**SA WG2 Meeting #S2-154 S2-xxx**

**14 – 18 November, 2022, Toulouse, FR**

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

**Title: Conclusion for key issue 3**

**Document for: Approval**

**Agenda Item: 9.18**

**Work Item / Release: FS\_5MBS\_Ph2 / Rel-18**

*Abstract of the contribution: This paper proposes conclusions for key issue 3.*

# 1 Introduction

Currently there are three solutions documented in the TR 23.700-47. Namely, solution #10, #11 and #30.

Solutions (#10 and #11) are for the purpose of letting AF provide a list of UEs to 5GC and request 5GC to add those UEs to an MBS multicast session. Solution#11 mandates dynamic PCC deployment, assumes the availability of UE’s private IP address to the AF, assumes that the UEs are already attached to a DNN and slice supporting MBS multicast, and adds impact to AF, PCF, SMF and UE. The existing Rel-17 solution where UEs are informed via application-level service announcements does not require such assumptions, and solutions #10 and #11 thus seem to bring disadvantages compared to the rel-17 procedures but no clear advantages.

Solution #30 is specifying the procedures for on demand multicast MBS session triggered by a join request of UE. It is assumed that an application in the UE is becoming aware of an external IP multicast sessions in the Internet and triggers that join request. While this scenario was already supported in Rel-17, some related steps were considered as implementation-specific. The solution allows to establish radio resources for the on-demand MBS session (a) either when the first UE within the PLMN request to join that IP multicast session; or (b) when multiple UE within the same PLMN have requested to join that IP multicast session. Concerns were raised that option (b) would bring no clear advantages, and it is thus suggested to only pursue option (a).

# 2 Proposal

It is proposed to include the following changes in TR 23.700-47.

\*\*\* 1st Change (all new text)\*\*\*

## 8.3 Key Issue #3: On demand multicast MBS session

Temporary multicast group can be created by the application layer. After the temporary group creation in application layer, if a multicast MBS Session is to be used to deliver the MBS service, the AF may create the MBS session and perform service announcement, and the UE then request to join the MBS Session as specified in Rel-17.

NOTE: For example, for mission critical services (see TS 23.280 [7]), creation of a temporary group on the application layer is already possible, and application-level signalling to request UEs to join MBS sessions is already defined.

However, for external IP multicast sessions the application layer may not have central knowledge of receivers and arbitrary clients can join. Rel-17 already allows the 5GC to create MBS multicast sessions without request from the AF when a UE requests to join an external IP multicast session, but leaves details of SMF and MB-SMF behaviour open to the implementation. It is concluded to perform normative work to specify the related aspects left to implementation in Rel-17 based on solution #30, option (a).