3GPP TSG-RAN WG3 Meeting #109-e R3-205514

E-meeting, 17 – 27 August, 2020

**Agenda item: 10.2.1.7**

**Source: Nokia (moderator)**

**Title: CB: # 1007\_SONMDT\_RACH - Summary of email discussion**

**Document for: Approval**

# 1 Introduction

This paper provides summary of discussions at RAN#109-e on:

**CB: # 1007\_SONMDT\_RACH**

**- Topics to discuss:**

 **- RACH conflict detection**

 **- RACH conflict resolution**

 **- Xn, F1 impacts**

 **- Any other topics based on contributions submitted**

**- LS to RAN2?**

**- If there are agreements, can proceed to CRs and LS**

(Nok - moderator)

Companies are kindly requested to provide input to the first stage of this discussion by EOB of Thursday, August 20, so we can take it into account during the online session on Friday.

# 2 For the Chairman’s Notes

[To be completed]

# 3 Discussion

## 3.1 Issue 1 - PRACH Coordination in Spectrum Shared between LTE and NR

The issue is raised in [1]. Company input is requested on: **The PRACH Coordination between LTE cell in upgraded site and newly-built NR site should be considered in Rel-17.** The proposal targets XnAP enhancement as follows: Addition of (E-UTRA) *PRACH Configuration* IE to XnAP *Neighbour Information E-UTRA* IE [2].

|  |  |
| --- | --- |
| Company | Comment |
| Huawei | OK. |
|  |  |
|  |  |

## 3.2 Issue 2 – Max Number of neighbour cells’ PRACH configuration from CU to DU

|  |  |
| --- | --- |
| Company | Comment |
| Huawei | 1024.As we explained in our discussion paper, there is no message oversize issue with 1024 neighbour cells’ PRACH configuration transferring from CU to DU in F1 setup response and gNB-CU configuration update message.As the size of PRACH configuration is much small than the served cell info.And we support 512 of cells on F1AP in F1 SETUP, which means there are 512 served cell info IEs. |

## 3.2 Issue 2 - PRACH configuration conflict detection - transmission of NR PRACH configuration info for neighbour cells

Which enhancements are needed in Rel-17 in terms of transmission of NR PRACH configuration info for neighbour cells? Is a signalling procedure from DU to CU needed to trigger/filter PRACH configuration delivery?

(Please focus on NG-RAN including F1. X2 transfer of NR PRACH configuration information is covered under issue 5).

|  |  |
| --- | --- |
| Company | Comment |
| Huawei | No, as we explained in our discussion paper, there is no message oversize issue with 1024 neighbour cells’ PRACH configuration transferring from CU to DU in F1 setup response and gNB-CU configuration update message.So, we don’t see the need to have an additional procedure from DU to CU for further PRACH configuration.This will introduce a lot of unnecessary signaling. |
|  |  |
|  |  |

## 3.3 Issue 3 - PRACH configuration conflict detection - retrieval of UE RACH Reports

Is a signalling procedure from DU to CU needed to request the CU to fetch UE RACH Reports from the UE (or from several UEs)?

|  |  |
| --- | --- |
| Company | Comment |
| Huawei | Yes. We see some benefits to have such procedure, as there are many cases that RACH procedure may occur between the DU and the UE, but the CU are not aware of this. Therefore, without those RACH reports, the RACH channel load estimation, like access probability and access delay may be not accurate, and hence may impact on the optimisation step negatively. |
|  |  |
|  |  |

## 3.4 Issue 4 - PRACH configuration conflict resolution

Can a PRACH configuration conflict be solved locally in the DU that detects the conflict, or is any signalling needed in conflict resolution phase?

|  |  |
| --- | --- |
| Company | Comment |
| Huawei | Yes, with a max number of 1024 neighbour cells’ PRACH configurations, we think that the DU has enough information to solve the PRACH configuration conflict issue locally. |
|  |  |
|  |  |

## 3.5 Issue 5 - inter-en-gNB RACH coordination

RAN3#108-e agreed to postpone inter-en-gNB RACH coordination to Rel-17:

* + X2AP signalling of PRACH configurations of neighbour cells is postponed to Rel-17

Proposals can be found in [7], [8]. Please provide your company's view.

|  |  |
| --- | --- |
| Company | Comment |
| Huawei | Good to have. |
|  |  |
|  |  |

## 3.6 Issue 6 - RACH report for SgNBs

The issue is raised in [11], and an LS proposed sent to RAN2 [12]. Please provide your company's view.

|  |  |
| --- | --- |
| Company | Comment |
| Huawei | No strong view. |
|  |  |
|  |  |

# 4 Conclusion, Recommendations [if needed]

If needed

# 5 References

 [1] R3-204633 Discussion on the PRACH Coordination in Spectrum Shared between LTE and NR, China Telecom, ZTE, Huawei discussion

[2] R3-204634 (TP for [NR\_SON\_MDT] BL CR for TS 38.423) Addition of LTE PRACH Coordination in XnAP China Telecommunications other 38.423

[3] R3-204758 PRACH configuration conflict detection Huawei discussion

[4] R3-204759 PRACH configuration conflict detection Huawei CR 38.473

[5] R3-205011 TP for RACH report availability indication on F1 interface Ericsson discussion

[6] R3-205012 Solution for RACH Conflict Detection and Resolution at gNB-DU Ericsson discussion

[7] R3-205013 PRACH Configuration of neighbouring cells for EN DC scenario Ericsson CR 36.423

[8] R3-205111 Discussion on Rel-16 leftover issues for PRACH coordination CATT discussion

[9] R3-205112 CR on PRACH coordination for F1AP CATT CR 38.473

[10] R3-205113 CR on PRACH coordination for X2AP CATT CR 36.423

[11] R3-205114 Discussion on RACH report for SgNB CATT discussion

[12] R3-205115 LS to RAN2 on RACH report for SgNB CATT LS out

[13] R3-205204 2-step RACH Configuration Exchange Nokia, Nokia Shanghai Bell discussion

[14] R3-205205 RACH Conflict Resolution Nokia, Nokia Shanghai Bell discussion

[15] R3-205206 Enhancement of RACH Conflict Resolution Nokia, Nokia Shanghai Bell CR 38.423

[16] R3-205207 Enhancement of RACH Conflict Resolution Nokia, Nokia Shanghai Bell CR 38.473

[17] R3-205323 Left issue for Rel-16 RACH Optimization ZTE, China Telecom, China Unicom discussion