ERICSSON

# Radio Feature Recommendations

## LTE

User Guide

85/1553-LZA 701 6014/1 Uen X4B

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## Trademark List

# Contents

# 1 Radio Feature Recommendations

The recommendations in this document aim for a network with simplified setup and robust performance in most common scenarios.

The activated features, deactivated features and parameter values recommended in this document are based on live network measurements and reflect the recommended settings for robust performance in common deployment scenarios. Activating the recommended features and using the recommended settings ensures consistent performance across different aspects of the radio network. The recommendations are valid only when the features recommended in this document are activated and deactivated.

The recommendations in this document are based on the feature set of L17.Q4 and are valid for L17.Q4 and onwards.

## 1.1 Benefits

The recommendations simplify the configuration of radio features, as only few parameters require a network-specific setting. Several SON features are included, which simplify network maintenance and optimize network performance.

The following areas of improvement are covered:

— Multi-antenna solution, which improves spectral efficiency, coverage, capacity and throughput by having more antennas and diversity.

— Securing high quality voice performance with improved capacity, coverage, sustainability and quality by the distinguished handling of VoLTE connections.

— Carrier aggregation, which results in higher peak bit rates, improved application coverage and increased network capacity by increasing the user bandwidth.

— Multi-carrier load management, which results in higher cell throughput by using a complete load balancing function including automated cell capacity estimate and load relation.

— Enhanced mobility, which improves network quality and simplifies configuration by activating automated functions for building neighbor relations and configuring mobility thresholds.

— High load handling and improved capacity by ensuring admitted users are served efficiently.

— Improved application coverage by increasing uplink capacity and cell-edge bitrate on the downlink and uplink channels.

— Improved application performance with enabled user and service prioritization in scheduler and admission control functionalities.

— Uplink resource handling, which improves uplink coverage and uplink resource utilization by configuring PUCCH and PUSCH resources when required.

# 2 Recommended Feature States for LTE RAN

Table 1 Recommended Feature States

| Feature Name | Value Package | Value of the License Control MO on DU Radio Node | Value of the License Control MO on Baseband-based Node | Recommended Value of the featureState Attribute |
|---|---|---|---|---|
| | | OptionalFeatureLicense | FeatureState | |
| 256 QAM Downlink | LTE Base Package | Dl256Qam | CXC4011969 | ACTIVATED |
| 3CC DL Carrier Aggregation Extension | Carrier Aggregation | ThreeDlCarrierAggregation | CXC4011714 | ACTIVATED |
| 4CC DL Carrier Aggregation | Carrier Aggregation | FourDlCarrierAggregation | CXC4011980 | ACTIVATED |
| 4x2 Quad Antenna Downlink Performance Package | 4x2 Downlink MIMO | QuadAntDlPerfPkg | CXC4011427 | ACTIVATED |
| 4x4 Quad Antenna Downlink Performance Package | 4x4 Downlink MIMO | QuadAntDlPerfPkg4x4 | CXC4011667 | ACTIVATED |
| 5CC DL Carrier Aggregation Extension | Carrier Aggregation | FiveDlCarrierAggregation | CXC4011981 | ACTIVATED |
| 64-QAM Uplink | LTE Base Package | Ul64Qam | CXC4011946 | ACTIVATED |
| Adaptive RLC Poll-Retransmission | High Load Handling | AdaptiveRLCPollRetransmission | CXC4012018 | ACTIVATED |
| Admission Control | LTE Base Package | | | ACTIVATED |
| Admission Triggered Offload | Service-Based Mobility | AdmissionTriggeredOffload | CXC4011814 | DEACTIVATED |

| Feature Name | Value Package | Value of the License Control MO on DU Radio Node | Value of the License Control MO on Baseband-based Node | Recommended Value of the featureState Attribute |
|---|---|---|---|---|
| | | OptionalFeatureLicense | FeatureState | |
| Advanced Differentiation for Resource Fair Scheduling | Differentiated Mobile Broadband | AdvancedDiffForResourceFairSch | CXC4011967 | ACTIVATED |
| Antenna System Monitoring | LTE Base Package | AntSystemMonitoring | CXC4011422 | ACTIVATED |
| Automated Cell Capacity Estimation | LTE Base Package | AutoCellCapEstFunction | CXC4011373 | ACTIVATED |
| Automated Mobility Optimization | Self-Organizing Networks | AutomatedMobilityOptimization | CXC4011376 | ACTIVATED |
| Automated Neighbor Relations | Self-Organizing Networks | Anr | CXC4010620 | ACTIVATED |
| Automated RACH Root Sequence Allocation | Self-Organizing Networks | AutoRachRsAlloc | CXC4011246 | ACTIVATED |
| Best Neighbor Relations for Intra-LTE Load Management | Multi-Carrier Load Management | BnrIntraLteLM | CXC4011370 | ACTIVATED |
| Best Neighbor Relations for WCDMA IRAT Offload | LTE Offload to WCDMA | BnrIratOffload | CXC4010512 | DEACTIVATED |
| Carrier Aggregation | Carrier Aggregation | CarrierAggregation | CXC4011476 | ACTIVATED |
| Carrier Aggregation-Aware IFLB | Advanced Carrier Aggregation | CarrierAggregationAwareIFLB | CXC4011666 | ACTIVATED |
| Configurable SCell Priority(1) | Advanced Carrier Aggregation | ConfigurableScellPrio | CXC4012097 | DEACTIVATED |
| Coverage-Adapted Load Management | Multi-Carrier Load Management | CoverageAdaptedLm | CXC4011698 | ACTIVATED |

| Feature Name | Value Package | Value of the License Control MO on DU Radio Node | Value of the License Control MO on Baseband-based Node | Recommended Value of the featureState Attribute |
|---|---|---|---|---|
| | | OptionalFeatureLicense | FeatureState | |
| Coverage-Triggered GERAN Session Continuity | LTE Base Package | GsmSessionContinuity | CXC4010618 | ACTIVATED |
| Coverage-Triggered Inter-Frequency Session Continuity | LTE Base Package | InterFreqSessionContinuity | CXC4010770 | ACTIVATED |
| Coverage-Triggered WCDMA Session Continuity | LTE Base Package | WcdmaSessionContinuity | CXC4010616 | ACTIVATED |
| Data-Aware Uplink Scheduling | LTE Base Package | DataAwareUplinkScheduling | CXC4012129 | ACTIVATED |
| Differentiated Admission Control | Differentiated Mobile Broadband | DifferentiatedAdmissionControl | CXC4011062 | ACTIVATED |
| Downlink Coordinated Multi-Point | CoMp | DlComp | CXC4011913 | ACTIVATED |
| Downlink Frequency-Selective Scheduling | LTE Base Package | DlFss | CXC4011255 | DEACTIVATED |
| Dynamic GBR Admission Control | VoLTE Performance | DynamicGbrAdmCtrl | CXC4011060 | ACTIVATED |
| Dynamic Load Control | High Load Handling | DynamicLoadControl | CXC4011713 | DEACTIVATED |
| Dynamic PUCCH | Uplink Spectrum Adaptations | DynamicPucch | CXC4011955 | ACTIVATED |
| Dynamic Random Access Backoff | High Load Handling | DynamicRABackoff | CXC4011937 | ACTIVATED |
| Dynamic SCell Selection for | Carrier Aggregation | DynamicScellSelection | CXC4011559 | ACTIVATED |

