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Bangladesh

SPECTRUM – PRESENT AND FUTURE – BANGLADESH PERSPECTIVE

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SPECTRUM- PRESENT & FUTURE - BANGLADESH PERSPECTIVE

Objective of Regulation

Ensure Enabling Environment

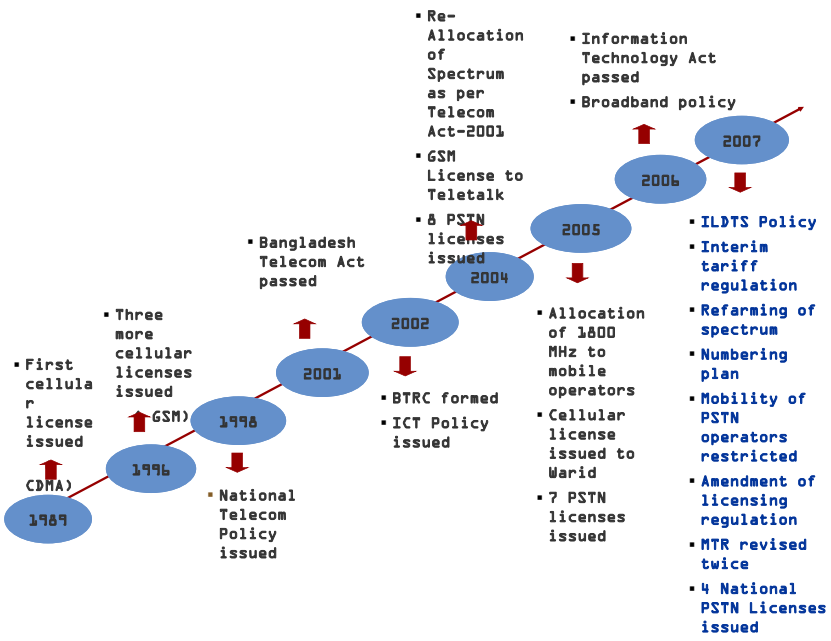
Good Regulatory Environment

- Introducing efficiency
- Transparent regulatory and licensing regimes
- Optimizing use of scarce resources
- Creating favorable climate to promote investment to expand telecom networks
- Minimizing regulatory intervention
- Harmonization
- Regulate on principle basis
- Establish operational efficiencies

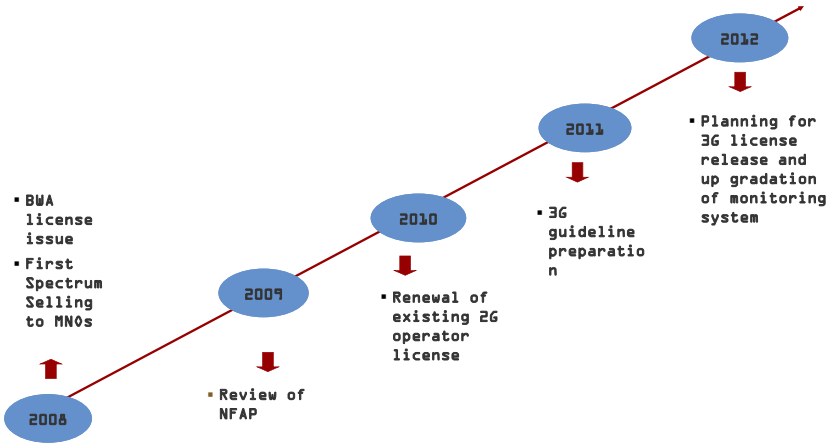
Agenda

- **Telecom Evolution**
- **Present Scenario**
- **Spectrum Re-Farming**
- **Spectrum Pricing**
- **Spectrum Monitoring**
- **Challenges**

Bangladesh Telecom - Evolution



Bangladesh Telecom - Evolution condt...



Present scenario (Access)

- BTRC prepared the National Frequency Allocation Plan (NFAP) effective from 2006.
- Several changes have been made after this but these were not included in the Plan.
- As per NFAP the present and prospective bands for mobile operation are

Band MHz	Up Link MHz	Down Link MHz	Total BW MHz	Status
450	450-457.5	460-467.5	7.5	• 3 MHz is Free •Allocated to Private PSTN
UHF	698-806		108	
850	825-845	870-890	20	• Fully Allocated • Allocated to Mobile & Private PSTN
900	890-915	935-960	25	• Fully Allocated • Allocated to Mobile operator

Present scenario (Access) contd..

