**3GPP TSG-RAN WG2 #127 *R2-2407835***

**Maastricht, Netherlands, Aug 19th – 23rd 2024**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
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|  | **38.306** | **CR** | **1158** | **rev** | **-** | **Current version:** | **18.2.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:***  | Mandatory support of Enhanced channel raster by RedCap UE |
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| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | R2 |
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| ***Work item code:*** | NR\_redcap-Core, NR\_redcap\_enh-Core |  | ***Date:*** | 2024-08-21 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
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| ***Reason for change:*** | In “LS on mandated support of the enhanced channel raster by RedCap UEs from Rel-17” ([R2-2407826](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_127/Docs//R2-2407826.zip)), RAN4 “…consider support of the enhanced raster by RedCap UEs essential and should therefore be mandated for all RedCap UEs from Rel-17, eRedCap UEs from Rel-18”. |
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| ***Summary of change:*** | Added that (e)RedCap UE supports the channel raster as specified in TS 38.101-1 [2], clause 5.4I, for all bands supported by the UE.Clarified that *enhancedChannelRaster-r18* is not applicable to RedCap or eRedCap UEs.**Impact Analysis**Impacted 5G architecture options: NR SA Impacted functionality: (e)RedCap UE RFInter-operability:1. If the network is implemented according to the CR and the UE is not, the network operator will need to make compromises on capacity (e.g. PDCCH), performance and spectrum utilization, if at all possible, to configure a RedCap BWP (see [R4-2411670](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_112/Docs//R4-2411670.zip)).2. If the UE is implemented according to the CR and the network is not, there are no interoperability issues. |
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| ***Consequences if not approved:*** | Some RedCap UE implementations compliant with Rel-17 may not support a configuration and location of a UE-specific channel bandwidth off the 100 kHz channel raster in bands with this raster granularity. For (e)RedCap UEs it must always be possible to configure BWPs and associated UE-specific channel bandwidths smaller than the gNB channel bandwidth. |
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| ***Clauses affected:*** | 4.2.7.2, 4.2.21.1, 4.2.22.1 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 38.101-1 CR2394  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