| Feature Name | Value Package | Value of the License Control MO on DU Radio Node | Value of the License Control MO on Baseband-based Node | Recommended Value of the featureState Attribute |
|---|---|---|---|---|
| | | OptionalFeatureLicense | FeatureState | |
| Carrier Aggregation | | | | |
| Dynamic UE Admission Control | High Load Handling | DynamicUeAdmCtrl | CXC4011940 | ACTIVATED |
| Dynamic Uplink Resorce Allocation | LTE Base Package | UlDynamicResourceAllocation | CXC4012036 | ACTIVATED |
| Elastic RAN(2) | Elastic RAN | ElasticRAN | CXC4012034 | DEACTIVATED |
| Enhanced PDCCH Link Adaptation | High Load Handling | EnhancedPdcchLa | CXC4011482 | ACTIVATED |
| Ericsson Lean Carrier | Ericsson Lean Carrier | EricssonLeanCarrier | CXC4011984 | ACTIVATED |
| FDD-TDD Carrier Aggregation | Carrier Aggregation | CarrierAggregationFddTdd | CXC4011922 | ACTIVATED |
| ICIC - Autonomous Resource Allocation | LTE Base Package | | | ACTIVATED |
| IFLB Activation Threshold | Multi-Carrier Load Management | IFLBActivationThreshold | CXC4011554 | ACTIVATED |
| Inactivity-triggered PUCCH Release at High Load(3) | High Load Handling | InactTrigPUCCHRelAtHighLoad | CXC4011941 | DEACTIVATED |
| Inter-Frequency Load Balancing | Multi-Carrier Load Management | InterFrequencyLoadBalancing | CXC4011319 | ACTIVATED |
| Inter-eNodeB Carrier Aggregation | Advanced Carrier Aggregation | InterENBCarrierAggregation | CXC4011983 | ACTIVATED |
| Interference Rejection Combining | LTE Base Package | Irc | CXC4010319 | ACTIVATED |

| Feature Name | Value Package | Value of the License Control MO on DU Radio Node | Value of the License Control MO on Baseband-based Node | Recommended Value of the featureState Attribute |
|---|---|---|---|---|
| | | OptionalFeatureLicense | FeatureState | |
| Inter-Frequency Offload | Self-Organizing Networks | InterFrequencyOffload | CXC4011557 | DEACTIVATED |
| Inter-RAT Offload to WCDMA | LTE Offload to WCDMA | InterRatOffloadToUtran | CXC4011478 | DEACTIVATED |
| Limited Uplink-Aware IFLB | Multi-Carrier Load Management | LimitedUplinkAwareIFLB | CXC4011966 | ACTIVATED |
| Load Based Access Barring | High Load Handling | LoadBasedAccessBarring | CXC4011807 | ACTIVATED |
| Load-based distribution at release | Multi-Carrier Load Management | LoadBasedDistributionAtRelease | CXC4011944 | ACTIVATED |
| Minimum Rate Proportional Fair Scheduler | Differentiated Mobile Broadband | Pfs | CXC4011033 | ACTIVATED |
| Mobility Control at Poor Coverage | LTE Base Package | MobCtrlAtPoorCov | CXC4011345 | ACTIVATED |
| Multi-Target RRC Connection Re-establishment | VoLTE Performance | MultiTargetRrcConnReest | CXC4011366 | ACTIVATED |
| Overlaid Cell Detection | Self-Organizing Networks | OverlaidCellDetection | CXC4011699 | DEACTIVATED |
| PCI Conflict Reporting | Self-Organizing Networks | Pci | CXC4011183 | ACTIVATED |
| PDCCH Power Boost | High Load Handling | PdcchPowerBoost | CXC4011515 | ACTIVATED |
| PLMN-Specific Access Barring(4) | Mission Critical High Load Handling | PLMNSpecificAccessBarring | CXC4012278 | DEACTIVATED |
| Prioritization of VoLTE in Access Barring | High Load Handling | PrioOfVolteInAccessBarring | CXC4011942 | ACTIVATED |
| Prioritized SR Scheduling | High Load Handling | PrioritizedSrScheduling | CXC4011938 | ACTIVATED |

| Feature Name | Value Package | Value of the License Control MO on DU Radio Node | Value of the License Control MO on Baseband-based Node | Recommended Value of the featureState Attribute |
|---|---|---|---|---|
| | | OptionalFeatureLicense | FeatureState | |
| Priority Paging | LTE Base Package | PriorityPaging | CXC4011711 | ACTIVATED |
| Progressive Access Barring | High Load Handling | ProgressiveAccessBarring | CXC4012120 | ACTIVATED |
| Quad Antenna Uplink Performance Package | 4-Way Receiver Diversity | QuadAntUlPerfPkg | CXC4011056 | ACTIVATED |
| Relative Priority Scheduling | Differentiated Mobile Broadband | Rps | CXC4011251 | ACTIVATED |
| Release Inactive UE at High Load Handover | High Load Handling | RelInactiveUeAtHighLoadHo | CXC4011939 | ACTIVATED |
| Service Specific HARQ | VoLTE Performance | ServiceSpecificHARQ | CXC4012070 | ACTIVATED |
| Service Specific Load Management | Service-Based Mobility | ServiceSpecificLoadMgmt | CXC4011477 | ACTIVATED |
| Supplemental Downlink for Carrier Aggregation | Carrier Aggregation | SUPPLEMENTARYDLONLYCELL | CXC4011567 | ACTIVATED |
| UE Level Oscillating Handover Minimization | Self-Organizing Networks | HoOscCtrlUE | CXC4011157 | ACTIVATED |
| UE Throughput Aware IFLB | Multi-Carrier Load Management | UeThroughputAwareIflb | CXC4011911 | ACTIVATED |
| Uplink Carrier Aggregation | Carrier Aggregation | UplinkCarrierAggregation | CXC4011973 | ACTIVATED |
| Uplink Coordinated Multi-Point Reception | CoMp | UlComp | CXC4011444 | ACTIVATED |

| Feature Name | Value Package | Value of the License Control MO on DU Radio Node | Value of the License Control MO on Baseband-based Node | Recommended Value of the featureState Attribute |
|---|---|---|---|---|
| | | OptionalFeatureLicense | FeatureState | |
| Uplink Frequency-Selective Scheduling | LTE Base Package | UlFss | CXC4011074 | DEACTIVATED |
| Uplink Scheduling Control for Out-of-Coverage UEs | High Load Handling | UlSchedContlForOocUes | CXC4012003 | ACTIVATED |
| Uplink-Triggered Inter-Frequency Mobility(5) | LTE Base Package | UlTrigInterFreqMob | CXC4011072 | DEACTIVATED |
| Variable SR and CQI Periodicity | High Load Handling | VarSrCqiPeriodicity | CXC4011258 | ACTIVATED |

(1) The Configurable SCell Priority feature is recommended as deactivated because specific tuning is required for each eNodeB to use the priority differentiation, which is not intended for this parameter recommendation.

(2) The Elastic RAN feature is an advanced solution for scenarios that require fast coordination. The Elastic RAN feature has special requirements regarding the transport network architecture.

(3) The Inactivity Triggered PUCCH Release at High Load feature is recommended as deactivated, due to a dependency with the Ericsson Lean Carrier feature, which is recommended as activated. The Inactivity Triggered PUCCH Release at High Load feature can provide clear benefits in the event of PUCCH congestion.

(4) The PLMN-Specific Access Barring feature allows to prioritize barring of different PLMNs in high load scenarios.

(5) The Uplink-Triggered Inter-Frequency Mobility feature can be used in scenarios where there are uplink problems.