Band MHz	Up Link MHz	Down Link MHz	Total BW MHz	Status
1800	1710-1785	1805-1880	75	• 15.6 MHz is Free. •Allocated to Mobile & One Private PSTN
1900	1880-1910	1960-1990	30	• 22.20 MHz is Free • Allocated to 03 Private PSTN but 01 operative
2100	1920-1960	2110-2170	40	• Free to Allocate
2300	2300-2400		100	• Fully Allocated • Allocated to Broadband including Wi-Max
2500	2500-2690		190	• FDD portion (70 MHz) is Free. • TDD (35 MHz) is allocated to Wi-Max

Present scenario (Microwave) contd..

Band GHz	Frequency Range (MHz)	BW per Channel	ITU-T Available Spots	GP Permitted Spots
2	2.025 - 2290	7		
6	5.925 - 6.425	29.65		
7	7.425 - 7.90	28	8	4
8	7.725 - 8.275	29.65	8	5
11	10.70 - 11.70	40	12	6
13	12.75 - 13.25	28	8	
15	14.5 - 15.35	14	30	3
18	17.7 - 19.7	13.75	70	7
23	22.0 - 23.6	14	41	6
26	24.5 - 26.5	14	64	
38	37.0 - 39.5	14	80	6
40 - 60	48.5 - 50.2	14	56	
	51.4 - 52.6	14	36	
	55.78 - 57.0	14	80	
	55.7 - 57	14	36	
	57 - 59			

UMTS core band (2100 MHz) 60 MHz

- BTRC appointed an International Consultancy firm "Helios" to review this NFAP under World Bank finance on July 2009.

Previous position:

- As per previous NFAP the core band is 40 MHz
- Operation of UMTS and CDMA in the same band will create interference

Present position:

- The present situation of UMTS core band

UL (UMTS)					
IMT 2000 (FDD)		Telebarta		CDMA (Reserve)	
58.25		2.6		9.15	
1920	1978.25	1978.25	1980.85	1980.85	1990

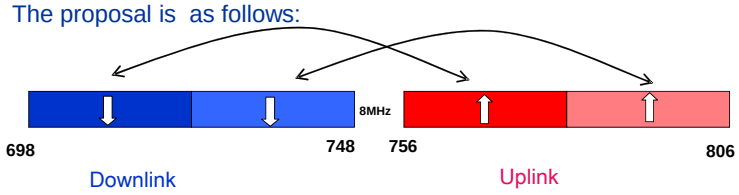
Provision for mobile broadband in 700 MHz band

Previous Position:

- At present this band (610-801 MHz) is allocated for broadcasting and fixed service.
- Total Band is almost free.
- Some vendors are developing mobile broadband product in this band.

Present Position:

- The proposal is as follows:



Spectrum Re-Farming at 1800 MHz Band

Previous Position:

- Before Re-Farming the band was 2*55 MHz instead of 2*75 MHz
- UMTS core Band (2100 MHz) is splitted into two Block of 2*20 MHz

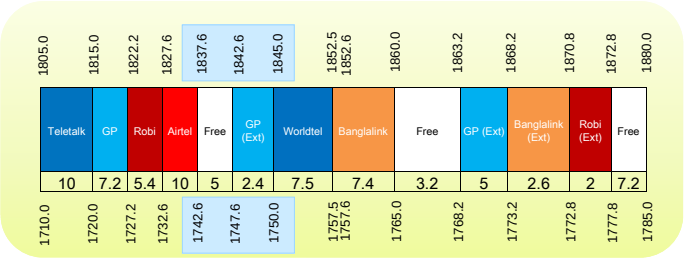
Present Position:

Still we are working for continuous allocation of Spectrum in this band.

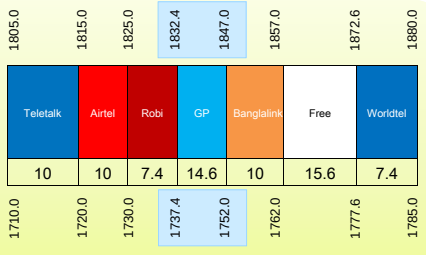
- BTRC increased the band to 75 MHz in 2008.
- The Policy is to make Spectrum costly so that maximum Spectrum will be available to assign to the potential customers.
- Still we are working for continuous allocation of Spectrum in this band.

Re-Arrangement of 1800 MHz

Spectrum Allocation (Previous)



Spectrum Allocation (Current)



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Spectrum Acquisition Method

BTRC has recently practiced both spectrum pricing method:

1. **Through Auction**
   - BWA License
2. **Through Beauty Contest**
   - Additional Spectrum in 1800 MHz band in October, 2008 to GP, Aktel, Banglalink

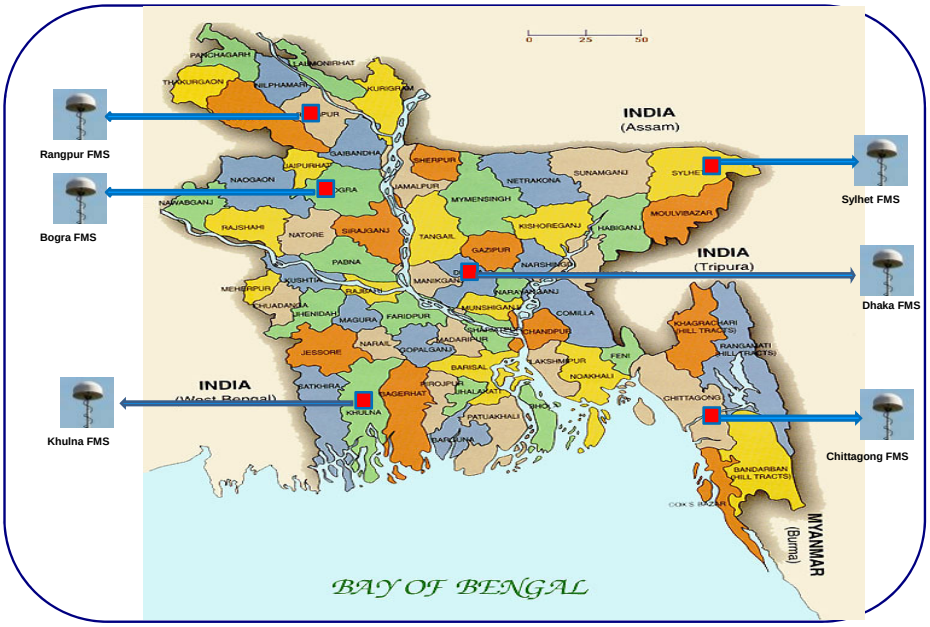
Spectrum Monitoring System

- **The objective is to monitor the different spectrum bands and find out the direction of transmitter in the ranges between 0.5 to 3000 MHz.**

Two types of stations are used:
1. Fixed Monitoring Station (FMS)
2. Mobile Monitoring Station (MMS)

At present, 6 FMSs are located throughout the country. And also have 5 MMSs.

Spectrum Monitoring Station



Recenet Success Stories

- Country wide spectrum scanning was done for the first time in this year.

  The objective of this scanning was to:

  organize the assignment of GSM 1800 Band.

  Scan the 3G band to check illegal usage.

  In this scanning, some illegal usage of frequency was found in northern part of the country.

  Strong GSM and CDMA signals were detected inside the territory of Bangladesh in some part of bordering areas. This issue can be solved if we can make the coordination with the neighboring country.

Recenet Success Stories (contd.)

- A 3.5 GHz ISP transmitter was located using unauthorized frequency.

- Identified and solved the interference issue between the Satellite TV Earth Station and ISP operating in 3.5 GHz band.

- Settled down the interference problem of Police Telecom's Walkie-Talkie network in the UHF band.

Challenges

- Revalidation of spectrum
- Co-ordination of spectrum assignment in the cross border area between the neighbouring states.
- Co-existence between the satellite downlink and BWA operating frequency in 3.4-4.2 GHz band.
- Frequency interference in the cross border zone.
- Spectrum monitoring within high rise building area, fighting against multipath fading.
- Finding out the transmitter location beyond 3 GHz as the existing system has the direction finding capability upto 3 GHz.

THANKS