

3GPP TSG RAN Meeting #84

Newport Beach, USA, June 3-6, 2019

Document for: discussion

Agenda Item: 8

RP-191209

# Motivation for new SI:

# Study on enhancement of RAN slicing

CMCC

# Current status of RAN Slicing

- \* Rel-15 specifications support end to end slice functionality and can provide the foundation of a common connectivity platform for various services

Feature	R15&16 Support of slice
Initial attachment	Support allowed S-NSSAI configuration
Session setup	Support PDU session setup procedure for allowed S-NSSAI
Cell reselection	By implementation, network can configure dedicated frequency priority according to allowed S-NSSAI of the UE
Handover	Support slice based admission control performed by target gNB
QoS	Support scheduling Slice/DRB according to QoS requirement from CN
KPI monitoring	Support per DRB and per slice KPI monitoring

- \* More efforts should be made in Rel-17 on enhancement of RAN slicing, to make it a tool that network operators can apply to meet the challenge of opening new source of revenue in addition to the one derived from customer subscription.



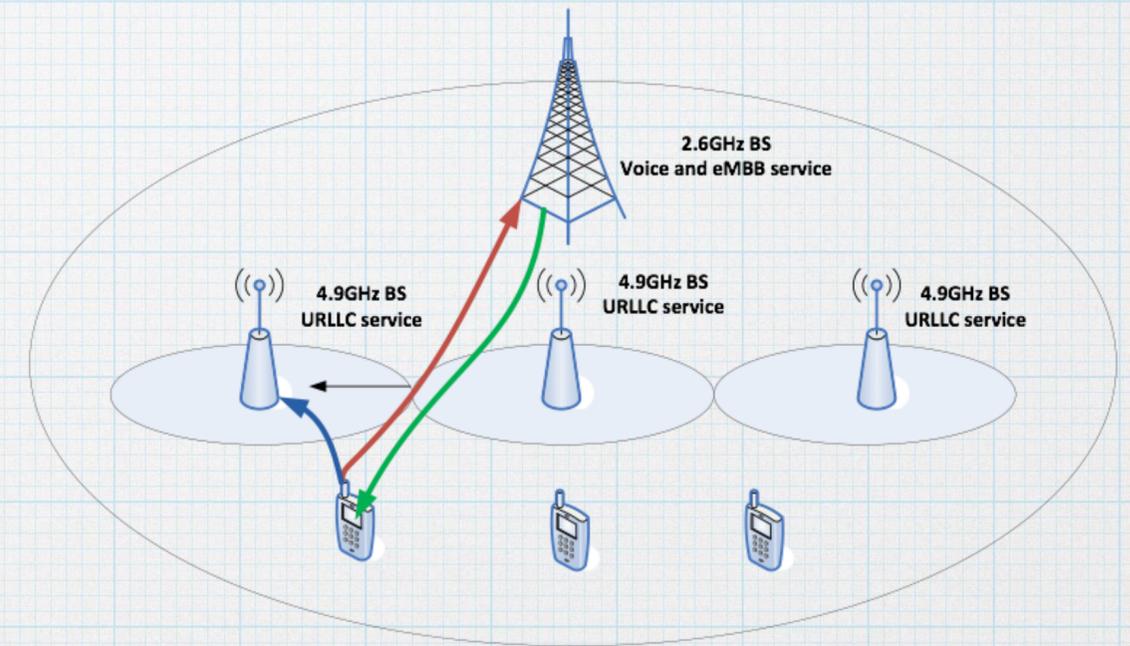
# Issue 1: Awareness of RAN slice

- \* For R15&16, slice is not broadcasted in system information.
- \* Idle and inactive UEs unaware of which slices the gNB supports. This limits the flexibility of slice, e.g. UE flexible reselecting carriers based on slice when network deploy different slices on each carrier.
- \* Study mechanisms to enable device awareness of RAN part of network slice



# Issue 2: Fast Access to Slice

- \* Operator may deployment different slices on each carriers.
- \* One UE may support multiple slices. Before launching a service, UE have no idea which slice to select.
- \* While UE camping on 2.6GHz carrier for voice and eMBB service, if UE needs to launch URLLC service, UE should reselect to 4.9GHz carrier for URLLC service.
- \* Study mechanisms to enable UE fast access to the slice available RAN node (not the camping cell)



# Issue 3: Slice Fallback

- \* During handover, target gNB may not support ongoing slice of the UE.
- \* In current spec, target gNB will reject unsupported slices, which affect service continuity.
- \* Study slice fallback or re-mapping mechanisms.



# Issue 4: R15 Restriction on deployment

- \* In R15, there is a restriction that 'the slice availability does not change within the UE's registration area'
- \* This restriction imposes constraints on RAN slice deployment for operators: All the cells that belongs to one TA should support the same lists of slices.
- \* This study item aims to study the feasibility to relax that deployment restriction.



# Objectives of SI

The study item aims to investigate enhancement on RAN support of network slicing. Detailed objectives of the study item are:

1. Study mechanisms to enable device awareness of RAN part of network slice, including [RAN2]:
  - a. broadcast and/or unicast signalling mechanisms for the availability of RAN support of a service;
2. Study mechanisms to enable UE fast access to the slice available RAN node (not the camping cell) [RAN2, RAN3]
3. Study mechanisms to support service continuity in mobility, e.g. target gNB doesn't support the UE's ongoing slice, including [RAN2, RAN3]:
  - a. slice re-mapping or fallback
  - b. data forwarding
4. Study the feasibility to relax the Rel-15 principle of “the slice availability does not change within the UE's registration area”, coordination with SA2 may be needed. [RAN2, RAN3]





Thank You