#### 4.2.7.2 *BandNR parameters*

| Definitions for parameters | Per | M | FDD-TDDDIFF | FR1-FR2DIFF |
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| ***ack-NACK-FeedbackForMulticastWithDCI-Enabler-r17***Indicates whether the UE supports DCI-based enabling/disabling ACK/NACK based HARQ-ACK feedback configured per G-RNTI by RRC signalling via DCI format 4\_2.A UE supporting this feature shall also indicate support of *ack-NACK-FeedbackForMulticast-r17* and *dynamicMulticastDCI-Format4-2-r17*. | Band | No | N/A | N/A |
| ***ack-NACK-FeedbackForSPS-MulticastWithDCI-Enabler-r17***Indicates whether the UE supports DCI-based enabling/disabling ACK/NACK based HARQ-ACK feedback configured per G-CS-RNTI for multicast by RRC signalling via DCI format 4\_2.A UE supporting this feature shall also indicate support of *ack-NACK-FeedbackForSPS-Multicast-r17* and *sps-MulticastDCI-Format4-2-r17*. | Band | No | N/A | N/A |
| ***activeConfiguredGrant-r16***Indicates whether the UE supports up to 12 configured/active configured grant configurations in a BWP of a serving cell. This field includes the following parameters:- *maxNumberConfigsPerBWP-r16* indicates the maximum number of configured/active configured grant configurations in a BWP of a serving cell.- *maxNumberConfigsAllCC-r16* indicates the maximum number of configured/active configured grant configurations across all serving cells in a MAC entity, and across MCG and SCG in case of NR-DC.The UE can include this feature only if the UE indicates support of either *configuredUL-GrantType1* *or configuredUL-GrantType1-v1650* and/or *configuredUL-GrantType2 or configuredUL-GrantType2-v1650*.NOTE:- For all the reported bands in FR1, a same X1 value is reported for *maxNumberConfigsAllCC-r16*. For all the reported bands in FR2, a same X2 value is reported for *maxNumberConfigsAllCC-r16*.- The total number of configured/active configured grant configurations across all serving cells in FR1 is no greater than X1.- The total number of configured/active configured grant configurations across all serving cells in FR2 is no greater than X2.- If the CA have some serving cell(s) in FR1 and some serving cell(s) in FR2, the total number of configured/active configured grant configurations across all serving cells is no greater than max(X1, X2). | Band | No | N/A | N/A |
| ***additionalActiveTCI-StatePDCCH***Indicates whether the UE supports one additional active TCI-State for control in addition to the supported number of active TCI-States for PDSCH. The UE can include this field only if *maxNumberActiveTCI-PerBWP* in *tci-StatePDSCH* is set to *n1*. Otherwise, the UE does not include this field. | Band | No | N/A | N/A |
| ***antennaArrayType-r18***Indicates whether the UE supports the RF and RRM requirements with antenna array as specified in TS 38.101-1 [2] clause 6.1J, 7.1J and TS 38.133 [5]. If the field is absent, the RF and RRM requirements with omni-directional antenna applies as specified in TS 38.101-1 [2] clause 6.1J, 7.1J and TS 38.133 [5]. The UE indicating support of this feature shall also indicate support of *airToGroundNetwork-r18*. This field is only applicable for bands as specified for ATG in clause 5.2J of TS 38.101-1 [2]. | Band | CY | N/A | FR1 only |
| ***aperiodicBeamReport***Indicates whether the UE supports aperiodic 'CRI/RSRP' or 'SSBRI/RSRP' reporting on PUSCH. The UE provides the capability for the band number for which the report is provided (where the measurement is performed). | Band | Yes | N/A | N/A |
| ***aperiodicCSI-RS-AdditionalBandwidth-r17***Indicates the UE supported TRS bandwidths for fast SCell activation, in addition to 52 RBs, for a 10MHz UE channel bandwidth. This field only applies for the BWPs configured with 52 RBs size and 15kHz SCS, in FDD bands and indicates the values:Value *addBW-Set1* indicates 28, 32, 36, 40, 44, 48 RBs.Value *addBW-Set2* indicates 32, 36, 40, 44, 48 RBs.The UE can include this feature only if the UE indicates support of *aperiodicCSI-RS-FastScellActivation-r17*. | Band | No | FDD only | FR1 only |
| ***aperiodicCSI-RS-FastScellActivation-r17***Indicates whether the UE supports aperiodic CSI-RS for tracking for fast SCell activation, i.e.,1) Aperiodic CSI-RS for tracking for fast SCell activation is triggered by enhanced SCell activation/deactivation MAC CE;2) Aperiodic CSI-RS for tracking for fast SCell activation is triggered within the BWP indicated by *firstActiveDownlinkBWP-Id* for the SCell.This field includes the following parameters:- *maxNumberAperiodicCSI-RS-PerCC-r17* indicates the maximum number of aperiodic CSI-RS resource set configurations for tracking for fast SCell activation that can be configured to UE per CC in a reported band. Value n8 corresponds to 8, n16 corresponds to 16, and so on.- *maxNumberAperiodicCSI-RS-AcrossCCs-r17* indicates the maximum number of aperiodic CSI-RS resource set configurations for tracking for fast SCell activation that can be configured to UE across CCs in a reported band. Value n8 corresponds to 8, n16 corresponds to 16, and so on.NOTE:- *maxNumberAperiodicCSI-RS-PerCC-r17* and *maxNumberAperiodicCSI-RS-AcrossCCs-r17* values refer to the number of RS configurations for fast SCell activation that can be indicated by the MAC CE.- The NZP-CSI-RS configured as RS for tracking for fast SCell activation are not considered when counting the maximum NZP-CSI-RS configurations of CSI-RS and CSI-IM reception for CSI feedback. | Band | No | N/A | N/A |
| ***aperiodicTRS***Indicates whether the UE supports DCI triggering aperiodic TRS associated with periodic TRS. | Band | No | N/A | Yes |
| ***asymmetricBandwidthCombinationSet***Defines the supported asymmetric channel bandwidth combination for the band as defined in the TS 38.101-1 [2]. Field encoded as a bit map, where bit N is set to "1" if UE support asymmetric channel bandwidth combination set N for this band as defined in the TS 38.101-1 [2]. The leading / leftmost bit (bit 0) corresponds to the asymmetric channel bandwidth combination set 1, the next bit corresponds to the asymmetric channel bandwidth combination set 2 and so on. UE shall support asymmetric channel bandwidth combination set 0. If the field is absent, the UE supports asymmetric channel bandwidth combination set 0. | Band | No | N/A | N/A |
| ***bandNR***Defines supported NR frequency band by NR frequency band number, as specified in TS 38.101-1 [2], TS 38.101-2 [3], and TS 38.101-5 [34]. | Band | Yes | N/A | N/A |
| ***beamCorrespondenceCSI-RS-based-r16***Indicates whether the UE support for beam correspondence based on CSI-RS has the ability to select its uplink beam based on measurement of CSI-RS. If a UE supports beam correspondence based on CSI-RS, then the network can expect the UE to also fulfil Rel-15 beam correspondence requirements.If UE supports neither *beamCorrespondenceSSB-based-r16*nor *beamCorrespondenceCSI-RS-based-r16*, gNB can expect the UE to fulfill beam correspondence based on Rel-15 beam correspondence requirements. | Band | No | TDD only | FR2 only |
| ***beamCorrespondenceSSB-based-r16***Indicates whether the UE support for beam correspondence based on SSB has the ability to select its uplink beam based on measurement of SSB. If a UE supports beam correspondence based on SSB, then the network can expect the UE to also fulfil Rel-15 beam correspondence requirements.If UE supports neither *beamCorrespondenceSSB-based-r16*nor *beamCorrespondenceCSI-RS-based-r16*, gNB can expect the UE to fulfil beam correspondence based on Rel-15 beam correspondence requirements. | Band | No | TDD only | FR2 only |
| ***beamCorrespondenceWithoutUL-BeamSweeping***Indicates how UE supports FR2 beam correspondence as specified in TS 38.101-2 [3], clause 6.6. The UE that fulfils the beam correspondence requirement without the uplink beam sweeping (as specified in TS 38.101-2 [3], clause 6.6) shall set the field to *supported*. The UE that fulfils the beam correspondence requirement with the uplink beam sweeping (as specified in TS 38.101-2 [3], clause 6.6) shall not report this field. | Band | Yes | N/A | FR2 only |
| ***beamManagementSSB-CSI-RS***Defines support of SS/PBCH and CSI-RS based RSRP measurements. The capability comprises signalling of- *maxNumberSSB-CSI-RS-ResourceOneTx* indicates maximum total number of configured one port NZP CSI-RS resources and SS/PBCH blocks that are supported by the UE to measure L1-RSRP as specified in TS 38.215 [13] within a slot and across all serving cells (see NOTE). On FR2, it is mandatory to report >=8; On FR1, it is mandatory with capability signalling to report >=8.- *maxNumberCSI-RS-Resource* indicates maximum total number of configured NZP-CSI-RS resources that are supported by the UE to measure L1-RSRP as specified in TS 38.215 [13] across all serving cells (see NOTE). It is mandated to report at least n8 for FR1.- *maxNumberCSI-RS-ResourceTwoTx* indicates maximum total number of two ports NZP CSI-RS resources that are supported by the UE to measure L1-RSRP as specified in TS 38.215 [13] within a slot and across all serving cells (see NOTE).- *supportedCSI-RS-Density* indicates density of one RE per PRB for one port NZP CSI-RS resource for RSRP reporting, if supported. On FR2, it is mandatory to report either "three" or "oneAndThree"; On FR1, it is mandatory with capability signalling to report either "three" or "oneAndThree".- *maxNumberAperiodicCSI-RS-Resource* indicates maximum number of configured aperiodic CSI-RS resources across all serving cells (see NOTE). For FR1 and FR2, the UE is mandated to report at least n4.NOTE: If the UE sets a value other than *n0* in an FR1 band, it shall set that same value in all FR1 bands. If the UE sets a value other than *n0* in an FR2 band, it shall set that same value in all FR2 bands. The UE supports a total number of resources equal to the maximum of the FR1 and FR2 value, but no more than the FR1 value across all FR1 serving cells and no more than the FR2 value across all FR2 serving cells. | Band | Yes | N/A | FD |
| ***beamReportTiming, beamReportTiming-v1710***Indicates the number of OFDM symbols between the end of the last symbol of SSB/CSI-RS and the start of the first symbol of the transmission channel containing beam report. The UE provides the capability for the band number for which the report is provided (where the measurement is performed). The UE includes this field for each supported sub-carrier spacing. | Band | Yes | N/A | N/A |
| ***beamSweepingFactorReduction-r18***Indicates whether the UE supports beam sweeping factor reduction for FR2 unknown SCell activation.The capability comprises signalling of- *reduceForCellDetection* indicates reducing beam sweeping factor for cell detection if UE has full set (N=8) of beam sweeping during AGC settling part during FR2-1 unknown SCell activation procedure.- *reduceForSSB-L1-RSRP-Meas* indicates reducing beam sweeping factor for SSB based L1-RSRP measurement if UE has full set (N=8) of beam sweeping during AGC settling part during FR2-1 unknown SCell activation procedure.UE is required to meet the shortened SCell activation delay requirement in TS 38.133 [5] if the feature is supported. | Band | No | TDD only | FR2-1 only |
| ***beamSwitchTiming, beamSwitchTiming-v1710***Indicates the minimum number of OFDM symbols between the DCI triggering of aperiodic CSI-RS and aperiodic CSI-RS transmission. The number of OFDM symbols is measured from the end of the last symbol containing the indication to the start of the first symbol of CSI-RS. The UE includes this field for each supported sub-carrier spacing.NOTE: *beamSwitchTiming* of value (*sym224* or *sym336* for 60kHz and 120kHz SCS, *sym896* or *sym1344* for 480kHz SCS and *sym1792* or *sym2688* for 960kHz SCS) will be used to determine UE expectation/behaviour for aperiodic CSI-RS for tracking and latency requirements for L1-RSRP reporting as described in clause 5.1.6.1.1 of TS 38.214 [12], while UE behaviour/assumption regarding before or after beam switch timing is unspecified for measuring AP CSI-RS for CSI acquisition (without *trs-Info* and without repetition) and for beam management (with repetition 'off'). | Band | No | N/A | FR2 only |
| ***beamSwitchTiming-r16, beamSwitchTiming-r17***Indicates the minimum number of required OFDM symbols (sym224, sym336 for 60kHz and 120kHz SCS, *sym896* or *sym1344* for 480kHz SCS and *sym1792* or *sym2688* for 960kHz SCS) between the DCI triggering aperiodic CSI-RS and the corresponding aperiodic CSI-RS transmission in a CSI-RS resource set configured with repetition 'ON' if *enableBeamSwitchTiming-r16* is configured.For CSI-RS configured with repetition "*off*", the UE applies beam switch time of sym48 if *beamSwitchTiming-r16* is reported and *enableBeamSwitchTiming-r16* is configured. For CSI-RS configured without repetition and without *trs-info*, the UE applies beam switch time of sym48 if *beamSwitchTiming-r16* is reported and *enableBeamSwitchTiming-r16* is configured. | Band | No | N/A | FR2 only |
| ***bfd-Relaxation-r17***Indicates whether the UE supports BFD relaxation criteria and requirement as specified in TS 38.133 [5]. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.UE indicating support of this feature shall also indicate support of *maxNumberCSI-RS-BFD, maxNumberSSB-BFD* and *maxNumberCSI-RS-SSB-CBD.* | Band  | No | N/A | N/A |
| ***bwp-DiffNumerology***Indicates whether the UE supports BWP adaptation up to 4 BWPs with the different numerologies, via DCI and timer. Except for SUL, the UE only supports the same numerology for the active UL and DL BWP. For the UE that is capable of this feature but is not indicating *supportOfRedCap-r17* nor *supportOfERedCap-r18*, the bandwidth of a UE-specific RRC configured DL BWP includes the bandwidth of the CORESET#0 (if CORESET#0 is present) and SSB for PCell and PSCell (if configured). For the UE which is a (e)RedCap UE capable of this feature, the bandwidth of a UE-specific RRC configured DL BWP may not include the bandwidth of the CORESET#0 (if configured) and SSB for PCell. For SCell(s), the bandwidth of the UE-specific RRC configured DL BWP includes SSB, if there is SSB on SCell(s). | Band | No | N/A | N/A |
| ***bwp-SameNumerology***Indicates whether UE supports BWP adaptation (up to 2/4 BWPs) with the same numerology, via DCI and timer. Except for SUL, the UE only supports the same numerology for the active UL and DL BWP. For the UE that is capable of this feature but is not indicating *supportOfRedCap-r17* nor *supportOfERedCap-r18*, the bandwidth of a UE-specific RRC configured DL BWP includes the bandwidth of the CORESET#0 (if CORESET#0 is present) and SSB for PCell and PSCell (if configured). For the UE which is a (e)RedCap UE capable of this feature, the bandwidth of a UE-specific RRC configured DL BWP may not include the bandwidth of the CORESET#0 (if configured) and SSB for PCell. For SCell(s), the bandwidth of the UE-specific RRC configured DL BWP includes SSB, if there is SSB on SCell(s). | Band | No | N/A | N/A |
| ***bwp-WithoutRestriction***Indicates support of BWP operation without bandwidth restriction. The Bandwidth restriction in terms of DL BWP for PCell and PSCell means that the bandwidth of a UE-specific RRC configured DL BWP may not include the bandwidth of CORESET #0 (if configured) and SSB. For SCell(s), it means that the bandwidth of DL BWP may not include SSB. | Band | No | N/A | N/A |
| ***cancelOverlappingPUSCH-r16***Indicates whether UE supports the cancellation of the (repetition of the) PUSCHs transmission on all other intra-band serving cell(s). The cancellation of the (repetition of the) PUSCH transmission on a the set of intra-band serving cell(s) includes all symbols from the earliest symbol that is overlapping with the first cancelled symbol of the PUSCH on the serving cell for which the DCI format 2\_4 is applicable to. If the UE supports this feature, the UE needs to report *pa-PhaseDiscontinuityImpacts* and *ul-CancellationSelfCarrier-r16*. | Band | No | N/A | N/A |
| ***cg-PUSCH-UTO-UCI-Ind-r18***Indicates whether the UE supports multiplexing of the unused transmission occasions UCI (UTO-UCI) on a CG-PUSCH.The UE indicating support of this feature shall also indicate support of at least one of *configuredUL-GrantType1, configuredUL-GrantType1-v1650, configuredUL-GrantType2, configuredUL-GrantType2-v1650*. | Band | No | N/A | N/A |
| ***cg-SDT-r17***Indicates whether the UE supports transmission of data and/or signalling over allowed radio bearers in RRC\_INACTIVE state via configured grant type 1 (i.e. CG-SDT), as specified in TS 38.331 [9]. Except for NTN bands, UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.UE supports multiple CG-SDT configurations when a UE indicates the support of this feature and *activeConfiguredGrant-r16*; otherwise UE only supports one CG-SDT configuration. | Band | No | N/A | N/A |
| ***cg-SDT-PeriodicityExt-r18***Indicates whether the UE supports to extend the range of CG-SDT periodicities for MO-SDT and/or MT-SDT, as specified in TS 38.331 [9].A UE supporting this feature shall also indicate the support of *ra-InsteadCG-SDT-r18*. A UE supporting this feature shall also indicate the support of *cg-SDT-r17* or *mt-CG-SDT-r18.* | Band | No | N/A | N/A |
| ***channelBW-DL-IAB-r16***Indicates whether the IAB-MT supports channel bandwidth of 100 MHz for a given SCS in FR1 for DL or whether the IAB-MT supports channel bandwidth of 200 MHz for a given SCS in FR2 for DL. | Band | No | N/A | N/A |
| ***channelBW-UL-IAB-r16***Indicates whether the IAB-MT supports channel bandwidth of 100 MHz for a given SCS in FR1 for UL or whether the IAB-MT supports channel bandwidth of 200 MHz for a given SCS in FR2 for UL. | Band | No | N/A | N/A |
| ***channelBWs-DL***Indicates for each subcarrier spacing the UE supported channel bandwidths.Absence of the *channelBWs-DL* (without suffix) for a band or absence of specific scs-XXkHz entry for a supported subcarrier spacing means that the UE supports the channel bandwidths among [5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100] and [50, 100, 200] that were defined in clause 5.3.5 of TS 38.101-1 version 15.7.0 [2] and TS 38.101-2 version 15.7.0 [3] for the given band or the specific SCS entry. For IAB-MT, to determine whether the IAB-MT supports a channel bandwidth of 100 MHz, the network checks c*hannelBW-DL-IAB-r16*.For FR1, the bits in *channelBWs-DL* (without suffix) starting from the leading / leftmost bit indicate 5, 10, 15, 20, 25, 30, 40, 50, 60 and 80MHz. For FR2, the bits in *channelBWs-DL* (without suffix) starting from the leading / leftmost bit indicate 50, 100 and 200MHz. The third / rightmost bit (for 200MHz) shall be set to 1. For IAB-MT the third / rightmost bit (for 200MHz) is ignored. To determine whether the IAB-MT supports a channel bandwidth of 200 MHz, the network checks *channelBW-DL-IAB-r16*.For FR1, the leading/leftmost bit in *channelBWs-DL-v1590* indicates 70MHz, the second leftmost bit indicates 45MHz, the third leftmost bit indicates 35MHz, the fourth leftmost bit indicates 100MHz and all the remaining bits in *channelBWs-DL-v1590* shall be set to 0. The fourth leftmost bit (for 100MHz) is not applicable for bands n41, n48, n77, n78, n79 and n90 as defined in TS 38.101-1 [2]. For each band, (e)RedCap UEs shall indicate supporting the maximum of those channel bandwidths that are less than or equal to 20 MHz for FR1 and less than or equal to 100 Mhz for FR2, taking restrictions in TS 38.101-1 [2] and TS 38.101-2 [3] into consideration. For each band, NTN capable UEs shall indicate the supported channel bandwidths for FR1, taking restrictions in TS 38.101-5 [34] into consideration.This feature is applicable only for FR1 and FR2-1 band, otherwise it is absent.NOTE: To determine whether the UE supports a specific SCS for a given band, the network validates the *supportedSubCarrierSpacingDL* and the *scs-60kHz*.To determine whether the UE supports a channel bandwidth of 90 MHz for the band combination with other bandwidth combination set than BCS5, the network may ignore this capability and validate instead the *channelBW-90mhz*, the *supportedBandwidthCombinationSet*, the *supportedBandwidthCombinationSetIntraENDC*, and *supportedBandwidthCombinationSetIntraENDC-v1790*. To determine whether the UE supports a channel bandwidth of 90 MHz for the band combination with BCS5, the network may ignore this capability and validate instead the *channelBW-90mhz*, the *supportedBandwidthCombinationSet*, the *supportedBandwidthCombinationSetIntraENDC*, *supportedAggBW-FR1-r17*, and *supportedBandwidthCombinationSetIntraENDC-v1790*. To determine whether the UE supports a channel bandwidth of 400 MHz, the network may ignore this capability and validate the *supportedBandwidthCombinationSet*, the *supportedBandwidthCombinationSetIntraENDC*, the *supportedBandwidthDL*, and *supportedBandwidthCombinationSetIntraENDC-v1790*.For serving cell(s) with other channel bandwidths:- If *supportedAggBW-FR1-r17* is reported, the network validates the *channelBWs-DL*, the *supportedBandwidthCombinationSet*, the *supportedBandwidthCombinationSetIntraENDC*, the *asymmetricBandwidthCombinationSet* (for a band supporting asymmetric channel bandwidth as defined in clause 5.3.6 of TS 38.101-1 [2]), *supportedBandwidthDL-v1780*, *supportedMinBandwidthDL*, *supportedAggBW-FR1-r17*, and *supportedBandwidthCombinationSetIntraENDC-v1790.*- Otherwise, the network validates the *channelBWs-DL*, the *supportedBandwidthCombinationSet*, the *supportedBandwidthCombinationSetIntraENDC*, the *asymmetricBandwidthCombinationSet* (for a band supporting asymmetric channel bandwidth as defined in clause 5.3.6 of TS 38.101-1 [2]), *supportedBandwidthDL/supportedBandwidthDL-v1710,* *supportedMinBandwidthDL*, *supportedAggBW-FR2-r17*, and *supportedBandwidthCombinationSetIntraENDC-v1790.* | Band | Yes | N/A | N/A |
| ***channelBWs-DL-SCS-120kHz-FR2-2-r17***Indicates the UE supported channel bandwidths in DL for the SCS 120kHz.The bits in *channelBWs-DL-SCS-120kHz-FR2-2* starting from the leading / leftmost bit indicate 100 and 400MHz.100 and 400 MHz are mandatory channel bandwidths if the UE supports 120 kHz SCS (i.e. the bit for 100 and 400MHz shall always be set to 1).UE supporting this feature shall also indicate support of *dl-FR2-2-SCS-120kHz-r17*.NOTE: To determine whether the UE supports a SCS 120kHz for a given band, the network validates the *supportedSubCarrierSpacingDL*.To determine the supported carrier bandwidths, the network validates the *channelBWs-DL-SCS-120kHz-FR2-2-r17*, the *supportedBandwidthCombinationSet* and the *supportedBandwidthDL-v1710*. | Band | CY | N/A | N/A |
| ***channelBWs-DL-SCS-480kHz-FR2-2-r17***Indicates the UE supported channel bandwidths in DL for the SCS 480kHz.The bits in *channelBWs-DL-SCS-480kHz-FR2-2* starting from the leading / leftmost bit indicate 400, 800 and 1600MHz.400 MHz is a mandatory channel bandwidth if the UE supports 480 kHz SCS (i.e. the bit for 400MHz shall always be set to 1).UE supporting this feature shall also indicate support of *dl-FR2-2-SCS-480kHz-r17*.NOTE: To determine whether the UE supports a SCS 480kHz for a given band, the network validates the *supportedSubCarrierSpacingDL*.To determine the supported carrier bandwidths, the network validates the *channelBWs-DL-SCS-480kHz-FR2-2-r17*, the *supportedBandwidthCombinationSet* and *supportedBandwidthDL-v1710*. | Band | CY | N/A | N/A |
| ***channelBWs-DL-SCS-960kHz-FR2-2-r17***Indicates the UE supported channel bandwidths in DL for the SCS 960kHz.The bits in *channelBWs-DL-SCS-960kHz-FR2-2* starting from the leading / leftmost bit indicate 400, 800,1600 and 2000MHz.400 MHz is a mandatory channel bandwidth if the UE supports 960 kHz SCS (i.e. the bit for 400MHz shall always be set to 1).UE supporting this feature shall also indicate support of *dl-FR2-2-SCS-960kHz-r17*.NOTE: To determine whether the UE supports a SCS 960kHz for a given band, the network validates the *supportedSubCarrierSpacingDL*.To determine the supported carrier bandwidths, the network validates the *channelBWs-DL-SCS-960kHz-FR2-2-r17*, the *supportedBandwidthCombinationSet* and *supportedBandwidthDL-v1710*. | Band | CY | N/A | N/A |
| ***channelBWs-UL***Indicates for each subcarrier spacing the UE supported channel bandwidths.Absence of the *channelBWs-UL* (without suffix) for a band or absence of specific scs-XXkHz entry for a supported subcarrier spacing means that the UE supports the channel bandwidths among [5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100] and [50, 100, 200] that were defined in clause 5.3.5 of TS 38.101-1 version 15.7.0 [2] and TS 38.101-2 version 15.7.0 [3] for the given band or the specific SCS entry. For IAB-MT, to determine whether the IAB-MT supports a channel bandwidth of 100 MHz, the network checks *channelBW-UL-IAB-r16*.For FR1, the bits in *channelBWs-UL* (without suffix) starting from the leading / leftmost bit indicate 5, 10, 15, 20, 25, 30, 40, 50, 60 and 80MHz. For FR2, the bits in *channelBWs-UL* (without suffix) starting from the leading / leftmost bit indicate 50, 100 and 200MHz. The third / rightmost bit (for 200MHz) shall be set to 1. For IAB-MT the third / rightmost bit (for 200MHz) is ignored. To determine whether the IAB-MT supports a channel bandwidth of 200 MHz, the network checks *channelBW-UL-IAB-r16*.For FR1, the leading/leftmost bit in *channelBWs-UL-v1590* indicates 70 MHz, the second leftmost bit indicates 45MHz, the third leftmost bit indicates 35MHz, the fourth leftmost bit indicates 100MHz and all the remaining bits in *channelBWs-UL-v1590* shall be set to 0. The fourth leftmost bit (for 100MHz) is not applicable for bands n41, n48, n77, n78, n79 and n90 as defined in TS 38.101-1 [2]. For each band, (e)RedCap UEs shall indicate supporting the maximum of those channel bandwidths that are less than or equal to 20 MHz for FR1 and less than or equal to 100 Mhz for FR2, taking restrictions in TS 38.101-1 [2] and TS 38.101-2 [3] into consideration. For each band, NTN capable UEs shall indicate the supported channel bandwidths for FR1, taking restrictions in TS 38.101-5 [34] into consideration.This feature is applicable only for FR1 and FR2-1 band, otherwise it is absent.NOTE 1: To determine whether the UE supports a specific SCS for a given band, the network validates the *supportedSubCarrierSpacingUL* and the *scs-60kHz*.To determine whether the UE supports a channel bandwidth of 90 MHz for the band combination with other bandwidth combination set than BCS5, the network may ignore this capability and validate instead the *channelBW-90mhz*, the *supportedBandwidthCombinationSet*, the *supportedBandwidthCombinationSetIntraENDC,* and *supportedBandwidthCombinationSetIntraENDC-v1790*. To determine whether the UE supports a channel bandwidth of 90 MHz for the band combination with BCS5, the network may ignore this capability and validate instead the *channelBW-90mhz*, the *supportedBandwidthCombinationSet*, the *supportedBandwidthCombinationSetIntraENDC*, *supportedAggBW-FR1-r17,* and *supportedBandwidthCombinationSetIntraENDC-v1790*. To determine whether the UE supports a channel bandwidth of 400 MHz, the network may ignore this capability and validate the *supportedBandwidthCombinationSet*, the *supportedBandwidthCombinationSetIntraENDC*, the *supportedBandwidthUL,* and *supportedBandwidthCombinationSetIntraENDC-v1790*.For serving cell(s) with other channel bandwidths:- If *supportedAggBW-FR1-r17* is reported, the network validates the *channelBWs-UL*, the *supportedBandwidthCombinationSet*, the *supportedBandwidthCombinationSetIntraENDC*, the *asymmetricBandwidthCombinationSet* (for a band supporting asymmetric channel bandwidth as defined in clause 5.3.6 of TS 38.101-1 [2]), *supportedBandwidthUL-v1780*, *supportedMinBandwidthUL*, *supportedAggBW-FR1-r17,* and *supportedBandwidthCombinationSetIntraENDC-v1790.*- Otherwise, the network validates the *channelBWs-UL*, the *supportedBandwidthCombinationSet*, the *supportedBandwidthCombinationSetIntraENDC*, the *asymmetricBandwidthCombinationSet* (for a band supporting asymmetric channel bandwidth as defined in clause 5.3.6 of TS 38.101-1 [2]), *supportedBandwidthUL/supportedBandwidthUL-v1710, supportedMinBandwidthUL*, *supportedAggBW-FR2-r17,* and *supportedBandwidthCombinationSetIntraENDC-v1790.*NOTE 2: For SRS carrier switching to a PUSCH-less cell, to determine whether the UE supports a channel bandwidth 90MHz/400MHz for SRS configuration, the network validates the supported DL bandwidth, e.g. if the 90MHz is supported by the downlink, the network can configure SRS with 90MHz on the PUSCH-less carrier. SRS carrier switching on PUSCH-less SCells is not supported when channel bandwidth configured for DL is not supported in UL according to *channelBWs-UL*. | Band | Yes | N/A | N/A |
| ***channelBWs-UL-SCS-120kHz-FR2-2-r17***Indicates the UE supported channel bandwidths in UL for the SCS 120kHz.The bits in *channelBWs-UL-SCS-120kHz-FR2-2* starting from the leading / leftmost bit indicate 100 and 400MHz.100 and 400 MHz are mandatory channel bandwidths if the UE supports 120 kHz SCS (i.e. the bit for 100 and 400MHz shall always be set to 1).UE supporting this feature shall also indicate support of *ul-FR2-2-SCS-120kHz-r17*.NOTE: To determine whether the UE supports a SCS 120kHz for a given band, the network validates the *supportedSubCarrierSpacingUL*.To determine the supported carrier bandwidths, the network validates the *channelBWs-UL-SCS-120kHz-FR2-2-r17*, the *supportedBandwidthCombinationSet* and the *supportedBandwidthUL-v1710*. | Band | CY | N/A | N/A |
| ***channelBWs-UL-SCS-480kHz-FR2-2-r17***Indicates the UE supported channel bandwidths in UL for the SCS 480kHz.The bits in *channelBWs-UL-SCS-480kHz-FR2-2* starting from the leading / leftmost bit indicate 400, 800 and 1600MHz.400 MHz is a mandatory channel bandwidth if the UE supports 480 kHz SCS (i.e. the bit for 400MHz shall always be set to 1).UE supporting this feature shall also indicate support of *ul-FR2-2-SCS-480kHz-r17*.NOTE: To determine whether the UE supports a SCS 480kHz for a given band, the network validates the *supportedSubCarrierSpacingUL*.To determine the supported carrier bandwidths, the network validates the *channelBWs-UL-SCS-480kHz-FR2-2-r17*, the *supportedBandwidthCombinationSet* and *supportedBandwidthUL-v1710*. | Band | CY | N/A | N/A |
| ***channelBWs-UL-SCS-960kHz-FR2-2-r17***Indicates the UE supported channel bandwidths in UL for the SCS 960kHz.The bits in *channelBWs-UL-SCS-960kHz-FR2-2* starting from the leading / leftmost bit indicate 400, 800, 1600 and 2000MHz.400 MHz is a mandatory channel bandwidth if the UE supports 960 kHz SCS (i.e. the bit for 400MHz shall always be set to 1).UE supporting this feature shall also indicate support of *ul-FR2-2-SCS-960kHz-r17*.NOTE: To determine whether the UE supports a SCS 960kHz for a given band, the network validates the *supportedSubCarrierSpacingUL*.To determine the supported carrier bandwidths, the network validates the *channelBWs-UL-SCS-960kHz-FR2-2-r17*, the *supportedBandwidthCombinationSet* and *supportedBandwidthUL-v1710*. | Band | CY | N/A | N/A |
| ***codebookComboParameterMixedType-r17***Indicates the support of active CSI-RS resources and ports for mixed codebook types in any slot. The UE reports support active CSI-RS resources and ports for up to 4 mixed codebook combinations in any slot. The following are the possible mixed codebook combinations {Codebook1, Codebook2, Codebook3}:*- type1SP-feType2PS-null-r17 indicates* {Type 1 Single Panel, FeType II PS M=1, NULL}*- type1SP-feType2PS-M2R1-null-r17* indicates {Type 1 Single Panel, FeType II PS M=2 R=1, NULL}*- type1SP-feType2PS-M2R2-null-r17* indicates {Type 1 Single Panel, FeType II PS M=2 R=2, NULL}*- type1SP-Type2-feType2-PS-M1-r17* indicates {Type 1 Single Panel, Type II, FeType II PS M=1}*- type1SP-Type2-feType2-PS-M2R1-r17* indicates {Type 1 Single Panel, Type II, FeType II PS M=2 R=1}*-* *type1SP-eType2R1-feType2-PS-M1-r17* indicates {Type 1 Single Panel, eType II R=1, FeType II PS M=1}*-* *type1SP-eType2R1-feType2-PS-M2R1-r17* indicates {Type 1 Single Panel, eType II R=1, FeType II PS M=2 R=1}*-* *type1MP-feType2PS-null-r17* indicates {Type 1 Multi Panel*,* FeType II PS M=1, NULL}*-* *type1MP-feType2PS-M2R1-null-r17* indicates {Type 1 Multi Panel*,* FeType II PS M=2 R=1, NULL}*-* *type1MP-feType2PS-M2R2-null-r17* indicates {Type 1 Multi Panel*,* FeType II PS M=2 R=2, NULL}*-* *type1MP-Type2-feType2-PS-M1-r17* indicates {Type 1 Multi Panel*,* Type II, FeType II PS M=1}*-* *type1MP-Type2-feType2-PS-M2R1-r17* indicates {Type 1 Multi Panel*,* Type II, FeType II PS M=2 R=1}*-* *type1MP-eType2R1-feType2-PS-M1-r17* indicates {Type 1 Multi Panel, eType II R=1, FeType II PS M=1}*-* *type1MP-eType2R1-feType2-PS-M2R1-r17* indicates {Type 1 Multi Panel*,* eType II R=1, FeType II PS M=2 R=1}For each mixed codebook supported by the UE, *supportedCSI-RS-ResourceListAdd-r16* indicates the list of supported CSI-RS resources in a band by referring to *codebookVariantsList*. The following parameters are included for the supported CSI-RS resource:*-* *maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in a resource of a band. The minimum of *maxNumberTxPortsPerResource* is '*p4*';- *maxNumberResourcesPerBand* indicates the maximum number of resources across all CCs in a band;- *totalNumberTxPortsPerBand* indicates the total number of Tx ports across all CCs in a band. The minimum value of *totalNumberTxPortsPerBand* is 4.The UE supporting this feature shall indicate the support of individual codebook types in the reported mixed codebook combination among *fetype2basic-r17, etype2R1-r16, CodebookComboParametersAddition-r16, supportedCSI-RS-ResourceList, fetype2R1-r17, fetype2R2-r17.* | Band | No | N/A | N/A |
| ***codebookComboParameterMultiTRP-r17***Indicates the support of active CSI-RS resources and ports in the presence of multi-TRP CSI.Indicates the support of active CSI-RS resources and ports for mixed codebook types in any slot. The UE reports supported active CSI-RS resources and ports for up to 4 mixed codebook combinations. The following are the possible mixed codebook combinations {Codebook1, Codebook2, Codebook3}:*-* *nCJT-null-null* indicates {NCJT, NULL, NULL}*-* *nCJT1SP-null-null* indicates {NCJT+Type 1 SP for sTRP, NULL, NULL}*- nCJT-Type2-null-r16* indicates{NCJT*, Type 2, Null*}*- nCJT-Type2PS-null-r16* indicates{NCJT*, Type 2 with port selection, Null*}*- nCJT-eType2R1-null-r16* indicates{NCJT*, eType 2 with R=1, Null*}*- nCJT-eType2R2-null-r16* indicates {NCJT*, eType 2 with R=2, Null*}*- nCJT-eType2R1PS-null-r16* indicates {NCJT*, eType 2 with R=1 and port selection, Null*}*- nCJT-eType2R2PS-null-r16* indicates {NCJT*, eType 2 with R=2 and port selection, Null*}*- nCJT-Type2-Type2PS-r16* indicates {NCJT*, Type 2, Type 2 with port selection*}*- nCJT1SP-Type2-null-r16* indicates{NCJT+Type 1 SP for sTRP, Type 2, Null}*- nCJT1SP-Type2PS-null-r16* indicates{NCJT+Type 1 SP for sTRP, Type 2 with port selection, Null}*- nCJT1SP-eType2R1-null-r16* indicates{NCJT+Type 1 SP for sTRP, eType 2 with R=1, Null}*- nCJT1SP-eType2R2-null-r16* indicates{NCJT+Type 1 SP for sTRP, eType 2 with R=2, Null}*- nCJT1SP-eType2R1PS-null-r16* indicates{NCJT+Type 1 SP for sTRP, eType 2 with R=1 and port selection, Null}*- nCJT1SP-eType2R2PS-null-r16* indicates{NCJT+Type 1 SP for sTRP, eType 2 with R=2 and port selection, Null}*- nCJT1SP-Type2-Type2PS-r16* indicates{NCJT+Type 1 SP for sTRP, Type 2, Type 2 with port selection}*- nCJT-feType2PS-null-r17 indicates* {NCJT, FeType II PS M=1, NULL}*- nCJT-feType2PS-M2R1-null-r17* indicates {NCJT, FeType II PS M=2 R=1, NULL}*- nCJT-feType2PS-M2R2-null-r17* indicates {NCJT, FeType II PS M=2 R=2, NULL}*- nCJT-Type2-feType2-PS-M1-r17* indicates {NCJT, Type II, FeType II PS M=1}*- nCJT-Type2-feType2-PS-M2R1-r17* indicates {NCJT, Type II, FeType II PS M=2 R=1}*-* *nCJT-eType2R1-feType2-PS-M1-r17* indicates {NCJT, eType II R=1, FeType II PS M=1}*-* *nCJT-eType2R1-feType2-PS-M2R1-r17* indicates {NCJT, eType II R=1, FeType II PS M=2 R=1}*- nCJT1SP-feType2PS-null-r17 indicates* {NCJT+Type 1 SP for sTRP, FeType II PS M=1, NULL}*- nCJT1SP-feType2PS-M2R1-null-r17* indicates {NCJT+Type 1 SP for sTRP, FeType II PS M=2 R=1, NULL}*- nCJT1SP-feType2PS-M2R2-null-r17* indicates {NCJT+Type 1 SP for sTRP, FeType II PS M=2 R=2, NULL}*- nCJT1SP-Type2-feType2-PS-M1-r17* indicates {NCJT+Type 1 SP for sTRP, Type II, FeType II PS M=1}*- nCJT1SP-Type2-feType2-PS-M2R1-r17* indicates {NCJT+Type 1 SP for sTRP, Type II, FeType II PS M=2 R=1}*-* *nCJT1SP-eType2R1-feType2-PS-M1-r17* indicates {NCJT+Type 1 SP for sTRP, eType II R=1, FeType II PS M=1}*-* *nCJT1SP-eType2R1-feType2-PS-M2R1-r17* indicates {NCJT+Type 1 SP for sTRP, eType II R=1, FeType II PS M=2 R=1}For each mixed codebook supported by the UE, *supportedCSI-RS-ResourceListAdd-r16* indicates the list of supported CSI-RS resources in a band by referring to *codebookVariantsList*. The following parameters are included in *codebookVariantsList*:*-* *maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in a resource of a band combination.- *maxNumberResourcesPerBand* indicates the maximum number of resources across all CCs in a band combination.- *totalNumberTxPortsPerBand* indicates the total number of Tx ports across all CCs in a band combination.NOTE 1: A CMR pair configured for NCJT will be counted as two activated resources, a CMR configured for sTRP will be counted as one activated resource for a triplet.NOTE 2: This capability is relevant only when UE is configured with NCJT CSI in at least one CSI report setting in at least one CC in the band and/or band combination.The UE indicating support of this feature shall also indicate the support of *mTRP-CSI-EnhancementPerBand-r17*. | Band | No | N/A | N/A |
| ***codebookComboParametersAddition-r16***Indicates the UE supports the mixed codebook combinations and the corresponding parameters supported by the UE.For mixed codebook types, UE reports support active CSI-RS resources and ports for up to 4 mixed codebook combinations in any slot. The following is the possible mixed codebook combinations:- {Type 1 Single Panel, Type 2, Null}- {Type 1 Single Panel, Type 2 with port selection, Null}- {Type 1 Single Panel, eType 2 with R=1, Null}- {Type 1 Single Panel, eType 2 with R=2, Null}- {Type 1 Single Panel, eType 2 with R=1 and port selection, Null}- {Type 1 Single Panel, eType 2 with R=2 and port selection, Null}- {Type 1 Single Panel, Type 2, Type 2 with port selection}- {Type 1 Multi Panel, Type 2, Null}- {Type 1 Multi Panel, Type 2 with port selection, Null}- {Type 1 Multi Panel, eType 2 with R=1, Null}- {Type 1 Multi Panel, eType 2 with R=2, Null}- {Type 1 Multi Panel, eType 2 with R=1 with port selection, Null}- {Type 1 Multi Panel, eType 2 with R=2 with port selection, Null}- {Type 1 Multi Panel, Type 2, Type 2 with port selection}Parameters for each mixed codebook supported by the UE:- *supportedCSI-RS-ResourceListAdd-r16* indicates the list of supported CSI-RS resources in a band by referring to *codebookVariantsList*. The following parameters are included in *codebookVariantsList*:For *supportedCSI-RS-ResourceListAdd-r16* related to the additional codebooks:- The minimum of *maxNumberTxPortsPerResource* is '*p4*';- The minimum value of *totalNumberTxPortsPerBand* is 4.If a UE reports one or more mixed codebook combinations, then usage of active CSI-RS resources and ports for multiple codebooks in any slot is allowed only within those combinations. For coexisting of mixed codebooks in any slot, gNB needs to consider the mixed codebook combination capability as well as per codebook capability of each codebook type in the mixed codebook combination.A UE that indicates support of a codebook type in the mixed codebook combination shall indicate support of the individual codebook type in the per band capability. | Band | No | N/A | N/A |
| ***CodebookComboParametersCJT-r18***Indicates the support of active CSI-RS resources and ports for mixed codebook types including Type-II-CJT in any slot.The UE reports supported active CSI-RS resources and ports for the following are the possible mixed codebook combinations {Codebook1, Codebook2, Codebook3}:- cjt-Type1SP-eType2R1-null indicates {Type I SP, eType-II-CJT R=1, NULL}- cjt-Type1SP-eType2R2-null indicates {Type I SP, eType-II-CJT R=2, NULL}- cjt-Type1SP-feType2R1M1-null indicates {Type I SP, FeType-II-CJT PS R=1 M=1, NULL}- cjt-Type1SP-feType2R1M2-null indicates {Type I SP, FeType-II-CJT PS R=1 M=2, NULL}- cjt-Type1SP-feType2R2M2-null indicates {Type I SP, FeType-II-CJT PS R=2 M=2, NULL}- cjt-Type1MP-eType2R1-null indicates {Type I MP, eType-II-CJT R=1, NULL}- cjt-Type1MP-eType2R2-null indicates {Type I MP, eType-II-CJT R=2, NULL}- cjt-Type1MP-feType2R1M1-null indicates {Type I MP, FeType-II-CJT PS R=1 M=1, NULL}- cjt-Type1MP-feType2R1M2-null indicates {Type I MP, FeType-II-CJT PS R=1 M=2, NULL}- cjt-Type1MP-feType2R2M2-null indicates {Type I MP, FeType-II-CJT PS R=2 M=2, NULL}For each mixed codebook supported by the UE, *supportedCSI-RS-ResourceListAdd-r16* indicates the list of supported CSI-RS resources in a band by referring to *codebookVariantsList*. The following parameters are included in *codebookVariantsList*:*- maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in a resource of a band combination. The minimum of *maxNumberTxPortsPerResource* is '*p4*';- *maxNumberResourcesPerBand* indicates the maximum number of resources across all CCs in a band combination.- *totalNumberTxPortsPerBand* indicates the total number of Tx ports across all CCs in a band combination. The minimum value of *totalNumberTxPortsPerBand* is 4.A UE supporting this feature shall also indicate support of individual codebook types in the reported mixed codebook combination among *eType2CJT-r18*, *feType2CJT-r18*, Type I single panel codebook and Type I multi-panel codebook. | Band | No | N/A | N/A |
| ***codebookParameters***Indicates the codebooks and the corresponding parameters supported by the UE.Parameters for type I single panel codebook (type1 singlePanel) supported by the UE, which are mandatory to report:- *supportedCSI-RS-ResourceList*;- a UE shall support a *maxNumberTxPortsPerResource* minimum value of 4 for codebook type I single panel in FR1 in the case of a single active CSI-resource across all bands in a band combination, regardless of what it reports in *supportedCSI-RS-ResourceList* with *maxNumberTxPortsPerResource*;- a UE shall support a *maxNumberTxPortsPerResource* minimum value of 8 when configured with wideband CSI report for codebook type I single panel in FR1 in the case of a single active CSI-resource across all bands in a band combination, regardless of what it reports in *supportedCSI-RS-ResourceList* with *maxNumberTxPortsPerResource*;- a UE shall support a *maxNumberTxPortsPerResource* minimum value of 2 for codebook type I single panel in FR2 in the case of a single active CSI-resource across all bands in a band combination, regardless of what it reports in *supportedCSI-RS-ResourceList* with *maxNumberTxPortsPerResource*.- *modes* indicates supported codebook modes (mode 1, both mode 1 and mode 2);- *maxNumberCSI-RS-PerResourceSet* indicates the maximum number of CSI-RS resource in a resource set.Parameters for type I multi-panel codebook (type1 multiPanel) supported by the UE, which are optional:- *supportedCSI-RS-ResourceList*;- *modes* indicates supported codebook modes (mode 1, mode 2, or both mode 1 and mode 2);- *maxNumberCSI-RS-PerResourceSet* indicates the maximum number of CSI-RS resource in a resource set;- *nrofPanels* indicates supported number of panels.Parameters for type II codebook (type2) supported by the UE, which are optional:- *supportedCSI-RS-ResourceList*;- *parameterLx* indicates the parameter "Lx" in codebook generation where x is an index of Tx ports indicated by *maxNumberTxPortsPerResource*;- *amplitudeScalingType* indicates the amplitude scaling type supported by the UE (wideband or both wideband and sub-band);- *amplitudeSubsetRestriction* indicates whether amplitude subset restriction is supported for the UE.Parameters for type II codebook with port selection (type2-PortSelection) supported by the UE, which are optional:- *supportedCSI-RS-ResourceList*;- *parameterLx* indicates the parameter "Lx" in codebook generation where x is an index of Tx ports indicated by *maxNumberTxPortsPerResource*;- *amplitudeScalingType* indicates the amplitude scaling type supported by the UE (wideband or both wideband and sub-band).*supportedCSI-RS-ResourceList* includes list of the following parameters:- *maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in a resource;- *maxNumberResourcesPerBand* indicates the maximum number of resources across all CCs within a band simultaneously;- *totalNumberTxPortsPerBand* indicates the total number of Tx ports across all CCs within a band simultaneously.For each codebook type, the UE may report another list of supported CSI-RS resources via *supportedCSI-RS-ResourceListAlt* in *codebookParametersPerBand*. For type I single panel codebook (type1 singlePanel) supportedCSI-RS-ResourceListAlt,- a UE shall report at least one triplet in supportedCSI-RS-ResourceListAlt with maxNumberTxPortsPerResource greater than or equal to 8 for FR1;- a UE shall report at least one triplet in supportedCSI-RS-ResourceListAlt with maxNumberTxPortsPerResource greater than or equal to 2 for FR2. | Band | FD | N/A | N/A |
| ***codebookParametersAddition-r16***Indicates the UE support of additional codebooks and the corresponding parameters supported by the UE.Codebook etype 2 R=1 support parameter combination 1 to 6 and rank 1 to 2. Parameters for etype 2 R=1 (*etype2R1-r16*) supported by the UE, which are optional:- *supportedCSI-RS-ResourceListAdd-r16* indicates the list of supported CSI-RS resources in a band by referring to *codebookVariantsList*. The following parameters are included in *codebookVariantsList*:- *maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in a resource of a band;- *maxNumberResourcesPerBand* indicates the maximum number of resources across all CCs in a band, simultaneously;- *totalNumberTxPortsPerBand* indicates the total number of Tx ports across all CCs in a band, simultaneously.- *paramComb7-8-r16* indicates the support of parameter combinations 7-8 for etype 2 R=1- *rank3-4-r16* indicates the support of rank 3,4.- *amplitudeSubsetRestriction-r16* indicates the support of amplitude subset restriction.Parameters for etype 2 R=2 (*etype2R2-r16*) supported by the UE, which are optional:- *supportedCSI-RS-ResourceListAdd-r16*;UE supporting *etype2R2-r16*supports also indicates support of *etype2R1-r16*.Codebook etype 2 R=1 with port selection supports 6 parameter combinations and rank 1,2. Parameters for etype 2 R=1 with port selection (*etype2R1-PortSelection-r16*) supported by the UE, which are optional:- *supportedCSI-RS-ResourceListAdd-r16*;- *rank3-4-r16* indicates the support of rank 3,4Parameters for etype 2 R=2 with port selection (*etype2R2-PortSelection-r16*) supported by the UE, which are optional:- *supportedCSI-RS-ResourceListAdd-r16*;UE supporting *etype2R2-PortSelection-r16* also indicates support of *etype2R1-PortSelection-r16*.For *supportedCSI-RS-ResourceListAdd-r16* related to the additional codebooks:- The minimum of *maxNumberTxPortsPerResource* is '*p4*';- The minimum value of *totalNumberTxPortsPerBand* is 4. | Band | No | N/A | N/A |
| ***codebookParametersetype2CJT-r18***Indicates the UE support of additional codebooks and the corresponding parameters supported by the UE of Enhanced Type II Codebook (eType-II) with refinement for multi-TRP CJT.The UE shall include *eType2CJT-r18* to indicate basic features of eType-II codebook with refinement for multi-TRP CJT. This capability signalling comprises the following parameters:*-* *supportedCSI-RS-ResourceList-r18* indicates the list of supported CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*. The following parameters are included in *codebookVariantsList*:- *maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in one NZP CSI-RS resource associated with multi-TRP CJT- *maxNumberResourcesPerBand* indicates the maximum total number of NZP CSI-RS resource associated with multi-TRP CJT- *totalNumberTxPortsPerBand* indicates the total number of Tx ports of NZP CSI-RS resources associated with multi-TRP CJT- *scalingfactor-r18* indicates the scaling factor X for CPU occupation counting for CJT etype-II codebook- *maxNumberNZP-CSI-RS-MultiTRP-CJT-r18* indicates the maximum number of NZP CSI-RS resources in one NZP CSI-RS resource set associated with multi-TRP CJTThe UE indicating *eType2CJT-r18* shall support N=N\_TRP only, N\_L=1 only, support mode 2 for eType-II codebook refinement for multi-TRP CJT, support for PMI subband R=1, support of parameter combinations with L=2,4, support rank 1,2, and support frequency basis selection mode 2, i.e., common frequency basis selection among different TRPs.The UE indicating support of *eType2CJT-r18* shall also indicate support of *csi-ReportFramework* and *simultaneousCSI-ReportsAllCC.*NOTE 1:When NTRP=1 TRP is configured, OCPU =1. When NTRP>1 TRPS are configured, OCPU = ceil(X \* NTRP).NOTE 2:A-CSI is supported, and whether UE supports SP-CSI on PUSCH is dependent on *sp-CSI-ReportPUSCH*.The UE optionally includes *eType2CJT-FD-IO-r18* to indicate whether the UE supports mode 1 for CJT eType-II codebook with FD basis selection integer frequency offset. This capability signalling comprises the list of supported NZP CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*. The UE indicating *eType2CJT-FD-IO-r18* shall also support frequency basis selection mode 1, i.e., common frequency basis selection among different TRPs with FD basis selection integer frequency offset.The UE optionally indicates *eType2CJT-FD-FO-r18* to indicate whether the UE supports frequency basis selection mode 1 with FD basis selection fractional frequency offset for eType-II based CJT codebook. The UE indicating *eType2CJT-FD-FO-r18* shall also indicate support of *eType2CJT-FD-IO-r18.*The UE optionally indicates *eType2CJT-R2-r18* to indicate whether the UE supports eType-II codebook refinement for multi-TRP CJT with PMI subbands R=2. This capability signalling comprises the list of supported NZP CSI-RS resources with R=2 across all CCs in a band by referring to *codebookVariantsList* across all CCs.The UE optionally indicates *eType2CJT-PV-Beta-r18* to indicate whether the UE supports eType-II codebook refinement for multi-TRP CJT with parameter combination pv={1/2,1/2,1/2,1/2} and beta=1/2.The UE optionally indicates *eType2CJT-2NN1N2-r18* to indicate whether the UE supports 2NN1N2 >32 for eType-II CJT codebook. The UE indicates themaximum number of ports across all TRPs for one CJT CSI measurement.The UE optionally indicates *eType2CJT-Rank3Rank4-r18* to indicate whether the UE supports eType-II codebook refinement for multi-TRP CJT with rank 3,4.The UE optionally indicates *eType2CJT-L6-r18* to indicate whether the UE supports eType-II codebook refinement for multi-TRP CJT with parameter combination with L=6. The UE supports this capability only for N\_TRP=1.The UE optionally indicates *eType2CJT-NN-r18* to indicate whether the UE supports selection of N <= N\_TRP CSI-RS resource by UE for multi-TRP CJT based on eType-II codebook.The UE optionally indicates *eType2CJT-NL-SD-r18* to indicate whether the UE supports N\_L>1 combinations of number of SD basis across CSI-RS resources for CJT eType-II codebook. The UE indicates themaximum number of lists for spatial basis selection, i.e., N\_L, for multi-TRP CJT based on eType-II codebook.The UE optionally indicates *eType2CJT-Unequal-r18* to indicate whether the UE supports unequal number of spatial basis selection configuration across CSI-RS resources for multi-TRP CJT including eType-II codebook refinement.For *codebookVariantsList* related to the eType-II:*-* The minimum of *maxNumberTxPortsPerResource* is '*p4*';*-* The minimum of *maxNumberResourcesPerBand* is 2;*-* The minimum value of *totalNumberTxPortsPerBand* is 4. | Band | No | N/A | N/A |
| ***codebookParametersetype2DopplerCSI-r18***Indicates the UE support of additional codebooks and the corresponding parameters supported by the UE of Enhanced Type II Codebook (eType-II) based on doppler CSI as specified in TS 38.214 [12].The UE shall include *eType2Doppler-r18* to indicate basic features of eType-II doppler codebook. This capability signalling comprises the following parameters:*-* *supportedCSI-RS-ResourceList-r18* indicates the list of supported CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*. The following parameters are included in *codebookVariantsList*:- *maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in a resource of a band- *maxNumberResourcesPerBand* indicates the maximum number of resources across all CCs in a band, simultaneously- *totalNumberTxPortsPerBand* indicates the total number of Tx ports across all CCs in a band, simultaneously- *valueY-P-SP-CSI-RS-r18* indicates value of Y for CPU occupation (OCPU = Y\* *vectorLengthDD-r18*), when P/SP-CSI-RS is configured for CMR- *valueY-A-CSI-RS-r18* indicates value of Y for CPU occupation (OCPU = Y\*K), when A-CSI-RS is configured for CMR- *scalingfactor-r18* indicates scaling factor for active resource counting KpThe UE indicating *eType2Doppler-r18* shall support X=1 CQI based on the first/earliest slot of the CSI reporting window and the first/earliest predicted PMI (TDCQI='1-1'), support eType-II regular codebook refinement for predicted PMI with PMI subband R=1 3, support parameter combinations with L=2,4, support for rank = 1,2, and support for the size of DD-basis, *vectorLengthDD-r18* =1.The UE indicating support of *eType2Doppler-r18* shall also indicate support of *csi-ReportFramework* and *simultaneousCSI-ReportsAllCC.*NOTE 1:When *vectorLengthDD-r18* =1, OCPU =4.NOTE 2:OCPU ≥ 4 when P/SP-CSI-RS is configured for CMR.NOTE 3:when K=12, OCPU =8NOTE 4:A UE that supports CSI enhancement for Rel-16 based type-II doppler must support this feature.The UE optionally includes *eType2DopplerN4-r18* to indicate whether the UE supports doppler measurement with *vectorLengthDD-r18* >1 for eType-II doppler codebook. This capability signalling comprises the following parameters:- *supportedCSI-RS-ReportSettingList1-r18* indicates the list of supported combinations across all CCs in a band simultaneously by referring to *supportedCSI-RS-ReportSettingList* The following parameters are included in *supportedCSI-RS-ReportSettingList-r18*- *maxN4-r18* indicates the max number of *vectorLengthDD-r18*- *maxNumberTxPortsPerResource-r18* indicates the maximum number of Tx ports in a resource of a band- *maxNumberResourcesPerBand-r18* indicates the maximum number of resources across all CCs in a band, simultaneously- *totalNumberTxPortsPerBand-r18* indicates the total number of Tx ports across all CCs in a band, simultaneously- *supportedCSI-RS-ReportSettingList2-r18* indicates the list of supported combinations for one CSI report setting by referring to *supportedCSI-RS-ReportSettingList-r18.*The UE indicating support of *eType2DopplerN4-r18* shall also indicate support for the size of DD-basis, *vectorLengthDD-r18* >1, and Value of *unitDurationDD-r18*=m for the DD unit size when A-CSI-RS is configured for CMR.The UE optionally includes *ddUnitSize-A-CSI-RS-CMR-r18* to indicate the support of value of *unitDurationDD-r18*=1 for the DD unit duration when A-CSI-RS is configured for CMR.A UE supporting this feature shall also indicate support of *eType2DopplerN4-r18*.The UE optionally includes *maxNumberAperiodicCSI-RS-Resource-r18* to indicate the maximum number of aperiodic CSI-RS resources that can be configured in the same CSI report setting for eType-II doppler measurement.The UE optionally includes *eType2DopplerR2-r18* to indicate whether the UE supports R=2 for eType-II doppler codebook. This capability signalling comprises the list of supported CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*.The UE optionally includes *eType2DopplerX1-r18* to indicate whether the UE support X=1 based on first and last slot of WCSI, for eType-II doppler codebook.The UE optionally includes *eType2DopplerX2-r18* to indicate whether the UE support X=2 CQI based on 2 slots for eType-II doppler codebook.The UE optionally includes *eType2DopplerL-N4D1-r18* to indicate whether the UE support l = (n – nCSI,ref ) for CSI reference slot for eType-II doppler codebook.The UE optionally includes *eType2DopplerL6-r18* to indicate whether the UE support L=6 for eType-II doppler codebook.The UE optionally includes *eType2DopplerR3R4-r18* to indicate whether the UE support rank equals 3 and 4 for eType-II doppler codebook.For *codebookVariantsList-r16* related to the eType-II:*-* The minimum of *maxNumberTxPortsPerResource* is '*p4*';*-* The minimum of *maxNumberResourcesPerBand* is 2, except for *eType2DopplerR2-r18*.*-* The minimum value of *totalNumberTxPortsPerBand* is 4. | Band | No | N/A | N/A |
