3GPP TR 36.903 V18.1.0 (2023-12)

Technical Specification

3rd Generation Partnership Project;

Technical Specification Group Radio Access Network;

Evolved Universal Terrestrial Radio Access (E-UTRA) and

Evolved Universal Terrestrial Radio Access Network (E-UTRAN);

Derivation of test tolerances for Radio Resource Management (RRM) conformance tests

(Release 18)

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# Foreword

This Technical Report has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

# Introduction

# 1 Scope

The present document specifies a general method used to derive Test Tolerances for Radio Resource Management tests, and establishes a system for relating the Test Tolerances to the measurement uncertainties of the Test System.

The test cases which have been analysed to determine Test Tolerances are included as .zip files.

The present document is applicable from Release 8 up to the release indicated on the front page of the present Terminal conformance specifications.

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document in the same Release as the present document unless the context in which the reference is made suggests a different Release is relevant (information on the applicable release in a particular context can be found in e.g. test case title, description or applicability, message description or content).

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[3] 3GPP TS 34.121-1: "Terminal conformance specification, Radio transmission and reception (FDD), Release 8".

[4] 3GPP TS 36.521-1: "User Equipment (UE) conformance specification, Radio transmission and reception Part 1: conformance testing, Release 8".

[5] 3GPP TS 36.521-3: "User Equipment (UE) conformance specification, Radio transmission and reception Part 3: Radio Resource Management (RRM) conformance testing, Release 8".

[6] 3GPP TS 36.141: "E-UTRA Base Station (BS) conformance testing, Release 8"

[7] 3GPP TS 36.211: "E-UTRA Physical Channels and Modulation, Release 8"

[8] 3GPP TS 37.571-1: “Universal Terrestrial Radio Access (UTRA) and Evolved UTRA (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification for UE positioning; Part 1: Terminal conformance”.

# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

Other definitions used in the present document are listed in 3GPP TS 36.521-3 [5] or 3GPP TS 36.141 [6].

## 3.2 Symbols

Symbols used in the present document are listed in 3GPP TR 21.905 [1], 3GPP TS 36.521-3 [5] or 3GPP TS 36.141 [6].

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

Other abbreviations used in the present document are listed in 3GPP TS 36.521-3 [5] or 3GPP TS 36.141 [6].

# 4 General Principles

## 4.1 Principle of Superposition

For multi-cell tests there are several cells each generating various Physical channels. In general cells are combined along with AWGN, so the signal and noise seen by the UE may be determined by more than one cell.

Since several cells may contribute towards the overall power applied to the UE, a number of test system uncertainties affect the signal and noise seen by the UE. The aim of the superposition method is to vary each controllable parameter of the test system separately, and to establish its effect on the critical parameters as seen by the UE receiver. The superposition principle then allows the effect of each test system uncertainty to be added, to calculate the overall effect.

The contributing test system uncertainties shall form a minimum set for the superposition principle to be applicable.

## 4.2 Sensitivity analysis

A change in any one channel level or channel ratio generated at source does not necessarily have a 1:1 effect at the UE. The effect of each controllable parameter of the test system on the critical parameters as seen by the UE receiver shall therefore be established. As a consequence of the sensitivity scaling factors not necessarily being unity, the test system uncertainties cannot be directly applied as test tolerances to the critical parameters as seen by the UE.

EXAMPLE: In many of the tests described, the Ês / Iot is one of the critical parameters at the UE. Scaling factors are used to model the sensitivity of the Ês / Iot to each test system uncertainty. When the scaling factors have been determined, the superposition principle then allows the effect of each test system uncertainty to be added, to give the overall variability in the critical parameters as seen at the UE.

There are often constraints on several parameters at the UE. The aim of the sensitivity analysis, together with the acceptable test system uncertainties, is to ensure that the variability in each of these parameters is controlled within the limits necessary for the specification to apply. The test has then been conducted under valid conditions.

## 4.3 Statistical combination of uncertainties

The acceptable uncertainties of the test system are specified as the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment, in accordance with 3GPP TS 36.521-3 [5] clause F.1. In the RRM tests covered by the present document, the Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, with an uncertainty not exceeding the specified values.

The method given in the present document combines the acceptable uncertainties of the test system, to give the overall variability in the critical parameters as seen at the UE. Since the process does not add any new uncertainties, the method of combination should be chosen to maintain the same tolerance interval for the combined uncertainty as is already specified for the contributing test system uncertainties.

The basic principle for combining uncertainties is in accordance with ETR 273-1-2 [2]. In summary, the process requires 3 steps:

a) Express the value of each contributing uncertainty as a one standard deviation figure, from knowledge of its numeric value and its distribution.

b) Combine all the one standard deviation figures as root-sum-squares, to give the one standard deviation value for the combined uncertainty.

c) Expand the combined uncertainty by a coverage factor, according to the tolerance interval required.

Provided that the contributing uncertainties have already been obtained using this method, using a coverage factor of 2, further stages of combination can be achieved by performing step b) alone, since steps a) and c) simply divide by 2 and multiply by 2 respectively.

The root-sum-squares method is therefore used to maintain the same tolerance interval for the combined uncertainty as is already specified for the contributing test system uncertainties. In some cases where correlation between contributing uncertainties has an adverse effect, the method is modified in accordance with clause 4.4.5 of the present document.

In each analysis, the uncertainties are assumed to be uncorrelated, and are added result root-sum-square unless otherwise stated.

The combination of uncertainties is performed using dB values for simplicity. It has been shown that using dB uncertainty values gives a slightly worse combined uncertainty result than using linear values for the uncertainties. The analysis method therefore errs on the safe side.

## 4.4 Correlation between uncertainties

The statistical (root-sum-square) addition of uncertainties is based on the assumption that the uncertainties are independent of each other. For realisable test systems, the uncertainties may not be fully independent. The validity of the method used to add uncertainties depends on both the type of correlation and on the way in which the uncertainties affect the test requirements.

Clauses 4.4.1 to 4.4.3 give examples to illustrate different types of correlation.

Clauses 4.4.4 to 4.4.7 show how the scenarios applicable to multi-cell RRM tests are treated.

### 4.4.1 Uncorrelated uncertainties

The graph shows an example of two test system uncertainties, A and B, which affect a test requirement. Each sample from a population of test systems has a specific value of error in parameter A, and a specific value of error in parameter B. Each dot on the graph represents a sample from a population of test systems, and is plotted according to its error values for parameters A and B.



Figure 4.4.1.1: Example of two test system uncertainties affecting a test requirement

It can be seen that a positive value of error in parameter A, for example, is equally likely to occur with either a positive or a negative value of error in parameter B. This is expected when two parameters are uncorrelated, such as two uncertainties which arise from different and unrelated parts of the test system.

### 4.4.2 Positively correlated uncertainties

The graph shows an example of two test system uncertainties, A and B, which affect a test requirement. Each sample from a population of test systems has a specific value of error in parameter A, and a specific value of error in parameter B. Each dot on the graph represents a sample from a population of test systems, and is plotted according to its error values for parameters A and B.



Figure 4.4.2.1: Example of two test system uncertainties affecting a test requirement

It can be seen that a positive value of error in parameter A, for example, is more likely to occur with a positive value of error in parameter B and less likely to occur with a negative value of error in parameter B. This can occur when the two uncertainties arise from similar parts of the test system, or when one component of the uncertainty affects both parameters in a similar way.

In an extreme case, if the error in parameter A and the error in parameter B came from the same sources of uncertainty, and no others, the dots would lie on a straight line of slope +1.

### 4.4.3 Negatively correlated uncertainties

The graph shows an example of two test system uncertainties, A and B, which affect a test condition. Each sample from a population of test systems has a specific value of error in parameter A, and a specific value of error in parameter B. Each dot on the graph represents a sample from a population of test systems, and is plotted according to its error values for parameters A and B.



Figure 4.4.3.1: Example of two test system uncertainties affecting a test condition

It can be seen that a positive value of error in parameter A, for example, is more likely to occur with a negative value of error in parameter B and less likely to occur with a positive value of error in parameter B. This effect can theoretically occur, and is included for completeness, but is unlikely in a practical test system.

### 4.4.4 Treatment of uncorrelated uncertainties

If two uncertainties are uncorrelated, they are added statistically in the analysis. Provided that each uncertainty is already expressed as an expanded uncertainty with coverage factor 2, the contributing uncertainties are added root-sum-squares to give a combined uncertainty which also has coverage factor 2, and the 95% tolerance interval is maintained.

This is the default assumption.

### 4.4.5 Treatment of positively correlated uncertainties with adverse effect

If two test system uncertainties are positively correlated, and if they affect the value of a critical parameter in the same direction, the combined effect may be greater than predicted by adding the contributing uncertainties root-sum-squares.

In this scenario the two uncertainties are added worst-case in the analysis. Provided that each uncertainty is already expressed as an expanded uncertainty with coverage factor 2, the combined uncertainty will cover a 95% tolerance interval even when the two contributing uncertainties are fully correlated. If the two contributing uncertainties are less than fully correlated, the combined uncertainty will cover a tolerance interval greater than 95%.

### 4.4.6 Treatment of positively correlated uncertainties with beneficial effect

If two test system uncertainties are positively correlated, and if they affect the value of a critical parameter in opposite directions, the combined effect will be less than predicted by adding the contributing uncertainties root-sum-squares.

In this scenario the two uncertainties are added statistically in the analysis. Provided that each uncertainty is already expressed as an expanded uncertainty with coverage factor 2, the combined uncertainty will cover a 95% tolerance interval when the two contributing uncertainties are uncorrelated. If the two contributing uncertainties are positively correlated, the combined uncertainty will cover a tolerance interval greater than 95%.

### 4.4.7 Treatment of negatively correlated uncertainties

Negatively correlated uncertainties are excluded by the assumptions. This has been agreed as an acceptable restriction on practical test systems, as the mechanisms which produce correlation generally arise from similarities between two parts of the test system, and therefore produce positive correlation.

# 5 Grouping of test cases defined in TS 36.521-3

The Test cases are grouped from the viewpoint of efficiently defining the uncertainties and test tolerances. Tests in the same group generally have the same type of uncertainties, given in more detail in Annex B.

A group of test cases having significant differences from those already listed, in respect of uncertainties and test tolerance analysis, will require a new row in the Table.

Table 5-1: Test case groups for test tolerance analysis

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Group | E-UTRA FDD | E-UTRA TDD | E-UTRA FDD/TDD | E-UTRA FDD Inter-RAT | E-UTRA TDD Inter-RAT | Comments |
| A | 4.2.1  5.1.1  6.1.1  8.1.1  8.1.2  8.1.3 | 4.2.2  5.1.2  6.1.3  8.2.1  8.2.2 |  |  |  | Two cell LTE intra  2 or 3 time periods  Various number of sub-tests  Some tests have fading |
| B | 4.2.3  5.1.3  5.1.5  6.1.2  8.3.1  8.3.2  8.3.3  8.11.1 | 4.2.6  5.1.4  5.1.6  6.1.4  8.4.1  8.4.2  8.4.3  8.11.2 |  |  |  | Two or three cell LTE inter  2 or 3 time periods  Some tests have fading |
| C | 9.1.1.1  9.1.1.2  9.2.1.1 | 9.1.2.1  9.1.2.2  9.2.2.1 |  |  |  | Two cell LTE intra  3 sub-tests  RSRP, RSRQ |
| D | 9.1.3.1  9.1.3.2  9.2.3.1  9.2.3.2 | 9.1.4.1  9.1.4.2  9.2.4.1  9.2.4.2 |  |  |  | Two cell LTE inter  2 or 3 sub-tests  RSRP, RSRQ |
| E | 6.2.1  6.2.2 | 6.2.3  6.2.4 |  |  |  | One cell LTE  1 time period  Various number of sub-tests  Level, timing |
| F | 7.1.1  7.2.1 | 7.1.2  7.2.2 |  |  |  | One cell LTE  Various number of time periods  Various number of sub-tests  Timing only |
| G | 7.3.1  7.3.2  7.3.5  7.3.6 | 7.3.3  7.3.4  7.3.7  7.3.8 |  |  |  | One cell LTE  Various number of time periods  Various number of sub-tests |
| H |  |  |  | 4.3.1.1  4.3.1.2  4.3.1.3  4.3.2  5.2.1  5.2.5  5.2.7  8.5.1  8.5.2  8.5.3  8.9.1  9.3.1  9.4.1 | 4.3.4.2  4.3.4.1  4.3.4.3  4.3.3  5.2.2  5.2.4  5.2.10  8.6.1  8.7.3  8.7.2  9.3.2  9.4.2 | One cell LTE or two cell LTE inter frequency  one UTRA cell  Various number of time periods  Various number of sub-tests  Some tests have fading |
| I |  |  |  | 4.4.1  5.2.3  5.2.8  8.8.1  8.8.2 | 4.4.2  5.2.6  5.2.9  8.10.1  8.10.2 | One cell LTE or two cell LTE inter frequency  one GSM cell  2 or 3 time periods  No fading |
| J | 8.3.7  8.3.8  8.3.9 | 8.4.7 |  |  |  | Four cells LTE inter  2 time periods  Some tests have fading |

# 5A Grouping of test cases defined in TS 37.571-1

The Test cases are grouped from the viewpoint of efficiently defining the uncertainties and test tolerances. Tests in the same group generally have the same type of uncertainties, given in more detail in Annex C.

