**3GPP TSG RAN Meeting #102 RP-23xxxx**

**Edinburgh, Scotland, Dec. 11-15, 2023 *Revision of RP-222993***

**Source: ZTE Corporation**

**Title: Revised WI: Mobile Terminated-Small Data Transmission (MT-SDT) for NR**

**Document for: Discussion**

**Agenda Item: 9.3.2.2**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

# Title: Mobile Terminated-Small Data Transmission (MT-SDT) for NR

## Acronym: NR\_MT\_SDT

## Unique identifier: *{A number to be provided by MCC at the plenary}*

NOTE: For new WIs/SIs leave the Unique identifier empty and make a proposal for an Acronym.

 For a revised WI/SI: Take Unique identifier and acronym as shown in 3GPP workplan.

 If this is a RAN WID including Core and Perf. part, then Title, Acronym and Unique identifier refer to the feature WI.

 Please tick (X) the applicable box(es) in the table below:

 Either:

|  |  |
| --- | --- |
| **This WID includes a Core part** | **X** |
| **This WID includes a Performance part** |  |

 or:

|  |  |
| --- | --- |
| **This WID includes a Testing part** |  |
| **and it addresses the following 3GPP work area:** | **Radio Access** |  |
| **Core Network** |  |
| **Services** |  |

Potential target Release: {Rel-18}.

Note that this field above indicates the proposed Release at the time of submission of the WID to TSG approval. It can later be changed without a need to revise the WID. The updated target Release is indicated in the Work Plan. NOTE: In case of contradiction with the target dates of clause 5, clause 5 determines the target release.

## 1 Impacts *{ For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study.}*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  | X | X |  |  |
| **No** | X |  |  |  |  |
| **Don't know** |  |  |  |  | X |

## 2 Classification of the Work Item and linked work items

### 2.1 Primary classification

This work item is a … *{Tick one box. "***Feature** */* **Building Block** */ Work Task" form a hierarchical structure. E.g. no Building Block can be proposed without a corresponding parent Feature. The full structure of all existing Work Items is shown in the 3GPP Work Plan in* *ftp://ftp.3gpp.org/Information/WORK\_PLAN* *}*

|  |  |
| --- | --- |
| x | Feature |
|  | Building Block |
|  | *Work Task* |
|  | Study Item |

NOTE: Normally, Core/Perf./Testing parts in RAN WIDs are Building Blocks. Only if they are under an SA or CT umbrella, they are defined as work tasks. If you are in doubt, please contact MCC.

### 2.2 Parent Work Item

*{"Parent" Work Item refers to the related, earlier Stage, Work Item, e.g. the related Stage 1 Work Item shall be indicated here when a Stage 2 Work Item is presented or e.g. the related Study Item shall be indicated here when a normative-work Work Items is started. List here all parent Work Items of which requirements are either fully or partially covered by the proposed Item. List previous Work Items of earlier releases if relevant.}*

*{This section is mandatory to be filled out by the rapporteur.}*

*{Not applicable for a* **Study Item***}*

*{For a* **Building Block***: list here the parent* **Feature** *}*

*{For a* Work Task*: list here the parent* **Building Block** *}*

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
|  |  |  |  |

NOTE: RAN agreed some time ago, that it describes the feature WI + Core/Perf. part WI or Testing part WI in one WID. Therefore the table above should just include the feature WI data (In case the feature covers Core and Perf. part, please list under Working Group the leading WG of the Core part).

### 2.3 Other related Work Items and dependencies

*{List here other Work Items which relate to the proposed one, such as preceding SI or a preceding WI (e.g. if further enhancing a feature).}*

|  |
| --- |
| Other related Work Items (if any) |
| Unique ID | Title | Nature of relationship |
|  |  | *{optional free text}*  |

NOTE: Also related or dependent WIs/SIs in other TSGs should be indicated.

**Dependency on non-3GPP (draft) specification**:

*{This section is to be typically used to identify the IETF dependencies. Delete the header "Dependency on non-3GPP (draft) specification:" if no such dependency.}*

## 3 Justification

Rel-17 specified MO-SDT to allow small packet transmission for UL-oriented packets. For DL, MT-SDT (i.e. DL-triggered small data) allows similar benefits, i.e. 1) reducing signalling overhead and UE power consumption by not transitioning to RRC\_CONNECTED and reducing latency by allowing fast transmission of (small and infrequent) packets, e.g. for positioning.

## 4 Objective

### 4.1 Objective of SI or Core part WI or Testing part WI

Specify the support for paging-triggered SDT (MT-SDT) [**RAN2**, RAN3]

* MT-SDT triggering mechanism for UEs in RRC\_INACTIVE, supporting RACH procedure based and CG-SDT procedure based UL response;
* MT-SDT procedure for initial DL data reception and subsequent UL/DL data transmissions in RRC\_INACTIVE.