| ***codebookParametersfetype2-r17***Indicates the UE support of additional codebooks and the corresponding parameters supported by the UE of Further Enhanced Port-Selection Type II Codebook (FeType-II) as specified in TS 38.214 [12] clause 5.2.2.2.7.The UE indicating this feature shall include *fetype2basic-r17* to indicate basic features of FeType-II. This capability signalling comprises the following parameters:*-* indicates the list of supported CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*. The following parameters are included in *codebookVariantsList*:- *maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in a resource of a band- *maxNumberResourcesPerBand* indicates the maximum number of resources across all CCs in a band, simultaneously- *totalNumberTxPortsPerBand* indicates the total number of Tx ports across all CCs in a band, simultaneouslyThe UE indicating *fetype2basic-r17* shall support parameter combinations with M=1 and support rank 1 and 2. UE indicating this feature shall also include *csi-ReportFramework*.The UE optionally includes *fetype2R1-r17* to indicate whether the UE supports M=2 and R=1 for FeType-II. This capability signalling comprises the following parameters:*-* indicates the list of supported CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*.The UE indicating support of *fetype2R1-r17* shall also indicate support of *fetype2basic-r17* and parameter combinations with M=2.The UE optionally includes *fetype2R2-r17* to indicate whether the UE supports R=2 for FeType-II. This capability signalling comprises the following parameters:*-* indicates the list of supported CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*.UE indicating support of *fetype2R2-r17* shall also indicate support of *fetype2R1-r17*.The UE optionally includes *fetype2Rank3Rank4-r17* to indicate whether the UE supports rank = 3 and rank = 4 for FeType-II. UE indicating support of *fetype2Rank3Rank4-r17* shall indicate support of *fetype2basic-r17*.For *codebookVariantsList* related to the FeType-II:- The minimum of *maxNumberTxPortsPerResource* is '*p4*';- The minimum value of *totalNumberTxPortsPerBand* is 4. | Band | No | N/A | N/A |
| ***codebookParametersfetype2CJT-r18***Indicates the UE support of additional codebooks and the corresponding parameters supported by the UE of Further Enhanced Type II Codebook (feType-II) with refinement for multi-TRP CJT.The UE shall include *feType2CJT-r18* to indicate basic features of feType-II codebook with refinement for multi-TRP CJT. This capability signalling comprises the following parameters:*-* *supportedCSI-RS-ResourceList-r18* indicates the list of supported CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*. The following parameters are included in *codebookVariantsList*:- *maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in one NZP CSI-RS resource associated with multi-TRP CJT- *maxNumberResourcesPerBand* indicates the maximum total number of NZP CSI-RS resource associated with multi-TRP CJT- *totalNumberTxPortsPerBand* indicates the total number of Tx ports of NZP CSI-RS resources associated with multi-TRP CJT- *scalingfactor-r18* indicates the scaling factor X for CPU occupation counting for CJT fetype-II codebook- *maxNumberNZP-CSI-RS-MultiTRP-CJT-r18* indicates the maximum number of NZP CSI-RS resources in one NZP CSI-RS resource set associated with multi-TRP CJTThe UE indicating *feType2CJT-r18* shall support N=N\_TRP only, N\_L=1 only, support mode 2 for FeType-II port selection codebook refinement for multi-TRP CJT, support for PMI subband R=1, support of parameter combinations with M=1, support rank 1,2, and support frequency basis selection mode 2, i.e., common frequency basis selection among different TRPs.The UE indicating support of *feType2CJT-r18* shall also indicate support of *csi-ReportFramework* and *simultaneousCSI-ReportsAllCC.*NOTE 1:When NTRP=1 TRP is configured, OCPU =1. When NTRP>1 TRPS are configured, OCPU = ceil(X \* NTRP).NOTE 2:A-CSI is supported, and whether UE supports SP-CSI on PUSCH is dependent on *sp-CSI-ReportPUSCH*.NOTE 3:A UE that supports CSI enhancement for Rel 17 based type-II CJT must support this feature.The UE optionally includes *feType2CJT-FD-IO-r18* to indicate whether the UE supports FeType-II port selection codebook refinement for multi-TRP CJT with PMI subband R=1. This capability signalling comprises the list of supported NZP CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*. The UE indicating *feType2CJT-FD-IO-r18* shall also support frequency basis selection mode 1, i.e., common frequency basis selection among different TRPs with FD basis selection integer frequency offset.The UE optionally indicates *feType2CJT-FD-FO-r18* to indicate whether the UE supports frequency basis selection mode 1 with FD basis selection fractional frequency offset for FeType-II port selection based CJT codebook. The UE indicating *feType2CJT-FD-FO-r18* shall also indicate support of *feType2CJT-FD-IO-r18.*The UE optionally indicates *eType2CJT-M2R1-r18* to indicate whether the UE supports FeType-II port selection codebook refinement for multi-TRP CJT with M=2 and PMI subband R=1. This capability signalling comprises the list of supported NZP CSI-RS resources with R=2 across all CCs in a band by referring to *codebookVariantsList*. The UE indicating *feType2CJT-M2R1-r18* shall also indicate support of *feType2CJT-r18* or *feType2CJT-FD-IO-r18*.The UE optionally indicates *feType2CJT-R2-r18* to indicate whether the UE supports FeType-II port selection codebook refinement for multi-TRP CJT with PMI subband R=2. This capability signalling comprises the list of supported NZP CSI-RS resources with R=2 across all CCs in a band by referring to *codebookVariantsList*. The UE indicating *feType2CJT-R2-r18* shall also indicate support of *feType2CJT-r18* or *feType2CJT-FD-IO-r18*.The UE optionally indicates *feType2CJT-2NN1N2-r18* to indicate whether the UE supports 2NN1N2 >32 for FeType-II CJT codebook. The UE indicates themaximum number of ports across all TRPs for one CJT CSI measurement.The UE optionally indicates *feType2CJT-Rank3Rank4-r18* to indicate whether the UE supports FeType-II port selection codebook refinement for multi-TRP CJT with rank 3,4.The UE optionally indicates *feType2CJT-NN-r18* to indicate whether the UE supports selection of N <= N\_TRP CSI-RS resource by UE for multi-TRP CJT based on FeType-II port selection codebook.The UE optionally indicates *feType2CJT-NL-r18* to indicate whether the UE supports N\_L>1 combinations of number of ports across CSI-RS resources for CJT Fetype-II codebook. The UE indicates themaximum number of lists for ports selection, i.e., NL, for multi-TRP CJT based on FeType-II port selection codebook.The UE optionally indicates *feType2CJT-Unequal-r18* to indicate whether the UE supports unequal number of port selection configuration across CSI-RS resources for multi-TRP CJT including FeType-II port selection codebook refinement.For *codebookVariantsList* related to the FeType-II:*-* The minimum of *maxNumberTxPortsPerResource* is '*p4*';*-* The minimum of *maxNumberResourcesPerBand* is 2;*-* The minimum value of *totalNumberTxPortsPerBand* is 4. | Band | No | N/A | N/A |
| ***codebookParametersfetype2DopplerCSI-r18***Indicates the UE support of additional codebooks and the corresponding parameters supported by the UE of Further Enhanced Type II Codebook (FeType-II) based on doppler CSI as specified in TS 38.214 [12].The UE shall include *feType2Doppler-r18* to indicate basic features of FeType-II doppler codebook. This capability signalling comprises the following parameters:*-* *supportedCSI-RS-ResourceList-r18* indicates the list of supported CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*. The following parameters are included in *codebookVariantsList*:- *maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in a resource of a band- *maxNumberResourcesPerBand* indicates the maximum number of resources across all CCs in a band, simultaneously- *totalNumberTxPortsPerBand* indicates the total number of Tx ports across all CCs in a band, simultaneously*-* *valueY-A-CSI-RS-r18* indicates value of Y for CPU occupation (OCPU = Y\*K), when A-CSI-RS is configured for CMR*-* *scalingfactor-r18* indicates scaling factor for active resource counting KpThe UE indicating *feType2Doppler-r18* shall support X=1 CQI based on the first/earliest slot of the CSI reporting window and the first/earliest predicted PMI, support FeType-II regular codebook refinement for predicted PMI with PMI subband R=1, support parameter combinations with M=1, support for rank = 1,2, and support *vectorLengthDD-r18* =1. A UE indicating this feature shall also indicate the support of *csi-ReportFramework*.The UE indicating support of *feType2Doppler-r18* shall also indicate support of *eType2Doppler-r18* and, *csi-ReportFramework* and *simultaneousCSI-ReportsAllCC.*NOTE 1:OCPU = 4 when P/SP-CSI-RS is configured for CMR.NOTE 2:when K=12, OCPU =8.The UE optionally includes *maxNumberAperiodicCSI-RS-Resource-r18* to indicate the maximum number of aperiodic CSI-RS resources that can be configured in the same CSI report setting for FeType-II doppler measurement.The UE optionally includes *feType2DopplerM2R1-r18* to indicate whether the UE supports M=2 and R=1 for FeType-II doppler codebook. This capability signalling comprises the list of supported CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*.The UE optionally includes *feType2DopplerR2-r18* to indicate whether the UE supports R=2 for FeType-II doppler codebook. This capability signalling comprises the list of supported CSI-RS resources across all CCs in a band by referring to *codebookVariantsList*.The UE optionally includes *feType2DopplerL-N4D1-r18* to indicate whether the UE support l = (n – nCSI,ref ) for CSI reference slot for FeType-II doppler codebook.The UE optionally includes *feType2DopplerR3R4-r18* to indicate whether the UE support rank equals 3 and 4 for FeType-II doppler codebook.For *codebookVariantsList-r16* related to the feType-II:*-* The minimum of *maxNumberTxPortsPerResource* is '*p4*';*-* The minimum of *maxNumberResourcesPerBand* is 2, except for *eType2DopplerR2-r18*.*-* The minimum value of *totalNumberTxPortsPerBand* is 4. | Band | No | N/A | N/A |
| ***codebookParametersHARQ-ACK-PUSCH-r18***Indicates whether the UE supports Multiplexing HARQ-ACK codebook in a PUSCH for PDSCH scheduled after UL grant.This capability signalling comprises the following parameters:- *multiplexingType1-r18* indicates whether the UE supports multiplexing Type-1 HARQ-ACK codebook on a repetition of a PUSCH transmission other than a first repetition, where ACK/NACK is generated for the HARQ-ACK codebook including HARQ-ACK information associated with PDSCH reception(s) scheduled after the UL grant scheduling the PUSCH transmission. A UE supporting this feature shall also indicate support of *semiStaticHARQ-ACK-Codebook.*- *multiplexingType2-r18* indicates whether the UE supports multiplexing Type-2 HARQ-ACK codebook on a repetition of a PUSCH transmission other than a first repetition, where ACK/NACK is generated for the HARQ-ACK codebook including HARQ-ACK information associated with PDSCH reception(s) scheduled after the UL grant scheduling the PUSCH transmission. A UE supporting this feature shall also indicate support of *dynamicHARQ-ACK-Codebook*.- *multiplexingType3-r18* indicates whether the UE supports multiplexing Type-3 HARQ-ACK codebook on a repetition of a PUSCH transmission other than a first repetition, where ACK/NACK is generated for the HARQ-ACK codebook including HARQ-ACK information associated with PDSCH reception(s) scheduled after the UL grant scheduling the PUSCH transmission. A UE supporting this feature shall also indicate support of *oneShotHARQ-feedback-r16*.A UE shall also indicate support of one of *pusch-RepetitionMultiSlots-r16* and *pusch-RepetitionTypeB-r16*.UE does not expect to determine a different codebook size in a PUCCH slot from the codebook size determined based on HARQ-ACK information associated with PDSCH reception(s) scheduled before a UL grant that schedules a PUSCH in a slot overlapping with the PUCCH slot unless the UE indicates support of *diffCB-Size-PDSCH-r18*.UE does not expect to determine a different PUCCH time domain resource in a slot from the PUCCH time domain resource determined based on HARQ-ACK information associated with PDSCH reception(s) scheduled before a UL grant that schedules a PUSCH in that slot unless the UE indicates support of *pucch-DiffResource-PDSCH-r18*.The UE optionally includes *pucch-DiffResource-PDSCH-r18* to indicate whether the UE supports determining a different PUCCH resource in a slot from the PUCCH resource indicated by the last DCI format before a UL grant in the slot, to include HARQ-ACK information associated with PDSCH reception(s) scheduled after the UL grant scheduling a PUSCH transmission with repetitions and the HARQ-ACK information are multiplexed on a repetition of the PUSCH transmission other than a first repetition in the same slot.The UE optionally includes *diffCB-Size-PDSCH-r18* to indicate whether the UE supports determining different codebook size in a PUCCH slot from the size determined based on HARQ-ACK information associated with PDSCH reception(s) scheduled before a UL grant, to include HARQ-ACK information associated with PDSCH reception(s) scheduled after the UL grant scheduling a PUSCH transmission with repetitions and the HARQ-ACK information are multiplexed on a repetition of the PUSCH transmission other than a first repetition in the same slot. | Band | No | N/A | N/A |
| ***commonTCI-MultiDCI-r18***Indicates whether the UE supports common multi-CC TCI state ID update and activation for multi-DCI based multi-TRP. The UE also indicates the maximum number of CC list(s).A UE supporting this feature shall also indicate support of *tci-JointTCI-UpdateSingleActiveTCI-PerCC-PerCORESET-r18*. | Band | No | N/A | N/A |
| ***commonTCI-SingleDCI-r18***Indicates whether the UE supports common multi-CC TCI state ID update and activation for single-DCI based multi-TRP. The UE also indicates the maximum number of CC list(s).A UE supporting this feature shall also indicate support of *tci-JointTCI-UpdateSingleActiveTCI-PerCC-r18*. | Band | No | N/A | N/A |
| ***condHandover-r16***Indicates whether the UE supports conditional handover including execution condition, candidate cell configuration and maximum 8 candidate cells. Except for NTN bands, UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively. | Band | No | N/A | N/A |
| ***condHandoverFailure-r16***Indicates whether the UE supports conditional handover during re-establishment procedure when the selected cell is configured as candidate cell for condition handover. Except for NTN bands, UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively. | Band | No | N/A | N/A |
| ***condHandoverTwoTriggerEvents-r16***Indicates whether the UE supports 2 trigger events for same execution condition. This feature is mandatory supported if the UE supports *condHandover-r16*. Except for NTN bands, UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively. | Band | CY | N/A | N/A |
| ***condHandoverWithCandSCG-change-r18***Indicates whether the UE supports conditional handover with candidate SCG, where conditional NR PSCell change is supported for FDD-FR1 bands, TDD-FR1 bands, TDD-FR2-1 bands and TDD-FR2-2 bands.The UE indicating support of this feature shall also indicate the support of *condHandover-r16* and support of at least one NR-DC band combination.UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. | Band | No | N/A | N/A |
| ***condPSCellChange-r16***Indicates whether the UE supports conditional PSCell change including execution condition, candidate cell configuration and maximum 8 candidate cells. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. | Band | No | N/A | N/A |
| ***condPSCellChangeTwoTriggerEvents-r16***Indicates whether the UE supports 2 trigger events for same execution condition. This feature is mandatory supported if the UE supports *condPSCellChange-r16*. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. | Band | CY | N/A | N/A |
| ***configuredUL-GrantType1-v1650***Indicates whether the UE supports Type 1 PUSCH transmissions with configured grant as specified in TS 38.214 [12] with UL-TWG-repK value of one. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *configuredUL-GrantType1-r16* applies. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.The UE only includes *configuredUL-GrantType1-v1650* if *configuredUL-GrantType1* is absent. | Band | No | N/A | N/A |
| ***configuredUL-GrantType2-v1650***Indicates whether the UE supports Type 2 PUSCH transmissions with configured grant as specified in TS 38.214 [12] with UL-TWG-repK value of one. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *configuredUL-GrantType2-r16* applies. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.The UE only includes *configuredUL-GrantType2*-v1650 if *configuredUL-GrantType2* is absent. | Band | No | N/A | N/A |
| ***cqi-4-BitsSubbandNTN-SharedSpectrumChAccess-r17***Indicates whether the UE supports CQI reporting with 4 bits per subband for NTN and shared spectrum channel access. | Band | No | N/A | N/A |
| ***crossCarrierScheduling-SameSCS***Indicates whether the UE supports cross carrier scheduling for the same numerology with carrier indicator field (CIF) in carrier aggregation where numerologies for the scheduling cell and scheduled cell are same. | Band | No | N/A | N/A |
| ***csi-ReportFramework***Indicates whether the UE supports CSI report framework. This capability signalling comprises the following parameters:- *maxNumberPeriodicCSI-PerBWP-ForCSI-Report* indicates the maximum number of periodic CSI report setting per BWP for CSI report;- *maxNumberPeriodicCSI-PerBWP-ForBeamReport* indicates the maximum number of periodic CSI report setting per BWP for beam report.- *maxNumberAperiodicCSI-PerBWP-ForCSI-Report* indicates the maximum number of aperiodic CSI report setting per BWP for CSI report;- *maxNumberAperiodicCSI-PerBWP-ForBeamReport* indicates the maximum number of aperiodic CSI report setting per BWP for beam report;- *maxNumberAperiodicCSI-triggeringStatePerCC* indicates the maximum number of aperiodic CSI triggering states in *CSI-AperiodicTriggerStateList* per CC;- *maxNumberSemiPersistentCSI-PerBWP-ForCSI-Report* indicates the maximum number of semi-persistent CSI report setting per BWP for CSI report;- *maxNumberSemiPersistentCSI-PerBWP-ForBeamReport* indicates the maximum number of semi-persistent CSI report setting per BWP for beam report;- *simultaneousCSI-ReportsPerCC* indicates the number of CSI report(s) for which the UE can measure and process reference signals simultaneously in a CC of the band for which this capability is provided. The CSI report comprises periodic, semi-persistent and aperiodic CSI and any latency classes and codebook types. The CSI report in simultaneousCSI-ReportsPerCC includes the beam report and CSI report.The UE is mandated to report *csi-ReportFramework*. | Band | Yes | N/A | N/A |
| ***csi-ReportFrameworkExt-r16***Indicates whether the UE supports the extension of the maximum number of configured aperiodic CSI report settings for all codebook types. The capability signalling comprises the following:*maxNumberAperiodicCSI-PerBWP-ForCSI-ReportExt-r16* indicates the extended maximum number of aperiodic CSI report setting per BWP for CSI report. If present, the value of *maxNumberAperiodicCSI-PerBWP-ForCSI-Report-r16* shall replace the corresponding value in *csi-ReportFramework*. | Band | No | N/A | N/A |
| ***csi-RS-ForTracking***Indicates support of CSI-RS for tracking (i.e. TRS). This capability signalling comprises the following parameters:- *maxBurstLength* indicates the TRS burst length. Value 1 indicates 1 slot and value 2 indicates both of 1 slot and 2 slots. In this release UE is mandated to report value 2;- *maxSimultaneousResourceSetsPerCC* indicates the maximum number of TRS resource sets per CC which the UE can track simultaneously;- *maxConfiguredResourceSetsPerCC* indicates the maximum number of TRS resource sets configured to UE per CC. It is mandated to report at least 8 for FR1 and 16 for FR2;- *maxConfiguredResourceSetsAllCC* indicates the maximum number of TRS resource sets configured to UE across CCs. If the UE includes the field in an FR1 band, it shall set the same value in all FR1 bands. If the UE includes the field in an FR2 band, it shall set the same value in all FR2 bands. The UE supports a total number of resources equal to the maximum of the FR1 and FR2 value, but no more than the FR1 value across all FR1 serving cells and no more than the FR2 value across all FR2 serving cells. The UE is mandated to report at least 16 for FR1 and 32 for FR2.The UE is mandated to report *csi-RS-ForTracking*. | Band | Yes | N/A | N/A |
| ***csi-RS-IM-ReceptionForFeedback***Indicates support of CSI-RS and CSI-IM reception for CSI feedback. This capability signalling comprises the following parameters:- *maxConfigNumberNZP-CSI-RS-PerCC* indicates the maximum number of configured NZP-CSI-RS resources per CC;- *maxConfigNumberPortsAcrossNZP-CSI-RS-PerCC* indicates the maximum number of ports across all configured NZP-CSI-RS resources per CC;- *maxConfigNumberCSI-IM-PerCC* indicates the maximum number of configured CSI-IM resources per CC;- *maxNumberSimultaneousNZP-CSI-RS-PerCC* indicates the maximum number of simultaneous CSI-RS-resources per CC;- *totalNumberPortsSimultaneousNZP-CSI-RS-PerCC* indicates the total number of CSI-RS ports in simultaneous CSI-RS resources per CC.The UE is mandated to report csi-RS-IM-ReceptionForFeedback. | Band | Yes | N/A | N/A |
| ***csi-RS-ProcFrameworkForSRS***Indicates support of CSI-RS processing framework for SRS. This capability signalling comprises the following parameters:- *maxNumberPeriodicSRS-AssocCSI-RS-PerBWP* indicates the maximum number of periodic SRS resources associated with CSI-RS per BWP;- *maxNumberAperiodicSRS-AssocCSI-RS-PerBWP* indicates the maximum number of aperiodic SRS resources associated with CSI-RS per BWP;- *maxNumberSP-SRS-AssocCSI-RS-PerBWP* indicates the maximum number of semi-persistent SRS resources associated with CSI-RS per BWP;- *simultaneousSRS-AssocCSI-RS-PerCC* indicates the number of SRS resources that the UE can process simultaneously in a CC, including periodic, aperiodic and semi-persistent SRS. | Band | No | N/A | N/A |
| ***cyclicShiftHoppingWithinSubset-r18***Indicates whether the UE supports configuration of subset of cyclic shifts for cyclic shift hopping.A UE supporting this feature shall also indicate the support of *srs-cyclicShiftHopping-r18*. | Band | No | N/A | N/A |
| ***defaultQCL-PerCORESETPoolIndex-r16***Indicates whether the UE supports default QCL assumption per CORESET pool index using multi-DCI based multi-TRP. The UE that indicates support of this feature shall support *multiDCI-MultiTRP-r16* and *simultaneousReceptionDiffTypeD-r16.* | Band | No | N/A | FR2 only |
| ***defaultQCL-TwoTCI-r16***Indicates whether the UE supports default QCL assumption with two TCI states using single-DCI based multi-TRP. The UE can include this field only if *simultaneousReceptionDiffTypeD-r16*is present. Otherwise, the UE does not include this field. | Band | No | N/A | FR2 only |
| ***dmrs-BundlingNonBackToBackTX-r17***Indicates whether the UE supports DM-RS bundling for non-back-to-back transmission for consecutive slots for PUSCH and PUCCH only for corresponding supported back-to-back transmission as reported in *dmrs-BundlingPUSCH-RepTypeA-r17*, *dmrs-BundlingPUSCH-RepTypeB-r17*, *dmrs-BundlingPUSCH-multiSlot-r17* or *dmrs-BundlingPUCCH-Rep-r17*. The UE is considered to support the feature in a band of a band combination if the UE indicates support of the feature for the corresponding band and for the band combination.UE indicating support of this feature shall also indicate support of at least one of dmrs-BundlingPUSCH-RepTypeA-r17, dmrs-BundlingPUSCH-RepTypeB-r17, dmrs-BundlingPUSCH-multiSlot-r17 or dmrs-BundlingPUCCH-Rep-r17. | Band | No | N/A | N/A |
| ***dmrs-BundlingPUCCH-Rep-r17***Indicates whether the UE supports DM-RS bundling for PUCCH repetitions for PUCCH formats 1/3/4 over consecutive symbols. The UE is considered to support the feature in a band of a band combination if the UE indicates support of the feature for the corresponding band and for the band combination.UE indicating support of this feature shall also indicate support of *maxDurationDMRS-Bundling-r17* and *pucch-Repetition-F1-3-4*. | Band | No | N/A | N/A |
| ***dmrs-BundlingPUSCH-multiSlot-r17***Indicates whether the UE supports DM-RS bundling for TB processing over multi-slot PUSCH over consecutive symbols. The UE is considered to support the feature in a band of a band combination if the UE indicates support of the feature for the corresponding band and for the band combination.UE indicating support of this feature shall also indicate support of *maxDurationDMRS-Bundling-r17* and *tb-ProcessingMultiSlotPUSCH-r17*. | Band | No | N/A | N/A |
| ***dmrs-BundlingPUSCH-RepTypeA-r17***Indicates whether the UE supports DM-RS bundling for PUSCH repetition type A over consecutive symbols. The UE is considered to support the feature in a band of a band combination if the UE indicates support of the feature for the corresponding band and for the band combination.UE indicating support of this feature shall also indicate support of *maxDurationDMRS-Bundling-r17* and at least one of *type1-PUSCH-RepetitionMultiSlots*, *type2-PUSCH-RepetitionMultiSlots* or *pusch-RepetitionMultiSlots*. | Band | No | N/A | N/A |
| ***dmrs-BundlingPUSCH-RepTypeB-r17***Indicates whether the UE supports DM-RS bundling for PUSCH repetition type B over consecutive symbols. The UE is considered to support the feature in a band of a band combination if the UE indicates support of the feature for the corresponding band and for the band combination.UE indicating support of this feature shall also indicate support of *maxDurationDMRS-Bundling-r17* and *pusch-RepetitionTypeB-r16*. | Band | No | N/A | N/A |
| ***dmrs-BundlingRestart-r17***Indicates whether the UE supports restarting DM-RS bundling after the events triggered by DCI or MAC CE that violate power consistency and phase continuity. The UE is considered to support the feature in a band of a band combination if the UE indicates support of the feature for the corresponding band and for the band combination.UE indicating support of this feature shall also indicate support of *maxDurationDMRS-Bundling-r17.*NOTE: Events which are triggered by DCI or MAC CE, but do not require UE capability to resume maintaining power consistency and/or phase continuity as specified in clause 6.1.7 of TS 38.214 [12] are excluded from this feature. | Band | No | N/A | N/A |
| ***dmrs-PortEntrySingleDCI-SDM-r18***Indicates whether the UE supports UL DMRS port entry {0, 2, 3} for single DCI based SDM scheme for Rel-15 DMRS port and/or Rel-18 DMRS port.A UE indicates supporting of this feature shall also indicate support of *pusch-CB-SingleDCI-STx2P-SDM-r18* or *pusch-NonCB-SingleDCI-STx2P-SDM-r18*. | Band | No | N/A | FR2 only |
| ***dynamicMulticastDCI-Format4-2-r17***Indicates whether the UE supports DCI format 4\_2 with CRC scrambled with G-RNTI for multicast in RRC\_CONNECTED.A UE supporting this feature shall also indicate support of *dynamicMulticastPCell-r17*. | Band | No | N/A | N/A |
| ***dynamicSlotRepetitionMulticastNTN-SharedSpectrumChAccess-r17***Indicates the maximum number of supported dynamic slot-level repetitions for group-common PDSCH for multicast in RRC\_CONNECTED for NTN and shared spectrum channel access. Value n8 corresponds to 8, and value n16 corresponds to 16.A UE supporting this feature shall also indicate support of *dynamicMulticastPCell-r17*. | Band | No | N/A | N/A |
| ***dynamicSlotRepetitionMulticastTN-NonSharedSpectrumChAccess-r17***Indicates the maximum number of supported dynamic slot-level repetitions for group-common PDSCH for multicast in RRC\_CONNECTED for TN and non-shared spectrum channel access. Value n8 corresponds to 8, and value n16 corresponds to 16. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2 bands respectively.A UE supporting this feature shall also indicate support of *dynamicMulticastPCell-r17*. | Band | No | N/A | N/A |
| ***dynamicWaveformSwitch-r18***Indicates whether the UE supports dynamic waveform switching for DCI format 0\_1/0\_2 when configured with only 1 UL carrier in the band.If UE supporting this feature also supports *dci-Format1-2And0-2-r16*, the UE supports this feature with DCI format 0\_2. | Band | No | N/A | N/A |
| ***dynamicWaveformSwitchIntraCA-r18***Indicates whether the UE supports dynamic waveform switching for DCI format 0\_1/0\_2 for intra-band UL CA with up to X CCs in the band. | Band | No | N/A | N/A |
| ***dynamicWaveformSwitchPHR-r18***Indicates whether the UE supports reporting of power headroom information for an assumed PUSCH using target waveform different from waveform of actual PUSCH.A UE supporting this feature shall also indicate support of *dynamicWaveformSwitch-r18*.NOTE: A UE can be configured to use either the single entry PHR with assumed PUSCH MAC CE or the multiple entry PHR with assumed PUSCH MAC CE for a cell group if the UE indicates support for this feature in any one cell of the cell group. | Band | No | N/A | N/A |
| ***enhancedChannelRaster-r18***Indicates whether the UE supports the requirements for UE channel bandwidths located on the enhanced channel raster of a band as specified in TS 38.101-1 [2] and TS 38.101-5 [34]. It is mandatory with capability signalling for all Rel-18 UEs for certain bands as defined in TS 38.101-1 [2] and TS 38.101-5 [34]. Otherwise, it is optional.This capability is not applicable to RedCap or eRedCap UEs, see 4.2.21.1 and 4.2.22.1. | Band | CY | N/A | FR1 only |
| ***enhancedSkipUplinkTxConfigured-v1660***Indicates whether the UE supports skipping UL transmission for a configured uplink grant only if no data is available for transmission and no UCI is multiplexed on the corresponding PUSCH of the uplink grant as specified in TS 38.321 [8]. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.The UE only includes *enhancedSkipUplinkTxConfigured-v1660* if *enhancedSkipUplinkTxConfigured-r16* is absent. | Band | No | N/A | N/A |
| ***enhancedSkipUplinkTxDynamic-v1660***Indicates whether the UE supports skipping UL transmission for an uplink grant addressed to a C-RNTI only if no data is available for transmission and no UCI is multiplexed on the corresponding PUSCH of the uplink grant as specified in TS 38.321 [8]. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.The UE only includes *enhancedSkipUplinkTxDynamic-v1660* if *enhancedSkipUplinkTxDynamic-r16* is absent. | Band | No | N/A | N/A |
| ***enhancedType3-HARQ-CodebookFeedback-r17***Indicates whether the UE supports enhanced type 3 HARQ-ACK codebook feedback based on triggering information in DCI 1\_1 and DCI 1\_2 (for a UE supporting DCI format 1\_2 as indicated in *dci-Format1-2And0-2-r16*) and also supports transmission of enhanced type 3 HARQ-ACK codebook using the first or second PUCCH configuration based on PHY priority indication in the triggering DCI (for a UE supporting two HARQ-ACK codebooks / PUCCH config as indicated in twoHARQ-ACK-Codebook-type1-r16). The capability signalling comprises the following parameters:- *enhancedType3-HARQ-Codebooks-r17* indicates the maximum number of supported enhanced type 3 HARQ-ACK codebooks;- *maxNumberPUCCH-Transmissions-r17* indicates the maximum number of actual PUCCH transmissions for type 3 or enhanced type 3 HARQ-ACK codebook feedback within a slot.UE only supports feedback of a dynamically selected enhanced type 3 HARQ-ACK codebook based on triggering information in DCI 1\_1 and DCI 1\_2 (for a UE supporting DCI format 1\_2 as indicated in *dci-Format1-2And0-2-r16*) if the UE supports more than one enhanced type 3 HARQ-ACK codebook to be configured (as indicated in *enhancedType3-HARQ-Codebooks-r17*). The UE indicates support of this capability shall also indicate support of *oneShotHARQ-feedback-r16*. | Band | No | N/A | N/A |
| ***enhancedUL-TransientPeriod-r16***Indicates whether the UE supports enhanced UL performance for the transient period as specified in clause 6.3.3 of TS 38.101-1 [2] and in clause 6.3.3 of TS 38.101-5 [34]. If not reported, the UE supports transient period of 10us. | Band | No | N/A | FR1 only |
| ***eventA4BasedCondHandover-r17***Indicates whether the UE supports Event A4 based conditional handover in NTN bands, i.e., *CondEvent A4* as specified in TS 38.331 [9]. A UE supporting this feature shall also indicate the support of *condHandover-r16* for NTN bands and the support of *nonTerrestrialNetwork-r17*. UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively. | Band | No | N/A | N/A |
| *eventA4BasedCondHandoverNES-r18*Indicates whether the UE supports Event A4 based conditional handover for NES, i.e., CondEvent A4 as specified in TS 38.331 [9]. A UE supporting this feature shall also indicate the support of *nesBasedCondHandoverWithDCI-r18*. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. | Band | No | N/A | N/A |
| ***extendedCP***Indicates whether the UE supports 60 kHz subcarrier spacing with extended CP length for reception of PDCCH, and PDSCH, and transmission of PUCCH, PUSCH, and SRS. | Band | No | N/A | N/A |
| ***fastBeamSweepingMultiRx-r18***Indicates whether the UE supports beam sweeping factor reduction for SSB-based layer-1 measurement for activated serving cell when the UE is in multi-Rx operation.NOTE: It is only supported for power class 3. | Band | No | TDD only | FR2-1 only |
| ***groupBeamReporting***Indicates whether UE supports RSRP reporting for the group of two reference signals. | Band | No | N/A | N/A |
| ***groupBeamReporting-STx2P-r18***Indicates whether the UE supports grouped-based beam reporting for STx2P.This capability signalling comprises the following parameters:- *groupL1-RSRP-Reporting-r18* indicates the supported group based L1-RSRP reporting for STx2P based transmission.- *maxNumberBeamGroups-r18* indicates the maximum number N of beam groups (M=2 beams per beam group) in a single L1-RSRP reporting instance based on measurement on two CMR resource sets.- *maxNumberResWithinSlotAcrossCC-r18* indicates the maximum number of SSB and CSI-RS resources for measurement in both CMR sets within a slot across all CCs in a band.- *maxNumberResAcrossCC-r18* indicates the maximum number of configured SSB and CSI-RS resources for measurement in both CMR sets across all CCs in a band.A UE supporting this feature shall also indicate support of *mTRP-GroupBasedL1-RSRP-r17*.NOTE: *maxNumberResWithinSlotAcrossCC-r18* and *maxNumberResAcrossCC-r18* are also counted in *maxTotalResourcesForOneFreqRange-r16*, *maxTotalResourcesForAcrossFreqRanges-r16*, and *mTRP-GroupBasedL1-RSRP-r17*. | Band | No | N/A | FR2 only |
| ***groupSINR-reporting-r16***Indicates whether UE supports group based L1-SINR reporting. UE indicates support of this feature shall indicate support of *ssb-csirs-SINR-measurement-r16.* | Band | No | N/A | N/A |
| ***handoverUTRA-FDD-r16***Indicates whether the UE supports NR to UTRA-FDD CELL\_DCH CS handover for the PCell on the band. It is mandatory to support both UTRA-FDD measurement and event B triggered reporting, and periodic UTRA-FDD measurement and reporting if the UE supports HO to UTRA-FDD. If this field is included, then UE shall support IMS voice over NR. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. | Band | No | N/A | N/A |
| ***interCellCrossTRP-PDCCH-OrderCFRA-r18***Indicates whether the UE supports cross-TRP PDCCH order based on CFRA for inter-cell multi-DCI based mTRP.A UE supporting this feature shall also indicate support of *multiDCI-InterCellMultiTRP-TwoTA-r18*. | Band | No | N/A | N/A |
| ***interSlotFreqHopInterSlotBundlingPUSCH-r17***Indicates whether the UE supports enhanced inter-slot frequency hopping with inter-slot bundling for PUSCH.UE indicating support of this feature shall also indicate support of at least one of *dmrs-BundlingPUSCH-RepTypeA-r17*, *dmrs-BundlingPUSCH-RepTypeB-r17* or *dmrs-BundlingPUSCH-multiSlot-r17*. | Band | No | N/A | N/A |
| ***interSlotFreqHopPUCCH-r17***Indicates whether the UE supports enhanced inter-slot frequency hopping for PUCCH repetitions with DMRS bundling.UE indicating support of this feature shall also indicate support of *dmrs-BundlingPUCCH-Rep-r17*. | Band | No | N/A | N/A |
| ***intraSlot-PDSCH-MulticastInactive-r18***Indicates whether the UE supports TDM between one unicast PDSCH (e.g., small data transmission PDSCH) and one group-common PDSCH for multicast in a slot.This capability indicates, for any two consecutive slots n and n+1, if there are more than 1 multicast/unicast PDSCH in either slot, whether to require the minimum time separation (4 OFDM symbols for 30kHz and 7 OFDM symbols for 60kHz) between starting time of any two multicast/unicast PDSCHs within the duration of these slots.A UE indicating support of this feature shall also indicate support of *multicastInactive-r18* and any of *ra-SDT-r17*, *ra-SDT-NTN-r17*, *cg-SDT-r17*, *mt-SDT-r18, mt-SDT-NTN-r18* or *mt-CG-SDT-r18*. | Band | No | N/A | N/A |
| ***jointConfigDMRSPortDynamicSwitching-r18***Indicates whether the UE supports joint configuration of DMRS ports and dynamic switching between DFT-S-OFDM and CP-OFDM for PUSCH.A UE supporting this feature shall also indicate the support of *pusch-TypeA-DMRS-r18* or *pusch-TypeB-DMRS-r18*, and *dynamicWaveformSwitch-r18*. | Band | No | N/A | N/A |
| ***jointReleaseConfiguredGrantType2-r16***Indicates whether the UE supports joint release in a DCI for two or more configured grant Type 2 configurations for a given BWP of a serving cell. The UE can include this feature only if the UE indicates support of *activeConfiguredGrant-r16*. | Band | No | N/A | N/A |
| ***jointReleaseDCI-r18***Indicates whether the UE supports joint release in a DCI for two or more configured grant Type 2 configurations, including multi-PUSCH CG configuration(s), for a given BWP of a serving cell.A UE supporting this feature shall also indicate support of one of *multiPUSCH-CG-r18* and *multiPUSCH-ActiveConfiguredGrant-r18*.NOTE: For the case of joint release in a DCI for two or more configured grant Type 2 configurations, including multi-PUSCH CG configuration(s), for a given BWP of a serving cell, the reporting of this feature applies, i.e., ignore irrespective of *jointReleaseConfiguredGrantType2-r16.*If UE supports *jointReleaseConfiguredGrantType2-r16* but does not support this feature, the UE does not expect to be indicated for joint release including multi-PUSCH CG configuration(s). | Band | No | N/A | N/A |
| ***jointReleaseSPS-r16***Indicates whether the UE supports joint release in a DCI for two or more SPS configurations for a given BWP of a serving cell. The UE can include this feature only if the UE indicates support of *sps-r16*. | Band | No | N/A | N/A |
| ***k1-RangeExtension-r17***Indicates whether the UE supports extended K1 value range of (0..31) for unpaired spectrum. This field is only applicable for bands in Table 5.2.2-1 and Table 5.2.3-1 in TS 38.101-5 [34] and HAPS operation bands in clause 5.2 of TS 38.104 [35]. | Band | No | N/A | N/A |
| ***locationBasedCondHandover-r17***Indicates whether the UE supports location based conditional handover, i.e., *CondEvent D1* as specified in TS 38.331 [9]. A UE supporting this feature shall also indicate the support of *condHandover-r16* for NTN bands and the support of *nonTerrestrialNetwork-r17*. UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively. | Band | No | N/A | N/A |
| ***locationBasedCondHandoverATG-r18***Indicates whether the UE supports location based conditional handover, i.e., *CondEvent D1, CondEvent A3, CondEvent A4* and *CondEvent A5* as specified in TS 38.331 [9]. A UE supporting this feature shall also indicate the support of *condHandover-r16* for bands as specified for ATG in clause 5.2J of TS 38.101-1 [2] and the support of *airToGroundNetwork-r18*. UE shall set the capability value consistently for all bands as specified for ATG in clause 5.2J of TS 38.101-1 [2]. | Band | No | N/A | FR1 only |
| ***locationBasedCondHandoverEMC-r18***Indicates whether the UE supports location based conditional handover for an NTN Earth-moving cell, i.e. *condEventD2* as specified in TS 38.331 [9].A UE supporting this feature shall also indicate the support of *condHandover-r16* for NTN bands and the support of *nonTerrestrialNetwork-r17*. UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively. | Band | No | N/A | N/A |
| ***lowerMSD-r18, lowerMSD-ENDC-r18***Indicates whether the UE supports lower maximum sensitivity degradation when the band is the victim band with sensitivity degradation as specified in TS 38.101-1 [2] and TS 38.101-3 [4]. The victim band and associated aggressor band(s) are within at least one of inter-band CA or EN-DC band combinations supported by the UE.This feature includes following parameters:- *aggressorband1-r18* indicates the aggressor band which causes sensitivity degradation to the victim band. It is an NR band for inter-band CA band combination and LTE band for EN-DC band combination.- *aggressorband2-r18* indicates the additional aggressor band only when the sensitivity degradation to the victim band is caused by IMD of another two bands, i.e. *aggressorband1-r18* and *aggressorband2-r18* together (i.e. if *aggressorband2-r18* is the victim band, it does not have to be indicated).- *msd-Type-r18* indicates the MSD type, including harmonic, harmonic mixing, cross band isolation, IMD2, IMD3, IMD4, IMD5 and 'all'. Value 'all' indicates the MSD capability class is applicable for all MSD types defined in this release, which are applicable to the associated victim band/aggressor band(s).- *msd-PowerClass-r18* indicates the applicable power class applied for the aggressor band(s) of the CA configuration for the lower MSD capability class reported in *msd-Class-r18*.- *msd-Class-r18* indicates the lower MSD capability class as specified in 7.3A.7 in TS 38.101-1 [2] and in 7.3B2.3.7 in TS 38.101-3 [4].The victim band and aggressor band(s) only consist of the bands requested by the network in *frequencyBandListFilter*. | Band | No | N/A | FR1 only |
| ***lowPAPR-DMRS-PDSCH-r16***Indicates whether the UE supports low PAPR DMRS for PDSCH. | Band | No | N/A | N/A |
| ***lowPAPR-DMRS-PUCCH-r16***Indicates whether the UE supports low PAPR DMRS for PUCCH format 3 and format 4 with transform precoding and with pi/2 BPSK modulation. UE indicates support of this feature shall indicate support of *pucch-F3-4-HalfPi-BPSK* and any combination of support of *pucch-F3-WithFH*, *pucch-F4-WithFH* and *pucch-F1-3-4WithoutFH*. It is mandatory with capability signalling. | Band | Yes | N/A | N/A |
| ***lowPAPR-DMRS-PUSCHwithoutPrecoding-r16***Indicates whether the UE supports low PAPR DMRS for PUSCH without transform precoding. | Band | No | N/A | N/A |
| ***lowPAPR-DMRS-PUSCHwithPrecoding-r16***Indicates whether the UE supports low PAPR DMRS for PUSCH with transform precoding and with pi/2 BPSK modulation. It is mandatory with capability signalling. UE indicates support of this feature shall indicate support of *pusch-HalfPi-BPSK*. | Band | Yes | N/A | N/A |
| ***ltm-BeamIndicationJointTCI-r18***Indicates whether the UE supports unified TCI with joint DL/UL LTM TCI-state indication for LTM procedure, indicating and activating a single joint LTM TCI state in a cell switch command.This capability comprises the following parameters:- *maxNumberJointTCI-PerCell-r18* indicates the maximum number of configured joint LTM TCI state(s) per candidate cell- *qcl-Resource-r18* indicates of the supported QCL source RS in the LTM TCI-state- configuration.- *maxNumberJointTCI-AcrossCells-r18* indicates index *N* of the maximum number of configured separate DL LTM TCI state(s) across candidate cells. The maximum number of configured separate DL LTM TCI state(s) across candidate cells is *N*\*8, where *N*={1..128}.- *maxNumberCells-r18* indicates the maximum number of configured joint LTM TCI state(s) across candidate cellsA UE supporting this feature shall also indicate support of *unifiedJointTCI-r17* and at least one of *ltm-MCG-r18* and *ltm-SCG-r18*. | Band | No | N/A | N/A |
| ***ltm-BeamIndicationSeparateTCI-r18***Indicates whether the UE supports unified TCI with separate DL/UL TCI-state indication for LTM procedure and indicating/activating a pair of UL/DL TCI-state in a cell switch command.This capability comprises the following parameters:- *maxNumberDL-TCI-PerCell-r18* indicates the maximum number of configured DL TCI state(s) per candidate cell.- *maxNumberUL-TCI-PerCell-r18* indicates the maximum number of configured UL TCI state(s) per candidate cell.- *qcl-Resource-r18* indicates the supported QCL source RS in the LTM TCI-state configuration.- *maxNumberDL-TCI-AcrossCells-r18* indicates value *N* of the maximum number of configured separate DL LTM TCI state(s) across candidate cells. The maximum number of configured separate DL LTM TCI state(s) across candidate cells is *N*\*8, where *N*={1..128}.- *maxNumberUL-TCI-AcrossCells-r18* indicates value *N* of the maximum number of configured separate UL LTM TCI state(s) across candidate cells. The maximum number of configured separate UL LTM TCI state(s) across candidate cells is *N*\*8, where *N*={1..64}.- *maxNumberCells-r18*indicates the maximum number of configured cells for separate DL/UL LTM TCI statesA UE supporting this feature shall also indicate support of *unifiedSeparateTCI-r17* and at least one of *ltm-MCG-r18* and *ltm-SCG-r18*. | Band | No | N/A | N/A |
| ***ltm-FastProcessingConfig-r18***Indicates whether the UE supports fast processing of LTM candidate cell RRC configuration. This capability signalling comprises the following parameters:- *maxNumberStoredConfigCells-r18* indicates the maximum number of serving cell(s) and candidate cell(s), including serving SpCell(s), serving SCell(s) in MCG and SCG, SpCell in *LTMCandidateConfig*(s) and Scell(s) in *LTMCandidateConfig*(s) for MCG and SCG, that UE can store the configurations.- *maxNumberConfigs-r18* indicates the maximum number of *LTMCandidateConfigs* that UE can support fast processing.A UE supporting this capability shall also indicate support of *ltm-MAC-CE-JointTCI-r18* or *ltm-MAC-CE-SeparateTCI-r18*. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.NOTE: The conditions for fast processing of an LTM candidate cell RRC configuration is defined in clause 6.3 in TS 38.133 [5]. | Band | No | N/A | No |
| ***ltm-MAC-CE-JointTCI-r18***Indicates whether the UE supports MAC-CE activated joint LTM TCI states.This capability comprises the following parameters:- *qcl-Resource-r18* indicates the supported QCL source RS for MAC-CE activated DL/UL LTM TCI states configuration.- *maxNumberJointTCI-PerCell-r18* indicates the maximum number of MAC-CE activated joint LTM TCI states per candidate cell- *maxNumberJointTCI-AcrossCells-r18* indicates the maximum number of MAC-CE activated joint LTM TCI states across candidate cells and serving cellsA UE supporting this feature shall also indicate support of *ltm-BeamIndicationJointTCI-r18*.NOTE: The maximum number of MAC-CE activated joint TCI states across all servings cells is limited by of *unifiedJointTCI-r17.* | Band | No | N/A | N/A |
| ***ltm-MAC-CE-SeparateTCI-r18***Indicates whether the UE supports MAC-CE activated DL/UL LTM TCI states.This capability comprises the following parameters:- *qcl-Resource-r18* indicates the supported QCL source RS for MAC-CE activated DL/UL LTM TCI states configuration.- *maxNumberDL-TCI-PerCell-r18* indicates the maximum number of MAC-CE activated DL TCI states per candidate cell- *maxNumberUL-TCI-PerCell-r18* indicates the maximum number of MAC-CE activated UL TCI states per candidate cell.- *maxNumberDL-TCI-AcrossCells-r18* indicates the maximum number of MAC-CE activated DL TCI states across all candidate cells and serving cells- *maxNumberUL-TCI-AcrossCells-r18* indicates the maximum number of MAC-CE activated UL TCI states across all candidate cells and serving cellsA UE supporting this feature shall also indicate support of *ltm-BeamIndicationSeparateTCI-r18*.The maximum number of MAC-CE activated DL/UL TCI states across all servings cells is limited by *unifiedSeparateTCI-r17.* | Band | No | N/A | N/A |
| ***maxDurationDMRS-Bundling-r17***Indicates whether the UE supports the maximum duration during which UE is able to maintain power consistency and phase continuity to support DM-RS bundling for PUSCH/PUCCH.NOTE: DM-RS bundling is only applicable for UL transmissions with pi/2 BPSK, BPSK, and QPSK modulation orders for the corresponding physical channels. | Band | No | N/A | N/A |
| ***maxDynamicSlotRepetitionForSPS-Multicast-r17***Indicates maximum number of dynamic slot-level repetitions for SPS group-common PDSCH for multicast. For TN, the UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands, associated with supported shared and non-shared spectrum respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.A UE that indicates support of this feature shall indicate support of *sps-Multicast-r17*. | Band | No | N/A | N/A |
| ***max-HARQ-ProcessNumber-r17***Indicates the maximal supported HARQ process numbers for UL and for DL respectively. For each value of *max-HARQ-ProcessNumber-r17*, value *u16d32* indicates the maximal supported HARQ process number is 16 for UL and 32 for DL, value *u32d16* indicates the maximal supported HARQ process number is 32 for UL and 16 for DL, value *u32d32* indicates the maximal supported HARQ process number is 32 for UL and 32 for DL. This field is only applicable for bands in Table 5.2.2-1 in TS 38.101-5 [34] and HAPS operation bands in clause 5.2 of TS 38.104 [35]. | Band | No | N/A | N/A |
| ***maxMIMO-LayersForMulti-DCI-mTRP-r16***Indicates the interpretation of *maxNumberMIMO-LayersPDSCH* for multi-DCI based mTRP. If this field is included, *maxNumberMIMO-LayersPDSCH* is interpreted as the maximum number of layers per PDSCH for multi-DCI multi-TRP operation.If this field is not included, *maxNumberMIMO-LayersPDSCH* is interpreted as the maximum number of layers across two PDSCHs if having at least one RE overlapped, for multi-DCI multi-TRP operation. The UE that indicates support of this feature shall support *overlapPDSCHsFullyFreqTime-r16*.NOTE 1: For data rate calculation in clause 4.1.2, if this feature is indicated, each multi-DCI based multi-TRP CC is counted two times toward J. | Band | No | N/A | N/A |
| ***maxModulationOrderForMulticast-r17***Defines the maximal modulation order for multicast PDSCH in RRC\_CONNECTED. If not reported, UE supports the same modulation order as unicast.- For FR1, up to 1024QAM is supported.- For FR2, up to 256QAM is supported.A UE supporting this feature shall also indicate support of *dynamicMulticastPCell-r17*.NOTE: A UE shall support the corresponding mandatory maximum modulation for unicast. | Band | No | N/A | N/A |
| ***maxNumberActivatedTCI-States-r16***Indicates maximum number of activated TCI states. This capability signalling includes the following:- *maxNumberPerCORESET-Pool-r16* indicates maximal number of activated TCI states per *CORESETPoolIndex* per BWP per CC including data and control- *maxTotalNumberAcrossCORESET-Pool-r16* indicates maximal total number of activated TCI states across *CORESETPoolIndex* per BWP per CC including data and controlThe UE that indicates support of this feature shall support *multiDCI-MultiTRP-r16*. | Band | No | N/A | N/A |
| ***maxNumberCSI-RS-BFD***Indicates maximal number of CSI-RS resources across all CCs, and across MCG and SCG in case of NR-DC, for UE to monitor PDCCH quality. In this release, the maximum value that can be signalled is 16. If the UE includes the field in an FR1 band, it shall set the same value in all FR1 bands. If the UE includes the field in an FR2 band, it shall set the same value in all FR2 bands. The UE supports a total number of resources equal to the maximum of the FR1 and FR2 value, but no more than the FR1 value across all FR1 serving cells and no more than the FR2 value across all FR2 serving cells. It is mandatory with capability signalling for FR2 and optional for FR1. | Band | CY | N/A | N/A |
| ***maxNumberCSI-RS-SSB-CBD***Defines maximal number of different CSI-RS [and/or SSB] resources across all CCs, and across MCG and SCG in case of NR-DC, for new beam identifications. In this release, the maximum value that can be signalled is 128. If the UE includes the field in an FR1 band, it shall set the same value in all FR1 bands. If the UE includes the field in an FR2 band, it shall set the same value in all FR2 bands. The UE supports a total number of resources equal to the maximum of the FR1 and FR2 value, but no more than the FR1 value across all FR1 serving cells and no more than the FR2 value across all FR2 serving cells. It is mandatory with capability signalling for FR2 and optional for FR1. The UE is mandated to report at least 32 for FR2. | Band | CY | N/A | N/A |
| ***maxNumberG-CS-RNTI-r17***Defines maximum number of G-CS-RNTIs for SPS multicast. For TN, the UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands, associated with supported shared and non-shared spectrum respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.A UE supporting this feature shall also indicate support of *sps-Multicast-r17*. | Band | No | N/A | N/A |
| ***maxNumberG-RNTI-r17***Defines maximum number of G-RNTIs for multicast in RRC\_CONNECTED. For TN, the UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands, associated with supported shared and non-shared spectrum respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.A UE supporting this feature shall also indicate support of *dynamicMulticastPCell-r17*.For the UE indicating support of *multicastInactive-r18*, this capability is also applicable to multicast reception in RRC\_INACTIVE, as specified in TS 38.331 [9]. | Band | No | N/A | N/A |
| ***maxNumber-NGSO-SatellitesPerCarrier-r17***Indicates the number of target NGSO satellites the UE can monitor per carrier. For serving carrier, the number of target NGSO satellites also includes the serving satellite. If this field is not included, the number of target satellites UE can monitor per carrier is 2. The value shall be larger than or equal to the reported value on *maxNumber-NGSO-SatellitesWithinOneSMTC-r17*. | Band | No | FDD only | FR1 only |
| ***maxNumber-NGSO-SatellitesWithinOneSMTC-r17***Indicates the number of different NGSO satellites for target cells that the UE supports of simultaneous measurements within a SMTC with value n1 corresponds to 1, value n2 corresponds to 2 and so on. | Band | No | FDD only | FR1 only |
| ***maxNumberNonGroupBeamReporting***Defines support of non-group based RSRP reporting using N\_max RSRP values reported. | Band | Yes | N/A | N/A |
| ***maxNumberPUSCH-TypeA-Repetition-r17***Indicates whether the UE supports the increased maximum number of PUSCH Type A repetitions to 32.A UE that indicates support of this feature shall support *type1-PUSCH-RepetitionMultiSlots, type2-PUSCH-RepetitionMultiSlots,* *pusch-RepetitionTypeA-r16* or *pusch-RepetitionTypeA-v16c0.*NOTE: For DG PUSCH, the number of repetitions is indicated in a TDRA list. A row index of the TDRA list is indicated by a DCI. For Type 1 CG PUSCH, the number of repetitions is indicated by *repK-v1710*. For Type 2 CG PUSCH, the number of repetitions is indicated in a TDRA list or by *repK-v1710*. | Band | No | N/A | N/A |
| ***maxNumberRxBeam, maxNumberRxBeam-v1720***Defines whether UE supports receive beamforming switching using NZP CSI-RS resource. UE shall indicate a single value for the preferred number of NZP CSI-RS resource repetitions per CSI-RS resource set. Support of Rx beam switching is mandatory for FR2. | Band | CY | N/A | N/A |
| ***maxNumberRxTxBeamSwitchDL,*** ***maxNumberRxTxBeamSwitchDL-v1710***Defines the number of Tx and Rx beam changes UE can perform on this band within a slot. UE shall report one value per each subcarrier spacing supported by the UE. In this release, the number of Tx and Rx beam changes for scs-15kHz and scs-30kHz are not included. | Band | No | N/A | FR2 only |
| ***maxNumberSCellBFR-r16***Defines the maximum number of SCells configured for SCell beam failure recovery simultaneously. The UE indicating support of this also indicates the capabilities of *maxNumberCSI-RS-BFD, maxNumberSSB-BFD* and *maxNumberCSI-RS-SSB-CBD.* | Band | No | N/A | N/A |
| ***maxNumberSSB-BFD***Defines maximal number of different SSBs across all CCs, and across MCG and SCG in case of NR-DC, for UE to monitor PDCCH quality. In this release, the maximum value that can be signalled is 16. If the UE includes the field in an FR1 band, it shall set the same value in all FR1 bands. If the UE includes the field in an FR2 band, it shall set the same value in all FR2 bands. The UE supports a total number of resources equal to the maximum of the FR1 and FR2 value, but no more than the FR1 value across all FR1 serving cells and no more than the FR2 value across all FR2 serving cells. It is mandatory with capability signalling for FR2 and optional for FR1. | Band | CY | N/A | N/A |
| ***maxOutputPowerATG-r18***Indicates the maximum output power rating at maximum modulation order and full RB allocation as specified in clause 6.2J of TS 38.101-1 [2]. Value 1 indicates 23dBm, value 2 indicates 24dBm and so on. If present, the *ue-PowerClass* is not included, and default UE power class is not applicable. The UE indicating support of this feature shall also indicate support of *airToGroundNetwork-r18*. This field is only applicable for bands as specified for ATG in clause 5.2J of TS 38.101-1 [2]. | Band | CY | N/A | FR1 only |
| ***maxPeriodicityCMR-r18***Indicates the maximum periodicity of periodic CSI-RS (in slots) UE can handle for Type-II-Doppler CSI report.The UE supporting this feature shall also indicate support at least one of *eType2Doppler-r18* and *feType2Doppler-r18*.NOTE: A UE that supports at least one of *eType2Doppler-r18* and *feType2Doppler-r18* must signal this feature. | Band | CY | N/A | N/A |
| ***maxUplinkDutyCycle-PC2-FR1***Indicates the maximum percentage of symbols during a certain evaluation period that can be scheduled for uplink transmission to ensure compliance with applicable electromagnetic energy absorption requirements provided by regulatory bodies. This field is applicable for FR1 power class 2 UE and also applicable for FR1 power class 1.5 UE as specified in clause 6.2.1 of TS 38.101-1 [2]. If the field and *maxUplinkDutyCycle-PC1dot5-MPE-FR1-r16* are both absent, 50% shall be applied as the upper limit of the UL duty cycle for power class 2. Value n60 corresponds to 60%, value n70 corresponds to 70% and so on. This capability is not applicable to IAB-MT. | Band | No | N/A | FR1 only |
