



## **AGENDA ITEM 9 : RADIO SPECTRUM**

Country Session: The Republic of TURKEY 13-14 July 2006











## **Spectrum Management Regulation**





## **Spectrum Management Regulation - I**

- Duties of Telecommunications Authority (TA)
- Responsible for management and administration of spectrum resources.
- To prepare National Allocation Table and assign frequencies
- To prepare the necessary plans in the field of radiocommunication and telecommunication and submit to the Ministry of Transport





**Spectrum Management Regulation - II** 

Duties of the TA in terms of spectrum management;

Regulating radiocommunication sector and controlling procedures within the scope of national laws, international telecommunication agreements and obligations

Conducting national regulations in line with International Radio Regulation (ITU/RR), CEPT Decisions and EU regulatory framework





**Spectrum Management Regulation - III** 

- Effective and efficient use of spectrum resources by taking into account the principles of;
  - Proportionality
  - □ Transparency
  - Non-discrimination
  - Technologically neutral.
- Devices/systems standards or technical specifications are harmonized with ETSI standards or RTT&E Directive





## National Allocation Table (NAT) and EFIS





## National Allocation Table (NAT) and EFIS - I

- TA has made significant progress in terms of spectrum management and frequency allocation towards alignment with the EU countries over the past years
- NAT was prepared within the scope of Radiocommunication Services pointed out by ITU. It is available at the TA's web site both in Turkish and in English
- NAT is revised every year by taking into account ITU, CEPT and EU's Decisions, WRC's results, ECA and internal market requirements





## National Allocation Table (NAT) and EFIS - II

- NAT consists of ITU-RR Region 1, ECA, National Allocation, Utilisation, TR Footnote, ERC/ECC/ITU Document, Standard, Note/Remark
- ❑ NAT published including usage criteria in ERO EFIS Database
- In addition to EFIS 2 consisting of interface which has channelling, power limit, channel occupation, licensing regime



## National Allocation Table





#### Tuesday, November 11, 2003

13 July 2006

#### The Republic of TURKEY





## **Radiocommunication By-law**







**Radiocommunication By-law - I** 

- The goal of the by-law is to determine procedure and basis for carrying out Radiocommunication Law.
- By-law contains all principles and procedures regarding radiocommunication systems/devices to be established/operated by all public institutions, real and legal persons.





## **Radiocommunication By-law - II**

- Regarding principles and procedures;
- Authorization
- Frequency Assignment
- Inspection of Radiocommunication Systems/Devices
- Transference of Spectrum Rights
- Solving Interference Problem
- Cancellation of Assigned Frequency





Radiocommunication By-law – III						
Numerical Distribution of Radiocommunication Certificates and Devices						
	Land Mobile	Maritime Mobile	Aeronautical Mobile	Total		
Certificates	21,503	14,396	751	36,650		
Devices	476,890	55,117	8,337	540,344		
http://www.tk.gov.tr/pdf/eng-2004.pdf						





## Short Range Devices (SRD) By-law







## SRD By-law (I)

- The goal of the by-law is to describe coverage features, frequency bands and principles of establishment and usage of the short range and low powered radio devices.
- By-law contains the short range and low powered radio devices and systems to be used by all public institutions, real and legal persons.
- SRDs are not subject to any permission by the TA within the scope of of the by-law.





# SRD By-law (II)

#### By-Law contains;

- Non-Specific Short Range Devices
- Wideband Data Transmission Systems and HIPERLANS
- Railway Applications and Road Transport and Traffic Telematics (RTTT)
- □ RF Sensors (Detectors) and Warning Devices
- □ Alarms
- **Equipment for Detecting Movement and Alert, Inductive Applications**
- Radio Microphones and Wireless Audio Applications
- Ultra Low Power Active Medical Implants
- Radio frequency Identification Applications (RFID)
- Private Mobile Radio 446 (PMR 446)
- DECT





## **NAT's Detail**

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NAT's Detail - I					
Frequency bands	Utilisation	Remark			
21.65-26.65 GHz	Fixed Link, ENG/OB, Non-Specific SRD, SRR				
2400-2483.5 MHz	RLANs	Indoor/outdoor			
5150-5350 MHz	WAS/RLANS	Indoor			
890-914 MHz 935-959 MHz	GSM 900	Fully used			
1710-1785 MHz 1805-1880 MHz	GSM 1800	2X15 MHz bands are used			
1880-1900 MHz	DECT	Not allow to import and produce CT1, CT1+ and CT2			





## NAT's Detail - II

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Frequency bands	Utilisation	Remark	
1900-1980 MHz 2010-2025 MHz 2110-2170 MHz 2500-2690 MHz	IMT-2000/UMTS (terrestrial)	There is not any 3G operator in Turkey at present	
1980-2010 MHz 2170-2200 MHz	IMT-2000/UMTS (satellite) and GMPCS		
169.4-169.8125 MHz	ERMES, Hearing Aids, Social Alarms, Meter Reading Systems,	These bands are available, but NAT	
77-81 GHz	SRR	and SRD by-law will be revised	





## NAT's Detail - III

- The new terrestrial digital broadcasting frequencies plan will be applicable to the geographic territory of the negotiating parties by the end of the RRC-06.
- TRT and private enterprises have been testing digital broadcasting in the same multiplexer for 5 months.
- □ Planned to switch-off analogue terrestrial television by 2012.
- TA follows the developments of effective and efficient use of 174-230 MHz and 470-862 MHz bands.





## **Ongoing Issues**





**Ongoing Issues - I** 

TA follows the developments regarding spectrum trading

 In accordance with the Radiocommunication Law and Radiocommunication by-law, transfer of spectrum rights has been possible since 1983
 Especially PMR/PAMR and maritime bands





## **Ongoing Issues - II**

TA participates in RSC and ECC/WG FM meetings where,
Flex-bands determined
Flexibility of spectrum usage discussed
Technology and service neutrality (WAPECS)





## Enforcement





## **Enforcement - I**

- Frequency spectrum is monitored in the interval of 10 kHz-2.5 GHz.
- The By-law on the Determination, Measurement Methods and Monitoring of the Electromagnetic Field Strength Limits From the Fixed Telecommunications Equipment Operating in the frequency band 10 kHz-60 GHz.







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## Enforcement - III

#### **Spectrum Engineering System (SES)**

- Designed in the light of ITU-R Handbook on National Spectrum Management, ITU-R Handbook on Computer-Aided Techniques for Spectrum Management and ITU Radio Regulations and ITU-R Recommendations
- Integrated with a Geographic Information System (GIS)
- Containing propagation analysis, interference analysis, link analysis, frequency assignment and planning, international coordination calculations, database operations and producing useful reports





## **Enforcement - IV**

- TA grants "Safety Certificate" to Fixed Telecommunications Devices which are using safety distance
  - "Safety Distance" is calculated by the methods indicated in the related regulation, in order to protect the human health against RF exposure within the safety area





