

3GPP TSG RAN Meeting #104

RP-241324

Shanghai, 17th - 20th, June 2024

Source: SK Telecom, ETRI

Agenda item: 10.9.2

Views on E-UTRAN TN to NR NTN Mobility



Background

- **Mobility from E-UTRA TN to NR NTN has been approved as a new Work Item at RAN #103, with the scope limited to idle mode mobility only.**

Justification

In Rel-17 and Rel-18, some solutions have been defined for NR NTN – NR NTN mobility and NR TN - NR NTN as well as NR NTN – NR TN mobility. However, mobility between E-UTRA TN and NR NTN and vice versa has not been defined yet.

Based on current any foreseen TN deployments and capabilities of UEs it is valuable to also define the mobility between E-UTRA TN and NR NTN for idle mode mobility support.

Objective

The work item aims at specifying support for the following objectives:

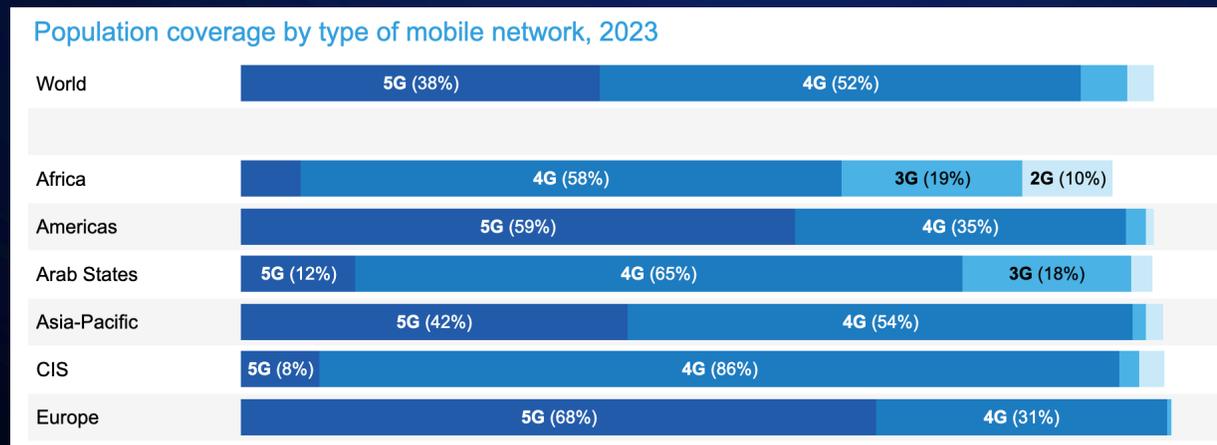
- **idle mode mobility based on cell reselection from E-UTRA TN to NR NTN, where E-UTRA TN provides satellite information for NR NTN neighbor cells in a System Information Block. [RAN2]**

Note:

- The solutions shall be reusing the existing signaling introduced for IoT-NTN and mobility procedures between NR TN and NR NTN to the maximum extent.

Required Features for E-UTRA TN to NR NTN Mobility

- **Due to the limited scope of Rel-19 WI, the following legacy features for NR NTN cannot be supported for E-UTRA TN to NR NTN mobility cases**
 - Handover
 - RACH-less handover
 - Conditional handover
- **Support of at least one feature among above is important, given that the other features on LTE-NR interworking, such as dual connectivity, are NOT available for NTN scenarios**
- **As of 2023, more than 50% of world population still has been being connected by E-UTRA**
 - Therefore, it is expected that E-UTRA TN to NR NTN mobility could be a common operation scenario, at least in some regions



<https://www.itu.int/itu-d/reports/statistics/2023/10/10/ff23-mobile-network-coverage/>

- **Proposal : Connected mode mobility from E-UTRA TN to NR NTN should be considered in Rel-19 or at least Rel-20.**

Conclusion

- **Proposal** : Connected mode mobility from E-UTRA TN to NR NTN should be considered in Rel-19 or at least Rel-20.