**3GPP TSG-CT WG4 Meeting #130** **C4-253359**

Göteberg, Sweden; 25th – 29th August 2025 (revision of CP-251282, C4-253314)

**Source: China Telecom**

**Title: Revised WID on CT aspects of MINT support in EPS for 5G-only national roaming UE**

**Document for: Approval**

**Agenda Item: 19.3**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: CT aspects of MINT support in EPS for 5G-only national roaming UE

Acronym: MINT\_Ph2

Unique identifier: 1080022

Potential target Release: Rel-19

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes | X | X |  | X |  |
| No |  |  | X |  | X |
| Don't know |  |  |  |  |  |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
|  | Study  |
|  | Normative – Stage 1 |
|  | Normative – Stage 2 |
| X | Normative – Stage 3 |
|  | Normative – Other\* |

**\* Other = e.g. testing**

## 2.2 Parent Work Item

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| MINT\_Ph2 | SA1 | 970041 | Minimization of Service Interruption During Core Network Failure Phase2 |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 1050029 | FS\_MINT\_Ph2 | Study on MINT support in EPS for 5G only national roaming UE |

**Dependency on non-3GPP (draft) specification:**

# 3 Justification

Based on SA1 R19 MINT\_Ph2, SA1 has agreed the new requirement in TS 22.261 clause 6.31:

*“Subject to regulatory requirements, operator's policy or UE capabilities, the 3GPP system shall be able to support a UE, with 5G-only national roaming access to a VPLMN, to obtain 4G connectivity service from that VPLMN in the area where a Disaster Condition applies.*

*NOTE: In the above scenario, voice call service is provided by IMS in HPLMN.”*

In the above scenario, the UE still receives service from IMS in HPLMN and only connectivity from VPLMN. This requirement allows 5G-only national roaming UEs to register for Disaster Roaming service in EPS of the same VPLMN. As a result, the 4G system shall be able to provide Disaster Roaming service.

Additionally, it could be a valid network deployment that the operator deploys 5G system and 4G system with different PLMN IDs to ensure that 5G-only national roaming UEs cannot access 4G in normal conditions. When the network’s 5G RAN is in the disaster condition and it’s 4G network provides Disaster Roaming service, 5G-only national roaming UEs can select the 4G network from the forbidden PLMN list to register for Disaster Roaming service.

As determined in TSG #104, TSG SA recommended CT1 that the study on MINT\_Ph2 needs to be done first before required normative work is progressed. CT1 performed study on these aspects for Rel-19, and the conclusions of the study are specified in 3GPP TR 24.812, which was approved by TSG in CT#107 meeting.

NOTE: An LS (C1-252037) has been sent to SA and SA2 to request for guidance on how to proceed with normative work.

Considering the conclusions of FS\_MINT\_Ph2, there is necessary to have a CT work item to develop the stage-2 and stage-3 for the requirements developed by CT1 during the study phase.

# 4 Objective

The objectives of this normative work item are to enhance the necessary CT1 specifications to specify the requirements developed by CT1 during the study phase, which are specified in TR 24.812.

The stage-2 and stage-3 work may include the following (non-exhaustive, additional areas can be identified based on progress in SA2 and in normative work in RAN WGs) aspects.

For CT1, the expected work includes to:

- support the requirements and solutions for enabling a UE to obtain connectivity service from 4G PLMN(s) when a disaster condition applies to the serving 5G PLMN, including:

- support the requirements and solutions for enabling a UE to be aware of the failure of a 5G PLMN when the disaster condition applies;

- support the requirements and solutions for enabling a UE to obtain information of particular 4G PLMN(s) when the disaster condition applies;

- support the requirements and solutions for enabling the roaming 4G PLMN(s) to determine and indicate to potential disaster inbound roamers whether they can access the PLMN or not;

- update the stage 2 requirements for network selection when the disaster condition applies for the 5G VPLMN of 5G-only national roaming UE;

- update the NAS procedures to support attach to the 4G PLMN(s) proving disaster roaming;

- support the requirements and solutions for RAT restriction handling under disaster conditions;

- support the requirements and solutions for enabling the UE to be aware of the recovery of a 5G PLMN used to be in the disaster condition and how the UE can return to 5GS when the disaster condition is no longer applicable;

- update the NAS procedures to minimize the congestion caused by the disaster roaming when the disaster condition applies;

- update the NAS procedures to minimize the congestion caused by the disaster roaming when the disaster condition is no longer applicable.

For CT4, the expected work includes:

- impacts on the procedures and parameter related to “Disaster Roaming indicator” for subscription data management;

- impacts on the procedures and parameter related to “Disaster Roaming indicator” provided to SGW and PGW.

For CT6, the expected work includes to:

- add parameters required for disaster roaming services to be pre-configured in USIM.

# 5 Expected Output and Time scale

|  |
| --- |
| New specifications {One line per specification. Create/delete lines as needed} |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Rapporteur |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 23.122 | -Potential updates to network selection when disaster condition applies for the 5G VPLMN of 5G-only national roaming UE; - Potential updates to specify stage-2 aspects of MINT\_Ph2 feature. | TSG CT#109 (September 2025) | CT1 responsibility |
| 24.301 | - Updates to attach procedure in order to support the registration to 4G PLMN providing disaster roaming when disaster condition applies;- Updates to NAS procedures in order to enhance congestion control for disaster roaming and returning to PLMN previously with disaster condition;- Updates to NAS procedures in order to support configuration/notification of the information related to disaster condition or disaster roaming;- Updates to the RAT restriction handling under disaster conditions; | TSG CT#109 (September 2025) | CT1 responsibility |
| 29.272 | - Updates to add “Disaster Roaming indicator” for subscription data management. | TSG CT#109 (September 2025) | CT4 responsibility |
| 29.274 | - Updates to provide “Disaster Roaming indicator” to SGW and PGW. | TSG CT#109 (September 2025) | CT4 responsibility |
| 31.102 | - Updates to add parameters required for disaster roaming services to be pre-configured in USIM | TSG CT#109 (September 2025) | CT6 responsibility |
|  |  |  |  |

# 6 Work item Rapporteur(s)

Li Mingxue, China Telecom (limx36@chinatelecom.cn)

# 7 Work item leadership

CT1

# 8 Aspects that involve other WGs

RAN2 for the potential updates of SIB information

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| China Telecom |
| NOKIA |
| vivo |
| Huawei |
| HiSilicon |
| CATT |
| LG Electronics |
| Samsung |
| OPPO |
| ZTE |
| HPE |