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

**Electronic Meeting, 12th – 20th April, 2021**

**Agenda item:** 8.4.2.3

**Source:** Moderator (CATT)

**Title:** Email discussion summary for [98-bis-e][217] NR\_RRM\_enh2\_2

**Document for:** Information

# Introduction

The documents in agenda item 8.4.2.3 focus on the following topic

* Topic #1: PUCCH SCell activation/deactivation requirements

# Topic #1: PUCCH SCell activation/deactivation requirements

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2104564 | MediaTek Inc. | **Proposal 1: For the valid TA case of PUCCH SCell activation, the Rel-15 SCell activation requirement can be reused.**  **Proposal 2: For the PUCCH SCell without valid TA, the activation requirement shall be Tactivate\_basic + T1 + T2 + T3, where**  ***Tactivate\_basic: the normal SCell activation delay in TS38.133 section 8.3.2.***  ***T1:*** ***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].***  ***T2:*** ***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. Slot n is the slot when UE received PUCCH SCell activation MAC CE.***  ***T3: 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 3: UE is only required to send the L1-RSRP and CQI report through the SpCell before the PUCCH SCell is successfully activated.**  **Proposal 4: No need to discuss spatial relation for PUCCH SCell activation if UE is only required to transmit the CSI report on SpCell before PUCCH SCell is activated.**  **Proposal 5: The known and unknown condition for SCell activation can be reused for PUCCH SCell.**  **Proposal 6: For the activation/deactivation of the PUCCH SCell with valid TA, the interruption requirement of PUCCH SCell can reuse the existing requirement for SCell in Rel-15.**  **Proposal 7: For the activation of PUCCH SCell without valid TA, the interruption requirement of PUCCH SCell shall include the existing requirement for SCell in Rel-15.**  **Proposal 8: For the deactivation of the PUCCH SCell without valid TA, the interruption requirement of PUCCH SCell can reuse the existing requirement for SCell in Rel-15.** |
| R4-2104633 | vivo | **Proposal 1: CSI report of PUCCH SCell is transmitted on PUCCH SCell to be activated**  **Proposal 2: For the unknown case, the beam information of the PUCCH SCell being activated should be indicated to NW. For the known case, this indication of this information can be omitted.**  **Proposal 3: For PUCCH SCell with a valid TA, the activation/deactivation delay requirements for deactivated/activated SCell of different scenarios can be reused for PUCCH SCell activation/deactivation**  **Proposal 4: For the PUCCH Scell activation delay requirement under invalid TA scenairo, suggest to reuse the corresponding principles of legacy Rel-15 requirements for the extra delay, i.e., option 1.**  **Proposal 5: investigate multiple Scell case after most issues for PUCCH Scell activation delay requirement for single Scell case are solved.**  **Proposal 6: reuse the interruption requirement of normal SCell activation/deactivation for PUCCH Scell activation/deactivation, at least for valid TA case.** |
| R4-2104686 | Xiaomi | **Proposal 1: The RRM requirements for PUCCH SCell activation and deactivation are defined provided that the CSI report of PUCCH SCell is transmitted on PSCell.**  **Proposal 2: The beam information of the PUCCH SCell being activated is not needed to be indicated to NW.**  **Proposal 3: 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 4: 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** |
| R4-2104760 | CATT | **Observation 1: CSI report of PUCCH SCell can be scheduled on PCell or PUCCH SCell.**  **Observation 2: If TA is not valid, CSI report may not be used to** determine **PUCCH SCell activation, but PRACH transmission can be used.**  **Proposal 1: If the TA is valid, the legacy requirement for SCell activation can be reused, i.e. the UE transmit valid CSI report on PUCCH SCell. If the TA is not valid, the ending point of PUCCH SCell activation should be defined at the point UE transmit PRACH on PUCCH SCell.**  **Proposal 2: The time for reading beam information should not be considered specially in PUCCH SCell activation delay requirements for contention random access. Whether and how to indicate the beam information of the PUCCH SCell being activated for non-contention random access procedure needs more study.**  **Proposal 3: The UL spatial relation should not be considered for defining PUCCH SCell activation delay requirement.**  **Proposal 4: The PUCCH SCell activation delay can be same as normal SCell activation delay in TS38.133 when TA of target PUCCH SCell is valid.**  **Proposal 5: PUCCH SCell activation delay with invalid TA is only replacing the waiting time for valid CSI report with waiting time for PRACH occasion based on normal SCell activation delay.**  **Proposal 6: Only T1 (The delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell) need to be considered.**  **Proposal 7: Option 1 for issue 1-2-8 in WF [1] should be adopted.**  **Proposal 8: 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).**  **Proposal 9: Reuse the interruption requirement of normal SCell activation/deactivation.** |
| R4-2104833 | Apple | ***Proposal 1: RAN4 defines the PUCCH SCell activation requirement for the scenario that CSI report of PUCCH SCell is transmitted on PUCCH SCell to be activated.***  ***Proposal 2: The beam information for network to determine the associated SSB for PDCCH triggered RACH occasion shall consider both FR1 and FR2 cases.***  ***Proposal 3:***  ***If the being-activated PUCCH SCell is known, no need to indicate the beam information to network for determining the associated SSB in PDCCH order for RA, i.e., no additional SSB based beam measurement is needed.***  ***If the being-activated PUCCH SCell is unknown:***   * ***if target SCell belongs to FR2 and if there is at least one active serving cell on that FR2 band: following the same conditions in TS38.133 section 8.3.2 for intra-band FR2 SCell activation, no need to indicate the beam information to network for determining the associated SSB in PDCCH order for RA.*** * ***if target SCell belongs to FR2 and if there is no active serving cell on that FR2 band: need to indicate the beam information to network for determining the associated SSB in PDCCH order for RA.*** * ***if target SCell belongs to FR1 and it is contiguous to an active serving cell in the same band: following the same conditions in TS38.133 section 8.3.2 for intra-band contiguous FR1 SCell activation, no need to indicate the beam information to network for determining the associated SSB in PDCCH order for RA.*** * ***if target SCell belongs to FR1 and if there is no contiguous active serving cell on that FR1 band: need to indicate the beam information to network for determining the associated SSB in PDCCH order for RA.***   ***Proposal 4: the UL spatial relation of PUCCH on target being-activated SCell should be considered for PUCCH SCell activation in FR2 only.***  ***Proposal 5: the time uncertainty of the MAC CE for UL spatial relation activation of PUCCH in target being-activated SCell shall be defined in the baseline FR2 SCell activation delay part (Tactivate\_basic). Details are FFS.***  ***Proposal 6: when the TA associated with target PUCCH SCell is valid,***   * ***the PUCCH SCell activation delay in FR1 could be same as the normal SCell activation delay in TS38.133 section 8.3.2 which is (( THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length);*** * ***the PUCCH SCell activation delay in FR2 could use normal SCell activation delay (i.e., (( THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length);) in TS38.133 section 8.3.2 as baseline, but the time uncertainty of the MAC CE for UL spatial relation activation of PUCCH in target being-activated SCell shall be considered in the baseline Tactivation\_time.***   ***Proposal 7: 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***   ***The values for T1/T2/T3 might be revisited for NR PUCCH SCell activation.***  ***Proposal 8: 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 9: 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 10: 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 11:*** ***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 12: reuse the interruption requirement of normal SCell activation/deactivation to the interruption requirement of PUCCH SCell activation/deactivation.*** |
| R4-2104944 | CMCC | ***Proposal 1: except CSI report of PUCCH SCell can be transmitted on PUCCH SCell, it is better for RAN4 to have consensus on whether CSI report of PUCCH SCell can be transmitted on PCell, which will have impact on the specification of SCell activation delay requirement.***  ***Proposal 2: If it is agreed that CSI report of PUCCH SCell can be transmitted on PCell, for this case, TA is valid and the activation delay requirements for this scenario is the same as the normal SCell activation delay requirements (specified in section 8.3.2 of TS 38.133), which is (( THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length).***  ***Proposal 3: 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 4: for the case of SCell activation for deactivated PUCCH SCell with invalid TA,***   * ***the SCell activation delay requirement in DL:* (( THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length)** * ***the SCell activation delay requirement in UL: 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 Deactivation Delay Requirement for Activated PUCCH Scell  ***Proposal 5: 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).*** |
| R4-2104981 | NEC | **Proposal 1: RAN4 to agree that CSI reporting can be transmitted on PCell for PUCCH SCell activation and TA acquisition should be performed before CSI reporting.**  **Proposal 2: For an unknown FR1 SCell activation where CSI reporting is transmitted on PCell, RAN4 to consider including L1-RSRP/beam reporting as part of the SCell activation procedure.**  **Proposal 3: RAN4 to agree that CSI reporting can be transmitted on SCell for PUCCH SCell activation and TA acquisition should be performed before CSI reporting.**  **Proposal 4: For an unknown FR1 SCell activation where CSI reporting is transmitted on SCell, RAN4 to consider including L1-RSRP/beam reporting as part of the SCell activation procedure.**  **Proposal 5: For known/unknown FR1/2 SCell activation where CSI reporting is transmitted on SCell, RAN4 to agree that SCell activation procedure includes UL spatial relation info for PUCCH.**  **Proposal 6: PUCCH SCell activation delay (TDelay\_PUCCH\_SCell) is defined as: TDelay\_PUCCH\_SCell=TBasic\_SCell\_activation\_delay + TL1-RSRP + TTA\_delay + TUL\_spatial\_relationInfo; where:**   * **TBasic\_SCell\_activation\_delay is SCell activation delay as described in clause 8.3.2 of TS 38.133;** * **TL1-RSRP: L1-RSRP measuring and reporting delay. This is zero for FR1/2 known SCells and FR2 unknown SCells;** * **TTA\_delay: Delay required for TA command acquisition and application. Exact delay is FFS; and** * **TUL\_spatial\_relationInfo: Delay uncertainty for receiving UL spatial relation info MAC CE and UL spatial relation info application delay. Exact delay is FFS. This is applicable only when CSI report of to be activated SCell is transmitted on SCell.**   **Proposal 7: RAN4 to agree that timing command acquisition and application delay (TTA\_delay) when the TA is invalid is defined as: TTA\_delay = T1 + T2 + T3; where,**   * **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 8: RAN 4 to reuse the SCell deactivation requirement of clause 8.3.8 for SCell Deactivation requirements of Activated PUCCH SCell with multiple SCells.** |
| R4-2105104 | NTT DOCOMO, INC. | **Observation 1: The CSI reporting has not to be transmitted on PUCCH SCell if the UE has a valid TA.**  **Observation 2: The CSI reporting shall be transmitted on PUCCH SCell if the UE does not have a valid TA.**  **Proposal 1: Whether CSI report of PUCCH SCell is transmitted on PCell or PUCCH SCell to be activated shall be specified in the case of the UE not having a valid TA.**  **Proposal 2: CSI report of PUCCH SCell shall be transmitted on PUCCH SCell to be activated in the case of the UE not having a valid TA.**  **Observation 3: In some cases, NW has to know the beam information of the PUCCH SCell being activated.**  **Proposal 3: If the SCell being activated is known and belongs to FR2 and if there is no active serving cell on that FR2 band provided that PCell or PSCell is in FR1 or in FR2, the beam information is needed to be indicated to NW.**  **Proposal 4: If the PCell/PSCell and the target SCell are configured as FR1-FR2 CA or if the PCell/PSCell and the target SCell are in a FR2 band pair with independent beam management, and the target SCell is unknown, the beam information is needed to be indicated to NW.**  **Proposal 5: The UL spatial relation shall be considered for PUCCH SCell activation in the case of the UE not having a valid TA**  **Proposal 6: The PUCCH SCell activation delay when TA of target PUCCH SCell is valid is same as the normal SCell activation delay in TS38.133 section 8.3.2 which is ((THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length)**  **Proposal 7: 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 (T1)** * **the delay for obtaining a valid TA command for the sTAG (T2)** * **the delay for applying the received TA for uplink transmission (T3)**   **Observation 4: The maximum duration is 160ms (1 occasion every 16SFN) for FR1 both paired/unpaired spectrumthe and 151ms (slot #4,9,14,19,24,29,34,39 every 16SFN) value.**  **Proposal 8: T1 is the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell. T1 is up to 160ms for FR1 and 151ms for FR2 and the actual value of T1 shall depend upon the PRACH configuration used in the PUCCH SCell.**  **Proposal 9: The value of T2 and T3 shall include the effect of SCS configuration.**  **Proposal 10: T2 is the delay for obtaining a valid TA command for the sTAG to which the SCell configured with PUCCH belongs. T2 is up to 13ms / (μ+1) where μ is the SCS configuration index.**  **Proposal 11: T3 is the delay for applying the received TA for upling transmission. T3 is 6ms / (μ+1) where μ is the SCS configuration index.** |
| R4-2106408 | Nokia, Nokia Shanghai Bell | **Observation #1: In LTE PUCCH SCell activation, the UE is required to be able to transmit valid CSI report on the PUCCH SCell within the activation delay requirement. Only the second scenario is considered in LTE.**  **Proposal1: If the PUCCH SCell is in FR1, the UE is not required to indicate the beam information. The UE shall transmit CSI report of PUCCH SCell on the PUCCH SCell at the end of the activation.**  **Proposal2: If the PUCCH SCell is known in FR2, the UE does not need to indicate the beam information during the activation period. The UE shall transmit CSI report on the PUCCH SCell at the end of the activation.**  **Proposal3: If the PUCCH SCell is unknown in FR2, the UE may need to indicate the beam information before network can initiate the PDCCH order. The UE may need to transmit a valid CSI report of PUCCH SCell on the PCell before network initiating the PDCCH order.**  **Proposal4: If RAN4 agrees to send beam information on PCell, we propose sending LS to RAN1/2 asking for the feasibility and potential solutions of transmitting CSI report of PUCCH SCell on the PCell.**  **Proposal5: 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.**  **Proposal6: 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.**  **Proposal7: 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 .**  **Proposal8: The activation delay requirement for PUCCH SCell shall be defined assuming no dedicated time period for CSI measurements and reporting.**  **Proposal9: 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.** |
| R4-2106534 | OPPO | **Observation 1: Minimum requirements of delay should be considered assuming PUCCH Scell should be ready for uplink transmission.**  **Proposal 1：Specify the same RRM requirement for both case 1 and case 2.**  **Proposal 2: The beam information of the PUCCH SCell being activated is not always essential to be indicated to NW.**  **Proposal 3: The PUCCH SCell activation delay with valid TA should be the same as the normal SCell activation delay in TS38.133 section 8.3.2 which is (( THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length).**  **Proposal 4: The additional delay for NR PUCCH SCell activation with invalid TA should be defined, considering at least the following 3 components:**   * **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 uplink transmission**   **Proposal 5: For SCell deactivation delay requirement for activated PUCCH SCell with multiple Scells, the requirements for activated normal SCell with multiple SCells are reused, which is (( THARQ + 3ms)/ NR slot length).**  **Proposal 6: For PUCCH SCell activation/deactivation with valid TA case, the interruption requirement of normal SCell activation/deactivation for valid TA case can be reused. For PUCCH SCell activation/deactivation with invalid TA cases, FFS the interruption requirements after the additional delay are clearly defined.** |
| R4-2106883 | Ericsson | **Proposal 1:** RAN4 to derive requirements for the scenario where CSI for PUCCH SCell is reported via PUCCH SCell, as the other scenario with reporting vis spCell is not different from existing activation procedure for SCell with uplink belonging to secondary TAG.  **Proposal 2:** RAN4 to focus on deriving PUCCH SCell activation requirements for the scenario where the beam index to provide in the PDCCH order is known to NW beforehand.  **Proposal 3:** RAN4 shall consider spatial relation information in the PUCCH SCell activation procedure.  **Proposal 4:** Delay requirements for PUCCH SCell activation shall account for additional time when PDCCH order is received outside Tactivate\_basic. The additional time shall be accounted for by an expression and/or a delay component, e.g. max(Tactivate\_basic, TPDCCH\_order).  **Proposal 5:** Delay requirement for PUCCH SCell activation shall allow for extended time when there are additional interruptions during the activation procedure. The extended time shall be in proportion to the impact the interruption has on the activation procedure. The extended time can be captured on a general level in a sentence.  **Proposal 6:** In activation of multiple SCells with one PUCCH SCell, activation delay requirement shall apply at least for the PUCCH SCell in the event that one or more SCells have configurations that render parallel activation impossible for the UE. FFS on whether activation delay requirement also is to apply for SCells that are compatible with parallel activation with PUCCH SCell.  **Proposal 7:** Existing interruption requirements for non-PUCCH SCell activation are applied to PUCCH SCell activation. Constraints on PUSCH/PUCCH/SRS transmission on CCs in same band when CFRA is carried out are already covered in TS 38.213. |
| R4-2106988 | Huawei, HiSilicon | **Observation 1: CSI reporting of PUCCH SCell on PUCCH PCell is not preferred for the following reason:**   * **NW cannot know when the UL of PUCCH SCell is ready.** * **Resource wasting as NW has to reserve PUCCH in PCell for the PUCCH SCell** * **Reconfiguration is needed to remove the CSI reporting on the PUCCH in PCell after the SCell is activated every time.**   **Proposal 1: Define SCell activation requirements at least for CSI reporting on PUCCH SCell to be activated.**  **Observation 2: The beam information is not needed for LTE and NW could indicate a CFRA RACH via PDCCH order directly.**  **Observation 3: It is beneficial to allow CBRA for PUCCH SCell activation when the Cell is unknown and TA is invalid. The procedure for beam indication and PDCCH order and the corresponding delay are saved.**  **Proposal 2: Send LS to RAN2 to inform the observation from RAN4 about the benefits of allowing CBRA activation and ask whether it is feasible to CBRA for PUCCH SCell.**  **Proposal 3: Further discuss the suitable way for beam information indication if the CBRA on PUCCH SCell is not feasible.** |
| R4-2107290 | Qualcomm Incorporated | **Proposal 1: PUCCH SCell activation requirements are applicable only to the following cases:**   * + **the PUCCH SCell is in a different band from SpCell band**   + **for invalid TA, UEs capable of more than one TAG**   + **for unknown PUCCH SCell, TA shall be assumed invalid**   **Proposal 2: For UEs not supporting one of the following capabilities, FR2 PUCCH SCell (de)activation requirements are not defined.**   * + **beamCorrespondenceWithoutUL-BeamSweeping**   + **beamCorrespondenceSSB-based-r16**   **Proposal 3: For known PUCCH SCell with a valid TA, the single SCell activation requirements in terms of activation delay and interruption are the same as respective legacy SCell activation requirements except that CSI of the PUCCH SCell is reported on the SCell.**  **Proposal 4: For known PUCCH SCell with an invalid TA, the single SCell activation requirements in terms of activation delay and interruption are defined as follows:**   * + **Starting point of interruption window is the same as legacy SCell activation requirement**   + **Activation delay = legacy SCell activation delay + T1 + T2 + T3, where**     - **T1: the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell**     - **T2: the delay for obtaining a valid TA command for the sTAG**     - **T3: the delay for applying the received TA for uplink transmission**   + **CSI of the PUCCH SCell is reported on the SCell after T3**   + **For FR1, the above requirement also applies to “unknown PUCCH SCell with invalid TA” if one of the following conditions is met:**     - **‘ssb-PositionInBurst’ indicates only one SSB is being actually transmitted, or**     - **‘ssb-PositionInBurst’ indicates multiple SSBs and TCI indication is provided in same MAC PDU with SCell activation**   + **For FR2, if L1-RSRP report is followed by RRC reconfiguration for PUCCH-SpatialRelationInfo update based on the report during the activation procedure, an additional delay is expected**   **Proposal 5: For unknown PUCCH SCell with an invalid TA, the single SCell activation requirements in terms of activation delay and interruption are defined as follows:**   * + **Starting point of interruption window is the same as legacy SCell activation requirement**   + **Activation delay = T0 + T1 + T2 + T3, where**     - **T0:**        * **If semi-persistent CSI-RS is used for CSI reporting,**       * **If periodic CSI-RS is used for CSI reporting,**     - **T1: the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell**     - **T2: the delay for obtaining a valid TA command for the sTAG**     - **T3: the delay for applying the received TA for uplink transmission**   + **PDCCH triggering CF-RA shall be after UE finishes processing the last activation command for TCI**   + **CSI of the PUCCH SCell is reported on the SCell after T3**   + **For FR2, if L1-RSRP report is followed by RRC reconfiguration for PUCCH-SpatialRelationInfo update based on the report during the activation procedure, an additional delay is expected**   + **For FR1, the above requirement applies only when none of the following conditions is met:**     - **‘ssb-PositionInBurst’ indicates only one SSB is being actually transmitted, or**     - **‘ssb-PositionInBurst’ indicates multiple SSBs and TCI indication is provided in same MAC PDU with SCell activation** |

## Open issues summary

### Sub-topic 1-1 General

**Issue 1-1-1: The ending point of PUCCH SCell activation?**

* Proposals
  + Option 1: (CATT)
    - For valid TA case, the ending point of PUCCH SCell activation should be the point when UE transmit valid CSI report on PUCCH SCell
    - For invalid TA case, the ending point of PUCCH SCell activation should be the point when UE transmit PRACH on PUCCH SCell
  + Option 2:
    - The ending point of PUCCH SCell activation is the point when UE transmit valid CSI report on a certain cell (SpCell or PUCCH SCell or others) for both valid and invalid TA cases.
* Recommended WF
  + *Need more discussion*

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| **Issue 1-1-1: The ending point of PUCCH SCell activation?** | |
| **Company** | **Comments** |
| XXX |  |
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**Issue 1-1-2:** **Which cell is the CSI reporting transmitted for PUCCH SCell activation?**

* Proposals
  + Option 1: (MTK)
    - UE is only required to send the L1-RSRP and CQI report through the SpCell before the PUCCH SCell is successfully activated.
  + Option 2: (vivo, Apple, Ericsson, Huawei, Qualcomm)
    - CSI report of PUCCH SCell is transmitted on PUCCH SCell to be activated
  + Option 2a: (NTT DOCOMO)
    - CSI report of PUCCH SCell is transmitted on PUCCH SCell to be activated in the case of the UE not having a valid TA.
  + Option 3: (Xiaomi)
    - CSI report of PUCCH SCell is transmitted on PSCell
  + Option 4: (Nokia)
    - CSI report of PUCCH SCell is transmitted on PUCCH SCell to be activated if the PUCCH SCell is in FR1 or known cell in FR2.
    - A valid CSI report of PUCCH SCell is transmitted on the PCell before network initiating the PDCCH order if the PUCCH SCell is unknown in FR2.
  + Option 5: (NEC)
    - CSI reporting can be transmitted on PCell or SCell and TA acquisition should be performed before CSI reporting.
  + Option 6: (OPPO)
    - Specify the same RRM requirement for the cases when CSI reporting is transmitted in PCell or PUCCH SCell to be activated.
  + Option 7: (CATT)
    - Not needed
* Recommended WF
  + *Need more discussion*

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| **Issue 1-1-2: Which cell is the CSI reporting transmitted for PUCCH SCell activation?** | |
| **Company** | **Comments** |
| XXX |  |
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**Issue 1-1-3: Whether the beam information (SSB index) of PUCCH SCell is needed to be indicated to NW?**

* Proposals
  + Option 1: (vivo)
    - For the unknown case, the beam information of the PUCCH SCell being activated should be indicated to NW.
    - For the known case, this indication of this information can be omitted.
  + Option 2: (NEC)
    - Needed for unknown FR1 SCell activation
      * For an unknown FR1 SCell activation where CSI reporting is transmitted on SCell, RAN4 to consider including L1-RSRP/beam reporting as part of the SCell activation procedure.
  + Option 3: (Nokia)
    - Needed for unknown PUCCH SCell in FR2.
    - Not needed for PUCCH Scell in FR1 or known PUCCH SCell in FR2.
    - If RAN4 agrees to send beam information on PCell, send LS to RAN1/2 asking for the feasibility and potential solutions of transmitting CSI report of PUCCH SCell on the PCell.
  + Option 4: (Apple)
    - If the being-activated PUCCH SCell is known, no need to indicate the beam information to network for determining the associated SSB in PDCCH order for RA, i.e., no additional SSB based beam measurement is needed.
    - If the being-activated PUCCH SCell is unknown:
      * if target SCell belongs to FR2 and if there is at least one active serving cell on that FR2 band: following the same conditions in TS38.133 section 8.3.2 for intra-band FR2 SCell activation, no need to indicate the beam information to network for determining the associated SSB in PDCCH order for RA.
      * if target SCell belongs to FR2 and if there is no active serving cell on that FR2 band: need to indicate the beam information to network for determining the associated SSB in PDCCH order for RA.
      * if target SCell belongs to FR1 and it is contiguous to an active serving cell in the same band: following the same conditions in TS38.133 section 8.3.2 for intra-band contiguous FR1 SCell activation, no need to indicate the beam information to network for determining the associated SSB in PDCCH order for RA.
      * if target SCell belongs to FR1 and if there is no contiguous active serving cell on that FR1 band: need to indicate the beam information to network for determining the associated SSB in PDCCH order for RA.
  + Option 5: (NTT DOCOMO)
    - If the SCell being activated is known and belongs to FR2 and if there is no active serving cell on that FR2 band provided that PCell or PSCell is in FR1 or in FR2, the beam information is needed to be indicated to NW.
    - If the PCell/PSCell and the target SCell are configured as FR1-FR2 CA or if the PCell/PSCell and the target SCell are in a FR2 band pair with independent beam management, and the target SCell is unknown, the beam information is needed to be indicated to NW.
  + Option 6: (Ericsson)
    - RAN4 to focus on deriving PUCCH SCell activation requirements for the scenario where the beam index to be provided in the PDCCH order is known to NW beforehand.
  + Option 7: (Huawei)
    - Send LS to RAN2 to inform the observation from RAN4 about the benefits of allowing CBRA activation and ask whether it is feasible to CBRA for PUCCH SCell.
    - Further discuss the suitable way for beam information indication if the CBRA on PUCCH SCell is not feasible.
  + Option 8: (Xiaomi)
    - No
  + Option 9: (CATT)
    - Not needed for contention random access. Needed for non-contention random access.
* Recommended WF
  + *Need more discussion*

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| **Issue 1-1-3: Whether the beam information PUCCH SCell is needed to be indicated to NW?** | |
| **Company** | **Comments** |
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**Issue 1-1-4: Which cell is the L1-RSRP reporting transmitted for PUCCH SCell activation?**

* Proposals
  + Option 1:
    - L1-RSRP report is transmitted on the PUCCH SCell to be activated.
  + Option 2:
    - L1-RSRP report is transmitted on the SpCell.
  + Others.

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| **Issue 1-1-4: Which cell is the L1-RSRP reporting transmitted for PUCCH SCell activation?** | |
| **Company** | **Comments** |
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**Issue 1-1-5: Whether the UL spatial relation is needed for PUCCH SCell activation?**

* Proposals
  + Option 1: (MTK, CATT)
    - No.
  + Option 2: (NEC, Ericsson)
    - Needed if CSI report of PUCCH SCell is transmitted on PUCCH SCell to be activated
  + Option 3: (NTT DOCOMO)
    - Shall be considered in the case of invalid TA.
  + Option 3: (Apple)
    - The UL spatial relation of PUCCH on target being-activated SCell should be considered for PUCCH SCell activation in FR2 only.
      * the time uncertainty of the MAC CE for UL spatial relation activation of PUCCH in target being-activated SCell shall be defined in the baseline FR2 SCell activation delay part (Tactivate\_basic). Details are FFS
* Recommended WF
  + *Need more discussion*

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| **Issue 1-1-5: Whether the UL spatial relation is needed for PUCCH SCell activation?** | |
| **Company** | **Comments** |
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**Issue 1-1-6: Known/unknown condition for PUCCH SCell activation?**

* Proposals
  + Option 1: (MTK)
    - The known and unknown condition for SCell activation can be reused for PUCCH SCell.
* Recommended WF
  + *Need more discussion*

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| **Issue 1-1-6: Known/unknown condition for PUCCH SCell activation?** | |
| **Company** | **Comments** |
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**Issue 1-1-7: UE capability for FR2 PUCCH SCell (de)activation requirements?**

* Proposals
  + Option 1: (Qualcomm)
    - For UEs not supporting one of the following capabilities, FR2 PUCCH SCell (de)activation requirements are not defined.
      * beamCorrespondenceWithoutUL-BeamSweeping
      * beamCorrespondenceSSB-based-r16.
* Recommended WF
  + *Need more discussion*

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| **Issue 1-1-7: UE capability for FR2 PUCCH SCell (de)activation requirements?** | |
| **Company** | **Comments** |
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### Sub-topic 1-2 PUCCH Scell activation delay requirement for valid TA case

* Proposals
  + Option 1: (MTK, vivo, Xiaomi, CATT, CMCC, NTT DOCOMO, Nokia, OPPO, Qualcomm)
    - Reuse the Rel-15 SCell activation delay requirement which is (( THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length).
  + Option 2: (Apple)
    - In FR1, reuse the Rel-15 SCell activation delay requirement which is (( THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length).
    - In FR2, use normal SCell activation delay (i.e., (( THARQ + Tactivation\_time +TCSI\_Reporting)/ NR slot length);) in TS38.133 section 8.3.2 as baseline, but the time uncertainty of the MAC CE for UL spatial relation activation of PUCCH in target being-activated SCell shall be considered in the baseline Tactivation\_time.
  + Option 3: (NEC)
    - PUCCH SCell activation delay (TDelay\_PUCCH\_SCell) is defined as: TDelay\_PUCCH\_SCell=TBasic\_SCell\_activation\_delay + TL1-RSRP + TTA\_delay + TUL\_spatial\_relationInfo; where:
      * TBasic\_SCell\_activation\_delay is SCell activation delay as described in clause 8.3.2 of TS 38.133;
      * TL1-RSRP: L1-RSRP measuring and reporting delay. This is zero for FR1/2 known SCells and FR2 unknown SCells;
      * TTA\_delay: Delay required for TA command acquisition and application. Exact delay is FFS; and
      * TUL\_spatial\_relationInfo: Delay uncertainty for receiving UL spatial relation info MAC CE and UL spatial relation info application delay. Exact delay is FFS. This is applicable only when CSI report of to be activated SCell is transmitted on SCell.
      * TTA\_delay = 0
* Recommended WF
  + *Need more discussion*

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| **Sub-topic 1-2 PUCCH Scell activation delay requirement for valid TA case** | |
| **Company** | **Comments** |
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### Sub-topic 1-3 PUCCH Scell activation delay requirement for invalid TA case

**Issue 1-3-1: The PUCCH SCell activation requirements for invalid TA case**

* Proposals
  + Option 1: (MTK, vivo, Xiaomi, Apple, CMCC, NTT DOCOMO, OPPO)
    - 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:
      * the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell (T1);
      * the delay for obtaining a valid TA command for the sTAG to which the SCell configured with PUCCH belongs (T2);
      * the delay for applying the received TA for uplink transmission (T3)
  + Option 2: (CATT)
    - Only T1 (The delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell) need to be considered
  + Option 3: (NEC)
    - PUCCH SCell activation delay (TDelay\_PUCCH\_SCell) is defined as: TDelay\_PUCCH\_SCell=TBasic\_SCell\_activation\_delay + TL1-RSRP + TTA\_delay + TUL\_spatial\_relationInfo; where:
      * TBasic\_SCell\_activation\_delay is SCell activation delay as described in clause 8.3.2 of TS 38.133;
      * TL1-RSRP: L1-RSRP measuring and reporting delay. This is zero for FR1/2 known SCells and FR2 unknown SCells;
      * TTA\_delay: Delay required for TA command acquisition and application. Exact delay is FFS; and
      * TUL\_spatial\_relationInfo: Delay uncertainty for receiving UL spatial relation info MAC CE and UL spatial relation info application delay. Exact delay is FFS. This is applicable only when CSI report of to be activated SCell is transmitted on SCell.
      * TTA\_delay = T1 + T2 + T3
  + Option 4: (Nokia)
    - If the UE does not have a valid TA for transmitting on an SCell,
      * the activation delay shall be defined for downlink and uplink actions separately.
      * 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 activation delay requirement for PUCCH SCell shall be defined assuming no dedicated time period for CSI measurements and reporting.
      * 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 5: (Ericsson)
    - Delay requirements for PUCCH SCell activation shall account for additional time when PDCCH order is received outside Tactivate\_basic. The additional time shall be accounted for by an expression and/or a delay component, e.g. max(Tactivate\_basic, TPDCCH\_order).
  + Option 6: (Qualcomm)
    - For known PUCCH SCell with an invalid TA, the single SCell activation requirements in terms of activation delay and interruption are defined as follows:
      * Starting point of interruption window is the same as legacy SCell activation requirement
      * Activation delay = legacy SCell activation delay + T1 + T2 + T3, where
        + T1: the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell
        + T2: the delay for obtaining a valid TA command for the sTAG
        + T3: the delay for applying the received TA for uplink transmission
      * CSI of the PUCCH SCell is reported on the SCell after T3
      * For FR1, the above requirement also applies to “unknown PUCCH SCell with invalid TA” if one of the following conditions is met:
        + ‘ssb-PositionInBurst’ indicates only one SSB is being actually transmitted, or
        + ‘ssb-PositionInBurst’ indicates multiple SSBs and TCI indication is provided in same MAC PDU with SCell activation
      * For FR2, if L1-RSRP report is followed by RRC reconfiguration for PUCCH-SpatialRelationInfo update based on the report during the activation procedure, an additional delay is expected
    - For unknown PUCCH SCell with an invalid TA, the single SCell activation requirements in terms of activation delay and interruption are defined as follows:
      * Starting point of interruption window is the same as legacy SCell activation requirement
      * Activation delay = T0 + T1 + T2 + T3, where
        + T0:

If semi-persistent CSI-RS is used for CSI reporting,

If periodic CSI-RS is used for CSI reporting,

* + - * + T1: the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell
        + T2: the delay for obtaining a valid TA command for the sTAG
        + T3: the delay for applying the received TA for uplink transmission
      * PDCCH triggering CF-RA shall be after UE finishes processing the last activation command for TCI
      * CSI of the PUCCH SCell is reported on the SCell after T3
      * For FR2, if L1-RSRP report is followed by RRC reconfiguration for PUCCH-SpatialRelationInfo update based on the report during the activation procedure, an additional delay is expected
      * For FR1, the above requirement applies only when none of the following conditions is met:
        + ‘ssb-PositionInBurst’ indicates only one SSB is being actually transmitted, or
        + ‘ssb-PositionInBurst’ indicates multiple SSBs and TCI indication is provided in same MAC PDU with SCell activation
* Recommended WF
  + *Need more discussion*

**Issue 1-3-2: the delay uncertainty in acquiring the first available PRACH occasion in the PUCCH SCell (i.e. T1)**

* Proposals
  + Option 1: (MTK, 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.
  + Option 2: (NTT DOCOMO)
    - T1 is up to 160ms for FR1 and 151ms for FR2 and the actual value of T1 shall depend upon the PRACH configuration used in the PUCCH SCell.
* Recommended WF
  + *Need more discussion*

**Issue 1-3-3: 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: (MTK, 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. Slot n is the slot when UE received PUCCH SCell activation MAC CE.
  + Option 2: (NTT DOCOMO)
    - T2 is the delay for obtaining a valid TA command for the sTAG to which the SCell configured with PUCCH belongs. T2 is up to 13ms / (μ+1) where μ is the SCS configuration index.
  + Option 3: (CATT)
    - Not needed
* Recommended WF
  + *Need more discussion*

**Issue 1-3-4: the delay for applying the received TA for uplink transmission on target PUCCH SCell being activated (i.e. T3)**

* Proposals
  + Option 1: (MTK, Apple)
    - 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.
  + Option 2: (NTT DOCOMO)
    - T3 is the delay for applying the received TA for upling transmission. T3 is 6ms / (μ+1) where μ is the SCS configuration index.
  + Option 3: (CATT)
    - Not needed
* Recommended WF
  + *Need more discussion*

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| **Sub-topic 1-3 PUCCH Scell activation delay requirement for invalid TA case** | |
| **Company** | **Comments** |
| XXX | Issue 1-3-1:  Issue 1-3-2:  Issue 1-3-3:  Issue 1-3-4: |
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### Sub-topic 1-4 Interruption requirements for PUCCH SCell activation

**Issue 1-4-1: Interruption requirements for PUCCH SCell activation in valid TA case**

* Proposals
  + Option 1: (MTK, vivo, CATT, Apple, OPPO, Ericsson, Qualcomm)
    - Reuse the existing requirement for SCell activation in Rel-15.
* Recommended WF
  + *Agree on option 1.*

**Issue 1-4-2: Interruption requirements for PUCCH SCell activation in invalid TA case**

* Proposals
  + Option 1: (MTK)
    - The interruption requirement shall include the existing requirement for SCell activation in Rel-15.
    - FFS whether to introduce interruption by PRACH transmission due to different SCS.
  + Option 2: (CATT, Apple, Ericsson)
    - Reuse the interruption requirement of normal SCell activation.
  + Option 3: (OPPO)
    - FFS after the additional delay are clearly defined
* Recommended WF
  + *Need more discussion*

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| **Sub-topic 1-4 Interruption requirements for PUCCH SCell activation** | |
| **Company** | **Comments** |
| XXX | Issue 1-4-1:  Issue 1-4-2: |
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### Sub-topic 1-5 Applicability of PUCCH SCell activation requirements

* Proposals
  + Option 1: (CATT, 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.
  + Option 2: (Qualcomm)
    - PUCCH SCell activation requirements are applicable only to the following cases:
      * the PUCCH SCell is in a different band from SpCell band
      * for invalid TA, UEs capable of more than one TAG
      * for unknown PUCCH SCell, TA shall be assumed invalid
  + Option 3: (Ericsson)
    - Delay requirements for PUCCH SCell activation shall account for additional time when PDCCH order is received outside Tactivate\_basic. The additional time shall be accounted for by an expression and/or a delay component, e.g. max(Tactivate\_basic, TPDCCH\_order).
    - Delay requirement for PUCCH SCell activation shall allow for extended time when there are additional interruptions during the activation procedure. The extended time shall be in proportion to the impact the interruption has on the activation procedure. The extended time can be captured on a general level in a sentence.
    - In activation of multiple SCells with one PUCCH SCell, activation delay requirement shall apply at least for the PUCCH SCell in the event that one or more SCells have configurations that render parallel activation impossible for the UE. FFS on whether activation delay requirement also is to apply for SCells that are compatible with parallel activation with PUCCH SCell.
* Recommended WF
  + *Need more discussion*

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| **Sub-topic 1-5 Applicability of PUCCH SCell activation requirements** | |
| **Company** | **Comments** |
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### Sub-topic 1-6 Interruption requirements for PUCCH SCell deactivation

* Proposals
  + Option 1: (MTK, vivo, CATT, Apple, OPPO)
    - Reuse the existing requirement for SCell deactivation in Rel-15.
* Recommended WF
  + *Agree option 1.*

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| **Sub-topic 1-6 Interruption requirements for PUCCH SCell deactivation** | |
| **Company** | **Comments** |
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### Sub-topic 1-7 PUCCH SCell deactivation delay requirement for activated PUCCH SCell with multiple Scells

* Proposals
  + Option 1: (CATT, NEC, OPPO)
    - 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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| **Sub-topic 1-7 PUCCH SCell deactivation delay requirement for activated PUCCH SCell with multiple Scells** | |
| **Company** | **Comments** |
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## Companies views’ collection for 1st round

### Open issues

### CRs/TPs comments collection

## Summary for 1st round

### Open issues

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|  | **Status summary** |
| **Sub-topic 1-1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |
| **Sub-topic 1-2** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |
| **Sub-topic 1-3** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |
| **Sub-topic 1-4** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |
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### CRs/TPs

## Discussion on 2nd round (if applicable)

# Recommendations for Tdocs

## 1st round

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Comments** |
| WF on … | YYY |  |
| LS on … | ZZZ | To: RAN\_X; Cc: RAN\_Y |
|  |  |  |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-210xxxx | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
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Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics incl. existing and new tdocs.
2. For the Recommendation column please include one of the following:
   1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
   2. Other documents: Agreeable, Revised, Noted
3. For new LS documents, please include information on To/Cc WGs in the comments column
4. Do not include hyper-links in the documents

## 2nd round

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-210xxxx | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| R4-210xxxx | WF on … | YYY | Agreeable, Revised, Noted |  |
| R4-210xxxx | LS on … | ZZZ | Agreeable, Revised, Noted |  |
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Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics.
2. For the Recommendation column please include one of the following:
   1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
   2. Other documents: Agreeable, Revised, Noted
3. Do not include hyper-links in the documents