3GPP TSG-RAN WG3 Meeting #129 R3-255877

Bengaluru, India, 25 – 29 August 2025

**Agenda item: 18.2**

**Source: Nokia**

**Title: [TP for LP-WUS BL CR TS 38.423] Conclusions for LP-WUS open points**

**WID/SID: NR\_LPWUS**

**Document for: Discussion and Decision**

# 1 Introduction

At the last RANP#102 meeting, the work item of LP-WUS was agreed in [1] including the following objective:

* *To specify an LP-WUS design commonly applicable to both IDLE/INACTIVE and CONNECTED modes (RAN1, RAN4)*
* *For IDLE/INACTIVE modes*
  + *Specify procedure and configuration of LP-WUS indicating paging monitoring triggered by LP-WUS, including at least configuration, sub-grouping and entry/exit condition for LP-WUS monitoring (RAN2, RAN1, RAN3, RAN4)*
  + *Specify LP-SS with periodicity with Yms for LP-WUR, for synchronization and/or RRM for serving cell. (RAN1, RAN4)*
  + *Specify further RRM relaxation of UE MR for both serving and neighbor cell measurements, and UE serving cell RRM measurement offloaded from MR to LP-WUR, including the necessary conditions (RAN4, RAN2)*
* *For CONNECTED mode, specify procedures to allow UE MR PDCCH monitoring triggered by LP-WUS including activation and deactivation procedure of LP-WUS monitoring (RAN2, RAN1)*
* *Note: The target coverage of LP-WUS and LP-SS shall be the coverage of PUSCH for message3.*
* *Note: The optimization of LP-WUS signal design for idle/inactive mode is prioritized over the optimization for connected mode.*

The work item has progressed in previous RAN3 meetings reaching agreements and working assumptions while some points remain open. This paper reviews the current agreements and proposes conclusions for the remaining open points.

# 4 References

1. RP-240801, *Low Power Wake up signal and receiver for NR, Vivo, NTT Docomo, Ericsson, Mediatek, Samsung, Sony*
2. R3-255221, *[TP for BL CR LP-WUS TS 38.300] Resolution of Paging Loss*

# 5 TP for BL CR LP-WUS TS 38.423

<<<<<<<<<<<<<<<<<<<< First Change >>>>>>>>>>>>>>>>>>>>

8.2.5.2 Successful operation

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**Figure 8.2.5.2-1: RAN Paging: successful operation**

The RAN Paging procedure is triggered by the NG-RAN node1 by sending the RAN PAGING message to the NG-RAN node2,in which the necessary information e.g. UE RAN Paging Identity should be provided.

If the *Paging Priority* IE is included in the RAN PAGING message, the NG-RAN node2 may use it to prioritize paging.

If the *Assistance Data for RAN Paging* IE is included in the RAN PAGING message, the NG-RAN node2 may use it according to TS 38.300 [9].

If the *UE Radio Capability for Paging* IE is included in the RAN PAGING message, the NG-RAN node2 may use it to apply specific paging schemes.

If the *Extended UE Identity Index Value* IE is included in the RAN PAGING message, the NG-RAN node2 may use it according to TS 36.304 [34], and for eDRX or the UE\_ID based subgrouping according to TS 38.304 [33]. When available, NG-RAN node1 may include the *Extended UE Identity Index Value* IE in the RAN PAGING message towards the NG-RAN node2.

When available, the NG-RAN node1 shall include the *E-UTRA Paging eDRX Information* IE in the RAN PAGING message towards the NG-RAN node2. If the *E-UTRA Paging eDRX Information* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 36.304 [34].

When available, the NG-RAN node1 shall include the *UE Specific DRX* IE in the RAN PAGING message towards the NG-RAN node2. If the *UE Specific DRX* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 36.304 [34].

When available, the NG-RAN node1 shall include the *NR Paging eDRX Information* IE in the RAN PAGING message towards the NG-RAN node2. If the *NR Paging eDRX Information* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 38.304 [33].

If the *NR* *Paging eDRX Information for RRC INACTIVE* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 38.304 [33].

When available, the NG-RAN node1 shall include the *Paging Cause* IE in the RAN PAGING message towards the NG-RAN node2. If the *Paging Cause* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 38.331 [10].

When available, the NG-RAN node1 shall include the *Hashed UE Identity Index Value* IE in the RAN PAGING message towards the NG-RAN node2. If the *Hashed UE Identity Index Value* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 38.304 [33] or TS 36.304 [34].

If the *PEIPS Assistance Information* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 38.300 [9].

If the *MT-SDT Information* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 38.300 [9].

If the *NR* *Paging Long eDRX Information for RRC INACTIVE* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 38.304 [33].

If the *LP-WUSPS Assistance Information* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 38.300 [9].

If the *Further Extended UE Identity Index Value* IE is included in the RAN PAGING message, the NG-RAN node2 shall, if supported, use it according to TS 38.304 [33].

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9.2.3.x LP-WUSPS Assistance Information

This IE provides the information related to LP-WUS paging subgrouping for a particular UE, as specified in TS 38.304 [33].

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
| LP-WUS CN Subgroup ID | M |  | INTEGER (0..30, …) |  |

<<<<<<<<<<<<<<<<<<<< Unmodified Text Omitted >>>>>>>>>>>>>>>>>>>>

LowerLayerPresenceStatusChange ::= ENUMERATED {

release-lower-layers,

re-establish-lower-layers,

...,

suspend-lower-layers,

resume-lower-layers

}

LPWUSPSassistanceInformation ::= SEQUENCE {

lPWUScNsubgroupID LPWUSCNsubgroupID,

iE-Extensions ProtocolExtensionContainer { { LPWUSPSassistanceInformation-ExtIEs} } OPTIONAL,

...

}

LPWUSPSassistanceInformation-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

LPWUSCNsubgroupID ::= INTEGER (0..30, ...)

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