

**TSG-RAN Meeting #18**

***RP-020712***

**3 – 6 December 2002, New Orleans, Louisiana, USA**

**Source:** Tekmar Sistemi, Allgon, KPN, Mikom, Telefonica, TDF

**Title:** Study Item Description Sheet for Optional RF Low Level Interface in FDD Base Stations.

**Document for:** Approval

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This contribution contains the Study Item Sheet Description for “Optional RF Low Level Interface in FDD Base Stations” following the outcome of the discussions of documents R4-021590 and R4-021737, chairman’s indications at RAN4 #25 and further off-line discussions.

## Study Item Description

**Title** Optional RF Low Level Interface in FDD Base Stations

### 1 3GPP Work Area

X	Radio Access
	Core Network
	Services

### 2 Linked work items

*none*

### 3 Justification

Many companies have shown interest in the feasibility of an optional RF low level interface (LLI) in the FDD Base Stations and the possibilities it offers, e.g.:

1. the flexibility in radio network deployment, which should be one of the characteristics of a 3G system,
2. it is not necessary to attenuate a high power signal before feeding an active external distribution system (lower power consumption, positive environmental effects),
3. it facilitates the sharing of the infrastructure among operators, especially in locations where it is difficult to find sites, or where operators are forced by regulators to share the infrastructures,
4. it allows the placement of one or several base stations in a centralised position with separate RF power amplifiers distributed closer to the subscriber positions, thus reducing interference while meeting the unwanted emissions requirements.
5. by placing the base stations at one location, less supporting infrastructure is required and maintenance is simplified.

### 4 Objective

The study item shall identify the application scenarios and the relevant parameters that best characterise the LLI. It shall assess the pros and cons of the introduction of such an optional interface in the base station and investigate the impact of the LLI into the radio network performance on a single or multioperator environment. Therefore it shall include scenarios for the investigation of the RF mono-carrier and multicarrier performances, e.g.:

- impact of the use of the LLI on the network performance parameters
- RRM and O&M aspects for connecting external active network elements
- Transmit characteristics
- Receive characteristics
- Potential regulatory implications

If necessary RAN WG3 and SA WG5 shall be involved for evaluation of any impact in O&M aspects. Submission of initial results is planned for RAN4 #26.

The conclusion of the study item is planned for RANP #20.

### 5 Service Aspects

*None*

**6 MMI-Aspects**

*None*

**7 Charging Aspects**

*None*

**8 Security Aspects**

*None*

**9 Impacts**

Affects:	USIM	ME	AN	CN	Others
<b>Yes</b>			X		O&M, RRM
<b>No</b>	X	X		X	
<b>Don't know</b>					

**10 Expected Output and Time scale (to be updated at each plenary)**

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR xx.yyy.	Feasibility Study of the new optional RF low level interface	WG4			RAN#20	
Affected existing specifications						
Spec No.	CR	Subject	Approved at plenary#		Comments	

**11 Work item rapporteurs**

t.b.d.

**12 Work item leadership**

TSG-RAN WG4

**13 Supporting Companies**

Tekmar Sistemi  
 Mikom  
 Allgon  
 Telefonica  
 KPN  
 TDF

**14 Classification of the SI**

	Building Block (go to 14b)
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**14b The SI is a Building Block: parent Feature is Radio Interface Improvement Feature**