**3GPP T****SG-RAN WG3 Meeting #112-e R3-212654**

**Online, 17th – 28th May 2021**

Agenda Item: 9.3.8.1

Source: CMCC

Title: Summary of offline discussion on Rel-16Corr\_SONMDT

Document for: Discussion and Decision

# Introduction

**CB: # 105\_ Rel-16Corr\_SONMDT**

**- Discuss if agreeable; revise as needed**

**- SON/MDT st2 corrections included for convenience; to be treated at Moderator’s discretion if time allows**

(CMCC - moderator)

Summary of offline disc [R3-212654](Inbox\R3-212654.zip)

This CB#105 will be organized in two phases:

**Phase 1: Check details and revise as needed**

**Phase 2: Converge on agreeable CRs**

The deadline for Phase 1 is Friday, January 28, end of day.

The deadline for Phase 2 is the same as for all email discussions, i.e., Tuesday, February 2, 12:00:00 UTC.

# For the Chairman’s Notes

**Agree on the following proposals:**

**[To be added]**

# Discussion (Phase I)

## Corrections on EN-DC Resource Status Reporting

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| [R3-211532](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211532.zip) | Consideration on EN-DC Resource Status Reporting (Huawei, Qualcomm Incorporated, BT, Nokia, Nokia Shanghai Bell, ZTE) | discussion |
| [R3-211533](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211533.zip) | Correction of en-gNB initiated EN-DC Resource Status Reporting (Huawei, Qualcomm Incorporated, BT, Nokia, Nokia Shanghai Bell, ZTE) | CR1593r, TS 36.423 v16.5.0, Rel-16, Cat. F |

**Reason for change:**

In en-gNB initiated EN-DC Resource Status Reporting Initiation, the en-gNB is not able to provide the eNB measurement ID, and the en-gNB Measurement ID shall always be included instead of C-ifRegistrationRequestStoporAdd.

In order to enable both eNB initiated and en-gNB initiated EN-DC Resource Status Reporting Initiation, it is needed to update the *eNB Measurement ID* IE and *en-gNB Measurement ID* IE to *E-UTRAN Node1 Measurement ID* IE and *E-UTRAN Node2 Measurement ID* IE in X2AP: EN-DC RESOURCE STATUS REQUEST, EN-DC RESOURCE STATUS RESPONSE and EN-DC RESOURCE STATUS FAILURE messages.

In order to align the EN-DC Resource Status Reporting Initiation procedure and the EN-DC Resource Status Reporting procedure, it is also needed to do the same change in X2AP: EN-DC RESOURCE STATUS UPDATE message.

Similar to existing cause value “Unknown eNB Measurement ID”, it is also needed to introduce a new cause “Unknown E-UTRAN Node Measurement ID” to indicate that the action failed because some E-UTRAN Node Measurement-ID is unknown.

**Summary of change:**

* Update the eNB Measurement ID IE and en-gNB Measurement ID IE to E-UTRAN Node1 Measurement ID IE and E-UTRAN Node2 Measurement ID IE in the following X2AP messages:
  + EN-DC RESOURCE STATUS REQUEST
  + EN-DC RESOURCE STATUS RESPONSE
  + EN-DC RESOURCE STATUS FAILURE
  + EN-DC RESOURCE STATUS UPDATE
* Introduce a new cause “Unknown E-UTRAN Node Measurement ID” to indicate that the action failed because some E-UTRAN Node Measurement-ID is unknown.

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
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## Corrections on reference to RACH-Report in TS 38.423/473

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| [R3-211673](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211673.zip) | Correction on reference to RACH-Report (NEC) | CR0744r, TS 38.473 v16.5.0, Rel-16, Cat. F |
| [R3-211711](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211711.zip) | RACH Report Container(CR to 38423) (China Telecommunication) | CR0594r, TS 38.423 v16.5.0, Rel-16, Cat. F |
| [R3-211712](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211712.zip) | RACH Report Container(CR to 38473) (China Telecommunication) | CR0746r, TS 38.473 v16.5.0, Rel-16, Cat. F |

**Reason for change:**

The RACH Report Container IE refer to RACH-ReportList-r16 but this RACH-ReportList-r16 does not exist in RRC.