Note: Data transmission in DL within paging message is not in scope of this WI.

### 4.2 Objective of Performance part WI

NOTE: Leave empty if the WI proposal does not contain a RAN performance part.

### 4.3 RAN time budget request (not applicable to RAN5 WIs/SIs)

NOTE: For all new RAN related WIs/SIs which are not led by RAN WG5 the WI/SI rapporteur has to fill out the attached Excel table to request time budgets for corresponding RAN WG meetings.
The Excel table has to be filled out for all affected RAN WGs and up to the target date of the WI/SI.
One time unit (TU) corresponds to ~ 2 hours in the meeting.
If no TU is needed, then leave the field empty otherwise enter a number >0 in the field.

 For revisions of already approved WI/SI descriptions: Please remove the Excel table from the WID/SID's zip file. The time budgets are already recorded. If you want to modify them, then this has to be done via the status report and not via a revised WID/SID.

 If this WID is covering Core and Performance part, then please fill out one line for each part in the attached Excel table.

**additional comments to the time budget request in the attached Excel table:**

## 5 Expected Output and Time scale

|  |
| --- |
| **New specifications** *{One line per specification. Create/delete lines as needed}* |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Remarks |
|  |  |  |  |  |  |

NOTE: If this is a RAN WI including Core and Perf. part, then all new Core part specs have to be listed first and then all new Perf. part specs. Indicate "Core part" or "Perf. part" under Remarks for each spec.
By default a new specs can only be new for one of both parts.

|  |
| --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 38.300 | Stage-2 description of the feature | RAN#102 |  |
| 38.306 | UE capabilities of the feature | RAN#102 |  |
| 38.321 | MAC aspects of MT-SDT | RAN#102 |  |
| 38.331 | Signalling aspects of MT-SDT | RAN#102 |  |
|  |  |  |  |
| 38.423 | XnAP impacts of MT-SDT | RAN#102 | (If needed) |
| 38.463 | E1AP impacts of MT-SDT | RAN#102 | (If needed) |
| 38.473 | F1AP impacts of MT-SDT | RAN#102 | (If needed) |
| 37.480 | E1 general aspects and principles | RAN#102 |  |
| 37.483 | E1 Application Protocol (E1AP) | RAN#102 |  |
| 38.401 | NG-RAN; Architecture description | RAN#102 |  |
| 38.420 | NG-RAN; Xn general aspects and principles | RAN#102 |  |

NOTE: If this is a RAN WI including Core and Perf. part, then all new Core part specs have to be listed first and then all new Perf. part specs. Indicate "Core part" or "Perf. part" under Remarks for each spec.
If an existing spec is affected by both (Core part and Perf. part), then it has to be listed twice with appropriate approval dates.

## 6 Work item Rapporteur(s)

*Vutukuri, Eswar, ZTE Corporation, eswar dot vutukuri at zte dot com dot cn*

*{The first listed Rapporteur is the work item primary Rapporteur. The role of a Rapporteur is further described in* [*www.3gpp.org/specifications-groups/delegates-corner/writing-a-new-spec*](http://www.3gpp.org/specifications-groups/delegates-corner/writing-a-new-spec)*. Secondary Rapporteur(s) are possible for specific secondary task(s)}*.

## 7 Work item leadership

RAN2 lead, RAN3 secondary

## 8 Aspects that involve other WGs

None identified

NOTE: For RAN WIs: Section 8 applies only toWGs outside of TSG RAN because RAN WG aspects have to be covered in section 4.

## 9 Supporting Individual Members

*{At least 4 supporting Individual Members are needed. There is an expectation that these companies will provide resources to progress the work. Note that having 4 supporting companies is a necessary but not sufficient condition: the usual TSG approval process by consensus is needed for the WID approval.}*

|  |
| --- |
| Supporting IM name |
| ZTE Corporation |
| Apple |
| CAICT  |
| CATT |
| China Telecom |
| China Unicom |
| CMCC |
| Continental Automotive |
| Ericsson  |
| Fujitsu |
| H3C  |
| HiSilicon |
| HONOR |
| Huawei |
| Intel |
| InterDigital |
| LG Electronics |
| LG Uplus |
| MediaTek Inc |
| NEC |
| Nokia |
| Nokia Shanghai Bell |
| OPPO |
| Panasonic  |
| Philips International B.V. |
| Qualcomm Incorporated |
| Sanechips |
| Samsung |
| Sony  |
| Spreadtrum Communications |
| vivo |
| Xiaomi  |
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