**3GPP TSG-RAN WG4 Meeting # 98-e R4-21XXXX**

**Electronic Meeting, 25 Jan. – 5 Feb., 2021**

**Agenda item:** 11.4.2.3

**Source:** Moderator (CATT)

**Title:** Email discussion summary for [98e][232] NR\_RRM\_enh2\_2

**Document for:** Information

# Introduction

The documents in agenda item 11.4.2.3 focus on the following topic

* Topic #1: PUCCH SCell activation/deactivation

# Topic #1: PUCCH SCell activation/deactivation

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2100194 | Apple | ***Proposal 1: in R17, RAN4 defines PUCCH SCell activation/deactivation requirements based on the “legacy R15 SCell activation mechanism” rather than “R16 direct SCell activation from DC/CA enhancement WI”.***  ***Observation: both valid and invalid TA cases shall be specified for PUCCH SCell activation requirement.***  ***Proposal 2: A TA is considered to be valid provided that the TimeAlignmentTimer associated with the TAG containing the PUCCH SCell is running.***  ***Proposal 3: When the TA associated with target PUCCH SCell is valid, this PUCCH SCell activation delay is as same as the normal SCell activation delay in TS38.133 section 8.3.2.***  ***Proposal 4: The three additional delay parts (T1/T2/T3) in LTE PUCCH SCell activation with invalid TA could be reused for NR PUCCH SCell activation with invalid TA. However, the values for T1/T2/T3 might be revisited for NR PUCCH SCell activation.***  ***Proposal 5: In NR PUCCH SCell activation delay requirement with invalid TA, T1 is the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell. T1 is up to the summation of SSB to PRACH occasion association period and 10 ms. SSB to PRACH occasion associated period is defined in the table 8.1-1 of TS 38.213 [3].***  ***Proposal 6: In NR PUCCH SCell activation delay requirement with invalid TA, T2 is the delay from slot n + (Tactivate\_basic +T1)/NR slot length until UE has obtained a valid TA command for the target PUCCH SCell being activated. Tactivate\_basic is the normal SCell activation delay in TS38.133 section 8.3.2. slot n is the slot when UE received PUCCH SCell activation MAC CE.***  ***Proposal 7: In NR PUCCH SCell activation delay requirement with invalid TA, T3 is the delay for applying the received TA for uplink transmission on target PUCCH SCell being activated, and greater than or equal to k+1 slot, where k is defined in clause 4.2 in TS 38.213.***  ***Proposal 8:*** ***The PUCCH SCell activation delay requirement shall apply provided that,***   * + ***The UE has received a PDCCH order to initiate RA procedure on the PUCCH SCell within Tactivate\_basic otherwise additional delay to activate the SCell is expected; and***   + ***No interruption occurs in same FR as the target PUCCH SCell during the SCell activation procedure if UE supports per-FR MG, otherwise the PUCCH SCell activation delay can be extended, and***   + ***No interruption occurs during the SCell activation procedure if UE does not support per-FR MG, otherwise the PUCCH SCell activation delay can be extended.***   ***The above interruption is caused by factor defined in TS38.133 section 8.2.1.1 for EN-DC, in TS38.133 section 8.2.2.1 for NR SA, in TS38.133 section 8.2.3.1 for NE-DC and*** ***in TS38.133 section 8.2.4.1 for NR-DC.***  ***Proposal 9: only MAC CE based SCell deactivation requirement is specified for PUCCH activated SCell, i.e., no timer based PUCCH SCell deactivation is assumed.***  ***Proposal 10: reuse MAC CE based normal SCell deactivation requirement to PUCCH SCell deactivation requirement.***  ***Proposal 11: reuse the interruption requirement of normal SCell activation/deactivation to the interruption requirement of PUCCH SCell activation/deactivation.*** |
| R4-2100402 | CATT | **Observation 1: It may be needed to add clarification in current specification TS38.133 that the SCell deactivated by expiry of the *sCellDeactivationTimer* is not PUCCH SCell.**  **Observation 2: The SCell Activation/ Deactivation delay requirement in current specification TS38.133 can be reused for PUCCH SCell Activation/ Deactivation.**  **Observation 3: Action time of getting TA for UE to transmit PUCCH on activated SCell should not be included in the PUCCH SCell Activation/ Deactivation delay requirement.** |
| R4-2100711 | Xiaomi | **Proposal 1: If UE has the valid TA on the PUCCH SCell being activated, the basic SCell activation delay defined in section 8.3.2 in TS38.133 can be reused for PUCCH SCell activation.**  **Proposal 2: If UE does not have the valid TA on the PUCCH SCell being activated, an additional UL synchronization procedure to obtain the valid TA shall be considered which including the following factors:**   1. **the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell;** 2. **the delay for obtaining a valid TA command for the sTAG to which the SCell configured with PUCCH belongs;** 3. **the delay for applying the received TA for uplink transmission** |
