**3GPP TSG-RAN WG4 Meeting #102-e R4-22xxxxx**

**Online Meeting, 21 Febuary – 03 March 2022**

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

**DRAFT Meeting Report  
for  
TSG RAN WG4  
meeting: 100-bis-e**

**Electronic Meeting, Online, 17/01/2022 to 25/01/2022**

Report generated on Friday, 2022-01-14 17:05 UTC

Contents:

1 Opening of the E-meeting 11

2 Approval of the agenda 11

3 Letters / reports from other groups / meeting 11

4 Rel-17 feature list 17

5 Rel-17 spectrum related WIs for NR 17

5.1 Introduction of lower 6GHz NR unlicensed operation for Europe 17

5.1.1 General 17

5.1.2 Band definition and channel arrangement 18

5.1.3 UE RF requirements 18

5.1.4 BS RF requirements 19

5.1.5 Others 20

5.2 Introduction of operation in full unlicensed band 5925-7125MHz for NR 21

5.2.1 General 21

5.2.2 Regulatory requirements and evaluation for re-using existing NS 21

5.2.3 UE RF requirements 21

5.2.4 BS RF requirements 22

5.2.5 Others 22

5.3 Introduction of 6GHz NR licensed bands 23

5.3.1 General 23

5.3.2 System parameters 23

5.3.3 UE RF requirements 25

5.3.4 BS RF requirements 26

5.3.5 Others 29

5.4 Introduction of 900 MHz spectrum to 5G NR applicable for Rail Mobile Radio 29

5.4.1 General 29

5.4.2 UE RF requirements 29

5.4.3 BS RF requirements 29

5.4.4 Others 33

5.5 Introduction of 1900 MHz spectrum to 5G NR applicable for Rail Mobile Radio 33

5.5.1 General 33

5.5.2 UE RF requirements 33

5.5.3 BS RF requirements 33

5.5.4 Others 35

5.6 Issues arising from basket WIs but not subject to block approval 35

5.6.1 UE RF requirements 35

5.6.2 NR-U intra-band contiguous UL CA 37

5.7 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y) 37

5.7.1 UE RF requirements for FR1 37

5.7.2 UE RF requirements for FR2 38

5.8 NR inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1, 2) 38

5.8.1 NR inter band CA requirements without any FR2 band(s) 38

5.8.2 NR inter band CA requirements with at least one FR2 band 42

5.9 NR Inter-band Carrier Aggregation for 3 bands DL with 1 band UL 43

5.9.1 UE RF requirements 43

5.10 NR Inter-band Carrier Aggregation for 4 bands DL with 1 band UL 48

5.10.1 UE RF requirements 48

5.11 NR Inter-band Carrier Aggregation/Dual connectivity for 3 bands DL with 2 bands UL 52

5.11.1 UE RF requirements 52

5.12 NR inter-band Carrier Aggregation and Dual connectivity for DL 4 bands and 2UL bands 62

5.12.1 UE RF requirements 62

5.13 NR inter-band CA for 5 bands DL with x bands UL (x=1, 2) 66

5.13.1 UE RF requirements 66

5.14 DC of 1 LTE band and 1 NR band 66

5.14.1 EN-DC requirements without FR2 band 66

5.14.2 EN-DC requirements with FR2 band 68

5.15 DC of 2 LTE band and 1 NR band 68

5.15.1 EN-DC requirements without FR2 band 69

5.15.2 EN-DC requirements with FR2 band 71

5.16 DC of 3 LTE band and 1 NR band 71

5.16.1 EN-DC requirements without FR2 band 71

5.16.2 EN-DC requirements with FR2 band 75

5.17 DC of 4 LTE band and 1 NR band 76

5.17.1 EN-DC requirements without FR2 band 76

5.17.2 EN-DC requirements with FR2 band 77

5.18 DC of 5 bands LTE inter-band CA (5DL/1L) and 1 NR band (1DL/1UL) 78

5.18.1 UE RF requirements 78

5.19 DC of x bands (x=1,2, 3, 4) LTE inter-band CA and 2 bands NR inter-band CA 78

5.19.1 EN-DC requirements including NR inter CA without FR2 band 79

5.19.2 EN-DC requirements including NR inter CA with FR2 band 90

5.20 DC of x bands (x=1,2) LTE inter-band CA (xDL/xUL) and y bands (y=3-x) NR inter-band CA 91

5.20.1 UE RF requirements 91

5.21 DC of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and 3 bands NR inter-band CA (3DL/1UL) 91

5.21.1 UE RF requirements 91

5.22 DC of x bands (x=2,3,4) LTE inter-band CA (xDL/1UL) and 1 NR FR1 band (1DL/1UL) and 1 NR FR2 band (1DL/1UL) 92

5.22.1 UE RF requirements 92

5.23 DC of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and 4 bands NR inter-band CA (4DL/1UL) 92

5.23.1 UE RF requirements 92

5.24 Band combinations for SA NR supplementary uplink (SUL) NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP) 92

5.24.1 UE RF requirements 92

5.25 Band combinations for Uu and V2X con-current operation 92

5.25.1 UE RF requirements 92

5.26 Adding channel bandwidth support to existing NR bands 93

5.26.1 UE RF requirements 93

5.26.1.1 Addition of bandwidth and Tx/Rx requirements 94

5.26.1.2 NR-U 100MHz bandwidth 94

5.26.2 BS RF requirements 94

5.27 Introduction of bandwidth combination set 4 (BCS4) for NR 94

5.27.1 UE RF requirements for BCS4/BCS5 94

5.27.2 Discussion of LS on NR CA capability for BCS5 (R2-1209073) 96

5.28 Addition of MSD (Maximum Sensitivity Degradation) for inter-band EN-DC combinations (1 band LTE+1 band NR FR1) due to added channel bandwidths 96

5.28.1 UE RF requirements 96

5.29 High-power UE operation for fixed-wireless/vehicle-mounted use cases in Band 12, Band 5, Band 13, Band n5, Band n13, and Band n71 97

5.29.1 General 97

5.29.2 Feasibility study 97

5.29.2.1 Coexistence study between B5 and adjacent bands 97

5.29.2.2 Coexistence study between B13/n13 and adjacent bands 97

5.29.2.3 Filter with smaller duplex for B13, n13 and n71 97

5.29.2.4 PA related to MPR and A-MPR for B13, n13, and n71 97

5.29.3 UE RF requirements 97

5.29.3.1 UE REFSENS 97

5.29.3.2 UE Tx requirements (MOP, MPR, A-MPR, and ACLR) 97

5.30 High power UE (power class 2) for NR inter-band Carrier Aggregation with 2 bands downlink and 2 bands uplink 98

5.30.1 UE RF requirements 98

5.31 High power UE (power class 2) for EN-DC with 1 LTE band + 1 NR TDD band 100

5.31.1 UE RF requirements 100

5.32 Power Class 2 UE for NR inter-band CA and SUL configurations with x (x>2) bands DL and y (y=1, 2) bands UL 100

5.32.1 UE RF requirements 100

5.33 Power Class 2 for EN-DC with xLTE band + yNR DL with 1LTE+1(TDD) NR UL band (x= 2, 3, 4, y=1; x=1, 2, y=2) 100

5.33.1 UE RF requirements 100

5.34 High power UE for NR TDD intra-band carrier aggregation in frequency range FR1 102

5.34.1 UE RF requirements 102

5.35 Increasing UE power high limit for CA and DC 102

5.35.1 General and work plan 102

5.35.2 Feasibility and impact study 102

5.35.3 UE RF requirements 103

5.36 High power UE (power class 2) for NR FDD band 104

5.36.1 General and work plan 104

5.36.2 UE RF requirements 104

5.36.2.1 UE maximum output power and power tolerance 104

5.36.2.2 A-MPR requirements 104

5.36.2.3 PC2 MSD requirements (investigation for HD-FDD) 105

5.37 Additional NR bands for UL-MIMO 105

5.37.1 UE RF requirements 105

5.38 Downlink interruption for band combinations to conduct dynamic Tx Switching 106

5.38.1 Determination of inter-band uplink CA and EN-DC combinations for which DL interruption is not allowed 106

5.39 Simultaneous Rx/Tx band combinations for CA, SUL, MR-DC and NR-DC 106

5.39.1 MSD threshold principle 106

5.39.2 FR2 band combinations with simultaneous Rx/Tx 107

5.40 4Rx support for NR band n8 108

5.40.1 UE RF requirements (delta\_R\_IB,4Rx) 108

5.40.2 Release independency 108

6 Rel-17 non-spectrum related work items for NR 108

6.1 Multiple Input Multiple Output (MIMO) Over-the-Air (OTA) requirements for NR UEs 108

6.1.1 General 108

6.1.2 Performance requirements 109

6.1.2.1 Performance Requirements for FR1 109

6.1.2.2 Performance Requirements for FR2 110

6.1.2.3 MU assessment for FR1 and FR2 110

6.1.3 Testing methodologies 110

6.1.3.1 Testing parameters for Performance 110

6.1.3.2 Optimization of test methodologies 111

6.1.3.3 Channel model validation 111

6.2 Introduction of UE TRP (Total Radiated Power) and TRS (Total Radiated Sensitivity) requirements and test methodologies for FR1 (NR SA and EN-DC) 112

6.2.1 General and work plan 112

6.2.2 Test methodology 113

6.2.2.1 SA test methodology 114

6.2.2.2 EN-DC test methodology 114

6.2.2.3 UE with multiple antennas test methodology 115

6.2.2.4 Test time reduction 115

6.2.3 Performance requirements 115

6.2.3.1 Framework for lab alignment and requirements 115

6.2.3.2 SA requirements 116

6.2.3.3 EN-DC requirements 116

6.3 RF requirements enhancement for NR frequency range 1 (FR1) 116

6.3.1 General 116

6.3.2 RF core requirements 117

6.3.2.1 UL MIMO configuration for SUL band configurations 117

6.3.2.2 HPUE for TDD intra-band contiguous UL CA 117

6.3.2.3 HPUE for TDD intra-band non-contiguous UL CA 118

6.3.2.4 Intra-band UL contiguous CA for UL MIMO (n41C and n78C) 119

6.3.2.5 Solution preventing transmission power dropping on cell with lower priority 120

6.3.2.5.1 FR1 related 120

6.3.2.5.2 FR2 related 121

6.3.3 RRM core requirements 121

6.3.4 RRM performance requirements 121

6.4 NR RF requirement enhancements for frequency range 2 (FR2) 121

6.4.1 General 121

6.4.2 UE RF requirements for inter-band CA 122

6.4.2.1 Inter-band DL CA requirements 122

6.4.2.1.1 CA configurations within the same frequency group based on CBM 122

6.4.2.1.2 CA configurations between different frequency groups based on CBM 123

6.4.2.1.3 Feasibility study for DL inter-band CA for IBM within the same frequency group 125

6.4.2.1.4 Rx beam switch value 125

6.4.2.2 Inter-band UL CA requirements 125

6.4.2.2.1 Inter-band UL CA for two bands 125

6.4.2.2.2 CA configuration CA\_n257A-n259A based on IBM 126

6.4.3 UL gaps for self-calibration and monitoring 127

6.4.3.1 UE Tx power management 127

6.4.3.2 Coherent UL-MIMO 128

6.4.4 DC location for intra-band UL CA with > 2 CCs for both FR2 and FR1 128

6.4.5 CA BW classes 129

6.4.5.1 New FR2 CA BW classes 129

6.4.5.2 Fallback group 130

6.4.6 RRM core requirements 130

6.4.6.1 Inter-band DL CA requirements for CBM 130

6.4.6.1.1 MRTD requirements 130

6.4.6.1.2 Other RRM requirements 132

6.4.6.2 Inter-band UL CA for IBM 134

6.4.6.3 UL gaps for self-calibration and monitoring 134

6.5 NR repeater 135

6.5.1 General 135

6.5.1.1 System parameters 135

6.5.1.2 Repeater Class/Type 136

6.5.1.3 TDD repeater switching requirements 136

6.5.1.4 Others 137

6.5.2 Conductive RF core requirements 137

6.5.2.1 Transmitted power related requirements 138

6.5.2.2 Emission requirements 138

6.5.2.3 Others 139

6.5.3 Radiated RF core requirements 140

6.5.3.1 Transmitted power related requirements 141

6.5.3.2 Emission requirements 141

6.5.3.3 Others 142

6.5.4 EMC core requirements 143

6.6 Introduction of DL 1024QAM for NR FR1 144

6.6.1 General 144

6.6.2 UE RF requirements maintenance 144

6.6.3 BS TX RF requirements maintenance 144

6.6.4 BS RF conformance testing 144

6.6.5 Demodulation and CSI requirements 145

6.6.5.1 General 145

6.6.5.2 PDSCH requirements 145

6.6.5.3 SDR requirements 146

6.6.5.4 CQI requirements 146

6.7 UE RF requirements for Transparent Tx Diversity (TxD) for NR 147

6.7.1 General 147

6.7.2 UE RF requirements for phase 1 (38.101-1) 147

6.7.2.1 UL MIMO requirement for TxD except ULFPTx 147

6.7.3 UE RF requirements for phase 2 (38.101-1) 148

6.7.3.1 SRS antenna switching related 148

6.7.3.2 ULFPTx related 149

6.8 Enhancement for NR high speed train scenario in FR1 151

6.8.1 General 151

6.8.2 RRM core requirements 151

6.8.2.1 Intra-frequency measurements 151

6.8.2.2 Inter-frequency measurements 151

6.8.2.3 L1-SINR measurements 152

6.8.2.4 Others 153

6.8.3 UE demodulation requirements (38.101-4) 154

6.8.3.1 General 154

6.8.3.2 PDSCH requirements for CA scenarios 154

6.9 NR support for high speed train scenario in FR2 156

6.9.1 General 156

6.9.2 High speed train deployment scenario in FR2 156

6.9.3 UE RF core requirements 156

6.9.3.1 UE Tx requirements 156

6.9.3.1.1 UE RF framework and power class 157

6.9.3.1.2 Spherical coverage requirements 157

6.9.3.1.3 Beam correspondence 157

6.9.3.2 UE Rx requirements 158

6.9.4 RRM core requirements 158

6.9.4.1 General 158

6.9.4.2 Number of RX beams 160

6.9.4.3 RRC Idle/Inactive and connected state mobility requirements 160

6.9.4.4 Timing requirements 161

6.9.4.5 Signalling characteristics requirements 162

6.9.4.6 Measurement procedure requirements 164

6.9.5 Demodulation requirements 164

6.9.5.1 General 164

6.9.5.2 UE demodulation requirements 165

6.9.5.2.1 PDSCH requirements under Uni-directional scenario 165

6.9.5.2.2 PDSCH requirements under Bi-directional scenario 165

6.9.5.3 BS demodulation requirements 166

6.9.5.3.1 PUSCH requirements 166

6.9.5.3.2 PUSCH with UL timing adjustment requirements 167

6.9.5.3.3 PRACH requirements 168

6.10 Further RRM enhancement for NR and MR-DC 169

6.10.1 General 169

6.10.2 RRM core requirements 169

6.10.2.1 SRS antenna port switching 169

6.10.2.2 HO with PSCell 171

6.10.2.3 PUCCH SCell activation/deactivation 173

6.11 NR and MR-DC measurement gap enhancements 176

6.11.1 General 176

6.11.2 RRM core requirements 176

6.11.2.1 Pre-configured MG pattern(s) 176

6.11.2.2 Multiple concurrent and independent MG patterns 179

6.11.2.3 Network Controlled Small Gap 182

6.12 Further enhancement on NR demodulation performance 185

6.12.1 General 185

6.12.2 UE demodulation and CSI requirements 186

6.12.2.1 MMSE-IRC receiver for inter-cell interference 186

6.12.2.1.1 PDSCH requirements 186

6.12.2.1.2 CQI requirements 188

6.12.2.2 MMSE-IRC receiver for intra-cell inter-user interference 190

6.12.2.3 CRS-IM receiver in scenarios with overlapping spectrum for LTE and NR 192

6.12.2.3.1 General 192

6.12.2.3.2 Necessity of Network assistant signaling 193

6.12.2.3.3 Test set-up 195

6.12.3 BS demodulation requirements 196

6.12.3.1 PUSCH demodulation requirements for FR1 256QAM 196

6.13 Solutions for NR to support non-terrestrial networks (NTN) 198

6.13.1 General 198

6.13.1.1 System parameters 198

6.13.1.2 NTN Satellite Access Node Class/Type 199

6.13.1.3 Regulatory information 199

6.13.1.4 Others 200

6.13.2 Coexistence aspects 201

6.13.2.1 NTN coexistence scenarios and simulations 201

6.13.2.2 HAPS coexistence scenarios and simulations 203

6.13.2.3 ACLR/ACS proposals 203

6.13.3 Satellite Access Node RF requirements 204

6.13.3.1 TX requirements for radiated characteristics 204

6.13.3.2 RX requirements for radiated characteristics 205

6.13.3.3 Tx requirements for conducted characteristics 206

6.13.3.4 Rx requirements for conducted characteristics 207

6.13.4 UE RF requirements 207

6.13.4.1 TX requirements 207

6.13.4.2 RX requirements 208

6.13.5 RRM core requirements 209

6.13.5.1 General 209

6.13.5.2 GNSS-related requirements 211

6.13.5.3 Mobility requirements 211

6.13.5.4 Timing requirements 212

6.13.5.5 Measurement procedure requirements 214

6.13.6 Demodulation requirements 216

6.13.6.1 General 216

6.13.6.2 Satellite Access Node demodulation requirements 216

6.13.6.3 UE demodulation requirements 216

6.14 UE Power Saving Enhancements for NR 217

6.14.1 General 217

6.14.2 RRM core requirements 217

6.14.2.1 UE measurements relaxation for RLM and/or BFD 217

6.15 NR Sidelink enhancement 220

6.15.1 General 220

6.15.2 UE RF requirements for NR SL enhancement 220

6.15.2.1 Configured Tx power requirements 221

6.15.2.2 REFSENS requirements 221

6.15.2.3 Other RF requirements 221

6.15.3 Intra-band con-current operation between NR SUL and NR Uu 222

6.15.3.1 RF requirements for intra-band V2X con-current (including MPR) 222

6.15.3.2 Synchronous operation between SL and Uu (including switching time mask, SL transmission timing) 224

6.15.4 High power UE(PC2) for SL 224

6.15.4.1 TX requirements (Power class) 224

6.15.4.2 Coexistence study 225

6.15.4.3 Others 225

6.15.5 RRM core requirements 225

6.15.5.1 Intra-band con-current V2X operation 225

6.15.5.2 SL-DRX 226

6.15.5.3 Others 227

6.16 Extending current NR operation to 71GHz 228

6.16.1 General 228

6.16.2 Operation bands and system parameters (channelization, raster, CBW, etc) 229

6.16.3 UE RF requirements 231

6.16.3.1 TX requirements 231

6.16.3.2 RX requirements 233

6.16.4 BS RF requirements 234

6.16.4.1 TX requirements 234

6.16.4.2 RX requirements 235

6.16.5 Co-existence simulations 236

6.16.6 FR1+FR2-2 DC/CA band combinations 237

6.16.7 RRM core requirements 238

6.16.7.1 General 238

6.16.7.2 Timing requirements 240

6.16.7.3 Interruption requirements 241

6.16.7.4 Active BWP switching delay requirements 242

6.16.7.5 Measurement gap interruption requirements 243

6.16.7.6 LBT impacts on RRM requirements 244

6.16.8 Others 245

6.17 Enhancements to Integrated Access and Backhaul (IAB) for NR 246

6.17.1 General 246

6.17.2 RF requirements 246

6.17.2.1 Impact for Simultaneous operation of IAB child and parent links 246

6.17.2.2 Impact for Timing enhancement 246

6.17.2.3 Others 247

6.17.3 RRM core requirements 247

6.17.4 Others 248

6.18 NR coverage enhancements 248

6.18.1 General and CR structure 248

6.18.2 UE RF requirements 249

6.18.2.1 Requirements for non-scheduled gap 249

6.18.2.2 Tolerance for power consistency/phase continuity 249

6.18.2.3 Maximum duration for joint channel estimation 250

6.18.2.4 Others 251

6.18.3 BS demodulation requirements 251

6.19 Further enhancements on MIMO for NR 252

6.19.1 General 252

6.19.2 UE RF requirements 253

6.19.2.1 Additional requirement for multi-panel reception 253

6.19.2.2 Impact of MPE enhancements 253

6.19.2.3 SRS related impact 254

6.19.3 RRM core requirements 254

6.19.3.1 Unified TCI for DL and UL 254

6.19.3.2 Inter-cell beam management 255

6.19.3.3 Others 256

6.19.4 UE Demodulation and CSI requirements 257

6.20 Support of reduced capability NR devices 259

6.20.1 General 259

6.20.2 UE RF requirements 259

6.20.2.1 FR1 259

6.20.2.1.1 Tx requirements (power class) 259

6.20.2.1.2 Rx requirements (REFSENS, etc) 260

6.20.2.2 FR2 261

6.20.2.2.1 Tx requirements (power class, UE type) 261

6.20.2.2.2 Rx requirements 262

6.20.2.3 Others 262

6.20.3 RRM core requirements 263

6.20.3.1 Impacts from UE complexity reduction 263

6.20.3.1.1 General 263

6.20.3.1.2 Mobility requirements 264

6.20.3.1.3 Timing requirements 265

6.20.3.1.4 Signalling characteristics 266

6.20.3.1.5 Measurement procedure 267

6.20.3.2 Extended DRX enhancements 269

6.20.3.3 RRM measurement relaxations 270

6.20.3.4 Others 272

6.20.4 UE demodulation and CSI requirements 273

6.21 Positioning enhancements for NR 274

6.21.1 General 274

6.21.2 RRM core requirements 275

6.21.2.1 UE Rx/Tx and/or gNB Rx/Tx timing delay mitigation 275

6.21.2.2 Latency reduction of positioning measurement 276

6.21.2.3 Measurement in RRC\_INACTIVE state 279

6.21.2.4 Impact on existing UE positioning and RRM requirements 280

6.21.2.5 Enhancements of A-GNSS positioning 282

6.21.2.6 Others 282

6.22 Multi-Radio Dual-Connectivity enhancements 283

6.22.1 General 283

6.22.2 RRM core requirements 283

6.22.2.1 Efficient activation/de-activation mechanism for SCells 283

6.22.2.2 Efficient activation/de-activation mechanism for one SCG 284

6.22.2.3 Conditional PSCell change and addition 286

6.22.2.4 Others 287

6.23 Enhanced IIoT and URLLC support 288

6.23.1 General 288

6.23.2 RRM core requirements 288

6.23.2.1 Propagation delay compensation enhancements 288

6.23.2.2 Reference point for Te requirements 289

6.23.2.3 Others 290

6.24 NR Sidelink Relay 290

6.24.1 General 290

6.24.2 RRM core requirements 290

6.25 NR small data transmissions in INACTIVE state 291

6.25.1 General and work plan 291

6.25.2 RRM core requirements 291

6.26 Support for Multi-SIM devices for LTE/NR 293

6.26.1 General and work plan 293

6.26.2 RRM core requirements 293

7 Rel-17 Study Items for NR 295

7.1 Study on enhanced test methods for FR2 in NR 295

7.1.1 Maintenance on objectives 1~6 295

7.1.2 OTA test methods for UE RF, RRM and demodulation for 52.6~71GHz 295

7.1.2.1 General 295

7.1.2.1.1 Test system assumption 295

7.1.2.1.2 UE types 295

7.1.2.1.3 MU assessment 296

7.1.2.1.4 Others 296

7.1.2.2 Test methodology for UE RF 296

7.1.2.3 Test methodology for RRM 296

7.1.2.4 Test methodology for UE demodulation and CSI 296

7.2 Study on Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths 296

7.2.1 General and TR 296

7.2.2 Evaluation of use of larger channel bandwidths than licensed bandwidth 297

7.2.2.1 Channel filter assumptions and RB blanking with impacts on UE (ACS, blocking) 297

7.2.2.2 Signaling and configuration (RAN1/RAN2 impacts) aspects 297

7.2.2.3 Other aspects such as detailed solution, complexity, legacy UE, etc 298

7.2.3 Evaluation of use of overlapping UE channel bandwidths 298

7.2.3.1 Overlapping CBWs from network perspective 298

7.2.3.2 Combined UE CBWs (one cell) 299

7.2.3.2.1 Signaling and configuration (RAN1/RAN2 impacts) aspects 299

7.2.3.2.2 Other aspects such as detailed solution, complexity, legacy UE, etc 299

7.2.3.3 Overlapping CA (two cells) 299

7.2.3.3.1 Signaling and configuration (RAN1/RAN2 impacts) aspects 299

7.2.3.3.2 Other aspects such as detailed solution, complexity, legacy UE, etc 300

7.2.3.4 Overall method comparisons 300

7.3 Study on band combination handling in RAN4 301

7.3.1 General and TR 301

7.3.2 Information of rules and guidelines of specifying band combinations (TP format, notation, band configurations, BCS) 301

7.3.2.1.1 Signaling and configuration (RAN1/RAN2 impacts) aspects 302

7.3.2.1.2 Other aspects such as detailed solution, complexity, legacy UE, etc 302

7.3.3 Improving RAN4 specification structures and reducing redundant contents 302

7.3.3.1 Optimization of delta TIB and delta RIB 302

7.3.3.2 Optimizations for other redundancy 303

7.4 Optimizations of pi/2 BPSK uplink power in NR 303

7.4.1 General and TR 303

7.4.2 UE Tx power and related issues 303

7.4.3 Evaluation of filter requirements applicable to identified new UE power capability 304

7.4.4 Link level simulations 304

7.4.5 SAR analysis 305

7.4.6 Identify RAN4 requirements 305

8 Rel-17 Work Items for LTE 305

8.1 LTE inter-band Carrier Aggregation for 2 bands DL with 1 band UL 305

8.1.1 UE RF with harmonic, close proximity and isolation issues 305

8.1.2 UE RF without specific issues 305

8.2 LTE inter-band Carrier Aggregation for 3 bands DL with 1 band UL 306

8.2.1 UE RF with harmonic, close proximity and isolation issues 306

8.2.2 UE RF without specific issues 306

8.3 LTE inter-band Carrier Aggregation for x bands DL (x=4, 5) with 1 band UL 307

8.3.1 UE RF with 4 LTE bands CA 307

8.3.2 UE RF with 5 LTE bands CA 307

8.4 LTE inter-band Carrier Aggregation for 2 bands DL with 2 band UL 307

8.4.1 UE RF with harmonic, close proximity and isolation issues 307

8.4.2 UE RF without specific issues 307

8.5 LTE inter-band Carrier Aggregation for x bands DL (x= 3, 4, 5) with 2 band UL 307

8.5.1 UE RF with MSD 308

8.5.2 UE RF without MSD 308

8.6 RRM for LTE CA basket WIs 308

8.6.1 RRM Core (36.133) 308

8.6.2 RRM Perf (36.133) 308

8.7 New WID on Additional LTE bands for UE category M1&M2 and/or NB1&NB2 in Rel-17 308

8.7.1 RF requirements 308

8.7.2 Others 308

8.8 Upper 700MHz A Block new E-UTRA band in US 309

8.8.1 General 309

8.8.2 Study for co-existence requirements 310

8.8.3 UE RF requirements 310

8.8.4 BS RF requirements 310

8.8.5 Others 311

8.9 Additional enhancements for NB-IoT and LTE-MTC 311

8.9.1 General and work plan 311

8.9.2 Support of 16QAM in NB-IoT 311

8.9.2.1 BS RF requirements 311

8.9.2.2 UE RF requirements 312

8.9.3 Support of power reduction for PRACH, PUCCH, and full-PRB PUSCH in MTC 312

8.9.3.1 UE RF requirements 312

8.9.4 RRM core requirements 312

8.9.4.1 Neighbour cell measurement in RRC Connected state for NB-IoT 312

8.9.5 Others 313

8.9.6 Demodulation requirements 313

8.9.6.1 General 313

8.9.6.2 Demodulation requirements for NB-IoT 313

8.9.6.2.1 UE demodulation requirements 313

8.9.6.2.2 BS demodulation requirements 314

8.9.6.3 Demodulation requirements for MTC 314

9 Liaison and output to other groups 315

9.1 R17 related 315

9.1.1 LS reply for beam correspondence with SDT in RRC\_INACTIVE 315

9.1.2 RAN5 response LS on LTE REFSENS exception simplification (R5-215803) 315

9.1.3 Others 316

10 Any other business 317

11 Close of the E-meeting 320

## 1 Opening of the E-meeting

The Chairman Xizeng Dai (Huawei) opened the meeting on RAN4 reflector on 17/01/2022.

Intellectual Property Rights Declaration Policy

The attention of the delegates to the meeting of this Technical Specification Group was drawn to the fact that 3GPP Individual Members have the obligation under the IPR Policies of their respective Organizational Partners to inform their respective Organizational Partners of Essential IPRs they become aware of.

The delegates were asked to take note that they were thereby invited:

- to investigate whether their organization or any other organization owns IPRs which were, or were likely to become Essential in respect of the work of 3GPP.

- to notify their respective Organizational Partners of all potential IPRs, e.g., for ETSI, by means of the IPR Information Statement and the Licensing declaration forms.

Statement regarding competition law

The attention of the delegates to the meeting was drawn to the fact that 3GPP activities were subject to all applicable antitrust and competition laws and that compliance with said laws was therefore required by any participant of the meeting, including the Chairman and Vice-Chairmen and were invited to seek any clarification needed with their legal counsel. The leadership would conduct the present meeting with impartiality and in the interests of 3GPP. Delegates were reminded that timely submission of work items in advance of TSG/WG meetings was important to allow for full and fair consideration of such matters.

Meeting arrangements

The meeting was conducted on three parallel sessions; Main session, RRM session and BS RF Test Demod session. The Main session was chaired by RAN4 Chair Xizeng Dai (Huawei), RRM session was chaired by RAN4 Vice Chair Andrey Chervyakov (Intel) and BS RF Test Demod session was chaired by RAN4 ViceChair Haijie Qiu (Samsung). The sessions were further broken down into separate email threads to address specific technical topics lead by assigned discussion moderators. Webinar sessions were used to summarize progress, resolve controversial issues and decide way forward.

## 2 Approval of the agenda

[**R4-2200001**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200001.zip) **RAN4#101-e Meeting Report**

*Type: report For: Approval  
 Source: ETSI MCC*

**Decision: Approved.**

[**R4-2200002**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200002.zip) **Agenda for RAN4#101-bis-e**

*Type: agenda For: Approval  
 Source: RAN4 Chair (Huawei)*

**Decision: Approved.**

[**R4-2200003**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200003.zip) **RAN4#101-bis-e E-Meeting Arrangements and Guidelines**

*Type: other For: Approval  
 Source: RAN4 Chair (Huawei)*

**Decision: Approved.**

## 3 Letters / reports from other groups / meeting

[R4-2200005](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200005.zip) LS on Energy Efficiency as guiding principle for new solutions SA

[R4-2200006](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200006.zip) Reply LS on inclusion of the 6425-7125 MHz frequency band in the 3GPP specification for 5G-NR/IMT-2000 systems RAN Response to: (RP-213605)

[R4-2200007](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200007.zip) LS on updates to study on optimizations of pi/2 BPSK uplink power in NR RAN

[R4-2200008](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200008.zip) Liaison statement to 3GPP TSG RAN on the inclusion of the 6425-7125 MHz frequency band in the 3GPP specification for 5G-NR / 1MT-2020 systems RCC Commission on Spectrum and Satellite Orbits

[R4-2200009](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200009.zip) Reply LS to RP-211577 on Test methods for over-the-air Total Radiated Power (TRP) field measurements of unwanted emissions from IMT radio equipment utilizing active antennas ITU-R WP1C Response to: (RP-211577)

[R4-2200010](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200010.zip) LS on work towards two new recommendations "Generic unwanted emission characteristics of base / mobile stations using the terrestrial radio interfaces of IMT-2020" RAN5 Response to: (R5-216419)

[R4-2200011](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200011.zip) LS on configuration of p-MaxEUTRA and p-NR-FR1 RAN5

[R4-2200012](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200012.zip) Reply to LS (in [R4-2120025](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2120025.zip)) on FR2 UE relative power control tolerance requirements RAN5 Response to: ([R4-2120025](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2120025.zip))

[R4-2200013](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200013.zip) Reply LS on TCI State Update for L1/L2-Centric Inter-Cell Mobility to RAN3 RAN3 Response to: (R1-2108527)

[R4-2200014](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200014.zip) LS on TRS-based SCell activation details RAN2

[R4-2200015](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200015.zip) LS response on PC5 DRX for ProSe RAN2 Response to: (R2-2111237)

[R4-2200016](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200016.zip) Reply LS on signalling for intra-band CA with UL-MIMO RAN2 Response to: ([R4-2114754](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2114754.zip))

[R4-2200026](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200026.zip) Reply LS on R17 NR MG enhancements – Concurrent MG RAN2 Response to: ([R4-2115343](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2115343.zip))

[R4-2200027](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200027.zip) Response LS on updated Rel-16 RAN1 UE features lists for NR after RAN1#105-e RAN2 Response to: (R1-2108427)

[R4-2200028](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200028.zip) Reply LS on the use of NCD-SSB instead of CD-SSB for RedCap UEs RAN2 Response to: (R2-2110727)

[R4-2200029](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200029.zip) Reply LS to RAN4 on UL gap in FR2 RF enhancement RAN2 Response to: ([R4-2114965](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2114965.zip))

[R4-2200030](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200030.zip) LS to RAN4 on L3 filter configuration RAN2

[R4-2200031](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200031.zip) Reply LS on specification impact for methods on efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths RAN2

[R4-2200032](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200032.zip) LS on MPE information signalling RAN2

[R4-2200033](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200033.zip) Reply LS on Pre-configured MG RAN2 Response to: ([R4-2115438](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2115438.zip))

[R4-2200034](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200034.zip) LS on the minimum time gap for wake-up and Scell dormancy indication for NR operation in 52.6 to 71 GHz RAN1

[R4-2200035](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200035.zip) Follow-up reply LS on inter-cell beam management and multi-TRP in Rel-17 RAN1 Response to: (R2-2108925)

[R4-2200036](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200036.zip) LS on DL PRS processing by UEs in RRC\_INACTIVE state RAN1

[R4-2200037](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200037.zip) LS on UL SRS-RSRPP definition RAN1

[R4-2200038](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200038.zip) Reply LS on capability related RAN2 agreements for RedCap RAN1 Response to: (R1-2108714)

[R4-2200040](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200040.zip) LS on L1-RSRP measurement behaviour when SSBs associated with different PCIs overlap RAN1

[R4-2200041](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200041.zip) LS on lower Rx beam sweeping factor for latency improvement RAN1

[R4-2200042](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200042.zip) LS on DL synchronization enhancements for IoT NTN RAN1

[R4-2200043](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200043.zip) LS on updated Rel-16 RAN1 UE features lists for NR after RAN1#107-e RAN1

[R4-2200044](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200044.zip) LS on use of NCD-SSB or CSI-RS in DL BWPs for RedCap UE RAN1

[R4-2200045](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200045.zip) LS on sensing beam selection RAN1

[R4-2200046](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200046.zip) LS on BFR for CORESET with two activated TCI states RAN1

[R4-2200047](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200047.zip) LS on propagation delay compensation RAN1

[R4-2200048](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200048.zip) LS on Rel-17 MAC-CE impacts RAN1

[R4-2200049](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200049.zip) Reply LS on beam information of PUCCH SCell in PUCCH SCell activation procedure RAN1 Response to: ([R4-2115339](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2115339.zip))

[R4-2200050](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200050.zip) Reply LS on initial state of elements controlled by MAC CEs RAN1 Response to: (R1-2110756)

[R4-2200051](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200051.zip) LS on the condition of PRS measurement outside the MG RAN1

[R4-2200052](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200052.zip) LS on updated Rel-17 RAN1 UE features list for LTE RAN1

[R4-2200053](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200053.zip) LS on updated Rel-17 RAN1 UE features list for NR RAN1

[R4-2200054](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200054.zip) LS on the reporting of the Tx TEG association information RAN1

[R4-2200055](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200055.zip) LS on channel quality reporting for NB-IoT RAN1

[R4-2200056](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200056.zip) LS on range of power control parameters for eIAB RAN1

[R4-2200057](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200057.zip) LS on updated Rel-17 LTE and NR higher-layers parameter list RAN1

[R4-2200058](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200058.zip) LS on triggering signalling of temporary RS for SCell activation RAN1

[**R4-2200005**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200005.zip) **LS on Energy Efficiency as guiding principle for new solutions (SA)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN, CT, SA1, SA2, SA3, SA4, SA5, SA6, RAN1, RAN2, RAN3, RAN4, RAN5, CT1, CT3, CT4, CT6, cc -*

**Decision: Noted.**

[**R4-2200006**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200006.zip) **Reply LS on inclusion of the 6425-7125 MHz frequency band in the 3GPP specification for 5G-NR/IMT-2000 systems (RAN)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RCC Commission on Spectrum and Satellite Orbits, cc RAN4***Decision: Noted.**

[**R4-2200007**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200007.zip) **LS on updates to study on optimizations of pi/2 BPSK uplink power in NR (RAN)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -***Decision: Noted.**

[**R4-2200008**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200008.zip) **Liaison statement to 3GPP TSG RAN on the inclusion of the 6425-7125 MHz frequency band in the 3GPP specification for 5G-NR / 1MT-2020 systems (RCC Commission on Spectrum and Satellite Orbits)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN, cc RAN4***Decision: Noted.**

[**R4-2200009**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200009.zip) **Reply LS to RP-211577 on Test methods for over-the-air Total Radiated Power (TRP) field measurements of unwanted emissions from IMT radio equipment utilizing active antennas (ITU-R WPIC)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN, cc ITU-R WP5D, RAN4*

**Decision: Noted.**

[**R4-2200010**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200010.zip) **LS on work towards two new recommendations "Generic unwanted emission characteristics of base / mobile stations using the terrestrial radio interfaces of IMT-2020 (RAN5)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN, cc RAN4*

**Decision: Noted.**

[**R4-2200011**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200011.zip) **LS on configuration of p-MaxEUTRA and p-NR-FR1 (RAN5)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN1, RAN2, RAN4, cc -*

**Decision: Noted.**

[**R4-2200012**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200012.zip) **Reply to LS (in** [**R4-2120025**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2120025.zip)**) on FR2 UE relative power control tolerance requirements (RAN5)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200013**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200013.zip) **Reply LS on TCI State Update for L1/L2-Centric Inter-Cell Mobility to RAN3 (RAN3)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN, RAN1, RAN2, cc RAN4*

**Decision: Noted.**

[**R4-2200014**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200014.zip) **LS on TRS-based SCell activation details (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN1, RAN4, cc -*

**Decision: Noted.**

[**R4-2200015**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200015.zip) **LS response on PC5 DRX for ProSe (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to SA2, cc CT1, RAN1, RAN4*

**Decision: Noted.**

[**R4-2200016**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200016.zip) **Reply LS on signalling for intra-band CA with UL-MIMO (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200026**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200026.zip) **Reply LS on R17 NR MG enhancements – Concurrent MG (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc RAN1*

**Decision: Noted.**

[**R4-2200027**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200027.zip) **Response LS on updated Rel-16 RAN1 UE features lists for NR after RAN1#105-e (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN1, cc RAN4*

**Decision: Noted.**

[**R4-2200028**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200028.zip) **Reply LS on the use of NCD-SSB instead of CD-SSB for RedCap Ues (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN1, cc RAN4*

**Decision: Noted.**

[**R4-2200029**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200029.zip) **Reply LS to RAN4 on UL gap in FR2 RF enhancement (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200030**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200030.zip) **LS to RAN4 on L3 filter configuration (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200031**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200031.zip) **Reply LS on specification impact for methods on efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc RAN1*

**Decision: Noted.**

[**R4-2200032**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200032.zip) **LS on MPE information signalling (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN1, cc RAN4*

**Decision: Noted.**

[**R4-2200033**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200033.zip) **Reply LS on Pre-configured MG (RAN2)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200034**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200034.zip) **LS on the minimum time gap for wake-up and Scell dormancy indication for NR operation in 52.6 to 71 GHz (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200035**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200035.zip) **Follow-up reply LS on inter-cell beam management and multi-TRP in Rel-17 (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, cc RAN4*

**Decision: Noted.**

[**R4-2200036**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200036.zip) **LS on DL PRS processing by UEs in RRC\_INACTIVE state (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200037**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200037.zip) **LS on UL SRS-RSRPP definition (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200038**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200038.zip) **Reply LS on capability related RAN2 agreements for RedCap (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, cc RAN4*

**Decision: Noted.**

[**R4-2200040**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200040.zip) **LS on L1-RSRP measurement behaviour when SSBs associated with different PCIs overlap (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc RAN2*

**Decision: Noted.**

[**R4-2200041**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200041.zip) **LS on lower Rx beam sweeping factor for latency improvement (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200042**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200042.zip) **LS on DL synchronization enhancements for IoT NTN (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200043**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200043.zip) **LS on updated Rel-16 RAN1 UE features lists for NR after RAN1#107-e (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, cc RAN4*

**Decision: Noted.**

[**R4-2200044**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200044.zip) **LS on use of NCD-SSB or CSI-RS in DL BWPs for RedCap UE (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, cc RAN4*

**Decision: Noted.**

[**R4-2200045**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200045.zip) **LS on sensing beam selection (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200046**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200046.zip) **LS on BFR for CORESET with two activated TCI states (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc RAN2*

**Decision: Noted.**

[**R4-2200047**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200047.zip) **LS on propagation delay compensation (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, cc RAN4*

**Decision: Noted.**

[**R4-2200048**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200048.zip) **LS on Rel-17 MAC-CE impacts (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, cc RAN4*

**Decision: Noted.**

[**R4-2200049**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200049.zip) **Reply LS on beam information of PUCCH SCell in PUCCH SCell activation procedure (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc RAN2*

**Decision: Noted.**

[**R4-2200050**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200050.zip) **Reply LS on initial state of elements controlled by MAC Ces (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, cc RAN4*

**Decision: Noted.**

[**R4-2200051**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200051.zip) **LS on the condition of PRS measurement outside the MG (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc -*

**Decision: Noted.**

[**R4-2200052**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200052.zip) **LS on updated Rel-17 RAN1 UE features list for LTE (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, cc RAN4*

**Decision: Noted.**

[**R4-2200053**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200053.zip) **LS on updated Rel-17 RAN1 UE features list for NR (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, cc RAN4*

**Decision: Noted.**

[**R4-2200054**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200054.zip) **LS on the reporting of the Tx TEG association information (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, RAN4, cc RAN3*

**Decision: Noted.**

[**R4-2200055**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200055.zip) **LS on channel quality reporting for NB-IoT (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, RAN4, cc -*

**Decision: Noted.**

[**R4-2200056**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200056.zip) **LS on range of power control parameters for eIAB (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN4, cc RAN2*

**Decision: Noted.**

[**R4-2200057**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200057.zip) **LS on updated Rel-17 LTE and NR higher-layers parameter list (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, RAN3, cc RAN4*

**Decision: Noted.**

[**R4-2200058**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200058.zip) **LS on triggering signalling of temporary RS for SCell activation (RAN1)**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN2, cc RAN4*

**Decision: Noted.**

## 4 Rel-17 feature list

**[101-bis-e][139] R17\_feature\_list, AI 4 – Xiaoran Zhang**

[**R4-2202239**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202239.zip) **Email discussion summary for [101-bis-e][139] R17\_feature\_list**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

Collect all the features and/or feature groups in this email thread.

**Decision: Revised to** [**R4-2202339**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202339.zip) **(from** [**R4-2202239**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202239.zip)**).**

[**R4-2202339**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202339.zip) **Email discussion summary for [101-bis-e][139] R17\_feature\_list**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

Collect all the features and/or feature groups in this email thread.

**Decision: Noted.**

**Conclusions after 1st round**

**GTW on Jan-18**

**Issue 1-1: Requirements for intra-band UL CA+UL MIMO**

Qualcomm: there is LS reply R2-2111465 from RAN2. There is no need to have additional signaling according to feedback LS. We would like to know any reason to have the signaling.

**Agreement:** follow the reply LS R2-2111465 from RAN2.

**Issue 1-2: Other features groups for NR FR1 enhancement**

Skyworks: depending architecture, we may or may not reuse the existing signalling.

* Further discuss the Skyworks proposal in [118 & 122]

**Agreement:** Capture the previous agreements of capabilities for Tx switching.

**Issue 2-1 ~ 2-3 (Apple)**

* Further discuss issue 2-1~2-3 in [120].

**Issue 2-3: Support of UL gap for coherent UL MIMO**

Ericsson: we do not support the UL gap for UL-MIMO at this stage. It can be done autonomously.

**Issue 2-4 inter-band UL CA**

Qualcomm: we do not distinguish it for UL and DL CA. Under what situation we forsee that the BM is different between DL and UL at the same time.

ZTE: Need this.

Huawei: More discussion is needed.

Nokia: what is the situation that BM is different? Once we have uplink in RAN4, the signalling should cover both downlink and uplink.

LGE: UL CBM is not in the scope.

Apple: Agree with Qualcomm and Nokia. Currently uplink transmission of FR2 is based on beam correspondence. BM should be the same between UL and DL.

Samsung: agree with Qualcomm and Nokia.

Oppo: for downlink, we have more CCs than uplink. For the common CC, it can be same. For other CC, it is downlink only, which could be IBM. Keeping uplink and downlink separate may be more flexible.

* Discuss issue 2-4 in [119].

**Issue 2-5 inter-band DL CA**

Nokia: The discussion is on-going, whether it should be per-UE or per band combination.

Samsung: common sense is that it should be per-band combination.

**Agreement:** Indicate the supported beam management type for inter-band CA within FR2-1. Beam management type can be independent beam management (IBM) or common beam management (CBM), or both

* The capability is defined per-band combination.

**Issue 3-1: UE supported FR2-2 channel bandwidths**

Apple: further discuss it in email thread 127.

Huawei: for note 2, what is the relationship between RAN1 feature and RAN4 feature?

* Further discuss issue 3-1 in email thread [127].

**Issue 3-2: UL support of 64QAM in the UL**

**Agreement:** agree on option 2.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Index | Feature group | Components | Prerequisite feature groups | Need for the gNB to know if the feature is supported | Applicable to the capability signalling exchange between UEs (V2X WI only)”. | Consequence if the feature is not supported by the UE | Type | Need of FDD/TDD differentiation | Need of FR1/FR2 differentiation | Capability interpretation for mixture of FDD/TDD and/or FR1/FR2 | Note | Mandatory/Optional |
| x-2 | 64QAM for PUSCH for FR2-2 | 1) Support of 64QAM modulation for FR2-2 PUSCH | FFS | Yes | No | UE cannot support PUSCH 64QAM transmission | Per band | N/A | Applicable to FR2-2 only | N/A |  | Optional with capability signalling |

**Issue 3-3: Improved ON/ON transient period**

* Discuss it in [128].

**Issue 4-1: TxD support per band per band combination**

**Issue 4-2: New power class signalling per band per band combination**

Apple: does Huawei mean that UE can only fall back to PC3?

Huawei: At the current stage, if UE supports TxD on one band and support CA combo, UE should fall back to 1 Tx on band.

OPPO: 4-1 and 4-2 can be discussed together. It should be clear which power class should be applied.

Skyworks: inter-band with one band using TxD is discussed in increasing power class WI. There is issue that one UE supports TxD in one band but has full power PA such that it can still support high power on one band.

Ericsson: Agree with OPPO. There is similarity to EN-DC case. We should consider Tx switching case with CA. We agree with concern from Apple.

Qualcomm: support Skyworks. We should have good understanding how those things can work together.

Mediatek: We share the similar view as OPPO and Ericsson. We need clear the signalling to indicate the power class per band per band combination.

* Discuss issue 4-1, 4-2 in email thread [139].

**Issue 4-3: Other UE features for TxD**.

* Discuss issue 4-3 in [118].

**Issue 5-1: Maximum duration of UE transmission for joint channel estimation**

Apple: can we further discuss it until the next meeting?

**Agreement:** no need to capture the feature in RAN4. Provide the feedback to RAN1 to capture the values.

**Issue 6-1: Support ot Hybrid duplex operation for HPUE FDD (Apple)**

* Discuss it in [115].

**Issue 6-2: Power high limit for inter-band CA and DC (ZTE)**

* Discuss it in [114].

**Issue 6-3: maxUplinkDutyCycle-interBandCA-PC2 (ZTE)**

**Agreement:** agree to capture feature of maxUplinkDutyCycle-interBandCA-PC2 and *maxUplinkDutyCycle-interBandCA-PC2* and *maxUplinkDutyCycle-SULcombination-PC2* in RAN4 feature list.

**Issue 6-4: DC location for intra-band CA [more than 2CC]**

Apple: is it for FR2 only?

OPPO/Nokia/Skyworks/Huawei/ZTE: to both.

**Agreement:** Introduce the new capability signalling for DC location for intra-band CA more than 2CC to indicate whether UE support additional DC location reporting for intra-band UL CA.

* Further discuss the details in email thread [121] for both FR1 and FR2.

**Issue 6-5: Per BC indication for the per-FR gap capability (Qualcomm)**

**Observation 1: Per-FR gap capability for a UE is not purely depending on RF architecture but also baseband design.**

**Observation 2: There are thousands of FR1+FR2 band combinations specified in 3GPP so far and they can be of up to 5 bands of either FDD or TDD in both FR1 and FR2.**

**Observation 3: The constraints of the per UE indication of per-FR gap come from that UE may not support per-FR gap for certain high order CA combination.**

**Observation 4: For overloading issues, reverting the assumptions for all related requirements in a case by case manner is not feasible as there will be severe compatibility issues even by introducing new dedicated signaling for each requirements.**

**Observation 5: The advantages of introducing the new capability are very clear (e.g. enables more UEs to support per-FR gap feature) while there is no foreseen disadvantage. In the worst case scenario, the new capability is simply ignored.**

**Proposal 1: Keep the original per UE per-FR gap indication and add new Per BC indication for the per-FR gap capacity to Rel-17 UE feature list.**

Intel: support the technique proposal. But we had agree in RAN not to discuss it in Rel-17.

Qualcomm: We discussed it in Rel-16 and then postponed. But we did not discuss it in Rel-17.

CMCC: we discussed several enhancement in RAN. There is no objective officially capturing it. We can have another try.

Qualcomm: we do not introduce a new capability. This is a simple capability. We do not need to change the requriements.

* Further discuss it in this email thread.

**Issue 6-6: Support of MSD reduction for HPUE FDD (China Unicom)**

Apple: this proposal contradicts with objective of WID.

* Discuss it in [115] email thread for FDD HPUE.

**Introduction of DL 1024QAM for NR FR1**

Intel/Ericsson: RAN1 has introduced the feature for it.

Tentative agreement: No need to capture the DL 1024QAM feature in RAN4.

**NR repeater**

**Agreement:** no UE features for NR repeaters in RAN4.

**Enhancements to Integrated Access and Backhaul (IAB) for NR**

* Need further discussion in this email thread.

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| Rel-17 UE feature list | CMCC | Approved |
| LS on Rel-17 RAN4 UE features list for NR | CMCC | Approved |

[**R4-2202400**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202400.zip) **Rel-17 UE feature list**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Approved.**

[**R4-2202401**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202401.zip) **LS on Rel-17 RAN4 UE features list for NR**

*Type: LSout For: Approval  
 Source: CMCC*

**Decision: Approved.**

**GTW on Jan-25 for R4-2202400 and R4-2202401**

**Conclusion:** put [] on feature group 17-2, which need further discussions.

The draft of 2400 and 2401 are agreeable.

