LPWUS Comments file

Template:

# Xnnn

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Xnnn |  |  |  |  |  |  | vnnn | ToDo |

**[Description]**:

**[Proposed Change]**:

**[Comments]**:

Instructions:

1. Copy the template RIL comments fields above (including the Heading Xnnn)
2. Paste the RIL comments fields at its position while **respecting the order of the RILs in the Review file (i.e. keep the order of the spec).**
3. Fill in the fields, see R19 ASN.1 Guideline.
4. Companies may comment whether they agree or disagree.
5. Can copy spec text and use Word “Track changes”, etc.
6. Do not delete text added by other companies.

# E007

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E006 | LPWUS | 2 | Move *lpwus-Config-r19* in *SpCellConfig* |  | Ericsson (Martin) |  | V002 | ToDo |

**[Description]**: LP-WUS is supported on PCell and/or PSCell and therefore *lpwus-Config-r19* should be put in *SpCellConfig*.

**[Proposed Change]**:

PhysicalCellGroupConfig ::= SEQUENCE {

…

[[

dcp-Config-r16 SetupRelease { DCP-Config-r16 } OPTIONAL, -- Need M

…

]] }

…

CellGroupConfig ::= SEQUENCE {

…

spCellConfig SpCellConfig OPTIONAL, -- Need M

…

}

-- Serving cell specific MAC and PHY parameters for a SpCell:

SpCellConfig ::= SEQUENCE {

…

]],

[[

lpwus-Config-r19 SetupRelease { LPWUS-Config-r19 } OPTIONAL -- Need M

]]

}

**[Comments]**: *dcp-Config-r16* should also have been put there.

# E008

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E007 | LPWUS | 1 | Restrictions to configure *s-SearchThresholdP5* and *P6*. |  | Ericsson (Martin) |  | V002 | ToDo |

**[Description]**: In case the NW does not configure Rel-19 RRM relaxation with LP-WUS, then the NW should be allowed to configure MR serving cell offloading in the complete LP-WUS coverage area. Currently it says: The network configures both *s-SearchThresholdP5* and *s-SearchThresholdP6* to be larger than or equal to *s-IntraSearchP* and *s-NonIntraSearchP*. See [R2-2505857](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_131/Docs//R2-2505857.zip) for more details.

**[Proposed Change]**:

|  |
| --- |
| ***s-SearchThresholdP, s-SearchThresholdP2, s-SearchThresholdP3, s-SearchThresholdP4, s-SearchThresholdP5, s-SearchThresholdP6***  Parameters "SSearchThresholdP", "SSearchThresholdP2", "SSearchThresholdP3", "SSearchThresholdP4", "SSearchThresholdP5", and "SSearchThresholdP6" in TS 38.304 [20]. The network configures *s-SearchThresholdP* and *s-SearchThresholdP2* to be less than or equal to *s-IntraSearchP* and *s-NonIntraSearchP*. The network configures *s-SearchThresholdP5* and *s-SearchThresholdP6* to be larger than or equal to *s-SearchThresholdP3* and *s-SearchThresholdP4*, respectively, if there is such configuration(s). |

**[Comments]**:

# E009

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E008 | LPWUS | 1 | Empty UAI message for LP-WUS time offset (RRC-5, MAX-X3) |  | Ericsson (Martin) |  | V002 | ToDo |

**[Description]**: The legacy rules should apply for the preferred time offset signalled via UAI. This means that when *timeOffset-r19* is absent in *LPWUS-OffsetPreference-r19*, aka the UE sends an “empty” UAI message, that the UE does not have a preference for the LP-WUS time offset. PS: when the UE does not include *LPWUS-OffsetPreference-r19* this means that the previous signalled preferred LP-WUS time offset remains valid:

UEAssistanceInformation-v19xx-IEs ::= SEQUENCE {

lpwus-OffsetPreference-r19 LPWUS-OffsetPreference-r19 OPTIONAL,

nonCriticalExtension SEQUENCE {} OPTIONAL

}

LPWUS-OffsetPreference-r19 ::= SEQUENCE {

timeOffset-r19 ENUMERATED {ms5, ms13, ms37} OPTIONAL

}

**[Proposed Change]**: The brackets can be removed, i.e. when the UE does not have a preference for the LP-WUS time offset, then that is also considered a preference, and this preference can be different from an actual preferred LP-WUS time offset previously:

