3GPP TSG-RAN WG2 Meeting #124 R2-2313567

Chicago, USA, Nov. 13th – 17th, 2023

**Source: Session Chair (Apple)**

**Title: Report from SON/MDT session**

**Status of At-Meeting Email Discussions**

*This subclause is not an Agenda Item. It contains a running summary of the email discussions assigned to take place during the meeting weeks. This section will be moved to an appendix in the final version of the report.*

* **[AT124][650][SONMDT] Organisational Sasha – SONMDT (Apple)**

 Scope: Organisational discussions and announcements, as needed throughout the meeting weeks

 Intended outcome: Well-informed participants

**5 NR Rel-15 and Rel-16**

*Essential corrections only.*

*Tdoc Limitation: 5 tdocs in total for all sub agenda items.*

*In case a correction need to be reflected in both NR TS and LTE TS, the corrections should be submitted under one single AI (so the NR and LTE correction can be treatee together), the sub-Ais below this*

**5.4 SON MDT support for NR**

*(NR\_SON\_MDT-Core; leading WG: RAN3; REL-16; started: Jun 19; Completed June 20; WID:* [*RP-191776*](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_85/Docs/RP-191776.zip)*).*

### 5.4.1 General and stage-2 corrections

*Including incoming LSs, TS 37.320 corrections*

### 5.4.2 TS 38.314 corrections

### 5.4.3 RRC corrections

[R2-2312888](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312888.zip) Clarification to the the field description of the raPurpose in RA-Report Ericsson CR Rel-16 38.331 16.14.0 4447 - F NR\_SON\_MDT-Core

Nokia: we understand the motivation, but we don’t do this for a frozen release

E///: this is a clarification which doesn’t change the behaviour

CATT: not essential

* Noted

[R2-2312889](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312889.zip) Clarification to the field description of the raPurpose in RA-Report Ericsson CR Rel-17 38.331 17.6.0 4448 - A NR\_SON\_MDT-Core

* Noted

[R2-2312890](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312890.zip) Setting the content of the RA report for the selected beam Ericsson CR Rel-16 38.331 16.14.0 4449 - F NR\_SON\_MDT-Core

CATT: support the change

Nokia: does this change result in any different in technical procedures

E///: this aligns the procedure with ASN.1

* Agreed

[R2-2312891](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312891.zip) Setting the content of the RA report for the selected beam Ericsson CR Rel-17 38.331 17.6.0 4450 - A NR\_SON\_MDT-Core

* Agreed

**6 NR Rel-17**

*Essential corrections only. Editorial/clarifications should be sent to be reviewed and approved by spec rapporteurs prior to submission. Editiorials should only be submitted by spec rapporteurs.*

**6.5 SON MDT**

*(NR\_ENDC\_SON\_MDT\_enh-Core; leading WG: RAN3; REL-17; WID:* [*RP-201281*](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_88e/Docs/RP-201281.zip)*)*

*Tdoc Limitation: 2 tdocs*

### 6.5.0 In Principle Agreed CRs

[R2-2312892](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312892.zip) Logging previousPSCellId in case of SCG addition failure Ericsson CR Rel-17 38.331 17.6.0 4348 1 F NR\_ENDC\_SON\_MDT\_enh-Core [R2-2310742](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2310742.zip)

* Agreed

[R2-2312893](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312893.zip) Successful handover report is missing under ObtainCommonLocationInfo Ericsson CR Rel-17 38.331 17.6.0 4349 1 F NR\_ENDC\_SON\_MDT\_enh-Core [R2-2310743](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2310743.zip)

* Agreed

[R2-2313128](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313128.zip) Correction on delay definitions for split DRB Huawei, HiSilicon CR Rel-17 38.314 17.3.0 0031 - F NR\_ENDC\_SON\_MDT\_enh-Core

* Agreed

### 6.5.1 SON Corrections

[R2-2313594](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313594.zip) LS reply for LS on user consent for SON/MDT for NB-IoT UEs (S3-235004; contact: Nokia) SA3 LSin Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN2, SA5

* Noted

R2-2313827 NB-IoT UE location Info in RLF report (Qualcomm)

Proposal 1: Similar to the non NB-IoT UEs behavior, NB-IoT UEs should not report the location information in RLF report if it is not configured to include location information.

