**3GPP TSG RAN WG1 #106bis-e R1-210XXXX**

**e-Meeting, October 11th – 19th, 2021**

**Source: RAN1 Chair**

**Title: Incoming LS handling for RAN1#106bis-e**

**Document for:** **Discussion and Decision**

# Introduction

This document summarizes the contributions submitted to Agenda Item 5 (Incoming Liaison Statements) in RAN1#106bis-e and identifies a set of LS that needs to be addressed in the email discussion phase of RAN1#106bis-e.

# Summary

## Incoming LSs “To RAN1”

### *NR\_pos\_enh*

[R1-2108696](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108696.zip) Reply LS on granularity of response time RAN2, Huawei

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| **Initial assessment** | Noted. Separate email discussion for a reply LS is not necessary. RAN1 to consider RAN2 response as part of the ongoing work under agenda item 8.5. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| QC | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Intel | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment |
| OPPO | Agree with the initial assessment |

[R1-2108697](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108697.zip) Reply LS on Positioning Reference Units RAN3, Ericsson

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| **Initial assessment** | Noted. Separate email discussion for a reply LS is not necessary. RAN1 to consider RAN3 response as part of the ongoing work under agenda item 8.5. |
| **Company** | **Views (if any)** |
| Nokia. NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| QC | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Intel | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment |
| Ericsson | We agree that no email discussion is needed, but it should be noted that RAN1 already agreed that there is no specification impact on this topic in RAN1(see agreement from RAN#105-e below). Hence, since there will be no further discussion in RAN1 on the PRU, the last sentence in the assessment should be removed.  Agreement:  Send an LS to RAN2/RAN3 (cc SA2), including the following content:   * RAN1 has evaluated the use of positioning reference units (PRUs) with known locations for positioning and observes improvements in using PRUs for enhancing the positioning performance. But, RAN1 has not identified specification enhancements needed in RAN1 specifications. RAN1 kindly requests RAN2/RAN3 (cc SA2) to determine if and what specification enhancements are adopted for PRUs for positioning. |
| OPPO | Agree with the initial assessment |

[R1-2108706](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108706.zip) Reply LS on PRS processing samples RAN4, Ericsson

**Relevant tdoc(s) under agenda item 5:**

[R1-2110368](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110368.zip) Discussion on RAN4 reply LS on PRS processing samples Huawei, HiSilicon

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| **Initial assessment** | Noted. Separate email discussion for a reply LS is not necessary. RAN1 to consider RAN4 response as part of the ongoing work under agenda item 8.5. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| QC | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Intel | Agree with the initial assessment |
| Huawei, HiSilicon | Although we think RAN1 input on whether to change the side condition or relax the performance requirement is helpful, since RAN1 did the evaluation for IIoT scenario during the SI, we can live with the initial assessment. |
| OPPO | Agree with the initial assessment |

[R1-2108707](file:///D:\\Documents\\3GPP%20documents\\RAN1\\TSGR1_106b-e\\Docs\\R1-2108707.zip) Reply LS on UE/TRP Tx/Rx timing error mitigation RAN4, CATT

**Relevant tdoc(s) under agenda item 5:**

[R1-2110369](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110369.zip) Discussion on RAN4 reply LS on UE/TRP Rx/Tx timing error mitigation Huawei, HiSilicon

