3GPP TSG-RAN WG2 #121bis electronic R2-20xxxxx

17- 26 April 2023

Agenda Item: 5.1.3.2

Source: ZTE, Sanechips

Title: Summary of offline [AT121bis-e][004][NR1516] UE cap (ZTE)

Document for: Discussion, Decision

# 1 Introduction

This contribution summarizes the following discussion:

* [AT121bis-e][004][NR1516] UE cap (ZTE)

Scope: Treat R2-2302437 (if needed), R2-2303660, R2-2303877, R2-2303878, R2-2303879, R2-2303880, R2-2303881, R2-2304161, R2-2304162, R2-2304163, R2-2304164, R2-2304165, R2-2304166  
Ph1: Determine agreeable parts. Ph2: For agreeable parts, if any, reflect these in agreeable CRs.

Intended outcome: Report, If applicable: In-Principle-Agreed CRs

Deadline: Schedule 1

**Contact from companies**

|  |  |
| --- | --- |
| Company | Email |
| ZTE | li.wenting@zte.com.cn |
| Ericsson | lian.araujo@ericsson.com |

# Discussion

## 2.1 Part 1: Intended to determine agreeable parts

Part 1 discussion is focusing on reaching conclusion whether the proposals/CRs can be agreed in principle, and Part 2 discussion would then focus on detailed changes for those agreeable contributions.

### LS on the SRS antenna Switching

[R2-2302437](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2302437.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2302437.zip) LS on clarification on impact of SRS antenna switching for TDD-FDD band combinations (R4-2303633; contact: Huawei) RAN4 LS in Rel-15 NR\_newRAT-Core To:RAN1 Cc:RAN2

RAN2 is CCed. Proposed Noted

For this LS, the Chairman proposed to be noted immediately for that RAN2 is CCed.

**Q1: Do companies agree with the chair’s proposal to Note this LS immediately?**

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| **Company** | **Yes or No** | **Comments** |
| Ericsson | Yes |  |
| ZTE | Yes |  |
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### SRS Tx Switching Capability

[R2-2303660](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303660.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303660.zip) Handling of SRS Tx switching capability Ericsson discussion

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| [Proposal 1 RAN2 to confirm the following behaviour for the parameters](#_Toc131702722) *[txSwitchImpactToRx](#_Toc131702722)* [and](#_Toc131702722) *[txSwitchWithAnotherBand](#_Toc131702722)* [in](#_Toc131702722) *[srs-TxSwitch](#_Toc131702722)*[:](#_Toc131702722)  [Bands with UL that impact each other define a group (i.e. SRS TX switching on any of the cells will impact UL on all the cells in the group). All the band entries in the group will signal the same group identifier in](#_Toc131702723) *[txSwitchWithAnotherBand](#_Toc131702723)*[. The first-listed band entry number in the group shall be used as identifier for the group. An UL group with only one band entry is not signaled in](#_Toc131702723) *[txSwitchWithAnotherBand](#_Toc131702723)*[.](#_Toc131702723)  [For bands where the DL is impacted by an UL group with a single band entry,](#_Toc131702724) *[txSwitchImpactToRx](#_Toc131702724)* [shall indicate the band entry number of that UL band. For bands where the DL is impacted by an UL group with more than one band entry,](#_Toc131702724) *[txSwitchImpactToRx](#_Toc131702724)* [shall point to the UL group using the group identifier number (as defined by](#_Toc131702724) *[txSwitchWithAnotherBand](#_Toc131702724)*[).](#_Toc131702724)  [Proposal 2 The behaviour of](#_Toc131702725) *[txSwitchImpactToRx](#_Toc131702725)* [and](#_Toc131702725) *[txSwitchWithAnotherBand](#_Toc131702725)* [should be clarified in 38.306.](#_Toc131702725) |

**Q2: Do companies agree with the proposal 1 in the** [R2-2303660](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303660.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303660.zip)**?**

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| **Company** | **Yes or No** | **Comments** |
| Ericsson | Yes | Proponent |
| ZTE | Yes | We agree with the clarification |
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**Q3: Do companies agree with the proposal 2 in the** [R2-2303660](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303660.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303660.zip)**?**

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| **Company** | **Yes or No** | **Comments** |
| Ericsson | Yes | Proponent |
| ZTE | No | We think it can be clarified in the chairman note without spec change. |
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### Miscellaneous Correction on UE capability

[R2-2303877](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303877.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303877.zip) Miscellaneous Correction on UE capability-R15 ZTE Corporation, Sanechips CR Rel-15 38.306 15.20.0 0895 - F NR\_newRAT-Core

[R2-2303878](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303878.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303878.zip) Miscellaneous Correction on UE capability-R16 ZTE Corporation, Sanechips CR Rel-16 38.306 16.12.0 0896 - A NR\_newRAT-Core

[R2-2303879](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303879.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303879.zip) Miscellaneous Correction on UE capability-R17 ZTE Corporation, Sanechips CR Rel-17 38.306 17.4.0 0897 - A NR\_newRAT-Core

Two changes are included in the CRs, one is about the PUSCH MIMO transmission, and the other one is about the PDSCH RE resource mapping.

**Q4: Do companies agree with the first change in the** [R2-2303877](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303877.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303877.zip)/R2-2303878/R2-2303879?

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| **Company** | **Yes or No** | **Comments** |
| Ericsson | Yes | We are fine with the change – we understand both changes are editorial. |
| ZTE | Yes | Proponent  For the non-CB based parameters, we agree that it’s editorial, but for the CB-based parameters it’s F class correction, for that it’s not correct to describe the prerequisite ( *pusch-TransCoherence)* only for the first sub-element (maxNumberMIMO-LayersCB-PUSCH MIMO-LayersUL). |
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**Q5: Do companies agree with the second change in the** [R2-2303877](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303877.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303877.zip)/R2-2303878/R2-2303879?

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| **Company** | **Yes or No** | **Comments** |
| Ericsson | Yes | We are fine with the change – we understand both changes are editorial. |
| ZTE | Yes | Proponent  According to RAN1 Feature 2-33a, the “bitmap” for the *“pdsch-RE-MappingFR1-PerSymbol/pdsch-RE-MappingFR1-PerSlot”* are different,   * For the *pdsch-RE-MappingFR1-PerSymbol,* it means the resources defined in the bitmap of the *rateMatchingResrcSetSemi-Static* and the *rateMatchingResrcSetDynamic* (5-26/27), * For the *pdsch-RE-MappingFR1-PerSlot,* it means the resources defined in the bitmap of the *rateMatchingResrcSetSemi-Static, rateMatchingResrcSetDynamic* and the *rateMatchingCtrlResrcSetDynamic*(5-26/27/27a).   Same issue also exists for the “*pdsch-RE-MappingFR2-PerSymbol/pdsch-RE-MappingFR2-PerSlot”*  In the current spec, it’s unclear what does the bitmap mean, and it’s also unclear on whether the same/different resources are defined for the p*dsch-RE-MappingFR1-PerSymbol and pdsch-RE-MappingFR1-PerSlot* |
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### PDCCH Blind Detection

[R2-2303880](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303880.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303880.zip) Correction on PDCCH Blind Detection-R16 ZTE Corporation, Sanechips CR Rel-16 38.306 16.12.0 0898 - F NR\_L1enh\_URLLC

[R2-2303881](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303881.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303881.zip) Correction on PDCCH Blind Detection-R17 ZTE Corporation, Sanechips CR Rel-17 38.306 17.4.0 0899 - A NR\_L1enh\_URLLC

**Q6: Do companies agree with the change in the** R2-2303880/R2-2303881?

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| **Company** | **Yes or No** | **Comments** |
| Ericsson | Yes | We are fine with the change, we understand this change is also editorial. |
| ZTE | Yes | We think it’s F class correction, for that it will give restriction to the corresponding capabilities:   1. g.   If the UE reports pdcch-BlindDetectionCA-r16,  - Candidate values for pdcch-BlindDetectionMCG-UE-r16 is 1 to pdcch-BlindDetectionCA-r16-1  - Candidate values for pdcch-BlindDetectionSCG-UE-r16 is 1 to pdcch-BlindDetectionCA-r16-1  - - pdcch-BlindDetectionMCG-UE-r16 + pdcch-BlindDetectionSCG-UE-r16 >= pdcch-BlindDetectionCA-r16  .....  Further more, it also restricts to the NR-DC only.  We use the short wording “ as specified in clause 10 in TS 38.213 [11] for the NR-DC.” just for the simplicity. |
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### Pusch Repetition TypeB

[R2-2304163](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304163.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2304163.zip) Correction on pusch-RepetitionTypeB capability Huawei, HiSilicon CR Rel-16 38.331 16.12.0 4059 - F NR\_L1enh\_URLLC-Core

[R2-2304164](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304164.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2304164.zip) Correction on pusch-RepetitionTypeB capability Huawei, HiSilicon CR Rel-17 38.331 17.4.0 4060 - A NR\_L1enh\_URLLC-Core

**Q7: Do companies agree with the change in the** R2-2304163/R2-2304164?

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| **Company** | **Yes or No** | **Comments** |
| Ericsson | No | The CR coversheet states the following:  In 38.822, the pusch-RepetitionTypeB-r16 capability indicates the supported maximum number of PUSCH transmissions within a slot for all TB(s), with the candidate value of {2, 3, 4, 7, 8, 12}. Besides, the supported value should be separately reported for UE processing capability 1 and for UE processing capability 2 if the UE supports both processing capabilities. The processing capability 1 is mandatory supported without signalling, and the processing capability 2 is defined by pusch-ProcessingType2.  There seems to be some contradiction between the two highlighted sentences – if UE processing capability 1 is mandatory supported without signaling then there would be nothing to signal for UE processing capability 1 and only signaling for processing capability 2 is required, so some clarification seems needed.  Also if the yellow highlighted sentence above holds, then introduction of any new value for UE processing capability 1 lower than the one expected without capability signaling would be non-backwards compatible. |
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[R2-2304161](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304161.zip" \o "C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\TSGR2_121bis-e\Docs\R2-2304161.zip) Correction on pusch-RepetitionTypeB capability Huawei, HiSilicon CR Rel-16 38.306 16.12.0 0901 - F NR\_L1enh\_URLLC-Core

[R2-2304162](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304162.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2304162.zip) Correction on pusch-RepetitionTypeB capability Huawei, HiSilicon CR Rel-17 38.306 17.4.0 0902 - A NR\_L1enh\_URLLC-Core

**Q7: Do companies agree with the change in the** R2-2304161/R2-2304162?

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| **Company** | **Yes or No** | **Comments** |
| Ericsson |  | Similar comments as for Q6. |
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### NR-DC Capability

[R2-2304165](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304165.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2304165.zip) Corrections on NR-DC capabilities Huawei, HiSilicon CR Rel-16 38.306 16.12.0 0903 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2304166](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304166.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2304166.zip) Corrections on NR-DC capabilities Huawei, HiSilicon CR Rel-17 38.306 17.4.0 0904 - A LTE\_NR\_DC\_CA\_enh-Core

Two modifications were made for the *ca-parametersNRDC* and *asyncNRDC-r16* respectively in the CR.

**Q8: Do companies agree with the first change in the** [R2-2304165](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303877.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303877.zip)/R2-2304166?

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| **Company** | **Yes or No** | **Comments** |
| Ericsson | No | We think the change is non backwards compatible since a current NW would expect the UE to support FR1-FR2 NR-DC as specified in 38.306. |
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**Q9: Do companies agree with the second change in the** [R2-2304165](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303877.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303877.zip)/R2-2304166?

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| **Company** | **Yes or No** | **Comments** |
| Ericsson |  | Similar comments as for Q8. |
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## 2.2 Part 2: Intended to progress discussion on agreeable parts

- To be updated after discussion on part 1 -

# 3 Conclusion

- To be updated after discussion on part 1 -

# 4 References

1. [R2-2302437](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2302437.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2302437.zip) LS on clarification on impact of SRS antenna switching for TDD-FDD band combinations (R4-2303633; contact: Huawei) RAN4 LS in Rel-15 NR\_newRAT-Core To:RAN1 Cc:RAN2
2. [R2-2303660](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303660.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303660.zip) Handling of SRS Tx switching capability Ericsson discussion
3. [R2-2303877](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303877.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303877.zip) Miscellaneous Correction on UE capability-R15 ZTE Corporation, Sanechips CR Rel-15 38.306 15.20.0 0895 - F NR\_newRAT-Core
4. [R2-2303878](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303878.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303878.zip) Miscellaneous Correction on UE capability-R16 ZTE Corporation, Sanechips CR Rel-16 38.306 16.12.0 0896 - A NR\_newRAT-Core
5. [R2-2303879](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303879.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303879.zip) Miscellaneous Correction on UE capability-R17 ZTE Corporation, Sanechips CR Rel-17 38.306 17.4.0 0897 - A NR\_newRAT-Core
6. [R2-2303880](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303880.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303880.zip) Correction on PDCCH Blind Detection-R16 ZTE Corporation, Sanechips CR Rel-16 38.306 16.12.0 0898 - F NR\_L1enh\_URLLC
7. [R2-2303881](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2303881.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2303881.zip) Correction on PDCCH Blind Detection-R17 ZTE Corporation, Sanechips CR Rel-17 38.306 17.4.0 0899 - A NR\_L1enh\_URLLC
8. [R2-2304161](C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304161.zip" \o "C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\TSGR2_121bis-e\Docs\R2-2304161.zip) Correction on pusch-RepetitionTypeB capability Huawei, HiSilicon CR Rel-16 38.306 16.12.0 0901 - F NR\_L1enh\_URLLC-Core
9. [R2-2304162](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304162.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2304162.zip) Correction on pusch-RepetitionTypeB capability Huawei, HiSilicon CR Rel-17 38.306 17.4.0 0902 - A NR\_L1enh\_URLLC-Core
10. [R2-2304163](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304163.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2304163.zip) Correction on pusch-RepetitionTypeB capability Huawei, HiSilicon CR Rel-16 38.331 16.12.0 4059 - F NR\_L1enh\_URLLC-Core
11. [R2-2304164](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304164.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2304164.zip) Correction on pusch-RepetitionTypeB capability Huawei, HiSilicon CR Rel-17 38.331 17.4.0 4060 - A NR\_L1enh\_URLLC-Core
12. [R2-2304165](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304165.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2304165.zip) Corrections on NR-DC capabilities Huawei, HiSilicon CR Rel-16 38.306 16.12.0 0903 - F LTE\_NR\_DC\_CA\_enh-Core
13. [R2-2304166](file:///C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121bis-e\\Docs\\R2-2304166.zip" \o "C:Usersmtk65284Documents3GPPtsg_ranWG2_RL2TSGR2_121bis-eDocsR2-2304166.zip) Corrections on NR-DC capabilities Huawei, HiSilicon CR Rel-17 38.306 17.4.0 0904 - A LTE\_NR\_DC\_CA\_enh-Core