Proposal 2: If the network is interested in obtaining the location information in the RLF report from NB-IoT UEs, it should configure a flag in the UEInformationRequest-NB to indicate NB-IOT UEs to report location information in the RLF report.

Proposal 3: NB-IoT UEs report location information in the RLF report, only if the flag (to indicate NB-IOT UEs to report location information in the RLF report) is configured in the UEInformationRequest-NB.

Proposal 4: RAN2 is requested to approve CRs in R2-2313825 [3] and R2-2313826 [4].

Huawei: RAN2 sent LS to both SA3 and SA5, we haven’t received a reply from SA5 for now

Nokia: why not RRCREconfiguration-NB?

QCOM: that’s another option

E///, HW: we are ok with the QCOM’s solution, have comments about the CRs

Chair: it seems there are no objections to define a solution

HW: there may be impact to UE capabilities

QCOM: can consider a new capability

* RAN2 will define a flag to indicate NB-IOT UEs to report location information (at the time of the failure) in the RLF report

[R2-2312894](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312894.zip) On logging CHO candidate cells in SHR Ericsson CR Rel-17 38.331 17.6.0 4451 - F NR\_ENDC\_SON\_MDT\_enh-Core

Nokia, Samsung: if we read the section it is clear it is about PCell

E///: the report is for PCell, but in the proposed change we are talking about measurements

=> Noted

[R2-2313324](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313324.zip) Failure information in RLF report for inter-RAT mobility SHARP Corporation discussion

Proposal: UE indicates whether the handover failure is caused by T304 expiry or not in RLF report when mobility from NR failure

Samsung: the case shall not be reported to beging with in RLF-Report

QCOM: this is not a correction, but a new feature

E///: the proposal itself is technically correct, but it doesn’t fit into Rel-17 (OK for Rel-18)

Sharp: OK to do this in Rel-18

Chair: this can be discussed in the next meeting as part of TEI

* Noted

[R2-2313322](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313322.zip) Failure cause in RLF report for inter-RAT mobility Sharp CR Rel-17 38.331 17.6.0 4486 - F NR\_ENDC\_SON\_MDT\_enh-Core

* Noted

### 6.5.2 MDT Corrections

[R2-2312895](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312895.zip) Discussion on the areaConfiguration Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

* Noted

[R2-2313273](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313273.zip) Corrections on extension of AreaConfiguration CATT CR Rel-17 38.331 17.6.0 4327 1 F NR\_ENDC\_SON\_MDT\_enh-Core [R2-2310364](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2310364.zip)

Nokia: Agree with E///, the IEs should be v17. Not sure about the condition

ZTE: agree with Nokia, we can address this in the field description

QCOM, Nokia, Samsung: capabilities are not needed

* Address this in the field description; all IEs should be r17
* [AT124][652][SONMDT] AreaConfiguration (CATT)

 Scope:

* Modify the CR in accordance with the agreements
* Can also discuss capabilities

 Intended outcome: agreed CR in R2-2313835, ideally without a CB

 Deadline: Friday CB session (ideally without a CB)

## 7.13 Further enhancement of data collection for SON MDT in NR and EN-DC

(NR\_ENDC\_SON\_MDT\_enh2-Core; leading WG: RAN3; REL-18; WID: [RP-221825](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_96/Docs/RP-221825.zip))

Includes LS in’s related to AI/ML for NG-RAN

Time budget: 1 TU

Tdoc Limitation: 6 tdocs

### 7.13.1 Organizational

Ls in Rapporteur input.

Ls in

[R2-2311725](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2311725.zip) LS on SPR (R3-235868; contact: Samsung) RAN3 LS in Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN2

Samsung: we believe the existing IE can already carry the information requested by RAN3 and so no enhancements may be needed

ZTE: agree with Samsung

QCOM: which IE?

