3GPP RAN WG2 Meeting #131 R2-250XXXX

Bengaluru, India, Aug 25th – 29th, 2025

Agenda Item: 8.9.2

Source: Nokia

Title: Remaining Open issues for Idle mode IoT-NTN Operation

Document for: Discussion, Decision

# Introduction

The following document includes a list of open issues according to the following email discussion:

* [Post130][308][R19 IoT NTN] MAC CR (Nokia)

 Scope: discuss the running TS 36.304 CR

 Intended outcome: Endorsed CR and list of remaining open issues

**Deadline:** Long

Companies are invited to provide feedback on open issue list by: TBD

# Remaining open issues for specification 36.304

**Open issue 1: Acceptable cell operation for NB-IoT (For PWS reception only)**

**Issue description: PWS Reception in acceptable cell for NB-IoT.**

In RAN2-130 meetings many companies interested in introducing support for PWS reception for NB-IoT out-side the cells of registered PLMN. The motivation to have this support is to enable reception of emergency messages at NB-IoT devices from any network broadcasting the PWS not limited to its registered network.

There are two options to introduce the support in the specification.

1. Introduce the support for ‘acceptable cell’ concept for NB-IOT in Rel-19. However if the acceptable cell type is supported it also impacts the cell selection process for the NB-IoT devices. For this option further proposals /questions provided in open issue 1A.
2. Alternative option is to allow the UE only to monitor for PWS related system information outside the suitable cells cell without any other procedures related to camping and monitoring other SIBs.

Companies are invited to provide their views on introducing PWS reception for NB-IoT in acceptable cell. Indicate the prefered options from the above. If you have alternative solutions ,please indicate the same.

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| **Company** | **Preferred Option** | **Comments** |
| Mediatek | Option 1 | If we want to support this feature, we should use better model (i.e. reuse accetable cell concept). Option 2 is a little unclear to us on how to specify the UE behavior. Selection for an “acceptable” cell for PWS reception is anyway required. |
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**Open Issue 1A:**

Following are the specification changes related to acceptable cell in TS36.304.

1. Acceptable cell definition :

An "acceptable cell" is a cell on which the UE may camp to obtain limited service (originate emergency calls and receive ETWS and CMAS notifications), and it is not applicable to RRC\_INACTIVE state.

**Proposal 1:** As emergency calls not supported in Rel-19 we also change the definition for NB-IoT in this release to exclude the emergency call in the definition.

1. Section 5.1.2 have modified UE behaviour related to acceptable cell for emergency call handling.

**Proposal 2:** These changes should not be applicable for NB-IoT.

1. Section 5.2.7 includes UE behavior on cell selection on return to RRC-IDLE considering acceptable cell for camping.

**Question 1**: Companies to comment on Whether this cell selection changes needed for NB-IoT PWS Reception.

1. Section 5.2.8 Indicates any cell selection state support for camping to acceptable cell

**Question 2:** Companies to comment whether the NB-IoT need to support this functionality for PWS reception.

Companies are invited to provide their views on the above proposals /questions related to specification impact if acceptable cell category is considered for NB-IoT for PWS.

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| **Company** | **P1/P2** | **Q1/Q2** |
| Medaitek | P1: No need to change the definition of acceptable cell. In current SPEC, it is already clear that NB-IoT UE does NOT support emergency call. Even if accetable cell includes the definition of emergency call, it should be clear that NB-IoT UE does not trigger emergency call. P2: Unclear. Which changes we are talking about ? Which part of 5.1.2 is impacted ? Any TP ?  | Q1: YesQ2: Yes |
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**Open issue 2: Working Assumption on SF mode operation indication for neighbour cells**

RAN2-130 has made the following working assumption.

Working Assumption:

1. In the neighbour cell list we introduce an indication whether the cell operates in S&F mode or not (FFS if we also include the transition time). This WA can only be confirmed if we converge on the corresponding UE behaviour.

The main FFS on this working assumption is related to whether UE behaviour related to cell reselection to be impacted with introduction of this parameter OR handling of this parameter should be left to UE implementation. Also for what cases /scenarios this information will be beneficial for UE ( For example whether the decision to select neighbour cell operating in SF mode is based on application layer trigger or status of pending paging reception for MO transmission).

Companies are invited to provide their views on introducing PWS reception for NB-IoT in acceptable cell. Indicate the prefered options from the above. If you have alternative solutions ,please indicate the same.

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| **Company** | **Scenario for usage of SF Mode of neighbour-cell** | **View on UE behaviour impact based on SF mode parameter of neighbour cell ( Impact to cell-reselection priority ..etc)** |
| Mediatek |  | If this new parameters are introduced, it should be up to UE implementation on how to handle the parameters. However, no significant benefit is foreseen by this new indication. We suggest not to do this in R19. |
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Summary

# Other identified open issues

Companies are invited to describe any other identified open issues not currently included within this document

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| **Company** | **Other identified open issues? (please describe)** |
| Mediatek | If the acceptable cell is supported for NB-IoT, the Figure 5.2.2-2 should be impacted.  |
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# Conclusions