2> if the UE has a preference on time offset for LP-WUS monitoring of the cell group and the UE did not transmit a *UEAssistanceInformation* message with *lpwus-OffsetPreference* for the cell group since it was configured to provide its preference on time offset for LP-WUS monitoring of the cell group for power saving; or

**[Comments]**:

# H050

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H050 | LPWUS | 1 | UAI for disabling LP-WUS | R2-25xxxxx | Kuang Yiru (Huawei) |  | V003 | ToDo |

**[Description]**: The NW only knows the MR measurement results based on existing RRC measurement report. Sometimes even when the MR measurement result is good, the LR can be bad due to the weaker tolerance for adjacent-channel interference. To avoid the LP-WUS missing and data loss in this case, it is beneficial to assist network for proper configuration since the UE is aware of the situation of LR. The UE can inform the network to stop using LP-WUS, or indicate whether the LP-WUS can be used again. It was discussed and postponed in the last RAN2 meeting.

**[Proposed Change]**: UE can send UAI to the network indicating to disable the LP-WUS functionality or whether the LP-WUS can be enabled again. The field of “preference on disabling LP-WUS” is added in UE assistance information message, e.g., use BOOLEAN. If the UE has a preference for disabling LP-WUS, set the field to *true*; otherwise (UE does not have a preference for disabling LP-WUS anymore), set the field to *false*.

**[Comments]:**

# H051

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H051 | LPWUS | 1 | Need code for “lpss-OverlaidSeqRoot-r19” parameter | R2-25xxxxx | Kuang Yiru (Huawei) |  | V003 | ToDo |

**[Description]**: Based on the description for “OOK4-Only” conditional presence, the parameter “lpss-OverlaidSeqRoot-r19” is optional if M = 1. So, this needs to be Need R.

**[Proposed Change]**: Change to Need R for “lpss-OverlaidSeqRoot-r19” if M = 1.

**[Comments]:**

# H052

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H052 | LPWUS | 1 | Missing need code for “startSymbol2-r19” in “lpss-StartSymbol-r19” | R2-25xxxxx | Rama Kumar Mopidevi (Huawei) |  | V003 | ToDo |

**[Description]**: Need code missing for “startSymbol2-r19”.

**[Proposed Change]**: Add “Need R”.

**[Comments]:** if the startSymbol2-r19 is not present, the startSymbol2-r19 should be released.

# H053

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H053 | LPWUS | 1 | Impact on thresholds entry condition due to RAN4 definition on LR types | R2-25xxxxx | Rama Kumar Mopidevi (Huawei) |  | V003 | ToDo |

**[Description]**: RAN4 defined two LR types (i.e., Type 1 and Type 2) in RAN4#114bis and agreed two different requirements for these. Due to different requirements, the current thresholds for entry condition for LP-WUS monitoring and RRM measurement relaxation/serving cell measurement offloading should be extended to ensure that the NW can configure appropriate thresholds for different LR types.

**[Proposed Change]**: Create separate set of entry thresholds for each type of LR.

**[Comments]:**

# H054

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H054 | LPWUS | 1 | Impact on thresholds exit condition due to RAN4 definition on LR types | R2-25xxxxx | Rama Kumar Mopidevi (Huawei) |  | V003 | ToDo |

**[Description]**: For the same reason given to H053, the current thresholds for exit condition for LP-WUS monitoring and RRM measurement relaxation/serving cell measurement offloading should be extended to ensure that the NW can configure appropriate thresholds for different LR types.

**[Proposed Change]**: Create separate set of exit thresholds for each type of LR.

**[Comments]:**

# H055

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H055 | LPWUS | 1 | Replace “option 1-1” and “option 1-2” terminology with description | R2-25xxxxx | Kuang Yiru (Huawei) |  | V003 | ToDo |

**[Description]**: It’s not clear what option 1-1 and option 1-2 mean in RRC spec. These are already removed from MAC CR. Better to replace them with description.

**[Proposed Change]**:

Describe option 1-1 as “LP-WUS operation in CONNECTED without lpwus-PDCCH-MonitoringTimer configured” and option 1-2 as “LP-WUS operation in CONNECTED with lpwus-PDCCH-MonitoringTimer configured”

There are a few places in the spec where this needs to be changed. If RAN2 agrees to remove this, RAN1 spec(s) need to do the same thing.

