TSG-RAN Working Group 1 meeting #7
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TSGR1#7(99)b26

Agenda item:

Source: Ericsson

Title: Proposal for new measurement specification

Document for: Discussion

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1 Introduction

It is clear that we need to do something about the measurement document TS 25.231, to align it with the flexible measurement control concept specified in WG2. Hence, we need to limit the scope somewhat of the document, and also restructure the document. In addition, we propose to split TS 25.231 into two documents, one for FDD (25.215) and one for TDD (25.225).

The reasons would be:

- Consistency. This has been done with all other documents so far.
- There are a lot of differences between the TDD and FDD modes, and it will be rather cumbersome to read the spec if TDD and FDD is mixed. Examples of differences:
  - For TDD there are the DCA measurements that don't exist for FDD.
  - For FDD compressed mode should be described, which will be a major part of the writing to do.
  - For TDD there are descriptions of inter-frequency monitoring using idle time slots.
  - The measurements are done on different physical channels in FDD and TDD.
  - In FDD we have pilots to measure on, while in TDD we have midambles.
  - In TDD we need to consider the time slots, while that is not necessary in FDD.
  - The filtering requirements may be different for FDD and TDD.
  - There may be different needs to support some measurements.

It would be possible to mix FDD and TDD in one document, but due to the extra need in all places to distinguish between FDD and TDD the result would be rather difficult to read.

Based on the above points, we propose to create two new documents, 25.215 and 25.225, which contain the relevant parts of the 25.231 contents, and with new scope that is better suited for what WG1 is expected to document. These two documents should have as aligned table of contents as possible, but be allowed to differ on the areas where the basic technical characteristics of the different modes deviates.

Arguments have been heard that dual-mode terminal operation in idle mode it would be difficult to split the specification into FDD and TDD parts, since a terminal in idle mode cannot be considered to operate in one of the modes. However, consistency is kept if the measurements in idle mode are described as if the terminal was single mode FDD or TDD. Then a dual-mode terminal would need to be implemented taking both the specifications into account, where e.g. the measurements on a FDD cell in idle mode are specified in the FDD document.

A document structure proposal for the FDD document, 25.215 is attached in this document. The FDD paper can also serve as a basis for discussions around the document structure for TDD. The issue with document structure is very urgent, since WG1 is supposed to have the measurement specification approved to V3.0.0 at the next RAN meeting. One requirement for that to happen is that WG1 in addition to knowing *what* to document, also know *how* to document it.

TS 25.215 V0.0.1 (1999-08)

Technical Specification

3rd Generation Partnership Project (3GPP);
Technical Specification Group (TSG)
Radio Access Network (RAN);
Working Group 1 (WG1);
Physical layer – Measurements (FDD)

Draft proposal for new document

Reference

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1 Intellectual Property Rights

<editor's note : this section will be completed when an official format for the document is agreed>

2 Foreword

This Technical Specification (TS) has been produced by the 3G Partnership Project (3GPP) of the European Telecommunications Standards Institute (ETSI).

The contents of this TS are subject to change as the work continues

3 Scope

< Editor's note: This section needs to be updated once the scope of the document is determined. >

4 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, subsequent revisions do apply.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] 3GPP RAN 25.211 Transport channels and physical channels (FDD)

[2] 3GPP RAN 25.212 Multiplexing and channel coding (FDD)

[3] 3GPP RAN 25.213 Spreading and modulation (FDD)

[4] 3GPP RAN 25.214 Physical layer procedures (FDD)

[5] 3GPP RAN 25.221 Transport channels and physical channels (TDD)

[6] 3GPP RAN 25.222 Multiplexing and channel coding (TDD)

[7] 3GPP RAN 25.223 Spreading and modulation (TDD)

[8] 3GPP RAN 25.224 Physical layer procedures (TDD)

[9] 3GPP RAN 25.302 Services provided by the Physical layer

[10] 3GPP RAN 25.303 UE functions and interlayer procedures in connected mode

[11] 3GPP RAN 25.304 UE procedures in idle mode

[12] XX.15, version 1.0.0 UTRA Handover

[13] XX.07, version 1.0.0 UTRA FDD, Physical layer procedures

[14] XX.13, version 1.0.0 UTRA TDD, Physical layer procedures

[15] ARIB, Vol 3

5 Control of UE/UTRAN measurements

<Editors note: In this chapter the general measurement control concept defined in WG2 shall briefly be described to get an understanding on how L1 measurements are initiated and controlled by higher layers. It shall be described how measurements are controlled both in idle and connected mode. In WG2 a measurement control concept are defined, where higher layers controls what to measure, how often to measure, when to report (criteria), filtering of measured value.>

6 Measurement abilities for UTRA FDD

<Editors note: In this chapter definitions of measurements required by WG2, L1 measurements reported to higher layers, shall be made. Maybe also UE internal measurements (not reported over the air-interface shall be defined?>

6.1 UE measurement abilities

<Editors note: Below is a example how to define a measurement quantity that the UE shall be able to measure.>

6.1.1 RSCP

Definition	Received Signal Code Power, the received power of the pilot bits on one code after de-spreading.
Purpose	Handover evaluation, DL open loop power control, calculation of SIR and pathloss.
Filtering	100ms to 5s in steps of 100ms, straight average filter (FIR) <*Actual filtering described here*>
Range/mapping	-133 to –70 dBm mapped on 6 bits. <*Actual mapping described here.*>

Physical channel(s) where the measurement shall be possible.	**Idle mode/Connected mode (I/C)**	
	Intra-frequency	Inter-frequency
CPICH	I/C	I/C
DPCH measured on DPCCH for each RL and after RL combination	C	N.A.

6.2 UTRAN measurement abilities

7 Measurement monitoring for UTRA FDD

7.1 UE measurements

7.1.1 Overview of the different cell sets

<Editors note: Shall the structure and content of the monitoring sets be described in WG1 or shall it be described within WG2?>

7.1.1.1 Cell selection/reselection

- 25.231 V0.3.1 section 5.1
- 25.231 V0.3.1 section 5.2

7.1.1.2 Handover

- 25.231 V0.3.1 section 7.1.1

7.1.2 Performance requirements for cell monitoring

<Editors-note: Is the performance requirements an issue for WG1 or shall it be specified within WG4?>

7.1.2.1 Cell selection/reselection

7.1.2.2 Handover

7.1.3 Monitoring of FDD cells on the same frequency

- 25.231 V0.3.1 section 7.1.3.2

7.1.4 Monitoring cells on different frequencies

7.1.4.1 Compressed mode

7.1.4.1.1 Use of compressed mode/dual receiver for monitoring

- 25.231 V0.3.1 section 7.1.3.3.1

7.1.4.1.2 Parameterisation of the compressed mode

- 25.231 V0.3.1 section 7.1.3.3.2

7.1.4.2 Monitoring of FDD cells on a different frequency

- 25.231 V0.3.1 section 7.1.3.3.4

7.1.4.2.1 Compressed mode settings

- 25.231 V0.3.1 section 7.1.3.3.4.1

7.1.4.3 Monitoring of TDD cells

- 25.231 V0.3.1 section 7.1.3.3.5

7.1.4.3.1 Compressed mode settings

- 25.231 V0.3.1 section 7.1.3.3.5.1

7.1.4.4 Monitoring of GSM cells

- 25.231 V0.3.1 section 7.1.3.3.6.1

7.1.4.4.1 Compressed mode settings

- 25.231 V0.3.1 section 7.1.3.3.6.2 - 7.1.3.3.6.6

7.1.5 Overall handover preparation at the UE

- 25.231 V0.3.1 section 7.1.3.4

7.2 UTRAN measurements

- 25.231 V0.3.1 section 7.1.4

8 Removal of paragraphs from the original TS 25.231 v0.3.1

The following paragraphs have been deleted from the original 25.231 v0.3.0

Paragraph	**Comment**
5.1.2	Measurement abilities defined in section 4.
5.2.2	Measurement abilities defined in section 4.
6	Measurements at call set-up. Where shall this be described?
7.1.2	Removed. Not a WG1 issue.
7.1.3.1	Removed, empty section.
7.1.3.3.3	Measurement requirements handled by WG4.
7.1.3.3.4.2	Measurement abilities defined in section 4.
7.1.3.3.5.2	Measurement abilities defined in section 4.
7.1.5	TDD section
7.1.6	TDD section
7.1.7	TDD section
7.2	Measurement for cell reselection in active mode, section not needed, handled by measurement control?
7.3	Measurement for power control, section not needed, handled by the measurement control?
7.4	TDD section
8	Radio Link Measurement section not needed. Measurement quantities are defined in section 4 instead.
Annex 1	Handover scenarios. Completely removed, not an WG1 issue.
Annex 2	Handover execution. Completely removed.

9 History

This document is written in Microsoft Word 97.		