

Agenda Item : **adhoc 16 (Measurements)**

Source : Siemens

Title : Proposal for Restructuring the TDD Parts of the Measurement Specification

Document for : Discussion

Introduction

In order to limit the scope of TS 25.231 and to align it with the flexible measurement control concept of RAN WG2 in TS 25.302, Tdoc [4] proposes a restructuring of the measurement specification taking into account only the FDD part.

With [1] and [2] necessary steps were already done to align the content of RAN WG1 specification TS 25.231 for TDD [3] with the measurement control concept of RAN WG2. As complement to [4], this contribution provides the missing parts of the measurement specification structure relevant for TDD as a discussion base.

In the following we summarise the two proposed modifications with respect to the structure that we would like to change also for the FDD part:

- In sections 6.1/6.2 we would like to add a table giving an overview of all derived and measured quantities.
- In sections 6.1/6.2 there should be only subsections for the measured quantities but not for the derived ones.

With respect to the content we propose the following also for the FDD part:

- In the purpose fields in subsections 6.1.x/6.2.x the channels on which the measurements are performed should be included to distinguish between different purposes.
- In section 7.1.1 only the purpose of the different cell sets and the references to the WG2 specifications should be included, since the detailed structure and contents of these sets are in the responsibility of RAN WG2.
- Section 7.1.2 about performance requirements for cell monitoring is a RAN WG4 matter and should therefore be removed.

References

[1] RAN WG2 Tdoc (99) 855, Measurements for TDD provided by the Physical Layer, source: Siemens

[2] RAN WG1 Tdoc (99) a79, Physical Layer Measurements in UTRA TDD Mode, source: Siemens

[3] RAN WG1 Tdoc (99) a70, TS 25.231 v0.3.1 Physical Layer Measurements

[4] RAN WG1 Tdoc (99) b26, Proposal for new measurement specification, source: Ericsson

Contents

4	References.....	2
5	Control of UE/UTRAN measurements	3
6	Measurement abilities for UTRA TDD	3
6.1	UE measurement abilities	3
6.1.1	RSCP	4
6.2	UTRAN measurement abilities	4
6.2.1	RSCP	4
7	Measurements for UTRA TDD.....	5
7.1	UE measurements.....	5
7.1.1	Overview of the different cell sets.....	5
7.1.1.1	Cell selection/reselection.....	5
7.1.1.2	Handover	5
7.1.2	Measurements for Handover.....	5
7.1.2.1	Monitoring of TDD cells.....	5
7.1.2.2	Monitoring of FDD cells	5
7.1.2.3	Monitoring of GSM cells	5
7.1.2.4	Overall handover preparation at the UE	5
7.1.3	Measurements for DCA.....	5
7.2	UTRAN measurements	5
7.2.1	Measurements for Timing Advance.....	6
7.2.2	Measurements for Handover.....	6
7.2.3	Measurements for DCA.....	6
8	Annex A.....	6
8.1	Monitoring GSM from TDD	6
9	Removal of paragraphs from the original TS 25.231 v0.3.1.....	6
10	History	7

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 is defined, where higher layers control what to measure, how often to measure, when to report (criteria), filtering of measured value.>

- 25.231 v0.3.1 section 7.1.7

6 Measurement abilities for UTRA TDD

<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

The following table provides an overview of the UE measurement abilities:

<Editor's note: The table is not yet complete.>

Measured and derived quantities.	Physical channel(s) where the measurement shall be possible (Idle mode= I / Connected mode = C)	
	Intra-frequency	Inter-frequency
RSCP	PCCPCH (I/C), DPCH (C), PDSCH (C)	CPICH (I/C) for FDD cells
ISCP	DPCH (C), PDSCH (C)	n.a.
RSSI	n.a.	CPICH (I/C) for FDD cells Broadcast channel (I/C) for GSM/PDC cells
SIR (=RSCP/ISCP)	DPCH (C), PDSCH (C)	n.a.
E_c/N_0 (=RSCP/RSSI)	n.a.	CPICH (I/C) for FDD cells

If nothing is mentioned measurements for idle mode apply for cell selection and also for cell reselection.

6.1.1 RSCP

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

Definition	Received Signal Code Power, the received power on one midamble code in a specified timeslot after de-spreading.
Purpose	Cell selection and reselection (PCCPCH of own and neighbour cells, CPICH of neighbour FDD cells), Handover evaluation (PCCPCH of own and neighbour cells, CPICH of neighbour FDD cells, DPCH, PDSCH), DI closed loop power control (DPCH, PDSCH), DCA (PCCPCH of own cell for pathloss calculation, DPCH, PDSCH for SIR calculation).
Filtering	[TBD
Range/mapping	TBD

6.2 UTRAN measurement abilities

The following table provides an overview of the UE measurement abilities:

<Editor's note: The table is not yet complete.>

Measured and derived quantities.	Physical channel(s) where the measurement shall be possible (Idle mode= I / Connected mode = C)
RSCP	DPCH (C), PUSCH (C)
ISCP	DPCH (C), PUSCH (C)
RSSI	n.a.
SIR (=RSCP/ISCP)	DPCH (C), PUSCH (C)
E_c/N_0 (=RSCP/RSSI)	n.a.

6.2.1 RSCP

<The following table is an example where further quantities have to be added>

Definition	Received Signal Code Power, the received power on one midamble code in a specified timeslot after de-spreading.
Purpose	Handover evaluation (all timeslots: DPCH, PUSCH), DCA (all timeslots: DPCH, PUSCH)
Filtering	TBD
Range/mapping	TBD

7 Measurements for UTRA TDD

7.1 UE measurements

7.1.1 Overview of the different cell sets

<Editor's note: The different cell sets should finally be described in the WG2 specifications, see e.g. TS 25.331. However, this section should list the different sets with their purpose and give some references to the relevant WG2 specifications.>

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 Measurements for Handover

7.1.2.1 Monitoring of TDD cells

- 25.231 V0.3.1 section 7.1.5.2

7.1.2.2 Monitoring of FDD cells

- 25.231 V0.3.1 section 7.1.5.3

7.1.2.3 Monitoring of GSM cells

- 25.231 V0.3.1 section 7.1.5.4 without sections 7.1.5.4.2.1, 7.1.4.5.2.2, 7.1.5.4.2.3 (see annex)

7.1.2.4 Overall handover preparation at the UE

- 25.231 V0.3.1 section 7.1.5.4.3 <Editor's note: This section will have some RAN WG2 aspects>

7.1.3 Measurements for DCA

- 25.231 V0.3.1 sections 6. and 7.4.1

7.2 UTRAN measurements

- 25.231 V0.3.1 section 7.1.6

7.2.1 Measurements for Timing Advance

7.2.2 Measurements for Handover

7.2.3 Measurements for DCA

25.231 v0.3.1 section 7.4.2

8 Annex A

8.1 Monitoring GSM from TDD

25.231 v0.3.1 section 7.1.5.4.2.1, 7.1.4.5.2.2, 7.1.5.4.2.3

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

The following paragraphs in the original 25.321 v0.3.1 have been deleted or moved to another section.

Paragraph in 25.231 v0.3.1	Comment (what is proposed for the paragraph)
5.1.2	Measurement abilities defined in section 4. Cell selection and reselection should be distinguished if there are differences.
5.2.2	Measurement abilities defined in section 4. Cell selection and reselection should be distinguished if there are differences.
6	Measurements at call set-up This includes DCA measurements and is shifted in section 7.1.3
7.1.2	'Measurement triggering criteria' removed. Not a WG1 but WG2 issue.
7.1.3	FDD section removed
7.1.4	FDD section removed
7.1.5.1	Deleted :
7.1.5.2	Moved to 7.1.2.1
7.1.5.3	Moved to 7.1.2.2
7.1.5.4	divided into 2 parts, see section 7.1.2.3 and 8.1
7.1.5.4.3	Wrong section number in 25.231 v0.3.1, moved to 7.1.2.4
7.1.6	TDD section, moved to 7.2
7.1.7	TDD section, moved to 5.
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 (manufacturer specific?) handled by the measurement control?

Paragraph in 25.231 v0.3.1	Comment (what is proposed for the paragraph)
7.4.1	TDD section, moved to 7.1.3
7.4.2	Moved to 7.2.3
7.5	Measurements on adjacent channels not needed?
7.6	Empty section on measurements for radio-link time-out deleted
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.

10History

This document is written in Microsoft Word 97.		