CULLEN
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EU spectrum policy: Digital dividend

33rd meeting of EPRA

Ohrid - May 26-27, 2011

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Outline

- Digital Dividend “ 1 ”
- “Digital Dividend 2”
- Collective Use of Spectrum (white spaces)

Digital Dividend

- **From analogue to digital**

The switch from analogue to digital broadcasting allied with more efficient compression technologies for audio and video means that several TV channels can be transmitted in each 8 MHz channel instead of one.

NB. Simulcast

Digital Dividend or Dividends?

• Technological innovations

- More efficient compression technologies for audio and video:
  - MPEG-2 to MPEG-4 to …
- More efficient transmission technologies:
  - DVB-T to DVB-T2 to …

Digital Dividend

- **A definition**

DD = *"spectrum over and above the frequencies required to support existing broadcasting services in a fully digital environment, including current public service obligations"*.

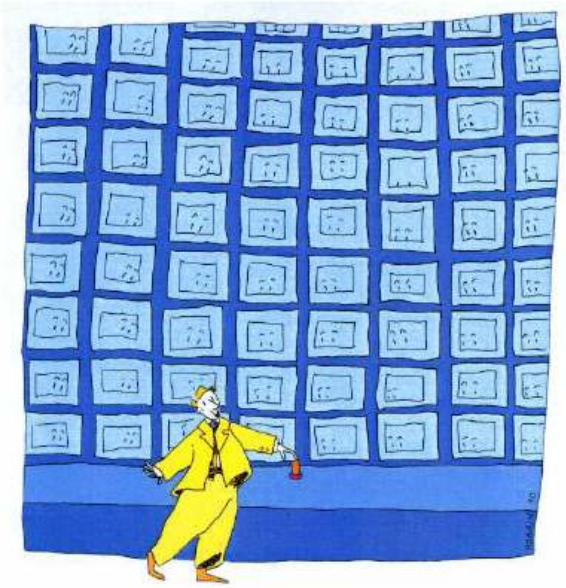
European Commission communication of Nov. 13, 2007 on a coordinated EU approach to the use of spectrum released by the analogue switch-off

Digital Dividend

- **Dividend for whom?**

DigiTAG

Digitization
An undoubted gain



Terrestrial TV

- France 1990
  - 5 Free to Air channels
  - 1 pay-TV channel
  - A few local channels
- France 2010
  - 20 FTA Standard definition
  - 4 FTA HD
  - 8 Pay-TV SD
  - 1 Pay-TV HD

5 times more + HD quality!

Digital Dividend

- **Dividend for whom?**

Sharing the cake between spectrum users:

- Astronomers (radio astronomers)
- Broadcasting (more TV channels, HDTV, 3DTV...)
- Internet of things;
- Military
- Police
- Public safety
- Renewable sources of energies (smart grids)
- Wireless broadband
- Wireless microphones

(non exhaustive)

800 MHz band

• World Radio Conference 2007

- 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) should be opened to mobile broadband services by 2015
- 72 MHz is therefore the portion of the digital dividend allocated by ITU to mobile broadband

Digital Dividend

• 800 MHz – what was done so far

- October 2009:

  European Commission recommends that:

  – digital switchover should take place by 2012

  – the 790-862 MHz sub-band should be used for fixed and/or mobile wireless broadband services.

Commission communication and recommendation on a coordinated approach to the digital dividend – October 2009

Digital Dividend

• 800 MHz – what was done so far

- May 2010: Commission (binding) decision on harmonised conditions for use of '800 MHz band'.

  NB. No deadline set to open the band for wireless broadband services – just technical regulation

- September 2010: Proposal for a RSPP

  Member States to make the 800 MHz (790-862 MHz) band available for wireless broadband services by January 1, 2013.

