**3GPP TSG-RAN WG4 Meeting #102-e R4-22xxxxx**

**E-meeting, February 21 – March 3, 2022**

**Title: WF on NR SL enhancements RRM requirements**

**Source: LG Electronics**

**Agenda item: 10.15.5/10.15.6**

**Document for:** **Approval**

# WF – 1.1.1 Scheduling availability when switching TDMbased intra-band con-current SL operation

* Scheduling availability requirement apply regardless of NTA

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# WF – 1.1.2 Timeline applicability when switching TDM based intra-band con-current SL operation

* Not consider Tx preparation time for defining scheduling availability
* If simultaneous Rx on Uu and SL is feasible, it can be revisited in maintenance.

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# WF – 2.1.1 UE Rx(Data) drop rate requirements for Asynchronized SLSS measurement & search

* UE is allowed to drop up to 2 slots of its V2X data reception per PSBCH monitoring occasion and UE is allowed to drop at most an aggregated window of 24ms of its V2X data reception during Tdetect,SyncRef UE\_V2X for the purpose of selection / reselection to the SyncRef UE when SL-DRX is used.

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# WF – 2.1.2 Conditional SyncRef UE detection requirements for Asynchronized SLSS measurement & search

* GTW agreement
  + Relax asynchronized SyncRef UE search requirement for R17 UE supporting DRX when the conditions are satisfied for an evaluation period, e.g. Tevaluate,SLSS  in initial/cease of SLSS Tx:
    - UE can extend the detection time to max(X\*50 DRX cycle length, 8s) when a set of conditions are satisfied over an evaluation period
      * DRX cycle length is the [longest] DRX cycle
      * X is FFS: 1 ≤ X < ∞
      * Set of conditions is FFS
* Moderator’s recommendation: discuss the followings and decide.
  + - 1. DRX cycle length is the [longest] DRX cycle
    - 2. X value
    - 3. Set of conditions

From 1st round, at least option 1 is reasonable. Focus other options.

* + - * Option 1: SLSS RSRP is larger than a threshold, e.g., syncTxThreshOoC
      * Option 2-a: SLSS RSRP variation, (instantaneous RSRP – current filtered RSRP)^2 , is lower than a threshold
      * Option 2-b: FFS on conditions to ensure UE is aware of high priority async SyncRef UE sources.
      * Option 3-a: Data connection is maintained with the current SyncRef UE source
      * Option 3-b: FFS on conditions data connection is reliable with current SyncRef UE sources.

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# WF – 2.2.1 Avoidance of Interruption to WAN due to SL-DRX

* GTW agreement
  + Define the following applicability rules for interruptions to WAN due to SL DRX

|  |  |  |
| --- | --- | --- |
| WAN operation | Applicability of WAN interruptions due to SL DRX transition between active/non-active states | |
| SL resource  allocation mode 1 | SL resource  allocation mode 2 |
| Reception of paging | Applicable | Not applicable |
| Reception of system information | Applicable | Not applicable |
| While RLF timer is running | Applicable | Not applicable for DRX cycle length < X ms  Applicable for other cases |
| While UE is performing CBD | Applicable |

* + - FFS on UE behavior for the case when WAN interruption shall be avoided (e.g., postpone SL-DRX transition)
* Moderator’s recommendation: decide the followings in the agreed table
  + X value
  + UE behaviour for the case when WAN interruption shall be avoided (e.g., postpone SL-DRX transition)

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# WF – 2.2.1.1 The conclusion from 2-2-1 is applicable to SL UE active to inactive transition only or all the transitions

* ‘Not applicable’ in issue2-2-1 applies for
  + Option 1: UE active to inactive transition only (QC/LGE/vivo)
  + Option 2: All the transitions (Ericsson/Huawei/ZTE)
* Moderator’s recommendation : Further discuss, and if no consensus,
  + compromise based on majority to complete core requirements or
  + discuss as maintenance

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# WF – 2.2.2 Interruption to WAN due to SL-DRX when NR is in DRX and SL is in SL-DRX

* GTW tentative agreement
  + Define interruptions to WAN due to SL-DRX when NR is in DRX
    - Interruptions on WAN are not applicable while *onDurationTimer* is running for the SL resource allocation mode 2
* Moderator’s recommendation : Further discuss tentative agreement and make agreement

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# WF – 2.2.3 Interruption to WAN due to SyncRef UE detection and/or Sensing during SL DRX off duration

* Reuse same requirements of interruption to WAN due to SL-DRX

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# WF – 4.1 Work plan of RRM performance

* RAN4#102-e meeting (’22.February)
  + Agree with list of RRM test cases
  + Do work-split of test cases for draft CRs
* RAN4#103-e meeting (’22.May)
  + Discuss the draft CRs with the detailed test configurations and related parameter
* RAN4#104 meeting (’22.August)
  + Endorse the final draft CRs.
  + Approve a Big CR based on all endorsed draft CRs.

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# WF – 4.2 List of test cases

* Introduce following test cases

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | **Feature/requirements** | **Comment** | **No of tests** | **Proposed section** | **Company** |
| 1 | 12.3.1.4 Initiation/Cease of SLSS transmissions with SyncRef UE as synchronization reference source | Need test for SL-DRX | 1 | - A.9.1.2.3 Test for SyncRef UE as synchronization reference source under SL-DRX |  |
| 2-1 | 12.4 Selection / Reselection of V2X Synchronization Reference Source | Need test for SL-DRX | 1 | - A.9.1.3.3 Test for GNSS configured as the highest priority under SL-DRX |  |
| 2-2 | Need test for SL-DRX | 1 | - A.9.1.3.4 Test for FR1 NR Cell configured as the highest priority under SL-DRX |  |
| 3-1 | 12.5.2 SL-RSRP measurements | Need test for Partial sensing(Periodic, Contiguous) | 2 | - A.9.1.4.4 Test for V2X UE Partial Sensing |  |
| 3-2 | Need test to verify that Tx UE performs proper sensing and select the resource during Rx UE DRx active time | 1 | - A.9.1.4.5 Test for V2X UE Sensing during Rx UE SL-DRX active time |  |
| 4-2 | 12.7.4 Interruptions to WAN at transitions between active and non-active during SL-DRX | Need test for SL-DRX | 1 | - A.9.1.6.3 Test for Interruption to WAN at transitions between active and non-active during SL-DRX for Asynchronized case |  |

* Moderator’s recommendation:
  + 2-1 & 2-2 need to be tested based on GTW agreements
  + Encourage companies to volunteer draft CR for interesting test cast.

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