Samsung: Otherconfig

* [AT124][653][SONMDT] LS from RAN3 on SPR (E///)

 Scope: discuss whether the existing IEs can be used or an enhancement is needed

 Intended outcome: draft reply LS in R2-231383

 Deadline: Friday CB

[R2-2311729](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2311729.zip) LS on MRO for Fast MCG Recovery (R3-235897; contact: Huawei) RAN3 LS in Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN2

RAN3 ask whether UE can report this PSCell identity also in the successful Fast MCG Recovery case

HW: we believe it should be possible

ZTE: agree, the current IE can be used, all we need to do is update procedural text

QCOM: agree, but also IE name needs to be renamed

* UE can report this PSCell identity also in the successful Fast MCG Recovery case, IE renaming can be discussed in CR implementation.
* [AT124][654][SONMDT] reply LS to RAN3 on MRO for Fast MCG Recovery (HW)

 Scope: draft reply LS to RAN3 taking into account the agreement

 Intended outcome: agreed LS in R2-2313838 (ideally without CB)

 Deadline: Friday CB

[R2-2311767](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2311767.zip) Reply LS on user consent of Non-public Network (S5-236928; contact: Ericsson) SA5 LS in Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN3 Cc:RAN2, SA3

* Noted

Running CRs

[R2-2312791](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312791.zip) Running 36.331 CR for SN RACH report ZTE Corporation, Sanechips CR Rel-18 36.331 17.6.0 4969 - B NR\_ENDC\_SON\_MDT\_enh2-Core

* Noted

[R2-2312792](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312792.zip) Running 38.331 CR for SON on RACH report ZTE Corporation, Sanechips CR Rel-18 38.331 17.6.0 4444 - B NR\_ENDC\_SON\_MDT\_enh2-Core

* Noted

[R2-2312902](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312902.zip) Running CR 38331 for Rel-18 SON MRO Ericsson CR Rel-18 38.331 17.6.0 4253 2 B NR\_ENDC\_SON\_MDT\_enh2-Core [R2-2310750](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2310750.zip)

* Noted

[R2-2313140](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313140.zip) Running 38.331 CR for logged MDT enhancements and NPN Huawei, HiSilicon draftCR Rel-18 38.331

* Noted 17.6.0 B NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313139](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313139.zip) Running 36.331 CR for logged MDT enhancements Huawei, HiSilicon draftCR Rel-18 36.331 17.6.0 B NR\_ENDC\_SON\_MDT\_enh2-Core

* Noted

Merged CRs

[R2-2312903](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312903.zip) CR to 38331 for introducing SON/MDT features in Rel-18 Ericsson, Huawei, ZTE CR Rel-18 38.331 17.6.0 4452 - B NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313129](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313129.zip) CR to 36.331 for Further enhancements on SONMDT Huawei, Ericsson, ZTE CR Rel-18 36.331 17.6.0 4973 - B NR\_ENDC\_SON\_MDT\_enh2-Core

Capabilities

[R2-2313130](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313130.zip) CR to 36.306 for UE capability for R18 SONMDT Huawei, HiSilicon, CATT CR Rel-18 36.306 17.4.0 1875 - B NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313131](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313131.zip) CR to 36.331 for UE capability for R18 SONMDT Huawei, HiSilicon, CATT CR Rel-18 36.331 17.6.0 4974 - B NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313271](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313271.zip) CR to 38306 for UE capability for R18 SONMDT CATT, Huawei, HiSilicon CR Rel-18 38.306 17.6.0 1007 - B NR\_ENDC\_SON\_MDT\_enh2-Core Revised

* Revised

[R2-2313272](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313272.zip) CR to 38331 for UE capability for R18 SONMDT CATT, Huawei, HiSilicon CR Rel-18 38.331 17.6.0 4484 - B NR\_ENDC\_SON\_MDT\_enh2-Core Revised

* Revised

[R2-2313545](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313545.zip) CR to 38306 for UE capability for R18 SONMDT CATT, Huawei, HiSilicon CR Rel-18 38.306 17.6.0 1007 1 B NR\_ENDC\_SON\_MDT\_enh2-Core [R2-2313271](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313271.zip) Late

