



# Industry perspectives

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**Philippe Defraigne**

Cullen International

[phil.defraigne@cullen-international.com](mailto:phil.defraigne@cullen-international.com)

# Outline

- Digital dividend
  - How much 'cleared spectrum' should be released?
  - For which services?
  - Harmonised band for Mobile TV
  - Is EU legislation needed on DD?
  - DD: when should preparatory work start?
  
- Centralisation vs. National decision on spectrum
- 2.6 GHz
- WAPECS
- 5-year review period
- Mobile Challengers and WiMAX forum: the late entrants
- Satellite industry

## Spectrum: UHF band

- WRC 07
  - agreement to open part of UHF spectrum band to mobile broadband services (IMT)  
NB. IMT means IMT 2000 (3G) and IMT-A (Advanced: 4G such as LTE)
  - For Europe, Africa and the Middle East, the upper UHF band (790-862 MHz) will be opened to mobile broadband services by 2015
  - 72 MHz is therefore the portion of the digital dividend allocated by ITU to mobile
  - In a given country, the digital dividend may far exceed 72 MHz and consequently the share allocated to mobile can be larger

## Digital dividend – a common approach at EU level

- European Commission communication of Nov. 13, 2007 on a coordinated EU approach to the use of spectrum released by the analogue switch-off
- digital dividend = *"spectrum over and above the frequencies required to support existing broadcasting services in a fully digital environment, including current public service obligations"*.
- Today, UHF bands are scattered in small segments which makes it difficult to use for new purposes.
- Commission proposes moving towards a common spectrum plan at EU level

# Digital dividend – How much?

## GSMA

- 72 MHz is not enough
- About 100MHz of harmonised spectrum across Europe
- More spectrum to be made available < 790 MHz on a national basis
- Broadcasters should be incentivised to use more efficient technologies (e.g. MPEG-4)

## ETNO

- The 790 - 862 MHz band should be harmonised at EU level for mobile and wireless broadband services only, with flexible plans also extending below 790 MHz to take into account national situations

## WiMAX Forum

- Abide by ITU WRC-2007 outcome

# Digital dividend – How much?

## EBU

- The size of the dividend will vary from one country to another, owing to national circumstances, such as the geographical position, size and topography, penetration of satellite/cable services, the requirements for regional or minority services, and spectrum usage in adjacent countries.
  
- Digital broadcasting technology is continually evolving. There will probably be several switch-over phases, and this development will vary from one country to another in terms of the timing and the choice of technology:
  - Analogue to SDTV (MPEG-2)
  - MPEG-2 to MPEG-4 AVC
  - SDTV to HDTV

# Digital dividend – How much?

## Long term view

- Broadcasters might be ready to trade their frequencies if they become more efficient
- MNOs would fund the costs of switching to more efficient technologies via auctions
- NRA would act as a ‘clearing house’
- Again something to be done at national level

## Digital dividend – What for?

### EBU

- 40% of European households use DTT
- By 2010 there will be over 120 HDTV channels in Europe. Consumers will expect HD to be offered on all platforms, incl. DTT.
- Since HD requires more bandwidth than standard DTT it needs significantly more spectrum.
  
- What about wireless broadband services?
  - Not the most efficient use of the UHF band
  - *Claims made by MNOs do not aim at efficient and sustainable use of scarce natural resource but at making short-term profit*
  - DTT can be efficiently delivered only in UHF band
  - WiMAX or 3G can be deployed in higher frequency bands

## Digital dividend – for what?

### **GSMA:**

- DD to be available on a technology/service neutrality basis

### **ETNO**

- Spectrum below 1GHz is ideal to ensure the coverage of rural areas with wireless broadband communications
- Bridge the digital (urban/rural) divide

### **WiMAX Forum**

- Access to UHF and DD in particular needed for truly mobile broadband internet (VoIP, data, IPTV, etc.)
- WiMAX (and LTE) should not be solely seen as a technology to be pushed to higher frequencies
- Increased HD TV delivery over satellite needs to be also considered

## UHF band – two or three clusters?

EC communication on DD: UHF to be divided into three sub-bands

- Lower band
  - *"unidirectional high power networks"* i.e. radio and TV (incl. HDTV)
  - sub-band to be managed by the Member States
  - TV channels currently operating outside this sub-band to be progressively relocated in this common sub-band
- Higher band
  - *"unidirectional medium to low power networks"* e.g. Mobile TV
  - national management but could be *"combined with optional EU coordination"*
- Highest band
  - fixed or mobile broadband access services include other applications such as innovative low power broadcasting services.
  - sub-band to be harmonised at EU level

## UHF- two or three clusters?

### EBU

- Mobile TV is already in operation in accordance with the GE-06 Plan, i.e. without any harmonized sub-band.
- Commission proposal to introduce a sub-band for mobile television, using the DVB-H standard, seems to be politically, rather than technically, motivated.