| ***maxUplinkDutyCycle-FR2***Indicates the maximum percentage of symbols during 1s that can be scheduled for uplink transmission at the UE maximum transmission power, so as to ensure compliance with applicable electromagnetic power density exposure requirements provided by regulatory bodies. This field is applicable for all power classes UE in FR2 as specified in TS 38.101-2 [3]. Value n15 corresponds to 15%, value n20 corresponds to 20% and so on. If the field is absent or the percentage of uplink symbols transmitted within any 1s evaluation period is larger than *maxUplinkDutyCycle-FR2*, the UE behaviour is specified in TS 38.101-2 [3]. This capability is not applicable to IAB-MT. | Band | No | N/A | FR2 only |
| ***maxUplinkDutyCycle-PC1dot5-MPE-FR1-r16***Indicates the maximum percentage of symbols during a certain evaluation period that can be scheduled for uplink transmission to ensure compliance with applicable electromagnetic energy absorption requirements provided by regulatory bodies. This field is only applicable for FR1 power class 1.5 UE as specified in clause 6.2.1 of TS 38.101-1 [2]. If the field and *maxUplinkDutyCycle-PC2-FR1* are both absent, 25% shall be applied as the upper limit of the UL duty cycle for power class 1.5. | Band | No | N/A | FR1 only |
| ***measEnhCAInterFreqFR2-r18***Indicates whether the UE supports the RRM requirement for intra-band CA operation in connected mode to support FR2 high speed up to 350 km/h, as specified in TS 38.133 [5] and the RRM requirement for enhanced inter-frequency measurements in connected mode to support FR2 high speed up to 350 km/h, as specified in TS 38.133 [5].A UE supporting this feature shall also indicate support of PC6 in *ue-PowerClass-v1700*. | Band | No | N/A | FR2 only |
| ***measValidationReportEMR-r18***Indicates whether the UE supports measurement validation and report based on EMR measurement during connection setup/resume for fast CA/DC setup. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.A UE supporting this feature shall also indicate support of *idleInactiveNR-MeasReport-r16* or *idleInactiveEUTRA-MeasReport-r16*. | Band | No | N/A | N/A |
| ***measValidationReportReselectionMeasurements-r18***Indicates whether the UE supports measurement validation based on reselection measurements during IDLE/INACTIVE state and reporting for fast CA/DC setup. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. | Band | No | N/A | N/A |
| ***mixCodeBookSpatialAdaptation-r18***Indicates whether the UE supports active CSI-RS resources and ports for mixed codebook types in any slot. The following codebook combination is a possible mixed codebook combination {Type 1 Single Panel, Type 1 Multi Panel, Null } for UE supporting CSI feedback based on CSI report sub-configuration(s), each containing one port subset configuration.A UE supporting this feature shall also indicate support of *spatialAdaptation-CSI-Feedback-r18*, or *spatialAdaptation-CSI-FeedbackPUSCH-r18*, or *spatialAdaptation-CSI-FeedbackPUCCH-r18*, or *spatialAdaptation-CSI-FeedbackAperiodic-r18*. | Band | No | N/A | N/A |
| ***mn-InitiatedCondPSCellChangeNRDC-r17***Indicates whether the UE supports MN initiated conditional PSCell change in NR-DC, which is configured by NR *conditionalReconfiguration* using MN configured measurement as triggering condition. The UE supporting this feature shall also support 2 trigger events for same execution condition in MN initiated conditional PSCell change in NR-DC. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands respectively. | Band | No | N/A | N/A |
| ***modifiedMPR-Behaviour***Indicates whether UE supports modified MPR behaviour defined in TS 38.101-1 [2], TS 38.101-2 [3], and TS 38.101-5 [34]. | Band | No | N/A | N/A |
| ***mpe-Mitigation-r17***Indicates the support of enhanced PHR reporting which includes pairs of (P-MPR, SSBRI/CRI).This feature also includes following parameters:- *maxNumP-MPR-RI-pairs-r17* indicates the maximum number of reported P-MPR and SSBRI/CRI pairs;- *maxNumConfRS-r17* indicates the maximum number of candidate RS(s) configured in a RRC pool for MPE mitigation.NOTE: *maxNumConfRS-r17* is also counted in *maxTotalResourcesForOneFreqRange-r16*/ *maxTotalResourcesForAcrossFreqRanges-r16.* | Band | No | N/A | FR2 only |
| ***mpr-PowerBoost-FR2-r16***Indicates whether UE supports uplink transmission power boost by suspension of in-band emission (IBE) requirements as specified in TS 38.101-2 [3]. | Band | No | TDD only | FR2 only |
| ***mt-CG-SDT-r18***Indicates whether the UE supports initiating MT-SDT procedure over configured grant type 1, as specified in TS 38.331 [9]. Except for NTN bands, UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.Except for NTN, a UE supporting this feature shall also support *mt-SDT-r18*. For NTN, a UE supporting this feature shall also support *mt-SDT-NTN-r18*. | Band | No | N/A | N/A |
| ***mTRP-BFD-RS-MAC-CE-r17***Indicates the support of MAC-CE based update of explicit BFD-RS for mTRP BFR with maximum number of configured candidate BFD-RS per BWP for MAC-CE based update.The UE indicating support of this feature shall also indicate the support of *mTRP-BFR-twoBFD-RS-Set-r17*. | Band | No | N/A | N/A |
| ***mTRP-BFR-association-PUCCH-SR-r17***Indicates whether the UE supports association between a BFD-RS resource set on SpCell and a PUCCH SR resource.The UE indicating support of this feature shall support *mTRP-BFR-PUCCH-SR-perCG-r17.* UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. | Band | No | N/A | N/A |
| ***mTRP-BFR-PUCCH-SR-perCG-r17***Indicates the maximum number of supported PUCCH-SR resources for MTRP BFR per cell group. A UE that supports *mTRP-BFR-twoBFD-RS-Set-r17* shall indicate support of this feature with at least 1 PUCCH-SR resources for MTRP BFR per cell group.UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. | Band | No | N/A | N/A |
| ***mTRP-BFR-twoBFD-RS-Set-r17***Indicates whether the UE supports mTRP BFR based on two BFD-RS sets. The capability signalling comprises the following parameters:*-* *maxBFD-RS-resourcesPerSetPerBWP-r17* indicates the maximum number of supported measured BFD-RS resources per set per BWP.- *maxBFR-r17* indicates the maximum number of CCs per band configured with BFR (including spCell/SCell/MTRP BFR).*-* *maxBFD-RS-resourcesAcrossSetsPerBWP-r17* indicates the supported maximum number of measured BFD-RS resources across two BFD-RS sets per BWP.*maxBFD-RS-resourcesAcrossSetsPerBWP-r17* is also counted in *maxTotalResourcesForOneFreqRange-r16* and *maxTotalResourcesForAcrossFreqRanges-r16*. | Band | No | N/A | N/A |
| ***mTRP-CSI-additionalCSI-r17***Indicates the maximum value of *numberOfSingleTRP-CSI-Mode1*.The UE indicating support of this feature shall also indicate 'mode1' or 'both' in *cSI-Report-mode-r17* of *mTRP-CSI-EnhancementPerBand-r17*. | Band | No | N/A | N/A |
| ***mTRP-CSI-CMR-r17***Indicates the support of a NZP CSI-RS resource referred by both a CMR pair configured for Rel-17 Multi-TRP CSI enhancement and a single CMR configured for Single-TRP measurement in a CSI reporting setting.The UE indicating support of this feature shall also indicate the support of *mTRP-CSI-EnhancementPerBand-r17*. | Band | No | N/A | FR2 only |
| ***mTRP-CSI-EnhancementPerBand-r17***Indicates support of CSI enhancements for multi-TRP including support of NZP CSI-RS resource pairs used as CMR (channel measurement resource) pairs for NCJT measurement hypothesis with N=1.This feature also includes following parameters:- *maxNumNZP-CSI-RS-r17* indicates the maximum number of NZP CSI-RS resources in one CSI-RS resource set: Ks,max- *cSI-Report-mode-r17* indicates the CSI report mode selection. Mode1 indicates mode 1 with X=0, mode2 indicates mode 2, both indicate the support of both mode 1 with X=0 and mode 2.- A list of supported combinations, up to 16, across all CCs simultaneously, where each combination includes:- *maxNumTx-Ports-r17* indicates the maximum number of Tx ports in one NZP CSI-RS resource associated with an NCJT measurement hypothesis- *maxTotalNumCMR-r17* indicates the maximum total number of CMRs for NCJT measurement- *maxTotalNumTx-PortsNZP-CSI-RS-r17* indicates the maximum total number of Tx ports of NZP CSI-RS resources associated with NCJT measurement hypotheses- *codebookModeNCJT-r17* indicates the supported codebook modes for NCJT CSI. | Band | No | N/A | N/A |
| ***mTRP-CSI-N-Max2-r17***Indicates the support of maximum number of CMR pairs Nmax=2 configured in *NZP-CSI-RS-ResourceSet* for a given CSI report setting.The UE indicating support of this feature shall also indicate the support of *mTRP-CSI-EnhancementPerBand-r17.* | Band | No | N/A | N/A |
| ***mTRP-CSI-numCPU-r17***Indicates the number of CSI processing units (CPUs) occupied by a pair of CMRs for NCJT CSI hypotheses. Maximum number of CPUs is reported in *csi-ReportFramework*.The UE indicating support of this feature shall also indicate the support of *mTRP-CSI-EnhancementPerBand-r17*. | Band | No | N/A | N/A |
| ***mTRP-GroupBasedL1-RSRP-r17***Indicates the support of group based L1-RSRP reporting enhancements.This feature also includes following parameters:- *maxNumBeamGroups-r17* indicates the maximum number N of beam groups (M=2 beams per beam group) in a single L1-RSRP reporting instance based on measurement on two CMR resource sets.- *maxNumRS-WithinSlot-r17* indicates the maximum number of SSB and CSI-RS resources for measurement in both CMR sets within a slot across all CCs.*-* *maxNumRS-AcrossSlot-r17* indicates the maximum number of configured SSB and CSI-RS resources for measurement in both CMR sets across all CCs.*maxNumRS-WithinSlot-r17* and *maxNumRS-AcrossSlot-r17* are also counted in *maxTotalResourcesForOneFreqRange-r16* and *maxTotalResourcesForAcrossFreqRanges-r16*. | Band | No | N/A | N/A |
| ***mTRP-inter-Cell-r17***Indicates the support of RRC configuration of additional PCI different from serving cell associated with the TCI state and/or QCL-info.This feature also includes following parameters:- *maxNumAdditionalPCI-Case1-r17* indicates the maximum number of configured additional PCIs per CC is X1 (Case 1) when each configuration of SSB time domain positions and periodicity of the additional PCIs is the same as SSB time domain positions and periodicity of the serving cell PCI.- *maxNumAdditionalPCI-Case2-r17* indicates the maximum number of configured additional PCIs per CC is X2 (Case 2) when the configurations of SSB time domain positions and periodicity of the additional PCIs is not according to Case 1.The UE indicating support of this feature shall also indicate the support of *multiDCI-MultiTRP-r16.* | Band | No | N/A | N/A |
| ***mTRP-PDCCH-anySpan-3Symbols-r17***Indicates support of PDCCH repetition for PDCCH monitoring on any span of up to 3 consecutive OFDM symbols of a slot. It is applicable to 15kHz SCS only.The UE indicating support of this feature shall also indicate support of *pdcchMonitoringSingleOccasion* and *mTRP-PDCCH-Repetition-r17*. | Band | No | N/A | FR1 only |
| ***mTRP-PDCCH-individual-r17***Indicates the support of monitoring of individual candidates when one of the linked PDCCH candidates uses the same set of CCEs as an individual (unlinked) PDCCH candidate, and they both are associated with the same DCI size, scrambling, and CORESET.The UE indicating support of this feature shall also indicate support of *mTRP-PDCCH-Repetition-r17*. | Band | No | N/A | N/A |
| ***mTRP-PDCCH-TwoQCL-TypeD-r17*** Indicates the support of determining two QCL-TypeD for time-domain overlapping CORESETs in the same CC or for intra-band CA when UE is configured with PDCCH repetition.The UE indicating support of this feature shall also indicate support of *mTRP-PDCCH-Repetition-r1*7. | Band | No | N/A | FR2 only |
| ***mTRP-PUCCH-CyclicMapping-r17***Indicates whether the UE supports cyclic mapping for beam mapping/power control parameter set mapping for PUCCH repetitions scheme 1 and/or 3 when the number of repetitions is larger than 2.The UE that indicates support of this feature shall also indicate support of *mTRP-PUCCH-InterSlot-r17.* | Band | No | N/A | N/A |
| ***mTRP-PUCCH-InterSlot-r17***Indicates whether the UE supports the following features:- support of PUCCH repetition scheme 1 (inter-slot repetition) with sequential mapping for repetitions larger than 2 and with cyclic mapping for 2 repetitions.- support of up to two PUCCH power control parameter sets/spatial relation information per PUCCH resource. The power control parameter sets only apply to FR1 and spatial relation information only applies to FR2.- supported PUCCH formats for PUCCH repetition scheme 1. | Band | No | N/A | N/A |
| ***mTRP-PUCCH-MAC-CE-r17***Indicates the support of updating two Spatial Relation Info's and two sets of power control parameters for a group of PUCCH resources in a CC by MAC-CE.The UE indicates support of this feature shall also indicate support of *mTRP-PUCCH-InterSlot-r17.* | Band | No | N/A | N/A |
| ***mTRP-PUCCH-maxNum-PC-FR1-r17***Indicates the maximum number of power control parameter sets configured for multi-TRP PUCCH repetition in FR1.The UE indicating support of this feature shall also indicate the support of *mTRP-PUCCH-InterSlot-r17.* | Band | No | N/A | FR1 only |
| ***mTRP-PUCCH-SecondTPC-r17***Indicates whether the UE supports second TPC field for per TRP closed-loop power control for PUCCH with DCI formats 1\_1 / 1\_2.The UE that indicates support of this feature shall also indicate support of *mTRP-PUCCH-InterSlot-r17.* | Band | No | N/A | N/A |
| ***mTRP-PUSCH-A-CSI-r17***Indicates the support of A-CSI report on two PUSCH repetitions.The UE indicating support of this feature shall also indicate the support of *mTRP-PUSCH-TypeA-CB-r17*or *mTRP-PUSCH-RepetitionTypeA-r17.* | Band | No | N/A | N/A |
| ***mTRP-PUSCH-CG-r17***Indicates the support of CG PUSCH transmission towards M-TRPs using a single CG configuration. The UE uses same beam mapping principals as dynamic grant PUSCH repetition scheme.The UE indicating support of this feature shall also indicate the support of *mTRP-PUSCH-TypeA-CB-r17*or *mTRP-PUSCH-RepetitionTypeA-r17*. | Band | No | N/A | N/A |
| ***mTRP-PUSCH-CSI-RS-r17***Indicates the support of CSI-RS processing framework for SRS with two associated CSI-RS resources.This feature also includes following parameters:- *maxNumPeriodicSRS-r17* indicates the maximum number of periodic SRS resources associated with first and second CSI-RS per BWP.- *maxNumAperiodicSRS-r17* indicates the maximum number of aperiodic SRS resources associated with first and second CSI-RS per BWP.- *maxNumSP-SRS-r17* indicates the maximum number of semi-persistent SRS resources associated with first and second CSI-RS per BWP.- *numSRS-ResourcePerCC-r17*: UE can process Y SRS resources associated with first and second CSI-RS resources simultaneously in a CC. Includes Periodic/Semi-Persistent/Aperiodic SRS.- *numSRS-ResourceNonCodebook-r17*: UE can process up to X CSI-RS resources associated with SRS for non-codebook based transmission simultaneously.The UE indicating support of this feature shall also indicate the support of *mTRP-PUSCH-twoCSI-RS-r17.* | Band | No | N/A | N/A |
| ***mTRP-PUSCH-cyclicMapping-r17***Indicates the support of cyclic mapping when the number of repetitions is larger than 2 with repetition type.The UE indicating support of this feature shall also indicate the support of *mTRP-PUSCH-TypeA-CB-r17*or *mTRP-PUSCH-RepetitionTypeA-r17*. | Band | No | N/A | N/A |
| ***mTRP-PUSCH-secondTPC-r17***Indicates the support of second TPC field for per TRP closed-loop power control for PUSCH with DCI formats 0\_1 and 0\_2.The UE indicating support of this feature shall also indicate the support of *mTRP-PUSCH-TypeA-CB-r17*or *mTRP-PUSCH-RepetitionTypeA-r17.* | Band | No | N/A | N/A |
| ***mTRP-PUSCH-SP-CSI-r17***Indicates the support of SP-CSI report on two PUSCH repetitions.The UE indicating support of this feature shall also indicate the support of *mTRP-PUSCH-TypeA-CB-r17*or *mTRP-PUSCH-RepetitionTypeA-r17.* | Band | No | N/A | N/A |
| ***mTRP-PUSCH-twoCSI-RS-r17***Indicates whether the UE supports up to two NZP CSI-RS resources associated with the two SRS resource sets for non-codebook-based mTRP PUSCH.The UE that indicates support of this feature shall also indicate support of *srs-AssocCSI-RS, csi-RS-IM-ReceptionForFeedbackPerBandComb and mTRP-PUSCH-RepetitionTypeA-r17.* | Band | No | N/A | N/A |
| ***mTRP-PUSCH-twoPHR-Reporting-r17***Indicates the support of PHR reporting related to M-TRP PUSCH repetition (calculate two PHRs (at least corresponding to the CC that applies m-TRP PUSCH repetitions), each associated with a first PUSCH occasion corresponding to each SRS resource set, and report two PHRs).The UE indicating support of this feature shall also indicate the support of *mTRP-PUSCH-TypeA-CB-r17* or *mTRP-PUSCH-RepetitionTypeA-r17.* | Band | No | N/A | N/A |
| ***multicastInactive-r18***Indicates whether the UE supports multicast reception in RRC\_INACTIVE as specified in TS 38.331 [9], comprised of the following functional components:- Supports group-common PDCCH/PDSCH for multicast with CRC scrambled by Multicast MCCH-RNTI;- Supports group-common PDCCH/PDSCH for multicast with CRC scrambled by G-RNTI;- Supports DCI format 4\_0 with CRC scrambled with Multicast MCCH-RNTI for multicast MCCH;- Supports DCI format 4\_1 with CRC scrambled with G-RNTI for multicast MTCH;- Supports multicast MCCH change notification indication via DCI;- Supports CFR configuration for multicast;- Supports CORESET and common search space configuration for multicast;- Supports one G-RNTI for multicast reception;- Supports RRC configured slot-level repetition up to 8 for multicast MTCH;- Supports inter-slot TDM between group-common PDSCH for multicast MCCH and group-common PDSCH for multicast MTCH, or among group-common PDSCH for multicast MCCH, group-common PDSCH for multicast MTCH and other PDSCHs in different slots;- Supports up to 64QAM for FR1/FR2;- Supports 12-bit length of PDCP sequence number;- Supports ROHC profiles 0x0000, 0x0001 and 0x0002;- Supports 4 ROHC header compression context sessions;- Supports UM MRB with 12-bit length of RLC sequence number;- Supports UM MRB with 6-bit length of RLC sequence number;- Supports long DRX cycle for MBS multicast reception as specified in TS 38.321 [8].A UE supporting this feature shall also indicate support of *dynamicMulticastPCell-r17*. A UE supporting this feature and supporting Mission Critical Services as described in clause 5.16.6 in TS 23.501 [37] shall also indicate the support of *thresholdBasedMulticastResume-r18*. | Band | No | N/A | N/A |
| ***multiPDSCH-SingleDCI-FR2-1-SCS-120kHz-r17***Indicates whether the UE supports multi-PDSCH scheduling by single DCI for the operation with 120kHz SCS in FR2-1 and HARQ enhancements for both type 1 and type 2 HARQ codebook. | Band | No | N/A | N/A |
| ***multipleRateMatchingEUTRA-CRS-r16***Indicates whether the UE supports multiple E-UTRA CRS rate matching patterns, which is supported only for FR1. The capability signalling comprises the following parameters:- *maxNumberPatterns-r16* indicates the maximum number of LTE-CRS rate matching patterns in total within a NR carrier using 15 kHz SCS. The UE can report the value larger than 2 only if UE reports the value of *maxNumberNon-OverlapPatterns-r16* is larger than 1.- *maxNumberNon-OverlapPatterns-r16* indicates the maximum number of LTE-CRS non-overlapping rate matching patterns within a NR carrier using 15 kHz SCS.The UE can include this feature only if the UE indicates support of *rateMatchingLTE-CRS*. | Band | No | N/A | FR1 only |
| ***multipleTCI***Indicates whether UE supports more than one TCI state configurations per CORESET. UE is only required to track one active TCI state per CORESET. UE is required to support minimum between 64 and number of configured TCI states indicated by *tci-StatePDSCH*. This field shall be set to *supported*. | Band | Yes | N/A | N/A |
| ***multiPUCCH-HARQ-ACK-ForMulticastUnicast-r17***Indicates whether the UE supports two non-overlapping slot-based PUCCHs for ACK/NACK based HARQ-ACK feedback for multicast or for unicast and multicast with different priorities in a slot.For TN, the UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands, associated with supported shared and non-shared spectrum respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.A UE supporting this feature shall also indicate support of *priorityIndicatorInDCI-Multicast-r17* and *twoHARQ-ACK-CodebookForUnicastAndMulticast-r17*. | Band | No | N/A | N/A |
| ***multiPUSCH-ActiveConfiguredGrant-r18***Indicates whether the UE supports multiple active multi-PUSCHs configured grant configurations for a BWP of a serving cell.This feature also includes following parameters:- *maxNumberConfigsPerBWP* indicates the supported maximum number of configured/active configured grant configurations in a BWP of a serving cell.- *maxNumberConfigsAllCC-FR1* indicates the supported maximum number of configured/active configured grant configurations across all serving cells, and across MCG and SCG in case of NR-DC in FR1.- *maxNumberConfigsAllCC-FR2* indicates the supported maximum number of configured/active configured grant configurations across all serving cells, and across MCG and SCG in case of NR-DC in FR2.A UE supporting this feature shall also indicate support of *multiPUSCH-CG-r18*.When UE supports both *activeConfiguredGrant-r16* and *multiPUSCH-ActiveConfiguredGrant-r18*, the total number which can be configured for CG with single-PUSCH TO in one CG period and CG with multi-PUSCH TO in one CG period should not exceed the value reported by *activeConfiguredGrant-r16*.For all the reported bands in FR1, a same value is reported for *maxNumberConfigsAllCC*. For all the reported bands in FR2, a same value is reported for *maxNumberConfigsAllCC*.The total number of configured/active configured grant configurations across all serving cells in FR1 is no greater than *maxNumberConfigsAllCC* in FR1.The total number of configured/active configured grant configurations across all serving cells in FR2 is no greater than *maxNumberConfigsAllCC* in FR2.If there are some serving cell(s) in FR1 and some serving cell(s) in FR2, the total number of configured/active configured grant configurations across all serving cells is no greater than max(*maxNumberConfigsAllCC-FR1*, *maxNumberConfigsAllCC-FR2*).NOTE: Separate release of different multi-PUSCHs configuration grant Type 2 configuration, i.e., one DCI release one multi-PUSCHs configured grant Type 2 configuration is supported with this feature. | Band | No | N/A | N/A |
| ***multiPUSCH-CG-r18***Indicates whether the UE supports multi-PUSCHs for configured grant by indicating whether the UE supports the determination of time-domain resource allocation for CG-PUSCHs associated to a multi-PUSCHs CG and also the maximum supported number of consecutive slots configured for CG-PUSCG TOs in one CG period.This feature also includes following parameters:- *n16* indicates the maximum supported number of consecutive slots configured for CG-PUSCH TOs in one CG period is 16.- *n32* indicates the maximum supported number of consecutive slots configured for CG-PUSCH TOs in one CG period is 32.A UE supporting this feature shall also indicate support of at least one of *configuredUL-GrantType1, configuredUL-GrantType1-v1650, configuredUL-GrantType2,* and *configuredUL-GrantType2-v1650.* | Band | No | N/A | N/A |
| ***multiPUSCH-SingleDCI-FR2-1-SCS-120kHz-r17***Indicates whether the UE supports multi-PUSCH scheduling by single DCI for the operation with 120kHz SCS in FR2-1 with non-contiguous allocation. | Band | No | N/A | N/A |
| ***multiPUSCH-SingleDCI-NonConsSlots-r18***Indicates support of Multi-PUSCH scheduling by single DCI format 0\_1 for the operation with non-contiguous allocation.A UE supporting this feature shall also indicate support of *multiPUSCH-UL-grant-r16.* | Band | No | N/A | FR1 only |
| ***mux-HARQ-ACK-DiffPriorities-r17***Indicates whether the UE supports HARQ-ACK with different priorities multiplexing on a PUCCH/PUSCH, comprised of the following functional components:- Supports multiplexing a high-priority HARQ-ACK and a low-priority HARQ-ACK into a PUCCH. Supports separate coding for the two HARQ-ACKs;- Supports multiplexing a low-priority HARQ-ACK, a high-priority HARQ-ACK and a high-priority SR into a PUCCH;- Supports multiplexing a low-priority HARQ-ACK in a high-priority PUSCH (conveying UL-SCH only). Supports separate beta\_offset values for this priority combination;- Supports multiplexing a high-priority HARQ-ACK in a low-priority PUSCH (conveying UL-SCH only). Supports separate beta\_offset values for this priority combination;- Supports multiplexing a low-priority HARQ-ACK, a high-priority PUSCH, a high-priority HARQ-ACK and/or CSI;- Supports multiplexing a high-priority HARQ-ACK, a low-priority PUSCH, a low-priority HARQ-ACK and/or CSI.The UE indicating support of this feature shall also indicate the support of *twoHARQ-ACK-Codebook-type1-r16.* | Band | No | N/A | N/A |
| ***nack-OnlyFeedbackForMulticastWithDCI-Enabler-r17***Indicates whether the UE supports DCI-based enabling/disabling NACK-only based HARQ-ACK feedback configured per G-RNTI by RRC signalling via DCI format 4\_2.A UE supporting this feature shall also indicate support of *nack-OnlyFeedbackForMulticast-r17* and *dynamicMulticastDCI-Format4-2-r17*. | Band | No | N/A | N/A |
| ***nack-OnlyFeedbackForSPS-MulticastWithDCI-Enabler-r17***Indicates whether the UE supports DCI-based enabling/disabling NACK-only based HARQ-ACK feedback configured per G-CS-RNTI by RRC signalling via DCI format 4\_2.A UE that indicates support of this feature shall indicate support of *nack-OnlyFeedbackForSPS-Multicast-r17* and *sps-MulticastDCI-Format4-2-r17*. | Band | No | N/A | N/A |
| ***ncd-SSB-BWP-Wor-r18***Indicates whether the UE supports RLM/BM/BFD and gapless L3 intra-frequency measurements based on NCD-SSB within active BWP. Bandwidth of UE-specific RRC configured BWP may not include bandwidth of the CORESET#0 (if CORESET#0 is present) and CD-SSB for PCell/PSCell (if configured) and bandwidth of the UE-specific RRC configured BWP may not include CD-SSB for Scell. NCD-SSB within the active DL BWP can be used as the QCL source for other reference signal. UE performs L3 intra-frequency measurements without gaps based on NCD-SSB, where the NCD-SSB is within the active DL BWP.NOTE: This feature applies only to PCell and PSCell (if configured). It is not applicable to RedCap or eRedCap UEs. | Band | No | N/A | N/A |
| ***nesBasedCondHandoverWithDCI-r18***Indicates whether the UE supports DCI-based enabling/disabling NES-specific CHO execution condition, i.e. NES-specific CHO execution condition based on source cell NES mode indicated via DCI format 2\_9 as specified in TS 38.331 [9]. A UE supporting this feature shall also indicate the support of *condHandover-r16*. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. | Band | No | N/A | N/A |
| ***nes-CellDTX-DRX-r18***Indicates whether the UE supports cell DTX and/or DRX operation by RRC configuration. The supported number of cell DTX/DRX patterns per cell group is 2, regardless of each pattern is for cell DTX only, cell DRX only, or both. A UE setting this field to the value 'cellDTXonly' or 'both' shall also indicate support of *longDRX-Cycle*. | Band | No | N/A | N/A |
| ***nes-CellDTX-DRX-DCI2-9-r18***Indicates whether the UE supports cell DTX/DRX configuration activation and deactivation via DCI 2\_9.A UE supporting this feature shall also indicate support of *nes-CellDTX-DRX-r18*. | Band | No | N/A | N/A |
| ***nonGroupSINR-reporting-r16***Indicates N\_max L1-SINR values reported when UE supports non-group based L1-SINR reporting. UE indicates support of this feature shall indicate support of *ssb-csirs-SINR-measurement-r16.* | Band | No | N/A | N/A |
| ***nr-PDCCH-OverlapLTE-CRS-RE-r18***Indicates whether the UE supports reception of NR PDCCH candidates that overlap with LTE CRS REs within a NR carrier using 15 kHz SCS. The UE is provided with LTE CRS RM pattern by configuration of one CRS rate matching pattern via *lte-CRS-ToMatchAround*. NR PDCCH that overlaps with LTE CRS REs is in Type-1 CSS with dedicated RRC configuration, Type-3 CSS, and/or USS that are monitored within the first 3 OFDM symbols of a slot. This feature comprises following components:- *overlapInRE-r18* indicates reception of a NR PDCCH candidate in REs that overlap with LTE CRS: Value *oneSymbolNoOverlap* indicates when at least one symbol of the NR PDCCH candidate and the DMRS for demodulation of the NR PDCCH candidateis not overlapped with LTE CRS. Value *someOrAllSymOverlap* indicates when some or all of symbols of NR PDCCH candidate overlap with LTE CRS.- *overlapInSymbol-r18* indicates reception of NR PDCCH candidates that overlap with LTE CRS REs on the X-th symbols of an NR slot: Value *symbol2* indicates only 2nd symbol, Value *symbol1And2* indicates 1st and 2nd symbols;The UE supporting this feature shall also indicate support of *rateMatchingLTE-CRS*.NOTE: This feature is supported by UE performing channel estimation with a regular Rel-15 DMRS pattern in frequency dimension, i.e., no change to UE assumption on PDCCH DMRS RE positions/pattern in a symbol that are used for the purpose of channel estimation. | Band | No | N/A |  FR1 only |
| ***nr-PDCCH-OverlapLTE-CRS-RE-MultiPatterns-r18***Indicates whether the UE supports reception of NR PDCCH candidates in REs that overlap with LTE CRS when UE is provided with LTE CRS RM patterns by configuration of one or multiple non-overlapping CRS rate matching patterns via *lte-CRS-PatternList1-r16* if the UE supports *multipleRateMatchingEUTRA-CRS-r16* or *lte-CRS-PatternList3-r18* if the UE supports *nr-PDCCH-OverlapLTE-CRS-RE-MultiPatterns-r18.*The UE supporting of this feature shall also indicate support of *nr-PDCCH-OverlapLTE-CRS-RE-r18* and at least one of *multipleRateMatchingEUTRA-CRS-r16* and *twoRateMatchingEUTRA-CRS-patterns-3-4-r18*.NOTE: The feature is supported by UE performing channel estimation with a regular Rel-15 DMRS pattern in frequency dimension, i.e., no change to UE assumption on PDCCH DMRS RE positions/pattern in a symbol that are used for the purpose of channel estimation. | Band | No | N/A | FR1 only |
| ***nr-PDCCH-OverlapLTE-CRS-RE-Span-3-4-r18***Indicates whether the UE supports NR PDCCH that overlaps with LTE CRS REs is in Type-1 CSS with dedicated RRC configuration, Type-3 CSS, and/or USS that are monitored within a single span of 3 consecutive OFDM symbols that is within the first 4 OFDM symbols in a slot.The UE supporting of this feature shall also indicate support of *nr-PDCCH-OverlapLTE-CRS-RE-r18* and *pdcch-MonitoringSingleSpanFirst4Sym-r16*. | Band | No | N/A | FR1 only |
| ***nr-UE-TxTEG-ID-MaxSupport-r17***Indicates the maximum number of UE TxTEG for SRS resource for positioning, which is supported and reported by UE for UL TDOA. The UE can include this field only if the UE supports *srs-AllPosResources-r16*. | Band | No | N/A | N/A |
| ***ntn-DMRS-BundlingNGSO-r18***Indicates whether the UE supports DM-RS bundling for PUSCH over consecutive slots in NGSO scenarios and pre-compensation to keep phase rotation due to timing drift within the phase difference limit.The UE indicates the maximum duration during which UE is able to maintain power consistency and phase continuity to support NTN DM-RS bundling for PUSCH over consecutive slots.A UE supporting this feature shall indicate support of *uplinkPreCompensation-r17* and at least one of *dmrs-BundlingPUSCH-RepTypeA-r17*, *dmrs-BundlingPUSCH-RepTypeB-r17* or *dmrs-BundlingPUSCH-RepTypeC-r17*.NOTE 1: This UE feature group is applicable only for bands in Tables 5.2.2-1 in TS 38.101-5 [34] and HAPS operation bands in Clause 5.2 of TS 38.104 [35].NOTE 2: A UE that does not report support of this feature and reports support of *maxDurationDMRS-Bundling-r17* for an NTN band can perform DMRS bundling only in GSO scenario in the NTN band.NOTE 3: DM-RS bundling is only applicable for UL transmissions with pi/2 BPSK, BPSK, and QPSK modulation orders.NOTE 4: For bands in Table 5.2.2-1 in TS 38.101-5 [34], reported value in *maxDurationDMRS-Bundling-r17* is applied only for GSO scenario. | Band | No | N/A | N/A |
| ***olpc-SRS-Pos-r16***Indicates whether the UE supports OLPC for SRS for positioning. The capability signalling comprises the following parameters.- *olpc-SRS-PosBasedOnPRS-Serving-r16* indicates whether the UE supports OLPC for SRS for positioning based on PRS from the serving cell in the same band. The UE can include this field only if the UE supports *NR-DL-PRS-ProcessingCapability-r16* defined in TS 37.355 [22], and *srs-PosResources-r16*. Otherwise, the UE does not include this field;- *olpc-SRS-PosBasedOnSSB-Neigh-r16* indicates whether the UE supports OLPC for SRS for positioning based on SSB from the neighbouring cell in the same band. The UE can include this field only if the UE supports *srs-PosResources-r16*. Otherwise, the UE does not include this field;- *olpc-SRS-PosBasedOnPRS-Neigh-r16* indicates whether the UE supports OLPC for SRS for positioning based on PRS from the neighbouring cell in the same band. The UE can include this field only if the UE supports *olpc-SRS-PosBasedOnPRS-Serving-r16*. Otherwise, the UE does not include this field;NOTE: A PRS from a PRS-only TP is treated as PRS from a non-serving cell.- *maxNumberPathLossEstimatePerServing-r16* indicates the maximum number of pathloss estimates that the UE can simultaneously maintain for all the SRS resource sets for positioning per serving cell in addition to the up to four pathloss estimates that the UE maintains per serving cell for the PUSCH/PUCCH/SRS transmissios. The UE shall include this field if the UE supports any of *olpc-SRS-PosBasedOnPRS-Serving-r16, olpc-SRS-PosBasedOnSSB-Neigh-r16* and *olpc-SRS-PosBasedOnPRS-Neigh-r16.* Otherwise, the UE does not include this field. | Band | No | N/A | N/A |
| ***olpc-SRS-PosRRC-Inactive-r17***Indicates whether the UE supports OLPC for SRS for positioning in RRC\_INACTIVE. The capability signalling comprises the following parameters.- *olpc-SRS-PosBasedOnPRS-Serving-r16* indicates whether the UE supports OLPC for SRS for positioning based on PRS from the serving cell in the same band. The UE can include this field only if the UE supports *NR-DL-PRS-ProcessingCapability-r16* defined in TS 37.355 [22], and *srs-PosResourcesRRC-Inactive-r17*. Otherwise, the UE does not include this field;- *olpc-SRS-PosBasedOnSSB-Neigh-r16* indicates whether the UE supports OLPC for SRS for positioning based on SSB from the neighbouring cell in the same band. The UE can include this field only if the UE supports *srs-PosResourcesRRC-Inactive-r17*. Otherwise, the UE does not include this field;- *olpc-SRS-PosBasedOnPRS-Neigh-r16* indicates whether the UE supports OLPC for SRS for positioning based on PRS from the neighbouring cell in the same band. The UE can include this field only if the UE supports *olpc-SRS-PosBasedOnPRS-Serving-r16*. Otherwise, the UE does not include this field;NOTE: A PRS from a PRS-only TP is treated as PRS from a non-serving cell.*-* *maxNumberPathLossEstimatePerServing-r16* indicates the maximum number of pathloss estimates that the UE can simultaneously maintain for all the SRS resource sets for positioning per serving cell in addition to the up to four pathloss estimates that the UE maintains per serving cell for the PUSCH/PUCCH/SRS transmissions. The UE shall include this field if the UE supports any of *olpc-SRS-PosBasedOnPRS-Serving-r16, olpc-SRS-PosBasedOnSSB-Neigh-r16* and *olpc-SRS-PosBasedOnPRS-Neigh-r16.* Otherwise, the UE does not include this field. | Band | No | N/A | N/A |
| ***oneShotHARQ-feedbackPhy-Priority-r17***Indicates whether the UE supports transmission of type 3 HARQ-ACK codebook using the first or second PUCCH configuration based on PHY priority indication in the triggering DCI.A UE supporting this feature shall also indicate support of *oneShotHARQ-feedback-r16* and *twoHARQ-ACK-Codebook-type1-r16*. | Band | No | N/A | N/A |
| ***oneShotHARQ-feedbackTriggeredByDCI-1-2-r17***Indicates whether the UE supports one-shot HARQ ACK feedback triggered by DCI format 1\_2, comprised of the following functional components:-Supports feedback of type 3 HARQ-ACK codebook, triggered by a DCI 1\_2 scheduling a PDSCH;-Supports feedback of type 3 HARQ-ACK codebook, triggered by a DCI 1\_2 without scheduling a PDSCH using a reserved FDRA value.A UE supporting this feature shall also indicate support of *oneShotHARQ-feedback-r16* and *dci-Format1-2And0-2-r16*. | Band | No | N/A | N/A |
| ***oneSlotPeriodicTRS-r16***Indicates whether the UE supports one-slot periodic TRS configuration only when no two consecutive slots are indicated as downlink slots by *tdd-UL-DL-ConfigurationCommon* or *tdd-UL-DL-ConfigDedicated*. If the UE supports this feature, the UE needs to report *csi-RS-ForTracking*. | Band | No | TDD only | FR1 only |
| ***outOfOrderOperationDL-r16***Indicates whether the UE supports out of order operation for DL. The UE that indicates support of this feature shall support *multiDCI-MultiTRP-r16*. The capability signalling comprises the following parameters:*- supportPDCCH-ToPDSCH-r16* indicates support out-of-order operation for PDCCH to PDSCH;*- supportPDSCH-ToHARQ-ACK-r16* indicates support out-of-order operation for PDSCH to HARQ-ACK. | Band | No | N/A | N/A |
| ***outOfOrderOperationUL-r16***Indicates whether the UE supports out of order operation for UL. The UE that indicates support of this feature shall support *multiDCI-MultiTRP-r16.*Note: Same closed loop index for power control across PUSCHs associated with different *CORESETPoolIndex* values is not supported by a UE indicating the support of this feature when TPC accumulation is enabled. | Band | No | N/A | N/A |
| ***overlapPDSCHsFullyFreqTime-r16***Indicates the maximal number of PDSCH scrambling sequences per serving cell when the UE supports PDSCHs with fully overlapping Resource Elements. The UE that indicates support of this feature shall support *multiDCI-MultiTRP-r16.*Note: A UE may assume that its maximum receive timing difference between the DL transmissions from two TRPs is within a Cyclic Prefix | Band | No | N/A | N/A |
| ***overlapPDSCHsInTimePartiallyFreq-r16***Indicates whether the UE supports PDSCHs with partially overlapping Resource Elements. The UE that indicates support of this feature shall support *overlapPDSCHsFullyFreqTime-r16.* | Band | No | N/A | N/A |
| ***overlapRateMatchingEUTRA-CRS-r16***Indicates whether the UE supports two LTE-CRS overlapping rate matching patterns within a part of NR carrier using 15 kHz SCS overlapping with a LTE carrier. If the UE supports this feature, the UE needs to report *multipleRateMatchingEUTRA-CRS-r16 and multiDCI-MultiTRP-r16*. | Band | No | N/A | FR1 only |
| ***overlapRateMatchingEUTRA-CRS-Patterns-3-4-Diff-CS-Pool-r18***Indicates whether the UE supports two LTE-CRS overlapping rate matching patterns configured by *lte-CRS-PatternList3-r18* and *lte-CRS-PatternList4-r18* with two different values of *coresetPoolIndex* within a part of NR carrier using 15 kHz overlapping with a LTE carrier for the case when *crs-RateMatchPerCoresetPoolIndex* is configured.UE supporting this feature shall support *twoRateMatchingEUTRA-CRS-patterns-3-4-r18* and *multiDCI-MultiTRP-r16.* | Band | No | N/A | FR1 only |
| ***overlapUL-TransReduction-r18***Indicates whether the UE supports reducing the overlapping duration of the later of the two time-domain overlapping UL transmissions when the UE is not configured with UL STx2P for multi-DCI based multi-TRP operation with two TA enhancement.A UE supporting this feature shall indicate support of *multiDCI-IntraCellMultiTRP-TwoTA-r18* or *multiDCI-InterCellMultiTRP-TwoTA-r18*.NOTE: If UE does not support this feature, UE does not expect the two UL transmissions to overlap (i.e., scheduling restriction is applied to avoid overlap between the two UL transmissions). | Band | No | N/A | N/A |
| ***parallelMeasurementWithoutRestriction-r17***Indicates whether the UE supports measurements on cells belonging to different satellites as the serving cell in parallel with normal operation (i.e. data/control transmission and/or reception, and L1 measurements) of serving cell without scheduling restrictions. The feature is applicable only when the serving satellite is NGSO. If the serving cell belongs to GSO satellite, the scheduling restriction is not applied on the premise that a mixed type of satellites on the same frequency layer is not supported in this release. If not reported, for measurements in parallel with normal operation of serving cell scheduling restrictions shall apply. | Band | No | FDD only | FR1 only |
| ***parallelPRS-MeasRRC-Inactive-r17***Indicates whether the UE supports performing RRM measurement and PRS measurement in parallel. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively | Band | No | N/A | N/A |
| ***pdcch-MonitoringResumptionAfterUL-NACK-r18***Indicates whether the UE supports PDCCH monitoring resumption after UL NACK.The UE indicating support of this feature shall also indicate support of *pdcch-SkippingWithoutSSSG-r17.* | Band | No | N/A | N/A |
| ***pdcch-SkippingWithoutSSSG-r17***Indicates whether the UE supports up to 2-bit indication of PDCCH skipping by scheduling DCI if SSSG is not configured as specified in TS 38.213 [11], clause 10.4. | Band | No | N/A | N/A |
| ***pdcch-SkippingWithSSSG-r17***Indicates whether the UE supports 2-bit indication of SSSG switching between 2 SSSGs, PDCCH skipping by scheduling DCI, and timer based SSSG switching as specified in TS 38.213 [11], clause 10.4. UE supports search space set group switching capability-1 according to Table 10.4-1 of TS 38.213 [11].UE indicating support of this feature shall also indicate support of *pdcch-SkippingWithoutSSSG-r17* and *sssg-Switching-1bitInd-r17*. | Band | No | N/A | N/A |
| ***pdc-maxNumberPRS-ResourceProcessedPerSlot-r18***Indicates the maximum number of single-symbol DL-PRS resources used in RTT-based Propagation delay compensation that UE can process in a slot. SCS: 15 kHz, 30 kHz, 60 kHz are applicable for FR1 bands. SCS: 60 kHz, 120 kHz are applicable for FR2 bands. A UE which supports *pdc-maxNumberPRS-ResourceProcessedPerSlot-r18* shall support single-symbol DL-PRS for PDC with the comb sizes from {2,4,6,12}.A UE supporting this feature shall also indicate support of *rtt-BasedPDC-PRS-r17*. | Band | No | N/A | N/A |
| ***pdsch-1024QAM-2MIMO-FR1-r17***Indicates whether the UE supports 1024QAM modulation scheme for PDSCH with maximum 2 MIMO layers for FR1 as defined in TS 38.211 [6], MCS and CQI feedback tables based on 1024QAM modulation order as defined in TS 38.214 [12].UE indicating support of this feature shall also indicate support of *pdsch-256QAM-FR1* and shall not indicate support of *pdsch-1024QAM-FR1-r17*. | Band | No | N/A | FR1 only |
| ***pdsch-1024QAM-FR1-r17***Indicates whether the UE supports 1024QAM modulation scheme for PDSCH for FR1 as defined in TS 38.211 [6], MCS and CQI feedback tables based on 1024QAM modulation order as defined in TS 38.214 [12].UE indicating support of this feature shall also indicate support of *pdsch-256QAM-FR1* and shall not indicate support of *pdsch-1024QAM-2MIMO-FR1-r17*. | Band | No | N/A | FR1 only |
| ***pdsch-256QAM-FR2***Indicates whether the UE supports 256QAM modulation scheme for PDSCH for FR2 as defined in 7.3.1.2 of TS 38.211 [6]. | Band | No | N/A | FR2 only |
| ***pdsch-MappingTypeB-Alt-r16***Indicates whether the UE supports PDSCH Type B scheduling of length 9 and 10 OFDM symbols, and DMRS shift for length-10 symbols. If the UE supports this feature, the UE needs to report *pdsch-MappingTypeB*. | Band | No | N/A | FR1 only |
| ***periodicBeamReport***Indicates whether UE supports periodic 'CRI/RSRP' or 'SSBRI/RSRP' reporting using PUCCH formats 2, 3 and 4 in one slot. | Band | Yes | N/A | N/A |
| ***posJointTriggerBySingleDCI-RRC-Connected-r18***Indicates whether UE supports a Rel-17 single DCI scheduling positioning SRS resource sets across the linked carriers for SRS bandwidth aggregation in RRC\_CONNECTED state.A UE indicating support of this feature shall also indicate support of *posSRS-BWA-RRC-Connected-r18*. | Band | No | N/A | N/A |
| ***posSRS-BWA-RRC-Inactive-r18***Indicates the UE capability for support of positioning SRS bandwidth aggregation in RRC\_INACTIVE and the support of the same SRS power reduction across aggregated carriers. The capability signalling comprises the following parameters:- *numOfCarriersIntraBandContiguous-r18* indicates the number of supported aggregated carriers in intra band contiguous carriers, which is supported and reported by UE.- *maximumAggregatedBW-TwoCarriersFR1-r18* indicates the maximum aggregated SRS bandwidth in MHz for two aggregated carriers for FR1, which is supported and reported by UE.- *maximumAggregatedBW-TwoCarriersFR2-r18* indicates the maximum aggregated SRS bandwidth in MHz for two aggregated carriers for FR2, which is supported and reported by UE.- *maximumAggregatedBW-ThreeCarriersFR1-r18* indicates the maximum aggregated SRS bandwidth in MHz for three aggregated carriers for FR1, which is supported and reported by UE.- *maximumAggregatedBW-ThreeCarriersFR2-r18* indicates the maximum aggregated SRS bandwidth in MHz for three aggregated carriers for FR2, which is supported and reported by UE.- *maximumAggregatedResourceSet-r18* indicates the max number of aggregated SRS resource sets for positioning supported by UE for SRS bandwidth aggregation, which is supported and reported by UE.- *maximumAggregatedResourcePeriodic-r18* indicates the maximum number of aggregated periodic SRS resources for bandwidth aggregation, which is supported and reported by UE.- *maximumAggregatedResourceSemi-r18* indicates the maximum number of aggregated semi-persistent SRS resources for bandwidth aggregation, which is supported and reported by UE.- *maximumAggregatedResourcePeriodicPerSlot-r18* indicates the maximum number of aggregated periodic SRS resources for bandwidth aggregation per slot, which is supported and reported by UE.- *maximumAggregatedResourceSemiPerSlot-r18* indicates the maximum number of aggregated semi-persistent SRS resources for bandwidth aggregation per slot, which is supported and reported by UE.- *guardPeriod-r18* indicates the guard period in microseconds before and after aggregated SRS transmission.*- powerClassForTwoAggregatedCarriers-r18* indicates the power class of supported two aggregated carriers in intra band contiguous carriers*.**- powerClassForThreeAggregatedCarriers-r18* indicates the power class of supported three aggregated carriers in intra band contiguous carriers*.*NOTE: The power class is only applicable for FR1 bands.UE indicating support of this feature shall also indicate support of *posSRS-RRC-Inactive-OutsideInitialUL-BWP-r17.* | Band | No | N/A | N/A |
| ***posSRS-PreconfigureRRC-InactiveInitialUL-BWP-r18***Indicates whether the UE supports preconfigured SRS with validity area in RRC\_INACTIVE for initial UL BWP.UE indicating support of this feature shall also indicate support of *posSRS-ValidityAreaRRC-InactiveInitialUL-BWP-r18*. | Band | No | N/A | N/A |
| ***posSRS-PreconfigureRRC-InactiveOutsideInitialUL-BWP-r18***Indicates whether the UE supports preconfigured SRS with validity area in RRC\_INACTIVE outside initial UL BWP.UE indicating support of this feature shall also indicate support of *posSRS-ValidityAreaRRC-InactiveOutsideInitialUL-BWP-r18*. | Band | No | N/A | N/A |
| ***posSRS-RRC-Inactive-OutsideInitialUL-BWP-r17***Indicates support of Positioning SRS transmission in RRC\_INACTIVE state configured outside initial UL BWP. The capability signalling comprises the following parameters:- *maxSRSposBandwidthForEachSCS-withinCC-FR1-r17* Indicates the maximum SRS bandwidth supported for each SCS that UE supports within a single CC for FR1*;*- *maxSRSposBandwidthForEachSCS-withinCC-FR2-r17* indicates the maximum SRS bandwidth supported for each SCS that UE supports within a single CC for FR2;- *maxNumOfSRSposResourceSets-r17* indicates the max number of SRS Resource Sets for positioning supported by UE;- *maxNumOfPeriodicSRSposResources-r17* indicates the max number of periodic SRS Resources for positioning;- *maxNumOfPeriodicSRSposResourcesPerSlot-r17* indicates the max number of periodic SRS Resources for positioning per slot;- *differentNumerologyBetweenSRSposAndInitialBWP-r17* indicates the support of different numerology between the SRS and the initial UL BWP;- *srsPosWithoutRestrictionOnBWP-r17* indicates the support of SRS operation without restriction on the BW: BW of the SRS may not include BW of the CORESET#0 and SSB;- *maxNumOfPeriodicAndSemipersistentSRSposResources-r17* indicates the max number of P/SP SRS Resources for positioning;- *maxNumOfPeriodicAndSemipersistentSRSposResourcesPerSlot-r17* indicates the max number of P/SP SRS Resources for positioning per slot;- *differentCenterFreqBetweenSRSposAndInitialBWP-r17* indicates the support of a different center frequency between the SRS for positioning and the initial UL BWP;- *switchingTimeSRS-TX-OtherTX-r17* indicates the switching time between SRS TX and other TX in initial UL BWP or RX in initial DL BWP- *maxNumOfSemiPersistentSRSposResources-r17* indicates the max number of semi-persistent SRS Resources for positioning;- *maxNumOfSemiPersistentSRSposResourcesPerSlot-r17* indicates the max number of semi-persistent SRS Resources for positioning per slot.The UE can include this field only if the UE supports *srs-PosResourcesRRC-Inactive-r17*. Otherwise, the UE does not include this field;NOTE 1: The BWP with SRS for positioning is defined by the parameters *locationAndBandwidth*, SCS, CP in the same way as other BWPs.NOTE 2: If *differentCenterFreqBetweenSRSposAndInitialBWP-r17* is not signalled, the UE only supports same center frequency between the SRS for positioning and initial UL BWP.NOTE 3: If *differentNumerologyBetweenSRSposAndInitialBWP-r17* is not signalled, the UE only supports same numerology between the SRS and the initial UL BWP.NOTE 4: If *srsPosWithoutRestrictionOnBWP-r17* is not signalled, the UE supports only SRS BW that include the BW of the CORESET #0 and SSB.NOTE 5: The fields of *maxNumOfSemiPersistentSRSposResources-r17* and *maxNumOfSemiPersistentSRSposResourcesPerSlot-r17* shall be reported together if supported by UE. One of the fields between *maxSRSposBandwidthForEachSCS-withinCC-FR1-r17* and *maxSRSposBandwidthForEachSCS-withinCC-FR2-r17,* and the fields of *maxNumOfSRSposResourceSets-r17, maxNumOfPeriodicSRSposResources-r17, maxNumOfPeriodicSRSposResourcesPerSlot-r17, maxNumOfPeriodicAndSemipersistentSRSposResources-r17, maxNumOfPeriodicAndSemipersistentSRSposResourcesPerSlot-r17,* and *switchingTimeSRS-TX-OtherTX-r17* shall be reported together if supported by UE.NOTE 6: *srsPosWithoutRestrictionOnBWP-r17* is not applicable to FDD or SUL bands. | Band | No | N/A | N/A |
| ***posSRS-ValidityAreaRRC-InactiveInitialUL-BWP-r18***Indicates whether the UE support SRS for positioning configuration in multi cells in RRC\_INACTIVE for initial UL BWP.UE indicating support of this feature shall also indicate support of *posSRS-RRC-Inactive-InInitialUL-BWP-r17.* | Band | No | N/A | N/A |
| ***posSRS-ValidityAreaRRC-InactiveOutsideInitialUL-BWP-r18***Indicates whether the UE supports SRS for positioning configuration in multi cells in RRC\_INACTIVE outside initial UL BWP.UE indicating support of this feature shall also indicate support of *posSRS-RRC-Inactive-OutsideInitialUL-BWP-r17* and *posSRS-ValidityAreaRRC-InactiveInitialUL-BWP-r18.* | Band | No | N/A | N/A |
| ***posUE-TA-AutoAdjustment-r18***Indicates whether the UE supports autonomous TA adjustment when cell-reselection happens.UE indicating support of this feature shall also indicate support of *posSRS-ValidityAreaRRC-InactiveInitialUL-BWP-r18.* | Band | No | N/A | N/A |
| ***powerAdaptation-CSI-Feedback-r18***Indicates whether the UE supports power domain adaptation with CSI feedback based on CSI report sub-configuration(s) for periodic CSI reporting and single-panel type 1 codebook. The UE supports CSI feedback based on CSI report sub-configuration(s), each containing one power offset for periodic CSI reporting. This capability signalling comprises the following parameters:- *maxNumberLmax-r18* indicates the max number of sub-configurations Lmax in one CSI report configuration;- *maxNumberCSI-ResourcePerCC-r18* indicates the maximum number of simultaneous NZP-CSI-RS resources per CC.- *maxNumberTotalCSI-ResourcePerCC-r18* indicates the maximum number of total CSI-RS ports in simultaneous NZP-CSI-RS resources per CC.- *totalNumberCSI-Reporting-r18* indicates total number of periodic CSI reporting settings without sub-configurations plus the total number of sub-configurations across periodic CSI report settings with sub-configurations per BWP.NOTE 1: For *maxNumberCSI-ResourcePerCC-r18* and *maxNumberTotalCSI-ResourcePerCC-r18*, NZP-CSI-RS resource and CSI-RS ports are counted for reporting settings with and without sub-configurations.NOTE 2: If a UE reports more than one capability from *spatialAdaptation-CSI-Feedback-r18, spatialAdaptation-CSI-FeedbackPUSCH-r18, spatialAdaptation-CSI-FeedbackAperiodic-r18, spatialAdaptation-CSI-FeedbackPUCCH-r18, powerAdaptation-CSI-Feedback-r18, powerAdaptation-CSI-FeedbackPUSCH-r18, powerAdaptation-CSI-FeedbackAperiodic-r18, powerAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to a subset of the above reported features, then the supported maximum of NZP-CSI-RS resources/ports is determined by the minimum of the reported values from that subset.A UE indicating support of this feature shall also indicate support of *powerAdaptation-CSI-FeedbackPerBC-r18.* | Band | No | N/A | N/A |
| ***powerAdaptation-CSI-FeedbackAperiodic-r18***Indicates whether the UE supports power domain adaptation with CSI feedback based on CSI report sub-configuration(s) for aperiodic CSI reporting and single-panel type 1 codebook. The UE supports CSI feedback based on CSI report sub-configuration(s), each containing one power offset for aperiodic CSI reporting. This capability signalling comprises the following parameters:- *maxNumberLmax-r18* indicates the max number of sub-configurations Lmax in one CSI report configuration;- *subReportCSI-r18* indicates N number of report of CSI sub-report(s) included in one SP-CSI report where each CSI sub-report corresponds to one sub-configuration.- *maxNumberCSI-ResourcePerCC-r18* indicates the maximum number of simultaneous NZP-CSI-RS resources per CC for SD-type 1 and/or SD-type 2.- *maxNumberTotalCSI-ResourcePerCC-r18* indicates the maximum number of total CSI-RS ports in simultaneous NZP-CSI-RS resources per CC for SD-type 1 and/or SD-type 2.- *totalNumberCSI-Reporting-r18* total number of aperiodic CSI reporting settings without sub-configurations plus the total number of sub-configurations across aperiodic CSI report settings with sub-configurations per BWP.NOTE 1: For *maxNumberCSI-ResourcePerCC-r18* and *maxNumberTotalCSI-ResourcePerCC-r18*, NZP-CSI-RS resource and CSI-RS ports are counted for reporting settings with and without sub-configurations.NOTE 2: If a UE reports more than one capability from *spatialAdaptation-CSI-Feedback-r18, spatialAdaptation-CSI-FeedbackPUSCH-r18, spatialAdaptation-CSI-FeedbackAperiodic-r18, spatialAdaptation-CSI-FeedbackPUCCH-r18, powerAdaptation-CSI-Feedback-r18, powerAdaptation-CSI-FeedbackPUSCH-r18, powerAdaptation-CSI-FeedbackAperiodic-r18, powerAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to a subset of the above reported features, then the supported maximum of NZP-CSI-RS resources/ports is determined by the minimum of the reported values from that subset.A UE indicating support of this feature shall also indicate support of *powerAdaptation-CSI-FeedbackAperiodicPerBC-r18.* | Band | No | N/A | N/A |
| ***powerAdaptation-CSI-FeedbackPUCCH-r18***Indicates whether the UE supports power domain adaptation with CSI feedback based on CSI report sub-configuration(s) for semi-persistent CSI reporting on PUCCH and single-panel type 1 codebook. The UE supports CSI feedback based on CSI report sub-configuration(s), each containing one power offset for semi-persistent CSI reporting on PUCCH. This capability signalling comprises the following parameters:- *maxNumberLmax-r18* indicates the max number of sub-configurations Lmax in one CSI report configuration;- *subReportCSI-r18* indicates N number of report of CSI sub-report(s) included in one SP-CSI report where each CSI sub-report corresponds to one sub-configuration.- *maxNumberCSI-ResourcePerCC-r18* indicates the maximum number of simultaneous NZP-CSI-RS resources per CC for SD-type 1 and/or SD-type 2.- *maxNumberTotalCSI-ResourcePerCC-r18* indicates the maximum number of total CSI-RS ports in simultaneous NZP-CSI-RS resources per CC for SD-type 1 and/or SD-type 2.- *totalNumberCSI-Reporting-r18* indicates total number of semi-persistent CSI reporting settings without sub-configurations plus the total number of sub-configurations across semi-persistent CSI report settings with sub-configurations per BWP.NOTE 1: For *maxNumberCSI-ResourcePerCC-r18* and *maxNumberTotalCSI-ResourcePerCC-r18*, NZP-CSI-RS resource and CSI-RS ports are counted for reporting settings with and without sub-configurations.NOTE 2: If a UE reports more than one capability from *spatialAdaptation-CSI-Feedback-r18, spatialAdaptation-CSI-FeedbackPUSCH-r18, spatialAdaptation-CSI-FeedbackAperiodic-r18, spatialAdaptation-CSI-FeedbackPUCCH-r18, powerAdaptation-CSI-Feedback-r18, powerAdaptation-CSI-FeedbackPUSCH-r18, powerAdaptation-CSI-FeedbackAperiodic-r18, powerAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to a subset of the above reported features, then the supported maximum of NZP-CSI-RS resources/ports is determined by the minimum of the reported values from that subset.NOTE 3: If a UE reports both *powerAdaptation-CSI-FeedbackPUSCH-r18* and *powerAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to both features, then the supported total number of semi-persistent CSI reporting settings without sub-configurations plus the total number of sub-configurations across semi-persistent CSI report settings with sub-configurations per BWP is determined by the minimum of the reported values from both features.A UE indicating support of this feature shall also indicate support of *powerAdaptation-CSI-FeedbackPUCCH-PerBC-r18.* | Band | No | N/A | N/A |