[R2-2313546](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313546.zip) CR to 38331 for UE capability for R18 SONMDT CATT, Huawei, HiSilicon CR Rel-18 38.331 17.6.0 4484 1 B NR\_ENDC\_SON\_MDT\_enh2-Core [R2-2313272](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313272.zip) Late

* [AT124][654][SONMDT] Capabilities (CATT)

 Scope: try to finalize the capabilities CRs

 15:30-16:30 in Brk3 (to be confirmed by the rapporteur)

 Intended outcome: CRs for endorsement in R2-231389, R2-231310, R2-231311, R2-231312

 Deadline: Friday CB

Open issues

[R2-2312740](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312740.zip) The report of [Post123bis][658][R18 SONMDT] Running UE capabilities CR of SONMDT(CATT) CATT report Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

Proposal 1: Define an optional UE capability without signalling to indicate if the UE supports the delivery of the CPAC related parameters for MRO in *SCGFailureInformation* message.

Proposal 2: Change the wording of UE capability of NPN in logged MDT and divide it into two separate UE capabilities for SNPN and PNI-NPN as below.

| *loggedMDT-PNI-NPN-r18*Indicates whether the UE supports Logged MDT for PNI-NPN(s). | UE | No | No | No |
| --- | --- | --- | --- | --- |
| *loggedMDT-SNPN-r18*Indicates whether the UE supports Logged MDT for SNPN(s). | UE | No | No | No |

Proposal 3: Update the UE capability of NPN in RLF report to restrict this UE capability to SNPN only, as below:

| RLF Report for SNPNIt is optional for UE to support the checking and the delivery of the SNPN ID(FFS : SNPN ID or SNPN IDs) in the RLF-report. |
| --- |

Nokia: -> “to support RLF in SNPN”, the delivery part is still open

Proposal 4: Whether and how to introduce the UE capabilities of NPN in CEF/RA report/MHI/OOC can wait for more progress.

Noted

Agreements:

Define an optional UE capability without signalling to indicate if the UE supports the delivery of the CPAC related parameters for MRO in SCGFailureInformation message.

Change the wording of UE capability of NPN in logged MDT and divide it into two separate UE capabilities for SNPN and PNI-NP (loggedMDT-PNI-NPN-r18 and loggedMDT-SNPN-r18)

It is optional for UE to support RLF in SNPN

[R2-2312896](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312896.zip) List of Open Issues of Rel-18 SONMDT MRO Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

1. RAN2 prioritize the following open issues to conclude the Rel-18 MRO discussion for voice fall back failure
	1. Differentiating of the emergency calls from normal voice call in the RLF report

Nokia, Samsung: we don’t think this is needed

E///: these failures affect emergency calls, which is important

1. RAN2 prioritize the following open issues to conclude the Rel-18 MRO discussion for inter-RAT SHR
	1. Leftover issue on correlation of the SHR and LTE RLF report as requested by RAN3 LS (R3-234716). Logging the time information as requested by RAN3 LS

E///: two views: time between HO execution and retrieval or the time between the HO execution and the RLF

Nokia: in our view the first variant is what RAN3 requested

E///: how the first option is useful?

QCOM: combined with other times reported in RLF it provides the information needed

Nokia: this is about correlating two reports

1. RAN2 prioritize the following open issues to conclude the Rel-18 MRO discussion for SPR
	1. Which location information configurations (configured by MN or source SN or target SN) should be used to log the location information in the SPR

QCOM: UE does what the network requests, even if its redundant

* 1. Which measurement objects (configured by the PCell or by PSCell) should be used to log the neighbouring cells measurements in the SPR

E///: maybe follow the agreement for location

* 1. Logging the PCI and ARFCN of the source PScell and target PSCell if the CGI of the corresponding cell is not available

Nokia: is there such a case?

E///: if not maybe CGI should be mandatory

Nokia: it is not a frequent case

QCOM: we may not need to differentiate between source and target PScell

* 1. SPR availability indication to the SN over SRB1 and/or SRB3

Samsung: not needed for SRB1, no strong view for SRB3

QCOM: no need to indicate availability to SN (indicator to MN is good enough)

E///: may not need indication for SRB1

QCOM: MN can blindly request without availability indication

Nokia: SRB3 indication is not needed, but do not support blind request

* 1. Setting CRNTI (configured by the MCG or by the SCG or both)

QCOM: this is not needed as RAN3 already designed a solution

E///: agree with QCOM, but target CRNTI is needed

* 1. Other mechanism than RRCReconfigurationComplete for the SPR availability indication
1. RAN2 prioritize the following open issues to conclude the Rel-18 MRO discussion for MRO in DC scenarios.
	1. Logging PSCell ID upon successful MCG recovery as requested by RAN3 LS (R3-235897)
	2. Logging PSCell ID of the deactivated SCG upon initiating the fast MCG recovery

Samsung: PSCell ID of the deactivated SCG is not useful

Nokia: this (p4b) is a corner case

Nokia: what about target PCell?

Agreements

RAN2 does not support differentiating of the emergency calls from normal voice call in the RLF report in this release

Include the time between HO execution and report retrieval in SHR

For the location information in the SPR the UE logs what is configured by the network (MN or SN) and as per the network node initiating the change

For measurement objects (configured by the PCell or by PSCell) report measurements associated with the configuration from the node that triggered the change

UE logs PCI and ARFCN of the target PSCell if the CGI of the corresponding cell is not available

In addition to SRB1 (to MN), support SPR availability indication over SRB3 (RRCReconfigurationComplete), no other mechanisms are supported in this release

* Noted

[R2-2312793](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312793.zip) RACH relevant SON open issues ZTE Corporation, Sanechips discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

**For RACH relevant MRO, RAN2 prioritize discussion on below ffs issues:**

For SN RACH report, ffs whether UE report all available NR RACH report based on request from LTE BS or whether new UE variable is needed.

CATT: can accept the first option

FFS how to set the numberOfPreamblesSentOnSSB-r16 ,numberOfPreamblesSentOnCSI-RS-r16 and the perRAAttemptInfoList.

ZTE: appears there is consensus to leave it to implementation

RAN2 discuss if raPurposes (including SchedulingRequestFailure and noPUCCHResourceAvailable) require any change when the LBT failure leads to an SR procedure failure or unavailability of the PUCCH resources for the SR in SCell.

Agreements

UE report all available NR RACH report based on request from LTE BS

For the case the UE indicates in a flag all preamble transmissions were blocked by LBT it is left to UE implementation how to set the numberOfPreamblesSentOnSSB-r16 ,numberOfPreamblesSentOnCSI-RS-r16 and the perRAAttemptInfoList and the network ignores the information transferred in these IEs

**Below proposals are treated only if time allows:**

Proposal 6 RAN2 discuss which of the following information to the logged in the RA report when the SDT triggers an RA procedure

a.UE reports the DL RSRP and pending UL data volume at the time of SDT initiation.

b.The data volume buffered at UE side upon SDT initiation

c.The data volume buffered at UE side when SDT fails

Proposal 7 RAN2 firstly discusses what kind of power information for an RA procedure the network actually needs for RA enhancement.

Proposal 8 if power ramping information is needed at network, RAN2 considers the following options:

Option 1: UE indicates whether notification of suspending power ramping counter has been received from power layer per RA attempt in RA report.

Option 2: UE indicates whether power ramping is performed or not per RA attempt in RA report.

Proposal 10 RAN2 discuss whether UE reports if it has used slicing specific or AI specific RACH parameters for the RA.

### 7.13.2 MRO for inter-system handover for voice fallback

[R2-2312794](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312794.zip) Consideration on MRO for inter-system handover for voice fallback ZTE Corporation, Sanechips discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312897](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312897.zip) Discussion on voice fallback HO failure Ericsson, CMCC discussion NR\_ENDC\_SON\_MDT\_enh2-Core

### 7.13.3 MDT override

### 7.13.4 SHR and SPCR

[R2-2312308](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312308.zip) On SPR availability indication Apple discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312473](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312473.zip) SON enhancements for inter-RAT SHR and SPR Lenovo discussion Rel-18

[R2-2312618](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312618.zip) SPR reporting mechanism Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312741](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312741.zip) Further discussion on SPR CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core Revised

[R2-2312795](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312795.zip) Consideration on SPR remaining issues ZTE Corporation, Sanechips discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312885](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312885.zip) SON/MDT enhancements for Inter-RAT SHR Samsung discussion

[R2-2312898](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312898.zip) Discussion on inter-RAT SHR and SPR Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312904](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312904.zip) SON/MDT enhancements for SPR Samsung discussion

[R2-2313070](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313070.zip) Discussion on Open Issues in SPR Qualcomm Incorporated discussion Rel-18

[R2-2313132](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313132.zip) Discussion on leftover issues for SHR and SPR Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313222](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313222.zip) Discussion on remaining issues for SPR SHARP Corporation discussion

[R2-2313443](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313443.zip) Remaining issues on SPR vivo discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh-Core

[R2-2313544](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313544.zip) Further discussion on SPR CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core [R2-2312741](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312741.zip) Late

### 7.13.5 SON for NR-U

Focus on UE impacts. RAN2/RAN3 progress should be considered.

[R2-2312474](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312474.zip) Discussion on MRO for NR-U Lenovo discussion Rel-18

[R2-2312676](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312676.zip) SONMDT enhancement for NR-U CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312742](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312742.zip) SON Enhancement for NR-U CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312796](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312796.zip) Remaining issue on NR-U ZTE Corporation, Sanechips discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312905](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312905.zip) SON/MDT enhancements for NR-U Samsung discussion

[R2-2313133](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313133.zip) Discussion on leftover issues for SON for NR-U Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313514](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313514.zip) Enhancements of SON reports for NR-U Ericsson discussion

### 7.13.6 RACH enhancement

[R2-2312489](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312489.zip) Consideration on the SON enhancements for RACH report Xiaomi discussion Rel-18

[R2-2312619](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312619.zip) Discussion on RACH enhancement for SON Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312743](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312743.zip) RACH enhancement for SON CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312797](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312797.zip) Remaining issue on RACH enhancements ZTE Corporation, Sanechips discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312899](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312899.zip) RA report enhancement Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312914](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312914.zip) SON/MDT enhancements for RACH Samsung discussion

[R2-2313082](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313082.zip) On SgNB RACH reporting Qualcomm Incorporated discussion Rel-18

[R2-2313134](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313134.zip) Discussion on leftover issues for RACH enhancement Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313177](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313177.zip) Power information in RA report SHARP Corporation discussion [R2-2310423](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2310423.zip)

[R2-2313214](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313214.zip) RA report enhancement for SDT SHARP Corporation discussion [R2-2310428](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2310428.zip)

### 7.13.7 SON/MDT enhancements for Non-Public Networks

[R2-2312309](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312309.zip) OOC analysis involving NPN network Apple discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312451](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312451.zip) Discussion on the SONMDT enhancement for NPN Xiaomi discussion Rel-18

[R2-2312620](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312620.zip) Discussion on open NPN issues in SON/MDT Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

Proposal 1.1: Add the following clarification into RAN2 specification: “In an AreaConfiguration SNPN related area configuration elements cannot be present if PLMN and/or PNI-NPN related configuration elements are present.”

Proposal 1.2: Only add a single NID within SNPN-ConfigCellId and SNPN-ConfigTAI

[R2-2312744](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312744.zip) SON and MDT Enhancement for NPN CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312798](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312798.zip) Remaining issue on SON-MDT support for NPN ZTE Corporation, Sanechips discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312886](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312886.zip) SON/MDT enhancements for NPN Samsung discussion

[R2-2312900](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312900.zip) SON Support for NPN Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313072](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313072.zip) Discussion on Open Issues in SON/MDT Enhancements for NPN Qualcomm Incorporated discussion

[R2-2313135](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313135.zip) Discussion on leftover issues for SONMDT enhancements for NPN Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313141](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313141.zip) Open issue list for RRC running CR for NPN Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

Proposal 1: Include NPN related area scopes with a non critical extension, i.e. AreaConfiguration-v18xy (this reverts the previous RAN2#123bis agreement).

Huawei: this is pending RAN3 progress

Proposal 2: For SONMDT enhancements for NPN, RAN2#124 can focus on open issue #1, 2, 3, 4 listed in this Tdoc, and some issues may need the outcome of RAN3.

Open issue#1: MHI, CEF, RA report enhancements for NPN

QCOM: UE should check NID, but not include it in the reports

Open issue#2: OOC details for NPN

Open issue#3: SNPN id details for RLF/HOF report (considering ESNPN)

FFS: Waiting for RAN3 related progress: Proposal 2: RAN2 to discuss whether ESNPN can be applied to RLF/HOF report besides the Logged MDT:

- Option 1: Limit RLF/HOF record and report to the registered SNPN, one nid is enough;

- Option 2: ESNPN is supported for RLF/HOF report, and separate nid(s) may need in the RLF/HOF report to identify the other part of SNPN IDs for different usage, together with the different PLMN ID part in e.g. previousPCellId-r16, failedPCellId-r16, reconnectCellId-r16 and reestablishmentCellId-r16.

E///: What happens with MHI when UE moves between non-NPN to NPN?

QCOM: a simple solution is for UE to delete stored MHI

E///: UE can log the time spent in NPN

CATT: agree with QCOM, can follow the same principle as MDT

For issue#3, RAN2 can firstly check the latest RAN3 progress, and then discuss options. After that, the NPN related stage-3 changes may be updated.

Open issue#4: RAN2 impacts due to the scenario of UE mobility among different SNPNs (i.e. ESNPN)

Agreements

Include NPN related area scopes with a non critical extension, i.e. AreaConfiguration-v18xy

Before signalling availability and before reporting (as in legacy) UE shall check SNPN ID for MHI, CEF, RA reports, SHR, SPR (all SON reports)

NID is not included in SON reports

When moving from NPN to PLMN (or vice versa) UE discards all stored MHI, RA report, and CEF

[R2-2313444](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313444.zip) Remaining issues on SON enhancement for NPN vivo discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh-Core

### 7.13.8 Other

[R2-2312475](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312475.zip) SON enhancements for CPAC Lenovo discussion Rel-18

[R2-2312621](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312621.zip) Improvement of handling of timeConnFailure Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312622](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312622.zip) MRO for CPAC Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312623](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312623.zip) MRO for fast MCG recovery Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312659](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312659.zip) Discussion on MRO for fast MCG recovery CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312660](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312660.zip) [Draft] Reply LS on MRO for Fast MCG Recovery CMCC LS out Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN3

[R2-2312677](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312677.zip) SON MDT enhancement for MR-DC CPAC CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312678](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312678.zip) MHI Enhancement for SCG Activation/Deactivation CMCC, Ericsson, CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312745](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312745.zip) Discussion on Fast MCG recovery MRO Enhancement CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

Proposal 3: It is kindly to ask RAN2 to discuss these three options to differentiate the case of SCG was failed while the timer T316 was running or at the time of initiation of the fast MCG recovery procedure:

- Option 1: Introduce an indication to differentiate these two cases;

- Option 2: Introduce the corresponding cause value for these two cases;

- Option 3: Set the positive or negative value of the time to different these two cases.

Nokia, Samsung: this is a very corner case

[R2-2312746](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312746.zip) Discussion on MHI Enhancement for SCG Deactivation/Activation CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312799](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312799.zip) Consideration on other SON remaining issues ZTE Corporation, Sanechips discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2312884](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312884.zip) Fast MCG Link Recovery Optimization Samsung discussion

[R2-2312901](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2312901.zip) Discussion on Fast MCG recovery Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313136](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313136.zip) Discussion on leftover issues for fast MCG recovery Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313137](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313137.zip) Discussion on leftover issues for CPAC MRO Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313138](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313138.zip) Discussion on MRO for Fast MCG Recovery (RAN3 LS R3-235897) Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

[R2-2313239](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313239.zip) Discussion on fast MCG recovery MRO SHARP Corporation discussion

[R2-2313445](file:///Users/sasha.sirotkin/meetings/TSGR2_124/Docs/R2-2313445.zip) Remaining issues on MRO for CPAC vivo discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh-Core

## Summary

All the tdocs have been discussed offline by email.

### **Agreed Documents**

### **Post-meeting email discussions**