3GPP TSG-RAN WG2 Meeting #131bis R2-250xxxx

Prague, Czech Republic, 13th – 17th October, 2025

**Agenda item: 8.11.3**

**Source: CATT**

**Title: [Post131bis][214][SBFD] CR for TS 38.300 (CATT)**

**Document for: Discussion and Decision**

# Introduction

The following email discussion is to discuss how to update the stage-2 CR for Rel-19 Evolution of NR duplex operation (SBFD), taking into account proposals and TPs in R2-2506823, R2-2507002 and R2-2507364:

* [Post131bis][214][SBFD] CR for TS 38.300 (CATT)

Intended outcome: Update the CR for endorsement

Deadline: Short

# Discussion

In this email discussion we will discuss how to update stage-2 CR following these TPs from companies:

- CFRA triggered by dedicated RRC signalling and MAC CE from R2-2506823 and R2-2507364;

- CBRA RO selection for initial PRACH transmissions from R2-2506823, R2-2507002, and R2-2507364;

- SBFD transmission/reception configuration 2 and SBFD RACH configuration option from R2-2507002.

## CFRA triggered by dedicated RRC signalling and MAC CE

Reason to change: RO type selection/indication via the PDCCH order has been provided by RAN1 in the stage-2 spec, so more cases for the CFRA RO type selection from RAN2’s perspective should be provided accordingly. There are two candidate TPs for selection by companies.

* **Option A from R2-2506823**

|  |
| --- |
| For CFRA triggered by PDCCH order, an SBFD aware UE can be explicitly indicated in the PDCCH order whether to use eitherthe first PRACH occasions or the second PRACH occasions as specified in TS 38.213 [38], for the PRACH transmission. For CFRA triggered by BFR or ReconfigurationwithSync, an SBFD aware UE can be explicitly indicated whether to use either the first PRACH occasions or the second PRACH occasions as specified in TS 38.213 [38] is used, as specified in TS 38.331 [12]. |

* **Option B from R2-2507364**

|  |
| --- |
| For CFRA triggered by PDCCH order, an SBFD aware UE can be explicitly indicated in the PDCCH order, the LTM Cell Switch Command MAC CE or dedicated RRC signalling whether to use eitherthe first PRACH occasions or the second PRACH occasions as specified in TS 38.213 [38], for the PRACH transmission. |

LTM Cell Switch Command MAC CE or dedicated RRC signalling in Option B's TP doesn't apply to CFRA triggered by PDCCH order case. Companies are invited to review above two TPs and provide the preference and comments as below:

**Q 1. Which option do you prefer?**

* Option A from R2-2506823
* Option B from R2-2507364

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Company** | | **Option A/B** | | **Suggested descriptions if any** | | |
| Ericsson | | Option B with update | | For CFRA ~~triggered by PDCCH order~~, an SBFD aware UE can be explicitly indicated in the PDCCH order, the LTM Cell Switch Command MAC CE or dedicated RRC signalling whether to use eitherthe first PRACH occasions or the second PRACH occasions as specified in TS 38.213 [38], for the PRACH transmission. | | |
| Xiaomi | | Option B | | Agree with Ericsson’s update above, which is simpler and avoids duplicates. Suggests to also add reference to TS 38.321 (for LTM CSC MAC CE) and 38.331 (for dedicated RRC signalling), as below:  For CFRA ~~triggered by PDCCH order~~, an SBFD aware UE can be explicitly indicated in the PDCCH order, the LTM Cell Switch Command MAC CE or dedicated RRC signalling whether to use eitherthe first PRACH occasions or the second PRACH occasions as specified in TS 38.213 [38], TS 38.321 [6], and TS 38.331 [12], for the PRACH transmission. | | |
| ZTE | | Option A with update | | Add the yellow text to option A, and remove the strikethrough words:  For CFRA triggered by PDCCH order, an SBFD aware UE can be explicitly indicated in the PDCCH order whether to use eitherthe first PRACH occasions or the second PRACH occasions as specified in TS 38.213 [38], for the PRACH transmission. For CFRA triggered by BFR or ReconfigurationwithSync, an SBFD aware UE can be explicitly indicated by dedicated RRC signaling whether to use either the first PRACH occasions or the second PRACH occasions ~~as specified in TS 38.213 [38] is used,~~ as specified in TS 38.331 [12]. For CFRA triggered by LTM cell switch, an SBFD aware UE can be explicitly indicated by (enhanced) LTM Cell Switch Command MAC CE whether to use either the first PRACH occasions or the second PRACH occasions as specified in TS 38.213 [38] |
| Qualcomm | | Option B | | Option B with Ericsson’s update is much simpler. | | |
| Apple | | Option B | | Some modification can be considered to add (Enhanced) to cover both Rel-18 and Rel-19 LTM Command MAC CE.  the (Enhanced) LTM Cell Switch Command MAC CE | | |
| IDC | | Option B | | The option B seems much simpler. We prefer simple description in stage-2 spec. | | |
|  | |  | |  | | |

Summary:

## CBRA RO selection for initial PRACH transmissions

Reason to change: RO type selection/indication via the PDCCH order has been provided by RAN1 in the stage-2 spec, so CBRA RO type selection from RAN2’s perspective should be provided accordingly. There are two candidate TPs for selection by companies.