### GSMA/ETNO/ECTA/WiMAX Forum

- 2 sub-bands
- compatibility between uni-directional net (DVB-T vs DVB-H) has been already demonstrated in different countries (e.g. Italy)

## UHF- harmonised band for mobile TV?

### **GSMA: No**

- Important that every country earmarks 8MHz for Mobile TV
- But no need for a dedicated sub-band across Europe
- Availability of spectrum for mobile TV should not compromise availability of spectrum for mobile broadband

### **ETNO: No**

- No need for a harmonised dedicated sub-band across Europe
- Minimum 8MHz to support a single DVB-H multiplex to be allocated on a national basis

### **WiMAX Forum: No!**

- Availability of spectrum for mobile broadband should not be compromised on the perceived need for more spectrum for mobile TV

### **EBU: No**

# Digital dividend: is EU legislation needed?

## **GSMA: Yes**

- In favour of legislative proposal for common sub-band for mobile broadband. 790-862 MHz is a starting point.

NB. UK auction of two separate UHF bands (550-630 and 790-854 MHz) seen as a unfortunate because of fragmentation. Unified band would make it easier for operators to get, say, 2\*20MHz

## **ETNO / ECTA / WiMAX Forum: YES**

### **Broadcasters**

- Spectrum policy should reflect national media/audiovisual policies.
- Difficult to harmonize the use of the digital dividend at EU level.
- DTT is provided in many countries based on the int'lly agreed Geneva frequency plan, costly and time-consuming re-planning would be necessary and switch-over to digital would be delayed.

## Digital dividend: should preparatory work start now?

- It's the creation of the services NOT the switch off that create a dividend
- Post switch-off spectrum plans should be decided ASAP so that migration takes place at the time of the switch-off
- Too few countries e.g. Sweden, France and UK have real plans