| R4-2100872 | CMCC | SCell Activation Delay Requirement for Deactivated PUCCH SCell  ***Proposal 1: a TA is considered to be valid provided that the TimeAlignmentTimer associated with the TAG containing the PUCCH SCell is running.***  ***Proposal 2: for the case of SCell activation for deactivated PUCCH SCell with valid TA, the SCell activation delay requirement for deactivated SCell specified in section 8.3.2 of TS 38.133 can be reused, which is* (( THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length).**  ***Proposal 3: for the case of SCell activation for deactivated PUCCH SCell with invalid TA, except THARQ + Tactivation\_time +TCSI\_Reporting，additional delay including following parts need to be considered for the SCell activation delay requirements specification:***   * ***the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell*** * ***the delay for obtaining a valid TA command for the sTAG*** * ***the delay for applying the received TA for upling transmission***   SCell Activation Delay Requirement for Deactivated PUCCH SCell with Multiple SCells  ***Proposal 4: for the case of SCell activation for deactivated PUCCH SCell with multiple SCells with valid TA, the SCell activation delay requirement for deactivated SCell with multiple downlink SCells specified in section 8.3.7 of TS 38.133 can be reused, which is (( THARQ + Tactivation\_time\_multiple\_scells +TCSI\_Reporting)/ NR slot length) .***  ***Proposal 5: for the case of SCell activation for deactivated PUCCH SCell with multiple SCells with invalid TA, except THARQ + Tactivation\_time\_multiple\_scells +TCSI\_Reporting，additional delay including following parts need to be considered for the SCell activation delay requirements specification:***   * ***the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell*** * ***the delay for obtaining a valid TA command for the sTAG*** * ***the delay for applying the received TA for upling transmission***   SCell Deactivation Delay Requirement for Activated PUCCH Scell  ***Proposal 6: for the case of SCell deactivation for activated PUCCH SCell, the SCell deactivation delay requirement for activated SCell specified in section 8.3.3 of TS 38.133 can be reused, which is (( THARQ + 3ms)/ NR slot length).***  SCell Deactivation Delay Requirement for Activated PUCCH SCell with Multiple Scells  ***Proposal 7: for the case of SCell deactivation for activated PUCCH SCell with multiple SCells, the SCell deactivation delay requirement for activated SCell with multiple downlink SCells specified in section 8.3.8 of TS 38.133 can be reused, which is (( THARQ + 3ms)/ NR slot length).*** |
| R4-2101046 | NTT DOCOMO, INC. | **Proposal 1: For NR, the same manner as LTE SCell activation delay requirement for deactivated PUCCH SCell should be applied and relaxation factor should be reconsidered.**  **Proposal 2: SCell activation delay requirement for deactivated PUCCH SCell with valid TA should be same as that of SCell activation delay requirement for deactivated SCell.**  **Proposal 3: SCell deactivation delay requirement for activated PUCCH SCell should be same as that of for the normal SCell if there are no special reasons.** |
| R4-2101080 | NEC | **Proposal 1: PUCCH SCell activation delay (TDelay\_PUCCH\_SCell) is defined as: TDelay\_PUCCH\_SCell = TBasic\_SCell\_activation\_delay + TTA\_delay; where, TBasic\_SCell\_activation\_delay is SCell activation delay as described in clause 8.3.2 of TS 38.133; and TTA\_delay is delay required for TA command acquisition and application.**  **Proposal 2: If *TimeAlignmentTimer* is running for the TAG containing the PUCCH SCell, TA is considered valid. If *TimeAlignmentTimer* is not running for the TAG containing the PUCCH SCell, TA is considered invalid.**  **Proposal 3: PUCCH SCell activation delay (TDelay\_PUCCH\_SCell) when the TA is valid is defined as: TDelay\_PUCCH\_SCell = TBasic\_SCell\_activation\_delay; where, TBasic\_SCell\_activation\_delay is SCell activation delay as described in clause 8.3.2 of TS 38.133.**  **Proposal 4: PUCCH SCell activation delay (TDelay\_PUCCH\_SCell) when the TA is valid is defined as: TDelay\_PUCCH\_SCell = TBasic\_SCell\_activation\_delay + T1 + T2 + T3; where,**   * **TBasic\_SCell\_activation\_delay is SCell activation delay as described in clause 8.3.2 of TS 38.133;** * **T1: delay uncertainty in acquiring next available PRACH occasion in the PUCCH SCell;** * **T2: delay for obtaining a valid TA command for the TAG to which the SCell configured with PUCCH belongs;** * **T3: delay for applying the received TA for uplink transmission.**   **Proposal 5: RAN4 to define requirements for PUCCH SCell activation with multiple SCell after requirements for PUCCH SCell activation with single SCell are completed.**    **Proposal 6: RAN 4 to reuse the SCell deactivation requirement of clause 8.3.3 for SCell Deactivation requirements of Activated PUCCH SCell.**  **Proposal 7: RAN 4 to reuse the SCell deactivation requirement of clause 8.3.8 for SCell Deactivation requirements of Activated PUCCH SCell with multiple SCells.** |
| R4-2101380 | vivo | **Proposal 1: For PUCCH SCell with UL synchronization, the activation/deactivated delay requirements for deactivated/activated SCell of different scenarios can be reused for PUCCH SCell activation/deactivation.**  **Proposal 2: Current requirements for SCell activation/deactivation with multiple downlink SCells can be reused for activation/deactivation requirement for PUCCH SCell with multiple downlink SCells of different scenarios if each SCell has UL synchronization.**  **Proposal 3: Based on UL synchronization status, for direct SCell Activation of Multiple Downlink SCells at SCell addition, corresponding requirements can be reused for PUCCH SCell case if the related SCell has UL synchronization.**  **Proposal 4: for all scenarios where Scells being activated/deactivated have not UL synchronization, relaxation on delay requirements should be considered for TA alignment time.** |
| R4-2101391 | Nokia, Nokia Shanghai Bell | **Proposal1: If the UE has a valid TA for transmitting on the PUCCH SCell in NR, the activation delay requirement is the same as the activation delay for activating a non-PUCCH SCell i.e. Tactivation\_time as defined in TS 38.133 section 8.3.2.**  **Proposal2: If the UE does not have a valid TA for transmitting on the PUCCH SCell in NR, the activation delay shall be defined for downlink and uplink actions separately.**  **Proposal3: If the UE does not have a valid TA for transmitting on an SCell, the UE shall be capable to perform downlink actions related to the SCell activation command for the SCell being activated on the PUCCH SCell no later than in slot .**  **Proposal4: If the UE does not have a valid TA for transmitting on an SCell, the UE shall be capable to perform uplink actions related to the SCell activation command for the SCell being activated on the PUCCH SCell no later than in slot , where TRACH is the delay to perform RACH procedure and apply the TA.**  **Proposal5: The SCell deactivation delay for activated PUCCH SCell is the same as the SCell deactivation delay defined in 3GPP TS 38.133 section 8.3.3.** |
| R4-2101536 | OPPO | **Proposal 1: For valid TA case, NR SCell activation delay requirement for deactivated PUCCH SCell should be the same as that for deactivated normal SCell.**  **Proposal 2: For invalid TA case, NR SCell activation delay requirement for deactivated PUCCH SCell should be relaxed, and relaxation factor should be reconsidered.**  **Proposal 3: Activation delay for deactivated PUCCH SCell with direct SCell activation should be separately specified.**  **Proposal 4: For direct SCell activation for PUCCH SCell at handover, only valid TA case should be considered.** |
| R4-2101658 | Huawei, HiSilicon | **Observation 1: It is beneficial to take PUCCH SCell activation and deactivation requirements for E-UTRA as the baseline.**  **Proposal 1: The way to indicate the beam information of the PUCCH SCell being activated to NW needs further discussion.**  **Observation 2: Only RA procedure triggered by a PDCCH order is considered for SCell and the SSB index should be explicitly indicated.**  **Proposal 3: Beam information is needed for NW to initiate the RA for TA updating by a PDCCH order.**  **Proposal 4: The UL spatial relation shall be considered as the UE shall be capable for UL transmission of valid CQI after the PUCCH SCell is activated.** |
| R4-2102365 | Ericsson | **Proposal 1:** Valid TA is defined in similar ways in NR as in EUTRA, i.e., TAT for TAG to which the PUCCH belongs is running. Valid TA implication is same as in EUTRA, i.e., when TA is valid, UE can skip RA at PUCCH SCell activation.  **Proposal 2:** For activation of single PUCCH SCell with valid TA, existing RRM requirements for activation of single downlink NR SCell to be used as baseline.  **Proposal 3:** For activation of single PUCCH SCell with invalid TA, existing RRM requirements for activation of single downlink NR SCell to be used as baseline for completion of downlink actions. Completion of uplink actions are to be further studied.  **Proposal 4:** For activation of multiple PUCCH SCells with valid TA, existing RRM requirements for activation of multiple downlink NR SCells to be used as baseline.  **Proposal 5:** For activation of multiple PUCCH SCells with invalid TA, existing RRM requirements for activation of multiple downlink NR SCells to be used as baseline for completion of downlink actions. Completion of uplink actions are to be further studied.  **Proposal 6:** For deactivation of activated PUCCH SCell(s), existing RRM requirements for deactivation of NR SCell(s) to be used as baseline. |
| R4-2102892 | Qualcomm Incorporated | **Proposal 1: PUCCH SCell activation delay is composed of ‘SCell activation delay’ and ‘TA acquisition/application delay in case of non-valid TA for the cell’**  **Proposal 2: RAN4 to define requirements based on absolute time, i.e. numerology agnostic manner**   * + **Whether and how to quantize the final requirement can be separately discussed in the later stage**   **Proposal 3: RAN4 to prioritize PUCCH SCell in FR1 when there is an available SCell in FR1 with UL if there is a need for frequency range differentiation in specifying requirements** |

## Open issues summary

### Sub-topic 1-1 General

**Issue 1-1-1: The working scope of R17 PUCCH SCell activation/deactivation requirements?**

* Proposals
  + Option 1: (Apple)
    - RAN4 defines PUCCH SCell activation/deactivation requirements based on the “legacy R15 SCell activation mechanism” rather than “R16 direct SCell activation from DC/CA enhancement WI”.
  + Option 2: (OPPO)
    - The PUCCH SCell activation/deactivation based on the ‘direct SCell activation’ should also be considered.
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-1-1: The working scope of R17 PUCCH SCell activation/deactivation requirements?** | |
| **Company** | **Comments** |
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**Issue 1-1-2: If option 2 in issue 1-1-1 is accepted, whether the direct SCell activation delay for deactivated PUCCH SCell should be separately specified?**

* Proposals
  + Option 1: (OPPO(proposal 3))
    - Yes
  + Option 2:
    - No
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-1-2: If option 2 in issue 1-1-1 is accepted, whether the direct SCell activation delay for deactivated PUCCH SCell should be separately specified?** | |
| **Company** | **Comments** |
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**Issue 1-1-3: If option 2 in issue 1-1-1 is accepted, which cases would be defined for the direct SCell activation delay for deactivated PUCCH SCell at handover?**

* Proposals
  + Option 1: (OPPO(proposal 4))
    - Only valid TA case is considered.
  + Option 2:
    - Both valid and invalid TA cases are considered.
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-1-3: If option 2 in issue 1-1-1 is accepted, which cases would be defined for the direct SCell activation delay for deactivated PUCCH SCell at handover?** | |
| **Company** | **Comments** |
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| **Issue 1-1-4: Whether the beam information of the PUCCH SCell being activated is needed for NW?** | |
| **Company** | **Comments** |
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**Issue 1-1-5: Whether the beam information of the PUCCH SCell being activated is needed to be indicated to NW?**

* Proposals
  + Option 1: (Huawei(proposal 1))
    - Yes
  + Option 2:
    - No
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-1-5: Whether the beam information of the PUCCH SCell being activated is needed to be indicated to NW?** | |
| **Company** | **Comments** |
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**Issue 1-1-6: Whether the beam information is needed for NW to initiate the RA for TA updating by a PDCCH order?**

* Proposals
  + Option 1: (Huawei(proposal 3))
    - Yes
  + Option 2:
    - No
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-1-6: Whether the beam information is needed for NW to initiate the RA for TA updating by a PDCCH order?** | |
| **Company** | **Comments** |
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**Issue 1-1-7: Whether the UL spatial relation should be considered for PUCCH SCell activation?**

* Proposals
  + Option 1: (Huawei)
    - Yes
  + Option 2:
    - No
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-1-7: Whether the UL spatial relation should be considered for PUCCH SCell activation?** | |
| **Company** | **Comments** |
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**Issue 1-1-8: Whether the requirement is agnostic to numerology?**

* Proposals
  + Option 1: (Qualcomm(proposal 2))
    - Yes
  + Option 2:
    - No
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-1-8: Whether the requirement is agnostic to numerology?** | |
| **Company** | **Comments** |
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**Issue 1-1-9: Whether the differentiation of FRs is needed for PUCCH SCell activation delay?**

* Proposals
  + Option 1:
    - Yes
  + Option 2:
    - No
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-1-9: Whether the differentiation of FRs is needed for PUCCH SCell activation delay?** | |
| **Company** | **Comments** |
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**Issue 1-1-10: If the answer of issue 1-1-9 is yes, the prioritization of FRs for PUCCH SCell activation requirements?**

* Proposals
  + Option 1: (Qualcomm)
    - RAN4 to prioritize PUCCH SCell in FR1 when there is an available SCell in FR1 with UL.
  + Option 2:
    - No prioritization.
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-1-10: If the answer of issue 1-1-9 is yes, the prioritization of FRs for PUCCH SCell activation requirements?** | |
| **Company** | **Comments** |
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### Sub-topic 1-2 PUCCH SCell activation requirements

**Issue 1-2-1: The condition that TA of target PUCCH SCell is valid?**

* Proposals
  + Option 1: (Apple, CMCC, NEC, Ericsson)
    - A TA is considered to be valid provided that the *TimeAlignmentTimer* associated with the TAG containing the PUCCH SCell is running.
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-2-1: The condition that TA of target PUCCH SCell is valid?** | |
| **Company** | **Comments** |
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**Issue 1-2-2: The PUCCH SCell activation delay when TA of target PUCCH SCell is valid?**

* Proposals
  + Option 1: (Apple, CATT, Xiaomi, CMCC, NTT DOCOMO, NEC, vivo, Nokia, OPPO)
    - Same as the normal SCell activation delay in TS38.133 section 8.3.2 which is (( THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length).
  + Option 2: (Ericsson)
    - Existing RRM requirements for activation of single downlink NR SCell to be used as baseline.
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-2-2: The PUCCH SCell activation delay when TA of target PUCCH SCell is valid?** | |
| **Company** | **Comments** |
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**Issue 1-2-3: Compared to valid case, whether the NR PUCCH SCell activation delay requirements should be relaxed for invalid TA case?**

* Proposals
  + Option 1: (Apple, Xiaomi, CMCC, NTT DOCOMO, NEC, Qualcomm, OPPO, vivo, Nokia)
    - Yes.
  + Option 2:
    - No.
* Recommended WF
  + *Option 1 is recommended as majority view.*

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| **Issue 1-2-3: Compared to valid case, whether the NR PUCCH SCell activation delay requirements should be relaxed for invalid TA case?** | |
| **Company** | **Comments** |
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**Issue 1-2-4: The additional delay parts for NR PUCCH SCell activation with invalid TA?**

* Proposals
  + Option 1: (Apple, Xiaomi, CMCC, NTT DOCOMO, NEC, Qualcomm)
    - The following three additional delay parts (T1/T2/T3) in LTE PUCCH SCell activation with invalid TA could be reused for NR PUCCH SCell activation with invalid TA.
      * the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell
      * the delay for obtaining a valid TA command for the sTAG
      * the delay for applying the received TA for upling transmission
  + Option 1a: (Apple, NTT DOCOMO)
    - The values for T1/T2/T3 might be revisited for NR PUCCH SCell activation.
  + Option 2: (Nokia)
    - The UE shall be capable to perform downlink actions related to the SCell activation command for the SCell being activated on the PUCCH SCell no later than in slot .
    - The UE shall be capable to perform uplink actions related to the SCell activation command for the SCell being activated on the PUCCH SCell no later than in slot , where TRACH is the delay to perform RACH procedure and apply the TA.
  + Option 3: (CATT)
    - Action time of getting TA for UE to transmit PUCCH on activated SCell should not be included in the PUCCH SCell Activation/ Deactivation delay requirement.
  + Option 5: (Ericsson)
    - Existing RRM requirements for activation of single downlink NR SCell to be used as baseline for completion of downlink actions. Completion of uplink actions are to be further studied.
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-2-4: The additional delay parts for NR PUCCH SCell activation with invalid TA?** | |
| **Company** | **Comments** |
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**Issue 1-2-5: The delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell (i.e. T1)?**

* Proposals
  + Option 1: (Apple)
    - T1 is up to the summation of SSB to PRACH occasion association period and 10 ms.
    - SSB to PRACH occasion associated period is defined in the table 8.1-1 of TS 38.213 [3].
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-2-5: The delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell (i.e. T1)?** | |
| **Company** | **Comments** |
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**Issue 1-2-6: The delay for obtaining a valid TA command for the sTAG to which the SCell configured with PUCCH belongs (i.e. T2)?**

* Proposals
  + Option 1: (Apple)
    - T2 is the delay from slot n + (Tactivate\_basic +T1)/NR slot length until UE has obtained a valid TA command for the target PUCCH SCell being activated.
    - Tactivate\_basic is the normal SCell activation delay in TS38.133 section 8.3.2.
    - Slot n is the slot when UE received PUCCH SCell activation MAC CE.
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-2-6: The delay for obtaining a valid TA command for the sTAG to which the SCell configured with PUCCH belongs (i.e. T2)?** | |
| **Company** | **Comments** |
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**Issue 1-2-7: The delay for applying the received TA for uplink transmission on target PUCCH SCell being activated (i.e. T3)?**

* Proposals
  + Option 1: (Apple)
    - T3 is greater than or equal to k+1 slot, where k is defined in clause 4.2 in TS 38.213.
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-2-7: The delay for applying the received TA for uplink transmission on target PUCCH SCell being activated (i.e. T3)?** | |
| **Company** | **Comments** |
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**Issue 1-2-8: Applicability of PUCCH SCell activation requirements?**

* Proposals
  + Option 1: (Apple)
    - The PUCCH SCell activation delay requirement shall apply provided that,
      * The UE has received a PDCCH order to initiate RA procedure on the PUCCH SCell within Tactivate\_basic otherwise additional delay to activate the SCell is expected; and
      * No interruption occurs in same FR as the target PUCCH SCell during the SCell activation procedure if UE supports per-FR MG, otherwise the PUCCH SCell activation delay can be extended, and
      * No interruption occurs during the SCell activation procedure if UE does not support per-FR MG, otherwise the PUCCH SCell activation delay can be extended.
      * The above interruption is caused by factor defined in TS38.133 section 8.2.1.1 for EN-DC, in TS38.133 section 8.2.2.1 for NR SA, in TS38.133 section 8.2.3.1 for NE-DC and in TS38.133 section 8.2.4.1 for NR-DC.
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-2-8: Applicability of PUCCH SCell activation requirements?** | |
| **Company** | **Comments** |
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### Sub-topic 1-3 SCell activation delay requirement for deactivated PUCCH SCell with multiple SCells

**Issue 1-3-1: SCell activation delay requirement for deactivated PUCCH SCell with multiple SCells with valid TA?**

* Proposals
  + Option 1: (CMCC, vivo)
    - Reuse the SCell activation delay requirement for deactivated SCell with multiple downlink SCells specified in section 8.3.7 of TS 38.133, which is (( THARQ + Tactivation\_time\_multiple\_scells +TCSI\_Reporting)/ NR slot length).
  + Option 2: (Ericsson)
    - Existing RRM requirements for activation of multiple downlink NR SCells to be used as baseline.
  + Option 4: (NEC)
    - RAN4 to define requirements for PUCCH SCell activation with multiple SCell after requirements for PUCCH SCell activation with single SCell are completed.
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-3-1: SCell activation delay requirement for deactivated PUCCH SCell with multiple SCells with valid TA?** | |
| **Company** | **Comments** |
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**Issue 1-3-2: Additional delay parts for SCell activation delay requirement for deactivated PUCCH SCell with multiple SCells with invalid TA?**

* Proposals
  + Option 1: (CMCC)
    - For the case of SCell activation for deactivated PUCCH SCell with multiple SCells with invalid TA, except ***THARQ +*** Tactivation\_time\_multiple\_scells +TCSI\_Reporting, additional delay including the following parts need to be considered:
      * the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell
      * the delay for obtaining a valid TA command for the sTAG
      * the delay for applying the received TA for upling transmission.
  + Option 2: (vivo)
    - Relaxation on delay requirements should be considered for TA alignment time.
  + Option 3: (Ericsson)
    - Existing RRM requirements for activation of multiple downlink NR SCells to be used as baseline for completion of downlink actions. Completion of uplink actions are to be further studied.
  + Option 5: (NEC)
    - RAN4 to define requirements for PUCCH SCell activation with multiple SCell after requirements for PUCCH SCell activation with single SCell are completed.
* Recommended WF
  + *Need more discussion.*

|  |  |
| --- | --- |
| **Issue 1-3-2: Additional delay parts for SCell activation delay requirement for deactivated PUCCH SCell with multiple SCells with invalid TA?** | |
| **Company** | **Comments** |
| XXX |  |
|  |  |

### Sub-topic 1-4 PUCCH SCell deactivation requirements

**Issue 1-4-1: The type of PUCCH SCell deactivation requirements?**

* Proposals
  + Option 1: (Apple)
    - Only MAC CE based SCell deactivation requirement is specified for PUCCH activated SCell, i.e., no timer based PUCCH SCell deactivation is assumed.
  + Option 2: (CATT)
    - Add clarification in current specification TS38.133 that the SCell deactivated by expiry of the *sCellDeactivationTimer* is not PUCCH SCell.
* Recommended WF
  + *Need more discussion.*

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| --- | --- |
| **Issue 1-4-1: The type of PUCCH SCell deactivation requirements?** | |
| **Company** | **Comments** |
| XXX |  |
|  |  |

**Issue 1-4-2: The PUCCH SCell deactivation requirements?**

* Proposals
  + Option 1: (Apple, CATT, CMCC, NTT DOCOMO, NEC, vivo, Nokia)
    - Reuse MAC CE based normal SCell deactivation requirement specified in section 8.3.3 of TS 38.133, which is ((THARQ + 3ms)/ NR slot length).
  + Option 2: (Ericsson)
    - Existing RRM requirements for deactivation of NR SCell(s) to be used as baseline.
* Recommended WF
  + *Need more discussion.*

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| --- | --- |
| **Issue 1-4-2: The PUCCH SCell deactivation requirements?** | |
| **Company** | **Comments** |
| XXX |  |
|  |  |

### Sub-topic 1-5 SCell deactivation delay requirement for activated PUCCH SCell with multiple SCells

**Issue 1-5-1: SCell deactivation delay requirement for activated PUCCH SCell with multiple SCells?**

* Proposals
  + Option 1: (CMCC, NEC, vivo)
    - Reuse the SCell deactivation delay requirement for activated SCell with multiple downlink SCells specified in section 8.3.8 of TS 38.133, which is (( THARQ + 3ms)/ NR slot length).
* Recommended WF
  + *Need more discussion.*

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| **Issue 1-5-1: SCell deactivation delay requirement for activated PUCCH SCell with multiple SCells?** | |
| **Company** | **Comments** |
| XXX |  |
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### Sub-topic 1-6 Interruption caused by PUCCH SCell activation/deactivation

**Issue 1-6-1: Interruption requirements for PUCCH SCell activation/deactivation?**

* Proposals
  + Option 1: (Apple)
    - Reuse the interruption requirement of normal SCell activation/deactivation.
* Recommended WF
  + *Need more discussion.*

|  |  |
| --- | --- |
| **Issue 1-6-1: Interruption requirements for PUCCH SCell activation/deactivation?** | |
| **Company** | **Comments** |
| XXX |  |
|  |  |

## Companies views’ collection for 1st round

### Open issues

### CRs/TPs comments collection

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Recommendations on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP/LS/WF number** | **T-doc Status update recommendation** |
| XXX | *Based on 2nd round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |