**3GPP TSG-CT WG1 Meeting #127bis-eC1-21XXXX**

**Electronic meeting; 25-29 January 2021 Revision of C1-210033**

**Source: China Mobile**

**Title: Solution to KI#6 About MCC limitation**

**Spec: 3GPP TR 24.821 v0.2.0**

**Agenda item: 17.2.4**

**Document for: Agreement**

**1. Introduction**

In TR 24.821, Key Issue 6, CT1 agreed to address the following issues:

a) Whether there are different priority levels for available PLMNs in satellite access?

b) Whether the periodic search for higher priority PLMNs in satellite access is needed?

c) Whether the need to have a separate range of values for the search interval for periodic search for higher priority PLMNs in satellite access; and

d) Whether the search for higher priority PLMN should be limited to PLMNs where MCC matches the MCC or country of the RPLMN.

In this contribution, a solution to issue d) is proposed.

**2. Reason for Change**

This solution attemps to consider the issues for PLMN search in the case roaming in VPLMN for Key issue 6.

**3. Proposal**

It is proposed to agree the following changes to 3GPP TR 24.821 v0.2.0.

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

## 6.1 Mapping of solutions to key issues

Table 6.1-1: Mapping of solutions to key issues

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Key issue | | | | | | |
| Solution | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | X |  |  |  |  |  |  |
| 2 |  | X |  |  |  |  |  |
| 3 |  | X |  |  |  |  |  |
| 4 |  |  | X |  |  |  |  |
| 5 |  |  | X |  |  |  |  |
| 6 |  |  |  | X |  |  |  |
| 7 |  |  |  | X |  |  |  |
| 8 |  |  |  |  |  | X |  |
| x |  |  |  |  |  | X |  |

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

## 6.x Solution <x>

### 6.x.1 Target key issue

This solution addresses key issue #6.

### 6.x.2 Solution Description

The solution to the key issue #6 d) is as follows:

d) Whether the search for higher priority PLMN should be limited to PLMNs where MCC matches the MCC or country of the RPLMN.

Based on the following consideration, the search for higher priority PLMN should not be limited to PLMNs where MCC matches the MCC or country of the RPLMN:

* For users near or in the international area(e.g.sea , Scenario C/D), a global/shared PLMN ID (with MCC 9xx) is broadcast. If the search for higher priority PLMN is limited to PLMNs where MCC matches the MCC or country of the RPLMN, the PLMN with MCC 9XX will not be considered in borders.
* For users in a scenario mentioned in TR 23.737 KI#10(Multi-national cell coverage area can span over multiple countries) and the Multi-national cell of satellite NG RAN broadcast multi-PLMN ID with different MCC, only searching for "same country as the current serving VPLMN" will keep the UE registered in the same VPLMN even though the UE is moving between countries A, B and C.

The search for higher priority PLMN should consider the MCCs allowed from the UE's location as a precondition. It is suggested the following mechanism:

* + 1. Enable a UE using satellite NG RAN to determine its location and support location-MCC mapping, following a solution to KI#1 and KI#2.
    2. During periodic search, the UE using satellite NG RAN checks it’s location and does the MCC mapping. The mapped MCC needs to be considered together with the priority/order list of PLMNs(e.g. HPLMN/EHPLMN/EPLMN).

Editor's note: It is FFS whether the PLMNs on the priority/order list matching the mapped MCC have the higher priority or the PLMNs on the priority/order list not matching the mapped MCC are excluded.

* + 1. The UE using satellite NG RAN can also check it’s location periodically and record the mapped MCC change for periodic search.

Editor's note: It is FFS how the UE implements the periodic checking and whether the periodic checking works together with the periodic search.

Editor's note: It is FFS how MCC(9xx) and the international areas case are considered for periodic search.

NOTE:The MCC allowed from the UE's location for periodic search may also provided by the network. How to provide MCC information from the network is not in the scope of this TR/study of PLMN selection.

### 6.x.3 Impacts

UE impacts:

* Consider the MCCs allowed from the UE's location as a precondition during periodic search.
* Consider the MCCs allowed from the UE's location as a precondition.

consider the MCCs allowed from the UE's location as a precondition.

Network impacts: For PLMN Selection: none.

NOTE:Network impact to support configuring and providing MCCs is expected and is not in the scope of this TR, but in the scope of 5GSAT\_ARCH WI in SA2.