3GPP TSG RAN WG2 Meeting #123bis R2-230xxxx

**Xiamen, China, October 09-13, 2023**

**Agenda item:** 7.18.2

**Source:** Intel Corporation

**Title:** Outcome of email discussion [POST123][303][MT-SDT] on UE Capabilities for Rel-18 MT SDT

**Document for:** Discussion and decision

# Introduction

This document aims to review the running CRs on UE capabilities for Rel-18 MT-SDT and to discuss one open topic identified during RAN2#123 meeting.

* [POST123][303][MT-SDT] CR to 38.306 (Intel)

Scope : review running CR

Outcome: CR to be submitted to next meeting

The following are RAN2#123 agreements relevant to this discussion:

* *A new optional radio capability signaling (e.g., MT-SDT-r18) is defined to indicate UE’s support of Rel-18* ***MT-RA-SDT-r18****. MT-RA-SDT-r18 indicates whether the UE supports initiation of MT-SDT procedure and transmission/reception in RRC\_INACTIVE state via Random Access procedure (i.e., RACH).*
* *Separate UE capability is used to indicate support* ***MT-CG-SDT****. If the UE support MT-CG-SDT, it has to support MT-RA-SDT.*
* *SRB2 capability will be captured by* ***adding “or MT-SDT”*** *Rel-17* ***srb-sdt-r-17*** *capability. (i.e. no separate capability)*
* *FFS how/whether we define UE capability to indicate UE’s support to select RACH resources instead of configured grant type 1 resource when triggering resume for SDT or MT-SDT and next CG-SDT resource is too far as specified in TS 38.331.*

Please provide your inputs **before/by Tuesday September 19th EOD PST** to have few days afterwards to further review the report and updated CRs (as official email discussion deadline is Friday September 22nd, 2023).

# Companies’ point of contact (PoC)

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| **Company’s name** | **PoC’s name** | **PoC’s email address** |
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# Discussion

## Drafted running CRs to TS 38.306 and 38.331 on UE Capabilities for MT-SDT

1. Please indicate if you have any input/comments on the drafted running CRs to TS 38.306 and 38.331 which captures the agreed details on UE Capabilities for MT-SDT during RAN2#123 meeting.

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| **Company’s name** | **TS #** | **Section** | **Comments, if any** |
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## Open topics identified on UE Capabilities for MT-SDT

On the usage of CG-SDT resources to initiate SDT that it is equally applicable for MT-SDT and MO-SDT, the following was agreed in RAN2#122 meeting:

* *For both MO and MT-SDT, if the next CG-SDT resource is too far, then RACH resource can be selected first. This is checked at the point of initial resource selection (e.g. CG SDT selection). FFS what is too far and how this is configured. Assumption is that we will continue this discussion in SDT session. CONFIRM with main session [CB]*

During RAN2#123 meeting, the corresponding new UE capability was discussed and the following FFS was captured:

* ***FFS how/whether*** *we define UE capability to indicate UE’s support to select RACH resources instead of configured grant type 1 resource when triggering resume for SDT or MT-SDT and next CG-SDT resource is too far as specified in TS 38.331.*

In addition, during the online discussion, it was mentioned that same/common UE capability might be preferable with this and the related CG-SDT topic discussed as part of TEI18. This is on the extension of CG-SDT periodicities, the following was agreed in RAN2#122 meeting (as part of TEI18) and RAN2 sent an LS [1] to RAN1 asking to provide any necessary feedback or concerns on impacts, if any:

* *Agreeable, under condition that RAN1 impact is very small (e.g. update of a table): Extend the maximum periodicity for CG-SDT to cover longer periodicities.*
* *Send LS to R1 ask about impact.*

RAN1 corresponding respond LS [2] will be discussed in next RAN2#123bis meeting which indicates that the foreseen impact is low (details copied below for reference).

*“RAN1 confirms that extension of CG-SDT periodicities would have low impact on RAN1 specifications”.*

The following discussion points aim to get inputs on those open topics raised during RAN2#123 online to easy related capability discussion in next RAN2#123bis meeting with the assumption that RAN2 will go ahead and extend the maximum periodicity for CG-SDT.

### Support to select RACH instead of CG resources for (MT-)SDT and the extension of CG-SDT periodicity

1. Do you prefer defining a single or two separate new UE capabilities for UE to indicate its Rel-18 support to select RACH resources instead of configured grant type 1 resource when triggering resume for SDT or MT-SDT and next CG-SDT resource is too far and to use extended values of the CG-SDT periodicities? If applicable, please indicate whether any pre-requirement or relation to other UE capability that needs to also be considered.
2. **Single** new UE capability is defined. For example, ***cg-SDT-Enh*-r18** could indicate the support of both enhancements related to CG-SDT operation (i.e., support to select RACH resources instead of configured grant type 1 resource when triggering resume for SDT or MT-SDT and next CG-SDT resource is too far and support to extend the range of CG-SDT periodicities).
3. **Two** separate new UE capabilities are defined. E.g., ***ra-InsteadCG-SDT-r18*** could indicate the support to select RACH resources instead of configured grant type 1 resource when triggering resume for SDT or MT-SDT and next CG-SDT resource is too far and ***cg-SDT-ExtendedPeriodicity-r18*** could indicate support to extend the range of CG-SDT periodicities.
4. **No** new/additional capability is defined but instead its support is defined as part of Rel-18 UE capability *MT-CG-SDT-r18*. Note that based on current RAN2 agreements, UE capability draft CR to 38.306 defines *MT-CG-SDT-r18* capability to indicates whether the UE supports the selection of configured grant type 1 resource (instead of RACH) to perform MT-SDT procedure as specified in TS 38.331 (moreover a UE supporting this *MT-CG-SDT-r18* feature shall also support *mt-SDT-r18*). This option c) would mean that the UE capability definition will also mandate that UE supporting this *MT-CG-SDT-r18* feature shall also support the two features here explained in this discussion point 2).

In addition, if option c) is preferable, please clarify how to allow the usage of this feature explained in this discussion point 2) by UEs only performing MO-SDT.

1. Other approach is preferred.

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| **Company’s name** | **Option** | **Comments, if any** |
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# Report <<To be added>>

*<<Report from this email discussion [to be added by rapporteur] >>*

1. xxxx.

# Conclusion

The proposals captured are the following:

**Proposal 1.** xxxx.

# Reference

1. R2-2306904, LS on longer CG-SDT periodicities, TEI18, From: RAN2, To: RAN1, May 2023.
2. R1-2308487, Reply LS on longer CG-SDT periodicities, TEI18, From: RAN1, To: RAN2, August 2023.