

October 22, 2006

STRATEGIC RESEARCH SERVICE

Analysts: Andrawes Snobar
andrawes@arabadvisors.com

Is commercial WiMAX around the corner in Jordan? The regulator prepares to issue a Fixed Broadband Wireless Access Tender.

On October 19, 2006, the Telecommunications Regulatory Commission (TRC) in Jordan issued a statement that outlines the upcoming tenders through which it will grant the spectrum licenses for the Fixed Broadband Wireless Access (FBWA). The TRC has underlined that the licenses are technology neutral although the market is already calling them the "WiMAX licenses".

Based on the public consultation entitled "Scarce Resources Allocation and Pricing" held in December 2005, the Telecommunications Regulatory Commission has issued a statement on "Radio Spectrum Assignment Competitive Process For Fixed Broadband Wireless Access (FBWA) and Pricing". The statement paves the way towards issuing the first tender through which spectrum licenses for the FBWA will be granted. In the regulator's view, this is just the first step towards fully developing the national table and register of the radio frequency spectrum which will eventually enable the TRC to plan for optimal utilization of the spectrum and to meet the demand for the spectrum-hungry broadband services. The following exhibit represents the frequency bands that have become available for Fixed Broadband Wireless Access (FBWA).

Exhibit 1: Frequency bands available for FBWA

Frequency Range (GHz)	Available Frequency Spectrum BW (MHz)	Allocated Frequency Spectrum Blocks	Tx/Rx Separation
3.4-3.6	60+60, Inside Amman Governorate	3440-3500MHz\3540-3600MHz	100MHz
	30+30, Outside Amman Governorate	3440-3470MHz\3540-3570MHz	100MHz
3.6-3.8	60+60, Inside Amman Governorate	3640-3700MHz\3740-3800MHz	100MHz
	30+30, Outside Amman Governorate	3640-3670MHz\3740-3770MHz	100MHz
5.2-5.35	50 MHz, All Jordan	5300-5350 MHz	N/A
5.4-5.7	20 MHz, All Jordan	5450-5470 MHz	N/A
	22 MHz All Jordan	5600-5622 MHz	

Note: Frequencies in the 2.5 GHz range may also be made available for use in the provision of Broadband Wireless Access (BWA) services. However, such use will be subject to the ongoing international activities for the use of this range in the provision of Mobile Broadband Wireless Access (MBWA) services. The TRC will make an announcement in this regard in due course.

Source: Telecommunications Regulatory Commission (TRC)

Arab Advisors Group
A Member of the Arab Jordan
Investment Bank Group

Amman
Tel 962.6.5828849
Fax 962.6.5828809
PO Box 2374, Amman 11821
Jordan

For more information
www.arabadvisors.com
arabadvisors@arabadvisors.com

This research note is taken from the Arab Advisors Group Strategic Research Service. We also publish Country Landscape and Projection Reports, Industry Trend Reports and provide consulting services.

The TRC expects that even if these bands were to be sufficient to meet the immediate expressed demand, fair opportunity for new comers to access will be maintained. This implies that rationing measures are necessary in order to meet existing and future needs. Therefore, the TRC has decided to adopt a competitive assignment process for the award of frequency licenses for the provision of FBWA services, as outlined below.

Technology Considerations

In order to ensure the efficient utilization of the radio frequency spectrum, as well as reinforcing TRC's previously stated intention to remain technologically neutral, Individual License holders who acquire a spectrum license to provide FBWA services will be free to choose the technology they intend to employ (WiMAX or otherwise). However, the licensees will not be allowed to employ the used technology for providing any form of "Public Mobile Wireless Services". For clarity, Portability within the coverage of the same radio base station without seamless hand over between adjacent radio stations is not considered equal to mobility.

The licensees may use the technology of their choice, or change the technology currently in use to a more efficient technology, provided that the radio transmission parameters and power envelopes (output power and antenna radiation patterns) of radio stations are well coordinated through TRC to avoid interference between national licensees or with operators in neighboring countries.

Licensed operators will not be prohibited or forced by TRC to restrict the types of services (voice, data, and/or video) that they would like to provide to their customers, subject always to adherence to the license requirements regarding compliance with applicable laws.

Assignment Possibilities

The current status regarding the possible assignments in available radio frequency spectrum for the purpose of its utilization in the provision of FBWA services in Jordan is as shown in the following paragraphs, noting that it is not the intention of TRC that any backhauling be made in any of the available bands. However, if any licensee does use some of the frequencies assigned for (FBWA) services in performing backhauling between radio stations within the same assigned band, this will be the choice of the licensee, and will not be accepted as an excuse for a demand by the licensee for extra spectrum in the same band or in any other band to cover shortage in frequencies for access purposes.

▪ The 3.5 GHz Band

In order to facilitate the assignments in this band and to cope with the imbalance between the availability inside and outside Amman Governorate, the available parts have been divided into units of 3.5 MHz width. Assignments will be made on the basis of 28 MHz lots composed of eight units of 3.5 MHz as shown in the exhibit below.

Exhibit 2: 3.5 GHz Band Allocation

Block 1 Inside & Outside Amman Gov.	A1	A2	A3	A4	B1	B2	B3	B4	
	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	
	3440.25	3443.75	3447.25	3450.75	3454.25	3457.75	3461.25	3464.75	3468.25
Block 2 Inside Amman Gov. Only	C1	C2	C3	C4	D1	D2	D3	D4	
	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	
	3470.00	3473.50	3477.00	3480.50	3484.00	3487.50	3491.00	3494.50	3498.00
Block 3 Inside & Outside Amman Gov.	A1'	A2'	A3'	A4'	B1'	B2'	B3'	B4'	
	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	
	3540.25	3543.75	3547.25	3550.75	3554.25	3557.75	3561.25	3564.75	3568.25
Block 4 Inside Amman Gov. Only	C1'	C2'	C3'	C4'	D1'	D2'	D3'	D4'	
	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	
	3570.00	3573.50	3577.00	3580.50	3584.00	3587.50	3591.00	3594.50	3598.00

Source: Telecommunications Regulatory Commission (TRC)

The first assignment in this band will be constituted from units A1, A2, C1, C2, and units A1', A2', C1', C2' (the first two columns in **Exhibit 2**). The next assignment will be constituted from the units in the third & fourth columns; and so on. This will enable a total of four assignable lots, each composed of 2x14 MHz inside Amman Governorate and 2x7 MHz outside it.

▪ **The 3.6 GHz Band**

In order to facilitate the assignments in this band and to cope with the imbalance between the availability inside and outside Amman Governorate, the available parts have been divided into units of 3.5 MHz width. Assignments will be made on the basis of 28 MHz lots composed of eight units of 3.5 MHz as shown in **Exhibit 3**.

Exhibit 3: 3.6 GHz Band Allocation

Block 1 Inside & Outside Amman Gov.	A1	A2	A3	A4	B1	B2	B3	B4	
	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	
	3640.25	3643.75	3647.25	3650.75	3654.25	3657.75	3661.25	3664.75	3668.25
Block 2 Inside Amman Gov. Only	C1	C2	C3	C4	D1	D2	D3	D4	
	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	
	3670.00	3673.50	3677.00	3680.50	3684.00	3687.50	3691.00	3694.50	3698.00
Block 3 Inside & Outside Amman Gov.	A1'	A2'	A3'	A4'	B1'	B2'	B3'	B4'	
	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	
	3740.25	3743.75	3747.25	3750.75	3754.25	3757.75	3761.25	3764.75	3768.25
Block 4 Inside Amman Gov. Only	C1'	C2'	C3'	C4'	D1'	D2'	D3'	D4'	
	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	3.5 MHz	
	3770.00	3773.50	3777.00	3780.50	3784.00	3787.50	3791.00	3794.50	3798.00