--------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200286**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200286.zip) **Initial views on R17 feature list**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2200485**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200485.zip) **Inputs to Rel-17 NR UE features for measurement gap enhancement**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision: Noted.**

[**R4-2200544**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200544.zip) **Discussion on Rel-17 RAN4 UE feature list**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2200641**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200641.zip) **Discussion on UE capability for FR1 HST enhancement**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision: Noted.**

[**R4-2201446**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201446.zip) **Initial review of RAN4 UE feature in Rel-17**

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

**Decision: Noted.**

[**R4-2201803**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201803.zip) **A new Rel-17 per-FR MG capability based on Per BC**

*Type: discussion For: Decision  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2200611**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200611.zip) **Discussion on capability signalling for HPUE NR DC with UE supporting TxD**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2200612**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200612.zip) **Draft LS on signalling clarification of NR CA/DC power class in R17**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2201308**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201308.zip) **TxD signalling and inter-band carrier aggregation**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

## 5 Rel-17 spectrum related WIs for NR

### 5.1 Introduction of lower 6GHz NR unlicensed operation for Europe

**[101-bis-e][101] NR\_6GHz\_unlic\_EU, AI 5.1 – Johannes Hejselbaek**

[**R4-2202201**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202201.zip) **Email discussion summary for [101-bis-e][101] NR\_6GHz\_unlic\_EU**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202301**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202301.zip) **(from** [**R4-2202201**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202201.zip)**).**

[**R4-2202301**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202301.zip) **Email discussion summary for [101-bis-e][101] NR\_6GHz\_unlic\_EU**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202249](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202249.zip) WF on introduction of lower 6GHz NR unlicensed operation | Nokia | Approved |
| [R4-2202250](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202250.zip) WF on adding a 20 MHz channel opportunity (Channel and Sync raster point) in the 5925-5945 MHz range for n96 and n102 | Apple | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2202421](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202421.zip) resied from [R4-2201080](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201080.zip) | draft TR 38.849 v0.6.0 | Nokia, Nokia Shanghai Bell | Agreed |  |
| R4-2202422  revisd from  [R4-2202251](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202251.zip)  [R4-2200430](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200430.zip) | Introduction of the lower 6GHz unlicensed band | Apple, Skyworks Solutions Inc., MediaTek Inc. | Endorsed | Comment from Ericsson |
| [R4-2202252](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202252.zip) revised from [R4-2201082](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201082.zip) | Running CR for 38.104 to add n102 | Nokia, ZTE Corporation | Endorsed | Comment from Ericsson |
| [R4-2202253](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202253.zip) revised from [R4-2201475](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201475.zip) | draft CR to TS38.141-2 the introduction of EU unlicensed band n102 | ZTE Corporation | Endorsed |  |
| [R4-2202254](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202254.zip) revised from [R4-2201476](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201476.zip) | draft CR to TS36.104 the introduction of EU unlicensed band n102 | ZTE Corporation | Endorsed |  |
| [R4-2202255](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202255.zip) revised from [R4-2201918](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201918.zip) | draft CR 37.105 on Introduction of lower 6GHz NR unlicensed operation for Europe | Ericsson | Endorsed |  |
| [R4-2202256](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202256.zip) revised from [R4-2201929](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201929.zip) | draftCR to 37.145-2 - adding band n102 | Huawei | Endorsed |  |
| [R4-2202257](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202257.zip) revised from [R4-2201998](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201998.zip) | draft CR to 37.104 on introduction of n102 co-existence requirements | Nokia, Nokia Shanghai Bell | Endorsed |  |
| [R4-2202258](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202258.zip) revised from [R4-2200431](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200431.zip) | TP for TR 38.849 | Apple | Approved |  |
| [R4-2202259](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202259.zip) revised from [R4-2202001](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202001.zip) | draft CR to 37.141 on introduction of n102 co-existence requirements | Nokia, Nokia Shanghai Bell | Endorsed |  |

**Way forward**

[**R4-2202249**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202249.zip) **WF on introduction of lower 6GHz NR unlicensed operation**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Approved.**

[**R4-2202250**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202250.zip) **WF on adding a 20 MHz channel opportunity (Channel and Sync raster point) in the 5925-5945 MHz range for n96 and n102**

*Type: other For: Approval  
 Source: Apple*

**Decision: Approved.**

#### 5.1.1 General

[**R4-2200429**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200429.zip) **Overview of the Region 1 countries implementing lower 6GHz unlicensed band**

*Type: discussion For: Decision  
 Source: Apple*

**Decision: Noted.**

[**R4-2201080**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201080.zip) **draft TR 38.849 v0.6.0**

*Type: draft TR For: Agreement  
 38.849 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Inclusion of agreements and TPs provided at RAN4#101bis

**Decision: Revised to** [**R4-2202421**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202421.zip) **(from** [**R4-2201080**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201080.zip)**).**

**[R4-2202421](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202421.zip) draft TR 38.849 v0.6.0**

*Type: draft TR For: Agreement  
 38.849 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Inclusion of agreements and TPs provided at RAN4#101bis

**Decision: Agreed.**

#### 5.1.2 Band definition and channel arrangement

[**R4-2200910**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200910.zip) **On channel rasters for the 6GHz unlicensed band**

*Type: discussion For: Decision  
 Source: Apple*

**Decision: Noted.**

[**R4-2201081**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201081.zip) **On band definition for the lower 6GHz NR unlicensed operation**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

#### 5.1.3 UE RF requirements

[**R4-2200430**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200430.zip) **Introduction of the lower 6GHz unlicensed band**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Apple, Skyworks Solutions Inc., MediaTek Inc.*

**Decision: Revised to** [**R4-2202251**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202251.zip) **(from** [**R4-2200430**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200430.zip)**).**

[**R4-2202251**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202251.zip) **Introduction of the lower 6GHz unlicensed band**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Apple, Skyworks Solutions Inc., MediaTek Inc.*

**Decision: Revised to R4-2202422 (from R4-2202251).**

[**R4-2202422**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202251.zip) **Introduction of the lower 6GHz unlicensed band**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Apple, Skyworks Solutions Inc., MediaTek Inc.*

**Decision: Endorsed.**

[**R4-2200849**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200849.zip) **Unwanted emissions requirements for lower 6GHz NR unlicensed operation for Europe**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution we discuss the unwanted emissions requirements for operations in 5925-6425 MHz

**Decision: Noted.**

[**R4-2200850**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200850.zip) **Unwanted emissions requirements for Band n102**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Draft CR to introduce unwanted emissions requirements for Band n102

**Decision: Merged (with** [**R4-2200430**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200430.zip)**).**

[**R4-2201854**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201854.zip) **NS signaling, MPR, and A-MPR for the 5925 – 6425 MHz NR-U band**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

#### 5.1.4 BS RF requirements

[**R4-2201082**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201082.zip) **Running CR for 38.104 to add n102**

*Type: draftCR For: Endorsement  
 38.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, ZTE Corporation*

**Abstract:**

draftCR including agreements at RAN4#101 intended revised to include agreements at RAN4#101bis

**Decision: Revised to** [**R4-2202252**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202252.zip) **(from** [**R4-2201082**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201082.zip)**).**

[**R4-2202252**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202252.zip) **Running CR for 38.104 to add n102**

*Type: draftCR For: Endorsement  
 38.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, ZTE Corporation*

**Abstract:**

draftCR including agreements at RAN4#101 intended revised to include agreements at RAN4#101bis

**Decision: Endorsed.**

[**R4-2201474**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201474.zip) **Discussion on MU for EU band n102**

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

**Decision: Noted.**

[**R4-2201475**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201475.zip) **draft CR to TS38.141-2 the introduction of EU unlicensed band n102**

*Type: draftCR For: Endorsement  
 38.141-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Revised to** [**R4-2202253**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202253.zip) **(from** [**R4-2201475**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201475.zip)**).**

[**R4-2202253**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202253.zip) **draft CR to TS38.141-2 the introduction of EU unlicensed band n102**

*Type: draftCR For: Endorsement  
 38.141-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Endorsed.**

[**R4-2201476**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201476.zip) **draft CR to TS36.104 the introduction of EU unlicensed band n102**

*Type: draftCR For: Endorsement  
 36.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Revised to** [**R4-2202254**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202254.zip) **(from** [**R4-2201476**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201476.zip)**).**

[**R4-2202254**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202254.zip) **draft CR to TS36.104 the introduction of EU unlicensed band n102**

*Type: draftCR For: Endorsement  
 36.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Endorsed.**

[**R4-2201918**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201918.zip) **draft CR 37.105 on Introduction of lower 6GHz NR unlicensed operation for Europe**

*Type: draftCR For: Endorsement  
 37.105 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

draft CR 37.105 on Introduction of lower 6GHz NR unlicensed operation for Europe

**Decision: Revised to** [**R4-2202255**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202255.zip) **(from** [**R4-2201918**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201918.zip)**).**

[**R4-2202255**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202255.zip) **draft CR 37.105 on Introduction of lower 6GHz NR unlicensed operation for Europe**

*Type: draftCR For: Endorsement  
 37.105 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

draft CR 37.105 on Introduction of lower 6GHz NR unlicensed operation for Europe

**Decision: Endorsed.**

[**R4-2201928**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201928.zip) **draftCR to 37.145-1 - adding band n102**

*Type: draftCR For: Endorsement  
 37.145-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei*

**Abstract:**

Adding the new UL band to the AAS conducted conformance specification

**Decision: Endorsed.**

[**R4-2201929**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201929.zip) **draftCR to 37.145-2 - adding band n102**

*Type: draftCR For: Endorsement  
 37.145-2 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei*

**Abstract:**

Adding the new UL band to the AAS radiated conformance specification

**Decision: Revised to** [**R4-2202256**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202256.zip) **(from** [**R4-2201929**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201929.zip)**).**

[**R4-2202256**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202256.zip) **draftCR to 37.145-2 - adding band n102**

*Type: draftCR For: Endorsement  
 37.145-2 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei*

**Abstract:**

Adding the new UL band to the AAS radiated conformance specification

**Decision: Endorsed.**

[**R4-2201998**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201998.zip) **draft CR to 37.104 on introduction of n102 co-existence requirements**

*Type: draftCR For: Endorsement  
 37.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Revised to** [**R4-2202257**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202257.zip) **(from** [**R4-2201998**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201998.zip)**).**

**[R4-2202257](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202257.zip) draft CR to 37.104 on introduction of n102 co-existence requirements**

*Type: draftCR For: Endorsement  
 37.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Endorsed.**

#### 5.1.5 Others

[**R4-2200431**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200431.zip) **TP for TR 38.849**

*Type: pCR For: Approval  
 38.849 v0.5.0 CR- rev Cat: (Rel-17)  
  
 Source: Apple*

**Abstract:**

Text proposal with a summary of which NS values are applicable to Region 1 countries.

**Decision: Revised to** [**R4-2202258**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202258.zip) **(from** [**R4-2200431**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200431.zip)**).**

[**R4-2202258**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202258.zip) **TP for TR 38.849**

*Type: pCR For: Approval  
 38.849 v0.5.0 CR- rev Cat: (Rel-17)  
  
 Source: Apple*

**Abstract:**

Text proposal with a summary of which NS values are applicable to Region 1 countries.

Conclusion: For now, Morocco and UAE is removed from TP so that companies have more time to check the corresponding emission requirements and whether NS\_01 can be applied to these countries.

**Decision: Agreed.**

[**R4-2201083**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201083.zip) **TP to TR 38.849 updating clause 5.1 for the lower 6GHz band**

*Type: pCR For: Approval  
 38.849 v0.5.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Approved.**

[**R4-2202001**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202001.zip) **draft CR to 37.141 on introduction of n102 co-existence requirements**

*Type: draftCR For: Endorsement  
 37.141 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Revised to** [**R4-2202259**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202259.zip) **(from** [**R4-2202001**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202001.zip)**).**

[**R4-2202259**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202259.zip) **draft CR to 37.141 on introduction of n102 co-existence requirements**

*Type: draftCR For: Endorsement  
 37.141 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Endorsed.**

[**R4-2202002**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202002.zip) **draft CR to 36.141 on introduction of n102 co-existence requirements**

*Type: draftCR For: Endorsement  
 36.141 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Endorsed.**

### 5.2 Introduction of operation in full unlicensed band 5925-7125MHz for NR

**[101-bis-e][102] NR\_6GHz\_unlic\_full, AI 5.2 –Alexander Sayenko**

[**R4-2202202**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202202.zip) **Email discussion summary for [101-bis-e][102] NR\_6GHz\_unlic\_full**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202302**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202302.zip) **(from** [**R4-2202202**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202202.zip)**).**

[**R4-2202302**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202302.zip) **Email discussion summary for [101-bis-e][102] NR\_6GHz\_unlic\_full**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202260](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202260.zip) WF on introduction of the full unlicensed band | Apple | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comments** |
| [R4-2202261](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202261.zip) revised from [R4-2201128](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201128.zip) | A-MPR analysis results for NR-U(VLP) considering regulatory parameters in Korea | LG Electronics Inc. | Noted |  |
| [R4-2202262](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202262.zip) revised from [R4-2200434](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200434.zip) | Draft CR for TS 38.101-1 | Apple | Endorsed |  |
| [R4-2202263](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202263.zip) revised from [R4-2200435](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200435.zip) | TP for TR 38.849 | Apple | Approved |  |
| [R4-2202264](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202264.zip) revised from [R4-2201085](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201085.zip) | TP to TR 38.849 updating clause 5.1 for the full 6GHz band | Nokia, Nokia Shanghai Bell | Approved |  |

[**R4-2202260**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202260.zip) **WF on introduction of the full unlicensed band**

*Type: other For: Approval  
 Source: Apple*

**Decision: Approved.**

#### 5.2.1 General

[**R4-2200432**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200432.zip) **Update of the 6GHz unlicensed band system and regulatory requirements in Region 2 and Region 3 countries**

*Type: discussion For: Decision  
 Source: Apple*

**Decision: Noted.**

[**R4-2201084**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201084.zip) **On band definition for 6GHz NR unlicensed operation**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

#### 5.2.2 Regulatory requirements and evaluation for re-using existing NS

[**R4-2200374**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200374.zip) **Introduction of the VLP mode for the 6GHz unlicensed band**

*Type: discussion For: Information  
 Source: TTA*

**Abstract:**

Korean regulation includes the LPI/VLP operation modes. Regarding the VLP operation, MSIT and domestic industries prefer to standardize the related requirement for VLP mode to enrich the echo system of the 6 GHz unlicensed band. TTA kindly ask 3GPP RAN4 t

**Decision: Noted.**

[**R4-2200433**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200433.zip) **Applicability of band n96**

*Type: discussion For: Decision  
 Source: Apple*

**Decision: Noted.**

#### 5.2.3 UE RF requirements

[**R4-2200434**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200434.zip) **Draft CR for TS 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Apple*

**Abstract:**

Draft running CR for endorsing technical content of existing agreements.

**Decision: Revised to** [**R4-2202262**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202262.zip) **(from** [**R4-2200434**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200434.zip)**).**

[**R4-2202262**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202262.zip) **Draft CR for TS 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Apple*

**Abstract:**

Draft running CR for endorsing technical content of existing agreements.

**Decision: Endorsed.**

[**R4-2201125**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201125.zip) **Discussion on the impact of the New power class definitions for NR-U UE in other countries**

*Type: discussion For: Approval  
 Source: LG Electronics Inc.*

**Abstract:**

In this contribution, We propose new power class and MPR/A-MPR approach for other countries that require VLP operating mode.

**Decision: Noted.**

[**R4-2201128**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201128.zip) **A-MPR analysis results for NR-U(VLP) considering regulatory parameters in Korea**

*Type: discussion For: Approval  
 Source: LG Electronics Inc.*

**Abstract:**

In this contribution, we provide A-MPR analysis results for NR-U(VLP) considering regulatory parameters in South Korea.

**Decision: Revised to** [**R4-2202261**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202261.zip) **(from** [**R4-2201128**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201128.zip)**).**

**[R4-2202261](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202261.zip) A-MPR analysis results for NR-U(VLP) considering regulatory parameters in Korea**

*Type: discussion For: Approval  
 Source: LG Electronics Inc.*

**Abstract:**

In this contribution, we provide A-MPR analysis results for NR-U(VLP) considering regulatory parameters in South Korea.

**Decision: Noted.**

#### 5.2.4 BS RF requirements

[**R4-2201515**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201515.zip) **TP for BS RF requirements**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

#### 5.2.5 Others

[**R4-2200435**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200435.zip) **TP for TR 38.849**

*Type: pCR For: Approval  
 38.849 v0.5.0 CR- rev Cat: (Rel-17)  
  
 Source: Apple*

**Abstract:**

Text proposal with a summary of which NS values are applicable to Region 2 and Region 3 countries.

**Decision: Revised to** [**R4-2202263**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202263.zip) **(from** [**R4-2200435**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200435.zip)**).**

[**R4-2202263**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202263.zip) **TP for TR 38.849**

*Type: pCR For: Approval  
 38.849 v0.5.0 CR- rev Cat: (Rel-17)  
  
 Source: Apple*

**Abstract:**

Text proposal with a summary of which NS values are applicable to Region 2 and Region 3 countries.

**Decision: Approved.**

[**R4-2201085**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201085.zip) **TP to TR 38.849 updating clause 5.1 for the full 6GHz band**

*Type: pCR For: Approval  
 38.849 v0.5.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Revised to** [**R4-2202264**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202264.zip) **(from** [**R4-2201085**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201085.zip)**).**

**[R4-2202264](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202264.zip) TP to TR 38.849 updating clause 5.1 for the full 6GHz band**

*Type: pCR For: Approval  
 38.849 v0.5.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Approved.**

### 5.3 Introduction of 6GHz NR licensed bands

**[101-bis-e][103] NR\_6 GHz\_licensed, AI 5.3 – Liehai Liu**

[**R4-2202203**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202203.zip) **Email discussion summary for [101-bis-e][103] NR\_6 GHz\_licensed**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202303**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202303.zip) **(from** [**R4-2202203**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202203.zip)**).**

[**R4-2202303**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202303.zip) **Email discussion summary for [101-bis-e][103] NR\_6 GHz\_licensed**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202265](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202265.zip) WF on general aspects for 6GHz licensed band | Huawei, HiSilicon | Approved |
| [R4-2202266](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202266.zip) WF on system parameters for 6GHz licensed band | ZTE | Approved |
| [R4-2202267](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202267.zip) WF on UE RF requirements for 6GHz licensed band | Ericsson | Approved |
| [R4-2202268](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202268.zip) WF on BS RF requirements for 6GHz licensed band | CATT | Approved |
| [R4-2202415](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202415.zip) Further reply LS on inclusion of the 6425-7125 MHz frequency band in the 3GPP specification for 5G-NR/IMT-2000 systems | Apple | Noted |

[**R4-2202265**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202265.zip) **WF on general aspects for 6GHz licensed band**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2202266**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202266.zip) **WF on system parameters for 6GHz licensed band**

*Type: other For: Approval  
 Source: ZTE*

**Decision: Approved.**

[**R4-2202267**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202267.zip) **WF on UE RF requirements for 6GHz licensed band**

*Type: other For: Approval  
 Source: Ericsson*

**Decision: Approved.**

[**R4-2202268**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202268.zip) **WF on BS RF requirements for 6GHz licensed band**

*Type: other For: Approval  
 Source: CATT*

**Decision: Approved.**

[**R4-2202415**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202415.zip) **Further reply LS on inclusion of the 6425-7125 MHz frequency band in the 3GPP specification for 5G-NR/IMT-2000 systems**

*Type: LS out For: Approval  
 Source: Apple*

**Decision: Noted.**

#### 5.3.1 General

[**R4-2200436**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200436.zip) **Initial considerations on requirements for the licensed operation in the upper 6GHz frequency range**

*Type: discussion For: Decision  
 Source: Apple*

**Decision: Noted.**

[**R4-2201231**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201231.zip) **Discussion on general issues for 6GHz licensed band**

*Type: discussion For: Approval  
 Source: CATT*

**Decision: Noted.**

[**R4-2201330**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201330.zip) **6GHz licensed band - General**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution is discussing general aspects and system parameters for the new 6GHz license band

**Decision: Noted.**

[**R4-2201503**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201503.zip) **General aspects for 6GHz NR licensed band**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201987**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201987.zip) **6GHz licensed band aspects**

*Type: discussion For: Discussion  
 Source: MediaTek (Chengdu) Inc.*

**Decision: Noted.**

#### 5.3.2 System parameters

[**R4-2200149**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200149.zip) **Discussion on system parameters for 6GHz licensed band**

*Type: discussion For: Approval  
 Source: CATT*

**Decision: Noted.**

[**R4-2200152**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200152.zip) **draft CR on introduction of 6GHz licensed band for 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2201304**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201304.zip) **Discussion on system parameters for 6G license band**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201331**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201331.zip) **6GHz licensed band - BS requirements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution is going through BS RF requirements, proposing a way forward to specify the corresponding limits for the new 6GHz license band.

**Decision: Noted.**

[**R4-2201447**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201447.zip) **Discussion on system parameters for 6425-7125MHz**

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

**Decision: Noted.**

[**R4-2201504**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201504.zip) **System parameters for 6GHz NR licensed band**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201545**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201545.zip) **6GHz licensed band attributes based on RCC recommendations**

*Type: discussion For: Discussion  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we examine the RCC recommendation document and applicable ITU documents referred to and provide our understanding on how it can translate into RAN4 specifications.

**Decision: Noted.**

[**R4-2201824**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201824.zip) **draft CR on introduction of 6GHz system parameters for 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

[**R4-2201825**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201825.zip) **draft CR on introduction of 6GHz system parameters for 38.104**

*Type: draftCR For: Endorsement  
 38.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

#### 5.3.3 UE RF requirements

[**R4-2200150**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200150.zip) **Discussion on UE RF requirements for 6GHz licensed band**

*Type: discussion For: Approval  
 Source: CATT*

**Decision: Noted.**

[**R4-2201305**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201305.zip) **Discussion on UE RF requirements for 6G license band**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201332**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201332.zip) **6GHz licensed band - UE requirements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution is going through UE RF requirements, proposing a way forward to specify the corresponding limits for the new 6GHz license band.

**Decision: Noted.**

[**R4-2201448**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201448.zip) **Discussion on UE RF requirements for 6425-7125MHz**

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

**Decision: Noted.**

[**R4-2201505**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201505.zip) **UE RF requirements**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, CMCC, China Unicom, OPPO*

**Decision: Noted.**

[**R4-2201506**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201506.zip) **Draft CR for 38.101-1: 6GHz NR licensed band**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon,CMCC, China Telecom, China Unicom, OPPO*

**Decision: Not pursued.**

[**R4-2201826**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201826.zip) **draft CR on introduction of 6GHz UE RF requirements for 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

[**R4-2201855**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201855.zip) **6 GHz licensed band**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

#### 5.3.4 BS RF requirements

[**R4-2200153**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200153.zip) **Analysis on BS requirements for operation in 6GHz band**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision: Noted.**

[**R4-2200154**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200154.zip) **draft CR on introduction of 6GHz licensed band for 38.104**

*Type: draftCR For: Endorsement  
 38.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200155**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200155.zip) **draft CR on introduction of 6GHz licensed band for 38.141-1**

*Type: draftCR For: Endorsement  
 38.141-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200156**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200156.zip) **draft CR on introduction of 6GHz licensed band for 38.141-2**

*Type: draftCR For: Endorsement  
 38.141-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200157**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200157.zip) **draft CR on introduction of 6GHz licensed band for 37.104**

*Type: draftCR For: Endorsement  
 37.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200158**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200158.zip) **draft CR on introduction of 6GHz licensed band for 37.105**

*Type: draftCR For: Endorsement  
 37.105 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200159**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200159.zip) **draft CR on introduction of 6GHz licensed band for 37.141**

*Type: draftCR For: Endorsement  
 37.141 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200160**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200160.zip) **draft CR on introduction of 6GHz licensed band for 37.145-1**

*Type: draftCR For: Endorsement  
 37.145-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200161**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200161.zip) **draft CR on introduction of 6GHz licensed band for 37.141-2**

*Type: draftCR For: Endorsement  
 37.145-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200480**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200480.zip) **draft CR on introduction of 6GHz licensed band for 38.174**

*Type: draftCR For: Endorsement  
 38.174 v16.5.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200481**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200481.zip) **draft CR on introduction of 6GHz licensed band for 38.176-1**

*Type: draftCR For: Endorsement  
 38.176-1 v16.2.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200482**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200482.zip) **draft CR on introduction of 6GHz licensed band for 38.176-2**

*Type: draftCR For: Endorsement  
 38.176-2 v16.2.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2201449**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201449.zip) **Discussion on BS RF requirements for 6425-7125MHz**

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

**Decision: Noted.**

[**R4-2201450**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201450.zip) **draft CR to TS38.104 the introduction of 6425-7125MHz**

*Type: draftCR For: Endorsement  
 38.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

[**R4-2201451**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201451.zip) **draft CR to TS36.104 the introduction of coexistence requirements of licensed band 6425-7125MHz**

*Type: draftCR For: Endorsement  
 36.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

[**R4-2201452**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201452.zip) **draft CR to TS36.141 the introduction of coexistence requirements of licensed band 6425-7125MHz**

*Type: draftCR For: Endorsement  
 36.141 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

[**R4-2201507**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201507.zip) **BS RF requirements**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Unicom, CMCC*

**Decision: Noted.**

[**R4-2201508**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201508.zip) **Draft CR for 38.104: 6GHz NR licensed band**

*Type: draftCR For: Endorsement  
 38.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Not pursued.**

[**R4-2201827**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201827.zip) **draft CR to TS 38.174 introduction of 6GHz coexistence requirement in IAB spec**

*Type: draftCR For: Endorsement  
 38.174 v16.5.0 CR- rev Cat: B (Rel-16)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

[**R4-2201828**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201828.zip) **draft CR to TS 38.176-1 on introduction of coexistence requirement for 6GHz**

*Type: draftCR For: Endorsement  
 38.176-1 v16.2.0 CR- rev Cat: B (Rel-16)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

[**R4-2201829**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201829.zip) **draft CR to TS 38.176-2 on introduction of coexistence requirement for 6GHz**

*Type: draftCR For: Endorsement  
 38.176-1 v16.2.0 CR- rev Cat: B (Rel-16)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

#### 5.3.5 Others

[**R4-2201453**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201453.zip) **Discussion on MR/LA BS UEM requirements for 6425-7125MHz and 10-10.5GHz**

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

**Decision: Noted.**

[**R4-2201454**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201454.zip) **draft CR to TR38.921 MR and LA BS requirements for 6425-7125MHz and 10-10.5GHz**

*Type: draftCR For: Endorsement  
 38.921 v17.0.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

### 5.4 Introduction of 900 MHz spectrum to 5G NR applicable for Rail Mobile Radio

#### 5.4.1 General

**[101-bis-e][104] RAIL\_900\_1900MHz, AI 5.4.1, 5.4.2, 5.4.4, 5.5.1, 5.5.2, 5.5.4 – Ingo Wendler**

[**R4-2202204**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202204.zip) **Email discussion summary for [101-bis-e][104] RAIL\_900\_1900MHz**

*Type: other For: Information  
 Source: Moderator (Union Inter. Chemins de Fer)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202304**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202304.zip) **(from** [**R4-2202204**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202204.zip)**).**

[**R4-2202304**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202304.zip) **Email discussion summary for [101-bis-e][104] RAIL\_900\_1900MHz**

*Type: other For: Information  
 Source: Moderator (Union Inter. Chemins de Fer)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comment** |
| [R4-2202245](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202245.zip) | Revised TR 38.853 version 0.2.0 | UIC | Agreed |  |
| [R4-2202246](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202246.zip) | TR\_38.853\_changes\_clause 7.1 | UIC | Approved |  |
| [R4-2202242](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202242.zip) | Revised TR 38.852 version 0.2.0 | UIC | Agreed |  |
| [R4-2202243](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202243.zip) | TR\_38.852\_changes\_clause 7.1 | UIC | Approved |  |
| [R4-2202244](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202244.zip) | TR\_38.852\_changes\_clause 7.2 | UIC | Approved |  |

-------------------------------------------------------------------------------------------------------------------------------------

[**R4-2201687**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201687.zip) **Revised TR 38.853 version 0.2.0**

*Type: draft TR For: Approval  
 38.853 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Abstract:**

In the Copyright Notification section, update the copyright year to 2022.

**Decision: Revised to** [**R4-2202245**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202245.zip) **(from** [**R4-2201687**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201687.zip)**).**

**[R4-2202245](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202245.zip) Revised TR 38.853 version 0.2.0**

*Type: draft TR For: Approval  
 38.853 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Abstract:**

In the Copyright Notification section, update the copyright year to 2022.

**Decision: Agreed.**

#### 5.4.2 UE RF requirements

**[101-bis-e][104] RAIL\_900\_1900MHz, AI 5.4.1, 5.4.2, 5.4.4, 5.5.1, 5.5.2, 5.5.4 – Ingo Wendler**

[**R4-2200702**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200702.zip) **On RMR900 sensitivity**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Approved.**

#### 5.4.3 BS RF requirements

#### 5.4.4 Others

**[101-bis-e][104] RAIL\_900\_1900MHz, AI 5.4.1, 5.4.2, 5.4.4, 5.5.1, 5.5.2, 5.5.4 – Ingo Wendler**

[**R4-2201688**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201688.zip) **TR\_38.853\_changes\_clause 7.1**

*Type: pCR For: Approval  
 38.853 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Decision: Revised to** [**R4-2202246**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202246.zip) **(from** [**R4-2201688**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201688.zip)**).**

**[R4-2202246](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202246.zip) TR\_38.853\_changes\_clause 7.1**

*Type: pCR For: Approval  
 38.853 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Decision: Approved.**

### 5.5 Introduction of 1900 MHz spectrum to 5G NR applicable for Rail Mobile Radio

#### 5.5.1 General

**[101-bis-e][104] RAIL\_900\_1900MHz, AI 5.4.1, 5.4.2, 5.4.4, 5.5.1, 5.5.2, 5.5.4 – Ingo Wendler**

[**R4-2201328**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201328.zip) **RMR 1900 MHz - TP to TR 38.852 on Regulatory background**

*Type: pCR For: Approval  
 38.852 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

This is TP on the regulatory background for RMR band 1900MHz

**Decision: Approved.**

[**R4-2201682**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201682.zip) **Revised TR 38.852 version 0.2.0**

*Type: draft TR For: Approval  
 38.852 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Abstract:**

In the Copyright Notification section, update the copyright year to 2022.

**Decision: Revised to** [**R4-2202242**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202242.zip) **(from** [**R4-2201682**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201682.zip)**).**

**[R4-2202242](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202242.zip) Revised TR 38.852 version 0.2.0**

*Type: draft TR For: Approval  
 38.852 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Abstract:**

In the Copyright Notification section, update the copyright year to 2022.

**Decision: Agreed.**

#### 5.5.2 UE RF requirements

#### 5.5.3 BS RF requirements

#### 5.5.4 Others

**[101-bis-e][104] RAIL\_900\_1900MHz, AI 5.4.1, 5.4.2, 5.4.4, 5.5.1, 5.5.2, 5.5.4 – Ingo Wendler**

[**R4-2201683**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201683.zip) **TR\_38.852\_changes\_clause 7.1**

*Type: pCR For: Approval  
 38.852 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Decision: Revised to** [**R4-2202243**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202243.zip) **(from** [**R4-2201683**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201683.zip)**).**

[**R4-2202243**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202243.zip) **TR\_38.852\_changes\_clause 7.1**

*Type: pCR For: Approval  
 38.852 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Decision: Approved.**

[**R4-2201685**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201685.zip) **TR\_38.852\_changes\_clause 7.2**

*Type: pCR For: Approval  
 38.852 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Decision: Revised to** [**R4-2202244**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202244.zip) **(from** [**R4-2201685**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201685.zip)**).**

**[R4-2202244](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202244.zip) TR\_38.852\_changes\_clause 7.2**

*Type: pCR For: Approval  
 38.852 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Decision: Approved.**

### 5.6 Issues arising from basket WIs but not subject to block approval

**[101-bis-e][105] NR\_Baskets\_Part\_1, AI 5.6 – Dominique Brunel**

[**R4-2202205**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202205.zip) **Email discussion summary for [101-bis-e][105] NR\_Baskets\_Part\_1**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

[R4-2200698](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200698.zip), [R4-2201440](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201440.zip) will be treated in this email thread.

[R4-2201804](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201804.zip) will be moved to AI 5.6.1 and treated in this email thread.

[R4-2202028](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202028.zip), [R4-2202034](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202034.zip), [R4-2202038](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202038.zip) will be treated in this email thread.

[R4-2202039](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202039.zip) is treated in this email thread.

[R4-2200176](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200176.zip) (n46-n480-n96, the note in TP needs discussion) and [R4-2200059](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200059.zip) are moved from [107] to [105], and treated in [105]

[R4-2200706](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200706.zip), [R4-2201565](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201565.zip), [R4-2202035](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202035.zip), [R4-2202036](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202036.zip) and [R4-2202037](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202037.zip) are also moved from [107] to [105]

**Decision: Revised to** [**R4-2202305**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202305.zip) **(from** [**R4-2202205**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202205.zip)**).**

[**R4-2202305**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202305.zip) **Email discussion summary for [101-bis-e][105] NR\_Baskets\_Part\_1**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Moderator input on some other topics:**

* NRU ULCA: for two meeting there were only a few contributions and no comment on this meeting contribution. It seems that there is no real interest for NRU contiguous ULCA. If no more input in February, maybe this objective should be removed from the R17 NR intra-band basket objectives.
* Promotion of specs to R17: there is an agreement that there is no need to maintain 25- and 34- series specifications and thus not promote them to R17. It is suggested to capture the agreement in chairman’s note to let MCC know.

**Agreement:** there is no need to maintain 25- and 34- series specifications and thus not promote them to R17

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202274](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202274.zip) draftCR to R17 38-101-1 to correct intra-band CA REFSENS MSD test points | Skyworks, Qualcomm | Endorsed |
| [R4-2202275](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202275.zip) WF on LB-LB MSDs | Skyworks, Qualcomm | Approved |
| [R4-2202276](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202276.zip) draftCR to R17 38-101-1 on MSD for CA\_n29-n71 | Dish, Nokia, Qualcomm, Skyworks | Endorsed |
| [R4-2202277](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202277.zip) draftCR to R17 38-101-1 on MSD for CA\_n5-n28 | Skyworks | Endorsed |
| [R4-2202278](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202278.zip) draftCR to R17 38-101-3 on MSD for DC\_20A-38A\_n8A | Skyworks | Endorsed |
| [R4-2202279](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202279.zip) WF on triple beat evaluation and specification framework | Qualcomm, Skyworks | Approved |
| [R4-2202280](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202280.zip) TP to TR for DC\_2\_n25 with 1UL | Ericsson, Bell Mobility | Withdrawn |
| [R4-2202281](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202281.zip) TP to TR for CA\_n46-n96 | Charter Communications, Inc | Postponed |
| [R4-2202405](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202405.zip) WF on introducing release independent features for TS 36.307 and TS 38.307 | CHTTL Nokia | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Tdoc number | Title | Source | Status | **Comments** |
| [R4-2202154](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202154.zip) | Triple beat B3 MSD evaluation for DC\_3A\_n41C (revision pending) | Skyworks Solutions Inc. | Noted |  |
| [R4-2202282](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202282.zip) | TP to TR TR38.717-03-01 for CA\_n46-n48-n96 | Charter Communications, Inc | Postponed |  |
| [R4-2202283](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202283.zip) | TP to TR 38.717.02-01 for CA\_n46-n48--n96 | Charter Communications, Inc | Postponed |
| [R4-2201573](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201573.zip) | TP for TR 37.717-21-11 to include DC\_2-7\_n25 | Ericsson, Bell Mobility | Postponed | [R4-2202280](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202280.zip) TP to TR for DC\_2\_n25 with 1UL was withdrawn |
| [R4-2201574](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201574.zip) | TP for TR 37.717-31-11 to include DC\_2-7-66\_n25 | Ericsson, Bell Mobility | Postponed |
| [R4-2201575](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201575.zip) | TP for TR 37.717-31-11 to include DC\_2-7-13\_n25 | Ericsson, Bell Mobility | Postponed |

[**R4-2202274**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202274.zip) **draftCR to R17 38-101-1 to correct intra-band CA REFSENS MSD test points**

*Type: draftCR For: Endorsement  
 38.101-01 v16.2.0 CR- rev Cat: F (Rel-1x)  
  
 Source: Skyworks, Qualcomm*

**Decision: Endorsed.**

[**R4-2202275**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202275.zip) **WF on LB-LB MSDs**

*Type: other For: Approval  
 Source: Skyworks, Qualcomm*

**Decision: Approved.**

[**R4-2202276**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202276.zip) **draftCR to R17 38-101-1 on MSD for CA\_n29-n71**

*Type: draftCR For: Endorsement  
 38.101-01 v x.x.x CR- rev Cat: F (Rel-1x)  
  
 Source: Dish, Nokia, Qualcomm, Skyworks*

**Decision: Endorsed.**

[**R4-2202277**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202277.zip) **draftCR to R17 38-101-1 on MSD for CA\_n5-n28**

*Type: CR For: Agreement  
 38.101-01 v x.x.x CR- rev Cat: F (Rel-1x)  
  
 Source: Skyworks*

**Decision: Endorsed.**

[**R4-2202278**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202278.zip) **draftCR to R17 38-101-3 on MSD for DC\_20A-38A\_n8A**

*Type: CR For: Agreement  
 38.1xx-03 v x.x.x CR- rev Cat: F (Rel-1x)  
  
 Source: Skyworks*

**Decision: Endorsed.**

[**R4-2202279**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202279.zip) **WF on triple beat evaluation and specification framework**

*Type: other For: Approval  
 Source: Qualcomm, Skyworks*

**Decision: Approved.**

[**R4-2202280**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202280.zip) **TP to TR for DC\_2\_n25 with 1UL**

*Type: pCR For: Approval  
 38.xxx-0y v x.x.0 CR- rev Cat: F (Rel-1x)  
  
 Source: Ericsson, Bell Mobility*

**Decision: Withdrawn.**

[**R4-2202281**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202281.zip) **TP to TR for CA\_n46-n96**

*Type: pCR For: Approval  
 38.xxx-0y v x.x.0 CR- rev Cat: F (Rel-1x)  
  
 Source: Charter Communications, Inc*

**Decision: Postponed.**

[**R4-2202405**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202405.zip) **WF on introducing release independent features for TS 36.307 and TS 38.307**

*Type: other For: Approval  
 Source: CHTTL, Nokia*

**Decision: Approved.**

#### 5.6.1 UE RF requirements

[**R4-2200176**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200176.zip) **TP to TR TR38.717-03-01 for CA\_n46-n48-n96**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Charter Communications, Inc*

**Decision: Revised to** [**R4-2202282**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202282.zip) **(from** [**R4-2200176**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200176.zip)**).**

[**R4-2202282**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202282.zip) **TP to TR TR38.717-03-01 for CA\_n46-n48-n96**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Charter Communications, Inc*

**Decision: Postponed.**

[**R4-2200698**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200698.zip) **Working procedures for updating release independence specification**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2200706**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200706.zip) **n29 MSD in CA\_n29-n71**

*Type: discussion For: Discussion  
 Source: Nokia, Dish*

**Decision: Noted.**

[**R4-2201440**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201440.zip) **Discussion on the working procedure for introducing release independent features**

*Type: discussion For: Discussion  
 Source: CHTTL*

**Decision: Noted.**

[**R4-2201565**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201565.zip) **TP for TR 38.717-02-01 to include CA\_n20-n67**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-02-01 to include CA\_n20-n67

**Decision: Approved.**

[**R4-2201804**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201804.zip) **Discussion on the Rel-17 specifications: 25-series and 34-series**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

In this contribution we provide inputs to the discussion on the list of RAN4 specifications to be promoted to Rel-17, in particular looking at 25-, and 34-series specifications.

**Decision: Noted.**

[**R4-2202022**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202022.zip) **NR-U Contiguous UL-CA Measurements**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2202028**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202028.zip) **Corrections to Intra-band CA MSD for CA\_n5B and CA\_n7B**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2202034**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202034.zip) **Triple beat B3 MSD evaluation for DC\_3A\_n41C**

*Type: discussion For: Approval  
 38.101-3 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Revised to** [**R4-2202154**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202154.zip) **(from** [**R4-2202034**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202034.zip)**).**

[**R4-2202154**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202154.zip) **Triple beat B3 MSD evaluation for DC\_3A\_n41C**

*Type: discussion For: Approval  
 38.101-3 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2202035**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202035.zip) **Measurements for CA\_n29-n71 MSD**

*Type: discussion For: Approval  
 38.101 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2202036**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202036.zip) **Measurements for CA\_n5-n28 MSD**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2202037**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202037.zip) **CA\_n29A-n71A MSD**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2202038**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202038.zip) **MSD for DC\_20A-38A\_n8A**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2202039**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202039.zip) **Intra-band CA REFSENS Ambiguity**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2200059**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200059.zip) **TP to TR 38.717.02-01 for CA\_n46-n48--n96**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Charter Communications, Inc*

**Decision: Revised to** [**R4-2202283**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202283.zip) **(from** [**R4-2200059**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200059.zip)**).**

**[R4-2202283](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202283.zip) TP to TR 38.717.02-01 for CA\_n46-n48--n96**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Charter Communications, Inc*

**Decision: Postponed.**

#### 5.6.2 NR-U intra-band contiguous UL CA

[**R4-2200851**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200851.zip) **On the MPR and A-MPR for intra-band UL CA with shared spectrum access**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we propose MPR and A-MPR requirements for interlaced transmissions and discuss the requirements for other resource-allocation types

**Decision:** The document was **not treated**.

### 5.7 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y)

**[101-bis-e][106] NR\_Baskets\_Part\_2, AI 5.7, 5.14, 5.15, 5.16, 5.17, 5.18 – Iwo Angelow**

[**R4-2202206**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202206.zip) **Email discussion summary for [101-bis-e][106] NR\_Baskets\_Part\_2**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

#### 5.7.1 UE RF requirements for FR1

[**R4-2201104**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201104.zip) **TP to TR 38.717-01-01 Addition of CA\_n40B**

*Type: pCR For: Approval  
 38.717-01-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, NBN*

**Decision: Revised to** [**R4-2202174**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202174.zip) **(from** [**R4-2201104**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201104.zip)**).**

**[R4-2202174](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202174.zip) TP to TR 38.717-01-01 Addition of CA\_n40B**

*Type: pCR For: Approval  
 38.717-01-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, NBN*

**Decision: Approved.**

#### 5.7.2 UE RF requirements for FR2

### 5.8 NR inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1, 2)

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

[**R4-2202207**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202207.zip) **Email discussion summary for [101-bis-e][107] NR\_Baskets\_Part\_3**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 1st round**

--------------------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2201796**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201796.zip) **TR 38.717-02-01 v0.8.0**

*Type: draft TR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Wistron Telecom AB*

**Decision: Not pursued.**

#### 5.8.1 NR inter band CA requirements without any FR2 band(s)

[**R4-2200060**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200060.zip) **TP to TR 38.717.02-01 for CA\_n48-n96**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Charter Communications, Inc*

**Decision: Revised to** [**R4-2202175**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202175.zip) **(from** [**R4-2200060**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200060.zip)**).**

[**R4-2202175**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202175.zip) **TP to TR 38.717.02-01 for CA\_n48-n96**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Charter Communications, Inc*

**Decision: Approved.**

[**R4-2200061**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200061.zip) **TP to TR 38.717.02-01 for CA\_n46-n48**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Charter Communications, Inc*

**Decision: Revised to** [**R4-2202176**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202176.zip) **(from** [**R4-2200061**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200061.zip)**).**

[**R4-2202176**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202176.zip) **TP to TR 38.717.02-01 for CA\_n46-n48**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Charter Communications, Inc*

**Decision: Approved.**

[**R4-2200193**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200193.zip) **Draft CR for 38.101-1: support of DC\_n1A-n28A and DC\_n1A-n41A**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

DC\_n1A-n28A and n1A-n41A are added based on relevant 2UL CA requirements..

**Decision: Endorsed.**

[**R4-2200201**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200201.zip) **Draft CR for TS 38.101-1: Support of BCS2 in CA\_n41-n79**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Revised to** [**R4-2202177**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202177.zip) **(from** [**R4-2200201**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200201.zip)**).**

[**R4-2202177**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202177.zip) **Draft CR for TS 38.101-1: Support of BCS2 in CA\_n41-n79**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Endorsed.**

[**R4-2201022**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201022.zip) **Draft CR for 38.101-1 to introduce CA\_n1A-n77(3A) and CA\_n18A-n77(3A)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Endorsed.**

[**R4-2201062**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201062.zip) **Draft CR for 38.101-1 to introduce new configurations of CA\_n25-n77**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, Telus, Bell Mobility*

**Decision: Endorsed.**

[**R4-2201088**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201088.zip) **draftCR to add DC\_n1A-n7A to 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, BT*

**Decision: Endorsed.**

[**R4-2201090**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201090.zip) **draftCR to add DC\_n7A-n46 to 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, BT*

**Decision: Endorsed.**

[**R4-2201094**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201094.zip) **TP to TR 38.717-02-01 Addition of BCS1 for CA\_n25-n77**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Telus*

**Decision: Approved.**

[**R4-2201100**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201100.zip) **TP to TR 38.717-02-01 Addition of CA\_n40-n77**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, NBN*

**Decision: Revised to** [**R4-2202178**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202178.zip) **(from** [**R4-2201100**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201100.zip)**).**

[**R4-2202178**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202178.zip) **TP to TR 38.717-02-01 Addition of CA\_n40-n77**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, NBN*

**Decision: Approved.**

[**R4-2201101**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201101.zip) **draftCR to add DC\_n40B-n78 to 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, NBN*

**Decision: Revised to** [**R4-2202179**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202179.zip) **(from** [**R4-2201101**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201101.zip)**).**

[**R4-2202179**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202179.zip) **draftCR to add DC\_n40B-n78 to 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, NBN*

**Decision: Endorsed.**

[**R4-2201105**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201105.zip) **draftCR 38.101-1 Addition of CA\_n12A-n66(2A)(3A)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Endorsed.**

[**R4-2201106**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201106.zip) **draftCR 38.101-1 Addition of CA\_n2(2A)-n12**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Endorsed.**

[**R4-2201107**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201107.zip) **draftCR 38.101-1 Addition of CA\_n29A-n66(3A)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Endorsed.**

[**R4-2201546**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201546.zip) **draft CR 38.101-1 to add new configurations for CA\_n25-n77 and CA\_n41-n48**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Eridsson, T-Mobile US*

**Abstract:**

draft CR 38.101-1 to add new configurations for CA\_n25-n77 and CA\_n41-n48

**Decision: Endorsed.**

[**R4-2201554**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201554.zip) **TP for TR 38.717-02-01 to include CA\_n41-n70**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

TP for TR 38.717-02-01 to include CA\_n41-n70

**Decision: Revised to** [**R4-2202180**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202180.zip) **(from** [**R4-2201554**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201554.zip)**).**

[**R4-2202180**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202180.zip) **TP for TR 38.717-02-01 to include CA\_n41-n70**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

TP for TR 38.717-02-01 to include CA\_n41-n70

**Decision: Approved.**

[**R4-2201555**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201555.zip) **TP for TR 38.717-02-01 to include CA\_n70-n78**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

TP for TR 38.717-02-01 to include CA\_n70-n78

**Decision: Revised to** [**R4-2202181**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202181.zip) **(from** [**R4-2201555**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201555.zip)**).**

[**R4-2202181**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202181.zip) **TP for TR 38.717-02-01 to include CA\_n70-n78**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

TP for TR 38.717-02-01 to include CA\_n70-n78

**Decision: Approved.**

[**R4-2201556**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201556.zip) **draft CR 38.101-1 to add new configurations for CA\_n3-n79**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-1 to add new configurations for CA\_n3-n79

**Decision: Endorsed.**

[**R4-2201559**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201559.zip) **TP for TR 38.717-02-01 to include dual UL for CA\_n3-n20**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-02-01 to include dual UL for CA\_n3-n20

**Decision: Approved.**

[**R4-2201561**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201561.zip) **TP for TR 38.717-02-01 to include CA\_n1-n67**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-02-01 to include CA\_n1-n67

**Decision: Approved.**

[**R4-2201562**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201562.zip) **TP for TR 38.717-02-01 to include CA\_n3-n67**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-02-01 to include CA\_n3-n67

**Decision: Approved.**

[**R4-2201564**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201564.zip) **TP for TR 38.717-02-01 to include dual UL for CA\_n1-n20**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-02-01 to include dual UL for CA\_n1-n20

**Decision: Revised to** [**R4-2202182**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202182.zip) **(from** [**R4-2201564**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201564.zip)**).**

[**R4-2202182**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202182.zip) **TP for TR 38.717-02-01 to include dual UL for CA\_n1-n20**

*Type: pCR For: Approval  
 38.717-02-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-02-01 to include dual UL for CA\_n1-n20

**Decision: Approved.**

[**R4-2201681**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201681.zip) **Draft CR on CA\_n1A-n8A**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: China Unicom*

**Abstract:**

Add BCS1 for CA\_n1A-n8A.

**Decision: Endorsed.**

#### 5.8.2 NR inter band CA requirements with at least one FR2 band

[**R4-2200192**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200192.zip) **Draft CR 38.101-3: support of DC\_n1A-n257D**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

DC\_n1A-n257D is added.

**Decision: Endorsed.**

[**R4-2200621**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200621.zip) **Draft CR for TS 38.101-3 on corrections to CA configurations of CA\_n25-n260**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Abstract:**

This paper is to provide draft CR for TS 38.101-3 on corrections to CA configurations of CA\_n25-n260

**Decision: Endorsed.**

[**R4-2201023**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201023.zip) **Draft CR for 38.101-3 to introduce new configuratuons of DC\_n77-n257**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Endorsed.**

[**R4-2201102**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201102.zip) **draftCR to add CA\_n40-n257 to 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, NBN*

**Decision: Revised to** [**R4-2202183**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202183.zip) **(from** [**R4-2201102**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201102.zip)**).**

[**R4-2202183**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202183.zip) **draftCR to add CA\_n40-n257 to 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, NBN*

**Decision: Endorsed.**

[**R4-2201348**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201348.zip) **Draft CR for TS 38.101-3 on corrections to CA configurations of CA\_n77(3A)-n257A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Endorsed.**

### 5.9 NR Inter-band Carrier Aggregation for 3 bands DL with 1 band UL

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

#### 5.9.1 UE RF requirements

[**R4-2200189**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200189.zip) **Draft CR for 38.101-3: support of n77(3A) in 1UL CA\_n3A/n28A-n77-n257A/D/G/H/I**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

n77(3A) support is added to CA\_n3/n28-n77-n257X in 1UL.