EU policy - multi-annual strategy

• Radio Spectrum Policy Program

- The Commission, taking the opinion of RSPG may submit legislative proposals to the European Parliament and the Council for establishing multi-annual radio spectrum policy programmes. (Art. 8a(3) of FWK Directive - 2002/21/EC)
- Such programmes shall set out the policy orientations and objectives for the strategic planning and harmonisation of the use of spectrum

EP & Council Decision on RSPP

• Commission proposal

- European Commission proposal for first RSPP
  - COM (2010) 471 final of September 20, 2010.

- Key proposals:

  - Switch off by January 1, 2012.

  - 800 MHz band available for wireless broadband by Jan 1, 2013

Council of Ministers

- **Meeting May 27, 2011**

- Telecoms Council expected to adopt a progress report

- Response to the RSPP proposal – rather than a formal common position on Parliament's first reading

European Parliament

- **E.P. Committees**

- EP debates:
  - Many hearings (EPP, S&D, ALDE)
  - Debates in three committees

	Industry, Research and Energy (ITRE) committee (lead) Vote on April 12, 2011	Culture and Education committee (CULT) (opinion adopted)	Internal market and consumer protection (IMCO) (opinion adopted)
Inclination	Pro-wireless broadband	Pro-DTT	Balanced
800 MHz – date for 800 MHz band to be made available for mobile broadband	Jan 1, 2013	2015	Jan 1, 2013
Harmonisation	Pro-EU	Pro national level	Balanced
Digital Dividend 2 (700 MHz band)	Pro DD2	Asks for removal of references to 'second digital dividend'.	Pro DD2

European Parliament & Council

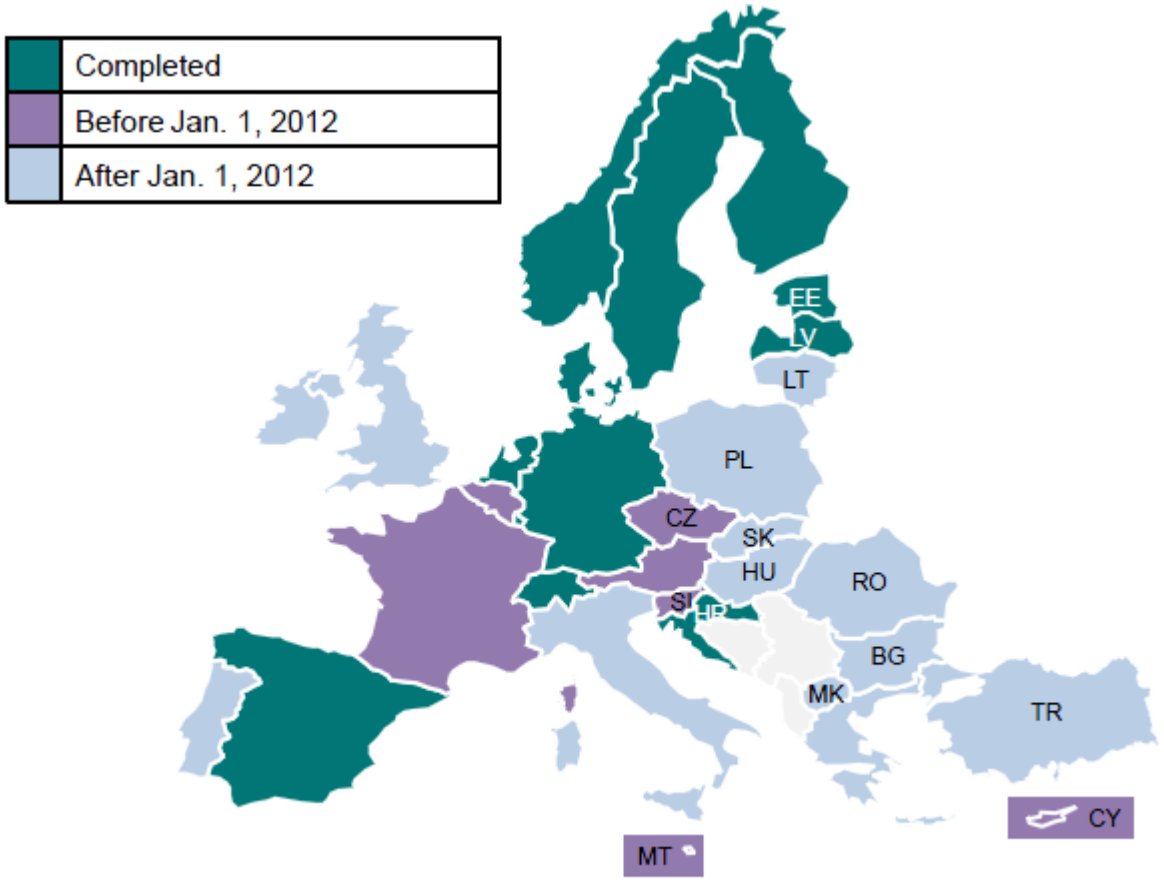
- **EP Plenary – May 11, 2011**
- **Council – Hungarian Presidency**