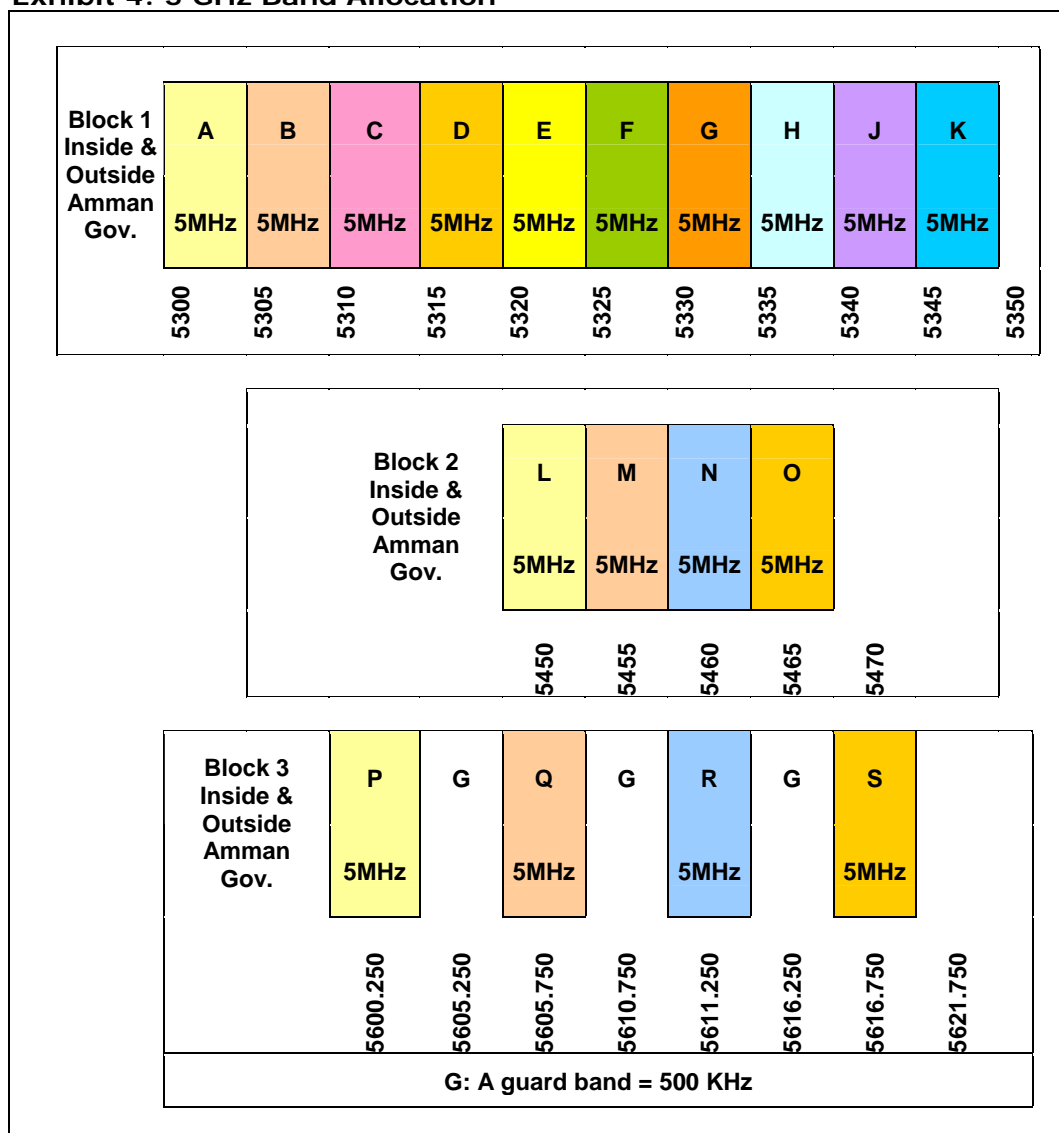
Source: Telecommunications Regulatory Commission (TRC)

The first assignment will be constituted from units A1, A2, C1, C2, and units A1', A2', C1', C2' (the first two columns in **Exhibit 3**). The next assignment will be constituted from the units in the third & fourth columns, and so on. This will enable four assignable lots, each using 2x14 MHz inside Amman Governorate and 2x7 MHz outside it

- **The 5 GHz band**

In order to facilitate the assignments in this band, the available parts have been divided into units of 5 MHz width. Assignments will be made on the basis of 20 MHz lots in units of 5 MHz as shown in **Exhibit 4**.

Exhibit 4: 5 GHz Band Allocation



Source: Telecommunications Regulatory Commission (TRC)

The first assignment will be constituted from units A, B, C & D. The next assignment will be units E, F, G & H, and so on. This will enable at least four assignable lots, each using 20 MHz inside and outside Amman Governorate.

Tenders

There will be several tenders for the assignment and licensing of the available frequency lots:

(a) The first tender will be open for participation by all individual licensees and non-class licensees whose licenses permit them to build FBWA networks and to provide the related services, as well as the existing applicants for individual licenses who are qualified by TRC. Through this tender, there will be a license for one lot only in the band 3.5 GHz with a bandwidth of (14x2) MHz within Amman Governorate, and a bandwidth of (7x2) MHz outside it. There will also be a license for one lot only in the band 3.6 GHz with a bandwidth of (14x2) MHz within Amman Governorate, and a bandwidth of (7x2) MHz outside it, as well as a license for one lot only in the band 5.4 GHz with a bandwidth of (20) MHz within Amman Governorate and outside it.

(b) The subsequent tenders will take place at least six months after the declaration of the results of the first tender, The TRC will announce these

tenders and their conditions for the assignment and licensing of more frequencies in due course. (*Participation or non-participation in these tenders by winners of the first tender, and other related details will be subject to a statement by TRC to be issued after studying the situation that results from the first tender*).

At the start of the first tender, the TRC will declare a lot of frequencies in each of the available bands as open for competition, and the Annual Returns (frequency fees) for the declared lot in each band will be specified. Applications for competition will be invited on the basis that each competitor has the freedom to make an offer for the acquisition of the declared lot in each of the available bands.

The competitive element will be the amount (in JOD) that the competitor is willing to pay for the acquisition of the license to utilize the declared lot for a nominal period of fifteen years (Acquisition Fee). The actual amount that the winner has to pay will be calculated in proportion to the remaining period of the individual license or the non-class license as applicable for a maximum of fifteen years.

The validity of the frequency license issued pursuant to this process will expire at the same expiry date of the individual or non-class license or the period of fifteen years, as applicable. Its renewal will be subject to conditions to be set by the TRC in due course. Additionally, the winner has to pay the Annual Returns (frequency fees) (**Exhibit 5**) for the lots(s) that were won, this being a constant amount determined by TRC to be paid annually and is not subject to the competition.

The minimum acceptable amount of the Acquisition Fee and the frequency fees for each of the indicated lots in the various bands will be as follows:

Exhibit 5: Minimum acceptable amount of the acquisition fee and the annual returns for the available band lots to be licensed

Band lots	Acquisition Fee (Minimum acceptable)		The Annual Returns (Frequency fees)	
	JOD million	US\$ million	JOD	US\$
In the 3.5 GHz band	5	7.04	564,480	795,042.25
In the 3.6 GHz band	5	7.04	564,480	795,042.25
In the 5.0 GHz band	3	4.23	358,400	504,788.73

Note: There will not be any evacuation fee.

Source: *Telecommunications Regulatory Commission (TRC)*

The Acquisition Fee (as described above) shall be paid on the date of the issuance of the frequency license by the TRC. However, the winner may offer to pay the said fee in the form of annual instalments, not to exceed the term of the frequency license. The amount of each annual instalment will be calculated by dividing the offered Acquisition Fee by the proposed number of years for the payment of the Acquisition Fee, inflated by a compound rate of 9% per year from the date of the issuance of the frequency license to the date of the payment of each annual instalment. In case that the TRC accepts the deferred payment method, the winner shall submit to the TRC a bond in the amount of the Acquisition Fee to secure the payment of the instalments. The bond shall be valid until the full payment of the Acquisition Fee and its amount will be reduced annually by an amount equal to the paid instalment. The bond will be released upon the full payment of the Acquisition Fee. The bond will be confiscated if the winner fails to pay the Acquisition Fee instalments on the specified dates.