| ***powerAdaptation-CSI-FeedbackPUSCH-r18***Indicates whether the UE supports power domain adaptation with CSI feedback based on CSI report sub-configuration(s) for semi-persistent CSI reporting on PUSCH and single-panel type 1 codebook. The UE supports CSI feedback based on CSI report sub-configuration(s), each containing one power offset for semi-persistent CSI reporting. This capability signalling comprises the following parameters:- *maxNumberLmax-r18* indicates the max number of sub-configurations Lmax in one CSI report configuration;- *subReportCSI-r18* indicates N number of report of CSI sub-report(s) included in one SP-CSI report where each CSI sub-report corresponds to one sub-configuration.- *maxNumberCSI-ResourcePerCC-r18* indicates the maximum number of simultaneous NZP-CSI-RS resources per CC.- *maxNumberTotalCSI-ResourcePerCC-r18* indicates the maximum number of total CSI-RS ports in simultaneous NZP-CSI-RS resources per CC.- *totalNumberCSI-Reporting-r18* indicates total number of semi-persistent CSI reporting settings without sub-configurations plus the total number of sub-configurations across semi-persistent CSI report settings with sub-configurations per BWP.NOTE 1: For *maxNumberCSI-ResourcePerCC-r18* and *maxNumberTotalCSI-ResourcePerCC-r18*, NZP-CSI-RS resource and CSI-RS ports are counted for reporting settings with and without sub-configurations.NOTE 2: If a UE reports more than one capability from *spatialAdaptation-CSI-Feedback-r18, spatialAdaptation-CSI-FeedbackPUSCH-r18, spatialAdaptation-CSI-FeedbackAperiodic-r18, spatialAdaptation-CSI-FeedbackPUCCH-r18, powerAdaptation-CSI-Feedback-r18, powerAdaptation-CSI-FeedbackPUSCH-r18, powerAdaptation-CSI-FeedbackAperiodic-r18, powerAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to a subset of the above reported features, then the supported maximum of NZP-CSI-RS resources/ports is determined by the minimum of the reported values from that subset.NOTE 3: If a UE reports both *powerAdaptation-CSI-FeedbackPUSCH-r18* and *powerAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to both features, then the supported total number of semi-persistent CSI reporting settings without sub-configurations plus the total number of sub-configurations across semi-persistent CSI report settings with sub-configurations per BWP is determined by the minimum of the reported values from both features.A UE indicating support of this feature shall also indicate support of *powerAdaptation-CSI-FeedbackPUSCH-PerBC-r18.* | Band | No | N/A | N/A |
| ***powerBoosting-pi2BPSK***Indicates whether UE supports power boosting for pi/2 BPSK, when applicable as defined in 6.2 of TS 38.101-1 [2] v16.9.0. It is mandatory with capability signalling. This capability is not applicable to IAB-MT. | Band | CY | TDD only | FR1 only |
| ***prach-CoverageEnh-r18***Indicates whether the UE supports {2, 4, 8} for the number of multiple PRACH transmissions with same Tx spatial filter. | Band | No | N/A | N/A |
| ***prach-Repetition-r18***Indicates whether the UE supports transmitting two PRACH repetitions when a gap between the last symbol of a PRACH repetition in the first slot and the first symbol of a PRACH repetition in the second slot is less than N symbols, where N=2 for μ=0 or μ=1, N=4 for μ=2 or μ=3, N=16 for μ=5, N=32 for μ=6, and μ is the SCS configuration for the UL BWP with the PRACH.A UE supporting this feature shall also indicate support of *prach-CoverageEnh-r18.* | Band | No | N/A | N/A |
| ***priorityIndicatorInDCI-Multicast-r17***Indicates whether the UE supports DL priority indication for multicast in DCI, comprised of the following functional components:- Support of priority indicator field configured in DCI formats 4\_2 with CRC scrambled with G-RNTI for multicast;- Supports two HARQ-ACK codebooks with different priorities to be simultaneously constructed different priorities for multicast and multicast at a UE.For TN, the UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands, associated with supported shared and non-shared spectrum respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.A UE supporting this feature shall also indicate support of *ack-NACK-FeedbackForMulticast-r17* and *dynamicMulticastDCI-Format4-2-r17*. | Band | No | N/A | N/A |
| ***priorityIndicatorInDCI-SPS-Multicast-r17***Indicates whether the UE supports priority indicator field configured in DCI format 4\_2 for multicast HARQ-ACK feedback of SPS multicast.For TN, the UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands, associated with supported shared and non-shared spectrum respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.A UE supporting this feature shall also indicate support of *ack-NACK-FeedbackForSPS-Multicast-r17* and *sps-MulticastDCI-Format4-2-r17*. | Band | No | N/A | N/A |
| ***prs-MeasurementWithoutMG-r17***Indicates whether the UE supports using the threshold to compare the Rx time difference between the serving cell and a neighbour cell/TRP for PRS measurements, as defined in clause 9.9.1.2 of TS 38.133 [5], to determine whether the PRS from the non-serving cell satisfy the condition of PRS measurement outside MG. The UE can include this field only if the UE supports one of *prs-ProcessingWindowType1A-r17, prs-ProcessingWindowType1B-r17* and *prs-ProcessingWindowType2-r17*. | Band | No | N/A | N/A |
| ***prs-ProcessingCapabilityOutsideMGinPPW-r17***Indicates the DL-PRS Processing Capability outside MG of each of the supported PRS Processing Window (PPW) Type in the case the UE supports multiple PPW Types in a band and comprises the following parameters:- *prsProcessingType-r17****:*** Indicates the PPW Type for which the *prs-ProcessingCapabilityOutsideMGinPPW-r17* are provided.- *ppw-dl-PRS-BufferType-r17*: Indicates DL-PRS buffering capability. Value *'type1'* indicates sub-slot/symbol level buffering and value *'type2'* indicates slot level buffering.- *ppw-durationOfPRS-Processing1-r17*: Indicates the duration of DL-PRS symbols N in units of ms a UE can process every T ms assuming maximum DL-PRS bandwidth provided in *ppw-maxNumOfDL-Bandwidth-r17* and comprises the following parameters:- *ppw-durationOfPRS-ProcessingSymbolsN-r17*: This field specifies the values for *N* with values msDot125 indicates 0.125ms, msDot25 indicates 0.25ms, and so on- *ppw-durationOfPRS-ProcessingSymbolsT-r17*: This field specifies the values for *T* with values ms1 indicates 1ms, ms2 indicates 2ms, and so on.- *ppw-durationOfPRS-Processing2-r17*: Indicates the duration of DL-PRS symbols N2 in units of ms a UE can process every T2 ms assuming maximum DL-PRS bandwidth provided in *ppw-maxNumOfDL-Bandwidth-r17* and comprises the following parameters:- *ppw-durationOfPRS-ProcessingSymbolsN2-r17*: This field specifies the values for *N2* with values msDot125 indicates 0.125ms, msDot25 indicates 0.25ms, and so on.- *ppw-durationOfPRS-ProcessingSymbolsT2-r17*: This field specifies the values for *T2* with values ms4 indicates 4ms, ms5 indicates 5ms, and so on.- *ppw-maxNumOfDL-PRS-ResProcessedPerSlot-r17*: Indicates the maximum number of DL PRS bandwidth in MHz, which is supported and reported by UE for PRS measurement outside MG within the PPW.- *ppw-maxNumOfDL-Bandwidth-r17*: Indicates the maximum number of DL PRS bandwidth in MHz for FR1 and FR2, which is supported and reported by UE for PRS measurement outside MG within the PPW.The UE can include this field only if the UE supports one of *prs-ProcessingWindowType1A-r17*, *prs-ProcessingWindowType1B-r17* and *prs-ProcessingWindowType2-r17*. Otherwise, the UE does not include this field.NOTE 1: A UE that supports one of *prs-ProcessingWindowType1A-r17*, *prs-ProcessingWindowType1B-r17* or *prs-ProcessingWindowType2-r17* shall always include the *prs-ProcessingCapabilityOutsideMGinPPW-r17*.NOTE 2: The (N, T) in *ppw-durationOfPRS-Processing1-r17* is interpreted as in (N,T) in *durationOfPRS-Processing-r16* in TS 37.355 [22], and the UE is expected to receive the DL-PRS within the PPW but the processing of the received DL-PRS may be outside a PPWNOTE 3: The (N2, T2) in *ppw-durationOfPRS-Processing2-r17* is interpreted such that the UE is capable of measuring up to N2 ms DL-PRS within a PPW and is capable of completing the DL-PRS processing within the PPW, e.g., if the time duration from the last symbol of the measured DL-PRS resource(s) inside the PPW to the end of PPW is not smaller than T2 ms.NOTE 4: A UE which supports *prs-ProcessingCapabilityOutsideMGinPPW-r17* shall support either *ppw-durationOfPRS-Processing1-r17* or *ppw-durationOfPRS-Processing2-r17*, but not both for each supported PPW type in a band. | Band | No | N/A | N/A |
| ***prs-ProcessingRRC-Inactive-r17***Indicates whether the UE supports PRS processing in RRC\_INACTIVE. | Band | No | N/A | N/A |
| ***prs-ProcessingWindowType1A-r17***Indicates whether the UE supports PRS processing Type 1A, subject to the UE determining that DL PRS to be higher priority for PRS measurement outside MG and in a PRS processing window and the priority handling options of PRS as follows:- Option 1: Support of "st1" and "st3" defined in clause 5.1.6.5 of TS 38.214 [12].- Option 2: Support of "st1", "st2", and "st3" defined in clause 5.1.6.5 of TS 38.214 [12].NOTE 1: Void.- Option 3: Support of "st1" only defined in clause 5.1.6.5 of TS 38.214 [12].The UE can include this field only if the UE supports *prs-ProcessingCapabilityBandList-r16* defined in TS 37.355 [22].A UE supporting this feature shall also indicate support of *prs-ProcessingCapabilityOutsideMGinPPW-r17*.NOTE 2: Type 1A refers to the determination of prioritization between DL PRS and other DL signals/channels in all OFDM symbols within the PRS processing window. The DL signals/channels from all DL CCs (per UE) are affected across LTE and NR.NOTE 3: Within a PRS processing window, UE measurement is inside the active DL BWP with PRS having the same numerology as the active DL BWP.NOTE 4: Support of configuration of PRS processing window in RRC and support of using DL MAC CE to activate/deactivate the PRS processing window for PRS measurements is part of the feature.NOTE 5: When the UE determines higher priority for other DL signals/channels over the DL-PRS measurement/processing, the UE is not expected to measure/process DL-PRS. | Band | No | N/A | N/A |
| ***prs-ProcessingWindowType1B-r17***Indicates whether the UE supports PRS processing Type 1B, subject to the UE determining that DL PRS to be higher priority for PRS measurement outside MG and in a PRS processing window and the priority handling options of PRS as follows:- Option 1: Support of "st1" and "st3" defined in clause 5.1.6.5 of TS 38.214 [12].- Option 2: Support of "st1", "st2", and "st3" defined in clause 5.1.6.5 of TS 38.214 [12].NOTE 1: Void.- Option 3: Support of "st1" only defined in clause 5.1.6.5 of TS 38.214 [12].The UE can include this field only if the UE supports *prs-ProcessingCapabilityBandList-r16* defined in TS 37.355 [22].A UE supporting this feature shall also indicate support of *prs-ProcessingCapabilityOutsideMGinPPW-r17*.NOTE 2: Type 1B refers to the determination of prioritization between DL PRS and other DL signals/channels in all OFDM symbols within the PRS processing window. The DL signals/channels from a certain band are affected.NOTE 3: Within a PRS processing window, UE measurement is inside the active DL BWP with PRS having the same numerology as the active DL BWP.NOTE 4: Support of configuration of PRS processing window in RRC and support of using DL MAC CE to activate/deactivate the PRS processing window for PRS measurements is part of the feature.NOTE 5: When the UE determines higher priority for other DL signals/channels over the DL-PRS measurement/processing, the UE is not expected to measure/process DL-PRS. | Band | No | N/A | N/A |
| ***prs-ProcessingWindowType2-r17***Indicates whether the UE supports PRS processing Type 2, subject to the UE determining that DL PRS to be higher priority for PRS measurement outside MG and in a PRS processing window and the priority handling options of PRS as follows:- Option 1: Support of "st1" and "st3" defined in clause 5.1.6.5 of TS 38.214 [12].- Option 2: Support of "st1", "st2", and "st3" defined in clause 5.1.6.5 of TS 38.214 [12].NOTE 1: Void.- Option 3: Support of "st1" only defined in clause 5.1.6.5 of TS 38.214 [12].The UE can include this field only if the UE supports *prs-ProcessingCapabilityBandList-r16* defined in TS 37.355 [22].A UE supporting this feature shall also indicate support of *prs-ProcessingCapabilityOutsideMGinPPW-r17*.NOTE 2: Type 2 refers to the determination of prioritization between DL PRS and other DL signals/channels only in DL PRS symbols within the PRS processing window.NOTE 3: Within a PRS processing window, UE measurement is inside the active DL BWP with PRS having the same numerology as the active DL BWP.NOTE 4: Support of configuration of PRS processing window in RRC and support of using DL MAC CE to activate/deactivate the PRS processing window for PRS measurements is part of the feature.NOTE 5: When the UE determines higher priority for other DL signals/channels over the DL-PRS measurement/processing, the UE is not expected to measure/process DL-PRS. | Band | No | N/A | N/A |
| ***ptrs-DensityRecommendationSetDL***For each supported sub-carrier spacing, indicates preferred threshold sets for determining DL PTRS density. It is mandated for FR2. For each supported sub-carrier spacing, this field comprises:- two values of *frequencyDensity*;- three values of *timeDensity*. | Band | CY | N/A | N/A |
| ***ptrs-DensityRecommendationSetUL***For each supported sub-carrier spacing, indicates preferred threshold sets for determining UL PTRS density. For each supported sub-carrier spacing, this field comprises:- two values of *frequencyDensity*;- three values of *timeDensity*;- five values of *sampleDensity*. | Band | No | N/A | N/A |
| ***pucch-RepetitionDynamicIndicationSFN-r18***Indicates whether the UE supports STx2P SFN PUCCH scheme together with *pucch-Repetition-F0-1-2-3-4-DynamicIndication-r17*.A UE supporting this feature shall also indicate support of *pucch-SingleDCI-STx2P-SFN-r18* and *slotBasedDynamicPUCCH-Rep-r17*. | Band | No | N/A | FR2 only |
| ***pucch-Repetition-F0-2-r17***Indicates whether the UE supports transmission of a PUCCH format 0 and 2 over multiple slots with the repetition factor 2, 4 or 8.A UE supporting this feature shall also indicate support of *pucch-Repetition-F1-3-4*. | Band | No | N/A | N/A |
| ***pucch-SpatialRelInfoMAC-CE***Indicates whether the UE supports indication of *PUCCH-spatialrelationinfo* by a MAC CE per PUCCH resource. It is mandatory for FR2 and optional for FR1. | Band | CY | N/A | N/A |
| ***pusch-256QAM***Indicates whether the UE supports 256QAM modulation scheme for PUSCH as defined in 6.3.1.2 of TS 38.211 [6]. | Band | No | N/A | N/A |
| ***pusch-CB-2PTRS-SingleDCI-STx2P-SDM-r18***Indicates whether the UE supports 2 PTRS ports for single-DCI based STx2P SDM scheme for PUSCH codebook.A UE supporting this feature shall also indicate support of *pusch-CB-SingleDCI-STx2P-SDM-r18*. | Band | No | N/A | FR2 only |
| ***pusch-CB-2PTRS-SingleDCI-STx2P-SFN-r18***Indicates whether the UE supports 2 PTRS ports for single-DCI based STx2P SFN scheme for PUSCH codebook.A UE supporting this feature shall also indicate support of *pusch-CB-SingleDCI-STx2P-SFN-r18*. | Band | No | N/A | FR2 only |
| ***pusch-NonCB-2PTRS-SingleDCI-STx2P-SDM-r18***Indicates whether the UE supports 2 PTRS ports for single-DCI based STx2P SDM scheme for PUSCH—noncodebook.A UE supporting this feature shall also indicate support of *pusch-NonCB-SingleDCI-STx2P-SDM-r18*. | Band | No | N/A | FR2 only |
| ***pusch-NonCB-2PTRS-SingleDCI-STx2P-SFN-r18***Indicates whether the UE supports 2 PTRS ports for single-DCI based STx2P SFN scheme for PUSCH—noncodebook.A UE supporting this feature shall also indicate support of *pusch-NonCB-SingleDCI-STx2P-SFN-r18*. | Band | No | N/A | FR2 only |
| ***pusch-NonCB-SingleDCI-STx2P-SDM-CSI-RS-SRS-r18***Indicates whether the UE supports up to two NZP CSI-RS resources associated with the two SRS resource sets for non-codebook based STx2P SDM scheme for PUSCH. This capability comprises:*-* *maxNumberPeriodicSRS-Resource-PerBWP-r18* indicates the maximum number of periodic SRS resources associated with first and second CSI-RS per BWP.*-* *maxNumberAperiodicSRS-Resource-PerBWP-r18* indicates the maximum number of aperiodic SRS resources associated with first and second CSI-RS per BWP.*-* *maxNumberSemiPersistentSRS-ResourcePerBWP-r18* indicates the maximum number of semi-persistent SRS resources associated with first and second CSI-RS per BWP.*-* *valueY-SRS-ResourceAssociate-r18* indicates UE can process (Y) SRS resources associated with first and second CSI-RS resources simultaneously in a CC. Includes P/SP/A SRS*-* *valueX-CSI-RS-ResourceAssociate-r18* indicates UE can process up to (X) CSI-RS resources associated with SRS for non-codebook-based transmission simultaneouslyA UE supporting this feature shall also indicate support of *srs-AssocCSI-RS* and *pusch-NonCB-SingleDCI-STx2P-SDM-r18*. | Band | No | N/A | FR2 only |
| ***pusch-NonCB-SingleDCI-STx2P-SFN-CSI-RS-SRS-r18***Indicates whether the UE supports up to two NZP CSI-RS resources associated with the two SRS resource sets for non-codebook based STx2P SFN scheme for PUSCH. This capability comprises:*-* *maxNumberPeriodicSRS-Resource-PerBWP-r18* indicates the maximum number of periodic SRS resources associated with first and second CSI-RS per BWP.*-* *maxNumberAperiodicSRS-Resource-PerBWP-r18* indicates the maximum number of aperiodic SRS resources associated with first and second CSI-RS per BWP.*-* *maxNumberSemiPersistentSRS-ResourcePerBWP-r18* indicates the maximum number of semi-persistent SRS resources associated with first and second CSI-RS per BWP.*-* *valueY-SRS-ResourceAssociate-r18* indicates UE can process (Y) SRS resources associated with first and second CSI-RS resources simultaneously in a CC. Includes P/SP/A SRS*-* *valueX-CSI-RS-ResourceAssociate-r18* indicates UE can process up to (X) CSI-RS resources associated with SRS for non-codebook-based transmission simultaneouslyA UE supporting this feature shall also indicate support of *srs-AssocCSI-RS*and *pusch-NonCB-SingleDCI-STx2P-SFN-r18*. | Band | No | N/A | FR2 only |
| ***pusch-RepetitionMsg3-r17***Indicates whether the UE supports repetition of PUSCH transmission scheduled by RAR UL grant and DCI format 0\_0 with CRC scrambled by TC-RNTI. | Band | No | N/A | N/A |
| ***pusch-RepetitionMultiSlots-v1650***Indicates whether the UE supports transmitting PUSCH scheduled by DCI format 0\_1 when configured with *pusch-AggregationFactor* > 1, as defined in clause 6.1.2.1 of TS 38.214 [12]. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *pusch-RepetitionMultiSlots-r16* applies. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.The UE only includes *pusch-RepetitionMultiSlots-v1650* if *pusch-RepetitionMultiSlots* is absent. | Band | Yes | N/A | N/A |
| ***pusch-RepetitionTypeA-v16c0***Indicates whether the UE supports the dynamic indication of the number of repetitions for PUSCH transmission as specified in TS 38.214 [12], clause 6.1.2.1. Support of this field is reported for shared spectrum channel access and non-shared spectrum channel access, respectively. UE indicating support of this feature shall support at least one of *type2-PUSCH-RepetitionMultiSlots* and *pusch-RepetitionMultiSlots* for shared spectrum and non-shared spectrum respectively.UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands respectively.The UE only includes *pusch-RepetitionTypeA-v16c0* if *pusch-RepetitionTypeA-r16* is absent. | Band | No | N/A | N/A |
| ***pusch-TransCoherence***Defines support of the uplink codebook subset by the UE for UL precoding for PUSCH transmission as described in clause 6.1.1.1 of TS 38.214 [12]. UE indicated support of partial coherent codebook subset shall also support non-coherent codebook subset. UE indicated support of full coherent codebook subset shall also support partial and non-coherent codebook subset. | Band | No | N/A | N/A |
| ***puschTypeA-RepetitionsAvailSlot-r17***Indicates whether UE supports dynamic and configured grant PUSCH repetitions based on available slots. Transmission occasions for the repetitions for dynamic and configured grant PUSCH are determined on the basis of available slots.A UE that indicates support of this feature shall support *type1-PUSCH-RepetitionMultiSlots, type2-PUSCH-RepetitionMultiSlots* or *pusch-RepetitionMultiSlots.* | Band | No | N/A | N/A |
| ***rach-EarlyTA-Measurement-r18***Indicates the maximum number of candidate cells for TA acquisition based on PDCCH ordered CFRA procedure before receiving cell switch command MAC-CE. Power ramping for PRACH retransmission based on PDCCH order indication. UE also supports dropping the serving cell UL to handle the overlap between UL transmission on serving cell(s) and PRACH on candidate cell(s).A UE supporting this feature shall also indicate support of *ta-IndicationCellSwitch-r18* and at least one of *ltm-MCG-r18* and *ltm-SCG-r18*. | Band | No | N/A | N/A |
| ***rach-LessHandoverCG-r18***Indicates whether the UE supports RACH-less handover with configured grant for SpCell, as specified in TS 38.321 [8]. In this release, FR1-FR2 and FDD-TDD RACH-less handovers with configured grant are not supported.For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands.For NTN bands, a UE supporting this feature shall also indicate the support of *nonTerrestrialNetwork-r17*.If an NTN UE indicates the support of both *timeBasedCondHandover-r17* and *rach-LessHandoverCG-r18*, the UE supports time based RACH-less CHO with configured grant. | Band | No | N/A | N/A |
| ***rach-LessHandoverDG-r18***Indicates whether the UE supports RACH-less handover with dynamic grant for SpCell, as specified in TS 38.321 [8]. In this release, FR1-FR2 and FDD-TDD RACH-less handovers with dynamic grant are not supported.For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands.For NTN bands, a UE supporting this feature shall also indicate the support of *nonTerrestrialNetwork-r17*.If an NTN UE indicates the support of both *timeBasedCondHandover-r17* and *rach-LessHandoverDG-r18*, the UE supports time based RACH-less CHO with dynamic grant. | Band | No | N/A | N/A |
| ***rateMatchingLTE-CRS***Indicates whether the UE supports receiving PDSCH with resource mapping that excludes the REs determined by the higher layer configuration LTE-carrier configuring common RS, as specified in TS 38.214 [12]. | Band | Yes | N/A | N/A |
| ***releaseSPS-MulticastWithCS-RNTI-r17***Indicates whether UE supports unicast PDCCH scrambled with CS-RNTI to release SPS group-common PDSCH. For TN, the UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands, associated with supported shared and non-shared spectrum respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.A UE that indicates the support of this feature shall indicate support of *sps-Multicast-r17* and *sps-r16.* | Band | No | N/A | N/A |
| ***re-LevelRateMatchingForMulticast-r17***Indicates whether the UE supports group-common PDSCH RE-level rate matching for multicast, comprised of the following functional components:- Supports SP ZP-CSI-RS for group-common PDSCH RE-mapping patterns;- Supports P ZP-CSI-RS for group-common PDSCH RE-mapping patterns;- Supports *p-ZP-CSI-RS-ResourceSet* configured in *PDSCH-Config-Multicast* same as or different from the *p-ZP-CSI-RS-ResourceSet* configured in *PDSCH-Config*;- Supports AP ZP-CSI-RS for group-common PDSCH RE-mapping patterns.For TN, the UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands, associated with supported shared and non-shared spectrum respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.A UE supporting this feature shall also indicate support of *dynamicMulticastPCell-r17*. A UE supporting this feature in FR1 bands shall also indicate support of *pdsch-RE-MappingFR1-PerSymbol* or *pdsch-RE-MappingFR1-PerSlot*. A UE supporting this feature in FR2 bands shall also indicate support of *pdsch-RE-MappingFR2-PerSymbol* or *pdsch-RE-MappingFR2-PerSlot*.NOTE: The total number of semi-persistent ZP-CSI-RS-ResourceSet that a UE can be configured with is the same as for unicast in Rel-16. | Band | No | N/A | N/A |
| ***rlm-BM-BFD-CSI-RS-OutsideActiveBWP-r18***Indicates whether the UE supports RLM/BM/BFD measurements based on CSI-RS, when CD-SSB is outside active DL BWP.Bandwidth of UE-specific RRC configured BWP may not include bandwidth of the CORESET#0 (if CORESET#0 is present) and CD-SSB for PCell/PSCell (if configured) and bandwidth of the UE-specific RRC configured BWP may not include CD-SSB for SCell.The UE also supports CSI-RS within active DL BWP for RLM/BM/BFD measurements can be QCLed with CD-SSB outside active DL BWP but within the bandwidth of the corresponding carrier(s).The UE supporting this feature shall also indicate support of *csi-RS-RLM, beamManagementSSB-CSI-RS* and *maxNumberCSI-RS-BFD*,*maxNumberSSB-BFD*, *maxNumberCSI-RS-SSB-CBD*. The UEs indicating the support of this feature group shall not indicate the support of *bwp-WithoutRestriction*.NOTE: The CD-SSB is still within the bandwidth of the carrier configured by *SCS-SpecificCarrier* of *downlinkChannelBW-PerSCS-List* in *ServingCellConfig*.It is not applicable to RedCap or eRedCap UEs. | Band | No | N/A | N/A |
| ***rlm-Relaxation-r17***Indicates whether the UE supports RLM relaxation criteria and requirement as specified in TS 38.133 [5]. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.UE indicating support of this feature shall also indicate support of *ssb-RLM* and/or *csi-RS-RLM.* | Band | No | N/A | N/A |
| ***searchSpaceSetGrp-switchCap2-r17***Indicates whether UE supports search space set group switching capability 2 for FR1 according to Table 10.4-1 of TS 38.213 [11] for SSSG switching.UE indicating support of this feature shall also indicate support of *sssg-Switching-1bitInd-r17*.NOTE: For UE supporting this feature and also *sssg-Switching-1BitInd-r17*, *sssg-Switching-2BitInd-r17*, and/or *pdcch-SkippingWithSSSG-r17*, search space set group switching Capability-2 is applied to *sssg-Switching-1BitInd-r17*, *sssg-Switching-2BitInd-r17*, and/or *pdcch-SkippingWithSSSG-r17*. | Band | No | N/A | FR1 only |
| ***semi-PersistentL1-SINR-Report-PUCCH-r16***Indicates whether the UE supports semi-persistent L1-SINR report on PUCCH. The UE indicating support of this feature shall include at least one of the following capabilities:- *supportReportFormat1-2OFDM-syms-r16* indicates support of report on PUCCH formats over 1 – 2 OFDM symbols once per slot (or piggybacked on a PUSCH)- *supportReportFormat4-14OFDM-syms-r16* indicates support of report on PUCCH formats over 4 – 14 OFDM symbols once per slot (or piggybacked on a PUSCH).The UE indicating support of this feature shall also indicate support of *ssb-csirs-SINR-measurement-r16.*  | Band | No | N/A | N/A |
| ***semi-PersistentL1-SINR-Report-PUSCH-r16***Indicates whether the UE supports semi-persistent L1-SINR report on PUSCH. The UE indicating support of this feature shall also indicate support of *ssb-csirs-SINR-measurement-r16.*  | Band | No | N/A | N/A |
| ***separateCRS-RateMatching-r16***Indicates whether the UE supports rate match around configured CRS patterns which is associated with *CORESETPoolIndex* (if configured) and are applied to the PDSCH scheduled with a DCI detected on a CORESET with the same value of *CORESETPoolIndex*. The UE that indicates support of this feature shall support *multiDCI-MultiTRP-r16* and *overlapRateMatchingEUTRA-CRS-r16.* This is only applicable for 15kHz SCS. | Band | No | N/A | FR1 only |
| ***sfn-DefaultDL-BeamSetup-r17***Indicates whether the UE supports the following features:- For FR2 only, PDSCH reception using default beam for enhanced SFN scheme when PDSCH is scheduled with offset less than threshold.- For FR1 and FR2, PDSCH reception using default beam for enhanced SFN scheme when TCI field is not present in DCI format 1\_0/1\_1/1\_2 when PDSCH is scheduled with offset equal or larger than the threshold, if applicable.- For FR2 only, aperiodic CSI-RS reception using default beam for enhanced SFN scheme when scheduling offset is less than threshold.The UE indicating support of this feature shall also indicate *sfn-schemeA-r17* or *sfn-schemeB-r17.* | Band | No | N/A | N/A |
| ***sfn-DefaultUL-BeamSetup-r17***Indicates whether the UE supports the following features:- Support of single-TRP PUCCH transmission using default beam when enhanced SFN PDCCH transmission scheme is configured.- Support of single-TRP PUSCH transmission using default beam when enhanced SFN PDCCH transmission scheme is configured.- Support of single-TRP SRS resource transmission using default beam when enhanced SFN PDCCH transmission scheme is configured.The UE indicating support of this feature shall also indicate *sfn-schemeA-r17* or *sfn-schemeB-r17* or *sfn-SchemeA-PDCCH-only-r17*. | Band | No | N/A | FR2 only |
| ***sfn-ImplicitRS-twoTCI-r17***Indicates whether the UE supports RS(s) with two TCI states configured implicitly for beam failure detection enhancement for HST. | Band | No | N/A | N/A |
| ***sfn-QCL-TypeD-Collision-twoTCI-r17***Indicates whether the UE supports identification of two QCL-TypeD properties for multiple overlapping CORESETs when a CORESET is activated with two TCI states which overlaps with another CORESET. | Band | No | N/A | N/A |
| ***sfn-SimulTwoTCI-AcrossMultiCC-r17***Indicates whether the UE supports simultaneous activation of two TCI states for CORESETs with the same CORESET ID in all BWPs across a set of configured component carriers by single MAC-CE. The UE indicating support of this feature shall also indicate *sfn-schemeA-r17* or *sfn-schemeB-r17* or *sfn-SchemeA-PDCCH-only-r17*.The UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively. | Band | No | N/A | N/A |
| ***simul-SpatialRelationUpdatePUCCHResGroup-r16***Indicates whether the UE support PUCCH resource groups per BWP for simultaneous spatial relation update. The UE indicating support of this also indicates the capabilities of supported SRS resources and maximum supported spatial relations for the supported bands using *supportedSRS-Resources, maxNumberConfiguredSpatialRelations* and *pucch-SpatialRelInfoMAC-CE*. | Band | No | N/A | N/A |
| ***simulSRS-MIMO-TransWithinBand-r16***Indicates the number of SRS resources for positioning and SRS resource for MIMO on a symbol within a band across multiple CCs. The UE can include this field only if the UE supports *srs-PosResources-r16*. Otherwise, the UE does not include this field. | Band | No | N/A | N/A |
| ***simulSRS-TransWithinBand-r16***Indicates the number of SRS resources for positioning on a symbol within a band across multiple CCs. The UE can include this field only if the UE supports *srs-PosResources-r16*. Otherwise, the UE does not include this field. | Band | No | N/A | N/A |
| ***simultaneousCSI-SubReportsPerCC-r18***Indicates the number of CSI report(s) for which the UE can measure and process reference signals simultaneously in a CC of the band for which this capability is provided. The CSI report comprises periodic, semi-persistent and aperiodic CSI and any latency classes and codebook types, and includes the beam report, and CSI report without sub-configurations plus CSI sub-report across CSI reports.NOTE 1: UE shall report the value in this capability being equal to or larger than that in *simultaneousCSI-ReportsPerCC*.NOTE 2: UE supporting at least one of *spatialAdaptation-CSI-Feedback-r18, spatialAdaptation-CSI-FeedbackPUSCH-r18, spatialAdaptation-CSI-FeedbackAperiodic-r18, spatialAdaptation-CSI-FeedbackPUCCH-r18, powerAdaptation-CSI-Feedback-r18, powerAdaptation-CSI-FeedbackPUSCH-r18, powerAdaptation-CSI-FeedbackAperiodic-r18,* and *powerAdaptation-CSI-FeedbackPUCCH-r18 shall report this feature*. | Band | No | N/A | N/A |
| ***simultaneousReceptionDiffTypeD-r16***Indicates whether the UE supports simultaneous reception with different QCL Type D reference signal as specified in TS 38.213 [11]. | Band | No | N/A | FR2 only |
| ***simultaneousReceptionTwoQCL-r18***Indicates whether the UE supports enhanced RF requirement to support FR2-1 PC6 UEs with simultaneous DL signals reception with two different QCL TypeD RSs and enhanced RRM requirement to support FR2-1 PC6 UEs with simultaneous DL signals reception associated with two different QCL TypeD RSs.This feature is applied when *highSpeedDeploymentTypeFR2-r17* is configured by network as bidirectional.A UE supporting this feature shall also indicate support of PC6 in *ue-PowerClass-v1700*. | Band | No | N/A | FR2 only |
| ***simulTX-SRS-AntSwitchingIntraBandUL-CA-r16***Indicates whether the UE support simultaneous transmission of SRS on different CCs for intra-band UL CA. The UE indicating support of this feature shall include at least one of the following capabilities:- *supportSRS-xTyR-xLessThanY-r16* indicates support transmission of SRS for xTyR (x<y) based antenna switching and SRS for CB/NCB/BM on different CCs in overlapped symbol(s) for intra-band UL CA.- *supportSRS-xTyR-xEqualToY-r16* indicates support transmission of SRS for xTyR (x=y) based antenna switching and SRS for CB/NCB/BM on different CCs in overlapped symbol(s) for intra-band UL CA.- *supportSRS-AntennaSwitching-r16* Indicates whether the UE support simultaneous transmission of SRS for antenna switching on different CCs in overlapped symbol(s) for intra-band UL CA.NOTE: For simultaneously antenna switching and antenna switching SRS in intra-band CAs with bands whose UL are switched together according to the reported *supportSRS-AntennaSwitching-r16*, the UE expects the same configuration of xTyR across the different CCs and the SRS resources overlapped in time domain from UE perspective are from the same UE antenna ports. | Band | No | N/A | N/A |
| ***sn-InitiatedCondPSCellChangeNRDC-r17***Indicates whether the UE supports SN initiated inter-SN conditional PSCell change in NR-DC, which is configured by NR *conditionalReconfiguration* using SN configured measurement as triggering condition. The UE supporting this feature shall also support 2 trigger events for same execution condition in SN initiated inter-SN conditional PSCell change in NR-DC. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands respectively. | Band | No | N/A | N/A |
| ***spatialAdaptation-CSI-Feedback-r18***Indicates whether the UE supports spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for periodic CSI reporting and single-panel type 1 codebook. This capability signalling comprises the following parameters:- *csiFeedbackType-r18* indicates CSI feedback based on CSI report sub-configuration(s), each containing one port subset configuration/list of CSI-RS resource IDs for periodic CSI reporting. Value *sdType1* indicates support of SD-type1, value *sdType2* indicates support of SD-type2, value *both* indicates support of both SD-type1 and SD-type2;NOTE 1: SD-type1 refers to configuration contains one port subset.NOTE 2: SD-type2 refers to configuration contains list of CSI-RS resource IDs.- *maxNumberLmax-r18* indicates the max number of sub-configurations Lmax in one CSI report configuration;- *maxNumberCSI-ResourcePerCC-r18* indicates the maximum number of simultaneous NZP-CSI-RS resources per CC for SD-type 1 and/or SD-type 2.- *maxNumberTotalCSI-ResourcePerCC-r18* indicates the maximum number of total CSI-RS ports in simultaneous NZP-CSI-RS resources per CC for SD-type 1 and/or SD-type 2.- *totalNumberCSI-Reporting-r18* indicates total number of periodic CSI reporting settings without sub-configurations plus the total number of sub-configurations across periodic CSI report settings with sub-configurations per BWP.NOTE 3: For *maxNumberCSI-ResourcePerCC-r18* and *maxNumberTotalCSI-ResourcePerCC-r18*, NZP-CSI-RS resource and CSI-RS ports are counted for reporting settings with and without sub-configurations.NOTE 4: If a UE reports more than one capability from *spatialAdaptation-CSI-Feedback-r18, spatialAdaptation-CSI-FeedbackPUSCH-r18, spatialAdaptation-CSI-FeedbackAperiodic-r18, spatialAdaptation-CSI-FeedbackPUCCH-r18, powerAdaptation-CSI-Feedback-r18, powerAdaptation-CSI-FeedbackPUSCH-r18, powerAdaptation-CSI-FeedbackAperiodic-r18, powerAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to a subset of the above reported features, then the supported maximum of NZP-CSI-RS resources/ports is determined by the minimum of the reported values from that subset.A UE indicating support of this feature shall also indicate support of *spatialAdaptation-CSI-FeedbackPerBC-r18*. | Band | No | N/A | N/A |
| ***spatialAdaptation-CSI-FeedbackAperiodic-r18***Indicates whether the UE supports spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for aperiodic CSI reporting and single-panel type 1 codebook. This capability signalling comprises the following parameters:- *csiFeedbackType-r18* indicates CSI feedback based on CSI report sub-configuration(s), each containing one port subset configuration/list of CSI-RS resource IDs for periodic CSI reporting. Value *sdType1* indicates support of SD-type1, value *sdType2* indicates support of SD-type2, value *both* indicates support of both SD-type1 and SD-type2;NOTE 1: SD-type1 refers to configuration contains one port subset.NOTE 2: SD-type2 refers to configuration contains list of CSI-RS resource IDs.- *maxNumberLmax-r18* indicates the max number of sub-configurations Lmax in one CSI report configuration;- *subReportCSI-r18* indicates N number of report of CSI sub-report(s) included in one SP-CSI report where each CSI sub-report corresponds to one sub-configuration.- *maxNumberCSI-ResourcePerCC-r18* indicates the maximum number of simultaneous NZP-CSI-RS resources per CC for SD-type 1 and/or SD-type 2.- *maxNumberTotalCSI-ResourcePerCC-r18* indicates the maximum number of total CSI-RS ports in simultaneous NZP-CSI-RS resources per CC for SD-type 1 and/or SD-type 2.- *totalNumberCSI-Reporting-r18* indicates total number of aperiodic CSI reporting settings without sub-configurations plus the total number of sub-configurations across aperiodic CSI report settings with sub-configurations per BWP.NOTE 3: For *maxNumberCSI-ResourcePerCC-r18* and *maxNumberTotalCSI-ResourcePerCC-r18*, NZP-CSI-RS resource and CSI-RS ports are counted for reporting settings with and without sub-configurations.NOTE 4: If a UE reports more than one capability from *spatialAdaptation-CSI-Feedback-r18, spatialAdaptation-CSI-FeedbackPUSCH-r18, spatialAdaptation-CSI-FeedbackAperiodic-r18, spatialAdaptation-CSI-FeedbackPUCCH-r18, powerAdaptation-CSI-Feedback-r18, powerAdaptation-CSI-FeedbackPUSCH-r18, powerAdaptation-CSI-FeedbackAperiodic-r18, powerAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to a subset of the above reported features, then the supported maximum of NZP-CSI-RS resources/ports is determined by the minimum of the reported values from that subset.A UE indicating support of this feature shall also indicate support of *spatialAdaptation-CSI-FeedbackAperiodicPerBC-r18*. | Band | No | N/A | N/A |
| ***spatialAdaptation-CSI-FeedbackPUCCH-r18***Indicates whether the UE supports spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for semi-persistent CSI reporting on PUCCH and single-panel type 1 codebook. This capability signalling comprises the following parameters:- *csiFeedbackType-r18* indicates the support of CSI feedback based on CSI report sub-configuration(s), each containing one port subset configuration/list of CSI-RS resource IDs for semi-persistent CSI reporting on PUCCH. Value *sdType1* indicates support of SD-type1, value *sdType2* indicates support of SD-type2, value *both* indicates support of both SD-type1 and SD-type2;NOTE 3: SD-type1 refers to configuration contains one port subset.NOTE 4: SD-type2 refers to configuration contains list of CSI-RS resource IDs.- *maxNumberLmax-r18* indicates the max number of sub-configurations Lmax in one CSI report configuration;- *subReportCSI-r18* indicates N number of report of CSI sub-report(s) included in one SP-CSI report where each CSI sub-report corresponds to one sub-configuration.- *maxNumberCSI-ResourcePerCC-r18* indicates the maximum number of simultaneous NZP-CSI-RS resources per CC for SD-type 1 and/or SD-type 2.- *maxNumberTotalCSI-ResourcePerCC-r18* indicates the maximum number of total CSI-RS ports in simultaneous NZP-CSI-RS resources per CC for SD-type 1 and/or SD-type 2.- *totalNumberCSI-Reporting-r18* indicates total number of semi-persistent CSI reporting settings without sub-configurations plus the total number of sub-configurations across semi-persistent CSI report settings with sub-configurations per BWP.NOTE 5: For *maxNumberCSI-ResourcePerCC-r18* and *maxNumberTotalCSI-ResourcePerCC-r18*, NZP-CSI-RS resource and CSI-RS ports are counted for reporting settings with and without sub-configurations.NOTE 6: If a UE reports more than one capability from *spatialAdaptation-CSI-Feedback-r18, spatialAdaptation-CSI-FeedbackPUSCH-r18, spatialAdaptation-CSI-FeedbackAperiodic-r18, spatialAdaptation-CSI-FeedbackPUCCH-r18, powerAdaptation-CSI-Feedback-r18, powerAdaptation-CSI-FeedbackPUSCH-r18, powerAdaptation-CSI-FeedbackAperiodic-r18, powerAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to a subset of the above reported features, then the supported maximum of NZP-CSI-RS resources/ports is determined by the minimum of the reported values from that subset.NOTE 7: If a UE reports both *spatialAdaptation-CSI-FeedbackPUSCH-r18*and *spatialAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to both features, then the supported total number of semi-persistent CSI reporting settings without sub-configurations plus the total number of sub-configurations across semi-persistent CSI report settings with sub-configurations per BWP is determined by the minimum of the reported values from both features.A UE indicating support of this feature shall also indicate support of *spatialAdaptation-CSI-FeedbackPUCCH-PerBC-r18.*NOTE 1: VoidNOTE 2: Void | Band | No | N/A | N/A |
| ***spatialAdaptation-CSI-FeedbackPUSCH-r18***Indicates whether the UE supports spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for semi-persistent CSI reporting on PUSCH and single-panel type 1 codebook. This capability signalling comprises the following parameters:- *csiFeedbackType-r18* indicates CSI feedback based on CSI report sub-configuration(s), each containing one port subset configuration/list of CSI-RS resource IDs for semi-persistent CSI reporting on PUSCH. Value *sdType1* indicates support of SD-type1, value *sdType2* indicates support of SD-type2, value *both* indicates support of both SD-type1 and SD-type2;NOTE 1: SD-type1 refers to configuration contains one port subset.NOTE 2: SD-type2 refers to configuration contains list of CSI-RS resource IDs.- *maxNumberLmax-r18* indicates the max number of sub-configurations Lmax in one CSI report configuration;- *subReportCSI-r18* indicates N number of report of CSI sub-report(s) included in one SP-CSI report where each CSI sub-report corresponds to one sub-configuration.- *maxNumberCSI-ResourcePerCC-r18* indicates the maximum number of simultaneous NZP-CSI-RS resources per CC.- *maxNumberTotalCSI-ResourcePerCC-r18* indicates the maximum number of total CSI-RS ports in simultaneous NZP-CSI-RS resources per.- *totalNumberCSI-Reporting-r18* indicates total number of semi-persistent CSI reporting settings without sub-configurations plus the total number of sub-configurations across semi-persistent CSI report settings with sub-configurations per BWP.NOTE 3: For *maxNumberCSI-ResourcePerCC-r18* and *maxNumberTotalCSI-ResourcePerCC-r18*, NZP-CSI-RS resource and CSI-RS ports are counted for reporting settings with and without sub-configurations.NOTE 4: If a UE reports more than one capability from *spatialAdaptation-CSI-Feedback-r18, spatialAdaptation-CSI-FeedbackPUSCH-r18, spatialAdaptation-CSI-FeedbackAperiodic-r18, spatialAdaptation-CSI-FeedbackPUCCH-r18, powerAdaptation-CSI-Feedback-r18, powerAdaptation-CSI-FeedbackPUSCH-r18, powerAdaptation-CSI-FeedbackAperiodic-r18, powerAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to a subset of the above reported features, then the supported maximum of NZP-CSI-RS resources/ports is determined by the minimum of the reported values from that subset.NOTE 5: If a UE reports both *spatialAdaptation-CSI-FeedbackPUSCH-r18*and *spatialAdaptation-CSI-FeedbackPUCCH-r18* and if the UE is configured with CSI report settings with sub-configurations corresponding to both features, then the supported total number of semi-persistent CSI reporting settings without sub-configurations plus the total number of sub-configurations across semi-persistent CSI report settings with sub-configurations per BWP is determined by the minimum of the reported values from both features.A UE indicating support of this feature shall also indicate support of *spatialAdaptation-CSI-FeedbackPUSCH-PerBC-r18.* | Band | No | N/A | N/A |
| ***spatialRelations, spatialRelations-v1640***Indicates whether the UE supports spatial relations. The capability signalling comprises the following parameters.- *maxNumberConfiguredSpatialRelations* indicates the maximum number of configured spatial relations per CC for PUCCH and SRS. It is not applicable to FR1 and applicable to FR2 only. The UE is mandated to report 16 or higher values. *maxNumberConfiguredSpatialRelations-v1640* indicates the maximum number of configured spatial relations per CC for PUCCH and SRS with UE supporting the configuration of maximum 64 PUCCH spatial relations per BWP per CC;- *maxNumberActiveSpatialRelations* indicates the maximum number of active spatial relations with regarding to PUCCH and SRS for PUSCH, per BWP per CC. It is not applicable to FR1 and applicable and mandatory to report one or higher value for FR2 only;- *additionalActiveSpatialRelationPUCCH* indicates support of one additional active spatial relation for PUCCH. It is mandatory with capability signalling if *maxNumberActiveSpatialRelations* is set to n1;- *maxNumberDL-RS-QCL-TypeD* indicates the maximum number of downlink RS resources used for QCL type D in the active TCI states and active spatial relation information, which is optional.The UE is mandated to report *spatialRelations* for FR2. if *maxNumberConfiguredSpatialRelations-v1640* is reported, UE shall report value *n96* in *maxNumberConfiguredSpatialRelations*. | Band | FD | N/A | FD |
| ***spatialRelationsSRS-Pos-r16***Indicates whether the UE supports spatial relations for SRS for positioning. The capability signalling comprises the following parameters.- *spatialRelation-SRS-PosBasedOnSSB-Serving-r16* indicates whether the UE supports spatial relation for SRS for positioning based on SSB from the serving cell in the same band. The UE can include this field only if the UE supports *srs-PosResources-r16*. Otherwise, the UE does not include this field;- *spatialRelation-SRS-PosBasedOnCSI-RS-Serving-r16* indicates whether the UE supports spatial relation for SRS for positioning based on CSI-RS from the serving cell in the same band. The UE can include this field only if the UE supports *spatialRelation-SRS-PosBasedOnSSB-Serving-r16*. Otherwise, the UE does not include this field;- *spatialRelation-SRS-PosBasedOnPRS-Serving-r16* indicates whether the UE supports spatial relation for SRS for positioning based on PRS from the serving cell in the same band. The UE can include this field only if the UE supports any of DL PRS Resources for DL AoD, DL PRS Resources for DL-TDOA or DL PRS Resources for Multi-RTT defined in TS 37.355 [22], or *srs-PosResources-r16*. Otherwise, the UE does not include this field;- *spatialRelation-SRS-PosBasedOnSRS-r16* indicates whether the UE supports spatial relation for SRS for positioning based on SRS in the same band. The UE can include this field only if the UE supports *srs-PosResources-r16*. Otherwise, the UE does not include this field;- *spatialRelation-SRS-PosBasedOnSSB-Neigh-r16* indicates whether the UE supports spatial relation for SRS for positioning based on SSB from the neighbouring cell in the same band. The UE can include this field only if the UE supports *spatialRelation-SRS-PosBasedOnSSB-Serving-r16*. Otherwise, the UE does not include this field;- *spatialRelation-SRS-PosBasedOnPRS-Neigh-r16* indicates whether the UE supports spatial relation for SRS for positioning based on PRS from the neighbouring cell in the same band. The UE can include this field only if the UE supports *spatialRelation-SRS-PosBasedOnPRS-Serving-r16*. Otherwise, the UE does not include this field;NOTE: A PRS from a PRS-only TP is treated as PRS from a non-serving cell. | Band | No | N/A | FR2 only |
| ***spatialRelationsSRS-PosRRC-Inactive-r17***Indicates whether the UE supports spatial relations for SRS for positioning in RRC\_INACTIVE. The capability signalling comprises the following parameters:- *spatialRelation-SRS-PosBasedOnSSB-Serving-r16* indicates whether the UE supports spatial relation for SRS for positioning based on SSB from the serving cell in the same band. The UE indicating support of this feature shall also indicate support of *srs-PosResourcesRRC-Inactive-r17*;- *spatialRelation-SRS-PosBasedOnCSI-RS-Serving-r16* indicates whether the UE supports spatial relation for SRS for positioning based on CSI-RS from the serving cell in the same band. The UE indicating support of this feature shall also indicate support of *spatialRelation-SRS-PosBasedOnSSB-Serving-r16*;- *spatialRelation-SRS-PosBasedOnPRS-Serving-r16* indicates whether the UE supports spatial relation for SRS for positioning based on PRS from the serving cell in the same band. The UE indicating support of this feature shall also indicate support any of DL PRS Resources for DL AoD, DL PRS Resources for DL-TDOA or DL PRS Resources for Multi-RTT defined in TS 37.355 [22], or *srs-PosResourcesRRC-Inactive-r17*;- *spatialRelation-SRS-PosBasedOnSRS-r16* indicates whether the UE supports spatial relation for SRS for positioning based on SRS in the same band. The UE indicating support of this feature shall also indicate support of *srs-PosResourcesRRC-Inactive-r17*;- *spatialRelation-SRS-PosBasedOnSSB-Neigh-r16* indicates whether the UE supports spatial relation for SRS for positioning based on SSB from the neighbouring cell in the same band. The UE indicating support of this feature shall also indicate support of *spatialRelation-SRS-PosBasedOnSSB-Serving-r16*;- *spatialRelation-SRS-PosBasedOnPRS-Neigh-r16* indicates whether the UE supports spatial relation for SRS for positioning based on PRS from the neighbouring cell in the same band. The UE indicating support of this feature shall also indicate support of *spatialRelation-SRS-PosBasedOnPRS-Serving-r16*.NOTE: A PRS from a PRS-only TP is treated as PRS from a non-serving cell. | Band | No | N/A | FR2 only |
| ***sp-BeamReportPUCCH***Indicates support of semi-persistent 'CRI/RSRP' or 'SSBRI/RSRP' reporting using PUCCH formats 2, 3 and 4 in one slot. | Band | No | N/A | N/A |
| ***sp-BeamReportPUSCH***Indicates support of semi-persistent 'CRI/RSRP' or 'SSBRI/RSRP' reporting on PUSCH. | Band | No | N/A | N/A |
| ***spCell-TAG-Ind-r18***Indicates whether the UE supports indicating one of two TAG IDs configured in the SpCell via absolute TA command MAC CE.A UE that indicates support of this feature shall indicate support of *multiDCI-IntraCellMultiTRP-TwoTA-r18* or *multiDCI-InterCellMultiTRP-TwoTA-r18*. | Band | No | N/A | N/A |
| ***sps-MulticastDCI-Format4-2-r17***Indicates whether the UE supports transmission and retransmission scheduled by DCI format 4\_2 with CRC scrambled with G-CS-RNTI for multicast SPS scheduling.A UE that indicates support of this feature shall indicate support of *sps-Multicast-r17*. | Band | No | N/A | N/A |
| ***sps-MulticastMultiConfig-r17***Indicates whether the UE supports up to 8 SPS group-common PDSCH configurations per CFR for multicast on PCell. The value indicates the maximum number of activated SPS group-common PDSCH configurations per CFR for multicast.The total number of SPS configurations for both multicast and unicast is no larger than 8 in a BWP of a serving cell. The total number of SPS configurations for both multicast and unicast in a cell group is no larger than 32.For TN, the UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands, associated with supported shared and non-shared spectrum respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.A UE that indicates support of this feature shall indicate support of *sps-Multicast-r17*. | Band | No | N/A | N/A |
| ***sps-r16***Indicates whether the UE support of up to 8 configured SPS configurations in a BWP of a serving cell and up to 32 configured SPS configurations in a cell group. This field includes the following parameters:- *maxNumberConfigsPerBWP-r16* indicates the maximum number of active SPS configurations in a BWP of a serving cell.- *maxNumberConfigsAllCC-r16* indicates the maximum number of active SPS configurations across all serving cells in a MAC entity, and across MCG and SCG in case of NR-DC.The UE can include this feature only if the UE indicates support of *downlinkSPS*.NOTE:- For all the reported bands in FR1, a same X1 value is reported for *maxNumberConfigsAllCC-r16*. For all the reported bands in FR2, a same X2 value is reported for *maxNumberConfigsAllCC-r16*.- The total number of active SPS configurations across all serving cells in FR1 is no greater than X1.- The total number of active SPS configurations across all serving cells in FR2 is no greater than X2.- If the CA have some serving cell(s) in FR1 and some serving cell(s) in FR2, the total number of active SPS configurations across all serving cells is no greater than max(X1, X2). | Band | No | N/A | N/A |
| ***srs-AssocCSI-RS***Parameters for the calculation of the precoder for SRS transmission based on channel measurements using associated NZP CSI-RS resource (srs-AssocCSI-RS) as described in clause 6.1.1.2 of TS 38.214 [12]. UE supporting this feature shall also indicate support of non-codebook based PUSCH transmission.This capability signalling includes list of the following parameters:- *maxNumberTxPortsPerResource* indicates the maximum number of Tx ports in a resource;- *maxNumberResourcesPerBand* indicates the maximum number of resources across all CCs within a band simultaneously;*-* *totalNumberTxPortsPerBand* indicates the total number of Tx ports across all CCs within a band simultaneously. | Band | No | N/A | N/A |
| ***srs-combEight-r17***Indicates whether the UE supports comb-8 for SRS other than for positioning. | Band | No | N/A | N/A |
| ***srs-combOffsetCombinedGroupSequence-r18***Indicates whether the UE supports SRS comb offset hopping combined with group/sequence hopping.The UE supporting this feature shall also indicate the support of *srs-combOffsetHopping-r18*. | Band | No | N/A | N/A |
| ***srs-combOffsetHopping-r18***Indicates whether the UE supports SRS comb offset hopping.The UE supporting this feature shall also indicate the support of *supportedSRS-Resources.* | Band | No | N/A | N/A |
| ***srs-combOffsetHoppingWithinSubset-r18***Indicates whether the UE supports configuration of subset of comb offsets for comb offset hopping.A UE supporting this feature shall also indicate support of *srs-combOffsetHopping-r18*. | Band | No | N/A | N/A |
| ***srs-combOffsetInTime-r18***Indicates whether the UE supports comb offset hopping granularity in time when repetition factor R>1 is configured. Value *srs* indicates the granularity is per SRS symbol, Value *rsrs* indicates the granularity is per R SRS symbols, Value *both* indicates both of per SRS symbol and per R SRS symbols are supported.The UE supporting this feature shall also indicate the support of *srs-combOffsetHopping-r18*. | Band | No | N/A | N/A |
| ***srs-cyclicShiftCombinedCombOffset-r18***Indicates whether the UE supports SRS cyclic shift hopping combined SRS comb offset hopping.The UE supporting this feature shall also indicate the support of *srs-combOffsetHopping-r18* and *srs-cyclicShiftHopping-r18*. | Band | No | N/A | N/A |
| ***srs-cyclicShiftCombinedGroupSequence-r18***Indicates whether the UE supports SRS cyclic shift hopping combined with group/sequence hopping.The UE supporting this feature shall also indicate the support of *srs-cyclicShiftHopping-r18*. | Band | No | N/A | N/A |
| ***srs-cyclicShiftHopping-r18***Indicates whether the UE supports SRS cyclic shift hopping.A UE supporting this feature shall also indicate support of *supportedSRS-Resources*. | Band | No | N/A | N/A |
| ***srs-cyclicShiftHoppingSmallGranularity-r18***Indicates whether the UE supports configuration of cyclic shift hopping with smaller granularity (with factor K=2).A UE supporting this feature shall also indicate the support *srs-cyclicShiftHopping-r18*. | Band | No | N/A | N/A |
| ***srs-increasedRepetition-r17***Indicates whether the UE supports increased repetition patterns (8, 10, 12, 14 symbols) for SRS resource.The UE supporting this feature shall also indicate the support of *srs-StartAnyOFDM-Symbol-r16*. | Band | No | N/A | N/A |
| ***srs-partialFreqSounding-r17***Indicates the support of partial frequency sounding for SRS for non-frequency hopping case.The UE indicating support of this feature shall also indicate the support of *srs-partialFrequencySounding-r17*. | Band | No | N/A | N/A |
| ***srs-partialFrequencySounding-r17***Indicates whether the UE supports partial frequency sounding for SRS with frequency hopping. | Band | No | N/A | N/A |
| ***srs-PortReport-r17***Indicates the maximum number of SRS ports for each UE reported quantity in *reportQuantity-r17*. | Band | No | N/A | N/A |