# 3 Recommended Parameter Settings for LTE RAN

Table 2 Recommended Parameter Settings

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| 256-QAM Downlink | EUtranCellFDD | dl256QamEnabled | Default (TRUE) | |
| | SectorCarrier | radioTransmitPerformanceMode | QAM_256_BOOST | |
| 3CC DL Carrier Aggregation Extension | CarrierAggregationFunction | waitForAdditionalSCellOpportunity | Default (10000) | |
| 4CC DL Carrier Aggregation Extension | CarrierAggregationFunction | caPreference | DL | |
| | EUtranCellFDD | noOfPucchFormat3PrbPairs | Default (1) | |
| | EUtranCellTDD | noOfPucchFormat3PrbPairs | Default (1) | |
| 64-QAM Uplink | EUtranCellFDD | puschPwrOffset64qam | Default (0) | |
| Admission Control | AdmissionControl | dlTransNwBandwidth | N/A | Deployment dependent. Set to correspond with transport network interface speed. |
| | | ulTransNwBandwidth | N/A | Deployment dependent. Set to correspond with transport network interface speed. |
| | | paArpOverride | Default (7) | |
| | | resourceReservationForPAState | ACTIVATED | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | nrOfRbReservationsPerPaConn | 5 | |
| Automated Cell Capacity Estimation | EUtranCellFDD | cellCapMaxCellSubCap | 100000 | |
| | | cellCapMinCellSubCap | 1000 | |
| | | cellCapMinMaxWriProt | TRUE | |
| Automated Mobility Optimization | EUtranCellFDD | hoOptAdjThresholdAbs | Default (5) | |
| | | hoOptAdjThresholdPerc | Default (50) | |
| | | hoOptStatNum | Default (200) | |
| | | hoOptStatTime | Default (24) | |
| | | cioUpperLimitAdjBySon | Default (4) | |
| | | cioLowerLimitAdjBySon | Default (-3) | |
| | EUtranCellTDD | hoOptAdjThresholdAbs | Default (5) | |
| | | hoOptAdjThresholdPerc | Default (50) | |
| | | hoOptStatNum | Default (200) | |
| | | hoOptStatTime | Default (24) | |
| | | cioUpperLimitAdjBySon | Default (4) | |
| | | cioLowerLimitAdjBySon | Default (-3) | |
| | EUtranCellRelation | amoAllowed | Default (TRUE) | |
| | EUtranFreqRelation | amoAllowed | Default (TRUE) | |
| | AmoFunction | amoAllowedInterVendor | FALSE | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| Automated Neighbor Relations | AnrFunction | removeNcellTime | 14 | |
| | | removeNenbTime | Default (7) | |
| | | removeNrelTime | Default (7) | |
| | | maxNoPciReportsEvent | Default (15) | |
| | | maxTimeEventBasedPciConf | Default (30) | |
| | | problematicCellPolicy | AUTO_DETECT_AND_BAR | |
| | | probCellDetectMedHoSuccThres | Default (50) | |
| | | probCellDetectMedHoSuccTime | Default (4) | |
| | | probCellDetectLowHoSuccThres | Default (10) | |
| | | probCellDetectLowHoSuccTime | Default (10) | |
| | | plmnWhiteListEnabled | Default (FALSE) | Set to TRUE to prevent mobility towards cells with PLMN IDs that are not white-listed. |
| | | perEcgiMeasPlmnWhiteList | Default (TRUE) | |
| | | pciConflictDetectionEcgiMeas | TRUE | |
| | | pciConflictMobilityEcgiMeas | TRUE | |
| | | cellRelHoAttRateThreshold | 10 | |
| | AnrFunctionEUtran | anrIntraFreqState | Default (ACTIVATED) | |
| | | anrInterFreqState | ACTIVATED | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | hoAllowedEutranPolicy | Default (TRUE) | |
| | | x2SetupPolicy | Default (TRUE) | |
| | | cellAddRsrpThresholdEutran | Default (-1150) | |
| | | cellAddRsrqThresholdEutran | Default (-1530) | |
| | | anrUesEUtraIntraFDecr | Default (10) | |
| | | anrUesEUtraIntraFIncrAnr | Default (20) | |
| | | anrUesEUtraIntraFIncrHo | Default (100) | |
| | | anrUesEUtraIntraFMax | Default (0) | |
| | | anrUesEUtraIntraFMin | Default (0) | |
| | | anrUesThreshInterFDecr | Default (10) | |
| | | anrUesThreshInterFIncrAnr | Default (20) | |
| | | anrUesThreshInterFIncrHo | Default (100) | |
| | | anrUesThreshInterFMax | Default (0) | This recommendation is only valid if the Mobility Control at Poor Coverage feature is activated. |
| | | anrUesThreshInterFMin | Default (0) | |
| | | anrEutranInterFMeasReportMax | 0 | This recommendation is only valid if the Inter-Frequency Load Balancing |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | | | feature is activated. |
| | | anrEutranInterFMeasReportMin | 0 | This recommendation is only valid if the Inter-Frequency Load Balancing feature is activated. |
| | | anrEutranInterFMeasReportIncr | Default (10) | |
| | | anrEutranInterFMeasReportDecr | Default (1) | |
| | AnrFunctionGeran | anrStateGsm | ACTIVATED | |
| | | anrGeranMeasReportMax | Default (100) | |
| | | anrGeranMeasReportMin | Default (5) | |
| | | anrGeranMeasReportDecr | Default (1) | |
| | | anrGeranMeasReportIncr | Default (10) | |
| | | anrGeranMeasReportRacIncr | Default (20) | |
| | AnrFunctionUtran | anrStateUtran | ACTIVATED | |
| | | anrUtranMeasReportMax | Default (100) | |
| | | anrUtranMeasReportMin | Default (5) | |
| | | anrUtranMeasReportDecr | Default (1) | |
| | | anrUtranMeasReportIncr | Default (10) | |
| | | anrUtranMeasReportAcIncr | Default (20) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | cellAddRscpThresholdUtranDelta | Default (-1) | |
| | | cellAddEcnoThresholdUtranDelta | Default (-10) | |
| | AnrPciConflictDrxProfile | anrPciConflictDrxInactivityTimer | Default (PSF20) | |
| | | anrPciConflictLongDrxCycle | Default (SF320) | |
| | | anrPciConflictOnDurationTimer | Default (PSF5) | |
| | ENodeBFunction | measuringEcgiWithAgActive | TRUE | |
| | EUtranCellRelation | isRemoveAllowed | TRUE | |
| | EUtranFreqRelation | anrMeasOn | Default (TRUE) | |
| | ExternalEUtranCellFDD | isRemoveAllowed | TRUE | |
| | ExternalEUtranCellTDD | isRemoveAllowed | TRUE | |
| | GeranFreqGroupRelation | anrMeasOn | Default (TRUE) | |
| | ReportConfigA5Anr | a5Threshold1RsrpAnrDelta | Default (1) | |
| | | a5Threshold1RsrqAnrDelta | Default (10) | |
| | | a5Threshold2RsrpAnrDelta | Default (1) | |
| | | a5Threshold2RsrqAnrDelta | Default (10) | |
| | | timeToTriggerA5 | Default (640) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | hysteresisA5 | Default (10) | |
| | ReportConfigEUtraBestCellAnr | hysteresisA3 | Default (10) | |
| | | timeToTriggerA3 | Default (640) | |
| | | a3offsetAnrDelta | Default (3) | |
| | UeMeasControl | maxNoMeasReportsInact | Default (1) | |
| | | maxMeasInterFreqEUtra | Default (7) | |
| | UtranFreqRelation | anrMeasOn | Default (TRUE) | |
| Best Neighbor Relations for Intra-LTE Load Management | EUtranCellRelation | lbBnrAllowed | Default (TRUE) | |
| | EUtranFreqRelation | lbBnrPolicy | Default (AUTO) | |
| | LoadBalancingFunction | lbHitRateEUtranAddThreshold | Default (15) | |
| | | lbHitRateEUtranMeasUeIntensity | 1 | |
| | | lbHitRateEUtranMeasUeThreshold | 2 | |