A group of test cases having significant differences from those already listed, in respect of uncertainties and test tolerance analysis, will require a new row in the Table.

Table 5 A-1: Test case groups for test tolerance analysis for ECID and OTDOA positioning test cases

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Group | E-UTRA FDD | E-UTRA TDD | E-UTRA FDD/TDD | E-UTRA FDD Inter-RAT | E-UTRA TDD Inter-RAT | Comments |
| [FFS] | 8.1.1 | 8.1.2 |  |  |  | One cell LTE  Various number of time periods  Various number of sub-tests  Timing only |

# 6 Determination of Test System Uncertainties

## 6.1 General

The uncertainty of a test system when making measurements reduces the ability of the test system to distinguish between conformant and non-conformant test subjects. The aim is therefore to minimise uncertainty, subject to a number of practical constraints:

a) A vendor’s test system should be reproducible in the required quantities.

b) A choice of test systems should be available from different vendors.

c) The uncertainties should allow reasonable freedom of test system implementation

d) The test system can be run automatically

e) The test system may include several radio access technologies

f) It should be possible to maintain calibration of deployed test systems over reasonable spans of time and environmental conditions

In practice therefore within 3GPP the acceptable uncertainty of the test system is the smallest value that can be agreed between the test system vendors represented, consistent with the above constraints. The uncertainty will not therefore be as low as could be achieved, for example, by a national standards laboratory.

## 6.2 Uncertainty figures

The actual figures for the acceptable uncertainty of a test system are defined in Annex F of 36.521-3 [5] and Annex C of 37.571-1 [8]. To avoid maintenance issues with figures in separate specifications, the uncertainties are not formally defined within the present document, but informative guidelines are provided in Annex B and Annex C of the present document.

In many cases the default uncertainties in Annex B of the present document are the same as used for UTRA in TS 34.121-1 [3] to allow similar calibration methods to be used. Where E-UTRA has different requirements, or parameters are specified in a different way, the uncertainties may differ.

In some cases the default uncertainties in Annex B of the present document are the same as used for equivalent base station test specifications, which have sometimes been agreed earlier than the UE test specifications.

# 7 Determination of Test Tolerances

## 7.1 General

The general principles given in the present document are applied to each test case, according to the applicable uncertainties and requirements to obtain a correct verdict.

The test cases which have been analysed to determine Test Tolerances are included the present document as .zip files. The name of the zip file indicates the test cases covered.

Annex A gives the rationale for their inclusion.

Annex A: Derivation documents

The documents (and spreadsheets where applicable) used to derive the test tolerances for each test case are included in the present document as zip files.

The aim is to provide a reference to completed test cases, so that test tolerances for similar test cases can be derived on a common basis. The information on test case grouping in section 5 can be used to identify similarities.

Annex B: Default uncertainties for test cases defined in TS 36.521-3

This annex contains suggested uncertainties, grouped according to types of test case. The aim is to provide a consistent set of uncertainties across similar test cases to allow efficient implementation.

This Annex is informative only, as the acceptable uncertainties of a test system are defined in Annex F of 36.521-3 [5].

# B.0 AWGN and Fading

The following uncertainties and parameters are suggested for E-UTRA AWGN and Fading:

Table B.0-1: Parameters for E-UTRA AWGN and Fading

|  |  |
| --- | --- |
| AWGN Bandwidth | ≥ 1.08MHz, 2.7MHz, 4.5MHz, 9MHz, 13.5MHz, 18MHz;  NRB x 180kHz according to BWConfig |
| AWGN absolute power uncertainty | Test-specific |
| AWGN flatness and signal flatness, max deviation for any Resource Block, relative to average over BWConfig | ±2 dB |
| AWGN peak to average ratio | ≥10 dB @0.001% |
| Signal-to noise ratio uncertainty | Test-specific |
| Fading profile power uncertainty  - For 1 Tx antenna:  - For 2 Tx antenna | ±0.5 dB  ±0.7 dB |
| Fading profile delay uncertainty, relative to frame timing | ±5 ns (excludes absolute errors related to baseband timing) |

Values are chosen to be the same as the performance tests in section 8 of TS 36.521-1 [4].

# B.1 Group A: E-UTRA Intra-frequency mobility

The following uncertainties and parameters are suggested for E-UTRA Intra-frequency mobility tests:

Table B.1-1: Maximum Test System Uncertainty for E-UTRA Intra-frequency mobility

|  |  |
| --- | --- |
| Noc averaged over BWConfig | ±1.0 dB |
| Ês1 / Noc averaged over BWConfig | ±0.3 dB |
| Ês2 / Noc averaged over BWConfig | ±0.3 dB |
| Note:  Ês1 / Noc is the ratio of cell 1 signal / AWGN  Ês2 / Noc is the ratio of cell 2 signal / AWGN  For tests that use fading, the fading uncertainties are given in Table B.0.1 | |

Values are chosen to be the same as equivalent parameters for UTRA in TS 34.121-1 [3].

This choice forms a minimum set, so the superposition principle can be applied.

# B.2 Group B: E-UTRA Inter-frequency mobility

The following uncertainties and parameters are suggested for E-UTRA Inter-frequency mobility tests:

Table B.2-1: Maximum Test System Uncertainty for E-UTRA Inter-frequency mobility

|  |  |
| --- | --- |
| Noc1 averaged over BWConfig | ±0.7 dB |
| Ês1 / Noc1 averaged over BWConfig | ±0.3 dB |
| Noc2 averaged over BWConfig | ±0.7 dB |
| Ês2 / Noc2 averaged over BWConfig | ±0.3 dB |
| Noc3 averaged over BWConfig | ±0.7 dB |
| Ês3 / Noc3 averaged over BWConfig | ±0.3 dB |
| Note:  Noc1 is the AWGN on cell 1 frequency  Ês1 / Noc1 is the ratio of cell 1 signal / AWGN  Noc2 is the AWGN on cell 2 frequency  Ês2 / Noc2 is the ratio of cell 2 signal / AWGN  Noc3 is the AWGN on cell 3 frequency if cell 3 exist  Ês3 / Noc3 is the ratio of cell 3 signal / AWGN if cell 3 exist  For tests that use fading, the fading uncertainties are given in Table B.0.1 | |

Noc values are chosen to be the same as the smallest existing downlink signal uncertainty in TS 36.521-1 [4].

Ês / Noc values are chosen to be the same as intra-frequency in B.1.

This choice forms a minimum set, so the superposition principle can be applied.

# B.3 Group C: E-UTRA Intra-frequency UE reporting accuracy

The following uncertainties and parameters are suggested for E-UTRA Intra-frequency UE reporting accuracy tests:

Table B.3-1: Maximum Test System Uncertainty for E-UTRA Intra-frequency UE reporting accuracy

|  |  |
| --- | --- |
| Noc averaged over BWConfig | ±0.7 dB |
| Noc for PRBs #22-27 | ±1.0 dB |
| Ês1 / Noc, Ês2 / Noc averaged over BWConfig | ±0.3 dB |
| Ês1 / Noc, Ês2 / Noc for PRBs #22-27 | ±0.8 dB |
| Note:  Ês1 / Noc is the ratio of cell 1 signal / AWGN  Ês2 / Noc is the ratio of cell 2 signal / AWGN | |

In these tests the UE measures the power of Cells over specific Physical Resource Block (PRB) numbers #22 to #27. The generic AWGN parameters values similar to those used in performance tests are therefore unsuitable, because the AWGN flatness specification would allow a large deviation for the power in PRBs #22 to #27.

In addition, these tests have separate constraints on the RSRP or RSRQ reported values (derived from UE measurements over PRBs #22 to #27), and on the overall power Io, specified over BWConfig.

Two sets of parameters are therefore given. The set averaged over the configured bandwidth have similar values to those already proposed for other tests. The set averaged over PRBs #22 to #27 have wider values, but constraining the deviation enough not to widen the RSRP or RSRQ reporting range too much.

The Noc value averaged over BWConfig is chosen to be the same as the smallest existing downlink signal uncertainty in TS 36.521-1 [4].

The Noc value for PRBs #22-27 is chosen to allow some deviation for these specific PRBs compared to the “averaged over BWConfig“ figure, but reasonably small compared to the UE reporting accuracy.

The Ês / Noc values averaged over BWConfig are chosen to be the same as intra-frequency in B.1.

The Ês / Noc values for PRBs #22-27 are chosen to allow some deviation for these specific PRBs compared to the “averaged over BWConfig“ figure, but reasonably small compared to the UE reporting accuracy.

This choice forms a minimum set (separately for PRBs #22-27, and for “averaged over BWConfig“), so the superposition principle can be applied.

# B.4 Group D: E-UTRA Inter-frequency UE reporting accuracy

The following uncertainties and parameters are suggested for E-UTRA Inter-frequency UE reporting accuracy tests:

Table B.4-1: Maximum Test System Uncertainty for E-UTRA Inter-frequency UE reporting accuracy

|  |  |
| --- | --- |
| Noc1, Noc2 averaged over BWConfig | ±0.7 dB |
| Noc1, Noc2 for PRBs #22-27 | ±1.0 dB |
| Ês1 / Noc1, Ês2 / Noc2 averaged over BWConfig | ±0.3 dB |
| Ês1 / Noc1, Ês2 / Noc2 for PRBs #22-27 | ±0.8 dB |
| Note:  Noc1 is the AWGN on cell 1 frequency  Ês1 / Noc1 is the ratio of cell 1 signal / AWGN  Noc2 is the AWGN on cell 2 frequency  Ês2 / Noc2 is the ratio of cell 2 signal / AWGN | |

In these tests the UE measures the power of Cells over specific Physical Resource Block (PRB) numbers #22 to #27. The generic AWGN parameters values similar to those used in performance tests are therefore unsuitable, because the AWGN flatness specification would allow a large deviation for the power in PRBs #22 to #27.

In addition, these tests have separate constraints on the RSRP or RSRQ reported values (derived from UE measurements over PRBs #22 to #27), and on the overall power Io, specified over BWConfig.

Two sets of parameters are therefore given. The set averaged over the configured bandwidth have similar values to those already proposed for other tests. The set averaged over PRBs #22 to #27 have wider values, but constraining the deviation enough not to widen the RSRP or RSRQ reporting range too much.

The Noc value averaged over BWConfig is chosen to be the same as the smallest existing downlink signal uncertainty in TS 36.521-1 [4].

The Noc value for PRBs #22-27 is chosen to allow some deviation for these specific PRBs compared to the “averaged over BWConfig“ figure, but reasonably small compared to the UE reporting accuracy.

The Ês / Noc values averaged over BWConfig are chosen to be the same as inter-frequency in B.2.

The Ês / Noc values for PRBs #22-27 are chosen to allow some deviation for these specific PRBs compared to the “averaged over BWConfig“ figure, but reasonably small compared to the UE reporting accuracy.

This choice forms a minimum set (separately for PRBs #22-27, and for “averaged over BWConfig“), so the superposition principle can be applied.

# B.5 Group E: E-UTRA Random Access

The following uncertainties and parameters are suggested for E-UTRA Random Access tests:

Table B.5-1: Maximum Test System Uncertainty for E-UTRA Random Access

|  |  |
| --- | --- |
| Downlink signal: | |
| Noc averaged over BWConfig | ±0.7 dB |
| Ês / Noc averaged over BWConfig | ±0.3 dB |
| Uplink signal: | |
| Absolute power measurement | ±0.7 dB |
| Power step relative measurement | ±0.7 dB |
| Uplink signal transmit timing relative to downlink | ±3Ts  TS = 1/(15000 x 2048) seconds, the basic timing unit defined in TS 36.211 |

The downlink Noc and Ês / Noc values are chosen to be the same as intra-frequency in B.3. The downlink signal uncertainties are critical for random access tests because the UE uses RSRP to calculate path loss, and hence to set the uplink power to the desired value.

The uplink power absolute signal measurement uncertainty value is chosen to be the same as the Maximum Output Power test 6.2.2 in Annex F of TS 36.521-1 [4]. The uplink power relative signal measurement uncertainty value is chosen to be the same as the Relative Power control test 6.3.5.2 in Annex F of TS 36.521-1 [4].

The uncertainty for uplink signal transmit timing relative to downlink measurement was derived by taking 25% of the tightest UE core requirement, which is 12 \* Ts for ≥3 MHz Channel bandwidth, giving a ±3\*Ts uncertainty.

The timing uncertainty is expressed in units of TS = 1 / (15000 x 2048) seconds, the basic timing unit defined in TS 36.211 [7].

These choices form a minimum set, so the superposition principle can be applied.

# B.6 Group F: E-UTRA Transmit timing and Timing advance

The following uncertainties and parameters are suggested for E-UTRA Transmit timing and Timing advance tests:

Table B.6-1: Maximum Test System Uncertainty for E-UTRA Transmit timing and Timing advance

|  |  |
| --- | --- |
| Downlink signal: | |
| Noc averaged over BWConfig | ±3.0 dB |
| Ês / Noc averaged over BWConfig | ±0.3 dB |
| Uplink signal: | |
| Uplink signal transmit timing relative to downlink | ±3Ts  TS = 1/(15000 x 2048) seconds, the basic timing unit defined in TS 36.211 |
| Relative UE timing adjustment | ±0.5Ts  TS = 1/(15000 x 2048) seconds, the basic timing unit defined in TS 36.211 |

The downlink uncertainty values are chosen to be the same as the performance tests in section 8 of TS 36.521-1 [4]. For Transmit timing and Timing advance tests, neither the absolute level of Noc nor the signal to noise ratio is critical.

The uncertainty for uplink signal transmit timing relative to downlink measurement was derived by taking 25% of the tightest UE core requirement, which is 12 \* Ts for ≥3 MHz Channel bandwidth, giving a ±3\*Ts uncertainty.

The uncertainty for relative UE timing adjustment was derived by taking 25% of the tightest UE core requirement, which is 2 \* Ts for ≥10 MHz Channel bandwidth, giving a ±0.5 \* Ts uncertainty.

Both timing uncertainties are expressed in units of TS = 1 / (15000 x 2048) seconds, the basic timing unit defined in TS 36.211 [7].

These choices form a minimum set, so the superposition principle can be applied.

# B.7 Group G: E-UTRA In-sync and Out-of-sync

The following uncertainties and parameters are suggested for E-UTRA In-sync and Out-of-sync tests:

Table B.7-1: Maximum Test System Uncertainty for E-UTRA In-sync and Out-of-sync

|  |  |
| --- | --- |
| Downlink signal: | |
| Noc averaged over BWConfig | ±3.0 dB |
| Ês / Noc averaged over BWConfig | ±0.3 dB |
| Note:  For tests that use fading, the fading uncertainties are given in Table B.0.1 | |

Values are chosen to be the same as the performance tests in section 8 of TS 36.521-1 [4]. For In-sync and Out-of-sync tests, as with performance tests, the absolute level of Noc is not critical, but the signal to noise ratio is critical.

This choice forms a minimum set, so the superposition principle can be applied.

# B.8 Group H: E-UTRA to UTRA Inter-RAT mobility

The following uncertainties and parameters are suggested for E-UTRAN cell in Table B.8-1 and for UTRAN cell in Table B.8-2.

Table B.8-1: Maximum Test System Uncertainty for E-UTRAN cell E-UTRA to UTRA Inter-RAT mobility

|  |  |
| --- | --- |
| Noc1 averaged over BWConfig | ±0.7 dB |
| Ês1 / Noc1 averaged over BWConfig | ±0.3 dB |
| Noc2 averaged over BWConfig | ±0.7 dB |
| Ês2 / Noc2 averaged over BWConfig | ±0.3 dB |
| Note:  Noc1 is the AWGN on cell 1 frequency  Ês1 / Noc1 is the ratio of cell 1 signal / AWGN  Noc2 is the AWGN on cell 2 frequency if the second LTE cell exist  Ês2 / Noc2 is the ratio of cell 2 signal / AWGN if the second LTE cell exist  For cells that use fading, the fading uncertainties are given in Table B.0.1 | |

Table B.8-2: Maximum Test System Uncertainty for UTRAN cell E-UTRA to UTRA Inter-RAT mobility

|  |  |
| --- | --- |
| Ioc | ±0.7 dB |
| Ior / Ioc | ±0.3 dB |
| Ec / Ior |  |
| CPICH Ec / Ior (UTRA FDD) | ±0.1dB |
| PCCPCH Ec / Ior (UTRA TDD) | ±0.1dB |
| DwPCH Ec / Ior (UTRA TDD) | ±0.1dB |
| Note:  Ioc is the AWGN on UTRA cell frequency  Ior / Ioc is the ratio of UTRA cell signal / AWGN  CPICH Ec / Ior is the fraction of UTRA FDD cell power assigned to the CPICH Physical channel  PCCPCH Ec / Ior is the fraction of UTRA TDD cell power assigned to the PCCPCH Physical channel  DwPCH\_Ec/Ior is the fraction of UTRA TDD cell power assigned to the DwPCH channel  For cell that use fading, .the fading profile power uncertainty of ±0.5 dB shall be considered. | |

Ês / Noc and Îor / Ioc are chosen to be similar to equivalent parameters in W-CDMA. The absolute levels of Noc and Ioc are specified as ±0.7dB, similar to the uncertainty for other absolute power values such as RefSens. The Ec / Ior is specified as ± 0.1dB, similar to the uncertainty in TS 34.121-1.

This choice forms a minimum set, so the superposition principle can be applied.

# B.9 Group I: E-UTRA to GSM Inter-RAT mobility

The following uncertainties and parameters are suggested for E-UTRAN cell in Table B.9-1 and for GSM cell in Table B.9-2.

Table B.9-1: Maximum Test System Uncertainty for E-UTRAN cell E-UTRA to GSM Inter-RAT mobility

|  |  |
| --- | --- |
| Noc1 averaged over BWConfig | ±0.7 dB |
| Ês1 / Noc1 averaged over BWConfig | ±0.3 dB |
| Noc2 averaged over BWConfig | ±0.7 dB |
| Ês2 / Noc2 averaged over BWConfig | ±0.3 dB |
| Note:  Noc1 is the AWGN on cell 1 frequency  Ês1 / Noc1 is the ratio of cell 1 signal / AWGN  Noc2 is the AWGN on cell 2 frequency if the second LTE cell exist  Ês2 / Noc2 is the ratio of cell 2 signal / AWGN if the second LTE cell exist | |

Table B.9-2: Maximum Test System Uncertainty for UTRAN cell E-UTRA to GSM Inter-RAT mobility

|  |  |
| --- | --- |
| Signal level | ±0.7 dB |
| Note:  GSM cell has only the wanted signal, without AWGN | |

Noc values are chosen to be the same as the smallest existing downlink signal uncertainty in TS 36.521-1 [4].

Ês / Noc values are chosen to be the same as intra-frequency in B.1.

The GSM cell signal level is specified as ±0.7 dB, similar to the uncertainty for other absolute power values such as E-UTRA RefSens.

This choice forms a minimum set, so the superposition principle can be applied.

Annex C: Default uncertainties for test cases defined in TS 37.571-1

This annex contains suggested uncertainties, grouped according to types of test case. The aim is to provide a consistent set of uncertainties across similar test cases to allow efficient implementation.

This Annex is informative only, as the acceptable uncertainties of a test system are defined in Annex C of 37.571-1 [8].

