**3GPP TSG-RAN WG4 Meeting #116 R4-250xxxx**

**Bengaluru, India, August 25th – 29th, 2025**

**Agenda Item: 2**

**Source: RAN4 Chair**

**Title:** **Agenda for RAN4 #116**

**Document for:** **Approval**

1. Opening of the meeting

**Intellectual Property Rights Declaration**

<https://www.3gpp.org/about-us/legal-matters/call-for-ipr>

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| The attention of the delegates to the meeting of this Technical Specification Group is 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 are asked to take note that they are thereby invited:   * to investigate whether their organization or any other organization owns IPRs which are, or are 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 Statement and the Licensing declaration forms |

**Statement regarding competition law**

<https://www.3gpp.org/about-us/legal-matters/statement-regarding-competition-law>

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| 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 Chair and Vice-Chairs 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/SWG meetings was important to allow for full and fair consideration of such matters. |

**Consensus principles reminder**

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| The attention of the delegates to the meeting is drawn to the fact that 3GPP endeavours to reach consensus on all decisions and therefore depends on a cooperative spirit of the Individual Members. In particular, Individual Members are encouraged to seek a consensus-based solution and only to sustain objections as a very last resort, and where absolutely necessary and well justified. The leadership will conduct the present meeting in a manner whereby informal methods of reaching consensus are encouraged, whilst ensuring that well justified concerns are taken into account. |

**Working Principles for 6G**

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| 3GPP to create lean and streamlined standards for 6G, e.g., by dimensioning an appropriate set of functionalities, minimizing the adoption of multiple options for the same functionality, avoiding excessive configurations, etc. Any exception to the above shall be well justified. |

**Guidance for maintenance agendas (AI 4, AI 5, AI 9)**

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| The following guidance are provided for maintenance work under AI 4, AI 5.2, AI 5.3.3, 5.28, 5.29 and 5.30:   * For maintenance agenda AI 4 **only essential corrections** (Rel-15/16/17), AI 5.2, AI 5.3.3, AI 5.28, AI 5.29 and AI 5.30 (Rel-18 items without the dedicated agendas), formal CRs are expected and multiple CRs per company in the lowest agenda are allowed. For tracking the changes easily, it expected that one batch of CRs (Cat-F/A/…) will just cover a single topic/WI rather than multiple topics/WIs and Cat-F CR with corresponding Cat-A CRs needs be submitted under the same agenda. * When reserving the tdoc number, please use the correct WI code rather than simply using TEI and fill the column of “Related WIs” in your reservation spreadsheet. If you submit a CR with TEI as WI code, please inform session chair. * For all the endorsed draft CRs from the previous bis meeting, please re-submit them as formal CRs in this meeting.   The following guidance are provided for tdocs related to incoming LS under AI 9:   * The contributions corresponding to incoming LS for Rel-15/16/17 are expected to be submitted in sub-AIs under AI 9. * The contributions corresponding to incoming LS for Rel-19/Rel-18 are expected to be submitted to (sub-) agenda dedicated to the individual WIs. If there is no dedicated agenda, please submit to AI 9. |

1. Meeting agenda, arrangement and meeting report
2. Incoming LS
3. Up to Rel-17 maintenance for LTE and NR and TEI
   1. Moderator summary and conclusions (for Agenda 4)
      1. Main session
      2. RRM session
      3. BDaT session
   2. UE RF requirements [WI code]
      1. Up to Rel-16 maintenance [WI code]
      2. Rel-17 maintenance [WI code]
   3. BS RF requirements and BS conformance testing [WI code]
   4. RRM requirements [WI code]
      1. Up to Rel-16 maintenance [WI code]
      2. Rel-17 maintenance [WI code]
   5. Demodulation and CSI requirements [WI code]
   6. Rel-16/17 TEI and others (EMC, OTA, and TRP/TRS) [TEI]
4. Rel-18 and Rel-19 maintenance for LTE and NR, TEI18 and TEI19
   1. Moderator summary and conclusions (for Agenda 5)
      1. Main session
      2. RRM session
      3. BDaT session

-------------------------------------- Rel-18 and Rel-19 Spectrum related ----------------------------------------------------------------------------------

* 1. Rel-18 Spectrum related WI maintenance [WI code]
  2. Rel-19 spectrum related WI maintenance [WI code]
     1. Introduction of the 1.4 GHz Band [NR\_FDD\_1400MHz-Core]
     2. Introduction of NR band n68 [NR\_band\_n68-Core]
     3. Introduction of NR-NTN S-band (MSS band 2000-2020 MHz UL and 2180-2200 MHz DL) [NR\_NTN\_Sband-Core/Perf]
     4. Introduction of IoT-NTN S-band (MSS band 2000-2020 MHz UL and 2180-2200 MHz DL) [IoT\_NTN\_FDD\_S\_band-Core/Perf]
     5. mmWave in NR: UE spurious emissions and EESS (Earth Exploration Satellite Service) protection [NR\_mmWave\_protect-Core/Perf]
     6. New bands for LTE based 5G terrestrial broadcast for early deployments [LTE\_terr\_bcast\_bands\_sub\_108-Core/Perf]
     7. Others

-------------------------------------- Rel-18 RAN4-led non-spectrum related ---------------------------------------------------------------

\* Rel-18 BS RF, SAN RF and EMC core requirements and conformance test papers for the topics without dedicated agenda should be submitted to agenda 5.28.2

\* Rel-18 demodulation papers for the topics without dedicated agenda should be submitted to agenda 5.28.4.

