Digital Dividend
What is it? Why now?

Radiocommunication Bureau

Agenda

- What is Digital Dividend?
- Why decide on Digital Dividend allocation now?

Digital Television

- The digitalisation of the Terrestrial TV brings and offers better quality and new services such as HD to the viewers.
- The characteristics of digital TV standards allow the possibility to multiplex more than one source and broadcasting more than one programme in a same RF channel.

Digital Flexibility

- The transmission characteristics of digital systems involve a number of parameters which can be adjusted to trade-off service area, quality reception, transmission power, data capacity and spectrum requirement.
  - Type of digital modulation (e.g. QPSK, 16 QAM, 256QAM)
  - Error correction coding (e.g. rate ½, ¾)
  - Motion picture compression algorithm (e.g. MPEG2, MPEG4).

Spectrum Requirement

- The overall system (e.g. the families of ATSC, ISDB, DMBT or DVB), reception mode (e.g. fixed, portable, portable indoor, mobile) and the selected parameters chosen will determine the overall spectrum required to satisfy the program requirements.

Digital Efficiency

- A single analog program can be broadcast on one transmission channel of 6 MHz to 8 MHz bandwidth
- The same transmission channel could carry from 2 to 12 digital equivalent programs simultaneously
- Most Digital TV standards allow the implementation of single frequency networks, more spectrum efficient compared to the analogue networks.

Define Digital Dividend

- The digital dividend is the amount of spectrum made available by the transition of analogue television to digital.

Size of Digital Dividend

- Given the very important gains in spectrum efficiency resulting from the transition to digital, the digital dividend may represent very significant amounts of spectrum.

Allocation of Digital Dividend

- Broadcasting services (e.g. provision of more programs, high definition, 3D or mobile television)
- Other services, such as the mobile service, in a frequency band which could be shared with broadcasting (e.g. short range devices) or in a distinct, harmonized allocation (e.g. IMT).

Digital Migration

- Transition to digital TV is not an option: analog equipment/spares (TX and RX) will eventually be difficult to purchase or if avaiable at very expensive price.

Need for Spectrum Planning

- Any intermediate plan is costly and disruptive. Even more when it is not planned in advance. Social impact: need to maintain reception + compensate cost impact
- need for interactively coordinate with neighboring countries
- harmonized regional approach necessary. To maximize return avoid Interference.

Need for timely decision

- The decision for the resources is crucial for the technical frame:
  - Key for steps to be taken like for the standardisation
  - Development and timely availability of equipment
- Without the above, there won´t be any provision of any service.

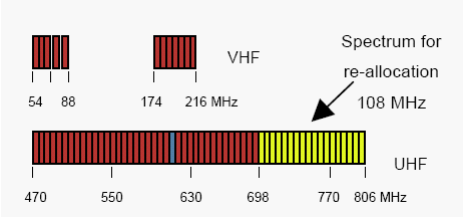
The Decision is Now!

- Avoiding a digital divide should be a substantial interest for all countries. The provision of broadband access in any part of any country is an inevitable consequence. This makes it necessary to make use of suitable resources (frequencies) as soon as possible.

Need to coordinate

- Coordinated use of the 800 MHz band would also facilitate roaming.
- The best possible approach is to provide harmonised conditions and to avoid fragmentation.
- Harmonising conditions and applying these in due time for achieving a "critical mass", to ensure economies of scale.

The USA



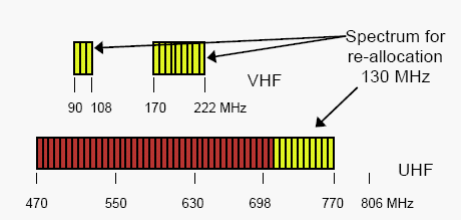
- Early identification
- Sold even before ASO – June 2009
- 18 X 6 MHz = 108 MHz

700 MHz Auction – Mar 2008

(Source: GSMA)

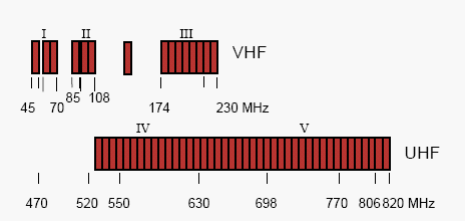
Verizon	**$9.4 Billion**
AT&T Mobility	**$6.6 Billion**
Frontier Wireless	**$711 million**
Qualcomm	**$558 million**

JAPAN



- 10 UHF channels = 60 MHz
- VHF = 70 MHz
- A total of 130 MHz

Australia



- 126 MHz from 694-820 MHz
- Consultation on the digital dividend band configuration, licence design and the method of allocating the spectrum. The closing date for submissions was 6 Dec 2010.

Thank you for your attention!