TSG-RAN Meeting #28 RP-050299
Quebec City, Canada, 1-3 June 2005

Title: **Proposed Revision to UMTS 2.6 GHz DL External Work Item Description**
Source: **IPWireless**
Agenda: **8.14**
Document for: **Discussion and Decision**

It has been proposed to PT1 [1] that consideration is given to both 1900 – 1920 and 2010 – 2025 MHz for potential designation to FDD (e.g. as uplink paired with 2670 – 2620 MHz downlink) on a national basis. Currently no decision has been made by PT1. Liaisons sent by ERM [2] and PT1 [3] to RAN4 requested feedback on the potential designation of 2010 – 2025 MHz for potential designation for FDD on a national basis.

Many countries have already awarded licences for TDD operation in 1900 – 1920 MHz and as services are launched re-designation may not be practical on a national basis. Moreover international operators may wish to provide service across several countries and this will also restrict possibilities to re-designate.

Some countries may wish to deregulate spectrum and therefore the assumption, that the 2010 – 2025 MHz band will be designated to FDD or TDD on a national basis, may be invalid. Even if these bands were to be designated as FDD or TDD on a national basis the issue of co-existence of FDD and TDD in these bands with respect to border areas (e.g. country A designates these bands as TDD whereas country B designates these bands as FDD and country A and B share a common border) needs to be addressed. Hence we propose that relevant FDD/TDD coexistence scenarios are studied.

Proposed WI objectives which include consideration of FDD in the 1900 – 1920 MHz band are not justified, based on liaisons sent to RAN4 [2, 3] and current agreements in PT1 [1]. We therefore propose that the WI is restricted to the 2010 – 2025 MHz band and proposed a revision the WI as discussed in RAN4 so that consideration of 1900 – 1920 band is removed based on the above considerations.

We believe that further discussion of use of the 1900 – 1920 band for FDD is needed. Co-existence of FDD and TDD within the 1900 – 1920 band, including proximity issues within the same geographic area, would need to be considered and, if appropriate, a separate WI proposal might be submitted to a future RAN meeting.

References

[1] Draft Minutes 17th ECC PT1 Meeting, Biel/Bienne, 9 – 12 May 2005

[2] R4-050523 “communication from ETSI ERM RM on the future use of 2010-2020 MHz band”

[3] R4-050596 “Status of ECC PT1 ongoing discussion on the revision of the Decision (99)25 including new FDD pairing possibilities with the optional FDD downlink in the centergap of the 2.6 GHz band”

[4] R4-50592 Draft UMTS 2.6 GHz DL External Work Item Description

TSG-RAN Working Group 4 Meeting #35 **R4-050592rev1**
Athens, Greece, 9-13 May 2005

Title: **Draft UMTS 2.6 GHz DL External Work Item Description**
Agenda: **9**
Document for: **Discussion**

Work Item Description

UMTS 2.6 GHz DL External

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Work within CEPT/PT1 regarding the harmonised utilisation of spectrum for IMT-2000/UMTS systems operating within the band 2500 - 2690 MHz has resulted in ECC Decision 05(05) of March 2005.
The harmonised spectrum scheme for IMT-2000/UMTS in the band 2500 - 2690 MHz as considered by CEPT/PT1 in ECC Decision 05(05) is as follows:

- The frequency band 2500 – 2570 MHz is paired with 2620 – 2690 MHz for FDD operation with the mobile transmit within the lower band and base transmit within the upper band.
- Administrations may assign the frequency band 2570 – 2620 MHz either for TDD or for FDD downlink (external). Any guard bands required to ensure adjacent band compatibility at 2570 MHz and 2620 MHz boundaries will be decided on a national basis and taken within the band 2570 – 2620 MHz.
- Assigned blocks shall be in multiple of 5.0 MHz.

Based on the draft version of the ECC decision from September 2004, TSG RAN has commenced work on specification for UMTS operating within the band 2500 – 2690 MHz, namely for UTRA FDD operating in the frequency band 2500 – 2570 MHz paired with 2620 – 2690 MHz and for UTRA TDD operating in the frequency band 2570 – 2620 MHz. At that time, it was emphasised that additional work and updates to the specifications need to be carried out at a later stage in order to support FDD DL operation in 2570 – 2620 MHz.

For FDD operation in 2570 – 2620 MHz as a downlink paired with an external uplink, all information related to the downlink operation is available. Regarding the uplink, ECC PT1 has started work on updating the ERC Decision (99)25 "*on the harmonised utilisation of spectrum for terrestrial Universal Mobile Telecommunications System (UMTS) operating within the bands 1900 - 1980 MHz, 2010 – 2025 MHz and 2110 – 2170 MHz*". In the context of this update, it is considered to use the band 2010 – 2025 MHz also for FDD, e.g. to pair this with parts of the band 2570 – 2620 MHz. ~~It has also been proposed to PT1 to consider the 1900-1920 MHz band for a potential designation to FDD besides TDD. This means that one possibility would be to pair also an FDD uplink in 1900-1920 MHz with the band 2570 - 2620 MHz.~~

Based on these developments, TSG RAN should be able to start work on the FDD specifications with 2570-2620 MHz as downlink and the potential uplink bands 2010 – 2025 MHz ~~and/or 1900 – 1920 MHz~~. 3GPP RAN4 should provide feedback to PT1 during the work item, thereby helping PT1 in its band designation work.

4 Objective

The purpose of this work item is to generate necessary information of 2.6 GHz FDD system detailed below:

- Generate a report summarizing a study of radio requirements UTRA FDD in the 2.6 GHz Band
  - 2010 – 2025 MHz ~~and 1900 – 1920 MHz~~: Up-link options (UE transmit, Node B receive)
  - 2570 – 2620 MHz: Down-link (Node B transmit, UE receive)
- The co-existence with IMT2000 technology within 2500 – 2690 MHz and with other IMT2000 bands shall be considered.
- Ensure co-existence with existing TDD deployment in 2010-2025 MHz
- Generate CR's to update the appropriate documents.
- TSG RAN WG2 - study any issues related to UMTS at 2.6 GHz FDD DL external band-signalling aspects.
- TSG RAN WG3 - study any possible interface impacts to UMTS networks.
- Any additional related issues.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	UICC apps	ME	AN	CN	Others
Yes		X	X		
No	X			X	X
Don't know					

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

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.101		UE Radio transmission and reception (FDD)	RAN#31 (Mar 2006)	
25.104		UTRA (BS) FDD; Radio transmission and reception	RAN#31 (Mar 2006)	
25.113		Base Station Electromagnetic compatibility	RAN#31 (Mar 2006	
25.133		Requirements for Support of Radio Resource Management (FDD)	RAN#31 (Mar 2006)	
25.141		Base station conformance testing (FDD)	RAN#31 (Mar 2006)	
25.331		RRC Protocol	RAN#31 (Mar 2006)	
25.942		RF System Scenarios	RAN#31 (Mar 2006)	
25.306		Radio UE capability	RAN#31 (Mar 2006)	
25.307		Requirements on UEs supporting a Release Independent Frequency Band	RAN#31 (Mar 2006)	
34.121		Terminal Conformance Specification, Radio Transmission and Reception	RAN#31 (Mar 2006)	

11 Work item rapporteur(s)

TBD

12 Work item leadership

RAN WG 4

13 Supporting Companies

Ericsson, Qualcomm, Nortel, TIM, Nokia, Motorola, Siemens

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	Work Task (go to 14c)

14b The WI is a Building Block: parent Feature

This WI is a building block part of the radio interface improvement feature.