* 1. Support of intra-band non-collocated EN-DC/NR-CA deployment [NonCol\_intraB\_ENDC\_NR\_CA]
  2. Air-to-ground network for NR [NR\_ATG]
     1. UE RF requirements [NR\_ATG-Core]
     2. RRM core and performance requirements [NR\_ATG-Core/Perf]
  3. Further RF requirements enhancement for NR and EN-DC in FR1 [NR\_ENDC\_RF\_FR1\_enh2]
     1. UE RF requirements [NR\_ENDC\_RF\_FR1\_enh2-Core]
     2. RRM performance requirements [NR\_ENDC\_RF\_FR1\_enh2-Perf]
  4. NR support for dedicated spectrum less than 5MHz for FR1 [NR\_FR1\_lessthan\_5MHz\_BW]
     1. System parameter and UE RF requirements [NR\_FR1\_lessthan\_5MHz\_BW-Core]
     2. RRM core and performance requirements [NR\_FR1\_lessthan\_5MHz\_BW-Core/Perf]
  5. NB-IoT/eMTC core & perf. requirements for NTN [LTE\_NBIOT\_eMTC\_NTN\_req]
     1. UE RF requirements [LTE\_NBIOT\_eMTC\_NTN\_req-Core]
     2. RRM core and performance requirements [LTE\_NBIOT\_eMTC\_NTN\_req-Core/Perf]
  6. Requirement for NR FR2 multi-Rx chain DL reception [NR\_FR2\_multiRX\_DL]
     1. RRM core and performance requirements [NR\_FR2\_multiRX\_DL-Core/Perf]
  7. Even Further RRM enhancement for NR and MR-DC [NR\_RRM\_enh3]
     1. RRM core and performance requirements [NR\_RRM\_enh3-Core/Perf]
  8. Further enhancements on NR and MR-DC measurement gaps and measurements without gaps [NR\_MG\_enh2]
     1. RRM core and performance requirements [NR\_MG\_enh2-Core/Perf]
  9. Completion of specification support for bandwidth part operation without restriction in NR [NR\_BWP\_wor]
     1. RRM core and performance requirements [NR\_BWP\_wor-Core/Perf]
  10. Enhanced NR support for high speed train scenario in frequency range 2 [NR\_HST\_FR2\_enh]
      1. RRM core and performance requirements [NR\_HST\_FR2\_enh-Core/Perf]
  11. Enhancement of TRP and TRS requirements and test methodologies [NR\_FR1\_TRP\_TRS\_Enh]
      1. Enhancement maintenance of test methodology [NR\_FR1\_TRP\_TRS\_enh-Core]
      2. Performance requirements [NR\_FR1\_TRP\_TRS\_enh-Perf]

---------------------------------------- Rel-18 Items led by other WGs ----------------------------------------------------------------------------------------

* 1. Multi-carrier enhancements for NR [NR\_MC\_enh]
     1. UE RF requirements [NR\_MC\_enh-Core]
     2. RRM core and performance requirements [NR\_MC\_enh-Core/Perf]
  2. NR sidelink evolution [NR\_SL\_enh2]
     1. UE RF requirements [NR\_SL\_enh2-Core]
     2. RRM core and performance requirements [NR\_SL\_enh2-Core/Perf]
  3. NR NTN enhancement [NR\_NTN\_enh]
     1. System parameters and UE RF requirements [NR\_NTN\_enh-Core]
     2. RRM core and performance requirements [NR\_NTN\_enh-Core/ Perf]
  4. Expanded and improved NR positioning [NR\_pos\_enh2]
     1. RRM core requirements maintenance [NR\_pos\_enh2-Core]
     2. RRM performance requirements [NR\_pos\_enh2-Perf]
  5. Further NR mobility enhancements [NR\_Mob\_enh2]
     1. RRM Core and performance requirements [NR\_Mob\_enh2-Core/Perf]
  6. NR MIMO evolution for downlink and uplink [NR\_MIMO\_evo\_DL\_UL]
     1. RRM core and performance requirements [NR\_MIMO\_evo\_DL\_UL-Core/Perf]
  7. Enhanced support of reduced capability NR devices [NR\_redcap\_enh]
     1. RRM core requirements [NR\_redcap\_enh-Core]
  8. Network energy saving for NR [Netw\_Energy\_NR]
     1. RRM core and performance requirements [Netw\_Energy\_NR-Core/Perf]
  9. IoT (Internet of Things) NTN (non-terrestrial network) enhancements [IoT\_NTN\_enh]
     1. RRM core and performance requirements [IoT\_NTN\_enh-Core/Perf]
  10. NR Network-controlled Repeaters [NR\_netcon\_repeater]
      1. RRM core and performance requirements [NR\_netcon\_repeater-Core/Perf]

---------------------------------------- Rel-19 RAN4-led non-spectrum related ----------------------------------------------------------------------------------------

* 1. NR sidelink Intra-band Carrier Aggregation in ITS band [NR\_SL\_intraB\_CA\_ITS]
  2. NR channel BW less than 5MHz for FR1 Phase 2 [NR\_FR1\_lessthan\_5MHz\_BW\_Ph2]
     1. UE RF requirements maintenance for inter-band NR CA/DC with 3MHz CBW [NR\_FR1\_lessthan\_5MHz\_BW\_Ph2-Core]
     2. RRM core requirements [NR\_FR1\_lessthan\_5MHz\_BW\_Ph2-Core]
     3. RRM performance requirements [NR\_FR1\_lessthan\_5MHz\_BW\_Ph2-Perf]
     4. UE demodulation performance requirements [NR\_FR1\_lessthan\_5MHz\_BW\_Ph2-Perf]
  3. NR power class 2 RedCap (Reduced Capability) UE in FR1 [NR\_PC2\_RedCap\_UE-Core]

---------------------------------------- Other topics ----------------------------------------------------------------------------------------

* 1. Rel-18 and Rel-19 non-spectrum related WIs
     1. UE RF requirements [WI code]
     2. BS/SAN/non-UE RF requirements [WI code]
     3. RRM requirements [WI code]
     4. Demodulation performance and CSI requirements [WI code]
     5. OTA aspects [WI code]
  2. Rel-18 TEI [TEI18]

\* Please note that only TEI topics are treated in this agenda. The tdocs for any closed Rel-18/17/16/15 WIs won’t be treated in this agenda.

\* For UE RF spec and RRM spec improvement, if there were dedicated remaining issues, please submit the tdocs under 5.27.1 and 5.27.2 respectively.

* + 1. UE RF related topics [TEI18]
    2. RRM related topics [TEI18]
    3. BS RF, demodulation performance and other topics [TEI18]
  1. Rel-19 TEI [TEI19]

\* Please note that only TEI topics are treated in this agenda. The tdocs for any closed Rel-19/18/17/16/15 WIs won’t be treated in this agenda.

* + 1. UE RF related topics [TEI19]
    2. RRM related topics
    3. BS RF, demodulation performance and other topics

1. Rel-19 on-going spectrum related work items for NR and LTE
   1. Moderator summary and conclusions (for Agenda 6)

-------------------------------------- MR-DC, NR-CA and LTE-CA Basket WIs-------------------------------------------

* 1. Rel-19 DC of x LTE band(s), y NR band(s) (x<=6) and single or two NR SUL bands [DC\_R19\_xBLTE\_yBNR-Core]
     1. Rapporteur input (WID/TR/big CR) [DC\_R19\_xBLTE\_yBNR-Core]
     2. UE RF requirements for EN-DC and NE-DC of 2 DL with 2 UL (DC\_R19\_1BLTE\_1BNR\_2DL2UL) [DC\_R19\_xBLTE\_yBNR-Core]
     3. UE RF requirements for EN-DC and NE-DC of 2 LTE and 1 NR, or of 1 LTE and 2 NR (DC\_R19\_xBLTE\_yBNR\_3DL2UL) [DC\_R19\_xBLTE\_yBNR-Core]
     4. UE RF requirements for EN-DC and NE-DC of x LTE and y NR with total z DL bands and q UL bands (DC\_R19\_xBLTE\_yBNR\_zDLqUL) [DC\_R19\_xBLTE\_yBNR-Core]
     5. UE RF requirements for EN-DC and NE-DC with one SUL and two SULs (DC\_R19\_LTE\_NR\_SUL\_combos) [DC\_R19\_xBLTE\_yBNR-Core]
     6. RAN4 PRD
  2. Rel-19 NR CA/DC for x bands DL with y bands UL (x<7, y<3) and SUL/CA band combinations with a single SUL or two SUL cells [NR\_CADC\_SUL\_R19-Core]
     1. Rapporteur input (WID/TR/big CR) [NR\_CADC\_SUL\_R19-Core]
     2. UE RF requirements for NR intra-band CA combinations for x CC DL/y CC UL (NR\_CA\_R19\_Intra with/without UL-MIMO) [NR\_CADC\_SUL\_R19-Core]
     3. UE RF requirements for NR inter-band CA/DC configurations including inter band CA for 2 DL with up to 2UL (NR\_CADC\_R19\_2BDL\_xBUL) [NR\_CADC\_SUL\_R19-Core]
     4. UE RF requirements for NR inter-band CA/DC configurations including inter band CA for 3 DL with x UL (NR\_CADC\_R19\_3BDL\_xBUL) [NR\_CADC\_SUL\_R19-Core]
     5. UE RF requirements for NR inter-band CA/DC configurations including inter band CA for y DL with x UL (NR\_CADC\_R19\_yBDL\_xBUL) [NR\_CADC\_SUL\_R19-Core]
     6. UE RF requirements for SUL and CA band combinations with SULs (NR\_SUL\_combos\_R19) [NR\_CADC\_SUL\_R19-Core]
  3. Rel-19 LTE-Advanced Carrier Aggregation for x bands (1<=x<= 6) DL with y bands (y=1, 2) UL [LTE\_CA\_R19\_xBDL\_yBUL-Core]
     1. Rapporteur input (WID/TR/big CR) [LTE\_CA\_R19\_xBDL\_yBUL-Core]
     2. UE RF requirements [LTE\_CA\_R19\_xBDL\_yBUL-Core]

-------------------------------------- HPUE basket WIs -------------------------------------------------------------------------

* 1. Rel-19 HPUE for NR FR1 TDD/FDD single band [HPUE\_NR\_FR1\_bands\_R19-Core]
     1. Rapporteur input (WID/TR/big CR) [HPUE\_NR\_FR1\_bands\_R19-Core]
     2. HPUE in a single TDD band [HPUE\_NR\_FR1\_bands\_R19-Core]
     3. HPUE in a single FDD band [HPUE\_NR\_FR1\_bands\_R19-Core]
  2. Rel-19 HPUE in a single LTE band [HPUE\_LTE\_bands\_R19-Core]
     1. Rapporteur input (WID/TR/big CR) [HPUE\_LTE\_bands\_R19-Core]
     2. UE RF requirements
  3. Rel-19 HPUE for DC combinations of LTE band(s) and NR band(s) [HPUE\_DC\_LTE\_NR\_R19-Core]
     1. Rapporteur input (WID/TR/big CR) [HPUE\_DC\_LTE\_NR\_R19-Core]
     2. UE RF requirements [HPUE\_DC\_LTE\_NR\_R19-Core]
  4. Rel-19 HPUE for NR intra-band CA and inter-band CA/DC with/without NR SUL [HPUE\_NR\_CADC\_SUL\_R19]
     1. Rapporteur input (WID/TR/big CR) [HPUE\_NR\_CADC\_SUL\_R19-Core]
     2. UE RF requirements for intra-band CA [HPUE\_NR\_CADC\_SUL\_R19-Core]
     3. UE RF requirements for inter-band CA/DC with high power on TDD band(s) [HPUE\_NR\_CADC\_SUL\_R19-Core]
     4. UE RF requirements for inter-band CA/DC with high power on FDD band(s) [HPUE\_NR\_CADC\_SUL\_R19-Core]
     5. UE RF requirements for inter-band CA/DC with high power on both FDD and TDD bands [HPUE\_NR\_CADC\_SUL\_R19-Core]

-------------------------------------- Other basket WIs --------------------------------------------------------------------------

* 1. Rel-19 Additional NR bands for NR features [NR\_bands\_xFeature\_R19-Core]
     1. Rapporteur input (WID/TR/big CR) [NR\_bands\_xFeature\_R19-Core]
     2. UE RF requirements for UL-MIMO in a single band [NR\_bands\_xFeature\_R19-Core]
     3. UE RF requirements for 4Rx and 8Rx [NR\_bands\_xFeature\_R19-Core]
  2. Rel-19 downlink interruption for NR and EN-DC band combinations at dynamic Tx Switching in Uplink [DL\_intrpt\_combos\_TxSW\_R19-Core]
     1. Rapporteur input (WID/TR/big CR) [DL\_intrpt\_combos\_TxSW\_R19-Core]
     2. UE RF requirements [DL\_intrpt\_combos\_TxSW\_R19-Core]
  3. Simultaneous Rx/Tx band combinations for NR CA/DC, NR SUL and LTE/NR DC in Rel-19 [LTE\_NR\_R19\_Simult\_RxTx-Core]
     1. Rapporteur input (WID/TR/big CR) [LTE\_NR\_R19\_Simult\_RxTx-Core]
     2. UE RF requirements [LTE\_NR\_R19\_Simult\_RxTx-Core]
  4. Adding channel bandwidth(s) support to existing NR bands and CA/ENDC combinations in REL-19 [NR\_bands\_CA\_ENDC\_R19\_BWs-Core]
     1. Rapporteur input (WID/TR/big CR) [NR\_bands\_CA\_ENDC\_R19\_BWs-Core]
     2. UE RF requirements [NR\_bands\_CA\_ENDC\_R19\_BWs-Core]

-------------------------------------- New bands ----------------------------------------------------------------------------------

* 1. Introduction of new NR NTN bands to support the Extended L-band (UL 1668-1675MHz, DL 1518-1525MHz) and the combined MSS L-band and Extended L-band ranges (DL 1518-1559 MHz, UL 1626.5-1660.5 MHz and 1668-1675 MHz) [NR\_NTN\_combinedLband-Core]
     1. System parameters and UE RF requirements [NR\_NTN\_combinedLband-Core]
     2. SAN RF core requirements [NR\_NTN\_combinedLband-Core]
     3. RRM core requirements [NR\_NTN\_combinedLband-Core]
  2. Introduction of NR TDD 4.9GHz Band for US Operation [TBD]
     1. General aspects and work plan [TBD]
     2. coexistence issues with adjacent spectrum and other users of the 4940-4990 MHz band [TBD]
        1. On adjacent spectrum protection requirements [TBD]
        2. On other technologies operating in the 4940-4990 MHz band

-------------------------------------- Other spectrum related items ----------------------------------------------------------------------------------

1. Rel-19 on-going non-spectrum related work/study items

-------------------------------------- Items led by RAN4 ----------------------------------------------------------------------------------

* 1. UE RF enhancements for NR FR1/FR2 and EN-DC, Phase 4 [NR\_ENDC\_RF\_Ph4]
     1. Moderator summary and conclusions [NR\_ENDC\_RF\_Ph4]
     2. UE RF requirements [NR\_ENDC\_RF\_Ph4-Core]
        1. High power UE (HPUE) for CA in terrestrial network (TN) [NR\_ENDC\_RF\_Ph4-Core]
           1. General aspects (incl. duty cycle solutions, MSD rules) [NR\_ENDC\_RF\_Ph4-Core]
           2. Intra-band contiguous and non-contiguous UL CA with PC1.5 [NR\_ENDC\_RF\_Ph4-Core]
           3. Inter-band UL NR-CA/EN-DC with 2 bands and 2Tx and/or 3Tx [NR\_ENDC\_RF\_Ph4-Core]
           4. Increasing UE transmission high power limit [NR\_ENDC\_RF\_Ph4-Core]
        2. Power domain enhancement for NR single carrier and NR intra-band UL CA for PC2 and PC3 [NR\_ENDC\_RF\_Ph4-Core]
           1. Power domain enhancements for single carrier [NR\_ENDC\_RF\_Ph4-Core]
           2. MPR applicability for FR1 intra-band UL CA [NR\_ENDC\_RF\_Ph4-Core]
           3. MPR applicability for FR2 [NR\_ENDC\_RF\_Ph4-Core]
        3. 6Rx UE [NR\_ENDC\_RF\_Ph4-Core]
           1. Reference sensitivity requirements [NR\_ENDC\_RF\_Ph4-Core]
           2. MIMO layer evaluation for 6Rx UE [NR\_ENDC\_RF\_Ph4-Core]
           3. SRS antenna switching requirements [NR\_ENDC\_RF\_Ph4-Core]
     3. RRM core and performance requirements for 6Rx [NR\_ENDC\_RF\_Ph4-Core/Perf]
     4. UE demodulation performance requirements for 6Rx [NR\_ENDC\_RF\_Ph4-Perf]
  2. Support of intra-band non-collocated EN-DC/NR-CA deployment Phase2: new receiver type(s) [NonCol\_intraB\_ENDC\_NR\_CA\_Ph2]
     1. Moderator summary and conclusions [NonCol\_intraB\_ENDC\_NR\_CA\_Ph2]
     2. UE RF requirements [NonCol\_intraB\_ENDC\_NR\_CA\_Ph2-Core]
        1. UE RF requirements for Type 4a/4b capable FWA UE for EN-DC/NR-CA [NonCol\_intraB\_ENDC\_NR\_CA\_Ph2-Core]
        2. UE Capability/UE behavior and network signaling for Type 4 EN-DC/NR-CA [NonCol\_intraB\_ENDC\_NR\_CA\_Ph2-Core]
        3. Other aspects (incl. clarification of contiguous LTE CCs) [NonCol\_intraB\_ENDC\_NR\_CA\_Ph2-Core]
     3. RRM core requirements [NonCol\_intraB\_ENDC\_NR\_CA\_Ph2-Core]
  3. Low band carrier aggregation via switching [NR\_LBCA\_Sw]
     1. Moderator summary and conclusions [NR\_LBCA\_Sw-Core]
     2. General aspects [NR\_LBCA\_Sw-Core]
     3. UE RF requirements and UE capability [NR\_LBCA\_Sw-Core]
     4. RRM core requirements [NR\_LBCA\_Sw-Core]
     5. RRM performance requirement [NR\_LBCA\_Sw-Perf]
  4. NR FR1 7 MHz Channel Bandwidth [NR\_FR1\_7MHz\_BW]
     1. Moderator summary and conclusions [NR\_FR1\_7MHz\_BW-Core]
     2. General aspects [NR\_FR1\_7MHz\_BW-Core]
     3. UE RF requirements and system parameters [NR\_FR1\_7MHz\_BW-Core]
     4. BS RF core and conformance requirements [NR\_FR1\_7MHz\_BW-Core/Perf]
     5. RRM performance requirements [NR\_FR1\_7MHz\_BW-Perf]
     6. UE and BS demodulation and CSI performance requirements [NR\_FR1\_7MHz\_BW-Perf]
  5. New LTE band for 5G broadcast for region 3 utilizing a geosynchronous satellite [LTE\_band\_5G\_bcast\_GSO]
     1. Moderator summary and conclusions [LTE\_band\_5G\_bcast\_GSO-Core]
     2. General aspects and work plan [LTE\_band\_5G\_bcast\_GSO-Core]
     3. Band definition and system parameters [LTE\_band\_5G\_bcast\_GSO-Core]
     4. UE RF core requirements [LTE\_band\_5G\_bcast\_GSO-Core]
     5. SAN RF core requirements [LTE\_band\_5G\_bcast\_GSO-Core]
  6. Enhanced requirements and conductive test methodology for NR NTN and IoT NTN [NR\_IoT\_NTN\_req\_test\_enh]
     1. Moderator summary and conclusions [NR\_IoT\_NTN\_req\_test\_enh]
     2. General aspects [NR\_IoT\_NTN\_req\_test\_enh]
     3. UE RF requirements for NTN HPUE [NR\_IoT\_NTN\_req\_test\_enh-Core]
        1. Coexistence study for example bands [NR\_IoT\_NTN\_req\_test\_enh-Core]
        2. NR-NTN HPUE RF requirements [NR\_IoT\_NTN\_req\_test\_enh-Core]
           1. Tx requirements [NR\_IoT\_NTN\_req\_test\_enh-Core]
           2. Rx requirements [NR\_IoT\_NTN\_req\_test\_enh-Core]
        3. IoT-NTN HPUE RF requirements [NR\_IoT\_NTN\_req\_test\_enh-Core]
           1. Tx requirements [NR\_IoT\_NTN\_req\_test\_enh-Core]
           2. Rx requirements [NR\_IoT\_NTN\_req\_test\_enh-Core]
     4. Less than 5MHz for NTN [NR\_IoT\_NTN\_req\_test\_enh-Core]
        1. System parameters [NR\_IoT\_NTN\_req\_test\_enh-Core]
        2. UE RF requirements [NR\_IoT\_NTN\_req\_test\_enh-Core]
        3. SAN RF core and conformance requirements [NR\_IoT\_NTN\_req\_test\_enh-Core/Perf]
        4. RRM core requirements [NR\_IoT\_NTN\_req\_test\_enh-Core]
        5. RRM performance requirements [NR\_IoT\_NTN\_req\_test\_enh-Perf]
        6. Demodulation performance requirements [NR\_IoT\_NTN\_req\_test\_enh-Perf]
     5. NTN testing for NGSO [NR\_IoT\_NTN\_req\_test\_enh-Core/Perf]
        1. Channel modeling [NR\_IoT\_NTN\_req\_test\_enh-Core/Perf]
        2. RRM performance requirements [NR\_IoT\_NTN\_req\_test\_enh-Perf]
        3. Demodulation performance requirements [NR\_IoT\_NTN\_req\_test\_enh-Perf]
  7. Introduction of Ku Band for NR NTN [NR\_NTN\_Ku\_bands-Core]
     1. Moderator summary and conclusions [NR\_NTN\_Ku\_bands-Core]
     2. General aspects [NR\_NTN\_Ku\_bands-Core]
     3. Coexistence study based on ITU regulations [NR\_NTN\_Ku\_bands-Core]
