

Seminar on pricing for frequency usage for CIS Countries

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Situation in Kyrgyzstan on the economic aspects of the spectrum management

In Kyrgyzstan the economic aspects of spectrum use management have been used since 1998.

For this purpose annual fees for using of spectrum are determined on the base of formula of stimulating payments.

In connection with this Model of radio license fees calculation was designed, the main elements of which are:

- covering the expenditures of a state on spectrum use management;
- determination of value of a spectral resource used in the republic;
- determination of payment per unit of the spectral resource;
- determination of payment of a user for the used spectral resource.

Used Model allows user any time to determine its annual payment for the spectrum and is transparent and available for all users. Thereby, if user uses a greater bandwidth, greater service area, operates a station in more populated geographical area or in more economically developed area, and operates a full working time in more congested frequency bands, so the payment will be greater.

Approach, thereby, encourages to more efficient spectrum use and is an incentive for the user to use modern equipment and operate in new, more high frequency bands. It also encourages sharing (under the possible modes) of the time with other users, as well as stimulates a telecommunication operator to cover rural and remote areas.

The method of determination of annual payment for using the spectral resource is approved in Kyrgyzstan on the basis of developed Model, which has been used since 1998.

On the following tables the illustrations of using of developed models in Kyrgyzstan are shown.

$$D_{\text{ann}} = 9,84629988161857 \times 10^{-7} \text{ som / kHz} \cdot \text{km}^2 \cdot \text{year}$$

Kinds of services	$a \times D_{\text{ann}}$	
	City	Village
Radio relay line in a range < 1 GHz	$1.476944982243 \cdot 10^{-6}$	$1.476944982243 \cdot 10^{-7}$
Radio relay line in a range > 1 GHz	$3.938519952647 \cdot 10^{-5}$	$3.938519952647 \cdot 10^{-6}$
Television in meter range (MW TV)	$7.384724911214 \cdot 10^{-5}$	$7.384724911214 \cdot 10^{-6}$
Television in decimetre range (DMW TV)	$9.846299881618 \cdot 10^{-5}$	$9.846299881618 \cdot 10^{-6}$
VHF sound broadcasting	$2.953889964485 \cdot 10^{-3}$	$2.953889964485 \cdot 10^{-4}$
LF – HF broadcasting	$9.846299881618 \cdot 10^{-4}$	$9.846299881618 \cdot 10^{-5}$
HF radio communications	$3.072045563065 \cdot 10^{-3}$	$3.072045563065 \cdot 10^{-4}$
Trunking	$3.544667957382 \cdot 10^{-3}$	$3.544667957382 \cdot 10^{-4}$
Cellular	$3.840056953831 \cdot 10^{-3}$	$3.840056953831 \cdot 10^{-4}$
Paging	0.01772333978691	0.001772333978691
PMR communications	$2.953889964485 \cdot 10^{-3}$	$2.953889964485 \cdot 10^{-4}$
Radio communications in CB range	$1.181555985794 \cdot 10^{-6}$	$1.181555985794 \cdot 10^{-7}$
Radiolocation	$1.476944982243 \cdot 10^{-7}$	$1.476944982243 \cdot 10^{-8}$
Safe (guard) signalling	$1.181555985794 \cdot 10^{-4}$	$1.181555985794 \cdot 10^{-5}$
Earth station for fixed satellite service	$3.938519952647 \cdot 10^{-4}$	$3.938519952647 \cdot 10^{-5}$
Earth stations for other satellite services including feeder links	$2.06772297514 \cdot 10^{-5}$	$2.06772297514 \cdot 10^{-6}$

1 USD = 49,2 soms

Chuy region (oblast) Bishkek city
(geographical coordinates 74 36 E. L. 42 53 N. L.)

	Kind of service	Frequencies	Power (Wt)	Antenna height	Antenna gain	Bandwidth	Payment (soms)
FM Broadcasting		101.4	500	25	2	250	11214.09
TV	MW	4	5000	40	8	8000	10609.44
	DMW	29	1000	40	8	8000	11587.00
Trunking		159.625	50	25	3	25	1658.88
		168.625	50	25	3	25	1658.88
Cellular	GSM	890.6	28	20	7.5	200	6004.03
		935.6	28	20	7.5	200	6004.03
	AMPS	890.6	28	20	7.5	30	900.6
		935.6	28	20	7.5	30	900.6
Radio-relay line		1782.0	1	10	7.5	24000	305.59
		1782.0	1	10	7.5	24000	305.59

Naryn oblast Naryn city
(geographical coordinates 76 00 E. L . 41 25 N. L.)

FM broadcasting		101.4	500	25	2	250	279.43
TV	MW	4	5000	40	8	8000	467.01
	DMW	29	1000	40	8	8000	251.39
Trunking		159.625	50	25	3	25	81.99
		168.625	50	25	3	25	81.99
Cellular	GSM	890.6	28	20	7.5	200	165.15
		935.6	28	20	7.5	200	165.15
	AMPS	890.6	28	20	7.5	30	24.77
		935.6	28	20	7.5	30	24.77
Radio-relay line		1782.0	1	10	7.5	24000	13.73
		1782.0	1	10	7.5	24000	13.73