* **Option A from R2-2506823 and R2-2507002**

|  |
| --- |
| For initial Random Access transmission in CBRA, either the first PRACH occasions or the second PRACH occasions can be indicated by network as specified in TS38.321 [6]. When no RO type indication but an RSRP threshold for the selection of the initial RO type is provided by the network, the UE shall select the PRACH occasions type based on the RSRP threshold as specified in TS 38.321 [6]. In the absence of both network RO type indication and RSRP threshold configuration, the PRACH occasions type selection is up to UE implementation. |

* **Option B from** **R2-2507364**

|  |
| --- |
| For CBRA, the network can configure a cell specific indication in SI whether to use eitherthe first PRACH occasions or the second PRACH occasions. If there is no cell specific indication, the UE selects the PRACH occasions based on an SSB RSRP threshold provided in SI. |

Option A's TP seems to address all possible cases with greater accuracy according to the rapporteur's assessment. Companies are invited to review these two TPs and provide the preference and comments as below:

**Q 2. Which option do you prefer?**

* Option A from R2-2506823 and R2-2507002
* Option B from R2-2507364

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Company** | | **Option A/B** | | **Suggested descriptions if any** | | |
| Ericsson | | Option B | | It is sufficient to give a high level description without too much details. | | |
| Xiaomi | | Option A | | No strong view but slightly prefer Option A for precise description. | | |
| ZTE | | Option B with update | | For CBRA, the network can configure a cell specific indication in SI whether to use eitherthe first PRACH occasions or the second PRACH occasions. If there is no cell specific indication, the UE selects the PRACH occasions based on an SSB RSRP threshold provided in SI. If none of cell specification indication nor SSB RSRP threshold is provided, UE selects the PRACH occasions based on its implementation. |
| Qualcomm | | Option B | | Option B with ZTE’s update is much simpler. | | |
| Apple | | Option B with ZTE’s update seems fine | |  | | |
| IDC | | Option B | | The option B seems much simpler. We prefer simple description in stage-2 spec. | | |
|  | |  | |  | | |

Summary:

## SBFD transmission/reception configuration 2 and SBFD RACH configuration option

* Reason to change #1: The current texts could be misunderstood as both SBFD symbols and non-SBFD symbols are used for each one of the multiple transmission/reception occasions, which is not correct.

Suggested TP from R2-2507002 can be found as below:

|  |
| --- |
| 23.1 General  \*\*\*\*\*\*\*skip the unchanged\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  A UE can be configured to transmit or receive only in non-SBFD symbols, only in SBFD symbols, or in both SBFD symbols and non-SBFD symbols across multiple transmission or reception occasions. |

* Reason to change #2: It is suggested to add "SBFD" before RACH configuration option to clarify that the said RACH configuration options are specific for SBFD operations, as there are RACH configuration options for other purposes/functions.

Suggested TP from R2-2507002 can be found as below:

|  |
| --- |
| Two RACH configuration options are specified for SBFD RA operation in TS 38.331 [12]. A cell can configure only one SBFD RACH configuration option. This can be either: 1) A single RACH configuration that supports both non-SBFD RA operation and SBFD RA operation, or 2) A dual RACH configuration where a RACH configuration is used for non-SBFD RA operation and an additional RACH configuration is designated for SBFD RA operation, as specified in TS 38.331 [12]. An SBFD aware UE that supports the SBFD RACH configuration option configured in the cell applies the corresponding RACH configuration. Otherwise, the SBFD aware UE applies the non-SBFD RA operation. |

**Q 3. Do you agree with above TPs? Please provide comments on the TP if any.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Company** | | **Yes/No** | | **Suggested descriptions if any** | | |
| Ericsson | |  | | No strong view | | |
| Xiaomi | | Yes | |  | | |
| ZTE | | Comments for the 1st TP | | For option 2 RO, there is a RRC parameter *sbfd-RACH-DualConfig-ValidRO-AcrossSymbolTypes-r19*:  ***sbfd-RACH-DualConfig-ValidRO-AcrossSymbolTypes***  Indicates whether a configured RO starting from SBFD symbol and ending in non-SBFD symbol either in the same slot or across different slots is valid for RACH configuration Option 2.  So at least for UE’s preamble transmission, the original wording is correct. So it may need to separate the description of preamble transmission and data transmission/reception in stage-2.  Simple way is to adopt the following:  Except for second PRACH occasions, a UE can be configured to transmit or receive only in non-SBFD symbols, only in SBFD symbols, or in both SBFD symbols and non-SBFD symbols across multiple transmission or reception occasions. |
| Qualcomm | | No for the 1st TP. Yes for the 2nd TP. | | The original wording of 1st TP is from RAN1 agreed TP (R2-2505030/ R1-2505081. We didn’t see any issues from RAN1’s TP. Thus, not support to change the 1st TP. | | |
| Apple | | Yes for 2nd TP. | |  | | |
| IDC | |  | | No strong view. Follow majority view and conclusion. | | |
|  | |  | |  | | |

Summary:

# Conclusion

In this contribution, we have the following proposal:

**Proposal 1: ...**

# Reference

1. R2-2506823 Introduction of Rel-19 Evolution of NR duplex operation (SBFD) CATT CR Rel-19 38.300 18.6.0 1008 2 F NR\_duplex\_evo-Core R2-2506604
2. R2-2507002 Discussion on issues for Stage-2 spec Huawei, HiSilicon discussion Rel-19 NR\_duplex\_evo-Core
3. R2-2507364 Remaining issue for Stage 2 spec Ericsson discussion Rel-19 NR\_duplex\_evo-Core