European Commission	European Parliament	Council – Presidency proposal
Member states should **make** the 800 MHz band **available** for wireless broadband by Jan.1, 2013	Same as Commission	Member states should **carry out the authorisation process** to make the 800 MHz bands available by Jan.1, 2013

NB. Debate on possible derogations until 2015

Analogue switch off

- **Completion date**



Source: CI research

The emerging debate on DD2

• 700 MZ band

European Commission – RSPP proposal	European Parliament – Parliament plenary report	Council – Presidency proposal
YES (diplomatic)	**YES** (Loud and clear)	**NO**
Commission to assess whether more spectrum, especially **under 1 GHz**, should be made available. "*In the longer term*", spectrum **below 790 MHz** can be envisaged.	Harmonised use of the **700 MHz band** (694-790 MHz – 'second digital dividend') for wireless broadband: • Commission assessment **before Jan. 1, 2015**. • It should, among other issues, take the possible **future spectrum needs of terrestrial radio and TV** into account.	Commission **assessment** to make more spectrum available is **deleted**.

Digital Dividend 2

• 700 MHz – a long journey

- The possible use of the 700 MHz band for Wireless Broadband requires an int'l agreement
- At WRC-12, 700 MHz for IMT would have to be included in items to be covered at WRC15 (agenda item 8.2)
- ITU Study Group would then carry out studies
- WRC-15 would make a decision

NB. IMT in 800 MHz was cleared by ITU in 2007

Collective Use of Spectrum

- **Two 8 MHz channels in the UHF band are not used in Munich!**

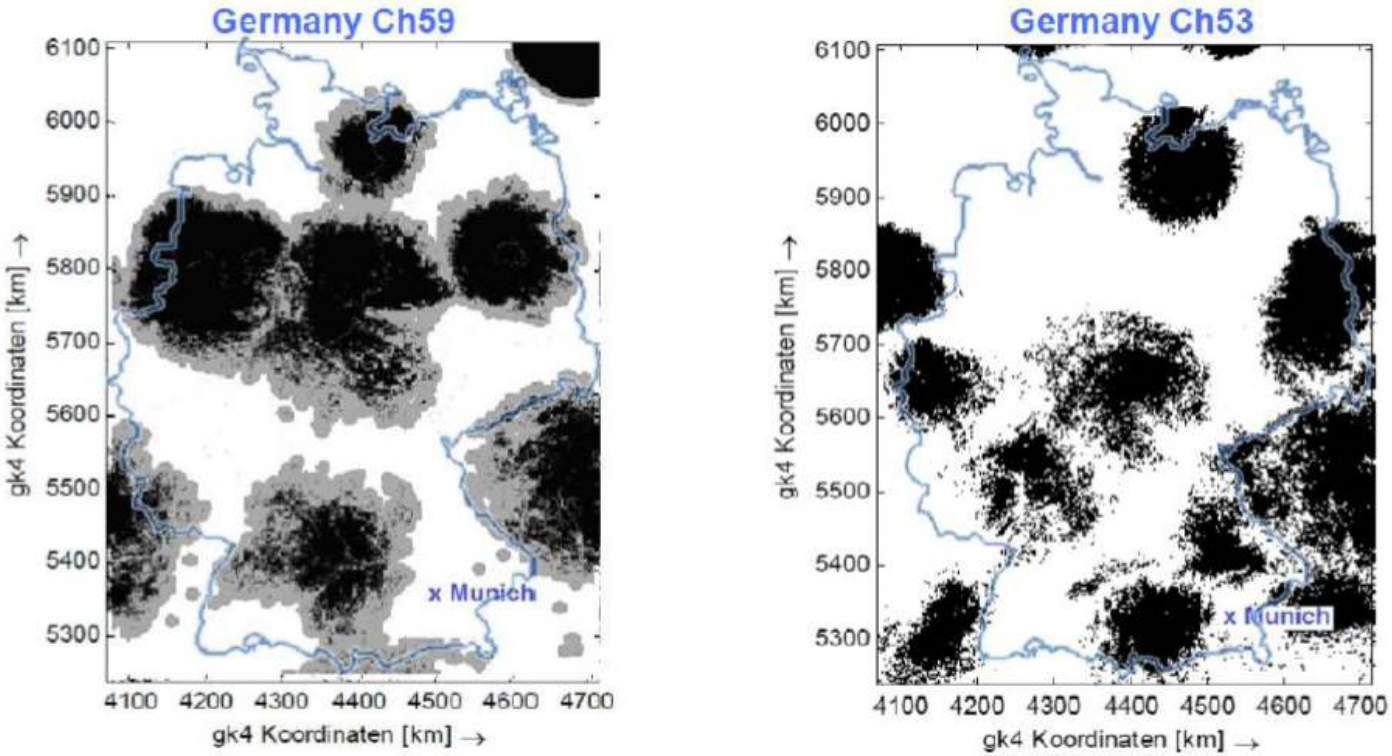


Figure 1 - TV white space in Channel 53 and 59 in Germany

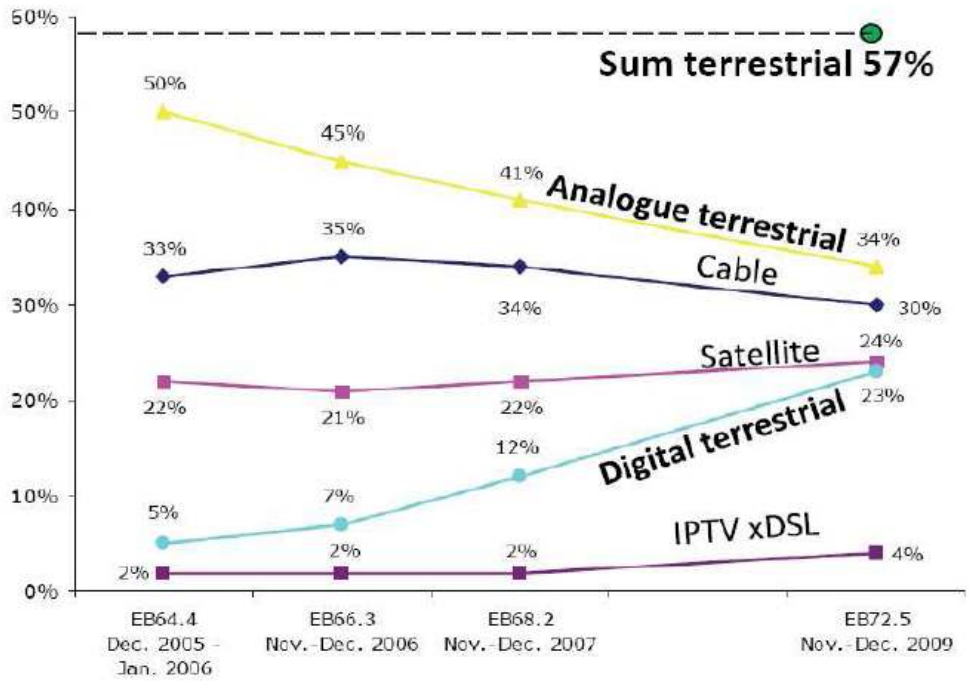
Source: COGEU Project

The role of DTT

- **DTT + Analogue TT = 57% of EU HH**

DigiTAG

The Terrestrial Broadcast market is by far the leading platform for TV - 57% of EU households use the terrestrial networks - DTT is the growing faster than analogue replacement