Annex D:  
Change History

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Date | TSG # | TSG Doc. | CR | Rev | Subject/Comment | Old | New |
| 2010-02 | RAN5#46 | R5-072185 | - | - | TR 36.903 Skeleton proposed for RAN5#46 | - | 0.0.1 |
| 2010-06 | - | - | - | - | TR 36.903 update proposed | 0.0.1 | 0.0.x |
| 2010-08 | RAN5#48 | - | - | - | TR 36.903 update proposed | 0.0.x | 0.0.2 |
| 2010-08 | RAN5#48 | R5-104409 | - | - | TR 36.903 update proposed including all docs agreed on RAN5#48 | 0.0.2 | 0.1.0 |
| 2010-09 | - | - | - | - | Small editorial corrections | 0.1.0 | 0.1.1 |
| 2010-09 | RAN5#49 | R5-106802 | - | - | TR 36.903 update proposed including all docs agreed on RAN5#49 | 0.1.1 | 1.0.0 |
| 2010-12 | RAN5#50 | R5-101182 | - | - | TR 36.903 v1.0.0 on Derivation of test tolerances for multi-cell RRM conformance tests (Approval) | 1.0.0 | 8.0.0 |
| 2010-12 | RAN5#50 | - | - | - | Raised to v9.0.0 with no change | 8.0.0 | 9.0.0 |
| 2011-09 | RAN5#52 | R5-113225 | 0001 | - | Test Tolerance analysis for RRM test case 4.3.1.3 | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-113227 | 0002 | - | RRM Test Tools agreed at RAN5#50 in TR 36.903 | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-113228 | 0003 | - | RRM Test Tools agreed at RAN5#51 in TR 36.903 | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-113248 | 0004 | - | Add Test Tolerance analysis for the inter RAT E-UTRAN handover test cases 5.2.1 and 5.2.2 | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-114008 | 0005 | - | Add Test Tolerance analysis for E-UTRAN to UTRA TDD handover test case 5.2.4 | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-114010 | 0006 | - | RRM Test Tools Updates agreed at RAN5#50 for TR 36.903 | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-114011 | 0007 | - | Update Test Tolerance analysis for Test cases 8.x | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-114012 | 0008 | - | Test Tolerance analysis for TS36.521-3 FDD SON ANR test case 8.5.2 | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-114015 | 0009 | - | Add Test Tolerance analysis for E-UTRAN FDD/TDD - UTRA FDD CPICH Ec/No absolute measurement accuracy test cases | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-114017 | 0010 | - | Add Test Tolerance analysis for E-UTRAN FDD- UTRAN TDD event triggered reporting under fading propagation conditions | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-114018 | 0011 | - | Update analysis for TC 8.3.3+8.4.3 in 36.903 | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-114020 | 0012 | - | Add Uncertainties and TT analysis for TC 4.3.4.3 in 36.903 | 9.0.0 | 9.1.0 |
| 2011-09 | RAN5#52 | R5-114058 | 0013 | - | Add Test Tolerance analysis for E-UTRAN to UTRA Cell Re-Selection test cases 4.3.4.1 | 9.0.0 | 9.1.0 |
| 2011-12 | RAN5#53 | R5-115149 | 0014 | - | Add Inter-RAT test case groups in 36.903 | 9.1.0 | 9.2.0 |
| 2011-12 | RAN5#53 | R5-115825 | 0015 | - | Test tolerances methodology for UE measurement procedures Inter-RAT event triggered reporting when DRX is used under fading test case 8.5.3 in TR 36.903 | 9.1.0 | 9.2.0 |
| 2011-12 | RAN5#53 | R5-115188 | 0016 | - | Test Tolerance analysis for RRM test case 8.11.3 | 9.1.0 | 9.2.0 |
| 2011-12 | RAN5#53 | R5-115201 | 0017 | - | Test Tolerance analysis for TS36.521-3 TDD SON ANR test case 8.7.3 | 9.1.0 | 9.2.0 |
| 2011-12 | RAN5#53 | R5-115402 | 0018 | - | Test Tolerance analysis for RRM test case 4.3.3 | 9.1.0 | 9.2.0 |
| 2011-12 | RAN5#53 | R5-115788 | 0019 | - | GCF Priority 2 - Add RRM Test Tolerance analysis for RRM test case 8.11.1 and 8.11.2 | 9.1.0 | 9.2.0 |
| 2011-12 | RAN5#53 | R5-115826 | 0020 | - | Update of Test Tolerances analysis for ch.9 test cases | 9.1.0 | 9.2.0 |
| 2011-12 | RAN5#53 | R5-115898 | 0021 | - | Add test tolerance analysis for 6.1.3 and 6.1.4 | 9.1.0 | 9.2.0 |
| 2012-03 | RAN5#54 | R5-120108 | 0022 | - | Test Tolerance analysis for TS36.521-3 TDD new CGI test cases 8.2.3 and 8.2.4 | 9.2.0 | 9.3.0 |
| 2012-03 | RAN5#54 | R5-120123 | 0023 | - | Test Tolerance analysis for TS36.521-3 TDD Inter-frequency new CGI test cases 8.4.4 and 8.4.5. | 9.2.0 | 9.3.0 |
| 2012-03 | RAN5#54 | R5-120246 | 0024 | - | Update Test Tolerance analysis for RRM test cases 9.1.4.1 and 9.1.4.2 | 9.2.0 | 9.3.0 |
| 2012-03 | RAN5#54 | R5-120247 | 0025 | - | Update RRM Test Tolerance analysis for TDD PRACH Test cases 6.2.3+6.2.4 | 9.2.0 | 9.3.0 |
| 2012-03 | RAN5#54 | R5-120248 | 0026 | - | Add Test Tolerance analysis for RRM test case 8.11.4 | 9.2.0 | 9.3.0 |
| 2012-03 | RAN5#54 | R5-120906 | 0027 | - | Add TT Analysis for TC 4.5.1.1 in 36.903 | 9.2.0 | 9.3.0 |
| 2012-03 | RAN5#54 | R5-120916 | 0028 | - | Add TT Analysis for TC 5.3.1 in 36.903 | 9.2.0 | 9.3.0 |
| 2012-06 | RAN5#55 | R5-121246 | 0029 | - | Grouping of positioning test cases in TR36.903 | 9.3.0 | 9.4.0 |
| 2012-06 | RAN5#55 | R5-121606 | 0030 | - | Add Test Tolerance analysis for RRM test cases 4.2.4 and 4.2.5 | 9.3.0 | 9.4.0 |
| 2012-06 | RAN5#55 | R5-121608 | 0031 | - | Add Test Tolerance analysis for RRM test cases 5.1.7 and 5.1.8 | 9.3.0 | 9.4.0 |
| 2012-06 | RAN5#55 | R5-121610 | 0032 | - | Add Test Tolerance analysis for RRM test cases 8.14.1 | 9.3.0 | 9.4.0 |
| 2012-06 | RAN5#55 | R5-121612 | 0033 | - | Add Test Tolerance analysis for RRM test cases 8.15.1 | 9.3.0 | 9.4.0 |
| 2012-06 | RAN5#55 | R5-121614 | 0034 | - | Add Test Tolerance analysis for RRM test case 9.1.5.1 | 9.3.0 | 9.4.0 |
| 2012-06 | RAN5#55 | R5-121616 | 0035 | - | Addition of Test Tolerance analysis for FDD - TDD Inter Frequency Relative Accuracy of RSRP test case 9.1.5.2 | 9.3.0 | 9.4.0 |
| 2012-06 | RAN5#55 | R5-121926 | 0036 | - | TT 9.6.2 analysis for 36.903 | 9.3.0 | 9.4.0 |
| 2012-06 | RAN5#55 | R5-121928 | 0037 | - | Resubmission of TT Analysis for TC 4.5.1.1 in 36.903 | 9.3.0 | 9.4.0 |
| 2012-06 | RAN5#55 | - | - | - | Added two missing TT Analysis zip files | 9.4.0 | 9.4.1 |
| 2012-09 | RAN5#56 | R5-123213 | 0045 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 4.2.7 and 4.2.8 | 9.4.1 | 9.5.0 |
| 2012-09 | RAN5#56 | R5-123921 | 0038 | - | Update Test Tolerance analysis for RRM test case 9.1.2.1 | 9.4.1 | 9.5.0 |
| 2012-09 | RAN5#56 | R5-123922 | 0039 | - | Update Test Tolerance analysis for RRM test case 9.1.2.2 | 9.4.1 | 9.5.0 |
| 2012-09 | RAN5#56 | R5-123923 | 0040 | - | Update Test Tolerance analysis for RRM test cases 9.1.3.1+9.1.4.1 | 9.4.1 | 9.5.0 |
| 2012-09 | RAN5#56 | R5-123924 | 0041 | - | Update Test Tolerance analysis for RRM test cases 9.1.3.2+9.1.4.2 | 9.4.1 | 9.5.0 |
| 2012-09 | RAN5#56 | R5-123925 | 0042 | - | Update Test Tolerance analysis for RRM test cases 9.2.1.1+9.2.2.1 | 9.4.1 | 9.5.0 |
| 2012-09 | RAN5#56 | R5-123926 | 0043 | - | Update Test Tolerance analysis for RRM test cases 9.2.3.1+9.2.4.1 | 9.4.1 | 9.5.0 |
| 2012-09 | RAN5#56 | R5-123927 | 0044 | - | Update Test Tolerance analysis for RRM test cases 9.2.3.2+9.2.4.2 | 9.4.1 | 9.5.0 |
| 2012-12 | RAN5#57 | R5-125558 | 0048 | - | Addition of uncertainties and test tolerance definition and analysis for TC 9.2.4A.1 | 9.5.0 | 9.6.0 |
| 2012-12 | RAN5#57 | R5-125815 | 0049 | - | Addition of uncertainties and test tolerance definition and analysis for TC 4.5.2.1 | 9.5.0 | 9.6.0 |
| 2012-12 | RAN5#57 | R5-125816 | 0050 | - | Addition of uncertainties and test tolerance definition and analysis for TC 5.3.5 | 9.5.0 | 9.6.0 |
| 2012-12 | RAN5#57 | R5-125817 | 0051 | - | Addition of uncertainties and test tolerance definition and analysis for TC 8.14.2 | 9.5.0 | 9.6.0 |
| 2012-12 | RAN5#57 | R5-125818 | 0052 | - | Addition of uncertainties and test tolerance definition and analysis for TC 8.15.2 | 9.5.0 | 9.6.0 |
| 2012-12 | RAN5#57 | R5-125819 | 0053 | - | Addition of uncertainties and test tolerance definition and analysis for TC 8.14.3 and 8.15.3 | 9.5.0 | 9.6.0 |
| 2012-12 | RAN5#57 | R5-125820 | 0054 | - | Addition of uncertainties and test tolerance definition and analysis for TC 9.2.4A.2 | 9.5.0 | 9.6.0 |
| 2012-12 | RAN5#57 | R5-125356 | 0046 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 8.16.1 and 8.16.2 | 9.6.0 | 10.0.0 |
| 2012-12 | RAN5#57 | R5-125362 | 0047 | - | Update TS 36.521-3 Test cases 5.2.3+5.2.6 Test Tolerance analyses for >3GHz | 9.6.0 | 10.0.0 |
| 2013-03 | RAN5#58 | R5-130055 | 0055 | - | Update TS 36.521-3 Test cases 7.1.1+7.1.2 Test Tolerance analyses | 10.0.0 | 10.1.0 |
| 2013-03 | RAN5#58 | R5-130057 | 0056 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.1.6.1 and 9.1.7.1 | 10.0.0 | 10.1.0 |
| 2013-03 | RAN5#58 | R5-130059 | 0057 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.1.6.2 and 9.1.7.2 | 10.0.0 | 10.1.0 |
| 2013-03 | RAN5#58 | R5-130061 | 0058 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.2.5.1 and 9.2.6.1 | 10.0.0 | 10.1.0 |
| 2013-03 | RAN5#58 | R5-130063 | 0059 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.2.5.2 and 9.2.6.2 | 10.0.0 | 10.1.0 |
| 2013-03 | RAN5#58 | R5-130393 | 0061 | - | Addition of test tolerance analysis for TCs 6.3.1+6.3.9 | 10.0.0 | 10.1.0 |
| 2013-03 | RAN5#58 | R5-130394 | 0062 | - | Addition of test tolerance analysis for TCs 6.3.3+6.3.10 | 10.0.0 | 10.1.0 |
| 2013-03 | RAN5#58 | R5-130933 | 0063 | - | Addition of uncertainties and test tolerance definition and analysis for TC 8.16.3 and TC 8.16.4 | 10.0.0 | 10.1.0 |
| 2013-06 | RAN5#59 | R5-131179 | 0077 | - | RRM: Add test tolerance analyses for TCs 8.1.5 and 8.1.6 | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131181 | 0065 | - | RRM: Add test tolerance analyses for TCs 8.3.4 and 8.3.5 | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131279 | 0066 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.2.7.1, 9.2.8.1 | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131285 | 0067 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 8.11.5, 8.11.6 | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131287 | 0068 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.5.1, 9.5.2 | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131290 | 0069 | - | Remove superseded analysis zip files | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131400 | 0070 | - | Test Tolerance analyses for TS 36.521-3 test cases 5.2.4 and 5.2.5 | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131401 | 0071 | - | Test Tolerance analyses for TS 36.521-3 test case 8.5.4 | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131402 | 0072 | - | Test Tolerance analyses for TS 36.521-3 test cases 8.7.4 and 8.9.2 | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131461 | 0073 | - | Addition of test tolerance analysis for TCs 6.3.2+6.3.12 | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131464 | 0074 | - | Addition of test tolerance analysis for TCs 6.3.4+6.3.11 | 10.1.0 | 10.2.0 |
| 2013-06 | RAN5#59 | R5-131467 | 0075 | - | Addition of test tolerance analysis for TCs 6.3.5+6.3.6+6.3.7+6.3.8 | 10.1.0 | 10.2.0 |
| 2013-09 | RAN5#60 | R5-133100 | 0078 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.1.8.1+9.1.9.1 | 10.2.0 | 10.3.0 |
| 2013-09 | RAN5#60 | R5-133102 | 0079 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.1.8.2+9.1.9.2 | 10.2.0 | 10.3.0 |
| 2013-09 | RAN5#60 | R5-133104 | 0080 | - | Update Test Tolerance analyses for TS 36.521-3 Test cases 9.1.3.x and 9.1.4.x | 10.2.0 | 10.3.0 |
| 2013-09 | RAN5#60 | R5-133106 | 0081 | - | Test Tolerances update for eICIC absolute RSRQ Test cases 9.2.7.1+9.2.8.1 | 10.2.0 | 10.3.0 |
| 2013-09 | RAN5#60 | R5-133219 | 0082 | - | RRM: Test tolerance analyses for TCs 9.6.1 and 9.6.2 | 10.2.0 | 10.3.0 |
| 2013-09 | RAN5#60 | R5-133349 | 0083 | - | Update Test Tolerance analyses for TS 36.521-3 Test cases 9.1.1.1 and 9.1.2.1 | 10.2.0 | 10.3.0 |
| 2013-09 | RAN5#60 | R5-133374 | 0084 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 9.1.1 and 9.1.2 | 10.2.0 | 10.3.0 |
| 2013-09 | RAN5#60 | R5-133376 | 0085 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 9.1.3 and 9.1.4 | 10.2.0 | 10.3.0 |
| 2013-09 | RAN5#60 | R5-133843 | 0086 | - | LBS Perf: Test tolerance analyses for TCs 8.1.1 and 8.1.2 | 10.2.0 | 10.3.0 |
| 2013-12 | RAN5#61 | R5-134144 | 0087 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.1.12.1 and 9.1.13.1 | 10.3.0 | 10.4.0 |
| 2013-12 | RAN5#61 | R5-134146 | 0088 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.1.12.2 and 9.1.13.2 | 10.3.0 | 10.4.0 |
| 2013-12 | RAN5#61 | R5-134148 | 0089 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.2.11.1 and 9.2.12.1 | 10.3.0 | 10.4.0 |
| 2013-12 | RAN5#61 | R5-134150 | 0090 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 9.2.11.2 and 9.2.12.2 | 10.3.0 | 10.4.0 |
| 2013-12 | RAN5#61 | R5-134220 | 0091 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 8.20.3 | 10.3.0 | 10.4.0 |
| 2013-12 | RAN5#61 | R5-134222 | 0092 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.2.9.1 and 9.2.10.1 | 10.3.0 | 10.4.0 |
| 2013-12 | RAN5#61 | R5-135015 | 0093 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 9.2.1 and 9.2.2 | 10.3.0 | 10.4.0 |
| 2013-12 | RAN5#61 | R5-135017 | 0094 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 9.2.4 and 9.2.5 | 10.3.0 | 10.4.0 |
| 2013-12 | RAN5#61 | - | - | - | Upgraded to Rel-11 with no change | 10.4.0 | 11.0.0 |
| 2013-12 | RAN5#61 | R5-134215 | 0108 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 9.1.17.1 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-134217 | 0109 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 9.2.17.1 and update 9.2.1.1+9.2.2.1 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-134611 | 0102 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 7.2.3 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135050 | 0095 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 4.2.9 and update 4.2.1+4.2.2 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135051 | 0096 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 4.3.1.4 and update 4.3.1.2+4.3.3 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135052 | 0097 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 5.1.9 and update 5.1.1+5.1.2 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135053 | 0098 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 5.2.11 and update 5.2.1+5.2.2 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135054 | 0099 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 6.1.5 and update 6.1.1+6.1.3 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135055 | 0100 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 6.2.5 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135056 | 0101 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 6.2.6 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135058 | 0103 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 7.3.23 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135059 | 0104 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 7.3.25 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135060 | 0105 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 8.1.9 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135061 | 0106 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 8.1.10 | 11.0.0 | 12.0.0 |
| 2013-12 | RAN5#61 | R5-135062 | 0107 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 8.5.7 | 11.0.0 | 12.0.0 |
| 2014-03 | RAN5#62 | R5-140083 | 0110 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 8.20.1 and 8.20.2 | 12.0.0 | 12.1.0 |
| 2014-03 | RAN5#62 | R5-140233 | 0113 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 9.1.16.2 and update 9.1.1.2+9.1.2.2 | 12.0.0 | 12.1.0 |
| 2014-03 | RAN5#62 | R5-140235 | 0114 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 9.1.18.1 and update 9.2.3.1+9.2.4.1 | 12.0.0 | 12.1.0 |
| 2014-03 | RAN5#62 | R5-140237 | 0115 | - | Add Test Tolerance analyses for TS 36.521-3 Test case 9.1.18.2 and update 9.2.3.2+9.2.4.2 | 12.0.0 | 12.1.0 |
| 2014-03 | RAN5#62 | R5-140239 | 0116 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 8.20.4 | 12.0.0 | 12.1.0 |
| 2014-03 | RAN5#62 | R5-140288 | 0118 | - | Addition of test tolerance analysis for TC 7.3.24 | 12.0.0 | 12.1.0 |
| 2014-03 | RAN5#62 | R5-140292 | 0119 | - | Addition of test tolerance analysis for TC 9.1.17.2 | 12.0.0 | 12.1.0 |
| 2014-03 | RAN5#62 | R5-140294 | 0120 | - | Addition of test tolerance analysis for TC 9.3.3 | 12.0.0 | 12.1.0 |
| 2014-03 | RAN5#62 | R5-140296 | 0121 | - | Addition of test tolerance analysis for TC 9.4.3 | 12.0.0 | 12.1.0 |
| 2014-03 | RAN5#62 | R5-140864 | 0122 | - | Addition of test tolerance analysis for TC 9.1.16.1 | 12.0.0 | 12.1.0 |
| 2014-03 | RAN5#62 | R5-141051 | 0117 | - | Addition of test tolerance analysis for TC 7.1.5 | 12.0.0 | 12.1.0 |
| 2014-06 | RAN5#63 | R5-142373 | 0123 | - | Update Test Tolerance analyses for TS 36.521-3 Test cases 9.1.8.1+9.1.9.1 | 12.1.0 | 12.2.0 |
| 2014-06 | RAN5#63 | R5-142377 | 0124 | - | Update Test Tolerance analyses for TS 36.521-3 Test cases 9.1.8.2+9.1.9.2 | 12.1.0 | 12.2.0 |
| 2014-06 | RAN5#63 | R5-142381 | 0125 | - | Update Test Tolerance analyses for TS 36.521-3 Test cases 9.2.7.1+9.2.8.1 | 12.1.0 | 12.2.0 |
| 2014-06 | RAN5#63 | R5-142545 | 0126 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 8.1.7 and 8.2.5 | 12.1.0 | 12.2.0 |
| 2014-06 | RAN5#63 | R5-142552 | 0127 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 7.3.11,7.3.12,7.3.15 and 7.3.16 | 12.1.0 | 12.2.0 |
| 2014-06 | RAN5#63 | R5-142712 | 0128 | - | Test Tolerance analysis for eICIC RRM TC 9.1.10.1, 9.1.11.1 | 12.1.0 | 12.2.0 |
| 2014-06 | RAN5#63 | R5-142751 | 0129 | - | Update Test Tolerance analyses for TS 36.521-3 Test cases 9.2.9.1+9.2.10.1 | 12.1.0 | 12.2.0 |
| 2014-06 | RAN5#63 | R5-142763 | 0130 | - | Addition of test tolerance analysis for 36.521-3 test case 9.1.10.2, 9.1.11.2 | 12.1.0 | 12.2.0 |
| 2014-06 | RAN5#63 | R5-143021 | 0131 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 7.3.9,7.3.10,7.3.13 and 7.3.14 | 12.1.0 | 12.2.0 |
| 2014-09 | RAN5#64 | R5-144126 | 0132 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 8.16.5 and 8.16.6 | 12.2.0 | 12.3.0 |
| 2014-09 | RAN5#64 | R5-144128 | 0133 | - | Add Test Tolerance analyses for TS 36.521-3 Test cases 8.16.7 and 8.16.8 | 12.2.0 | 12.3.0 |
| 2014-09 | RAN5#64 | R5-144144 | 0134 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.3 and 10.4 | 12.2.0 | 12.3.0 |
| 2014-09 | RAN5#64 | R5-144146 | 0135 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.3A and 10.4A | 12.2.0 | 12.3.0 |
| 2014-09 | RAN5#64 | R5-144290 | 0136 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 8.3.6 | 12.2.0 | 12.3.0 |
| 2014-09 | RAN5#64 | R5-144292 | 0137 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 8.5.6 | 12.2.0 | 12.3.0 |
| 2014-09 | RAN5#64 | R5-144294 | 0138 | - | Update Test Tolerance analyses for TS 36.521-3 Test cases 8.3.3+8.4.3 | 12.2.0 | 12.3.0 |
| 2014-09 | RAN5#64 | R5-144834 | 0139 | - | Addition of test tolerance analysis for 36.521-3 test case 9.4.1, 9.4.2 and 9.4.3 | 12.2.0 | 12.3.0 |
| 2014-12 | RAN5#65 | R5-145167 | 0140 | - | Update Test Tolerance Analyses for TS 37.571-1 Test Cases 9.1.1 and 9.1.2 | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145168 | 0141 | - | Update Test Tolerance Analyses for TS 37.571-1 Test Cases 9.2.1 and 9.2.2 | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145298 | 0142 | - | Update Test Tolerance analyses for TS 36.521-3 Test case 8.5.3 | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145300 | 0143 | - | Add Test Tolerance analysis for feICIC RSRQ absolute accuracy Test cases | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145302 | 0144 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.2.21.1 and 9.2.22.1 | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145304 | 0145 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.2.21.2 and 9.2.22.2 | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145321 | 0146 | - | Add Test Tolerance analysis for TS 36.521-3 feICIC test cases 9.1.14.1 and 9.1.15.1 | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145323 | 0147 | - | Add Test Tolerance analysis for TS 36.521-3 feICIC test cases 9.1.14.2 and 9.1.15.2 | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145828 | 0148 | - | Test Tolerance Analysis for TS 37.571-1 TC 8.1.5+8.1.6 | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145829 | 0149 | - | Add Test Tolerance analysis for TS 36.521-3 feICIC test cases 7.3.17 and 7.3.18 | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145830 | 0150 | - | Add Test Tolerance analysis for TS 36.521-3 feICIC test cases 7.3.19, 7.3.20, 7.3.21 and 7.3.22 | 12.3.0 | 12.4.0 |
| 2014-12 | RAN5#65 | R5-145924 | 0151 | - | Test Tolerance Analysis for TS 36.521-3 TC 8.1.8+8.2.6 | 12.3.0 | 12.4.0 |
| 2015-03 | RAN5#66 | R5-150078 | 0152 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.1 and 10.2 | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150079 | 0153 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.1A and 10.2A | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150080 | 0154 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.1B and 10.2B | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150081 | 0155 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.1C and 10.2C | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150083 | 0156 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.3B and 10.4B | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150084 | 0157 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.3C and 10.4C | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150219 | 0158 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 4.3.1.3 | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150221 | 0159 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 4.3.4.3 | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150223 | 0160 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 8.5.2 | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150225 | 0161 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 8.7.3 | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150227 | 0162 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 8.9.1 | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150229 | 0163 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 8.8.1+8.10.1 | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150231 | 0164 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 8.8.2+8.10.2 | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150293 | 0165 | - | Add Test Tolerance analysis for TCs 8.16.9+8.16.10 36.903 CR | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150305 | 0166 | - | Add Test Tolerance analysis for TCs 8.16.11+8.16.12 36.903 CR | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150307 | 0167 | - | Add Test Tolerance analysis for TCs 8.16.13+8.16.14 36.903 CR | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150309 | 0168 | - | Add Test Tolerance analysis for TCs 8.16.15+8.16.16 36.903 CR | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150311 | 0169 | - | Add Test Tolerance analysis for TCs 9.1.18.1+9.1.19.1 36.903 CR | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150313 | 0170 | - | Add Test Tolerance analysis for TCs 9.1.18.2+9.1.19.2 36.903 CR | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150315 | 0171 | - | Add Test Tolerance analysis for TCs 9.1.20.1+9.1.21.1 36.903 CR | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150317 | 0172 | - | Add Test Tolerance analysis for TCs 9.1.20.2+9.1.21.2 36.903 CR | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150319 | 0173 | - | Add Test Tolerance analysis for TCs 9.2.23.1+9.2.24.1 36.903 CR | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150325 | 0174 | - | Add Test Tolerance analysis for TCs 9.2.23.2+9.2.24.2 36.903 CR | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150853 | 0175 | - | Update Test Tolerance analyses for TS 36.521-3 Test case 5.1.5 | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150854 | 0176 | - | Update Test Tolerance analyses for TS 36.521-3 Test case 5.1.6 | 12.4.0 | 12.5.0 |
| 2015-03 | RAN5#66 | R5-150855 | 0177 | - | Update Test Tolerance analyses for TS 36.521-3 Test case 5.2.3, 5.2.6 | 12.4.0 | 12.5.0 |
| 2015-06 | RAN5#67 | R5-151078 | 0178 | - | Update Test Tolerance Analyses for TS 37.571-1 Test Cases 9.1.3 and 9.1.4 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151079 | 0179 | - | Update Test Tolerance Analyses for TS 37.571-1 Test Cases 9.2.4 and 9.2.5 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151080 | 0180 | - | Update Test Tolerance Analyses for TS 37.571-1 Test Cases 10.3 and 10.4 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151081 | 0181 | - | Update Test Tolerance Analyses for TS 37.571-1 Test Cases 10.3A and 10.4A | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151082 | 0182 | - | Add Test Tolerance Analysis for TS 37.571-1 Test Case 10.2D | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151084 | 0183 | - | Add Test Tolerance Analysis for TS 37.571-1 Test Case 10.4D | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151132 | 0184 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.9.1.1 and 9.9.2.1 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151134 | 0185 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.9.1.2 and 9.9.2.2 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151263 | 0186 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 8.3.1+8.3.2+8.14.1+8.14.2 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151264 | 0187 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 8.4.1+8.4.2+8.15.1+8.15.2 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151265 | 0188 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 9.2.4A.1 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151266 | 0189 | - | Update Test Tolerance Analysis for TS 36.521-3 TC 9.2.4A.2 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151541 | 0198 | - | Add Test Tolerance analysis for TC 8.16.21 36.903 CR | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151543 | 0199 | - | Add Test Tolerance analysis for TC 8.16.22 36.903 CR | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151545 | 0200 | - | Add Test Tolerance analysis for TCs 9.1.24.1 36.903 CR | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151547 | 0201 | - | Add Test Tolerance analysis for TCs 9.1.24.1\_1 36.903 CR | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151549 | 0202 | - | Add Test Tolerance analysis for TC 9.1.24.2 36.903 CR | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151553 | 0204 | - | Add Test Tolerance analysis for TC 9.2.27.2 36.903 CR | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151837 | 0190 | 1 | Update Test Tolerances and Test requirements for TS 36.521-3 Test cases 4.2.3, 4.2.4, 4.2.5, 4.2.6 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151839 | 0191 | 1 | Update Test Tolerance analyses for TS 36.521-3 Test case 9.1.5.1 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151841 | 0192 | 1 | Update Test Tolerances and Test requirements for TS 36.521-3 Test case 9.1.5.2 | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151843 | 0194 | 1 | Add Test Tolerance analysis for Rel-12 Improved RSRP accuracy Test cases | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151845 | 0195 | 1 | Update Test Tolerance analysis for TCs 8.11.1+8.11.2 for frequencies above 3GHz 36.903 CR | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151847 | 0196 | 1 | Update Test Tolerance analysis for TC 8.11.3 for frequencies above 3GHz 36.903 CR | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151849 | 0197 | 1 | Update Test Tolerance analysis for TC 8.11.4 for frequencies above 3GHz 36.903 CR | 12.5.0 | 12.6.0 |
| 2015-06 | RAN5#67 | R5-151851 | 0203 | 1 | Add Test Tolerance analysis for TC 9.2.27.1 36.903 CR | 12.5.0 | 12.6.0 |
| 2015-09 | RAN5#68 | R5-153175 | 0205 | - | Update Test Tolerance analyses for TS 36.521-3 Test case 4.3.1.1 | 12.6.0 | 12.7.0 |
| 2015-09 | RAN5#68 | R5-153178 | 0206 | - | Update Test Tolerance analyses for Test case 4.3.4.1 | 12.6.0 | 12.7.0 |
| 2015-09 | RAN5#68 | R5-153180 | 0207 | - | Update Test Tolerance analyses for TS 36.521-3 Test cases 5.1.3+5.1.4+5.1.7+5.1.8 | 12.6.0 | 12.7.0 |
| 2015-09 | RAN5#68 | R5-153252 | 0208 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 8.20.2B | 12.6.0 | 12.7.0 |
| 2015-09 | RAN5#68 | R5-153444 | 0209 | - | Add Test Tolerance analysis for TCs 7.1.3+7.1.3\_1+7.1.4+7.1.4\_1 36.903 CR | 12.6.0 | 12.7.0 |
| 2015-09 | RAN5#68 | R5-153531 | 0210 | - | Update Test Tolerance analyses for TS 36.521-3 Test case 5.2.7 | 12.6.0 | 12.7.0 |
| 2015-09 | RAN5#68 | R5-153543 | 0211 | - | Update Test Tolerance analyses for TS 36.521-3 Test cases 5.2.8 and 5.2.9 | 12.6.0 | 12.7.0 |
| 2015-09 | RAN5#68 | R5-153546 | 0212 | - | Update Test Tolerance analyses for TS 36.521-3 Test case 5.2.10 | 12.6.0 | 12.7.0 |
| 2015-09 | RAN5#68 | - | - | - | update of the "non-specific references" in section 2 according to the approved R5-153582 and an action point on ETSI MCC | 12.6.0 | 12.7.0 |
| 2015-12 | RAN5#69 | R5-155017 | 0213 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.3A\_1 and 10.4A\_1 | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155095 | 0214 | - | Add Test Tolerance analysis for 7.1.4A | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155140 | 0215 | - | Update Test Tolerance analysis for TS 36.521-3 Test cases 4.3.2 and 4.3.4.2 | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155142 | 0216 | - | Update Test Tolerance analysis for TS 36.521-3 Test cases 4.4.1 and 4.4.2 | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155148 | 0219 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 8.20.4A | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155150 | 0220 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 8.20.4B | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155195 | 0221 | - | Update Test Tolerance analyses for serving cell Intra Frequency Absolute RSRQ Accuracy Test cases | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155198 | 0222 | - | Add Test Tolerance analysis for 2DL CA activation and deactivation of known SCell in non-DRX Test cases | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155202 | 0224 | - | Add Test Tolerance analysis for 3DL CA Event Triggered Reporting under Deactivated SCells in Non-DRX Test cases | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155206 | 0225 | - | Add Test Tolerance analysis for 3DL E-UTRA for Carrier Aggregation RSRP Accuracy Test cases | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155208 | 0226 | - | Add Test Tolerance analysis for 3DL E-UTRA for Carrier Aggregation RSRQ Accuracy Test cases | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155418 | 0227 | - | Addition of Test Tolerance analysis for 3DL E-UTRA for Carrier Aggregation RSRP Accuracy Test cases | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155588 | 0228 | - | Add Test Tolerance analysis for TCs 8.16.31+8.16.32+8.16.33+8.16.34 36.903 CR | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155882 | 0223 | 1 | Add Test Tolerance analysis for E-UTRAN TDD – UE Timing Advanced Adjustment Accuracy Test for SCell in sTAG | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155886 | 0217 | 1 | Update Test Tolerance analysis for TS 36.521-3 Test cases 4.5.1.1 and 4.5.2.1 | 12.7.0 | 12.8.0 |
| 2015-12 | RAN5#69 | R5-155887 | 0218 | 1 | Add Test Tolerance analysis for TS 36.521-3 Test case 8.20.2A | 12.7.0 | 12.8.0 |
| 2016-03 | RAN#71 | R5-160199 | 0229 | - | Band 66 update of Test Tolerance analyses for 3DL E-UTRA for CA RSRP Accuracy Test cases | 12.8.0 | 12.9.0 |
| 2016-03 | RAN#71 | R5-160223 | 0230 | - | Add TT analysis for 8.16.23 and 8.16.24 TDD-FDD CA event triggered reporting under deactivated SCell in non-DRX with PCell in FDD/TDD 36.903 | 12.8.0 | 12.9.0 |
| 2016-03 | RAN#71 | R5-160224 | 0231 | - | Add TT analysis for 8.16.25 and 8.16.26 TDD-FDD CA event triggered reporting on deactivated SCell with PCell interruption in non-DRX with PCell in FDD/TDD 36.903 | 12.8.0 | 12.9.0 |
| 2016-03 | RAN#71 | R5-160551 | 0234 | - | Add Test Tolerance analysis for E-UTRAN 3DL CA Activation and Deactivation of Known SCell in Non-DRX | 12.8.0 | 12.9.0 |
| 2016-03 | RAN#71 | R5-160875 | 0232 | 1 | Add Test Tolerance analysis for RRM test cases 7.1.6, 7.1.7, 7.1.7A and 7.1.7B | 12.8.0 | 12.9.0 |
| 2016-03 | RAN#71 | R5-160882 | 0233 | 1 | Update Test Tolerance analysis for RRM test cases 7.1.3, 7.1.3\_1, 7.1.4, 7.1.4\_1, and 7.1.4A | 12.8.0 | 12.9.0 |
| 2016-06 | RAN#72 | R5-162112 | 0235 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.5 and 10.6 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162115 | 0236 | - | Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.7 and 10.8 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162261 | 0239 | - | Test Tolerance analysis for Cat 0 RLM out of sync (non-DRX) test cases | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162264 | 0240 | - | Test Tolerance analysis for Cat 0 RLM out of sync DRX test cases | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162270 | 0241 | - | Test Tolerance analysis for Cat 0 RLM in sync non-DRX test cases | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162273 | 0242 | - | Test Tolerance analysis for Cat 0 RLM in sync DRX test cases | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162398 | 0244 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.1.6.1\_1 and 9.1.12.1\_1 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162400 | 0245 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.1.6.2\_1 and 9.1.12.2\_1 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162429 | 0246 | - | Update of Test Tolerance analyses for intra-freq absolute RSRP accuracy Test cases to include bands 65 and 66 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162431 | 0247 | - | Update of Test Tolerance analyses for intra-freq absolute RSRP accuracy Test cases Rel-12 to include bands 65 and 66 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162435 | 0248 | - | Update of Test Tolerance analyses for intra-freq relative RSRP accuracy Test cases to include bands 65 and 66 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162438 | 0249 | - | Update of Test Tolerance analyses for inter-freq relative RSRP accuracy Test cases to include bands 65 and 66 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162736 | 0253 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 9.1.25 and 9.1.26 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162892 | 0238 | 1 | Add Test Tolerance analysis for MTC RRM test cases 8.1.12, 8.1.13, 8.1.17 and 8.1.18 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162893 | 0237 | 1 | Add Test Tolerance analysis for MTC RRM test cases 8.1.11 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162896 | 0250 | 1 | Add Test Tolerance analysis for TS 36.521-3 Test case 8.22.1 and 8.22.2 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-162898 | 0251 | 1 | Add Test Tolerance analysis for TS 36.521-3 Test case 8.22.3 and 8.22.4 | 12.9.0 | 12.10.0 |
| 2016-06 | RAN#72 | R5-163115 | 0243 | 1 | Add Test Tolerance analysis for TS 37.571-1 Test cases 8.1.3 and 8.1.4 | 12.9.0 | 12.10.0 |
| 2016-09 | RAN#73 | R5-165167 | 0254 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.1.3.1\_1 and 9.1.4.1\_1 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-165294 | 0259 | - | Band 66 update of Test Tolerance analyses for Inter-freq relative RSRP accuracy Test cases | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-165303 | 0260 | - | Update of Test Tolerance analyses for Test case 9.1.24 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-165523 | 0264 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 8.22.9 and 8.22.10 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-165524 | 0265 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 9.2.28 and 9.2.29 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-165525 | 0266 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 9.2.30 and 9.2.31 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-165526 | 0267 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 9.2.32 and 9.2.33 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-165578 | 0270 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 9.1.27 and 9.1.28 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-165579 | 0271 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 9.1.33 and 9.1.34 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-166097 | 0261 | 1 | Update of Test Tolerance analyses for 10.2 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-166099 | 0262 | 1 | Update of Test Tolerance analyses for 7.5.4 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-166101 | 0255 | 1 | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.1.3.2\_1 and 9.1.4.2\_1 | 12.10.0 | 12.11.0 |
| 2016-09 | RAN#73 | R5-166307 | 0263 | 1 | Addition of Test Tolerance analysis for intra frequency absolute and relative CSI-RSRP accuracies in CRI-RS based discovery signal Test cases | 12.10.0 | 12.11.0 |
| 2016-12 | RAN#74 | R5-168169 | 0275 | F | Addition of Test Tolerance analysis for inter frequency absolute and relative CSI-RSRP accuracies in CSI-RS based discovery signal Test cases | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168171 | 0276 | F | Addition of Test Tolerance analysis for FDD/TDD absolute and relative CSI-RSRP accuracies for E-UTRAN Carrier Aggregation in CSI-RS based discovery signal Test cases | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168260 | 0278 | F | Update of Test Tolerance analyses for 3 DL CA Activation and Deactivation of Unknown SCell in Non-DRX test cases | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168477 | 0285 | F | Add Test Tolerance analysis for MTC RRM test cases 9.2.42.1,9.2.43.1 and 9.2.44.1 | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168519 | 0289 | F | Update of Test Tolerance analyses for 10.4 | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168585 | 0291 | F | Update to Test Tolerance analysis for TS 36.521-3 Test case 9.1.27 and 9.1.28 | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168685 | 0294 | F | PCC-SCC swap update of Test Tolerance analyses for 10+20MHz RSRQ accuracy Test cases | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168817 | 0295 | F | Update of Test Tolerance analyses for DC RLM out of sync DRX test cases | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168819 | 0296 | F | Update of Test Tolerance analyses for DC RLM in sync DRX test cases | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168831 | 0297 | F | Update of Test Tolerance analyses for TC 9.1.5.1 to cater for FDD\_B | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168835 | 0298 | F | Update of Test Tolerance analyses for TC 9.1.5.2 to cater for FDD\_B | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168838 | 0299 | F | Update of Test Tolerance analyses for TC’s 9.1.6.1, 9.1.7.1, 9.1.12.1 and 9.1.13.1 to cater for FDD\_B | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-169596 | 0279 | F | Add Test Tolerance analysis for DC RRM test cases 8.23.4, 8.23.5 and 8.23.6 | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-169604 | 0293 | F | PCC-SCC swap update of Test Tolerance analyses for 10+20MHz TDD-TDD inter-frequency event triggered reporting test cases | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-169605 | 0300 | F | Update of Test Tolerance analyses for TC’s 9.1.6.2, 9.1.7.2, 9.1.12.2 and 9.1.13.2 to cater for FDD\_B | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-169607 | 0272 | F | Add Test Tolerance analysis for TS 36.521-3 Test case 9.1.41.1, 9.1.42.1 and 9.1.43.1 | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-169608 | 0273 | F | Add Test Tolerance analysis for TS 36.521-3 Test case 9.1.41.2, 9.1.42.2 and 9.1.43.2 | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-169728 | 0286 | F | Add Test Tolerance analysis for MTC RRM test cases 8.1.19, 8.1.20,8.1.21 and 8.1.22 | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-169729 | 0287 | F | Add Test Tolerance analysis for MTC RRM test cases 8.2.7 and 8.2.8 | 12.11.0 | 12.12.0 |
| 2016-12 | RAN#74 | R5-168173 | 0277 | F | Addition of Test Tolerance analysis for intra frequency absolute and relative RSRP accuracies of Cat-M1 UE in CEModeA | 12.12.0 | 13.0.0 |
| 2016-12 | RAN#74 | R5-168358 | 0283 | F | Test tolerance calculation for OOS RLM test cases for CE Mode A | 12.12.0 | 13.0.0 |
| 2016-12 | RAN#74 | R5-168360 | 0284 | F | Test tolerance calculation for IS RLM test cases for CE Mode A | 12.12.0 | 13.0.0 |
| 2016-12 | RAN#74 | R5-169598 | 0292 | F | Add Test Tolerance analysis for TS 36.521-3 Test case 9.1.57, 9.1.58 and 9.1.59 | 12.12.0 | 13.0.0 |
| 2017-03 | RAN#75 | R5-170790 | 0310 | - | Update to Test Tolerance analysis for the Test cases 9.1.29 and 9.1.30 | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171078 | 0316 | - | Test Tolerance analysis for TS 36.521-3 Test case 8.22.5 and 8.22.6 | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171198 | 0320 | - | Update of Test Tolerance analyses for TDD Relative RSRP Accuracy for E-UTRA Carrier Aggregation for 20MHz + 10MHz | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171782 | 0315 | 1 | Test Tolerance analyses updates for TC’s 9.1.8.1, 9.1.9.1 to cater for FDD\_B | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171784 | 0319 | 1 | PCC-SCC swap update of Test Tolerance analyses for 10+20MHz TDD-TDD inter-frequency event triggered reporting test cases | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171930 | 0311 | 1 | Add Test Tolerance analysis for TS 36.521-3 Test case 8.26.5 and 8.26.6 | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171961 | 0313 | 1 | Add Test Tolerance analysis for DC RRM test cases 8.23.1, 8.23.2 and 8.23.3 | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171966 | 0307 | 2 | Add Test Tolerance analysis for Cat NB1 intra-freq cell reselection Test case | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171980 | 0301 | 2 | Add Test Tolerance Analyses for TS 36.521-3 Test Cases 4.2.15, 4.2.16, and 4.2.17 | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171981 | 0306 | 1 | Add Test Tolerance analyses for UE Cat M1 Handover Test cases | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171982 | 0308 | 2 | Addition of Test Tolerance analysis for test cases 8.1.33, 8.1.34 and 8.1.35 for Cat-M1 UE in CEModeB | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171983 | 0309 | 2 | Addition of Test Tolerance analysis for the Test Cases 8.1.23, 8.1.24, and 8.1.25 for Cat-M1 UE in CEModeA | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171984 | 0317 | 1 | Test Tolerance analyses to 36.903 for TC 6.1.12 - 14 eMTC CEModeB | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171988 | 0304 | 2 | Test Tolerance Analysis for RRM TC 9.1.18.2\_1, 9.1.19.2\_1 and 9.1.24.2\_1 | 13.0.0 | 13.1.0 |
| 2017-03 | RAN#75 | R5-171989 | 0305 | 2 | Test Tolerance Analysis for RRM TC 9.9.1.1\_1 and 9.9.2.1\_1 | 13.0.0 | 13.1.0 |
| 2017-06 | RAN#76 | R5-172236 | 0326 | - | Add Test Tolerance Analysis in 36.903 for TCs 5.1.16, 5.1.17 and 5.1.18 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-172284 | 0327 | - | Update of Test Tolerance analysis to include 8.26.7 and 8.26.8 E-UTRAN FDD/TDD-FS3 Intra-frequency event triggered reporting in DRX for CRS based discovery signal | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-172288 | 0328 | - | Add Test Tolerance analysis for Contention Based Random Access Tests for Cat-M1 UEs in Enhanced Coverage Test cases | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-172330 | 0329 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.1.7.1\_1+9.1.13.1\_1 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-172332 | 0330 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.1.7.2\_1+9.1.13.2\_1 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-172334 | 0331 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.1.8.1\_1+9.1.9.1\_1 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-172336 | 0332 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.1.10.1\_1+9.1.11.1\_1 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-172662 | 0342 | - | PCC-SCC swap update of Test Tolerance analyses for 10+20MHz TDD event triggered reporting on deactivated SCell with PCell interruption in non-DRX | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-172732 | 0346 | - | Test Tolerance analysis for TS 36.521-3 Test case 8.22.11 and 8.22.12 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-172745 | 0347 | - | Test Tolerance: Analysis of Test cases 9.2.51 and 9.2.52 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-172751 | 0348 | - | Test Tolerance analyses updates for TC’s 9.1.8.2, 9.1.9.2 to cater for FDD\_B | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173058 | 0324 | 1 | LAA: Test Tolerance Analysis for RRM TC 9.1.55 and 9.1.56 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173060 | 0337 | 2 | Test tolerance analysis for the test cases 8.26.3 and 8.26.4 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173062 | 0339 | 2 | Test tolerance analysis for the test cases 7.1.17 and 7.1.18 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173069 | 0335 | 2 | Add Test Tolerance analysis for Cat-M1 test cases 7.2.10, 7.2.11, 7.2.12 in CEModeB | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173081 | 0350 | - | Test tolerance analysis for 36.521-3 test cases 9.11.1 and 9.11.2 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173230 | 0345 | 1 | Test Tolerance analysis for TS 36.521-3 Test case 8.22.7 and 8.22.8 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173232 | 0334 | 1 | Add Test Tolerance analysis for CA RRM test cases 8.16.51, 8.16.52, 8.16.53 and 8.16.54 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173236 | 0323 | 1 | LAA: Test Tolerance analysis of LAA Scell event reporting | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173241 | 0336 | 1 | Test tolerance analysis for the test cases 9.1..60 and 9.1.61 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173246 | 0344 | 1 | Test Tolerance: Analysis of Test cases 8.26.9 and 8.26.10 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173247 | 0338 | 1 | Test tolerance analysis for the test cases 6.1.15 and 6.1.16 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173251 | 0340 | 1 | Test tolerance analysis for the test cases 7.2.9 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173253 | 0341 | 1 | Test tolerance analysis for the test cases 7.3.62 and 7.3.63 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173259 | 0325 | 1 | Test tolerance calculation for TC7.3.56,7.3.57,7.3.58,7.3.59 | 13.1.0 | 13.2.0 |
| 2017-06 | RAN#76 | R5-173434 | 0349 | 2 | Test Tolerance analysis for the test cases 7.3.64 and 7.3.65 | 13.1.0 | 13.2.0 |
| 2017-09 | RAN#77 | R5-173749 | 0352 | - | Add Test Tolerance analysis for Test case 9.1.5.1\_1 | 13.2.0 | 13.3.0 |
| 2017-09 | RAN#77 | R5-173753 | 0354 | - | Add Test Tolerance analysis for TS 36.521-3 Test case 9.1.5.2\_1 | 13.2.0 | 13.3.0 |
| 2017-09 | RAN#77 | R5-173755 | 0355 | - | Add Test Tolerance analysis for TS 36.521-3 Test cases 9.1.14.1\_1+9.1.15.1\_1 | 13.2.0 | 13.3.0 |
| 2017-09 | RAN#77 | R5-173844 | 0359 | - | Test Tolerance: Analysis of Test cases 7.1.14, 7.1.15 and 7.1.16 | 13.2.0 | 13.3.0 |
| 2017-09 | RAN#77 | R5-173906 | 0360 | - | Test Tolerance analysis for Contention Based Random Access Tests in TS 36.521-3 6.2.10, 6.2.11 and 6.2.12 for Cat-M1 UEs in Normal Coverage Test cases | 13.2.0 | 13.3.0 |
| 2017-09 | RAN#77 | R5-173919 | 0361 | - | Update Test Tolerance analysis for reselection Test cases 4.2.1+4.2.2+4.2.9 | 13.2.0 | 13.3.0 |
| 2017-09 | RAN#77 | R5-175032 | 0353 | 1 | Add Test Tolerance analysis for TS 36.521-3 Test cases 8.16.55 and 8.16.56 | 13.2.0 | 13.3.0 |
| 2017-09 | RAN#77 | R5-175035 | 0358 | 1 | Test Tolerance: Analysis of Test cases 7.3.60 and 7.3.61 | 13.2.0 | 13.3.0 |
| 2017-09 | RAN#77 | R5-175036 | 0363 | 1 | Test tolerance, addition of test tolerance analysis of NB-IoT test cases 7.3.66 and 7.3.67 | 13.2.0 | 13.3.0 |
| 2017-09 | RAN#77 | R5-175164 | 0357 | 1 | Test Tolerance analyses for intra frequency case for Cat M1 UE in normal coverage | 13.2.0 | 13.3.0 |
| 2017-09 | RAN#77 | R5-175215 | 0351 | 1 | Test tolerance analysis for 36.521-3 test cases 9.12.1 and 9.12.2 | 13.2.0 | 13.3.0 |
| 2017-12 | RAN#78 | R5-176445 | 0368 | - | Test tolerance, addition of test tolerance analysis of eIMTA test case 8.4.6 | 13.3.0 | 13.4.0 |
| 2017-12 | RAN#78 | R5-177125 | 0364 | 2 | Update Test Tolerance analysis for NB-IoT RLM Out-of-sync Test cases | 13.3.0 | 13.4.0 |
| 2017-12 | RAN#78 | R5-177126 | 0365 | 2 | Update Test Tolerance analysis for NB-IoT RLM In-sync Test cases | 13.3.0 | 13.4.0 |
| 2017-12 | RAN#78 | R5-177313 | 0366 | 1 | Test tolerance, addition of test tolerance analysis of NB-IoT test cases 4.2.19 and 4.2.24 | 13.3.0 | 13.4.0 |
| 2018-03 | RAN#79 | R5-181517 | 0370 | 1 | Test tolerance, addition of test tolerance analysis of NB-IoT test case 6.2.16 | 13.4.0 | 13.5.0 |
| 2018-03 | RAN#79 | R5-181518 | 0371 | 1 | Test tolerance, addition of test tolerance analysis of NB-IoT test case 6.2.17 | 13.4.0 | 13.5.0 |
| 2018-03 | RAN#79 | R5-181031 | 0375 | - | Add Test Tolerance analysis for Cat-1bis RRM test cases 4.2.20 and 4.2.21 | 13.5.0 | 14.0.0 |
| 2018-03 | RAN#79 | R5-181032 | 0376 | - | Add Test Tolerance analysis for Cat-1bis RRM test cases 5.1.19 and 5.1.20 | 13.5.0 | 14.0.0 |
| 2018-03 | RAN#79 | R5-181512 | 0369 | 1 | Test tolerance, addition of test tolerance analysis of SRS switching test case 7.6.1 and 7.6.2. | 13.5.0 | 14.0.0 |
| 2018-03 | RAN#79 | R5-181513 | 0372 | 1 | Addition of test tolerance analysis for HST test case 8.2.11 | 13.5.0 | 14.0.0 |
| 2018-06 | RAN#80 | R5-183717 | 0379 | 1 | Test tolerance, Update of zip file to add information of test case 6.2.18 | 14.0.0 | 14.1.0 |
| 2018-06 | RAN#80 | R5-183727 | 0380 | 1 | Update Test Tolerance analysis for NB-IoT Tx Timing Test cases 7.1.17+7.1.18 | 14.0.0 | 14.1.0 |
| 2018-06 | RAN#80 | R5-183728 | 0378 | 1 | Add Test Tolerances analysis for E-UTRAN Handover inter-frequency case for UE category 1bis | 14.0.0 | 14.1.0 |
| 2018-06 | RAN#80 | R5-183785 | 0381 | - | Add Test Tolerances analysis for inter-freq cell reselection Test cases for UE category 1bis | 14.0.0 | 14.1.0 |
| 2018-09 | RAN#81 | R5-184172 | 0397 | - | Add Test Tolerances analysis for E-UTRAN RRM IncMon TCs 8.3.7 and 8.4.7 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-184173 | 0398 | - | Add Test Tolerances analysis for E-UTRAN IncMon TC 8.3.8 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-184174 | 0399 | - | Add Test Tolerances analysis for E-UTRAN IncMon TC 8.3.9 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-184409 | 0409 | - | Addition of TT analysis of V2X TC 12.2.1 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-184410 | 0410 | - | Addition of TT analysis of V2X TC 12.2.2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-184411 | 0411 | - | Addition of TT analysis of V2X TC 12.4 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185338 | 0412 | 1 | Test Tolerances analysis for E-UTRAN FDD-FDD and TDD-TDD inter-frequency TC 8.3.1\_2, 8.3.2\_2, 8.4.1\_2, 8.4.2\_2 and 8.4.6\_2 for UE category 1bis | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185339 | 0413 | 1 | Test Tolerances analysis for E-UTRAN FDD-FDD and TDD-TDD inter-frequency TC 8.3.3\_2 and 8.4.3\_2 for UE category 1bis when L3 filtering is used | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185340 | 0414 | 1 | Test Tolerances analysis for E-UTRAN FDD-FDD intra-frequency event triggered reporting under fading propagation conditions in asynchronous cells for UE category 1bis | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185341 | 0415 | 1 | Test Tolerances analysis for E-UTRAN FDD-FDD and TDD-TDD intra-frequency TC 8.1.12\_2, 8.1.13\_2, 8.1.17\_2, 8.1.18\_2 for UE category 1bis | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185395 | 0383 | 1 | Test Tolerance Analysis for RRM TC 9.1.1.1\_2 and 9.1.2.1\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185396 | 0386 | 1 | Test Tolerance Analysis for RRM TC 9.1.1.2\_2 and 9.1.2.2\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185397 | 0387 | 1 | Test Tolerance Analysis for RRM TC 9.1.3.1\_2 and 9.1.4.1\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185398 | 0388 | 1 | Test Tolerance Analysis for RRM TC 9.1.3.2\_2 and 9.1.4.2\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185399 | 0389 | 1 | Test Tolerance Analysis for RRM TC 9.1.5.1\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185400 | 0390 | 1 | Test Tolerance Analysis for RRM TC 9.1.5.2\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185401 | 0392 | 1 | Test Tolerance Analysis for RRM TC 9.2.3.1\_2 and 9.2.4.1\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185402 | 0393 | 1 | Test Tolerance Analysis for RRM TC 9.2.3.2\_2 and 9.2.4.2\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185403 | 0394 | 1 | Test Tolerance Analysis for RRM TC 9.2.4A.1\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185404 | 0395 | 1 | Test Tolerance Analysis for RRM TC 9.2.4A.2\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185405 | 0400 | 1 | Test Tolerance Analysis for RRM TC 9.2.1.1\_2 and 9.2.2.1\_2 | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185424 | 0384 | 1 | Addition of TT analysis of eHST FDD Intra-frequency event reporting. | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185425 | 0385 | 1 | Addition of TT analysis of V2X uplink timing test case | 14.1.0 | 14.2.0 |
| 2018-09 | RAN#81 | R5-185456 | 0396 | 1 | TC Group definition for RRM IncMon test cases | 14.1.0 | 14.2.0 |
| 2019-03 | RAN#83 | R5-191593 | 0423 | - | Addition of Test Tolerance Analysis for RRM IncMon Test Cases 4.2.10 and 4.2.11 | 14.3.0 | 14.4.0 |
| 2019-03 | RAN#83 | R5-191594 | 0424 | - | Addition of Test Tolerance Analysis for RRM IncMon Test Cases 4.3.15, 4.3.3A | 14.3.0 | 14.4.0 |
| 2019-03 | RAN#83 | R5-191595 | 0425 | - | Addition of Test Tolerance Analysis for RRM IncMon Test Cases 4.3.2A and 4.3.4.4 | 14.3.0 | 14.4.0 |
| 2019-03 | RAN#83 | R5-191596 | 0426 | - | Addition of Test Tolerance Analysis for RRM IncMon Test Cases 8.5.8 and 8.6.3 | 14.3.0 | 14.4.0 |
| 2019-03 | RAN#83 | R5-191597 | 0427 | - | Addition of Test Tolerance Analysis for RRM IncMon Test Cases 8.7.5 and 8.7A.1 | 14.3.0 | 14.4.0 |
| 2019-03 | RAN#83 | R5-192850 | 0428 | 1 | Correction to TT analysis for NB-IOT RLM tests | 14.4.0 | 15.0.0 |
| 2019-09 | RAN#85 | R5-196398 | 0429 | - | Addition of Test Tolerance Analysis for 3DL/3UL TDD CA UE Transmit Timing Accuracy | 15.0.0 | 15.1.0 |
| 2019-09 | RAN#85 | R5-196944 | 0431 | - | Test Tolerances analysis for E-UTRAN RRM feMTC Test Cases | 15.0.0 | 15.1.0 |
| 2019-12 | RAN#86 | R5-197753 | 0432 | - | Addition of Test tolerance of V2X RRM test cases 12.3.1 and 12.3.2 | 15.1.0 | 15.2.0 |
| 2019-12 | RAN#86 | R5-197756 | 0433 | - | Addition of Test tolerance of V2X RRM test case 12.5 | 15.1.0 | 15.2.0 |
| 2019-12 | RAN#86 | R5-199457 | 0436 | - | Test Tolerances analysis for E-UTRAN RRM feMTC Test Cases | 15.1.0 | 15.2.0 |
| 2019-12 | RAN#86 | R5-199479 | 0434 | 1 | Addition of Test Tolerance of V2X RRM test cases 12.6.1 and 12.6.2 | 15.1.0 | 15.2.0 |
| 2020-06 | RAN#88 | R5-202801 | 0438 | 1 | Test Tolerance analysis for E-UTRAN FDD inter-frequency event triggered reporting in CEModeA test cases | 15.2.0 | 15.3.0 |
| 2020-06 | RAN#88 | R5-202802 | 0439 | 1 | Test Tolerance analysis for E-UTRAN FDD inter-frequency event triggered reporting in CEModeB test cases | 15.2.0 | 15.3.0 |
| 2020-09 | RAN#89 | R5-204114 | 0440 | - | Test Tolerance analysis for E-UTRAN HD-FDD inter frequency handover for Cat-M1 UEs in CEModeA test case | 15.3.0 | 15.4.0 |
| 2020-09 | RAN#89 | R5-204115 | 0441 | - | Test Tolerance analysis for E-UTRAN HD-FDD Inter frequency RRC Re-establishment for Cat-M1 UE in CEModeA test case | 15.3.0 | 15.4.0 |
| 2020-12 | RAN#90 | R5-205894 | 0443 | - | Addition of TT analysis of NB-IOT TDD RRM test cases 4.2.35, 4.2.36 and 4.2.37 | 15.4.0 | 15.5.0 |
| 2020-12 | RAN#90 | R5-206711 | 0442 | 1 | Addition of test point analysis for sTTI RRM test cases | 15.4.0 | 15.5.0 |
| 2022-06 | RAN#96 | R5-223175 | 0445 | - | Test Tolerances for E-UTRAN intra-frequency Conditional Handover test cases | 15.5.0 | 16.0.0 |
| 2022-06 | RAN#96 | R5-223176 | 0446 | - | Test Tolerances for E-UTRAN inter-frequency Conditional Handover test cases | 15.5.0 | 16.0.0 |
| 2022-09 | RAN#97 | R5-224841 | 0447 | - | Update to TT analysis of V2X test case 12.1.2 | 16.0.0 | 16.1.0 |
| 2023-03 | RAN#99 | - | - | - | Administrative release upgrade to match the release of TS 36.521-2 and TS 36.521-3 which were upgraded at RAN#99 to Rel-18 due to Rel-18 relevant CR(s) | 16.1.0 | 17.0.0 |
| 2023-03 | RAN#99 | - | - | - | Administrative release upgrade to match the release of TS 36.521-2 and TS 36.521-3 which were upgraded at RAN#99 to Rel-18 due to Rel-18 relevant CR(s) | 17.0.0 | 18.0.0 |
| 2023-12 | RAN#102 | R5-235996 | 0451 | - | Addition TT analysis for NB-IoT NTN RLM IS test cases | 18.0.0 | 18.1.0 |
| 2023-12 | RAN#102 | R5-235998 | 0452 | - | Addition TT analysis for NB-IoT NTN RLM OOS test cases | 18.0.0 | 18.1.0 |
| 2023-12 | RAN#102 | R5-236000 | 0453 | - | Addition TT analysis for NB-IoT NTN timing advance test cases. | 18.0.0 | 18.1.0 |
| 2023-12 | RAN#102 | R5-236002 | 0454 | - | Addition TT analysis for NB-IoT NTN timing accuracy test cases | 18.0.0 | 18.1.0 |
| 2023-12 | RAN#102 | R5-236006 | 0455 | - | TT analysis addition for NB-IoT NTN RRC Re-establishment test cases 13.3.1.1 and 13.3.1.2 | 18.0.0 | 18.1.0 |
| 2023-12 | RAN#102 | R5-236009 | 0456 | - | Addition of TT analysis for NB-IoT Cell Reselection test cases 13.1.1.1, 13.1.1.2 and 13.1.1.3 | 18.0.0 | 18.1.0 |
| 2023-12 | RAN#102 | R5-236025 | 0457 | - | Addition TT analysis for NB-IoT NTN random access test cases | 18.0.0 | 18.1.0 |
| 2023-12 | RAN#102 | R5-236026 | 0458 | - | Addition TT analysis for NB-IoT NTN downlink channel quality reporting accuracy test cases | 18.0.0 | 18.1.0 |