**[Comments]:**

# C026

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C026 | NES, LPWUS | 2 | Co-existence of LP-WUS in idle/inactive and paging adaptation | R2-25xxxxx | Da Wang (CATT) |  | V004 | ToDo |

**[Description]**: It is not clear whether LP-WUS in idle/inactive can be co-exist with Rel-19 paging adaptation mechanism in NES.

**[Proposed Change]**: R2 discuss whether and how LP-WUS in idle/inactive can be co-exist with Rel-19 paging adaptation mechanism in NES.

**[Comments]**:

V000

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V000 | LPWUS | 1 | lpwus-OffsetPreferenceConfig should be captured as per cell group configuration |  | Vivo(Chenli) |  | V005 | ToDo |

**[Description]**: As *lpwus-OffsetPreferenceConfig* is configured per CG and the offset preference is reported per CG, while the current specification didn’t reflect it in several places.

**[Proposed Change]**: The corresponding clarification in 5.3.5.9, 5.3.5.10, 5.3.7.2, 5.3.7.3, 5.3.13.2 should be added.

**[Comments]**:

V001

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V001 | LPWUS | 1 | Empty UAI on offset for LP-WUS monitoring (RRC-5) | R2-25xxx | Vivo(Chenli) |  | V005 | ToDo |

**[Description]**: **]**: We don’t have the conclusion on the open issue [RRC-5], i.e. whether empty UAI on offset for LP-WUS monitoring is allowed. The legacy rules should apply for the preferred time offset signalled via UAI, similar as *DRX-Preference*.

**[Proposed Change]**: In section 5.7.4.3, add the scenario that when UE initiates the *UEAssistanceInformation* message and UE has no preference on offset for LP-WUS monitoring of the cell group, the UE doesn’t include offset as follows:

1> if transmission of the *UEAssistanceInformation* message is initiated to provide *lpwus-OffsetPreference* of a cell group according to 5.7.4.2 or 5.3.5.3:

2> include *lpwus-OffsetPreference* in the *UEAssistanceInformation* message;

2> if the UE has a preference on time offset for LP-WUS monitoring:

3> set the *timeOffset* to the preferred offset value.

2> else (if the UE has no preference on offset for LP-WUS monitoring of the cell group):

3> do not include *offset* in the *Offset-Preference* IE;

**[Comments]**:

V002

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V002 | LPWUS | 1 | The relationship on MR based entry conditions between RRM relaxation and LP-WUS monitoring | R2-25xxx | Vivo(Chenli) |  | V005 | ToDo |

**[Description]**: The MR-based threshold for RRM relaxation condition should be lower than or equal to the threshold of entry condition for LP-WUS monitoring. Otherwise, there is no power saving gain for LP-WUS monitoring.

**[Proposed Change]**: This restriction should be captured in the field description of RRM relaxation condition as below:

|  |
| --- |
| ***s-SearchThresholdP, s-SearchThresholdP2, s-SearchThresholdP3, s-SearchThresholdP4, s-SearchThresholdP5, s-SearchThresholdP6***  Parameters "SSearchThresholdP", "SSearchThresholdP2", "SSearchThresholdP3", "SSearchThresholdP4", "SSearchThresholdP5", and "SSearchThresholdP6" in TS 38.304 [20]. The network configures *s-SearchThresholdP* and *s-SearchThresholdP2* to be less than or equal to *s-IntraSearchP* and *s-NonIntraSearchP*. The network configures both *s-SearchThresholdP5* and *s-SearchThresholdP6* to be larger than or equal to *s-IntraSearchP* and *s-NonIntraSearchP*, if there is such configuration(s). [RIL]: E008 LPWUS The network configures *s-SearchThresholdP5* and *s-SearchThresholdP6* to be larger than or equal to *s-SearchThresholdP3* and *s-SearchThresholdP4*, respectively, if there is such configuration(s). The network configures *s-SearchThresholdP3* and *s-SearchThresholdP4* to be smaller than or equal to *thresholdP2* and *thresholdP1*, respectively, if there is such configuration(s). |
| ***s-SearchThresholdQ, s-SearchThresholdQ2, s-SearchThresholdQ3, s-SearchThresholdQ4, s-SearchThresholdQ5, s-SearchThresholdQ6***  Parameters "SSearchThresholdQ" "SSearchThresholdQ2", "SSearchThresholdQ3", "SSearchThresholdQ4", "SSearchThresholdQ5", and "SSearchThresholdQ6" in TS 38.304 [20]. The network configures *s-SearchThresholdQ* and *s-SearchThresholdQ2* to be less than or equal to *s-IntraSearchQ* and *s-NonIntraSearchQ*. The network configures both *s-SearchThresholdQ5* and *s-SearchThresholdQ6* to be larger than or equal to *s-IntraSearchQ* and *s-NonIntraSearchQ*, if there is such configuration(s). The network configures *s-SearchThresholdQ5* and *s-SearchThresholdQ6* to be larger than or equal to *s-SearchThresholdQ3* and *s-SearchThresholdQ4*, respectively, if there is such configuration(s). The network configures *s-SearchThresholdQ3* and *s-SearchThresholdQ4* to be smaller than or equal to *thresholdQ2* and *thresholdQ1*, respectively, if there is such configuration(s). |