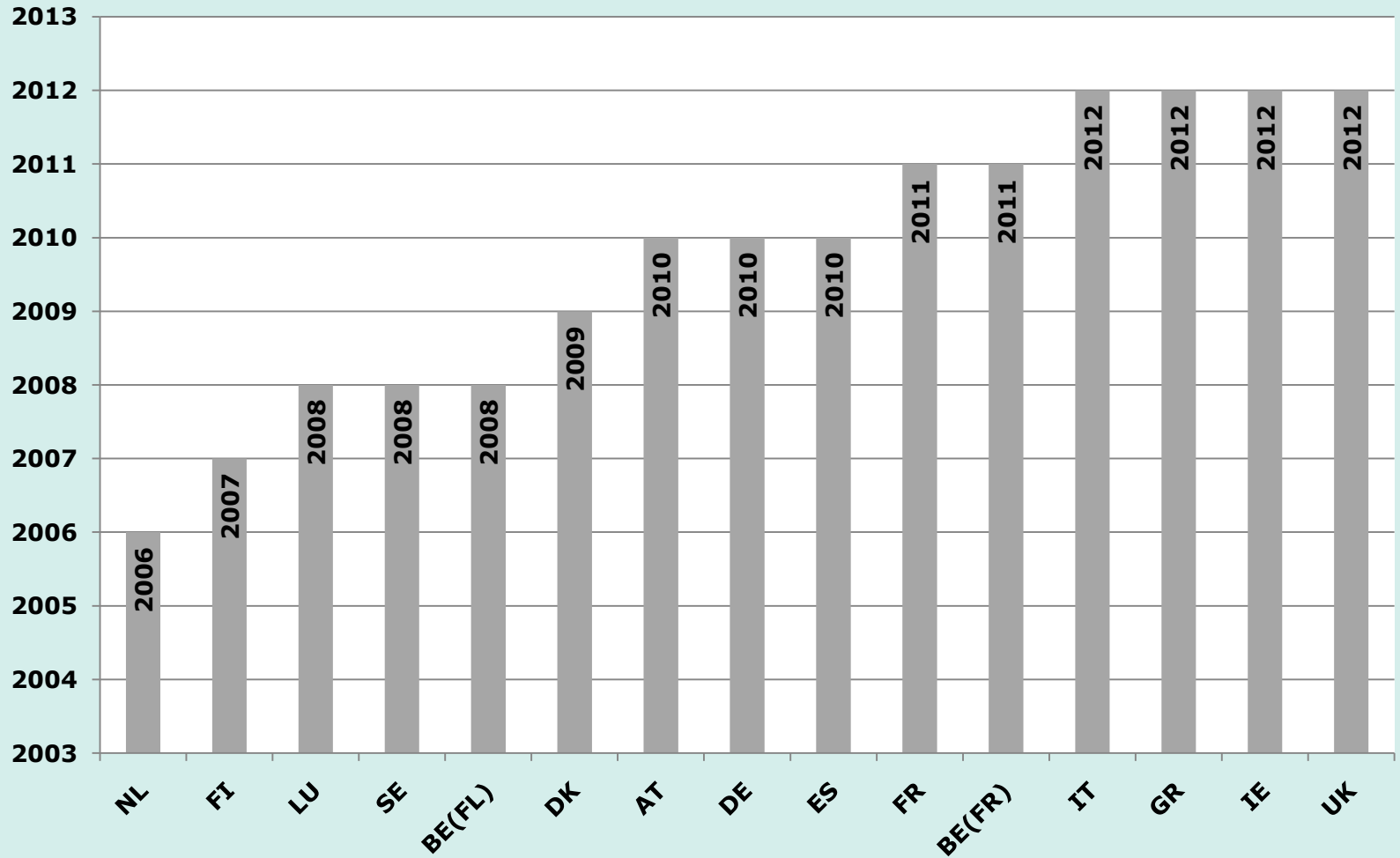
### **GSMA/ECTA/ETNO/WiMAX Forum: YES**

#### ETNO:

- non harmonised approach with different timescales and objectives in the EU member states would be counterproductive.

NB. There is a window of 3-4 years during which more UHF spectrum can be identified for WAPECS... After that it will be too late as too many millions consumer will have bought DTT equipment: deadlock case.

# UHF band - Analogue switch off



## EU centralised management: for / against?

### GSMA

- No problem that cannot be solved with existing procedures

### ETNO:

- favours coordination and harmonisation of spectrum management through existing procedures
- Common agreement on how to use the digital dividend on the basis of an EC decision supported by all EU member states.
- CEPT countries should also be involved.

### WiMAX Forum

- important to ensure timely access to DD spectrum rather than spend years discussing regional vs national spectrum management

### EBU

- MSS' competences for cultural and media policies should not be undermined by centralised selection procedures at EU level

## The 2.6 GHz band

- Commission Decision on 2.6 GHz of June 13, 2008
- Licences granted for BWA in Latvia, Norway and Sweden.
- Plans to grant licences in Austria, France, Germany, the Netherlands, Spain and the UK.

### WiMAX Forum

- ECC Decision (05)05 due for review January 2008;
- unfair to TDD since any guardband requirement is taken from TDD allocation;
- does not comply with Commission Decision on 2.6 GHz

## 2.6 GHz – For or against isolated auctions?

### GSMA

- Many MNOs wish to see the whole picture rather than a piecemeal approach
  - 2.6GHz
  - Digital dividend
  - 2G refarming
- No auctions of 2.6GHz spectrum in isolation
- Reminiscent of the 3G auctions in 2000:
  - ‘mobile data: now or never’

### WIMAX Forum

- Totally rejects proposals to link 2.6 GHz, with DD and GSM refarming since this stifles innovation, competition and technology choice
- Delaying 2.6 GHz has no merit and severely disadvantages European citizens
- Support immediate release of 2.6 GHz within CEPT

## Spectrum trading

- MSs to ensure that undertakings may transfer or lease to others individual rights to use radio frequencies in the bands for which this is provided in the implementing measures ... without the prior consent of the NRA. (FWK 9b)
- In other bands, MSs may also make provision for undertakings to transfer or lease individual rights to use radio frequencies to other undertakings. (9b)

# Spectrum trading

## EBU

- Market-based methods for spectrum allocation on a service and technology-neutral basis, such as auctions, can be in contradiction with the pursuit of policy goals, such as media pluralism and cultural diversity.
- Favour the wealthiest bidder, whose primary interest is not necessarily the efficient use of spectrum or the long-term public interest.
- No spectrum trading for frequencies that a MS has made available for broadcasting services
- Pay or play: frequency fee vs. Investment European production...

## GSMA/ETNO/ECTA/WiMAX Forum

- In favour of frequency trading

NB Idea of a cap on amount of spectrum below 1GHz. (see FWK Dir – 9 c (c ))

## Technology/Service neutrality

- Unless otherwise provided ... MSs shall ensure that all types of radio network or wireless access technology may be used in the radio frequency bands open to electronic communications services. (FWK Dir – Art 9.3)
- MSs to ensure that all types of electronic communications services may be provided in the radio frequency bands open to electronic communications. (FWK Dir – Art 9.4)

### EBU

- Interference occurs, in particular, when broadcasting and two-way mobile services are delivered within the same bands. Viewers and listeners who have invested in digital equipment must be guaranteed stable reception and high-quality sound and video.
- welcomes the fact that the Commission recognizes the problem of interference and the limits of service neutrality.

# Technology/Service neutrality

## ETNO

- Service neutrality to be applied on band by band basis
- No sector should be excluded a priori
- Exceptions to be based on a clearly justified reasons

## WiMAX Forum

- Fully support service neutrality and also technology neutrality

## ESOA

- Spectrum trading should not result in a change in the service as identified in the national frequency allocation tables for that radio frequency band if it would result in harmful interference to other spectrum users.

## Five year review period

- *Any individual right to use radio frequencies that is granted for ten years or more and that may not be transferred or leased between undertakings ... shall, every five years and for the first time five years after its issuance, be subject to a review ...*

*If the criteria to grant individual rights of use are no longer applicable, the individual right of use shall be changed into a general authorisation for the use of radio frequencies, subject to prior notice of not more than five years from the conclusion of the review, or shall be made freely transferable or leaseable between undertakings (Authorisation Dir. – Art 5.2)*

## Five year review period

### ETNO/GSMA

- Supports review for all services incl. broadcasting

### WiMAX Forum

- Prefer longer periods of security; five years is too short to support viable business cases. (need security to attract investment)

### ESOA

- Once a decision has been made on the design of a satellite, the specifications cannot be modified for the following 18-20 years (about 3-4 years between the decision to launch a satellite and the actual launch + a 15 year lifespan)
- Incompatible with a rolling 5 year revision of rights

## ***'Late entrants'***

### **The Mobile Challengers Group**

- Main area of disagreement with other MNOs: Frequency refarming.
  - Asymmetric frequency allocation
  - Access to 900 MHz for all currently active operators
  - Same amount of spectrum than early entrant
    - Justified by mobile data, not just voice

### **WiMAX Forum**

- DD spectrum should be assigned on a technology and service neutral basis with no preference to existing operators
- new entrants should be treated equally
- FDD and TDD should be supported

## Satellite industry (1)

- Space-to-Earth signal is less strong and therefore highly sensitive to interference: this makes it important to guarantee a strong & specific protection of satellite frequencies when implementing 'neutrality' principles
- Appropriate references to ITU Radio Regulation (Table of Allocation) are necessary
- Illustration: C-Band
  - Although not very much used in Europe, this band is critical to satellite elsewhere and also in int'l comms between EU and rest of the world (e.g. Africa)
  - European Commission decision on harmonised allocation of the 3.4-3.8 GHz band to broadband wireless access (BWA), including high-density mobile systems, adopted May 2008
  - This is contrary to WRC-07 that foresees that 3.4 - 4.2 GHz is allocated to satellite communications primarily over mobile systems



## Satellite industry (2)

- Mobile Satellite Systems in 2GHz (MSS): common selection procedure
  - Proposed Council and EP Decision
  - EP: May 2008 resolution
  - Council: political agreement reached on June 12, 2008
- Some players who have already invested to use this spectrum (e.g. Solaris) have to launch their satellite soon, otherwise they would lose the frequency rights secured with ITU
- There is a serious risk that the selection procedure may not be completed in time for these serious candidates, which makes the procedure debatable



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