| | | lbHitRateEUtranRemoveThreshold | Default (2) | |
| Carrier Aggregation | CarrierAggregationFunction | pdcchEnhancedLaForVolte | TRUE | |
| | | caPreemptionThreshold | Default (50) | |
| | | caRateAdjustCoeff | Default (10) | |
| | | caUsageLimit | Default (65535) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | sCellActDeactDataThres | Default (100) | |
| | | sCellActDeactDataThresHyst | Default (90) | |
| | | sCellScheduleSinrThres | Default (0) | |
| | EUtranCellFDD | channelSelectionSetSize | N/A | Dependent on transmission mode. See channelSelectionSetSize for setting instructions. |
| | | noOfChannelSelectionSets | Default (4) | Set to 0 for cells that are not PCells. |
| | EUtranCellRelation | sCellCandidate | ALLOWED | |
| | EUtranCellTDD | noOfChannelSelectionSets | Default (6) | |
| Carrier Aggregation-Aware IFLB | EUtranFreqRelation | caTriggeredRedirectionActive | Default (TRUE) | |
| | ExternalENodeBFunction | eSCellCapacityScaling | Default (100) | |
| | LoadBalancingFunction | lbCaCapHysteresis | Default (20) | |
| | | lbCaThreshold | Default (800) | |
| | | lbDiffCaOffset | Default (100) | |
| Configurable SCell Priority | CarrierAggregationFunction | dynamicSCellSelectionMethod | PRIORITIZED | |
| | | enhancedSelectionOfMimoAndCA | TRUE | |
| | | fourLayerMimoPreferred | Default (FALSE) | |
| | EUtranCellFDD | caPrioThreshold | Default (300) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | EUtranCellRelation | sCellPriority | 4 | |
| | | coverageIndicator | Default (NONE) | This parameter has no effect when CarrierAggregationFunction.dynamicSCellSelectionMethod is set to PRIORITIZED. |
| | EUtranCellTDD | caPrioThreshold | Default (300) | |
| | EUtranFreqRelation | caFreqPriority | Default (4) | |
| | | caFreqProportion | Default (100) | |
| Coverage-Adapted Load Management | EUtranCellRelation | lbCovIndicated | Default (FALSE) | |
| | LoadBalancingFunction | lbMeasScalingLimit | Default (30) | |
| Coverage-Triggered GERAN Session Continuity | GeranFreqGroupRelation | cellReselectionPriority | 2 | |
| Coverage-Triggered WCDMA Session Continuity | UtranFreqRelation | cellReselectionPriority | 3 | |
| Differentiated Admission Control | AdmissionControl | zzzTemp20 | Default (1000) | |
| | | zzzTemp21 | Default (1000) | |
| | | ulAdmDifferentiationThr | Default (500) | |
| | | ulAdmOverloadThr | Default (950) | |
| | | admNrRrcDifferentiationThr | Default (750) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | arpBasedPreEmptionState | Default (DEACTIVATED) | |
| | | dlAdmDifferentiationThr | Default (500) | |
| | | dlAdmOverloadThr | Default (950) | |
| | | nrOfPaConnReservationsPerCell | 5 | |
| Dynamic PUCCH | EUtranCellFDD | allocThrPucchFormat1 | Default (50) | |
| | | allocTimerPucchFormat1 | Default (50) | |
| | | deallocThrPucchFormat1 | Default (100) | |
| | | deallocTimerPucchFormat1 | Default (6000) | |
| Dynamic SCell Selection for Carrier Aggregation | CarrierAggregationFunction | sCellSelectionMode | 2 (ACK_SIMULTANEOUS_SCELL_SELECTION) | |
| | | waitForCaOpportunity | Default (10000) | |
| | | sCellDeactProhibitTimer | Default (200) | |
| | | waitForBetterSCellRep | 50 | |
| | | sCellActProhibitTimer | Default (10) | |
| | | sCellDeactDelayTimer | Default (50) | |
| | | sCellDeactOutOfCoverageTimer | 680 | >= MAX(240, 3*CarrierAggregationFunction.sCellDeactProhibitTimer + 80) ms. See |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | | | the equation in 5CC DL Carrier Aggregation Extension. |
| | ReportConfigSCellA1A2 | timeToTriggerA1 | Default (40) | |
| | | timeToTriggerA2 | Default (40) | |
| | | triggerQuantityA1A2 | Default (RSRP) | |
| | | a1a2ThresholdRsrp | -124 | |
| | | a1a2ThresholdRsrq | -115 | |
| | | hysteresisA1A2Rsrp | Default (10) | |
| | | hysteresisA1A2Rsrq | Default (15) | |
| | ReportConfigSCellA6 | timeToTriggerA6 | Default (40) | |
| | | triggerQuantityA6 | Default (RSRP) | |
| | | a6offset | Default (30) | |
| | | hysteresisA6 | Default (10) | |
| Dynamic UE Admission Control | ENodeBFunction | dlMaxWaitingTimeGlobal | 500 | |
| | | ulMaxWaitingTimeGlobal | 500 | |
| | EUtranCellFDD | cceDynUeAdmCtrlRetDiffThr | 700 | |
| | | cceDynUeAdmCtrlOverloadThr | 900 | |
| | | dlDynUeAdmCtrlOverloadThr | 950 | |
| | | dlDynUeAdmCtrlRetDiffThr | 850 | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | dynUeAdmCtrlFilterConst | Default (3000) | |
| | | ulDynUeAdmCtrlOverloadThr | 950 | |
| | | ulDynUeAdmCtrlRetDiffThr | 850 | |
| Dynamic Uplink Resource Allocation | EUtranCellFDD | pZeroNominalPusch | Default (-103) | For 4RX, the value can be reduced by 3 dB. |
| Enhanced PDCCH Link Adaptation | EUtranCellFDD | pdcchOuterLoopInitialAdj | Default (-70) | |
| | | pdcchOuterLoopInitialAdjPCell | Default (-70) | |
| | | pdcchOuterLoopInitialAdjVolte | Default (-70) | |
| | | pdcchOuterLoopUpStep | Default (8) | |
| | | pdcchOuterLoopUpStepPCell | Default (6) | |
| | | pdcchOuterLoopUpStepVolte | Default (6) | |
| | | pdcchTargetBler | Default (24) | |
| | | pdcchTargetBlerPCell | Default (22) | |
| | | pdcchTargetBlerVolte | Default (22) | |
| Ericsson Lean Carrier | ENodeBFunction | timeAndPhaseSynchAlignment | TRUE | |
| | EUtranCellFDD | elcLongDrxCycle | Default (SF40) | |
| | | dlBlerTargetEnabled | Default (FALSE) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | noOfPucchCqiUsers | 320 | |
| | EUtranCellTDD | elcLongDrxCycle | Default (SF40) | |
| | | dlBlerTargetEnabled | Default (FALSE) | |
| | | tTimeAlignmentTimer | Default (0) | |
| | | noOfPucchCqiUsers | 128 | |
| | EUtranFreqRelation | allowedMeasBandwidth | Default (6) | This setting is mandatory for all cells that have neighboring cells with the Ericsson Lean Carrier feature enabled. |
| | ImeisvProfile | elc320msDrxEnabled | Default (FALSE) | |
| | Paging | nB | 6 (T/16) | |
| | ReportConfigEUtraBestCell | timeToTriggerA3 | 320 | |
| ICIC - Autonomous Resource Allocation | EUtranCellFDD | dlInterferenceManagementActive | TRUE | |
| | | ulInterferenceManagementActive | Default (TRUE) | |
| Idle Mode Support | EUtranCellFDD | qRxLevMin | -124 | |
| | | acBarringInfoPresent | TRUE | |
| | | qQualMin | Default (0) | |
| | | threshServingLow | Default (0) | For the coverage layers, this parameter is recommended to be set to Default (0). For the |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | | | capacity layers, this parameter is recommended to be set to 2. |
| | SIB3 | sNonIntraSearch | 4 | |
| | | sNonIntraSearchP | 4 | |
| | | sNonIntraSearchQ | Default (0) | |
| | | sNonIntraSearchv920Active | Default (FALSE) | |
| | | threshServingLowQ | Default (1000) | |
| | EUtranFreqRelation | cellReselectionPriority | 4 | |
| | | threshXHigh | Default (4) | |
| | | threshXLow | Default (0) | |
| IFLB Activation Threshold | EUtranFreqRelation | lbActivationThreshold | Default (0) | |
| Inactivity-Triggered PUCCH Release at High Load | EUtranCellFDD | tTimeAlignmentTimer | Default (0) | |
| Inter-eNodeB Carrier Aggregation | ENodeBFunction | interEnbCaTunnelDscp | Default (14) | |
| Inter-Frequency Load Balancing | EUtranCellFDD | cellSubscriptionCapacity | N/A | This parameter is recommended to be set as the value of EUtranCellFDD.dlChannelBandwidth*1.7. The EUtranCellFDD.dlChannelBandwidth parameter is expressed in kHz and can be |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | | | different for each carrier. |
| | EUtranCellRelation | loadBalancing | Default (NOT_ALLOWED) | |
| | EUtranCellTDD | cellSubscriptionCapacity | 15000 | |
| | EUtranFreqRelation | lbA5Thr1RsrpFreqOffset | Default(0) | |
| | LoadBalancingFunction | lbCeiling | Default (200) | |
| | | lbThreshold | Default (30) | |
| | | lbRateOffsetCoefficient | Default (320) | |
| | | lbRateOffsetLoadThreshold | 1500 | |
| | ReportConfigEUtraInterFreqLb | a5Threshold1Rsrp | Default (-44) | For the coverage layers, this parameter is recommended to be set to the value of EUtranCellFDD.qRxLevMin + 80 dB, that is, to -44 dBm. For the capacity layers, this parameter is recommended to be set to -124 dBm. |
| | | a5Threshold2Rsrp | -112 | Set to the value of EUtranCellFDD.qRxLevMin + 12 dB. |
| | | a5Threshold2Rsrq | -150 | |
| | | hysteresisA5 | Default (10) | |
| | UeMeasControl | sMeasure | Default (0) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| Limited-Uplink-Aware IFLB | EUtranCellFDD | estCellCapUsableFraction | Default (100) | If the layers have different coverage, it is possible that tuning is required. |
| | | cellDownlinkCaCapacity | N/A | This parameter is recommended to be set as the value of EUtranCellFDD.dlChannelBandwidth*1.7. The EUtranCellFDD.dlChannelBandwidth parameter is expressed in kHz and can be different for each carrier. |
| | EUtranCellTDD | estCellCapUsableFraction | Default (100) | If the layers have different coverage, it is possible that tuning is required. |
| Load-Based Access Barring | EUtranCellFDD | lbabDecr | Default (5) | |
| | | lbabIncr | Default (5) | |
| | | lbabPeriod | 30 | |
| | | lbabThreshRejectRateHigh | 100 | |
| | | lbabThreshRejectRateLow | Default (20) | |
| | | lbabThreshTimeHigh | Default (30) | |
| | | lbabThreshTimeLow | Default (30) | |
| | | lbabMinBarringFactor | Default (0) | |
| | | lbabMinBarringFactorPrio1 | Default (0) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | lbabMinBarringFactorPrio2 | Default (0) | |
| | EUtranCellTDD | lbabMinBarringFactor | Default (0) | |
| | | lbabMinBarringFactorPrio1 | Default (0) | |
| | | lbabMinBarringFactorPrio2 | Default (0) | |
| | | lbabThreshTimeHigh | Default (30) | |
| | | lbabThreshTimeLow | Default (30) | |
| | | lbabThreshRejectRateHigh | 100 | |
| | | lbabThreshRejectRateLow | Default (20) | |
| | | lbabDecr | Default (5) | |
| | | lbabPeriod | 30 | |
| | | lbabIncr | Default (5) | |
| Mobility Control at Poor Coverage | ReportConfigA5 | hysteresisA5RsrqOffset | Default (0) | |
| | | timeToTriggerA5Rsrq | Default (-1) | |
| | ReportConfigB2Cdma2000 | timeToTriggerB2Rsrq | Default (-1) | |
| | | hysteresisB2RsrqOffset | Default (0) | |
| | ReportConfigB2Geran | timeToTriggerB2Rsrq | Default (-1) | |
| | | hysteresisB2RsrqOffset | Default (0) | |
| | ReportConfigB2Utra | timeToTriggerB2Rsrq | Default (-1) | |
| | | hysteresisB2RsrqOffset | Default (0) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | ReportConfigEUtraIFBestCell | timeToTriggerA3Rsrq | Default (-1) | |
| | | a3RsrqOffset | Default (0) | |
| | | hysteresisA3RsrqOffset | Default (0) | |
| | ReportConfigSearch | a1a2SearchThresholdRsrp | -115 | Check which parameter has the highest value from the ReportConfigA5.a5Threshold1Rsrp, ReportConfigB2Geran.b2Threshold1Rsrp and ReportConfigB2Utran.b2Threshold1Rsrp parameters used for coverage-triggered IFHO or IRAT handover. Set to the highest value. |
| | | a1a2SearchThresholdRsrq | -195 | If RSRQ triggering is required, check which parameter has the highest value from the ReportConfigA5.a5Threshold1Rsrq, ReportConfigB2Geran.b2Threshold1Rsrq and ReportConfigB2Utran.b2Threshold1Rsrq parameters used for coverage-triggered IFHO or IRAT handover. |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | | | Set to the highest value. |
| | | hysteresisA1A2SearchRsrp | Default (20) | |
| | | hysteresisA1A2SearchRsrq | Default (15) | |
| | | hysteresisA2OuterSearchRsrp | Default (20) | |
| | | hysteresisA2OuterSearchRsrq | Default (15) | |
| | | timeToTriggerA1Search | Default (640) | |
| | | timeToTriggerA1SearchRsrq | Default (-1) | |
| | | timeToTriggerA2Search | Default (40) | |
| | | timeToTriggerA2SearchRsrq | Default (-1) | |
| | | timeToTriggerA2OutSearch | Default (40) | Set to the same value as ReportConfigSearch.timeToTriggerA2Search. This parameter has no effect when the recommended value is set, as outer search is not used. |
| | | timeToTriggerA2OutSearchRsrq | Default (-1) | |
| | | a2OuterSearchThrRsrpOffset | Default (0) | Set to -3 dB if outer search zone for RSRP is used. |
| | | a2OuterSearchThrRsrqOffset | Default (0) | |
| | | a2CriticalThresholdRsrp | -126 | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | a2CriticalThresholdRsrq | Default (-195) | |
| | | hysteresisA2CriticalRsrp | Default (10) | |
| | | hysteresisA2CriticalRsrq | Default (10) | |
| | | timeToTriggerA2Critical | 512 | |
| | | timeToTriggerA2CriticalRsrq | Default (-1) | |
| | | a2CriticalThrQci1RsrpOffset | Default (0) | Set to 3 dB for more stable and sustainable voice performance. |
| | | a2CriticalThrQci1RsrqOffset | Default (0) | Set to 3 dB for more stable and sustainable voice performance. |
| | | inhibitA2SearchConfig | 1 (INHIBIT_A2SEARCH_RSRQ) | |
| | UeMeasControl | searchEffortTime | Default (40) | It is recommended to configure a shorter value than the value of UeMeasControl.a5B2MobilityTimer. |
| | | ueMeasurementsActiveIF | Default (TRUE) | |
| | | ueMeasurementsActiveUTRAN | Default (TRUE) | |
| | | ueMeasurementsActiveGERAN | Default (TRUE) | |
| | | ueMeasurementsActiveCDMA2000 | Default (TRUE) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | bothA5RsrpRsrqCheck | Default (FALSE) | |
| | | inhibitB2RsrqConfig | Default (FALSE) | Set to TRUE to prevent RSRQ-triggered mobility to UTRAN. This parameter has no effect when the recommended value is set. |
| | | lowPrioMeasThresh | Default (0) | |
| | | excludeInterFreqAtCritical | Default (FALSE) | |
| | | checkA2SearchLevel | Default (TRUE) | |
| Multi-Target RRC Connection Re-establishment | ENodeBFunction | rrcConnReestActive | TRUE | |
| | | tS1HoCancelTimer | Default (3) | |
| | | tRelocOverallValue | Default (5) | |
| | | mtRreWithoutNeighborActive | Default (TRUE) | |
| | RlfProfile | n310 | Default (20) | |
| | | n311 | Default (1) | |
| | | t310 | Default (2000) | |
| | | t311 | Default (3000) | |
| | | t301 | Default (400) | |
| | Rrc | t301 | Default (400) | |
| | | t304 | Default (1000) | |
| | | t311 | Default (3000) | |
| PCI Conflict Reporting | ENodeBFunction | x2SetupTwoWayRelations | Default (TRUE) | |
| | | zzzTemporary39 | 1 | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| PDCCH Power Boost | EUtranCellFDD | pdcchPowerBoostMax | Default (0) | |
| Power Control | EUtranCellFDD | crsGain | Default (0) | For 4Tx, the value can be set to 3 dB to maintain the same cell boundaries as with legacy 2TX, with all other settings remaining the same.<br>This is not recommended for greenfield deployment as it increases CRS interference over legacy 2TX, which can negate any 4x2 gain over 2TX. This limitation is less applicable for 4x4 with its higher peak throughput.<br>See 4x2 Downlink MIMO and 4x4 Downlink MIMO for details. |
| | | pdschTypeBGain | Default (0) | If the EUtranCellFDD.crsGain parameter for 4Tx is changed to a value greater than 0 dB, this parameter must be changed to 1. |
| | | alpha | Default (10) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| Prioritization of VoLTE in Access Barring | EUtranCellFDD | acBarringSkipForMmtelVideo | Default (FALSE) | |
| | | acBarringSkipForMmtelVoice | TRUE | |
| | | acBarringSkipForSms | TRUE | |
| Progressive Access Barring | AcBarringPresence | acBarringForMoDataPresence | AUTO | |
| | | acBarringForMoSignPresence | AUTO | |
| | | acBarringForCSFBPresence | Default (OFF) | |
| | | acBarringForMmtelVoicePresence | AUTO | |
| | | acBarringForMmtelVideoPresence | AUTO | |
| | | acBarringPriorityMoData | Default (PRIORITY0) | |
| | | acBarringPriorityMoSignaling | Default (PRIORITY0) | |
| | | acBarringPriorityCSFB | Default (PRIORITY0) | |
| | | acBarringPriorityMmtelVoice | PRIORITY1 | |
| | | acBarringPriorityMmtelVideo | PRIORITY1 | |
| Radio Bearer Service | DataRadioBearer | dlMaxRetxThreshold | Default (8) | |
| | | ulMaxRetxThreshold | Default (8) | |
| | | tPollRetransmitDl | 160 | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | tPollRetransmitUl | 160 | |
| | Rcs | tInactivityTimer | 10 | |
| | SignalingRadioBearer | dlMaxRetxThreshold | Default (8) | |
| | | ulMaxRetxThreshold | Default (8) | |
| | | tPollRetransmitDl | 160 | |
| | | tPollRetransmitUl | 160 | |
| Random Access | EUtranCellFDD | cellRange | Default (15) | |
| | | preambleInitialReceivedTargetPower | Default (-110) | |
| | | cfraEnable | TRUE | |
| Release Inactive UE at High Load Handover | ENodeBFunction | releaseInactiveUesInactTime | Default (1) | |
| | | releaseInactiveUesMpLoadLevel | Default (VERY_HIGH_LOAD) | |
| Scheduler | EUtranCellFDD | pdcchCfiMode | 5 (CFI_AUTO_MAXIMUM_3) | |
| | | pZeroNominalPucch | Default (-117) | For 4RX, the value can be reduced by 3 dB. |
| Service Specific HARQ | EUtranCellFDD | tReorderingAutoConfiguration | TRUE | |
| | | harqOffsetDl | Default (3) | |
| | | harqOffsetUl | Default (3) | |
| | | enableServiceSpecificHARQ | TRUE | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | EUtranCellTDD | tReorderingAutoConfiguration | TRUE | |
| | | harqOffsetDl | Default (3) | |
| | | harqOffsetUl | Default (3) | |
| | | enableServiceSpecificHARQ | TRUE | |
| Supplemental Downlink for Carrier Aggregation | EUtranCellFDD | isDlOnly | N/A | Requires network-specific configuration. Set to FALSE, except for DL-only carriers. |
| | | cellBarred | N/A | Requires network-specific configuration. Set to NOT_BARRED, except for DL-only carriers. |
| UE Level Oscillating Handover Minimization | ReportConfigEUtraBestCell | a3offset | Default (30) | |
| UE Throughput-Aware IFLB | EUtranCellFDD | lbTpNonQualFraction | Default (35) | |
| | | lbTpRankThreshMin | Default (-20) | |
| | LoadBalancingFunction | lbUeEvaluationTimer | Default (90) | |
| Uplink Carrier Aggregation | CarrierAggregationFunction | sCellActDeactUlDataThresh | Default (100) | |
| | | sCellActDeactUlDataThreshHyst | Default (90) | |
| | EUtranCellFDD | networkSignallingValueCa | Default (CA_NS_31) | |
| | | ulSCellPriority | Default (5) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | ReportConfigSCellA1A2 | a1a2ThresholdRsrpBidir | N/A | It is recommended to activate the Uplink Carrier Aggregation feature. If it is activated, the bandwith-based formula in Uplink Carrier Aggregation should be used, that is, the value of ReportConfigSCellA1A2.a1a2ThresholdRsrp + 9 dB. The 9 dB measurement is based on 3 MHz Pcell and 20 MHz SCell. |
| | | hysteresisA1A2RsrpBidirectional | Default (20) | |
| Uplink Coordinated Multi-Point Reception | SectorCarrier | ulForcedTimingAdvanceCommand | Default (0) | |
| Uplink Scheduling for Out-of-Coverage UEs | EUtranCellFDD | outOfCoverageSrTimerPeriodicity | Default (320) | |
| | | outOfCoverageThreshold | Default (20) | |
| | | ulSchedCtrlForOocUesEnabled | Default (TRUE) | |
| | EUtranCellTDD | outOfCoverageSrTimerPeriodicity | Default (320) | |
| | | outOfCoverageThreshold | Default (20) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | | ulSchedCtrlForOocUesEnabled | Default (TRUE) | |
| Uplink-Triggered Inter-Frequency Mobility | ENodeBFunction | enabledUlTrigMeas | Default (FALSE) | |
| | EUtranCellFDD | ulTrigActive | Default (TRUE) | |
| | EUtranCellTDD | ulTrigActive | Default (TRUE) | |
| | ExternalENodeBFunction | ulTrigHoSupport | Default (NO_ULTRIG_HO) | |
| | InterFreqMeasType | interFreqMeasTypeUlSinr | Default (EVENT_A5) | |
| | ReportConfigA5UlTrig | a5Threshold2Rsrp | -95 | |
| | | hysteresisA5 | 30 | |
| | | reportIntervalA5 | Default (MS_2048) | |
| | | timeToTriggerA5 | Default (640) | |
| | ReportConfigB2GeranUlTrig | b2Threshold2Geran | -90 | |
| | | hysteresisB2 | 20 | |
| | | reportIntervalB2 | Default (MS_2048) | |
| | | timeToTriggerB2 | 320 | |
| | ReportConfigB2UtraUlTrig | b2Threshold2EcNoUtra | Default (-240) | |
| | | b2Threshold2RscpUtra | Default (-115) | |
| | | hysteresisB2 | Default (10) | |
| | | reportIntervalB2 | Default (MS_2048) | |
| | | timeToTriggerB2 | Default (640) | |

| Feature Name | MO Class | Parameter | Recommended Value (1) | Additional Information |
|---|---|---|---|---|
| | ReportConfigSearch | a1a2UlSearchThreshold | 30 | |
| | | hysteresisA1A2UlSearch | Default (20) | |
| | | timeToTriggerA1UlSearch | 320 | |
| | | timeToTriggerA2UlSearch | 320 | |
| | | a2UlCriticalThreshold | -90 | |
| | | hysteresisA2UlCritical | Default (20) | |
| | | timeToTriggerA2UlCritical | 320 | |
| | UeMeasControl | targetA2UlSearchOffset | Default (20) | |
| | | ulSinrOffset | 40 | |
| Variable SR and CQI Periodicity | EUtranCellFDD | commonSrPeriodicity | Default (10) | |
| | EUtranCellFDD | srDetectHighThres | Default (70) | |
| | | srProcessingLevel | 1 (TWO_SR_FOR_LOW_THRESHOLD_SR_PROCESSING) | |

(1) If there is no recommended value indicated, the parameter requires network-specific configuration.

## 3.1 Recommended Parameter Settings for Inter-Frequency Load Balancing and Idle Mode Mobility in a Multi-Layer Network

This section contains the recommended parameter settings for a multi-layer network, sorted by LTE frequency relation. The recommended parameters in Table 2 cover the basic scenario where the network has a single coverage layer. The recommended settings in this section cover the following multi-layer scenarios:

— the network has more than one coverage layer

— the network has one or more capacity layers

For more information, see *Mobility Configurations* in the *LTE Mobility and Traffic Management Guideline*.

The recommended settings in this section are to be used together with those included in Table 2. To avoid overwriting the multi-layer configuration with the single layer configuration, the recommended settings in this section must be implemented after the implementation of values in Table 2.

**Note:** `EUtranCellFDD.cellSubscriptionCapacity` and `EUtranCellFDD.threshServingLow` at the coverage and capacity layers use the recommended settings in Table 2.

### Recommended Settings by Frequency Relation at the Coverage Layer

The recommended settings sorted by frequency relations at the coverage layer are listed in Table 3. An equal priority mobility configuration is recommended towards the same and other coverage layers to allow UEs to select the strongest frequency. A priority carrier mobility configuration is recommended towards the capacity layers to push UEs to the frequencies with higher capacity.

Table 3 Recommended Settings by Frequency Relation at the Coverage Layer

| Attribute | Coverage Layer to the Same Coverage Layer | Coverage Layer to Capacity Layers | Coverage Layer to a Different Coverage Layer |
|---|---|---|---|
| `EUtranFreqRelation.caTriggeredRedirectionActive` | `Default (TRUE)` | `Default (TRUE)` | `Default (TRUE)` |
| `EUtranFreqRelation.cellReselectionPriority` | `4` | `6` | `4` |
| `EUtranFreqRelation.lbA5Thr1RsrpFreqOffset` | `Default (0)` | `Default (0)` | `Default (0)` |
| `EUtranFreqRelation.threshXHigh` | `Default (4)` | `8` | `Default (4)` |
| `EUtranFreqRelation.threshXLow` | `Default (0)` | `4` | `Default (0)` |

### Recommended Settings by Frequency Relation at the Capacity Layer

The recommended settings sorted by frequency relation at the capacity layers are listed in Table 4. A priority carrier mobility configuration is recommended towards the coverage layers to push UEs to the frequencies with higher capacity. A sticky carrier mobility configuration is recommended towards the other capacity layers to have a stable traffic distribution.

Table 4 Recommended Settings by Frequency Relation at the Capacity Layer

| Attribute | Capacity Layer to Coverage Layers | Capacity Layer to the Same Capacity Layer | Capacity Layer to Another Capacity Layer |
|---|---|---|---|
| EUtranFreqRelation.caTriggeredRedirectionActive | FALSE | TRUE | TRUE |
| EUtranFreqRelation.cellReselectionPriority | 4 | 6 | 5 |
| EUtranFreqRelation.lbA5Thr1RsrpFreqOffset | 8 | 80 | 80 |
| EUtranFreqRelation.threshXHigh | Default (4) | 8 | 8 |
| EUtranFreqRelation.threshXLow | Default (0) | 4 | 4 |

# 4 Recommendations for Basic AAS for TDD

## 4.1 Basic AAS for TDD Dependencies to Other Features

The SRS system functions needs to be activated and the radio should be AAS radio, for example AIR6468.

The following features cannot be enabled together with Basic AAS for TDD:

— Uplink Frequency-Selective Scheduling

— Uplink Interference Reporting

— UpPTS Interference Reporting

— Multi-Operator RAN

— UE-Assisted Adaptive DRX

— Uplink Coordinated Multi-Point Reception

— Multi-Clustered PUSCH

— Transmit Data Cloning

— UL Frequency Selective Scheduling

— 256QAM

— TM9

— LAA

— ERAN

Basic AAS for TDD is a basic feature on an eNodeB with 64TRX TDD Radio. The following legacy licenses have no effect on the 64TRX TDD configured cells and are suggested to be disabled:

— Dual-Antenna Downlink Performance Package

— Single Layer Beamforming Performance Package

— Dual Layer Beamforming Performance Package

— Octal Antenna Uplink Performance Package

## 4.2 Recommended Parameter Settings for Downlink Common Control Channel Beamforming

### Recommended Parameter Settings for Downlink Common Control Channel Beamforming

After the cell shape is configured, all the downlink common control channels broadcast use the desired beam pattern. After the shape of the cell is configured with macro, there is another parameter digitalTilt to set the tilt of the AAS.

