause of this specification. The NAS timer value shall be calculated at start of a NAS procedure and shall not re-calculate the use of the NAS timer value until the NAS procedure is completed, restarted or aborted.

NOTE 1: If the tracking area updating procedure is initiated in EMM-CONNECTED mode, the MME can stop any running implementation specific supervision timer if it is started when sending an ESM DATA TRANSPORT message to the UE.

NOTE 2: As NB-S1 mode includes the case when satellite access is used in EPS, the values for applicable NAS timers specified in this clause apply also for satellite access.

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

## 4.8 EPS mobility management and EPS session management in WB-S1 mode for IoT

### 4.8.1 UE not using satellite E-UTRAN access

In WB-S1 mode, a UE operating in category CE can operate in either CE mode A or CE mode B (see 3GPP TS 36.306 [44]). If a UE that supports CE mode B and operates in WB-S1 mode not using satellite E-UTRAN access, the UE's usage setting is not set to "voice centric" (see 3GPP TS 23.401 [10]), and

a) the use of enhanced coverage is not restricted for the UE; or

b) CE mode B is not restricted for the UE (see 3GPP TS 23.401 [10]);

the UE shall apply the value of the applicable NAS timer indicated in tables 10.2.1 and indicated in table 10.3.1 for WB-S1/CE mode.

A UE that supports CE mode B and operates in WB-S1 mode not using satellite E-UTRAN access shall not apply the value of the applicable NAS timer indicated in table 10.2.1 and table 10.3.1 for WB-S1/CE mode before receiving an indication from the network that the use of enhanced coverage is not restricted as described in this clause.

The NAS timer value obtained is used as described in the appropriate procedure clause of this specification. The NAS timer value shall be calculated at start of a NAS procedure, and shall not be re-calculated until the NAS procedure is completed, restarted or aborted.

The support of CE mode B by a UE is indicated to the MME by lower layers and shall be stored by the MME. When an MME that supports WB-S1 mode performs NAS signalling with a UE not using satellite E-UTRAN access, which supports CE mode B and operates in WB-S1 mode and the MME determines that

a) the use of enhanced coverage is not restricted for the UE; or

b) CE mode B is not restricted for the UE (see 3GPP TS 23.401 [10])

the MME shall calculate the value of the applicable NAS timer indicated in tables 10.2.2 and indicated in table 10.3.2 for WB-S1/CE mode.

The NAS timer value obtained is used as described in the appropriate procedure clause of this specification. The NAS timer value shall be calculated at start of a NAS procedure and shall not be re-calculated until the NAS procedure is completed, restarted or aborted.

### 4.8.2 UE using satellite E-UTRAN access

In WB-S1 mode via satellite E-UTRAN access, the UE shall apply the value of the applicable NAS timer indicated in tables 10.2.1 and indicated in table 10.3.1 for WB-S1/CE mode.

The NAS timer value obtained is used as described in the appropriate procedure clause of this specification. The NAS timer value shall be calculated at start of a NAS procedure and shall not be re-calculated until the NAS procedure is completed, restarted or aborted.

When an MME that supports WB-S1 mode performs NAS signalling with a UE via satellite E-UTRAN access, the MME shall calculate the value of the applicable NAS timer indicated in tables 10.2.2 and indicated in table 10.3.2 for WB-S1/CE mode.

The NAS timer value obtained is used as described in the appropriate procedure clause of this specification. The NAS timer value shall be calculated at start of a NAS procedure and shall not be re-calculated until the NAS procedure is completed, restarted or aborted.

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