**3GPP TSG-CT WG1 Meeting #136-eC1-223648**

**E-Meeting, 12th – 20th May 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.501** | **CR** | **4349** | **rev** | **-** | **Current version:** | **17.6.1** |  |
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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:*** | Emergency PDU session while the timer for disaster roaming wait range is running | | | | | | | | | |
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| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MINT | | | | |  | ***Date:*** | | | 04-05-2022 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
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| ***Reason for change:*** | | Section 4.24 of TS 24.501 states:  “While the timer is running, the UE shall not initiate registration on the selected PLMN”  While the timer is running, the UE may need to place an emergency service and hence cannot register for disaster roaming due to the requirement stated above. In this case, the UE should register for emergency but keep the timer running.  However, if the timer expires while the UE is registered for emergency, then the UE performs the registration procedure for disaster roaming. | | | | | | | | |
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| ***Summary of change:*** | | The following change is introduced to address the case which is described above:  “Upon selecting a PLMN for disaster roaming, if:  a) the timer is running as describe above; and  b) the UE needs to request a PDU session for emergency services;  the UE shall initiate the registration procedure and set the 5GS registration type IE to "emergency registration" in the REGISTRATION REQUEST message and the UE shall keep the timer running.  If the timer expires while the UE is registered for emergency services, the UE shall perform the registration procedure and set the 5GS registration type IE to "disaster roaming mobility registration updating" in the REGISTRATION REQUEST message” | | | | | | | | |
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| ***Consequences if not approved:*** | | The UE is not be able to get emergency service while a timer is running for the disaster roaming wait range. Negative user experience especially for emergency PDU session. | | | | | | | | |
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| ***Clauses affected:*** | | 4.24 | | | | | | | | |
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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:*** | |  | | | | | | | | |

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

## 4.24 Minimization of service interruption

The UE and the network may support Minimization of service interruption (MINT). MINT aims to enable a UE to obtain service from a PLMN offering disaster roaming service when a disaster condition applies to the UE's determined PLMN with disaster condition.

If the UE supports MINT, the indication of whether disaster roaming is enabled in the UE, the indication of 'applicability of "lists of PLMN(s) to be used in disaster condition" provided by a VPLMN', the one or more "list of PLMN(s) to be used in disaster condition", disaster roaming wait range and disaster return wait range provisioned by the network, if available, are stored in the non-volatile memory in the ME as specified in annex C and are kept when the UE enters 5GMM-DEREGISTERED state. Annex C specifies condition under which the indication of whether disaster roaming is enabled in the UE, the indication of 'applicability of "lists of PLMN(s) to be used in disaster condition" provided by a VPLMN', the one or more "lists of PLMN(s) to be used in disaster condition", disaster roaming wait range and disaster return wait range stored in the ME are deleted.

Upon selecting a PLMN for disaster roaming as specified in 3GPP TS 23.122 [6]:

a) if the UE does not have a stored disaster roaming wait range, the UE shall perform a registration procedure for disaster roaming services on the selected PLMN as described in clause 5.5.1; and

b) if the UE has a stored disaster roaming wait range, the UE shall generate a random number within the disaster roaming wait range and start a timer with the generated random number. While the timer is running, the UE shall not initiate registration on the selected PLMN except if the UE needs to request a PDU session for emergency services, in which case the UE shall initiate the registration procedure, set the 5GS registration type IE to "emergency registration" in the REGISTRATION REQUEST message and keep the timer running. Upon expiration of the timer, if the UE is not registered for emergency services, the UE shall perform a registration procedure for disaster roaming services as described in clause 5.5.1 if still camped on the selected PLMN. If the UE is registered for emergency services when the timer expires, the registration procedure for disaster roaming services as described in clause 5.5.1 shall be performed after the release of the PDU session for emergency services.

The timer started with a generated random number within the disaster roaming wait range is stopped and the UE shall perform a PLMN selection as described in 3GPP TS 23.122 [5], if:

a) the UE has successfully registered over non-3GPP access on another PLMN;

b) the UE has successfully registered with an allowable PLMN; or

c) an NG-RAN cell selected for camping of the selected PLMN broadcasts neither the disaster related indication nor a "list of one or more PLMN(s) with disaster condition for which disaster roaming is offered by the available PLMN" including the determined PLMN with Disaster Condition (see 3GPP TS 23.122 [5]).

Upon determining that a disaster condition has ended and that the UE shall perform PLMN selection as specified in 3GPP TS 23.122 [6]:

a) if the UE does not have a stored disaster return wait range, the UE shall perform a registration procedure on the selected PLMN; and

b) if the UE has a stored disaster return wait range, the UE shall generate a random number within the disaster return wait range and start a timer with the generated random number value. While the timer is running, the UE shall not initiate registration on the selected PLMN. Upon expiration of the timer, the UE shall perform a registration procedure if still camped on the selected PLMN.

When the AMF assigns a registration area to the UE registered for disaster roaming services, the AMF shall only include TAIs covering the area with the disaster condition.

When the AMF determines that the disaster condition has ended and the UE which is registered for disaster roaming services has an emergency PDU session, the AMF shall initiate the generic UE configuration update procedure to indicate that the UE is registered for emergency services as described in subclause 5.4.4.2.

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