**Decision: Endorsed.**

[**R4-2200200**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200200.zip) **Draft CR for TS 38.101-1: Addition of missing CA\_n3-n28-n41 Tib values**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Endorsed.**

[**R4-2200606**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200606.zip) **Draft CR for TS 38.101-1: Adding same note for higher order combo of CA\_n20-n28**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: MediaTek Inc.*

**Decision: Revised to** [**R4-2202184**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202184.zip) **(from** [**R4-2200606**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200606.zip)**).**

[**R4-2202184**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202184.zip) **Draft CR for TS 38.101-1: Adding same note for higher order combo of CA\_n20-n28**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: MediaTek Inc.*

**Decision: Endorsed.**

[**R4-2200607**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200607.zip) **Draft CR for TS 38.101-3: UL configuration correction of 48\_n77's higher order combinations**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: MediaTek Inc.*

**Decision: Endorsed.**

[**R4-2200711**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200711.zip) **TP to TR 38.717-03-01: CA\_n41-n66-n260**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, TMO USA*

**Decision: Approved.**

[**R4-2200712**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200712.zip) **TP to TR 38.717-03-01: CA\_n66-n77-n260**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, TMO USA*

**Decision: Noted.**

[**R4-2201024**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201024.zip) **TP for TR 38.717-03-01 CA\_n1-n3-n18**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201025**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201025.zip) **TP for TR 38.717-03-01 CA\_n1-n18-n28**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201026**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201026.zip) **TP for TR 38.717-03-01 CA\_n1-n18-n41**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201027**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201027.zip) **TP for TR 38.717-03-01 CA\_n1-n18-n77**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201028**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201028.zip) **TP for TR 38.717-03-01 CA\_n1-n28-n41**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201029**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201029.zip) **TP for TR 38.717-03-01 CA\_n1-n28-n77**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201030**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201030.zip) **TP for TR 38.717-03-01 CA\_n1-n41-n77**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201031**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201031.zip) **TP for TR 38.717-03-01 CA\_n3-n18-n28**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201032**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201032.zip) **TP for TR 38.717-03-01 CA\_n3-n18-n77**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201033**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201033.zip) **TP for TR 38.717-03-01 CA\_n18-n28-n41**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201034**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201034.zip) **TP for TR 38.717-03-01 CA\_n18-n28-n77**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201035**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201035.zip) **TP for TR 38.717-03-01 CA\_n18-n41-n77**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2201052**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201052.zip) **Draft CR for 38.101-1 to introduce new configurations to CA\_n5-n48-n77 and CA\_n48-n66-n77 with 1UL**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, Verizon*

**Decision: Revised to** [**R4-2202185**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202185.zip) **(from** [**R4-2201052**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201052.zip)**).**

[**R4-2202185**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202185.zip) **Draft CR for 38.101-1 to introduce new configurations to CA\_n5-n48-n77 and CA\_n48-n66-n77 with 1UL**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, Verizon*

**Decision: Endorsed.**

[**R4-2201063**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201063.zip) **Draft CR for 38.101-1 to introduce new configurations to CA\_n5-n25-n77 and CA\_n5-n66-n77 with 1UL**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, Telus, Bell Mobility*

**Decision: Endorsed.**

[**R4-2201108**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201108.zip) **TP to TR 38.717-03-01 Addition of CA\_n12-n30-n66**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201109**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201109.zip) **TP to TR 38.717-03-01 Addition of CA\_n29-n30-n66**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201110**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201110.zip) **TP to TR 38.717-03-01 Addition of CA\_n2-n12-n30**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201111**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201111.zip) **TP to TR 38.717-03-01 Addition of CA\_n2-n12-n66**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201112**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201112.zip) **TP to TR 38.717-03-01 Addition of CA\_n2-n29-n30**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201113**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201113.zip) **TP to TR 38.717-03-01 Addition of CA\_n2-n29-n66**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201552**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201552.zip) **TP for TR 38.717-03-01 to include CA\_n41-n70-n78**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

TP for TR 38.717-03-01 to include CA\_n41-n70-n78

**Decision: Approved.**

[**R4-2201566**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201566.zip) **TP for TR 38.717-03-01 to include CA\_n1-n20-n67**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-03-01 to include CA\_n1-n20-n67

[Skyworks] Fallback CA\_n20-n67 LB-LB configuration requires discussion in the "not for block approval" AI

**Decision: Approved.**

[**R4-2201568**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201568.zip) **TP for TR 38.717-03-01 to include CA\_n3-n20-n67**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-03-01 to include CA\_n3-n20-n67

[Skyworks] Fallback CA\_n20-n67 LB-LB configuration requires discussion in the "not for block approval" AI

**Decision: Approved.**

[**R4-2201724**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201724.zip) **TP for TR 38.717-03-01 to include CA\_n2-n71-n78**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 38.717-03-01 to include CA\_n2-n71-n78

**Decision: Approved.**

[**R4-2201725**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201725.zip) **TP for TR 38.717-03-01 to include CA\_n2-n66-n78**

*Type: pCR For: Approval  
 38.717-03-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 38.717-03-01 to include CA\_n2-n66-n78

**Decision: Approved.**

### 5.10 NR Inter-band Carrier Aggregation for 4 bands DL with 1 band UL

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

#### 5.10.1 UE RF requirements

[**R4-2200211**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200211.zip) **TP for TR 38.717-04-01: CA\_n1-n3-n28-n77**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200212**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200212.zip) **TP for TR 38.717-04-01: CA\_n1-n3-n28-n79**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200213**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200213.zip) **TP for TR 38.717-04-01: CA\_n1-n3-n28-n257**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200214**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200214.zip) **TP for TR 38.717-04-01: CA\_n1-n3-n77-n79**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200215**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200215.zip) **TP for TR 38.717-04-01: CA\_n1-n3-n79-n257**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200216**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200216.zip) **TP for TR 38.717-04-01: CA\_n1-n28-n77-n79**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200217**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200217.zip) **TP for TR 38.717-04-01: CA\_n1-n28-n77-n257**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200218**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200218.zip) **TP for TR 38.717-04-01: CA\_n1-n28-n79-n257**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200219**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200219.zip) **TP for TR 38.717-04-01: CA\_n3-n28-n41-n257**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200220**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200220.zip) **TP for TR 38.717-04-01: CA\_n3-n41-n77-n257**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200221**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200221.zip) **TP for TR 38.717-04-01: CA\_n28-n41-n77-n257**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200356**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200356.zip) **TP for CA\_n28-n77-n79-n257 for TR 38.717-04-01**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2200357**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200357.zip) **TP for CA\_n28-n78-n79-n257 for TR 38.717-04-01**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2200724**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200724.zip) **draft CR to add NR Inter-band CA for 4 bands in TS 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Endorsed.**

[**R4-2201065**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201065.zip) **TP for TR 38.717-04-01 CA\_n5-n25-n66-n77**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Telus, Bell Mobility*

**Decision: Approved.**

[**R4-2201120**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201120.zip) **TP to TR 38.717-04-01 Addition of CA\_n2-n12-n30-n66**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201121**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201121.zip) **TP to TR 38.717-04-01 Addition of CA\_n2-n29-n30-n66**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201550**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201550.zip) **TP for TR 38.717-04-01 to include CA\_n41-n66-n70-n78**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

TP for TR 38.717-04-01 to include CA\_n41-n66-n70-n78

**Decision: Approved.**

[**R4-2201726**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201726.zip) **TP for TR 38.717-04-01 to include CA\_n25-n41-n71-n78**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 38.717-04-01 to include CA\_n25-n41-n71-n78

**Decision: Approved.**

[**R4-2201727**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201727.zip) **TP for TR 38.717-04-01 to include CA\_n2-n66-n71-n78**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 38.717-04-01 to include CA\_n2-n66-n71-n78

**Decision: Approved.**

[**R4-2201891**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201891.zip) **TP for TR 38.717-04-01 to include CA\_n2A-n5A-n30A-n77A**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-01 to include CA\_n2A-n5A-n30A-n77A

**Decision: Approved.**

[**R4-2201892**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201892.zip) **TP for TR 38.717-04-01 to include CA\_n2A-n5A-n66A-n77A**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-01 to include CA\_n2A-n5A-n66A-n77A

**Decision: Revised to** [**R4-2202186**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202186.zip) **(from** [**R4-2201892**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201892.zip)**).**

[**R4-2202186**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202186.zip) **TP for TR 38.717-04-01 to include CA\_n2A-n5A-n66A-n77A**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-01 to include CA\_n2A-n5A-n66A-n77A

**Decision: Approved.**

[**R4-2201893**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201893.zip) **TP for TR 38.717-04-01 to include CA\_n2A-n14A-n30A-n77A**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-01 to include CA\_n2A-n14A-n30A-n77A

**Decision: Approved.**

[**R4-2201894**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201894.zip) **TP for TR 38.717-04-01 to include CA\_n2A-n14A-n66A-n77A**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-01 to include CA\_n2A-n14A-n66A-n77A

**Decision: Approved.**

[**R4-2201895**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201895.zip) **TP for TR 38.717-04-01 to include CA\_n5A-n30A-n66-n77A**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-01 to include CA\_n5A-n30A-n66-n77A

**Decision: Approved.**

[**R4-2201896**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201896.zip) **TP for TR 38.717-04-01 to include CA\_n14A-n30A-n66A-n77A**

*Type: pCR For: Approval  
 38.717-04-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-01 to include CA\_n14A-n30A-n66A-n77A

**Decision: Approved.**

### 5.11 NR Inter-band Carrier Aggregation/Dual connectivity for 3 bands DL with 2 bands UL

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

[**R4-2201797**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201797.zip) **TR 38.717-03-02 v0.8.0**

*Type: draft TR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Wistron Telecom AB*

**Decision: Not pursued.**

#### 5.11.1 UE RF requirements

[**R4-2200190**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200190.zip) **Draft CR for 38.101-1: support of n77(2A) in 2UL CA\_n1A-n77-n79A**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

n77(2A) support is added to CA\_n1-n77-n79.

**Decision: Endorsed.**

[**R4-2200191**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200191.zip) **Draft CR for 38.101-1: support of 2UL in CA\_n3A-n28A-n77(3A)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

2UL support is added to CA\_n3A-n28A-n77(3A).

**Decision: Not pursued.**

[**R4-2200194**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200194.zip) **Draft CR for 38.101-1: support of 3 Bands DC\_n1A-n3A-n77A and DC\_n1A-n3A-n79A**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

DC\_n1A-n3A-n77A/n79A are added.

**Decision: Endorsed.**

[**R4-2200195**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200195.zip) **Draft CR for 38.101-1: support of 3 Bands DC\_n1A-n77A-n79A, DC\_n3A-n77A-n79A and DC\_n3A-n77(2A)-n79A**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

DC\_n1A-n77A-n79A and n3A-n77A/n77(2A)-n79A are added.

**Decision: Endorsed.**

[**R4-2200196**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200196.zip) **Draft CR for 38.101-1: support of 3 Bands DC\_n3A-n28A-n41A, DC\_n3A-n41A-n77A and DC\_n28A-n41A-n77A**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

DC\_n3A-n28A-n41A, DC\_n3A-n41A-n77A and DC\_n28A-n41A-n77A are added.

**Decision: Endorsed.**

[**R4-2200202**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200202.zip) **TP for TR 38.717-03-02: CA\_n1-n3-n79**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200203**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200203.zip) **TP for TR 38.717-03-02: CA\_n1-n3-n257**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200204**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200204.zip) **TP for TR 38.717-03-02: CA\_n1-n28-n41**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200205**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200205.zip) **TP for TR 38.717-03-02: CA\_n1-n28-n77**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200206**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200206.zip) **TP for TR 38.717-03-02: CA\_n1-n28-n79**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200207**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200207.zip) **TP for TR 38.717-03-02: CA\_n1-n28-n257**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200208**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200208.zip) **TP for TR 38.717-03-02: CA\_n1-n41-n77**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200209**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200209.zip) **TP for TR 38.717-03-02: CA\_n1-n41-n257**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200210**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200210.zip) **TP for TR 38.717-03-02: CA\_n41-n77-n257**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200351**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200351.zip) **BCS corrections for CA\_n7-n66-n77 and CA\_n66-n71-n77**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR implementation error is corrected.

**Decision: Endorsed.**

[**R4-2200355**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200355.zip) **TP for CA\_n28-n78-n79 for TR 38.717-03-02**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: NTT DOCOMO, INC. MediaTek Inc.*

**Decision: Approved.**

[**R4-2201036**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201036.zip) **TP for TR 38.717-03-02 CA\_n1A-n3A-n18A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Approved.**

[**R4-2201037**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201037.zip) **TP for TR 38.717-03-02 CA\_n1A-n18A-n28A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Approved.**

[**R4-2201038**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201038.zip) **TP for TR 38.717-03-02 CA\_n1A-n18A-n41A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Approved.**

[**R4-2201039**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201039.zip) **TP for TR 38.717-03-02 CA\_n1A-n18A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Approved.**

[**R4-2201040**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201040.zip) **TP for TR 38.717-03-02 CA\_n1A-n28A-n41A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Noted.**

[**R4-2201041**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201041.zip) **TP for TR 38.717-03-02 CA\_n1A-n28A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Noted.**

[**R4-2201042**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201042.zip) **TP for TR 38.717-03-02 CA\_n1A-n41A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Noted.**

[**R4-2201043**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201043.zip) **TP for TR 38.717-03-02 CA\_n3A-n18A-n28A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Approved.**

[**R4-2201044**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201044.zip) **TP for TR 38.717-03-02 CA\_n3A-n18A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Approved.**

[**R4-2201045**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201045.zip) **TP for TR 38.717-03-02 CA\_n18A-n28A-n41A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Approved.**

[**R4-2201046**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201046.zip) **TP for TR 38.717-03-02 CA\_n18A-n28A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Approved.**

[**R4-2201047**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201047.zip) **TP for TR 38.717-03-02 CA\_n18A-n41A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, KDDI*

**Abstract:**

This contribution is a resubmission from last meeting contribution which was noted for uncompleted fallback mode.

**Decision: Approved.**

[**R4-2201048**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201048.zip) **Draft CR for 38.101-1 to introduce CA\_n3A-n28A-n77(3A) and CA\_n1A-n3A-n77(2A)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Endorsed.**

[**R4-2201049**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201049.zip) **Draft CR for 38.101-3 to introduce new combination for NR inter-band CA DC 3 bands DL with 2 bands UL**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Endorsed.**

[**R4-2201053**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201053.zip) **TP for TR 38.717-03-02 CA\_n2-n5-n48**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Verizon*

**Decision: Approved.**

[**R4-2201054**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201054.zip) **TP for TR 38.717-03-02 CA\_n2-n48-n66**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Verizon*

**Decision: Approved.**

[**R4-2201055**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201055.zip) **TP for TR 38.717-03-02 CA\_n2-n48-n77**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Verizon*

**Decision: Approved.**

[**R4-2201056**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201056.zip) **TP for TR 38.717-03-02 CA\_n5-n48-n66**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Verizon*

**Decision: Approved.**

[**R4-2201057**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201057.zip) **TP for TR 38.717-03-02 CA\_n5-n48-n77**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Verizon*

**Decision: Approved.**

[**R4-2201058**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201058.zip) **TP for TR 38.717-03-02 CA\_n48-n66-n77**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Verizon*

**Decision: Approved.**

[**R4-2201064**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201064.zip) **Draft CR for 38.101-1 to introduce new configurations to CA\_n5-n25-n77 and CA\_n5-n66-n77 with 2UL**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, Telus, Bell Mobility*

**Decision: Endorsed.**

[**R4-2201086**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201086.zip) **TP to TR 38.717-03-02 Addition of CADC\_n7A-n46-n78A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, BT*

**Decision: Revised to** [**R4-2202187**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202187.zip) **(from** [**R4-2201086**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201086.zip)**).**

[**R4-2202187**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202187.zip) **TP to TR 38.717-03-02 Addition of CADC\_n7A-n46-n78A**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, BT*

**Decision: Approved.**

[**R4-2201087**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201087.zip) **draftCR to add n78(2A) to CA\_n7A-n28A-n78 already in 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, BT*

**Decision: Endorsed.**

[**R4-2201103**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201103.zip) **draftCR to add CA\_n40-n78-n257 to 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, NBN*

**Decision: Endorsed.**

[**R4-2201114**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201114.zip) **TP to TR 38.717-03-02 Addition of CA\_n12-n30-n66**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201115**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201115.zip) **TP to TR 38.717-03-02 Addition of CA\_n29-n30-n66**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Revised to** [**R4-2202188**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202188.zip) **(from** [**R4-2201115**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201115.zip)**).**

[**R4-2202188**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202188.zip) **TP to TR 38.717-03-02 Addition of CA\_n29-n30-n66**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201116**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201116.zip) **TP to TR 38.717-03-02 Addition of CA\_n2-n12-n30**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201117**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201117.zip) **TP to TR 38.717-03-02 Addition of CA\_n2-n12-n66**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201118**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201118.zip) **TP to TR 38.717-03-02 Addition of CA\_n2-n29-n30**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201119**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201119.zip) **TP to TR 38.717-03-02 Addition of CA\_n2-n29-n66**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201349**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201349.zip) **Draft CR for TS 38.101-3 Add a note for BCS in 3DL NR CA table**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Endorsed.**

[**R4-2201516**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201516.zip) **DraftCR for 38.101-1: Correction on CA\_n7-n66-n78**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon, Bell Mobility, Telus*

**Decision: Endorsed.**

[**R4-2201517**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201517.zip) **DraftCR for 38.101-1: CA\_n25(2A)-n38A-n66(2A)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon, Bell Mobility, Telus*

**Decision: Endorsed.**

[**R4-2201518**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201518.zip) **DraftCR for 38.101-1: additional combinations for CA\_n7-n25-n66**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon, Bell Mobility, Telus*

**Decision: Endorsed.**

[**R4-2201547**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201547.zip) **draft CR 38.101-1 to add new configurations for CA\_n25-n41-n66, CA\_n25-n41-n71, CA\_n25-n66-n71, CA\_n41-n66-n71, CA\_n66-n71-n77**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Eridsson, T-Mobile US*

**Abstract:**

draft CR 38.101-1 to add new configurations for CA\_n25-n41-n66, CA\_n25-n41-n71, CA\_n25-n66-n71, CA\_n41-n66-n71, CA\_n66-n71-n77

**Decision: Endorsed.**

[**R4-2201548**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201548.zip) **TP for TR 38.717-03-02 to include CA\_n41-n66-n260**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Eridsson, T-Mobile US*

**Abstract:**

TP for TR 38.717-03-02 to include CA\_n41-n66-n260

**Decision: Revised to** [**R4-2202189**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202189.zip) **(from** [**R4-2201548**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201548.zip)**).**

[**R4-2202189**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202189.zip) **TP for TR 38.717-03-02 to include CA\_n41-n66-n260**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Eridsson, T-Mobile US*

**Abstract:**

TP for TR 38.717-03-02 to include CA\_n41-n66-n260

**Decision: Approved.**

[**R4-2201549**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201549.zip) **TP for TR 38.717-03-02 to include DC\_n41-n66-n260**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Eridsson, T-Mobile US*

**Abstract:**

TP for TR 38.717-03-02 to include DC\_n41-n66-n260

**Decision: Noted.**

[**R4-2201553**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201553.zip) **TP for TR 38.717-03-02 to include CA\_n41-n70-n78**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

TP for TR 38.717-03-02 to include CA\_n41-n70-n78

**Decision: Revised to** [**R4-2202190**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202190.zip) **(from** [**R4-2201553**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201553.zip)**).**

[**R4-2202190**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202190.zip) **TP for TR 38.717-03-02 to include CA\_n41-n70-n78**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

TP for TR 38.717-03-02 to include CA\_n41-n70-n78

**Decision: Approved.**

[**R4-2201560**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201560.zip) **TP for TR 38.717-03-02 to include CA\_n1-n3-n20**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-03-02 to include CA\_n1-n3-n20

**Decision: Approved.**

[**R4-2201563**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201563.zip) **TP for TR 38.717-03-02 to include CA\_n1-n3-n67**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-03-02 to include CA\_n1-n3-n67

**Decision: Approved.**

[**R4-2201567**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201567.zip) **TP for TR 38.717-03-02 to include CA\_n1-n20-n67**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-03-02 to include CA\_n1-n20-n67

[Skyworks] Fallback CA\_n20-n67 LB-LB configuration requires discussion in the "not for block approval" AI

**Decision: Approved.**

[**R4-2201569**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201569.zip) **TP for TR 38.717-03-02 to include CA\_n3-n20-n67**

*Type: pCR For: Approval  
 38.717-03-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 38.717-03-02 to include CA\_n3-n20-n67

[Skyworks] Fallback CA\_n20-n67 LB-LB configuration requires discussion in the "not for block approval" AI

**Decision: Approved.**

[**R4-2201578**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201578.zip) **draft CR 38.101-3 to add new 3DL CA combinations with FR2**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, Telstra*

**Abstract:**

draft CR 38.101-3 to add new 3DL CA combinations with FR2

**Decision: Endorsed.**

[**R4-2201579**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201579.zip) **draft CR 38.101-3 to add new 3DL DC combinations with FR2**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, Telstra*

**Abstract:**

draft CR 38.101-3 to add new 3DL DC combinations with FR2

**Decision: Endorsed.**

### 5.12 NR inter-band Carrier Aggregation and Dual connectivity for DL 4 bands and 2UL bands

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

#### 5.12.1 UE RF requirements

[**R4-2200197**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200197.zip) **Draft CR for 38.101-3: support of 4 Bands DC\_n28A-n77A-n79A-257A/G/H/I and DC\_n28A-n77(2A)-n79A-257A/G/H/I**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

DC\_n28A-n77A/(2A)-n79A-257A/G/H/I are added.

**Decision: Not pursued.**

[**R4-2200198**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200198.zip) **Draft CR for 38.101-3: additions of Low+Low UL configurations for 4 Bands DC\_n3A-n28A-n77A-257A/G/H/I and DC\_n3A-n28A-n77(2A)-257A/G/H/I**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

UL conf of two low bands combinations, i.e., n3-n28, n3-n77 and n28-n77 are added to DC\_n3A-n28A-n77A/(2A)-257A/G/H/I.

**Decision: Endorsed.**

[**R4-2200199**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200199.zip) **Draft CR for 38.101-3: support of 4 Bands DC\_n3A-n28A-n79A-257A/G/H/I**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

DC\_n3A-n28A-n79A-257A/G/H/I are added.

**Decision: Endorsed.**

[**R4-2200358**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200358.zip) **TP for CA\_n28-n78-n79-n257 for TR 38.717-04-02**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2200359**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200359.zip) **Draft CR for TS 38.101-3: DC\_n28-n77-n79-n257 and DC\_n28-n78-n79-n257**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Revised to** [**R4-2202191**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202191.zip) **(from** [**R4-2200359**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200359.zip)**).**

[**R4-2202191**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202191.zip) **Draft CR for TS 38.101-3: DC\_n28-n77-n79-n257 and DC\_n28-n78-n79-n257**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Endorsed.**

[**R4-2201050**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201050.zip) **Draft CR for 38.101-3 to introduce new combinations for NR inter-band CA DC 4 bands DL with 2 bands UL**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, KDDI*

**Decision: Not pursued.**

[**R4-2201066**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201066.zip) **TP for TR 38.717-04-02 CA\_n5-n25-n66-n77**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Telus, Bell Mobility*

**Decision: Approved.**

[**R4-2201122**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201122.zip) **TP to TR 38.717-04-02 Addition of CA\_n2-n12-n30-n66**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201123**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201123.zip) **TP to TR 38.717-04-02 Addition of CA\_n2-n29-n30-n66**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, AT&T*

**Decision: Approved.**

[**R4-2201551**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201551.zip) **TP for TR 38.717-04-02 to include CA\_n41-n66-n70-n78**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

TP for TR 38.717-04-02 to include CA\_n41-n66-n70-n78

**Decision: Noted.**

[**R4-2201580**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201580.zip) **draft CR 38.101-3 to add new 4DL CA combinations with FR2**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, Telstra*

**Abstract:**

draft CR 38.101-3 to add new 4DL CA combinations with FR2

**Decision: Endorsed.**

[**R4-2201581**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201581.zip) **draft CR 38.101-3 to add new 4DL DC combinations with FR2**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, Telstra*

**Abstract:**

draft CR 38.101-3 to add new 4DL DC combinations with FR2

**Decision: Endorsed.**

[**R4-2201897**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201897.zip) **TP for TR 38.717-04-02 to include CA\_n2A-n5A-n30A-n77A**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-02 to include CA\_n2A-n5A-n30A-n77A

**Decision: Approved.**

[**R4-2201898**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201898.zip) **TP for TR 38.717-04-02 to include CA\_n2A-n5A-n66A-n77A**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-02 to include CA\_n2A-n5A-n66A-n77A

**Decision: Revised to** [**R4-2202192**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202192.zip) **(from** [**R4-2201898**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201898.zip)**).**

[**R4-2202192**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202192.zip) **TP for TR 38.717-04-02 to include CA\_n2A-n5A-n66A-n77A**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-02 to include CA\_n2A-n5A-n66A-n77A

**Decision: Approved.**

[**R4-2201899**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201899.zip) **TP for TR 38.717-04-02 to include CA\_n2A-n14A-n30A-n77A**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-02 to include CA\_n2A-n14A-n30A-n77A

**Decision: Approved.**

[**R4-2201900**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201900.zip) **TP for TR 38.717-04-02 to include CA\_n14A-n30A-n66A-n77A**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-02 to include CA\_n14A-n30A-n66A-n77A

**Decision: Approved.**

[**R4-2201901**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201901.zip) **TP for TR 38.717-04-02 to include CA\_n2A-n14A-n66A-n77A**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-02 to include CA\_n2A-n14A-n66A-n77A

**Decision: Approved.**

[**R4-2201902**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201902.zip) **TP for TR 38.717-04-02 to include CA\_n5A-n30A-n66-n77A**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 38.717-04-02 to include CA\_n5A-n30A-n66-n77A

**Decision: Approved.**

### 5.13 NR inter-band CA for 5 bands DL with x bands UL (x=1, 2)

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

#### 5.13.1 UE RF requirements

[**R4-2200222**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200222.zip) **TP for TR 38.717-05-01: CA\_n3-28-n77-n79-n257**

*Type: pCR For: Approval  
 38.717-05-01 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

### 5.14 DC of 1 LTE band and 1 NR band

**[101-bis-e][106] NR\_Baskets\_Part\_2, AI 5.7, 5.14, 5.15, 5.16, 5.17, 5.18 – Iwo Angelow**

[**R4-2201362**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201362.zip) **TR 37.717-11-11 v1.1.0 Rel-17 Dual Connectivity (DC) of 1 LTE band (1DL/1UL) and 1 NR band (1DL/1UL)**

*Type: draft TR For: Approval  
 37.717-11-11 v1.0.0 CR- rev Cat: (Rel-17)  
  
 Source: CHTTL*

**Decision: Withdrawn.**

#### 5.14.1 EN-DC requirements without FR2 band

[**R4-2200185**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200185.zip) **Draft CR for 38.101-3: corrections of MOP in DC\_42C\_n1A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

A missed MOP for the combo is added.

**Decision: Endorsed.**

[**R4-2200237**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200237.zip) **TP update for TR 37.717-11-11: DC\_11\_n1**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200827**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200827.zip) **TP for TR 37.717-11-11: DC\_n28A\_8C**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CMCC*

**Decision: Revised to** [**R4-2202157**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202157.zip) **(from** [**R4-2200827**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200827.zip)**).**

[**R4-2202157**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202157.zip) **TP for TR 37.717-11-11: DC\_n28A\_8C**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CMCC*

**Decision: Approved.**

[**R4-2200828**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200828.zip) **TP for TR 37.717-11-11: DC\_n41\_39**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CMCC*

**Decision: Revised to** [**R4-2202158**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202158.zip) **(from** [**R4-2200828**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200828.zip)**).**

[**R4-2202158**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202158.zip) **TP for TR 37.717-11-11: DC\_n41\_39**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CMCC*

**Decision: Approved.**

[**R4-2200829**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200829.zip) **TP for TR 37.717\_11\_11 DC\_n41\_3**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CMCC*

**Decision: Revised to** [**R4-2202159**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202159.zip) **(from** [**R4-2200829**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200829.zip)**).**

[**R4-2202159**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202159.zip) **TP for TR 37.717\_11\_11 DC\_n41\_3**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CMCC*

**Decision: Approved.**

[**R4-2200830**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200830.zip) **TP for TR 37.717\_11\_11 DC\_n41\_8**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CMCC*

**Decision: Revised to** [**R4-2202160**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202160.zip) **(from** [**R4-2200830**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200830.zip)**).**

[**R4-2202160**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202160.zip) **TP for TR 37.717\_11\_11 DC\_n41\_8**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CMCC*

**Decision: Approved.**

[**R4-2200831**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200831.zip) **TP for TR 37.717\_11\_11 DC\_n41\_40**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CMCC*

**Decision: Revised to** [**R4-2202161**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202161.zip) **(from** [**R4-2200831**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200831.zip)**).**

[**R4-2202161**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202161.zip) **TP for TR 37.717\_11\_11 DC\_n41\_40**

*Type: pCR For: Approval  
 37.717-11-11 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CMCC*

**Decision: Approved.**

[**R4-2201051**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201051.zip) **TP for TR 37.717-11-11 DC\_5\_n3**

*Type: pCR For: Approval  
 37.717-11-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Reliance Jio*

**Decision: Noted.**

[**R4-2201091**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201091.zip) **draftCR to add DC\_3C\_n20A to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, BT*

**Decision: Revised to** [**R4-2202162**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202162.zip) **(from** [**R4-2201091**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201091.zip)**).**

[**R4-2202162**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202162.zip) **draftCR to add DC\_3C\_n20A to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, BT*

**Decision: Endorsed.**

[**R4-2201557**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201557.zip) **TP for TR 37.717-11-11 to include DC\_5\_n1**

*Type: pCR For: Approval  
 37.717-11-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Airtel*

**Abstract:**

TP for TR 37.717-11-11 to include DC\_5\_n1

**Decision: Revised to** [**R4-2202163**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202163.zip) **(from** [**R4-2201557**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201557.zip)**).**

[**R4-2202163**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202163.zip) **TP for TR 37.717-11-11 to include DC\_5\_n1**

*Type: pCR For: Approval  
 37.717-11-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Airtel*

**Abstract:**

TP for TR 37.717-11-11 to include DC\_5\_n1

**Decision: Approved.**

[**R4-2201558**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201558.zip) **TP for TR 37.717-11-11 to include DC\_5\_n3**

*Type: pCR For: Approval  
 37.717-11-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Airtel*

**Abstract:**

TP for TR 37.717-11-11 to include DC\_5\_n3

**Decision: Revised to** [**R4-2202153**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202153.zip) **(from** [**R4-2201558**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201558.zip)**).**

[**R4-2202153**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202153.zip) **TP for TR 37.717-11-11 to include DC\_5\_n3**

*Type: pCR For: Approval  
 37.717-11-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Airtel, Samsung, Relience Jio*

**Abstract:**

TP for TR 37.717-11-11 to include DC\_5\_n3

**Decision: Approved.**

[**R4-2201728**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201728.zip) **draft CR 38.101-3 to add new configurations for DC\_2\_n78 and DC\_71\_n78**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

draft CR 38.101-3 to add new configurations for DC\_2\_n78 and DC\_71\_n78

**Decision: Revised to** [**R4-2202164**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202164.zip) **(from** [**R4-2201728**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201728.zip)**).**

**[R4-2202164](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202164.zip) draft CR 38.101-3 to add new configurations for DC\_2\_n78 and DC\_71\_n78**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

draft CR 38.101-3 to add new configurations for DC\_2\_n78 and DC\_71\_n78

**Decision: Endorsed.**

#### 5.14.2 EN-DC requirements with FR2 band

### 5.15 DC of 2 LTE band and 1 NR band

**[101-bis-e][106] NR\_Baskets\_Part\_2, AI 5.7, 5.14, 5.15, 5.16, 5.17, 5.18 – Iwo Angelow**

[**R4-2200367**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200367.zip) **TP for TR 37.717-21-11 DC\_n3A\_1A-8A**

*Type: discussion For: Approval  
 37.717-21-11 v CR- rev Cat: (Rel-17)  
  
 Source: Huawei Technologies France*

**Decision: Approved.**

[**R4-2200368**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200368.zip) **TP for TR 37.717-21-11: DC\_n77A\_1A-8A and DC\_n77(2A)\_1A-8A**

*Type: discussion For: Approval  
 37.717-21-11 v CR- rev Cat: (Rel-17)  
  
 Source: Huawei Technologies France*

**Decision: Approved.**

[**R4-2200369**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200369.zip) **TP for TR 37.717-21-11 DC\_n77A\_3A\_1A**

*Type: discussion For: Approval  
 37.717-21-11 v CR- rev Cat: (Rel-17)  
  
 Source: Huawei Technologies France*

**Decision: Approved.**

[**R4-2200370**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200370.zip) **TP for TR 37.717-21-11 DC\_n77A\_3A-8A and DC\_n77(2A)\_3A-8A**

*Type: discussion For: Approval  
 37.717-21-11 v CR- rev Cat: (Rel-17)  
  
 Source: Huawei Technologies France*

**Decision: Approved.**

[**R4-2200371**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200371.zip) **TP for TR 37.717-21-11: DC\_n257A\_3A-1A**

*Type: discussion For: Approval  
 37.717-21-11 v CR- rev Cat: (Rel-17)  
  
 Source: Huawei Technologies France*

**Decision: Approved.**

[**R4-2200372**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200372.zip) **TP for TR 37.717-21-11 DC\_n257A\_3A-8A**

*Type: discussion For: Approval  
 37.717-21-11 v CR- rev Cat: (Rel-17)  
  
 Source: Huawei Technologies France*

**Decision: Approved.**

#### 5.15.1 EN-DC requirements without FR2 band

[**R4-2200186**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200186.zip) **Draft CR for 38.101-3: support of n77(3A) in 2LTE+1NR DC\_1A/3A/8A/11A\_n77**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

n77(3A) support is added to 2 LTE + 1NR DC of 1A/3A/8A/11A\_n77.

**Decision: Revised to** [**R4-2202165**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202165.zip) **(from** [**R4-2200186**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200186.zip)**).**

[**R4-2202165**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202165.zip) **Draft CR for 38.101-3: support of n77(3A) in 2LTE+1NR DC\_1A/3A/8A/11A\_n77**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

n77(3A) support is added to 2 LTE + 1NR DC of 1A/3A/8A/11A\_n77.

**Decision: Endorsed.**

[**R4-2200235**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200235.zip) **TP for TR 37.717-21-11: EN-DC\_8-41\_n1**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.1 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp., LG Electronics*

**Decision: Revised to** [**R4-2202166**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202166.zip) **(from** [**R4-2200235**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200235.zip)**).**

[**R4-2202166**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202166.zip) **TP for TR 37.717-21-11: EN-DC\_8-41\_n1**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.1 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp., LG Electronics*

**Decision: Endorsed.**

[**R4-2200375**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200375.zip) **TP for TR 37.717-21-11: DC\_1A\_(n)3AA**

*Type: discussion For: Approval  
 37.717-21-11 v CR- rev Cat: (Rel-17)  
  
 Source: Huawei Technologies France*

**Decision: Withdrawn.**

[**R4-2200608**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200608.zip) **CR for TS 38.101-3: Adding same note for higher order combo of DC\_20\_n28**

*Type: CR For: Endorsement  
 38.101-3 v17.4.0 CR-0672 rev Cat: F (Rel-17)  
  
 Source: MediaTek Inc.*

**Abstract:**

This CR is for endorsement

**Decision: Revised to** [**R4-2202167**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202167.zip) **(from** [**R4-2200608**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200608.zip)**).**

[**R4-2202167**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202167.zip) **CR for TS 38.101-3: Adding same note for higher order combo of DC\_20\_n28**

*Type: CR For: Endorsement  
 38.101-3 v17.4.0 CR-0672 rev Cat: F (Rel-17)  
  
 Source: MediaTek Inc.*

**Abstract:**

This CR is for endorsement

**Decision: Endorsed.**

[**R4-2201089**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201089.zip) **draftCR to add DC\_n1A-n7A-n78A to 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, BT*

**Decision: Endorsed.**

[**R4-2201095**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201095.zip) **TP to TR 37.717-21-11 Addition of DC\_2A-38A\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia*

**Decision: Revised to** [**R4-2202168**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202168.zip) **(from** [**R4-2201095**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201095.zip)**).**

[**R4-2202168**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202168.zip) **TP to TR 37.717-21-11 Addition of DC\_2A-38A\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia*

**Decision: Approved.**

[**R4-2201096**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201096.zip) **TP to TR 37.717-21-11 Addition of DC\_2A-28A\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia*

**Decision: Revised to** [**R4-2202169**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202169.zip) **(from** [**R4-2201096**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201096.zip)**).**

[**R4-2202169**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202169.zip) **TP to TR 37.717-21-11 Addition of DC\_2A-28A\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia*

**Decision: Approved.**

[**R4-2201097**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201097.zip) **draftCR to add DC\_2-7\_n28 and DC\_5-66\_n78 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia*

**Decision: Revised to** [**R4-2202170**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202170.zip) **(from** [**R4-2201097**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201097.zip)**).**

[**R4-2202170**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202170.zip) **draftCR to add DC\_2-7\_n28 and DC\_5-66\_n78 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia*

**Decision: Endorsed.**

[**R4-2201356**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201356.zip) **TP for TR 37.717-21-11\_DC\_1A-38A\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

[**R4-2201357**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201357.zip) **TP for TR 37.717-21-11\_DC\_7A-38A\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

[**R4-2201573**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201573.zip) **TP for TR 37.717-21-11 to include DC\_2-7\_n25**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Bell Mobility*

**Abstract:**

TP for TR 37.717-21-11 to include DC\_2-7\_n25

Move to [105]

**Decision: Postponed.**

[**R4-2201729**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201729.zip) **draft CR 38.101-3 to add new configurations for DC\_12-66\_n78, DC\_2-71\_n78, DC\_7-12\_n78, DC\_7-71\_n78, DC\_66-71\_n78**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

draft CR 38.101-3 to add new configurations for DC\_12-66\_n78, DC\_2-71\_n78, DC\_7-12\_n78, DC\_7-71\_n78, DC\_66-71\_n78

**Decision: Revised to** [**R4-2202171**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202171.zip) **(from** [**R4-2201729**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201729.zip)**).**

[**R4-2202171**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202171.zip) **draft CR 38.101-3 to add new configurations for DC\_12-66\_n78, DC\_2-71\_n78, DC\_7-12\_n78, DC\_7-71\_n78, DC\_66-71\_n78**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

draft CR 38.101-3 to add new configurations for DC\_12-66\_n78, DC\_2-71\_n78, DC\_7-12\_n78, DC\_7-71\_n78, DC\_66-71\_n78

**Decision: Endorsed.**

[**R4-2202005**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202005.zip) **TP update for TR 37.717-21-11: EN-DC\_1-11\_n79**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.1 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp., LG Electronics*

**Decision: Approved.**

[**R4-2202007**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202007.zip) **TP update for TR 37.717-21-11: EN-DC\_8-11\_n79**

*Type: pCR For: Approval  
 37.717-21-11 v0.7.1 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp., LG Electronics*

**Decision: Approved.**

#### 5.15.2 EN-DC requirements with FR2 band

### 5.16 DC of 3 LTE band and 1 NR band

**[101-bis-e][106] NR\_Baskets\_Part\_2, AI 5.7, 5.14, 5.15, 5.16, 5.17, 5.18 – Iwo Angelow**

[**R4-2200373**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200373.zip) **TP for TR 37.717-31-11 DC\_n77A\_1A-3A-8A and DC\_n77(2A)\_1A-3A-8A**

*Type: discussion For: Approval  
 37.717-31-11 v CR- rev Cat: (Rel-17)  
  
 Source: Huawei Technologies France*

**Decision: Approved.**

#### 5.16.1 EN-DC requirements without FR2 band

[**R4-2200609**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200609.zip) **CR for TS 38.101-3: Adding same note for higher order combo of DC\_20\_n28**

*Type: CR For: Endorsement  
 38.101-3 v17.4.0 CR-0673 rev Cat: F (Rel-17)  
  
 Source: MediaTek Inc.*

**Abstract:**

This CR is for endorsement

**Decision: Not pursued.**

[**R4-2200623**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200623.zip) **Draft CR for TS 38.101-3 to add UL DC\_20A\_n78A support for DC\_1A-20A-38A\_n78A and DC\_3A-20A-38A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Abstract:**

This paper is to provide draft CR for TS 38.101-3 to add UL DC\_20A\_n78A support for DC\_1A-20A-38A\_n78A and DC\_3A-20A-38A\_n78A

**Decision: Endorsed.**

[**R4-2200624**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200624.zip) **TP for TR 37.717-31-11\_DC\_1A-3A-38A\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Abstract:**

This paper is to provide TP for TR 37.717-31-11\_DC\_1A-3A-38A\_n78A

**Decision: Approved.**

[**R4-2200713**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200713.zip) **TP to TR 37.717-31-11: DC\_2-5-48\_n77**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Revised to** [**R4-2202172**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202172.zip) **(from** [**R4-2200713**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200713.zip)**).**

[**R4-2202172**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202172.zip) **TP to TR 37.717-31-11: DC\_2-5-48\_n77**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Approved.**

[**R4-2200714**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200714.zip) **TP to TR 37.717-31-11: DC\_5-48-66\_n77**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Approved.**

[**R4-2200715**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200715.zip) **TP to TR 37.717-31-11: DC\_2-13-48\_n77**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Approved.**

[**R4-2201059**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201059.zip) **Draft CR for 38.101-3 to introduce DC\_7A-7A-29A-66A\_n78A and DC\_7C-29A-66A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung, Telus, Bell Mobility*

**Decision: Approved.**

[**R4-2201060**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201060.zip) **TP for TR 37.717-31-11 DC\_2-7-29\_n78**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Telus, Bell Mobility*

**Decision: Approved.**

[**R4-2201098**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201098.zip) **TP to TR 37.717-31-11 Addition of DC\_2-7-28\_n78**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia*

**Decision: Approved.**

[**R4-2201099**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201099.zip) **TP to TR 37.717-31-11 Addition of DC\_5-7-66\_n78**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia*

**Decision: Approved.**

[**R4-2201233**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201233.zip) **Draft CR for 38.101-3 To configuration DC\_3C-7A-20A\_n28A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

[**R4-2201234**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201234.zip) **Draft CR for 38.101-3 To configuration DC\_3C-20A-32A\_n1A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

[**R4-2201235**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201235.zip) **Draft CR for 38.101-3 To add UL configuration DC\_3C\_n78A for DC\_3C-7A-20A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

[**R4-2201236**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201236.zip) **Draft CR for 38.101-3 To add UL configuration DC\_3C\_n28A for DC\_1A-3C-20A\_n28A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

[**R4-2201358**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201358.zip) **TP for TR 37.717-31-11\_DC\_1A-7A-38A\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

[**R4-2201359**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201359.zip) **TP for TR 37.717-31-11\_DC\_7A-20A-38A\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

[**R4-2201574**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201574.zip) **TP for TR 37.717-31-11 to include DC\_2-7-66\_n25**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Bell Mobility*

**Abstract:**

TP for TR 37.717-31-11 to include DC\_2-7-66\_n25

Move to [105]

**Decision: Postponed.**

[**R4-2201575**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201575.zip) **TP for TR 37.717-31-11 to include DC\_2-7-13\_n25**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Bell Mobility*

**Abstract:**

TP for TR 37.717-31-11 to include DC\_2-7-13\_n25

Move to [105].

**Decision: Postponed.**

[**R4-2201730**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201730.zip) **TP for TR 37.717-31-11 to include DC\_2-5-7\_n78**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-31-11 to include DC\_2-5-7\_n78

**Decision: Approved.**

[**R4-2201731**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201731.zip) **TP for TR 37.717-31-11 to include DC\_2-5-66\_n78**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-31-11 to include DC\_2-5-66\_n78

**Decision: Approved.**

[**R4-2201732**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201732.zip) **TP for TR 37.717-31-11 to include DC\_5-7-66\_n78**

*Type: pCR For: Approval  
 37.717-31-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-31-11 to include DC\_5-7-66\_n78

**Decision: Approved.**

#### 5.16.2 EN-DC requirements with FR2 band

[**R4-2201903**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201903.zip) **draft CR 38101-3 to add DC\_2A-2A-5A-66A\_n260M and DC\_2A-2A-5A-66A\_n260M**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38101-3 to add DC\_2A-2A-5A-66A\_n260M and DC\_2A-2A-5A-66A\_n260M

**Decision: Endorsed.**

[**R4-2201904**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201904.zip) **draft CR 38101-3 to add DC\_2A-2A-12A-30A\_n260M**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38101-3 to add DC\_2A-2A-12A-30A\_n260M

**Decision: Endorsed.**

[**R4-2201905**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201905.zip) **draft CR 38101-3 to add DC\_2A-2A-12A-66A\_n260M and DC\_2A-12A-66A-66A\_n260M**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38101-3 to add DC\_2A-2A-12A-66A\_n260M and DC\_2A-12A-66A-66A\_n260M

**Decision: Endorsed.**

[**R4-2201906**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201906.zip) **draft CR 38101-3 to add DC\_5A-30A-66A-66A\_n260M**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38101-3 to add DC\_5A-30A-66A-66A\_n260M

**Decision: Endorsed.**

[**R4-2201907**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201907.zip) **draft CR 38101-3 to add DC\_12A-30A-66A-66A\_n260M**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38101-3 to add DC\_12A-30A-66A-66A\_n260M

**Decision: Endorsed.**

[**R4-2201908**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201908.zip) **draft CR 38101-3 to add DC\_12A-30A-66A-66A\_n260M**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38101-3 to add DC\_12A-30A-66A-66A\_n260M

**Decision: Withdrawn.**

[**R4-2201961**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201961.zip) **draft CR 38101-3 to add DC\_2A-2A-5A-30A\_n260M**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38101-3 to add DC\_2A-2A-5A-30A\_n260M

**Decision: Endorsed.**

### 5.17 DC of 4 LTE band and 1 NR band

**[101-bis-e][106] NR\_Baskets\_Part\_2, AI 5.7, 5.14, 5.15, 5.16, 5.17, 5.18 – Iwo Angelow**

#### 5.17.1 EN-DC requirements without FR2 band

[**R4-2200610**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200610.zip) **CR for TS 38.101-3: Adding same note for higher order combo of DC\_20\_n28**

*Type: CR For: Endorsement  
 38.101-3 v17.4.0 CR-0674 rev Cat: F (Rel-17)  
  
 Source: MediaTek Inc.*

**Abstract:**

This CR is for endorsement

**Decision: Not pursued.**

[**R4-2200622**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200622.zip) **Draft CR for TS 38.101-3 to add UL DC\_1A\_n78A support for DC\_1A-3A-20A-38A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Abstract:**

This paper is to provide draft CR for TS 38.101-3 to add UL DC\_1A\_n78A support for DC\_1A-3A-20A-38A\_n78A

**Decision: Endorsed.**

[**R4-2201061**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201061.zip) **TP for TR 37.717-41-11 DC\_2-7-29-66\_n78**

*Type: pCR For: Approval  
 37.717-41-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Samsung, Telus, Bell Mobility*

**Decision: Approved.**

[**R4-2201733**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201733.zip) **TP for TR 37.717-41-11 to include DC\_2-5-7-66\_n78**

*Type: pCR For: Approval  
 37.717-41-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-41-11 to include DC\_2-5-7-66\_n78

**Decision: Revised to** [**R4-2202173**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202173.zip) **(from** [**R4-2201733**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201733.zip)**).**

**[R4-2202173](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202173.zip) TP for TR 37.717-41-11 to include DC\_2-5-7-66\_n78**

*Type: pCR For: Approval  
 37.717-41-11 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-41-11 to include DC\_2-5-7-66\_n78

**Decision: Approved.**

#### 5.17.2 EN-DC requirements with FR2 band

[**R4-2201909**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201909.zip) **draft CR 38101-3 to add DC\_2A-5A-30A-66A\_n260M**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38101-3 to add DC\_2A-5A-30A-66A\_n260M

**Decision: Endorsed.**

[**R4-2201910**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201910.zip) **draft CR 38101-3 to add DC\_2A-12A-30A-66A\_n260M**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38101-3 to add DC\_2A-12A-30A-66A\_n260M

**Decision: Endorsed.**

### 5.18 DC of 5 bands LTE inter-band CA (5DL/1L) and 1 NR band (1DL/1UL)

**[101-bis-e][106] NR\_Baskets\_Part\_2, AI 5.7, 5.14, 5.15, 5.16, 5.17, 5.18 – Iwo Angelow**

#### 5.18.1 UE RF requirements

### 5.19 DC of x bands (x=1,2, 3, 4) LTE inter-band CA and 2 bands NR inter-band CA

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

[**R4-2200789**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200789.zip) **TR 37.717-11-21 v0.8.0 TR update: LTE(xDL/1UL)+ NR(2DL/1UL) DC in Rel-17**

*Type: draft TR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Provide TR to update DC band combinations for LTE(xDL/1UL)+ NR(2DL/1UL) in Rel-17

**Decision: Not pursued.**

[**R4-2200791**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200791.zip) **Revised WID on LTE (xDL/UL x=1.2,3,4) with NR 2 bands (2DL/1UL) DC in Rel-17**

*Type: WID revised For: Endorsement  
 Source: LG Electronics France*

**Abstract:**

Revised WID to update the status on each DC band combination for LTE (xDL/UL x=1.2,3,4) with NR 2 bands (2DL/1UL) DC in Rel-17.

**Decision: Not pursued.**

[**R4-2200792**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200792.zip) **Introduction CR on new NR DC LTE(xDL/1UL)+ NR(2DL/1UL) band combinations in Rel-17**

*Type: CR For: Agreement  
 38.101-3 v17.4.0 CR-0675 rev Cat: B (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Big CR to introduce new NR DC band combinations in TS38.101-3 in Rel-17.

**Decision: Not pursued.**

#### 5.19.1 EN-DC requirements including NR inter CA without FR2 band

[**R4-2200225**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200225.zip) **TP for TR 37.717-11-21: EN-DC\_1-8\_n28-n79**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200226**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200226.zip) **TP for TR 37.717-11-21: EN-DC\_1-8\_n77-n79**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200227**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200227.zip) **TP for TR 37.717-11-21: EN-DC\_3-8\_n77-n79**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200228**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200228.zip) **TP for TR 37.717-11-21: EN-DC\_8\_n1-n3**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200231**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200231.zip) **TP for TR 37.717-11-21: EN-DC\_8-41\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200232**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200232.zip) **TP for TR 37.717-11-21: EN-DC\_8-42\_n1-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200233**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200233.zip) **TP for TR 37.717-11-21: EN-DC\_41\_n1-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200234**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200234.zip) **TP for TR 37.717-11-21: EN-DC\_42\_n1-n3**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200236**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200236.zip) **TP for TR 37.717-11-21: EN-DC\_11\_n3-n79**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200716**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200716.zip) **TP to TR 37.717-11-21: DC\_13-66\_n5-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Approved.**

[**R4-2200717**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200717.zip) **TP to TR 37.717-11-21: DC\_2-66\_n5-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Approved.**

[**R4-2200718**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200718.zip) **TP to TR 37.717-11-21: DC\_2-13\_n66-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Approved.**

[**R4-2200719**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200719.zip) **TP to TR 37.717-11-21: DC\_2-66\_n66-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Approved.**

[**R4-2200720**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200720.zip) **TP to TR 37.717-11-21: DC\_2-5-66\_n66-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Approved.**

[**R4-2200721**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200721.zip) **TP to TR 37.717-11-21: DC\_2-2-13-66\_n66-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Approved.**

[**R4-2200722**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200722.zip) **TP to TR 38.717-05-01: CA\_n2-n5-n48-n66-n77**

*Type: pCR For: Approval  
 38.717-05-01 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Approved.**

[**R4-2200723**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200723.zip) **TP to TR 38.717-04-02: CA\_n2-n5-n66-n77**

*Type: pCR For: Approval  
 38.717-04-02 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Noted.**

[**R4-2200725**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200725.zip) **draftCR 38.101-3 introduction of 2LTE and 2NR bandcombinations**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Verizon*

**Decision: Endorsed.**

[**R4-2200794**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200794.zip) **MSD test results and test configurations for new NR DC band combinations**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Add MSD test results and test configurations for LTE(xDL/1UL)+ NR(2DL/1UL) DC in Rel-17.

**Decision: Approved.**

[**R4-2201092**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201092.zip) **draftCR to add DC\_3\_n1A-n78(2A) to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, BT*

**Decision: Endorsed.**

[**R4-2201093**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201093.zip) **draftCR to add DC\_3\_n28A-n78(2A) to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, BT*

**Decision: Endorsed.**

[**R4-2201237**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201237.zip) **TP for TR 37.717-11-21: DC\_3A-32A\_n1A-n28A and DC\_3C-32A\_n1A-n28A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201238**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201238.zip) **TP for TR 37.717-11-21: DC\_20A-32A\_n1A-n28A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201239**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201239.zip) **TP for TR 37.717-11-21: DC\_3A-20A-32A\_n1A-n28A and DC\_3C-20A-32A\_n1A-n28A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201240**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201240.zip) **TP for TR 37.717-11-21: DC\_1A\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2202193**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202193.zip) **(from** [**R4-2201240**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201240.zip)**).**

[**R4-2202193**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202193.zip) **TP for TR 37.717-11-21: DC\_1A\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201241**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201241.zip) **TP for TR 37.717-11-21: DC\_3A\_n28A-n75A and DC\_3C\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2202194**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202194.zip) **(from** [**R4-2201241**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201241.zip)**).**

[**R4-2202194**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202194.zip) **TP for TR 37.717-11-21: DC\_3A\_n28A-n75A and DC\_3C\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201242**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201242.zip) **TP for TR 37.717-11-21: DC\_1A-3A\_n28A-n75A and DC\_1A-3C\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2202195**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202195.zip) **(from** [**R4-2201242**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201242.zip)**).**

[**R4-2202195**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202195.zip) **TP for TR 37.717-11-21: DC\_1A-3A\_n28A-n75A and DC\_1A-3C\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201243**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201243.zip) **TP for TR 37.717-11-21: DC\_3A-20A\_n28A-n75A and DC\_3C-20A\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2202196**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202196.zip) **(from** [**R4-2201243**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201243.zip)**).**

[**R4-2202196**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202196.zip) **TP for TR 37.717-11-21: DC\_3A-20A\_n28A-n75A and DC\_3C-20A\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201244**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201244.zip) **TP for TR 37.717-11-21: DC\_1A-20A\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2202197**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202197.zip) **(from** [**R4-2201244**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201244.zip)**).**

[**R4-2202197**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202197.zip) **TP for TR 37.717-11-21: DC\_1A-20A\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201245**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201245.zip) **TP for TR 37.717-11-21: DC\_1A-3A-20A\_n28A-n75A and DC\_1A-3C-20A\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2202198**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202198.zip) **(from** [**R4-2201245**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201245.zip)**).**

[**R4-2202198**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202198.zip) **TP for TR 37.717-11-21: DC\_1A-3A-20A\_n28A-n75A and DC\_1A-3C-20A\_n28A-n75A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201246**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201246.zip) **Draft CR for 38.101-3 to add UL configuration DC\_3C\_n1A and DC\_3C\_n78A for DC\_3C-7C\_n1A-n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

[**R4-2201350**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201350.zip) **TP for TR 37.717-11-21: DC\_1A\_n3A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Abstract:**

This band combination has existed in current Spec 38.101-3 v17.4.0. Moderator recommends it is noted.

**Decision: Noted.**

[**R4-2201351**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201351.zip) **TP for TR 37.717-11-21\_DC\_1A-38A\_n3A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

[**R4-2201352**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201352.zip) **TP for TR 37.717-11-21\_DC\_7A-38A\_n3A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

[**R4-2201353**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201353.zip) **TP for TR 37.717-11-21\_DC\_20A\_n3A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Abstract:**

This band combination has existed in current Spec 38.101-3 v17.4.0. Moderator recommends it is noted.

**Decision: Noted.**

[**R4-2201354**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201354.zip) **TP for TR 37.717-11-21\_DC\_20A-38A\_n3A-n78A.**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

[**R4-2201355**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201355.zip) **TP for TR 37.717-11-21\_DC\_38A\_n3A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Revised to** [**R4-2202199**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202199.zip) **(from** [**R4-2201355**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201355.zip)**).**

[**R4-2202199**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202199.zip) **TP for TR 37.717-11-21\_DC\_38A\_n3A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

[**R4-2201519**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201519.zip) **TP for TR 37.717-11-21: DC\_2-7-66\_n66-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon, Bell Mobility, Telus*

**Decision: Approved.**

[**R4-2201570**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201570.zip) **TP for TR 37.717-11-21 to include DC\_20\_n1-n67**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_20\_n1-n67

**Decision: Noted.**

[**R4-2201571**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201571.zip) **TP for TR 37.717-11-21 to include DC\_20\_n3-n67**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_20\_n3-n67

**Decision: Noted.**

[**R4-2201572**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201572.zip) **TP for TR 37.717-11-21 to include DC\_3\_n20-n67**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_3\_n20-n67

**Decision: Revised to** [**R4-2202200**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202200.zip) **(from** [**R4-2201572**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201572.zip)**).**

[**R4-2202200**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202200.zip) **TP for TR 37.717-11-21 to include DC\_3\_n20-n67**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_3\_n20-n67

**Decision: Approved.**

[**R4-2201576**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201576.zip) **TP for TR 37.717-11-21 to include DC\_2\_n25-n66**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Bell Mobility*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2\_n25-n66

**Decision: Approved.**

[**R4-2201577**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201577.zip) **TP for TR 37.717-11-21 to include DC\_2-66\_n25-n66**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Bell Mobility*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-66\_n25-n66

**Decision: Approved.**

[**R4-2201734**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201734.zip) **draft CR 38.101-3 to add new configurations for DC\_2\_n66-n78 and DC\_2\_n71-n78**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

draft CR 38.101-3 to add new configurations for DC\_2\_n66-n78 and DC\_2\_n71-n78

**Decision: Endorsed.**

[**R4-2201735**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201735.zip) **TP for TR 37.717-11-21 to include DC\_5\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_5\_n2-n78

**Decision: Approved.**

[**R4-2201736**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201736.zip) **TP for TR 37.717-11-21 to include DC\_66\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_66\_n2-n78

**Decision: Approved.**

[**R4-2201737**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201737.zip) **TP for TR 37.717-11-21 to include DC\_12\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_12\_n2-n78

**Decision: Approved.**

[**R4-2201738**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201738.zip) **TP for TR 37.717-11-21 to include DC\_2-5\_n66-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-5\_n66-n78

**Decision: Approved.**

[**R4-2201739**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201739.zip) **TP for TR 37.717-11-21 to include DC\_2-5\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-5\_n2-n78

**Decision: Approved.**

[**R4-2201740**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201740.zip) **TP for TR 37.717-11-21 to include DC\_2-66\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-66\_n2-n78

**Decision: Approved.**

[**R4-2201741**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201741.zip) **TP for TR 37.717-11-21 to include DC\_5-66\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_5-66\_n2-n78

**Decision: Approved.**

[**R4-2201742**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201742.zip) **TP for TR 37.717-11-21 to include DC\_2-7\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-7\_n2-n78

**Decision: Approved.**

[**R4-2201743**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201743.zip) **TP for TR 37.717-11-21 to include DC\_2-7\_n71-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-7\_n71-n78

**Decision: Approved.**

[**R4-2201744**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201744.zip) **TP for TR 37.717-11-21 to include DC\_2-12\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-12\_n2-n78

**Decision: Approved.**

[**R4-2201745**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201745.zip) **TP for TR 37.717-11-21 to include DC\_2-12\_n66-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-12\_n66-n78

**Decision: Approved.**

[**R4-2201746**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201746.zip) **TP for TR 37.717-11-21 to include DC\_2-66\_n71-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-66\_n71-n78

**Decision: Approved.**

[**R4-2201747**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201747.zip) **TP for TR 37.717-11-21 to include DC\_2-71\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-71\_n2-n78

**Decision: Approved.**

[**R4-2201748**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201748.zip) **TP for TR 37.717-11-21 to include DC\_2-71\_n66-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2-71\_n66-n78

**Decision: Approved.**

[**R4-2201749**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201749.zip) **TP for TR 37.717-11-21 to include DC\_5-7\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_5-7\_n2-n78

**Decision: Approved.**

[**R4-2201750**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201750.zip) **TP for TR 37.717-11-21 to include DC\_5-7\_n66-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_5-7\_n66-n78

**Decision: Approved.**

[**R4-2201751**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201751.zip) **TP for TR 37.717-11-21 to include DC\_7-12\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_7-12\_n2-n78

**Decision: Approved.**

[**R4-2201752**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201752.zip) **TP for TR 37.717-11-21 to include DC\_7-12\_n66-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_7-12\_n66-n78

**Decision: Approved.**

[**R4-2201753**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201753.zip) **TP for TR 37.717-11-21 to include DC\_7-66\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_7-66\_n2-n78

**Decision: Approved.**

[**R4-2201754**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201754.zip) **TP for TR 37.717-11-21 to include DC\_7-66\_n71-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_7-66\_n71-n78

**Decision: Approved.**

[**R4-2201755**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201755.zip) **TP for TR 37.717-11-21 to include DC\_7-71\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_7-71\_n2-n78

**Decision: Approved.**

[**R4-2201756**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201756.zip) **TP for TR 37.717-11-21 to include DC\_7-71\_n66-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_7-71\_n66-n78

**Decision: Approved.**

[**R4-2201757**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201757.zip) **TP for TR 37.717-11-21 to include DC\_12-66\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_12-66\_n2-n78

**Decision: Approved.**

[**R4-2201758**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201758.zip) **TP for TR 37.717-11-21 to include DC\_66-71\_n2-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_66-71\_n2-n78

**Decision: Approved.**

#### 5.19.2 EN-DC requirements including NR inter CA with FR2 band

[**R4-2200793**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200793.zip) **TP on summary of self-interference analysis for new NR DC LTE(xDL/1UL)+ NR(2DL/1UL) DC in Rel-17**

*Type: pCR For: Approval  
 37.717-11-21 v0.7.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Add the self-interference analysis results in TR37.717-11-21.

**Decision: Approved.**

### 5.20 DC of x bands (x=1,2) LTE inter-band CA (xDL/xUL) and y bands (y=3-x) NR inter-band CA

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

#### 5.20.1 UE RF requirements

### 5.21 DC of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and 3 bands NR inter-band CA (3DL/1UL)

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

#### 5.21.1 UE RF requirements

[**R4-2200187**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200187.zip) **Draft CR for 38.101-3: the support of n77(2A) in DC\_8A\_n3A-n77-n79A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

n77(2A) support is added to DC\_8A\_n3A-n77-n79A.

**Decision: Endorsed.**

[**R4-2200224**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200224.zip) **TP for TR 37.716-11-31: EN-DC\_1-8\_n3-n77-n79**

*Type: pCR For: Approval  
 37.717-11-31 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200229**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200229.zip) **TP for TR 37.717-11-31: EN-DC\_8\_n3-n28-n79**

*Type: pCR For: Approval  
 37.717-11-31 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2200230**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200230.zip) **TP for TR 37.717-11-31: EN-DC\_8\_n28-n77-n79**

*Type: pCR For: Approval  
 37.717-11-31 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

[**R4-2201438**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201438.zip) **TP for TR 37.717-11-31: support of DC\_3\_n1-n8-n78, DC\_3-3\_n1-n8-n78, DC\_7\_n1-n8-n78, DC\_7-7\_n1-n8-n78**

*Type: pCR For: Approval  
 37.717-11-31 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CHTTL*

**Decision: Approved.**

[**R4-2201439**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201439.zip) **TP for TR 37.717-11-31: support of DC\_3-7\_n1-n8-n78, DC\_3-3-7\_n1-n8-n78, DC\_3-7-7\_n1-n8-n78, DC\_3-3-7-7\_n1-n8-n78**

*Type: pCR For: Approval  
 37.717-11-31 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CHTTL*

**Decision: Approved.**

### 5.22 DC of x bands (x=2,3,4) LTE inter-band CA (xDL/1UL) and 1 NR FR1 band (1DL/1UL) and 1 NR FR2 band (1DL/1UL)

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

#### 5.22.1 UE RF requirements

### 5.23 DC of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and 4 bands NR inter-band CA (4DL/1UL)

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

#### 5.23.1 UE RF requirements

[**R4-2200223**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200223.zip) **TP for TR 37.717-11-41: EN-DC\_1\_n3-n28-n77-n79**

*Type: pCR For: Approval  
 37.717-11-41 v0.0.1 CR- rev Cat: (Rel-17)  
  
 Source: SoftBank Corp.*

**Decision: Approved.**

### 5.24 Band combinations for SA NR supplementary uplink (SUL) NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP)

**[101-bis-e][107] NR\_Baskets\_Part\_3, AI 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24 –Johannes Hejselbaek**

#### 5.24.1 UE RF requirements

[**R4-2200188**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200188.zip) **CR for TS 38.101-1: Applicability correction for SUL\_n41-n97**

*Type: CR For: Endorsement  
 38.101-1 v17.4.0 CR-0985 rev Cat: F (Rel-17)  
  
 Source: MediaTek Inc.*

**Abstract:**

This CR is for endorsement

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

### 5.25 Band combinations for Uu and V2X con-current operation

**[101-bis-e][108] NR\_LTE\_V2X\_PC5\_combos, AI 5.25 – Yuan Gao**

[**R4-2202208**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202208.zip) **Email discussion summary for [101-bis-e][108] NR\_LTE\_V2X\_PC5\_combos**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202308**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202308.zip) **(from** [**R4-2202208**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202208.zip)**).**

[**R4-2202308**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202308.zip) **Email discussion summary for [101-bis-e][108] NR\_LTE\_V2X\_PC5\_combos**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2202284](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202284.zip) | TP on coexistence study of V2X\_n8A-n47A, V2X\_8A\_n47A and V2X\_n8A\_47A | CATT | Approved |  |
| [R4-2202155](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202155.zip) | Calculation of MSD for V2X\_1A-n47A and V2X\_n1A-47A and accompanying TP | Qualcomm Incorporated | Approved |  |

#### 5.25.1 UE RF requirements

[**R4-2200144**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200144.zip) **TR37.875, Band combinations of V2X con-current operation**

*Type: draft TR For: Approval  
 37.875 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: CATT*

**Abstract:**

[Email Approval]

**Decision:** The document was **not treated**.

[**R4-2200145**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200145.zip) **TP on coexistence study of V2X\_n8A-n47A, V2X\_8A\_n47A and V2X\_n8A\_47A**

*Type: pCR For: Approval  
 37.875 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CATT*

**Decision: Revised to** [**R4-2202284**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202284.zip) **(from** [**R4-2200145**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200145.zip)**).**

[**R4-2202284**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202284.zip) **TP on coexistence study of V2X\_n8A-n47A, V2X\_8A\_n47A and V2X\_n8A\_47A**

*Type: pCR For: Approval  
 37.875 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: CATT*

**Decision: Approved.**

[**R4-2200146**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200146.zip) **Draft CR for TS 38.101-1, Introduce new band combinations of V2X\_n8A-n47A**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Endorsed.**

[**R4-2200147**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200147.zip) **Draft CR for TS 38.101-3, Introduce new band combination of V2X\_n8A\_47A and V2X\_8A\_n47A**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Endorsed.**

[**R4-2200508**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200508.zip) **Calculation of MSD for V2X\_1A-n47A and V2X\_n1A-47A and accompanying TP**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Outlines MSD for n79 for V2X\_n79A-n47A and V2X\_n79A-47A

**Decision: Revised to** [**R4-2202155**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202155.zip) **(from** [**R4-2200508**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200508.zip)**).**

**[R4-2202155](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202155.zip) Calculation of MSD for V2X\_1A-n47A and V2X\_n1A-47A and accompanying TP**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Outlines MSD for n79 for V2X\_n79A-n47A and V2X\_n79A-47A

**Decision: Approved.**

### 5.26 Adding channel bandwidth support to existing NR bands

**[101-bis-e][109] NR\_bands\_R17\_BWs, AI 5.26 – Dominique Evereare**

[**R4-2202209**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202209.zip) **Email discussion summary for [101-bis-e][109] NR\_bands\_R17\_BWs**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202309**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202309.zip) **(from** [**R4-2202209**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202209.zip)**).**

[**R4-2202309**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202309.zip) **Email discussion summary for [101-bis-e][109] NR\_bands\_R17\_BWs**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Issue 1-1-1: 100MHz channel BW for band n46**

No progress on this topic.

Some companies showed interest for the 100MHz but the only compromise which would be acceptable would be to limit channel rasters to 5200, 5300, 5520 and 5865 MHz, which also looks too restrictive by the interested companies.

No way forward has been proposed and we’ll have to come back on this issue in next meeting.

As this was open for several meetings now, we should conclude on this aspect. Based on the past discussion, it seems that the only compromise would be to only support the 4 channel rasters.

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202285](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202285.zip) WF on adding 100 MHz channel BW in NR-U bands n46 and n96. | Qualcomm | Withdrawn |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2202286](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202286.zip) | Draft LS on CORESET#0 impact of CBW narrower than 40MHz of n79 | Samsung | Approved |  |

[**R4-2202285**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202285.zip) **WF on adding 100 MHz channel BW in NR-U bands n46 and n96**

*Type: other For: Approval  
 Source: Qualcomm*

**Decision: Withdrawn.**

#### 5.26.1 UE RF requirements

[**R4-2200922**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200922.zip) **On new channel bandwidths narrower than 40 MHz of n79**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2200923**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200923.zip) **Draft LS on CORESET#0 impact of CBW narrower than 40MHz of n79**

*Type: LS out For: Approval  
 to RAN1, cc RAN2  
 Source: Samsung*

**Decision: Revised to** [**R4-2202286**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202286.zip) **(from** [**R4-2200923**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200923.zip)**).**

**[R4-2202286](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202286.zip) Draft LS on CORESET#0 impact of CBW narrower than 40MHz of n79**

*Type: LS out For: Approval  
 to RAN1, cc RAN2  
 Source: Samsung*

**Decision: Approved.**

##### 5.26.1.1 Addition of bandwidth and Tx/Rx requirements

[**R4-2201335**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201335.zip) **Equation Based for FR1 Minimum Output Power**

*Type: other For: Approval  
 Source: ZTE Corporation, Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2201336**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201336.zip) **Draft CR to TS38.101-1: Some corrections for the tables due to introduction of 35MHz\_45MHz CBW**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: ZTE Corporation, Skyworks Solutions Inc.*

**Decision: Endorsed.**

##### 5.26.1.2 NR-U 100MHz bandwidth

[**R4-2200177**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200177.zip) **Further discussion on co-existence proposal between NR-U 100 MHz channel raster and Wi-Fi in 5 GHz (n46)**

*Type: Work Plan For: Approval  
 Source: Charter Communications, Inc*

**Decision: Noted.**

[**R4-2202156**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202156.zip) **Further discussion on co-existence proposal between NR-U 100 MHz channel raster and Wi-Fi in 5 GHz (n46)**

*Type: Work Plan For: Approval  
 Source: Charter Communications, Inc*

**Decision: Withdrawn.**

[**R4-2200437**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200437.zip) **On intra-carrier guard bands for the 100MHz NR-U channel**

*Type: discussion For: Decision  
 Source: Apple*

**Decision: Noted.**

[**R4-2200505**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200505.zip) **NR-U Punctured Channel SEM for 100 MHz Bandwidth**

*Type: discussion For: Approval  
 Source: CableLabs*

**Decision: Noted.**

#### 5.26.2 BS RF requirements

### 5.27 Introduction of bandwidth combination set 4 (BCS4) for NR

**[101-bis-e][110] NR\_BCS4\_MSD\_Inter\_Band\_ENDC, AI 5.27, 5.28 – Peng Zhang**

[**R4-2202210**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202210.zip) **Email discussion summary for [101-bis-e][110] NR\_BCS4\_MSD\_Inter\_Band\_ENDC**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202310**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202310.zip) **(from** [**R4-2202210**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202210.zip)**).**

**[R4-2202310](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202310.zip) Email discussion summary for [101-bis-e][110] NR\_BCS4\_MSD\_Inter\_Band\_ENDC**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202287](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202287.zip) WF on improvements to MSD table | Huawei, HiSilicon | Approved |

[**R4-2202287**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202287.zip) **WF on improvements to MSD table**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

#### 5.27.1 UE RF requirements for BCS4/BCS5

[**R4-2200462**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200462.zip) **Handling of maximum aggregated channel bandwidth for BCS4/5**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discusses handling of maximum aggregated channel bandwidth for BCS4/5.

**Decision: Noted.**

[**R4-2200463**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200463.zip) **MSD table improvements**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discusses handling of MSD table based on the approved WF of [[R4-2119878](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2119878.zip)].

**Decision: Noted.**

[**R4-2200464**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200464.zip) **Draft CR: Clarification on no simultaneous signalling of BCS4 and 5 for 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The draft CR clarifies that BCS4 and BCS5 are not allowed to be signalled simultaneously.

**Decision: Endorsed.**

[**R4-2200465**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200465.zip) **Draft CR: Clarification on no simultaneous signalling of BCS4 and 5 for 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The draft CR clarifies that BCS4 and BCS5 are not allowed to be signalled simultaneously.

**Decision: Endorsed.**

[**R4-2200619**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200619.zip) **Draft CR to TS 38.307 on Release independence of band combination set 4 and 5**

*Type: draftCR For: Endorsement  
 38.307 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Abstract:**

This paper is to provide draft CR to TS 38.307 on Release independence of band combination set 4 and 5

**Decision: Postponed.**

[**R4-2201251**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201251.zip) **Discussion on simplifying extended MSD table**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201252**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201252.zip) **Draft CR for 38.307 to introduce release independent method for BCS4/5**

*Type: draftCR For: Endorsement  
 38.307 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Postponed.**

[**R4-2201296**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201296.zip) **TP for TR 38.862 on the maximum aggregated bandwidth for intra-band CA with BCS4/BCS5**

*Type: pCR For: Approval  
 38.862 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Xiaomi*

**Decision: Approved.**

[**R4-2202040**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202040.zip) **Discussion on NR-CA and EN-DC MSD Table Simplifications**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

#### 5.27.2 Discussion of LS on NR CA capability for BCS5 (R2-1209073)

[**R4-2201295**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201295.zip) **Reply LS on NR CA capability for BCS5**

*Type: LS out For: Approval  
 to RAN2  
 Source: Xiaomi*

**Decision: Approved.**

### 5.28 Addition of MSD (Maximum Sensitivity Degradation) for inter-band EN-DC combinations (1 band LTE+1 band NR FR1) due to added channel bandwidths

#### 5.28.1 UE RF requirements

[**R4-2201253**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201253.zip) **Draft CR for 38.101-3 to introduce MSD requirements for missing bandwidths**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

### 5.29 High-power UE operation for fixed-wireless/vehicle-mounted use cases in Band 12, Band 5, Band 13, Band n5, Band n13, and Band n71

**[101-bis-e][111] LTE\_NR\_HPUE\_FWVM, AI 5.29 – Man Hung Ng**

[**R4-2202211**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202211.zip) **Email discussion summary for [101-bis-e][111] LTE\_NR\_HPUE\_FWVM**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202311**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202311.zip) **(from** [**R4-2202211**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202211.zip)**).**

**[R4-2202311](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202311.zip) Email discussion summary for [101-bis-e][111] LTE\_NR\_HPUE\_FWVM**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2202288](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202288.zip) | TP to TR 37.828: Coexistence study for High-power UE Vs adjacent channel Public Safety operation for fixed-wireless/vehicle-mounted use cases in Band 5 and Band n5 | Nokia, Nokia Shanghai Bell | Approved |  |
| [R4-2202289](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202289.zip) | MPR study for PC1 FWA device | Nokia, Nokia Shanghai Bell | Withdrawn | Original TP in [R4-2200704](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200704.zip) can be noted. |

#### 5.29.1 General

[**R4-2200703**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200703.zip) **TR 37.828 v0.1.0**

*Type: draft TR For: Approval  
 37.828 v0.0.1 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In the Copyright Notification section, update the copyright year to 2022.

**Decision: Agreed.**

#### 5.29.2 Feasibility study

##### 5.29.2.1 Coexistence study between B5 and adjacent bands

[**R4-2200410**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200410.zip) **TP to TR 37.828: Coexistence study for High-power UE Vs adjacent channel Public Safety operation for fixed-wireless/vehicle-mounted use cases in Band 5 and Band n5**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides some discussion on the coexistence studies between HPUE in Band 5 and adjacent channel public safety operation in the same geographical area, and a text proposal is provided below to record the discussion into the TR 37.828 [2]

**Decision: Revised to** [**R4-2202288**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202288.zip) **(from** [**R4-2200410**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200410.zip)**).**

**[R4-2202288](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202288.zip) TP to TR 37.828: Coexistence study for High-power UE Vs adjacent channel Public Safety operation for fixed-wireless/vehicle-mounted use cases in Band 5 and Band n5**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides some discussion on the coexistence studies between HPUE in Band 5 and adjacent channel public safety operation in the same geographical area, and a text proposal is provided below to record the discussion into the TR 37.828 [2]

**Decision: Approved.**

##### 5.29.2.2 Coexistence study between B13/n13 and adjacent bands

##### 5.29.2.3 Filter with smaller duplex for B13, n13 and n71

##### 5.29.2.4 PA related to MPR and A-MPR for B13, n13, and n71

#### 5.29.3 UE RF requirements

##### 5.29.3.1 UE REFSENS

##### 5.29.3.2 UE Tx requirements (MOP, MPR, A-MPR, and ACLR)

[**R4-2200704**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200704.zip) **MPR study for PC1 FWA device**

*Type: pCR For: Approval  
 37.828 v0.0.1 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

**[R4-2202289](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202289.zip) MPR study for PC1 FWA device**

*Type: pCR For: Approval  
 37.828 v0.0.1 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Withdrawn.**

### 5.30 High power UE (power class 2) for NR inter-band Carrier Aggregation with 2 bands downlink and 2 bands uplink

**[101-bis-e][112] NR\_PC2\_SUL\_CA\_lowMSD, AI 5.30, 5.32 – Bo Liu**

[**R4-2202212**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202212.zip) **Email discussion summary for [101-bis-e][112] NR\_PC2\_SUL\_CA\_lowMSD**

*Type: other For: Information  
 Source: Moderator (China Telecom)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202312**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202312.zip) **(from** [**R4-2202212**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202212.zip)**).**

[**R4-2202312**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202312.zip) **Email discussion summary for [101-bis-e][112] NR\_PC2\_SUL\_CA\_lowMSD**

*Type: other For: Information  
 Source: Moderator (China Telecom)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2201717](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201717.zip) | Draft CR to 38.101-1 for HPUE CA with 2 bands downlink and x bands uplink (x =1,2) | Verizon, AT&T | Endorsed | [R4-2202290](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202290.zip) is withdrawn |
| [R4-2202042](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202042.zip) | Draft CR for 38.101-1: Addition of PC2 and PC1.5 for DL CA\_n41(2A) UL n41 | T-Mobile USA | Endorsed |  |
| [R4-2202043](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202043.zip) | Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n25 and n41 | T-Mobile USA | Endorsed |  |
| [R4-2202044](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202044.zip) | Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n41 and n66 | T-Mobile USA | Endorsed |  |
| [R4-2202045](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202045.zip) | Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n41 and n71 | T-Mobile USA | Endorsed |  |

-------------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200768**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200768.zip) **Draft TR 38.841 v0.6.0: High power UE for NR inter-band Carrier Aggregation with 2 bands downlink and x bands uplink (x =1,2)**

*Type: draft TR For: Approval  
 38.841 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: China Telecom*

**Abstract:**

[Email Approval] draft TR for email approval

**Decision:** The document was **not treated**.

[**R4-2200769**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200769.zip) **Draft CR to 38.101-1 Introduce RF requirements for HPUE CA with 2 bands downlink and x bands uplink (x =1,2)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: China Telecom*

**Abstract:**

draft big CR for email approval

**Decision:** The document was **not treated**.

#### 5.30.1 UE RF requirements

[**R4-2200304**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200304.zip) **DraftCR to 38.101-1 for HPUE CA with 2 bands downlink and x bands uplink (x =1,2)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Verizon Denmark*

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

[**R4-2201225**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201225.zip) **Draft CR to 38.101-1 corrections on Tx power configuration on IMD requirement for high power UE inter-band CA**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Xiaomi*

**Abstract:**

For PC2 IMD requirments, MSD value is derived by assuming 3dB higher Tx power that that for PC3, therefore current Tx power configuration shall be change to min(+23 dBm, PCMAX\_L,f,c) for PC2 case.

**Decision: Noted.**

[**R4-2201680**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201680.zip) **TP for TR 38.841 Addition of CA\_n29-n77**

*Type: pCR For: Approval  
 38.841 v0.5.0 CR- rev Cat: (Rel-17)  
  
 Source: AT&T*

**Decision: Approved.**

[**R4-2201717**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201717.zip) **DraftCR to 38.101-1 for HPUE CA with 2 bands downlink and x bands uplink (x =1,2)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Verizon, AT&T*

**Decision: Endorsed.**

[**R4-2202290**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202290.zip) **DraftCR to 38.101-1 for HPUE CA with 2 bands downlink and x bands uplink (x =1,2)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Verizon, AT&T*

**Decision: Withdrawn.**

[**R4-2202041**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202041.zip) **Power Class notation for BCSs**

*Type: discussion For: Approval  
 Source: T-Mobile USA*

**Decision: Noted.**

[**R4-2202042**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202042.zip) **Draft CR for 38.101-1: Addition of PC2 and PC1.5 for DL CA\_n41(2A) UL n41**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

[**R4-2202043**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202043.zip) **Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n25 and n41**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

[**R4-2202044**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202044.zip) **Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n41 and n66**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

[**R4-2202045**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202045.zip) **Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n41 and n71**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

### 5.31 High power UE (power class 2) for EN-DC with 1 LTE band + 1 NR TDD band

**[101-bis-e][113] NR\_PC2\_EN-DC, AI 5.31, 5.33 – Per Lindell**

[**R4-2202213**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202213.zip) **Email discussion summary for [101-bis-e][113] NR\_PC2\_EN-DC**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202313**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202313.zip) **(from** [**R4-2202213**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202213.zip)**).**

**[R4-2202313](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202313.zip) Email discussion summary for [101-bis-e][113] NR\_PC2\_EN-DC**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**Existing tdocs**

|  |  |  |  |
| --- | --- | --- | --- |
| **CR/TP number** | **Title** | **Status** | **Comment** |
| [R4-2202291](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202291.zip) | DraftCR to add EN-DC PC2 band combinations with more than 2 bands | Endorsed |  |

#### 5.31.1 UE RF requirements

[**R4-2200305**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200305.zip) **TP for TR 37.826 for DL DC\_48\_n77**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision: Approved.**

### 5.32 Power Class 2 UE for NR inter-band CA and SUL configurations with x (x>2) bands DL and y (y=1, 2) bands UL

**[101-bis-e][112] NR\_PC2\_SUL\_CA\_lowMSD, AI 5.30, 5.32 – Bo Liu**

[**R4-2202020**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202020.zip) **MSD update needed for PC2 and PC1.5 UL configurations**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In R4#101 e-meeting two CRs [1,2] added single UL PC2 and PC1.5 configurations to the intra-band and inter-band RC CA combinations and configurations. At this point it is unclear if a new or increased MSD has been considered for these higher power UL conf

**Decision:** The document was **not treated**.

#### 5.32.1 UE RF requirements

### 5.33 Power Class 2 for EN-DC with xLTE band + yNR DL with 1LTE+1(TDD) NR UL band (x= 2, 3, 4, y=1; x=1, 2, y=2)

**[101-bis-e][113] NR\_PC2\_EN-DC, AI 5.31, 5.33 – Per Lindell**

#### 5.33.1 UE RF requirements

[**R4-2200303**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200303.zip) **DraftCR to add EN-DC PC2 band combinations with more than 2 bands**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Verizon Denmark*

**Decision: Revised to** [**R4-2202291**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202291.zip) **(from** [**R4-2200303**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200303.zip)**).**

[**R4-2202291**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202291.zip) **DraftCR to add EN-DC PC2 band combinations with more than 2 bands**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Verizon Denmark*

**Decision: Endorsed.**

[**R4-2200306**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200306.zip) **TP for TR 37.827 for DC\_2-5\_n2-n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2200308**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200308.zip) **TP for TR 37.827 for DC\_2-5\_n66-n77**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision: Approved.**

[**R4-2200309**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200309.zip) **TP for TR 37.827 for DC\_2-5-66\_n2-n77**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision: Approved.**

[**R4-2200310**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200310.zip) **TP for TR 37.827 for DC\_2-5-66\_n66-n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2200311**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200311.zip) **TP for TR 37.827 for DC\_2-5-66\_n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2200313**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200313.zip) **TP for TR 37.827 for DC\_2-13\_n66-n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2200314**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200314.zip) **TP for TR 37.827 for DC\_2-13-66\_n66-n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2200315**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200315.zip) **TP for TR 37.827 for DC\_2-13-66\_n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2200316**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200316.zip) **TP for TR 37.827 for DC\_2-66\_n66-n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2200317**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200317.zip) **TP for TR 37.827 for DC\_5-66\_n2-n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2200318**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200318.zip) **TP for TR 37.827 for DC\_5-66\_n66-n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2200319**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200319.zip) **TP for TR 37.827 for DC\_5-66\_n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2200320**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200320.zip) **TP for TR 37.827 for DC\_13-66\_n66-n77**

*Type: discussion For: Approval  
 Source: Verizon, Samsung*

**Decision: Approved.**

[**R4-2201684**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201684.zip) **DraftCR 38.101-3 Addition of PC2 EN-DC Combinations**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: AT&T*

**Decision: Endorsed.**

### 5.34 High power UE for NR TDD intra-band carrier aggregation in frequency range FR1

#### 5.34.1 UE RF requirements

### 5.35 Increasing UE power high limit for CA and DC

**[101-bis-e][114] NR\_Power\_Limit\_CA\_DC, AI 5.35 – Gene Fong**

[**R4-2202214**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202214.zip) **Email discussion summary for [101-bis-e][114] NR\_Power\_Limit\_CA\_DC**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202314**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202314.zip) **(from** [**R4-2202214**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202214.zip)**).**

**[R4-2202314](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202314.zip) Email discussion summary for [101-bis-e][114] NR\_Power\_Limit\_CA\_DC**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202404](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202404.zip) WF on agreements for increasing MOP for CA and DC | Qualcomm Incorporated | Noted |

[**R4-2202404**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202404.zip) **WF on agreements for increasing MOP for CA and DC**

*Type: other For: Approval  
 Source: Qualcomm*

**Decision: Noted.**

#### 5.35.1 General and work plan

#### 5.35.2 Feasibility and impact study

[**R4-2200454**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200454.zip) **Comparison between variants of “the sum method”**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution addresses the issues captured in the approved WF of [R4-2120064](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2120064.zip).

**Decision: Noted.**

[**R4-2200494**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200494.zip) **Implementation aspects of increasing MOP for PC2 inter-band ULCA**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we further examine the different PC2 inter-band cases with a focus on the cases where one band is based on a 2Tx PC2 or PC1.5 implementation.

**Decision: Noted.**

[**R4-2200852**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200852.zip) **Increasing UE power high limit for CA and DC by existing signaling**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we propose to reuse existing signaling mechanism to increase the power limit for CA and DC

**Decision: Noted.**

[**R4-2200965**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200965.zip) **Further discussion on the increasing UE power high limit for CA and DC**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201278**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201278.zip) **R17 UE power class high limit**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2201334**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201334.zip) **Further discussion on increase UE maximum power for NR uplink inter band CA**

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

**Decision: Noted.**

[**R4-2201836**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201836.zip) **On Increasing MOP for NR inter-band CA**

*Type: discussion For: Agreement  
 Source: Huawei,HiSilicon*

**Decision: Noted.**

#### 5.35.3 UE RF requirements

[**R4-2200440**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200440.zip) **UE maximum output power for inter-band UL CA**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2200455**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200455.zip) **UE RF requirements for the sum method**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution shares concrete examples of the requirements for PC2+PC3 based on the respective option 2 and 3 [[R4-2200454](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200454.zip)].

**Decision: Noted.**

[**R4-2201229**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201229.zip) **Discussion on increasing UE maximum power high limit**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201265**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201265.zip) **RF requirements impact for Increased MOP for CA and DC**

*Type: other For: Approval  
 Source: InterDigital, Inc.*

**Decision: Noted.**

[**R4-2201856**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201856.zip) **Higher output power for CA and DC**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

### 5.36 High power UE (power class 2) for NR FDD band

**[101-bis-e][115] NR\_PC2\_UE\_FDD, AI 5.36 – Basaier Jialade**

[**R4-2202215**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202215.zip) **Email discussion summary for [101-bis-e][115] NR\_PC2\_UE\_FDD**

*Type: other For: Information  
 Source: Moderator (China Unicom)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202315**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202315.zip) **(from** [**R4-2202215**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202215.zip)**).**

**[R4-2202315](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202315.zip) Email discussion summary for [101-bis-e][115] NR\_PC2\_UE\_FDD**

*Type: other For: Information  
 Source: Moderator (China Unicom)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202292](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202292.zip) WF on A-MPR for FDD PC2 HPUE | Apple | Approved |
| [R4-2202293](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202293.zip) WF on MSD requirements for FDD PC2 HPUE | China Unicom | Approved |

[**R4-2202292**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202292.zip) **WF on A-MPR for FDD PC2 HPUE**

*Type: other For: Approval  
 Source: Apple, Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2202293**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202293.zip) **WF on MSD requirements for FDD PC2 HPUE**

*Type: other For: Approval  
 Source: China Unicom*

**Decision: Approved.**

#### 5.36.1 General and work plan

#### 5.36.2 UE RF requirements

[**R4-2200908**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200908.zip) **Hybrid duplex operation for PC2 FDD bands**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2201226**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201226.zip) **Discussion on HP UE for FDD bands**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

##### 5.36.2.1 UE maximum output power and power tolerance

##### 5.36.2.2 A-MPR requirements

[**R4-2200444**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200444.zip) **HPUE A-MPR Proposal for NS\_05**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2200445**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200445.zip) **HPUE A-MPR Proposal for NS\_48**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2200446**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200446.zip) **HPUE A-MPR Proposal for NS\_49**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2200447**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200447.zip) **HPUE A-MPR Proposal for NS\_100**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2201834**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201834.zip) **On A-MPR requirements for PC2 FDD bands**

*Type: discussion For: Agreement  
 Source: Huawei,HiSilicon*

**Decision: Noted.**

[**R4-2202008**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202008.zip) **A-MPR for Bandwidth Parts**

*Type: discussion For: Discussion  
 Source: Lenovo, Motorola Mobility*

**Decision: Noted.**

##### 5.36.2.3 PC2 MSD requirements (investigation for HD-FDD)

[**R4-2200441**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200441.zip) **NR FDD HPUE MSD and system performance analyses**

*Type: other For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2200964**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200964.zip) **Further discussion on half duplex operation under HPUE**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201070**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201070.zip) **MSD analysis for PC2 FDD UE**

*Type: discussion For: Approval  
 Source: LG Electronics Inc.*

**Abstract:**

In this contribution, we provide expected sensitivity degradation for PC2 FDD UE in NR band n1 and n3.

**Decision: Noted.**

[**R4-2201338**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201338.zip) **Discussion on HPUE FDD MSD**

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

**Decision: Noted.**

[**R4-2201835**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201835.zip) **On MSD requirements for PC2 FDD bands**

*Type: discussion For: Agreement  
 Source: Huawei,HiSilicon*

**Decision: Noted.**

### 5.37 Additional NR bands for UL-MIMO

**[101-bis-e][116] LTE\_NR\_Other\_WI, AI 5.37, 5.38, 5.39, 8.7, 8.9.2, 8.9.3 – Jin Wang**

[**R4-2202216**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202216.zip) **Email discussion summary for [101-bis-e][116] LTE\_NR\_Other\_WI**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202316**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202316.zip) **(from** [**R4-2202216**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202216.zip)**).**

**[R4-2202316](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202316.zip) Email discussion summary for [101-bis-e][116] LTE\_NR\_Other\_WI**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202294](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202294.zip) WF on simultaneous Rx/Tx capability for FR1+FR1 FDD-TDD band combinations | Huawei, HiSilicon | Noted |
| [R4-2202295](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202295.zip) WF on simultaneous Rx/Tx capability for band pairs included in higher order band combinations | NTT Docomo | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2202296](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202296.zip) | Draft CR to TS36141 Addition of NB-IoT 16QAM | Huawei,HiSilicon, Nokia, Nokia Shanghai Bell | Endorsed |  |

[**R4-2202294**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202294.zip) **WF on simultaneous Rx/Tx capability for FR1+FR1 FDD-TDD band combinations**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2202295**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202295.zip) **WF on simultaneous Rx/Tx capability for band pairs included in higher order band combinations**

*Type: other For: Approval  
 Source: NTT Docomo*

**Decision: Approved.**

#### 5.37.1 UE RF requirements

[**R4-2201759**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201759.zip) **Draft CR for n24 and n99 UL-MIMO PC3**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ligado Networks*

**Decision: Endorsed.**

### 5.38 Downlink interruption for band combinations to conduct dynamic Tx Switching

**[101-bis-e][116] LTE\_NR\_Other\_WI, AI 5.37, 5.38, 5.39, 8.7, 8.9.2, 8.9.3 – Jin Wang**

[**R4-2200770**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200770.zip) **Draft CR to 38.101-1 Introduce DL interruption clarification for CA conduting Tx Switching**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: China Telecom*

**Abstract:**

draft big CR for email approval

**Decision: Withdrawn.**

#### 5.38.1 Determination of inter-band uplink CA and EN-DC combinations for which DL interruption is not allowed

### 5.39 Simultaneous Rx/Tx band combinations for CA, SUL, MR-DC and NR-DC

**[101-bis-e][116] LTE\_NR\_Other\_WI, AI 5.37, 5.38, 5.39, 8.7, 8.9.2, 8.9.3 – Jin Wang**

[**R4-2200566**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200566.zip) **Clarification on per-band-pair simultaneous RxTx capability**

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

**Decision: Noted.**

#### 5.39.1 MSD threshold principle

[**R4-2200354**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200354.zip) **Discussion on the simultaneous Rx/Tx capability for FR1+FR1 FDD-TDD band combination**

*Type: other For: Approval  
 Source: SoftBank Corp.*

**Decision: Noted.**

[**R4-2201067**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201067.zip) **Discussion on simultaneous RxTx capability for FR1 FDD-TDD band combination**

*Type: discussion For: Approval  
 Source: Samsung*

**Decision: Noted.**

[**R4-2201230**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201230.zip) **Discussion on principle for simultaneous Rx Tx band combinations for CA, SUL, MR-DC and NR-DC**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201340**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201340.zip) **Simultaneous Rx/Tx capability for FR1+FR1 FDD-TDD band combination**

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

**Decision: Noted.**

[**R4-2201954**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201954.zip) **Further consideration on the MSD principle for FR1 FDD-TDD band combination**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201955**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201955.zip) **TP for TR 38.839: Principles for simultaneous RxTx capability**

*Type: pCR For: Approval  
 38.839 v0.1.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

#### 5.39.2 FR2 band combinations with simultaneous Rx/Tx

[**R4-2200567**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200567.zip) **View on FR2 simultaneous Tx/Rx discussion**

*Type: discussion For: Approval  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Proposal: Add NOTE to clarify the minimum requirements apply only when there is non-simultaneous Rx/Tx operation for CA\_n257-n259 and CA\_n258-n260, as CA\_n260-n261.

**Decision: Noted.**

[**R4-2201341**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201341.zip) **DRAFT CR to TS 38.101-2: On Simultaneous RxTx capability for FR2 inter-band CA**

*Type: draftCR For: Endorsement  
 38.101-2 v16.10.0 CR- rev Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Decision: Endorsed.**

[**R4-2201342**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201342.zip) **DRAFT CR to TS 38.101-2: On Simultaneous RxTx capability for FR2 inter-band CA**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: A (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Endorsed.**

[**R4-2201343**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201343.zip) **Draft CR to TS38.101-2[R17] On Simultaneous RxTx capability for FR2 inter-band CA\_n257-n259 and CA\_n258-n260**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Postponed.**

[**R4-2201956**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201956.zip) **Further consideration on the simultaneous Rx/Tx capability for FR2 TDD-TDD band combination**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

### 5.40 4Rx support for NR band n8

**[101-bis-e][117] NR\_4Rx\_Bn8\_FWA, AI 5.40 – Jinqiang Xing**

[**R4-2202217**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202217.zip) **Email discussion summary for [101-bis-e][117] NR\_4Rx\_Bn8\_FWA**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**[R4-2202317](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202317.zip) Email discussion summary for [101-bis-e][117] NR\_4Rx\_Bn8\_FWA**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Withdrawn.**

**Conclusions after 2nd round**

This email thread can be closed after the 1st round.

#### 5.40.1 UE RF requirements (delta\_R\_IB,4Rx)

[**R4-2201347**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201347.zip) **On band n8 support 4Rx**

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

**Decision: Noted.**

[**R4-2201372**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201372.zip) **draft CR for 4 Rx antenna ports support of band n8**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: CHTTL*

**Decision: Endorsed.**

#### 5.40.2 Release independency

[**R4-2201413**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201413.zip) **Discussion on release independent for 4Rx support for NR band**

*Type: discussion For: Approval  
 Source: CHTTL*

**Decision: Noted.**

## 6 Rel-17 non-spectrum related work items for NR

### 6.1 Multiple Input Multiple Output (MIMO) Over-the-Air (OTA) requirements for NR UEs

#### 6.1.1 General

#### 6.1.2 Performance requirements

##### 6.1.2.1 Performance Requirements for FR1

##### 6.1.2.2 Performance Requirements for FR2

##### 6.1.2.3 MU assessment for FR1 and FR2

#### 6.1.3 Testing methodologies

##### 6.1.3.1 Testing parameters for Performance

##### 6.1.3.2 Optimization of test methodologies

##### 6.1.3.3 Channel model validation

### 6.2 Introduction of UE TRP (Total Radiated Power) and TRS (Total Radiated Sensitivity) requirements and test methodologies for FR1 (NR SA and EN-DC)

#### 6.2.1 General and work plan

#### 6.2.2 Test methodology

##### 6.2.2.1 SA test methodology

##### 6.2.2.2 EN-DC test methodology

##### 6.2.2.3 UE with multiple antennas test methodology

##### 6.2.2.4 Test time reduction

#### 6.2.3 Performance requirements

##### 6.2.3.1 Framework for lab alignment and requirements

##### 6.2.3.2 SA requirements

##### 6.2.3.3 EN-DC requirements

### 6.3 RF requirements enhancement for NR frequency range 1 (FR1)

#### 6.3.1 General

**[101-bis-e][118]** **NR\_RF\_FR1\_enh\_IntraHPUE, AI 6.3.1, 6.3.2 – Ye Liu**

[**R4-2202218**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202218.zip) **Email discussion summary for [101-bis-e][118] NR\_RF\_FR1\_enh\_IntraHPUE**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202318**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202318.zip) **(from** [**R4-2202218**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202218.zip)**).**

[**R4-2202318**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202318.zip) **Email discussion summary for [101-bis-e][118] NR\_RF\_FR1\_enh\_IntraHPUE**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202300](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202300.zip) WF on PC2 intra-band contiguous UL CA with UL MIMO | Huawei, HiSilicon | Approved |
| [R4-2202340](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202340.zip) WF on PC2 intra-band NC UL CA for FR1 | Skyworks | Approved |
| [R4-2202341](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202341.zip) WF on SCell dropping | vivo | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2202297](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202297.zip) | draft CR: UL MIMO coherence for Tx switching | China Telecom | Endorsed |  |
| [R4-2202298](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202298.zip) | Big CR for PC2 intra-band non-contiguous UL CA | Huawei, HiSilicon, Qualcomm | Endorsed |  |
| [R4-2202299](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202299.zip) | Big CR for TS 38.101-1: contiguous CA with UL MIMO for power class 2 | Huawei, HiSilicon | Endorsed |  |

[**R4-2202300**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202300.zip) **WF on PC2 intra-band contiguous UL CA with UL MIMO**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

**GTW on Jan-21 for draft\_**[**R4-2202300**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202300.zip)

**Issue 1-1: MPR for 23+26dBm**

Candidate options:

* + Option 1. 1T PC2 MPR for CA is applied (i.e. Current MPR in 6.2A.2 for PC2)
  + Option 2: Same as 2T 23+23 with delta MPR based on measurement data

Tentative agreements:

Option 1.

Proposed WF

1T PC2 MPR is applied for CA implemented with 23+26dBm architecture

**Discussions:**

Samsung: We prefer Option 2.

OPPO: is this for 1LO case?

Huawei: that is for dual PA.

Skyworks: the measurement is for 23+26. 1LO with two antennas. When a 26+23 architecture in CA+UL-MIMO, such architecture still need support uplink CA no matter whether it supports UL-MIMO. That is why we apply the same.

LGE: support Skyworks. It is based on 1LO with antennas. We support WF.

OPPO: this is 1LO and two PAs. Do two PAs work together?

LGE: it supports 1Tx antenna without MIMO.

Skyworks: Does PC2 is supported by 1PA or 2PA? Without MIMO, we can use 1 PA. Option 2 would be more flexible.

Samsung: Should 2 LO and two PA be considered.

Skyworks: in principle, we also have 2LO and 2PA for bandwidth class C.

Huawei: agree with Skyworks. Those two options.

Xiaomi: we support views from Samsung and Qualcomm. We are not sure if 23+26 TxD is allowed.

VIVO: We also have concern similar to Qualcomm. Current we only have TxD indication rather than indication of other architectures.

**Agreement: for** MPR for 23+26dBm for contiguous UL CA

* For 1LO without TxD indication [and for 2LO cases for bandwidth class C only], 1T PC2 MPR is applied for CA implemented
* For TxD, same as 2T 23+23 with delta MPR based on measurement data

**Issue 2-3: MPR for 23+26dBm**

Candidate options:

* + Option 1. 1T PC2 MPR for CA is applied (i.e. Current MPR in 6.2A.2 for PC2)
  + Option 2. Depends on whether TxD is indicated, i.e.
    - 1T PC2 MPR for CA w/o TxD
    - 2T 23+23 relaxed MPR w/ TxD
  + Option 3. Using delta requirements (i.e. 2T 23+23 relaxed MPR) for all architectures for CA+UL-MIMO.
  + Option 4:
    - If PC2 UL contiguous CA and UL MIMO being used simultaneously, MPR for 2T 23+23
    - If PC2 UL contiguous CA but UL MIMO NOT being used simultaneously, MPR for 1T PC2🡪Option 1

Proposed WF

~~1) MPR for 1T PC2 🡪 for PC2 UL contiguous CA w/o UL MIMO or TxD indication~~

2) MPR for 2T 23+23 🡪 for PC2 UL contiguous CA with UL MIMO or TxD indication

**Agreement:** MPR for 2T 23+23 can apply for PC2 UL contiguous CA with UL MIMO indication.

**GTW on Jan-24 for draft** [**R4-2202300**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202300.zip)

**Issue 1-2: Signalling for UL CA**

Candidate options:

* + Remove limitation to absence of dualPA-Architecture IE reporting
  + Add that uplinkTxDC-TwoCarrierReport-r16 is applicable to bandwidth class C

**Agreement:**

1) dualPA-Architecture IE is only considered for CA bandwidth class C

2) uplinkTxDC-TwoCarrierReport-r16 is not used to differentiate MPR requirements for different architectures

**Issue 1-3: Spec change for delta MPR with indication of TxD**

Candidate options:

* + Option 1: Clarification Note in the existing MPR table for PC3 and PC2
  + Option 2: Separate Tables with relaxed MPR

Tentative agreements:

Option 2 with separate tables for the relaxed MPR.

**Discussions:**

Skyworks: FFS whether it is MPR table or delta-MPR table.

Qualcomm:

Ericsson: on TxD indication, what is the network expected to do with this indication? Is there any other difference of UE functionality?

Huawei: the main purpose is since we have two sets of MPR requirements, we should consider how to test them. That is for test purpose.

Ericsson: The signaling is not needed for conformance testing. The signaling is needed for UE behavior.

ZTE: the wording seems like a new feature introduced.

Qualcomm: why is dual PA here?

Huawei: We do not need dual PA here.

**Agreement**

* To define separate MPR tables for CA with indication of TxD
  + No new signaling is needed as reply LS from RAN2

**Issue 2-1: Whether UE architectures of 23+23, 23+26, 26+26 should be explicitly indicated in the spec**

Candidate options:

* + Option 1. Yes
  + Option 2. No

Tentative agreements:

Option 2. No explicitly indication of specific UE architectures in the spec, i.e. 23+23, 23+26, 26+26.

**Agreement**

No explicitly indication of specific UE architectures in the spec, i.e. 23+23, 23+26, 26+26.

**Issue 2-2: Whether new UE capabilities needed to be introduced for CA+MIMO other than existing capabilities**

Candidate options:

* + Option 1. Yes
  + Option 2. No

Tentative agreements:

Option 1. No new capability needs to be introduced to distinguish the applicable MPR requirements.

**Agreement:**

No new capability needs to be introduced to distinguish the applicable MPR requirements.

* The existing capability can be reused to ensure correctly mapping the separate requirements to UE

**Issue 2-4: MPR for 23+23, 26+26dBm**

Candidate options:

* + Option 1. 1T PC2 MPR for CA is applied (i.e. Current MPR in 6.2A.2 for PC2)
  + Option 2. Depends on whether TxD is indicated, i.e.
    - 1T PC2 MPR for CA w/o TxD
    - 2T 23+23 relaxed MPR w/ TxD
  + Option 3. Using delta requirements (i.e. 2T 23+23 relaxed MPR) for all architectures for CA+UL-MIMO.
  + Option 4:
    - If PC2 UL contiguous CA and UL MIMO being used simultaneously, MPR for 2T 23+23
    - If PC2 UL contiguous CA but UL MIMO NOT being used simultaneously, MPR for 1T PC2🡪Option 1

**Discussions:**

Skyworks: what we do not have is how to map them to UE based on the existing signaling. The same thing for 26+26, which does not require any MPR.

Samsung: one set of requirements should be applied to all the three architectures. If UL CA with MIMO, then 23+23 requirement will be applied.

Huawei: We agree with Samsung observation but we have already had agreement for TxD. If we adopt the same principle, the requirement with UL-MIMO would be easier.

Qualcomm: on 26+26 MPR, we are not sure if the modified MPR is the way forward for 26+26.

Skyworks: We put the requirement based on worst case. TxD is undefined. The previous agreement is that we use the same MPR and the same architecture.

Qualcomm: For third bullet, it does not mean that the same implementation. Modified MPR is a new signaling.

LGE: support Samsung comment.

**Agreement:**

* MPR for 1T PC2 is applied for PC2 UL contiguous CA w/o UL MIMO or TxD indication
* MPR for 2T 23+23 is applied for PC2 UL contiguous CA with UL MIMO and/or TxD indication

Skyworks: 26+26 and 23+23 are the baseline assumptions for this work since the beginning.

[**R4-2202340**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202340.zip) **WF on PC2 intra-band NC UL CA for FR1**

*Type: other For: Approval  
 Source: Skyworks*

**Decision: Approved.**

**GTW on Jan-21 for draft\_**[**R4-2202340**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202340.zip)

**PC3 NC ULCA**

**Issue 3-1-2: 1CC fall-back MPR for NC UL CA**

**Discussions:**

Huawei: we would like to make sure the other issues are agreeable. We are OK with proposals.

OPPO: OK with WF. Now we use dual PA to indicate two LO. In RAN2 306 spec, it just mentions this capability supports only two LO not mentioning DC location. We should inform that this capabilities can also indicate DC locations.

Ericsson: For lowest MCS to highest MCS, because there is tolerance available, the failure in the conformance test is 5dB lower. From network perspective, is there any UE behaviour to be changed? If you have power backoff of 8dB the total power exceed 18dBm and you need 15dBm on each CC.

Skyworks: Two LO architecture only works on the restricted channel configuration up to 200MHz bandwidth separation class. When looking at the difference, the difference is A-MPR for larger location is much larger than dual PA architeure. There is very different capability for those two architectures.

Ericsson: If Half dB difference, there is no need to indicate at all. If there is difference that network cannot configure UE, that is crucial information. 200MHz bandwidth class separation is crucial.

ZTE: For WF text, the requirement that UE met relies on the real RB allocation. What is impact on test design? Secondly, about dual PA case, for the second sub-bullet, 1Tx requirements are applicable which will limit the implementation. This flexibility should be allowed.

Qualcomm: To Ericsson, I do not think dual PA is relevant and it should be bandwidth class separation which is relevant. There is no need for dual PA .. we need separation.

Skyworks: it is not true that depending on bandwidth class separation. LO number information is also needed. 2LO has not such limitation. There is not 0.5dBm difference.

Ericsson: to Qualcomm, the bandwidth class can be used for that purpose. However, to indicate bandwidth class is consistent with UE implementation. That is the function of architecture.

Huawei: agree with Skyworks. The WF is for test applicability. We can use applicability.

LGE: the simple way is to define only two LO case in Rel-17. The other can be discussed in Rel-18.

Qualcomm: CR should be updated. There is no mention about the gap bandwidth.

Ericsson: to Skyworks, LO PA architecture has any impact on network CA configuration. That part should be made clear. In conformance, we should consider tolerance.

Skyworks: without restriction, 1LO needs infinite MPR.

**Agreement:**

WF on 2CC and 1CC fallback PC3 MPR mapping for a UE configured for intra-band non-contiguous UL CA:

* When *dualPA-Architecture* is reported (2LO case) and is applicable to any bandwidth separation class and any gap bandwidth
  + When RBs are allocated in both CC MPR in section 6.2A.2.2 of R17 38.101-1 applies
  + When RBs are allocated only in one CC, the MPR in Table 6.2.2-1 of R17 38.101-1 applies
* When *dualPA-Architecture* is absent (1LO case) and is applicable only to bandwidth separation class ≤ 200MHz AND Gap Bandwidth ≤ aggregated BW
  + When RBs are allocated in both CC MPR in section 6.2A.2.2 of R17 38.101-1 applies
  + When RBs are allocated only in one CC, the MPR in Section 1.4 of WF [R4-2119955](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2119955.zip) applies

**PC2 NC ULCA**

**Discussions:**

OPPO: add “at least” for the first bullet.

Qualcomm: Put [ ] on the Table 6.2.2-2 for further checking.

**Agreement:**

WF on 2CC and 1CC fallback PC2 MPR mapping for a UE configured for intra-band non-contiguous UL CA:

* When *dualPA-Architecture* is reported (2LO case, at least one full power PA exists, *TxD* does not apply) and it is applicable to any bandwidth separation class and any gap bandwidth :
  + - when RBs are allocated in both CC, PC2 MPR in section 3.3 of way forward [R4-2114948](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2114948.zip) applies
    - when RBs are allocated only in one CC, Table 6.2.2-2 of R17 38.101-1 applies
* When *dualPA-Architecture* is absent (1LO case) and it is applicable only to bandwidth separation class ≤ 200MHz AND Gap Bandwidth ≤ aggregated BW:
  + - If *TxD* is signalled
    - when RBs are allocated in both CC, the MPR in Section 1.3 of WF [R4-2119955](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2119955.zip) applies
    - when RBs are allocated only in one CC, 2Tx 1CC PC2 Table in [R4-2119971](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2119971.zip) draftCR applies
    - If *TxD* is not signalled, 1Tx PC2 in Table 6.2.2-2 applies.
    - when RBs are allocated in both CC, the MPR in Section 1.3 of WF [R4-2119955](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2119955.zip) applies
    - when RBs are allocated only in one CC, Table [6.2.2-2] of R17 38.101-1 applies

[**R4-2202341**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202341.zip) **WF on SCell dropping**

*Type: other For: Approval  
 Source: VIVO*

**Decision: Approved.**

**GTW on Jan-21 for draft\_**[**R4-2202341**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202341.zip)

**SCell dropping solution**

**Discussions:**

Oppo: For equal PSD among CCs we are not sure how network can ensure. We would like to remove it.