The role of DTT

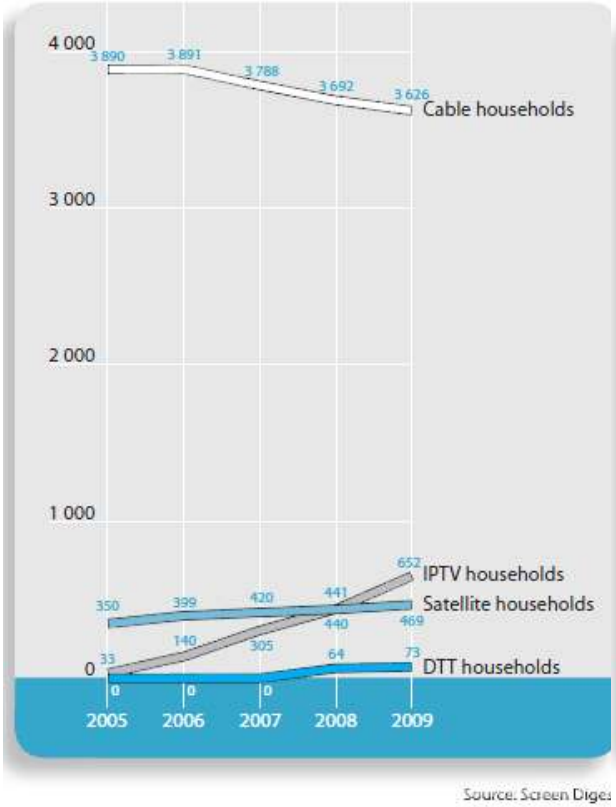
- **EBN argument**

- Digital Terrestrial Television (DTT) provides near universal coverage (90+% of pop) and access to television services from the public service and commercial broadcasters.

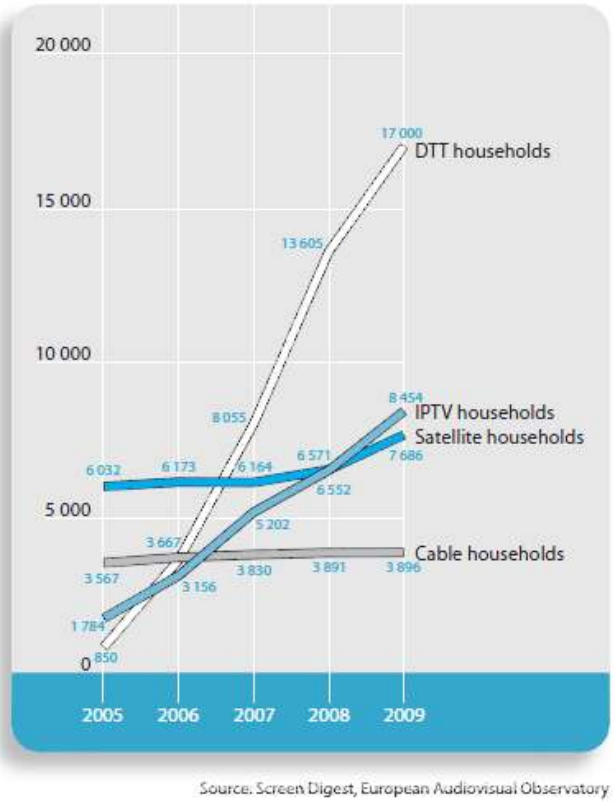
- Considerable public investments would be needed to reach high population coverage with fiber networks and to facilitate equivalent coverage would take a long time.

