

Agenda Item: 5.4.2
Source: ARIB
Title: Regional requirements on Test Tolerances
Document for: Discussion and Approval

Introduction

In RAN WG4#15 meeting in Boston (Jan 2001), a CR on "Regional requirements on Test Tolerances" [1] which was for TS25.141 [2] had been discussed. The CR proposed sentences to the section on "regional requirements" in order to reflect Japanese regulatory environment, where zero test tolerances will be applied as their first stage regulations while non-zero test tolerances are to be agreed in 3GPP. Although these non-zero test tolerances are expected to be incorporated into Japanese regulations, it will need certain period of time, say more than half an year or so. In the meantime, there will be inconsistency between Japanese regulations and the latest 3GPP specifications in terms of test tolerances and it may cause confusion or misunderstanding with conformance testing especially in Japan.

To avoid such situations, the CR had been proposed, but the consequence in the RAN4 meeting was that the decision should be made in RAN meeting since it seemed to be rather regulatory issue but not a technical one, while WG4 were to focus on technical issues. In this document, rationales of the CR are reviewed and proposal on how to handle this issue is made. It is also noted that the decision shall be also applied commonly for UE side, i.e. guidance to TSG-T on this issue shall be needed.

Discussion

First of all, it should be noted that all the efforts are being made to incorporate all the changes in 3GPP specifications into their regulations. These are under way of legislation process, but on the other hand, it needs a certain period of time and is expected to be more than half an year of so. In the meantime, there will be inconsistency between these two and that means ARIB will not be able to import or approve these specifications as its own since the 3GPP specifications may not meet Japanese regulations at that moment.

As can be seen in minutes of OP#4 meeting in San Francisco (Nov.2000) [3], it was agreed as:

"The Partners confirmed that whenever possible, additional requirements mandated by regulators should be clearly indicated in the superset of 3GPP specifications".

The decision was for document [4], which was proposed by ETSI, and it said:

"Additional requirements that may be mandated by regulators should be seen as options of the 'superset' and should be contained within the 3GPP specifications. Such additional requirements should not be considered as external to the 3GPP specifications. Only by adhering to this policy will we ensure that the objective of global mobility of terminals is achieved".

Based on the discussion above, ARIB believes that it should be implemented in 3GPP specifications properly, since it is a regional requirement in Japan.

Proposal

In order to reflect Japanese regulatory environment to 3GPP specifications, indication of the Japanese situation in section for "regional requirements" in TS25.141 (and in TS34.121 as well) are to be needed. CR discussed in RAN4#15 [5] is attached as Appendix and it will be a solution on this issue. The proposed sentences are:

"By the time the non-zero test tolerances are reflected to the Japanese regulations, shared risk against core specification value with test tolerance of zero may be applied provisionally as their regional requirement in Japan".

This document suggests TSG-RAN to approve the solution and to provide relevant WGs with a form of guidance.

Reference

- [1] R4-010225," CR for Regional requirements on Test Tolerances (Rev2)",ARIB
- [2] TS25.141(V3.4.1), " Base station conformance testing (FDD)"
- [3] OP#4-0011,"Draft summary minutes, decisions and actions from 3GPP Organisation Partners Meeting#4, San Francisco, 15 November 2000", 3GPP OP
- [4] OP#4-0005,"Regional requirements and global circulation of terminals", ETSI
- [5] R4-010225, " CR for Regional requirements on Test Tolerances (Rev2) ", ARIB

Appendix

3GPP TSG-RAN4 Meeting #15
Boston, MA, US, Jan 22th - 26th 2001

Tdoc R4-010225

Agenda Item: 4.7
Source: ARIB
Title: CR for Regional requirements on Test Tolerances (Rev2)
Document for: Discussion and Approval

Preface

This contribution is a further revision of Tdoc. R4-010204, to incorporate the comments from the delegates. R4-010204 was for TEM AH in RAN4#15 meeting and it is also a revised version of original input, Tdoc. R4-010054. Changes are made to indicate explicitly that the proposed regional requirement is for Japan.

It should be noted that all the effort shall be done to incorporate all the changes in 3GPP specifications into the Japanese regulations. But on the other hand, it needs a certain period of time, expected to be half a year or so. And in the meantime, we need such a proposed text so as to avoid any misunderstanding in conformance testing.

Introduction

In RAN WG4, it is expected that test tolerances of non-zero value are to be agreed and reflected to each "test requirements" in TS25.141. On the other hand, concerns have been raised in Japan that they already have certain regulations based on a previous version of TS25.141 which does not yet incorporate any "test requirements" of non-zero test tolerance. This means that in Japan, the latest TS25.141 may have an inconsistency with their regulations and ARIB cannot import nor approve such specifications as its own specifications.

Although Japanese regulations are expected to be revised so as to incorporate all the changes in the final test requirements in TS25.141, it will take a certain period of time, and in the meanwhile the differences between these two may cause serious misunderstanding or confusion especially in Japan. Similar situation might be envisaged in European countries; legislation procedure in both regions are considered to take several months. This situation was reported in TSG-RAN #10 meeting held in Bangkok and well understood by the attendees [1]. Tables in [1], which shows relevant regulatory items, are attached as an annex.

To avoid temporary confusion and to enable each SDO to approve latest version of TS25.141 as its own specification which are to be referred by relevant ITU-R recommendations, this contribution proposes a pragmatic and intermediate solution until the regulatory processes are firmly settled.

Proposal

In order to enable each regional standardisation organisations to approve (or to import) latest version of TS25.141 as their own specifications without any legal inconsistency nor ambiguity, ARIB proposes to add a sentence to section 4.7, that dare to state regional regulations supersedes test requirements in 3GPP, i.e. "tentative (or provisional) application of zero test tolerance" may be allowed before each regional regulations incorporates latest changes in TS25.141. After all the changes are reflected to the regulations, the statement proposed here shall be removed.

Reference

- [1] RP-000668, Japanese regulatory items in TS 25.141 and TS 34.121, TSG-RAN meeting #10, ARIB
- [2] Document 8/20-E, "MEASUREMENT UNCERTAINTY AS IT APPLIES TO TEST LIMITS FOR THE TERRESTRIAL COMPONENT OF IMT-2000," ITU-R Working Party 8F
- [3] R4-000991, "Proposal for definitions, test tolerances and way forward in TS25.141", Measurement Uncertainty AdHoc.
- [4] "Ordinance for Regulating Radio Equipment of Japan", The Ministry of Posts and Telecommunications (MPT)

Annex

Table 1 Test Tolerances for conformance test of UE in TS34.121 (V3.3.0)

Clause	Item	Items Under regulation of Japan	Items under conformance test by TELEC
Emission Requirements			
5.9	Spectrum Emission Mask		
5.10	ACLR	X	X
5.11	(Tx) Spurious Emissions	X	X
6.8	Rx Spurious Emissions	X	X
Other emission requirements			
5.8	Occupied Bandwidth	X	X
5.12	Transmit Intermodulation		
Frequency requirement			
5.3	Frequency error	X	X
Power accuracy requirements			
5.2	Maximum output power	X	X
5.4.1	Open Loop Power Control in the Uplink	Note 2	
5.4.2	Inner Loop Power Control in the Uplink	Note 2	
5.4.3	Minimum Output Power		
5.4.4	Out of sync handling of output power		
5.5.1	Transmit OFF Power	X	
5.5.2	Transmit ON/IFF Time mask		
5.6	Change of TFC		
5.7	Power setting in uplink compressed mode		
Receiver performance			
6.2	Receiver Sensitivity Level	X	
6.3	Maximum Input Level		
7	Performance Requirements		
Receiver immunity to strong interferers			
6.4	Adjacent Channel Selectivity	X	
6.5	Blocking Characteristics	Note 3	
6.6	Spurious Response	X	
6.7	Intermodulation Characteristics	X	
Other requirements			
5.13.1	Error Vector Magnitude	Note 4	
5.13.2	Peak code domain error	Note 4	

Note1: "X" denotes that regulation of Japan or TELEC specifies the corresponding values.

Note2: This shall be automatically controlled to be the bare minimum. Corresponding values are not specified.

Note3: Defined as spurious response.

Note4: Defined as modulation accuracy.

Note5: TELEC currently specifies that test tolerance (TT) equal to 0 will be applied.

Table 2 Test Tolerances for conformance test of BS in TS25.141 (V3.4.0)

Clause	Item		Items Under regulation of Japan	Items under conformance test by TELEC
Emission Requirements				
6.5.2.2	ACLR		X	X
6.5.2.1	Spectrum Emission Mask			
6.5.3	(Tx) Spurious emissions		X	X
7.7	Rx Spurious emissions		X	X
Other emission requirements				
6.5.1	Occupied bandwidth		X	X
6.6	Transmit intermodulation		X	X
Frequency requirement				
6.3	Frequency error		X	X
Power accuracy requirements				
6.2.1	Base station maximum output power		X	X
6.2.2	CPICH power accuracy			
6.4.2	Power control steps	Relative 1dB step	Note 2	
		Avg. in 10 steps	Note 2	
6.4.3	Power ctrl dynamic range	At max./min. power	Note 2	
		25 dB relative power	Note 2	
6.4.4	Total power dynamic range	Total power	Note 2	
		At 25dB relative power	Note 2	
Receiver performance				
7.2	Receiver sensitivity Level		X	
8	Performance requirement			
Receiver immunity to strong interferers				
7.4	Adjacent Channel Selectivity		X	
7.5	Blocking characteristics		Note 3	
7.6	Intermodulation characteristics		X	
Other requirements				
6.7.1	Error vector magnitude		Note 4	
6.7.2	Peak code Domain error		Note 4	
7.3	Rx dynamic range			
7.8	Verification of BER calculation			

Note1: “X” denotes that regulation of Japan or TELEC specifies the corresponding values.

Note2: This shall be automatically controlled to be the bare minimum. Corresponding values are not specified.

Note3: Defined as spurious response.

Note4: Defined as modulation accuracy.

Note5: TELEC currently specifies that test tolerance (TT) equal to 0 will be applied.

CHANGE REQUEST

⌘ **25.141 CR NUM** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Regional requirements on Test Tolerance		
Source:	⌘ ARIB		
Work item code:	⌘	Date:	⌘ 01.18.2001
Category:	⌘ F	Release:	⌘ R99
Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)	

Reason for change:	⌘ As the current Japanese regulations could only be based on "test requirements" in former version of TS25.141, they do not reflect latest "test requirements" which may include non-zero test tolerances. Although, Japanese regulations have to be revised so as to incorporate all the changes in TS25.141, it will take certain period of time and as a matter of fact, before all the changes are incorporated, Japanese regulations supersedes test requirements in 3GPP. It is also a common possible situation in regions other than Japan. To avoid neither confusion nor misunderstanding caused by this inconsistency, clear indication of allowing "tentative application of 'test requirements' with 'zero test tolerance'" is necessary.
Summary of change:	⌘ To indicate that, shared risk against core specification value with test tolerance of zero may be applied provisionally as regional requirement in Japan by the time the non-zero test tolerances are reflected to the Japanese regulations.
Consequences if not approved:	⌘ In the meantime before those regulations reflect "Test Requirements with non-zero test tolerance", there will be inconsistency between test requirements in 3GPP and the regulations. This will cause serious confusion or misunderstanding in conformance testing.

Clauses affected:	⌘ 4.7		
Other specs Affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘ The proposed statement shall be removed after all the relevant regulations in each region reflect "Test Requirements with non-zero test tolerance" in TS25.141.		

4.7 Regional requirements

Some requirements in TS 25.141 may only apply in certain regions. Table 4.4 lists all requirements that may be applied differently in different regions.

Table 4.4: List of regional requirements

Subclause number	Requirement	Comments
3.4.1	Frequency bands	Some bands may be applied regionally.
3.4.2	Tx-Rx Frequency Separation	The requirement is applied according to what frequency bands in subclause 3.4.1 that are supported by the BS.
4.2	Test Tolerances	By the time the non-zero test tolerances are reflected to the Japanese regulations, in case of test tolerances of zero being applied in certain area as their regulations, shared risk against core specification value with test tolerance of zero may be applied provisionally as their regional requirement in Japan. by the time the non-zero test tolerances are reflected to the regulations.
6.2.1.2	Base station output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the ranges defined for the Normal test environment in subclause 4.4.1.
6.5.2.1	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
6.5.3.5	Spurious emissions (Category A)	These requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329-7 [1], are applied.
6.5.3.6	Spurious emissions (Category B)	These requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329-7 [1], are applied.
6.5.3.8.1	Co-existence with GSM900 – Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS in geographic areas in which both GSM 900 and UTRA are deployed.
6.5.3.8.2	Co-existence with GSM900 – Co-located base stations	This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA BS are co-located.
6.5.3.9.1	Co-existence with DCS1800 – Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS in geographic areas in which both DCS 1800 and UTRA are deployed.
6.5.3.9.2	Co-existence with DCS1800 – Co-located base stations	This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA BS are co-located.
6.5.3.10	Co-existence with PHS	This requirement may be applied for the protection of PHS in geographic areas in which both PHS and UTRA are deployed.
6.5.3.11	Co-existence with services in adjacent frequency bands	This requirement may be applied for the protection in bands adjacent to 2110-2170 MHz, as defined in subclause 3.4.1(a) and 1930-1990 MHz, as defined in subclause 3.4.1(b) in geographic areas in which both an adjacent band service and UTRA are deployed.
6.5.3.12.1	Co-existence with UTRA TDD – Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.5.3.12.2	Co-existence with UTRA TDD – Co-located base stations	This requirement may be applied for the protection of UTRA-TDD BS receivers when UTRA-TDD BS and UTRA FDD BS are co-located.
7.5	Blocking characteristic	The requirement is applied according to what frequency bands in subclause 3.4.1 that are supported by the BS.