3GPP TSG-RAN WG1 Meeting #101-e R1-20xxxxx

e-Meeting, 25th May – 5th June, 2020

Agenda Item: 7.2.2.2.2

Source: Moderator (Nokia)

Title: [101-e-NR-unlic-NRU-InitAccessProc-07] Email discussion/approval

Document for: Discussion, Decision

# 1 Introduction

This document captures discussion related to the following e-mail discussion which has been kicked-off as follows:

[101-e-NR-unlic-NRU-InitAccessProc-07] Email approval of reply LS to R1-2003274 by 5/28, to be managed under 7.2.2.2.2 – Michel (Nokia)

# 2 Discussion

RAN4 has sent a LS to RAN1 on the topic of NR-U SSB monitoring capabilities [1].

In order to formulate a reply LS to RAN4, the moderator would like to receive company feedback on the following questions:

**Question 1:** Provide feedback whether monitoring within a given discovery burst transmission window all candidate SS/PBCH block indexes corresponding to the same SS/PBCH block index is mandatory for UEs.

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| **Company** | **View/Position** |
| Nokia, NSB | In our view, it is mandatory for the UEs to monitor all SS/PBCH blocks with candidate indexes corresponding to the same SS/PBCH block index within a given discovery burst transmission window; it can be up to UE’s implementation to stop SS/PBCH block monitoring for a given SS/PBCH block index in the case the UE has already detected a SS/PBCH block with the same index for a given discovery burst transmission window.  In our understanding, any deviation to this requirement will lead to degraded performances for both RRM and RLM/BFD/CBD measurements.  See also the additional remarks provided within the draft Reply LS. |
| Samsung | As a UE capability, it is mandatory for the UEs to monitor all SS/PBCH blocks with candidate indexes corresponding to the same SS/PBCH block index within a given discovery burst transmission window. It can be up to UE’s implementation to stop monitoring if an SS/PBCH block is detected among the SS/PBCH blocks with candidate indexes corresponding to the same SS/PBCH block index within a given discovery burst transmission window. |
| LG Electronics | Agree with Nokia and Samsung. UE mandatorily monitors all candidate SS/PBCH block indexes corresponding to the same SS/PBCH block index in the DRS transmission window. After a candidate SS/PBCH block index corresponding to a SS/PBCH block index in a given DRS transmission window is detected, UE may stop receiving a candidate SS/PBCH block index corresponding to the SS/PBCH block index in the DRS transmission window. |
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**Question 2:** Provide feedback on the values of N1 and N2, considering the impact on the network performance if UEs are not monitoring all candidate positions.

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| **Company** | **View/Position** |
| Nokia, NSB | N1 and N2 are not applicable in our view (see Q1) |
| Samsung | N1 and N2 are not applicable, since the UE is monitoring all SS/PBCH blocks with candidate indexes corresponding to the same SS/PBCH block index within a given discovery burst transmission window. |
| LG Electronics | Agree with Nokia and Samsung. |
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**Question 3:** Provide feedback on whether differentiation is needed for UEs operating in FBE and LBE modes

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| **Company** | **View/Position** |
| Nokia, NSB | As N1 and N2 are not applicable in our view (see Q1), we see no need for such differentiation |
| Samsung | There is no need to differentiate UEs operating in FBE and LBE modes, and can be up to gNB’s configuration on the discovery burst transmission window to implicitly differentiate FEB and LBE modes. |
| LG Electronics | In our contribution (R1-2004009), we pointed out one potential difference between FBE and LBE that, for FBE case, if location of a candidate SS/PBCH block is (partially) overlapped with idle region of a fixed frame period, UE shall not perform RRM/RLM/BFD/CBD operation for the SS/PBCH block. This comes from the conclusion that we made in previous meeting. However, if the intention of RAN4 on Q3 was to ask N1/N2 capability for FBE and LBE, the answer to Q1 and Q2 shoud be the same both for FBE and LBE. |
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**Question 4:** Provide feedback for the case when Q is not provided to the UE

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| **Company** | **View/Position** |
| Nokia, NSB | For both RRM and RLM/BFD/CBD measurements, Q is always provided to the UE (see [2]) |
| Samsung | For RLM/BFD/CBD, Q is always provided to the UE. More details of the indication of Q can be found in R1-2003044 [2]. |
| LG Electronics | Share the view with Nokia and Samsung. |
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# References

1. R1-2003274, “LS on NR-U SSB monitoring capabilities” RAN4, RAN1#101-e, May 2020.
2. R1-2003044, “LS on Signalling of Q Parameter for NR-U”, Charter Communications, RAN1#100bis-e, April 2020