The role of DTT

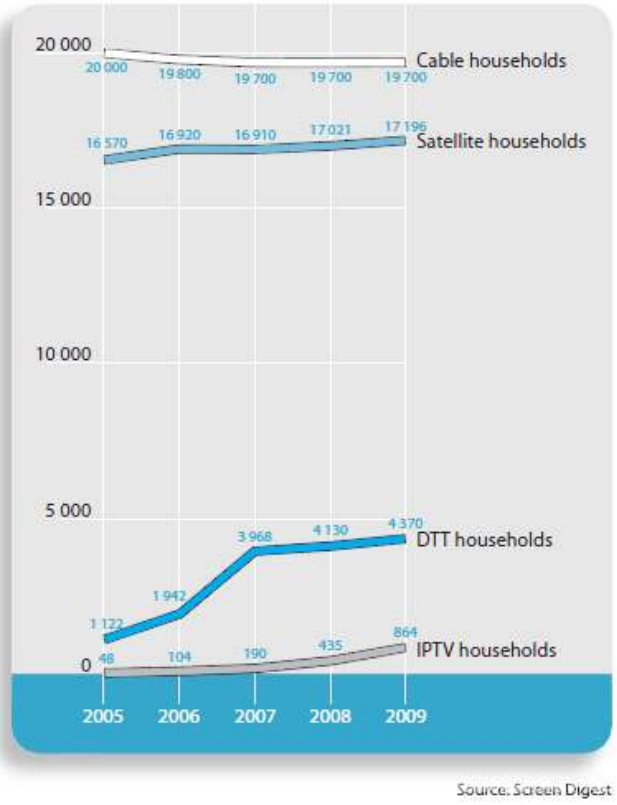
- **Important national variations**



Source: Screen Digest



Source: Screen Digest, European Audiovisual Observatory



Source: Screen Digest

Belgium **France** **Germany**

European Union targets for high-speed broadband

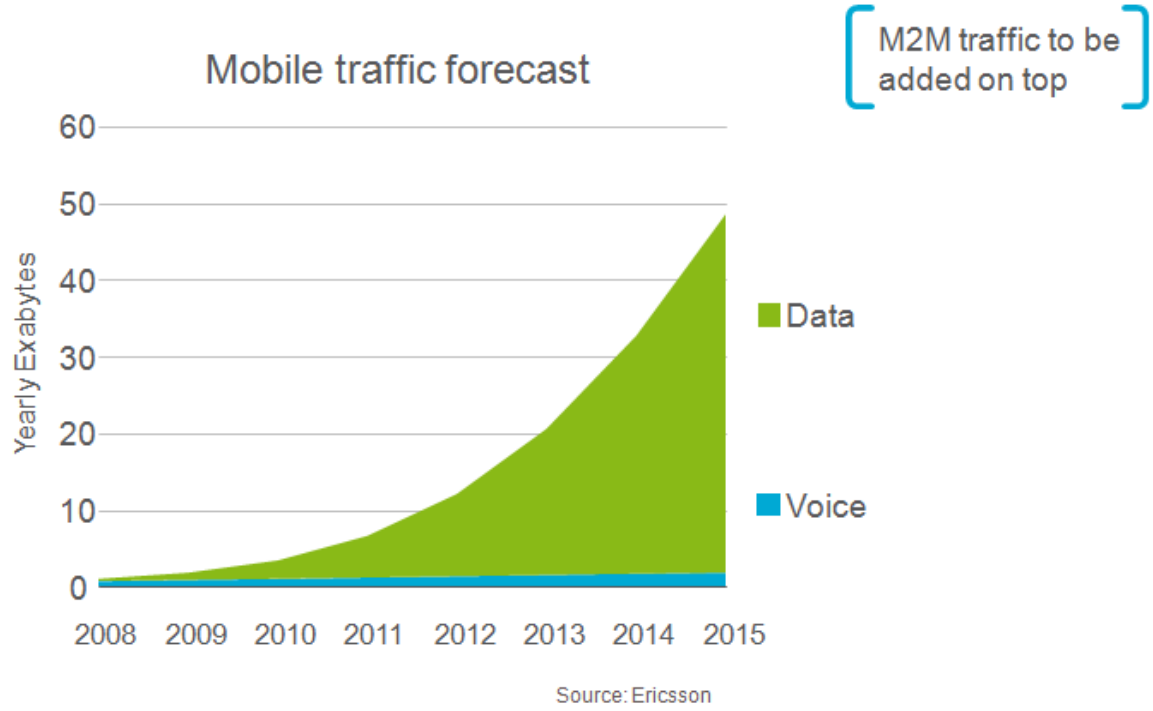
	Universal coverage All EU citizens should have access to:	Subscriptions % of EU households having subscriptions with speeds above 100 Mbps:
2013	Basic broadband (speed not defined)	No target
2020	Fast broadband with speeds of at least 30 Mbps	50% households
Estimated cost	EUR 38-58 billion	EUR 181-268 billion