     4. System parameters [NR\_NTN\_Ku\_bands-Core]
     5. UE RF requirements [NR\_NTN\_Ku\_bands-Core]
     6. SAN RF core requirements [NR\_NTN\_Ku\_bands-Core]
     7. RRM core requirements [NR\_NTN\_Ku\_bands-Core]
  8. Enhancements for Air-to-ground network for NR [NR\_ATG\_enh]
     1. Moderator summary and conclusions [NR\_ATG\_enh]
     2. UE RF requirements [NR\_ATG\_enh-Core]
        1. Intra-band contiguous and inter-band CA [NR\_ATG\_enh-Core]
        2. UL MIMO [NR\_ATG\_enh-Core]
        3. DL MIMO [NR\_ATG\_enh-Core]
        4. Others [NR\_ATG\_enh-Core]
     3. BS RF requirements [NR\_ATG\_enh-Core]
     4. BS RF conformance requirements [NR\_ATG\_enh-Perf]
     5. RRM core requirements for CA [NR\_ATG\_enh-Core]
     6. RRM performance requirements [NR\_ATG\_enh-Perf]
     7. Demodulation performance requirements [NR\_ATG\_enh-Perf]
  9. NR base station (BS) RF requirement evolution for FR1/FR2 and testing [NR\_BS\_RF\_req\_evo]
     1. Moderator summary and conclusions [NR\_BS\_RF\_req\_evo]
     2. General aspects [NR\_BS\_RF\_req\_evo-Core]
     3. BS core requirements [NR\_BS\_RF\_req\_evo-Core]
        1. Expected EIRP mask for upper 6GHz [NR\_BS\_RF\_req\_evo-Core]
        2. OTA test enhancement (co-location reference antenna) [NR\_BS\_RF\_req\_evo-Core]
        3. Transmitter co-existence spurious emission requirements [NR\_BS\_RF\_req\_evo-Core]
     4. BS conformance testing [NR\_BS\_RF\_req\_evo-Perf]
        1. Expected EIRP mask for upper 6GHz [NR\_BS\_RF\_req\_evo-Perf]
        2. OTA test enhancement [NR\_BS\_RF\_req\_evo-Perf]
           1. Identification and reduction of BS OTA test scope (TxIM, RX OoB blocking) [NR\_BS\_RF\_req\_evo-Perf]
           2. CLTA [NR\_BS\_RF\_req\_evo-Perf]
           3. Simplification of BS TRP test methods [NR\_BS\_RF\_req\_evo-Perf]
        3. Transmitter co-existence spurious emission requirements [NR\_BS\_RF\_req\_evo-Perf]
  10. TRP (Total Radiated Power), TRS (Total Radiated Sensitivity) and MIMO OTA (Over the Air) testing enhancement Phase 3 [TRP\_TRS\_MIMO\_OTA\_Ph3]
      1. Moderator summary and conclusions [TRP\_TRS\_MIMO\_OTA\_Ph3]
      2. General aspects [TRP\_TRS\_MIMO\_OTA\_Ph3-Core]
      3. Core requirements [TRP\_TRS\_MIMO\_OTA\_Ph3-Core]
         1. Test methodology for FR1 non-RedCap headworn XR devices [TRP\_TRS\_MIMO\_OTA\_Ph3-Core]
         2. Test methodology and radiated performance metric for FR1 NTN devices [TRP\_TRS\_MIMO\_OTA\_Ph3-Core]
         3. FR1 dynamic MIMO OTA test methodology [TRP\_TRS\_MIMO\_OTA\_Ph3-Core]
      4. Performance requirements [TRP\_TRS\_MIMO\_OTA\_Ph3-Perf]
         1. TRP TRS requirements [TRP\_TRS\_MIMO\_OTA\_Ph3-Perf]
         2. MIMO OTA requirements [TRP\_TRS\_MIMO\_OTA\_Ph3-Perf]
  11. Study on NR FR2 OTA (Over the Air) testing enhancement Phase 3 [FS\_NR\_FR2\_OTA\_Ph3]
      1. Moderator summary and conclusions [FS\_NR\_FR2\_OTA\_Ph3]
      2. General aspects [FS\_NR\_FR2\_OTA\_Ph3]
      3. RF testing methodology for FR2 non-handheld UE that can transmit simultaneously with multi-panel [FS\_NR\_FR2\_OTA\_Ph3]
  12. Study on spatial channel model for demodulation performance requirements [FS\_NR\_demod\_SCM]
      1. Moderator summary and conclusions [FS\_NR\_demod\_SCM]
      2. General aspects and work plan [FS\_NR\_demod\_SCM]
      3. Spatial channel modelling methodology [FS\_NR\_demod\_SCM]
  13. NR demodulation performance Phase 5 [NR\_demod\_Ph5-Perf]
      1. Moderator summary and conclusions [NR\_demod\_Ph5-Perf]
      2. General aspects [NR\_demod\_Ph5-Perf]
      3. UE demodulation performance requirements for 8Rx with MMSE-IRC [NR\_demod\_Ph5-Perf]
      4. BS demodulation performance requirements for MMSE-IRC [NR\_demod\_Ph5-Perf]
  14. NR Radio Resource Management (RRM) Phase 5 [NR\_RRM\_Ph5]
      1. Moderator summary and conclusions [NR\_RRM\_Ph5-Core]
      2. General aspects [NR\_RRM\_Ph5-Core]
      3. RRM core requirements of FR2-1 SSB based L3 measurement delay reduction for connected mode [NR\_RRM\_Ph5-Core]
         1. FR2-1 L3 measurement delay by optimizing Rx beam sweeping factor [NR\_RRM\_Ph5-Core]
         2. FR2-1 L3 measurement delay by optimizing CSSF outside gap in CA/DC [NR\_RRM\_Ph5-Core]
      4. RRM core requirements of Fast SCell activation for UE supporting Rel-18 EMR [NR\_RRM\_Ph5-Core]
      5. RRM performance requirements of FR2-1 SSB based L3 measurement delay reduction for connected mode [NR\_RRM\_Ph5-Perf]
      6. RRM performance requirements of Fast SCell activation for UE supporting Rel-18 EMR [NR\_RRM\_Ph5-Perf]
  15. Performance part for Minimum requirements for BDS B2b Signal in A-GNSS [LCS\_BDS\_B2b\_LTE\_NR-Perf]
      1. Moderator summary and conclusions [LCS\_BDS\_B2b\_LTE\_NR-Perf]
      2. General aspects [LCS\_BDS\_B2b\_LTE\_NR-Perf]
      3. RRM performance requirements [LCS\_BDS\_B2b\_LTE\_NR-Perf]
  16. Performance part for Introduction of NavIC L1 SPS AGNSS support in NR & LTE [LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Perf]
      1. Moderator summary and conclusions [LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Perf]
      2. General aspects [LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Perf]
      3. RRM performance requirements maintenance [LCS\_NAVIC\_L1\_SPS\_NR\_LTE-Perf]

-------------------------------------- Items led by other WGs ----------------------------------------------------------------------------------

* 1. Artificial Intelligence (AI)/Machine Learning (ML) for NR Air Interface [NR\_AIML\_air]
     1. Moderator summary and conclusions [NR\_AIML\_air-Core]
     2. General aspects [NR\_AIML\_air-Core]
     3. CSI reporting requirement and testing framework for CSI prediction [NR\_AIML\_air-Core]
     4. RRM core requirement and testing framework for beam management [NR\_AIML\_air-Core]
     5. RRM core requirement and testing framework for Positioning accuracy enhancement [NR\_AIML\_air-Core]
     6. RRM performance requirements for beam management and positioning accuracy [NR\_AIML\_air-Perf]
     7. Demodulation and/or CSI reporting requirements for CSI prediction [NR\_AIML\_air-Perf]
  2. Study on Artificial Intelligence (AI)/Machine Learning (ML) for NR air interface Phase 2 [FS\_NR\_AIML\_air\_Ph2]
     1. Moderator summary and conclusions [FS\_NR\_AIML\_air\_Ph2]
     2. General aspects [FS\_NR\_AIML\_air\_Ph2]
     3. Testing issues for CSI compression two-sided models [FS\_NR\_AIML\_air\_Ph2]
  3. Study on AI (Artificial Intelligence)/ML (Machine Learning) for mobility in NR [FS\_NR\_AIML\_Mob]
     1. Moderator summary and conclusions [FS\_NR\_AIML\_Mob]
     2. General aspects [FS\_NR\_AIML\_Mob]
     3. Study of impacts on RAN4 requirements [FS\_NR\_AIML\_Mob]
        1. Study of RAN4 impacts for RRM measurement prediction [FS\_NR\_AIML\_Mob]
        2. Study of RAN4 impacts for measurement event prediction [FS\_NR\_AIML\_Mob]
     4. Study of testability and interoperability [FS\_NR\_AIML\_Mob]
  4. NR MIMO Phase 5 [NR\_MIMO\_Ph5]
     1. Moderator summary and conclusions [NR\_MIMO\_Ph5-Core]
     2. General aspects [NR\_MIMO\_Ph5-Core]
     3. UE RF requirements [NR\_MIMO\_Ph5-Core]
     4. RRM core requirements [NR\_MIMO\_Ph5-Core]
        1. Enhancement for UE-initiated/event-driven beam management [NR\_MIMO\_Ph5-Core]
        2. Other RRM requirements [NR\_MIMO\_Ph5-Core]
     5. RRM performance requirements [NR\_MIMO\_Ph5-Perf]
     6. Demodulation performance and CSI reporting requirements [NR\_MIMO\_Ph5-Perf]
  5. Evolution of NR duplex operation: Sub-band full duplex (SBFD) [NR\_duplex\_evo]
     1. Moderator summary and conclusions [NR\_duplex\_evo]
     2. General aspects (including RAN4 aspects for SBFD system parameters) [NR\_duplex\_evo-Core]
        1. General system parameters for SBFD operation                                                                                                                         [NR\_duplex\_evo-Core]
        2. Analysis on intra-operator adjacent-channel inter-cell UE-UE CLI and solutions                                                                   [NR\_duplex\_evo-Core]
     3. BS RF and conformance requirements [NR\_duplex\_evo-Core/Perf]
        1. Potentially new requirements for SBFD operation for FR1 and FR2-1 including BS conformance [NR\_duplex\_evo-Core/Perf]
        2. Modification of existing Tx requirements for FR1 and FR2-1 including BS conformance [NR\_duplex\_evo-Core/Perf]
        3. Modification of existing Rx requirements for FR1 and FR2-1 including BS conformance [NR\_duplex\_evo-Core/Perf]
     4. RRM core requirements [NR\_duplex\_evo-Core]
        1. RRM requirements for UE-to-UE CLI handling [NR\_duplex\_evo-Core]
        2. RRM impacts for SBFD operation [NR\_duplex\_evo-Core]
     5. RRM performance requirements [NR\_duplex\_evo-Perf]
     6. UE and BS Demodulation performance requirements [NR\_duplex\_evo-Perf]
  6. Solutions for Ambient IoT (Internet of Things) in NR [Ambient\_IoT\_Solutions]
     1. Moderator summary and conclusions [Ambient\_IoT\_Solutions-Core]
     2. General aspects [Ambient\_IoT\_Solutions-Core]
     3. RF requirements for A-IoT [Ambient\_IoT\_Solutions-Core]
        1. RF requirements for Type 1-C Ambient-IoT BS [Ambient\_IoT\_Solutions-Core]
        2. RF requirements for device 1 [Ambient\_IoT\_Solutions-Core]
        3. RF requirements for CW [Ambient\_IoT\_Solutions-Core]
     4. RRM core requirements [Ambient\_IoT\_Solutions-Core]
     5. OTA test method for A-IoT device 1 [Ambient\_IoT\_Solutions-Core]
     6. Conformance testing for Ambient-IoT BS [Ambient\_IoT\_Solutions-Perf]
     7. RRM performance requirements for device 1 [Ambient\_IoT\_Solutions-Perf]
     8. Demodulation performance requirements for device 1 [Ambient\_IoT\_Solutions-Perf]
     9. Demodulation performance requirements for Ambient-IoT BS [Ambient\_IoT\_Solutions-Perf]
  7. Enhancements of network energy savings for NR [Netw\_Energy\_NR\_enh]
     1. Moderator summary and conclusions [Netw\_Energy\_NR\_enh-Core]
     2. General aspects [Netw\_Energy\_NR\_enh-Core]
     3. RRM core requirements [Netw\_Energy\_NR\_enh-Core]
        1. On-demand SSB SCell operation [Netw\_Energy\_NR\_enh-Core]
        2. Adaptation of common signal/channel transmission [Netw\_Energy\_NR\_enh-Core]
        3. On-demand SIB1 [Netw\_Energy\_NR\_enh-Core]
     4. RRM performance requirements [Netw\_Energy\_NR\_enh-Perf]
     5. UE and BS demodulation performance requirements [Netw\_Energy\_NR\_enh-Perf]
  8. Low-power wake-up signal and receiver for NR (LP-WUS/WUR) [NR\_LPWUS]
     1. Moderator summary and conclusions [NR\_LPWUS]
     2. General aspects and RF TR (for email approval) [NR\_LPWUS-Core]
     3. UE RF requirements for LP-WUS/WUR [NR\_LPWUS-Core]
        1. System parameters [NR\_LPWUS-Core]
        2. Rx requirements of REFSENS, ASCS and ACS [NR\_LPWUS-Core]
        3. Rx requirements of IBB, OBB, intermodulation, spurious emissions and others [NR\_LPWUS-Core]
        4. Testability for UE RF requirements [NR\_LPWUS-Core]
     4. BS RF requirements and conformance testing for LP-WUS/WUR [NR\_LPWUS-Core/Perf]
     5. RRM core requirements for LP-WUS/WUR [NR\_LPWUS-Core]
        1. Simulation assumptions and results [NR\_LPWUS-Core]
        2. RRM core requirements [NR\_LPWUS-Core]
     6. RRM performance requirements for LP-WUS/WUR [NR\_LPWUS-Perf]
     7. Demodulation performance requirements [NR\_LPWUS-Perf]
  9. NR mobility enhancements Phase 4 [NR\_Mob\_Ph4]
     1. Moderator summary and conclusions [NR\_Mob\_Ph4-Core]
     2. General aspects [NR\_Mob\_Ph4-Core]
     3. RRM core requirements [NR\_Mob\_Ph4-Core]
        1. Event triggered L1 measurement reporting [NR\_Mob\_Ph4-Core]
        2. CSI-RS based L1 measurement [NR\_Mob\_Ph4-Core]
        3. Conditional Intra-CU LTM [NR\_Mob\_Ph4-Core]
     4. RRM performance requirements [NR\_Mob\_Ph4-Perf]
  10. XR for NR Phase 3 [NR\_XR\_Ph3]
      1. Moderator summary and conclusions [NR\_XR\_Ph3-Core]
      2. General aspects [NR\_XR\_Ph3-Core]
      3. RRM core requirements [NR\_XR\_Ph3-Core]
      4. RRM performance requirements [NR\_XR\_Ph3-Perf]
  11. Non-Terrestrial Networks (NTN) for NR Phase 3 [NR\_NTN\_Ph3]
      1. Moderator summary and conclusions [NR\_NTN\_Ph3]
      2. General aspects [NR\_NTN\_Ph3-Core]
      3. UE RF requirements [NR\_NTN\_Ph3-Core]
         1. RedCap UE RF requirements [NR\_NTN\_Ph3-Core]
         2. Other requirements [NR\_NTN\_Ph3-Core]
      4. SAN RF and conformance requirements [NR\_NTN\_Ph3-Core/Perf]
      5. RRM core requirements [NR\_NTN\_Ph3-Core]
         1. (e)RedCap RRM requirements [NR\_NTN\_Ph3-Core]
         2. Other RRM requirements [NR\_NTN\_Ph3-Core]
      6. RRM performance requirements [NR\_NTN\_Ph3-Perf]
      7. UE and SAN demodulation performance requirements [NR\_NTN\_Ph3-Perf]
  12. Non-Terrestrial Networks (NTN) for Internet of Things (IoT) Phase 3 [IoT\_NTN\_Ph3]
      1. Moderator summary and conclusions [IoT\_NTN\_Ph3-Core]
      2. General aspects [IoT\_NTN\_Ph3-Core]
      3. RF core and SAN conformance requirements [IoT\_NTN\_Ph3-Core/Perf]
      4. RRM core requirements [IoT\_NTN\_Ph3-Core]
      5. RRM performance requirements [IoT\_NTN\_Ph3-Perf]
      6. SAN demodulation performance requirements [IoT\_NTN\_Ph3-Perf]
  13. Introduction of IoT-NTN TDD mode [IoT\_NTN\_TDD]
      1. Moderator summary and conclusions [IoT\_NTN\_TDD-Core]
      2. General aspects [IoT\_NTN\_TDD]
      3. Band and system parameters (DL and UL channelization, channel bandwidth) [IoT\_NTN\_TDD-Core]
      4. SAN RF requirements [IoT\_NTN\_TDD-Core]
      5. UE RF requirements [IoT\_NTN\_TDD-Core]
      6. RRM core requirements [IoT\_NTN\_TDD-Core]
  14. Performance part for LTE-based 5G Broadcast Phase 2 [LTE\_terr\_bcast\_Ph2-Perf]
      1. Moderator summary and conclusions [LTE\_terr\_bcast\_Ph2-Perf]
      2. UE demodulation for time/frequency interleaving [LTE\_terr\_bcast\_Ph2-Perf]

1. R19 feature list

\* Single contribution per company is allowed in this agenda with the summary of proposed RAN4 related feature list. After the decision is made under the agenda of the individual WI, the corresponding UE capability will be captured in the Rel-19 feature list under this agenda.

\* The proponents also need submit the contribution with details to the agenda of the corresponding WI under "7.xx.xx General aspects" and the decision should be made under the agenda of the individual WI.

\* If there is no corresponding agenda, the proponents can directly submit the contributions with technique details in the dedicated agenda for Rel-19 feature list, and the decision will be made under this agenda.

1. Liaison output to other groups and related issues
   1. Moderator summary and conclusions
   2. R19 related (LS which cannot be submitted to any dedicated agenda under AI 7)
   3. R18 related
   4. R17, R15 and R16 related
2. RAN task and other topics
   1. Framework simplification for co-location/co-existence requirements (RP-243288)
3. New or revised WID/SID
4. Any other business
5. Close of the meeting