**SA WG2 Meeting #156E (e-meeting) S2-230xxxx**

**April 17 – 21, 2023 *revision of S2-230xxxx***

**Source: Nokia, Nokia Shanghai-Bell**

**Title: Handling of location dependent sessions for MOCN network sharing**

**Document for: Approval**

**Agenda Item: 9.10.2**

**Work Item / Release: 5MBS\_Ph2 / Rel-18**

*Abstract:* *This contribution discusses how to handle location dependent sessions for MOCN network sharing. A related CR is in S2-230xxxx.*

# 1. Introduction

TS 23.247 contains the following

*Editor’s Note: For location dependent broadcast service, whether the Associated Session ID is sufficient for the NG-RAN to identify multiple broadcast MBS Sessions via different CNs delivering the same content is FFS.*

*Editor´s notes: How to support multiple broadcast MBS Sessions via different CNs to deliver the same content for location-dependent MBS sessions is FFS.*

This contribution discusses how to handle of location dependent sessions for MOCN network sharing. A related CR is in S2-230xxx.

# 2. Discussion

For a location dependent MBS service, different content is provided in different service areas. The information about the location dependent sessions will be provided separately from each CN participating in network sharing towards RAN nodes. Service areas are defined by the AFs creating the location dependent MBS sessions.

However, resource sharing across broadcast MBS Sessions in network sharing comes from providing the same content in a radio cell only one time. Also from a service perspective there is no reason why service areas in a shared RAN area should depend on the PLMN. But service areas may also include non-shared RAN cells and can differ with respect to those cells between PLMNs (even if they cover the same geographical area).

**Proposal 1:** **For location dependent MBS sessions subject to Resource sharing across broadcast MBS Sessions during network sharing, AFs that create the location dependent MBS sessions towards the participating PLMNs shall supply service areas that contain the same shared radio cells (but may contain different non-shared radio cells)**

In each participating PLMN, for a Location dependent Broadcast Service, MB-SMF allocates an Area Session ID for each service area, and provides the service area and Area Session ID to NG RAN nodes. Thus, the same service area within a shared MBS session will obtain a different Area Session ID in each PLMN, and the NG-RAN node cannot use the Area Session ID to identify the area sessions with the same content within the MBS session.

However, for each area session the RAN node also obtains the service area within the MBS session start procedure. Based on the service area, the RAN node can select for each cell the appropriate content and area session ID for each PLMN. Shared MBS sessions can be identified as agreed for non-location dependent services via the same associated session ID (applicable for all area sessions) or via configured mapping of TMGIs in the RAN.

At the last meeting, it was suggested to extend the associated session ID with a separate second area session ID allocated by the AF for each area session. This seems not required and would complicate the procedures with extra signalling and complexity for the AF. It would also mean that location-dependent services cannot be supported if configured mapping of TMGIs in the RAN is applied.

**Proposal 2: For location dependent MBS sessions subject to Resource sharing across broadcast MBS Sessions during network sharing, the same associated session ID is applicable for each service area.**

**Proposal 3:** **For location dependent MBS sessions subject to Resource sharing across broadcast MBS Sessions during network sharing, 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.**

**Annex: Example of location dependent session during RAN sharing**