Mobile operators need more spectrum?

- **Yes they do!**

TRAFFIC GROWTH IN MOBILE NETWORKS - FORECAST

This slide contains forward looking statements



BEHAVIOR AS IN FIXED – HIGH DEFINITION VIDEO STREAMS – 50 B. DEVICES 2020

Spectrum auctions

- **Western Europe**

	800 MHz	900 MHz	1800 MHz	2.1 GHz	2.6 GHz
AT	2011/2012	Date not set yet			Awarded
BE		June 2011	June 2011	June 2011	Oct. 2011
DK		Awarded	Awarded	Awarded	Awarded
FI					Awarded
FR	2011			Awarded	2011
DE	Awarded		Awarded	Awarded	Awarded
GR		Date not set yet			Date not set yet
IE	2011	2011	2011 (possibly)		
IT	2011 (expected)	Date not set yet			Date not set yet
LU					
NL	2012	2012	2012	2012	Awarded 2012
NO	2011 (expected)		Date not set yet		Awarded
PT	2011	2011	2011	2011	2011
ES	2Q 2011	2Q 2011	2Q 2011		2Q 2011
SE	Awarded		Date not set		Awarded
CH	2011	2011	2011	2011	2011
UK	2012				2012

Table 1: Spectrum awarded and dates of awards in progress, source: CI research

Spectrum

- **How much spectrum will be available for wireless communications?**

2 * 265 MHz in paired spectrum
85 MHz in unpaired spectrum

	2.1 GHz	900 MHz	1800 MHz	2.6 GHz	800 MHz
	Original 3G band	Liberalisation of use of 2G bands		3G extension band	Digital dividend
Paired	2x60 MHz	2x35 MHz	2x70 MHz	2x70 MHz	2x30 MHz
Unpaired	35 MHz			50 MHz	
Proposed deadline		By 2012		By 2012	By 2013

Table 2: Making more spectrum available for mobile broadband

How much spectrum does it need?

- **Assessment underway**

- Radio Spectrum Policy Group priority for 2011

- Detailed data base of spectrum usages with assessment of efficiency

- Assessment of the impact of technology

How much spectrum does it need?

- **An equation with many variables**

A few factors influencing the outcome:

- What mix for wired/wireless?
- Cable industry's eyes on next generation WiFi
- New compression technologies for video
- Pricing of mobile data (incl. Roaming)

THANK YOU!