Ericsson: we agree with OPPO. We do not see why we should guarantee it. Limit bandwidth. The open change is MAC-CE signalling. If you have full allocation with equal bandwidth, you can achieve equal PSD if you set -3dB on both. That would not require the changes often, if it can modify MAC-CE.

Huawei: regarding PSD, it was agreed last time. Equal PSD is not exact. We can call it as normalized PSD. Since that is the open aspect, we do not see the problem to list here. Some solution has RAN1 impacts. We are not sure if RAN1 solution is feasible. Requirements depend on the final solution. When there is stable solution, we can consider the requirement.

Ericsson: For the first items the difference is PSD, which changes every subframe. If the real network you cannot guarantee the PSD is equal. It is not desired to do it. For signalling, we should write LS to RAN2. RAN1 answered that there is no impact. But some companies still argue there is impact on priority of transmissions in RAN1. If that would be case, use of P-MPR also changes the priority. For the third one, Ericsson submitted CR for many meetings. It can be measured for total power. RAN5 can find out. For power head room, it is not frequency. To use power control, it is difficult. If Pcmax, CA is used, that is the same as Pcmax for serving cell. For how to proceed if no consensus, RAN2 has already proceeded. You have implemented all the devices in that way.

Apple: We also commented several times. We are not sure if this dropping is real issue or not, and whether it impacts UE performance or not. It impacts Ran5 conformance test. It requires RAN4 core requirements? There is delta-PCmax introduced. We need to define another RAN5 test for this delta-PCMAX. It creates a lot of work. This is different from field. In the field there is a loop.

Ericsson: We would like to re-iterate. It is not merely for test. The primary tent is to make the requirement in the real field. For Apple mentioned test, RAN5 has already to test Pcmax change. The same UE behaviour is expected in the field. The real challenge is to control it from the network side in the field.

Qualcomm: we send LS to RAN1 we say it is an issue. I do not know what the point is. I encourage companies to provide the solutions. Setting the limit. It cannot be guaranteed.

**Agreement:**

* Consider adding a new RRC signalling in the feature list, details depends on the final solution if any
  + Discuss whether to test delta-Pcmax to minimize the efforts in RAN5 testing
* FFS: Configured maximum power Pcmax,f,c for serving cells can be modified by a UE-specific parameter, which is configured by network
* FFS the network configured parameter
  + can be semi-persistent/dynamic configured
  + can be fast enabled/disabled
  + can be adjusted dynamically due to the allocated resource in PCell/Scells
  + need to make sure the priority is not always on PCell
  + can be fast enable/disable or modified by MAC-CE
  + can guarantee equal PSD among CCs, though equal PSD is not always the case
* The solution should have no RAN1 impact in Rel-17
* Whether and how to implement the RAN4 requirements based on the final solution if any
* FFS on the measurement, i.e. whether to reflect the network configured parameter in Pumax
* FFS whether Pcmax,CA and PHR for CA is needed considering the following issues
  + 1) Whether the proposal is mandatory from now on
  + 2) Whether it override the current Per-CC PHR reporting? Or what is NW expected to do if receiving both per-CC and per-BC PHR reports? Or there is only one report, either per-CC or per-BC, but not both?
  + 3) Does network really need to know the PCMAX,CA?
* FFS on how to proceed if no consensus can be reached.

---------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200019**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200019.zip) **draft CR: UL MIMO coherence for Tx switching**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: China Telecom*

**Decision: Revised to** [**R4-2202297**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202297.zip) **(from** [**R4-2200019**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200019.zip)**).**

[**R4-2202297**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202297.zip) **draft CR: UL MIMO coherence for Tx switching**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: China Telecom*

**Decision: Endorsed.**

[**R4-2200499**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200499.zip) **Requirement and signaling aspect of features requiring two transmit paths**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we highlight all the relevant cases for varying feature implementations with two transmit paths (TxD, UL MIMO, intra-band ULCA) and their R17 status, while identifying missing requirements. We also provide further clarification and g

**Decision: Noted.**

[**R4-2200958**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200958.zip) **TP for TR 38.837 on Power Class clarification**

*Type: pCR For: Approval  
 38.837 v0.2.0 CR- rev Cat: (Rel-17)  
  
 Source: vivo*

**Decision: Revised to** [**R4-2202348**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202348.zip) **(from** [**R4-2200958**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200958.zip)**).**

[**R4-2202348**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202348.zip) **TP for TR 38.837 on Power Class clarification**

*Type: pCR For: Approval  
 38.837 v0.2.0 CR- rev Cat: (Rel-17)  
  
 Source: vivo*

**Decision: Approved.**

[**R4-2201228**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201228.zip) **PC2 PA configuration and signalling**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

**[R4-2201590](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201590.zip) 3GPP TR 38.837 v0.3.0**

*Type: draft TR For: Approval  
 38.837 v0.2.0 CR- rev Cat: (Rel-17)  
  
 Source: vivo*

**Decision:** The document was **for email approval**.

#### 6.3.2 RF core requirements

##### 6.3.2.1 UL MIMO configuration for SUL band configurations

##### 6.3.2.2 HPUE for TDD intra-band contiguous UL CA

[**R4-2200334**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200334.zip) **Requirements for different architectures and their capabilities**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2200497**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200497.zip) **Signaling for contiguous ULCA cases**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

Although the MPR values are correct, some signaling aspects related to enabling implementations with 2LO with two PC2 PAs require additional consideration. In this contribution, we provide further clarification and guidance on related signaling aspects.

**Decision: Noted.**

[**R4-2201593**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201593.zip) **Draft CR TS 38.101-1 R17: Introduction of PC2 contiguous ULCA MPR for 2Tx**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

Correction of Signaling aspects and addition of 2Tx MPR.

**Decision: Not pursued.**

##### 6.3.2.3 HPUE for TDD intra-band non-contiguous UL CA

[**R4-2200335**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200335.zip) **draft CR to remove dualPA from Rel-16 specs**

*Type: draftCR For: Endorsement  
 38.101-1 v16.10.0 CR- rev Cat: (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Decision: Withdrawn.**

[**R4-2200336**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200336.zip) **2CC LO location reportting and dualPA capability in rel-16**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2200498**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200498.zip) **Requirement and signaling aspect of non-contiguous ULCA**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

PC2 non-contiguous ULCA MPR for 1LO architectures were agreed in [1], there was also an open aspect on how to differentiate 1LO and 2LO architectures that have a different MPR requirement. In this contribution, we provide further clarification on related

**Decision: Noted.**

[**R4-2201674**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201674.zip) **Draft CR TS 38.101-1 R17: Addition of PC2 non-contiguous ULCA MPR requirements**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

PC2 non-contiguous ULCA MPR is captured for 1LO and 2LO architectures based on WF agreements.

**Decision: Not pursued.**

[**R4-2201943**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201943.zip) **Big CR for PC2 intra-band non-contiguous UL CA**

*Type: CR For: Agreement  
 38.101-1 v17.4.0 CR-0987 rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon, Qualcomm*

**Decision: Revised to** [**R4-2202298**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202298.zip) **(from** [**R4-2201943**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201943.zip)**).**

[**R4-2202298**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202298.zip) **Big CR for PC2 intra-band non-contiguous UL CA**

*Type: CR For: Agreement  
 38.101-1 v17.4.0 CR-0987 rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon, Qualcomm*

**Decision: Endorsed.**

[**R4-2201944**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201944.zip) **Consideration on signalling to differentiate MPR for different architectures**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

##### 6.3.2.4 Intra-band UL contiguous CA for UL MIMO (n41C and n78C)

[**R4-2200493**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200493.zip) **Signalling on PC2 intra-band NC UL CA for FR1**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discusses signalling aspects based on approved WF of [[R4-2119955](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2119955.zip)].

**Decision: Noted.**

[**R4-2200495**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200495.zip) **MPR for PC2 intra-band contiguous ULCA&MIMO 26+23 case**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we provide additional measured data for 2Tx PC2 contiguous UL CA for 26+23dBm PA architecture, compare them to PC2 1Tx and 23+23 2Tx results and make MPR proposals.

**Decision: Noted.**

[**R4-2200956**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200956.zip) **Discussion on MPR applicability and reference architectures for CA +UL MIMO and TxD**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201069**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201069.zip) **MPR and capability signaling for 2Tx PC2 intra-band contiguous UL CA with UL MIMO**

*Type: discussion For: Approval  
 Source: Samsung*

**Decision: Noted.**

[**R4-2201270**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201270.zip) **R17 FR1 UL CA and UL MIMO MPR**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2201800**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201800.zip) **DraftCR on TS 38.101-1 on ULCA + ULMIMO**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Wistron Telecom AB*

**Decision: Not pursued.**

[**R4-2201946**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201946.zip) **On RF requirements for PC2 intra-band UL CA with UL MIMO**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201947**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201947.zip) **Big CR for TS 38.101-1: contiguous CA with UL MIMO for power class 2**

*Type: CR For: Agreement  
 38.101-1 v17.4.0 CR-0988 rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2202299**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202299.zip) **(from** [**R4-2201947**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201947.zip)**).**

**[R4-2202299](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202299.zip) Big CR for TS 38.101-1: contiguous CA with UL MIMO for power class 2**

*Type: CR For: Agreement  
 38.101-1 v17.4.0 CR-0988 rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

##### 6.3.2.5 Solution preventing transmission power dropping on cell with lower priority

[**R4-2200337**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200337.zip) **Solution for SCell dropping**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2200957**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200957.zip) **Further discussion on Scell dropping**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

###### 6.3.2.5.1 FR1 related

[**R4-2200853**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200853.zip) **Further details on resolving the Scell dropping (power prioritization) problem by power limits**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Further background to the solution of the Scell power prioritization problems by means of serving cell power limits (both FR1 and FR2 explained)

**Decision: Noted.**

[**R4-2200854**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200854.zip) **Introduction of power limits for serving cells of UL CA**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Draft CR to introduce power limits for serving cells of UL CA to prevent power reduction of serving cells for power limited UEs when the power reduction is enabled (FR1)

**Decision: Postponed.**

[**R4-2201068**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201068.zip) **Discussion on transmission power dropping on cell with low priority**

*Type: discussion For: Approval  
 Source: Samsung*

**Decision: Noted.**

[**R4-2201945**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201945.zip) **On SCell dropping**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

###### 6.3.2.5.2 FR2 related

[**R4-2200855**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200855.zip) **Introduction of power limits for serving cells of UL CA**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Draft CR to introduce power limits for serving cells of UL CA to prevent power reduction of serving cells for power limited UEs when the power reduction is enabled (FR2)

**Decision: Postponed.**

#### 6.3.3 RRM core requirements

#### 6.3.4 RRM performance requirements

### 6.4 NR RF requirement enhancements for frequency range 2 (FR2)

#### 6.4.1 General

**[101-bis-e][119] NR\_RF\_FR2\_enh2\_Part\_1, AI 6.4.1, 6.4.2 – Petri Vasenkari**

[**R4-2202219**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202219.zip) **Email discussion summary for [101-bis-e][119] NR\_RF\_FR2\_enh2\_Part\_1**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202319**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202319.zip) **(from** [**R4-2202219**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202219.zip)**).**

Chair: Due to mistake in the uploaded tdoc number, which was treated during GTW, [R4-2202219](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202219.zip) captured the following as the agreement. But in fact the group did not agree on it. More discussion is needed. In the meeting note below, Chair has removed it.

[**R4-2202319**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202319.zip) **Email discussion summary for [101-bis-e][119] NR\_RF\_FR2\_enh2\_Part\_1**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Return to.**

**Conclusions after 1st round**

**GTW on Jan-18**

**Issue 4-1-1: The requirement definition for inter-band DL CA between different band groups should only be based on multi-chain architecture.**

* Proposals
  + Option 1: Yes
  + Option 2: Also single chain architecture needs to be considered
* Moderator comment
  + Both options got support. RAN4#99 agreement
    - *RAN4 agrees to define CBM requirements in such manner that both single chain and multi chain architectures are possible.*

**Discussion:**

Qualcomm: Agree with the moderator that there is agreement. At least for CA between frequency groups, it is not feasible to have single chain design. We would like to further discuss it.

Nokia: it is proposed to define the refsen with minimum degradation.

Apple: Support Option 1. Single chain is not feasible considering different frequency band based on CBM.

DOCOMO: Support Option 1.

Mediatek: Echo Apple. It will not limit UE implementation.

Samsung: The issue here seems a little confusing. There is misunderstanding. Some companies only consider CA in the different frequency groups. The issue here is for framework.

Huawei: Agree with Nokia. We should consider both architectures. Now we discuss how to define the requirements. We do not need go back and forth about the architeure.

Nokia: If going with Option1, the requirement design would be difficult.

Ericsson: Appreciate NTT DOCOMO intention to minimize the degradation. Revisiting the early agreement makes it difficult to complete it in Rel-17. We propose to stick with the previous agreement.

OPPO: agree with sticking with the previous agreement. The only possibility to reuse the existing design is to follow single panel. Multiple panels which seem difficult.

Vivo: Option 1.

Sony: Stick to previous agreement. When defining the requirements, we should base on multiple-chains.

Mediatek: We understand intention. The key is that we do know single chain is difficult for different band group. We can discuss the reasonable requirement.

Apple: multi-chain was introduced to support CBM for different frequency groups. The same frequency assumes single chains. The requirements based on multi=chain does not contradict with the previous agreement.

ZTE: stick to previous agreement.

Xiaomi: stick with the previous agreements.

Samsung: Option 2 does not mandate UE to support single chain.

Qualcomm: should we define to capability to indicate the tolerance of high PSD?

Nokia: we should focus on requirements.

**Issue 4-2-1: REFSENS**

* Proposals
  + Option 1: The PSD different between the two CCs for CBM sensitivity test should be minimized while it shall ensure the devices can meet sensitivity requirement on both CCs simultaneously.
  + Option 2: PSD difference can be the same as IBM, i.e., set the power level of untested band as spherical coverage requirement.
  + Option 3: For CBM sensitivity requirements (peak EIS and EIS spherical coverage), adopt normalized equal PSD (CC1 and CC2 achieve sensitivity status simultaneously).
* Moderator comment
  + Option 2 and 3 got support (note 1 is very similar to 3). If above quoted RAN4#99 agreement on UE architecture is respected, then option 2 is not possible hence option 3 should be selected.

**Discussion:**

Qualcomm: Option 2 and Option 3 are dramatically different and it seems difficult to converge.

Samsung: If following the previous agreement, Option 2 is precluded. We can make middle way between Option 1 and Option 3.

Nokia: We do not prefer the capability for applying option 2 and option 3. Option 1 and 3 are fine for us.

OPPO: agree with Nokia and Samsung. Support Option 1 and 3.

VIVO: this is related to previous one. If both architectures are feasible, Option 3 is OK. Otherwise no big difference …

Huawei: PSD could be different for different implementation. PSD difference is for different deployment scenario. Capability should not limit the deployment.

Ericsson: Go with Option 1 or 3. For beam management, beam correspondence should be supported in co-located scenario. PSD should be equal. We agree with Nokia.

Sony: Support Option 1 and accept middle ground between 1 and 3.

Qualcomm: we can go with 1 and 3.

Xiaomi: the test configuration should distinguish the frequency groups. Considering CBM for inter-band CA within the same frequency group, we prefer 1 and 3.

Mediatek: although CBM requirements are derived from collocated, the path loss would be different. Similar PSD difference assumption is not reasonable. We prefer Option 2.

Huawei: for non-collocated scenario, we need consider option 2 as well.

VIVO: we have the same concern as Huawei. Equal PSD cannot be guaranteed in the real network.

Apple: we agree with Nokia and Ericsson. For FR1, we never discuss the requirement with PSD difference.

**Tentative agreement:** Define the minimum CBM sensitivity requirements on the condition of normalized equal PSD.

* It does not limit the CBM to collocated scenario with equal PSD.
* ~~It does not preclude other scenarios where PSD is unequal.~~

**Issue 4-2-4: Maximum input level**

* Proposals
  + Option 1: If max input level of CBM is to be defined per-band, 3dB relaxation per-band is needed
  + Option 2: If max input level of CBM is to be defined as summed power of DL CCs among bands, the same requirement as single carrier apply
* Moderator comment
  + Both options give same outcome, proponent prefers option 1 for simplicity. Seek approval for option 1.

**Agreement:** for maximum input level, agree on Option 1.

**Issue 4-2-5: ACS and IBB**

* Proposals
  + Option 1: in-gap exemption for ACS and IBB apply for FR2 inter-band CA no matter IBM or CBM.
  + Option 2: Other
* Moderator comment
  + Unanimous support for option 1. Seek approval for option 1.

**Discussion:**

Qualcomm: We can treat IBM and CBM separately.

Samsung: if removing IBM, the previous agreement has covered CBM already.

Qualcomm: it change what the filter is required, if aligning with CBM. We would like focus on finalizing the requirement for CBM.

**Sub-topic 4-3: BMRS**

**Issue 4-3-1: Configuration and side condition**

* Proposals (Can support more than one)
  + Option 1: Configuration and side condition of reference signal of the Band\_with\_BMRS is as single-band beam correspondence operation
  + Option 2: “QCLed with the other CC in Band\_with\_BMRS” shall be applied for the reference signal of Band\_without\_BMRS.
  + Option 3: LS to RAN1 to raise the requirement on “SSB QCLed with the other CC in Band\_with\_BMRS” for the reference signal of Band\_without\_BMRS.
  + Option 4: Reference signal power level of the two bands, Band\_with\_BMRS and Band\_without\_BMRS, shall be equal for CBM.
  + Option 5: The reference signal configuration, side condition, power level and QCLed behavior are applied for both “different frequency groups” and “within same frequency group” based on CBM.
  + Option 6: No need to specify the BMRS side condition for CBM in R17 and only inform RAN5 that the BMRS type is the same as IBM.
* Moderator comment
  + 1 and 5 seems to be agreeable to most
    - Option 1: Configuration and side condition of reference signal of the Band\_with\_BMRS is as single-band beam correspondence operation
    - Option 5: The reference signal configuration, side condition, power level and QCLed behavior are applied for both “different frequency groups” and “within same frequency group” based on CBM.
  + Also 2 got support but one company had issue with wording, new wording was provided
    - “QCLed with the other CC in Band\_with\_BMRS” shall be applied for the SSB and/or CSI-RS of Band\_without\_BMRS.
  + If we cannot get consensus above then option 6 is only choice and we should agree it in this GTW
    - Option 6: No need to specify the BMRS side condition for CBM in R17 and only inform RAN5 that the BMRS type is the same as IBM.

**Discussion:**

Huawei: need clarification on the condition for option 5?

Mediatek: for band with BMRS, single band condition is applied. The key difference is that band with BMRS needs sync while UE copy the sync information from band with BMRS on the band without BMRS.

Huawei: Option 2 and 6 should be considered too. The test can be left to RAN5.

OPPO: for option 2, what is the reference signal? We do not find the definition.

Mediatek: SSB and/or CSI-RS.

VIVO: Option 3 needs further discussion.

Mediatek: Option 1~5 are agreeable.

Qualcomm: the working needs more discussion.

**Agreement:**

* Agree on Option 1 and Option 5.
* Further discussion Option 2, 3 and 6.

**Sub-topic 4-4: Verification**

**Issue 4-4-1: verification rules for inter-band CA supporting ‘both’**

* Proposals (Can support more than one)
  + Option 1: if the measured sensitivity of CBM has already satisfied the delta\_RIB requirements of IBM, then the IBM sensitivity verification is not necessary
  + Option 2: if the max input level is already met with IBM requirements, then it is not necessary to verify the CBM requirements
  + Option 3: ACS and IBB can be verified with either IBM or CBM
* Moderator comment
  + No objection to option 3.

**Discussion:**

Samsung: we propose to agree on Option 3. Besides, we can agree on for the inter-band CA supporting both RAN4 can further discuss the verification rules.

Ericsson: It is more question for RAN5 for conformance test. We can assist RAN5 which test will be run.

Oppo: Option 2 can be agreed. If UE can meet the input level requirement it can also meet CBM requirement.

Nokia: Agree with Ericsson. We need to do verification reduction. RESFENS should be applied for both IBM and CBM. For others we prefer Option 3.

Sony: we are positive to further discuss the verification. Some high level requirement is agreement.

**Agreement:** Agree on Option 2 and Option 3.

* For the inter-band CA supporting both RAN4 can further discuss the verification rules.
* FFS Option 1.

**Sub-topic 4-5: Beam management capabilities**

**Issue 4-5-1: UE-centric description is adopted in IBM and CBM definition.**

* Proposals
  + Option 1: refine the IBM and CBM definition to highlight the per-BC characteristics to avoid confusion.
  + Option 2: Not needed
* Moderator comment
  + Companies support option 1 but need to see concreate text proposal. Intent can be agreed and further discuss the text in this meeting.

**Discussion:**

**Agreement:** Agree on Option 1 in principle but need check the concrete wording.

**Issue 3-1-1: Fs\_Inter capability**

* Proposals
  + Option 1: Is introduced
  + Option 2: Is introduced. No additional EIS relaxation specific for frequency separation factor is acceptable,
  + Option 3: Introduce Fs\_inter\_CBM with MSD\_Fs\_inter\_CBM = {2dB, 4dB, 6dB, 8dB, …} to indicate addition DL spectrum that suffer from the hardware limitation
  + Option 4: Is not introduced
  + Option 5: Is not introduced but Delta\_RIB together with EIS relaxation for Fs\_inter are defined
* Moderator comment
  + All options got support

**Discussion:**

Nokia: no operators raised the request.

Qualcomm: we have strong concern. It breaks the definition of inter-band CA.

OPPO: Regarding FS\_inter\_capability, this is introduced for single chain UE. In intra-band CA case, we use the EIS relaxation. For inter-band CBM case, we can follow the same approach. We can do spec without capability.

DOCOMO: We prefer Option 3 and 5. UE should support all the options for CA. We may consider limitation of implementation. Option 3 is compromise.

Huawei: it is necessary to introduce the capability to consider the UE implementation. We can follow intra-band case. For option 3, we have concern.

Ericsson: It would be beneficial to clarify what the capability implies and what the implemetation limitation is. It would be very complicated to configure it, if capability is defined. If the performance difference is very large, we can consider different requirement. If the performance cannot be guaranteed, UE can report not to support.

Sony: we do not see the need to introduce the capability.

VIVO: Option 3 could be compromise. UE can report the degradation and network can get the whole picture of the UE performance. If the degradation is acceptable to network, network can still schedule.

Qualcomm: It is possible to define Delta\_RIB based on worse case of frequency separation.

Apple: it is not necessary to introduce the capability. But the requirement with relaxation can be defined for different separation.

OPPO: Option 5 is preferred.

Mediatek: We have agreement to define CBM for multi-chain and single chain. Option 3 would be middle.

Samsung: Agree with Nokia. It is better to be careful to introduce the signaling. CBM requirement should follow IBM framework except for Delta-RIB. It is better to look into the worse case. If it is compareable with IBM, UE can follow IBM framework.

Nokia: we do not support introduce Fs\_Inter-capability. We wonder what the purpose is to introduce the signaling.

Huawei: one concern is to introduce the separation capability. We can consider option 2.

Qualcomm: For NC intra-band CA, the enhancement is how much bandwidth UE can support. The separation is used for UE to indicate how much enhancement is. For inter-band, the enhancement is how many bands UE can support.

Sony: Not to introduce the Fs does not mean we do not address the different implementation.

Ericsson: agree with Nokia. There is no value to indicate 2dB in conformance testing.

Mediatek: we can have partial support. We are OK to have Fs but no any relaxation.

Huawei: We disagree with Qualcomm. For NC CA we also need consider the gap between CCs which is limited by UE hardware limitation.

OPPO: combine Fs and Delta-RIB together for discussion.

LGE: we can define the new terminology if inter-band CA term is broken.

**Agreement:** Further discuss the following options:

* Option 2: Fs\_Inter capability is introduced. No additional EIS relaxation specific for frequency separation factor is acceptable
* Option 4a: Fs\_Inter capability is not introduced. Define Delta\_RIB based on worse case of frequency separation

**Sub-topic 3-2: Requirement setting within same f-group**

**Issue 3-2-1: How CBM requirements are defined**

* Proposals
  + Option 1: per band combination
  + Option 2: per frequency separation
* Moderator comment
  + Most companies supported option 1, seek approval for option 1.

**Discussions:**

OPPO: Option 1 is OK generally. But we need further discussion on Delta-RIB. Maybe frequency separation is needed.

Apple: if going with Option 1, the worst case of frequency separation needs be considered.

**Agreement:** Agree on Option1 and define the requirements considering the worst case of frequency separation.

* FFS whether Option 2 is needed depending on the outcome of Issue 3-1-1 for Fs\_inter\_capability.

**Issue 3-2-2: RAN4 shall define the requirement of CBM UEs within the same frequency group based on an example band in Rel-17 using n258+261**

* Proposals
  + Option 1: Yes
  + Option 2: No
* Moderator comment
  + Majority support option 2 as no operator request.

**Discussions:**

LGE: need clarification. If the capability is defined, then the agreement can be changed or not?

Nokia: Issue 3-2-2 is the only band combination mentioned as example band combination. If we do not agree on it, then there is no need to define requirement for CBM within the same frequency group.

Huawei: That is the example band combination. RAN4 needs define the general requirements.

**Issue 6-1-4: Total power handling**

* Proposals
  + Option 1:
    - No total power concepts (i.e., no extra handling other than P-MPR for the sake of power consumption issues)
  + Option 2:
    - 1 dB relaxation
  + Option 3
    - 2 dB relaxation
  + Option 4:
    - Equal or more than 3 dB relaxation
  + Option 5:
    - Others
* Moderator comment
  + Most support for option 1 so far.

**Discussion:**

Huawei: we disagree that we do not need consider total power.

Vivo: we can first agree that there is no upper power limitation.

Mediatek: FR2 needs the same concept. We do not block high power UE.

Qualcomm: What is physical argument to support the total power concept? For FR2 there is no regulation to limit per UE power. UL CA is optional capability. How to handle the thermal is left to UE.

Nokia: Agree with Qualcomm. There is no reason to limit FR2 as the FR1. What is benefit for network to configure power according to upper power limit?

OPPO: Regarding Option 1, P-MPR cannot be used for this purpose of power consumption. Option 1 provides the reason about the power consumption and heating.

Mediatek: from UE design perspective, we have same budget concept. If we have 3dB power higher for FR2, it is difficult to design UE.

Huawei: Heating issue is important. We should consider the total power.

**Issue 6-1-1: MOP/MPR framework**

* Proposals
  + Option 1:
    - CA MOP = single carrier MOP – X&Y
    - CA MPR = max { MPRPA-PA, MPRwaveform&modulation&BW&etc }
  + Option 2:
    - CA MOP = single carrier MOP
    - CA MPR = max { X&Y, MPRPA-PA, MPRwaveform&modulation&BW&etc }
* Moderator comment
  + Most support for option 1 so far.

**Discussions:**

Apple: we support option 2 too. We has concern on double counting.

Qualcomm: we have list all the mechanism techniques to be addressed.

Mediatek: we can further discuss to avoid double counting issue. We would like to follow the

Huawei: we agree with Qualcomm.

**Issue 6-1-3: MBR handling**

* Proposals
  + Option 1:
    - MBR is part of X&Y
  + Option 2:
    - MBR is part of single carrier MOP
* Moderator comment
  + Most support for option 1 so far.

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202342](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202342.zip) WF on FR2 DL CA | Nokia | Approved |
| [R4-2202343](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202343.zip) WF on FR2 UL CA | Qualcomm | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2200346](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200346.zip) | TP to TR 38.851 to introduce FR2 UL CA\_n257A-n259A | Nokia, Nokia Shanghai Bell | Noted |  |
| [R4-2201970](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201970.zip) | dCR to 38.101-2 on requirements for UEs that support inter-band CA with CBM | Nokia, Nokia Shanghai Bell, Qualcomm Incorporated | Not pursued |  |

[**R4-2202342**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202342.zip) **WF on FR2 DL CA**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Approved.**

**GTW on Jan-25 for R4-2202342**

The following text was extensive discussed during GTW. It is encouraged all the experts to look into it and prepare the discussions for future meeting.

------------------- Text under discussion -----------------------

1. ~~Introduce UE capability CBM HPC.~~ 
   1. Which architecture UE supports is up to UE implementation
2. UE requirements
   1. FFS on within same frequency group CBM DL requirements are based on single receiver ~~and multi receiver~~ architecture
   2. between frequency groups CBM DL requirements are based on multi receiver architecture, IBM-requirements, relaxations can be discussed (i.e., relaxation could be not exact the same as IBM)
3. Fs\_inter is ~~introduced~~ further discussed whether Fs\_inter is for functional limitation or for performance functional separation
   1. Applies within same frequency group band combinations for single receiver architecture
   2. ~~Applies to UEs not declaring  HPC~~
   3. Is introduced together with other LL n258+n261 UE requirements for both CBM and IBM ~~when there is operator request for band combination within same frequency group~~
   4. When CBM requirements are introduced for band combination within same frequency group also IBM requirements are introduced (earlier agreement)
   5. REFSENS: Define the minimum CBM sensitivity requirements on the condition of normalized equal PSD for band combinations within same frequency group.
4. CR for CA\_n257-n259, CA\_n258-n260 and CA\_n260-n261~~(for both CBM and IBM)~~ i.e. CBM between frequency groups is agreed ~~in RAN4#102~~
5. ~~CBM REFSENS between frequency groups is defined to be same as IBM REFSENS~~
   1. ~~FFS relaxation value~~
6. CR introducing LL combo n258+n261 with Fsinter and CR introducing LH combos CA\_n257-n259, CA\_n258-n260 and CA\_n260-n261 are agreed as a package.

------------------- Text under discussion -----------------------

[**R4-2202343**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202343.zip) **WF on FR2 UL CA**

*Type: other For: Approval  
 Source: Qualcomm*

**Decision: Approved.**

--------------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200699**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200699.zip) **TR38.851 v0.3.0**

*Type: draft TR For: Approval  
 38.851 v0.2.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In the Copyright Notification section, update the copyright year to 2022.

**Decision: Agreed.**

#### 6.4.2 UE RF requirements for inter-band CA

##### 6.4.2.1 Inter-band DL CA requirements

[**R4-2200361**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200361.zip) **Sensitivity requirements for inter-band CA with CBM**

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

**Abstract:**

To discuss PSD condition for sensitivity requirements.

**Decision: Noted.**

[**R4-2200940**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200940.zip) **Discussion on introducation of Fs, inter\_CBM**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201970**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201970.zip) **dCR to 38.101-2 on requirements for UEs that support inter-band CA with CBM**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell, Qualcomm Incorporated*

**Abstract:**

Cat B feature CR in draft form

**Decision: Not pursued.**

###### 6.4.2.1.1 CA configurations within the same frequency group based on CBM

[**R4-2200362**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200362.zip) **UE capability for CA within same frequency group with CBM**

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

**Abstract:**

To discuss UE capability for frequency separation with CBM.

**Decision: Noted.**

[**R4-2200466**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200466.zip) **UE requirements for CBM for the same frequency group**

*Type: other For: Decision  
 Source: Sony, Ericsson*

**Decision: Noted.**

[**R4-2200554**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200554.zip) **Discussion on CBM based inter-band DL CA within same frequency group**

*Type: discussion For: Discussion  
 Source: LG Electronics*

**Abstract:**

It discusses RF requirements for CBM based inter-band DL CA.

**Decision: Noted.**

[**R4-2200579**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200579.zip) **Reference signal and Fs\_intern\_CBM of FR2 inter-band DL CA within same frequency group based on CBM**

*Type: discussion For: Approval  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Observation: Reference signal discussion shall be applied for both “different frequency groups” and “within same frequency group” based on CBM. Hence, we explain and propose the details in our paper of agenda item “6.4.2.1.2 CA configurations between diff

**Decision: Noted.**

[**R4-2200939**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200939.zip) **Discussion on CBM within same frequency group**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201275**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201275.zip) **R17 FR2 CBM inter-band DL CA**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2201337**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201337.zip) **Discussion on CBM for FR2 Inter-band DL CA**

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

**Decision: Noted.**

[**R4-2201968**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201968.zip) **On delta(RIB) for n258+n261 DL inter-CA**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

Inter-band CA for band-pairs within the same frequency group is a special case, as it allows a single receiver shared across both bands to become attractive and practical. We provide analysis for an example band combination from the same frequency group

**Decision: Noted.**

###### 6.4.2.1.2 CA configurations between different frequency groups based on CBM

[**R4-2200439**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200439.zip) **Views on FR2 inter-band DL CA CBM for different band groups**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2200467**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200467.zip) **Requirements for CBM UEs between different frequency group**

*Type: other For: Decision  
 Source: Sony, Ericsson*

**Decision: Noted.**

[**R4-2200577**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200577.zip) **Reference signal of FR2 inter-band DL CA between different frequency groups based on CBM**

*Type: discussion For: Approval  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Proposal1: Configuration and side condition of reference signal of the Band\_with\_BMRS is as single-band beam correspondence operation

Proposal2: “QCLed with the other CC in Band\_with\_BMRS” shall be applied for the reference signal of Band\_without\_BMRS.

Pr

**Decision: Noted.**

[**R4-2200700**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200700.zip) **TP to TR 38.851: Agreements made for CA configurations between frequency groups using CBM**

*Type: pCR For: Approval  
 38.851 v0.2.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Approved.**

[**R4-2200735**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200735.zip) **Discussion on requirements of FR2 inter-band DL CA**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2200941**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200941.zip) **Discussion on CBM between different frequency group**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201299**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201299.zip) **Rx requirements for inter-band DL CA with CBM**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201969**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201969.zip) **On delta(RIB) for DL inter-CA with CBM in n260+n261**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

delta(RIB) proposal for an example band combination, along with relevant considerations

**Decision: Noted.**

###### 6.4.2.1.3 Feasibility study for DL inter-band CA for IBM within the same frequency group

###### 6.4.2.1.4 Rx beam switch value

[**R4-2200701**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200701.zip) **Discussion on UE Rx beam switch delay**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2200945**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200945.zip) **Discussion on Rx beam switch time**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201594**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201594.zip) **Discussion on UE Rx beam switch delay**

*Type: other For: Approval  
 Source: Nokia*

**Abstract:**

Revision of [R4-2200701](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200701.zip)

**Decision: Noted.**

##### 6.4.2.2 Inter-band UL CA requirements

###### 6.4.2.2.1 Inter-band UL CA for two bands

[**R4-2200345**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200345.zip) **FR2 inter-band UL CA framework**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Relexation framework is discussed without assuming total power concept.

**Decision: Noted.**

[**R4-2200468**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200468.zip) **UE UL CA requirements based on IBM**

*Type: other For: Decision  
 Source: Sony, Ericsson*

**Decision: Noted.**

[**R4-2200736**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200736.zip) **Discussion on requirements of FR2 inter-band UL CA**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2200942**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200942.zip) **Discussion on inter-band UL CA**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201276**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201276.zip) **R17 FR2 Inter-band UL CA requirements**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2201291**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201291.zip) **Discussion on inter-band UL CA requirements**

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

**Decision: Noted.**

[**R4-2201300**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201300.zip) **Tx requirements for inter-band UL CA between different frequency groups based on IBM**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

###### 6.4.2.2.2 CA configuration CA\_n257A-n259A based on IBM

[**R4-2200346**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200346.zip) **TP to TR 38.851 to introduce FR2 UL CA\_n257A-n259A**

*Type: pCR For: Approval  
 38.851 v0.2.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Text proposal to TR 38.851 is to included the spec impact of FR2 UL CA to TS 38.101-2.

**Decision: Noted.**

[**R4-2200555**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200555.zip) **RF requirements for CA\_n257A\_n259A based on IBM**

*Type: discussion For: Discussion  
 Source: LG Electronics*

**Abstract:**

It discusses RF requirements for IBM based inter-band UL CA\_n257-n259.

**Decision: Noted.**

[**R4-2200569**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200569.zip) **View on factor of FR2 inter-band UL CA relaxation**

*Type: discussion For: Approval  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Proposal: Detailed factors and values for inter-band UL CA relaxation value calculation shall base on below table.

**Decision: Noted.**

[**R4-2201292**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201292.zip) **Discussion on relaxation value X&Y for CA\_n257A\_n259A**

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

**Decision: Noted.**

[**R4-2201967**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201967.zip) **On UL power for FR2 inter-band ULCA**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

We evaluate if it is justified to defined non-zero flat reductions in min. peak EIRP for FR2+FR2 inter-band ULCA and share our MPR proposal based on measurements

**Decision: Noted.**

#### 6.4.3 UL gaps for self-calibration and monitoring

**[101-bis-e][120] NR\_RF\_FR2\_enh2\_Part\_2, AI 6.4.3, 6.4.6.3 – Yang Tang**

[**R4-2202220**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202220.zip) **Email discussion summary for [101-bis-e][120] NR\_RF\_FR2\_enh2\_Part\_2**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202320**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202320.zip) **(from** [**R4-2202220**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202220.zip)**).**

[**R4-2202320**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202320.zip) **Email discussion summary for [101-bis-e][120] NR\_RF\_FR2\_enh2\_Part\_2**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Return to.**

**Conclusions after 1st round**

**GTW on Jan-19**

**Sub-topic 1-1: delta P-MPR reporting**

* + Option 1: delta P-MPR should be tested (Nokia)
  + Option 2: delta P-MPR should not be tested (vivo, OPPO)
  + Option 3: it is optional to report P-MPR (Ericsson, Sony)

**Discussions:**

OPPO: what is the additional benefit compared to delta EIPR requirement defined. There is problem for testing such that gain cannot be shown. We should not test delta P-MPR.

VIVO: Agree with OPPO. The P-MPR is just range which does not help for verification.

Ericsson: Agree with OPPO.

Qualcomm: Why won’t UE report? There would be conflict. But we can go with majority views.

AT&T: Prefer Option 1. It is completed solution.

Ericsson: This different options making different prerequisite. We propose Option 3. With or without gap, if network reduces the duty cycle, UE should not report P-MPR. We should not mandate reporting P-MPR when UE supports UL gap. Network has multiple way to handle.

Apple: In last meeting, we agreed that UE should report P-MPR. The ambiguous part is UE behavior. In our view, UE behavior should report P-MPR. We are fine with either way. With either option, we won’t introduce the new signaling, i.e., delta-PMPR. UE just reports P-MPR. To Ericsson, the comment makes sense to us. But I wonder if it is directly related to delta P=MPR issue.

Nokia: Delta P-MPR should be tested.

Qualcomm: To Ericsson, we cannot say UE is forced to report. P-MPR reporting capability should be mandated for this feature. We prefer Option 1.

DOCOMO: at least P-MPR is defined as minimum requirement for UL-gap. For option 3, we are not sure if we understand it correctly. We do not support Option 3. For delta P-MPR, Option 1 is better for us. We can accept Option 2.

Ericsson: For P-MPR, the conformance requirements on EIPR. There is 3dB gain. How can we make sure if UE is capable device? How can we ensure UE gets 3dBm gain when gap is not configured. Many devices can meet the requirement with a large margin.

OPPO: we do not know difference between delta-peak EIRP and delta-P-MPR. We are not clear how to test delta P-MPR.

Apple: how can we ensure UE to report P-MPR when the gap is not configured? During the test, we should pick up the suitable duty cycle. This is important aspect. But we do not need combine it with delta-PMPR testing. We can create another topic for it.

Ericsson: when gap is supported, there is most beneficial for high duty cycle. We would like to verify the case when there is lower duty cyles. UE should not reply on higher duty cyles.

**Sub-topic 1-2: On Tx OFF**

* + Support measuring UE in-band Tx power during the gaps (Nokia, ZTE)
  + The maximum value for TX\_OFFduring gap FFS (Nokia)

**Discussions:**

Moderator: the spurious emission may be beyond the Tx-off power.

Apple: we are fine with the first bullet.

Huawei: We have concern to the position about the -33. We are not sure if such low level can be use to detect the body.

DOCOMO: Support measuring the power during the gap. Our concern is that we cannot specify other values than Tx\_off power. We cannot relax requirement.

Qualcomm: We have agreed it already. We were discussing some solutions. The changing power can change the whole design.

Huawei: we can compromise.

**Agreement:**

* Support measuring UE in-band Tx power during the gaps
  + The maximum value is TX\_OFF power

**Sub-topic 1-3: on time duration for peak EIRP measurement**

Proposal: When UL gap is activated or de-activated and non-zero P-MPR is applied, the peak EIRP measurement should be averaged across UL slots with PUSCH transmission over [4]s.

**Discussions:**

Intel: we have concern. For 42-95GHz, it is 2s. For 24-42GHz, it is 4s.

Apple: 4s is aligned with FCC requirement. 4s is not just for that purpose. With 4s with the current gap configuration, UE can have enough to sense. We can deal with false alarm. If we reduce the time too much, basically the false alarm will dominate the eventual result. 4s serves two purposes.

**Agreement:** When UL gap is activated or de-activated and non-zero P-MPR is applied, the peak EIRP measurement should be averaged across UL slots with PUSCH transmission over 4s.

**Sub-topic 1-4: on related UE capability**

Discuss the related UE capability in

* Option 1: support of UL gaps for MPE is a UE capability. (Ericsson, Sony, vivo)
* Option 2: UL gap UE capability as per band reported and configured. (OPPO)

**Discussions:**

OPPO: UL gap capability should be per-band. Not all the bands have MPE issue.

Mediatek: Discussing with RAN2, we share the similar view as OPPO.

VIVO: RAN2 never discuss it. For UE with single RF chain the gap should be per-UE.

ZTE: Such UE capability should be per UE level. This level should be aligned with MPE capability.

Apple: all FR2 has MPE requirement. Which bands we do not have MPE requirement?

OPPO: it is not related MPE requirement. It is related to MPE issue. For some band, UE may not need power backoff.

Qualcomm: Our reference is for per-band. MPE is defined as power density. For some band UE does not need gap. It may waste the uplink reporting resources if defining as per-UE.

Sony: Capability is for UE to use gap for BPS. In this case, UE implementation should be valid for all the bands. We do not have strong view. We can compromise to per-band.

Apple: even if we define per-UE, it does prevent UE vendor not use it for a certain band. The requirement applies to all the bands.

VIVO: our concern to use per-band is that it is too complicated. But we can compromise.

Qualcomm: if defining per UE, the network thinks UE needs the gap. Gap may wastes a lot of uplink resources. It should not up to UE to decide whether to use it or not.

Apple: UE can request the activation or deactivation of the gap.

**Agreement:** UL gap UE capability should be defined per band.

**Sub-topic 2-1: Optionality of Gap configurations**

* Option 1: All UL gap configurations are optional, and UE reports the supported UL gap configurations through UE capability report. (Apple)
* Option 2: All UL gap configurations are mandatory (Nokia)

**Discussions:**

Ericsson: Share the similar view as Nokia. If going with Option 1, network should support all the gaps. We can mandate a number of gap.

Nokia: Agree with Ericsson. We also find some compromise here.

Apple: We can work in the direction. Based on the last couple of meetings, different companies may have different preference for a certain gaps. We are OK to mandate #0 and #1.

Qualcomm: We do not support option 2. We cannot mandate pattern, which should be left to UE implementation.

Nokia: what if UE requests something but network cannot support.

VIVO: Although we supports Option 1 we are OK to compromise.

Qualcomm: the gap pattern has nothing to do with UE behavior. What is the technique reason behind to mandate some patterns?

OPPO: even if we mandate some patterns, UE may not follow. What is the meaning to mandate?

Nokia: Mandating means those patterns should be supported and allocate the pattern to the UE. When allocating DL gap, UE may or may not use it. For gap, UE is not expect to be scheduled and network won’t schedule.

Apple: Agree with Qualcomm and OPPO views. This is really implementation dependent. To Nokia, from network perspective, it is matter of complexity.

Nokia: main problem here is that network has to accomondate different implementaions.

**Sub-topic 2-2: On gap configuration #3 to support SCS=60kHz**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ULGP #3 | 120kHz | 0.125 | 1 | 5 | 40 | 2.5% |
| Option-A: 60kHz | 0.25 | 1 | 5 | 20 | 5% |
| Option-B: 60kHz | 0.25 | 1 | 10 | 40 | 2.5% |

(Qualcomm)

Option 1: When UGL is shorter than a slot length with respect to an activated UL BWP’s SCS on a serving cell where UL gap is configured and activated, the configured UGL and UGRP are adjusted. For ULGP#3, when an SCS of active BWP is 60kHz, UGL and UGRP are adjusted to Option-A in Table 1

**Discussions:**

Qualcomm: UL GP is half slot length. Whether we should adjust the length? Better to keep the same periodicity.

**Agreement:** When UGL is shorter than a slot length with respect to an activated UL BWP’s SCS on a serving cell where UL gap is configured and activated, the configured UGL and UGRP are adjusted. For ULGP#3, when an SCS of active BWP is 60kHz, UGL and UGRP are adjusted to Option-A in Table 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ULGP #3 | 120kHz | 0.125 | 1 | 5 | 40 | 2.5% |
| Option-A: 60kHz | 0.25 | 1 | 5 | 20 | 5% |
| Option-B: 60kHz | 0.25 | 1 | 10 | 40 | 2.5% |

**Sub-topic 2-3: MAC-CE based activation and deactivation**

* Option 1: Enable dynamic activation and de-activation of UL gap via either MAC CE (Apple, Nokia)
* Option 2: Do not introduce MAC-CE based activation/deactivation (ZTE, vivo, Ericsson)

**Discussions:**

Moderator: Option 2 got majority view.

Apple: Option 1 can make UL gap feature more efficient. Overhead is not trivial. We should save the uplink resource.

ZTE: We prefer Option2. Some update is needed. We do not need such dynamic method to update. Reusing RRC signalling is enough.

Ericsson: the gain is not higher than RRC based. We prefer to RRC based.

Qualcomm: Similar view as Ericsson. Regarding overhead, RRC is typically with larger periodicity. The difference is not much. For latency, RRC based can also be lower. 5ms vs 16ms between MAC-CE based and RRC based.

Huawei: similar view as Apple. MAC-CE makes gap more efficient. It can save uplink resource.

OPPO: agree with Huawei and Apple. MAC-Ce can provide more flexibility. We also want to say in the SCell dropping topic people want to use DCI based.

Qualcomm: Those items are different totally. DCI is defined in RAN1. We do not introduce new. For this, the thing is whether we should define the new thing.

Apple: Basically like Ericsson the gain of PRMP is based on traffic. If the traffic is lower, there is purely loss. We would like to have a dynamic approach to adapt.

Vivo: the benefit is minor. We do not see the strong motivation.

Qualcomm: Framework. If UE active the gap, there would be some traffic for UE. For deactivation, the 16ms does not matter.

Apple: basically UE can request gap via RRC. It should make decision on many other aspects. The framework does not limit network to do configuration only based on UE request.

Huawei: We know that RAN2 is discussing this topic. We can refer to RAN2 and leave it to RAN2.

**Sub-topic 2-4: Procedures to be prioritized over UL gap**

**Agreement:** Regarding Procedures to be prioritized over UL gap,

* All the RACH procedure should be prioritized
* FFS for other procedure

**Sub-topic 2-5: UE indication to NW on “need for UL gap” and “no need for UL gap”**

* Follow the WF agreement to enable UE explicit indication to NW on “need for UL gap” and “no need for UL gap” (Apple)
* The UE indicates need for activating an UL Gap using the PHR. The PH and P-MPR values will indicate to the gNB whether the UE needs UL gaps or not. (Nokia)

**Discussions:**

Apple: PHR is not enough.

Nokia: we can follow the FW. But with PHR, UE can provide necessary information.

**Issue 3-1: side conditions of RF requirements**

* Define the RF requirement for UL coherent MIMO as 40-degree difference of relative phase error and 4dB difference of relative power error when side condition happens, and UL gap for coherent MIMO is triggered. (Apple)
* Requirements for coherent UL MIMO also need to be applicable to the side condition including DRX on, BWP switching, SRS switching, DL measurement gap, etc. (Huawei)

**Discussions:**

Ericsson: we do not support to introduction of this gap in general. This can be done by UE in autonomous way.

Huawei: We think the UL gap for coherent UL MIMO has been confirmed last meeting. In this meeting, we should not discuss the need for gap.

Moderator: what Huawei said is correct. In RAN we agreed to move the second phase. We understand the Ericsson point. We might need to define the side condition. The first issue is not very related to configured gap or autonomous gap.

Ericsson: we do not support introduction.

**Issue 3-2: gap configure/deconfigure and activation/deactivation**

* UL gaps for coherent UL MIMO are configured/ deconfigured by the network using RRC configuration. (Huawei)
* The UL gaps can be activated when configured (using RRC signalling), and The UL gaps are deactivated when deconfigured (using RRC signalling). (Huawei)
* With the agreement that UE can explicitly indicate to NW on “need for UL gap” and “no need for UL gap”, RAN4 will leave the detailed signaling design to RAN2. (Huawei)
* Enable implicit triggering of the UL gap for UL coherent MIMO, by defining K2\_min\_cal which include the PUSCH preparation time plus the calibration time. (Apple)

**Discussions:**

Moderators: suggest proponent shows to gain to Ericsson compared to autonomous gap.

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202417](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202417.zip) WF on UL gap for FR2 | Apple | Approved |
| [R4-2202419](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202419.zip) Reply LS on UL gap for RAN2 | Apple | Approved |
| [R4-2202420](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202420.zip) LS to RAN2 on UL gap in FR2 RF enhancement | Apple | Approved |

[**R4-2202344**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202344.zip) **WF on UL gap for FR2**

*Type: other For: Approval  
 Source: Apple*

**Decision: Revised to** [**R4-2202417**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202417.zip) **(from** [**R4-2202344**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202344.zip)**).**

**[R4-2202417](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202417.zip) WF on UL gap for FR2**

*Type: other For: Approval  
 Source: Apple*

Agreement: further discuss whether all the gaps will be optional in the next meeting.

**Decision: Approved.**

**[R4-2202345](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202345.zip) Reply LS on UL gap for RAN2**

*Type: other For: Approval  
 Source: Apple*

**Decision: Revised to** [**R4-2202419**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202419.zip) **(from** [**R4-2202345**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202345.zip)**).**

[**R4-2202419**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202419.zip) **Reply LS on UL gap for RAN2**

*Type: other For: Approval  
 Source: Apple*

**Decision: Approved.**

[**R4-2202420**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202420.zip) **LS to RAN2 on UL gap in FR2 RF enhancement**

*Type: LS out For: Approval  
 Source: Apple*

**Decision: Approved.**

----------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200353**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200353.zip) **Discussion of UL gap in FR2 RF enhancement for RAN2 LS**

*Type: discussion For: Discussion  
 Source: Mediatek India Technology Pvt.*

**Decision: Noted.**

[**R4-2201693**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201693.zip) **Discussion on LS on UL gap in FR2 RF enhancement**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

##### 6.4.3.1 UE Tx power management

[**R4-2200253**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200253.zip) **UL gaps for Tx power management RF aspect**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2200255**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200255.zip) **Draft CR for UL gap for Tx power management RF aspect**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Apple*

**Decision: Not pursued.**

[**R4-2200383**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200383.zip) **Requirements and test cases of UE FR2 UL Gap for UE Tx power enhancement**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

UE FR2 UL Gap for UE Tx power enhancement

**Decision: Noted.**

[**R4-2200589**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200589.zip) **Discussion on UL gap for Tx power management**

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

**Decision: Noted.**

[**R4-2200856**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200856.zip) **On UE Tx power management for MPE compliance**

*Type: other For: Approval  
 Source: Ericsson, Sony*

**Abstract:**

In this constribution we make proposals on the Tx power manangement for MPE and P-MPR in particular

**Decision: Noted.**

[**R4-2200943**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200943.zip) **Discussion and reply LS on FR2 UL gap**

*Type: discussion For: Discussion  
 Source:* *vivo*

**Decision: Noted.**

[**R4-2201274**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201274.zip) **R17 FR2 UL gap for power management**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2201443**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201443.zip) **Discussion on Tx power management**

*Type: discussion For: Discussion  
 Source: Huawei,HiSilicon*

**Decision: Noted.**

##### 6.4.3.2 Coherent UL-MIMO

[**R4-2200254**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200254.zip) **UL gaps for coherent UL MIMO**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2201442**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201442.zip) **Draft CR to 38.101-2 on requirements for coherent UL MIMO**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Decision: Not pursued.**

[**R4-2201444**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201444.zip) **Discussion on UL coherent MIMO**

*Type: discussion For: Discussion  
 Source: Huawei,HiSilicon*

**Decision: Noted.**

#### 6.4.4 DC location for intra-band UL CA with > 2 CCs for both FR2 and FR1

**[101-bis-e][121] NR\_RF\_FR2\_enh2\_Part\_3, AI 6.4.4, 6.4.5 – Sanjun Feng**

[**R4-2202221**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202221.zip) **Email discussion summary for [101-bis-e][121] NR\_RF\_FR2\_enh2\_Part\_3**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202321**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202321.zip) **(from** [**R4-2202221**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202221.zip)**).**

[**R4-2202321**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202321.zip) **Email discussion summary for [101-bis-e][121] NR\_RF\_FR2\_enh2\_Part\_3**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 1st round**

**GTW on Jan-19**

**Issue 1-1-1: Whether the multiple DC location should be completed in R17?**

* Proposals
  + Option 1: The Rel-17 DC location method will support only one DC location reporting.
  + Option 2: At least 2 DC location case based on the capability *dual-PA architecture* should be completed in R17.
  + Option 3: Others
* Recommended WF
  + TBA

**Discussions:**

OPPO: last meeting we agree to introduce at least one DC location. Option 2 does not apply the FR2.

Apple: the intention here is R16 has already covered two CC and two DC locations cases, which are applicable to FR1 and FR2. For Rel-17 we do not see the new configurations in FR1 which needs additional signalling. So Rel-17 should be applicable for FR2. For FR2 the architecture may only require one DC location.

Nokia: This is enhancement over Rel-16. Rel-16 can cover up to two DC locations and two CCS. We are discussing more than two CCs. We can go with Rel-17. If going with Option 2, we may have too many capabilities.

Qualcomm: For FR2 we do not have two DC locations at all. We should do it for one. There is no test for second LO. Should we need the information of second LO? How to do those two locations? We can look at issue 1-1-2 first.

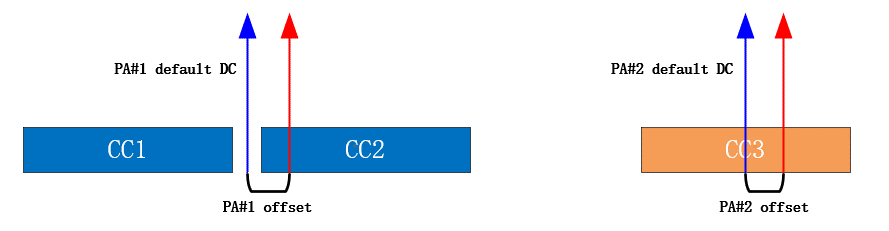
Vivo: new DC location reporting method is quite different from Rel-16. It should be used from Rel-17. Rel-16 method is based on assumption of two PA.

OPPO: dual PA architecture has been discussed. For FR2, intra-band NC CA, there is possibility for UE to use two DC location. It should cover Rel-16. From Rel-17 onward, we should use the new signalling. In this regards we should cover two DC location.

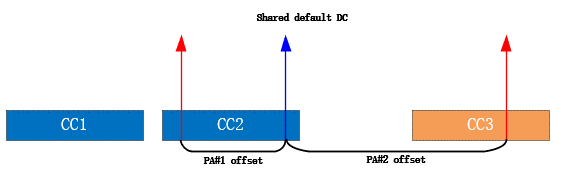
Nokia: Dual PA is tied to DC location from Rel-16. Dual PA architecture elements is independent of frequency.

**Issue 1-1-2: Which reporting framework of multiple DC is preferred?**

* Proposals
  + Option 1:



* + Option 2:



* + Option 3: Others
* Recommended WF
  + TBA

**Discussions:**

OPPO: with information sent to RAN2, Option 2 is the easier way. UE can report DC offset to actual DC location.

VIVO: we also support Option 2. If going with Option 1, we need more clarification on PA and..

Nokia: We do not agree with OPPO and VIVO. If going with Option 2, what is the point for UE to report frequency elements? There is no relation between DC location and frequency.

Huawei: Option 2 is easier way to go. Last meeting we agree to send LS to RAN2. If going with Option 1, we need more information to align between UE and network. Besides, this issue is related to the next one.

OPPO: Regarding Nokia comment on the relation to default DC location, network configures CC#1~3 to UE. UE will take all the configurations to decide the default DC location. If UE uses one DC location, UE reports one… It is aligned with the same logic in RAN2. There is no some issue to connecting the default and component.

Apple: the example configuration with three carriers and two gaps does not exist in FR1 now. But it exists in FR2. The architecture for FR1 and FR2 are different. For FR1, three PA is needed. The framework is not sufficient. Based on current available CA configuration, we do not think the framework is needed.

Qualcomm: why do we have two DC location? How the network has the knowledge about which CC is associated with which DC locations.

OPPO: to Apple, we check that two PA architecture is included for three CC cases.

Apple: Agree that we have dual PA architecture, but for FR2 we do not have it.

**Issue 1-2-1: How to consider the offset range?**

* Proposals
  + Option 1: To cover multiple DC reporting case and leave more flexibility for UE, 1.5 GHz offset range is preferred.
  + Option 2: It is proposed to define UE DC offset ranges as +/-20MHz from the default DC location.
  + Option 3: Reuse the 12 bit length of the original signalling for DC location offset report > 2CCs and adopt the following mapping relationship.
  + Option 4: Others
* Recommended WF
  + TBA

**Discussions:**

OPPO: The offset range is connected with architecture. If option2 is chosen the range would be large. If we use two DC locations, we will have the smaller one.

Qualcomm: For option 2, FR1 the 400MHz can be available, and why the 20Mhz is used as offset.

Huawei: For option 3, our preference is for one location with a number of offsets to cover two DC location cases. If going with Option 2 in the previous topic, the larger range is needed. 1.5GHz is waste.

OPPO: Regarding Qualcomm question, our understanding is DC offset is used in scenario UE face narrow band interference. We do not see why we need 1.5Ghz, which means DC location is far from the center. Otherwise the filter would cover the double ranges which leads to performance loss.

Nokia: if the conclusion of the previous sub-topics, we disagree with Option 1 if option 1 is chosen for the previous topics.

VIVO: Our proposal is to indicate the larger offset is needed. We are open to 1.5Ghz value.

Qualcomm: To Huawei comment, what does it really mean?

Huawei: my intention is for real DC 1.5GHz shift is not logical. We prefer lower number.

Qualcomm: 1.5GHz comes from that we have larger range of frequency bands. How can we conclude the number for FR2?

Huawei: in my previous comment, for single LO location, lower offset range is enough. For dual LO location, we can discuss the larger number.

OPPO: this one is connected to the previous one.

Qualcomm: we have opposite understanding as Huawei.

**Issue 2-1: How to define the new CA BW classes and fall back behaviour?**

**Discussions:**

Nokia: before agreeing which option, we should consider the number of combination + FR1, which may lead to many combinations. We need discuss whether something new is needed.

Xiaomi: Support Nokia comment. RAN4 should clarify the rule for new bandwidths. Option 4 is too complicated. We prefer to Option 2.

Ericsson: we do not agree that Option 4 is more complex than others. Actually it is more converge.

Xiaomi: by saying complex, I means that we cannot get the combination easily. It is math problem. Option 4 covers the aggregations which overlaps with the existing ones.

Apple: option 4 is reasonable one, which requires the same number as Option 2. Option 4 provides more fall back. There is no meaning to consider 15MHz. Option 4 can be further simplified.

Ericsson: for 15Mhz, we include it in CR. If no operators require block size with 15MHz, we can remove it.

**Agreement:** down-select to Option 2 and Option 4

* FFS which options among 2 and 4 should be chosen or further simplified, considering the number of new band combinations.

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202346](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202346.zip) WF on DC-Location | vivo | Approved |
| [R4-2202347](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202347.zip) WF on FR2 CA BW classes | Xiaomi | Approved |

[**R4-2202346**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202346.zip) **WF on DC-Location**

*Type: other For: Approval  
 Source: VIVO*

**Decision: Approved.**

[**R4-2202347**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202347.zip) **WF on FR2 CA BW classes**

*Type: other For: Approval  
 Source: Xiaomi*

**GTW on Jan-25**

Agreement: RAN4 will make the decision in the next meeting.

**Decision: Approved.**

------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200333**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200333.zip) **Further details and optimizations on DC location**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2200456**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200456.zip) **Handling of multiple DC locations for intra-band configuration**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution shares our views on how to handle multiple DC locations for intra-band configuration.

**Decision: Noted.**

[**R4-2200944**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200944.zip) **Discussion on DC location**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201273**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201273.zip) **R17 FR2 DC reporting**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2201959**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201959.zip) **Further study on DC location reporting**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

#### 6.4.5 CA BW classes

**[101-bis-e][121] NR\_RF\_FR2\_enh2\_Part\_3, AI 6.4.4, 6.4.5 – Sanjun Feng**

##### 6.4.5.1 New FR2 CA BW classes

[**R4-2200857**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200857.zip) **FR2 bandwidth classes covering up to 1600 MHz aggregated bandwidth with mixed carrier bandwidths**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we propose to reconsider the BW classes of the WF agreed at RAN4#100 in view of deployment aspects and number of CCs supported.

**Decision: Noted.**

[**R4-2200858**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200858.zip) **FR2 CA BW classes up to 1600 MHz aggregated BW with mixed channel bandwidths**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Draft CR to introduce FR2 CA BW classes up to 1600 MHz aggregated BW with mixed channel bandwidths.

**Decision: Noted.**

[**R4-2200909**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200909.zip) **Alternatives of FR2 new CA BW classes**

*Type: other For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2201297**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201297.zip) **Draft CR for TS 38.101-2 to introduction of FR2 new CA BW classesV, MF,ME, MD and MA**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Xiaomi*

**Decision: Noted.**

##### 6.4.5.2 Fallback group

[**R4-2200302**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200302.zip) **FR2 bandwidth class and fallback group**

*Type: discussion For: Approval  
 Source: Verizon, Qualcomm, MediaTek*

**Decision: Noted.**

[**R4-2200620**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200620.zip) **Further considerations on FR2 fallback group**

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

**Abstract:**

In this paper, we further provide our opinion on FR2 fallback group.

**Decision: Noted.**

[**R4-2201298**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201298.zip) **Discussion on fallback group for FR2 new CA BW classes**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

#### 6.4.6 RRM core requirements

##### 6.4.6.1 Inter-band DL CA requirements for CBM

###### 6.4.6.1.1 MRTD requirements

###### 6.4.6.1.2 Other RRM requirements

##### 6.4.6.2 Inter-band UL CA for IBM

##### 6.4.6.3 UL gaps for self-calibration and monitoring

**[101-bis-e][120] NR\_RF\_FR2\_enh2\_Part\_2, AI 6.4.3, 6.4.6.3 – Yang Tang**

[**R4-2200256**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200256.zip) **UL gaps for Tx power management RRM aspect and draft reply LS**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2200257**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200257.zip) **Draft CR for UL gap for Tx power management RRM aspect**

*Type: draftCR For: Endorsement  
 38.133 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Apple*

**Decision: Not pursued.**

[**R4-2200384**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200384.zip) **Network impact of UE FR2 UL Gap for UE Tx power enhancements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2200427**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200427.zip) **UL gaps for self-calibration and monitoring**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2200590**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200590.zip) **Discussion on RRM impact of UL gap for Tx power management**

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

**Decision: Noted.**

[**R4-2200605**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200605.zip) **Discussion on RRM impacts of UL gaps for self-calibration and monitoring**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201377**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201377.zip) **Discussion on UL gaps for self calibration and monitoring**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution, we provide our views on UL gaps for self-calibration and monitoring and its impacts on other RRM requirements.

**Decision: Noted.**

### 6.5 NR repeater

#### 6.5.1 General

##### 6.5.1.1 System parameters

##### 6.5.1.2 Repeater Class/Type

##### 6.5.1.3 TDD repeater switching requirements

##### 6.5.1.4 Others

#### 6.5.2 Conductive RF core requirements

##### 6.5.2.2 Emission requirements

##### 6.5.2.3 Others

#### 6.5.3 Radiated RF core requirements

##### 6.5.3.1 Transmitted power related requirements

##### 6.5.3.2 Emission requirements

##### 6.5.3.3 Others

#### 6.5.4 EMC core requirements

### 6.6 Introduction of DL 1024QAM for NR FR1

#### 6.6.1 General

#### 6.6.2 UE RF requirements maintenance

#### 6.6.3 BS TX RF requirements maintenance

#### 6.6.4 BS RF conformance testing

#### 6.6.5 Demodulation and CSI requirements

##### 6.6.5.1 General

##### 6.6.5.3 SDR requirements

##### 6.6.5.4 CQI requirements

### 6.7 UE RF requirements for Transparent Tx Diversity (TxD) for NR

**[101-bis-e][122]** **NR\_TxD, AI 6.7 – Ville Vintola**

[**R4-2202222**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202222.zip) **Email discussion summary for [101-bis-e][122] NR\_TxD**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202322**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202322.zip) **(from** [**R4-2202222**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202222.zip)**).**

**[R4-2202322](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202322.zip) Email discussion summary for [101-bis-e][122] NR\_TxD**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Return to.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202352](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202352.zip) WF on MPR for 26+23 | Qualcomm | Approved |
| [R4-2202353](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202353.zip) WF on SRS sharing | vivo | Approved |
| [R4-2202354](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202354.zip) WF on ULFPTx requirements for fallback and SRS antenna switching | Samsung | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| [R4-2202348](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202348.zip) | TP for TR 38.837 on Power Class clarification | vivo | Approved |  |
| [R4-2201941](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201941.zip) | Big CR for TS 38.101-1 Tx diversity requirements | Huawei, HiSilicon, Qualcomm, vivo | Email approval |  |
| [R4-2202349](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202349.zip) | Draft CR TS 38.101-1 R17: moving 2Tx MPR to clause 6.2D and amending PC2 2TX MPR | Skyworks Solutions Inc. | Endorsed |  |
| [R4-2202350](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202350.zip) | Draft R17 CR on SRS IL for TxD | OPPO | Postponed |  |
| [R4-2202351](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202351.zip) | TxD and UL-MIMO requirements for single-port antenna transmission | Ericsson | Withdrawn |  |

[**R4-2202352**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202352.zip) **WF on MPR for 26+23**

*Type: other For: Approval  
 Source: Qualcomm*

**Decision: Approved.**

**GTW on Jan-21 for draft\_**[**R4-2202352**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202352.zip)

**Proposed Way forward after 1st round**

Proposed Agreement 1: 1CC without configuration for 2-layer UL MIMO: the 26+23 implementation will apply TxD MPR if it declares TxD and 1Tx MPR if it does not declare TxD.

Proposed Agreement 2: 1CC with configuration for 2-layer UL MIMO: 26+23 dBm implementation will meet 2Tx MPRs when configured for 2-layer UL MIMO transmissions.

**Discussions:**

Skyworks: we had agreement previously. Do we enable it again? We should have consistent approach for TxD signalling for 1 CC and 2CC.

Qualcomm: We need separate capabilities for 1CC and 2CC.

OPPO: similar as Qualcomm. We would like to simplify the discussion.

Skyworks: the overall requirements are different. We do not suggest signalling the architecture. But we need signaling to know the behaviour of UE in the spec.

Huawei: agree with Qualcomm. We have two sets of requirements. We do not need to signalling architecture. We can use the simple way to deal with it.

Vivo: we agree with Qualcomm…

**Agreement:**

* 1CC without configuration for 2-layer UL MIMO:
  + A UE indicates TxD, TxD MPR applies, if not, 1Tx MPR applies.
* 1CC with configuration for 2-layer UL MIMO:
  + 2Tx MPR applies regardless of TxD indication by the UE.

[**R4-2202353**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202353.zip) **WF on SRS sharing**

*Type: other For: Approval  
 Source: VIVO*

**Decision: Approved.**

**GTW on Jan-21 for draft\_**[**R4-2202353**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202353.zip)

**Discussions:**

OPPO: there is no restriction in RAN1. RAN1 has discussed this scenario last year and there was no consensus in RAN1. This overlapping scenario is error case and should not be supported by spec.

ZTE: regarding the understanding of RAN1 spec, we need send LS officially to RAN1. For issue itself, periodic comes from discussion last night. Our preference is to have no such limitation.

Vivo: to OPPO, we also have checked. RAN1 discussed the collision which is different from it. That is different thing. Regarding periodic case, we have restriction based on offfline discussion. For aperiodic case, there would be no such problem. SRS can always correctly be mapped.

Qualcomm: It is under RAN1 design. The issue that SRS for different use cases collide with other signals should be discussed by RAN1. What should RAN4 do? It should be RAN1.

Huawei: For different SRS, resources sets could be shared based on our understanding of Ran1 spec. We do not need considering the new requirements.

Ericsson: We share the Qualcomm view. We do not see the issue. The simultaneous case only be addressed in RAN1. We can send LS to Ran1 if our conformance test restrict the use case.

VIVO: we can proceed RAN4 work.

[**R4-2202354**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202354.zip) **WF on ULFPTx requirements for fallback and SRS antenna switching**

*Type: other For: Approval  
 Source: Samsung*

**Decision: Approved.**

**GTW on Jan-21 for draft\_**[**R4-2202354**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202354.zip)

There were some discussions on the table for single antenna port (fallback DCI) requirement applicability. But there was no agreement reached.

[**R4-2201272**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201272.zip) **Draft R17 CR on SRS IL for TxD**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: OPPO*

**Decision: Revised to** [**R4-2202350**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202350.zip) **(from** [**R4-2201272**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201272.zip)**).**

[**R4-2202350**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202350.zip) **Draft R17 CR on SRS IL for TxD**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: OPPO*

**Decision: Postponed.**

**GTW on Jan-21 for Rev\_**[**R4-2201272**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201272.zip)

**Agreement:**

* During the specification work, RAN4 assumes that only UE supporting 23+23dBm for PC2 and 26+26dBm for PC1.5 shall report TxD.
* If 6dBm relaxation is allowed for PC2, it can only be allowed for one port SRS, i.e., t1xxx
  + List all the possible configuration with one port.

**Agreement:** add power class 1.5 for Delta\_T\_RxSRS.

**GTW on Jan-25 for R4-2202350**

Companies disagreed to apply Delat\_P\_PowerClass to lower bound only.

#### 6.7.1 General

[**R4-2201941**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201941.zip) **Big CR for TS 38.101-1 Tx diversity requirements**

*Type: CR For: Agreement  
 38.101-1 v17.4.0 CR-0986 rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon, Qualcomm, vivo*

**Abstract:**

reserved CR for phase 2 requirements

**Decision: for email approval.**

#### 6.7.2 UE RF requirements for phase 1 (38.101-1)

[**R4-2201772**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201772.zip) **Draft CR TS 38.101-1 R17: moving 2Tx MPR to clause 6.2D and amending PC2 2TX MPR**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

Solving merge issue of [R4-2119971](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2119971.zip) Draft CR on MPR of Tx Diversity (TxD) PC2 for two PC3 PA architecture and [R4-2119977](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2119977.zip) Draft CR TS 38.101-1: Move PC1.5 MPR to Clause 6.2G. and clarify signaling aspects

**Decision: Revised to** [**R4-2202349**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202349.zip) **(from** [**R4-2201772**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201772.zip)**).**

**[R4-2202349](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202349.zip) Draft CR TS 38.101-1 R17: moving 2Tx MPR to clause 6.2D and amending PC2 2TX MPR**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

Solving merge issue of [R4-2119971](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2119971.zip) Draft CR on MPR of Tx Diversity (TxD) PC2 for two PC3 PA architecture and [R4-2119977](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2119977.zip) Draft CR TS 38.101-1: Move PC1.5 MPR to Clause 6.2G. and clarify signaling aspects

**Decision: Endorsed.**

##### 6.7.2.1 UL MIMO requirement for TxD except ULFPTx

[**R4-2200340**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200340.zip) **Draft CR for fixing MPRs in suffix D**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Decision: Withdrawn.**

[**R4-2201267**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201267.zip) **R17 FR1 TxD requirements and signaling**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2201269**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201269.zip) **Draft R17 CR on UL MIMO falllback to TxD**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: OPPO*

**Decision: Not pursued.**

#### 6.7.3 UE RF requirements for phase 2 (38.101-1)

##### 6.7.3.1 SRS antenna switching related

[**R4-2200341**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200341.zip) **SRS virtualization for antenna switching**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2200484**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200484.zip) **Relation of TxD and SRS antenna switching**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discusses relation between TxD and SRS antenna switching based on [[R4-2120065](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2120065.zip)].

**Decision: Noted.**

[**R4-2200859**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200859.zip) **SRS antenna switching with antenna virtualization**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we discuss SRS swiching with virtualization (TxD) and FP UL-MIMO and propose corrections to the configured power for SRS with switching

**Decision: Noted.**

[**R4-2200860**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200860.zip) **Pcmax for SRS usage set as antenna switching for TxD and UL-MIMO features**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Draft CR to correct the Pcmax for SRS used for antenna switching for antenna virtualization and full-power UL-MIMO

**Decision: Noted.**

[**R4-2200959**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200959.zip) **Further discussion on SRS antenna switching for TxD**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2200960**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200960.zip) **Draft CR on SRS antenna switching for TxD**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: vivo*

**Decision: Not pursued.**

[**R4-2201227**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201227.zip) **Discussion on Tx diversity SRS antenna switching**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201271**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201271.zip) **R17 SRS IL for TxD**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2201799**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201799.zip) **Further discussion on SRS antenna switching requirements for TxD**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Decision: Noted.**

[**R4-2201940**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201940.zip) **On SRS relaxation**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

##### 6.7.3.2 ULFPTx related

[**R4-2200483**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200483.zip) **Relation of MOP between TxD and ULFPTx**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discusses relation of MOP between TxD and ULFPTx specifically for the case that a UE is scheduled for single antenna-port PUSCH transmission by DCI format 0\_0 or by DCI format 0\_1 for single antenna port codebook based transmission based

**Decision: Noted.**

[**R4-2200861**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200861.zip) **Single-antenna falback for TxD and UL-MIMO (including ULFPTx)**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we propose single-antenna port fall-back requirements and discuss the importance of consistent virtualization for SRS and PUSCH

**Decision: Noted.**

[**R4-2200862**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200862.zip) **TxD and UL-MIMO requirements for single-port antenna transmission**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Draft CR to correct the single-port requirements to accommodate TxD and (full-power) UL-MIMO modes

**Decision: Revised to** [**R4-2202351**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202351.zip) **(from** [**R4-2200862**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200862.zip)**).**

[**R4-2202351**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202351.zip) **TxD and UL-MIMO requirements for single-port antenna transmission**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Draft CR to correct the single-port requirements to accommodate TxD and (full-power) UL-MIMO modes

**Decision: Withdrawn.**

[**R4-2200961**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200961.zip) **Discussion on ULFPTx with TxD**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201268**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201268.zip) **R17 FR1 TxD and ULFPTx**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2201762**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201762.zip) **Further Discussion on Transparent TxD – ULFPTx related**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2201798**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201798.zip) **Further discussion on ULFPTx with TxD**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Decision: Noted.**

[**R4-2201942**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201942.zip) **On ULFPTx and applicable MPR requirements for different PA configurations**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2202051**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202051.zip) **ULFPTX Mode 2 and TxD**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

### 6.8 Enhancement for NR high speed train scenario in FR1

#### 6.8.1 General

#### 6.8.2 RRM core requirements

##### 6.8.2.1 Intra-frequency measurements

##### 6.8.2.2 Inter-frequency measurements

##### 6.8.2.3 L1-SINR measurements

##### 6.8.2.4 Others

#### 6.8.3 UE demodulation requirements (38.101-4)

##### 6.8.3.1 General

##### 6.8.3.2 PDSCH requirements for CA scenarios

### 6.9 NR support for high speed train scenario in FR2

#### 6.9.1 General

**[101-bis-e][123] NR\_HST\_FR2, AI 6.9.1, 6.9.3 – He Wang**

[**R4-2202223**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202223.zip) **Email discussion summary for [101-bis-e][123] NR\_HST\_FR2**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202323**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202323.zip) **(from** [**R4-2202223**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202223.zip)**).**

[**R4-2202323**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202323.zip) **Email discussion summary for [101-bis-e][123] NR\_HST\_FR2**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 1st round**

**GTW on Jan-19**

**Issue 2-1-1: Spherical coverage requirement framework – Requirement for one panel**

**Discussions:**

Ericsson: we supports one panel case. This is mounted on train. One panel UE can be done by declaration. Operators can be aware of the type of device.

Qualcomm: from UE vendors, the scenario for one panel is quite limited.

Samsung: we share the similar view. Two side deployment for high speed train is needed. We do not prefer Option 2.

Verizon: same view as Qualcomm and Samsung. Two panels were agreed long time ago.

Ericsson: We do not quite agree with the limitation.

Huawei: we share the similar view as Qualcomm and Samsung.

ZTE: We share the same view as Qualcomm and Verizon. There was an agreement in #98. We should only define the spherical coverage for two panels. For network, either unidirectional or bidirectional will be deployed. UE should support both.

**Agreement:** RAN4 shall not define core requirement for one-panel based spherical coverage requirement.

**Issue 2-1-2: Spherical coverage requirement – Coordination system**

**Discussions:**

Nokia: the train mounted CPE can be tilted. How can we use absolute coordination system?

Samsung: Last meeting, we agree that UE has freedom to point panel to any direction. By using wording here, we want to make sure reader be clear enough what the direction is.

Qualcomm: Coordination system maps to tracks. If looking at the Note of 6.2.1.6-4.

Mediatek: we have comment on Theta values.

**Agreement:** use the absolution coordination system as well as Qualcomm proposals below as baseline

* The minimum EIRP measured over the evaluation area specified below is defined as the spherical coverage requirement and is found in Table 6.2.1.6-3 below. The evaluation area is found in table 6.2.1.6-4 below, in the reference coordinate system in Annex J.1. The requirement is verified with the test metric of EIRP (Link= TBD grid, Meas=Link angle).
  + 0 degree of azimuth angle is along the tracks

Table 6.2.1.6-3: UE spherical coverage for power class 6

|  |  |
| --- | --- |
| Operating band | Min EIRP over the areas required for spherical coverage (dBm) |
| n257 | TBD |
| n258 | TBD |
| n259 | TBD |
| NOTE 1:   Minimum EIRP over the areas required for spherical coverage is defined as the lower limit without tolerance  NOTE 2:   The requirements in this table are verified only under normal temperature conditions as defined in Annex E.2.1. | |

Table 6.2.1.6-4: UE spherical coverage area for power class 6

|  |  |
| --- | --- |
| Theta range (deg) | Phi range (deg) |
| 90 - (90-theta\_elev) | -phi\_az to + phi\_az |
| 90 to (90-theta\_elev) | 180-phi\_az to 180+ phi\_az |
| NOTE 1: When testing power class 6 UEs, DUT orientation can be determined according to the evaluation area, not necessarily following default alignment in J.1-2 or positioning guidelines in J.3. | |

**Issue 2-1-3: Spherical coverage requirement framework - Coverage region**

**Discussions:**

Samsung: for Option 2, we should guarantee that UE needs follow the RRM enhancement requirements. For elevation plane Option 1 and Option 2 are not too much different.

**Agreement:** network signaling is provided to configure UE to follow enhanced RRM requirement Set 2.

**Issue 2-2-1: Side Condition for FR2 Power Class 6 UE Beam Correspondence Requirement**

**Agreement:**

* After RAN4 obtained PC6 EIS spherical coverage requirement, the side conditions for beam correspondence requirement can be derived according by:
  + Minimum SSB\_RP = EIS spherical coverage(PC6, n259, 50MHz) - 10\*log10(nrofRBs x 12) – SNR(at Refsens) + SSB Ês/Iot + ΔMBS

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Comments** |
| [R4-2202270](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202270.zip) WF on UE RF requirement for FR2 HST | Samsung | Approved |
| [R4-2202271](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202271.zip) Draft TR 38.854 v0.3.0: NR support for high speed train scenario in frequency range 2 (FR2) | Nokia, Nokia Shanghai Bell, Samsung | Email approval |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2202272](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202272.zip) | TR for FR2 HST | Nokia, Nokia Shanghai Bell, Samsung | Agreed | Need some revision to address comments from Qualcomm, Intel. |
| [R4-2202273](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202273.zip) | Draft CR to introduce UE RF requirement for FR2 Power Class 6 | Samsung | Endorsed |  |

[**R4-2202270**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202270.zip) **WF on UE RF requirement for FR2 HST**

*Type: other For: Approval  
 Source: Samsung*

**Decision: Approved.**

[**R4-2202271**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202271.zip) **Draft TR 38.854 v0.3.0: NR support for high speed train scenario in frequency range 2 (FR2)**

*Type: draft TR For: Information  
 38.854 v0.1.1 CR- rev Cat: (Rel-17)*

*Source: Nokia, Nokia Shanghai Bell, Samsung*

**Decision: for email approval.**

--------------------------------------------------------------------------------------------------------------------------------

[**R4-2201696**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201696.zip) **TR for FR2 HST**

*Type: draft TR For: Information  
 38.854 v0.1.1 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell, Samsung*

**Abstract:**

dradt TR 38.854; the version (v0.1.0) need to be checked and possibly increased to (v0.2.0).

**Decision: Revised to** [**R4-2202272**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202272.zip) **(from** [**R4-2201696**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201696.zip)**).**

**[R4-2202272](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202272.zip) TR for FR2 HST**

*Type: draft TR For: Information  
 38.854 v0.2.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell, Samsung*

**Abstract:**

dradt TR 38.854; the version (v0.1.0) need to be checked and possibly increased to (v0.2.0).

**Decision: Agreed.**

#### 6.9.2 High speed train deployment scenario in FR2

#### 6.9.3 UE RF core requirements

**[101-bis-e][123] NR\_HST\_FR2, AI 6.9.1, 6.9.3 – He Wang**

[**R4-2200327**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200327.zip) **On FR2 HST RF Requirements**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision: Noted.**

##### 6.9.3.1 UE Tx requirements

[**R4-2201764**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201764.zip) **Draft CR to introduce UE RF requirement for FR2 Power Class 6**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung*

**Decision: Revised to** [**R4-2202273**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202273.zip) **(from** [**R4-2201764**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201764.zip)**).**

**[R4-2202273](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202273.zip) Draft CR to introduce UE RF requirement for FR2 Power Class 6**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Samsung*

**Decision: Endorsed.**

###### 6.9.3.1.1 UE RF framework and power class

[**R4-2200347**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200347.zip) **UE RF requirement framework for FR2 HST**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

remaining issue on UE RF assumption is discussed.

**Decision: Noted.**

###### 6.9.3.1.2 Spherical coverage requirements

[**R4-2200348**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200348.zip) **UE spherical coverage requirement for FR2 HST**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

spherical coverage shall be based on declaration of boresight beam

**Decision: Noted.**

[**R4-2200836**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200836.zip) **Discussion on Spherical coverage requirements for HST\_FR2**

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

**Decision: Noted.**

[**R4-2201525**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201525.zip) **FR2 HST UE requirements**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Remaining UE issues

**Decision: Noted.**

[**R4-2201763**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201763.zip) **Further Discussion on Spherical Coverage Requirement for FR2 HST UE**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

###### 6.9.3.1.3 Beam correspondence

[**R4-2201765**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201765.zip) **Side Conditions for FR2 HST UE Beam Correspondence Requirement**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

##### 6.9.3.2 UE Rx requirements

#### 6.9.4 RRM core requirements

##### 6.9.4.1 General

##### 6.9.4.2 Number of RX beams

##### 6.9.4.3 RRC Idle/Inactive and connected state mobility requirements

##### 6.9.4.4 Timing requirements

##### 6.9.4.5 Signalling characteristics requirements

##### 6.9.4.6 Measurement procedure requirements

#### 6.9.5 Demodulation requirements

##### 6.9.5.1 General

##### 6.9.5.2 UE demodulation requirements

###### 6.9.5.2.1 PDSCH requirements under Uni-directional scenario

###### 6.9.5.2.2 PDSCH requirements under Bi-directional scenario

##### 6.9.5.3 BS demodulation requirements

###### 6.9.5.3.1 PUSCH requirements

###### 6.9.5.3.2 PUSCH with UL timing adjustment requirements

###### 6.9.5.3.3 PRACH requirements

### 6.10 Further RRM enhancement for NR and MR-DC

#### 6.10.1 General

#### 6.10.2 RRM core requirements

##### 6.10.2.1 SRS antenna port switching

##### 6.10.2.2 HO with PSCell

##### 6.10.2.3 PUCCH SCell activation/deactivation

### 6.11 NR and MR-DC measurement gap enhancements

#### 6.11.1 General

#### 6.11.2 RRM core requirements

##### 6.11.2.1 Pre-configured MG pattern(s)

##### 6.11.2.2 Multiple concurrent and independent MG patterns

##### 6.11.2.3 Network Controlled Small Gap

### 6.12 Further enhancement on NR demodulation performance

#### 6.12.1 General

#### 6.12.2 UE demodulation and CSI requirements

##### 6.12.2.1 MMSE-IRC receiver for inter-cell interference

###### 6.12.2.1.1 PDSCH requirements

###### 6.12.2.1.2 CQI requirements

##### 6.12.2.2 MMSE-IRC receiver for intra-cell inter-user interference

##### 6.12.2.3 CRS-IM receiver in scenarios with overlapping spectrum for LTE and NR

###### 6.12.2.3.1 General

###### 6.12.2.3.2 Necessity of Network assistant signaling

###### 6.12.2.3.3 Test set-up

#### 6.12.3 BS demodulation requirements

##### 6.12.3.1 PUSCH demodulation requirements for FR1 256QAM

### 6.13 Solutions for NR to support non-terrestrial networks (NTN)

#### 6.13.1 General

##### 6.13.1.1 System parameters

##### 6.13.1.2 NTN Satellite Access Node Class/Type

##### 6.13.1.3 Regulatory information

##### 6.13.1.4 Others

#### 6.13.2 Coexistence aspects

##### 6.13.2.1 NTN coexistence scenarios and simulations

##### 6.13.2.2 HAPS coexistence scenarios and simulations

##### 6.13.2.3 ACLR/ACS proposals

#### 6.13.3 Satellite Access Node RF requirements

##### 6.13.3.1 TX requirements for radiated characteristics

##### 6.13.3.2 RX requirements for radiated characteristics

##### 6.13.3.3 Tx requirements for conducted characteristics

##### 6.13.3.4 Rx requirements for conducted characteristics

#### 6.13.4 UE RF requirements

##### 6.13.4.1 TX requirements

##### 6.13.4.2 RX requirements

#### 6.13.5 RRM core requirements

##### 6.13.5.1 General

##### 6.13.5.2 GNSS-related requirements

##### 6.13.5.3 Mobility requirements

##### 6.13.5.4 Timing requirements

##### 6.13.5.5 Measurement procedure requirements

#### 6.13.6 Demodulation requirements

##### 6.13.6.1 General

##### 6.13.6.2 Satellite Access Node demodulation requirements

##### 6.13.6.3 UE demodulation requirements

### 6.14 UE Power Saving Enhancements for NR

#### 6.14.1 General

#### 6.14.2 RRM core requirements

##### 6.14.2.1 UE measurements relaxation for RLM and/or BFD

### 6.15 NR Sidelink enhancement

#### 6.15.1 General

**[101-bis-e][124] NRSL\_enh\_Part\_1, AI 6.15.1, 6.15.2 – Suhwan Lim**

[**R4-2202224**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202224.zip) **Email discussion summary for [101-bis-e][124] NRSL\_enh\_Part\_1**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202324**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202324.zip) **(from** [**R4-2202224**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202224.zip)**).**

[**R4-2202324**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202324.zip) **Email discussion summary for [101-bis-e][124] NRSL\_enh\_Part\_1**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Revised tdoc number** |
| [R4-2200139](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200139.zip) | Draft CR for TS 38.101-1, Correction on MOP requirements for inter-band V2X con-current operation (Rel-16) | CATT | Endorsed | Shadowing draft CR of [R4-2200138](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200138.zip) |
| [R4-2200141](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200141.zip) | Draft CR for TS 38.101-3, Correction on MOP requirements for inter-band V2X con-current operation (Rel-16) | CATT | Endorsed | Shadowing draft CR of [R4-2200140](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200140.zip) |
| [R4-2200833](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200833.zip) | TR38.785 v0.5.0 TR Update for SL enhancement in Rel-17 | LG Electronics France | Agreed | All Approved TPs are captured in the update TR |
| [R4-2202355](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202355.zip)  (Rev\_[R4-2200946](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200946.zip)) | TP for TR 38.785: Addition of definitions and symbols to Chapter 3 | vivo | Approved | TP to add definitions and symbols to Chapter 3 |
| [R4-2202407](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202407.zip)  (Rev\_[R4-2200842](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200842.zip)) | TP on RF requirements for NR PS UE in n14 for NRSL\_enh WI in Rel-17 | LG Electronics France | Approved | TP to define RF core requirements for PS UE |
| [R4-2202408](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202408.zip)  (Rev\_[R4-2200848](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200848.zip)) | Draft CR on RF requirements for SL enhancement for public safety service in n14 | LG Electronics France | Approved | Draft CR to specify the RF core requirements for PS UE |

------------------------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200833**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200833.zip) **TR38.785 v0.5.0 TR Update for SL enhancement in Rel-17**

*Type: draft TR For: Approval  
 38.785 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

[Email Approval] Provide revised TR to include these approved TPs in this meeting.

**Decision: Agreed.**

[**R4-2200946**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200946.zip) **TP for TR 38.785: Addition of definitions and symbols to Chapter 3**

*Type: pCR For: Approval  
 38.785 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: vivo*

**Decision: Revised to** [**R4-2202355**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202355.zip) **(from** [**R4-2200946**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200946.zip)**).**

**[R4-2202355](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202355.zip) TP for TR 38.785: Addition of definitions and symbols to Chapter 3**

*Type: pCR For: Approval  
 38.785 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: vivo*

**Decision: Approved.**

#### 6.15.2 UE RF requirements for NR SL enhancement

**[101-bis-e][124] NRSL\_enh\_Part\_1, AI 6.15.1, 6.15.2 – Suhwan Lim**

[**R4-2200842**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200842.zip) **TP on RF requirements for NR PS UE in n14 for NRSL\_enh WI in Rel-17**

*Type: pCR For: Approval  
 38.785 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Propose TP to add the NR PS UE RF requirements in TR38.785 in Rel-17.

**Decision: Revised to** [**R4-2202407**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202407.zip) **(from** [**R4-2200842**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200842.zip)**).**

[**R4-2202407**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202407.zip) **TP on RF requirements for NR PS UE in n14 for NRSL\_enh WI in Rel-17**

*Type: pCR For: Approval  
 38.785 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Propose TP to add the NR PS UE RF requirements in TR38.785 in Rel-17.

**Decision: Approved.**

[**R4-2200848**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200848.zip) **Draft CR on RF requirements for SL enhancement for public safety service in n14**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Introduce NR PS UE RF requirements in TS38.101-1 in Rel-17.

**Decision: Revised to** [**R4-2202408**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202408.zip) **(from** [**R4-2200848**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200848.zip)**).**

**[R4-2202408](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202408.zip) Draft CR on RF requirements for SL enhancement for public safety service in n14**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Introduce NR PS UE RF requirements in TS38.101-1 in Rel-17.

**Decision: Approved.**

##### 6.15.2.1 Configured Tx power requirements

##### 6.15.2.2 REFSENS requirements

[**R4-2200509**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200509.zip) **n14 REFSENS for PS in licensed band**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Presents REFSENSE numbers for n14 PS

**Agreement:** the contents are agreeable.

**Decision: Noted.**

##### 6.15.2.3 Other RF requirements

[**R4-2200138**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200138.zip) **Draft CR for TS 38.101-1, Correction on MOP requirements for inter-band V2X con-current operation (Rel-17)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: CATT*

**Decision: Endorsed.**

[**R4-2200139**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200139.zip) **Draft CR for TS 38.101-1, Correction on MOP requirements for inter-band V2X con-current operation (Rel-16)**

*Type: draftCR For: Endorsement  
 38.101-1 v16.10.0 CR- rev Cat: F (Rel-16)  
  
 Source: CATT*

**Decision: Endorsed.**

[**R4-2200140**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200140.zip) **Draft CR for TS 38.101-3, Correction on MOP requirements for inter-band V2X con-current operation (Rel-17)**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: CATT*

**Decision: Endorsed.**

[**R4-2200141**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200141.zip) **Draft CR for TS 38.101-3, Correction on MOP requirements for inter-band V2X con-current operation (Rel-16)**

*Type: draftCR For: Endorsement  
 38.101-3 v16.10.0 CR- rev Cat: F (Rel-16)  
  
 Source: CATT*

**Decision: Endorsed.**

[**R4-2201952**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201952.zip) **TP for 38.785: TxD requirements for NR V2X**

*Type: pCR For: Approval  
 38.785 v0.2.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201953**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201953.zip) **Big CR: introduction of TxD requirements for NR V2X**

*Type: CR For: Agreement  
 38.101-1 v17.4.0 CR-0989 rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

#### 6.15.3 Intra-band con-current operation between NR SUL and NR Uu

**[101-bis-e][125] NRSL\_enh\_Part\_2, AI 6.15.3 – Yuan Gao**

[**R4-2202225**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202225.zip) **Email discussion summary for [101-bis-e][125] NRSL\_enh\_Part\_2**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202325**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202325.zip) **(from** [**R4-2202225**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202225.zip)**).**

[**R4-2202325**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202325.zip) **Email discussion summary for [101-bis-e][125] NRSL\_enh\_Part\_2**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202360](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202360.zip) WF on switching time mask and sync issue for intra-band V2X con-current operation | CATT | Approved |
| [R4-2202361](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202361.zip) WF on configured transmitted power for intra-band V2X con-current operation | LG Electronics | Approved |
| [R4-2202362](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202362.zip) WF on MPR for intra-band V2X con-current operation | Huawei, HiSilicon | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comments** |
| [R4-2202356](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202356.zip) | Draft CR on RF requirements for intra-band con-current V2X operation in Rel-17 | LG Electronics | Endorsed |  |
| [R4-2202357](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202357.zip) | TP on RF requirements for intra-band con-current V2X operation in licensed band | LG Electronics | Approved |  |
| [R4-2202358](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202358.zip) | draft CR for TS 38.101-1 correction on intra-band concurrent operation | Xiaomi | Endorsed |  |
| [R4-2202359](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202359.zip) | TP on sync issue for intra-band V2X operation | CATT | Approved |  |

[**R4-2202360**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202360.zip) **WF on switching time mask and sync issue for intra-band V2X con-current operation**

*Type: other For: Approval  
 Source: CATT*

**Decision: Approved.**

[**R4-2202361**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202361.zip) **WF on configured transmitted power for intra-band V2X con-current operation**

*Type: other For: Approval  
 Source: LGE*

**Decision: Approved.**

[**R4-2202362**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202362.zip) **WF on MPR for intra-band V2X con-current operation**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

--------------------------------------------------------------------------------------------------------------------------------

[**R4-2200841**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200841.zip) **Draft CR on RF requirements for intra-band con-current V2X operation in Rel-17**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Introduce RF core requirements for the intra-band con-current V2X UE in TS38.101-1 in Rel-17

**Decision: Revised to** [**R4-2202356**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202356.zip) **(from** [**R4-2200841**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200841.zip)**).**

**[R4-2202356](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202356.zip) Draft CR on RF requirements for intra-band con-current V2X operation in Rel-17**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Introduce RF core requirements for the intra-band con-current V2X UE in TS38.101-1 in Rel-17

**Decision: Endorsed.**

##### 6.15.3.1 RF requirements for intra-band V2X con-current (including MPR)

[**R4-2200143**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200143.zip) **TP on configured transmitted power for intra-band V2X con-current operation**

*Type: pCR For: Approval  
 38.785 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: CATT*

**Decision: Merged (with** [**R4-2200840**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200840.zip)**).**

[**R4-2200556**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200556.zip) **MPR for NR V2X intra-band con-current operation with Uu**

*Type: discussion For: Approval  
 Source: LG Electronics*

**Abstract:**

It provides MPR for NR V2X intra-band con-current operation with Uu.

**Decision: Noted.**

[**R4-2200834**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200834.zip) **RF requirements for intra-band con-current V2X operation in licensed band**

*Type: other For: Approval  
 Source: LG Electronics France*

**Abstract:**

This is a discussion and decision paper to finalize the ON/OFF time mask and configured Tx power for intra-band con-current V2X operation in the licensed band.

**Decision: Noted.**

[**R4-2200840**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200840.zip) **TP on RF requirements for intra-band con-current V2X operation in licensed band**

*Type: pCR For: Approval  
 38.785 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Propose the ON/OFF time mask, MPR requirements, and configured Tx power for intra-band con-current V2X operation in the licensed band.

**Decision: Revised to** [**R4-2202357**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202357.zip) **(from** [**R4-2200840**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200840.zip)**).**

[**R4-2202357**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202357.zip) **TP on RF requirements for intra-band con-current V2X operation in licensed band**

*Type: pCR For: Approval  
 38.785 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Propose the ON/OFF time mask, MPR requirements, and configured Tx power for intra-band con-current V2X operation in the licensed band.

**Decision: Approved.**

[**R4-2200947**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200947.zip) **Remaining issues for intra-band con-current operation**

*Type: discussion For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2201496**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201496.zip) **draft CR for TS 38.101-1 correctiron on intra-band concurrent operation**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Xiaomi*

**Decision: Revised to** [**R4-2202358**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202358.zip) **(from** [**R4-2201496**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201496.zip)**).**

[**R4-2202358**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202358.zip) **draft CR for TS 38.101-1 correctiron on intra-band concurrent operation**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Xiaomi*

**Decision: Endorsed.**

[**R4-2201500**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201500.zip) **further discussion on configured power for intra-band concurrent operation**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201949**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201949.zip) **Draft CR for TS 38.101-1: configured transmitted power for intra-band con-current operation**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Merged (with** [**R4-2202358**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202358.zip)**).**

[**R4-2201950**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201950.zip) **MPR for intra-band con-current operation**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

##### 6.15.3.2 Synchronous operation between SL and Uu (including switching time mask, SL transmission timing)

[**R4-2200142**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200142.zip) **Discussion on time mask for Uu and SL switching**

*Type: discussion For: Approval  
 Source: CATT*

**Decision: Noted.**

[**R4-2200510**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200510.zip) **RF switching time for V2X intra-band con-current operation with different carriers in TDD bands and time masks for same carrier switching**

*Type: discussion For: Approval  
 38.101-2 v CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

RF switching requirements for intra-band con-current operation with different carrier is presented

**Decision: Approved.**

[**R4-2201021**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201021.zip) **TP on sync issue for intra-band V2X operation**

*Type: pCR For: Approval  
 38.785 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: CATT*

**Decision: Revised to** [**R4-2202359**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202359.zip) **(from** [**R4-2201021**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201021.zip)**).**

[**R4-2202359**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202359.zip) **TP on sync issue for intra-band V2X operation**

*Type: pCR For: Approval  
 38.785 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: CATT*

**Decision: Approved.**

[**R4-2201497**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201497.zip) **draft CR for TS 38.101-1 on switching time mask between SL and Uu**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Xiaomi*

**Decision: Merged (with** [**R4-2202356**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202356.zip)**).**

[**R4-2201502**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201502.zip) **further discussion on switching time mask between SL and Uu**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201948**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201948.zip) **On SL switching time mask**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

#### 6.15.4 High power UE(PC2) for SL

**[101-bis-e][126] NRSL\_enh\_Part\_3, AI 6.15.4 – Liehai Liu**

[**R4-2202226**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202226.zip) **Email discussion summary for [101-bis-e][126] NRSL\_enh\_Part\_3**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202326**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202326.zip) **(from** [**R4-2202226**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202226.zip)**).**

**[R4-2202326](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202326.zip) Email discussion summary for [101-bis-e][126] NRSL\_enh\_Part\_3**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202363](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202363.zip) WF on PC2 HPUE for NR sidelink enhancements | Huawei | Approved |

[**R4-2202363**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202363.zip) **WF on PC2 HPUE for NR sidelink enhancements**

*Type: other For: Approval  
 Source: Huawei*

**Decision: Approved.**

##### 6.15.4.1 TX requirements (Power class)

[**R4-2201498**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201498.zip) **draft CR for TS 38.101-3 on Pcmax definition on inter-band V2X UE**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: F (Rel-17)  
  
 Source: Xiaomi*

**Decision: Not pursued.**

[**R4-2201501**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201501.zip) **further discussion on Pcmax definition on inter-band V2X UE**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

##### 6.15.4.2 Coexistence study

[**R4-2201499**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201499.zip) **further discussion on co-existence issue for HPUE**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201708**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201708.zip) **Co-channel existing**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our views on co-channel interference aspect

**Decision: Noted.**

[**R4-2201951**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201951.zip) **On co-channel existence issue in RAN4**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

##### 6.15.4.3 Others

#### 6.15.5 RRM core requirements

##### 6.15.5.1 Intra-band con-current V2X operation

##### 6.15.5.2 SL-DRX

##### 6.15.5.3 Others

### 6.16 Extending current NR operation to 71GHz

#### 6.16.1 General

**[101-bis-e][127] NR\_ext\_to\_71GHz\_Part\_1, AI 6.16.1, 6.16.2, 6.16.6, 6.16.8 – Aida L Vera Lopez**

[**R4-2202227**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202227.zip) **Email discussion summary for [101-bis-e][127] NR\_ext\_to\_71GHz\_Part\_1**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202327**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202327.zip) **(from** [**R4-2202227**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202227.zip)**).**

[**R4-2202327**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202327.zip) **Email discussion summary for [101-bis-e][127] NR\_ext\_to\_71GHz\_Part\_1**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202365](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202365.zip) WF on general aspects and system parameters of FR2-2 | Intel | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2200081](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200081.zip) | Draft LS for the channelization for up to 71 GHz | CATT | Approved |  |
| [R4-2202409](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202409.zip) | Draft LS on sensing beam characteristics to RAN1 | Ericsson | Postponed |  |
| [R4-2200321](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200321.zip) | draft CR to 38.101-2 60 GHz UE general clauses | Qualcomm Incorporated | Merged | Merge the CA operating band content of this draftCR to [R4-2202364](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202364.zip) |
| [R4-2202364](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202364.zip) rev of [R4-2200948](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200948.zip) | Draft CR for TS 38.101-2: Introduction of system parameters for FR2-2 | vivo | Endorsed | Merge the CA operating band portion of draftCR [R4-2200321](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200321.zip) to this draftCR |
| [R4-2202410](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202410.zip)  Rev of [R4-2201917](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201917.zip) | draft CR 38.101-3 on FR2-2 DC/CA with FR1 anchor | Ericsson | Endorsed |  |
| [R4-2200863](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200863.zip) | Channel arrangement and channel bandwidths for n263 | Ericsson | Not pursued | [R4-2202411](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202411.zip) is withdrawn. |
| [R4-2201490](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201490.zip) | Draft CR to TS 38.104: Section 5.4 Channel arrangement | Ericsson | Not pursued | [R4-2202412](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202412.zip) is withdrawn. |
| [R4-2201599](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201599.zip) | How to introduce FR2-2 bands into 38.101-2 and combinations into 38.101-3 | Nokia, Nokia Shanghai Bell | Approved |  |

[**R4-2202365**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202365.zip) **WF on general aspects and system parameters of FR2-2**

*Type: other For: Approval  
 Source: Intel*

**Decision: Approved.**

**GTW on Jan-20**

**Issue 1-1: CR work split volunteer**

* Recommended WF
  + Provide feedback if interested in overseeing the Tx or Rx part of TS 38.101-2

**Agreement:** The work split agreement for TS 38.101-2, along with the companies overseeing each part, is listed below. A volunteer is needed for the Tx or Rx part.

* System parameters – Intel, vivo
* Tx - Apple
* Rx - Ericsson

**Issue 2-1a: Channelization solution**

* Option 1C: No IEEE 802.11ad/ay alignment and floating channelization
* Option 1D: Hybrid between IEEE and no IEEE alignment with fixed channelization depending on max spectrum utilization and better coexistence
* Option 2: Hybrid approach (fixed for min CBW/SCS and floating for larger CBWs) for both licensed and unlicensed operation (MediaTek, [R4-2201985](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201985.zip))
* Recommended WF
  + Moderator suggests companies share their views on Option 1C, Option 1D and Option 2 (new option detailing a method to implement Option 1D) by focusing on the aspects listed above in a concise way. Also, please include in your feedback whether the option can be supported. As captured in the WF, if consensus cannot be reached in this meeting, we will consider different channelizations for licensed and unlicensed bands.

**Discussions:**

Mediatek: Option 2 is solution to solve the increasing number of rasters.

VIVO: 1C is OK as compromise. As Mediatek pointed out, the increasing number of sync raster is not a big issue, i.e., lower than 3 times.

Intel: our concern is that no floating channelization is needed. In some region, we have concern how it can work. Prefer to starting with simple way which can work.

Apple: last meeting we list number of factors for companies to consider for 1C and 1D. We did the analysis and shared the information. 1D outperformed 1C. We did not agree with 1C. For unlicensed, we do not see the need for harmonization with licensed bands. 1D can shorten the cell searching time.

Ericsson: We did also list all the issues for Option 1C. The most important thing is the flexibility and you can put channel anywhere and for future-proof and do aggregation freedomly. You can decrease the gap between channels and increase overall utilization. Regarding co-existence, you can put channel anywhere, and we would like to know that LBT requiring the co-existence is not a must. For searching complexity, we are far below the target set by RAN. 1C is superior.

Mediatek: Option 2 can do all the things as Ericsson mentioned.

Nokia: Agree with Ericsson. The major dis-advantage is that in case there is mis-alignement there will be a loss of spectrum.

Ericsson: Agree with Nokia last comment. Another aspect is for aggregation.

Apple: we discussed it in most context of licensed band. For licensed we do not know when the regulation is ready. For unlicensed we do not see the future-proof need.

Intel: We share the same comment as Apple. Complexity issue may be associated with flexibility. We are not sure what the benefit is for it. In Rel-17 timeframe, there will be no licensed band. We are not sure why the flexibility should be put on unlicensed.

Mediatek: To Ericsson, why does aggregation not work? To Intel, we list the cases with separate channelization and we aim to use the same … for licensed and unlicensed.

Ericsson: one complexity is how to define channel spacing. For intel, we use the exact the same aggregation as FR2-1. The difference is to decrease the gap between carriers.

Mediatek: to Ericsson, based on our analysis it would be 175 versus 337 search points.

LGE: for unlicensed band, there is challenging for larger number of rasters. The flexibility comes with complexity although Ericsson solution want to address the problem in one approach.

Intel: in Rel-17 we only consider unlicensed bands. In Rel-17, there is no way to define sync raster in Rel-17. Here we just focus on the band.

Ericsson: we also consider that for unlicensed band the flexibility is also beneficial regarding your licensed scheme. From our aspects, we are ready to accept the compromise on the condition.

**Agreement:** Consider the different channelization for licensed band(s) and unlicensed band(s)

* Fixed sync raster for unlicensed bands
  + Fixed scheme should not be constrained by IEEE channel raster
  + Send LS to RAN1 to make sure that RAN1 accommodates the solution already now for both fixed and floating sync raster.
  + For the contiguous carrier aggregation, the channel spacing of adjacent channels should be multiple of the larger SCS, i.e., 960KHz, used by two channels/CCs
* Floating sync raster for licensed bands
* Stick to the agreement last meeting for 3 x 17.28MHz as the minimum granularity.
  + Refer to gap between adjacent GSCN values is not smaller than 3 x 17.28MHz
* FFS: Unlicensed bands tries to use the sub-set of sync raster for licensed bands

**Issue 2-2: CA support**

*A tentative agreement was captured in RAN4 #101-e (*[*R4-2120061*](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2120061.zip)*).*

* Proposal: Confirm the agreement as starting point from previous meeting: (Nokia)
  + Consider n x 400 MHz, n= [2, 3, 4, 5] and m x 100 MHz, m=[ 2..8] as the supported channel BW options for CA operation in unlicensed band for total bandwidths up to 2000 MHz.
* Recommended WF
  + Companies should share their views on confirming the above agreement.

**Discussions:**

Vivo: does it preclude other channel bandwidths like 800MHz?

Nokia: No intention to preclude.

**Agreement:** Use the following as the starting point for further discussions

* Consider n x 400 MHz, n= [2, 3, 4, 5] and m x 100 MHz, m=[ 2..8] as the supported channel BW options for CA operation in unlicensed band for total bandwidths up to 2000 MHz.

**Issue 3-1a: Adding FR2-2 bands and band combinations**

* Proposal: When FR2-2 bands and band combinations involving FR2-2 are introduced, existing tables and table formatting should be re-used as much as possible. (Nokia)
* Recommended WF
  + Companies should provide their views on the above proposal.

**Agreement:** When FR2-2 bands and band combinations involving FR2-2 are introduced, existing tables and table formatting should be re-used as much as possible.

**Issue 3-1b: FR2-2 DC/CA with FR1 anchor**

* Proposal: CA/DC combinations with FR2-2 and with an anchor in FR1 can be added directly by draft CR’s just like it is done for CA/DC FR2-1 combinations with an anchor in FR1
* Recommended WF
  + Moderator suggests companies share their view on the above proposal.

**Discussions:**

Apple: when are we going to propose CRs?

Huawei: no big position. What is the timeline? There is only one meeting left.

Ericsson: to enable the specification for RRM requirements. We stick to previous agreement.

**Agreement:** CA/DC combinations with FR2-2 and with an anchor in FR1 can be added directly by draft CR’s just like it is done for CA/DC FR2-1 combinations with an anchor in FR1.

* In principle, work on the requirements for single band before working on the CRs for FR1+FR2-2 DC/CA.
* When providing CRs, we should consider whether and what common requirements are needed for band combinations.

**Sub-topic 4-1: LS reply to RAN1 on sensing beam characteristics**

**Discussions:**

Huawei: consider sensing is important, we should have the agreement for the test. We propose some initial thoughts in the comments summary.

Apple: we do not want to specify any requirement without testing. We focus on EIRP directions. We have to look at the specific beamwidth.

Ericsson: try to measure the performance on sensing beam and transmission beam. We need some further discussion to see the alternative.

CATT: consider LBT.

Mediatek: we have already defined the beam correspondence performance.

CATT: in RAN1 LS, the beam correspondence is supported by UE there will be no problem. RAN1 has concern on the case when UE does not support beam correspondence. We think LBT requirement needs be defined.

Sony: we are not against the LBT requirements. But we have concern on the workload. With current beam correspondence, LBT cannot be verified. Current beam correspondence just verified how much power is transmitted.

Huawei: this requirements applies for both BS and UE sides.

Mediatek: our comment is for UE. If UE uses beam switching to help BC, we have defined the requirements of tolerance.

Ericsson: we have no beam quality requirement for BS and UE in spec. That is complex in terms of conformance testing.

CATT: For UE we can reply that the current requirements can cover. For BS we need more discussion.

Huawei: what kind of LBT requirements are you talking about?

CATT: for NR-U, 38.107/106. RF requirements.

**Agreement:** Use Ericsson draft LS [R4-2200847](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200847.zip) as baseline for further discussion.

**Agreement:** further discuss whether to define the requirement or test for sensing taking companies’ comments in first round into consideration.

---------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200469**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200469.zip) **Views on sensing beam selection on the UE side**

*Type: other For: Discussion  
 Source: Sony*

**Decision: Noted.**

[**R4-2200847**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200847.zip) **Draft LS on sensing beam characteristics to RAN1**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we present some technical background related to beam quality properties previously discussed in RAN4 and our view on the need for beam quality requirements and corresponding test aspects relevant for BS and UE operating within the fre

**Decision: Revised to** [**R4-2202409**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202409.zip) **(from** [**R4-2200847**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200847.zip)**).**

[**R4-2202409**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202409.zip) **Draft LS on sensing beam characteristics to RAN1**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we present some technical background related to beam quality properties previously discussed in RAN4 and our view on the need for beam quality requirements and corresponding test aspects relevant for BS and UE operating within the fre

**Decision: Postponed.**

[**R4-2200948**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200948.zip) **Draft CR for TS 38.101-2: Introduction of system parameters for FR2-2**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: vivo*

**Decision: Revised to** [**R4-2202364**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202364.zip) **(from** [**R4-2200948**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200948.zip)**).**

[**R4-2202364**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202364.zip) **Draft CR for TS 38.101-2: Introduction of system parameters for FR2-2**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: vivo*

**Decision: Endorsed.**

[**R4-2201410**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201410.zip) **Discussion and draft reply LS on sensing beam selection from RAN1**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201533**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201533.zip) **Discussion and draft reply LS on sensing beam selection from RAN1**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201923**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201923.zip) **CR work split and UE feature list for NR ext. to 71GHz**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

#### 6.16.2 Operation bands and system parameters (channelization, raster, CBW, etc)

**[101-bis-e][127] NR\_ext\_to\_71GHz\_Part\_1, AI 6.16.1, 6.16.2, 6.16.6, 6.16.8 – Aida L Vera Lopez**

[**R4-2200080**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200080.zip) **Discussion of channelization for up to 71 GHz**

*Type: other For: Approval  
 Source: CATT*

**Decision: Noted.**

[**R4-2200081**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200081.zip) **LS for the channelization for up to 71 GHz**

*Type: other For: Approval  
 Source: CATT*

**GTW on Jan-25**

Add 3x17.28MHz for 120KHz SCS

**Decision: Approved.**

[**R4-2200282**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200282.zip) **Channel and Sync rasters for NR operation in 52.6GHz - 71GHz**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2200321**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200321.zip) **draft CR to 38.101-2 60 GHz UE general clauses**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

n263 CA, max TX BW, channel BWs added

**Decision: Merged (with** [**R4-2202364**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202364.zip)**).**

[**R4-2200863**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200863.zip) **Channel arrangement and channel bandwidths for n263**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Draft CR to introduce channel and synchronisation rasters and channel bandwidths for n263

**Decision: Not pursued.**

[**R4-2202411**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202411.zip) **Channel arrangement and channel bandwidths for n263**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Draft CR to introduce channel and synchronisation rasters and channel bandwidths for n263

**Decision: Withdrawn.**

[**R4-2200949**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200949.zip) **Further discussion on channel raster and sync raster for 52.6~71 GHz**

*Type: discussion For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2201490**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201490.zip) **Draft CR to TS 38.104: Section 5.4 Channel arrangement**

*Type: draftCR For: Endorsement  
 38.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Introduction of Channel Arrangement for NR extension to 71 GHz

**Decision: Not pursued.**

[**R4-2202412**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202412.zip) **Draft CR to TS 38.104: Section 5.4 Channel arrangement**

*Type: draftCR For: Endorsement  
 38.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Introduction of Channel Arrangement for NR extension to 71 GHz

**Decision: Withdrawn.**

[**R4-2201491**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201491.zip) **52.6-71 GHz System Parameters**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution will further highlight the design details of Option 1C and Option 1D using the above agreements as benchmarking criteria.

**Decision: Noted.**

[**R4-2201592**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201592.zip) **60GHz channel and synchronization raster**

*Type: discussion For: Approval  
 Source: LG Electronics Finland*

**Abstract:**

Channel raster and SSB raster for 57-71GHz frequency range is discussed and proposals for both are made.

**Decision: Noted.**

[**R4-2201598**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201598.zip) **System parameters for a NR band in the range 52.6GHz – 71GHz**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution synchronization raster, carrier aggregation and spectrum utilization in FR2-2 are discussed.

**Decision: Noted.**

[**R4-2201924**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201924.zip) **Views on channelization for 52.6 to 71 GHz**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2201985**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201985.zip) **Channelization and synchronization raster for 60GHz**

*Type: discussion For: Discussion  
 Source: MediaTek (Chengdu) Inc.*

**Decision: Noted.**

[**R4-2202023**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202023.zip) **Discussion on the channel raster and sync raster in FR2-2**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

This contribution provides our views and proposals about channel raster and sync raster for band n263, and the possible licensed band in 66-71 GHz spectrum.

**Decision: Noted.**

#### 6.16.3 UE RF requirements

**[101-bis-e][128] NR\_ext\_to\_71GHz\_Part\_2, AI 6.16.3 – Phil Coan**

[**R4-2202228**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202228.zip) **Email discussion summary for [101-bis-e][128] NR\_ext\_to\_71GHz\_Part\_2**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202328**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202328.zip) **(from** [**R4-2202228**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202228.zip)**).**

[**R4-2202328**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202328.zip) **Email discussion summary for [101-bis-e][128] NR\_ext\_to\_71GHz\_Part\_2**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202366](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202366.zip) WF on 60 GHz UE RF | Qualcomm Incorporated | Approved |
| [R4-2202414](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202414.zip) Peak EIRP and EIS for 60 GHz | Apple | Noted |
| [R4-2202403](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202403.zip) On EIS for FR2-2 | Nokia, Nokia Shanghai Bell | Noted |
| [R4-2202402](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202402.zip) On EIRP for FR2-2 | Nokia, Nokia Shanghai Bell | Noted |
| [R4-2202269](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202269.zip) R17 60GHz Tx requirements | OPPO | Noted |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **T-doc number** | **title** | **Source** | **Status** | **Comment** |
| [R4-2202247](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202247.zip) | 60 GHz UE TX | Qualcomm Incorporated | Noted |  |
| [R4-2202248](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202248.zip) | 60 GHz UE RX | Qualcomm Incorporated | Noted |  |
| [R4-2202406](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202406.zip) | UE Array, EIRP level and Spherical Coverage at 60 GHz | Sony, Ericsson | Noted |  |

[**R4-2202366**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202366.zip) **WF on 60 GHz UE RF**

*Type: other For: Approval  
 Source: Qulacomm*

**Decision: Approved.**

[**R4-2202414**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202414.zip) **Peak EIRP and EIS for 60 GHz**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

**GTW Jan-20**

**1.3.1 Handheld UE number of antenna element assumption**

Preferred number of elements from company comments :

16 (Huawei, DOCOMO, QCOM, Sony, Ericsson)

8 (Murata, Nokia, vivo, Intel, Mediatek, LGE, OPPO)

4(Apple, Xiaomi, Mediatek, OPPO, VIVO)

Acceptable: vivo 8  4, Murata 8 16, DOCOMO 16 8

**Discussions:**

Mediatek: 4 or 8.

Sony: 16.

LGE: 8.

Ericsson: 16

OPPO: 4 and 8.

Ericsson: we should also need to consider the performance aspects. To overcome the propagation, we need consider proper number. We should also consider co-existence. So we prefer to larger number.

Qualcomm: 16 elements are preferable considering propagation. 8~16 elements as assumption would be OK.

Huawei: Echo Ericsson and Qualcomm. According to data, maximum achievable power is 7dB less than EIPR of 28GHz by 8 elements, which will cause great degradation. We should consider more elements to reach the proper EIRP level.

Mediatek: Some companies propose 16 just because the power of single antenna is lower.

Apple: Understand the concern of performance. We share in our paper what does mean for larger antenna numbers. It would be difficult to have beam-forming. We show the limitation of implementation. We show the Mediatek proposal to consider output power and antenna element as package.

Sony: Echo with Ericsson, Qualcomm and Huawei. 16 elements are feasible for mobile devices.

Qualcomm: as comment by Apple, the feasibility of 16 elements, we provide our analysis. We made response to that concern.

OPPO: in this issue, we are talking about the elements. Next we will discuss the panel number.

Sony: we are fine with suggestion from moderators.

Apple: 4

OPPO: prefer 8 as maximum

Mediatek: prefer one value 8.

VIVo: 8

Huawei: 16. We are OK with the range.

**Agreement:** Use 8 antenna elements as the assumption for defining minimum requirements

* Check if there is any performance problem. If performance problem is identified and agreed, revisit the agreement.
  + The simulation assumptions for co-existence study can be used as baseline in the second round or future meetings for the performance analysis.

**1.3.2 Handheld UE min peak EIRP**

can we make an agreement pending the number of element discussion above?

|  |  |  |  |
| --- | --- | --- | --- |
| Company | Min Peak EIRP | | |
| 4 elements | 8 elements | 16 elements |
| vivo |  | 11.3 |  |
| QCOM |  |  | 15 |
| LGE |  | **14.7** | ~~14.7~~ |
| Murata |  | 15.7 | 20.1 |
| Nokia |  | >20 | >20 |
| Sony, Ericsson |  |  | 20.5 |
| Intel |  | 13.6 |  |
| Huawei |  | 12 | 18 |
| Apple | 6.1 |  |  |
| Average | n/a | TBD ~~15.4~~ | TBD ~~18.0~~ |

**Discussions:**

Intel: Can vivo clarify number?

VIVO: our original 11.3. 13.2 is average from the companies.

Qualcomm: I took VIVO baseline requirements.

DOCOMO: we are OK to average approach. We should align the frequency range firstly. Our suggestion is that we agree frequency definition. Next meeting, companies can provide the results based on those assumptions.

Huawei: we would like to provide the values. We would like to check whether the average should be done in dB or linear range.

Qualcomm: n263 is assumed.

VIVO: on the table, the values of LGE and Nokia, how can they achieve the same values?

AT&T: Average should be updated. In general we use dB and we set some bounds for the values to be averaged.

Ericsson: we should also consider the performance when we make averaging. The performance is still the guideline.

Qualcomm: For Nokia number,

Nokia: based on the different PA output possibility, we proposal is above 20.

LGE: 14.7 for 8.

DOCOMO: n263 is OK for us.

Qualcomm: n263 is the frequency of 77.1

Apple: we are OK to averaging. But we should first have antenna assumption.

Intel: the better thing is to stabilize the table before we start. We focus on averaging. We could agree on the range for simulation to justify the performance aspects.

**Agreement:**

* Use n263 (57GHz – 71GHz) to derive the minimum peak EIRP.
* Do the averaging across the proposed values the table below to try to derive the minimum requirements, and if needed, do the performance analysis considering the averaged value.
  + Put the averaged number derived in [ ] for further checking.
  + Companies can provide the additional number and link level analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Company | Min Peak EIRP | | |
| 4 elements | 8 elements | 16 elements |
| vivo |  | 11.3 |  |
| QCOM |  |  | 15 |
| LGE |  | **14.7** | ~~14.7~~ |
| Murata |  | 15.7 | 20.1 |
| Nokia |  | 20 | 20 |
| Sony, Ericsson |  |  | 20.5 |
| Intel |  | 13.6 |  |
| Huawei |  | 12 | 18 |
| Apple | 6.1 |  |  |

**1.3.3 Handheld UE number of antenna panels for spatial coverage**

Companies are split on the number of panels

Minimum 2: (7) (Murata, Nokia, Sony, LGE, Ericsson, DOCOMO, QCOM)

Minimum 1: (4) (Apple, vivo, Huawei, OPPO)

**Discussions:**

Intel: suggest to agree on minimum 1. It can work.

OPPO: Panel number impacts the spherical coverage. For FR2-1, we agree on 1. 1 is enough for spherical coverage considering we agree on 8 elements.

Sony: we cannot know how 1 panel can work. We do not think 1 panel can work.

Ericsson: agree with Sony. 1 panel does not work.

Nokia: Echo Sony and Ericsson. Choosing 1 panel is to solve blocking issue. Assuming 2 panel makes more sense.

Huawei: the number of panel should depend on UE implementation. Even if we agree with 2 panel as assumption, the spherical coverage requirements still varies. We can first agree on the EIPR drop first.

Intel: Similar comment. It includes one assumption.

Qualcomm: we should look at the deployment scenario, e.g., n258/257 11dB drop. We could do the similar analysis as did for n257/258 for FR2-2.

Sony: the proposal from Qualcomm is reasonable.

Apple: we are not OK with 11dB.

Qualcomm: 11dB is an example. Our analysis shows 16.5dB in our contribution for n263 based on the simulating antenna array and do special analysis.

Huawei: for starting point, we suggest using 13.1dB.

Apple: The analysis has been done in the different assumption of 16 antenna elements and also provide analysis for spherical coverage.

Qualcomm: Apple made a good point. We should further analysis.

DOCOMO: we should not preclude 3.

**Agreement:** Provide the analysis based on 8 antenna elements with assumption of 1, 2 and 3 panels to derive the spherical coverage requirements in the future meeting.

* Try to reuse the previous agreed simulation assumptions for FR2-1 except for frequency range.
  + Need further checking during this meeting.

**1.3.5 Handheld UE REFSENS**

Can we make an agreement pending the number of element discussion above?

|  |  |  |  |
| --- | --- | --- | --- |
| Company | 400 MHz SENS | | |
| 4 elements | 8 elements | 16 elements |
| QCOM |  |  | -79.6 |
| vivo |  | -68 |  |
| LGE |  | -75.3 |  |
| Huawei |  |  | -72.5 |
| Intel |  | -70 |  |

**Agreement:**

* Do the averaging across the proposed values in the table below to try to derive the minimum requirements.
  + Put the averaged number derived in [ ] for further checking.
  + Companies can provide the additional number and link level analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Company | 400 MHz SENS | | |
| 4 elements | 8 elements | 16 elements |
| QCOM |  |  | -79.6 |
| vivo |  | -68 |  |
| LGE |  | -75.3 |  |
| Huawei |  |  | -72.5 |
| Intel |  | -70 |  |

**1.3.6 Handheld UE EIS spherical coverage**

**Discussions:**

Open issues and candidate options before e-meeting:

* Proposals
  + Proposal 1: -63 dBm, 400 MHz, 50%ile
  + Proposal 2: -64.3 dBm, 400 MHz, 50%ile
  + Proposal 3: -59.3 dBm, 400 MHz, 50%ile
* Recommended WF
  + As a compromise, agree on the median -61 dBm

Mediatek: for EIS, we should wait for spherical EIRP.

Nokia: we are not ready to agree with -61dBm. Let us focus on other values.

Qualcomm: we need to make sure that we use 8 element assumption. We need align the 8 element assumption.

**Agreement:** For EIS, provide the analysis based on 8 element assumption to derive the requirements.

**1.3.21 ON/ON transient periods for 480 and 960 SCS**

Sub-topic description:

Open issues and candidate options before e-meeting:

* Proposals
  + Proposal 1: Use the same 5usec for FR2-2. (2)
  + Proposal 2: Introduce {1, 2, 3} µS improved ON/ON transient period as the optional UE capabilities for 480 and 960 kHz SCS.
* Recommended WF
  + Further discuss

**Discussions:**

AT&T: it seems some flexibility to support optional capability with reduced value. From our side, we see no harm to have flexibility. We would like to at least to agree to introduce the optional capability and decide the numbers.

Ericsson: We also see the benefit to have optional capability. Possible with reduce values.

Nokia: we are fine to have optional capability. We should reduce the number of possibility.

Apple: there are better way to improve performance by not having burden for UE implementation. Could we propose #1 agreed and keep #2 for further discussion.

Mediatek: similar view as Apple. It should be the baseline. We can consider the better capability in the future release. We should make sure the value is right if there is only one value.

Huawei: Share similar view as Apple and Mediatek. The capability is not introduced for FR2-1 and suggest to agree on #1 first.

Qualcomm: Agree with Apple and Huawei.

AT&T: the difference from FR2-2 is that SCS is different from FR2-1. 480 and 960KHz SCS are for different deployment scenario. We should not push it to later release.

Ericsson: Agree with AT&T. This is Optional capability.

Intel: There is difference between FR2-1 and FR2-2. Reducing the transient period can improve the performance by 20%. We do not see the harm to have one reduce value. How to move on it.

Apple: to intel, we are interested in further discussion. We should have better assumption on what the BS assumption is for this capability, which would lead to some complexity for scheduling. How can BS design if UE does not support this capability?

Ericsson: We agree with AT&T proposal. FFS should be removed.

Tentative agreement: Use the same 5usec for FR2-2.

* FFS on introduction of a single value among {1, 2, 3} µS improved ON/ON transient period as the optional UE capabilities for 480 and 960 kHz SCS

-------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200438**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200438.zip) **UE antenna module with 60 GHz integration**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

##### 6.16.3.1 TX requirements

[**R4-2200067**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200067.zip) **Views on UE antenna elements for FR2-2**

*Type: discussion For: Discussion  
 Source: Murata Manufacturing Co Ltd.*

**Decision: Noted.**

**[R4-2200238](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200238.zip) 60GHz UE TX**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

Discuss various UE TX requirements

**Decision: Revised to** [**R4-2202247**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202247.zip) **(from** [**R4-2200238**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200238.zip)**).**

[**R4-2202247**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202247.zip) **60GHz UE TX**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

Discuss various UE TX requirements

**Decision: Noted.**

**[R4-2200312](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200312.zip) draft CR to 38.101-2 60 GHz UE TX**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

EIRP, spherical coverage, SEM, ALCR, TX PSD requirements added

**Decision: Noted.**

[**R4-2200453**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200453.zip) **Remaining issues with transient requirements for FR2-2**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2200470**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200470.zip) **UE Array, EIRP level and Spherical Coverage at 60 GHz**

*Type: other For: Decision  
 Source: Sony, Ericsson*

**Decision: Revised to** [**R4-2202406**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202406.zip) **(from** [**R4-2200470**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200470.zip)**).**

[**R4-2202406**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202406.zip) **UE Array, EIRP level and Spherical Coverage at 60 GHz**

*Type: other For: Decision  
 Source: Sony, Ericsson*

**Decision: Noted.**

[**R4-2200570**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200570.zip) **View on TX requirements of FR2-2**

*Type: discussion For: Approval  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Proposal: Antenna quantity assumption and Pout per RF chain assumption shall be agreed together as a package.

**Decision: Noted.**

[**R4-2200950**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200950.zip) **Further discussion on handheld UE EIRP and spherical coverage requirements for 52.6~71 GHz**

*Type: discussion For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2201073**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201073.zip) **On UE Tx RF aspects for a NR band in the range 52.6GHz – 71GHz**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2201209**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201209.zip) **Discussion on Tx RF requirements in FR2-2**

*Type: discussion For: Discussion  
 Source: LG Electronics Finland*

**Abstract:**

Views on Tx RF requirements for FR2-2

**Decision: Noted.**

[**R4-2201411**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201411.zip) **On 60GHz UE Tx RF requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

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

[**R4-2201534**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201534.zip) **On 60GHz UE Tx RF requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201925**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201925.zip) **UE Tx requirements for 52.6 to 71 GHz**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2202269**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202269.zip) **R17 60GHz Tx requirements**

*Type: other For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

[**R4-2202402**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202402.zip) **On EIRP for FR2-2**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

##### 6.16.3.2 RX requirements

[**R4-2200239**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200239.zip) **60 GHz UE RX**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

Discuss various UE RX requirements

**Decision: Revised to** [**R4-2202248**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202248.zip) **(from** [**R4-2200239**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200239.zip)**).**

[**R4-2202248**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202248.zip) **60 GHz UE RX**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

Discuss various UE RX requirements

**Decision: Noted.**

[**R4-2200307**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200307.zip) **draft CR to 38.101-2 60GHz UE RX**

*Type: draftCR For: Endorsement  
 38.101-2 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

define PC1, PC3 REFSENS and EIS spherical coverage

**Decision: Not pursued.**

[**R4-2200360**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200360.zip) **Handheld UE antenna assumption for FR2-2**

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

**Abstract:**

To discuss antenna assumption for FR2-2 UE.

**Decision: Noted.**

[**R4-2200951**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200951.zip) **Further discussion on handheld UE EIS requirements for 52.6~71 GHz**

*Type: discussion For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2201171**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201171.zip) **Discussion on Rx RF requirements in FR2-2**

*Type: discussion For: Discussion  
 Source: LG Electronics Finland*

**Abstract:**

Views on Rx RF requirements for FR2-2.

**Decision: Noted.**

[**R4-2201412**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201412.zip) **On 60GHz UE EIS requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

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

[**R4-2201535**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201535.zip) **On 60GHz UE EIS requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201926**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201926.zip) **UE EIS requirements for FR2-2**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2202403**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202403.zip) **On EIS for FR2-2**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

#### 6.16.4 BS RF requirements

##### 6.16.4.1 TX requirements

##### 6.16.4.2 RX requirements

#### 6.16.5 Co-existence simulations

**[101-bis-e][129] NR\_ext\_to\_71GHz\_Part\_3, AI 6.16.5 – Huiping Shan**

[**R4-2202229**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202229.zip) **Email discussion summary for [101-bis-e][129] NR\_ext\_to\_71GHz\_Part\_3**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202329**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202329.zip) **(from** [**R4-2202229**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202229.zip)**).**

[**R4-2202329**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202329.zip) **Email discussion summary for [101-bis-e][129] NR\_ext\_to\_71GHz\_Part\_3**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Comments** |
| [R4-2202367](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202367.zip) WF on the decision of DL/UL ACIR and BS/UE ACLR/ACS for FR2-2 | CATT, Qualcomm, Nokia, ZTE, Ericsson, vivo, Korea Testing Laboratory, Huawei | Approved |

[**R4-2202367**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202367.zip) **WF on the decision of DL/UL ACIR and BS/UE ACLR/ACS for FR2-2**

*Type: other For: Approval  
 Source: CATT, Qualcomm, Nokia, ZTE, Ericsson, vivo, Korea Testing Laboratory, Huawei*

**Decision: Approved.**

-----------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200039**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200039.zip) **Discussions on coexistence requirements for 60GHz**

*Type: other For: Discussion  
 Source: Qualcomm CDMA Technologies*

**Decision: Noted.**

[**R4-2200082**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200082.zip) **Discussion on ACIR requirement for 71 GHz**

*Type: other For: Approval  
 Source: CATT*

**Decision: Noted.**

[**R4-2200413**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200413.zip) **Proposals on coexistence simulation for extending current NR operation to 71 GHz**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides some preliminary simulation results based on the proposed assumptions and parameters in the approved WF and provides some proposals on coexistence simulation for extending current NR operation to 71.

**Decision: Noted.**

[**R4-2200578**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200578.zip) **Discussion on ACIR requirements for 52.6-71 GHz**

*Type: discussion For: Discussion  
 Source: Korea Testing Laboratory*

**Decision: Noted.**

[**R4-2200846**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200846.zip) **Update of coexistence simulation results relevant for NR extension to 71 GHz**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we present additional results and summarize the current situation and propose a compromise to settle ACLR and ACS requirement for BS and UE.

**Decision: Noted.**

[**R4-2200952**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200952.zip) **Discussion on DL/UL ACIR and BS/UE ACLR/ACS for FR2-2**

*Type: discussion For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2201455**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201455.zip) **Coexistence simulation results for 52.6-71GHz**

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

**Decision: Noted.**

#### 6.16.6 FR1+FR2-2 DC/CA band combinations

**[101-bis-e][127] NR\_ext\_to\_71GHz\_Part\_1, AI 6.16.1, 6.16.2, 6.16.6, 6.16.8 – Aida L Vera Lopez**

[**R4-2201599**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201599.zip) **How to introduce FR2-2 bands into 38.101-2 and combinations into 38.101-3**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In RAN4#101-e the changes to general parts of specifications due to introduction of FR2-2 was discussed and some draft CRs were endorsed. One of the open items was whether to separate FR2-2 bands and band combinations into separate tables and/or create fu

**Decision: Approved.**

[**R4-2201916**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201916.zip) **Discussion on FR2-2 DC/CA with FR1 anchor**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion on FR2-2 DC/CA with FR1 anchor

**Decision: Noted.**

[**R4-2201917**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201917.zip) **draft CR 38.101-3 on FR2-2 DC/CA with FR1 anchor**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-3 on FR2-2 DC/CA with FR1 anchor

**Decision: Revised to** [**R4-2202410**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202410.zip) **(from** [**R4-2201917**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201917.zip)**).**

**[R4-2202410](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202410.zip) draft CR 38.101-3 on FR2-2 DC/CA with FR1 anchor**

*Type: draftCR For: Endorsement  
 38.101-3 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-3 on FR2-2 DC/CA with FR1 anchor

**Decision: Endorsed.**

#### 6.16.7 RRM core requirements

##### 6.16.7.1 General

##### 6.16.7.2 Timing requirements

##### 6.16.7.3 Interruption requirements

##### 6.16.7.4 Active BWP switching delay requirements

##### 6.16.7.5 Measurement gap interruption requirements

##### 6.16.7.6 LBT impacts on RRM requirements

#### 6.16.8 Others

**[101-bis-e][127] NR\_ext\_to\_71GHz\_Part\_1, AI 6.16.1, 6.16.2, 6.16.6, 6.16.8 – Aida L Vera Lopez**

[**R4-2200083**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200083.zip) **Discussion on the LBT requirement and the reply LS for sensing beam selection**

*Type: other For: Approval  
 Source: CATT*

**Decision: Noted.**

[**R4-2200084**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200084.zip) **Draft CR for TS 37.107: introduction of LBT requirements for FR2-2**

*Type: draftCR For: Endorsement  
 37.107 v16.3.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200085**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200085.zip) **Draft CR for TS 37.106: introduction of LBT requirements for FR2-2**

*Type: draftCR For: Endorsement  
 37.106 v16.1.0 CR- rev Cat: B (Rel-17)  
  
 Source: CATT*

**Decision: Not pursued.**

[**R4-2200953**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200953.zip) **Discussion and draft reply LS on sensing beam selection**

*Type: discussion For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2201600**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201600.zip) **Sensing beam for LBT in FR2-2**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we discuss LBT and sensing beam from RAN4 perspective and propose a how to handle it in RAN4.

**Decision: Noted.**

### 6.17 Enhancements to Integrated Access and Backhaul (IAB) for NR

#### 6.17.1 General

#### 6.17.2 RF requirements

##### 6.17.2.1 Impact for Simultaneous operation of IAB child and parent links

##### 6.17.2.2 Impact for Timing enhancement

##### 6.17.2.3 Others

#### 6.17.3 RRM core requirements

#### 6.17.4 Others

### 6.18 NR coverage enhancements

#### 6.18.1 General and CR structure

**[101-bis-e][130] NR\_cov\_enh, AI 6.18.1, 6.18.2 – Shan Yang**

[**R4-2202230**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202230.zip) **Email discussion summary for [101-bis-e][130] NR\_cov\_enh**

*Type: other For: Information  
 Source: Moderator (China Telecom)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202330**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202330.zip) **(from** [**R4-2202230**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202230.zip)**).**

[**R4-2202330**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202330.zip) **Email discussion summary for [101-bis-e][130] NR\_cov\_enh**

*Type: other For: Information  
 Source: Moderator (China Telecom)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202368](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202368.zip) Reply LS on Maximum duration for DMRS bundling | Qualcomm Incorporated | Approved |
| [R4-2202418](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202418.zip) WF on phase continuity and power consistency for PUCCH and PUSCH transmissions (rev of [R4-2202369](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202369.zip)) | Huawei, HiSilicon | Approved |

[**R4-2202368**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202368.zip) **Reply LS on Maximum duration for DMRS bundling**

*Type: LSout For: Approval  
 Source: Qualcomm*

**Decision: Approved.**

**GTW on Jan-24 for draft** [**R4-2202368**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202368.zip)

**Discussions:**

Mediatek: we are not completely clear on 16 and 32. We are not sure if we concluded. We need discussing further to ensure that RAN1 and RAN4 have consistent understanding. This discussion on the reflector seems that people want to have downlink slots in-between by asking for longer length.

China Telecom: we can put 32 in []. We would like to keep 16. This is phase offset without CFO impacts. We can further discuss the CFO issue to address Mediatek concern. Should we show the justification in the next meeting or just make decision?

Ericsson: Now the situation is like fish market. If we do not know what the factors impact the maximum duration, UE can report everything. In this case RAN4 won’t discuss the factor impacting maximum duration, we can choose the highest number to reduce the BS complexity. We propose the highest number of 32.

ZTE: Tend to agree with China Telecom. It is UE capability. RAN4 just provides possible configuration value and it is up to UE to report.

Mediatek: Cannot agree just one value 32 only, which is even worse.

Qualcomm: We can agree with LS context originally. We can tend to agree that there is fish market right now.

InterDigital: we can say a number of bits which should be reserved to RAN2 and RAN4 will further discuss the feasible values.

**Agreement:**

* The maximum duration will be reported per band
* Ran4 will further discussed the feasible value(s) for maximum duration, considering the following
  + 5, 8, 16 or 32 slots.
* Send LS to RAN2 to indicate that UE reports the single value from a set of up to 4 values, and RAN4 does not consider the value more than 32 slots for the capability for maximum duration.

[**R4-2202369**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202369.zip) **WF on** **phase continuity and power consistency for PUCCH and PUSCH transmissions**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2202418**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202418.zip) **(from** [**R4-2202369**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202369.zip)**).**

[**R4-2202418**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202418.zip) **WF on** **phase continuity and power consistency for PUCCH and PUSCH transmissions**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

**GTW on Jan-24 for draft** [**R4-2202369**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202369.zip)

**Discussions:**

Ericsson: we should first discuss Issue 1-1.

Apple: Option 1 describes quite well in the real network. It is up to network to do equal equalization or unequal. We can remove Option 2.

R&S: from testing point of view Option 3 is prefereable. Option 3 is clean way to go with such that it will simplify discussion in Issue 3-1.

Anritsu: agree with R&S.

China Telecom: the reason to suggesting Issue 3-1 as first issue is that if we can address Issue 3-1 then we can decide whether we need considering EVM test metric. We do not need to make decision on absolute and accumulate phase value as test metric. We do not need consider option 1 and option 2.

Qualcomm: agree with Ericsson. Issue 3-3 is linked to Issue 1-1. In the simulation we also need the assumption of receiver. Is there memory …

Ericsson: The technique to use bundling operation in Option 1 needs be treated carefully. In JCE we can tolerate such error. In the test, we need to verify the UE actual performance.

Nokia: We agree with Apple. Option 1 should provide the better performance.

R&S: to Qualcomm, basically we will measurement each slot separately.

Huawei: We supports TE vendors and we should conduct test in frequency domain. JCE impacts the performance for UE under test. During such test, UE transmit perforamne should be tested rather than coverage performance gain. CE should be done slot by slot.

Mediatek: The important thing to consider is the frequency error. If going with Option 2, we are not sure frequency error can be handled.

InterDigital: we should look at the condition to test phase error. The UE has to maintain a ceratin of error.

**Agreement:**

* The assumption at test equipment:
  + The phase error should be measured slot by slot
    - FFS: down-select between the following two options
      * Phase offset Option 1: for each individual slot k (k=1…n) within the bundle, an independent offset is generated and applied with respect to the slot 0.
      * Phase offset Option 2: for each individual slot k (k=1…n) within the bundle, an independent offset is generated and applied with respect to the slot k-1. (i.e., the offset is allowed to accumulate)
    - Only use phase error as test metric, unless the problem is identified
  + The common frequency error of UE should be corrected at test equipment per slot basis in the way similar to that done in EVM testing.
  + The channel estimation should be done for each slot and JCE is precluded
  + The TPC command for UE transmission won’t be adjusted during the testing window
    - Pcmax is configured such that UE transmits at the highest power during the test.
  + The downlink received power for UE should not be changed.
  + There is no uplink transmission gap during testing window.
* There is no additional transmission power requirement specific to coverage enhancement.

-----------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200020**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200020.zip) **Updated RAN4 RF work plan for NR coverage enhancements WI**

*Type: Work Plan For: Approval  
 Source: China Telecom*

**Decision: Approved.**

[**R4-2200339**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200339.zip) **draft CR for EVM based requriements**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Decision: Postponed.**

[**R4-2201706**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201706.zip) **simulation updated results for phase tolerance for PUSCH repetition**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our updated simulation results

**Decision: Noted.**

#### 6.18.2 UE RF requirements

**[101-bis-e][130] NR\_cov\_enh, AI 6.18.1, 6.18.2 – Shan Yang**

[**R4-2201986**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201986.zip) **Some remaining open issues on coverage enhancements**

*Type: discussion For: Discussion  
 Source: MediaTek (Chengdu) Inc.*

**Decision: Noted.**

##### 6.18.2.1 Requirements for non-scheduled gap

[**R4-2200021**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200021.zip) **RF requirements for the non-zero gap in between PUSCH/PUCCH transmissions**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision: Noted.**

[**R4-2200343**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200343.zip) **OFF power requirement for the gap in TX on case**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2201705**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201705.zip) **RF impact on non-scheduled gap**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on the RF requirement aspect of phase continuity.

**Decision: Noted.**

##### 6.18.2.2 Tolerance for power consistency/phase continuity

[**R4-2200022**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200022.zip) **On phase continuity and power consistency tolerance**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision: Noted.**

[**R4-2200338**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200338.zip) **Discussion on UE requirement for JCE**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2200471**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200471.zip) **Views on phase continuity and power consistency for PUSCH and PUCCH repetition**

*Type: other For: Discussion  
 Source: Sony*

**Decision: Noted.**

[**R4-2200926**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200926.zip) **Discussion on testability of coverage enhancement requirements**

*Type: discussion For: Approval  
 Source: ROHDE & SCHWARZ*

**Decision: Noted.**

[**R4-2201704**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201704.zip) **On JCE phase continuity and power consistency tolerance for PUCCH and PUSCH**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on the RF requirement aspect on JCE phase continuity and power consistency tolerance for PUCCH and PUSCH repetition continuity

**Decision: Noted.**

[**R4-2201840**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201840.zip) **Feasibility of proposed test methods for phase continuity and power consistency tolerance measurements**

*Type: discussion For: Approval  
 Source: Anritsu Limited*

**Decision: Noted.**

[**R4-2201958**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201958.zip) **On phase continuity for multiple transmissions**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

##### 6.18.2.3 Maximum duration for joint channel estimation

[**R4-2200023**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200023.zip) **On maximum duration for joint channel estimation**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision: Noted.**

[**R4-2201707**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201707.zip) **LS reply On maximum duration of phase continuity and power consistency for PUCCH and PUSCH repetition**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on the FFS aspects of phase continuity and also our view on the LS questions.

**Decision: Noted.**

##### 6.18.2.4 Others

[**R4-2200024**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200024.zip) **On UE autonomous adjustment and DL reception in-between transmission**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision: Noted.**

[**R4-2200344**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200344.zip) **Maximum duration handling for JCE**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2201703**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201703.zip) **On measurement of the TX coherent transmission**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on the RF requirement measurement aspect of phase /power discontinuity tolerance.

**Decision: Noted.**

#### 6.18.3 BS demodulation requirements

### 6.19 Further enhancements on MIMO for NR

#### 6.19.1 General

**[101-bis-e][131] NR\_feMIMO, AI 6.19.1, 6.19.2 – Taekhoon Kim**

[**R4-2202231**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202231.zip) **Email discussion summary for [101-bis-e][131] NR\_feMIMO**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202331**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202331.zip) **(from** [**R4-2202231**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202231.zip)**).**

[**R4-2202331**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202331.zip) **Email discussion summary for [101-bis-e][131] NR\_feMIMO**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202370](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202370.zip) WF on remaining issues of FeMIMO | Samsung | Approved |
| [R4-2202413](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202413.zip) [Draft] LS on Rel-17 FeMIMO SRS related impact | Huawei | Approved  Nokia and Ericson had comment |

[**R4-2202370**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202370.zip) **WF on remaining issues of FeMIMO**

*Type: other For: Approval  
 Source: Samsung*

**Discussions:**

Qualcomm: we have concerns with making agreements to postpone the work in RAN4 instead of having this discussion in the plenary.

**Decision: Approved.**

[**R4-2202413**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202413.zip) **LS on Rel-17 FeMIMO SRS related impact**

*Type: LSout For: Approval  
 Source: Huawei*

**Decision: Approved.**

**GTW on Jan-25 for draft R4-2202413**

**Agreement:** RAN4 clarify the transient period between SRS resources is 15us. Not sending PUSCH and PUCCH between SRS resources will make the transmission inefficient.

------------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200276**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200276.zip) **Discussion on Impact to RF and RRM requirements with simultaneous reception**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2200534**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200534.zip) **Discussion on FR2 simultaneous reception in NR FeMIMO**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2200924**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200924.zip) **FR2 UE with the capability of simultaneous reception with different QCL Type-D RSs**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2201266**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201266.zip) **Requirements for Simultaneous Reception in FR2**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2201386**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201386.zip) **Discussion on Simultaneous reception with different QCL-type D**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribtuion, we discuss RRM requirements for simultaneous reception of channel/RS with different QCL type D

**Decision: Noted.**

#### 6.19.2 UE RF requirements

**[101-bis-e][131] NR\_feMIMO, AI 6.19.1, 6.19.2 – Taekhoon Kim**

[**R4-2200925**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200925.zip) **On RF requirements for further enhancements on MIMO**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

##### 6.19.2.1 Additional requirement for multi-panel reception

[**R4-2200568**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200568.zip) **View on additional FR2 FeMIMO multi-panel reception requirement**

*Type: discussion For: Approval  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Proposal: No need to specify additional reception requirement for multi-panel reception UE.

**Decision: Noted.**

[**R4-2200591**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200591.zip) **Discussion on Additional requirement for multi-panel reception**

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

**Decision: Noted.**

[**R4-2200962**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200962.zip) **Further discussion on impact of multi-panel reception requirements**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201957**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201957.zip) **RF requirements for further enhancements on MIMO**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

##### 6.19.2.2 Impact of MPE enhancements

[**R4-2200301**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200301.zip) **On per beam based P-MPR reporting in FeMIMO**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2200592**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200592.zip) **Discussion on Impact of MPE enhancements**

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

**Decision: Noted.**

[**R4-2200963**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200963.zip) **Further discussion on impact of MPE requirements**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

##### 6.19.2.3 SRS related impact

[**R4-2200342**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200342.zip) **Two sets of SRS sets and GP needed in between**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

#### 6.19.3 RRM core requirements

##### 6.19.3.1 Unified TCI for DL and UL

##### 6.19.3.2 Inter-cell beam management

##### 6.19.3.3 Others

#### 6.19.4 UE Demodulation and CSI requirements

### 6.20 Support of reduced capability NR devices

#### 6.20.1 General

**[101-bis-e][132] NR\_RedCap, AI 6.20.1, 6.20.2 – Chunhui Zhang**

[**R4-2202232**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202232.zip) **Email discussion summary for [101-bis-e][132] NR\_RedCap**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202332**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202332.zip) **(from** [**R4-2202232**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202232.zip)**).**

[**R4-2202332**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202332.zip) **Email discussion summary for [101-bis-e][132] NR\_RedCap**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Return to.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202371](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202371.zip) WF on the RedCap RF | Ericsson | Noted |

**Existing tdocs**

|  |  |  |  |
| --- | --- | --- | --- |
| **CR/TP number** | **Title** | **Status** | **Comment** |
| [R4-2202372](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202372.zip) (Rev of [R4-2201709](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201709.zip)) | CR on RedCap UE FR1-TX | Not pursued |  |
| [R4-2202373](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202373.zip) (Rev of [R4-2201250](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201250.zip)) | Draft CR for 38.101-1 to introduce RF requirements for RedCap UE | Not pursued | To be revise , RX part Merge with [R4-2201710](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201710.zip) |

[**R4-2202371**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202371.zip) **WF on the RedCap RF**

*Type: other For: Approval  
 Source: Ericsson*

**Decision: Noted.**

**GTW on Jan-24**

**Topic #2: RedCap UE operating bands**

**Discussions:**

Moderator: can we use Mediatek proposal as way forward?

CMCC: the proposal is not aligned with RAN agreement.

Huawei: agree with CMCC. We cannot create the new table. This is similar with Ericsson original one. Creating table will increase the mainatenance work in future.

VIVO: share the similar view as CMCC and Huawei. SUL should not be precluded.

Mediatek: We think the proposal reflects the RAN agreement and do not preclude the features.

**Issue 3-1-1-1: Justification to make exception bands**

* 1. Option 1: improve production yield
  2. Option 2: high insertion loss of single branch filter

**Agreement:** agree on Option 2

**Issue 3-1-1: HD-FDD REFSESN**

* Proposals
* Option 1a: per band exception and selected band for different scaling factor as below: [Apple]
* The HD-FDD 5MHz REFSENS tightening from FD-FDD is proposed as in the table below.

|  |  |  |
| --- | --- | --- |
| FD-FDD 5MHz REFSENS | HD-FDD REFSENS Tightening | Bands |
| ≤ -100 dBm | 0 dB | n1, n18, n24, n70 |
| > -100 dBm and ≤ -99 dBm | 0.5 dB | n30, n65, n66, n74 |
| > -99 dBm | 0.8 dB | n2, n3, n5, n7, n8, n12, n13, n14, n20, n25, n26, n28, n71, n85 |

* HD-FDD REFSENS for channel BW wider than 5 MHz can be calculated by REFSENS(5MHz) + 10log10(n x NRB/25), where NRB is the maximum transmission bandwidth configuration with n=1 for 15kHz SCS and n=2 for 30kHz SCS.
* Option 1b: per band exception and selected band for different scaling factor as below: [Hawei]
  + There is no need to specify the exceptional value ΔRIB,HD for NR band n2, n3, n5, n8, n13, n20, n25, n26, n28.
  + Exceptional value ΔRIB,HD can be specified as zero for NR band n91, n92, n93 and n94.
* Option 2: generic scaling factor cover all bands without exception per band
  + A REFSENS relaxation of 2.0 dB for HD-FDD referred to the values in TS 38.101-1 Table 7.3.2-1, shall be used for RedCap supporting single RX branch.
  + For RedCap supporting 2 RX HD-FDD the REFSENS values shall be tightened 0.5 dB compared to TS 38.101-1 Table 7.3.2-1.
* Option 3: TBA
* Recommended WF
  + TBA

**Discussions:**

Mediatek: this framework is preferrable. The value needs further checking.

**Agreement:** Agree on the framework of Option 1a

* Further check the values in Option 1a
* FFS: Exceptional value ΔRIB,HD can be specified as zero for NR band n91, n92, n93 and n94.

Ericsson: for FFS part, encouarge companies to think aobut whether HD-FDD should be applicable to **NR band n91, n92, n93 and n94**

**Topic #5: FR2 aspects**

**Issue 5-1: New power class for RedCap UE**

* Proposals
  + Option 1: For power class for industry sensor
    - Option 1a: Define new power class
    - Option 1b: Define the same power class with wearable RedCap UE
    - Option 1c: TBA
    - Optoin 1d: Reuse PC5 power class
  + Option 2: For power class for Video surveillance
    - Option 2a: Define new power class
    - Option 2b: Reuse the PC5 power class
    - Option 3c: TBA
  + Option 3: For power class for wearable UE
    - Option 3a: Define new power class
    - Option 3b: Define the same power class with industry sensor RedCap UE
    - Option 3c: TBA
* Recommended WF
  + TBA

**Discussions:**

Mediatek: What does ”reuse” means?

Sony/Qualcomm: reuse the exact the requirements.

Huawei: for industry sensor, we can define the new power class to relax the requirements.

Ericsson: there are some concern from 2nd round even if we reduce the power. We can concentrate on wearable to combine the reduced power from indurstry sensor.

Qualcomm: Are we thinking that there is future wearable UE with power to equal to that of industry sensor.

Sony: we could define one lower power class for both wearable and industry use case.

ZTE: if we reuse PC5, we violate the purpose of WID of reduction of branch.

Qualcomm: We should look at other means to cover the cost reduction, e.g., not supporting CA and DC.

Mediatek: does it mean two –layer MIMO for DL.

Ericsson: Single branch or polarization receiver. We can skip for FR2 part. We have only one meeting left. From UE vendor, there is gain for reducing power reduction.

Sony: agree with Qualcomm. We need dual polarized and include baseband. Whether to use MIMO or not need further discussion. If we do any change for existing power class, i.e., a new power class, we cannot finalize the work timely and thsu we should concentrate on one power class.

Qualcomm: we does not mandate two-layer.

**Agreement:**

* For power class for FWA device
  + Reuse the PC5 power class
* For power class for wearable UE and additional industry sensor use case
  + FFS whether to define the new power class for wearable UE and additional industry sensor separately, or define one power class for both
  + To limit the number of additional RF requirements, focus on the following three requirements
    - Minimum EIRP
    - Minimum EIS
    - Spherical coverage
* For all the devices above, 2-layer DL MIMO is not mandated and FFS whether to define 2-layer MIMO performance requirements for them.

**Sub-topic 5-2 (FR2 Redcap UE for Industry sensor)**

**Issue 5-2-1-1: Reducing the# of Rx branch**

Option 1: No

Option 2a: yes, single pol receiving and single receiver in baseband

Option 2b: yes, dual pol receiving but single receiver in baseband

**Agreement: not reduce the number of Rx branch for FR2**

**Sub-topic 5-3 (FR2 Redcap UE for wearables)**

**Issue 5-3-1-1: Reducing the# of Rx branch**

* Option 1: No
* Option 2a: yes, single pol receiving and single receiver in baseband
* Option 2b: yes, dual pol receiving but single receiver in baseband

**Agreement:** Agree on Option 1.

**Issue 5-3-1-2: For Min EIRP and array arrangement for wearable use case RedCap UE (fine tuning needed)**

* Option 1: 20log(2) = 6 dB lower than FR2 PC5, reduce to half array size of PC3 with array arrangement of (4x1 single panel or 2x1 dual panel, dual pol),
* Option 2: 20log(4) = 12 dB lower than FR3 PC5, reduce to quarter array size of PC3 (2x1 single panel, dual pol)
* Option 3: 3 dB lower than FR3 PC5, single pol receiver (4x1 single panel, single pol)
* Option 4: Other, FFS

**Agreement: For Min EIRP and array arrangement for wearable use case** RedCap UE, agree on

* 20log(2) = 6 dB lower than FR2 PC3, reduce to half array size of PC3 with array arrangement of (4x1 single panel or 2x1 dual panel, dual pol),

--------------------------------------------------------------------------------------------------------------------------------

[**R4-2200407**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200407.zip) **On NR RedCap general BS demodulation performance requirements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution, we have provided an overview of RedCap-related features and scenarios. We see that there is no potential impact on the BS demodulation performance.

**Decision: Noted.**

#### 6.20.2 UE RF requirements

**[101-bis-e][132] NR\_RedCap, AI 6.20.1, 6.20.2 – Chunhui Zhang**

##### 6.20.2.1 FR1

[**R4-2201250**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201250.zip) **Draft CR for 38.101-1 to introduce RF requirements for RedCap UE**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon, CMCC, OPPO, CBN*

RX part Merge with [R4-2201710](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201710.zip)

**Decision: Revised to** [**R4-2202373**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202373.zip) **(from** [**R4-2201250**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201250.zip)**).**

[**R4-2202373**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202373.zip) **Draft CR for 38.101-1 to introduce RF requirements for RedCap UE**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon, CMCC, OPPO, CBN*

**Decision: Not pursued.**

[**R4-2201988**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201988.zip) **RedCap general UE RF requirements aspects**

*Type: discussion For: Discussion  
 Source: MediaTek (Chengdu) Inc.*

**Decision: Noted.**

###### 6.20.2.1.1 Tx requirements (power class)

[**R4-2200496**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200496.zip) **RedCap UL Architecture and power class**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

A number of power class agreements were achieved in last meeting and, in this contribution, we further discuss the potential for PC2 implementations and preferred approach.

**Decision: Noted.**

[**R4-2201279**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201279.zip) **R17 FR1 Redcap UE**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2201301**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201301.zip) **Discussion on Tx requirements for FR1 Redcap UE**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201345**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201345.zip) **On FR1 Redcap UE 2Tx**

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

**Decision: Noted.**

[**R4-2201709**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201709.zip) **CR on RedCap UE FR1-TX**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR on general and Tx part for RedCap UE is introduced

Merge TX part with [R4-2201250](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201250.zip)

**Decision: Revised to** [**R4-2202372**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202372.zip) **(from** [**R4-2201709**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201709.zip)**).**

**[R4-2202372](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202372.zip) CR on RedCap UE FR1-TX**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR on general and Tx part for RedCap UE is introduced

**Decision: Not pursued.**

###### 6.20.2.1.2 Rx requirements (REFSENS, etc)

[**R4-2200442**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200442.zip) **RedCap UE HD-FDD REFSENS requirements**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2200472**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200472.zip) **Considerations on REFSENS for RedCap FR1**

*Type: other For: Decision  
 Source: Sony*

**Decision: Noted.**

[**R4-2201248**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201248.zip) **Discussion on FR1 REFSENS requirements for RedCap UE**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201344**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201344.zip) **Further discussion on FR1 RedCap related requirements**

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

**Decision: Noted.**

[**R4-2201710**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201710.zip) **CR on RedCap UE FR1-RX**

*Type: draftCR For: Endorsement  
 38.101-1 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR on general and RX part for RedCap UE is introduced

**Decision: Merged (with** [**R4-2202373**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202373.zip)**).**

##### 6.20.2.2 FR2

[**R4-2201249**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201249.zip) **Discussion on FR2 RF requirements for RedCap UE**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

###### 6.20.2.2.1 Tx requirements (power class, UE type)

[**R4-2200473**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200473.zip) **Considerations on RF architecture for RedCap FR2**

*Type: other For: Decision  
 Source: Sony*

**Decision: Noted.**

[**R4-2200571**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200571.zip) **View on FR2 RedCap**

*Type: discussion For: Approval  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Proposal1: For FR2 wearable, use “watch” as the typical assumption for requirement discussion.

Proposal2: Throughput, battery life, and UE implementation feasibility shall be considered together before specifying FR2 requirements for wearable.

**Decision: Noted.**

[**R4-2200978**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200978.zip) **Discussion on FR2 RedCap Tx requirements**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201302**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201302.zip) **Discussion on Tx requirements for FR2 Redcap UE**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201346**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201346.zip) **Discussion on FR2 RedCap UE**

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

**Decision: Noted.**

[**R4-2201713**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201713.zip) **RF impact On FR2 RedCap**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on the FR2 RedCap RF impact.

**Decision: Noted.**

[**R4-2201972**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201972.zip) **On Redcap FR2-1 UE Tx RF assumptions**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

Discussion on Tx topology, benefit of a lower TRP limit for a UE that is expected at the outset to be a low power device

**Decision: Noted.**

###### 6.20.2.2.2 Rx requirements

[**R4-2200979**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200979.zip) **Discussion on FR2 RedCap Rx requirements**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201303**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201303.zip) **Discussion on Rx requirements for FR2 Redcap UE**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2201712**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201712.zip) **On single polarization receiving on FR2 RedCap UE**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on single polarization receiving

**Decision: Noted.**

[**R4-2201971**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201971.zip) **On Redcap FR2-1 UE Rx RF assumptions**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

Discussion on whether a dual pol. receiver is appropriate for a RedCap UE

**Decision: Noted.**

##### 6.20.2.3 Others

[**R4-2201711**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201711.zip) **RedCap FR1 Operating band n79**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on Redcap UE band n79

**Decision: Noted.**

#### 6.20.3 RRM core requirements

##### 6.20.3.1 Impacts from UE complexity reduction

###### 6.20.3.1.1 General

###### 6.20.3.1.2 Mobility requirements

###### 6.20.3.1.3 Timing requirements

###### 6.20.3.1.4 Signalling characteristics

###### 6.20.3.1.5 Measurement procedure

##### 6.20.3.2 Extended DRX enhancements

##### 6.20.3.3 RRM measurement relaxations

##### 6.20.3.4 Others

#### 6.20.4 UE demodulation and CSI requirements

### 6.21 Positioning enhancements for NR

#### 6.21.1 General

#### 6.21.2 RRM core requirements

##### 6.21.2.1 UE Rx/Tx and/or gNB Rx/Tx timing delay mitigation

##### 6.21.2.2 Latency reduction of positioning measurement

##### 6.21.2.3 Measurement in RRC\_INACTIVE state

##### 6.21.2.4 Impact on existing UE positioning and RRM requirements

##### 6.21.2.5 Enhancements of A-GNSS positioning

##### 6.21.2.6 Others

### 6.22 Multi-Radio Dual-Connectivity enhancements

#### 6.22.1 General

#### 6.22.2 RRM core requirements

##### 6.22.2.1 Efficient activation/de-activation mechanism for SCells

##### 6.22.2.2 Efficient activation/de-activation mechanism for one SCG

##### 6.22.2.3 Conditional PSCell change and addition

##### 6.22.2.4 Others

### 6.23 Enhanced IIoT and URLLC support

#### 6.23.1 General

#### 6.23.2 RRM core requirements

##### 6.23.2.1 Propagation delay compensation enhancements

##### 6.23.2.2 Reference point for Te requirements

##### 6.23.2.3 Others

### 6.24 NR Sidelink Relay

#### 6.24.1 General

#### 6.24.2 RRM core requirements

### 6.25 NR small data transmissions in INACTIVE state

#### 6.25.1 General and work plan

#### 6.25.2 RRM core requirements

### 6.26 Support for Multi-SIM devices for LTE/NR

#### 6.26.1 General and work plan

#### 6.26.2 RRM core requirements

## 7 Rel-17 Study Items for NR

### 7.1 Study on enhanced test methods for FR2 in NR

#### 7.1.1 Maintenance on objectives 1~6

#### 7.1.2 OTA test methods for UE RF, RRM and demodulation for 52.6~71GHz

##### 7.1.2.1 General

###### 7.1.2.1.1 Test system assumption

###### 7.1.2.1.2 UE types

###### 7.1.2.1.3 MU assessment

###### 7.1.2.1.4 Others

##### 7.1.2.2 Test methodology for UE RF

##### 7.1.2.3 Test methodology for RRM

##### 7.1.2.4 Test methodology for UE demodulation and CSI

### 7.2 Study on Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths

**[101-bis-e][133] FS\_NR\_eff\_BW\_util, AI 7.2 – Esther Sienkiewicz**

[**R4-2202233**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202233.zip) **Email discussion summary for [101-bis-e][133] FS\_NR\_eff\_BW\_util**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202333**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202333.zip) **(from** [**R4-2202233**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202233.zip)**).**

**[R4-2202333](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202333.zip) Email discussion summary for [101-bis-e][133] FS\_NR\_eff\_BW\_util**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Return to.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202380](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202380.zip) TP to TR 38.844: Clause 6.7.x RAN4 standard impact identification | Qualcomm | Noted |
| [R4-2202381](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202381.zip) TP to TR 38.844: Clause 6.1.2 Signalling and configuration aspects | China Telecom | Approved |
| [R4-2202382](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202382.zip) TP to TR 38.844: Clause 7 | Qualcomm | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comment** |
| [R4-2201486](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201486.zip) | TP to TR 38.844: Section 6.1.2 Signalling for Larger Channel BW Approach | Ericsson | Noted | [R4-2202374](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202374.zip) is withdrawn |
| [R4-2202416](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202416.zip) (Rev of [R4-2202046](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202046.zip)) | TP for TR 38.844: Proposal for n12 and n85 | T-Mobile USA | Approved |  |
| [R4-2202375](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202375.zip) (Rev of [R4-2201885](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201885.zip)) | TP to TR 38.844: Wider CBW method | Intel Corporation | Approved |  |
| [R4-2202376](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202376.zip) (Rev of [R4-2200912](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200912.zip)) | TP with corrections for overlapping channels from the network | Apple | Approved |  |
| [R4-2202377](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202377.zip) (Rev of [R4-2201511](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201511.zip)) | On overlapping CBWs from Network perspective | Huawei, HiSilicon | Approved |  |
| [R4-2202378](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202378.zip) (Rev of [R4-2201993](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201993.zip)) | TP to TR 38.844: on combined UE CBW (one cell) – signalling aspects | Nokia, Nokia Shanghai Bell | Approved | Outcome to be captured after GTW |
| [R4-2202379](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202379.zip) (Rev of [R4-2201487](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201487.zip)) | TP to TR 38.844: Section 6.1.2 Signalling for Overlapping CA Approach | Ericsson | Approved |  |

**GTW on Jan-25**

**R4-2202375 (Rev of R4-2201885)**

There are agreed modifications on the paragraph below Figure 6.1.3-1, which are highlighted by red

*For the Figure 6.1.3-2, the scenario when the WiderCBW filter can’t protect against blockers is when the irregular spectrum block ~~operating band~~ is more narrow than the CBW filter and there are blockers on both sides. In this case the UE CBW filter will necessarily extend beyond the wanted signal RBs.*

*NOTE: for the text above multi-operator scenario can be considered further in this example.*

Conclusion: with those modifications, R4-2202375 is agreeable.

**R4-2202378 (Rev of R4-2201993)**

**Discussions:**

There is discussion on whether it is possible that the UE dedicated channel bandwidth can be larger than the carrier bandwidth configured by SIB1. Nokia, T-Mobile USA and other companies thought that it is possible based on RAN2 response. Ericsson had different view. After discussion, as a compromise, R4-2202378 was approved.

Ericsson: It is impossible to configure UE with a dedicated channel bandwidth wider than/partially outside the carrier bandwidth configured in SIB1.

Ericsson had the same comment as above to [R4-2202382](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202382.zip), but as the compromise can accept it.

--------------------------------------------------------------------------------------------------------------------------------------

[**R4-2202380**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202380.zip) **TP to TR 38.844: Clause 6.7.x RAN4 standard impact identification**

*Type: draft TR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm*

**Decision: Noted.**

[**R4-2202381**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202381.zip) **TP to TR 38.844: Clause 6.1.2 Signalling and configuration aspects**

*Type: draft TR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: China Telecom*

**Decision: Approved.**

[**R4-2202382**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202382.zip) **TP to TR 38.844: Clause 7**

*Type: draft TR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm*

**Decision: Approved.**

#### 7.2.1 General and TR

[**R4-2201485**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201485.zip) **draft TR 38.844 v0.0.6**

*Type: draft TR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

draft TR 38.844 v0.0.6 with implemented TPs from RAN4 #101-e.

**Decision: Agreed.**

[**R4-2201794**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201794.zip) **Revision on TR 38.344 Section 6.2.3**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Wistron Telecom AB*

**Decision: Approved.**

[**R4-2202046**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202046.zip) **TP for TR 38.844: Proposal for n12 and n85**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: T-Mobile USA*

**Decision: Revised to** [**R4-2202416**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202416.zip) **(from** [**R4-2202046**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202046.zip)**).**

**[R4-2202416](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202416.zip) TP for TR 38.844: Proposal for n12 and n85**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: T-Mobile USA*

**Decision: Approved.**

#### 7.2.2 Evaluation of use of larger channel bandwidths than licensed bandwidth

[**R4-2200913**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200913.zip) **Discussion on the widerCBW approach**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision: Noted.**

[**R4-2201509**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201509.zip) **On the applicability of wider channel bandwidth**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

##### 7.2.2.1 Channel filter assumptions and RB blanking with impacts on UE (ACS, blocking)

[**R4-2200911**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200911.zip) **Further input on performance when using the next larger channel**

*Type: pCR For: Decision  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Apple*

**Decision: Withdrawn.**

##### 7.2.2.2 Signaling and configuration (RAN1/RAN2 impacts) aspects

[**R4-2201486**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201486.zip) **TP to TR 38.844: Section 6.1.2 Signalling for Larger Channel BW Approach**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Based upon the LS Reply from RAN2 the following is a text proposal to include inputs for completeness.

**Decision: Noted.**

[**R4-2202374**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202374.zip) **TP to TR 38.844: Section 6.1.2 Signalling for Larger Channel BW Approach**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Based upon the LS Reply from RAN2 the following is a text proposal to include inputs for completeness.

**Decision: Withdrawn.**

[**R4-2201795**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201795.zip) **Further discussion on the WiderCBW approach**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Decision: Noted.**

[**R4-2201880**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201880.zip) **Views on signalling for Wider CBW method**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2201881**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201881.zip) **Views on Signalling for Overlapping CBW from Network Perspective**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

##### 7.2.2.3 Other aspects such as detailed solution, complexity, legacy UE, etc

[**R4-2201995**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201995.zip) **On wider CBW open issues**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

#### 7.2.3 Evaluation of use of overlapping UE channel bandwidths

##### 7.2.3.1 Overlapping CBWs from network perspective

[**R4-2200912**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200912.zip) **Further corrections to the solution based on overlapping channels from the network perspective**

*Type: pCR For: Decision  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2202376**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202376.zip) **(from** [**R4-2200912**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200912.zip)**).**

[**R4-2202376**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202376.zip) **Further corrections to the solution based on overlapping channels from the network perspective**

*Type: pCR For: Decision  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Apple*

Merge [R4-2201510](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201510.zip) into revision

**Decision: Approved.**

[**R4-2201510**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201510.zip) **Signaling aspect for overlapping from network perspective**

*Type: pCR For: Approval  
 38.844 v0.0.5 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Merged (with** [**R4-2202376**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202376.zip)**).**

[**R4-2201511**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201511.zip) **On overlapping CBWs from Network perspective**

*Type: pCR For: Approval  
 38.844 v0.0.5 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2202377**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202377.zip) **(from** [**R4-2201511**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201511.zip)**).**

**[R4-2202377](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202377.zip) On overlapping CBWs from Network perspective**

*Type: pCR For: Approval  
 38.844 v0.0.5 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2201882**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201882.zip) **Views on BS TX Channel BW Filters for Overlapping CBW**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

##### 7.2.3.2 Combined UE CBWs (one cell)

###### 7.2.3.2.1 Signaling and configuration (RAN1/RAN2 impacts) aspects

[**R4-2201488**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201488.zip) **TP to TR 38.844: Section 6.1.2 Signalling for Overlapping Channel BW from UE perspective Approach**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Based upon the LS Reply from RAN2 the following is a text proposal to include inputs for completeness.

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

[**R4-2201883**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201883.zip) **Views on Overlapping UE CBWs method**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2201993**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201993.zip) **TP to TR 38.844: on combined UE CBW (one cell) – signalling aspects**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Revised to** [**R4-2202378**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202378.zip) **(from** [**R4-2201993**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201993.zip)**).**

**[R4-2202378](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202378.zip) TP to TR 38.844: on combined UE CBW (one cell) – signalling aspects**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Approved.**

###### 7.2.3.2.2 Other aspects such as detailed solution, complexity, legacy UE, etc

[**R4-2201994**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201994.zip) **On combined UE CBW (one cell) gNB channel filter and UE requirements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

##### 7.2.3.3 Overlapping CA (two cells)

###### 7.2.3.3.1 Signaling and configuration (RAN1/RAN2 impacts) aspects

[**R4-2201487**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201487.zip) **TP to TR 38.844: Section 6.1.2 Signalling for Overlapping CA Approach**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Based upon the LS Reply from RAN2 the following is a text proposal to include inputs for completeness.

**Decision: Revised to** [**R4-2202379**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202379.zip) **(from** [**R4-2201487**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201487.zip)**).**

[**R4-2202379**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202379.zip) **TP to TR 38.844: Section 6.1.2 Signalling for Overlapping CA Approach**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Based upon the LS Reply from RAN2 the following is a text proposal to include inputs for completeness.

**Decision: Approved.**

[**R4-2201884**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201884.zip) **Views on Overlapping CA method**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

###### 7.2.3.3.2 Other aspects such as detailed solution, complexity, legacy UE, etc

[**R4-2201333**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201333.zip) **TP to TR 38.844: Section 6.5.1 Overlapping CA (two cells)**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

This TP is sugegsting text update to the overlapping CA / RAN1-RAN2 impact section for completeness

**Decision: Noted.**

[**R4-2201512**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201512.zip) **RF requirements for overlapping CA**

*Type: pCR For: Approval  
 38.844 v0.0.5 CR- rev Cat: (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

##### 7.2.3.4 Overall method comparisons

[**R4-2200817**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200817.zip) **Discussion on overall method comparisons for irregular bandwidth**

*Type: discussion For: Decision  
 Source: CMCC*

**Decision: Noted.**

[**R4-2200921**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200921.zip) **Considerations for wider CBW and overlapping UE CBW solutions**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision: Noted.**

[**R4-2201264**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201264.zip) **Comparison of Different Schemes**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2201492**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201492.zip) **Comparison Between Methods for Irregular BWs**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution further discusses the evaluation matrix introduced several meetings as a means to evaluate each method.

**Decision: Noted.**

[**R4-2201513**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201513.zip) **Overall method comparisons**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2201885**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201885.zip) **TP to TR 38.844: Wider CBW method**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Intel Corporation*

**Decision: Revised to** [**R4-2202375**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202375.zip) **(from** [**R4-2201885**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201885.zip)**).**

[**R4-2202375**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202375.zip) **TP to TR 38.844: Wider CBW method**

*Type: pCR For: Approval  
 38.844 v0.0.6 CR- rev Cat: (Rel-17)  
  
 Source: Intel Corporation*

**Decision: Approved.**

[**R4-2201992**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201992.zip) **Irregular bandwidth – comparison between options**

*Type: discussion For: Discussion  
 Source: MediaTek (Chengdu) Inc.*

**Decision: Noted.**

### 7.3 Study on band combination handling in RAN4

**[101-bis-e][134] FS\_BC\_handling, AI 7.3 – Zhifeng Ma**

[**R4-2202234**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202234.zip) **Email discussion summary for [101-bis-e][134] FS\_BC\_handling**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202334**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202334.zip) **(from** [**R4-2202234**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202234.zip)**).**

**[R4-2202334](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202334.zip) Email discussion summary for [101-bis-e][134] FS\_BC\_handling**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202383](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202383.zip) WF on simplification for DC configuration table in Rel-18 | ZTE Corporation | Approved |
| [R4-2202384](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202384.zip) TP to TR38.862 on introduction to BCS4 and BCS5 | ZTE Corporation, Xiaomi | Withdrawn |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| [R4-2200613](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200613.zip) | TR 38.862 V050 Band combination handling | ZTE Corporation | For email approval |  |
| [R4-2202385](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202385.zip) (Rev of [R4-2200618](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200618.zip)) | TP to TR38.862 on introduction to BCS4 and BCS5 | ZTE Corporation, Xiaomi | Approved |  |
| [R4-2200616](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200616.zip) | TP to TR38.862 on simplification for DC configuration table in Rel-18 | ZTE Corporation | Noted |  |

[**R4-2202383**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202383.zip) **WF on simplification for DC configuration table in Rel-18**

*Type: other For: Approval  
 Source: ZTE*

**Decision: Approved.**

[**R4-2202384**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202384.zip) **TP to TR38.862 on introduction to BCS4 and BCS5**

*Type: draft TR For: Approval  
 38.862 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Withdrawn.**

#### 7.3.1 General and TR

[**R4-2200613**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200613.zip) **TR 38.862 V050 Band combination handling**

*Type: draft TR For: Approval  
 38.862 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Abstract:**

This paper is to provide TR 38.862 V050 for band combination handling to include the approved TP in this meeting.

**Decision:** The document was **for email approval**.

[**R4-2200614**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200614.zip) **Motivation on further study on band combination handling in Rel-18**

*Type: discussion For: Decision  
 Source: ZTE Corporation*

**Abstract:**

In this paper, we’d like to provide our opinions on the next phase of study for band combination handling in Rel-18.

**Decision: Noted.**

[**R4-2200615**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200615.zip) **Draft New SID on further study on band combination handling in RAN4**

*Type: SID new For: Discussion  
 Source: ZTE Corporation*

**Abstract:**

In this paper, we’d like to provide a draft SID for further study on band combination handling in Rel-18.

**Decision: Noted.**

#### 7.3.2 Information of rules and guidelines of specifying band combinations (TP format, notation, band configurations, BCS)

[**R4-2200553**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200553.zip) **Adding contributions not for block approval**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we provide a status of the band combinations not for block approval and the related frameworks and formulate proposals to include in rules and guidelines of specifying band combinations TR for these cases.

**Decision: Noted.**

[**R4-2200618**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200618.zip) **TP to TR38.862 on introdution to BCS4 and BCS5**

*Type: pCR For: Approval  
 38.862 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation, Xiaomi*

**Abstract:**

In this proposal, a TP to capture the related agreements and some guidelines for BCS4/5 definition is proposed.

**Decision: Revised to** [**R4-2202385**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202385.zip) **(from** [**R4-2200618**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200618.zip)**).**

**[R4-2202385](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202385.zip) TP to TR38.862 on introdution to BCS4 and BCS5**

*Type: pCR For: Approval  
 38.862 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation, Xiaomi*

**Abstract:**

In this proposal, a TP to capture the related agreements and some guidelines for BCS4/5 definition is proposed.

**Decision: Approved.**

###### 7.3.2.1.1 Signaling and configuration (RAN1/RAN2 impacts) aspects

###### 7.3.2.1.2 Other aspects such as detailed solution, complexity, legacy UE, etc

#### 7.3.3 Improving RAN4 specification structures and reducing redundant contents

##### 7.3.3.1 Optimization of delta TIB and delta RIB

[**R4-2200617**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200617.zip) **Band category for rule based approach for delta TIB and RIB**

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

**Abstract:**

In this paper we discuss the band category for rule based approach for delta TIB and RIB.

**Decision: Noted.**

[**R4-2200705**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200705.zip) **Statistics of dTib and dRib**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

##### 7.3.3.2 Optimizations for other redundancy

[**R4-2200616**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200616.zip) **TP to TR38.862 on simplification for DC configuration table in Rel-18**

*Type: pCR For: Approval  
 38.862 v0.4.0 CR- rev Cat: (Rel-17)  
  
 Source: ZTE Corporation*

**Abstract:**

In this paper, we would like to further discuss the possible optimizations for DC configuration table on the basis of [3] in the timeframe of Rel-18.

**Decision: Noted.**

### 7.4 Optimizations of pi/2 BPSK uplink power in NR

**[101-bis-e][135] FS\_NR\_Opt\_pi2BPSK, AI 7.4 – Chan Fernando**

[**R4-2202235**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202235.zip) **Email discussion summary for [101-bis-e][135] FS\_NR\_Opt\_pi2BPSK**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202335**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202335.zip) **(from** [**R4-2202235**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202235.zip)**).**

**[R4-2202335](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202335.zip) Email discussion summary for [101-bis-e][135] FS\_NR\_Opt\_pi2BPSK**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202386](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202386.zip) WF on optimizations of Pi/2 BPSK UL power in NR and agreements | Huawei, HiSilicon, Qualcomm Inc., Nokia | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2202387](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202387.zip) (Rev of [R4-2200507](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200507.zip)) | TP for Pi/2 BPSK study item for TR38.868 | Qualcomm Incorporated | Approved |  |

[**R4-2202386**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202386.zip) **WF on optimizations of Pi/2 BPSK UL power in NR and agreements**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, Qualcomm Inc., Nokia*

**Decision: Approved.**

#### 7.4.1 General and TR

[**R4-2200506**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200506.zip) **TR skeleton for SI on optimizations of pi\_2 BPSK uplink power**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Workplan for ‘Optimizations of pi/2 BPSK uplink power in NR’ is presented

**Decision: Approved.**

[**R4-2200507**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200507.zip) **TP for Pi/2 BPSK study item for TR38.868**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Presents items from company contributions that are to be included in TR38.868

**Decision: Revised to** [**R4-2202387**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202387.zip) **(from** [**R4-2200507**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200507.zip)**).**

**[R4-2202387](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202387.zip) TP for Pi/2 BPSK study item for TR38.868**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Presents items from company contributions that are to be included in TR38.868

**Decision: Approved.**

#### 7.4.2 UE Tx power and related issues

[**R4-2200443**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200443.zip) **MPR region proposal for PI/2 BPSK power boosting**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2200727**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200727.zip) **Transmitter performance for pi/2 BPSK with spectral shaping**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2200954**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200954.zip) **Discussion on pi/2 BPSK UE Tx power**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision: Noted.**

[**R4-2201837**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201837.zip) **On the remaining issues for Pi/2 BPSK Optimisations**

*Type: discussion For: Agreement  
 Source: Huawei,HiSilicon*

**Decision: Noted.**

[**R4-2201879**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201879.zip) **Pi/2 BPSK combined Tx and Rx Link performance**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2202029**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202029.zip) **PC2 Pi/2 BPSK Power Boosting Measurements**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

#### 7.4.3 Evaluation of filter requirements applicable to identified new UE power capability

[**R4-2200511**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200511.zip) **Spectral flatness requirements**

*Type: discussion For: Approval  
 38.101-2 v CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Discussion on timing for SL transmission in Rel-17

**Decision: Noted.**

[**R4-2200728**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200728.zip) **Shaping filter characteristics including transmitter and link performance**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

#### 7.4.4 Link level simulations

[**R4-2200726**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200726.zip) **Receiver performance for pi/2 BPSK with spectral shaping**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2200955**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200955.zip) **Link level Simulation results for pi/2 BPSK**

*Type: other For: Discussion  
 Source: vivo*

**Decision: Noted.**

#### 7.4.5 SAR analysis

#### 7.4.6 Identify RAN4 requirements

[**R4-2200729**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200729.zip) **Identify?potential changes for?RAN4 requirements**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

## 8 Rel-17 Work Items for LTE

### 8.1 LTE inter-band Carrier Aggregation for 2 bands DL with 1 band UL

**[101-bis-e][136] LTE\_Baskets, AI 8.1, 8.2, 8.3, 8.4, 8.5 – Per Lindell**

[**R4-2202236**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202236.zip) **Email discussion summary for [101-bis-e][136] LTE\_Baskets**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Return to.**

#### 8.1.1 UE RF with harmonic, close proximity and isolation issues

#### 8.1.2 UE RF without specific issues

[**R4-2200349**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200349.zip) **TP to TR 36.717-02-01: CA\_2-38**

*Type: pCR For: Approval  
 36.717-02-01 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CA\_2A-38A is introduced.

**Decision: Approved.**

[**R4-2201911**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201911.zip) **TP for TR 36.717-02-01 to include CA\_30A-48A**

*Type: pCR For: Approval  
 36.717-02-01 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 36.717-02-01 to include CA\_30A-48A

**Decision: Revised to** [**R4-2202240**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202240.zip) **(from** [**R4-2201911**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201911.zip)**).**

[**R4-2202240**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202240.zip) **TP for TR 36.717-02-01 to include CA\_30A-48A**

*Type: pCR For: Approval  
 36.717-02-01 v0.6.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 36.717-02-01 to include CA\_30A-48A

**Decision: Approved.**

[**R4-2201912**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201912.zip) **TP for TR 36.717-02-02 to include CA\_30A-48A**

*Type: pCR For: Approval  
 36.717-02-02 v0.3.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 36.717-02-02 to include CA\_30A-48A

**Decision: Revised to** [**R4-2202241**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202241.zip) **(from** [**R4-2201912**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201912.zip)**).**

[**R4-2202241**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202241.zip) **TP for TR 36.717-02-02 to include CA\_30A-48A**

*Type: pCR For: Approval  
 36.717-02-02 v0.3.0 CR- rev Cat: (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

TP for TR 36.717-02-02 to include CA\_30A-48A

**Decision: Approved.**

[**R4-2201914**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201914.zip) **draft CR 36101 to add CA\_2A-2A-46E**

*Type: draftCR For: Endorsement  
 36.101 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 36101 to add CA\_2A-2A-46E

**Decision: Endorsed.**

### 8.2 LTE inter-band Carrier Aggregation for 3 bands DL with 1 band UL

#### 8.2.1 UE RF with harmonic, close proximity and isolation issues

#### 8.2.2 UE RF without specific issues

[**R4-2200350**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200350.zip) **TP to TR 36.717-03-01: CA\_2-7-38**

*Type: pCR For: Approval  
 36.717-03-01 v0.5.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CA\_2A-7A-38A and CA\_2A-7C-38A are introduced.

**Decision: Approved.**

[**R4-2200707**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200707.zip) **DraftCR 36.101: Addition CA\_5A-7A-7A-28A**

*Type: draftCR For: Endorsement  
 36.101 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Telefonica*

**Decision: Endorsed.**

[**R4-2201915**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201915.zip) **draft CR 36101 to add CA\_2A-2A-29A-66A**

*Type: draftCR For: Endorsement  
 36.101 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 36101 to add CA\_2A-2A-29A-66A

**Decision: Endorsed.**

### 8.3 LTE inter-band Carrier Aggregation for x bands DL (x=4, 5) with 1 band UL

#### 8.3.1 UE RF with 4 LTE bands CA

[**R4-2200708**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200708.zip) **DraftCR 36.101: Addition CA\_1A-5A-7A-7A-28A**

*Type: draftCR For: Endorsement  
 36.101 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Telefonica*

**Decision: Endorsed.**

[**R4-2200709**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200709.zip) **DraftCR 36.101: Addition CA\_3A-5A-7A-7A-28A**

*Type: draftCR For: Endorsement  
 36.101 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Telefonica*

**Decision: Endorsed.**

[**R4-2201913**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201913.zip) **draft CR 36101 to add CA\_2A-2A-29A-30A-66A**

*Type: draftCR For: Endorsement  
 36.101 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 36101 to add CA\_2A-2A-29A-30A-66A

**Decision: Endorsed.**

#### 8.3.2 UE RF with 5 LTE bands CA

[**R4-2200710**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200710.zip) **DraftCR 36.101: Addition CA\_1A-3A-5A-7A-7A-28A**

*Type: draftCR For: Endorsement  
 36.101 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Nokia, Telefonica*

**Decision: Endorsed.**

### 8.4 LTE inter-band Carrier Aggregation for 2 bands DL with 2 band UL

#### 8.4.1 UE RF with harmonic, close proximity and isolation issues

#### 8.4.2 UE RF without specific issues

### 8.5 LTE inter-band Carrier Aggregation for x bands DL (x= 3, 4, 5) with 2 band UL

[**R4-2200773**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200773.zip) **TR 36.717-03-02 v0.6.0 TR update for LTE-A inter-band CA for x bands (x=3,4,5) DL with 2 bands UL in Rel-17**

*Type: draft TR For: Approval  
 36.717-03-02 v0.5.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Draft TR to update CA band combinations in Rel-17

**Decision:** The document was **not treated**.

[**R4-2200775**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200775.zip) **Revised WID on LTE-A inter-band CA for x bands (x=3,4,5) DL with 2 bands UL in Rel-17**

*Type: WID revised For: Endorsement  
 Source: LG Electronics France*

**Abstract:**

Revised WID to update the status on the LTE-A CA band combinations in Rel-17

**Decision:** The document was **not treated**.

[**R4-2200776**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200776.zip) **Introduction of LTE-A inter-band CA for x bands (x=3,4,5) DL with 2 bands UL to TS36.101**

*Type: CR For: Agreement  
 36.101 v17.4.0 CR-5847 rev Cat: B (Rel-17)  
  
 Source: LG Electronics France*

**Abstract:**

Introduce new LTE-A CA band combinations in TS36.101 in rel-17

**Decision:** The document was **not treated**.

#### 8.5.1 UE RF with MSD

#### 8.5.2 UE RF without MSD

### 8.6 RRM for LTE CA basket WIs

#### 8.6.1 RRM Core (36.133)

#### 8.6.2 RRM Perf (36.133)

### 8.7 New WID on Additional LTE bands for UE category M1&M2 and/or NB1&NB2 in Rel-17

**[101-bis-e][116] LTE\_NR\_Other\_WI, AI 5.37, 5.38, 5.39, 8.7, 8.9.2, 8.9.3 – Jin Wang**

#### 8.7.1 RF requirements

#### 8.7.2 Others

[**R4-2201716**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201716.zip) **AMPR simulation results for Cat-M1 for B48**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

This paper presents results of A-MPR simulations for LTE Band 24 CAT-M1 UE with full-RB and sub-PRB allocation.

**Decision: Approved.**

### 8.8 Upper 700MHz A Block new E-UTRA band in US

**[101-bis-e][137] LTE\_Upper\_700MHz, AI 8.8 – Michal Szydelko**

[**R4-2202237**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202237.zip) **Email discussion summary for [101-bis-e][137] LTE\_Upper\_700MHz**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2202337**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202337.zip) **(from** [**R4-2202237**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202237.zip)**).**

[**R4-2202337**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202337.zip) **Email discussion summary for [101-bis-e][137] LTE\_Upper\_700MHz**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202389](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202389.zip) Draft CR to TS 36.101: Introduction of upper 700MHz A block into TS 36.101 | Puloli | Endorsed |
| [R4-2202388](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202388.zip) WF on the remaining RF issues for upper 700MHz A block E-UTRA band | Huawei | Approved |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Status** | **Comment** |
| [R4-2202390](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202390.zip) (Rev of [R4-2200765](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200765.zip)) | Work plan for LTE\_upper\_700MHz\_A WI | Puloli | Approved |  |
| [R4-2202391](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202391.zip) (Rev of [R4-2200771](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200771.zip)) | TP to TR 36.779: Frequency band arrangements and regulatory background | Puloli | Approved |  |
| [R4-2202392](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202392.zip) (Rev of [R4-2200772](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200772.zip)) | TP to TR 36.762: Operating band, channel bandwidths, channel numbering | Puloli | Approved |  |
| [R4-2202393](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202393.zip) (Rev of [R4-2200774](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200774.zip)) | TP to TR 36.762: Analysis on UE requirements for upper 700MHz A block in the US | Puloli | Approved |  |
| [R4-2202394](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202394.zip) (Rev of [R4-2200457](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200457.zip)) | DraftCR to 36.104: introduction of LTE upper 700MHz band | Baicells | Endorsed |  |
| [R4-2202395](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202395.zip) (Rev of [R4-2200458](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200458.zip)) | DraftCR to 37.104: introduction of LTE upper 700MHz band | Baicells | Endorsed |  |
| [R4-2202396](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202396.zip) (Rev of [R4-2200459](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200459.zip)) | DraftCR to 37.105: introduction of LTE upper 700MHz band | Baicells | Endorsed |  |
| [R4-2202397](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202397.zip) (Rev of [R4-2200460](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200460.zip)) | DraftCR to 38.104: introduction of LTE upper 700MHz band | Baicells | Endorsed |  |
| [R4-2202398](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202398.zip) (Rev of [R4-2201071](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201071.zip)) | TP to TR 36.779 on BS aspect issues | Baicells | Approved |  |

[**R4-2202388**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202388.zip) **WF on the remaining RF issues for upper 700MHz A block E-UTRA band**

*Type: other For: Approval  
 Source: Huawei*

**Decision: Approved.**

[**R4-2202389**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202389.zip) **Draft CR to TS 36.101: Introduction of upper 700MHz A block into TS 36.101**

*Type: CR For: Agreement  
 3x.1xx-0y v1x.x.0 CR- rev Cat: F (Rel-1x)*

*Source: Puloli*

**Decision: Endorsed.**

-------------------------------------------------------------------------------------------------------------------------------------------

[**R4-2200766**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200766.zip) **TR skeleton for TR 36.779**

*Type: draft TR For: Approval  
 36.779 v0.0.3 CR- rev Cat: (Rel-17)  
  
 Source: Puloli*

**Abstract:**

In the Copyright Notification section, update the copyright year to 2022. Revised based on comments received from RAN4#101-e

**Decision: Noted.**

#### 8.8.1 General

[**R4-2200765**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200765.zip) **Work plan for LTE\_upper\_700MHz\_A WI**

*Type: Work Plan For: Approval  
 Source: Puloli*

**Decision: Revised to** [**R4-2202390**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202390.zip) **(from** [**R4-2200765**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200765.zip)**).**

[**R4-2202390**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202390.zip) **Work plan for LTE\_upper\_700MHz\_A WI**

*Type: Work Plan For: Approval  
 Source: Puloli*

**Decision: Approved.**

[**R4-2200771**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200771.zip) **TP to TR 36.779 on Frequency band arrangements and regulatory background**

*Type: pCR For: Approval  
 36.779 v0.0.3 CR- rev Cat: (Rel-17)  
  
 Source: Puloli*

**Decision: Revised to** [**R4-2202391**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202391.zip) **(from** [**R4-2200771**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200771.zip)**).**

[**R4-2202391**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202391.zip) **TP to TR 36.779 on Frequency band arrangements and regulatory background**

*Type: pCR For: Approval  
 36.779 v0.0.3 CR- rev Cat: (Rel-17)  
  
 Source: Puloli*

**Decision: Approved.**

[**R4-2200772**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200772.zip) **TP to TR 36.779 on Operating band, channel bandwidths, channel numbering**

*Type: pCR For: Approval  
 36.779 v0.0.3 CR- rev Cat: (Rel-17)  
  
 Source: Puloli*

**Decision: Revised to** [**R4-2202392**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202392.zip) **(from** [**R4-2200772**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200772.zip)**).**

[**R4-2202392**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202392.zip) **TP to TR 36.779 on Operating band, channel bandwidths, channel numbering**

*Type: pCR For: Approval  
 36.779 v0.0.3 CR- rev Cat: (Rel-17)  
  
 Source: Puloli*

**Decision: Approved.**

[**R4-2202025**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202025.zip) **Draft CR to TS 36.104: exemplary implementation of LTE\_upper\_700MHz\_A band**

*Type: draftCR For: Endorsement  
 36.104 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Huawei*

**Abstract:**

Based on related discussion paper, we provide an exemplary implementation of the LTE\_upper\_700MHz\_A band into the TS 36.104.

**Decision: Not pursued.**

#### 8.8.2 Study for co-existence requirements

[**R4-2202024**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202024.zip) **Further discussion on the BS RF requirements for LTE\_upper\_700MHz\_A**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

In this contribution we provide updated analysis of the co-location and co-ex requirements for BS RF.

**Decision: Noted.**

#### 8.8.3 UE RF requirements

[**R4-2200004**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200004.zip) **Introduction of upper 700MHz A block into TS 36.101**

*Type: CR For: Agreement  
 36.101 v17.4.0 CR-5846 rev Cat: B (Rel-17)  
  
 Source: Puloli*

**Decision: Withdrawn.**

[**R4-2200774**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200774.zip) **TP to TR 36.779 on Analysis on UE requirements for upper 700MHz A block**

*Type: pCR For: Approval  
 36.779 v0.0.3 CR- rev Cat: (Rel-17)  
  
 Source: Puloli*

**Decision: Revised to** [**R4-2202393**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202393.zip) **(from** [**R4-2200774**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200774.zip)**).**

[**R4-2202393**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202393.zip) **TP to TR 36.779 on Analysis on UE requirements for upper 700MHz A block**

*Type: pCR For: Approval  
 36.779 v0.0.3 CR- rev Cat: (Rel-17)  
  
 Source: Puloli*

**Decision: Approved.**

[**R4-2200790**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200790.zip) **draftCR to TS 36.101: Introduction of upper 700MHz A block**

*Type: draftCR For: Endorsement  
 36.101 v17.4.0 CR- rev Cat: B (Rel-17)  
  
 Source: Puloli*

**Decision: Not pursued.**

#### 8.8.4 BS RF requirements

[**R4-2200457**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200457.zip) **draft CR on introduction of upper 700MHz A block for 36.104**

*Type: draftCR For: Endorsement  
 36.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Baicells*

**Decision: Revised to** [**R4-2202394**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202394.zip) **(from** [**R4-2200457**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200457.zip)**).**

[**R4-2202394**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202394.zip) **draft CR on introduction of upper 700MHz A block for 36.104**

*Type: draftCR For: Endorsement  
 36.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Baicells*

**Decision: Endorsed.**

[**R4-2200458**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200458.zip) **draft CR on introduction of upper 700MHz A block for 37.104**

*Type: draftCR For: Endorsement  
 37.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Baicells*

**Decision: Revised to** [**R4-2202395**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202395.zip) **(from** [**R4-2200458**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200458.zip)**).**

[**R4-2202395**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202395.zip) **draft CR on introduction of upper 700MHz A block for 37.104**

*Type: draftCR For: Endorsement  
 37.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Baicells*

**Decision: Endorsed.**

[**R4-2200459**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200459.zip) **draft CR on introduction of upper 700MHz A block for 37.105**

*Type: draftCR For: Endorsement  
 37.105 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Baicells*

**Decision: Revised to** [**R4-2202396**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202396.zip) **(from** [**R4-2200459**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200459.zip)**).**

[**R4-2202396**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202396.zip) **draft CR on introduction of upper 700MHz A block for 37.105**

*Type: draftCR For: Endorsement  
 37.105 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Baicells*

**Decision: Endorsed.**

[**R4-2200460**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200460.zip) **draft CR on introduction of upper 700MHz A block for 38.104**

*Type: draftCR For: Endorsement  
 38.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Baicells*

**Decision: Revised to** [**R4-2202397**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202397.zip) **(from** [**R4-2200460**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200460.zip)**).**

[**R4-2202397**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202397.zip) **draft CR on introduction of upper 700MHz A block for 38.104**

*Type: draftCR For: Endorsement  
 38.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Baicells*

**Decision: Endorsed.**

[**R4-2200461**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200461.zip) **TP to TR 36.779 on BS aspect issues**

*Type: discussion For: Approval  
 Source: Baicells*

**Decision: Withdrawn.**

[**R4-2201071**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201071.zip) **TP to TR 36.779 on Analysis on BS requirements for upper 700MHz A block**

*Type: discussion For: Approval  
 Source: Baicells*

**Decision: Revised to** [**R4-2202398**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202398.zip) **(from** [**R4-2201071**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201071.zip)**).**

**[R4-2202398](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202398.zip) TP to TR 36.779 on Analysis on BS requirements for upper 700MHz A block**

*Type: discussion For: Approval  
 Source: Baicells*

**Decision: Approved.**

#### 8.8.5 Others

### 8.9 Additional enhancements for NB-IoT and LTE-MTC

#### 8.9.1 General and work plan

#### 8.9.2 Support of 16QAM in NB-IoT

**[101-bis-e][116] LTE\_NR\_Other\_WI, AI 5.37, 5.38, 5.39, 8.7, 8.9.2, 8.9.3 – Jin Wang**

##### 8.9.2.1 BS RF requirements

[**R4-2200415**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200415.zip) **Proposals on BS RF requirements for support of 16QAM in NB-IoT**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides further proposals on BS RF requirements for the support of 16-QAM in NB-IoT unicast in UL and DL according to the approved WF at TSG RAN4#98-bis-e and the agreements in RAN1.

**Decision: Noted.**

[**R4-2201714**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201714.zip) **BS RF impact analysis on R17 NB\_IoT**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on the BS RF impact on NB-IoT for this objective.

**Decision: Noted.**

[**R4-2201831**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201831.zip) **Remaining issues for NB-IoT 16QAM BS RF requirements**

*Type: discussion For: Agreement  
 Source: Huawei,HiSilicon*

**Decision: Noted.**

[**R4-2201832**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201832.zip) **Draft CR to TS36104 Addition of NB-IoT 16QAM**

*Type: draftCR For: Endorsement  
 36.104 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Decision: Endorsed.**

[**R4-2201833**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201833.zip) **Draft CR to TS36141 Addition of NB-IoT 16QAM**

*Type: draftCR For: Endorsement  
 36.141 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Decision: Revised to** [**R4-2202296**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202296.zip) **(from** [**R4-2201833**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201833.zip)**).**

**[R4-2202296](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202296.zip) Draft CR to TS36141 Addition of NB-IoT 16QAM**

*Type: draftCR For: Endorsement  
 36.141 v17.4.0 CR- rev Cat: (Rel-17)  
  
 Source: Huawei,HiSilicon, Nokia, Nokia Shanghai Bell*

**Decision: Endorsed.**

##### 8.9.2.2 UE RF requirements

#### 8.9.3 Support of power reduction for PRACH, PUCCH, and full-PRB PUSCH in MTC

**[101-bis-e][116] LTE\_NR\_Other\_WI, AI 5.37, 5.38, 5.39, 8.7, 8.9.2, 8.9.3 – Jin Wang**

##### 8.9.3.1 UE RF requirements

[**R4-2201287**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201287.zip) **On max power reduction for PRACH, PUCCH, and full-PRB PUSCH**

*Type: other For: Decision  
 Source: Sony*

**Decision: Noted.**

[**R4-2201715**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201715.zip) **RF impact analysis on R17 eMTC WID**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on the RF impact for the Rel-17 eMTC.

**Decision: Noted.**

#### 8.9.4 RRM core requirements

##### 8.9.4.1 Neighbour cell measurement in RRC Connected state for NB-IoT

#### 8.9.5 Others

#### 8.9.6 Demodulation requirements

##### 8.9.6.1 General

##### 8.9.6.2 Demodulation requirements for NB-IoT

###### 8.9.6.2.1 UE demodulation requirements

###### 8.9.6.2.2 BS demodulation requirements

##### 8.9.6.3 Demodulation requirements for MTC

## 9 Liaison and output to other groups

### 9.1 R17 related

**[101-bis-e] NR\_reply\_LS\_UE\_RF, AI 9.1.1, 9.1.2, 9.1.3 – Steven Chen**

[**R4-2202238**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202238.zip) **Email discussion summary for [101-bis-e][138] NR\_reply\_LS\_UE\_RF**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

The following topics will be treated in this email thread:

1) Beam correspondence for SDT: [R4-2201484](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201484.zip), [R4-2201973](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201973.zip)

2) Reply LS to RAN5 for REFSENS: [R4-2201247](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201247.zip)

3) FR2 power control for NR-DC: [R4-2201277](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201277.zip)

**Decision: Revised to** [**R4-2202338**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202338.zip) **(from** [**R4-2202238**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202238.zip)**).**

**[R4-2202338](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202338.zip) Email discussion summary for [101-bis-e][138] NR\_reply\_LS\_UE\_RF**

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

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Conclusions after 2nd round**

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Status** |
| [R4-2202399](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202399.zip) Response LS to RAN5 on LTE REFSENS Exceptions Simplification | Huawei, HiSilicon | Withdrawn |

[**R4-2202399**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202399.zip) **Response LS to RAN5 on LTE REFSENS Exceptions Simplification**

*Type: LSout For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Withdrawn.**

#### 9.1.1 LS reply for beam correspondence with SDT in RRC\_INACTIVE

[**R4-2200252**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200252.zip) **Discussion on RAN2 LS (R2-2108861) on gap handling for MUSIM**

*Type: discussion For: Discussion  
 Source: Apple*

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

[**R4-2201484**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201484.zip) **Discussion on reply LS on Beam correspondence with Small Data Transmission in Inactive State**

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

**Decision: Noted.**

[**R4-2201973**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201973.zip) **On beam correspondence requirements and SDT**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

RAN1 has enquired about the beam correspondence functionality in context of the SDT feature. We provide our views on UE RF requirements for this type of feature

**Decision: Noted.**

#### 9.1.2 RAN5 response LS on LTE REFSENS exception simplification (R5-215803)

[**R4-2201247**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201247.zip) **Discussion and draft LS on LTE REFSENS exception simplification**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

#### 9.1.3 Others

[**R4-2201277**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201277.zip) **R17 FR2 power control for NR-DC and draft LS**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision: Noted.**

**-------------------------------- Not treated in this meeting--------------------------------**

[**R4-2201339**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201339.zip) **Discussion on reply LS on configuration of p-MaxEUTRA and p-NR-FR1**

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

**Abstract:**

Session Chair: This contribution (Rel-15 related) will not be treated in this meeting.

**Decision:** The document was **not treated**.

[**R4-2201974**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201974.zip) **On reply to RAN5 on FR2 requirement applicability over ETC**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

Session Chair: This contribution will not be treated in this meeting. RAN4 must first establish common understanding on any subject before responding externally.

**Decision:** The document was **not treated**.

**-------------------------------- Not treated in this meeting--------------------------------**

## 10 Any other business

[**R4-2200172**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200172.zip) **Motivation for new WI on air-to-ground network for NR**

*Type: WID new For: Information  
 Source: CMCC*

**Decision:** The document was **not treated**.

[**R4-2200173**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200173.zip) **New WID on air-to-ground network for NR**

*Type: WID new For: Information  
 Source: CMCC*

**Decision:** The document was **not treated**.

[**R4-2200174**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200174.zip) **Motivation for new WID on Home Base Station for NR**

*Type: WID new For: Information  
 Source: CMCC*

**Decision:** The document was **not treated**.

[**R4-2200175**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200175.zip) **New WID on Home Base Station for NR**

*Type: WID new For: Information  
 Source: CMCC*

**Decision:** The document was **not treated**.

[**R4-2200287**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200287.zip) **Rel-18 proposal on FR2 coverage/performance enhancements**

*Type: discussion For: Information  
 Source: Apple*

**Decision:** The document was **not treated**.

[**R4-2200299**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200299.zip) **Motivation paper for R18 RRM enhancement**

*Type: discussion For: Information  
 Source: Apple*

**Decision:** The document was **not treated**.

[**R4-2200451**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200451.zip) **Views on handling ETC applicability to FR2 UE RF requirements**

*Type: discussion For: Information  
 Source: Apple*

**Decision:** The document was **not treated**.

[**R4-2200545**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200545.zip) **Views on RAN4 Rel-18 scope**

*Type: discussion For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

[**R4-2200546**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200546.zip) **Views on RAN4 Rel-18: FR2 multi-beam reception**

*Type: discussion For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

[**R4-2200547**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200547.zip) **Views on RAN4 Rel-18: RRM enhancements**

*Type: discussion For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

[**R4-2200548**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200548.zip) **Views on RAN4 Rel-18: Demodulation enhancements**

*Type: discussion For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

[**R4-2200549**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200549.zip) **Draft New WID: Requirements for NR FR2 UEs with multi-Rx chain DL reception**

*Type: WID new For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

[**R4-2200550**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200550.zip) **Draft New WID: NR and MR-DC RRM requirements enhancements**

*Type: WID new For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

[**R4-2200551**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200551.zip) **Draft New WID: NR and MR-DC Measurement Gap further enhancements**

*Type: WID new For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

[**R4-2200552**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2200552.zip) **Draft New WID: NR demodulation requirements enhancements**

*Type: WID new For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

[**R4-2201193**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201193.zip) **[Draft] WID on FR2 RRM requirements evaluation**

*Type: WID new For: Information  
 Source: Huawei, Hisilicon*

**Decision:** The document was **not treated**.

[**R4-2201280**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201280.zip) **R18 Motivation of 3Tx handheld UE**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

[**R4-2201281**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201281.zip) **R18 New WID on 3Tx handheld UE for NR**

*Type: WID new For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

[**R4-2201360**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201360.zip) **Motivation on basket WID on 4Rx and 8Rx bands**

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

**Decision:** The document was **not treated**.

[**R4-2201361**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201361.zip) **New WID on 4Rx\_8Rx support for NR bands**

*Type: other For: Information  
 Source: ZTE,China Telecom*

**Decision:** The document was **not treated**.

[**R4-2201648**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201648.zip) **Motivation for FR2 RRM requirement enhancement**

*Type: discussion For: Information  
 Source: Huawei, Hisilicon*

**Decision:** The document was **not treated**.

[**R4-2201650**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201650.zip) **Views on small A-MPR for Rel-18 RAN4 led WI**

*Type: discussion For: Information  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution shares our views on smaller A-MPR, which is one of the topics in moderator summary in [RP-212682].

**Decision:** The document was **not treated**.

[**R4-2201653**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201653.zip) **New WID on Low MSD for CA and DC band combinations**

*Type: WID new For: Information  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

A possible objective for a new WI for low MSD is shared.

**Decision:** The document was **not treated**.

[**R4-2201675**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201675.zip) **Motivation of new WID on High Altitude Platform Station (HAPS) for NR**

*Type: discussion For: Information  
 Source: China Unicom*

**Decision:** The document was **not treated**.

[**R4-2201677**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201677.zip) **Rel-18 Draft New WID on High Altitude Platform Station (HAPS) for NR**

*Type: WID new For: Information  
 Source: China Unicom*

**Decision:** The document was **not treated**.

[**R4-2201678**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201678.zip) **Draft Rel-18 new basket WID on high power UE (power class 2) for NR FDD band**

*Type: WID new For: Information  
 Source: China Unicom*

**Decision:** The document was **not treated**.

[**R4-2201679**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201679.zip) **Draft Rel-18 new basket WID on High power UE (power class 1.5) for NR inter-band CA with 2 UL bands**

*Type: WID new For: Information  
 Source: China Unicom*

**Decision:** The document was **not treated**.

[**R4-2202047**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202047.zip) **R18 New WID on NR MIMO OTA**

*Type: WID new For: Approval  
 Source: CAICT, OPPO*

**Decision:** The document was **not treated**.

[**R4-2202050**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2202050.zip) **R18 New WID on FR1 TRP TRS**

*Type: WID new For: Approval  
 Source: OPPO, CAICT*

**Decision:** The document was **not treated**.

[**R4-2201477**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201477.zip) **Support of ATG for 5G Advanced**

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

**Decision:** The document was **not treated**.

[**R4-2201478**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201478.zip) **Motivation on study on NR NTN RF requirement for coexistence with TN standalone NB-IoT**

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

**Decision:** The document was **not treated**.

[**R4-2201479**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201479.zip) **New SI proposal: Study on NR NTN RF requirement for coexistence with TN standalone NB-IoT**

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

**Decision:** The document was **not treated**.

[**R4-2201480**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201480.zip) **Views on NR UE RF enhancement in Rel-18**

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

**Decision:** The document was **not treated**.

[**R4-2201481**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201481.zip) **Views on NR BS RF enhancement in Rel-18**

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

**Decision:** The document was **not treated**.

[**R4-2201482**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201482.zip) **Views on NR UE RRM enhancement in Rel-18**

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

**Decision:** The document was **not treated**.

[**R4-2201483**](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_101-bis-e/Docs/R4-2201483.zip) **Motivation on the support of CRS-IM for Redcap UE**

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

**Decision:** The document was **not treated**.

## 11 Close of the E-meeting

Report prepared by: MCC