| ***srs-PortReportSP-AP-r17***Indicates that the UE supports the maximum number of SRS ports with semi-persistent/aperiodic capability value reporting.The UE supporting this feature shall also indicate support of *srs-PortReport-r17* and one of *aperiodicBeamReport*, *sp-BeamReportPUCCH*, *sp-BeamReportPUSCH,* *ssb-csirs-SINR-measurement-r16, semi-PersistentL1-SINR-Report-PUCCH-r16* or *semi-PersistentL1-SINR-Report-PUSCH-r16.* | Band | No | N/A | N/A |
| ***srs-PosResourcesRRC-Inactive-r17***Indicates support of positioning SRS transmission in RRC\_INACTIVE for initial UL BWP. The capability signalling comprises the following parameters:- *maxNumberSRS-PosResourceSetPerBWP-r17* Indicates the max number of SRS Resource Sets for positioning supported by UE*;*- *maxNumberSRS-PosResourcesPerBWP-r17* indicates the max number of P/SP SRS Resources for positioning;- *maxNumberSRS-ResourcesPerBWP-PerSlot-r17* indicates the max number of P/SP SRS Resources for positioning per slot;- *maxNumberPeriodicSRS-PosResourcesPerBWP-r17* indicates the max number of periodic SRS Resources for positioning;- *maxNumberPeriodicSRS-PosResourcesPerBWP-PerSlot-r17* indicates the max number of periodic SRS Resources for positioning per slot.NOTE: OLPC for SRS for positioning based on SSB from the last serving cell (the cell that releases UE from connection) is part of this feature. No dedicated capability signalling is intended for this component | Band | No | N/A | N/A |
| ***srs-SemiPersistent-PosResourcesRRC-Inactive-r17***Indicates support of positioning SRS transmission in RRC\_INACTIVE for initial UL BWP with semi-persistent SRS. UE indicating support of this feature shall indicate support of *srs-PosResourcesRRC-Inactive-r17*.The capability signalling comprises the following parameters:- *maxNumOfSemiPersistentSRSposResources-r17* indicates the max number of semi-persistent SRS Resources for positioning;- *maxNumOfSemiPersistentSRSposResourcesPerSlot-r17* indicates the max number of semi-persistent SRS Resources for positioning per slot. | Band | No | N/A | N/A |
| ***srs-startRB-locationHoppingPartial-r17***Indicates whether the UE supports start RB location hopping in partial frequency SRS transmission across different SRS frequency hopping periods for periodic/semi-persistent/aperiodic SRS.The UE supporting this feature shall also indicate the support of *srs-partialFrequencySounding-r17.* | Band | No | N/A | N/A |
| ***srs-TriggeringDCI-r17***Indicates whether the UE supports triggering SRS in DCI 0\_1/0\_2 without data and without CSI. | Band | No | N/A | N/A |
| ***srs-TriggeringOffset-r17***Indicates the maximum number of configured available slots offsets for determining aperiodic SRS location based on available slot. | Band | No | N/A | N/A |
| ***ssb-csirs-SINR-measurement-r16***Indicates the limitations of the UE support of SSB/CSI-RS for L1-SINR measurement.This capability signalling includes list of the following parameters:Per slot limitations:- *maxNumberSSB-CSIRS-OneTx-CMR-r16* indicates the maximum number of SSB/CSI-RS (1TX) across all CCs within a band for Channel Measurement Report- *maxNumberCSI-IM-NZP-IMR-res-r16* indicates the maximum number of CSI-IM/NZP-IMR resources across all CCs within a band- maxNumberCSIRS-2Tx-res-r16 indicates the maximum number of CSI-RS (2TX) resources across all CCs within a band for Channel Measurement ReportMemory limitations:- *maxNumberSSB-CSIRS-res-r16* indicates the max number of SSB/CSI-RS resources across all CCs within a band as Channel Measurement Report- *maxNumberCSI-IM-NZP-IMR-res-mem-r16* indicates the maximum number of CSI-IM/NZP-IMR resources across all CCs within a bandOther limitations:- *supportedCSI-RS-Density-CMR-r16* indicates supported density of CSI-RS for Channel Measurement Report.- *maxNumberAperiodicCSI-RS-Res-r16* indicates the maximum number of aperiodic CSI-RS resources across all CCs within a band configured to measure L1-SINR (including CMR and IMR)- *supportedSINR-meas* indicates the supported SINR measurements.- *supportedSINR-meas-r16* contains values {*ssbWithCSI-IM*, *ssbWithNZP-IMR*, *csirsWithNZP-IMR*, *csi-RSWithoutIMR*} representing {SSB as CMR with dedicated CSI-IM, SSB as CMR with dedicated NZP IMR, CSI-RS as CMR with dedicated NZP IMR configured, CSI-RS as CMR without dedicated IMR configured}.- *supportedSINR-meas-v1670* indicates a 4-bit bitmap {ssbWithCSI-IM, ssbWithNZP-IMR, csirsWithNZP-IMR, csi-RSWithoutIMR}, where the leftmost bit corresponds to ssbWithCSI-IM, the next bit corresponds to ssbWithNZP-IMR and so on. UE indicating *supportedSINR-meas-v1670* shall always indicate *supportedSINR-meas-r16.*UE supporting this feature shall also indicate support of CSI-RS as CMR with dedicated CSI-IM. UE indicating support of this feature shall also indicate support of *periodicBeamReport* and *aperiodicBeamReport* or *sp-BeamReportPUCCH* and *sp-BeamReportPUSCH.* UE indicating support of *ssb-csirs-SINR-measurement-r16* shall support periodic and aperiodic L1-SINR report.NOTE 1: The reference slot duration is the shortest slot duration defined for the frequency range where the reported band belongs.NOTE 2: For *maxNumberSSB-CSIRS-res-r16* and *maxNumberCSI-IM-NZP-IMR-res-mem-r16* the configured CSI-RS resources for both active and inactive BWPs are counted.NOTE 3: For *maxNumberSSB-CSIRS-OneTx-CMR-r16, maxNumberCSI-IM-NZP-IMR-res-r16* and *maxNumberCSIRS-2Tx-res-r16*, CSI-RS resources configured as CMR without dedicated IMR are counted both as CMR and IMR.NOTE 4: For *maxNumberSSB-CSIRS-OneTx-CMR-r16*, *maxNumberCSI-IM-NZP-IMR-res-r16*, *maxNumberCSIRS-2Tx-res-r16*, *maxNumberAperiodicCSI-RS-Res-r16*, a SSB/CSI-RS resource is counted within the duration of a reference slot in which the corresponding reference signals are transmitted.NOTE 5: For *maxNumberSSB-CSIRS-OneTx-CMR-r16*, *maxNumberCSI-IM-NZP-IMR-res-r16*, *maxNumberCSIRS-2Tx-res-r16*, *maxNumberAperiodicCSI-RS-Res-r16*, if one resource used for L1-SINR measurement is referred N times by one or more CSI reporting settings with *reportQuantity-r16* = *ssb-Index-SINR-r16* or *cri-SINR-r16*, it is counted N times.NOTE 6: If more than one type of SINR measurement is indicated in *supportedSINR-meas-v1670*, it is left to UE implementation which SINR measurement to indicate in *supportedSINR-meas-r16*. | Band | No | N/A | N/A |
| ***sssg-Switching-1BitInd-r17***Indicates whether the UE supports 1-bit indication of SSSG switching between 2 SSSGs by scheduling DCI, and timer based SSSG switching, if *pdcch-SkippingDurationList* is not configured as specified in TS 38.213 [11], clause 10.4. UE supports search space set group switching capability-1 according to Table 10.4-1 of TS 38.213 [11]. | Band | No | N/A | N/A |
| ***sssg-Switching-2BitInd-r17***Indicates whether the UE supports 2-bit indication of SSSG switching among 3 SSSGs by scheduling DCI and timer based SSSG switching, if *pdcch-SkippingDurationList* is not configured as specified in TS 38.213 [11], clause 10.4. UE supports search space set group switching capability-1 according to Table 10.4-1 of TS 38.213 [11].UE indicating support of this feature shall also indicate support of *sssg-Switching-1bitInd-r17*. | Band | No | N/A | N/A |
| ***support12PRB-CORESET0-r18***Indicates whether the UE supports reception of 12 PRB CORESET0 with an associated SS/PBCH block that is located according to Table 5.4.3.1-2 in TS 38.101-1 [2].A UE supporting this feature shall also indicate support of *support-3MHz-ChannelBW-Symmetric-r18*.This feature is supported for 15kHz SCS only.This feature is only applicable to single-carrier operation.This feature is not applicable to UEs indicating *supportOfRedCap-r17* or *supportOfERedCap-r18*.NOTE: The UE supporting this capability supports configuration of 12 PRB BWP operation. | Band | No | FDD only | FR1 only |
| ***support3MHz-ChannelBW-Asymmetric-r18***Indicates whether the UE supports 3 MHz channel bandwidth in uplink with larger than 3 MHz channel BW in DL, including short RACH preamble formats with 15kHz SCS, and long PRACH formats with 1.25kHz SCS.This feature is supported for 15kHz SCS only. It is applicable only to single-carrier operation and applies to bands where the UE indicates support for *asymmetricBandwidthCombinationSet* with 3 MHz UL according to clause 5.3.6 of TS 38.101-1 [2].This feature is not applicable to UEs indicating *supportOfRedCap-r17* or *supportOfERedCap-r18*.NOTE 1: The UE supporting this feature supports configuration of 15 PRB UL BWP operation.NOTE 2: If the UE indicates support in *asymmetricBandwidthCombinationSet* for a 3MHz UL in a band according to clause 5.3.6 of 38.101-1 [2], this feature shall be indicated for the band. | Band | No | FDD only | FR1 only |
| ***support3MHz-ChannelBW-Symmetric-r18***Indicates whether the UE supports 3 MHz symmetric channel bandwidth in DL and UL, including the following functional components:*-* Reception of 12 PRB PBCH based on RB-level puncturing;*-* Short RACH preamble formats with 15kHz SCS, and long PRACH formats with 1.25kHz SCS;*-* Reception of 15 PRB CORESET0.This feature is supported for 15kHz SCS only. It is applicable only to single-carrier operation and when an associated SS/PBCH block is located according to Table 5.4.3.3-2 in TS 38.101-1 [2].This feature is not applicable to UEs indicating *supportOfRedCap-r17* or *supportOfERedCap-r18*.NOTE: The UE supporting this capability supports configuration of 15 PRB BWP operation in DL and UL. | Band | No | FDD only | FR1 only |
| ***support64CandidateBeamRS-BFR-r16***Indicates UE support of configuring maximum 64 candidate beam RSs per BWP per CC. UE indicating support of this feature shall also indicate support of *maxNumberCSI-RS-BFD, maxNumberSSB-BFD* and *maxNumberCSI-RS-SSB-CBD.* | Band | No | N/A | N/A |
| ***supportCodeWordSoftCombining-r16***Indicates whether UE supports codeword soft combining for FDMSchemeB. UE indicates support of this feature depends on whether the *supportFDM-SchemeB-r16* is also supported. | Band | No | N/A | N/A |
| ***supportFDM-SchemeA-r16***Indicates whether UE supports single DCI based FDMSchemeA. | Band | No | N/A | N/A |
| ***supportInter-slotTDM-r16***Indicates whether UE supports single-DCI based inter-slot TDM. This capability signalling includes the following:- *supportRepNumPDSCH-TDRA-r16* indicates support of *repetitionNumber-r16* in *PDSCH-TimeDomainResourceAllocation-r16* and the maximum value of *repetitionNumber-r16*- *maxTBS-Size-r16* indicates maximum TBS size.- *maxNumberTCI-states-r16* indicates the maximum number of TCI states. | Band | No | N/A | N/A |
| ***supportNewDMRS-Port-r16***Indicates whether UE supports new DMRS port entry {0,2,3}. UE supports this feature should indicate support *singleDCI-SDM-scheme-r16* for the band. | Band | No | N/A | N/A |
| ***supportOf2RxXR-r18***Indicates that the UE is 2Rx XR UE as specified in TS 38.101-1 [2] (see "two antenna port XR UE"). A UE reporting this parameter shall not indicate support of *supportOfRedCap-r17* or *supportOfERedCap-r18*. | Band | No | N/A | N/A |
| ***supportRepNumPDSCH-TDRA-DCI-1-2-r17***Indicates support of *repetitionNumber-v1730* in *PDSCH-TimeDomainResourceAllocation* for DCI format 1\_2 and the maximum value of *repetitionNumber-v1730*. The UE indicating support of this field shall also indicate support of *dci-Format1-2And0-2-r16*. | Band | No | N/A | N/A |
| ***supportTDM-SchemeA-r16***Indicates whether UE supports single DCI based TDMSchemeA. The capability signalling includes the maximum TBS size. | Band | No | N/A | N/A |
| ***supportTwoPortDL-PTRS-r16***Indicates whether UE supports 2-port DL PT-RS. UE supports this feature should indicate support *singleDCI-SDM-scheme-r16* for the band. | Band | No | N/A | N/A |
| ***ta-BasedPDC-NTN-SharedSpectrumChAccess-r17***Indicates whether the UE supports propagation delay compensation based on Rel-15 TA procedure for NTN and shared spectrum channel access. | Band | No | N/A | N/A |
| ***ta-IndicationCellSwitch-r18***Indicates whether the UE supports TA indication in cell switch command.A UE supporting this feature shall also indicate support of at least one of *ltm-RACHLessCG-r18* and *ltm-RACHLessDG-r18* and support of *ltm-BeamIndicationJointTCI-r18* or *ltm-BeamIndicationSeparateTCI-r18* for the same band. | Band | No | N/A | N/A |
| ***tb-ProcessingMultiSlotPUSCH-r17***Indicates whether UE supports TB processing over multi-slot PUSCH for DG and Type 2 CG without repetition in RRC connected mode. | Band | No | N/A | N/A |
| ***tb-ProcessingRepMultiSlotPUSCH-r17***Indicates whether UE supports repetition of TB processing over multi-slot PUSCH in RRC connected mode.UE supporting this feature shall also indicate support of *tb-ProcessingMultiSlotPUSCH-r17*. | Band | No | N/A | N/A |
| ***tci-StatePDSCH***Defines support of TCI-States for PDSCH. The capability signalling comprises the following parameters:- *maxNumberConfiguredTCI-StatesPerCC* indicates the maximum number of configured TCI-states per CC for PDSCH. For FR2, the UE is mandated to set the value at least to 64 (i.e. value 128 is an optional value). For FR1, the UE is mandated to set these values at least to the maximum number of allowed SSBs in the supported band;- *maxNumberActiveTCI-PerBWP* indicates the maximum number of activated TCI-states per BWP per CC, including control and data. If a UE reports X active TCI state(s), it is not expected that more than X active QCL type D assumption(s) for any PDSCH and any CORESETs for a given BWP of a serving cell become active for the UE. The UE shall include this field.NOTE: the UE is required to track only the active TCI states.The UE is mandated to report *tci-StatePDSCH*. | Band | Yes | N/A | N/A |
| ***tci-StateSwitchInd-r18***Indicates whether the UE supports enhanced one-shot large UL transmit timing adjustment requirement to support FR2-1 PC6 Ues and enhanced TCI state switching delay requirements based on [the cross-RRH TCI state indication for UE-specific PDCCH MAC CE] in HST FR2 scenario, as specified in TS 38.133 [5].A UE supporting this feature shall also indicate support of PC6 in *ue-PowerClass-v1700*. | Band | No | N/A | FR2 only |
| ***tci-JointTCI-UpdateMultiActiveTCI-PerCC-r18***Indicates whether the UE supports unified TCI with joint DL/UL TCI update for single-DCI based intra-cell multi-TRP with multiple activated TCI codepoints per CC. The capability signalling comprises the following parameters:- *tci-StateInd-r18* indicates TCI state indication for update and activation. Value *withAssignment* corresponds to MAC-CE+DCI-based TCI state indication (use of monitored DCI formats 1\_1 and if supported 1\_2) with DL assignment, value *withoutAssignment* corresponds to MAC-CE+DCI-based TCI state indication (use of monitored DCI formats 1\_1 and if supported 1\_2) without DL assignment;- *maxNumberActiveJointTCI-PerCC-r18* indicates the maximum number of activated joint TCI states per CC.A UE supporting this feature shall also indicate support *tci-JointTCI-UpdateSingleActiveTCI-PerCC-r18* and *unifiedJointTCI-multiMAC-CE-r17*.NOTE: *defaultQCL-TwoTCI-r16* can be used to indicate support of two default beams | Band | No | N/A | N/A |
| ***tci-JointTCI-UpdateMultiActiveTCI-PerCC-PerCORESET-r18***Indicates whether the UE supports unified TCI with joint DL/UL TCI update for multi-DCI based multi-TRP with multiple activated TCI codepoints per *CORESETPoolIndex* per CC. The capability indicates the maximum number of MAC-CE activated joint TCI states per *CORESETPoolIndex* per CC.The TCI state indication for update and activation includes:- MAC-CE+DCI-based TCI state indication (use of monitored DCI formats 1\_1 and if supported 1\_2) with DL assignment;- MAC-CE+DCI-based TCI state indication (use of monitored DCI formats 1\_1 and if supported 1\_2) without DL assignment.A UE supporting this feature shall also indicate support of *tci-JointTCI-UpdateSingleActiveTCI-PerCC-PerCORESET-r18* and *unifiedJointTCI-multiMAC-CE-r17*. | Band | No | N/A | N/A |
| ***tci-JointTCI-UpdateSingleActiveTCI-PerCC-r18***Indicates whether the UE supports Unified TCI with joint DL/UL TCI update for single-DCI based intra-cell multi-TRP with single activated TCI codepoint per CC.The capability signalling comprises the following parameters:- *maxNumberConfigJointTCIPerCC-PerBWP-r18* indicates the maximum number of configured joint TCI states per CC per BWP;- *maxNumberActiveJointTCI-AcrossCC-r18* indicates the maximum number of activated joint TCI states across all CCs in a band.A UE supporting this feature shall also indicate support of *unifiedJointTCI-r17*.NOTE: *defaultQCL-TwoTCI-r16* can be used to indicate support of two default beams. | Band | No | N/A | N/A |
| ***tci-JointTCI-UpdateSingleActiveTCI-PerCC-PerCORESET-r18***Indicates whether the UE supports unified TCI with joint DL/UL TCI update for multi-DCI based multi-TRP with single activated TCI codepoint per *CORESETPoolIndex* per CC. UE supporting this feature supports one MAC-CE activated joint TCI-states per CC in a band for a TRP associated with a '*coresetPoolIndex*' value.The capability signalling comprises the following parameters:- *mTRP-Operation-r18* indicates mTRP operation for M-DCI with joint TCI state.- *maxNumberConfigJointTCIPerCC-PerBWP-r18* indicates the maximum number of configured joint TCI states per BWP per CC.- *maxNumberActiveJointTCIAcrossCC-PerCORESET-r18* indicates the maximum number of activated joint TCI states across all CCs in a band per '*coresetPoolIndex*' value.A UE supporting this feature shall also indicate support of *unifiedJointTCI-r17*.NOTE 1: Activated joint TCI state(s) include all PDCCH/PDSCH receptions and PUSCH/PUCCH transmissions.NOTE 2: defaultQCL-PerCORESETPoolIndex-r16 can be used to indicate support of two default beams. | Band | No | N/A | N/A |
| ***tci-SelectionAperiodicCSI-RS-r18***Indicates whether the UE supports per aperiodic CSI-RS resource/resource set configuration for TCI selection in S-DCI based MTRP.The UE supporting this feature shall also indicate support of *tci-JointTCI-UpdateSingleActiveTCI-PerCC-r18.*NOTE: When the UE supports NCJT CSI under *mTRP-CSI-EnhancementPerBand-r17* or CJT CSI under *twoTCI-StatePDSCH-CJT-TxScheme-r18*, UE is expected to support "*per resource*" when the corresponding NCJT CSI or CJT CSI is configured. | Band | No | N/A | N/A |
| ***tci-SelectionAperiodicCSI-RS-M-DCI-r18***Indicates whether the UE supports per aperiodic CSI-RS resource/resource set configuration for TCI selection in M-DCI based MTRP.The UE supporting this feature shall also indicate support of *tci-JointTCI-UpdateSingleActiveTCI-PerCC-PerCORESET-r18*. | Band | No | N/A | N/A |
| ***tci-SelectionDCI-r18***Indicates whether the UE supports DCI format 1\_1 and if supported 1\_2 configured with TCI selection field.The UE supporting this feature shall also indicate support at least one of *tci-JointTCI-UpdateSingleActiveTCI-PerCC-r18, tci-JointTCI-UpdateMultiActiveTCI-PerCC-r18*, *tci-SeparateTCI-UpdateSingleActiveTCI-PerCC-r18,* and *tci-SeparateTCI-UpdateMultiActiveTCI-PerCC-r18*. | Band | No | N/A | N/A |
| ***tci-SeparateTCI-UpdateMultiActiveTCI-PerCC-r18***Indicates whether the UE supports unified TCI with separate DL/UL TCI update for single-DCI based intra-cell multi-TRP with multiple activated TCI codepoints per CC.TCI state indication for update and activation includes:- MAC-CE+DCI-based TCI state indication (use of monitored DCI formats 1\_1 and if supported 1\_2) with DL assignment;- MAC-CE+DCI-based TCI state indication (use of monitored DCI formats 1\_1 and if supported 1\_2) without DL assignment.The capability signalling comprises the following parameters:- *maxNumActiveDL-TCI-AcrossCC-r18* indicates the maximum number of activated DL TCI states across all CCs in a band,- *maxNumActiveUL-TCI-AcrossCC-r18* indicates the maximum number of activated UL TCI states across all CCs in a band.The UE supporting this feature shall also indicate support of *tci-SeparateTCI-UpdateSingleActiveTCI-PerCC-r18.*NOTE: *defaultQCL-TwoTCI-r16* can be used to indicate support of two default beams. | Band | No | N/A | N/A |
| ***tci-SeparateTCI-UpdateMultiActiveTCI-PerCC-PerCORESET-r18***Indicates whether the UE supports unified TCI with separate DL/UL TCI update for multi-DCI based multi-TRP with multiple activated TCI codepoints per CORESETPoolIndex per CC. TCI state indication for update and activation includes:- MAC-CE+DCI-based TCI state indication (use of monitored DCI formats 1\_1 and if supported 1\_2) with DL assignment;- MAC-CE+DCI-based TCI state indication (use of monitored DCI formats 1\_1 and if supported 1\_2) without DL assignment.The capability signalling comprises the following parameters:- *maxNumConfigDL-TCI-PerCC-PerBWP-r18* indicates the maximum number of configured DL TCI states per CC per BWP ,- *maxNumConfigUL-TCI-PerCC-PerBWP-r18* indicates the maximum number of configured UL TCI states per CC per BWP.A UE supporting this feature shall also indicate support of *tci-SeparateTCI-UpdateSingleActiveTCI-PerCC-PerCORESET-r18* and *unifiedSeparateTCI-multiMAC-CE-r17*. | Band | No | N/A | N/A |
| ***tci-SeparateTCI-UpdateSingleActiveTCI-PerCC-r18***Indicates whether the UE supports unified TCI with separate DL/UL TCI update for single-DCI based intra-cell multi-TRP with single activated TCI codepoint per CC. The capability signalling comprises the following parameters:- *maxNumConfigDL-TCI-PerCC-PerBWP-r18* indicates the maximum number of configured DL TCI states per CC per BWP ,- *maxNumConfigUL-TCI-PerCC-PerBWP-r18* indicates the maximum number of configured UL TCI states per CC per BWP.- *maxNumActiveDL-TCI-AcrossCC-r18* indicates the maximum number of activated DL TCI states across all CCs in a band,- *maxNumActiveUL-TCI-AcrossCC-r18* indicates the maximum number of activated UL TCI states across all CCs in a band.A UE supporting this feature shall also indicate support of *tci-JointTCI-UpdateSingleActiveTCI-PerCC-r18* and *unifiedJointTCI-commonUpdate-r17*.NOTE: *defaultQCL-TwoTCI-r16* can be used to indicate support of two default beams | Band | No | N/A | N/A |
| ***tci-SeparateTCI-UpdateSingleActiveTCI-PerCC-PerCORESET-r18***Indicates whether the UE supports unified TCI with separate DL/UL TCI update for multi-DCI based multi-TRP with single activated TCI codepoint per *CORESETPoolIndex* per CC.UE supporting this feature supports one MAC-CE activated DL TCI-state per CC in a band for a TRP associated with a 'coresetPoolIndex' value and one MAC-CE activated UL TCI-state per CC in a band for a TRP associated with a 'coresetPoolIndex' value.The capability signalling comprises the following parameters:- *mTRP-Operation-r18* indicates the mTRP operation for M-DCI with separate DL/UL TCI state.- *maxNumConfigDL-TCI-PerCC-PerBWP-r18* indicates the maximum number of configured DL TCI states per CC per BWP,- *maxNumConfigUL-TCI-PerCC-PerBWP-r18* indicates the maximum number of configured UL TCI states per CC per BWP.- *maxNumActiveDL-TCI-AcrossCC-r18* indicates the maximum number of activated DL TCI states across all CCs in a band,- *maxNumActiveUL-TCI-AcrossCC-r18* indicates the maximum number of activated UL TCI states across all CCs in a band.A UE supporting this feature shall also indicate support of *tci-JointTCI-UpdateSingleActiveTCI-PerCC-PerCORESET-r18* and *unifiedSeparateTCI-r17.* | Band | No | N/A | N/A |
| ***tci-TRP-BFR-r18***Indicates whether the UE supports TRP-specific BFR with unified TCI framework with Unified TCI.A UE supporting this feature shall also indicate support of *mTRP-BFR-twoBFD-RS-Set-r17*. | Band | No | N/A | N/A |
| ***tdcp-Report-r18***Indicates whether the UE supports Y=1 delay value for TDCP report and amplitude report. The UE also supports to configure KTRS = 1 TRS resource set.This capability signalling comprises the following parameters:- *valueX-r18* indicates CPU occupation (OCPU=(Y+1)\*X).- *maxNumberActiveResource-r18* indicates the index *N* of the maximum number of simultaneously active CSI-RS resources for TDCP across all CCs within a band. The maximum number of simultaneously active CSI-RS resources for TDCP across all CCs within a band is *N*\*2, where *N* = {2..32}.A UE supporting this feature shall also indicate support of *csi-ReportFramework* and *simultaneousCSI-ReportsAllCC.*NOTE: Counting of simultaneously active CSI-RS resources follows existing specification TS 38.214 [12]. | Band | No | N/A | N/A |
| ***tdcp-Resource-r18***Indicates the number of CSI-RS resources for TDCP that the UE supports.This capability signalling comprises the following parameters:- *maxNumberConfigPerCC-r18* indicates the maximum number of configured CSI-RS resources for TDCP per CC.- *maxNumberConfigAcrossCC-r18* indicates the index *N* the maximum number of configured CSI-RS resources for TDCP across all CCs within a band. The maximum number of configured CSI-RS resources for TDCP across all CCs within a band is *N*\*2, where *N* = {1..32}.- *maxNumberSimultaneousPerCC-r18* indicates the maximum number of simultaneously active CSI-RS resources for TDCP per CC.A UE supporting this feature shall indicate support of *tdcp-Report-r18*.NOTE: Counting of simultaneously active CSI-RS resources follows existing specification TS 38.214 [12]. | Band | No | N/A | N/A |
| ***thresholdBasedMulticastResume-r18***Indicates whether the UE supports *thresholdMBS-List-r18* as specified in TS 38.331 [9].A UE supporting this feature shall also indicate support of *multicastInactive-r18*. | Band | No | N/A | N/A |
| ***timeBasedCondHandover-r17***Indicates whether the UE supports time based conditional handover, i.e., *CondEvent T1* as specified in TS 38.331 [9]. A UE supporting this feature shall also indicate the support of *condHandover-r16* for NTN bands and the support of *nonTerrestrialNetwork-r17*. UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively. | Band | No | N/A | N/A |
| ***timelineRelax-CJT-CSI-r18***Indicates whether the UE supports timeline relaxation parameter for regular eType-II-CJT CSI, or for port selection FeType-II-CJT CSI. Value *n0* indicates 0, value *n2* indicates Z2.A UE supporting this feature shall also indicate support of *eType2CJT-r18* or *feType2CJT-r18*.NOTE: A UE that supports *eType2CJT-r18* or *feType2CJT-r18* must signal this feature. | Band | CY | N/A | N/A |
| ***triggeredHARQ-CodebookRetx-r17***Indicates whether the UE supports triggered HARQ-ACK codebook re-transmission from an earlier PUCCH slot based on the triggering information in DCI format 1\_1 and DCI format 1\_2 (for a UE supporting DCI format 1\_2 as indicated in dci-Format1-2And0-2-r16) and support the related PHY priority handling in terms of HARQ-ACK codebook selection and the applicable PUCCH configuration (for a UE supporting two HARQ-ACK codebooks / PUCCH config as indicated in twoHARQ-ACK-Codebook-type1-r16). The capability signalling comprises the following parameters:- *minHARQ-Retx-Offset-r17* indicates minimum value for the HARQ re-tx offset. Value *n-7* corresponds to -7, value *n-5* corresponds to -5, and so on.- *maxHARQ-Retx-Offset-r17* indicates maximum value for the HARQ re-tx offset.NOTE: The minimum requirement for *minHARQ-Retx-Offset-r17* and *maxHARQ-Retx-Offset-r17* is valid for HARQ CBs consisted of HARQ Processes with a single HARQ bit per HARQ Process ID. | Band | No | N/A | N/A |
| ***triggeredHARQ-CodebookRetxDCI-1-3-r18***Indicates whether the UE supports triggered HARQ-ACK codebook re-transmission from an earlier PUCCH slot based on the triggering information in DCI format 1\_3 and supports the related PHY priority handling in terms of HARQ-ACK codebook selection and the applicable PUCCH configuration (for a UE supporting two HARQ-ACK codebooks / PUCCH config in *simultaneous-2-1-HARQ-ACK-CB-r18*). The capability signalling comprises the following parameters:- *minHARQ-Retx-Offset-r18* indicates minimum value for the HARQ re-tx offset. Value *n-7* corresponds to -7, value *n-5* corresponds to -5, and so on. If the UE also supports *triggeredHARQ-CodebookRetx-r17*, the same values as *minHARQ-Retx-Offset-r17* is reported.- *maxHARQ-Retx-Offset-r18* indicates maximum value for the HARQ re-tx offset. If the UE also supports *triggeredHARQ-CodebookRetx-r17*, the same values as *maxHARQ-Retx-Offset-r17* is reported.A UE supporting this feature shall also indicate support of at least one of *multiCell-PDSCH-DCI-1-3-SameSCS-r18* and *multiCell-PDSCH-DCI-1-3-DiffSCS-r18*.NOTE: The minimum requirement for *minHARQ-Retx-Offset-r18* and *maxHARQ-Retx-Offset-r18* is valid for HARQ CBs consisting of HARQ Processes with a single HARQ bit per HARQ Process ID. | Band | No | N/A | N/A |
| ***trs-AdditionalBandwidth-r16***Indicates the UE supported TRS bandwidths, in addition to 52 RBs, for a 10MHz UE channel bandwidth. This field only applies for the BWPs configured with 52 RBs size and 15kHz SCS, in FDD bands.Value *trs-AddBW-Set1* indicates 28, 32, 36, 40, 44, 48 RBs.Value *trs-AddBW-Set2* indicates 32, 36, 40, 44, 48 RBs. | Band | No | FDD only | FR1 only |
| ***twoHARQ-ACK-CodebookForUnicastAndMulticast-r17***Indicates whether the UE supports two HARQ-ACK codebooks simultaneously constructed for supporting HARQ-ACK codebooks with different priorities for unicast and multicast at a UE.For TN, the UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands and all TDD-FR2 bands, associated with supported shared and non-shared spectrum respectively. For NTN, UE shall set the capability value consistently for all FDD-FR1 NTN bands and all FDD-FR2 NTN bands respectively.A UE supporting this feature shall also indicate support of *priorityIndicatorInDCI-Multicast-r17*. | Band | No | N/A | N/A |
| ***twoPHR-Reporting-r18***Indicates whether the UE supports two PHR reporting related to STx2P.A UE supporting this feature shall also indicate support of at least one of *pusch-CB-SingleDCI-STx2P-SDM-r18, pusch-NonCB-SingleDCI-STx2P-SDM-r18, pusch-CB-SingleDCI-STx2P-SFN-r18, pusch-NonCB-SingleDCI-STx2P-SFN-r18, twoPUSCH-CB-MultiDCI-STx2P-DG-DG-r18,* and *twoPUSCH-NonCB-MultiDCI-STx2P-DG-DG-r18*.NOTE: If gNB does not configure corresponding RRC parameter for this feature, UE will report a PHR for an actual PUSCH transmission and PHR for the first indicated TCI state or PHR associated with *coresetPoolIndex0* is reported if actual PUSCH transmission is based on STx2P schemes. | Band | No | N/A | FR2 only |
| ***twoPortsPTRS-UL***Defines whether UE supports PT-RS with 2 antenna ports for UL transmission. | Band | No | N/A | N/A |
| ***twoPUSCH-CB-MultiDCI-STx2P-CG-CG-r18***Indicates whether the UE supports multi-DCI based STx2P CG-PUSCH+CG-PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-CB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoPUSCH-CB-MultiDCI-STx2P-CG-DG-r18***Indicates whether the UE supports multi-DCI based STx2P DG-PUSCH+CG-PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-CB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoPUSCH-CB-MultiDCI-STx2P-FullTimeFullFreqOverlap-r18***Indicates whether the UE supports fully overlapping PUSCHs in time and fully overlapping in frequency for codebook multi-DCI based STx2P PUSCH+PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-CB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoPUSCH-CB-MultiDCI-STx2P-FullTimePartialFreqOverlap-r18***Indicates whether the UE supports fully overlapping PUSCHs in time and partially overlapping in frequency for codebook multi-DCI based STx2P PUSCH+PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-CB-MultiDCI-STx2P-DG-DG-r18* | Band | No | N/A | FR2 only |
| ***twoPUSCH-CB-MultiDCI-STx2P-PartialTimeFullFreqOverlap-r18***Indicates whether the UE supports partially overlapping PUSCHs in time and fully overlapping in frequency for codebook multi-DCI based STx2P PUSCH+PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-CB-MultiDCI-STx2P-DG-DG-r18* | Band | No | N/A | FR2 only |
| ***twoPUSCH-CB-MultiDCI-STx2P-PartialTimeNonFreqOverlap-r18***Indicates whether the UE supports the partially overlapping PUSCHs in time, non-overlapping in frequency for codebook multi-DCI based STx2P PUSCH+PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-CB-MultiDCI-STx2P-DG-DG-r18* | Band | No | N/A | FR2 only |
| ***twoPUSCH-CB-MultiDCI-STx2P-PartialTimePartialFreqOverlap-r18***Indicates whether the UE supports the partially overlapping PUSCHs in time, partially overlapping in frequency for codebook multi-DCI based STx2P PUSCH+PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-CB-MultiDCI-STx2P-DG-DG-r18* | Band | No | N/A | FR2 only |
| ***twoPUSCH-NonCB-MultiDCI-STx2P-CG-CG-r18***Indicates whether the UE supports multi-DCI based STx2P CG-PUSCH+CG-PUSCH for noncodebook.A UE supporting this feature shall also indicate support of *twoPUSCH-NonCB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoPUSCH-NonCB-MultiDCI-STx2P-CG-DG-r18***Indicates whether the UE supports multi-DCI based STx2P DG-PUSCH+CG-PUSCH for noncodebook.A UE supporting this feature shall also indicate support of *twoPUSCH-NonCB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoPUSCH-NonCB-Multi-DCI-STx2P-CSI-RS-Resource-r18***Indicates whether the UE supports up to two NZP CSI-RS resources associated with the two SRS resource sets for multi-DCI non-codebook based STx2P scheme for PUSCH. The capability signalling comprises the following parameters:- *maxNumberPeriodicSRS-r18* indicates the maximum number of periodic SRS resources associated with first and second CSI-RS per BWP.- *maxNumberAperiodicSRS-r18* indicates the maximum number of aperiodic SRS resources associated with first and second CSI-RS per BWP.- *maxNumberSemiPersistentSRS-r18* indicates the maximum number of semi-persistent SRS resources associated with first and second CSI-RS per BWP.- *simultaneousSRS-PerCC-r18* indicates the number of SRS resources associated with first and second CSI-RS resources simultaneously in a CC that the UE can process. The number of SRS resources includes P/SP/A SRS.- *simultaneousCSI-RS-NonCB-r18* indicates the maximum number of CSI-RS resources associated with SRS for non-codebook-based transmission simultaneously that the UE can process.A UE supporting this feature shall also indicate support of *srs-AssocCSI-RS*, *csi-RS-IM-ReceptionForFeedbackPerBandComb* and *twoPUSCH-NonCB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoPUSCH-NonCB-MultiDCI-STx2P-FullTimeFullFreqOverlap-r18***Indicates whether the UE supports fully overlapping PUSCHs in time and fully overlapping in frequency for noncodebook multi-DCI based STx2P PUSCH+PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-NonCB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoPUSCH-NonCB-MultiDCI-STx2P-FullTimePartialFreqOverlap-r18***Indicates whether the UE supports fully overlapping PUSCHs in time and partially overlapping in frequency for noncodebook multi-DCI based STx2P PUSCH+PUSCH. A UE supporting this feature shall also indicate support of *twoPUSCH-NonCB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoPUSCH-NonCB-MultiDCI-STx2P-PartialTimeFullFreqOverlap-r18***Indicates whether the UE supports partially overlapping PUSCHs in time and fully overlapping in frequency for noncodebook multi-DCI based STx2P PUSCH+PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-NonCB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoPUSCH-NonCB-MultiDCI-STx2P-PartialTimeNonFreqOverlap-r18***Indicates whether the UE supports partially overlapping PUSCHs in time, non-overlapping in frequency for noncodebook multi-DCI based STx2P PUSCH+PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-NonCB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoPUSCH-NonCB-MultiDCI-STx2P-PartialTimePartialFreqOverlap-r18***Indicates whether the UE supports partially overlapping PUSCHs in time, partially overlapping in frequency for noncodebook multi-DCI based STx2P PUSCH+PUSCH.A UE supporting this feature shall also indicate support of *twoPUSCH-NonCB-MultiDCI-STx2P-DG-DG-r18*. | Band | No | N/A | FR2 only |
| ***twoRateMatchingEUTRA-CRS-patterns-3-4-r18***Indicates whether the UE supports two LTE-CRS overlapping rate matching patterns configured by *lte-CRS-PatternList3-r18* and *lte-CRS-PatternList4-r18* within a part of NR carrier using 15 kHz overlapping with a LTE carrier (regardless of support or configuration of multi-TRP) for the case when *crs-RateMatchPerCoresetPoolIndex* is not configured. The capability signalling comprises the following parameters:- *maxNumberPatterns-r18* indicates the maximum number of LTE-CRS rate matching patterns in total within a NR carrier using 15 kHz SCS.- *maxNumberNon-OverlapPatterns-r18* indicates the maximum number of LTE-CRS non-overlapping rate matching patterns within a NR carrier using 15 kHz SCS.UE supporting this feature shall support *rateMatchingLTE-CRS*.NOTE: If a UE supports this feature and *multipleRateMatchingEUTRA-CRS-r16*, *multipleRateMatchingEUTRA-CRS-r16* is reported for *lte-CRS-PatternList1-r16* and *lte-CRS-PatterList2-r16* and *twoRateMatchingEUTRA-CRS-patterns-3-4-r18* is reported for *lte-CRS-PatternList3-r16* and *lte-CRS-PatternList4-r16*. | Band | No | N/A | FR1 only |
| ***twoTCI-StatePDSCH-CJT-TxScheme-r18***Indicates whether the UE supports two TCI states for CJT Tx scheme for PDSCH.Value *cjtSchemeA* corresponds to PDSCH DMRS port(s) is QCLed with the DL RSs of both indicated joint/DL TCI states with respect to QCL-TypeA, value *cjtSchemeB* corresponds to PDSCH DMRS port(s) is QCLed with the DL RSs of both indicated joint/DL TCI states with respect to QCL-TypeA except for QCL parameters {Doppler shift, Doppler spread} of the second indicated joint/DL TCI state. Value *both* corresponds to the supporting of both *cjtSchemeA* and *cjtSchemeB*.A UE supporting this feature shall also indicate support of *tci-JointTCI-UpdateSingleActiveTCI-PerCC-r18*. | Band | No | N/A | N/A |
| ***txDiversity-r16***Indicates whether the UE supports transparent Tx diversity requirements for 2Tx as specified in the suffix G clauses of TS 38.101-1 [2] (see also clauses 4.2 and 4.3 of TS 38.101-1 [2]).This field is only applicable for single CC case (i.e. non-CA). | Band | No | N/A | FR1 only |
| ***type1-HARQ-Codebook-r17***Indicates whether the UE supports Type-1 HARQ codebook enhancements when there are feedback-disabled HARQ processes*.* UE indicating support of this feature shall also indicate support of *harq-FeedbackDisabled-r17.* This field is only applicable for bands in Table 5.2.2-1 in TS 38.101-5 [34] and HAPS operation bands in clause 5.2 of TS 38.104 [35]. | Band | No | N/A | N/A |
| ***type1-PUSCH-RepetitionMultiSlots-v1650***Indicates whether the UE supports Type 1 PUSCH transmissions with configured grant as specified in TS 38.214 [12] with UL-TWG-repK value equal to 2, 4, or 8 with a single repetition of the transport block within each slot, and redundancy version pattern as indicated by UL-TWG-RV-rep. A UE supporting this feature shall also support Type 1 PUSCH transmissions with configured grant as specified in TS 38.214 [12] with UL-TWG-repK value of one. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *type1-PUSCH-RepetitionMultiSlots-r16* applies. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.The UE only includes *type1-PUSCH-RepetitionMultiSlots-v1650* if *type1-PUSCH-RepetitionMultiSlots* is absent | Band | No | N/A | N/A |
| ***type2-HARQ-Codebook-r17***Indicates whether the UE supports Type-2 HARQ codebook enhancements when there are feedback-disabled HARQ processes*.* UE indicating support of this feature shall also indicate support of *harq-FeedbackDisabled-r17.* This field is only applicable for bands in Table 5.2.2-1 in TS 38.101-5 [34] and HAPS operation bands in clause 5.2 of TS 38.104 [35]. | Band | No | N/A | N/A |
| ***type2-PUSCH-RepetitionMultiSlots-v1650***Indicates whether the UE supports Type 2 PUSCH transmissions with configured grant as specified in TS 38.214 [12] with UL-TWG-repK value equal to 2, 4, or 8 with a single repetition of the transport block within each slot, and redundancy version pattern as indicated by UL-TWG-RV-rep. A UE supporting this feature shall also support Type 2 PUSCH transmissions with configured grant as specified in TS 38.214 [12] with UL-TWG-repK value of one. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *type2-PUSCH-RepetitionMultiSlots-r16* applies. UE shall set the capability value consistently for all FDD-FR1 bands, all TDD-FR1 bands, all TDD-FR2-1 bands and all TDD-FR2-2 bands respectively.The UE only includes *type2-PUSCH-RepetitionMultiSlots-v1650* if *type2-PUSCH-RepetitionMultiSlots* is absent | Band | No | N/A | N/A |
| ***type3-HARQ-Codebook-r17***Indicates whether the UE supports Type-3 HARQ codebook enhancements when there are feedback-disabled HARQ processes*.* UE indicating support of this feature shall also indicate support of *harq-FeedbackDisabled-r17.* This field is only applicable for bands in Table 5.2.2-1 in TS 38.101-5 [34] and HAPS operation bands in clause 5.2 of TS 38.104 [35]. | Band | No | N/A | N/A |
| ***ue-OneShotUL-TimingAdj-r17***Indicates whether the UE supports one shot large UL timing adjustment.UE indicating support of this feature shall indicate support of *ue-PowerClass-v1700* set to *'pc6'.* | Band | No | N/A | FR2 only |
| ***ue-PowerClass, ue-PowerClass-v1610, ue-PowerClass-v1700***For FR1, if the UE supports the different UE power class than the default UE power class as defined in clause 6.2 of TS 38.101-1 [2], or in clause 6.2 of TS 38.101-5 [34], the UE shall report the supported UE power class in this field. For FR2, UE shall report the supported UE power class as defined in clause 6 and 7 of TS 38.101-2 [3] in this field. UE indicating support for *pc6* supports the enhanced intra-NR RRM and demodulation processing requirements for FR2 to support high speed up to 350 km/h as specified in TS 38.133 [5]. This capability is not applicable to IAB-MT. The power class pc7 is only applicable for RedCap UEs operation in FR2. This capability is not applicable for UEs indicating support of *maxOutputPowerATG-r18*. | Band | Yes | N/A | N/A |
| ***ue-specific-K-Offset-r17***Indicates whether the UE supports the reception of UE-specific K-offset comprised of the following functional components:- Support of reception of Differential K-offset via MAC-CE- Support of determining the timing of PUSCH, PUCCH, CSI reference resource, transmission of aperiodic SRS, activation of TA command, first PUSCH transmission in CG Type 2 with Differential K-offsetUE indicating support of this feature shall also indicate support of *uplinkPreCompensation-r17* and *uplink-TA-Reporting-r17* for this band*.* This field is only applicable for bands in Table 5.2.2-1 and Table 5.2.3-1 in TS 38.101-5 [34] and HAPS operation bands in clause 5.2 of TS 38.104 [35]. | Band | No | N/A | N/A |
| ***ue-TA-Measurement-r18***Indicates whether the UE supports UE-based TA measurement by indicating the maximum number of candidate cells that the UE maintains the TA for.A UE supporting this feature shall also indicate the support of at least one of *ltm-RACHLessCG-r18* and *ltm-RACHLessDG-r18* and support of *ltm-BeamIndicationJointTCI-r18* or *ltm-BeamIndicationSeparateTCI-r18* for the same band. | Band | No | N/A | N/A |
| ***ul-GapFR2-r17***Indicates whether the UE supports FR2 UL gap to perform BPS sensing for Tx power management by the use of uplink gap patterns as specified in TS 38.133 [5] if UE supports a band in FR2. | Band | No | No | FR2 only |
| ***unifiedJointTCI-r17***Indicates the support of unified TCI state operation with joint DL/UL TCI update for intra-cell beam management including the support of:- One MAC-CE activated joint TCI state per CC in a band- TCI state indication for update and activation of MAC CE based TCI state indication for one active TCI stateThe capability signalling comprises the following parameters:- *maxConfiguredJointTCI-r17* indicates the maximum number of configured joint TCI states per BWP per CC in a band- *maxActivatedTCIAcrossCC-r1*7 indicates the maximum number of MAC-CE activated joint TCI states across all CC(s) in a bandIf a UE supports *unifiedJointTCI-InterCell-r17*, the signalled component values (except *additionalMAC-CE-AcrossCC-r17*) also apply to inter-cell beam management,NOTE: Activated joint TCI state(s) include all PDCCH/PDSCH receptions and PUSCH/PUCCH transmissions | Band | No | N/A | N/A |
| ***unifiedJointTCI-BeamAlignDLRS-r17***Indicates the support of beam misalignment between the DL source RS in the TCI state to provide spatial relation indication and the PL-RS.The UE indicating support of this feature shall also indicate support of *unifiedJointTCI-r17*. | Band | No | N/A | FR2 only |
| ***unifiedJointTCI-commonMultiCC-r17***Indicates the support of common multi-CC TCI state ID update and activation.The UE indicating support of this feature shall also indicate support of *unifiedJointTCI-r17*. | Band | No | N/A | N/A |
| ***unifiedJointTCI-InterCell-r17***Indicates the support of Unified TCI with joint DL/UL TCI update for inter-cell beam management including following parameters:- *additionalMAC-CE-PerCC-r17* indicates the number of K additional MAC-CEs to indicate joint TCI states per CC in a band.- *additionalMAC-CE-AcrossCC-r17* indicates the number of K additional MAC-CE activated joint TCI states across all CC(s) in a band.A UE indicating support of this shall also indicate support of *unifiedJointTCI-r17* and *unifiedJointTCI-mTRP-InterCell-BM-r17*.NOTE: A UE that supports *unifiedJointTCI-InterCell-r17* supports K additional MAC-CE activated joint TCI states across all CC(s) in a band in addition to the maximum number of MAC-CE activated joint TCI states across all CC(s) in a band signalled in *unifiedJointTCI-r17*. The signalled value in *additionalMAC-CE-AcrossCC-r17* plus the signalled value in *maxActivatedTCIAcrossCC-r17* determine the maximum number of MAC-CE activated joint TCI states across all CC(s) in a band that are applied to intra and inter-cell beam management jointly. | Band | No | N/A | N/A |
| ***unifiedJointTCI-Legacy-r17***Indicates the support of indication/configuration of R17 TCI states for aperiodic CSI-RS, PDCCH, PDSCH (except for TRS and for CORESET #0 and the respective PDSCH reception) reusing the Rel-15/16 signalling/configuration design(s).The UE indicating support of this feature shall also indicate support of *unifiedJointTCI-r17*. | Band | No | N/A | N/A |
| ***unifiedJointTCI-Legacy-CORESET0-r17*** Indicates the support of indication/configuration of R17 TCI states for CORESET #0 and the respective PDSCH reception reusing the Rel-15/16 signalling/configuration design(s)***.***The UE indicating support of this feature shall also indicate support of *unifiedJointTCI-r17*. | Band | No | N/A | N/A |
| ***unifiedJointTCI-Legacy-SRS-r17***Indicates the support of indication/configuration of R17 TCI states for SRS (except for periodic/semi-persistent SRS for BM) reusing the Rel-15/16 signalling/configuration design(s).The UE indicating support of this feature shall also indicate support of *unifiedJointTCI-r17*. | Band | No | N/A | N/A |
| ***unifiedJointTCI-ListSharingCA-r17***Indicates the support of reference BWP/serving cell index to indicate reference TCI state list shared by multiple BWPs/serving cells. The value indicates the maximum number of configured joint TCI state lists across all BWPs and all Serving cells in a band.The UE indicating support of this feature shall also indicate support of *unifiedJointTCI-r17*. A UE that supports CA and *unifiedJointTCI-r17* shall indicate support of this feature. | Band | No | N/A | N/A |
| ***unifiedJointTCI-mTRP-InterCell-BM-r17***Indicates the support of inter-cell beam measurement and reporting for inter-cell BM and mTRP. This feature includes support of L1-RSRP measurement and reporting on SSB(s) with PCI(s) different from serving cell PCI (additional PCI) and support of up to K SSBRI-RSRP pairs in one report where a pair is associated with a PCI different from serving cell PCI can be reported, where K is equal to *maxNumberNonGroupBeamReporting*.This feature also includes following parameters:- *maxNumAdditionalPCI-L1-RSRP-r17* indicates the maximum number of RRC-configured] PCI(s) different from serving cell PCI for L1-RSRP measurement.- *maxNumSSB-ResourceL1-RSRP-AcrossCC-r17* indicates the maximum number of SSB resources configured to measure L1-RSRP within a slot with PCI(s) same as or different from serving cell PCI [across all CC].NOTE: *maxNumSSBResource-L1-RSRP-AcrossCC-r17* is also counted in *maxTotalResourcesForOneFreqRange-r16/ maxTotalResourcesForAcrossFreqRanges-r16*. | Band | No | N/A | N/A |
| ***unifiedJointTCI-multiMAC-CE-r17***Indicates the support of unified TCI state operation with joint DL/UL TCI update for intra- and inter-cell beam management with more than one MAC-CE activated joint TCI state per CC with MAC CE and DCI based TCI state indication in DCI formats 1\_1 and 1\_2 with and without DL assignment.This capability signalling includes the following parameters:- *minBeamApplicationTime-r17* indicates the minimum beam application time in Y symbols per SCS indicated only for FR2.- *maxNumMAC-CE-PerCC-r17* indicates the maximum number of MAC-CE activated joint TCI states per CC in a band.The UE indicating support of this feature shall also indicate support of *unifiedJointTCI-r17*.NOTE 1: The maximum number of MAC-CE activated joint TCI states across all CC(s) in a band for more than one MAC-CE activated joint TCI state is signaled in *unifiedJointTCI-r17.*NOTE 2: Activated joint TCI state(s) include all PDCCH/PDSCH receptions and PUSCH/PUCCH. | Band | No | N/A | N/A |
| ***unifiedJointTCI-multiMAC-CE-IntraCell-r18***Indicates whether the UE supports unified TCI with joint DL/UL TCI update by DCI format 1\_3 for intra-cell beam management with more than one MAC-CE activated joint TCI state per CC. The UE also supports using TCI state indication for update and activation.The capability signalling comprises the following parameters:- *minBeamApplicationTime-r18* indicates the minimum beam application time in symbols per SCS. If the UE also support *unifiedJointTCI-multiMAC-CE-r17*, same values as *minBeamApplicationTime-r17* for *unifiedJointTCI-multiMAC-CE-r17* are reported.- *maxActivatedTCI-PerCC-r18* indicates the maximum number of MAC-CE activated joint TCI states per CC in a band. If the UE also support *unifiedJointTCI-multiMAC-CE-r17*, same values as *maxActivatedTCIAcrossCC-r17* for *unifiedJointTCI-multiMAC-CE-r17* are reported.NOTE 1: The maximum number of MAC-CE activated joint TCI states across all CC(s) in a band for more than one MAC-CE activated joint TCI state is signalled in *maxActivatedTCIAcrossCC-r17* of *unifiedJointTCI-r17*.NOTE 2: Activated joint TCI state(s) include all PDCCH/PDSCH receptions and PUSCH/PUCCH.A UE supporting this feature shall also indicate support of *unifiedJointTCI-r17*, at least one of *multiCell-PDSCH-DCI-1-3-SameSCS-r18* and *multiCell-PDSCH-DCI-1-3-DiffSCS-r18*. | Band | No | N/A | N/A |
| ***unifiedJointTCI-PC-association-r17***Indicates the support of association between TCI state and UL PC settings except for PL RSfor PUCCH, PUSCH, and SRS.The UE indicating support of this feature shall also indicate support of *unifiedJointTCI-r17*. | Band | No | N/A | N/A |
| ***unifiedJointTCI-perBWP-CA-r17***Indicates the support of TCI state list configuration per BWP when CA is configured.The UE indicating support of this feature shall also indicate support of *unifiedJointTCI-r17*. | Band | No | N/A | N/A |
| ***unifiedJointTCI-SCellBFR-r17***Indicates the support of SCell BFR with unified TCI operation. The maximum number of CCs configured with SCell BFR with unified TCI framework in a band with SpCell BFR is given by *maxNumberSCellBFR-r16*. The UE supporting this feature assumes that maxNumberSCellBFR-r16 includes SpCell. | Band | No | N/A | N/A |
| ***unifiedSeparateTCI-r17***Indicates the support of unified TCI state operation with joint DL/UL TCI update for intra-cell beam management including the support of:- One MAC-CE activated DL TCI state per CC in a band- One MAC-CE activated UL TCI state per CC in a band- TCI state indication for update and activation including MAC CE based TCI state indication for one active DL/UL TCI stateThe capability signalling comprises the following parameters:- *maxConfiguredDL-TCI-r17* indicates the maximum number of configured DL TCI states per BWP per CC- *maxConfiguredUL-TCI-r17* indicates the maximum number of configured UL TCI states per BWP per CC- *maxActivatedDL-TCIAcrossCC-r17* indicates the maximum number of MAC-CE activated DL TCI states across all CC(s) in a band- *maxActivatedUL-TCIAcrossCC-r17* indicates the maximum number of MAC-CE activated UL TCI states across all CC(s) in a bandThe UE indicating support of this feature shall also indicate support of *unifiedJointTCI-r17*. If a UE supports *unifiedSeparateTCI-InterCell-r17*, the *maxConfiguredDL-TCI-r17* and *maxConfiguredUL-TCI-r17* apply to intra- and inter-cell beam management jointly. | Band | No | N/A | N/A |
| ***unifiedSeparateTCI-commonMultiCC-r17***Indicates the Common multi-CC DL/UL-TCI state ID update and activation.The UE indicating support of this feature shall also indicate support of *unifiedSeparateTCI-r17*. | Band | No | N/A | N/A |
| ***unifiedSeparateTCI-InterCell-r17***Indicates the support of unified TCI with separate DL/UL TCI update for inter-cell beam management with more than one MAC-CE activated separate TCI state per CC.This feature also includes following parameters:- *k-DL-PerCC-r17* indicates the number of additional MAC-CE activated DL TCI states per CC in a band- *k-UL-PerCC-r17* indicates the number of additional MAC-CE activated UL TCI states per CC in a band- *k-DL-AcrossCC-r17* indicates the number of additional MAC-CE activated DL TCI states across all CC(s) in a band- *k-UL-AcrossCC-r17* indicates the number of additional MAC-CE activated UL TCI states across all CC(s) in a bandThe UE indicating support of this feature shall also indicate support of *unifiedSeparateTCI-r17*.NOTE: A UE that supports this feature supports K additional MAC-CE activated DL and K additional MAC-CE activated UL TCI states across all CC(s) in a band in addition to the maximum number of MAC-CE activated DL and UL TCI states across all CC(s) in a band signalled in *unifiedSeparateTCI-r17*. The signalled value in *k-DL-AcrossCC-r17* (*k-UL-AcrossCC-r17*) plus the signalled value in *maxActivatedDL-TCIAcrossCC-r17* (*maxActivatedUL-TCIAcrossCC-r17*) determine the maximum number of MAC-CE activated DL (UL) TCI states across all CC(s) in a band that are applied to intra and inter-cell beam management jointly. | Band | No | N/A | N/A |
| ***unifiedSeparateTCI-ListSharingCA-r17***Indicates the support of reference BWP/serving cell configured with reference TCI state pool shared by a set of BWPs/serving cells. The value indicates the maximum number of configured DL/UL TCI state pools across all BWPs and all serving cells in a band. | Band | No | N/A | N/A |
| ***unifiedSeparateTCI-multiMAC-CE-r17***Indicates TCI state indication for update and activation a) MAC-CE+DCI-based TCI state indication (use of DCI formats 1\_1/1\_2 with DL assignment)And b) MAC-CE+DCI-based TCI state indication (use of DCI formats 1\_1/1\_2 without DL assignment).This capability signalling includes the following parameters:- *minBeamApplicationTime-r17* indicates the minimum beam application time in Y symbols per SCS.- *maxActivatedDL-TCIPerCC-r17* indicates the maximum number of MAC-CE activated DL TCI states per CC in a band- *maxActivatedUL-TCIPerCC-r17* indicates the maximum number of MAC-CE activated UL TCI states per CC in a bandThe UE indicating support of this feature shall also indicate support of *unifiedSeparateTCI-r17*. | Band | No | N/A | N/A |
| ***unifiedSeparateTCI-MultiMAC-CE-IntraCell-r18***Indicates whether the UE supports unified TCI with separate DL/UL TCI update by DCI format 1\_3 for intra-cell beam management with more than one MAC-CE activated separate TCI state per CC. This capability also indicates TCI state indication for update and activation.The capability signalling comprises the following parameters:- *minBeamApplicationTime-r18* indicates the minimum beam application time in symbols per SCS. If the UE also support *unifiedJointTCI-multiMAC-CE-r17*, same values as *minBeamApplicationTime-r17* for *unifiedJointTCI-multiMAC-CE-r17* are reported.- *maxActivatedDL-TCI-PerCC-r18* indicates the maximum number of MAC-CE activated DL TCI states per CC in a band.- *maxActivatedUL-TCI-PerCC-r18* indicates the maximum number of MAC-CE activated UL TCI states per CC in a band.If a UE supports *unifiedSeparateTCI-InterCell-r17*, the signalled component values also apply to inter-cell beam management.A UE supporting this feature shall also indicate support of *unifiedSeparateTCI-r17*, at least one of *multiCell-PDSCH-DCI-1-3-SameSCS-r18* and *multiCell-PDSCH-DCI-1-3-DiffSCS-r18*. | Band | No | N/A | N/A |
| ***unifiedSeparateTCI-perBWP-CA-r17***Indicates the support of DL/UL TCI state pool configuration per BWP for CA mode.The UE indicating support of this feature shall also indicate support of *unifiedSeparateTCI-r17*. | Band | No | N/A | N/A |
| ***uplinkBeamManagement***Defines support of beam management for UL. This capability signalling comprises the following parameters:- *maxNumberSRS-ResourcePerSet-BM* indicates the maximum number of SRS resources per SRS resource set configurable for beam management, supported by the UE.- *maxNumberSRS-ResourceSet* indicates the maximum number of SRS resource sets configurable for beam management, supported by the UE.If the UE does not set *beamCorrespondenceWithoutUL-BeamSweeping* to *supported*, the UE shall report this capability. This feature is optional for the UE that supports beam correspondence without uplink beam sweeping as defined in clause 6.6, TS 38.101-2 [3].NOTE: The network uses *maxNumberSRS-ResourceSet* to determine the maximum number of SRS resource sets that can be configured to the UE for periodic/semi-persistent/aperiodic configurations as below:

|  |  |
| --- | --- |
| Maximum number of SRS resource sets across all time domain behaviour (periodic/semi-persistent/aperiodic) reported in *maxNumberSRS-ResourceSet* | Additional constraint on the maximum number of SRS resource sets configured to the UE for each supported time domain behaviour (periodic/semi-persistent/aperiodic) |
| 1 | 1 |
| 2 | 1 |
| 3 | 1 |
| 4 | 2 |
| 5 | 2 |
| 6 | 2 |
| 7 | 4 |
| 8 | 4 |

 | Band | No | N/A | FR2 only |
| ***uplinkPreCompensation-r17***Indicates whether the UE supports the uplink time and frequency pre-compensation and timing relationship enhancements comprised of the following functional components:- Support of UE specific TA calculation based on its GNSS-acquired position and the serving satellite ephemeris.- Support of common TA calculation according to the parameters provided by the network (UE considers common TA as 0 if the parameters are not provided)- For TA update in RRC\_CONNECTED state, support of combination of both open (i.e. UE autonomous TA estimation, and common TA estimation) and closed (i.e., received TA commands) control loops- Support of pre-compensation of the calculated TA in its uplink transmissions- Support of estimating UE-gNB RTT and delaying the start of RAR window by UE-gNB RTT- Support of frequency pre-compensation to counter shift the Doppler experienced on the service link- Support of determining timing of the scheduling of PUSCH, PUCCH and PDCCH ordered PRACH, CSI reference resource, transmission of aperiodic SRS activation of TA command, first PUSCH transmission in CG Type 2 with cell-specific K\_offset if indicated- Support of determining timing of the UE action and assumption on a downlink configuration carried by MAC CE command by K\_mac if it is indicated and determining the timing of PDCCH monitoring in recovery search space using K-mac during beam failure recovery procedure- Support of UE receiving cell-specific K\_offset/K\_mac in system informationSupport of this feature in NTN bands is mandatory for UE supporting *nonTerrestrialNetwork-r17*. This field is only applicable for bands in Table 5.2.2-1 and Table 5.2.3-1 in TS 38.101-5 [34] and HAPS operation bands in clause 5.2 of TS 38.104 [35]. | Band | CY | N/A | N/A |
| ***uplink-TA-Reporting-r17***Indicates whether the UE supports UE reporting of information related to TA pre-compensation as specified in TS 38.321 [8]*.* UE indicating support of this feature shall also indicate support of *uplinkPreCompensation-r17* for this band. This field is only applicable for bands in Table 5.2.2-1 and Table 5.2.3-1 in TS 38.101-5 [34] and HAPS operation bands in clause 5.2 of TS 38.104 [35]. | Band | No | N/A | N/A |

