**3GPP TSG-RAN WG3 Meeting #110-e R3-206408**

**E-meeting, 2 – 12 Nov 2020**

**Title:** (TP to TS 38.300 BL CR) Inclusion of the agreements of RAN3#109

**Source:** Huawei

**Agenda item:** 22.1

**Document Type:** other

# Introduction

In RAN3#109 meeting, there are a list of agreements and working assumptions achieved, but there was no TP agreed yet, in this contribution, we provide TP to capture the corresponding agreements and working assumptions in to the BL CR of TS38.300..

# Related Agreements and WAs

**Agreements and WAs captured in the TP provided in section 3:**

**Agreements:**

* **Use existing NG-RAN architecture to support NR MBS.**
* **No MCE entity/node in RAN architecture.**
* **No SYNC protocol for this release.**
* **gNB makes the decision on using PTP or PTM over the radio.**
* **An MBS session is denoted by an MBS session identifier unique within the PLMN**
* **MBS session resource establishment is requested by 5GC (similarly to the PDU session establishment for unicast)**
* **Counting procedures for multicast are not introduced in Rel-17**
* **RAN may request MBS session resource UP establishment, e.g. in handover (FFS). The signaling procedure (e.g. nested in handover signaling or new procedure, whether a single procedure is used or not, …) is FFS.**
* **Prioritize work on support of mobility scenarios of UEs moving from a cell with established MBS session resource to another cell with established or to be established MBS session resource.**
* **Xn Handover Request and the NG Handover Request message should contain MBS context information for the UE**
* **The MBS configuration decided at target gNB is sent to the UE via the source gNB (details e.g. RRC container etc. pending RAN2 progress)**
* **For the prioritized scenario, intra-CU mobility and Xn/NG based inter-gNB mobility will be considered.**
* **First focus on standalone (i.e. non-MR-DC) scenarios.**
* **For multicast, the gNB determines the area in which MBS user data needs to be provided by knowledge of the UEs that have joined the MBS Session**
* **For multicast, the area in which the MBS user data needs to be provided is deduced from UE Context data**
* **For multicast, the area in which MBS user data needs to be provided may be further limited by the multicast service area; input from SA2 expected**

**Working Assumptions:**

* **One or more QoS flows may be used within a single MBS session**
* **Each MB QoS flow belongs to one MBS Session**
* **Each MB QoS flow is associated with a QoS profile**
* **NR MBS supports both GBR and non-GBR QoS**
* **Use “PTP” and “PTM” over the radio: definitions of “PTP” and “PTM” in RAN3 are pending until basic RAN1/2 decisions are made.**
* **For 5GC shared MBS traffic delivery of user data to a gNB, we shall use shared NG-U transport, regardless of delivery method over the radio**
* **One Shared NG-U tunnel is used per MBS session.**
* **the UE Context to be transferred to the target gNB contains information about the MBS Session(s) the UE joined. Details are FFS.**
* **For multicast, same QoS requirements are applicable regardless of whether PtP or PtM is selected by NG-RAN. [Input from SA2 is needed]**
* **In RRC\_CONNECTED state, the MBS multicast tree is updated between the gNB and the MB-UPF at least for the first UE joining an MBS multicast session at a gNB. Similarly, the MBS multicast tree is updated between the target gNB and the MB-UPF at least for the first UE requesting an MBS multicast session and accepted into the target gNB.**

# Text Proposal to BL CR of TS38.300

## 16.x NR Multicast and Broadcast

### 16.x.1 General

Editor’s Note: General aspects to be covered here.

### The support of NR Multicast and Broadcast services (MBS) is facilitated by the introduction of the mechanisms described in the following clauses.16.x.2 Architecture

Editor’s Note: Architecture aspects to be covered here.

gNB supports NR MBS as defined in TS 23.501 [3], by using the NG-RAN architecture as defined in section 4.1, i.e. the gNBs are interconnected with each other by means of the Xn interface, and the gNBs connecting to the 5GC by means of NG interfaces.

For multicast, the gNB determines the area in which MBS user data needs to be provided by knowledge of the UEs that have joined the MBS Session, i.e. based on UE context. Note: the area in which MBS user data needs to be provided may be further limited by the multicast service area [FFS].

Shared NG-U transport is used to support 5GC shared MBS traffic delivery. The MBS multicast tree is updated between the gNB and the MB-UPF at least for the first UE joining an MBS multicast session at a gNB. Similarly, the MBS multicast tree is updated between the target gNB and the MB-UPF at least for the first UE requesting an MBS multicast session and accepted into the target gNB.

### 16.x.3 Session Management

Editor’s Note: Session Management aspects to be covered here.

### An MBS session is denoted by an MBS session identifier unique within the PLMN. The MBS session resource establishment is requested by 5GC, the NG-RAN may request MBS session resource UP establishment, e.g. in handover (FFS).16.x.4 PTP-PTM Switching

Editor’s Note: covers both PTP to PTM switching and PTM to PTP switching.

The gNB makes the decision on using PTP or PTM over the radio.

### 16.x.5 MBS Mobility

Editor’s Note: Mobility aspects to be covered here.

#### 16.x.5.1 Mobility between MBS supporting nodes

The intra-NR RAN handover procedures (i.e. Xn Handover and NG Handover) are used support the mobility scenarios of UEs moving from a cell with established MBS session resource to another cell with established or to be established MBS session resource.

The MBS context information for the UE should be contained in the Xn Handover Request and the NG Handover Request messages. The Target gNB provides the corresponding MBS configuration to be used in the target cell to the UE via the source gNB.

### 16.x.5 MBS QoS

Editor’s Note: QoS aspects to be covered here.

The MBS QoS Architecture in NG-RAN for NR connected to 5GC, is depicted in the Figure 16.x.5-1 and described in the following:

- One or more QoS flows may be used within a single MBS session;

- Each MBS QoS flow belongs to one MBS Session;

- Each MBS QoS flow is associated with a QoS profile;

- Both GBR and non-GBR QoS are supported;

# Reference

1. R3-205810 Introduction of NR MBS, Nokia, Nokia Shanghai Bell