The Annual Returns (frequency fees) for each of the available lots for the purpose of FBWA shall be in accordance with the prevailing tariff that the TRC sets in accordance with its authorities under the telecommunications law. It is noteworthy that an individual license obliges the licensee to pay the TRC an annual License fee based on a percentage of the operating revenues arising from its Licensed Activities. The percentage is naturally determined by the TRC, but, according to the license terms, does not exceed 1% of such revenues.

Each competitor will be required to submit a Bid Bond in an amount of 10% of the value of the offer for each of the offers that the competitor submits. After the closing date of receiving offers, the highest offers for the Acquisition Fee will be identified and the procedures outlined in the tender document will be applied for the selection of the winner in each of the bands that are offered for competition, taking the national interests into consideration whenever necessary.

If the licensee does not start operating the FBWA network and providing the related services in the licensed areas, the TRC shall have the right to take the following actions:

(a) If the service is not provided in Amman Governorate within one year from the grant of the frequency license, the TRC may enforce the revocation of the license and the confiscation of the paid acquisition fees and/or the instalments bond as applicable.

(b) If the service is provided in Amman Governorate and not provided in any of the other Governorates within two years from the grant of the license, the TRC may amend the license by dropping the licensee's right of use of the frequencies in the concerned Governorate(s).

The Arab Advisors Group believes that there are many companies interested in providing fixed wireless broadband services in Jordan. As such, the tenders will be closely watched. It is clear that the TRC –having been widely criticized in the local media on what some people consider low license acquisition fees in the cellular sector- is aiming at maximizing the return from these new FBWA tenders. This is evident by the TRC setting the minimum acquisition fee in the 3GHz range at US\$ 1.4 million higher than what was paid for the 3rd GSM license issued in 2004.

Related Arab Advisors Group research

"VTEL Holdings takes a strategic stake in Jordan's Xpress.", October 18, 2006

"An update on Jordan Telecom's Privatization: The government's ownership stake drops to 15.6% of the company." October 17, 2006

"Jordan's Government fully divests from Jordan Telecom as France Telecom purchases a majority stake in the operator." July 5, 2006

"As Jordan's Umniah celebrates its first- year anniversary, Bahrain's Batelco acquires a 96% stake in the operator." June 27, 2006

"Fastlink chooses to couple its transfer to the new licensing regime with an early license renewal." May 2, 2006

"Jordan's regulator details instructions to safeguard competition in the market: A vital step towards insuring fair competition." March 19, 2006

"Jordan Telecom Group 2005 results: Enhanced GSM and broadband service uptake." March 14, 2006

"Wanadoo's 2005 results: ADSL growth contributes towards record revenues." February 16, 2006

"Fastlink's new international gateway: Steering clear from an all out price war." December 18, 2005
"Jordan Telecom Q3 results: The early signs of more competitive pressure begin to show." November 15, 2005
" Jordan Communications Projections Report 2005" October, 2005
"Jordan's iDEN operator launches a GPS service for businesses: Another service differentiator." September 5, 2005
"The dynamic of broadband adoption in Jordan." August 28, 2005 *"Jordan's cellular packages plethora!"* June 30, 2005
"Subscription Free Internet is introduced into the Jordanian Internet market." April 26, 2005
"Umniah Mobile Company, Jordan's 4th cellular operator, is to launch its services in the third quarter of 2005." April 18, 2005
"A survey based analysis of the cellular handsets market in Jordan: Nokia dominates the market, and the handsets' replacement frequency is relatively low." April 5, 2005
"Internet usage patterns in Jordan: A survey-based analysis." March 8, 2005
"Highlights of Jordan's International Traffic in 2004: Healthy growth with more yet to come in 2005!" February 17, 2005
"An update on Jordan's Internet market: An ADSL boom and heightened competition in 2004 " February 3, 2005.
"Jordan's Cellular Market in Q1 2006: Exhibiting the effects of full competition" June 26, 2006

Although the information in this report has been obtained from sources that Arab Advisors Group believes to be reliable, we do not guarantee its accuracy, and such information may be incomplete or condensed. All opinions and estimates included in this report constitute our judgment as of this date and are subject to change without notice. This report is for information purposes only and is not intended as an offer or solicitation with respect to the purchase or sale of any security. No part of this document may be reproduced without the written permission of Arab Advisors Group.