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| **Initial assessment** | To be handled under agenda item 8.5.1. Separate email thread: [106bis-e-NR-ePos-07]. Discuss whether a reply LS is needed. If reply LS is needed, the same email threads is to be used to converge on the response to RAN4. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Do NOT agree with the initial assessment. The LS in itself does not call for a reply. It is possible that when the information in the LS is considered in the AI 8.5.1, a need for an LS to RAN4 emerges, and an LS is sent to RAN4. However, initiating an email discussion specifically to address the need and content of a response LS is not warranted.  On Huawei ‘0369   * Proposal 1 “asking RAN4 plans” is a pointless request. RAN1 could agree to ask another WG to do something, but there is no point for RAN1 to ask what an another WG intends to do. * Proposal 2 asking follow-up details on points where RAN4 will conduct further discussion does not seem necessary. If need be, Huawei can make sure that RAN4 sends a follow-up LS to RAN1. If these questions specifically arise in the AI 8.5.1 discussions, then an LS discussion can be triggered. |
| Samsung | Can be discussed as part of the email discussion in agenda item 8.5.1 [106bis-e-NR-ePos-01] |
| vivo | Agree with the initial assessment |
| ZTE | Do NOT agree with the initial assessment. The LS doesn’t expect a reply from RAN1, RAN4 can continue their discussion under the basis of RAN4 LS. The discussion points raised by Huawei are in RAN4 scope. |
| QC | Separate email discussion for a reply LS is not necessary. RAN1 to consider RAN4 response (if needed) as part of the ongoing work under agenda item 8.5.1. |
| DOCOMO | Do NOT agree with the initial assessment. The LS does not request RAN1 reply. If needed, we can discuss it in AI 8.5.1. |
| Intel | Consider discussing it under AI 8.5.1 i.e., in [106bis-e-NR-ePos-01]. |
| Huawei, HiSilicon | We think the discussion on the UE performance requirement with TEG may be needed, especially for the case when single Rx is associated with a TEG, where the current 2Rx performance requirement may not apply.  For time variation of TEGs, we think RAN1 is also discussing similar issues. It would be good if RAN1 could share the results to RAN4.  Reply to Nokia, in Rel-16 UL RTOA reference definition, there was an LS approved in RAN1 asking RAN3 if they plan to capture the definition in NRPPa (see R1- 2003054). We think whether RAN4 have such a plan may have impact on the Rx TEG numbers per UE that we are discussing.  We are fine with either a separate email thread or at least including the inputs in x0369 in the current 8.5.1 email thread. |
| OPPO | Share the same view as Nokia |

[R1-2108711](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108711.zip) Reply LS to RAN1 on on-demand DL PRS parameters RAN2, Intel

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| **Initial assessment** | Response LS needed. To be handled under agenda item 8.5.6. Separate email thread: [106bis-e-NR-ePos-07] |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| QC | Separate email discussion for a reply LS is not necessary. RAN1 to consider RAN2 response as part of the ongoing work under agenda item 8.5.6 |
| DOCOMO | Agree with the initial assessment |
| Intel | Consider discussing it under 8.5.6 i.e., in [106bis-e-NR-ePos-06].  RAN1 is supposed to update RAN2 once additional progress is made based on RAN1 discussion in AI 8.5.6. No need for separate e-mail thread. |
| Huawei, HiSilicon | Agree with the initial assessment |
| Ericsson | Our understanding is that an LS will be needed as part of the usual RAN2 impact of further agreements, but no new LS related to the question is needed. |
| OPPO | Agree with the initial assessment |

### *NR\_SL\_enh*

[R1-2108710](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108710.zip) LS to RAN1 on RAN2 Agreements Related to Resource Selection RAN2, InterDigital

**Relevant tdoc(s) under agenda item 5:**

[R1-2108817](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108817.zip) Discussion on RAN2 LS on RAN2 Agreements Related to Resource Selection Nokia, Nokia Shanghai Bell

[R1-2109735](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109735.zip) Discussion on RAN2 LS on resource selection within DRX ZTE, Sanechips

[R1-2109859](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109859.zip) Discussion on LS to RAN1 on RAN2 Agreements Related to Resource Selection LG Electronics

[R1-2110335](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110335.zip) [Draft] Reply LS on RAN2 Agreements Related to Resource Selection Ericsson

[R1-2110365](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110365.zip) Discussion on RAN2 LS on resoruce selection with DRX Huawei, HiSilicon

[R1-2108946](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108946.zip) Draft reply LS on RAN2 Agreements Related to Resource Selection vivo

