3GPP TSG-RAN WG2 Meeting #130 R2-25xxxx

St Julian’s, Malta, 19 – 23 May, 2025

**Agenda item: 8.11.1**

**Source: Samsung**

**Title: Remaining MAC open issues for Rel-19 SBFD**

**Document for: Discussion & Decision**

# Introduction

This document outlines the remaining open issues related to the Sub-Band Full Duplex (SBFD) MAC running CR for discussion during the RAN2#130 meeting. For issues lacking sufficient input from companies, proposals have been formulated to present possible options for discussion.

# Discussion

**Issue MAC-1: CSI-RS based CFRA with SBFD RO**

During the previous meeting, one company raised concerns regarding whether SBFD RO can be supported in CSI-RS-based CFRA. The primary reason for this concern is that RAN1 and RAN4 have not yet discussed or agreed upon this feature. Since root cause of the concern is the potential cross-working group (WG) issues, and given that no fundamental objections to the operation itself have been raised within RAN2, the rapporteur recommends that RAN2 adopts a working assumption during the RAN2#130 meeting. This would allow for further evaluation of any critical issues from other WGs. It is important to note that this proposal does not involve submitting LS(es) to other WG(s) but relies on internal sharing within companies, as previously discussed.

**Proposal 1: RAN2 to proceed with a working assumption that SBFD RO can be supported for both SSB-based and CSI-RS-based CFRAs.**

**Issue MAC-2: RA Resource Set Reselection at RO Type Switching**

On one hand, with the introduction of separate RSRP thresholds for Msg1 repetitions in SBFD RO, the applicable Msg1 repetition numbers may differ between the two RO types. Consequently, the sets of Random Access (RA) resources associated with these repetition numbers may also be different.

On the other hand, considering that a complete random access procedure is typically executed within a single RA resource set (with Msg1 repetition fallback being an exception), it is essential for RAN2 to determine whether RA resource set change should be introduced for RO type switching.

**Proposal 2: RAN2 to discuss whether RA resource set change is introduced for RO type switching, considering the following alternatives:**

* **Alt 1: RA resource set change is not supported for RO type switching.**
* **Alt 2: RA resource set change is supported for RO type switching. FFS whether additional conditions/constraints should be applied or not.**

**Issue MAC-3: Msg 1 Repetition Number Fallback with SBFD RO**

According to the current MAC specification, Msg1 repetition number fallback occurs if another RA resource set associated with a higher repetition number and the same feature or feature combination, sharing the same prach-ConfigurationIndex, is available. However, RAN2 has not yet addressed whether Msg1 repetition number fallback (and the resulting RA resource set change) can be supported with SBFD RO. Therefore, it is essential for RAN2 to first determine whether Msg1 repetition number fallback is applicable in the context of SBFD RO.

**Proposal 3: RAN2 to discuss whether Msg 1 repetition number fallback is supported with SBFD RO, considering the following alternatives:**

* **Alt 1: Msg1 repetition number fallback is not supported with SBFD RO.**
* **Alt 2: Msg1 repetition number fallback is supported with SBFD RO. FFS whether additional conditions/constraints should be applied or not.**

**Issue MAC-4: RO Type Signalling in LTM Cell Switch Command MAC CE**

The question of whether SBFD RO is supported for RACH-based LTM is expected to be addressed during the RRC open issue discussion. Based on the outcome of this discussion, the related MAC open issue—whether the LTM Cell Switch Command MAC CE should be modified for RO type signalling—should be evaluated accordingly.

**Proposal 4:** **If SBFD RO is supported for RACH-based LTM, RAN2 to discuss how to modify the LTM Cell Switch Command MAC CE for RO type signalling.**

# Conclusion

Based on the discussion above, the following proposals are made by Rapporteur:

**Issue MAC-1: CSI-RS based CFRA with SBFD RO**

**Proposal 1: RAN2 to proceed with a working assumption that SBFD RO can be supported for both SSB-based and CSI-RS-based CFRAs.**

**Issue MAC-2: RA Resource Set Reselection at RO Type Switching**

**Proposal 2: RAN2 to discuss whether RA resource set change is introduced for RO type switching, considering the following alternatives:**

* **Alt 1: RA resource set change is not supported for RO type switching.**
* **Alt 2: RA resource set change is supported for RO type switching. FFS whether additional conditions/constraints should be applied or not.**

**Issue MAC-3: Msg 1 Repetition Number Fallback with SBFD RO**

**Proposal 3: RAN2 to discuss whether Msg 1 repetition number fallback is supported with SBFD RO, considering the following alternatives:**

* **Alt 1: Msg1 repetition number fallback is not supported with SBFD RO.**
* **Alt 2: Msg1 repetition number fallback is supported with SBFD RO. FFS whether additional conditions/constraints should be applied or not.**

**Issue MAC-4: RO Type Signalling in LTM Cell Switch Command MAC CE**

**Proposal 4:** **If SBFD RO is supported for RACH-based LTM, RAN2 to discuss how to modify the LTM Cell Switch Command MAC CE for RO type signalling.**