**[Comments]**:

V003

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V003 | LPWUS | 1 | The relationship on LR based entry conditions between RRM relaxation and LP-WUS monitoring | R2-25xxx | Vivo(Chenli) |  | V005 | ToDo |

**[Description]**: The LR-based threshold for RRM relaxation condition should be lower than or equal to the threshold of entry condition for LP-WUS monitoring. Otherwise, there is no power saving gain for LP-WUS monitoring.

**[Proposed Change]**: This restriction should be captured in the field description of RRM relaxation condition as below:

|  |
| --- |
| ***rsrpThresholdLR, rsrpThresholdLR2, rsrpThresholdLR3, rsrpThresholdLR4, rsrpThresholdLR5***, ***rsrpThresholdLR6***  Parameters "*SRSRPThresholdLR*", "*SRSRPThresholdLR2*", "*SRSRPThresholdLR3*", "*SRSRPThresholdLR4*", "*SRSRPThresholdLR5*", and "*SRSRPThresholdLR6*" in TS 38.304 [20]. The network configures *rsrpThresholdLR3* and *rsrpThresholdLR4* to be larger than or equal to *rsrpThresholdLR* and *rsrpThresholdLR2,* respectively, if there is such configuration(s). The network configures *rsrpThresholdLR* and *rsrpThresholdLR2* to be smaller than or equal to *thresholdP3*-*LR* and *thresholdP1*-*LR*, respectively, if there is such configuration(s). |
| ***rsrqThresholdLR, rsrqThresholdLR2, rsrThresholdLR3, rsrqThresholdLR4, rsrqThresholdLR5***, ***rsrqThresholdLR6***  Parameters "*SRSRQThresholdLR*", "*SRSRQThresholdLR2*", "*SRSRQThresholdLR3*", "*SRSRQThresholdLR4*", "*SRSRQThresholdLR5*", and "*SRSRQThresholdLR6*" in TS 38.304 [20]. The network configures *rsrqThresholdLR3* and *rsrqThresholdLR4* to be larger than or equal to *rsrqThresholdLR* and *rsrqThresholdLR2,* respectively, if there is such configuration(s). The network configures *rsrqThresholdLR* and *rsrqThresholdLR2* to be smaller than or equal to *thresholdQ3*-*LR* and *thresholdQ1*-*LR*, respectively, if there is such configuration(s). |

**[Comments]**:

V004

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V004 | LPWUS | 1 | The relationship on MR based entry conditions between RRM offloading and LP-WUS monitoring | R2-25xxx | Vivo(Chenli) |  | V005 | ToDo |

**[Description]**: Considering the entry conditions of LP-WUS monitoring include at least serving cell quality via MR, serving cell measurement via MR cannot be offloaded to LR before UE starts the LP-WUS monitoring. Thus, the threshold of the entry condition for serving cell RRM offloading should be higher than or equal to the threshold of the entry condition for LP-WUS monitoring.

**[Proposed Change]**: This restriction should be captured in the field description of RRM offloading condition as below:

|  |
| --- |
| ***s-SearchThresholdP, s-SearchThresholdP2, s-SearchThresholdP3, s-SearchThresholdP4, s-SearchThresholdP5, s-SearchThresholdP6***  Parameters "SSearchThresholdP", "SSearchThresholdP2", "SSearchThresholdP3", "SSearchThresholdP4", "SSearchThresholdP5", and "SSearchThresholdP6" in TS 38.304 [20]. The network configures *s-SearchThresholdP* and *s-SearchThresholdP2* to be less than or equal to *s-IntraSearchP* and *s-NonIntraSearchP*. The network configures both *s-SearchThresholdP5* and *s-SearchThresholdP6* to be larger than or equal to *s-IntraSearchP* and *s-NonIntraSearchP*, if there is such configuration(s). [RIL]: E008 LPWUS The network configures *s-SearchThresholdP5* and *s-SearchThresholdP6* to be larger than or equal to *s-SearchThresholdP3* and *s-SearchThresholdP4*, respectively, if there is such configuration(s). The network configures *s-SearchThresholdP5*and *s-SearchThresholdP6* to be larger than or equal to *thresholdP2* and *thresholdP1*, respectively, if there is such configuration(s). |
| ***s-SearchThresholdQ, s-SearchThresholdQ2, s-SearchThresholdQ3, s-SearchThresholdQ4, s-SearchThresholdQ5, s-SearchThresholdQ6***  Parameters "SSearchThresholdQ" "SSearchThresholdQ2", "SSearchThresholdQ3", "SSearchThresholdQ4", "SSearchThresholdQ5", and "SSearchThresholdQ6" in TS 38.304 [20]. The network configures *s-SearchThresholdQ* and *s-SearchThresholdQ2* to be less than or equal to *s-IntraSearchQ* and *s-NonIntraSearchQ*. The network configures both *s-SearchThresholdQ5* and *s-SearchThresholdQ6* to be larger than or equal to *s-IntraSearchQ* and *s-NonIntraSearchQ*, if there is such configuration(s). The network configures *s-SearchThresholdQ5* and *s-SearchThresholdQ6* to be larger than or equal to *s-SearchThresholdQ3* and *s-SearchThresholdQ4*, respectively, if there is such configuration(s). The network configures *s-SearchThresholdQ5* and *s-SearchThresholdQ6* to be larger than or equal to *thresholdQ2* and *thresholdQ1*, respectively, if there is such configuration(s). |

**[Comments]**:

V005

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V005 | LPWUS | 1 | The relationship on LR based exit conditions between RRM offloading and LP-WUS monitoring | R2-25xxx | Vivo(Chenli) |  | V005 | ToDo |

**[Description]**: With the same reason as RIL V004, the threshold of the exit condition for serving cell RRM offloading should be higher than or equal to the threshold of the exit condition for LP-WUS monitoring. Otherwise, LP-WUS cannot be used once the UE exits the LP-WUS monitoring, while doesn’t exit the serving cell RRM offloading, as the entry condition for LP-WUS monitoring includes at least MR measurement while there is no MR measurement when offloading.

**[Proposed Change]**: This restriction should be captured in the field description of RRM offloading condition as below:

|  |
| --- |
| ***rsrpThresholdLR, rsrpThresholdLR2, rsrpThresholdLR3, rsrpThresholdLR4, rsrpThresholdLR5***, ***rsrpThresholdLR6***  Parameters "*SRSRPThresholdLR*", "*SRSRPThresholdLR2*", "*SRSRPThresholdLR3*", "*SRSRPThresholdLR4*", "*SRSRPThresholdLR5*", and "*SRSRPThresholdLR6*" in TS 38.304 [20]. The network configures *rsrpThresholdLR3* and *rsrpThresholdLR4* to be larger than or equal to *rsrpThresholdLR* and *rsrpThresholdLR2,* respectively, if there is such configuration(s). The network configures *rsrpThresholdLR3* and *rsrpThresholdLR4* to be larger than or equal to *thresholdP3-LR* and *thresholdP1*-*LR*, respectively, if there is such configuration(s). |
| ***rsrqThresholdLR, rsrqThresholdLR2, rsrThresholdLR3, rsrqThresholdLR4, rsrqThresholdLR5***, ***rsrqThresholdLR6***  Parameters "*SRSRQThresholdLR*", "*SRSRQThresholdLR2*", "*SRSRQThresholdLR3*", "*SRSRQThresholdLR4*", "*SRSRQThresholdLR5*", and "*SRSRQThresholdLR6*" in TS 38.304 [20]. The network configures *rsrqThresholdLR3* and *rsrqThresholdLR4* to be larger than or equal to *rsrqThresholdLR* and *rsrqThresholdLR2,* respectively, if there is such configuration(s). The network configures *rsrqThresholdLR3* and *rsrqThresholdLR4* to be larger than or equal to *thresholdQ3*-*LR* and *thresholdQ1*-*LR*, respectively, if there is such configuration(s). |

**[Comments]**: