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**Title:** Measurements for FDD in UTRA specifications  
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## 1. Background

The issue of Radio Resource Management specification in UTRA has been a subject for discussion at several RAN meetings this year. At RAN #2 in Ft. Lauderdale, a global principle was agreed for the organisation of the work in Tdoc TSGR#2(99)173. It states that WG2 is responsible for defining the RRM and producing a Technical Report on "RRM strategies". WG1 is responsible for the necessary measurements in support of the upper layer procedures based on requirements from WG2 and WG4 is responsible for the accuracy of these measurements. An additional WG4 responsibility is the study of RF scenarios.

At RAN#4 in Miami, the responsibilities with regards to measurements was further clarified in Tdoc TSGR#4(99)409. The split between the specifications in WG2, WG1 and WG4 was then explicitly stated:

- TS 25.302 specifies what measurements shall be performed
- TS 25.231 specifies how to perform measurements;
- TS 25.103 specifies requirements related to the above measurements

It is also stated that these specifications "should be synchronized with respect to the measurements process".

The work has now continued in the working groups. It has been identified that there is still a lack of synchronisation between the specification of measurements in the three documents. There are differences in name, scope as well as definition of several measurements and even the list of measurements as such differs between specifications. The difference in naming also makes understanding of the specification of measurements as a whole very difficult.

We therefore put forward a proposal for naming and structure of measurements to be applied in the three specifications. It should be noted that the WG1 specification 25.231 is today split into one document for FDD (25.215) and one for TDD measurements (25.225). Only FDD measurements are discussed here.

## 2. Proposal

### 1. **The agreed structure of measurements in RAN specifications to be confirmed**

- TS 25.302 specifies what measurements shall be performed.  
*Each measurement is defined from a functional point of view e.g. with a name, source, destination and reporting trigger according to the present structure. Exact definition and precision requirements should ultimately not be in 25.302.*
- TS 25.215 specifies how to perform FDD measurements  
*Each measurement should have a complete definition including e.g. range, but not purpose of the measurement*
- TS 25.103 specifies requirements for the measurements  
*Requirements are defined for e.g. accuracy and delay definition or purpose should not be in 25.103.*

### 2. **The following names to be agreed for the measurements**

There is today no complete list of measurements in any of the specifications. Tables 1 and 2 are based on the list of measurements in TS25.302, except for the two last ones, which only exist in 25.215. RAN WG2 should confirm the content of the list.

Many measurements have new names proposed, which will hopefully make them more self-evident. If a measurement exists for several physical channels, they have separate names for each channel.

**Table 1. UE measurements**

<b>Proposed new name</b>	<b>Current name in 25.302 &amp; 25.103</b>	<b>Current name in 25.215</b>	<b>Comments</b>
<b>CPICH Ec/N0</b>	Primary CCPCH RX Ec/10	Ec/N0	
<b>CPICH SIR</b>	Primary CCPCH Rx SIR	<i>Not defined in WG1</i>	<i>Feasibility and need not concluded in WG1.</i>
<b>CPICH RSCP</b>	Primary CCPCH Rx RSCP	RSCP	
<b>CPICH ISCP</b>	Primary CCPCH Rx ISCP	<i>Not defined in WG1</i>	<i>Feasibility and need not concluded in WG1.</i>
<b>DPCCH Ec/N0</b>	<i>Not defined in WG2</i>	Ec/N0	
<b>DPCCH SIR</b>	DPCCH SIR	SIR	
<b>DPCCH RSCP</b>	<i>Not defined in WG2</i>	RSCP	
<b>UTRA Carrier RSSI</b>	UTRA Cell Signal strength (RSSI)	RSSI	
<b>GSM Carrier RSSI</b>	GSM Signal strength	RSSI	
<b>Transport Channel BLER</b>	Transport CH BLER	Transport CH BLER	
<b>DPDCH BER</b>	Physical CH BER	Physical CH BER	
<b>UE Transmitted Power</b>	UE Tx Power	UE TX Power	
<b>CFN-SFN time difference</b>	CFN-SFN Observed time difference	Relative timing difference between cells	
<b>SFN-SFN time difference</b>	SFN-SFN Observed time difference	<i>Not defined in WG1</i>	<i>Definition and purpose unclear.</i>
<b>Time difference to GSM cell</b>	Observed time difference to GSM cell	<i>Not defined in WG1</i>	<i>Purpose not clear.</i>
<b>Time difference between cells for LCS</b>	<i>Not defined in WG2</i>	Relative Timing Difference Between Cells for LCS	<i>Similar to SFN-SFN time difference, but with different range and resolution.</i>
<b>UE Internal Timing</b>	<i>Not defined in WG2</i>	UE Rx-Tx Timing	

**Table 2. UTRAN measurements**

<b>Proposed new name</b>	<b>Current name in 25.302 &amp; 25.103</b>	<b>Current name in 25.215</b>	<b>Comments</b>
<b>Transmitted Carrier Power</b>	Total Tx Power	Total Transmitted Power	
<b>Transmitted Code Power</b>	Code Tx Power	Transmitted Code Power	
<b>RSSI</b>	UL load	RSSI	
<b>Transport Channel BLER</b>	Transport CH BLER	Transport CH BLER	
<b>DPDCH BER</b>	Physical CH BER	Physical CH BER	
<b>DPCCH SIR</b>	<i>Not defined in WG2</i>	DPCCH SIR	
<b>Time of Arrival</b>	Time of Arrival (TOA)	<i>Not defined in WG1</i>	<i>Definition and purpose unclear.</i>
<b>Frequency Offset</b>	Frequency Offset (FO)	<i>Not defined in WG1</i>	<i>Definition and purpose unclear.</i>
<b>Round Trip Time</b>	<i>Not defined in WG2</i>	Round Trip Delay (RTD)	

### **3. Proposed way forward for the Working Groups**

The structure of Tables 1 and 2 should be adopted in all working groups, with UE and UTRAN measurements separated as proposed.

#### **RAN WG1**

- Align structure and naming.
- Investigate feasibility and definition of measurements that are defined in WG2, but not in WG1.

#### **RAN WG2**

- Align structure and naming.
- Consider the need and purpose of measurements that are defined in WG1, but not in WG2.
- Especially consider the “averaging” and/or “filtering” aspects of the measurements.

#### **RAN WG3**

- Align structure and naming.

#### **RAN WG4**

- Align structure and naming.
- Define requirements for the measurements based on relevant RF scenarios.

There is today a lack of input on measurements in all working groups. TSG RAN should encourage Working Groups 1, 2, 3 and 4 to increase their activity on the subject, since measurements are an essential part of Release 99. Companies contributing should ensure a co-ordinated effort between the WGs.