[R1-2109062](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109062.zip) Discussion on the relationship between SL DRX and resource selection OPPO

[R1-2109063](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109063.zip) Draft reply LS on LS about SL resource selection OPPO

[R1-2109181](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109181.zip) Discussion on LS on RAN2 Agreements Related to Resource Selection CATT, GOHIGH

[R1-2109461](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109461.zip) Draft Reply LS on RAN2 Agreements Related to Resource Selection Samsung

[R1-2109589](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109589.zip) Response to RAN2 LS Related to Resource Selection Intel Corporation

[R1-2110156](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110156.zip) Draft reply to RAN2 LS to RAN1 on RAN2 Agreements Related to Resource Selection Qualcomm Incorporated

[R1-2109882](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109882.zip) Discussion on RAN2 LS on RA for transmission to Rx UEs in DRX InterDigital, Inc.

[R1-2110338](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110338.zip) DRX impacts on resource selection procedures Ericsson

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| **Initial assessment** | Response LS needed. To be handled under agenda item 8.11.1. Separate email thread: [106bis-e-NR-R17-Sidelink-03]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| QC | Agree with the initial assessment. |
| DOCOMO | Agree with the initial assessment |
| Intel | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment |
| OPPO | Agree with the initial assessment |

### *FS\_NR\_eff\_BW\_util*

[R1-2108700](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108700.zip) LS on specification impact for methods on efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths RAN4, Nokia

**Relevant tdoc(s) under agenda item 5:**

[R1-2110296](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110296.zip) DRAFT LS on specification impact for methods on efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths Nokia, Nokia Shanghai Bell

[R1-2110304](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110304.zip) On efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths Ericsson

[R1-2108948](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108948.zip) Discussion on RAN4 LS regarding methods on efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths vivo

[R1-2109027](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109027.zip) Discussion on efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths ZTE

[R1-2109028](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109028.zip) [DRAFT] Reply LS on efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths ZTE

[R1-2110010](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110010.zip) Discussion on RAN4 LS on irregular channel bandwidths Apple

[R1-2110011](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110011.zip) Draft Reply to RAN4 LS on irregular channel bandwidths Apple

[R1-2110366](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110366.zip) Discussion on RAN4 LS on efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths Huawei, HiSilicon

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| **Initial assessment** | Response LS needed. To be handled under agenda item 5. Separate email thread: [106bis-e-AI5-LSs-01]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| QC | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment |

### *LTE\_NR\_DC\_enh2*

[R1-2108708](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108708.zip) Reply LS on temporary RS for efficient SCell activation in NR CA RAN4, Huawei

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| **Initial assessment** | Noted. Separate email discussion for a reply LS is not necessary. RAN1 to consider RAN4 response as part of the ongoing work under agenda item 8.13.2. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| QC | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment |
| OPPO | Agree with the initial assessment |

### *NR\_cov\_enh*

[R1-2108703](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108703.zip) Reply LS on PUCCH and PUSCH transmissions RAN4, Qualcomm

**Relevant tdoc(s) under agenda item 5:**

[R1-2110094](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110094.zip) Draft Reply LS on PUCCH and PUSCH repetitions LG Electronics

[R1-2110370](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110370.zip) Discussion on RAN4 LS on PUCCH and PUSCH repetition Huawei, HiSilicon

[R1-2108863](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108863.zip) [DRAFT] Reply LS on PUCCH and PUSCH transmissions ZTE

[R1-2108943](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108943.zip) Discussion on RAN4 Reply LS on PUCCH and PUSCH transmissions vivo

[R1-2110359](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110359.zip) Discussion Reply on PUCCH and PUSCH Transmissions Ericsson

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| **Initial assessment** | Response LS needed. To be handled under agenda item 8.8.1.3. Separate email thread: [106bis-e-NR-R17-CovEnh-06]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| China Telecom | Agree with separate email thread for response LS. Since it covers both PUCCH and PUSCH, suggest to be handled under AI 8.8. |
| ZTE | Agree with the initial assessment |
| QC | Agree with the initial assessment |
| Intel | Agree with the initial assessment. Intel Tdoc with the proposed response submitted under AI8.8.1.3 as R1-2109626 |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. Since it has been agreed to strive for common design between PUSCH and PUCCH, either AI 8.8.1.3 for PUSCH or the general AI 8.8 is fine. |

[R1-2108712](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108712.zip) LS on Msg3 repetition in coverage enhancement RAN2, ZTE

**Relevant tdoc(s) under agenda item 5:**

[R1-2110095](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110095.zip) Draft Reply LS on Msg3 repetition in coverage enhancement LG Electronics

[R1-2110362](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110362.zip) Discussion on LS on Msg3 PUSH repetition Huawei, HiSilicon

[R1-2108838](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108838.zip) [DRAFT] Reply LS on Msg3 repetition in coverage enhancement ZTE

[R1-2108942](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108942.zip) Discussion on RAN2 LS on Msg3 repetition in coverage enhancement vivo

[R1-2109588](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109588.zip) Discussion on RAN2 LS on Msg3 repetition in coverage enhancement Intel Corporation

[R1-2110160](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110160.zip) Draft reply LS on Msg3 repetition in coverage enhancement Qualcomm Incorporated

[R1-2110360](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110360.zip) Draft Reply on Msg3 Repetition in Coverage Enhancement Ericsson

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| **Initial assessment** | Response LS needed. To be handled under agenda item 8.8.3. Separate email thread: [106bis-e-NR-R17-CovEnh-07]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| China Telecom | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| QC | Agree with the initial assessment |
| Intel | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. |

### *NR\_ext\_to\_71GHz*

[R1-2108702](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108702.zip) Reply LS on the maximum/minimum channel bandwidth and channelization for NR operation in 52.6 to 71 GHz RAN4, Ericsson

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| **Initial assessment** | Noted. Separate email discussion for a reply LS is not necessary. RAN1 to consider RAN4 response as part of the ongoing work under agenda item 8.2. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. |

### *NR\_feMIMO*

[R1-2108717](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108717.zip) LS on inter-cell beam management and multi-TRP in Rel-17 RAN2, Nokia

**Relevant tdoc(s) under agenda item 5:**

[R1-2110076](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110076.zip) Draft reply LS to RAN2 on inter-cell beam management and multi-TRP in Rel-17 LG Electronics

[R1-2110363](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110363.zip) Views on RAN2 LS for inter-cell BM in R17 Huawei, HiSilicon

[R1-2109049](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109049.zip) Discussion on LS on inter-cell beam management and multi-TRP in Rel-17 OPPO

[R1-2109114](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109114.zip) Draft reply LS on inter-cell beam management and multi-TRP in Rel-17 vivo

[R1-2109257](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109257.zip) Draft reply LS on inter-cell beam management and multi-TRP in Rel-17 ZTE

[R1-2109376](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109376.zip) Draft Reply LS to RAN2 LS on on inter-cell beam management and multi-TRP in Rel-17 Xiaomi

[R1-2109464](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109464.zip) Draft Reply LS on inter-cell beam management and multi-TRP in Rel-17 Samsung

[R1-2109869](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109869.zip) Draft reply LS to RAN 2 LS on inter-cell beam management and multi-TRP in Rel-17 Nokia, Nokia Shanghai Bell

[R1-2109900](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109900.zip) [DRAFT] Reply LS on inter-cell beam management and multi-TRP in Rel-17 Lenovo, Motorola Mobility

[R1-2109947](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109947.zip) Discussion on LS reply on inter-cell beam management and multi-TRP in Rel-17 Intel Corporation

[R1-2110008](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110008.zip) Draft Reply LS on Inter-cell Beam Management and Multi-TRP Apple

[R1-2110159](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110159.zip) Draft reply LS on inter-cell beam management and multi-TRP in Rel-17 Qualcomm Incorporated

[R1-2110346](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110346.zip) Discussion of RAN2 LS on inter-cell BM and mTRP Ericsson

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| **Initial assessment** | Response LS needed. To be handled under agenda item 8.1.1. Separate email thread: [106bis-e-NR-feMIMO-09]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. |
| OPPO | Agree with the initial assessment |

### *NR\_NTN\_solutions*

[R1-2108699](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108699.zip) Reply LS on broadcast of NTN GW or gNB position SA1, Huawei

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| **Initial assessment** | Noted. Separate email discussion for a reply LS is not necessary. RAN1 to consider SA1 response as part of the ongoing work under agenda item 8.4. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment, to be taken into account in AI 8.4.2. |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. |

[R1-2108705](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108705.zip) Reply LS on NTN UL time and frequency synchronization requirements RAN4, Xiaomi

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| **Initial assessment** | Noted. Separate email discussion for a reply LS is not necessary. RAN1 to consider RAN4 response as part of the ongoing work under agenda item 8.4. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment, to be taken into account in AI 8.4.2. |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. |

### *NR\_REDCAP*

[R1-2108709](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108709.zip) Reply LS to Half-duplex FDD switching for RedCap UE RAN4, Ericsson

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| **Initial assessment** | Noted. Separate email discussion for a reply LS is not necessary. RAN1 to consider RAN4 response as part of the ongoing work under agenda item 8.6. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment, to be discussed as part of HD-FDD handling. |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| Spreadtrum | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| QC | We agree with the initial assessment. |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. |

[R1-2108713](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108713.zip) LS to RAN1 on L2 buffer size reduction RAN2, Intel, Spreadtrum

**Relevant tdoc(s) under agenda item 5:**

[R1-2108893](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108893.zip) Discussion on RAN2 LS on L2 buffer size reduction Spreadtrum Communications

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| **Initial assessment** | Response LS needed. To be handled under agenda item 8.6.1.3. Separate email thread: [106bis-e-NR-R17-RedCap-05]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment. |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| Spreadtrum | Agree with the initial assessment |
| FUTUREWEI | OK for a reply LS, but no need for a separate email thread, it is already being discussed in RAN1-106bis-e-NWM-NR-R17-RedCap-03 as the first and main issue. See https://nwm-trial.etsi.org/#/documents/6635 . |
| ZTE | Agree with the initial assessment |
| Intel | Agree that response LS is needed. However, this is already being discussed as part of [106bis-e-NR-R17-RedCap-03] as the main outstanding issue, and a dedicated email thread is not necessary. |
| QC | We think L2 buffer size reduction can be achieved by the L1 UE complexity reduction features agreed for R17 RedCap device. It is not necessary to study max data rate scaling factor in RAN1, which is a parameter configured by higher layer and out of the scope of R17 WI objectives. |
| DOCOMO | Agree with the initial assessment. Also fine to continue discussing in [106bis-e-NR-R17-RedCap-03] since there are almost no other remaining issues in the email thread. |
| Huawei, HiSilicon | Agree with the initial assessment. |

[R1-2108714](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108714.zip) LS on capability related RAN2 agreements for RedCap RAN2, Ericsson

**Relevant tdoc(s) under agenda item 5:**

[R1-2109331](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109331.zip) Discussion on RAN2 reply LS on UE capabilities for RedCap ZTE, Sanechips

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| **Initial assessment** | Response LS needed. To be handled under agenda item 8.17.6. Separate email thread: [106bis-e-R17-UE-features-REDCAP-02]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment. Nokia Tdoc submitted originally to AI 8.6.3 in R1-2109313 |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| Spreadtrum | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| Qualcomm | Agree with the initial assessment in general. Given the potential UE testing differentiation among licensed, unlicensed and NTN band, the type of R17 RedCap UE feature should be specified per band, unless otherwise stated. |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. |

### *NR\_RRM\_enh2*

[R1-2108704](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108704.zip) LS on beam information of PUCCH Scell in PUCCH SCell activation procedure RAN4, Huawei

**Relevant tdoc(s) under agenda item 5:**

[R1-2108944](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108944.zip) Draft Reply LS on beam information of PUCCH SCell in PUCCH SCell activation procedure vivo

[R1-2109463](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109463.zip) Draft Reply LS on beam information of PUCCH SCell in PUCCH SCell activation procedure Samsung

[R1-2109550](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109550.zip) Draft reply LS on beam information of PUCCH SCell in PUCCH SCell activation procedure MediaTek Inc.

[R1-2109587](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109587.zip) [Draft] Reply LS on beam information of PUCCH SCell in PUCCH SCell activation procedure ZTE

[R1-2110009](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110009.zip) Discussion on RAN4 LS [R1-2108704](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108704.zip) on beam information of PUCCH Scell in PUCCH SCell activation procedure Apple

[R1-2110158](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110158.zip) Discussion on LS on beam information of PUCCH SCell in PUCCH SCell activation procedure Qualcomm Incorporated

[R1-2108775](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108775.zip) Reply LS on beam information of PUCCH SCell in PUCCH SCell activation procedure Huawei, HiSilicon

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| **Initial assessment** | Response LS needed. To be handled under agenda item 5. Separate email thread: [106bis-e-AI5-LSs-02]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| Qualcomm | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. |

### *NR\_SmallData\_INACTIVE*

[R1-2108715](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108715.zip) LS on agreements related to SDT RAN2, ZTE

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| **Initial assessment** | Response LS needed. To be handled under agenda item 5.2. Separate email thread: [106bis-e-NR-R17-SDT-02]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment. Nokia Tdoc with the proposed response submitted under AI5.2 as R1-2110297 |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | We think it may need clarification on whether this email thread is only for drafting reply LS or discussing related issues, because the related issues have already been summarized in the FL summary of kicked off email thread [106bis-e-NR-R17-SDT-01]. |
| Intel | Agree with the initial assessment. Intel Tdoc with the proposed response submitted under AI5.2 as R1-2109590 |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. |

### *NR\_UE\_pow\_sav\_enh*

[R1-2108716](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108716.zip) LS on UE Power Saving RAN2, MediaTek

**Relevant tdoc(s) under agenda item 5:**

[R1-2110367](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110367.zip) Discussion on RAN2 LS on UE Power Saving Huawei, HiSilicon

[R1-2109462](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109462.zip) Draft Reply to RAN2 LS on UE Power Saving Samsung

[R1-2109580](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109580.zip) Discussion on RAN2 LS on UE Power Saving MediaTek Inc.

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| **Initial assessment** | Response LS needed. To be handled under agenda item 8.7.1.1. Separate email thread: [106bis-e-NR-R17-PowSav-04]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with the initial assessment. |
| Ericsson | Agree with assessment that reply LS is needed. However, for discussion scope, it would be good to clarify whether any RRC parameters will be communicated to RAN2 as part of reply to this LS or whether the RRC parameter part is handled in overall Rel17 RRC parameter discussions |

### *NR\_RF\_FR1\_enh*

[R1-2108701](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108701.zip) LS on scell dropping issue of CA RAN4, Huawei

**Relevant tdoc(s) under agenda item 5:**

[R1-2108947](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108947.zip) Draft reply LS on Scell dropping issue of CA vivo

[R1-2109048](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109048.zip) Discussion on "LS on scell dropping issue of CA" OPPO

[R1-2109139](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109139.zip) [Draft] Reply LS on Scell dropping issue of CA ZTE

[R1-2110135](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110135.zip) Draft Reply to RAN4 LS on SCell dropping issue of CA Ericsson

[R1-2110162](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110162.zip) Discussion on LS on SCell dropping issue of CA Qualcomm Incorporated

[R1-2108776](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108776.zip) Reply LS on Scell dropping issue of CA Huawei, HiSilicon

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| **Initial assessment** | Response LS needed. To be handled under agenda item 5.1. Separate email thread: [106bis-e-NR-R17-TxSwitching-02]. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment |
| Samsung | Agree with the initial assessment |
| SoftBank | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| China Telecom | Agree with separate email thread for response LS. It seems the LS is not specific to Tx switching, suggest to revise the title of the email thread to avoid confusion. |
| ZTE | Agree with the initial assessment |
| Qualcomm | Agree with the initial assessment |
| DOCOMO | Agree with the initial assessment |
| Huawei, HiSilicon | Agree with an email thread for reply LS. Similar view as China Telecom, the topic has nothing about Tx switching that has been discussed in AI 5.1, suggest to revise the title of email thread accordingly. |
| Ericsson | Agree that an email discussion on a reply is needed, but as highlighted by other this is not TX switching related. |
| OPPO | Agree with the initial assessment |

## Incoming LSs “CC: RAN1”

All the following LSs are noted. No actions from RAN1 unless explicitly requested.

R1-2108698 Reply LS on determination of location estimates in local co-ordinates RAN3, Huawei

R1-2108718 Reply LS on determination of location estimates in local co-ordinates RAN2, Ericsson

R1-2108719 Reply LS on inter-donor migration RAN2, Samsung

R1-2109370 Reply LS to RAN2 on the capability of transparent TxD RAN4, vivo

R1-2109371 LS on R17 NR MG enhancements – Concurrent MG RAN4, CATT, MediaTek

R1-2109372 LS on criteria for RLM/BFD relaxation RAN4, vivo, MediaTek

R1-2109373 Reply LS on inter-donor migration RAN4, ZTE Corporation

R1-2109374 Reply LS on TCI state updates for L1/L2 centric inter-cell mobility RAN4, Ericsson

R1-2109375 LS on Rel-17 FeMIMO WI objective on link recovery procedure in FR2 serving cell RAN4, vivo

## Others

### *NR\_SL\_enh – Synchronous Uu and SL (from RAN1#106-e)*

R1-2106430 LS on synchronous operation between Uu and SL in TDD band n79 RAN4, CATT

**Relevant tdoc(s) under agenda item 5:**

[R1-2108816](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108816.zip) Discussion on RAN4 LS on synchronous operation between Uu and SL Nokia, Nokia Shanghai Bell

[R1-2110364](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110364.zip) Discussion on RAN4 LS on synchronous operation between Uu and SL in TDD band Huawei, HiSilicon

[R1-2108945](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108945.zip) Draft reply LS on synchronous operation between Uu and SL in TDD band vivo

[R1-2109064](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109064.zip) Discussion on synchronous operation between Uu and SL in TDD band OPPO

[R1-2109065](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109065.zip) Draft reply LS on synchronous operation between Uu and SL in TDD band OPPO

[R1-2109182](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109182.zip) Discussion on LS on synchronous operation between Uu and SL in TDD band CATT, GOHIGH

[R1-2109183](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109183.zip) Draft Reply LS on synchronous operation between Uu and SL in TDD band CATT, GOHIGH

[R1-2110157](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110157.zip) Draft Reply to RAN4 LS on synchronous operation between Uu and SL in TDD band Qualcomm Incorporated

[R1-2110337](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110337.zip) Discussion on RAN4 LS on synchronous operation between Uu and SL in TDD band Ericsson

[R1-2110336](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2110336.zip) [Draft] Reply LS on synchronous operation between Uu and SL in TDD band Ericsson

[R1-2109736](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2109736.zip) Discussion on synchronous operation between Uu and SL in TDD band ZTE, Sanechips

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| **Initial assessment** | To be handled under agenda item 8.11.2. Separate email thread: [106bis-e-NR-R17-Sidelink-04]. Discuss whether a reply LS is needed. If reply LS is needed, the same email threads is to be used to converge on the response to RAN4. |
| **Company** | **Views (if any)** |
| Nokia, NSB | Agree with the initial assessment. |
| Samsung | Agree with the initial assessment |
| vivo | Agree with the initial assessment |
| ZTE | Agree with the initial assessment |
| Qualcomm | We agree with the proposal to discuss in a separate email thread. In our view, a reply is needed since RAN4 is waiting for RAN1 input to resume work on this topic. |
| DOCOMO | Agree with the initial assessment |
| Intel | Agree with the initial assessment |
| Huawei, HiSilicon | A reply LS is needed. A separate thread is OK. |
| OPPO | Agree with the initial assessment |

# Conclusions

All incoming LSs are noted. The following incoming LSs will be further discussed for possible RAN1 action in RAN1#106bis-e.

1. [R1-2108707](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108707.zip) under agenda item 8.5.1: [106bis-e-NR-ePos-07] Discuss incoming LS on UE/TRP Tx/Rx timing error mitigation for a possible reply LS by October 18 – Su (Huawei)
2. [R1-2108711](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108711.zip) under agenda item 8.5.6: [106bis-e-NR-ePos-08] Discuss incoming LS on on-demand DL PRS parameters for a possible reply LS by October 18 – Alexey (Intel)
3. [R1-2108710](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108710.zip) under agenda item 8.11.1: [106bis-e-NR-R17-Sidelink-03] Discuss incoming LS on resource selection for a possible reply LS by October 18 – Moonil (InterDigital)
4. [R1-2108700](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108700.zip) under agenda item 5: [106bis-e-AI5-LSs-01] Discuss incoming LS on efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths for a possible reply LS by October 18 – ??? (Nokia)
5. [R1-2108703](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108703.zip) under agenda item 8.8.1.3: [106bis-e-NR-R17-CovEnh-06] Discuss incoming LS on PUCCH and PUSCH repetitions for a possible reply LS by October 18 – Yi (Qualcomm)
6. [R1-2108717](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108717.zip) under agenda item 8.1.1: [106bis-e-NR-feMIMO-09] Discuss incoming LS on inter-cell beam management and multi-TRP for a possible reply LS by October 18 – Mihai (Nokia)
7. [R1-2108713](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108713.zip) under agenda item 8.6.1.3: [106bis-e-NR-R17-RedCap-05] Discuss incoming LS on REDCAP L2 buffer size reduction for a possible reply LS by October 18 – Sicong (Spreadtrum)
8. [R1-2108714](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108714.zip) under agenda item 8.17.6: [106bis-e-R17-UE-features-REDCAP-02] Discuss incoming LS on capability related RAN2 agreements for REDCAP for a possible reply LS by October 18 – Johan (Ericsson)
9. [R1-2108704](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108704.zip) under agenda item 5: [106bis-e-AI5-LSs-02] Discuss incoming LS on beam information of PUCCH Scell in PUCCH SCell activation procedure for a possible reply LS by October 18 – Frank (Huawei)
10. [R1-2108715](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108715.zip) under agenda item 5.2: [106bis-e-NR-R17-SDT-02] Discuss incoming LS on RAN2 agreements related to SDT for a possible reply LS by October 18 – Ziyang (ZTE)
11. [R1-2108716](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108716.zip) under agenda item 8.7.1.1: [106bis-e-NR-R17-PowSav-04] Discuss incoming LS on UE power saving for a possible reply LS by October 18 – Weide (MediaTek)
12. [R1-2108701](file:///D:\Documents\3GPP%20documents\RAN1\TSGR1_106b-e\Docs\R1-2108701.zip) under agenda item 5.1: [106bis-e-NR-R17-TxSwitching-02] Discuss incoming LS on SCell dropping issue of CA for a possible reply LS by October 18 – Frank (Huawei)
13. R1-2106430 under agenda item 8.11.2: [106bis-e-NR-R17-Sidelink-04] Discuss incoming LS on synchronous operation between Uu and SL in TDD band n79 for a possible reply LS by October 18 – Rui (CATT)