Table 5 Recommended Parameter for Common Control Channel Beamforming

| MO | Parameter | Description | Range | Recommended Setting |
|---|---|---|---|---|
| SectorCarrier | sectorShape | Shape of sector carrier. | MACRO | MACRO |
| | | MACRO<br>Horizontal HPBW: 65°<br>Vertical HPBW: 8° | | |
| SectorCarrier | digitalTilt | Digitally-controlled tilt through beamforming. Positive value gives downwards tilt and negative value give upwards tilt. | {-80..+80}<br>Unit: 0.1° | 30 |

## 4.3 Macro Deployment with Basic AAS for TDD

Table 6 Recommended Parameter for Basic AAS for TDD with Cell Shape Macro

| MO | Parameter | Description | Range | Recommended Setting |
|---|---|---|---|---|
| SectorCarrier | noOfRxAntennas | Has be set to 0 for the AAS radio. | {0, 1, 2, 4, 8} | 0 |

| MO | Parameter | Description | Range | Recommended Setting |
|---|---|---|---|---|
| SectorCarrier | noOfTxAntennas | Has be set to 0 for the AAS radio. | {0, 1, 2, 4, 8} | 0 |
| SectorCarrier | sectorFunctionRef | Reference to an instance of SectorEquipmentFunction MO. | Example: NodeSupport=1,SectorEquipmentFunction=AAS-1 | |
| SectorEquipmentFunction | rfBranchRef | Reference to an instance of Transceiver MO. | Example: Equipment=1,FieldReplaceableUnit=AAS-1,Transceiver=1 | |
| Transceiver | | This MO models the UL and DL antenna streams in a radio with an embedded antenna system. | | |
| EUtranCellTDD | tm7ModeSwitchingEnabled | Enables dynamic switching between TM7 and TM3. | | False |
| EUtranCellTDD | tm8ModeSwitchingEnabled | Enables dynamic switching between TM7 and TM3. | | True |
| EUtranCellTDD | ulSrsEnable | Controls whether sounding shall be enabled or not for the functionality that supports sounding. | | True |
| EUtranCellTDD | transmissionMode | Defines the Transmission Mode, for example | | TRANSMISSION_MODE_3 |

| MO | Parameter | Description | Range | Recommended Setting |
|---|---|---|---|---|
| | | Transmit Diversity and Closed-Loop Spatial Multiplexing, that is used for the UEs that are connected to the cell.<br>See 3GPP TS 36.213 table 7.1-5 for a definition of Transmission Mode. | | |
| EUtranCellTDD | pdcchCfiMode | Controls the CFI (Control Format Indicator) used for the control region, cfiMode maps to CFI as described under enumerations. For DL BW of 1400 kHz, values of CFI = 1, 2 and 3 map to 2, 3, and 4 control region symbols respectively. Other BW, CFI maps directly to number of control region symbols. | | CFI_AUTO_MAXIMUM_3 |
| EUtranCellTDD | specialSubframePattern | The special subframe pattern configuration for Downlink Part of Time | | 7 |

| MO | Parameter | Description | Range | Recommended Setting |
|---|---|---|---|---|
| | | Slot (DwPTS), Guard Period (GP), and Uplink Part of Time Slot (UpPTS). All TDD cells in the same frequency band, or specific frequency band combinations where one frequency band overlaps with another (e.g. Band 38 and Band 41) must have the same special subframe pattern configuration. | | |
| EUtranCellTDD | subframeAssignment | The assignment of uplink and downlink subframes for the TDD frame structure (called UL/DL configuration in 3GPP TS 36.211). All TDD cells in the same DU or Baseband, or same frequency band, or specific frequency band combinations where one frequency | | 2 |

| MO | Parameter | Description | Range | Recommended Setting |
|---|---|---|---|---|
| | | band overlaps with another (e.g. Band 38 and Band 41) must have the same uplink and downlink subframe assignment. | | |

# 5 Recommendations for Multi-User MIMO

## 5.1 Multi-User MIMO Dependencies to Other Features

The SRS system functions and Basic AAS for TDD feature need to be activated and the radio should be AAS radio, for example AIR6468.

The following features are not supported together with Multi-User MIMO:

— Downlink CA

— Radio and Resource Partitioning

The Uplink Multiuser MIMO feature, CXC4011943, has to be deactivated, this license is not intended for use with the AIR6468, it is the legacy license for 8rx 2-layer UL MU-MIMO.

The following features will change their behavior when MU-MIMO is enabled:

— FSS-DL: Only the UE scheduled in the bottom will benefit from FSS.

— TM3-TM8 Switching: UEs with good SINR will not be switched to TM3 but remain as TM8 to be considered as MU candidates.

## 5.2 Macro Deployment with Multi-User MIMO

Table 7 Recommended Parameter Settings for Multi-User MIMO with Cell Shape Macro

| MO | Parameter | Description | Range | Recommended Setting |
|---|---|---|---|---|
| EUtranCellTDD | dlMaxMuMimoLayers | Enables downlink multiuser MIMO at cell level. The value corresponds to the maximum number of co-scheduled layers that is allowed. Only single user MIMO is | {0, 1, 2, 4, 8, 12, 16} | 8 |

| MO | Parameter | Description | Range | Recommended Setting |
|---|---|---|---|---|
| | | allowed when the value zero is given. | | |
| EUtranCellTDD | ulMaxMuMimoLayers | Enables uplink multiuser MIMO at cell level. The value corresponds to the maximum number of co-scheduled layers that is allowed. Only single user MIMO is allowed when the value is zero. | | 2 |
| EUtranCellTDD | ulSrsEnable | Controls whether sounding shall be enabled or not for the functionality that supports sounding. | | True |
| EUtranCellTDD | transmissionMode | Defines the Transmission Mode (e.g. Transmit Diversity and Closed-Loop Spatial Multiplexing) that shall be used for the UEs that are connected to the cell.<br>See 3GPP TS 36.213 table 7.1-5 for a definition of | | TRANSMISSION_MODE_8 |

| MO | Parameter | Description | Range | Recommended Setting |
|---|---|---|---|---|
| | | Transmission Mode. | | |
| SectorCarrier | configuredMaxTxPower | Maximum output power to be used in a SectorCarrier. The output power is evenly distributed over antenna connectors used for TX transmission allocated for the SectorCarrier. | Tune based on coverage requirement. | 40000 (1) |
| EUtranCellTDD | pZeroNominalPusch | The nominal component of the UE transmit power for Physical Uplink Shared Channel (PUSCH). | Tune based on RF conditions. | -87 (2) |
| EUtranCellTDD | pZeroNominalPucch | The nominal component of the UE transmit power for Physical Uplink Control Channel (PUCCH). | Tune based on RF conditions. | -96 (3) |

(1) The recommended setting for configuredMaxTxPower depends on the OutputPower license for AAS

(2) The recommended setting for pZeroNominalPusch (-87) is based on the configuredMaxTxPower set as 40000. Depending on the RF condition of the UE, this value needs be tuned.

(3) The recommended setting for pZeroNominalPucch (-96) is basing on the configuredMaxTxPower set as 40000. Depending on the RF condition of the UE,this value need be tuned slightly