**3GPP TSG RAN WG1 Meeting #104bis-e R1-200xxxx**

**April 12th – April 20th, 2020**

**Agenda item: 7.2.2**

**Source: Moderator (Qualcomm Incorporated)**

**Title: Preparation phase email discussion for NR-U**

**Document for: Discussion and Decision**

# Introduction

The paper summarizes the preparation phase email discussion for contribution submitted to 7.2.2 on NR-U CR.

# Issues identified

## 2.1 Initial access signals and channels

For initial access signals and channels [1], the following issues have been identified, but it can be captured in IA discussion

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| --- | --- | --- |
| Issue # | Issue summary | # Contributions |
| ~~Init-1~~ | ~~Invalid SSB by SSB positions in burst for FBE~~ | ~~1~~ |
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FL recommendations

* Captured in IA as well. Discuss it there.

## 2.2 DL signals and channels

For DL signals and channels [2], the following issues have been identified

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| Issue # | Issue summary | # Contributions |
| DL-A1 | Maximum size of switchTriggerToAddModList-r16 and switchTriggerToReleaseList-r16 | 1 |
| DL-B1 | Action when an inapplicable value for HARQ-ACK feedback timing is provided in the DCI scheduling the PDSCH (K1=-1) | 1 |
| DL-B2 | Measurement during SCell activation | 4 |
| DL-B3 | CSI measurement across DL bursts | 1 |
| DL-C1 | Processing time for at least l\_d=5 | 2 |
| DL-D1 | Missing description of PDCCH features for shared spectrum in TS38.300 | 1 |
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FL recommendations:

## 2.3 UL signals and channels

For UL signals and channels [3], the following issues have been identified

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| **Issue #** | **Issue summary** | **# Contribution(s)** |
| UL-01 | Clarification on DCI size matching rules for DCI 0\_0 | 1 |
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FL recommendations (see further details in [3]): Already discussed multiple times and no consensus to change.

## 2.4 Channel access

For channel access [4], the following issues have been identified

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| Issue # | Issue summary | # Contributions |
| CA-1 | Clarifying the conditions for indicating Type 2 LBT for wideband scheduled PUSCH | 1 |
| CA-2 | China-specific aspects related to CCA time and gaps | 1 |
| CA-3 | Correction to SR reporting due to consistent LBT failure recovery | 1 |
| CA-4 | Clarifications on applicability of Type 2A DL Channel Access | 2 |
| CA-5 | UL contention window adjustment procedures | 1 |
| CA-6 | DL COT Detection in Semi-static Channel Access | 1 |
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FL recommendations:

## 2.5 Initial access procedures

For initial access procedures [5], the following issues have been identified

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| Issue # | Issue summary | # Contributions |
| IA 2-1 | PDSCH rate matching over SSB partially overlapping with idle | 1 |
| IA 3-1 | Terminology clarification for “operation” | 1 |
| IA 3-2 | MsgA PUSCH in FBE idle | 1 |

## 2.6 HARQ enhancements

For HARQ enhancements [6], the following issues have been identified

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| Issue # | Issue summary | # Contributions |
| Type3CB#1 | Type-3 HARQ-ACK codebook size ambiguity | 2 |
| Type3CB#2 | Correction on multiplexing timeline definition for Type-3 HARQ-ACK codebook | 4 |
| Type2CB#3 | Assumption on NFI value for a PDSCH group not received at UE side when the UL DAI indicates a value not equal to 4 for that group | 1 |
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FL recommendations:

* Type2CB#3 discussed before

## 2.7 CG enhancements

For CG enhancements [7], the following issues have been identified

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| Issue # | Issue summary | # Contributions |
| CG-1 | Freq hopping for NR-U CG | 1 |
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FL recommendations:

## 2.8 Wideband operation

On wideband operation enhancements, no issue identified.

# Preparation phase discussion

We have identified many issues and we have limited email thread to discuss them. In the next tables, please provide your view on issues with the following notations

* “Y” if you believe the issue is important and needs email discussion
* “E” if you believe the issue is agreeable but editorial in nature. Potentially we can take all the editorial issues out for a separate fast track email approval.
* Empty if you believe the issue is not necessary to fix or low priority

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| Company | DL-A1 | DL-B1 | DL-B2 | DL-B3 | DL-C1 | DL-D1 | UL-01 |
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| Company | CA-1 | CA-2 | CA-3 | CA-4 | CA-5 | CA-6 |
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| Company | IA 2-1 | IA 2-2 | IA 2-3 | Type3CB#1 | Type3CB#2 | Type2CB#3 | CG-1 |
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Please provide additional company views below

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| **Company** | **View** |
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# Reference

[1]. R1-20xxxxx, FL summary for initial access signals and channels, Qualcomm

[2]. R1-20xxxxx, FL summary for DL signals and channels, Lenovo

[3]. R1-20xxxxx, FL summary for UL signals and channels, Ericsson

[4]. R1-20xxxxx, FL summary for channel access procedures for NR-U, Nokia

[5]. R1-20xxxxx, FL summary for initial access procedure enhancements, Charter Communications

[6]. R1-20xxxxx, FL summary on NR-U HARQ maintenance, Huawei

[7]. R1-20xxxxx, FL summary for on NRU configured grant enhancement, Vivo

[8]. Reserved