**Summary of change:**

Correct the reference to RA-ReportList-r16.

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
| China Telecom | Yes | In TS38.423 and TS38.473, as there is no “*RACH-ReportList-r16*” IE defiend in subclause 6.2.2 in TS 38.331 where only “*RA-ReportList-r16*” IE has been defined, “*RACH-ReportList-r16*” in TS38.423 and TS38.473 needs be revised to “*RA-ReportList-r16*”.  It is not only just rewording but also correcting the meaning because “RACH” looks more likely to refer to “Random Access Channel” while “RA” refers to “RADIO ACCESS”. |
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## Correction on Signalling based MDT Activation

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| [R3-211730](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211730.zip) | Correction on Signalling based MDT Activation [NR\_SON\_MDT-Core] (ZTE, China Telecom, Samsung) | CR0172r1, TS 38.401 v16.5.0, Rel-16, Cat. F |

**Reason for change:**

During the discussion on Signaling Support for MDT in Rel-16, the agreement “In split RAN architecture, the MDT data is reported to TCE by each node directly” has been reached. However, in TS 38.401, the agreement is only reflected in Management based MDT based activation, but not in the Signalling based MDT activation.

**Summary of change:**

Add the description to reflect the above agreement for Signalling based MDT activation.

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
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## Correction on MRO Inter-system measurement Configuration

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| [R3-211763](file:///C:\Users\cmcc\AppData\Roaming\Microsoft\Word\Docs\R3-211763.zip) | MRO Inter-system measurement Configuration (Ericsson) | discussion |
| [R3-211764](file:///C:\Users\cmcc\AppData\Roaming\Microsoft\Word\Docs\R3-211764.zip) | MRO S1AP clarifications for Inter-system measurement Configuration (Ericsson) | CR1790r4, TS 36.413 v16.5.0, Rel-16, Cat. F |

**Reason for change:**

Clarifications for Inter-system measurement Configuration

1. It is unclear what is the receiver behavior in case none of the optional IEs RSRP, RSRQ, SINR are present in the Inter-system measurement Configuration IE.
2. there is a mismatch with 38.413 v16.5.0 and the “Inter-System Handover Report IE” should be “Inter-System HO Report IE” instead.
3. In the tabular section for Inter-system measurement Configuration, the semantic description of the IEs RSRP, RSRQ, SINR does not reflect the functional behavior of the thresholds as described in the procedural text.

**Summary of change:**

1. In the procedural text for Handover Resource Allocation:   
   text added in the abnormal conditions, to specify the receiver behavior when all RSRP, RSRQ, RSSI IEs are missing in Inter-system measurement Configuration IE;
2. aligned the name of “Inter-System HO Report” IE to TS 38.413;
3. minor editorial fixes. In the tabular for Inter-system measurement Configuration IE: semantic description clarified for RSRP, RSRQ and RSSI IEs.

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
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## Correction on Maximum Number of RRC connections

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| [R3-211765](file:///C:\Users\cmcc\AppData\Roaming\Microsoft\Word\Docs\R3-211765.zip) | Maximum Number of RRC connections (Ericsson, CMCC) | CR0559r1, TS 38.423 v16.5.0, Rel-16, Cat. F |

**Reason for change:**

Clarification of the meaning for Number of RRC Corrections IE

**Summary of change:**

Clarify the text description for Number of RRC Corrections IE, indicating that it refers to the maximum number of RRC connections per cell. No ASN.1 impact.

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
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## Correction on RESOURCE STATUS REQUEST message

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| [R3-211950](file:///C:\Users\cmcc\AppData\Roaming\Microsoft\Word\Docs\R3-211950.zip) | Issue in RESOURCE STATUS REQUEST message (Samsung, CMCC, ZTE, CATT, Lenovo, Motorola Mobility, Nokia, Nokia Shanghai Bell) |
| [R3-211951](file:///C:\Users\cmcc\AppData\Roaming\Microsoft\Word\Docs\R3-211951.zip) | Correction of ASN.1 definition for RESOURCE STATUS REQUEST message and semantics for Resource Status Reporting Initiation procedure (Samsung, CMCC, ZTE, CATT, Lenovo, Motorola Mobility, Nokia, Nokia Shanghai Bell) |

**Reason for change:**

1. There is mismatch between the tablular and ASN.1 in RESOURCE STATUS REQUEST message.
2. There is an erroneous semantics description for the Cause IE in the RESOURCE STATUS FAILURE message.

**Summary of change:**

1. Change sSBToReport-List and sliceToReport-List to be optional in the ASN.1.

**This is a NBC change, but during the offline discussion, the co-signing companies think this approach is the cleanest approach.**

1. Remove the erroneous semantics description.

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
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## Correction on LTE UE RLF report

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| [R3-212509](Docs\R3-212509.zip) | Correction on LTE UE RLF Report (China Telecom,CATT) | CR0629r, TS 38.423 v16.5.0, Rel-16, Cat. F |

**Reason for change:**

For LTE UE RLF Report, there are two parts in UEInformationResponse message which are RLF-Report-r9 IE and RLF-Report-v9e0 IE. It is propose to include RLF-Report-v9e0 IE in LTE UE RLF Report.

**Summary of change:**

RLF-Report-v9e0 IE is included in LTE UE RLF Report

9.2.2.59 UE RLF Report

This IE contains the RLF Report to be transferred.

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| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| CHOICE *type* | M |  |  |  |
| >*NR* |  |  |  |  |
| >>NR UE RLF Report Container | M |  | OCTET STRING | *nr-RLF-Report-r16* IE contained in the *UEInformationResponse* message defined in TS 38.331 [10]. |
| >*LTE* |  |  |  |  |
| >>LTE UE RLF Report Container | M |  | OCTET STRING | *RLF-Report-r9* IE contained in the *UEInformationResponse* message defined in TS 36.331 [14] |
| >>LTE UE RLF Report Container for extended bands | O |  | OCTET STRING | RLF-Report-v9e0 IE contained in the UEInformationResponse message defined in TS 36.331 [14] |

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
| China Telecom | Yes | As per TS36.331, RLF-report-v9e0 is used to indicate the target frequency which exceeds the upper bound of ARFCN-ValueEUTRA. |
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## Correction on MLB for TS38.473

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| [R3-212580](Docs\R3-212580.zip) | Correction on MLB for TS38.473 [NR\_SON\_MDT-Core] (ZTE, China Telecom, China Unicom) | CR0776r, TS 38.473 v16.5.0, Rel-16, Cat. F |

**Reason for change:**

The partial failure function which is supported in E-UTRAN is not introduced in NR Release 16. And the corresponding semantics description of the Cause IE is not removed.

**Summary of change:**

Remove the semantics description of the *Cause* IE in the RESOURCE STATUS FAILURE message.

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
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## Correction on UE History Information in MRO

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| [R3-211697](Docs\R3-211697.zip) | Correction on MRO related issues (CATT) | CR0593r, TS 38.423 v16.5.0, Rel-16, Cat. F |

**Reason for change:**

NG-RAN can retrieve and transfer UE History Information from the UE in handover procedures to facilitate handover judgement. Nowadays, only NR UE History Information from the UE is included in interface in Rel-16, and NG-RAN includes not only gNB but also ng-eNB case. There may be handover between ng-eNB and LTE UE History Information from the UE shall also be used to optimize ng-eNB handover. So, it is proposed to include LTE UE History Information from the UE in Xn interface.

**Summary of change:**

LTE UE History Information from the UE is included in Xn interface

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
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## Correction on MRO stage 2

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| [R3-211952](Docs\R3-211952.zip) | Issues in stage 2 on MRO (Samsung, CMCC, Ericsson, ZTE, Nokia, Nokia Shanghai Bell, Lenovo, Motorola Mobility) | discussion  Move to 9.3.8.1 |
| [R3-211953](Docs\R3-211953.zip) | Correction of MRO in stage 2 (Samsung, CMCC, Ericsson, ZTE, Nokia, Nokia Shanghai Bell, Lenovo, Motorola Mobility) | draftCRr, TS 38.300 v16.5.0, Rel-16, Cat.  Move to 9.3.8.1 |

**Reason for change:**

The description of detection of Intra-system Too Early Handover and Intra-system Handover to Wrong Cell doesn’t reflect the agreement of RAN3.

In case of no RRC Reestalbishment, the RAN node use the cell where UE attempts to re-connect to detect the problem based on above description. However, RAN3 agreed that the UE should report the CGI of successful re-connected cell instead of the cell UE attempts to re-connect at RAN3#107bis-e meeting [1]. RAN2 also agreed stage 3 based on LS from RAN3 [2]. Therefore, stage 2 should be corrected to reflect the agreement in RAN3 and RAN2.

**Summary of change:**

Replace “the cell UE attempts to re-connect” to “the successful re-connect cell” for detection of Intra-system Too Early Handover and Intra-system Handover to Wrong Cell.

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
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## Correction on detection mechanisms for Intra-system too late handover

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| [R3-211857](Docs\R3-211857.zip) | Correction on detection mechanisms for Intra-system too late handover (CATT,CMCC,ZTE) | draftCRr, TS 38.300 v16.5.0, Rel-16, Cat. F  Move to 9.3.8.1 |

**Reason for change:**

Lack of description on the cell where UE attempts to re-establish the radio link connection.

For the detailed detection mechanisms for Intra-system too late handover, too early handover and handover to wrong cell, there is a requirement for the cell where UE attempts to re-establish the radio link connection after RLF. For Intra-system too early handover and handover to wrong cell, the description is complete, but for Intra-system too late handover, the description for the cell where UE attempts to re-establish the radio link connection is missing.

**Summary of change:**

The detailed detection mechanisms for too late handover, too early handover and handover to wrong cell are carried out through the following in the NG-RAN node that served the UE before the reported connection failure:

- Intra-system Too Late Handover: there is no recent handover for the UE prior to the connection failure e.g. the UE reported timer is absent or larger than the configured threshold (e.g. Tstore\_UE\_cntxt), and the first re-establishment attempt cell/the cell UE attempts to re-connect is not the cell that served the UE where the RLF happened.

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
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## Correction on inter system SON configuration Transfer

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| [R3-212272](Docs\R3-212272.zip) | Correction of inter system SON configuration Transfer (NTT DOCOMO INC.) | CR0607r, TS 38.413 v16.5.0, Rel-16, Cat. F |

**Reason for change:**

In TS 23.501 subclause 5.17.7, the configuraiton transfer between NG-RAN and E-UTRAN to enable the transfer of the RAN TNL address information between the gNB and eNB via MME and AMF is supported. While the related signaling is not supported in latest TS 38.413 spec yet.

**Summary of change:**

Add SON Information Request and SON Information Reply IEs in Inter-system SON Information IE.

**Q1: Do you agree with the corrections? Do you propose changes?**

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| Company | Y/N | Comments |
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# Conclusion, Recommendations

# Reference

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| [R3-211532](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211532.zip) | Consideration on EN-DC Resource Status Reporting (Huawei, Qualcomm Incorporated, BT, Nokia, Nokia Shanghai Bell, ZTE) | discussion |
| [R3-211533](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211533.zip) | Correction of en-gNB initiated EN-DC Resource Status Reporting (Huawei, Qualcomm Incorporated, BT, Nokia, Nokia Shanghai Bell, ZTE) | CR1593r, TS 36.423 v16.5.0, Rel-16, Cat. F |
| [R3-211673](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211673.zip) | Correction on reference to RACH-Report (NEC) | CR0744r, TS 38.473 v16.5.0, Rel-16, Cat. F |
| [R3-211711](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211711.zip) | RACH Report Container(CR to 38423) (China Telecommunication) | CR0594r, TS 38.423 v16.5.0, Rel-16, Cat. F |
| [R3-211712](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211712.zip) | RACH Report Container(CR to 38473) (China Telecommunication) | CR0746r, TS 38.473 v16.5.0, Rel-16, Cat. F |
| [R3-211730](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211730.zip) | Correction on Signalling based MDT Activation [NR\_SON\_MDT-Core] (ZTE, China Telecom, Samsung) | CR0172r1, TS 38.401 v16.5.0, Rel-16, Cat. F |
| [R3-211763](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211763.zip) | MRO Inter-system measurement Configuration (Ericsson) | discussion |
| [R3-211764](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211764.zip) | MRO S1AP clarifications for Inter-system measurement Configuration (Ericsson) | CR1790r4, TS 36.413 v16.5.0, Rel-16, Cat. F |
| [R3-211765](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211765.zip) | Maximum Number of RRC connections (Ericsson, CMCC) | CR0559r1, TS 38.423 v16.5.0, Rel-16, Cat. F |
| [R3-211950](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211950.zip) | Issue in RESOURCE STATUS REQUEST message (Samsung, CMCC, ZTE, CATT, Lenovo, Motorola Mobility, Nokia, Nokia Shanghai Bell) | discussion |
| [R3-211951](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211951.zip) | Correction of ASN.1 definition for RESOURCE STATUS REQUEST message and semantics for Resource Status Reporting Initiation procedure (Samsung, CMCC, ZTE, CATT, Lenovo, Motorola Mobility, Nokia, Nokia Shanghai Bell) | CR0609r, TS 38.423 v16.5.0, Rel-16, Cat. F  Chair: NBC |
| [R3-212509](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-212509.zip) | Correction on LTE UE RLF Report (China Telecom,CATT) | CR0629r, TS 38.423 v16.5.0, Rel-16, Cat. F |
| [R3-212580](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-212580.zip) | Correction on MLB for TS38.473 [NR\_SON\_MDT-Core] (ZTE, China Telecom, China Unicom) | CR0776r, TS 38.473 v16.5.0, Rel-16, Cat. F |
| [R3-211697](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211697.zip) | Correction on MRO related issues (CATT) | CR0593r, TS 38.423 v16.5.0, Rel-16, Cat. F |
| [R3-211952](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211952.zip) | Issues in stage 2 on MRO (Samsung, CMCC, Ericsson, ZTE, Nokia, Nokia Shanghai Bell, Lenovo, Motorola Mobility) | discussion  Move to 9.3.8.1 |
| [R3-211953](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211953.zip) | Correction of MRO in stage 2 (Samsung, CMCC, Ericsson, ZTE, Nokia, Nokia Shanghai Bell, Lenovo, Motorola Mobility) | draftCRr, TS 38.300 v16.5.0, Rel-16, Cat.  Move to 9.3.8.1 |
| [R3-211857](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-211857.zip) | Correction on detection mechanisms for Intra-system too late handover (CATT,CMCC,ZTE) | draftCRr, TS 38.300 v16.5.0, Rel-16, Cat. F  Move to 9.3.8.1 |
| [R3-212272](file:///D:\CMRI%20work\2021%20projects\3GPP\RAN3%23112\CB\CB%20%23105\Docs\R3-212272.zip) | Correction of inter system SON configuration Transfer (NTT DOCOMO INC.) | CR0607r, TS 38.413 v16.5.0, Rel-16, Cat. F |