**3GPP TSG RAN WG2 Meeting #131bis R2-250xxxx  
Prague, Czech Republic, 13 – 17 October 2025**

**Agenda item: 8.4.1**

**Source: Apple (Rapporteur)**

**Title: Open issues on Rel-19 LPWUS 38.321 CR**

**WID/SID: NR\_LPWUS-Core – Release 19**

**Document for: Discussion and Decision**

# 1 Introduction

As part of email discussion [Post131][213][LPWUS] CR for TS 38.321 (Apple)”, this document is to **collect open issues on Rel-19 LPWUS 38.321 CR (R2-2506613)**.

Companies are invited to provide input no later than **Friday September 19 18:00 UTC**.

## Contact information:

|  |  |  |
| --- | --- | --- |
| Company | Delegate Name | Email |
| Apple | Fangli XU | fangli\_xu@apple.com |
| Ericsson | Martin van der Zee | martin.van.der.zee@ericsson.com |
| OPPO | Haocheng Wang | wanghaocheng1@oppo.com |
| ZTE | QI Tao | qi.tao3@zte.com.cn |
| Vivo | Chenli | Chenli5g@vivo.com |

# 2 Discussion

Rapporteur has not identified open issues related to Rel-19 LPWUS 38.321 CR. Companies are invited to describe any identified open issues in the table below.

|  |  |  |
| --- | --- | --- |
| **Company+issue #**  **(e.g. Apple 001)** | **Description of open issues and potential resolution** | **Rapporteur comment** |
| Eri-001 | RAN2 agreed:   * For Option 1-2, UE does not start the lpwus-PDCCH-MonitoringTimer in collision cases, i.e. when the UE is not able to monitor the LP-WUS occasion(s). Can discuss if critical issue identified with this mechanism.   For certain configurations, where the LP-WUS monitoring occasions are sparse, e.g. smaller equal to the C-DRX cycle length, the UE becomes “temporarily” unreachable when it misses 2 or 3 consecutive LP-WUS occasions.  The NW should be allowed to configure the number of consecutive LOs the UE is allowed to miss due to collisions before the UE needs to start the timer. |  |
| OPPO-001 | For a UE configured with both secondary DRX group and LP-WUS option 1-1 on PCell, there may be a case that primary DRX group is in short DRX cycle and secondary DRX group is in long DRX cycle. It is unclear whether UE monitors LP-WUS in this case. We need to discuss and clarify the UE behaviors. |  |
| ZTE-001 | For UE in RRC\_CONNECTED state, the condition for UE to monitor LP-WUS has been defined, but how NW knows that the UE is monitoring LP-WUS has not been specified, i.e., NW is not aware of whether UE monitors LP-WUS, and network behaviour is not defined.  This results in misalignment, especially in option 1-2, UE starts *lpwus-PDCCH-MonitoringTimer* and monitors PDCCH when the LP-WUS monitoring condition is met, and UE starts drx-onDurationTimer and monitors PDCCH as legacy when the LP-WUS monitoring condition is not met. Since gNB does not know whether the LP-WUS monitoring condition is met or not, whether to send PDCCH based on LP-WUS mechanism or legacy mechanism cannot be decided, which result in ambiguity and potentially network resource waste.  This issue should be discussed. |  |
| Vivo 001 | **UE behaviour when *lpwus-PDCCH-MonitoringTimer* is notrunning**  For Option 1-2, when *lpwus-PDCCH-MonitoringTimer* is notrunning and UE is not in Active Time, the UE should follow the legacy behaviour as in non-active time, i.e. cannot transmit SRS or report CSI. But this condition is missed in the current specification.  It should be updated as:  1> else:  2> in current symbol n, if a DRX group would not be in Active Time considering grants/assignments scheduled on Serving Cell(s) in this DRX group and DRX Command MAC CE/Long DRX Command MAC CE received and Scheduling Request sent until 4 ms prior to symbol n when evaluating all DRX Active Time conditions as specified in this clause; and  2> if *lpwus-PDCCH-MonitoringTimer* is not running (if configured); and[…]  3> not transmit periodic SRS and semi-persistent SRS defined in TS 38.214 [7] in this DRX group;  3> not report CSI on PUCCH and semi-persistent CSI configured on PUSCH in this DRX group. |  |
| Vivo 002 | **CSI report behaviour during *lpwus-PDCCH-MonitoringTimer* is running**  We have not extensively discussed the UE behaviour on CSI report during the PDCCH monitoring timer triggered by LP-WUS Option 1-2. It is better to discuss whether it would be same as the CSI report behaviour during active time within the *drx-onDurationTimer*, while the current specification means the behaviour is the same as in active time other than *drx-onDurationTimer*. |  |
| Vivo 003 | **Whether/How to capture option 1-1/1-2 description in MAC or stage-2 specification**  In the first version of MAC running CR, there was some description for “option 1-1” and “option 1-2”. And in the later version, it was removed based on companies’ comments.  In the current MAC specification, option 1-2 is differentiated by the condition “if *lpwus-PDCCH-MonitoringTimer* is configured”. But the present condition for parameter “*lpwus-PDCCH-MonitoringTimer*” is “this field is mandatory present for option 1-2”. This leads to mutually dependent circular conditions.  Besides, there are other configurations with the condition of option 1-1/option 1-2.  To resolve above problem and simplify the description in RRC, we request to discuss how to capture the description in MAC or stage-2 for “option 1-1” “option 1-2” or some similar description. |  |

# 3 Conclusion

In this contribution, we collect open issues of Rel-19 LPWUS 38.321 CR. Based on above discussion, following open issues are identified: