

1st round wrap-up
Variant of [102-e][235] NR_SmallData_INACTIVE_NWM Version 0.0.3
RAN4

3GPP TSG-RAN WG4 Meeting # 102-e R4-2206778

Electronic Meeting, Feb 21st – Mar 3rd, 2022

Agenda item: 10.25

Source: Moderator (ZTE)

Title: Email discussion summary for [102-e][235] NR_SmallData_INACTIVE_NWM

Document for: Information

1 Introduction

Briefly introduce background, the scope of this email discussion (e.g. list of treated agenda items) and provide some guidelines for email discussion if necessary.

List of candidate target of email discussion for 1st round and 2nd round

- 1st round:

- Consensus on the two windows
- Consensus on the duration between T2 and CG occasion
-

- 2nd round: TBA

- Update the draft CRs according to the consensus if any

Below is the overview of all contributions to be discussed in this thread.

(4) The maximum allowed duration between T2 and the moment of actual CG transmission is 160ms
R4-2203535

Draft CR TA validation for Small Data Transmissions

Nokia, Nokia Shanghai Bell

Draft CR for TA validation for NR SDT
R4-2203796

On RRM requirement for CG-SDT

Apple

- (1) Allow UE not to meet inter-freq or inter-RAT measurement requirements in an SDT session
- (2) Prioritize inter-frequency measurement occasion if colliding with subsequent SDT occasions.
- (3) For UE unable to receive PO occasion and transmit SDT occasion simultaneously, prioritize receiving PO occasion or no requirement is specified for the collision
- (4) For UE unable to perform intra-freq SSB measurement and transmit SDT occasion simultaneously, scheduling restrictions apply for subsequent SDT transmission.
- (5) $X1=Y1=640\text{ms}$, $X2=Y2=\text{DRX cycle for FR1}$, and $X1=Y1 = M \text{ DRX cycles}$, $X2 = Y2 = \text{unlimited}$ (i.e., removed from the formula) for FR2

(6) The maximum allowed duration between T2 and the moment of actual CG transmission is 1120ms for FR1, and 800ms for FR2.
R4-2203867

RRM requirements and TA validation windows for CG-SDT

Qualcomm Incorporated

- (1) UE does not meet inter-frequency and inter-RAT requirements for the subsequent SDT transmission.
- (2) Legacy scheduling restrictions are applied, and no additional scheduling restriction is necessary.
- (3) $X1$ and $Y1 = 480\text{ms}$ for FR1, FR2. A value larger than 480 for FR1 is acceptable. And set $X2=Y2 = \text{unlimited}$ (equivalent to removal from formulas).
- (4) The duration between T2 and the actual CG occasion can be 50ms (Moderator's puzzle: maximum?)

(5) Leave the NR SDT feature to RAN2, and RAN4 involvement should be after RAN2 agree on the feature.
R4-2205216

Draft big CR for SDT RRM requirements

ZTE Wistron Telecom AB

Placeholder for the running big CR
R4-2205217

On RRM requirements for NR SDT

ZTE Wistron Telecom AB

(1) RAN4 not to introduce an additional RRM requirement for the interval between the TA validation moment and CG-SDT transmission.

(2) $X1=Y1$ is defined as the period of intra-frequency measurement without gap.

(3) Set $X2=Y2$ as PagingCycle in the IE SuspendConfig.

(4) RAN4 introduce two items for the NR SDT feature as shown in the table.
R4-2205392

Discussion on remaining issues for SDT RRM

Huawei, HiSilicon

(1) Set $X1=Y1$ as 1.28s.

(2) Set $X2=Y2$ as $N*DRX$ cycles. $N=1$ for FR1. $N=N1$ from Table 4.2.2.2-1 in 38.133.

(3) If introducing a requirement on the distance between T2 and CG-SDT transmission, the maximum value is 640ms.

(4) UE is not required to meet inter-frequency and inter-RAT measurement requirements during subsequent transmission in SDT session.

(5) Scheduling restriction applies to the SDT subsequent transmission during SSB occasions.
R4-2205393

CR on SDT RRM requirements

Huawei, HiSilicon

(1) Adding abbreviations (SDT, CG-SDT)

(2) excluding measurements of inter-freq NR and inter-RAT EUTRA cells in an SDT session.
R4-2205638

Discussions on RRM requirements for Small Data Transmissions

Ericsson

(1) Update the definition of T2 to consider the actual CG occasion. (Moderator: We already agreed that T2 stays the same definition as LTE, and address the concern on the duration between T2 and the actual CG occasion by considering an additional requirement.)

(2) The UE is not required to meet the inter-frequency and inter-RAT neighbour cell measurement

requirements

(3) No needs to introduce scheduling restriction in FR1

(4) Scheduling restriction is needed in FR2 if different numerologies are used for SDT and SSBs used for DL measurements

(5) RAN4 to agree on minimum condition on SSB availability for HD-FDD UE to meet the SDT requirements.

(6) Set $X1 = Y1 = 200\text{ms}$ for FR1, 400ms for FR2, $X2 = Y2M1 * T_{\text{DRX}}$ for FR1, $M1 * N1 * T_{\text{DRX}}$ for FR2
R4-2205639

Draft CR TA validation for Small Data Transmissions

Ericsson

Duplicate of R4-2203535?[ST2]
R4-2205923

RRM requirements for CG-SDT

MediaTek Inc.

(1) X1 should be defined based on the measurement period of intra-frequency measurements given the existing NR requirements

Set $X1 = Y1 = \max(200\text{ms}, 5 \times \text{SMTC period})$ for FR1, $\max(400\text{ms}, M_{\text{meas_period_w/o_gaps}} \times \text{SMTC period})$ for FR2

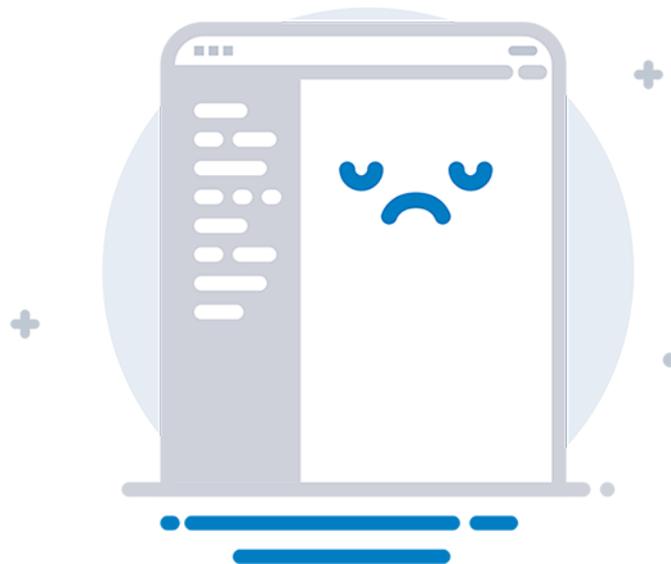
(2) Set $X2 = Y2 = M1 * \text{DRX cycle}$ for FR1, $M1 * N1 * \text{DRX cycle}$ for FR2

(3) no need to introduce any requirements between T2 and the moment of the actual CG-SDT transmission

(4) UE is allowed not to meet inter-frequency and inter-RAT requirements during subsequent SDT transmission assuming that subsequent SDT transmission is too long.

Clarify that a limitation on how long subsequent SDT transmission can last in this case

(5) Scheduling restriction can be applied during subsequent SDT transmission



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2 Topic #1: TA validation windows

Main technical topic overview. The structure can be done based on sub-agenda basis.

This topic addresses the two TA validation windows under the unified formulas agreed in RAN4#101-bis-e:

(1) $X1/X2, Y1/Y2$

(2) *Potential RRM requirement for the duration between T2 and the actual CG occasion.*

2.1 Companies' contributions summary

(4) The maximum allowed duration between T2 and the moment of actual CG transmission is 160ms
R4-2203796

On RRM requirement for CG-SDT

Apple

(5) $X1=Y1=640\text{ms}$, $X2=Y2=\text{DRX cycle for FR1}$, and $X1=Y1 = M \text{ DRX cycles}$, $X2 = Y2 = \text{unlimited}$ (i.e., removed from the formula) for FR2

(6) The maximum allowed duration between T2 and the moment of actual CG transmission is 1120ms for FR1, and 800ms for FR2.
R4-2203867

RRM requirements and TA validation windows for CG-SDT

Qualcomm Incorporated

(3) X1 and Y1 = 480ms for FR1, FR2. A value larger than 480 for FR1 is acceptable. And set X2=Y2 = unlimited (equivalent to removal from formulas).

(4) The duration between T2 and the actual CG occasion can be 50ms (Moderator's puzzle: maximum?)

R4-2205217

On RRM requirements for NR SDT

ZTE Wistron Telecom AB

(1) RAN4 not to introduce an additional RRM requirement for the interval between the TA validation moment and CG-SDT transmission.

(2) X1=Y1 is defined as the period of intra-frequency measurement without gap.

(3) Set X2 =Y2 as PagingCycle in the IE SuspendConfig.

R4-2205392

Discussion on remaining issues for SDT RRM

Huawei, HiSilicon

(1) Set X1=Y1 as 1.28s.

(2) Set X2=Y2 as N*DRX cycles. N=1 for FR1. N=N1 from Table 4.2.2.2-1 in 38.133.

(3) If introducing a requirement on the distance between T2 and CG-SDT transmission, the maximum value is 640ms.

R4-2205638

Discussions on RRM requirements for Small Data Transmissions

Ericsson

(1) Update the definition of T2 to consider the actual CG occasion. (Moderator: We already agreed that T2 stays the same definition as LTE, and address the concern on the duration between T2 and the actual CG occasion by considering an additional requirement.)

(6) Set X1 = Y1 = 200ms for FR1, 400ms for FR2, X2 = Y2M1 * T_{DRX} for FR1, M1*N1*T_{DRX} for FR2

R4-2205923

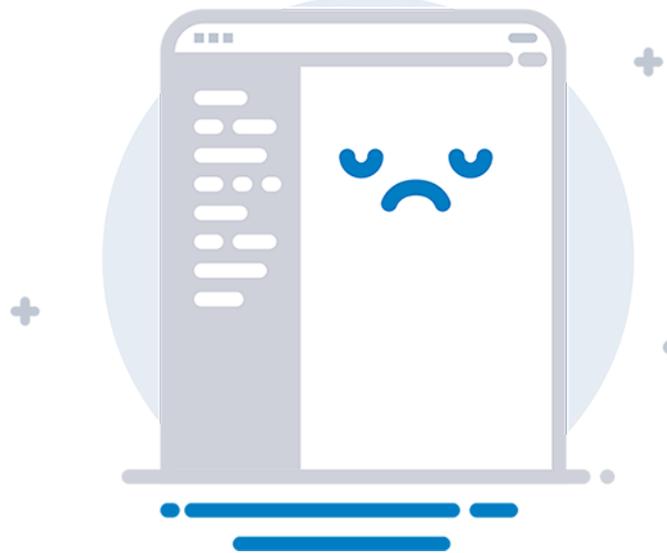
RRM requirements for CG-SDT

MediaTek Inc.

(1) X1 should be defined based on the measurement period of intra-frequency measurements given the existing NR requirements

Set $X1 = Y1 = \max(200\text{ms}, 5 \times \text{SMTC period})$ for FR1, $\max(400\text{ms}, M_{\text{meas_period_w/o_gaps}} \times \text{SMTC period})$ for FR2

(2) Set $X2 = Y2 = M1 * \text{DRX cycle}$ for FR1, $M1 * N1 * \text{DRX cycle}$ for FR2



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2.2 Open issues summary

Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies' contributions.

2.2.1 Sub-topic 1-1

Sub-topic description: This sub-topic addresses the two window sizes for TA validation, under the unified formulas agreed in RAN4#101-bis-e:

The first window: $T_1 - \min(X1, X2) \leq T_1' \leq T_1 + \min(X1, X2)$

The second window: $T_2 - \min(Y1, Y2) \leq T_2' \leq T_2$

Moderator's note: Proposal 1 from R4-2205638 on the definition of T2 to consider the actual CG occasion is not listed in the open issues since we already agreed that T2 stays the same definition as LTE, and address the concern on the duration between T2 and the actual CG occasion by considering an additional requirement.

Open issues and candidate options before e-meeting:

Issue 1-1-1 Whether or not to set X1=Y1, and X2=Y2:

- Proposals
 - Option 1: Yes
 - Option 2: No
- Recommended WF
 - Option 1 (According to all proposals to this meeting).

Feedback Form 1: Comments collection on Issue 1-1-1

1 – Apple Poland Sp. z.o.o. Agree with recommended WF.
2 – HuaWei Technologies Co. Agree with recommended WF.
3 – Ericsson Hungary Ltd Agree with recommended WF.
4 – MediaTek Inc. Agree with recommended WF.
5 – Qualcomm CDMA Technologies Agree with recommended WF but we propose to remove X2, Y2
6 – Nokia Belgium Agree with recommended WF

Issue 1-1-2 Which of the option for X1/Y1 (assuming the answer to Issue 1-1-1 is Yes) for FR1

- Proposals
 - Option 1: 480ms
 - 480+ ms acceptable for FR1
 - Option 2: 640ms for FR1

- Option 3: the period of intra-frequency measurement without gap
 - Option 3a: max(200ms, 5 x SMTC period) for FR1
- Option 4: 1.28s
- Option 5: 200ms for FR1

- Recommended WF

- TBD

Feedback Form 2: Comments collection on Issue 1-1-2

1 – Apple Poland Sp. z.o.o.

We propose option 2. The rationale is: The RSRP1 window size shall consider the UE time drifting (including both UE moving and UE clock drifting), if the half window size is D , UE moving speed is V_{UE} , c is light speed, and UE clock drifting rate is R_{UE} , the D shall meet:

$$D \cdot V_{UE} / c + D \cdot R_{UE} \leq T_e / 2$$

The reason to use $T_e/2$ here is because we need to consider both RSRP1 and RSRP2, and the total time drifting for RSRP1 and RSRP2 shall not be greater than T_e . Here, we assume UE moving speed is $V_{UE} = 120\text{km/h}$ for FR1 and 30km/h for FR2, UE clock drifting is $R_{UE} = 0.1\text{ppm}$.

2 – HuaWei Technologies Co.

We support option 4 which is our proposal. We were assuming UE speed of 30km/h , but if companies think higher speed like 120km/h should be also considered for SDT in FR1, we can compromise to option 2.

3 – Ericsson Hungary Ltd

We support option 5. $X1/Y1$ should correspond to the lower bound of measurement period. In existing FR1 requirements, the lower bound . The measurement is performed on the serving cell, therefore the measurement period from the serving carrier (intra-frequency) shall be applied here which is 200ms for FR1 and 400ms for FR2 for the existing requirements for measurements with and without gaps. Since it is assumed that UE is already in synchronization with respect to the serving cell (as agreed earlier), then we don't think any additional margin is needed.

4 – MediaTek Inc.

Given the largest CG-SDT resources periodicity of 640ms , any RSRP window size greater than this periodicity does not make sense, because UE might be missing too many CG resources opportunities by extending these window sizes, which can therefore increase the latency. Therefore, we think the window size should be defined at least within this periodicity. In our paper, we proposed to define this window based on the intra-frequency measurement without gap (similar to LTE PUR) as in Option 3a: max(200ms, 5 x SMTC period), which should be sufficient to measure SS-RSRP level of the serving cell and is a reasonable size compared to the largest CG resources periodicity of 640ms . Therefore, based on this, we support Options 3 and 3a.

5 – Qualcomm CDMA Technologies

support option1 and option2. First of all we think single side window size should larger than 320ms to contain at least two 160ms periodicity of SSBs for filtering. Also it should not be too long to meet the maximum timing error especially high speed mobility (>100km/h). Both 480ms and 640ms can support high speed mobility.

6 – Nokia Belgium

We prefer Option 1.

We could agree with Options 2 and 5 provided that the condition in Issue 1-1-4 is respected

For option 3 max(200ms, 5 x SMTC period) is 800 ms in the worst case

Issue 1-1-3 Which of the option for X1/Y1 (assuming the answer to Issue 1-1-1 is Yes) for FR2

- Proposals

- Option 1: 480ms
- Option 2: M DRX cycles
- Option 3: the period of intra-frequency measurement without gap
 - Option 3a: max(400ms, Mmeas_period_w/o_gaps x SMTC period)
- Option 4: 1.28s
- Option 5: 400ms for FR2

- Recommended WF

- TBD

Feedback Form 3: Comments collection on Issue 1-1-3

1 – Apple Poland Sp. z.o.o.

Option 2, for FR2 we think we don't need min function. The reason is: in FR2 we think UE at least needs to perform one round of beam sweeping for RSRP measurement, otherwise, the RSRP measurement difference might be dominated by Rx beam difference, e.g., UE is not moving but UE has been rotated. So, in FR2 we propose to only consider M*DRX rather than the min function.

2 – HuaWei Technologies Co.

We support option 4 which is our proposal, but we are also fine with option 2. Basically, the window size for FR2 should be larger compared to FR1 considering that UE mobility is likely to be lower and measurement time is larger.

3 – Ericsson Hungary Ltd

We support option 5. Same comment as for issue 1-1-2.

4 – MediaTek Inc.

We support Options 3 and 3a, based on the same grounds for the previous issue 1-1-2.

5 – Qualcomm CDMA Technologies

We support option1 and option5. FR2 timing error limit is much smaller than FR1. For example, timing drift from 480ms window size for FR2 is already close to timing error limit. Thus single side window size should not larger than 480ms for high speed case.

6 – Nokia Belgium

We agree with Option 1 or 5.

For Option 2, would we use $M=N1$ in table 4.2.2.2-1?

If that is the case, for DRX length 2.56, $N1=3$, we would have 7.68 s. That window size would result in requirements that are not robust against UE movement.

For Option 3a, $M_{measperiodw/o_gaps}$ is either 40 or 24 depending on the power class. That would be 6.4 s for 160 ms SMTC period, we also think this is too large.

Issue 1-1-4 Total length of combined TA validation windows:

- Proposals

- Option 1: $\min(X1,X2)+\min(Y1,Y2)+Z$ shall not exceed 1.2 seconds, where Z is the time interval from T2 until CG-SDT transmission time
- Recommended WF
 - TBD

Feedback Form 4: Comments collection on Issue 1-1-4

1 – Apple Poland Sp. z.o.o.

Don't understand the necessity of this total length limitation since the time gap limitation between T1 and T2 is not defined(why need to consider the two measurement window length together without considering the time gap between two absolute timing points T1 and T2).

There was no time limitation between T1 and T2 in LTE spec. In addition, when to perform TA validation is also up to when UE have UL data in buffer to transmit, but when this UL data arrived at UE buffer is an uncertainty time and cannot limited by a fixed length as proposed in option 1.

2 – HuaWei Technologies Co.

We do not support option 1, and we suggest to uphold the agreement from last meeting to define different window sizes separately.

3 – Ericsson Hungary Ltd

We disagree to option 1. We don't see any need to put an additional limit on the total delay. The delay expression already contains a lower bound and a variable bound which has a limit. Also it shall be noted that there is no such limit in LTE PUR specification and we should use the LTE PUR as baseline and only do the necessary changes for NR.

4 – MediaTek Inc.

We don't support this proposal since we have already agreed to follow LTE PUR approach for TA validation by using two measurement windows separately.

5 – Qualcomm CDMA Technologies

We don't support option 1. Z and TA validation window requirement is independent.

6 – Nokia Belgium

The intention of this proposal is to be an assumption on how we determine the maximum size of the RSRP windows.

We didn't want this proposal that imply in a requirement that says that both windows have to be smaller than that limit.

We think that it is good to define requirements that consider these parameters when they are combined, because the effects of UE movement are related to all of them together.

Issue 1-1-5 Which of the option for X2/Y2 (assuming the answer to Issue 1-1-1 is Yes) for FR1:

- Proposals

- Option 1: $M1 * T_{DRX}$
 - Option 1a: $M1 = 1$
 - Option 1b: $M1 = 1$, and T_{DRX} is indicated by PagingCycle in the IE SuspendConfig
 - Option 1c: $M1$, as specified in clause 4.2.2.2, $M1=2$ if SMTC periodicity (T_{SMTC}) > 20 ms and DRX cycle ≤ 0.64 second, otherwise $M1=1$.
- Option 2: unlimited (equivalent to removal from formulas).

- Recommended WF

- TBD

Feedback Form 5: Comments collection on Issue 1-1-5

<p>1 – Apple Poland Sp. z.o.o.</p> <p>We support option 1a, since that can make FR1 at least have one chance to do T/F tracking and measurement. In order to consider some power saving purpose, we can also compromise to option 1c if majority companies agree on that.</p>
<p>2 – HuaWei Technologies Co.</p> <p>We support option 1c which is more accurately aligned with the existing serving cell measurement requirements.</p>
<p>3 – Ericsson Hungary Ltd</p> <p>We support option 1c, $M1 \cdot T_{DRX}$, where $M1=2$ if SMTC periodicity (T_{SMTC}) > 20 ms and DRX cycle ≤ 0.64 second, otherwise $M1=1$</p> <p>Requirements on M1 is directly reused from section 4.2.2 in 38.133. This also enables power saving to the UE as pointed out by Apple. Option 2 is not in line with LTE PUR requirements, and RAN4 has earlier agreed to follow the approach from LTE PUR.</p>
<p>4 – MediaTek Inc.</p> <p>We support Option 1c.</p> <p>For FR1, UE shall measure the SS-RSRP level of the serving cell at least once every M1 DRX cycle, where M1 is specified in clause 4.2.2.2 as $M1=2$ if SMTC periodicity (T_{SMTC}) > 20 ms and DRX cycle ≤ 0.64 second, otherwise $M1=1$.</p>
<p>5 – Qualcomm CDMA Technologies</p> <p>support Option2 remove X2,Y2. Actually it depends on how RAN4 agree X1,Y1. Based on X1 value, $\min(X1, X2)$ can always select X1 when X2 is $N \cdot DRX_cycle$.</p>
<p>6 – Nokia Belgium</p> <p>Our preference is Option 1c, which is based on the requirements of 4.2.2.2.</p> <p>We can agree with options 1a, 1c or 2.</p>

Issue 1-1-6 Which of the option for X2/Y2 (assuming the answer to Issue 1-1-1 is Yes) for FR2:

- Proposals

- Option 1: $N1 \cdot M1 \cdot T_{DRX}$, $N1$ from Table 4.2.2.2-1 in 38.133
 - Option 1a: $M1 = 1$
 - Option 1b: $M1 = 1$, and T_{DRX} is indicated by PagingCycle in the IE SuspendConfig
 - Option 1c: $M1$, as specified in clause 4.2.2.2, $M1=2$ if SMTC periodicity (T_{SMTC}) > 20 ms and DRX cycle ≤ 0.64 second, otherwise $M1=1$.
- Option 2: unlimited (i.e., removed from the formula)

- Recommended WF

□ TBD

Feedback Form 6: Comments collection on Issue 1-1-6

<p>1 – Apple Poland Sp. z.o.o.</p> <p>We support option 2 here, reason is same as for issue 1-1-3 (if option 2 is used for issue 1-1-3).</p>
<p>2 – HuaWei Technologies Co.</p> <p>We support option 1c which is more accurately aligned with the existing serving cell measurement requirements.</p>
<p>3 – Ericsson Hungary Ltd</p> <p>We support option 1c: $N1M1TDRX$, where, $N1$ from Table 4.2.2.2-1 in 38.133. $M1=2$ if SMTC periodicity (TSMTC) > 20 ms and DRX cycle ≤ 0.64 second, otherwise $M1=1$. Requirements on $M1$ is directly reused from section 4.2.2 in 38.133. We disagree to option 2. The measurement period should be clear. What does "unlimited" in option 2 mean? Is it up to UE implementation? Our view is option 1c is clearer and also in line with LTE PUR requirements.</p>
<p>4 – MediaTek Inc.</p> <p>We support Option 1c.</p> <p>For FR2, UE shall measure the SS-RSRP level of the serving cell at least once every $M1*N1$ DRX cycle, where $M1$ is specified in clause 4.2.2.2 as $M1=2$ if SMTC periodicity (TSMTC) > 20 ms and DRX cycle ≤ 0.64 second, otherwise $M1=1$. $N1$ is given Table 4.2.2.2-1.</p>
<p>5 – Qualcomm CDMA Technologies</p> <p>Support option2 (remove X2,Y2) same as 1-1-5 comments</p>
<p>6 – Nokia Belgium</p> <p>Our initial preference is Option 1c, which is based on the requirements of 4.2.2.2.</p> <p>We can also compromise with Option 1a or Option 2.</p>

2.2.2 Sub-topic 1-2

Sub-topic description: This sub-topic addresses the potential requirement for the duration between T2 and the actual CG occasion.

Issue 1-2 Whether or not to introduce an additional requirement for the duration between T2 and the actual CG occasion?

- Proposals

□ Option 1: No additional requirement introduced

- Option 2: 160ms
- Option 3: 1120ms for FR1, and 800ms for FR2.
- Option 4: 50ms?
- Option 5: 640ms if introduced
- Option 6: Clarify as follows:
 - “T2 is referred to the next NR CG-SDT occasion that follows in time based on the configured CG-SDT periodicity after TA validation.”
 -

- Recommended WF

- TBD

Feedback Form 7: Comments collection on Issue 1-2

1 – Apple Poland Sp. z.o.o.

We support option 3, the reason is: the time span between timing of TA validation and timing of actual CG-SDT transmission (T3) should guarantee that the timing drift within this time span should not be greater than T_e . If the time span between timing of TA validation and timing of actual CG-SDT transmission is S , it shall meet that: $S \cdot V_{UE}/c + S \cdot R_{UE} \leq T_e$ (UE moving speed is V_{UE} , c is light speed, and UE clock drifting rate is R_{UE}).

Regarding option 6, we are wondering if it's a typo, because in our view it's a definition of T3: T3 ~~T2~~ is referred to the next NR CG-SDT occasion that follows in time based on the configured CG-SDT periodicity after TA validation. If our understanding is correct, we can also compromise to option 6 for simplicity.

2 – HuaWei Technologies Co.

We support option 1 and option 5.

We think the values in option 2 and option 4 may be too conservative considering the possible timing change during the proposed time duration. The values in option 3 may be too large considering the largest CG periodicity is 640ms.

On option 6, with Apple's correction above, we understand it means UE should always use the next CG occasion after TA validation. It may be a reasonable assumption for medium to large CG periodicity, but the CG periodicity can be as small as 1 slot, and in case of small CG periodicity this is too limiting for UE implementation.

3 – Ericsson Hungary Ltd

To clarify, it is a typo. It should be the time to the actual CG_SDT transmission (T3). We suggest a compromise proposal which combines option 3 and option 5 as follows: "For FR1 1280 ms (typical number instead of 1120 ms) and for FR2 640 ms"

4 – MediaTek Inc.

We support Option 1. No additional requirement to be introduced since UE can avoid performing the second window measurement, which terminates at T2, to be far from the CG occasions.

5 – Qualcomm CDMA Technologies

we are okay with option3 as the maximum distance between T2 and T3.

6 – Nokia Belgium

Our preferences are:

1st preference: Option 6

2nd preference: Option 2

If we take option 6, we can also relax further RSRP windows 1 and 2.

We understand that this has to be determined having the limit discussed in Issue 1-1-4 in mind.

Option 6 is the best option in our perspective. In this case we anchor the window to the CG occasion

We proposed Option 2 160 ms, because it is the maximum SSB periodicity, so this would guarantee that the second RSRP window has a SSB available in the window before the actual CG occasion.

2.3 Summary for 1st round

2.3.1 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.

Table 3:

	Status summary
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Sub-topic #1-1

Tentative agreements:

Issue 1-1-1: Unanimous consensus on Option 1, will use X1/X2 for both windows.

Issue 1-1-2: Six companies commented. Four companies can accept Option 2 (where 1 company on condition on Issue 1-1-4), and two companies can accept Option 1, and fewer votes for Option 4 or Option 5. Considering this meeting is the last meeting, Moderator suggests to go for the majority view on Option 2.

Issue 1-1-3: Diverse views, Option 1(2 votes), Option 2(2 votes), Option 3 (1 vote), Option 4(1 vote), Option 5 (3 votes). Moderator suggests to narrow down the selection on Option 1, 2, and 5 in the second round discussion.

Issue 1-1-4: Proponent does not get sufficient support. Since the concerns can be addressed in discussions on the window size, and it does not rely on this proposal, Moderator suggests to close this issue in the second round.

Issue 1-1-5: Majority view on Option 1c (5 votes) against Option 1a(2 votes), and Option 2 (2 votes). Considering this meeting is the last meeting, Moderator suggests to compromise to Option 1c.

Issue 1-1-6: Option 1c(4 votes) against Option 2(3 votes) against Option 1a (1 vote). Moderator suggests to continue discussion between Option 1c and Option 2 in the second round.

Candidate options: Issue 1-1-1: Set $X1=Y1$, $X2=Y2$. No further discussion on this issue in the second round;

Issue 1-1-2: No more discussion on this issue in the second round provided that compromise to Option 2 is reached.

Issue 1-1-4: Closed, no more discussion on this issue.

Issue 1-1-5: No more discussion on this issue in the second round provided that compromise to Option 1c is reached.

Recommendations for 2nd round:

New issue 1-1-7 from Issue 1-1-3: Continue discussion among Option 1, 2 and 5.

New issue 1-1-8 from Issue 1-1-6: Continue discussion among Option 1c and Option 2.

<p>Sub-topic #1-2</p>	<p><i>Tentative agreements:</i> Issue 1-2: Diverse views (Option 1(2 votes):Option 2(1 vote): Option 3(2 votes): Option 5(1 vote): Option 6(1 vote) and one new proposal to combine Option 3 and 5). For the sake of progress, Moderator suggests to remove Option 2, 4 and 6 in the second round and continue discussion between Option 1, 2 and combine Option 3 and 5.</p> <p><i>Candidate options:</i></p> <p><i>Recommendations for 2nd round:</i> New issue 1-2-2 from Issue 1-2: Continue discussion among Option 1, 2 and combined Option 3/5.</p>
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Feedback Form 8: Comments collection on the 1st round summary for Topic #1

2.4 Discussion on 2nd round (if applicable)

Issue 1-1-7 Which of the option for X1 for FR2?

- Option 1: 480ms
- Option 2: M DRX cycles
- Option 5: 400ms

Feedback Form 9: Comments collection on Issue 1-1-7

Issue 1-1-8 Which of the option for X2for FR2?

- Option 1c: M1, as specified in clause 4.2.2.2, M1=2 if SMTC periodicity (T_{SMTC}) > 20 ms and DRX cycle \leq 0.64 second, otherwise M1=1.
- Option 2: unlimited (i.e., removed from the formula)

Feedback Form 10: Comment collection on Issue 1-1-8

Issue 1-2-2 Whether or not to introduce an additional requirement for the duration between T2 and the actual CG occasion?

- Option 1: No additional requirement introduced
- **Option 2: 160ms**
- Option 7 (combining Option 3 and 5): 1280ms for FR1, 640 ms for FR2

Feedback Form 11: Comments collection on Issue 1-2-2

3 Topic #2: Inter-freq and inter-RAT measurement requirements and scheduling restriction for SDT transmission

Main technical topic overview. The structure can be done based on sub-agenda basis.

3.1 Companies' contributions summary
Table 4:

TDoc	Title	Source	Moderator's remarks
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R4-2203796	On RRM requirement for CG-SDT	Apple	<p>(1) Allow UE not to meet inter-freq or inter-RAT measurement requirements in an SDT session</p> <p>(2) Prioritize inter-frequency measurement occasion if colliding with subsequent SDT occasions.</p> <p>(3) For UE unable to receive PO occasion and transmit SDT occasion simultaneously, prioritize receiving PO occasion or no requirement is specified for the collision</p> <p>(4) For UE unable to perform intra-freq SSB measurement and transmit SDT occasion simultaneously, scheduling restrictions apply for subsequent SDT transmission.</p>
R4-2203867	RRM requirements and TA validation windows for CG-SDT	Qualcomm Incorporated	<p>(1) UE does not meet inter-frequency and inter-RAT requirements for the subsequent SDT transmission.</p> <p>Legacy scheduling restrictions are applied, and no additional scheduling restriction is necessary.</p>
R4-2205392	Discussion on remaining issues for SDT RRM	Huawei, HiSilicon	<p>(4) UE is not required to meet inter-frequency and inter-RAT measurement requirements during subsequent transmission in SDT session.</p> <p>(5) Scheduling restriction applies to the SDT subsequent transmission during SSB occasions.</p>

R4-2205638	Discussions on RRM requirements for Small Data Transmissions	Ericsson	<p>(2) The UE is not required to meet the inter-frequency and inter-RAT neighbour cell measurement requirements</p> <p>(3) No needs to introduce scheduling restriction in FR1</p> <p>(4) Scheduling restriction is needed in FR2 if different numerologies are used for SDT and SSBs used for DL measurements</p> <p>(5) RAN4 to agree on minimum condition on SSB availability for HD-FDD UE to meet the SDT requirements.</p>
R4-2205923	RRM requirements for CG-SDT	MediaTek Inc.	<p>(4) UE is allowed not to meet inter-frequency and inter-RAT requirements during subsequent SDT transmission assuming that subsequent SDT transmission is too long. Clarify that a limitation on how long subsequent SDT transmission can last in this case</p> <p>(5) Scheduling restriction can be applied during subsequent SDT transmission</p>

3.2 Open issues summary

Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies' contributions.

3.2.1 Sub-topic 2-1

Sub-topic description: This sub-topic addresses issue on whether or not UE is allowed NOT to meet inter-frequency or inter-RAT requirements during subsequent SDT transmission.

Open issues and candidate options before e-meeting:

Issue 2-1: Whether or not UE is allowed NOT to meet inter-frequency or inter-RAT requirements during subsequent SDT transmission?

- Proposals

■ Option 1: Yes

- Option 1a: Clarify that a limitation on how long subsequent SDT transmission can last in this case

■ Option 2: [ST3] The UE is not required to meet the inter-frequency and inter-RAT neighbour cell measurement requirements during subsequent SDT session except measurement performed on:

- Intra-frequency layers
- Frequency layers used for EMR measurements
- Positioning measurements

■ Option 3: No

- Recommended WF

■ Discuss the options.

Feedback Form 12: Comments collection on Issue 2-1

1 – Apple Poland Sp. z.o.o.

We support option 1. But we propose to also consider some special overlapping condition as below,

Option 1b: UE is allowed to drop some subsequent transmissions in SDT session if the inter-frequency measurement occasions are fully overlapped with subsequent SDT occasions.

The reason is: if the SDT occasions are fully overlapped with inter-frequency or inter-RAT measurement occasions and if we always prioritize SDT, UE may not have any chance for measurement for cell reselection and it's conflicted with RAN2 assumption(RAN2 assumed reselection can happen and would stop the SDT on current serving cell). That is, the UE mobility also needs to be considered, and it shall always allow UE to have reselection opportunity by measuring inter-frequency or inter-RAT carriers.

2 – HuaWei Technologies Co.

We support option 1.

On option 1a, while we agree that it is not very meaningful to have long duration for subsequent transmission, we understand it may be difficult to specify such a limit because it is in the end up to NW implementation.

On option 2, we understand that intra-frequency layers are to be measured, but for EMR frequency layers and positioning frequency we think there is same technical issue as inter-frequency and inter-RAT measurement, i.e. these measurements may require interruption to data during subsequent transmission, so we

suggest that UE is not required to meet the requirements for them too.

On option 1b raised up by Apple above, we would like to understand more how it is supposed to be captured in the spec.

3 – Ericsson Hungary Ltd

We support option 2. The rationale is that positioning measurements and EMR measurements should not be affected as they are critical measurements. In our view, SDT data should not be considered as important as positioning or EMR measurements, therefore it is important that positioning/EMR measurements are not affected due to SDT. However, it is fine to skip the inter-frequency and inter-RAT measurements during the subsequent SDT session since the UE already measuring on intra-frequency. This part is not addressed in option 1.

4 – MediaTek Inc.

Support Option 1. UE might not be able to meet inter-frequency and inter-RAT requirements during subsequent SDT transmission.

5 – Qualcomm CDMA Technologies

Support Option 1. To support inter-frequency and inter-RAT measurement, longer subsequent transmission via dynamic grant than initially scheduled uplink resource date can be assumed. In this case, we think NW can make UE switch to Connected state. Thus UE does not have to meet inter-frequency and inter-RAT requirements for the subsequent SDT transmission.

6 – Ericsson Hungary Ltd

We think option 1 and option 2 are not directly conflicting. In option 2, it is still saying that UE is not required to meet inter-frequency and inter-RAT during the subsequent transmission. But option 2 still states that the UE is not required to meet the inter-frequency and inter-RAT requirements, but in addition it also clarifies the expected behavior for positioning and EMR measurements. If we don't clarify it, then what requirements is the UE supposed to meet? This part is not addressed in option 1 which it does in option. Therefore our view is that option 1 is a subset of option 2, which is broader and also covers positioning and EMR measurements. Therefore we support option 2.

3.2.2 Sub-topic 2-2

Sub-topic description: This sub-topic addresses the potential scheduling restrictions between the subsequent SDT transmission and other occasions (e.g., SSB occasion, PO occasions, etc).

Open issues and candidate options before e-meeting:

Issue 2-2-1: Scheduling restriction in order to avoid collision between the subsequent SDT transmission and SSB occasion?

- Proposals

- Option 1: Yes
- Option 2: No spec impact, left to the network's strategy.

- Option 3: No needs to introduce scheduling restriction in FR1, and scheduling restriction is needed in FR2 if different numerologies are used for SDT and SSBs used for DL measurements

- Recommended WF

- TBA

Feedback Form 13: Comments collection on Issue 2-2-1

1 – Apple Poland Sp. z.o.o.

Option 1. If SSB occasion is colliding with SDT transmission and UE cannot support SDT transmission and intra-frequency SSB measurement simultaneously, the scheduling restriction could be applied to prioritize serving cell or intra-frequency SSB measurement, since serving cell SSB measurement is also used for T/F tracking for PO reception (we think PO reception has higher priority and therefore the SSB measurement for this PO reception shall also be prioritized). We are fine to differentiate FR1 and FR2 like mentioned in option 3, if companies agree that UE cannot support SDT transmission and intra-frequency SSB measurement simultaneously only in FR2.

2 – HuaWei Technologies Co.

We support option 1, and we think it should be same as existing scheduling restriction due to intra-frequency and L1 measurement in RRC CONNECTED mode. In existing requirements, there are 3 causes of scheduling restriction: simultaneous UL and measurement, different SCS between SSB and data, and FR2 Rx beam sweeping. We think all 3 causes are applicable for subsequent transmission during SDT.

3 – Ericsson Hungary Ltd

We support option 3. In option 1, we don't understand why such scheduling restriction is needed for FR1, and why such restriction is needed if same numerology is used for FR2. If same numerology is used, the reception of SSB should not be affected.

4 – MediaTek Inc.

Support Option 1. Scheduling restriction should be applied during subsequent SDT transmission since it is important to prioritize serving cell SSBs measurements.

5 – Qualcomm CDMA Technologies

Support option 1. scheduling restriction for subsequent SDT transmission in SSB occasion includes not only SDT transmission but also dynamic grant monitoring in SSB occasion. Thus legacy scheduling restrictions are applied, and no additional scheduling restriction is necessary

6 – Nokia Belgium

Fine with option 1.

Considering of Huawei comments, we see that the 3 causes for scheduling restriction also apply for SDT.

7 – Ericsson Hungary Ltd

We suggest to split the issue FR1 and FR2 and discuss them separately because mainly FR2 is impacted in our view.

Issue 2-2-2: Scheduling restriction in order to avoid collision between the subsequent SDT transmission and PO occasion?

- Proposals
 - Option 1: Yes
 - Option 2: No, prioritize receiving PO occasion.
 - Option 3: No, no requirement is specified for the collision

- Recommended WF
 - TBA

Feedback Form 14: Comments collection on Issue 2-2-2

1 – Apple Poland Sp. z.o.o.

Option 2. As we concluded in RedCap WI last meeting (R4-2202670), “When there is an overlap between paging reception and CG-SDT transmission occasion in time domain for a HD-FDD UE, the UE shall not miss the paging reception and the UE is allowed to drop the CG-SDT transmission.” Here, we also think PO shall be prioritized.

2 – Ericsson Hungary Ltd

We support option 2. This is also aligned with the agreement reached for HD-FDD UE performing SDT in RedCap WI.

3 – HuaWei Technologies Co.

We would like more clarification on when there would be collision between subsequent transmission and PO. In our understanding, FD-FDD UE can receive PO and perform UL transmission at the same time, and for TDD UE, PO and UL will anyway not occur at the same time, so the scenarios addressed in this issue is not fully clear to us.

4 – MediaTek Inc.

We support option 1 and we are also fine with option 2. With option 1, we think the NW is aware of the PO and the UL transmission occasions, hence such collision can be avoided from the NW with better scheduling.

5 – Qualcomm CDMA Technologies

We ask to clarify PO occasion meaning. Does it mean every single Paging occasion?

6 – Nokia Belgium

We prefer option 3. This PO reception collision if only a problem for HD-FDD UEs in RedCap. If other companies want that for HD-FDD UEs, we propose Option 4.

Option 4: No for HD-FDD UEs, prioritize receiving PO occasion

7 – Ericsson Hungary Ltd

Good point raised by HW. It is good to understand the scenario better. Why would there be a collision between UL and DL for a FDD or TDD UE?

Issue 2-2-3: Whether or not to introduce minimum condition on SSB availability for HD-FDD UE to meet the SDT requirements.?

- Proposals

- Option 1: Yes
- Option 2: No.

- Recommended WF

- TBA

Feedback Form 15: Comments collection on Issue 2-2-3

1 – Apple Poland Sp. z.o.o.

We think we already discussed it in last meeting, i.e., the NR sync requirement for SDT, regardless of FD-FDD or HD-FDD, and in NR sync requirement it has the condition for SSB availability. No need to discuss it again.

2 – HuaWei Technologies Co.

Same comment as Apple.

3 – Ericsson Hungary Ltd

We are fine with option 2 if SSB availability condition is already exist in NR regardless of duplex mode.

4 – Qualcomm CDMA Technologies

@Ericsson, we are not clear about the question. could you please clarify?

if this question is related to sync requirement (at least one SSB is available during 160ms) for HD-FDD, we support option 2.

If this is proposed as part of scheduling restriction for HD-FDD then we support option 1.

5 – Nokia Belgium

We prefer option 2. Not clear why we need.

6 – Ericsson Hungary Ltd

To Qualcomm: Our comment was in fact a reply to Apple. In Apple's comment, they wrote "NR sync requirement for SDT, regardless of FD-FDD or HD-FDD, and in NR sync requirement it has the condition for SSB availability. ". Our interpretation of this is that there is already a condition SSB availability. However, after further checking I noticed that such condition on SSB availability is missing. The rationale for stating the condition on SSB availability for HD-FDD is to ensure that it can do T/F tracking, and under this assumption the HD-FDD UE meets the SDT requirement. If such condition is missing, then how can the HD-FDD UE perform the T/F tracking to meet the SDT requirements?

7 – Apple Poland Sp. z.o.o.

To Ericsson, in our understanding the SSB availability is captured in TS38.133 section 7.1.2: "The UE shall meet the Te requirement for an initial transmission provided that at least one SSB is available at the UE during the last 160 ms". We thought that's the reason why in last meeting issue 3-2 (R4-2202710) we agreed to reuse 'NR sync requirement' rather than 'NR sync requirements + NR serving cell availability requirements'. But if companies have different understanding on it, we are open to further discuss.

3.3 Summary for 1st round

3.3.1 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.

Table 5:

	Status summary
Sub-topic#2-1	<p><i>Tentative agreements:</i></p> <p>Issue 2-1: Majority views go for Option 1 (4 votes) against Option 2 (1 vote) and new proposed Option 1b (1 vote). For the view that Option 2 include Option 1, Moderator understanding is the other way around (Option 1 allows relaxation, but Option 2 allows relaxation with exceptions). For the sake of progress, Moderator suggests to agree on Option 1. However, with a strong concern on the impacts on positioning and EMR measurements, further discuss on Option 1 and Option 2 in the second round.</p> <p><i>Candidate options:</i></p> <p><i>Recommendations for 2nd round:</i> No more discussion on this issue in the second round provided that compromise to Option 1 is reached. New issue 2-1-2 by narrowing down to Option 1 and 2.</p>

<p>Sub-topic#2-2</p>	<p><i>Tentative agreements:</i></p> <p>Issue 2-2-1: Majority views go for Option 1 (5 votes) against Option 3 (1 vote) and one proposal to split FR1 and FR2 since FR2 is mainly impacted. For the sake of progress, Moderator suggests to compromise to Option 1.</p> <p>Issue 2-2-2: Slight majority views to Option 2 which is aligned with the agreement in RedCap (3 votes) and 1 for Option 1 and 3 respectively, and clarification questions raised. Clarification on conflict: If a UE is scheduled for a UL Tx and DL Rx at the same time, the UE has to choose which of the operation for HD-FDD. And PO occasion means PO reception. With clarification above, Moderator suggests to go for Option 2 which is aligned with agreement already made in RedCap.</p> <p>Issue 2-2-3: Majority views go to Option 2 (4 votes) and clarification questions raised. Clarification: the issue is related to sync requirement. With such clarification, Moderator suggests to go to the majority view, i.e., Option 2.</p> <p><i>Candidate options:</i></p> <p><i>Recommendations for 2nd round:</i></p> <p>Issue 2-2-1: No more discussion on this issue in the second round provided that a compromise to Option 1 is reached.</p> <p>Issue 2-2-2: No more discussion on this issue for HD-FDD in the second round provided that a compromise to Option 2 is reached.</p> <p>Issue 2-2-3: No more discussion on this issue in the second round provided that compromise to Option 2 is reached.</p>
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**Feedback Form 16: Comments collection on the 1st round
summary for Topic #2**

3.4 Discussion on 2nd round (if applicable)

Moderator can provide summary of 2nd round here. Note that recommended decisions on tdocs should be provided in the section titled "Recommendations for Tdocs".

Issue 2-1-2: Whether or not UE is allowed NOT to meet inter-frequency or inter-RAT requirements during subsequent SDT transmission?

- Option 1: Yes
- Option 2: The UE is not required to meet the inter-frequency and inter-RAT neighbour cell measurement requirements during subsequent SDT session except measurement performed on:
 - intra-frequency layers
 - Frequency layers used for EMR measurements
 - Positioning measurements

undefined

Feedback Form 17: Comments collection on Issue 2-1-2

4 Topic #3: UE feature list for NR SDT

Main technical topic overview. The structure can be done based on sub-agenda basis.

4.1 Companies' contributions summary

Table 6:

TDoc	Title	Source	Moderator's remarks
R4-2203867	RRM requirements and TA validation windows for CG-SDT	Qualcomm Incorporated	(5) Leave the NR SDT feature to RAN2, and RAN4 involvement should be after RAN2 agree on the feature.
R4-2205217	On RRM requirements for NR SDT	ZTE Wistron Telecom AB	(4) RAN4 introduce two items for the NR SDT feature as shown in the table.

4.2 Open issues summary

Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies' contributions.

4.2.1 Sub-topic 3-1

Sub-topic description: This sub-topic addresses on whether or not RAN4 UE feature list should capture NR SDT. In RAN4#101-bis-e, an initial table was discussed but without conclusion.

Open issues and candidate options before e-meeting:

Issue 3-1: Whether or not to include NR SDT in the RAN4 UE feature list?

- Proposals
 - Option 1: Yes
 - Option 2: No
- Recommended WF
 - TBA

Feedback Form 18: Comments collection on Issue 3-1

1 – HuaWei Technologies Co.
We support option 2, we still think the baseline capability should be defined in the leading WG (RAN2).
2 – Qualcomm CDMA Technologies
Option2. Same view as HuaWei

4.3 Summary for 1st round

4.3.1 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.

Table 7:

	Status summary
Sub-topic#3-1	<p><i>Tentative agreements:</i> Two companies comments with both for Option 2. The NR SDT feature is left to the leading group RAN2. We can continue discuss in case RAN2 needs inputs from RAN4.</p> <p><i>Candidate options:</i> <i>Recommendations for 2nd round:</i> Issue closed, no more discussion is needed in the second round.</p>

**Feedback Form 19: Comments collection on the 1st round
summary for Topic #3**

4.4 Discussion on 2nd round (if applicable)

Moderator can provide summary of 2nd round here. Note that recommended decisions on tdocs should be provided in the section titled "Recommendations for Tdocs".

5 Topic #4: CRs

Main technical topic overview. The structure can be done based on sub-agenda basis.

The CRs are discussed in this topic, and further revisions may be required according to the outcome of the discussions.

5.1 Companies' contributions summary

Table 8:

TDoc	Title	Source	Moderator's remarks
R4-2203535	Draft CR TA validation for Small Data Transmissions	Nokia, Nokia Shanghai Bell	Draft CR for TA validation for NR SDT

R4-2205216	Draft big CR for SDT RRM requirements	ZTE Wistron Telecom AB	Placeholder for the running big CR
R4-2205393	CR on SDT RRM requirements	Huawei, HiSilicon	(1) Adding abbreviations (SDT, CG-SDT) (2) excluding measurements of inter-freq NR and inter-RAT EUTRA cells in an SDT session.
R4-2205639	Draft CR TA validation for Small Data Transmissions	Ericsson	Duplicate of R4-2203535?

5.1.1 CRs/TPs comments collection

Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.

Feedback Form 20: Comments collection on R4-2203535/5639 (CR on TA validation window requirements for CG-SDT)

<p>1 – ZTE Wistron Telecom AB</p> <p>Moderator: R4-2205639 is a duplicate of R4-2203535? Suggest to be merged into R4-2203535.</p>
<p>2 – Ericsson Hungary Ltd</p> <p>We are fine with the suggestion from moderator.</p>
<p>3 – HuaWei Technologies Co.</p> <p>We are fine to update the endorsed CR to capture new agreements, but some of the changes are pending on open issue discussion in sub-topic 1-1 and 1-2.</p>
<p>4 – Qualcomm CDMA Technologies</p> <p>similar view as Huawei.</p> <p>TA_validation formula is FFS. and the definition of T2 should be same as the one in LTE-PUR?</p> <p>I think the following statement in CR is about T3.</p> <p>“T2 T3 is the next CG-SDT occasion that follows in time based on the configured CG-SDT periodicity after TA validation.”</p>

5 – Nokia Belgium

We are fine with the merge.

The specific formulas and definition of T2 will be adapted according to the agreements.

Feedback Form 21: Comments collection on R4-2205393 (CR on SDT RRM requirements)

1 – Ericsson Hungary Ltd

CR needs to be updated based on the agreement for scheduling restriction. In addition, it needs to be updated based on the outcome of issue 2-1, i.e. positioning measurements and EMR measurements should not be affected.

5.2 Summary for 1st round

5.2.1 CRs/TPs

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

Table 9:

CR/TP number	CRs/TPs Status update recommendation
XXX	<i>Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”</i>
R4-2205639	Merged into R4-2203535
R4-2203535	Revised according to the discussion outcome
R4-2205393	Revised according to the discussion outcome

5.3 Discussion on 2nd round (if applicable)

Moderator can provide summary of 2nd round here. Note that recommended decisions on tdocs should be provided in the section titled “Recommendations for Tdocs”.

6 Recommendations for Tdocs

6.1 1st round

New tdocs

Table 10:

Title	Source	Comments
WF on ...	YYY	
LS on ...	ZZZ	To: RAN_X; Cc: RAN_Y
<i>WF on RRM requirements for NR SDT</i>	ZTE	<i>Capture the agreements and open issues</i>

Existing tdocs

Table 11:

Tdoc number	Title	Source	Recommendation	Comments
R4-210xxxx	CR on ...	XXX	Agreeable, Re-vised, Merged, Postponed, Not Pursued	
R4-2203534	TA validation window requirements for CG-SDT	Nokia, Nokia Shanghai Bell	Noted	
R4-2203535	Draft CR TA validation for Small Data Transmissions	Nokia, Nokia Shanghai Bell	Revised	
R4-2203796	On RRM requirement for CG-SDT	Apple	Noted	
R4-2203867	RRM requirements and TA validation windows for CG-SDT	Qualcomm Incorporated	Revised to R4-2206784	

R4-2206784	RRM requirements and TA validation windows for CG-SDT	Qualcomm Incorporated	Noted	
R4-2205216	Draft big CR for SDT RRM requirements	ZTE Wistron Telecom AB	Return-to	
R4-2205217	On RRM requirements for NR SDT	ZTE Wistron Telecom AB	Noted	
R4-2205392	Discussion on remaining issues for SDT RRM	Huawei, HiSilicon	Noted	
R4-2205393	CR on SDT RRM requirements	Huawei, HiSilicon	Revised	
R4-2205638	Discussions on RRM requirements for Small Data Transmissions	Ericsson	Noted	
R4-2205639	Draft CR TA validation for Small Data Transmissions	Ericsson	Merged to the revision of R4-2203535	
R4-2205923	RRM requirements for CG-SDT	MediaTek Inc.	Noted	

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:
 - i) CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
 - ii) 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

6.2 2nd round

Table 12:

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	

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:
 - i) CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
 - ii) Other documents: Agreeable, Revised, Noted
3. Do not include hyper-links in the documents

7 Annex

Contact information

Table 13:

Company	Name	Email address

Note:

- α : Please add your contact information in above table once you make comments on this email thread.
- β : If multiple delegates from the same company make comments on single email thread, please add you name as suffix after company name when make comments i.e. Company A (XX, XX)