<Next change>

### 4.2.21 RedCap Parameters

#### 4.2.21.1 Definition of RedCap UE

RedCap UE is the UE with reduced capability:

- The maximum bandwidth is 20 MHz for FR1, and is 100 MHz for FR2. UE features and corresponding capabilities related to UE bandwidths wider than 20 MHz in FR1 or wider than 100 MHz in FR2 are not supported by RedCap UEs;

- The maximum mandatory supported DRB number is 8;

- The mandatory supported PDCP SN length is 12 bits while 18 bits being optional;

- The mandatory supported RLC AM SN length is 12 bits while 18 bits being optional;

- For FR1, 1 DL MIMO layer if 1 Rx branch is supported, and 2 DL MIMO layers if 2 Rx branches are supported; for FR2, either 1 or 2 DL MIMO layers can be supported, while 2 Rx branches are always supported. For FR1 and FR2, UE features and corresponding capabilities related to more than 2 UE Rx branches or more than 2 DL MIMO layers, as well as UE features and capabilities related to more than 1 UE Tx branch or more than 1 UL MIMO layer are not supported by RedCap UEs;

- CA, MR-DC, DAPS, CPAC and IAB (i.e., the RedCap UE is not expected to act as IAB node) related UE features and corresponding capabilities are not supported by RedCap UEs. All other feature groups or components of the feature groups as captured in TR 38.822 [24] as well as capabilities specified in this specification remain applicable for RedCap UEs same as other UEs, unless indicated otherwise.

RedCap UE supports the channel raster as specified in TS 38.101-1 [2], clause 5.4I, for all bands supported by the UE.

### 4.2.22 eRedCap Parameters

#### 4.2.22.1 Definition of eRedCap UE

eRedCap UE is the UE with reduced peak data rate and, with or without reduced baseband bandwidth in FR1:

- The maximum bandwidth is 20 MHz for FR1. UE features and corresponding capabilities related to UE bandwidths wider than 20 MHz in FR1 are not supported by eRedCap UEs. eRedCap UEs do not support operation in FR2 and in FR1 60kHz SCS.

- CA, MR-DC, DAPS, CPAC and IAB (i.e., the eRedCap UE is not expected to act as IAB node) related UE features and corresponding capabilities are not supported by eRedCap UEs. All other feature groups or components of the feature groups as captured in TR 38.822 [24] as well as capabilities specified in this specification remain applicable for eRedCap UEs same as other UEs, unless indicated otherwise.

eRedCap UE supports the channel raster as specified in TS 38.101-1 [2], clause 5.4I, for all bands supported by the UE.