3GPP TSG-RAN WG3 #119 R3-230929

27th Feb – 3rd Mar 2023

Athens, Greece

Agenda Item: 15.2

Source: Nokia, Nokia Shanghai Bell (moderator)

Title: Summary of Offline Discussion on CB: # 35\_MBS1\_NetworkSharing

Document for: Approval

# Introduction

This is the summary of the following offline discussion

**CB: # 35\_MBS1\_NetworkSharing**

**- Discuss the open issues above**

**- Other critical issues if any**

(Nok - moderator)

Summary of offline disc [R3-230929](file:///C%3A%5CUsers%5Cpgodin%5CDesktop%5CphilipDocuments%5Ca_ran3new2%5Cran3119%5Cmeeting%5CCB%20%23%2035_MBS1_NetworkSharing%5CInbox%5CR3-230929.zip)

# For the Chairman’s Notes

**For MOCN, it is up to NG-RAN node implementation to decide how many NG-U tunnels to be setup.**

**For MOCN, It is up to the NG-RAN node implementation on how to handle different S-NSSAI received for the same shared service from different PLMNs (i.e. same Associated Session ID).**

**It is agreed to encode the Associated Session ID inside the MBS Session ID (i.e. as an extension of the asn1 sequence of MBS Session ID). Agreed to report and ask feedback on this in the LS back to SA2/CT4 which currently have described to send the Associated Session ID in N2 SM container.**

**Agree initial TP for stage 2 for TS 38.300 in R3-230941.**

**Agree initial TP for stage 2 for TS 38.401 in R3-230989.**

**WA: for RAN sharing with multiple cell ID broadcast each gNB-DU sets up an F1-U tunnel.**

To be continued:

**1/ Protocol impact(s) of the agreement of NG-RAN node implementation deciding the number of NG-U tunnels.**

**2/ Whether for MOCN the gNB-CU sends to the gNB-DU over F1:**

* **Option 1: multiple F1AP: BROADCAST CONTEXT SETUP REQUEST messages with different TMGIs and same associated session ID**
* **Option 2: a single F1AP: BROADCAST CONTEXT SETUP/MODIFICATION REQUEST message includes a list of TMGIs and an associated session ID**

**3/ How the Associated session ID is managed for alocation dependent MBS session.**

**4/ Stage 2 content for RAN sharing with multiple cell ID broadcast on selecting an MRB PDCP configurations received from participating gNB-CUs.**

# Discussion- Second round

<TBD>

# Discussion-First round

## Background

The following is copied from Chair note.

Shared NG-U tunnel establishment:

- Option 1: establish the NG-U tunnels for each session for different PLMNs

- Option 2: establish only one NG-U tunnel for multiple session from different PLMNs

- Option 3: establish one primary NG-U tunnel and one backup NG-U tunnel for multiple session from different PLMNs

- Option 4: NG-RAN node implementation decision on how many NG-U tunnels to be set up

Nok, E///, QC, CATT, HW, ZTE: Go for opt4, SA2 has agreed

QC, HW: Opt1 can be used as baseline

HW: Need new procedure for BC

SS: Accept Opt1\2\4, no need to consider dynamic tunnel update

E///: Solution detail is the next step

CMCC: Combine opt1 and opt4

HW: No effort needed for opt1

Nok, QC: opt1 is included in opt4

**Agree Option4 to support shared NG-U tunnel.**

**Detail impact over interfaces?**

## Discussions around open issues (for information)

Impact of gNB implementation deciding the number of NG-U tunnels:

Protocol impact was discussed:

* How to avoid setting up some NG-U tunnels
* Whether a new gNB triggered shared N3 setup procedure is needed for broadcast?
* If needed, whether to reuse the multicast distribution setup request or use of new one?

Whether the shared CU sends to shared DU over F1:

Option 1: multiple F1AP: BROADCAST CONTEXT SETUP REQUEST messages with different TMGIs and same associated session ID

Option 2: a single F1AP: BROADCAST CONTEXT SETUP/MODIFICATION REQUEST message includes a list of TMGIs and an associated session ID

It was discussed:

In case of shared CU in option 1, the shared CU coodinates the information from different PLMNs to build the common signalling to be sent over F1 which is used by the shared DU to build the common MCCH.

In case fo shared CU in option 2 the shared DU receives multiple signaling over F1 from the shared CU (signaling per PLMN) and the shared DU coodinates the multiple pieces of information to be build the MMCH.

Associated Session ID and location dependent MBS session:

Option 1: we can rely on service area (list of cells/TAs):

For location dependent MBS sessions subject to resource sharing across broadcast MBS sessions during network sharing, the service areas of the participating PLMNs shall contain the same shared radio cells but may contain different non-shared radio cells. As for non-location dependent services, the RAN node identifies the MBS sessions based on associated session ID or configured TMGI mapping and for each cell selects the content based on the service areas obtained from the core network participating in RAN sharing. It applies area session IDs only for the interactions with the core networks, i.e., different Area session IDs may be used by the different core networks for the same service area. There is no need of additional identifier

Option 2: need of some additional indicator to identify ame content.

Call flow for the shared gNB-DU selecting one of the MRB PDCP configurations received from multiple PLMN gNB-CUs

how does shared CU select the MRB PDCP configuration to be used?

Does the shared DU select the first received MRB PDCP configuration from one CU and inform later the other CUs?

Whether and how the other CUs can accept/reject this selected MRB PDCP configuration and fallback to normal RAN sharing with their own MRB PDCP configuration (i.e. R17 not efficient RAN sharing)?

Whethe the shared DU can reverse the initially selected MRB PDCP configuration base don subsequently received MRB PDCP configuration (from another CU)

Whether the “configuration solution” to identify the same shared service has F1 protocol impact.

Should CU send to DU some service IDs ? see tdoc R3-230081.

# Conclusion, Recommendations [if needed]

# References