**Third Generation Partnership Project (3GPP™)**

**DRAFT Meeting Report  
for  
TSG RAN WG4  
meeting: 94-e**

**Electronic Meeting, 24/02/2020 to 06/03/2020**

Report generated on Tuesday, 2020-02-18 08:25 UTC

Contents:

1 Opening of the E-meeting 12

2 Approval of the agenda 12

3 Letters / reports from other groups / meetings 12

6 Rel15 New radio access technology [NR\_newRAT] 12

6.1 Requirements for NE-DC (option 4) and NGEN-DC Maintenance [NR\_newRAT-Core] 13

6.1.1 RF requirements (38.101-3) [NR-newRAT-Core] 13

6.2 NR-NR Dual Connectivity Maintenance [NR\_newRAT-Core] 13

6.2.1 UE RF requirements for DC combinations for FR1+FR2 (38.101-3) [NR\_newRAT-Core] 13

6.3 System Parameters Maintenance [NR\_newRAT-Core] 13

6.3.1 Channel bandwidth Maintenance [NR\_newRAT-Core] 13

6.3.2 Channel Arrangement Maintenance [NR\_newRAT-Core] 13

6.3.3 Other system parameters maintenance [NR\_newRAT-Core] 16

6.4 SUL and LTE-NR co-existence maintenance [NR\_newRAT-Core] 16

6.5 UE RF requirements maintenance [NR\_newRAT] 17

6.5.1 Draft CR for editorial errors only [NR\_newRAT-Core] 18

6.5.1.1 Draft CR for 38.101-1 for editorial errors only [NR\_newRAT-Core] 18

6.5.1.2 Draft CR for 38.101-2 for editorial errors only [NR\_newRAT-Core] 21

6.5.1.3 Draft CR for 38.101-3 for editorial errors only [NR\_newRAT-Core] 23

6.5.2 DC combination including NR carrier and/or NR CA combination maintenance [NR\_newRAT-Core] 24

6.5.2.1 Maintenance for bands and band combinations for 38.101-1 [NR\_newRAT-Core] 24

6.5.2.2 Maintenance for combinations for 38.101-2 [NR\_newRAT-Core] 26

6.5.2.3 Maintenance for combinations for 38.101-3 [NR\_newRAT-Core] 28

6.5.3 [FR1] Tx and Rx common [NR\_newRAT-Core] 30

6.5.4 [FR1] Transmitter characteristics [NR\_newRAT-Core] 31

6.5.4.1 EN-DC power class and UL MIMO clarifications [NR\_newRAT-Core] 31

6.5.4.2 UE additional maximum output power reduction (A-MPR) [NR\_newRAT-Core] 33

6.5.4.3 Configured transmitted power [NR\_newRAT-Core] 34

6.5.4.4 Tx DC location [NR\_newRAT-Core] 35

6.5.4.5 Other Tx requirements [NR\_newRAT-Core] 35

6.5.5 [FR1] Receiver characteristics [NR\_newRAT-Core] 37

6.5.5.1 Out of band blocking exceptions [NR\_newRAT-Core] 37

6.5.5.2 Other Rx requirements [NR\_newRAT-Core] 37

6.5.6 [FR2] Common to Tx and Rx [NR\_newRAT-Core] 40

6.5.6.1 Regulatory Tx/Rx spurious emission limits handling [NR\_newRAT-Core] 41

6.5.7 [FR2] Transmitter characteristics [NR\_newRAT-Core] 44

6.5.7.1 Power control [NR\_newRAT-Core] 44

6.5.7.2 Beam correspondence [NR\_newRAT-Core] 46

6.5.7.3 Other Tx requirements [NR\_newRAT-Core] 46

6.5.8 [FR2] Receiver characteristics [NR\_newRAT-Core] 49

6.6 UE EMC [NR\_newRAT-Core] 51

6.7 BS RF [NR\_newRAT-Core] 51

6.7.1 General and ad-hoc meeting minutes [NR\_newRAT-Core] 51

6.7.2 Transmitter characteristics maintenance [NR\_newRAT-Core] 52

6.7.3 Receiver characteristics maintenance [NR\_newRAT-Core] 56

6.8 BS conformance testing [NR\_newRAT-Perf] 58

6.8.1 General and ad-hoc meeting minutes [NR\_newRAT-Perf] 58

6.8.2 BS specifications clean-ups (including conformance testing and core) [NR\_newRAT-Perf/Core] 58

6.8.2.1 eAAS specifications [NR\_newRAT-Perf/Core] 58

6.8.2.2 MSR specifications [NR\_newRAT-Perf/Core] 58

6.8.2.3 NR conformance testing specifications [NR\_newRAT-Perf] 59

6.8.3 Common for 38.141-1 and 38.141-2 [NR\_newRAT-Perf] 64

6.8.3.1 Test configurations [NR\_newRAT-Perf] 64

6.8.3.2 Test cases [NR\_newRAT-Perf] 67

6.8.3.3 Test models [NR\_newRAT-Perf] 67

6.8.4 Conducted conformance testing (38.141-1) [NR\_newRAT-Perf] 70

6.8.4.1 MU and TT analysis [NR\_newRAT-Perf] 71

6.8.4.2 BS Demodulation conformance testing (38.141-1) [NR\_newRAT-Perf] 71

6.8.4.2.1 Test system related MU and TT [NR\_newRAT-Perf] 71

6.8.5 Radiated conformance testing (38.141-2) [NR\_newRAT-Perf] 71

6.8.5.1 Common to FR1 and FR2 radiated conformance testing [NR\_newRAT-Perf] 72

6.8.5.2 FR1 radiated conformance testing [NR\_newRAT-Perf] 73

6.8.5.2.1 NR specific MU and TT analysis [NR\_newRAT-Perf] 73

6.8.5.3 FR2 radiated conformance testing [NR\_newRAT-Perf] 73

6.8.5.3.1 NR specific MU and TT analysis [NR\_newRAT-Perf] 73

6.8.5.4 BS Demodulation conformance testing (38.141-2) [NR\_newRAT-Perf] 73

6.9 BS EMC [NR\_newRAT-Core] 73

6.9.1 Editor input for BS EMC spec (38.113) [NR\_newRAT-Core] 73

6.9.2 Core requirements [NR\_newRAT-Core] 73

6.9.2.1 Emission requirements [NR\_newRAT-Core] 73

6.9.2.2 Immunity requirements [NR\_newRAT-Core] 73

6.9.3 Performance requirements [NR\_newRAT-Perf] 73

6.10 RRM core maintenance (38.133/36.133) [NR\_newRAT-Core] 75

6.10.1 General [NR\_newRAT-Core] 75

6.10.2 Editorial CRs [NR\_newRAT-Core] 75

6.10.3 UE measurement capability (38.133/36.133) [NR\_newRAT-Core] 77

6.10.4 RRM measurement and measurement gap (38.133/36.133) [NR\_newRAT-Core] 79

6.10.5 Idle state and inactive state mobility for SA and NSA (38.133/36.133) [NR\_newRAT-Core] 84

6.10.6 Connected state mobility (38.133/36.133) [NR\_newRAT-Core] 84

6.10.7 Timing (38.133/36.133) [NR\_newRAT-Core] 86

6.10.7.1 One shot timing adjustment requirements [NR\_newRAT-Core] 86

6.10.7.2 MTTD and MRTD requirements [NR\_newRAT-Core] 89

6.10.7.3 Other timing requirements [NR\_newRAT-Core] 89

6.10.8 Signaling characteristics (38.133/36.133) [NR\_newRAT-Core] 89

6.10.8.1 RLM [NR\_newRAT-Core] 89

6.10.8.2 SCell activation delay requirements [NR\_newRAT-Core] 90

6.10.8.3 PSCell addition/release requirements (36.133) [NR\_newRAT-Core] 91

6.10.8.4 TCI state switching requirements [NR\_newRAT-Core] 92

6.10.8.5 BWP switching requirements [NR\_newRAT-Core] 95

6.10.8.6 Other requirements [NR\_newRAT-Core] 96

6.10.9 Beam management based on SSB and/or CSI-RS (38.133) [NR\_newRAT-Core] 96

6.10.10 Requirements for NE-DC (option 4) and NGEN-DC [NR\_newRAT-Core] 97

6.10.11 Requirements for NR-NR Dual Connectivity [NR\_newRAT-Core] 98

6.10.12 Other requirements [NR\_newRAT-Core] 98

6.11 RRM perf maintenance (38.133/36.133) [NR\_newRAT-Perf] 98

6.11.1 General [NR\_newRAT-Perf] 98

6.11.2 Editorial CRs [NR\_newRAT-Perf] 100

6.11.3 RRM test cases [NR\_newRAT-Perf] 103

6.11.3.1 RRC\_IDLE state mobility test cases [NR\_newRAT-Perf] 103

6.11.3.1.1 SA idle/inactive cell reselection [NR\_newRAT-Perf] 104

6.11.3.2 RRC\_CONNECTED state mobility test cases [NR\_newRAT-Perf] 105

6.11.3.2.1 NR-NR Handovers [NR\_newRAT-Perf] 105

6.11.3.2.2 NR handovers to other RATs [NR\_newRAT-Perf] 105

6.11.3.2.3 RRC Re-establishment [NR\_newRAT-Perf] 105

6.11.3.2.4 Random access [NR\_newRAT-Perf] 105

6.11.3.2.5 RRC Release with redirection to NR/E-UTRAN [NR\_newRAT-Perf] 105

6.11.3.3 Timing test cases [NR\_newRAT-Perf] 106

6.11.3.3.1 EN-DC timing accuracy and adjustment [NR\_newRAT-Perf] 107

6.11.3.3.2 SA timing accuracy and adjustment [NR\_newRAT-Perf] 107

6.11.3.3.3 EN-DC TA accuracy [NR\_newRAT-Perf] 107

6.11.3.3.4 SA TA accuracy [NR\_newRAT-Perf] 107

6.11.3.4 RLM test cases [NR\_newRAT-Perf] 107

6.11.3.4.1 EN-DC SSB RLM for PSCell IS and OOS [NR\_newRAT-Perf] 107

6.11.3.4.2 SA SSB RLM for PCell IS and OOS [NR\_newRAT-Perf] 108

6.11.3.4.3 EN-DC CSI RLM for PSCell [NR\_newRAT-Perf] 108

6.11.3.4.4 SA CSI RLM for PCell [NR\_newRAT-Perf] 108

6.11.3.4.5 SSB RLM scheduling restriction &impact on mobility [NR\_newRAT-Perf] 108

6.11.3.5 Interruption test cases [NR\_newRAT-Perf] 108

6.11.3.5.1 EN-DC interruption due to DRX transition [NR\_newRAT-Perf] 109

6.11.3.5.2 EN-DC interruption due to deactivated SCell operations [NR\_newRAT-Perf] 109

6.11.3.5.3 SA interruptions at SCell addition/release/(de-)activation [NR\_newRAT-Perf] 109

6.11.3.5.4 SA interruptions due to measurement on deactivated SCell [NR\_newRAT-Perf] 109

6.11.3.6 SCell activation and de-activation test cases [NR\_newRAT-Perf] 109

6.11.3.6.1 EN-DC SCell activation/deactivation delay [NR\_newRAT-Perf] 109

6.11.3.6.2 SA SCell activation/deactivation [NR\_newRAT-Perf] 109

6.11.3.7 UE UL carrier RRC reconfiguration delay test cases [NR\_newRAT-Perf] 109

6.11.3.8 Beam failure detection and link recovery procedure test cases [NR\_newRAT-Perf] 109

6.11.3.8.1 EN-DC beam failure detection and recovery [NR\_newRAT-Perf] 110

6.11.3.8.2 SA beam failure detection and recovery [NR\_newRAT-Perf] 110

6.11.3.8.3 EN-DC/SA scheduling restriction for BFD [NR\_newRAT-Perf] 110

6.11.3.9 Active BWP switching test cases [NR\_newRAT-Perf] 110

6.11.3.10 Measurement procedure test cases [NR\_newRAT-Perf] 110

6.11.3.10.1 EN-DC cell search and L1 measurement period [NR\_newRAT-Perf] 111

6.11.3.10.2 SA cell search and L1 measurement period [NR\_newRAT-Perf] 111

6.11.3.10.3 Inter-frequency measurement with LTE PCell [NR\_newRAT-Perf] 111

6.11.3.10.4 EN-DC NR inter-frequency measurement [NR\_newRAT-Perf] 111

6.11.3.10.5 SA NR inter-frequency measurement [NR\_newRAT-Perf] 111

6.11.3.10.6 EN-DC SFTD measurement delay [NR\_newRAT-Perf] 112

6.11.3.10.7 Inter-RAT E-UTRA measurement (with NR PCell) [NR\_newRAT-Perf] 112

6.11.3.10.8 EN-DC L1-RSRP measurement delay [NR\_newRAT-Perf] 112

6.11.3.10.9 SA L1-RSRP measurement delay [NR\_newRAT-Perf] 112

6.11.3.11 Measurement performance test cases [NR\_newRAT-Perf] 112

6.11.3.11.1 Intra-frequency RSRP accuracy for FR1 and FR2 [NR\_newRAT-Perf] 112

6.11.3.11.2 Inter-frequency RSRP accuracy for FR1 and FR2 [NR\_newRAT-Perf] 113

6.11.3.11.3 Intra-frequency RSRQ accuracy for FR1 and FR2 [NR\_newRAT-Perf] 114

6.11.3.11.4 Inter-frequency RSRQ accuracy for FR1 and FR2 [NR\_newRAT-Perf] 114

6.11.3.11.5 SA/EN-DC SS-SINR measurement accuracies [NR\_newRAT-Perf] 115

6.11.3.11.6 Beam management: L1-RSRP reporting [NR\_newRAT-Perf] 115

6.11.3.11.7 EN-DC SFTD measurement accuracy [NR\_newRAT-Perf] 116

6.11.3.11.8 SA NR inter-RAT E-UTRAN RSRP accuracy [NR\_newRAT-Perf] 116

6.11.3.11.9 SA NR inter-RAT E-UTRAN RSRQ accuracy [NR\_newRAT-Perf] 116

6.11.3.11.10 SA NR inter-RAT E-UTRAN SINR accuracy [NR\_newRAT-Perf] 116

6.11.3.12 NR PSCell addition and release in EN-DC [NR\_newRAT-Perf] 116

6.11.3.13 TCI switching delay [NR\_newRAT-Perf] 116

6.11.3.14 E-UTRAN standalone test for NR [NR\_newRAT-Perf] 116

6.11.3.14.1 E-UTRAN cell reselection to NR target cell [NR\_newRAT-Perf] 116

6.11.3.14.2 E-UTRAN inter-RAT NR cell search and measurement delay [NR\_newRAT-Perf] 116

6.11.3.14.3 E-UTRAN inter-RAT handover [NR\_newRAT-Perf] 116

6.11.3.14.4 E-UTRAN inter-RAT NR measurement accuracy [NR\_newRAT-Perf] 116

6.12 Demodulation and CSI maintenance [NR\_newRAT-Perf] 116

6.12.1 UE demodulation and CSI (38.101-4) [NR\_newRAT-Perf] 116

6.12.2 BS demodulation (38.104) [NR\_newRAT-Perf] 118

6.13 Maintenance of the Positioning specs (36.171, 37.171 and 38.171) [NR\_newRAT-Perf or TEI] 121

7 Rel-16 Work Items for LTE 122

7.1 LTE intra-band Carrier Aggregation for x CC DL/y CC UL including contiguous and non-contiguous spectrum (x>=y) [LTE\_CA\_R16\_intra] 122

7.1.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_intra-Core/Perf] 122

7.1.2 UE RF [LTE\_CA\_R16\_intra-Core] 123

7.2 LTE inter-band Carrier Aggregation for 2 bands DL with 1 band UL [LTE\_CA\_R16\_2BDL\_1BUL] 123

7.2.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_2BDL\_1BUL-Core/Perf] 123

7.2.2 UE RF with harmonic, close proximity and isolation issues [LTE\_CA\_R16\_2BDL\_1BUL-Core] 124

7.2.3 UE RF without specific issues [LTE\_CA\_R16\_2BDL\_1BUL-Core] 124

7.3 LTE inter-band Carrier Aggregation for 3 bands DL with 1 band UL [LTE\_CA\_R16\_3BDL\_1BUL] 125

7.3.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_3BDL\_1BUL-Core/Perf] 125

7.3.2 UE RF with harmonic, close proximity and isolation issues [LTE\_CA\_R16\_3BDL\_1BUL-Core] 125

7.3.3 UE RF without specific issues [LTE\_CA\_R16\_3BDL\_1BUL-Core] 126

7.4 LTE inter-band Carrier Aggregation for x bands DL (x=4, 5) with 1 band UL [LTE\_CA\_R16\_xBDL\_1BUL] 126

7.4.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_xBDL\_1BUL-Core] 126

7.4.2 UE RF with 4 LTE bands CA [LTE\_CA\_R16\_xBDL\_1BUL-Core] 127

7.4.3 UE RF with 5 LTE bands CA [LTE\_CA\_R16\_xBDL\_1BUL-Core] 128

7.5 LTE inter-band Carrier Aggregation for 2 bands DL with 2 band UL [LTE\_CA\_R16\_2BDL\_2BUL] 128

7.5.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_2BDL\_2BUL-Core] 128

7.5.2 UE RF with harmonic, close proximity and isolation issues [LTE\_CA\_R16\_2BDL\_2BUL-Core] 128

7.5.3 UE RF without specific issues [LTE\_CA\_R16\_2BDL\_2BUL-Core] 128

7.6 LTE inter-band Carrier Aggregation for x bands DL (x= 3, 4, 5) with 2 band UL [LTE\_CA\_R16\_xBDL\_2BUL] 128

7.6.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_xBDL\_2BUL-Core] 128

7.6.2 UE RF with MSD [LTE\_CA\_R16\_xBDL\_2BUL-Core] 129

7.6.3 UE RF without MSD [LTE\_CA\_R16\_xBDL\_2BUL-Core] 130

7.7 RRM for LTE CA basket WI-s [LTE\_CA\_R16\_xxxx] 130

7.7.1 RRM Core (36.133) [LTE\_CA\_R16\_xxxx-Core] 130

7.7.2 RRM Perf (36.133) [LTE\_CA\_R16\_xxxx-Perf] 130

7.8 Additional LTE bands for UE category M1 and/or NB1 in Rel-16 [LTE\_bands\_R16\_M1\_NB1] 130

7.8.1 RF [LTE\_bands\_R16\_M1\_NB1-Core] 130

7.8.2 Others [LTE\_bands\_R16\_M1\_NB1-Perf] 130

7.9 Additional LTE bands for UE category M2 and/or NB2 in in Rel-16 [LTE\_bands\_R16\_M2\_NB2] 130

7.9.1 RF [LTE\_bands\_R16\_M2\_NB2-Core] 130

7.9.2 Others [LTE\_bands\_R15\_M2\_NB2-Perf] 130

7.10 Additional MTC enhancements for LTE [LTE\_eMTC5] 130

7.10.1 General [LTE\_eMTC5] 130

7.10.2 Coexistence with NR [LTE\_eMTC5] 130

7.10.3 RRM core requirements (36.133) [LTE\_eMTC5-Core] 131

7.10.3.1 DL quality report in MSG3 and connected mode [LTE\_eMTC5-Core] 131

7.10.3.2 WUS [LTE\_eMTC5-Core] 132

7.10.3.3 MPDCCH performance improvement [LTE\_eMTC5-Core] 133

7.10.3.4 PUR [LTE\_eMTC5-Core] 133

7.10.3.5 Mobility enhancement [LTE\_eMTC5-Core] 134

7.10.3.6 Others [LTE\_eMTC5-Core] 135

7.10.4 Demodulation and CSI requirements (36.101/36.104) [LTE\_eMTC5-Perf] 135

7.11 Additional enhancements for NB-IoT [NB\_IOTenh3] 137

7.11.1 General [NB\_IOTenh3] 137

7.11.2 Co-existence with NR [NB\_IOTenh3] 137

7.11.3 RRM core requirements (36.133) [NB\_IOTenh3-Core] 140

7.11.3.1 Group WUS [NB\_IOTenh3-Core] 140

7.11.3.2 PUR [NB\_IOTenh3-Core] 140

7.11.3.3 Multi-carrier operations [NB\_IOTenh3-Core] 140

7.11.3.4 Others [NB\_IOTenh3-Core] 141

7.11.4 Demodulation and CSI requirements (36.101/36.104) [NB\_IOTenh3-Perf] 141

7.12 Even further Mobility enhancement in E-UTRAN [LTE\_feMob] 143

7.12.1 RRM core requirements (36.133) [LTE\_feMob-Core] 143

7.12.1.1 Conditional handover [LTE\_feMob-Core] 143

7.12.1.2 Reduction of user data interruption [LTE\_feMob-Core] 144

7.12.1.3 Others [LTE\_feMob-Core] 145

7.13 Further performance enhancement for LTE in high speed scenario [LTE\_high\_speed\_enh2] 145

7.13.1 RRM core requirements maintenance (36.133) [LTE\_high\_speed\_enh2-Core] 145

7.13.2 RRM performance requirements (36.133) [LTE\_high\_speed\_enh2-Perf] 145

7.13.3 UE Demodulation and CSI requirements (36.101) [LTE\_high\_speed\_enh2-Perf] 145

7.13.3.1 Extension of demodulation requirements to CA [LTE\_high\_speed\_enh2-Perf] 145

7.13.3.2 HST-SFN PDSCH demodulation requirements [LTE\_high\_speed\_enh2-Perf] 146

7.13.3.3 Single tap HST PDSCH demodulation requirements [LTE\_high\_speed\_enh2-Perf] 146

7.13.4 BS Demodulation requirements (36.104) LTE\_high\_speed\_enh2-Perf] 146

7.13.4.1 PUSCH demodulation requirements [LTE\_high\_speed\_enh2-Perf] 146

7.13.4.2 PRACH requirements [LTE\_high\_speed\_enh2-Perf] 147

7.14 LTE-based 5G terrestrial broadcast [LTE\_terr\_bcast] 147

7.14.1 RRM core requirements maintenance (36.133) [LTE\_terr\_bcast -Core] 147

7.14.1.1 Interruption requirements [LTE\_terr\_bcast -Core] 147

7.14.1.2 Phase synchronization accuracy [LTE\_terr\_bcast -Core] 147

7.14.1.3 RSRP/RSRQ report mapping [LTE\_terr\_bcast -Core] 147

7.14.1.4 Other requirements [LTE\_terr\_bcast -Core] 147

7.14.2 RRM Perf requirements (36.133) [LTE\_terr\_bcast -Perf] 147

7.14.3 Demodulation and CSI requirements (36.101) [LTE\_terr\_bcast -Perf] 147

7.15 Support for NavIC Navigation Satellite System for LTE [LCS\_NAVIC-Perf] 148

7.15.1 UE perf. requirements (36.171) [LCS\_NAVIC-Perf] 148

7.16 DL MIMO efficiency enhancements for LTE [LTE\_DL\_MIMO\_EE] 148

7.16.1 UE RF requirements (36.101) [LTE\_DL\_MIMO\_EE] 149

8 Rel-16 non-spectrum related work items for NR 149

8.1 NR-based access to unlicensed spectrum [NR\_unlic] 149

8.1.1 System Parameters [NR\_unlic-Core] 149

8.1.1.1 General [NR\_unlic-Core ] 149

8.1.1.2 Wideband operations (UE and BS) [NR\_unlic-Core] 150

8.1.1.3 Channel raster [NR\_unlic-Core ] 152

8.1.1.4 Spectrum utilizations [NR\_unlic-Core] 152

8.1.1.5 Sync raster [NR\_unlic-Core] 152

8.1.2 UE RF requirements [NR\_unlic-Core] 152

8.1.2.1 Transmitter characteristics [NR\_unlic-Core] 155

8.1.2.2 Receiver characteristics [NR\_unlic-Core] 156

8.1.3 BS RF requirements [NR\_unlic-Core] 157

8.1.3.1 Transmitter characteristics [NR\_unlic-Core] 157

8.1.3.2 Receiver characteristics [NR\_unlic-Core] 157

8.1.4 RRM core requirements (38.133) [NR\_unlic-Core] 159

8.1.4.1 Cell re-selection [NR\_unlic-Core] 160

8.1.4.2 Handover [NR\_unlic-Core] 162

8.1.4.3 RRC connection mobility control [NR\_unlic-Core] 163

8.1.4.4 SCell activation/deactivation (delay and interruption) [NR\_unlic-Core] 165

8.1.4.5 PSCell addition/release (delay and interruption) [NR\_unlic-Core] 166

8.1.4.6 Active TCI state switching [NR\_unlic-Core] 167

8.1.4.7 Interruptions due to operation in non-NR-U serving cells [NR\_unlic-Core] 168

8.1.4.8 Active BWP switching [NR\_unlic-Core] 168

8.1.4.9 RLM and link recovery procedures [NR\_unlic-Core] 169

8.1.4.10 Measurement requirements [NR\_unlic-Core] 171

8.1.4.11 Measurement accuracy [NR\_unlic-Core] 176

8.1.4.12 Measurement capability and reporting criteria [NR\_unlic-Core] 176

8.1.4.13 Timing [NR\_unlic-Core] 177

8.1.4.14 Others [NR\_unlic-Core] 178

8.2 Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR [NR\_CLI\_RIM] 179

8.2.1 General [NR\_CLI\_RIM-Core] 179

8.2.2 RRM core requirements maintenance (38.133) [NR\_CLI\_RIM-Core] 179

8.2.3 RRM perf. requirements (38.133) [NR\_CLI\_RIM-Perf] 180

8.2.3.1 CLI measurement accuracy [NR\_CLI\_RIM-Perf] 180

8.2.3.2 Test cases [NR\_CLI\_RIM-Perf] 180

8.2.3.3 Others [NR\_CLI\_RIM-Perf] 181

8.3 NR mobility enhancement [NR\_Mob\_enh] 181

8.3.1 General [NR\_Mob\_enh-Core] 181

8.3.2 RRM core requirements (38.133) [NR\_Mob\_enh-Core] 181

8.3.2.1 Handover with simultaneous Rx/Tx with source and target cells [NR\_Mob\_enh-Core] 181

8.3.2.2 Conditional handover [NR\_Mob\_enh-Core] 183

8.3.2.3 Conditional PSCell addition/change [NR\_Mob\_enh-Core] 185

8.3.2.4 Others [NR\_Mob\_enh-Core] 185

8.4 5G V2X with NR sidelink [5G\_V2X\_NRSL] 185

8.4.1 General [5G\_V2X\_NRSL] 185

8.4.2 Co-existence Study [5G\_V2X\_NRSL-Core] 187

8.4.2.1 Simulation Results [5G\_V2X\_NRSL-Core] 187

8.4.2.2 In-device coexistence [5G\_V2X\_NRSL-Core] 187

8.4.2.3 UE-to-UE coexistence [5G\_V2X\_NRSL-Core] 187

8.4.3 System parameters [5G\_V2X\_NRSL-Core] 187

8.4.3.1 Bands and bandwidth [5G\_V2X\_NRSL-Core] 188

8.4.3.2 Others [5G\_V2X\_NRSL-Core] 189

8.4.4 UE RF requirements [5G\_V2X\_NRSL-Core] 189

8.4.4.1 Transmitter characteristics [5G\_V2X\_NRSL-Core ] 190

8.4.4.2 Receiver characteristics [5G\_V2X\_NRSL-Core ] 194

8.4.5 RRM core requirements (38.133) [5G\_V2X\_NRSL-Core] 195

8.4.5.1 Transmit timing requirements [5G\_V2X\_NRSL-Core] 195

8.4.5.2 Synchronization requirements [5G\_V2X\_NRSL-Core] 195

8.4.5.3 Measurement requirements [5G\_V2X\_NRSL-Core] 196

8.4.5.4 Interruption requirements [5G\_V2X\_NRSL-Core] 198

8.4.5.5 Unicast, groupcast related [5G\_V2X\_NRSL-Core] 198

8.4.5.6 Others [5G\_V2X\_NRSL-Core] 198

8.5 Integrated Access and Backhaul for NR [NR\_IAB] 199

8.5.1 General [NR\_IAB-Core/Perf] 199

8.5.2 Co-existence study [NR\_IAB-Core] 202

8.5.3 System parameters [NR\_IAB-Core] 203

8.5.4 RF requirements [NR\_IAB-Core] 204

8.5.4.1 Conductive RF core requirements [NR\_IAB-Core] 205

8.5.4.1.1 Transmitter characteristics [NR\_IAB-Core] 205

8.5.4.1.2 Receiver characteristics [NR\_IAB-Core] 206

8.5.4.2 Radiated RF core requirements [NR\_IAB-Core] 206

8.5.4.2.1 Transmitter characteristics [NR\_IAB-Core] 206

8.5.4.2.2 Receiver characteristics [NR\_IAB-Core] 216

8.5.5 RRM core requirements (38.133) [NR\_IAB-Core] 219

8.5.5.1 RRC connection mobility control [NR\_IAB-Core] 219

8.5.5.2 MT timing related requirements [NR\_IAB-Core] 221

8.5.5.3 DU timing related requirements [NR\_IAB-Core] 222

8.5.5.4 RLM requirements [NR\_IAB-Core] 222

8.5.5.5 BFD/BFR requirements [NR\_IAB-Core] 223

8.5.5.6 Other requirements [NR\_IAB-Core] 223

8.5.6 EMC core requirements [NR\_IAB-Core] 223

8.5.7 Others [NR\_IAB-Core] 225

8.6 Multi-RAT Dual-Connectivity and Carrier Aggregation enhancements [LTE\_NR\_DC\_CA\_enh] 225

8.6.1 General [LTE\_NR\_DC\_CA\_enh-Core] 225

8.6.2 RF requirements [LTE\_NR\_DC\_CA\_enh-Core] 225

8.6.2.1 RF requirements for EN-DC [LTE\_NR\_DC\_CA\_enh-Core] 225

8.6.2.2 RF requirements for CA [LTE\_NR\_DC\_CA\_enh-Core] 225

8.6.2.3 RF requirements for NR-DC [LTE\_NR\_DC\_CA\_enh-Core] 225

8.6.3 RRM core requirements (38.133) [LTE\_NR\_DC\_CA\_enh-Core] 225

8.6.3.1 Asynchronous and synchronous NR-NR Dual Connectivity [LTE\_NR\_DC\_CA\_enh-Core] 225

8.6.3.2 Early Measurement reporting [LTE\_NR\_DC\_CA\_enh-Core] 225

8.6.3.2.1 NR measurements for EMR [LTE\_NR\_DC\_CA\_enh-Core] 226

8.6.3.2.2 LTE NR Inter-RAT EMR [LTE\_NR\_DC\_CA\_enh-Core] 227

8.6.3.3 Efficient and low latency serving cell configuration, activation and setup [LTE\_NR\_DC\_CA\_enh-Core] 227

8.6.3.3.1 Direct SCell activation [LTE\_NR\_DC\_CA\_enh-Core] 227

8.6.3.3.2 SCell dormancy [LTE\_NR\_DC\_CA\_enh-Core] 229

8.6.3.4 Interruption under EN-DC and NE-DC [LTE\_NR\_DC\_CA\_enh-Core] 230

8.6.3.5 Fast recovery [LTE\_NR\_DC\_CA\_enh-Core] 230

8.6.3.6 Cross-carrier scheduling with different numerologies on the scheduling and scheduled carriers [LTE\_NR\_DC\_CA\_enh-Core] 230

8.6.3.7 Others [LTE\_NR\_DC\_CA\_enh-Core] 230

8.7 UE power saving in NR [NR\_UE\_pow\_sav] 230

8.7.1 General [NR\_UE\_pow\_sav] 230

8.7.2 Switching and interruption time [NR\_UE\_pow\_sav] 230

8.7.3 RRM core requirements (38.133) [NR\_UE\_pow\_sav-Core] 231

8.7.3.1 RRM measurement relaxation [NR\_UE\_pow\_sav-Core] 231

8.7.3.2 Requirements for MIMO layer adaptation [NR\_UE\_pow\_sav-Core] 234

8.8 NR Positioning Support [NR\_pos] 236

8.8.1 General (Work plan, rapporteur input) [NR\_pos-Core/Perf] 236

8.8.2 RRM core requirements (38.133) [NR\_pos-Core] 236

8.8.2.1 UE requirements [NR\_pos-Core] 236

8.8.2.1.1 System-level evaluations for PRS-RSTD and PRS-RSRP [NR\_pos-Core] 237

8.8.2.1.2 PRS-RSTD measurements [NR\_pos-Core] 237

8.8.2.1.3 PRS-RSRP measurements [NR\_pos-Core] 239

8.8.2.1.4 Rx-Tx time difference measurements [NR\_pos-Core] 240

8.8.2.1.5 SSB and CSI-RS RSRP/RSRQ measurements [NR\_pos-Core] 241

8.8.2.1.6 Link-level evaluations for PRS-RSTD and PRS-RSRP [NR\_pos-Core] 242

8.8.2.2 gNB requirements [NR\_pos-Core] 244

8.8.2.3 Impact on existing RRM requirements [NR\_pos-Core] 245

8.8.2.4 Others [NR\_pos-Core] 246

8.9 Physical layer enhancements for NR URLLC [NR\_L1enh\_URLLC-Core] 246

8.9.1 Demodulation and CSI requirements [NR\_L1enh\_URLLC-Perf] 246

8.9.1.1 Test feasibility [NR\_L1enh\_URLLC-Perf] 246

8.9.1.2 UE demodulation and CSI requirements (38.101-4) [NR\_L1enh\_URLLC-Perf] 247

8.9.1.3 BS demodulation requirements (38.104) [NR\_L1enh\_URLLC-Perf] 249

8.10 Single radio voice call continuity from 5G to 3G (SRVCC) [SRVCC\_NR\_to\_UMTS-Core] 251

8.10.1 RRM core requirements maintenance (38.133) [SRVCC\_NR\_to\_UMTS-Core] 251

8.10.2 RRM perf requirements (38.133) [SRVCC\_NR\_to\_UMTS-Perf] 251

8.11 Enhancements on MIMO for NR [NR\_eMIMO] 252

8.11.1 UE RF core requirements (38.101) [NR\_eMIMO-Core] 252

8.11.1.1 DMRS enhancement with PI/2 BPSK [NR\_eMIMO-Core] 252

8.11.1.2 Uplink Tx Full Power transmission [NR\_eMIMO-Core] 253

8.11.2 RRM core requirements (38.133) [NR\_eMIMO-Core] 254

8.11.2.1 L1-SINR [NR\_eMIMO-Core] 254

8.11.2.2 SCell Beam failure recovery [NR\_eMIMO-Core] 256

8.11.2.3 DL/UL beam indication with reduced latency and overhead [NR\_eMIMO-Core] 257

8.11.2.4 Others [NR\_eMIMO-Core] 258

8.11.3 Demodulation and CSI requirements [NR\_eMIMO-Perf] 258

8.11.3.1 General [NR\_eMIMO-Perf] 258

8.11.3.2 Demodulation requirements [NR\_eMIMO-Perf] 258

8.11.3.3 CSI requirements [NR\_eMIMO-Perf] 260

8.12 Add support of NR DL 256QAM for FR2 [NR\_DL256QAM\_FR2] 261

8.12.1 General (Ad-hoc MoM/TR maintenance) [NR\_DL256QAM\_FR2] 261

8.12.2 BS RF core requirements (38.104) [NR\_DL256QAM\_FR2] 261

8.12.3 UE RF core requirements (38.101-2) [NR\_DL256QAM\_FR2] 263

8.13 RF requirements for NR frequency range 1 (FR1) [NR\_RF\_FR1] 264

8.13.1 RF core requirements [NR\_RF\_FR1] 264

8.13.1.1 Almost contiguous allocations for CP-OFDM UL for FR1 [NR\_RF\_FR1] 264

8.13.1.2 Intra-band contiguous DL CA for FR1 [NR\_RF\_FR1] 265

8.13.1.3 Intra-band non-contiguous DL CA for FR1 for generic and n77 and n78 [NR\_RF\_FR1] 266

8.13.1.4 Intra-band contiguous UL CA for FR1 power class 3 [NR\_RF\_FR1] 266

8.13.1.5 Intra-band non-contiguous UL CA for FR1 power class [NR\_RF\_FR1] 268

8.13.1.6 Switching period between case 1 and case 2 [NR\_RF\_FR1] 268

8.13.1.7 Transient period capability [NR\_RF\_FR1] 272

8.13.2 RRM core requirements (38.133) [NR\_RF\_FR1] 273

8.13.2.1 RRM requirements for Tx switching between two uplink carriers [NR\_RF\_FR1] 273

8.14 NR RF requirement enhancements for frequency range 2 (FR2) [NR\_RF\_FR2\_req\_enh] 274

8.14.1 RF core requirements [NR\_RF\_FR2\_req\_enh] 274

8.14.1.1 FR2 MPE [NR\_RF\_FR2\_req\_enh] 275

8.14.1.2 Beam Correspondence based on configured DL RS (SSB or CSI-RS) [NR\_RF\_FR2\_req\_enh] 277

8.14.1.3 Intra-band cont DL CA for aggregated BW larger than 1400 MHz [NR\_RF\_FR2\_req\_enh] 281

8.14.1.4 Intra-band non-cont DL CA for aggregated BW larger than 1400 MHz [NR\_RF\_FR2\_req\_enh] 281

8.14.1.5 Intra-band contiguous UL CA [NR\_RF\_FR2\_req\_enh] 283

8.14.1.6 Intra-band non-contiguous UL CA [NR\_RF\_FR2\_req\_enh] 283

8.14.1.7 Inter-band DL CA [NR\_RF\_FR2\_req\_enh] 285

8.14.1.8 Improvement of UE MPR [NR\_RF\_FR2\_req\_enh] 288

8.14.1.9 Improvement of spherical coverage requirements for PC3 [NR\_RF\_FR2\_req\_enh] 288

8.14.2 RRM core requirements (38.133) [NR\_RF\_FR2\_req\_enh] 290

8.14.2.1 Inter-band DL CA MRTD [NR\_RF\_FR2\_req\_enh] 290

8.15 NR RRM requirement enhancement [NR\_RRM\_Enh\_Core] 290

8.15.1 RRM core requirements (38.133) [NR\_RRM\_Enh\_Core] 290

8.15.1.1 SRS carrier switching requirements [NR\_RRM\_Enh\_Core] 290

8.15.1.2 Multiple Scell activation/deactivation [NR\_RRM\_Enh\_Core] 292

8.15.1.3 CGI reading requirements with autonomous gap [NR\_RRM\_Enh\_Core] 293

8.15.1.4 BWP switching on multiple CCs [NR\_RRM\_Enh\_Core] 296

8.15.1.5 Inter-frequency measurement requirement without MG [NR\_RRM\_Enh\_Core] 298

8.15.1.6 Mandatory MG patterns [NR\_RRM\_Enh\_Core] 300

8.15.1.7 UE-specific CBW change [NR\_RRM\_Enh\_Core] 303

8.15.1.8 Spatial relation switch for uplink [NR\_RRM\_Enh\_Core] 303

8.15.1.9 Non-simultaneous UL carrier operation in FR2 [NR\_RRM\_Enh\_Core] 304

8.15.1.10 Inter-band CA requirement for FR2 UE measurement capability of independent Rx beam and/or common beam [NR\_RRM\_Enh\_Core] 304

8.15.1.11 Others [NR\_RRM\_Enh\_Core] 305

8.16 NR RRM requirements for CSI-RS based L3 measurement [NR\_CSIRS\_L3meas] 305

8.16.1 RRM core requirements (38.133) [NR\_CSIRS\_L3meas-Core] 305

8.16.1.1 CSI-RS measurement bandwidth [NR\_CSIRS\_L3meas-Core] 305

8.16.1.2 CSI-RS based intra-frequency and inter-frequency measurements definition [NR\_CSIRS\_L3meas-Core] 306

8.16.1.3 Measurement capability [NR\_CSIRS\_L3meas-Core] 309

8.16.1.4 Intra-frequency measurement requirements [NR\_CSIRS\_L3meas-Core] 310

8.16.1.5 Inter-frequency measurement requirements [NR\_CSIRS\_L3meas-Core] 311

8.16.1.6 Others [NR\_CSIRS\_L3meas-Core] 311

8.17 NR support for high speed train scenario [NR\_HST] 312

8.17.1 RRM core requirements (38.133) [NR\_HST-Core] 312

8.17.1.1 Cell re-selection [NR\_HST-Core] 313

8.17.1.2 Cell identification delay [NR\_HST-Core] 313

8.17.1.3 RLM [NR\_HST-Core] 314

8.17.1.4 Beam management [NR\_HST-Core] 315

8.17.1.5 Inter-RAT measurement [NR\_HST-Core] 315

8.17.1.6 Network assistance and UE capability signalling [NR\_HST-Core] 316

8.17.2 Demodulation and CSI requirements (38.101-4 / 38.104) [NR\_HST-Perf] 316

8.17.2.1 UE demodulation and CSI requirements (38.101-4) [NR\_HST-Perf] 316

8.17.2.1.1 Scenarios and transmission schemes [NR\_HST-Perf] 317

8.17.2.1.2 Requirements for HST-SFN [NR\_HST-Perf] 317

8.17.2.1.3 Requirements for HST single tap [NR\_HST-Perf] 318

8.17.2.1.4 Requirements for multi-path fading channels [NR\_HST-Perf] 319

8.17.2.1.5 Network assistance and UE capability signalling [NR\_HST-Perf] 320

8.17.2.2 BS demodulation requirements (38.104) [NR\_HST-Perf] 321

8.17.2.2.1 PUSCH requirements [NR\_HST-Perf] 321

8.17.2.2.2 PRACH requirements [NR\_HST-Perf] 325

8.17.2.2.3 UL timing adjustment requirements [NR\_HST-Perf] 328

8.18 NR performance requirement enhancement [NR\_perf\_enh-Perf] 329

8.18.1 UE demodulation and CSI requirements (38.101-4) [NR\_perf\_enh-Perf] 329

8.18.1.1 NR CA PDSCH requirementS [NR\_perf\_enh-Perf] 329

8.18.1.2 PMI reporting requirements with larger number of Tx ports [NR\_perf\_enh-Perf] 332

8.18.1.3 LTE-NR co-existence for TDD [NR\_perf\_enh-Perf] 334

8.18.1.4 FR1 CA power imbalance requirements [NR\_perf\_enh-Perf] 335

8.18.2 BS demodulation requirements (38.104) [NR\_perf\_enh-Perf] 335

8.18.2.1 30% TP test point [NR\_perf\_enh-Perf] 335

8.18.2.2 Additional FR2 requirements [NR\_perf\_enh-Perf] 338

8.19 Over the air (OTA) base station (BS) testing TR [OTA\_BS\_testing-Perf] 339

8.19.1 General (such as work plan, AH minutes) [OTA\_BS\_testing-Perf] 341

8.19.2 Others [OTA\_BS\_testing-Perf] 342

8.20 2-step RACH for NR [NR\_2step\_RACH-Perf] 346

8.20.1 BS Demodulation requirements (38.104/38.141-1/38.141-2) [NR\_2step\_RACH-Perf] 346

8.20.2 Others [NR\_2step\_RACH-Perf] 347

8.21 SON/MDT Support for NR [NR\_SON\_MDT] 347

8.21.1 MDT related RRM requirements (38.133, 36.133) [NR\_SON\_MDT-Core] 347

9 Rel-16 spectrum related Work Items for NR 348

9.1 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y) [NR\_CA\_R16\_intra] 349

9.1.1 Rapporteur Input (WID/TR/CR) [NR\_CA\_R16\_intra-Core /Perf] 349

9.1.2 UE RF for FR1 [NR\_CA\_R16\_intra-Core] 351

9.1.3 UE RF for FR2 [NR\_CA\_R16\_intra-Core] 352

9.2 NR inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1, 2) [NR\_CADC\_R16\_2BDL\_xBUL] 352

9.2.1 Rapporteur Input (WID/TR/CR) [NR\_CADC\_R16\_2BDL\_xBUL-Core/Perf] 352

9.2.2 NR inter band CA without any FR2 band(s) [NR\_CADC\_R16\_2BDL\_xBUL-Core] 353

9.2.3 NR inter band CA with at least one FR2 band [NR\_CADC\_R16\_2BDL\_xBUL-Core] 358

9.3 EN-DC of 1 LTE band and 1 NR band [DC\_R16\_1BLTE\_1BNR\_2DL2UL] 358

9.3.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_1BLTE\_1BNR\_2DL2UL-Core/Perf] 358

9.3.2 EN-DC without FR2 band [DC\_R16\_1BLTE\_1BNR\_2DL2UL-Core] 359

9.3.3 EN-DC with FR2 band [DC\_R16\_1BLTE\_1BNR\_2DL2UL-Core] 369

9.4 EN-DC of 2 LTE band and 1 NR band [DC\_R16\_2BLTE\_1BNR\_3DL2UL] 369

9.4.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_2BLTE\_1BNR\_3DL2UL-Core/Perf] 369

9.4.2 EN-DC without FR2 band [DC\_R16\_2BLTE\_1BNR\_3DL2UL-Core] 369

9.4.3 EN-DC with FR2 band [DC\_R16\_2BLTE\_1BNR\_3DL2UL-Core] 384

9.5 EN-DC of 3 LTE band and 1 NR band [DC\_R16\_3BLTE\_1BNR\_4DL2UL] 386

9.5.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_3BLTE\_1BNR\_4DL2UL-Core/Perf] 386

9.5.2 EN-DC without FR2 band [DC\_R16\_3BLTE\_1BNR\_4DL2UL-Core] 387

9.5.3 EN-DC with FR2 band [DC\_R16\_3BLTE\_1BNR\_4DL2UL-Core] 397

9.6 EN-DC of 4 LTE band and 1 NR band [DC\_R16\_4BLTE\_1BNR\_5DL2UL] 397

9.6.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_4BLTE\_1BNR\_5DL2UL-Core/Perf] 397

9.6.2 EN-DC without FR2 band [DC\_R16\_4BLTE\_1BNR\_5DL2UL-Core] 397

9.6.3 EN-DC with FR2 band [DC\_R16\_4BLTE\_1BNR\_5DL2UL-Core] 397

9.7 EN-DC of x bands (x=1,2, 3, 4) LTE inter-band CA and 2 bands NR inter-band CA [DC\_R16\_xBLTE\_2BNR\_yDL2UL] 398

9.7.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_xBLTE\_2BNR\_yDL2UL-Core/Per] 398

9.7.2 EN-DC including NR inter CA without FR2 band [DC\_R16\_xBLTE\_2BNR\_yDL2UL-Core] 398

9.7.3 EN-DC including NR inter CA with FR2 band [DC\_R16\_xBLTE\_2BNR\_yDL2UL-Core] 406

9.8 Band combinations for SA NR supplementary uplink (SUL), NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP) [NR\_SUL\_combos\_R16] 417

9.8.1 Rapporteur Input (WID/TR/CR) [NR\_SUL\_combos\_R16-Core/Per] 417

9.8.2 UE RF [NR\_SUL\_combos\_R16-Core] 417

9.9 NR Inter-band Carrier Aggregation for 3 bands DL with 1 band UL [NR\_CA\_R16\_3BDL\_1BUL] 418

9.9.1 Rapporteur Input (WID/TR/CR) [NR\_CA\_R16\_3BDL\_1BUL-Core/Per] 418

9.9.2 UE RF [NR\_CA\_R16\_3BDL\_1BUL-Core] 419

9.10 NR Inter-band Carrier Aggregation for 4 bands DL with 1 band UL [NR\_CA\_R16\_4BDL\_1BUL] 422

9.10.1 Rapporteur Input (WID/TR/CR) [NR\_CA\_R16\_4BDL\_1BUL-Core/Per] 422

9.10.2 UE RF [NR\_CA\_R16\_4BDL\_1BUL-Core] 423

9.11 NR Inter-band Carrier Aggregation/Dual connectivity for 3 bands DL with 2 bands UL [NR\_CADC\_R16\_3BDL\_2BUL] 423

9.11.1 Rapporteur Input (WID/TR/CR) [NR\_CADC\_R16\_3BDL\_2BUL-Core/Per] 423

9.11.2 UE RF [NR\_CADC\_R16\_3BDL\_2BUL-Core] 424

9.12 Dual Connectivity (EN-DC) with 3 bands DL and 3 bands UL [DC\_R16\_LTE\_NR\_3DL3UL] 426

9.12.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_LTE\_NR\_3DL3UL-Core/Per] 426

9.12.2 UE RF [DC\_R16\_LTE\_NR\_3DL3UL-Core] 426

9.13 Dual Connectivity (EN-DC) of LTE inter-band CA xDL/1UL bands (x=2,3,4) and NR FR1 1DL/1UL band and NR FR2 1DL/1UL band [DC\_R16\_xBLTE\_2BNR\_yDL3UL] 428

9.13.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_xBLTE\_2BNR\_yDL3UL-Core/Per] 428

9.13.2 UE RF [DC\_R16\_xBLTE\_2BNR\_yDL3UL-Core] 429

9.14 29dBm UE Power Class for B41 and n41 [LTE\_NR\_B41\_Bn41\_PC29dBm] 436

9.14.1 Rapporteur Input (WID/TR/CR) [LTE\_NR\_B41\_Bn41\_PC29dBm] 436

9.14.2 UE RF (36.101, 38.101-1, 38.101-3) [LTE\_NR\_B41\_Bn41\_PC29dBm] 436

9.14.3 Others [LTE\_NR\_B41\_Bn41\_PC29dBm] 439

9.15 Power Class 2 UE for EN-DC (1 LTE FDD band +1 NR TDD band) [ENDC\_UE\_PC2\_FDD\_TDD-Core] 439

9.15.1 General [ENDC\_UE\_PC2\_FDD\_TDD-Core] 439

9.15.2 UE RF requirement [ENDC\_UE\_PC2\_FDD\_TDD-Core] 440

9.15.3 Signaling [ENDC\_UE\_PC2\_FDD\_TDD-Core] 441

9.16 Introduction of NR band n259 [NR\_n259] 442

9.16.1 UE RF (38.101-2) [NR\_n259-Core] 442

9.16.2 BS RF (38.104) [NR\_n259-Core] 444

9.16.3 RRM (38.133) [NR\_n259-Core] 445

9.16.4 Others [NR\_n259-Core/Perf] 446

9.17 Adding 30MHz channel bandwidth for NR band n1 [NR\_n1\_BW] 446

9.17.1 UE RF (38.101-1) [NR\_n1\_BW-Core] 446

9.17.2 BS RF (38.104) [NR\_n1\_BW-Core] 446

9.17.3 RRM (38.133) [NR\_n1\_BW] 447

9.17.4 Others [NR\_n1\_BW] 447

9.18 Addition of wider channel bandwidth in NR band n28 [NR\_n28\_BW-Core] 447

9.18.1 UE RF (38.101-1) [NR\_n28\_BW-Core] 447

9.18.2 BS RF (38.104) [NR\_n28\_BW-Core] 449

9.18.3 RRM (38.133) [NR\_n28\_BW-Core] 449

9.18.4 Others [NR\_n28\_BW-Core/Perf] 449

9.19 Introduction of NR Band n26 [NR\_n26] 449

9.19.1 UE RF (38.101-1) [NR\_n26] 449

9.19.2 BS RF (38.104) [NR\_n26] 450

9.19.3 RRM (38.133) [NR\_n26] 452

9.19.4 Others [NR\_n26] 453

9.20 Adding 25MHz and 50MHz channel bandwidth in NR band n1 [NR\_n1\_BW2] 453

9.20.1 UE RF (38.101-1) [NR\_n1\_BW2-Core] 453

9.20.2 BS RF (38.104) [NR\_n1\_BW2-Core] 454

9.20.3 RRM (38.133) [NR\_n1\_BW2-Core] 454

9.20.4 Others [NR\_n1\_BW2-Core/Perf] 454

9.21 Addition of asymmetric channel bandwidth for NR band n66 [NR\_n66\_BW] 454

9.21.1 UE RF (38.101-1) [NR\_n66\_BW] 454

9.21.2 BS RF (38.104) [NR\_n66\_BW] 455

9.21.3 RRM (38.133) [NR\_n66\_BW] 455

9.21.4 OtherS [NR\_n66\_BW] 455

9.22 Adding wider channel bandwidth to NR band n38 [NR\_n38\_BW2] 455

9.22.1 UE RF (38.101-1) [NR\_n38\_BW2] 455

9.22.2 BS RF (38.104) [NR\_n38\_BW2] 455

9.22.3 RRM (38.133) [NR\_n38\_BW2] 456

9.22.4 Others [NR\_n38\_BW2] 456

9.23 LTE/NR spectrum sharing in band 48/n48 frequency range [NR\_n48\_LTE\_48\_coex-Core] 456

9.23.1 General (such as work plan, AH minutes) [NR\_n48\_LTE\_48\_coex-Core] 456

9.23.2 Channel raster, sync raster, and UL shift [NR\_n48\_LTE\_48\_coex-Core] 456

9.24 Adding 40 MHz channel bandwidth (15, 30 and 60kHz SCS) in NR band n3 [NR\_n3\_BW] 458

9.24.1 UE RF (38.101-1) [NR\_n3\_BW] 458

9.24.2 BS RF (38.104) [NR\_n3\_BW] 458

9.24.3 RRM (38.133) [NR\_n3\_BW] 459

9.24.4 Others [NR\_n3\_BW] 459

9.25 Adding 50 MHz channel bandwidth (15, 30 and 60kHz SCS) in NR band n65 [NR\_n65\_BW] 459

9.25.1 UE RF (38.101-1) [NR\_n65\_BW] 459

9.25.2 BS RF (38.104) [NR\_n65\_BW] 460

9.25.3 RRM (38.133) [NR\_n65\_BW] 460

9.25.4 Others [NR\_n65\_BW] 460

9.26 Introduction of NR Band n53 [NR\_n53] 460

9.26.1 UE RF (38.101-1) [NR\_n53] 460

9.26.2 BS RF (38.104) [NR\_n53] 460

9.26.3 RRM (38.133) [NR\_n53] 462

9.26.4 Others [NR\_n53] 463

9.27 Closed Rel-16 NR spectrum related WIs [WI code] 463

9.27.1 UE RF [WI code] 463

9.27.2 BS RF [WI code] 465

9.27.3 RRM [WI code] 465

9.27.4 Demodulation and CSI [WI code] 466

10 Rel-16 Study Items for NR 466

10.2 Study on radiated metrics and test methodology for the verification of multi-antenna reception perf. of NR UEs [FS\_NR\_MIMO\_OTA\_test] 466

10.2.1 General [FS\_NR\_MIMO\_OTA\_test] 466

10.2.2 Performance metrics [FS\_NR\_MIMO\_OTA\_test] 466

10.2.3 Testing methodologies [FS\_NR\_MIMO\_OTA\_test] 467

10.2.3.1 FR1 test methodologies [FS\_NR\_MIMO\_OTA\_test] 467

10.2.3.2 FR2 test methodologies [FS\_NR\_MIMO\_OTA\_test] 467

10.2.4 Channel Models [FS\_NR\_MIMO\_OTA\_test] 471

10.3 Study on 7 - 24GHz frequency range [FS\_7to24GHz\_NR] 471

10.3.1 General [FS\_7to24GHz\_NR] 471

10.3.2 Regulatory survey [FS\_7to24GHz\_NR] 472

10.3.3 Boundary frequency and/or boundary conditions [FS\_7to24GHz\_NR] 473

10.3.4 NR system parameters analysis [FS\_7to24GHz\_NR] 473

10.3.5 Deployment scenarios [FS\_7to24GHz\_NR] 473

10.3.6 RF technology aspects [FS\_7to24GHz\_NR] 473

10.3.7 NR UE [FS\_7to24GHz\_NR] 473

10.3.7.1 NR UE architecture [FS\_7to24GHz\_NR] 473

10.3.7.2 TX requirements [FS\_7to24GHz\_NR] 473

10.3.7.3 RX requirements [FS\_7to24GHz\_NR] 473

10.3.8 NR BS [FS\_7to24GHz\_NR] 473

10.3.8.1 BS types, BS requirement sets [FS\_7to24GHz\_NR] 473

10.3.8.2 NR BS architecture [FS\_7to24GHz\_NR] 474

10.3.8.3 TX requirements [FS\_7to24GHz\_NR] 474

10.3.8.4 RX requirements [FS\_7to24GHz\_NR] 474

10.3.9 BS EMC [FS\_7to24GHz\_NR] 475

12 Liaison and output to other groups 475

13 Revision of the Work Plan 476

13.1 Simplification of band combinations in RAN4 specifications 476

13.2 R17 new proposals 476

13.2.1 Basket WI approach for adding existing channel bandwidth on existing NR bands 477

13.2.2 Proposals on adding “brand new” channel bandwidth 477

13.2.3 Basket WIs for LTE CA, EN-DC, NR CA and NR DC 479

13.2.4 Others 479

13.3 Others 483

14 Any other business 484

15 Close of the E-meeting 485

## 1 Opening of the E-meeting

## 2 Approval of the agenda

## 3 Letters / reports from other groups / meetings

## 6 Rel15 New radio access technology [NR\_newRAT]

### 6.1 Requirements for NE-DC (option 4) and NGEN-DC Maintenance [NR\_newRAT-Core]

#### 6.1.1 RF requirements (38.101-3) [NR-newRAT-Core]

### 6.2 NR-NR Dual Connectivity Maintenance [NR\_newRAT-Core]

#### 6.2.1 UE RF requirements for DC combinations for FR1+FR2 (38.101-3) [NR\_newRAT-Core]

### 6.3 System Parameters Maintenance [NR\_newRAT-Core]

#### 6.3.1 Channel bandwidth Maintenance [NR\_newRAT-Core]

#### 6.3.2 Channel Arrangement Maintenance [NR\_newRAT-Core]

### 6.4 SUL and LTE-NR co-existence maintenance [NR\_newRAT-Core]

### 6.5 UE RF requirements maintenance [NR\_newRAT]

#### 6.5.1 Draft CR for editorial errors only [NR\_newRAT-Core]

##### 6.5.1.1 Draft CR for 38.101-1 for editorial errors only [NR\_newRAT-Core]

##### 6.5.1.2 Draft CR for 38.101-2 for editorial errors only [NR\_newRAT-Core]

##### 6.5.1.3 Draft CR for 38.101-3 for editorial errors only [NR\_newRAT-Core]

#### 6.5.2 DC combination including NR carrier and/or NR CA combination maintenance [NR\_newRAT-Core]

##### 6.5.2.1 Maintenance for bands and band combinations for 38.101-1 [NR\_newRAT-Core]

##### 6.5.2.2 Maintenance for combinations for 38.101-2 [NR\_newRAT-Core]

##### 6.5.2.3 Maintenance for combinations for 38.101-3 [NR\_newRAT-Core]

#### 6.5.3 [FR1] Tx and Rx common [NR\_newRAT-Core]

#### 6.5.4 [FR1] Transmitter characteristics [NR\_newRAT-Core]

##### 6.5.4.1 EN-DC power class and UL MIMO clarifications [NR\_newRAT-Core]

#### 6.5.5 [FR1] Receiver characteristics [NR\_newRAT-Core]

##### 6.5.5.1 Out of band blocking exceptions [NR\_newRAT-Core]

##### 6.5.5.2 Other Rx requirements [NR\_newRAT-Core]

#### 6.5.6 [FR2] Common to Tx and Rx [NR\_newRAT-Core]

##### 6.5.6.1 Regulatory Tx/Rx spurious emission limits handling [NR\_newRAT-Core]

#### 6.5.7 [FR2] Transmitter characteristics [NR\_newRAT-Core]

##### 6.5.7.1 Power control [NR\_newRAT-Core]

##### 6.5.7.2 Beam correspondence [NR\_newRAT-Core]

#### 6.5.8 [FR2] Receiver characteristics [NR\_newRAT-Core]

### 6.6 UE EMC [NR\_newRAT-Core]

### 6.7 BS RF [NR\_newRAT-Core]

#### 6.7.1 General and ad-hoc meeting minutes [NR\_newRAT-Core]

**R4-2002366 Email discussion summary for RAN4#94e\_#75\_NR\_NewRAT\_RF\_BS**

*Type: other For: Information   
 Source: Moderator (Ericsson)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002504.**

**R4-2002504 Email discussion summary for RAN4#94e\_#75\_NR\_NewRAT\_RF\_BS**

*Type: other For: Information   
 Source: Moderator (Ericsson)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002466 Way forward on EESS protection for NR BS operation in Band n257 and n258** *Type: other For: Approval   
 Source: Ericsson*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001005 CR to TS 38.104: Regional requirements**

*Type: CR For: Agreement  
 38.104 v15.8.0 CR-0141 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

Add the OTA receiver spurious emissions requirements for BS type 2-O in the regional requirements table.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001006 CR to TS 38.104: Regional requirements**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0142 Cat: A (Rel-16)  
  
 Source: NEC*

**Abstract:**

Add the OTA receiver spurious emissions requirements for BS type 2-O in the regional requirements table.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001007 CR to TS 38.141-2: Regional requirements**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0117 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

Add the OTA receiver spurious emissions requirements for BS type 2-O in the regional requirements table.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001008 CR to TS 38.141-2: Regional requirements**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0118 Cat: A (Rel-16)  
  
 Source: NEC*

**Abstract:**

Add the OTA receiver spurious emissions requirements for BS type 2-O in the regional requirements table.

**Discussion:**

.

**Decision:** The document was **Agreed.**

#### 6.7.2 Transmitter characteristics maintenance [NR\_newRAT-Core]

**R4-2000891 CR for background on Category B unwanted emission requirement for BS type 2-O**

*Type: CR For: Agreement  
 38.817-02 v15.6.0 CR-0062 Cat: F (Rel-15)  
  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002467.**

**R4-2002467 CR for background on Category B unwanted emission requirement for BS type 2-O**

*Type: CR For: Agreement  
 38.817-02 v15.6.0 CR-0062 Cat: F (Rel-15)  
  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001191 Additional unwanted emission requirements for the EESS protection from band n257 and n258**

*Type: other For: Approval  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2001241 CR to TS 37.104 channel spacing R15**

*Type: CR For: Agreement  
 37.104 v15.9.0 CR-0895 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

Delete the 30kHz channel raster and change to 30kHz channel raster granularity.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002469.**

**R4-2002469 CR to TS 37.104 channel spacing R15**

*Type: CR For: Agreement  
 37.104 v15.9.0 CR-0895 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

Delete the 30kHz channel raster and change to 30kHz channel raster granularity.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001242 CR to TS 37.104 channel spacing R16 catA**

*Type: CR For: Agreement  
 37.104 v16.4.0 CR-0896 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001243 CR to TS 37.141 channel spacing R15**

*Type: CR For: Agreement  
 37.141 v15.9.0 CR-0925 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

Delete the 30kHz channel raster and change to 30kHz channel raster granularity.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002470.**

**R4-2002470 CR to TS 37.141 channel spacing R15**

*Type: CR For: Agreement  
 37.141 v15.9.0 CR-0925 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

Delete the 30kHz channel raster and change to 30kHz channel raster granularity.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001244 CR to TS 37.141 channel spacing R16 catA**

*Type: CR For: Agreement  
 37.141 v16.4.0 CR-0926 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001245 CR to TS 38.104 editorial correction R16 catA**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0149 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

1,Corrected the BWGB to BWGB,low and BWBG,High for CA bandwidth

2,Corrected the table of 9.4.3.3-1 as the metric lack of “)”

3,Corrected the reference to EISminsens in table 10.6.2.1-1 and 10.6.2.2-1 to clause 10.2.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001246 CR to TS 38.104 editorial correction**

*Type: CR For: Agreement  
 38.104 v15.8.0 CR-0150 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001247 CR to TS 38.104 spurious emission for FR2 R16catA**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0151 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

The TX spurious emission table 9.7.5.3.2.3-2 has been updated with band n257, n260, n261 requirement.

**Discussion:**

.

**Decision:** The document was **Return to.**.

**R4-2001248 CR to TS 38.104 spurious emission for FR2**

*Type: CR For: Agreement  
 38.104 v15.8.0 CR-0152 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001249 CR to TS 38.817-02 out-of-band blocking boundary**

*Type: CR For: Agreement  
 38.817-02 v15.6.0 CR-0064 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

Added the statement when channel bandwidth is greater than 900MHz.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001250 on WRC-19 FR2 emission requirements**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Abstract:**

In this contribution, we give analysis of WRC-19 decision and the observations and proposals are:

Proposal: To capture the WRC-19 requirement in 3GPP specification.

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2001420 CR to 38.817-02: Measurement uncertainty for FR2 OTA additional spurious emissions requirements**

*Type: CR For: Agreement  
 38.817-02 v15.6.0 CR-0065 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

World Radio Conference (WRC-19) has reached an agreement on limits of unwanted emission power in a specified bandwidth with the Earth Exploration Satellite Service (EESS) band. In this CR the measurement uncertainty analysis is captured into the TR.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001421 CR to TS 38.104: Additional OTA transmitter spurious emissions requirements for EESS protection**

*Type: CR For: Agreement  
 38.104 v15.8.0 CR-0153 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

World Radio Conference (WRC-19) has reached an agreement on limits of unwanted emission power in a specified bandwidth with the Earth Exploration Satellite Service (EESS) band. The emission requirements are introduced in this CR.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001422 CR to TS 38.104: Additional OTA transmitter spurious emissions requirements for EESS protection**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0154 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

World Radio Conference (WRC-19) has reached an agreement on limits of unwanted emission power in a specified bandwidth with the Earth Exploration Satellite Service (EESS) band. The emission requirements are introduced in this CR.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001423 CR to TS 38.141-2: Additional OTA transmitter spurious emissions requirements for EESS protection**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0123 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

World Radio Conference (WRC-19) has reached an agreement on limits of unwanted emission power in a specified bandwidth with the Earth Exploration Satellite Service (EESS) band. The conformance requirements are introduced in this CR.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001424 CR to TS 38.141-2: Additional OTA transmitter spurious emissions requirements for EESS protection**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0124 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

World Radio Conference (WRC-19) has reached an agreement on limits of unwanted emission power in a specified bandwidth with the Earth Exploration Satellite Service (EESS) band. The conformance requirements are introduced in this CR.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001686 EESS protection for NR BS operation in Band n257 and n258**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

The document discusses the WRC'19 outcome for EESS protection and makes proposals for how it can be implemented in BS specificaitons.

**Discussion:**

.

**Decision:** The document was **Noted**

#### 6.7.3 Receiver characteristics maintenance [NR\_newRAT-Core]

**R4-2000659 CR to TR 38.817-02: Clarifications and corrections on receiver dynamic range and other requirements**

*Type: CR For: Agreement  
 38.817-02 v15.6.0 CR-0061 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) Clarify in clause 7.3 that SCS in the equations for interference level and wanted signal refer to different values.

2) Remove the outdated statements in clause 5.1 that indicate the works on the MSR and AAS BS specifications updates for NR are yet to b

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002468.**

**R4-2002468 CR to TR 38.817-02: Clarifications and corrections on receiver dynamic range and other requirements**

*Type: CR For: Agreement  
 38.817-02 v15.6.0 CR-0061 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) Clarify in clause 7.3 that SCS in the equations for interference level and wanted signal refer to different values.

2) Remove the outdated statements in clause 5.1 that indicate the works on the MSR and AAS BS specifications updates for NR are yet to b

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000660 CR to TR 38.104: Corrections on rated carrier output power symbols**

*Type: CR For: Agreement  
 38.104 v15.8.0 CR-0133 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘. Typo are also corrected.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2000661 CR to TR 38.104: Corrections on rated carrier output power symbols**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0134 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘. Typo are also corrected.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001004 CR to TR 38.817-02: Clarification on receiver dynamic range requirement**

*Type: CR For: Agreement  
 38.817-02 v15.6.0 CR-0063 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

Clarify the SCS for interference level formula and wanted signal formula for the receiver dynamic range requirement.

**Discussion:**

.

**Decision:** The document was **Noted.**

### 6.8 BS conformance testing [NR\_newRAT-Perf]

#### 6.8.1 General and ad-hoc meeting minutes [NR\_newRAT-Perf]

**R4-2002367 Email discussion summary for RAN4#94e\_#76\_NR\_NewRAT\_Conformance\_BS\_Part\_1**

*Type: other For: Information   
 Source: Moderator (FUTUREWEI)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002505.**

**R4-2002505 Email discussion summary for RAN4#94e\_#76\_NR\_NewRAT\_Conformance\_BS\_Part\_1**

*Type: other For: Information   
 Source: Moderator (FUTUREWEI)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002368 Email discussion summary for RAN4#94e\_#76\_NR\_NewRAT\_Conformance\_BS\_Part\_2**

*Type: other For: Information   
 Source: Moderator (ZTE)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002506.**

**R4-2002506 Email discussion summary for RAN4#94e\_#76\_NR\_NewRAT\_Conformance\_BS\_Part\_2**

*Type: other For: Information   
 Source: Moderator (ZTE)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002462 WF for using Foffset in BS Conformance specifications**

*Type: other For: Approval   
 Source: Ericssion*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002463 WF for extreme environment testing**

*Type: other For: Approval   
 Source: Huawei*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

#### 6.8.2 BS specifications clean-ups (including conformance testing and core) [NR\_newRAT-Perf/Core]

##### 6.8.2.1 eAAS specifications [NR\_newRAT-Perf/Core]

##### 6.8.2.2 MSR specifications [NR\_newRAT-Perf/Core]

**R4-2000898 CR to TS 37.141: Update on Tx transient period definition**

*Type: CR For: Agreement  
 37.141 v15.9.0 CR-0920 Cat: F (Rel-15)  
  
 Source: CMCC*

**Abstract:**

The same illustration figure of the transient period of NR is added in accordance with TS 37.104.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2000899 CR to TS 37.141: Update on Tx transient period definition**

*Type: CR For: Agreement  
 37.141 v16.4.0 CR-0921 Cat: A (Rel-16)  
  
 Source: CMCC*

**Abstract:**

The same illustration figure of the transient period of NR is added in accordance with TS 37.104.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001200 TS 37.141 - Issues with TC applicabilities for CS17 and CS18**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution highlights some issues with TC applicabilities for CS17 and CS18.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001201 CR to TS 37.141 Rel-15 - Issues with TC applicabilities CS17**

*Type: CR For: Agreement  
 37.141 v15.9.0 CR-0923 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

This CR is fixing the issues with TC applicabilities for CS17

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001202 CR to TS 37.141 Rel-16 - Issues with TC applicabilities CS17-CS18**

*Type: CR For: Agreement  
 37.141 v16.4.0 CR-0924 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This CR is fixing the issues with TC applicabilities for CS17 and CS18

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001685 CR to 38.141-2 on Correction of Receiver Spurious Emissions**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0131 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The CR corrects a CR implementation error in TS 38.141-2 (Rel-15) for the new BS type 1-O Receiver Spurious emission limits.

**Discussion:**

.

**Decision:** The document was **Agreed.**

##### 6.8.2.3 NR conformance testing specifications [NR\_newRAT-Perf]

**R4-2000662 CR to TR 38.141-1: Corrections on rated carrier output power symbols**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0089 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002459.**

**R4-2002459 CR to TR 38.141-1: Corrections on rated carrier output power symbols**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0089 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000663 CR to TR 38.141-1: Corrections on rated carrier output power symbols**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0090 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2000664 CR to TR 38.141-2: Corrections on rated carrier output power symbols and clarifications on procedure for reverberation chamber**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0108 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘.

2) Clarify and align the wordings in the procedure for reverberation chamber in all clauses. Typo are also corrected.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2000665 CR to TR 38.141-2: Corrections on rated carrier output power symbols and clarifications on procedure for reverberation chamber**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0109 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘.

2) Clarify and align the wordings in the procedure for reverberation chamber in all clauses. Typo are also corrected.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2000675 CR to TR 38.141-1: Corrections on rated carrier output power symbols**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0094 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘.

**Discussion:**

.

**Decision:** The document was **withdrawn**.

**R4-2000676 CR to TR 38.141-1: Corrections on rated carrier output power symbols**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0095 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘.

**Discussion:**

.

**Decision:** The document was **withdrawn**.

**R4-2000677 CR to TR 38.141-2: Corrections on rated carrier output power symbols**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0112 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘. Typo are also corrected.

**Discussion:**

.

**Decision:** The document was **withdrawn**.

**R4-2000678 CR to TR 38.141-2: Corrections on rated carrier output power symbols**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0113 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correct the symbol ‘PRated‘ to the defined symbol ‘Prated‘. Typo are also corrected.

**Discussion:**

.

**Decision:** The document was **withdrawn**.

**R4-2001681 CR to 38.141-1 Corrections to test models, TPDR and modulation quality tests sections**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0104 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001682 CR to 38.141-1 Corrections to test models, TPDR and modulation quality tests sections**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0105 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001683 CR to 38.141-2 updates for reference to annex F and OFDM symbol TX power**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0129 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002460.**

**R4-2002460 CR to 38.141-2 updates for reference to annex F and OFDM symbol TX power**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0129 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001684 CR to 38.141-2 updates for reference to annex F and OFDM symbol TX power**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0130 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001907 Corrections related to Foffset across specifications**

*Type: other For: Agreement  
 Source: Ericsson*

**Abstract:**

The different statements related to Foffset and Foffset,RAT are not aligned across the specs. In some spec definitions are missing. Proposal to align

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2001908 Alignment of extreme condition testing for BS output power across specifications**

*Type: other For: Agreement  
 Source: Ericsson*

**Abstract:**

There is a different approach to extreme condition testing for BS output power across the specifications. Alignment is necessary. Two proposals are presented for agreement

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001909 TS 38.141-2: Editorial corrections**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0138 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

There is a mistake in the table with interfering signals for rx intermod testing. This mistake is only present in 38.141-2 rel 16

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002461.**

**R4-2002461 TS 38.141-2: Editorial corrections**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0138 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

There is a mistake in the table with interfering signals for rx intermod testing. This mistake is only present in 38.141-2 rel 16

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001910 TS 38.141-1: Correction on testing under extreme conditions for BS output powerr**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0115 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The tdoc proposes correction of the description of testing under extreme conditions.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001911 TS 38.141-1: Correction on testing under extreme conditions for BS output powerr**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0116 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The tdoc proposes correction of the description of testing under extreme conditions.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001912 TS 38.141-2: Correction on testing under extreme conditions for BS radiated transmit power**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0139 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The tdoc proposes correction of the description of testing under extreme conditions.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001913 TS 38.141-2: Correction on testing under extreme conditions for BS radiated transmit power**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0140 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The tdoc proposes correction of the description of testing under extreme conditions.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001828 CR to TS 38.141-1: Corrections for the extreme environment testing , Rel-15**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0113 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

Clarification of text ambiguity on the extreme test conditions applicability in TS 38.141-1.

**Session Chair: Moved from Agenda 6.8.4**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001830 CR to TS 38.141-1: Corrections for the extreme environment testing , Rel-16**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0114 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Clarification of text ambiguity on the extreme test conditions applicability in TS 38.141-1.

**Session Chair: Moved from Agenda 6.8.4**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001829 CR to TS 38.141-2: Corrections for the extreme environment testing , Rel-15**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0136 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

Clarification of text ambiguity on the extreme test conditions applicability in TS 38.141-2.

**Session Chair: Moved from agenda 6.8.5**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001831 CR to TS 38.141-2: Corrections for the extreme environment testing , Rel-16**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0137 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Clarification of text ambiguity on the extreme test conditions applicability in TS 38.141-2.

**Session Chair: Moved from agenda 6.8.5**

**Discussion:**

.

**Decision:** The document was **Return to.**

#### 6.8.3 Common for 38.141-1 and 38.141-2 [NR\_newRAT-Perf]

##### 6.8.3.1 Test configurations [NR\_newRAT-Perf]

**R4-2000666 CR to TR 38.141-1: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0091 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) For NRTC1 power allocation, set the power spectral density of each carrier to the same level only be used for testing BS supporting CA only operation (D.15), and set the power of each carrier to the same level for testing BS supporting multiple carrier

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002453.**

**R4-2002453 CR to TR 38.141-1: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0091 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) For NRTC1 power allocation, set the power spectral density of each carrier to the same level only be used for testing BS supporting CA only operation (D.15), and set the power of each carrier to the same level for testing BS supporting multiple carrier

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000667 CR to TR 38.141-1: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0092 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) For NRTC1 power allocation, set the power spectral density of each carrier to the same level only be used for testing BS supporting CA only operation (D.15), and set the power of each carrier to the same level for testing BS supporting multiple carrier

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000668 CR to TR 38.141-2: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0110 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) For power allocation for all test configurations except NRTC2, set the power of each carrier to the same level, and use rated transmitter TRP,Prated,t,TRP (D.38) instead of rated carrier TRP,PRated,c,TRP (D.37) for the total radiated power.

2) For NRTC

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000669 CR to TR 38.141-2: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0111 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) For power allocation for all test configurations except NRTC2, set the power of each carrier to the same level, and use rated transmitter TRP,Prated,t,TRP (D.38) instead of rated carrier TRP,PRated,c,TRP (D.37) for the total radiated power.

2) For NRTC

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000679 CR to TR 38.141-1: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0096 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) For NRTC1 power allocation, set the power spectral density of each carrier to the same level only be used for testing BS supporting CA only operation (D.15), and set the power of each carrier to the same level for testing BS supporting multiple carrier

**Discussion:**

.

**Decision:** The document was **withdrawn**.

**R4-2000680 CR to TR 38.141-1: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0097 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) For NRTC1 power allocation, set the power spectral density of each carrier to the same level only be used for testing BS supporting CA only operation (D.15), and set the power of each carrier to the same level for testing BS supporting multiple carrier

**Discussion:**

.

**Decision:** The document was **withdrawn**.

**R4-2000681 CR to TR 38.141-2: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0114 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) For power allocation for all test configurations except NRTC2, set the power of each carrier to the same level, and use rated transmitter TRP,Prated,t,TRP (D.38) instead of rated carrier TRP,PRated,c,TRP (D.37) for the total radiated power.

2) For NRTC

**Discussion:**

.

**Decision:** The document was **withdrawn**.

**R4-2000682 CR to TR 38.141-2: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0115 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) For power allocation for all test configurations except NRTC2, set the power of each carrier to the same level, and use rated transmitter TRP,Prated,t,TRP (D.38) instead of rated carrier TRP,PRated,c,TRP (D.37) for the total radiated power.

2) For NRTC

**Discussion:**

.

**Decision:** The document was **withdrawn**.

##### 6.8.3.2 Test cases [NR\_newRAT-Perf]

##### 6.8.3.3 Test models [NR\_newRAT-Perf]

**R4-2001171 Discussion on random data content of physical channels for NR test models**

*Type: other For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Withdrawn**.

**R4-2001676 Discussion on data content for NR test models**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001677 CR to 38.141-1 updates for OSTP calculations**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0102 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002456.**

**R4-2002456 CR to 38.141-1 updates for OSTP calculations**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0102 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001678 CR to 38.141-1 updates for OSTP calculations**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0103 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001679 CR to 38.141-2 updates for OSTP calculations**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0127 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002457.**

**R4-2002457 CR to 38.141-2 updates for OSTP calculations**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0127 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001680 CR to 38.141-2 updates for OSTP calculations**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0128 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001722 Random data content of physical channels for NR test modes**

*Type: other For: Discussion  
 38.141-1 v..  
 Source: Ericsson*

**Abstract:**

In this contribution, further analysis of the 5 topic points agreed in [1] are exhibited.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001723 CR to TS 38.141-1: Random data content for NR BS Test Models**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0106 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Update data content of ‘all zero data’ to random data

**Discussion:**

.

**Decision:** The document was **Revsied in R4-2002454.**

**R4-2002454 CR to TS 38.141-1: Random data content for NR BS Test Models**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0106 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Update data content of ‘all zero data’ to random data

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001724 CR to TS 38.141-1: Random data content for NR BS Test Models**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0107 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

corresponding Cat A CR

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001725 CR to TS 38.141-2: Random data content for NR BS Test Models**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0133 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Update data content of ‘all zero data’ to random data

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002455.**

**R4-2002455 CR to TS 38.141-2: Random data content for NR BS Test Models**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0133 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Update data content of ‘all zero data’ to random data

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001726 CR to TS 38.141-2: Random data content for NR BS Test Models**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0108 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

corresponding Cat A CR

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001730 Scrambling and initialization for test models**

*Type: other For: Approval  
 Source: Futurewei*

**Abstract:**

In RAN4#93, discussions about randomization of data were captured in WF. At issue: the scrambling seed for the shared channel in LTE is a function of the subframe number while in NR, the scrambling seed is independent of the slot number. As a result of th

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001805 Study on NR Test Model signal characteristic by data content choice**

*Type: other For: Discussion  
 Source: Keysight Technologies UK Ltd*

**Discussion:**

.

**Decision:** The document was **Noted**.

#### 6.8.4 Conducted conformance testing (38.141-1) [NR\_newRAT-Perf]

**R4-2001824 CR to TS 38.141-1: OBUE Cat. B Option 2 correction for n7, Rel-15**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0111 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

Consideration of the ECC regulations for the AAS in 2.6GHz bands in Europe to accout for n7 in OBUE Cat. B Option 2 emission limits.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002458.**

**R4-2002458 CR to TS 38.141-1: OBUE Cat. B Option 2 correction for n7, Rel-15**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0111 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

Consideration of the ECC regulations for the AAS in 2.6GHz bands in Europe to accout for n7 in OBUE Cat. B Option 2 emission limits.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001825 CR to TS 38.141-1: OBUE Cat. B Option 2 correction for n7, Rel-16**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0112 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Consideration of the ECC regulations for the AAS in 2.6GHz bands in Europe to accout for n7 in OBUE Cat. B Option 2 emission limits.

**Session Chair: Need to change CR category from A to F, check with MCC**

**Discussion:**

.

**Decision:** The document was **Return to.**

##### 6.8.4.1 MU and TT analysis [NR\_newRAT-Perf]

##### 6.8.4.2 BS Demodulation conformance testing (38.141-1) [NR\_newRAT-Perf]

###### 6.8.4.2.1 Test system related MU and TT [NR\_newRAT-Perf]

#### 6.8.5 Radiated conformance testing (38.141-2) [NR\_newRAT-Perf]

**R4-2001826 CR to TS 38.141-2: OBUE Cat. B Option 2 correction for n7 and n38, Rel-15**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0134 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

Consideration of the ECC regulations for the AAS in 2.6GHz bands in Europe to accout for n7 and n38 in OBUE Cat. B Option 2 emission limits.

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001827 CR to TS 38.141-2: OBUE Cat. B Option 2 correction for n7 and n38, Rel-16**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0135 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Consideration of the ECC regulations for the AAS in 2.6GHz bands in Europe to accout for n7 and n38 in OBUE Cat. B Option 2 emission limits.

**Discussion:**

.

**Decision:** The document was **Agreed.**

##### 6.8.5.1 Common to FR1 and FR2 radiated conformance testing [NR\_newRAT-Perf]

**R4-2002042 Simulation analysis of correlation between wanted and in-band unwanted emissions**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this document, we carry out a comprehensive analysis using the simulation model (including the Matlab code) provided in [1] to study if the proposed approach [2][3] would fail to identify uncorrelated cases which have smaller directivity than the corre

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 6.8.5.2 FR1 radiated conformance testing [NR\_newRAT-Perf]

###### 6.8.5.2.1 NR specific MU and TT analysis [NR\_newRAT-Perf]

##### 6.8.5.3 FR2 radiated conformance testing [NR\_newRAT-Perf]

###### 6.8.5.3.1 NR specific MU and TT analysis [NR\_newRAT-Perf]

##### 6.8.5.4 BS Demodulation conformance testing (38.141-2) [NR\_newRAT-Perf]

### 6.9 BS EMC [NR\_newRAT-Core]

**R4-2002369 Email discussion summary for RAN4#94e\_#78\_NR\_NewRAT\_EMC**

*Type: Discussion For: Information   
 Source: Moderator (ZTE)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002507.**

**R4-2002507 Email discussion summary for RAN4#94e\_#78\_NR\_NewRAT\_EMC**

*Type: Discussion For: Information   
 Source: Moderator (ZTE)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

#### 6.9.1 Editor input for BS EMC spec (38.113) [NR\_newRAT-Core]

#### 6.9.2 Core requirements [NR\_newRAT-Core]

##### 6.9.2.1 Emission requirements [NR\_newRAT-Core]

**R4-2001905 EMC for MSR and AAS BS: Proposal for reduction of test configurations - cont.**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

Proposal for reduction of the number of test configurations for emissions and rx immunity, given the fact that multi-RAT functionality has little influence on EMC unwanted emissions

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 6.9.2.2 Immunity requirements [NR\_newRAT-Core]

**R4-2001906 EMC RX immunity: Use of reverberation chamber**

*Type: other For: Agreement  
 Source: Ericsson*

**Abstract:**

Proposal for including reverberation chamber method for rx imunity testing

**Discussion:**

.

**Decision:** The document was **Noted**.

#### 6.9.3 Performance requirements [NR\_newRAT-Perf]

**R4-2001251 CR to TS 37.114 Add the transmitter exclusion band for MSR BS(subclause 4.4.1)**

*Type: CR For: Agreement  
 37.113 v15.8.0 CR-0108 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

Transmitter exclusion band has been added.

**Discussion:**

.

**Decision:** The document was **Withdrawn**.

**R4-2001252 CR to TS 38.113 Add the transmitter exclusion band for NR BS(subclause 4.4.1)**

*Type: CR For: Agreement  
 38.113 v15.8.0 CR-0017 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

Transmitter exclusion band has been added.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002450.**

**R4-2002450 CR to TS 38.113 Add the transmitter exclusion band for NR BS(subclause 4.4.1)**

*Type: CR For: Agreement  
 38.113 v15.8.0 CR-0017 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

Transmitter exclusion band has been added.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001717 CR to TS 37.114 Add the transmitter exclusion band for MSR BS(subclause 4.1)**

*Type: CR For: Agreement  
 37.114 v15.7.0 CR-0095 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

dded transmitter exclusion band for OTA AAS BS.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002451**

**R4-2002451 CR to TS 37.114 Add the transmitter exclusion band for MSR BS(subclause 4.1)**

*Type: CR For: Agreement  
 37.114 v15.7.0 CR-0095 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

dded transmitter exclusion band for OTA AAS BS.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001832 Proposal of using direct field strength approach to measure unwanted radiated emissions from the enclosure port of BS**

*Type: other For: Agreement  
 Source: Huawei*

**Abstract:**

The direct field strength approach is proposed to measure the EMC radiated emissions from the enclosure port of BS equipped with the antenna connectors / TAB connectors, as an alternative method to the substitution approach.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001833 CR to TS 38.113: direct field strength measurements for the EMC RE, Rel-15**

*Type: CR For: Agreement  
 38.113 v15.8.0 CR-0018 Cat: B (Rel-15)  
  
 Source: Huawei*

**Abstract:**

CR for the direct field strength measurement method to measure the EMC radiated emissions from the enclosure port of BS equipped with the antenna connectors / TAB connectors, as an alternative method to the substitution approach.

**Discussion:**

.

**Decision:** The document was **Return to.**

### 6.10 RRM core maintenance (38.133/36.133) [NR\_newRAT-Core]

#### 6.10.1 General [NR\_newRAT-Core]

#### 6.10.2 Editorial CRs [NR\_newRAT-Core]

#### 6.10.3 UE measurement capability (38.133/36.133) [NR\_newRAT-Core]

#### 6.10.4 RRM measurement and measurement gap (38.133/36.133) [NR\_newRAT-Core]

#### 6.10.5 Idle state and inactive state mobility for SA and NSA (38.133/36.133) [NR\_newRAT-Core]

#### 6.10.6 Connected state mobility (38.133/36.133) [NR\_newRAT-Core]

#### 6.10.7 Timing (38.133/36.133) [NR\_newRAT-Core]

##### 6.10.7.1 One shot timing adjustment requirements [NR\_newRAT-Core]

##### 6.10.7.2 MTTD and MRTD requirements [NR\_newRAT-Core]

##### 6.10.7.3 Other timing requirements [NR\_newRAT-Core]

#### 6.10.8 Signaling characteristics (38.133/36.133) [NR\_newRAT-Core]

##### 6.10.8.1 RLM [NR\_newRAT-Core]

##### 6.10.8.2 SCell activation delay requirements [NR\_newRAT-Core]

##### 6.10.8.3 PSCell addition/release requirements (36.133) [NR\_newRAT-Core]

##### 6.10.8.4 TCI state switching requirements [NR\_newRAT-Core]

##### 6.10.8.5 BWP switching requirements [NR\_newRAT-Core]

##### 6.10.8.6 Other requirements [NR\_newRAT-Core]

#### 6.10.9 Beam management based on SSB and/or CSI-RS (38.133) [NR\_newRAT-Core]

#### 6.10.10 Requirements for NE-DC (option 4) and NGEN-DC [NR\_newRAT-Core]

#### 6.10.11 Requirements for NR-NR Dual Connectivity [NR\_newRAT-Core]

#### 6.10.12 Other requirements [NR\_newRAT-Core]

### 6.11 RRM perf maintenance (38.133/36.133) [NR\_newRAT-Perf]

#### 6.11.1 General [NR\_newRAT-Perf]

#### 6.11.2 Editorial CRs [NR\_newRAT-Perf]

#### 6.11.3 RRM test cases [NR\_newRAT-Perf]

##### 6.11.3.1 RRC\_IDLE state mobility test cases [NR\_newRAT-Perf]

###### 6.11.3.1.1 SA idle/inactive cell reselection [NR\_newRAT-Perf]

##### 6.11.3.2 RRC\_CONNECTED state mobility test cases [NR\_newRAT-Perf]

###### 6.11.3.2.1 NR-NR Handovers [NR\_newRAT-Perf]

###### 6.11.3.2.2 NR handovers to other RATs [NR\_newRAT-Perf]

###### 6.11.3.2.3 RRC Re-establishment [NR\_newRAT-Perf]

###### 6.11.3.2.4 Random access [NR\_newRAT-Perf]

###### 6.11.3.2.5 RRC Release with redirection to NR/E-UTRAN [NR\_newRAT-Perf]

##### 6.11.3.3 Timing test cases [NR\_newRAT-Perf]

###### 6.11.3.3.1 EN-DC timing accuracy and adjustment [NR\_newRAT-Perf]

###### 6.11.3.3.2 SA timing accuracy and adjustment [NR\_newRAT-Perf]

###### 6.11.3.3.3 EN-DC TA accuracy [NR\_newRAT-Perf]

###### 6.11.3.3.4 SA TA accuracy [NR\_newRAT-Perf]

##### 6.11.3.4 RLM test cases [NR\_newRAT-Perf]

###### 6.11.3.4.1 EN-DC SSB RLM for PSCell IS and OOS [NR\_newRAT-Perf]

###### 6.11.3.4.2 SA SSB RLM for PCell IS and OOS [NR\_newRAT-Perf]

###### 6.11.3.4.3 EN-DC CSI RLM for PSCell [NR\_newRAT-Perf]

###### 6.11.3.4.4 SA CSI RLM for PCell [NR\_newRAT-Perf]

###### 6.11.3.4.5 SSB RLM scheduling restriction &impact on mobility [NR\_newRAT-Perf]

##### 6.11.3.5 Interruption test cases [NR\_newRAT-Perf]

###### 6.11.3.5.1 EN-DC interruption due to DRX transition [NR\_newRAT-Perf]

###### 6.11.3.5.2 EN-DC interruption due to deactivated SCell operations [NR\_newRAT-Perf]

###### 6.11.3.5.3 SA interruptions at SCell addition/release/(de-)activation [NR\_newRAT-Perf]

###### 6.11.3.5.4 SA interruptions due to measurement on deactivated SCell [NR\_newRAT-Perf]

##### 6.11.3.6 SCell activation and de-activation test cases [NR\_newRAT-Perf]

###### 6.11.3.6.1 EN-DC SCell activation/deactivation delay [NR\_newRAT-Perf]

###### 6.11.3.6.2 SA SCell activation/deactivation [NR\_newRAT-Perf]

##### 6.11.3.7 UE UL carrier RRC reconfiguration delay test cases [NR\_newRAT-Perf]

###### 6.11.3.8.1 EN-DC beam failure detection and recovery [NR\_newRAT-Perf]

###### 6.11.3.8.2 SA beam failure detection and recovery [NR\_newRAT-Perf]

###### 6.11.3.8.3 EN-DC/SA scheduling restriction for BFD [NR\_newRAT-Perf]

##### 6.11.3.9 Active BWP switching test cases [NR\_newRAT-Perf]

##### 6.11.3.10 Measurement procedure test cases [NR\_newRAT-Perf]

###### 6.11.3.10.3 Inter-frequency measurement with LTE PCell [NR\_newRAT-Perf]

###### 6.11.3.10.4 EN-DC NR inter-frequency measurement [NR\_newRAT-Perf]

###### 6.11.3.10.5 SA NR inter-frequency measurement [NR\_newRAT-Perf]

###### 6.11.3.10.6 EN-DC SFTD measurement delay [NR\_newRAT-Perf]

###### 6.11.3.10.7 Inter-RAT E-UTRA measurement (with NR PCell) [NR\_newRAT-Perf]

###### 6.11.3.10.8 EN-DC L1-RSRP measurement delay [NR\_newRAT-Perf]

###### 6.11.3.10.9 SA L1-RSRP measurement delay [NR\_newRAT-Perf]

##### 6.11.3.11 Measurement performance test cases [NR\_newRAT-Perf]

###### 6.11.3.11.1 Intra-frequency RSRP accuracy for FR1 and FR2 [NR\_newRAT-Perf]

###### 6.11.3.11.2 Inter-frequency RSRP accuracy for FR1 and FR2 [NR\_newRAT-Perf]

###### 6.11.3.11.3 Intra-frequency RSRQ accuracy for FR1 and FR2 [NR\_newRAT-Perf]

###### 6.11.3.11.4 Inter-frequency RSRQ accuracy for FR1 and FR2 [NR\_newRAT-Perf]

###### 6.11.3.11.5 SA/EN-DC SS-SINR measurement accuracies [NR\_newRAT-Perf]

###### 6.11.3.11.6 Beam management: L1-RSRP reporting [NR\_newRAT-Perf]

###### 6.11.3.11.7 EN-DC SFTD measurement accuracy [NR\_newRAT-Perf]

###### 6.11.3.11.8 SA NR inter-RAT E-UTRAN RSRP accuracy [NR\_newRAT-Perf]

###### 6.11.3.11.9 SA NR inter-RAT E-UTRAN RSRQ accuracy [NR\_newRAT-Perf]

###### 6.11.3.11.10 SA NR inter-RAT E-UTRAN SINR accuracy [NR\_newRAT-Perf]

##### 6.11.3.12 NR PSCell addition and release in EN-DC [NR\_newRAT-Perf]

##### 6.11.3.13 TCI switching delay [NR\_newRAT-Perf]

##### 6.11.3.14 E-UTRAN standalone test for NR [NR\_newRAT-Perf]

###### 6.11.3.14.1 E-UTRAN cell reselection to NR target cell [NR\_newRAT-Perf]

###### 6.11.3.14.2 E-UTRAN inter-RAT NR cell search and measurement delay [NR\_newRAT-Perf]

###### 6.11.3.14.3 E-UTRAN inter-RAT handover [NR\_newRAT-Perf]

###### 6.11.3.14.4 E-UTRAN inter-RAT NR measurement accuracy [NR\_newRAT-Perf]

### 6.12 Demodulation and CSI maintenance [NR\_newRAT-Perf]

**R4-2002380 Email discussion summary for RAN4#94e\_#89\_NR\_NewRAT\_Demod**

*Type: other For: Information  
 Source: Moderator (Intel)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002518.**

**R4-2002518 Email discussion summary for RAN4#94e\_#89\_NR\_NewRAT\_Demod**

*Type: other For: Information  
 Source: Moderator (Intel)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002445 Way forward on HARQ timing for NR BS demodulation conformance testing**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

#### 6.12.1 UE demodulation and CSI (38.101-4) [NR\_newRAT-Perf]

**R4-2000076 Clarification of Random PMI when testing**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0031 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

The use of random PMI when testing PDSCH demodulation and PMI requirements is not clear enough to implement the test cases as intended.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002446.**

**R4-2002446 Clarification of Random PMI when testing**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0031 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

The use of random PMI when testing PDSCH demodulation and PMI requirements is not clear enough to implement the test cases as intended.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000081 Correction to 5.3.3 4Rx PDCCH Demod Requirements**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0032 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

For 4Rx PDCCH demodulation:

a) Table 5.3.3.1.2-1 Test 3 Aggregation level is contradicting with that specified by R.PDCCH 1-1.3 FDD. Change from 4 to 8, to align with Reference channel.

b) Table 5.3.3.2-1: Interleaver size is not defined for 2Tx case. Spe

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002447.**

**R4-2002447 Correction to 5.3.3 4Rx PDCCH Demod Requirements**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0032 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

For 4Rx PDCCH demodulation:

a) Table 5.3.3.1.2-1 Test 3 Aggregation level is contradicting with that specified by R.PDCCH 1-1.3 FDD. Change from 4 to 8, to align with Reference channel.

b) Table 5.3.3.2-1: Interleaver size is not defined for 2Tx case. Spe

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000353 CR on corrections for FR1 PDSCH demodulation performance tests**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0033 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002448**.

**R4-2002448 CR on corrections for FR1 PDSCH demodulation performance tests**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0033 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000358 CR to TS 38.101-4: Editorial corrections (R15)**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0034 Cat: F (Rel-15)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002449.**

**R4-2002449 CR to TS 38.101-4: Editorial corrections (R15)**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0034 Cat: F (Rel-15)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000564 On signal power ratios and mapping for UE requirements**

*Type: other For: Approval  
 Source: Rohde & Schwarz*

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2000565 Update of DL physical channels**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0036 Cat: F (Rel-15)  
  
 Source: Rohde & Schwarz*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001002 CR on number of NZP CSI-RS ports for RI reporting test in a TDD 4Rx test case**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0037 Cat: F (Rel-15)  
  
 Source: MediaTek inc.*

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001450 CR: Updates to NR PDSCH test parameters (Rel-15)**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0038 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Corrected the number of HARQ process for TDD UL-DL pattern DS1S2U is 10 for 4Rx cases

**Discussion:**

.

**Decision:** The document was **Agreed.**

#### 6.12.2 BS demodulation (38.104) [NR\_newRAT-Perf]

**R4-2000295 CR on correction of NR UCI on PUSCH conducted performance requirements for TS 38.141-1**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0084 Cat: D (Rel-15)  
  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2000296 CR on correction of NR UCI on PUSCH conducted performance requirements for TS 38.141-1**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0085 Cat: A (Rel-16)  
  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2000297 CR on correction of NR UCI on PUSCH radiated performance requirements for TS 38.141-2**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0103 Cat: D (Rel-15)  
  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2000298 CR on correction of NR UCI on PUSCH radiated performance requirements for TS 38.141-2**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0104 Cat: A (Rel-16)  
  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Agreed.**

**R4-2001172 IntraSlot frequency hopping applicability in the one OFDM symbol test case**

*Type: CR For: Agreement  
 38.104 v15.8.0 CR-0144 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Corrects erroneous assignment of hopping to single slot

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001173 IntraSlot frequency hopping applicability in the one OFDM symbol test case**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0145 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Corrects erroneous assignment of hopping to single slot

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001174 IntraSlot frequency hopping applicability in the one OFDM symbol test case**

*Type: CR For: Agreement  
 38.141-1 v15.4.0 CR-0099 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Corrects erroneous assignment of hopping to single slot

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001175 IntraSlot frequency hopping applicability in the one OFDM symbol test case**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0100 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Corrects erroneous assignment of hopping to single slot

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001176 IntraSlot frequency hopping applicability in the one OFDM symbol test case**

*Type: CR For: Agreement  
 38.141-2 v15.4.0 CR-0119 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Corrects erroneous assignment of hopping to single slot

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001177 IntraSlot frequency hopping applicability in the one OFDM symbol test case**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0120 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Corrects erroneous assignment of hopping to single slot

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001451 Discussion on HARQ timing for NR BS performance requirements**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

This contribution share our view about the NR PUSCH testing considering NR UL is asynchronous that is different from LTE

**Discussion:**

.

**Decision:** The document was **Noted.**

### 6.13 Maintenance of the Positioning specs (36.171, 37.171 and 38.171) [NR\_newRAT-Perf or TEI]

## 7 Rel-16 Work Items for LTE

### 7.1 LTE intra-band Carrier Aggregation for x CC DL/y CC UL including contiguous and non-contiguous spectrum (x>=y) [LTE\_CA\_R16\_intra]

#### 7.1.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_intra-Core/Perf]

### 7.2 LTE inter-band Carrier Aggregation for 2 bands DL with 1 band UL [LTE\_CA\_R16\_2BDL\_1BUL]

#### 7.2.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_2BDL\_1BUL-Core/Perf]

#### 7.2.2 UE RF with harmonic, close proximity and isolation issues [LTE\_CA\_R16\_2BDL\_1BUL-Core]

#### 7.2.3 UE RF without specific issues [LTE\_CA\_R16\_2BDL\_1BUL-Core]

### 7.3 LTE inter-band Carrier Aggregation for 3 bands DL with 1 band UL [LTE\_CA\_R16\_3BDL\_1BUL]

#### 7.3.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_3BDL\_1BUL-Core/Perf]

#### 7.3.2 UE RF with harmonic, close proximity and isolation issues [LTE\_CA\_R16\_3BDL\_1BUL-Core]

#### 7.3.3 UE RF without specific issues [LTE\_CA\_R16\_3BDL\_1BUL-Core]

### 7.4 LTE inter-band Carrier Aggregation for x bands DL (x=4, 5) with 1 band UL [LTE\_CA\_R16\_xBDL\_1BUL]

#### 7.4.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_xBDL\_1BUL-Core]

#### 7.4.2 UE RF with 4 LTE bands CA [LTE\_CA\_R16\_xBDL\_1BUL-Core]

#### 7.4.3 UE RF with 5 LTE bands CA [LTE\_CA\_R16\_xBDL\_1BUL-Core]

### 7.5 LTE inter-band Carrier Aggregation for 2 bands DL with 2 band UL [LTE\_CA\_R16\_2BDL\_2BUL]

#### 7.5.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_2BDL\_2BUL-Core]

#### 7.5.2 UE RF with harmonic, close proximity and isolation issues [LTE\_CA\_R16\_2BDL\_2BUL-Core]

#### 7.5.3 UE RF without specific issues [LTE\_CA\_R16\_2BDL\_2BUL-Core]

### 7.6 LTE inter-band Carrier Aggregation for x bands DL (x= 3, 4, 5) with 2 band UL [LTE\_CA\_R16\_xBDL\_2BUL]

#### 7.6.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R16\_xBDL\_2BUL-Core]

#### 7.6.2 UE RF with MSD [LTE\_CA\_R16\_xBDL\_2BUL-Core]

#### 7.6.3 UE RF without MSD [LTE\_CA\_R16\_xBDL\_2BUL-Core]

### 7.7 RRM for LTE CA basket WI-s [LTE\_CA\_R16\_xxxx]

#### 7.7.1 RRM Core (36.133) [LTE\_CA\_R16\_xxxx-Core]

#### 7.7.2 RRM Perf (36.133) [LTE\_CA\_R16\_xxxx-Perf]

### 7.8 Additional LTE bands for UE category M1 and/or NB1 in Rel-16 [LTE\_bands\_R16\_M1\_NB1]

#### 7.8.1 RF [LTE\_bands\_R16\_M1\_NB1-Core]

#### 7.8.2 Others [LTE\_bands\_R16\_M1\_NB1-Perf]

### 7.9 Additional LTE bands for UE category M2 and/or NB2 in in Rel-16 [LTE\_bands\_R16\_M2\_NB2]

#### 7.9.1 RF [LTE\_bands\_R16\_M2\_NB2-Core]

#### 7.9.2 Others [LTE\_bands\_R15\_M2\_NB2-Perf]

### 7.10 Additional MTC enhancements for LTE [LTE\_eMTC5]

#### 7.10.1 General [LTE\_eMTC5]

#### 7.10.2 Coexistence with NR [LTE\_eMTC5]

#### 7.10.3 RRM core requirements (36.133) [LTE\_eMTC5-Core]

##### 7.10.3.1 DL quality report in MSG3 and connected mode [LTE\_eMTC5-Core]

##### 7.10.3.2 WUS [LTE\_eMTC5-Core]

##### 7.10.3.3 MPDCCH performance improvement [LTE\_eMTC5-Core]

##### 7.10.3.4 PUR [LTE\_eMTC5-Core]

##### 7.10.3.5 Mobility enhancement [LTE\_eMTC5-Core]

##### 7.10.3.6 Others [LTE\_eMTC5-Core]

#### 7.10.4 Demodulation and CSI requirements (36.101/36.104) [LTE\_eMTC5-Perf]

**R4-2002376 Email discussion summary for RAN4#94e\_#85\_LTE\_eMTC5\_Demod**

*Type: other For: Information  
 Source: Moderator (Ericsson)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002514.**

**R4-2002514 Email discussion summary for RAN4#94e\_#85\_LTE\_eMTC5\_Demod**

*Type: other For: Information  
 Source: Moderator (Ericsson)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002426 Way forward on UE/BS demodulation performance for additional MTC enhancements for LTE**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000311 View on BS demodulation requirement for LTE additional enhancement for eMTC**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001351 Open issues on UE/BS demodulation requirements for Rel-16 eMTC**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the open issues for UE/BS demodulation requirements for Rel-16 eMTC.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001352 Discussion on UE demodulation and CSI reporting requirements for Rel-16 BL/CE UE**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the test setup of improved MPDCCH demodulation requirements and CSI-RS based PMI reporting requirements.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001479 Discussion on BS performance requirements for additional MTC enhancements for LTE**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discuss and give our proposals on open issues

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001480 Discussion on UE performance requirements for additional MTC enhancements for LTE**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discuss and give our proposals on open issues

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001481 Discussion on initial simulation assumption for MPDCCH of LTE eMTC**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our initial simulation assumptions proposal for MPDCCH

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001482 Discussion on initial simulation assumption for CSI reporting of LTE eMTC**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our initial simulation assumptions for CSI reporting of LTE eMTC

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001915 UE and BS demodulation requirements for LTE\_eMTC5**

*Type: other For: Agreement  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion on open issues from RAN4 #93.

**Discussion:**

.

**Decision:** The document was **Noted**.

### 7.11 Additional enhancements for NB-IoT [NB\_IOTenh3]

#### 7.11.1 General [NB\_IOTenh3]

#### 7.11.2 Co-existence with NR [NB\_IOTenh3]

#### 7.11.3 RRM core requirements (36.133) [NB\_IOTenh3-Core]

##### 7.11.3.1 Group WUS [NB\_IOTenh3-Core]

##### 7.11.3.2 PUR [NB\_IOTenh3-Core]

##### 7.11.3.3 Multi-carrier operations [NB\_IOTenh3-Core]

##### 7.11.3.4 Others [NB\_IOTenh3-Core]

#### 7.11.4 Demodulation and CSI requirements (36.101/36.104) [NB\_IOTenh3-Perf]

**R4-2002377 Email discussion summary for RAN4#94e\_#86\_ NB\_IOTenh3\_Demod**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002515.**

**R4-2002515 Email discussion summary for RAN4#94e\_#86\_ NB\_IOTenh3\_Demod**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002425 Way forward on LTE UE and BS performance requirements for additional enhancements for NB-IOT**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000312 View on BS demodulation requirement for LTE additional enhancement for NB IoT**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001353 Open issues on UE/BS demodulation requirements for Rel-16 NB-IoT**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the open issues for UE/BS demodulation requirements for Rel-16 NB-IoT.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001461 Discussion on NPDSCH performance requirements for additional enhancements for NB-IOT**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our discussion on performance requirement for Rel-16 NPDSCH

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001462 Discussion on NPUSCH performance requirements for additional enhancements for NB-IOT**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our discussion on performance requirement for Rel-16 NPUSCH

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001916 UE and BS demodulation requirements for NB\_IOTenh3**

*Type: other For: Agreement  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion on open issues from RAN4 #93.

**Discussion:**

.

**Decision:** The document was **Noted**.

### 7.12 Even further Mobility enhancement in E-UTRAN [LTE\_feMob]

#### 7.12.1 RRM core requirements (36.133) [LTE\_feMob-Core]

##### 7.12.1.1 Conditional handover [LTE\_feMob-Core]

##### 7.12.1.2 Reduction of user data interruption [LTE\_feMob-Core]

##### 7.12.1.3 Others [LTE\_feMob-Core]

### 7.13 Further performance enhancement for LTE in high speed scenario [LTE\_high\_speed\_enh2]

**R4-2002378 Email discussion summary for RAN4#94e\_#87\_LTE\_high\_speed\_enh2\_Demod**

*Type: other For: Information  
 Source: Moderator (NTT DoCoMo)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002516.**

**R4-2002516 Email discussion summary for RAN4#94e\_#87\_LTE\_high\_speed\_enh2\_Demod**

*Type: other For: Information  
 Source: Moderator (NTT DoCoMo)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

#### 7.13.1 RRM core requirements maintenance (36.133) [LTE\_high\_speed\_enh2-Core]

#### 7.13.2 RRM performance requirements (36.133) [LTE\_high\_speed\_enh2-Perf]

#### 7.13.3 UE Demodulation and CSI requirements (36.101) [LTE\_high\_speed\_enh2-Perf]

**R4-2000872 CR to TS 36.101: Finalization on PDSCH demodulation with 500km/h velocity**

*Type: CR For: Agreement  
 36.101 v16.4.0 CR-5596 Cat: F (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Agreed.**.

##### 7.13.3.1 Extension of demodulation requirements to CA [LTE\_high\_speed\_enh2-Perf]

**R4-2001348 Finalization of CA PDSCH demodulation requirements with HST-SFN**

*Type: CR For: Agreement  
 36.101 v16.4.0 CR-5598 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This CR mainly removes the square brackets to complete the PDSCH demodulation requirements with CA under HST-SFN.

Session Chair: Contents agreeable need to update cover page to fix erros according to MCC information.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002424.**

**R4-2002424 Finalization of CA PDSCH demodulation requirements with HST-SFN**

*Type: CR For: Agreement  
 36.101 v16.4.0 CR-5598 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This CR mainly removes the square brackets to complete the PDSCH demodulation requirements with CA under HST-SFN.

**Discussion:**

**Decision:** The document was **Return to.**

##### 7.13.3.2 HST-SFN PDSCH demodulation requirements [LTE\_high\_speed\_enh2-Perf]

##### 7.13.3.3 Single tap HST PDSCH demodulation requirements [LTE\_high\_speed\_enh2-Perf]

#### 7.13.4 BS Demodulation requirements (36.104) LTE\_high\_speed\_enh2-Perf]

**R4-2002499 CR to TS 36.104 Updates of PUSCH performance requirements for enhanced HST scenario**

*Type: CR For: Agreement  
 36.104 v16.4.0 CR-xxxx Cat: F (Rel-16)  
  
 Source: NTT DoCoMo*

**Abstract:**

**Discussion:**

**Decision:** The document was **Return to.**

**R4-2002500 CR to TS 36.141 Updates of PUSCH performance requirements for enhanced HST scenario**

*Type: CR For: Agreement  
 36.141 v16.4.0 CR-xxxx Cat: F (Rel-16)  
  
 Source: NTT DoCoMo*

**Abstract:**

**Discussion:**

**Decision:** The document was **Return to.**

**R4-2002501 CR to TS 36.104 Updates of PRACH performance requirements for enhanced HST scenario**

*Type: CR For: Agreement  
 36.104 v16.4.0 CR-xxxx Cat: F (Rel-16)  
  
 Source: NTT DoCoMo*

**Abstract:**

**Discussion:**

**Decision:** The document was **Return to.**

**R4-2002502 CR to TS 36.141 Updates of PRACH performance requirements for enhanced HST scenario**

*Type: CR For: Agreement  
36.141 v16.4.0 CR-xxxx Cat: F (Rel-16)  
  
Source: NTT DoCoMo*

**Abstract:**

**Discussion:**

**Decision:** The document was **Return to.**

##### 7.13.4.1 PUSCH demodulation requirements [LTE\_high\_speed\_enh2-Perf]

**R4-2000309 Simulation results summary of BS demodulation requirement for LTE Rel-16 HST**

*Type: other For: Information  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000310 Simulation results for HST PUSCH in LTE Rel-16**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001452 Simulation results for LTE HST BS demodulation requirements**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

The simulation results provided by companies is not aligned at last meeting. As per simulaition assumptiuon in WF R4-1912777, we resubmit our simulation results for alignment.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001720 Discussion on aligning simulation results of PUSCH for Rel-16 LTE HST**

*Type: other For: Discussion  
 36.104 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This document has investigated the simulation results for PUSCH for Rel-16 LTE HST provided by different companies in an attempt to align the simulation results and finalize the SNR requirement for Scenario 1-LTE500a/b and Scenario 3-LTE500a/b.

We propo

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 7.13.4.2 PRACH requirements [LTE\_high\_speed\_enh2-Perf]

**R4-2001718 Discussion on aligning simulation results of PRACH preamble restricted set type B for Rel-16 LTE HST**

*Type: other For: Discussion  
 36.104 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This document has examined our contribution to the simulation results for PRACH preamble restricted set type B [2] that were presented at the last meeting in an attempt to uncover errors or discrepancies in the simulation results.

Proposal 1: SNR values

**Discussion:**

.

**Decision:** The document was **Noted**.

### 7.14 LTE-based 5G terrestrial broadcast [LTE\_terr\_bcast]

#### 7.14.1 RRM core requirements maintenance (36.133) [LTE\_terr\_bcast -Core]

##### 7.14.1.1 Interruption requirements [LTE\_terr\_bcast -Core]

##### 7.14.1.2 Phase synchronization accuracy [LTE\_terr\_bcast -Core]

##### 7.14.1.3 RSRP/RSRQ report mapping [LTE\_terr\_bcast -Core]

##### 7.14.1.4 Other requirements [LTE\_terr\_bcast -Core]

#### 7.14.2 RRM Perf requirements (36.133) [LTE\_terr\_bcast -Perf]

#### 7.14.3 Demodulation and CSI requirements (36.101) [LTE\_terr\_bcast -Perf]

**R4-2002379 Email discussion summary for RAN4#94e\_#88\_LTE\_terr\_bcast\_Demod**

*Type: other For: Information  
 Source: Moderator (Qualcomm)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002517.**

**R4-2002517 Email discussion summary for RAN4#94e\_#88\_LTE\_terr\_bcast\_Demod**

*Type: other For: Information  
 Source: Moderator (Qualcomm)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002423 WF for 5G broadcast demod requirement**

*Type: other For: Approval  
 Source: Moderator (Qualcomm)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000773 On LTE-based 5G terrestrial broadcast demod requirement**

*Type: other For: Discussion  
 Source: Qualcomm, Inc.*

**Abstract:**

PMCH and CAS demod requirement

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001453 Discussion on the performance requirement for LTE-based 5G terrestrial broadcast**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per Work plan R4-1911284, provide our view about test scope and simulation assumption on LTE based 5G terrestrial broadcast.

**Discussion:**

.

**Decision:** The document was **Noted**.

### 7.15 Support for NavIC Navigation Satellite System for LTE [LCS\_NAVIC-Perf]

#### 7.15.1 UE perf. requirements (36.171) [LCS\_NAVIC-Perf]

### 7.16 DL MIMO efficiency enhancements for LTE [LTE\_DL\_MIMO\_EE]

#### 7.16.1 UE RF requirements (36.101) [LTE\_DL\_MIMO\_EE]

## 8 Rel-16 non-spectrum related work items for NR

### 8.1 NR-based access to unlicensed spectrum [NR\_unlic]

#### 8.1.1 System Parameters [NR\_unlic-Core]

##### 8.1.1.1 General [NR\_unlic-Core ]

##### 8.1.1.2 Wideband operations (UE and BS) [NR\_unlic-Core]

##### 8.1.1.3 Channel raster [NR\_unlic-Core ]

##### 8.1.1.4 Spectrum utilizations [NR\_unlic-Core]

##### 8.1.1.5 Sync raster [NR\_unlic-Core]

#### 8.1.2 UE RF requirements [NR\_unlic-Core]

##### 8.1.2.1 Transmitter characteristics [NR\_unlic-Core]

#### 8.1.3 BS RF requirements [NR\_unlic-Core]

**R4-2002370 Email discussion summary for RAN4#94e\_#79\_NR\_unlic\_RF\_BS**

*Type: other For: Information   
 Source: Moderator (Nokia)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002508.**

**R4-2002508 Email discussion summary for RAN4#94e\_#79\_NR\_unlic\_RF\_BS**

*Type: other For: Information   
 Source: Moderator (Nokia)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002465 WF for NR-U FRCs**

*Type: other For: Approval  
 Source: Nokia*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000985 CR for NR-U RX requirement**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0140 Cat: B (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was Noted.

##### 8.1.3.1 Transmitter characteristics [NR\_unlic-Core]

##### 8.1.3.2 Receiver characteristics [NR\_unlic-Core]

**R4-2000821 NR-U BS REFSENS**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2000822 NR-U BS dynamic range**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000982 simulation results for NR-U BS RX FRC**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000983 NR-U BS RX REFSENS and dynamic range requirement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000984 NR-U BS RX ICS requirement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001463 Discussion and simulation results for NR-U BS REFSENS/ICS**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Share our simulation results for NR-U BS REFSENS/ICS as per the agreed simulation assumptions in R4-1916162.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001464 Discussion and simulation results for NR-U BS Dynamic range**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Share our simulation results for NR-U BS Dynamic range as per the agreed simulation assumptions in R4-1916162.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001465 Discussion on FRC definition for NR-U BS REFSENS and Dynamic range**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per RAN1 agreements about the interlace structure, this contribution share our view on the FRC definition for NR-U BS REFSENS and Dynamic range

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001674 NR-U BS receiver requirements**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001675 Summary of simulation results for NR-U BS Rx FRC**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001727 Update to NR-U FRC definition**

*Type: other For: Approval  
 38.104 v..  
 Source: Ericsson, Nokia, Nokia Shanghai Bell*

**Abstract:**

During RAN4#93, interested companies defined the new NR-U BS RX simulation assumptions needed for input towards new FRC(s) to be defined. The FRC parameters will differ for NR-U compared to NR due to interleaving aspects for NR-U compared to that of NR.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001728 NR-U BS RX Simulation Results**

*Type: other For: Discussion  
 38.104 v..  
 Source: Ericsson*

**Abstract:**

Initial simulation results based on updated FRC parameters defined in [1]

**Discussion:**

.

**Decision:** The document was **Noted**.

#### 8.1.4 RRM core requirements (38.133) [NR\_unlic-Core]

##### 8.1.4.1 Cell re-selection [NR\_unlic-Core]

##### 8.1.4.2 Handover [NR\_unlic-Core]

##### 8.1.4.3 RRC connection mobility control [NR\_unlic-Core]

##### 8.1.4.4 SCell activation/deactivation (delay and interruption) [NR\_unlic-Core]

##### 8.1.4.5 PSCell addition/release (delay and interruption) [NR\_unlic-Core]

##### 8.1.4.6 Active TCI state switching [NR\_unlic-Core]

##### 8.1.4.7 Interruptions due to operation in non-NR-U serving cells [NR\_unlic-Core]

##### 8.1.4.8 Active BWP switching [NR\_unlic-Core]

##### 8.1.4.9 RLM and link recovery procedures [NR\_unlic-Core]

##### 8.1.4.10 Measurement requirements [NR\_unlic-Core]

##### 8.1.4.11 Measurement accuracy [NR\_unlic-Core]

##### 8.1.4.12 Measurement capability and reporting criteria [NR\_unlic-Core]

##### 8.1.4.13 Timing [NR\_unlic-Core]

##### 8.1.4.14 Others [NR\_unlic-Core]

### 8.2 Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR [NR\_CLI\_RIM]

#### 8.2.1 General [NR\_CLI\_RIM-Core]

#### 8.2.2 RRM core requirements maintenance (38.133) [NR\_CLI\_RIM-Core]

#### 8.2.3 RRM perf. requirements (38.133) [NR\_CLI\_RIM-Perf]

##### 8.2.3.1 CLI measurement accuracy [NR\_CLI\_RIM-Perf]

##### 8.2.3.2 Test cases [NR\_CLI\_RIM-Perf]

##### 8.2.3.3 Others [NR\_CLI\_RIM-Perf]

### 8.3 NR mobility enhancement [NR\_Mob\_enh]

#### 8.3.1 General [NR\_Mob\_enh-Core]

#### 8.3.2 RRM core requirements (38.133) [NR\_Mob\_enh-Core]

##### 8.3.2.1 Handover with simultaneous Rx/Tx with source and target cells [NR\_Mob\_enh-Core]

##### 8.3.2.3 Conditional PSCell addition/change [NR\_Mob\_enh-Core]

##### 8.3.2.4 Others [NR\_Mob\_enh-Core]

### 8.4 5G V2X with NR sidelink [5G\_V2X\_NRSL]

#### 8.4.1 General [5G\_V2X\_NRSL]

#### 8.4.2 Co-existence Study [5G\_V2X\_NRSL-Core]

##### 8.4.2.1 Simulation Results [5G\_V2X\_NRSL-Core]

##### 8.4.2.2 In-device coexistence [5G\_V2X\_NRSL-Core]

##### 8.4.2.3 UE-to-UE coexistence [5G\_V2X\_NRSL-Core]

#### 8.4.3 System parameters [5G\_V2X\_NRSL-Core]

##### 8.4.3.1 Bands and bandwidth [5G\_V2X\_NRSL-Core]

##### 8.4.3.2 Others [5G\_V2X\_NRSL-Core]

#### 8.4.4 UE RF requirements [5G\_V2X\_NRSL-Core]

#### 8.4.5 RRM core requirements (38.133) [5G\_V2X\_NRSL-Core]

##### 8.4.5.1 Transmit timing requirements [5G\_V2X\_NRSL-Core]

##### 8.4.5.2 Synchronization requirements [5G\_V2X\_NRSL-Core]

##### 8.4.5.3 Measurement requirements [5G\_V2X\_NRSL-Core]

##### 8.4.5.4 Interruption requirements [5G\_V2X\_NRSL-Core]

##### 8.4.5.5 Unicast, groupcast related [5G\_V2X\_NRSL-Core]

##### 8.4.5.6 Others [5G\_V2X\_NRSL-Core]

### 8.5 Integrated Access and Backhaul for NR [NR\_IAB]

**R4-2002371 Email discussion summary for RAN4#94e\_#80\_NR\_IAB\_System\_parameters**

*Type: other For: Information   
 Source: Moderator (Huawei)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002509.**

**R4-2002509 Email discussion summary for RAN4#94e\_#80\_NR\_IAB\_System\_parameters**

*Type: other For: Information   
 Source: Moderator (Huawei)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002372 Email discussion summary for RAN4#94e\_#81\_NR\_IAB\_Co-existence**

*Type: other For: Information   
 Source: Moderator (Nokia)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002510.**

**R4-2002510 Email discussion summary for RAN4#94e\_#81\_NR\_IAB\_Co-existence**

*Type: other For: Information   
 Source: Moderator (Nokia)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002373 Email discussion summary for RAN4#94e\_#82\_NR\_IAB\_RF\_Tx**

*Type: other For: Information   
 Source: Moderator (Qualcomm)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002511.**

~~~~~~~~~~~~~~~1st round discussion agreements~~~~~~~~~~~~~~~~~~~~~~~~~

Topic #5: IAB-MT Rx-Tx Switching time

Agreements: Don’t define RF requirement for the IAB-MT Rx-Tx switching time.

Topic #6: IAB-MT Unwanted Emissions

Agreements: Define OBW of 99% for the IAB-MT.

**R4-2002511 Email discussion summary for RAN4#94e\_#82\_NR\_IAB\_RF\_Tx**

*Type: other For: Information   
 Source: Moderator (Qualcomm)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002374 Email discussion summary for RAN4#94e\_#82\_NR\_IAB\_RF\_Rx**

*Type: other For: Information   
 Source: Moderator (Samsung)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002512.**

**R4-2002512 Email discussion summary for RAN4#94e\_#82\_NR\_IAB\_RF\_Rx**

*Type: other For: Information   
 Source: Moderator (Samsung)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002483 WF on IAB RX RF requirement**

*Type: other For: Approval   
 Source: Samsung*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002484 WF on TS drafting referencing rules**

*Type: other For: Approval   
 Source: Nokia*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002485 WF on IAB definitions**

*Type: other For: Approval   
 Source: Ericsson*

**Abstract:**

**Session Chair: Including Channel bandwidth definition in this WF.**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002489 WF on CA and multi-carrier agreements**

*Type: other For: Approval   
 Source: Ericsson*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002490 WF on IAB-MT ACS, IBB and ACLR in FR1**

*Type: other For: Approval   
 Source: ZTE*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002491 WF on IAB-MT ACS and IBB in FR2**

*Type: other For: Approval   
 Source: Ericsson*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002492 WF on IAB-MT ACLR and minimum Tx power in FR2**

*Type: other For: Approval   
 Source: Nokia*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002494 WF on IAB MT class definition**

*Type: other For: Approval   
 Source: Samsung*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002495 WF on IAB-MT Tx power requirements**

*Type: other For: Approval   
 Source: Huawei*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002496 WF on IAB Tx Signal Quality**

*Type: other For: Approval   
 Source: Nokia*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002498 WF on IAB-DU Tx Requirements**

*Type: other For: Approval   
 Source: ZTE*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002503 WF on IAB-MT Beam Correspondence**

*Type: other For: Approval   
 Source: Qualcomm*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

#### 8.5.1 General [NR\_IAB-Core/Perf]

**R4-2000824 FR1 IAB frequency band**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom, China Unicom, BT plc*

**Discussion:**

.

**Decision:** The document was **Approved**.

**R4-2001186 On multicarrier and CA for IAB**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Discussion and proposal on handling of multicarrier for IAB

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001887 TP for TR \_RF Requirements reference points**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of reference point is proposed

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002487.**

**R4-2002487 TP for TR \_RF Requirements reference points**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of reference point is proposed

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001888 TP for TR \_Spec organization**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of spec organization is proposed

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002488.**

**R4-2002488 TP for TR \_Spec organization**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of spec organization is proposed

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001901 TP for TS \_Conducted and radiated requirement reference points**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on reference point is proposed

**Discussion:**

.

**Decision:** The document was **merged.**

**R4-2001902 TP for TS \_Definitions**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on Definition is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2002043 [IAB] Discussion on drafting TS and referencing**

*Type: other For: Discussion  
 Source: Huawei*

**Abstract:**

Discussion on use of referencing in IAB TS 38.174

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2002123 WF on IAB TS spec structure and terminology**

*Type: other For: (not specified)  
 Source: Qualcomm*

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001904 TP for TS \_Relationship with other core specifications**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on relation to other spec is proposed

**Session Chair: Moved from agenda 8.5.4.2.**

**Discussion:**

.

**Decision:** The document was **not treated**.

#### 8.5.2 Co-existence study [NR\_IAB-Core]

**R4-2000972 simulation results for FR1 IAB coexistence study**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000973 simulation results for FR2 IAB coexistence study**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000977 In-band blocking for FR1 IAB MT**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000978 In-band blocking for FR2 IAB MT**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001432 TP to TR 38.xxx IAB-Node blocking, power class and coexistence requirements in FR2**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we provide further simulation results as agreed in RAN4#93 and discuss the receiver blocking of both legacy NR network and IAB-Nodes. Also coexistence requirements for IAB-Nodes are proposed.

**Discussion:**

.

**Decision:** The document was **Merged.**

**R4-2001708 [IAB] TP to TR 38.xxx Antenna assumptions**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Text for the draft TR capturing the antenna definition and background for the co=-location simulations

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002493.**

**R4-2002493 [IAB] TP to TR 38.xxx Antenna assumptions**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Text for the draft TR capturing the antenna definition and background for the co=-location simulations

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001025 TP to TR 38.xxx: Addition of antenna model and parameters in subclause 6.2**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

At the end of this contribution an updated version the previously presented text proposal is submitted for approval.

**Session Chair: Moved from agenda 8.5.1**

**Discussion:**

**Decision:** The document was **Merged.**

#### 8.5.3 System parameters [NR\_IAB-Core]

**R4-2000275 TP for TS38.174: IAB system parameters**

*Type: pCR For: Approval  
 38.174 v0.0.2  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000974 Discussion on IAB MT channel bandwidth**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2002044 [IAB] TP to TS 38.174, clause 4**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Huawei*

**Abstract:**

TP filling in the general section in clause 4

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002486.**

**R4-2002486 [IAB] TP to TS 38.174, clause 4**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Huawei*

**Abstract:**

TP filling in the general section in clause 4

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002045 [IAB] TP to TS 38.174, clause 5**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Huawei*

**Abstract:**

TP filling in the operating band and channel arrangements sections in clause 5

**Discussion:**

.

**Decision:** The document was **Noted.**

#### 8.5.4 RF requirements [NR\_IAB-Core]

**R4-2000964 IAB DU RF Requirements**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

This paper discusses the IAB DU RF requirements definition and propose to import most of the requirements from the BS specifications

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000965 IAB MT RF Requirements**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000975 frequency error requirement for IAB**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000976 switching time for IAB DU and MT**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000979 Discussion on IAB MT OOBB**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000980 Discussion on IAB MT BC requirement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001019 Technical background for IAB-Node reference sensitivity**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution the technical background information relevant for IAB-Node reference sensitivity requirement have been collected.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001022 Technical background for IAB-Node out-of-band receiver blocking**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution the technical background information for IAB-Node out-of-band receiver blocking have been collected, based on current specifications.

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 8.5.4.1 Conductive RF core requirements [NR\_IAB-Core]

###### 8.5.4.1.1 Transmitter characteristics [NR\_IAB-Core]

**R4-2000618 IAB frequency error requirement**

*Type: other For: Approval  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000619 Discussion of IAB MT power control accuracy requirement**

*Type: other For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000900 Discussion on IAB Conducted Requirements**

*Type: other For: Discussion  
 Source: CMCC*

**Discussion:**

.

**Decision:** The document was **Noted**.

###### 8.5.4.1.2 Receiver characteristics [NR\_IAB-Core]

##### 8.5.4.2 Radiated RF core requirements [NR\_IAB-Core]

###### 8.5.4.2.1 Transmitter characteristics [NR\_IAB-Core]

**R4-2000276 Radiated transmit power and OTA output power for IAB-MT**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000277 OTA output power dynamic for IAB-MT**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000278 OTA transmit signal quality for IAB-MT**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000279 OTA Unwanted emission for IAB-MT**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000901 Discussion on IAB Radiated Tx Requirements**

*Type: other For: Approval  
 Source: CMCC*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001187 On IAB MT beam correspondence**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Discussion and proposal for beam correspondence for MT

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001280 Definition of IAB-MT ACLR requirement in FR2**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

In this paper we analyze IAB/NR adjacent channel co-existence and make a proposal for FR2 ACLR requirement for IAB-MT

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001281 Beam correspondence requirement for IAB-MT**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

This paper discusses our views on definition of beam correspondence requirement for IAB-MT

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001283 On IAB-MT classes and dynamic range**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

This paper presents our views on IAB-MT classes definition and dynamic range

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001868 IAB class definition**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper,IAB class definition is discussed

**Session Chair: Move from agenda 8.5.1**

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001886 TP for TR \_IAB classification**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of IAB class defintion is proposed

**Session Chair: Move from agenda 8.5.1**

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001903 TP for TS \_IAB classes**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on IAB class is proposed

**Session Chair: Move from agenda 8.5.1**

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001431 TP to TR 38.xxx IAB-Node Frequency error requirements in FR2**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we provide further motivation to specify frequency error as relative requirement for IAB-MT and propose requirements.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001433 Switching time requirements between IAB-MT and IAB-DU**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we discuss the switching time between IAB-DU and IAB-MT.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001434 Beam correspondence requirement for IAB-Nodes**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we provide our views on how beam correspondence capability for an IAB-Node could be handled from requirement point of view.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001436 IAB-Node transmitter requirements for FR2**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we discuss the transmitter requirements

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001706 [IAB] Discussion on beam correspondence**

*Type: other For: Discussion  
 Source: Huawei*

**Abstract:**

Discussion on beam correspondence for IAB-MT

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001707 [IAB] Discussion on transmitter OFF power**

*Type: other For: Discussion  
 Source: Huawei*

**Abstract:**

Discussion on the TX OFF levels for IAB nodes with proposal on requirement.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001709 [IAB] Discussion on power classes**

*Type: other For: Discussion  
 Source: Huawei*

**Abstract:**

Discussion on how to implement power classes for IAB-MT node.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001865 IAB MT ACLR**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, IAB MT ACLR requirement is discussed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001866 IAB MT TX dynamic range and min Tx power**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TX dyanmica range requirement is discussed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001867 IAB MT TX power**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TX power requirement is discussed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001869 IAB MT carrier leakage and IQ impag**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, IBE requirement is discussed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001870 IAB MT DU switching latency**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, DU and MT switch delay is discussed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001871 IAB MT Frequency error**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, MT frequency error requirement is discussed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001872 IAB MT power control requirement**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, MT power control requirement is discussed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001874 TP for TR \_9 IAB OTA Beam correspondence**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of beam correspondence is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001875 TP for TR \_9 IAB OTA IAB MT carrier leakage**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of carrier leakage is proposed

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001876 TP for TR \_9 IAB OTA IAB MT frequency error**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of frequency error is proposed

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001877 TP for TR \_9 IAB OTA IAB MT In-band emission**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of inband emissin is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001878 TP for TR \_9 IAB OTA output power dynamics**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of output power dynamic is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001879 TP for TR \_9 IAB OTA output power**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of OTA output power is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001880 TP for TR \_9 IAB OTA transmit ON\_OFF power**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of transmit ON\_OFF power is proposed

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001881 TP for TR \_9 IAB OTA transmitter intermodulation**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of transmitter intermodulation is proposed

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002497.**

**R4-2002497 TP for TR \_9 IAB OTA transmitter intermodulation**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of transmitter intermodulation is proposed

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001882 TP for TR OTA unwanted emissions**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of unwanted emission is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001883 TP for TR \_9 radiated power**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of radiated power is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001889 TP for TS \_9 IAB output power**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on of IAB output power is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001890 TP for TS \_9 OTA Carrier leakage**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on of OTA carrier leakage is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001891 TP for TS \_9 OTA EVM equalizer spectrum flatness**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on of equalizer flatness is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001892 TP for TS \_9 OTA EVM**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on of EVM is proposed

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001893 TP for TS \_9 OTA In-band emissions**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on of in-band emission is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001894 TP for TS \_9 OTA output power dynamics**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on of output power dynamics is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001895 TP for TS \_9 OTA TX OFF Power**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on of TX OFF power is proposed

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001896 TP for TS \_9 OTA TX ON\_OFF time mask**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on of TX ON\_OFF time mask is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001897 TP for TS \_9 OTA unwanted emissions -ACLR \_OBW**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on of ACLR is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001898 TP for TS \_9 Radiated transmit power**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on of raditated transmit power is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

###### 8.5.4.2.2 Receiver characteristics [NR\_IAB-Core]

**R4-2000280 OTA REFSENS for IAB-MT**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000281 Receiver dynamic range for FR2 IAB**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000282 OTA in-band selectivity for IAB-MT**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000283 OTA spurious emission for IAB**

*Type: pCR For: Approval  
 38.174 v0.0.2  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000284 OTA in-channel selectivity for IAB**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001020 TP to TR 38.xxx: Addition of background information for FR2 reference sensitivity in subclause 10.3**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution a text proposal with technical background information relevant for the IAB-Node FR2 reference sensitivity requirement have been created. The text proposal is attached at the end of this contribution and is presented for approval to be

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001021 TP to TS 38.174: Addition of FR2 IAB reference sensitivity requirement text in clause 3 and clause 10**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

In this contribution specification text for IAB Node reference sensitivity have been created. The intension is to capture specification text, including the structure, technical details and requirement levels for FR2 IAB-Node.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001023 TP to TR 38.xxx: Addition of background information for FR2 out-of-band blocking in subclause 10.6**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

At the end of the contribution a text proposal is attached for approval. The text proposal brings technical background information relevant for IAB-Node out-of-band blocking requirement to be included in the technical report.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001024 TP to TS 38.174: Addition of FR2 IAB out-of-band receiver blocking requirement in subclause 10.6**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

In this contribution specification text for IAB Node FR2 out-of-band blocking requirement have been created in a text proposal. The text proposal for the technical specification is attached at the end of this contribution and it is presented for approval.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001282 Definition of IAB-MT in-band blocking requirement**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

This paper presents system level simulation results for definition of IAB-MT in-band blocking requirement

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001435 IAB-Node receiver requirements for FR2**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we discuss the receiver requirements.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001873 IAB MT inband blocking and ACS**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, MT inband blocking and ACS requirement is discussed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001884 TP for TR \_10 IAB OTA ACS**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of OTA ACS is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001885 TP for TR \_10 IAB OTA in-band blocking**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, TP of OTA in-band blocking is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001899 TP for TS \_10 OTA ACS**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on ACS is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001900 TP for TS \_10 OTA Inband blocking**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, TP of TS on inband blocking is proposed

**Discussion:**

.

**Decision:** The document was **Noted.**

#### 8.5.5 RRM core requirements (38.133) [NR\_IAB-Core]

##### 8.5.5.1 RRC connection mobility control [NR\_IAB-Core]

##### 8.5.5.2 MT timing related requirements [NR\_IAB-Core]

##### 8.5.5.3 DU timing related requirements [NR\_IAB-Core]

##### 8.5.5.4 RLM requirements [NR\_IAB-Core]

##### 8.5.5.5 BFD/BFR requirements [NR\_IAB-Core]

##### 8.5.5.6 Other requirements [NR\_IAB-Core]

#### 8.5.6 EMC core requirements [NR\_IAB-Core]

**R4-2002452 Way forward on IAB EMC requirements**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001253 further discussion on IAB EMC emission requirement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Abstract:**

The emission requirement of an IAB has been discussed in this papper.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001254 further discussion on IAB EMC immunity requirement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Abstract:**

The immunity requirement of an IAB has been discussed in this papper

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001255 TP to TR IAB EMC emission requirements**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Abstract:**

The TP to TR of IAB EMC emission requirements discussion has been provided.

**Discussion:**

.

**Decision:** The document was Noted.

**R4-2001256 TP to TR IAB EMC General part**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Abstract:**

The TP to TR of IAB EMC general discussion has been provided. It is proposed to approve the following text proposal.

**Discussion:**

.

**Decision:** The document was Noted.

**R4-2001257 TP to TR IAB EMC immunity requirements**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Abstract:**

The TP to TR of IAB EMC immunity requirements discussion has been provided. It is proposed to approve the following text proposal.

**Discussion:**

.

**Decision:** The document was Noted.

#### 8.5.7 Others [NR\_IAB-Core]

### 8.6 Multi-RAT Dual-Connectivity and Carrier Aggregation enhancements [LTE\_NR\_DC\_CA\_enh]

#### 8.6.1 General [LTE\_NR\_DC\_CA\_enh-Core]

#### 8.6.2 RF requirements [LTE\_NR\_DC\_CA\_enh-Core]

##### 8.6.2.1 RF requirements for EN-DC [LTE\_NR\_DC\_CA\_enh-Core]

##### 8.6.2.2 RF requirements for CA [LTE\_NR\_DC\_CA\_enh-Core]

##### 8.6.2.3 RF requirements for NR-DC [LTE\_NR\_DC\_CA\_enh-Core]

#### 8.6.3 RRM core requirements (38.133) [LTE\_NR\_DC\_CA\_enh-Core]

##### 8.6.3.1 Asynchronous and synchronous NR-NR Dual Connectivity [LTE\_NR\_DC\_CA\_enh-Core]

###### 8.6.3.2.1 NR measurements for EMR [LTE\_NR\_DC\_CA\_enh-Core]

###### 8.6.3.2.2 LTE NR Inter-RAT EMR [LTE\_NR\_DC\_CA\_enh-Core]

##### 8.6.3.3 Efficient and low latency serving cell configuration, activation and setup [LTE\_NR\_DC\_CA\_enh-Core]

###### 8.6.3.3.1 Direct SCell activation [LTE\_NR\_DC\_CA\_enh-Core]

###### 8.6.3.3.2 SCell dormancy [LTE\_NR\_DC\_CA\_enh-Core]

##### 8.6.3.4 Interruption under EN-DC and NE-DC [LTE\_NR\_DC\_CA\_enh-Core]

##### 8.6.3.5 Fast recovery [LTE\_NR\_DC\_CA\_enh-Core]

##### 8.6.3.6 Cross-carrier scheduling with different numerologies on the scheduling and scheduled carriers [LTE\_NR\_DC\_CA\_enh-Core]

##### 8.6.3.7 Others [LTE\_NR\_DC\_CA\_enh-Core]

### 8.7 UE power saving in NR [NR\_UE\_pow\_sav]

#### 8.7.1 General [NR\_UE\_pow\_sav]

#### 8.7.2 Switching and interruption time [NR\_UE\_pow\_sav]

#### 8.7.3 RRM core requirements (38.133) [NR\_UE\_pow\_sav-Core]

##### 8.7.3.1 RRM measurement relaxation [NR\_UE\_pow\_sav-Core]

##### 8.7.3.2 Requirements for MIMO layer adaptation [NR\_UE\_pow\_sav-Core]

### 8.8 NR Positioning Support [NR\_pos]

#### 8.8.1 General (Work plan, rapporteur input) [NR\_pos-Core/Perf]

#### 8.8.2 RRM core requirements (38.133) [NR\_pos-Core]

##### 8.8.2.1 UE requirements [NR\_pos-Core]

###### 8.8.2.1.1 System-level evaluations for PRS-RSTD and PRS-RSRP [NR\_pos-Core]

###### 8.8.2.1.2 PRS-RSTD measurements [NR\_pos-Core]

###### 8.8.2.1.3 PRS-RSRP measurements [NR\_pos-Core]

###### 8.8.2.1.4 Rx-Tx time difference measurements [NR\_pos-Core]

###### 8.8.2.1.5 SSB and CSI-RS RSRP/RSRQ measurements [NR\_pos-Core]

###### 8.8.2.1.6 Link-level evaluations for PRS-RSTD and PRS-RSRP [NR\_pos-Core]

##### 8.8.2.2 gNB requirements [NR\_pos-Core]

##### 8.8.2.3 Impact on existing RRM requirements [NR\_pos-Core]

##### 8.8.2.4 Others [NR\_pos-Core]

### 8.9 Physical layer enhancements for NR URLLC [NR\_L1enh\_URLLC-Core]

#### 8.9.1 Demodulation and CSI requirements [NR\_L1enh\_URLLC-Perf]

**R4-2002381 Email discussion summary for RAN4#94e\_#90\_NR\_L1enh\_URLLC\_Demod\_Test**

*Type: other For: Information  
 Source: Moderator (Ericsson)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002519.**

**R4-2002519 Email discussion summary for RAN4#94e\_#90\_NR\_L1enh\_URLLC\_Demod\_Test**

*Type: other For: Information  
 Source: Moderator (Ericsson)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002382 Email discussion summary for RAN4#94e\_#91\_NR\_L1enh\_URLLC\_Demod\_Requirements**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002520.**

**R4-2002520 Email discussion summary for RAN4#94e\_#91\_NR\_L1enh\_URLLC\_Demod\_Requirements**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002422 Way Forward on parameters and test methodology for URLLC ultra-low BLER test**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002428 Way forward for NR UE URLLC performance requirements**

*Type: other For: Approval  
 Source: Intel*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002429 Way forward for NR BS URLLC performance requirements**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

##### 8.9.1.1 Test feasibility [NR\_L1enh\_URLLC-Perf]

**R4-2000370 Discussion on test feasibility and methodology for URLLC**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2000566 Simulation results for URLCC device test times**

*Type: other For: Discussion  
 Source: Rohde & Schwarz*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001178 URLLC error floor test**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Discussion on reaching confidence level and proposals for test parameters and SNR

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001483 Discussion and simulation results for URLLC high reliability test feasibility**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discuss and simulation method 1 and method 2, share our view on URLLC high reliability test feasibility

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001695 On NR Rel-16 high reliability BS demodulation test feasibility and methodology**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we analyse the proposed two methods in terms of test feasibility and meaningfulness and propose which method is suitable under expected practical test circumstances. We also contribute simulation results for both methods.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2002115 Views on URLLC Test Feasibility**

*Type: other For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 8.9.1.2 UE demodulation and CSI requirements (38.101-4) [NR\_L1enh\_URLLC-Perf]

**R4-2000371 Discussion on test cases for URLLC**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000944 Discussion on UE performance requirements for URLLC**

*Type: other For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001484 Discussion and simulation results for URLLC UE PDSCH demodulation requirements for high reliability**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discussion and give simulation assumption for the PDSCH high reliability demodulation requiremnets

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001485 Discussion on URLLC UE performance requriements for low latency**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discussion UE capability 2, mapping Type B and pre-emption for URLLC UE low latency performance requirements

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001486 Discussion on URLLC UE CQI reporting requrements**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our views on CQI reporting test for URLLC

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001738 Vies on UE demodulation test for slot aggregation**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide our views on UE slot aggregation for URLLC

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001739 Aspects of Rel-15 UE candidate features**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide an overview of candidate UE features for URLLC

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2002142 Views on URLLC Test Cases**

*Type: other For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 8.9.1.3 BS demodulation requirements (38.104) [NR\_L1enh\_URLLC-Perf]

**R4-2000313 View on BS demodulation requirement for URLLC in NR Rel-16**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001179 Proposals for BS slot aggregation requirement**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Proposed parameters for a slot aggregation requirement

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001180 Proposals for BS non-slot requirement**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Proposed parameters for non slot requirement

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001181 Proposal for BS grant free transmission requirement**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Proposal for no requirement for grant free

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001182 Proposal for BS PUCCH requirement**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Proposal for no requirement for PUCCH

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001197 Views on NR BS performance for URLLC**

*Type: other For: Approval  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001487 Discussion and simulation results for URLLC BS PUSCH demodulation requirements for high reliability**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discussion and give simulation assumption for the PUSCH demodulation requiremnets for URLLC high reliabiltiy

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001488 Discussion on URLLC BS performance requirements for low latency**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give simulation assumption for PUSCH low latency demodulation requirements to verify mapping Type B and discuss UL transmission with grant free

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001489 Discussion on introduction of PUCCH demodulation performance requirements for URLLC**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discussion PUCCH demodulation performance requirements for URLLC high reliability

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001696 On NR Rel-16 high reliability BS demodulation requirements**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we discuss and propose our preferred way forward for high reliability requirements based on the test feasibility and meaningfulness analysis in our companion paper. Furthermore, we briefly discuss our opinions on low latency requireme

**Discussion:**

.

**Decision:** The document was **Noted**.

### 8.10 Single radio voice call continuity from 5G to 3G (SRVCC) [SRVCC\_NR\_to\_UMTS-Core]

#### 8.10.1 RRM core requirements maintenance (38.133) [SRVCC\_NR\_to\_UMTS-Core]

#### 8.10.2 RRM perf requirements (38.133) [SRVCC\_NR\_to\_UMTS-Perf]

### 8.11 Enhancements on MIMO for NR [NR\_eMIMO]

#### 8.11.1 UE RF core requirements (38.101) [NR\_eMIMO-Core]

##### 8.11.1.1 DMRS enhancement with PI/2 BPSK [NR\_eMIMO-Core]

##### 8.11.1.2 Uplink Tx Full Power transmission [NR\_eMIMO-Core]

#### 8.11.2 RRM core requirements (38.133) [NR\_eMIMO-Core]

##### 8.11.2.1 L1-SINR [NR\_eMIMO-Core]

##### 8.11.2.2 SCell Beam failure recovery [NR\_eMIMO-Core]

##### 8.11.2.3 DL/UL beam indication with reduced latency and overhead [NR\_eMIMO-Core]

##### 8.11.2.4 Others [NR\_eMIMO-Core]

#### 8.11.3 Demodulation and CSI requirements [NR\_eMIMO-Perf]

**R4-2002383 Email discussion summary for RAN4#94e\_#92\_NR\_eMIMO\_Demod**

*Type: other For: Information  
 Source: Moderator (Samsung)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revsied in R4-2002521.**

**R4-2002521 Email discussion summary for RAN4#94e\_#92\_NR\_eMIMO\_Demod**

*Type: other For: Information  
 Source: Moderator (Samsung)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002419 WF on demodulation and CSI requirement of NR eMIMO**

*Type: other For: Approval  
 Source: Samsung*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002420 WF on PDSCH demodulation requirement based on multi-TRP/panel transmission for NR eMIMO**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002421 WF on PMI reporting requirement for NR eMIMO**

*Type: other For: Approval  
 Source: Qualcomm*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

##### 8.11.3.1 General [NR\_eMIMO-Perf]

**R4-2000319 Overview on Rel-16 eMIMO performance requirements**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000352 Views on test cases for eMIMO**

*Type: other For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001740 Discussion on demodulation requirements for Rel-16 NR eMIMO**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 8.11.3.2 Demodulation requirements [NR\_eMIMO-Perf]

**R4-2000322 Test case design for DL multi-pannel/TRP transmission**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000324 Simulation assumption for eMIMO PDSCH test cases with multi-pannel/TRP transmission**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **withdrawn**.

**R4-2001363 UE demodulation requirements for eMIMO**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the UE demodulation impacts due to Rel-16 NR eMIMO WI.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001466 Discussion on UE performance requirements for Multi-TRP in NR eMIMO**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our views on whether to define performance requirements for Multi-TRP

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001467 Discussion on other UE performance requirements for NR eMIMO**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our views on whether to define performance requirements for some of the UE enhancement

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001469 Discussion on BS performance requirements for Multi-TRP in NR eMIMO**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our views on whether to define performance requirements for Multi-TRP

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001470 Discussion on other BS performance requirements for NR eMIMO**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our views on whether to define performance requirements for some of the BS enhancement

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 8.11.3.3 CSI requirements [NR\_eMIMO-Perf]

**R4-2000320 Test case design for Enhanced Type II codebook**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000321 Initial simulation results for PMI reporting with enhanced type II codebook**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000323 Simulation assumption for eMIMO PMI test cases with advanced Type II codebook**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **withdrawn**.

**R4-2001468 Discussion on CSI enhancement demodulation performance requirement for NR eMIMO**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our views on whether to define performance requirements for CSI enhancement

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001735 Discussion on CSI requirements under interference**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper we discuss demodulation requirements under interfernce scenario

**Discussion:**

.

**Decision:** The document was **Noted**.

### 8.12 Add support of NR DL 256QAM for FR2 [NR\_DL256QAM\_FR2]

#### 8.12.1 General (Ad-hoc MoM/TR maintenance) [NR\_DL256QAM\_FR2]

#### 8.12.2 BS RF core requirements (38.104) [NR\_DL256QAM\_FR2]

#### 8.12.3 UE RF core requirements (38.101-2) [NR\_DL256QAM\_FR2]

### 8.13 RF requirements for NR frequency range 1 (FR1) [NR\_RF\_FR1]

#### 8.13.1 RF core requirements [NR\_RF\_FR1]

##### 8.13.1.1 Almost contiguous allocations for CP-OFDM UL for FR1 [NR\_RF\_FR1]

##### 8.13.1.2 Intra-band contiguous DL CA for FR1 [NR\_RF\_FR1]

##### 8.13.1.3 Intra-band non-contiguous DL CA for FR1 for generic and n77 and n78 [NR\_RF\_FR1]

##### 8.13.1.4 Intra-band contiguous UL CA for FR1 power class 3 [NR\_RF\_FR1]

##### 8.13.1.5 Intra-band non-contiguous UL CA for FR1 power class [NR\_RF\_FR1]

##### 8.13.1.6 Switching period between case 1 and case 2 [NR\_RF\_FR1]

##### 8.13.1.7 Transient period capability [NR\_RF\_FR1]

#### 8.13.2 RRM core requirements (38.133) [NR\_RF\_FR1]

##### 8.13.2.1 RRM requirements for Tx switching between two uplink carriers [NR\_RF\_FR1]

### 8.14 NR RF requirement enhancements for frequency range 2 (FR2) [NR\_RF\_FR2\_req\_enh]

#### 8.14.1 RF core requirements [NR\_RF\_FR2\_req\_enh]

##### 8.14.1.1 FR2 MPE [NR\_RF\_FR2\_req\_enh]

##### 8.14.1.2 Beam Correspondence based on configured DL RS (SSB or CSI-RS) [NR\_RF\_FR2\_req\_enh]

##### 8.14.1.3 Intra-band cont DL CA for aggregated BW larger than 1400 MHz [NR\_RF\_FR2\_req\_enh]

##### 8.14.1.4 Intra-band non-cont DL CA for aggregated BW larger than 1400 MHz [NR\_RF\_FR2\_req\_enh]

##### 8.14.1.5 Intra-band contiguous UL CA [NR\_RF\_FR2\_req\_enh]

##### 8.14.1.6 Intra-band non-contiguous UL CA [NR\_RF\_FR2\_req\_enh]

##### 8.14.1.7 Inter-band DL CA [NR\_RF\_FR2\_req\_enh]

##### 8.14.1.8 Improvement of UE MPR [NR\_RF\_FR2\_req\_enh]

##### 8.14.1.9 Improvement of spherical coverage requirements for PC3 [NR\_RF\_FR2\_req\_enh]

#### 8.14.2 RRM core requirements (38.133) [NR\_RF\_FR2\_req\_enh]

##### 8.14.2.1 Inter-band DL CA MRTD [NR\_RF\_FR2\_req\_enh]

### 8.15 NR RRM requirement enhancement [NR\_RRM\_Enh\_Core]

#### 8.15.1 RRM core requirements (38.133) [NR\_RRM\_Enh\_Core]

##### 8.15.1.1 SRS carrier switching requirements [NR\_RRM\_Enh\_Core]

##### 8.15.1.2 Multiple Scell activation/deactivation [NR\_RRM\_Enh\_Core]

##### 8.15.1.3 CGI reading requirements with autonomous gap [NR\_RRM\_Enh\_Core]

##### 8.15.1.4 BWP switching on multiple CCs [NR\_RRM\_Enh\_Core]

##### 8.15.1.5 Inter-frequency measurement requirement without MG [NR\_RRM\_Enh\_Core]

##### 8.15.1.6 Mandatory MG patterns [NR\_RRM\_Enh\_Core]

##### 8.15.1.7 UE-specific CBW change [NR\_RRM\_Enh\_Core]

##### 8.15.1.8 Spatial relation switch for uplink [NR\_RRM\_Enh\_Core]

##### 8.15.1.9 Non-simultaneous UL carrier operation in FR2 [NR\_RRM\_Enh\_Core]

##### 8.15.1.10 Inter-band CA requirement for FR2 UE measurement capability of independent Rx beam and/or common beam [NR\_RRM\_Enh\_Core]

##### 8.15.1.11 Others [NR\_RRM\_Enh\_Core]

### 8.16 NR RRM requirements for CSI-RS based L3 measurement [NR\_CSIRS\_L3meas]

#### 8.16.1 RRM core requirements (38.133) [NR\_CSIRS\_L3meas-Core]

##### 8.16.1.1 CSI-RS measurement bandwidth [NR\_CSIRS\_L3meas-Core]

##### 8.16.1.2 CSI-RS based intra-frequency and inter-frequency measurements definition [NR\_CSIRS\_L3meas-Core]

##### 8.16.1.3 Measurement capability [NR\_CSIRS\_L3meas-Core]

##### 8.16.1.4 Intra-frequency measurement requirements [NR\_CSIRS\_L3meas-Core]

##### 8.16.1.5 Inter-frequency measurement requirements [NR\_CSIRS\_L3meas-Core]

##### 8.16.1.6 Others [NR\_CSIRS\_L3meas-Core]

### 8.17 NR support for high speed train scenario [NR\_HST]

#### 8.17.1 RRM core requirements (38.133) [NR\_HST-Core]

##### 8.17.1.1 Cell re-selection [NR\_HST-Core]

##### 8.17.1.2 Cell identification delay [NR\_HST-Core]

##### 8.17.1.3 RLM [NR\_HST-Core]

##### 8.17.1.4 Beam management [NR\_HST-Core]

##### 8.17.1.5 Inter-RAT measurement [NR\_HST-Core]

##### 8.17.1.6 Network assistance and UE capability signalling [NR\_HST-Core]

#### 8.17.2 Demodulation and CSI requirements (38.101-4 / 38.104) [NR\_HST-Perf]

**R4-2002384 Email discussion summary for RAN4#94e\_#93\_NR\_HST\_Demod\_UE**

*Type: other For: Information  
 Source: Moderator (China Mobile)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revsied in R4-2002522.**

**R4-2002522 Email discussion summary for RAN4#94e\_#93\_NR\_HST\_Demod\_UE**

*Type: other For: Information  
 Source: Moderator (China Mobile)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002385 Email discussion summary for RAN4#94e\_#94\_NR\_HST\_Demod\_BS**

*Type: other For: Information  
 Source: Moderator (Nokia)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002523.**

**R4-2002523 Email discussion summary for RAN4#94e\_#94\_NR\_HST\_Demod\_BS**

*Type: other For: Information  
 Source: Moderator (Nokia)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002405 WF on Rel-16 NR HST BS demodulation requirementsscenario**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002418 WF on Rel-16 NR HST UE demodulation**

*Type: other For: Approval  
 Source: CMCC*

**Discussion:**

.

**Decision:** The document was **Return to.**

##### 8.17.2.1 UE demodulation and CSI requirements (38.101-4) [NR\_HST-Perf]

**R4-2000634 Further discussion on UE demodulation for NR support of high speed scenario**

*Type: other For: Approval  
 Source: CMCC*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000948 Release independent applicability for HST requirements**

*Type: other For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2002072 Views on Tests for High Speed Train Scenarios**

*Type: other For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Noted**.

###### 8.17.2.1.1 Scenarios and transmission schemes [NR\_HST-Perf]

**R4-2000366 Views on DL demodulation requirements for different transmission schemes in NR HST-SFN**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001357 Transmission scheme in NR PDSCH demodulation requirements for HST**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the transmission schemes used in PDSCH demodulation requirements for NR HST.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001454 Discussion on transmission schemes for NR HST UE demodulation requirements**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per approved WF R4-1915926, this contribution further shares our views on the transmission scheme for NR HST performance requirements definition

**Discussion:**

.

**Decision:** The document was **Noted**.

###### 8.17.2.1.2 Requirements for HST-SFN [NR\_HST-Perf]

**R4-2000303 Simulation results for UE demodulation requirements under HST single tap**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000367 Views on NR UE demodulation requirements for HST-SFN scenario with JT operation**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000949 Views on HST-SFN for NR**

*Type: other For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001497 Discussion and simulation results on NR UE HST performance requirements under SFN**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per WF R4-1915926, share our views on the maximum Doppler shift and MCS based on our simulation results.

**Discussion:**

.

**Decision:** The document was **Noted**.

###### 8.17.2.1.3 Requirements for HST single tap [NR\_HST-Perf]

**R4-2000304 Simulation results for UE demodulation requirements under HST SFN**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000368 Views on NR UE demodulation requirements for HST single tap scenario**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000950 Views on HST single tap for NR**

*Type: other For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001358 Discussion on PDSCH demodulation performance with HST single tap**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the UE receiver assumption for PDSCH demodulation performance with HST single tap.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001455 Discussion and simulation results on NR UE HST performance requirements under single-tap**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per WF R4-1915926, share our views on the maximum Doppler shift and MCS based on our simulation results.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001736 Simulation results for NR UE HST single tap**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide simulation results based on the assumptions found in WF

**Discussion:**

.

**Decision:** The document was **Noted**.

###### 8.17.2.1.4 Requirements for multi-path fading channels [NR\_HST-Perf]

**R4-2000305 Simulation results for UE demodulation requirements under fading channel with high Doppler value**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2000369 Views on NR UE demodulation requirements for HST scenario with fading channel conditions**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000951 Views on High-speed multi-path fading channels**

*Type: other For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001456 Discussion and simulation results on NR UE HST performance requirements under multi-path fading channel**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per WF R4-1915926, share our views on the selection of MCS and Rank based on our simulation results.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001737 Simulation results for HST Multipath fading channels**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide simulation results based on the assumptions found in WF.

**Discussion:**

.

**Decision:** The document was **Noted**.

###### 8.17.2.1.5 Network assistance and UE capability signalling [NR\_HST-Perf]

**R4-2001457 Discussion on the requirement definition for NR UE HST single tap channel**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per WF R4-1915926, share our views on how to define the requirements for single tap.

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 8.17.2.2 BS demodulation requirements (38.104) [NR\_HST-Perf]

**R4-2000613 Summary of ideal and impairment results for NR HST demodulation requirements**

*Type: other For: Agreement  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002417**.

**R4-2002417 Summary of ideal and impairment results for NR HST demodulation requirements**

*Type: other For: Information  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001687 NR Rel-16 HST BS demodulation PUSCH and UL TA simulation results**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution, we provide the results of our simulation campaign taking into account the changes agreed in the last meeting, e.g., center frequency, max doppler shift, etc.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001689 On NR Rel-16 HST BS demodulation PUSCH and UL TA requirements**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The few remaining open issues mentionned in the last WF are clustered around: PUSCH 1x1, PUSCH 500kph MCS, PUSCH l0 value simulation alignment, and UL TA SRS placement

Open issues not yet captured in the meetings are, a possible 350/500kph conformance tes

**Discussion:**

.

**Decision:** The document was **Noted**.

###### 8.17.2.2.1 PUSCH requirements [NR\_HST-Perf]

**R4-2000306 Discussion and initial simulation results for NR HST PUSCH**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000404 Simulation results for Rel-16 NR HST PUSCH demodulation performance at UE speed of 350 km/h**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

simulation results for HST PUSCH demodulation at 350km/h

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000405 Simulation results for Rel-16 NR HST PUSCH demodulation performance at UE speed of 500 km/h**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

simulation results for HST PUSCH demodulation at 500km/h

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000608 Discussion on Front loaded DMRS start symbol for NR HST PUSCH**

*Type: other For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000609 Discussion on antenna configuration and MCS for NR HST PUSCH**

*Type: other For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000610 Initial simulation results for NR HST PUSCH demodulation requirement**

*Type: other For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000633 Simulation results on PUSCH for NR support of high speed scenario**

*Type: other For: Discussion  
 Source: CMCC*

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2000807 Simulation results for NR HST PUSCH**

*Type: other For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001184 Introducting of conformance tests for 350km/h HST**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0121 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Introduces conformance for HST 350km/h

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002415.**

**R4-2002415 Introducting of conformance tests for 350km/h HST**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0121 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Introduces conformance for HST 350km/h

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001185 Introduction of HST 350km/h FRCs and channel model**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0122 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Introduces conformance for HST 350km/h

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002416.**

**R4-2002416 Introduction of HST 350km/h FRCs and channel model**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0122 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Introduces conformance for HST 350km/h

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001195 Views on NR PUSCH for high speed**

*Type: other For: Approval  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001458 Discussion on NR HST PUSCH performance requirements**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the WF R4-1915886, share our views about the BS demodulation requirements for NR Rel-16 HST

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001459 Simulation results on NR HST PUSCH performance requirements**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the WF R4-1915886, provide our simulation results on NR HST PUSCH performance requirement for alignment

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001690 CR for 38.104: HST PUSCH demodulation requirements introduction**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0157 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Add new section for PUSCH performance under high speed train conditions assuming a UE velocity up to 350km/h.

**Decision:** The document was **Revised in R4-2002406.**

**R4-2002406 CR for 38.104: HST PUSCH demodulation requirements introduction**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0157 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Add new section for PUSCH performance under high speed train conditions assuming a UE velocity up to 350km/h.

**Decision:** The document was **Return to.**

**R4-2001691 CR for 38.104: HST PUSCH demodulation Annex including both FRC and channel model**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0158 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Add HST scenario 1-NR350 and scenario 3-NR350 as Annex G.3.

Add new FRCs for performance requirements in high speed train scenarios within Annex A.3 (MCS2) and A.4 (MCS16), for DM-RS Pos2 configuration.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002407**

**R4-2002407 CR for 38.104: HST PUSCH demodulation Annex including both FRC and channel model**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0158 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Add HST scenario 1-NR350 and scenario 3-NR350 as Annex G.3.

Add new FRCs for performance requirements in high speed train scenarios within Annex A.3 (MCS2) and A.4 (MCS16), for DM-RS Pos2 configuration.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001802 CR for TS 38.141-1: Introduction of NR PUSCH performance requirements for HST**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0109 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002408**.

**R4-2002408 CR for TS 38.141-1: Introduction of NR PUSCH performance requirements for HST**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0109 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Return to.**.

**R4-2001803 CR for TS 38.141-1: Introduction of NR PUSCH performance Annex including both FRC and channel model for HST**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0110 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002409**

**R4-2002409 CR for TS 38.141-1: Introduction of NR PUSCH performance Annex including both FRC and channel model for HST**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0110 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Return to.**

###### 8.17.2.2.2 PRACH requirements [NR\_HST-Perf]

**R4-2000307 Ideal and impairment simulation results for NR HST PRACH**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000407 Simulation results for PRACH HST with 350km/h**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

simulation results for HST PRACH demodulation at 350km/h

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000408 Simulation results for PRACH HST with 500km/h**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

simulation results for HST PRACH demodulation at 500km/h

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000611 Initial simulation results for NR HST PRACH demodulation requirement with PRACH format 0**

*Type: other For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2000612 Initial simulation results for NR HST PRACH demodulation requirement with PRACH short sequence format**

*Type: other For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2000809 Simulation results for NR HST PRACH**

*Type: other For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2001471 Ideal and impairment simulation results for NR HST PRACH format 0**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our simulation results

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2001472 Ideal and impairment simulation results for NR HST PRACH short sequence format**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our simulation results

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2001473 CR for TS 38.104: Introduction of PRACH demodulation requirements for NR HST**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0156 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce new PRACH HST requirements

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002410.**

**R4-2002410 CR for TS 38.104: Introduction of PRACH demodulation requirements for NR HST**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0156 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce new PRACH HST requirements

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001474 CR for TS 38.141-1: Introduction of PRACH performance requirements for NR HST**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0101 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce new PRACH HST requirements

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002401.**

**R4-2002411 CR for TS 38.141-1: Introduction of PRACH performance requirements for NR HST**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0101 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce new PRACH HST requirements

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001475 CR for TS 38.141-2: Introduction of PRACH performance requirements for NR HST**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0126 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce new PRACH HST requirements

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002412.**

**R4-2002412 CR for TS 38.141-2: Introduction of PRACH performance requirements for NR HST**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0126 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce new PRACH HST requirements

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001688 NR Rel-16 HST BS demodulation PRACH remaining issues and simulation results**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we discuss the final open issue on fading channels and provide our simulation results.

**Discussion:**

.

**Decision:** The document was **Noted**.

###### 8.17.2.2.3 UL timing adjustment requirements [NR\_HST-Perf]

**R4-2000308 Discussion and initial simulation results for NR UL timing adjustment**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000406 Simulation results for Rel-16 NR PUSCH UL timing adjustment**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

simulation results for HST UL timing adjustment and observations

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000805 CR for 38.104: introduction of UL timing adjustment**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0137 Cat: C (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Revsied in R4-2002413**

**R4-2002413 CR for 38.104: introduction of UL timing adjustment**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0137 Cat: C (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000806 CR for 38.104: Appendix for UL timing adjustment**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0138 Cat: C (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002414**.

**R4-2002414 CR for 38.104: Appendix for UL timing adjustment**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0138 Cat: C (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000808 Simulation results for NR UL timing adjustment**

*Type: other For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001460 Discussion on the UL timing adjustment**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the WF R4-1915886, share our views on the remaining needed test parameters and give our proposal on simulation assumption for UL timing adjustment

**Discussion:**

.

**Decision:** The document was **Noted**.

### 8.18 NR performance requirement enhancement [NR\_perf\_enh-Perf]

**R4-2002386 Email discussion summary for RAN4#94e\_#95\_NR\_perf\_enh\_Demod**

*Type: other For: Information  
 Source: Moderator (China Telecomm)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002524.**

**R4-2002524 Email discussion summary for RAN4#94e\_#95\_NR\_perf\_enh\_Demod**

*Type: other For: Information  
 Source: Moderator (China Telecomm)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002390 Way forward on release independent aspect for UE demodulation and CSI reporting requirements**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002391 Way forward on PDSCH CA normal demodulation requirements**

*Type: other For: Approval  
 Source: Intel*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002392 Simulation assumptions for NR normal CA UE performance requirements**

*Type: other For: Approval  
 Source: Intel*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002393 Way forward on PMI reporting requirements for Tx ports larger than 8 and up to 32**

*Type: other For: Approval  
 Source: Ericsson，Samsung*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002394 Simulation assumptions for NR PMI reporting requirements for more than 8 Tx ports**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002395 Summary of simulation results for LTE-NR coexistence for TDD**

*Type: other For: Information  
 Source: Huawei, HiSilicon*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002396 Way forward on UE FR1 CA power imbalance requirements**

*Type: other For: Approval  
 Source: NTT DoCoMo*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002397 Way forward on PUSCH demodulation requirements for 30% throughput**

*Type: other For: Approval  
 Source: NTT DoCoMo*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

#### 8.18.1 UE demodulation and CSI requirements (38.101-4) [NR\_perf\_enh-Perf]

**R4-2001445 Discussion on release independence for NR Rel-16 enhanced UE demodulation requirements**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the agreements made in RAN4#93, this contribution shares our views about the release independence aspects for NR Rel-16 UE demodulation requirements including normal CA, PMI and LTE TDD - NR coexistence

**Discussion:**

.

**Decision:** The document was **Noted.**

##### 8.18.1.1 NR CA PDSCH requirementS [NR\_perf\_enh-Perf]

**R4-2000136 On NR CA PDSCH normal demodulation requirements**

*Type: other For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000137 Initial simulation results for NR CA PDSCH normal demodulation requirements**

*Type: other For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000359 Discussion on NR CA UE demodulation requirements**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000360 Simulation results for Normal CA requirements**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000361 Summary of Normal CA simulation results (FR1 15 kHz FDD and TDD)**

*Type: other For: Information  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000362 Summary of Normal CA simulation results (FR1 30 kHz TDD)**

*Type: other For: Information  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000363 Summary of Normal CA simulation results (FR2)**

*Type: other For: Information  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000647 Discussion on NR CA PDSCH normal demodulation**

*Type: other For: Discussion  
 Source: CMCC*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000952 Views on normal PDSCH demodulation test for NR CA**

*Type: other For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001354 Simulation result of NR PDSCH demodulation requirements with CA**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution provides the simulation results for PDSCH for CA and also discussed MCS/rank for FR2.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001419 Views on NR CA PDSCH Demodulation Performance Tests**

*Type: other For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001444 Simulation Results for NR CA PDSCH Demodulation Performance Tests**

*Type: other For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001446 Simulation results on NR UE normal CA performance requirements**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the WF R4-1915863, provide our simulation results onNR UE normal CA performance requirements for alignment

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001447 Discussion on NR Rel-16 UE CA normal demodulation requirements**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per WF R4-1915863, this contribution shares our views on those open issues for NR UE CA normal performance requirements

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001448 Discussion on HARQ timing for NR UE normal CA performance requirements**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per WF R4-1915863, this contribution shares our analysis and views for all TDD-FDD CA and TDD-TDD CA with different numerology

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 8.18.1.2 PMI reporting requirements with larger number of Tx ports [NR\_perf\_enh-Perf]

**R4-2000138 Discussion on PMI reporting requirements for larger number of Tx ports**

*Type: other For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000139 Initial simulation results for wideband PMI reporting requirements**

*Type: other For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000300 Simulation results of PMI test cases**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000301 Initial simulation results for PMI reporting with type II codebook**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000302 Test case design for PMI reporting with Type II codebook**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000374 Simulation results for PMI test cases with 16,32 ports**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001476 Ideal and impairment simulation results for PMI reporting test**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Give our simulation results

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001477 Discussion on PMI Type I test of Tx ports larger than 8**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discuss and give our views on PMI Type I test

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001478 Discussion on PMI Type II test for Tx ports larger than 8**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discuss and give our proposals on PMI Type II test

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001733 Simulation results for CSI PMI test cases**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide simulation results based on the assumptions found in WF and detailed simulation assumptions

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001734 Summary of simulation results of NR UE CSI with 16, and 32Tx antennas**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This contribution summarizes simulation results for NR UE PMI for up to 32 antenna ports

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2002041 Parameters and simulation results on PMI reporting requirements with larger number of Tx ports**

*Type: other For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 8.18.1.3 LTE-NR co-existence for TDD [NR\_perf\_enh-Perf]

**R4-2000364 CR to TS 38.101-4: LTE-NR coexistence requirements for TDD mode (R16)**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0035 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002427.**

**R4-2002427 CR to TS 38.101-4: LTE-NR coexistence requirements for TDD mode (R16)**

*Type: CR For: Agreement  
 38.101-4 v15.4.0 CR-0035 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001861 Simulation results for TDD LTE-NR Coexistence**

*Type: other For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 8.18.1.4 FR1 CA power imbalance requirements [NR\_perf\_enh-Perf]

**R4-2000140 FR1 CA PDSCH demodulation requirement with power imbalance**

*Type: other For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000365 Discussion on FR1 CA power imbalance requirements**

*Type: other For: Discussion  
 Source: Intel Corporation*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000953 Further discussion on power imbalance requirement for intra-band EN-DC/NR CA**

*Type: other For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**.

#### 8.18.2 BS demodulation requirements (38.104) [NR\_perf\_enh-Perf]

##### 8.18.2.1 30% TP test point [NR\_perf\_enh-Perf]

**R4-2000141 PUSCH demodulation requirements for 30% throughput**

*Type: other For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000299 Discussion and initial results for NR demodulation performance in Rel-16**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000403 Discussion on PUSCH demodulation requirements at 30% throughput test point**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

simulation results for 30% throughput and observations

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2000614 Discussion on PUSCH performance requirement with 30% throughput metric**

*Type: other For: Agreement  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2000615 CR for TS38.104: Introducing PUSCH performance requirements at 30% throughput testing point**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0130 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002398.**

**R4-2002398 CR for TS38.104: Introducing PUSCH performance requirements at 30% throughput testing point**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0130 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000616 CR for TS38.141-1: Introducing PUSCH performance requirements at 30% throughput testing point**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0088 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002399.**

**R4-2002399 CR for TS38.141-1: Introducing PUSCH performance requirements at 30% throughput testing point**

*Type: CR For: Agreement  
 38.141-1 v16.2.0 CR-0088 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000617 CR for TS38.141-2: Introducing PUSCH performance requirements at 30% throughput testing point**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0107 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002400.**

**R4-2002400 CR for TS38.141-2: Introducing PUSCH performance requirements at 30% throughput testing point**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0107 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000811 Discussion on Rel-16 demodulation requirements for 30% throughput testing points**

*Type: other For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2000812 Simulation results for NR PUSCH with 30% throughput**

*Type: other For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001194 Remaining issues on 30% TP test point for BS demodulation**

*Type: other For: Approval  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001449 Discussion on the PUSCH performance requirements at 30% max throughput test point**

*Type: other For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the agreements made in RAN4#93, this contributions further share our view about the NR PUSCH 30% TP test point testing

**Discussion:**

.

**Decision:** The document was **Noted**

**R4-2001692 NR Rel-16 performance requirement enhancement BS demodulation simulation results and general discussion**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we deliver our simulation results and discuss the remaining open points (PT-RS and DM-RS configuration) for 30% TPUT test points.

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 8.18.2.2 Additional FR2 requirements [NR\_perf\_enh-Perf]

**R4-2000142 Summary of ideal and impairment results for FR2 PUSCH 2T2R MCS12**

*Type: other For: Information  
 Source: China Telecom*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000799 CR for 38.104: new FRC tables for FR2 PUSCH 2T2R MCS12**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0136 Cat: C (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002401.**

**R4-2002401 CR for 38.104: new FRC tables for FR2 PUSCH 2T2R MCS12**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0136 Cat: C (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000800 CR for 38.141-2: new FRC tables for FR2 PUSCH 2T2R MCS12**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0116 Cat: C (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002402.**

**R4-2002402 CR for 38.141-2: new FRC tables for FR2 PUSCH 2T2R MCS12**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0116 Cat: C (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001693 CR for 38.104: Performance requirements for FR2 PUSCH 2T2R 16QAM**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0159 Cat: C (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

SNR of performance requirements for FR2 PUSCH 2T2R 16QAM, in section 11 is unachievable. Implement previously agreed changes to rectify.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002403.**

**R4-2002403 CR for 38.104: Performance requirements for FR2 PUSCH 2T2R 16QAM**

*Type: CR For: Agreement  
 38.104 v16.2.0 CR-0159 Cat: C (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

SNR of performance requirements for FR2 PUSCH 2T2R 16QAM, in section 11 is unachievable. Implement previously agreed changes to rectify.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001694 CR for 38.141-2: Radiated test requirements for FR2 PUSCH 2T2R 16QAM**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0132 Cat: C (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

SNR of performance requirements for FR2 PUSCH 2T2R 16QAM, in section 8 is unachievable. Implement previously agreed changes to rectify.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002404.**

**R4-2002404 CR for 38.141-2: Radiated test requirements for FR2 PUSCH 2T2R 16QAM**

*Type: CR For: Agreement  
 38.141-2 v16.2.0 CR-0132 Cat: C (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

SNR of performance requirements for FR2 PUSCH 2T2R 16QAM, in section 8 is unachievable. Implement previously agreed changes to rectify.

**Discussion:**

.

**Decision:** The document was **Return to.**

### 8.19 Over the air (OTA) base station (BS) testing TR [OTA\_BS\_testing-Perf]

**R4-2002375 Email discussion summary for RAN4#94e\_#84\_OTA\_BS\_testing**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002513.**

**R4-2002513 Email discussion summary for RAN4#94e\_#84\_OTA\_BS\_testing**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001698 TP to TR 37.9xx : Test uncertainty annexes**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Test unceratinty annexes for the OTA testing TR.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002444.**

**R4-2002444 TP to TR 37.9xx : Test uncertainty annexes**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Test unceratinty annexes for the OTA testing TR.

**Discussion:**

.

**Decision:** The document was **Return to..**

**R4-2001699 OTA BS testing Tx FR1 MU calculation tables**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Cover sheet for the FR1 Tx MU budget spreadsheet

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002431**.

**R4-2002431 OTA BS testing Tx FR1 MU calculation tables**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Cover sheet for the FR1 Tx MU budget spreadsheet

**Discussion:**

.

**Decision:** The document was **Return to**.

**R4-2001700 OTA BS testing Tx FR2 MU calculation tables**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Cover sheet for the FR2 Tx MU budget spreadsheet

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002432**.

**R4-2002432 OTA BS testing Tx FR2 MU calculation tables**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Cover sheet for the FR2 Tx MU budget spreadsheet

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001701 OTA BS testing RX FR1 MU calculation tables**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Cover sheet for the FR1 Rx MU budget spreadsheet

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002433**.

**R4-2002433 OTA BS testing RX FR1 MU calculation tables**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Cover sheet for the FR1 Rx MU budget spreadsheet

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001702 OTA BS testing FR1 co-location MU calculation tables**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Cover sheet for the FR1 co-location MU budget spreadsheet

**Discussion:**

.

**Decision:** The document was **Approved**.

**R4-2001703 TP to TR 37.9xx : Colocation MU value derivation sub-clause updates**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Update and clarify the co-location MU derivation subclause.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002442.**

**R4-2002442 TP to TR 37.9xx : Colocation MU value derivation sub-clause updates**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Update and clarify the co-location MU derivation subclause.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001704 TP to TR 37.9xx - OTA BS testing summary clauses 17-18**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Summary table sections for MU and TT

**Discussion:**

.

**Decision:** The document was **Approved.**

**R4-2001705 TP to TR 37.9xx -Tx MU value derivation sub-clause update**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

TP to update MU and TT sub-clauses with agreed MU tables for each Tx requirement.

**Discussion:**

.

**Decision:** The document was **Approved.**

**R4-2001715 TP to OTA BS TR on EMC**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002443**.

**R4-2002443 TP to OTA BS TR on EMC**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision:** The document was **Return to.**.

#### 8.19.1 General (such as work plan, AH minutes) [OTA\_BS\_testing-Perf]

**R4-2001806 Work-plan for the OTA BS testing WI**

*Type: other For: Discussion  
 Source: Huawei*

**Abstract:**

In this contribution we provide description of the work-flow used to general the External TR (i.e. RF conformance testing background for radiated BS requirements) content for the OTA BS testing WI.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001807 Skeleton for TR 37.941 on OTA BS testing, Rel-15**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

In the attached document we provide skeleton for the External TR (i.e. RF conformance testing background for radiated BS requirements) for OTA BS testing WI, Rel-15.

**Discussion:**

.

**Decision:** The document was **Approved.**

**R4-2001823 Big TP for TR 37.941, Rel-15**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

Placeholder TP for the External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for all the agreed TPs from the e-meeting to be implemented for Rel-15 version of the TR.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002430**.

**R4-2002430 Big TP for TR 37.941, Rel-15**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

Placeholder TP for the External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for all the agreed TPs from the e-meeting to be implemented for Rel-15 version of the TR.

**Discussion:**

.

**Decision:** The document was **Return to.**

#### 8.19.2 Others [OTA\_BS\_testing-Perf]

**R4-2001808 TP to the TR 37.941: Scope**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the Scope section.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002434**.

**R4-2002434 TP to the TR 37.941: Scope**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the Scope section.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001809 TP to the TR 37.941: general sections**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the references, definitions, symbols and abbreviations sections.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001810 TP to the TR 37.941: Coordinate system**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the coordinate system section.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001811 TP to the TR 37.941: conformance testing framework**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the conformance testing framework section.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002435.**

**R4-2002435 TP to the TR 37.941: conformance testing framework**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the conformance testing framework section.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001812 TP to the TR 37.941: measurement types**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the measurement types section.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002436.**

**R4-2002436 TP to the TR 37.941: measurement types**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the measurement types section.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001813 TP to the TR 37.941: OTA measurement systems**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the OTA measurement systems section.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002437**.

**R4-2002437 TP to the TR 37.941: OTA measurement systems**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the OTA measurement systems section.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001814 TP to the TR 37.941: measurement systems calibration**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the measurement systems calibration section.

**Discussion:**

.

**Decision:** The document was **Approved**.

**R4-2001815 TP to the TR 37.941: TX directional requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the TX directional requirements section.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002438.**

**R4-2002438 TP to the TR 37.941: TX directional requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the TX directional requirements section.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001816 TP to the TR 37.941: RX directional requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the RX directional requirements section.

**Discussion:**

.

**Decision:** The document was **Approved**.

**R4-2001817 TP to the TR 37.941: In-band TRP requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the in-band TRP requirements section.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002439.**

**R4-2002439 TP to the TR 37.941: In-band TRP requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the in-band TRP requirements section.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001818 TP to the TR 37.941: Out-of-band TRP requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the OoB TRP requirements section.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002440.**

**R4-2002440 TP to the TR 37.941: Out-of-band TRP requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the OoB TRP requirements section.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001819 TP to the TR 37.941: Out-of-band blocking requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the OoB blocking requirements section.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002441.**

**R4-2002441 TP to the TR 37.941: Out-of-band blocking requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the OoB blocking requirements section.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2001820 TP to the TR 37.941: Demodulation performance requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the demodiulation performance requirements section.

**Discussion:**

.

**Decision:** The document was **Approved.**

**R4-2001821 TP to the TR 37.941: EMC requirements**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the EMC requirements section.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2001822 TP to the TR 37.941: annex D, E, F**

*Type: pCR For: Approval  
 37.941 v0.0.1  
 Source: Huawei*

**Abstract:**

TP to External TR (i.e. RF conformance testing background for radiated BS requirements) on OTA BS testing for the annexes D, E, F on beam sweeping, sparse sampling and power density measurement close to BS.

**Discussion:**

.

**Decision:** The document was **Approved**.

### 8.20 2-step RACH for NR [NR\_2step\_RACH-Perf]

**R4-2002387 Email discussion summary for RAN4#94e\_#96\_NR\_2step\_RACH\_Demod**

*Type: other For: Information  
 Source: Moderator (ZTE)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002525.**

**R4-2002525 Email discussion summary for RAN4#94e\_#96\_NR\_2step\_RACH\_Demod**

*Type: other For: Information  
 Source: Moderator (ZTE)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002389 Wayforward on BS demodulation requirements for 2-step RACH**

*Type: other For: Approval  
 Source: ZTE*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000802 2-step RACH workplan**

*Type: other For: Approval  
 Source: ZTE Wistron Telecom AB*

**Session Chair: Include Demdoualtion part into discussion.**

**Discussion:**

**Decision:** The document was **Return to.**

#### 8.20.1 BS Demodulation requirements (38.104/38.141-1/38.141-2) [NR\_2step\_RACH-Perf]

**R4-2000314 View on BS demodulation requirement for NR 2-step RACH**

*Type: other For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000801 BS demodulation requirements for 2-step RACH**

*Type: other For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001183 On 2 step RACH demodulation**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Proposal for no requirement for 2 step RACH

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2001491 On 2-step RACH BS demodulation requirements**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This paper presents the initial discussion on base station demodulation requirements for 2-step RACH

**Discussion:**

.

**Decision:** The document was **Noted**

#### 8.20.2 Others [NR\_2step\_RACH-Perf]

### 8.21 SON/MDT Support for NR [NR\_SON\_MDT]

#### 8.21.1 MDT related RRM requirements (38.133, 36.133) [NR\_SON\_MDT-Core]

## 9 Rel-16 spectrum related Work Items for NR

### 9.1 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y) [NR\_CA\_R16\_intra]

#### 9.1.1 Rapporteur Input (WID/TR/CR) [NR\_CA\_R16\_intra-Core /Perf]

#### 9.1.2 UE RF for FR1 [NR\_CA\_R16\_intra-Core]

#### 9.1.3 UE RF for FR2 [NR\_CA\_R16\_intra-Core]

### 9.2 NR inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1, 2) [NR\_CADC\_R16\_2BDL\_xBUL]

#### 9.2.1 Rapporteur Input (WID/TR/CR) [NR\_CADC\_R16\_2BDL\_xBUL-Core/Perf]

#### 9.2.2 NR inter band CA without any FR2 band(s) [NR\_CADC\_R16\_2BDL\_xBUL-Core]

#### 9.2.3 NR inter band CA with at least one FR2 band [NR\_CADC\_R16\_2BDL\_xBUL-Core]

### 9.3 EN-DC of 1 LTE band and 1 NR band [DC\_R16\_1BLTE\_1BNR\_2DL2UL]

#### 9.3.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_1BLTE\_1BNR\_2DL2UL-Core/Perf]

#### 9.3.2 EN-DC without FR2 band [DC\_R16\_1BLTE\_1BNR\_2DL2UL-Core]

#### 9.3.3 EN-DC with FR2 band [DC\_R16\_1BLTE\_1BNR\_2DL2UL-Core]

### 9.4 EN-DC of 2 LTE band and 1 NR band [DC\_R16\_2BLTE\_1BNR\_3DL2UL]

#### 9.4.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_2BLTE\_1BNR\_3DL2UL-Core/Perf]

#### 9.4.2 EN-DC without FR2 band [DC\_R16\_2BLTE\_1BNR\_3DL2UL-Core]

#### 9.4.3 EN-DC with FR2 band [DC\_R16\_2BLTE\_1BNR\_3DL2UL-Core]

### 9.5 EN-DC of 3 LTE band and 1 NR band [DC\_R16\_3BLTE\_1BNR\_4DL2UL]

#### 9.5.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_3BLTE\_1BNR\_4DL2UL-Core/Perf]

#### 9.5.2 EN-DC without FR2 band [DC\_R16\_3BLTE\_1BNR\_4DL2UL-Core]

#### 9.5.3 EN-DC with FR2 band [DC\_R16\_3BLTE\_1BNR\_4DL2UL-Core]

### 9.6 EN-DC of 4 LTE band and 1 NR band [DC\_R16\_4BLTE\_1BNR\_5DL2UL]

#### 9.6.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_4BLTE\_1BNR\_5DL2UL-Core/Perf]

#### 9.6.2 EN-DC without FR2 band [DC\_R16\_4BLTE\_1BNR\_5DL2UL-Core]

#### 9.6.3 EN-DC with FR2 band [DC\_R16\_4BLTE\_1BNR\_5DL2UL-Core]

### 9.7 EN-DC of x bands (x=1,2, 3, 4) LTE inter-band CA and 2 bands NR inter-band CA [DC\_R16\_xBLTE\_2BNR\_yDL2UL]

#### 9.7.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_xBLTE\_2BNR\_yDL2UL-Core/Per]

#### 9.7.2 EN-DC including NR inter CA without FR2 band [DC\_R16\_xBLTE\_2BNR\_yDL2UL-Core]

#### 9.7.3 EN-DC including NR inter CA with FR2 band [DC\_R16\_xBLTE\_2BNR\_yDL2UL-Core]

### 9.8 Band combinations for SA NR supplementary uplink (SUL), NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP) [NR\_SUL\_combos\_R16]

#### 9.8.1 Rapporteur Input (WID/TR/CR) [NR\_SUL\_combos\_R16-Core/Per]

#### 9.8.2 UE RF [NR\_SUL\_combos\_R16-Core]

### 9.9 NR Inter-band Carrier Aggregation for 3 bands DL with 1 band UL [NR\_CA\_R16\_3BDL\_1BUL]

#### 9.9.1 Rapporteur Input (WID/TR/CR) [NR\_CA\_R16\_3BDL\_1BUL-Core/Per]

#### 9.9.2 UE RF [NR\_CA\_R16\_3BDL\_1BUL-Core]

### 9.10 NR Inter-band Carrier Aggregation for 4 bands DL with 1 band UL [NR\_CA\_R16\_4BDL\_1BUL]

#### 9.10.1 Rapporteur Input (WID/TR/CR) [NR\_CA\_R16\_4BDL\_1BUL-Core/Per]

#### 9.10.2 UE RF [NR\_CA\_R16\_4BDL\_1BUL-Core]

### 9.11 NR Inter-band Carrier Aggregation/Dual connectivity for 3 bands DL with 2 bands UL [NR\_CADC\_R16\_3BDL\_2BUL]

#### 9.11.1 Rapporteur Input (WID/TR/CR) [NR\_CADC\_R16\_3BDL\_2BUL-Core/Per]

#### 9.11.2 UE RF [NR\_CADC\_R16\_3BDL\_2BUL-Core]

### 9.12 Dual Connectivity (EN-DC) with 3 bands DL and 3 bands UL [DC\_R16\_LTE\_NR\_3DL3UL]

#### 9.12.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_LTE\_NR\_3DL3UL-Core/Per]

#### 9.12.2 UE RF [DC\_R16\_LTE\_NR\_3DL3UL-Core]

### 9.13 Dual Connectivity (EN-DC) of LTE inter-band CA xDL/1UL bands (x=2,3,4) and NR FR1 1DL/1UL band and NR FR2 1DL/1UL band [DC\_R16\_xBLTE\_2BNR\_yDL3UL]

#### 9.13.1 Rapporteur Input (WID/TR/CR) [DC\_R16\_xBLTE\_2BNR\_yDL3UL-Core/Per]

#### 9.13.2 UE RF [DC\_R16\_xBLTE\_2BNR\_yDL3UL-Core]

### 9.14 29dBm UE Power Class for B41 and n41 [LTE\_NR\_B41\_Bn41\_PC29dBm]

#### 9.14.1 Rapporteur Input (WID/TR/CR) [LTE\_NR\_B41\_Bn41\_PC29dBm]

#### 9.14.2 UE RF (36.101, 38.101-1, 38.101-3) [LTE\_NR\_B41\_Bn41\_PC29dBm]

#### 9.14.3 Others [LTE\_NR\_B41\_Bn41\_PC29dBm]

### 9.15 Power Class 2 UE for EN-DC (1 LTE FDD band +1 NR TDD band) [ENDC\_UE\_PC2\_FDD\_TDD-Core]

#### 9.15.1 General [ENDC\_UE\_PC2\_FDD\_TDD-Core]

#### 9.15.2 UE RF requirement [ENDC\_UE\_PC2\_FDD\_TDD-Core]

#### 9.15.3 Signaling [ENDC\_UE\_PC2\_FDD\_TDD-Core]

### 9.16 Introduction of NR band n259 [NR\_n259]

#### 9.16.1 UE RF (38.101-2) [NR\_n259-Core]

#### 9.16.2 BS RF (38.104) [NR\_n259-Core]

#### 9.16.3 RRM (38.133) [NR\_n259-Core]

#### 9.16.4 Others [NR\_n259-Core/Perf]

### 9.17 Adding 30MHz channel bandwidth for NR band n1 [NR\_n1\_BW]

#### 9.17.1 UE RF (38.101-1) [NR\_n1\_BW-Core]

#### 9.17.2 BS RF (38.104) [NR\_n1\_BW-Core]

#### 9.17.3 RRM (38.133) [NR\_n1\_BW]

#### 9.17.4 Others [NR\_n1\_BW]

### 9.18 Addition of wider channel bandwidth in NR band n28 [NR\_n28\_BW-Core]

#### 9.18.1 UE RF (38.101-1) [NR\_n28\_BW-Core]

#### 9.18.2 BS RF (38.104) [NR\_n28\_BW-Core]

#### 9.18.3 RRM (38.133) [NR\_n28\_BW-Core]

#### 9.18.4 Others [NR\_n28\_BW-Core/Perf]

### 9.19 Introduction of NR Band n26 [NR\_n26]

#### 9.19.1 UE RF (38.101-1) [NR\_n26]

#### 9.19.2 BS RF (38.104) [NR\_n26]

#### 9.19.3 RRM (38.133) [NR\_n26]

#### 9.19.4 Others [NR\_n26]

### 9.20 Adding 25MHz and 50MHz channel bandwidth in NR band n1 [NR\_n1\_BW2]

#### 9.20.1 UE RF (38.101-1) [NR\_n1\_BW2-Core]

#### 9.20.2 BS RF (38.104) [NR\_n1\_BW2-Core]

#### 9.20.3 RRM (38.133) [NR\_n1\_BW2-Core]

#### 9.20.4 Others [NR\_n1\_BW2-Core/Perf]

### 9.21 Addition of asymmetric channel bandwidth for NR band n66 [NR\_n66\_BW]

#### 9.21.1 UE RF (38.101-1) [NR\_n66\_BW]

#### 9.21.2 BS RF (38.104) [NR\_n66\_BW]

#### 9.21.3 RRM (38.133) [NR\_n66\_BW]

#### 9.21.4 OtherS [NR\_n66\_BW]

### 9.22 Adding wider channel bandwidth to NR band n38 [NR\_n38\_BW2]

#### 9.22.1 UE RF (38.101-1) [NR\_n38\_BW2]

#### 9.22.2 BS RF (38.104) [NR\_n38\_BW2]

#### 9.22.3 RRM (38.133) [NR\_n38\_BW2]

#### 9.22.4 Others [NR\_n38\_BW2]

### 9.23 LTE/NR spectrum sharing in band 48/n48 frequency range [NR\_n48\_LTE\_48\_coex-Core]

#### 9.23.1 General (such as work plan, AH minutes) [NR\_n48\_LTE\_48\_coex-Core]

#### 9.23.2 Channel raster, sync raster, and UL shift [NR\_n48\_LTE\_48\_coex-Core]

### 9.24 Adding 40 MHz channel bandwidth (15, 30 and 60kHz SCS) in NR band n3 [NR\_n3\_BW]

#### 9.24.1 UE RF (38.101-1) [NR\_n3\_BW]

#### 9.24.2 BS RF (38.104) [NR\_n3\_BW]

#### 9.24.3 RRM (38.133) [NR\_n3\_BW]

#### 9.24.4 Others [NR\_n3\_BW]

### 9.25 Adding 50 MHz channel bandwidth (15, 30 and 60kHz SCS) in NR band n65 [NR\_n65\_BW]

#### 9.25.1 UE RF (38.101-1) [NR\_n65\_BW]

#### 9.25.2 BS RF (38.104) [NR\_n65\_BW]

#### 9.25.3 RRM (38.133) [NR\_n65\_BW]

#### 9.25.4 Others [NR\_n65\_BW]

### 9.26 Introduction of NR Band n53 [NR\_n53]

#### 9.26.1 UE RF (38.101-1) [NR\_n53]

#### 9.26.2 BS RF (38.104) [NR\_n53]

#### 9.26.3 RRM (38.133) [NR\_n53]

#### 9.26.4 Others [NR\_n53]

### 9.27 Closed Rel-16 NR spectrum related WIs [WI code]

#### 9.27.1 UE RF [WI code]

#### 9.27.2 BS RF [WI code]

#### 9.27.3 RRM [WI code]

#### 9.27.4 Demodulation and CSI [WI code]

## 10 Rel-16 Study Items for NR

### 10.2 Study on radiated metrics and test methodology for the verification of multi-antenna reception perf. of NR UEs [FS\_NR\_MIMO\_OTA\_test]

#### 10.2.1 General [FS\_NR\_MIMO\_OTA\_test]

**R4-2002388 Email discussion summary for RAN4#94e\_#97\_FS\_NR\_MIMO\_OTA\_test**

*Type: other For: Information  
 Source: Moderator (CAICT)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002526.**

**R4-2002526 Email discussion summary for RAN4#94e\_#97\_FS\_NR\_MIMO\_OTA\_test**

*Type: other For: Information  
 Source: Moderator (CAICT)*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002471 WF on finalizing FR2 MIMO OTA**

*Type: other For: Approval  
 Source: CAICT*

**Abstract:**

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002481 TP to TR38.827 on spatial sampling points for FR1 spatial correlation validation**

*Type: pCR For: Approval  
 38.827 v1.1.0  
 Source: Keysight*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002482 TR38.827 v1.2.0 NR MIMO OTA**

*Type: draft TR For: Approval  
 38.827 v1.2.0  
 Source: CAICT*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2000894 TR38.827 v1.1.0 NR MIMO OTA**

*Type: draft TR For: Approval  
 38.827 v1.1.0  
 Source: CAICT*

**Discussion:**

.

**Decision:** The document was **Approved**

**R4-2000897 TP to TR 38.827 v1.1.0 on general part**

*Type: pCR For: Approval  
 38.827 v1.1.0  
 Source: CAICT*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002472.**

**R4-2002472 TP to TR 38.827 v1.1.0 on general part**

*Type: pCR For: Approval  
 38.827 v1.1.0  
 Source: CAICT*

**Discussion:**

.

**Decision:** The document was **Return to.**

#### 10.2.2 Performance metrics [FS\_NR\_MIMO\_OTA\_test]

**R4-2000272 Proposal on MIMO OTA performance metrics for FR2**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000895 TP to TR 38.827 v1.1.0 on FR2 MIMO OTA performance metrics**

*Type: pCR For: Approval  
 38.827 v1.1.0  
 Source: CAICT*

**Discussion:**

.

**Decision:** The document was **Noted.**

#### 10.2.3 Testing methodologies [FS\_NR\_MIMO\_OTA\_test]

##### 10.2.3.1 FR1 test methodologies [FS\_NR\_MIMO\_OTA\_test]

**R4-2002156 Reference Spatial Correlation Curves for Different NR FR1 MIMO OTA Test Frequencies**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This contribution presents the spatial correlation reference curves for NR MIMO OTA models at different test frequencies.

**Discussion:**

.

**Decision:** The document was **Noted**.

##### 10.2.3.2 FR2 test methodologies [FS\_NR\_MIMO\_OTA\_test]

**R4-2000080 Dynamic geometry-based MIMO OTA Testing**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

We provide observations about limits of the current test methodology and propose to further study dynamic geometry-based MIMO OTA methodology

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000505 Study feasible SNR ranges for NR FR2 MIMO OTA in 3D MPAC**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

In this paper, we provide the analysis on the feasible SNR ranges for static MIMO OTA in 3D-MPAC system.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2000896 TP to TR 38.827 v1.1.0 on FR2 preliminary MU assessment**

*Type: pCR For: Approval  
 38.827 v1.1.0  
 Source: CAICT*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002473.**

**R4-2002473 TP to TR 38.827 v1.1.0 on FR2 preliminary MU assessment**

*Type: pCR For: Approval  
 38.827 v1.1.0  
 Source: CAICT*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002069 DoT selection for FR2 channel model**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

The two channel models, InO CDL-A, and UMi CDL-C have been chosen for FR2 [4] as the working assumption for analysis in the ad-hoc group. This contribution looks at these two channel models with spatial filtering and thresholding, and the resulting selec

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002364**

**R4-2002364 DoT selection for FR2 channel model**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

The two channel models, InO CDL-A, and UMi CDL-C have been chosen for FR2 [4] as the working assumption for analysis in the ad-hoc group. This contribution looks at these two channel models with spatial filtering and thresholding, and the resulting selec

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2002070 TP for DoT selection for FR2 channel model**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

Text Proposal for DoT selection: The two channel models, InO CDL-A, and UMi CDL-C have been chosen for FR2 [4] as the working assumption for analysis in the ad-hoc group. This contribution looks at these two channel models with spatial filtering and thr

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002474.**

**R4-2002474 TP for DoT selection for FR2 channel model**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

Text Proposal for DoT selection: The two channel models, InO CDL-A, and UMi CDL-C have been chosen for FR2 [4] as the working assumption for analysis in the ad-hoc group. This contribution looks at these two channel models with spatial filtering and thr

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002073 System Design and Probe layout for FR2 MPAC MIMO OTA**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

This contribution looks at the design and layout of probes in order to reproduce the desired FR2 channel model in the test volume.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2002074 TP for System Design and Probe layout for FR2 MPAC MIMO OTA**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

TP for: This contribution looks at the design and layout of probes in order to reproduce the desired FR2 channel model in the test volume.

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2002100 Verification of FR2 channel models in MPAC system**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

The target of the validation is to guarantee that given propagation conditions or Figure of Merits are created to the test volume.

**Discussion:**

.

**Decision:** The document was **Noted.**

**R4-2002102 TP for Verification of FR2 channel models in MPAC system**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

The target of the validation is to guarantee that given propagation conditions or Figure of Merits are created to the test volume.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002365.**

**R4-2002365 TP for Verification of FR2 channel models in MPAC system**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

The target of the validation is to guarantee that given propagation conditions or Figure of Merits are created to the test volume.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002475.**

**R4-2002475 TP for Verification of FR2 channel models in MPAC system**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

The target of the validation is to guarantee that given propagation conditions or Figure of Merits are created to the test volume.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002117 Discussion on test system implementation for FR2 MIMO OTA**

*Type: other For: Approval  
 Source: ROHDE & SCHWARZ*

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002479.**

**R4-2002479 Discussion on test system implementation for FR2 MIMO OTA**

*Type: other For: Approval  
 Source: ROHDE & SCHWARZ*

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002151 TP to TR38.827: FR2 MIMO OTA Calibration and Test Procedures**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This text proposal adds the calibration and test procedures into TR 38.827

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002476.**

**R4-2002476 TP to TR38.827: FR2 MIMO OTA Calibration and Test Procedures**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This text proposal adds the calibration and test procedures into TR 38.827

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002152 TP to 38.827 to introduce EUT orientations for FR2**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This contribution is introducing the TP for the EUT orientations used for the NR FR2 MIMO OTA 3D scan

**Discussion:**

.

**Decision:** The document was **Approved.**

**R4-2002153 Sample SNR ranges in FR2 OTA setup**

*Type: other For: Information  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This contribution is addressing the action item captured in the last WF on feasible SNR range

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2002154 PSP Correlation between two CE Vendors**

*Type: other For: Information  
 Source: Keysight Technologies UK Ltd, Spirent Communications*

**Abstract:**

This contribution provides a brief overview of a PSP correlation exercise between the two CE vendors that have provided PSP simulations in the past.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002477.**

**R4-2002477 PSP Correlation between two CE Vendors**

*Type: other For: Information  
 Source: Keysight Technologies UK Ltd, Spirent Communications*

**Abstract:**

This contribution provides a brief overview of a PSP correlation exercise between the two CE vendors that have provided PSP simulations in the past.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002155 System Implementation of FR2 3D MPAC Systems**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

In this contribution, we propose one set of optimal probe locations for an FR2 3D MPAC system, which can efficiently emulate the behaviour of InO CDL-A and UMi CDL-C models inside the chamber.

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002478.**

**R4-2002478 System Implementation of FR2 3D MPAC Systems**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

In this contribution, we propose one set of optimal probe locations for an FR2 3D MPAC system, which can efficiently emulate the behaviour of InO CDL-A and UMi CDL-C models inside the chamber.

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002157 Joint Power-Angle-Delay profiles for FR2 NR MIMO OTA channel models validation and PSP evaluation**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This contribution presents the joint power-angle-delay (PADP) estimates for NR FR2 MIMO OTA models at FR1 frequency band, i.e., 2600 MHz, scaled down from FR2.

**Discussion:**

.

**Decision:** The document was **Noted**.

#### 10.2.4 Channel Models [FS\_NR\_MIMO\_OTA\_test]

**R4-2000798 Initial phase of MIMO OTA channel model**

*Type: other For: Approval  
 Source: MediaTek Beijing Inc.*

**Discussion:**

.

**Decision:** The document was **Noted**.

**R4-2002149 Clarification of Beam Forming Weights**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This contribution is providing clarifications on the channel model coefficient equations in Section 7.2 of TR38.827

**Discussion:**

.

**Decision:** The document was **Revised in R4-2002480.**

**R4-2002480 Clarification of Beam Forming Weights**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This contribution is providing clarifications on the channel model coefficient equations in Section 7.2 of TR38.827

**Discussion:**

.

**Decision:** The document was **Return to.**

**R4-2002150 Initial phase definition of channel models**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This contribution is discussing the need for the scalar initial phase terms to be fixed.

**Discussion:**

.

**Decision:** The document was **Noted**.

### 10.3 Study on 7 - 24GHz frequency range [FS\_7to24GHz\_NR]

#### 10.3.1 General [FS\_7to24GHz\_NR]

#### 10.3.2 Regulatory survey [FS\_7to24GHz\_NR]

#### 10.3.3 Boundary frequency and/or boundary conditions [FS\_7to24GHz\_NR]

#### 10.3.4 NR system parameters analysis [FS\_7to24GHz\_NR]

#### 10.3.5 Deployment scenarios [FS\_7to24GHz\_NR]

#### 10.3.6 RF technology aspects [FS\_7to24GHz\_NR]

#### 10.3.7 NR UE [FS\_7to24GHz\_NR]

##### 10.3.7.1 NR UE architecture [FS\_7to24GHz\_NR]

##### 10.3.7.2 TX requirements [FS\_7to24GHz\_NR]

##### 10.3.7.3 RX requirements [FS\_7to24GHz\_NR]

#### 10.3.8 NR BS [FS\_7to24GHz\_NR]

##### 10.3.8.1 BS types, BS requirement sets [FS\_7to24GHz\_NR]

##### 10.3.8.2 NR BS architecture [FS\_7to24GHz\_NR]

##### 10.3.8.3 TX requirements [FS\_7to24GHz\_NR]

##### 10.3.8.4 RX requirements [FS\_7to24GHz\_NR]

#### 10.3.9 BS EMC [FS\_7to24GHz\_NR]

## 12 Liaison and output to other groups

## 13 Revision of the Work Plan

### 13.1 Simplification of band combinations in RAN4 specifications

### 13.2 R17 new proposals

#### 13.2.1 Basket WI approach for adding existing channel bandwidth on existing NR bands

#### 13.2.2 Proposals on adding “brand new” channel bandwidth

#### 13.2.3 Basket WIs for LTE CA, EN-DC, NR CA and NR DC

#### 13.2.4 Others

### 13.3 Others

## 14 Any other business

## 15 Close of the E-meeting

Report prepared by: Kai-Erik Sunell