

Agenda Item:

Source: Ericsson

Title: Required UE measurements in UTRA/FDD, revised

Document for: Approval

1 Introduction

In the last WG1 meeting, WG1#6 the contribution "R1-99850, Required UE measurements in UTRA/FDD was presented and discussed. All measurement quantities were accepted except the requirement for the UE to report ISCP and SIR on the CPICH to higher layers. This contribution contains a modified text proposal for 25.231 to reflect the changes of ISCP and SIR discussed in WG1#6. For a background discussion on the measurement quantities please see the contribution R1-99850. See section 2 for a text proposal for 25.231.

2 Text Proposal for 25.231, Measurements

5.1.2 Measurement from the cell selection monitoring set and reporting to higher layers

For intra system measurements the UE shall support measuring and reporting to higher layers of the quantities:

1. RSCP,
2. SIR (not accepted by WG1 yet),
3. Ec/No,

of the Common Pilot Channel (CPICH). See section 8 for the definition of the quantities.

For inter system (GSM/PDC) measurements the UE shall support measuring and reporting to the higher layers of the quantities:

1. RSSI,

of the physical broadcast channel of the target system (GSM/PDC). See section 8 for the definition of the quantities.

5.2.2 Measurements for cell reselection and reporting to higher layers

For intra system measurements the UE shall support measuring and reporting to the higher layers of the quantities:

1. RSCP,

2. SIR (not accepted by WG1 yet),
3. E_c/N_0 ,

of the Common Pilot Channel (CPICH). See section 8 for the definition of the quantities.

For inter system (GSM/PDC) measurements the UE shall support measuring and reporting to the higher layers of the quantities:

1. RSSI,

of the physical broadcast channel of the target system (GSM/PDC). See 8 for the definition of the quantities.

7.1.3.2 Monitoring of FDD cells on the same frequency

The UE shall measure and report to the higher layers from the cells on the same frequency, belonging to the handover monitoring set, any of the quantities:

1. RSCP,
2. SIR (not accepted by WG1 yet),
3. E_c/N_0 ,

of the CPICH.

The UE shall also measure the relative timing difference between cells according to section 8.

7.1.3.3.4 Monitoring of FDD cells on other frequencies at the UE for the handover preparation from UTRA FDD to UTRA FDD

7.1.3.3.4.1 Setting of the compressed mode parameters

7.1.3.3.4.2 Measurements

The UE shall measure and report to the higher layers from the cells on a different frequency, belonging to the handover monitoring set, any of the quantities:

1. RSCP,
2. SIR (not accepted by WG1 yet),
3. E_c/N_0 ,

of the CPICH.

The UE shall also measure the relative timing difference between cells according to section 8.

8 Radio link measurements

8.1 UE measurement abilities

8.1.1 RSCP

Definition	Received Signal Code Power, the received power on one code after de-spreading measured on the pilot bits. The reference point for the RSCP is the antenna connector at the UE.
Purpose	Handover evaluation, DL open loop power control, calculation of SIR and pathloss.
Filtering	TBD.

Range/mapping	TBD.
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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.

8.1.2 ISCP

Note that it is not a requirement that the ISCP shall be possible to report to higher layers. The ISCP is defined in this section because it is included in the definition of SIR.

Definition	Interference Signal Code Power, the interference on the received signal after de-spreading. Only the non-orthogonal part of the interference is included in the measurement. The reference point for the ISCP is the antenna connector at the UE.
Purpose	Calculation of SIR.

8.1.3 SIR

Definition	Signal to Interference Ratio, defined as the RSCP divided by ISCP. The reference point for the SIR is the antenna connector of the UE.
Purpose	DL inner/outer loop power control, DL open loop power control, handover evaluation, initial power setting.
Filtering	TBD.
Range/mapping	TBD.

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.

* = Note that the requirement that the UE shall measure SIR on CPICH is still not approved by WG1.

8.1.4 RSSI

<Editors-note: RSSI is not a radio link measurement, but it is defined in this section anyway.>

Definition	Received Signal Strength Indicator, the wide-band received power within the relevant channel bandwidth. The reference point for the RSSI is the antenna connector at the UE.
Purpose	Inter system handover, load control.

Filtering	TBD.
Range/mapping	UTRAN: TBD. GSM: according to the definition of RXLEV in GSM 05.08.

Measured on:	Idle mode/Connected mode (I/C)	
	Intra-frequency	Inter-frequency
UTRAN DL carrier.	I/C	I/C
GSM BCCH carrier.	N.A.	I/C

8.1.5 Ec/No

Definition	The received energy per chip divided by the power density in the band. The Ec/No is identical to RSCP/RSSI. The reference point for Ec/No is the antenna connector at the UE.
Purpose	Cell selection/re-selection, handover evaluation.
Filtering	TBD.
Range/mapping	TBD.

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.