ITU-D Regional Development Forum for the Arab Region:
"Access to spectrum, including broadcasting services – trends and technologies"

"Experiences in the transition process"

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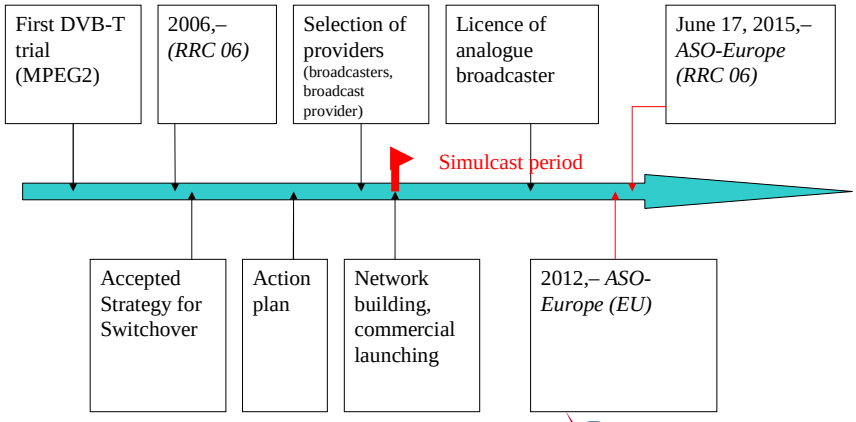
Timeline



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Technical parameters

Technical parameters could be defined by:

- authority
- service provider
- or mixed

Technical parameters

Technology:

-DVB-T
-DVB-T2 (It was published last year, which enables 30 to 50 percents bitrate increase, as compared to the first generation standards.

Coding system:

- MPEG-2(early birds)

  -digital-digital switchover in the future

- MPEG-4 standard part 10 (version 10) (followers) **=>HDTV**

Reception mode

Necessary to protect analogue broadcasting and other existing services during the transition period.

The reception mode is temporarily worse during the transition period. (outdoor coverage, rooftop antenna).

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Digital receivers (IDTV, STB)

Technical parameters:

- Suitable for former parameters
- **Suitable for HDTV** (future-proof solution for viewers)

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Subsidy

- Direct by state
- Indirect by service providers, manufactures, etc.

Aims of subsidy:

- to solve the market failure
- to ensure social or regional cohesion.

Do not "forget" to notify EU.

Subsidy

- Avoid:
  - Discrimination: DTT is not "more equal" than other platform.
  - Operating Costs: Do not relieve companies from their operating costs, i.e. from their transmission costs.
- Technology Neutrality;
  - Support pilot projects, R&D, roll-out of network in areas with insufficient coverage, development of new digital services (e.g. EPG, mobile applications);
  - Grants to consumers, e.g. to buy Set-Top-Boxes/decoders;
  - Compensate private broadcasters for additional transmission costs during simulcast or early expiry of their analogue licenses;
  - Grants to public broadcasters to promote universal coverage on all transmission platforms.

Content

Digital broadcasting is a new technology and opportunity for the viewers, but on the other hand the viewers are going to lose the possibility of the reception of former analogue broadcasting. (They might feel that the state deprived them of something they used to have.)

Problem: The license of analogue broadcaster frequently longer than ASO.

The attractive content helps the process:

>More TV channels

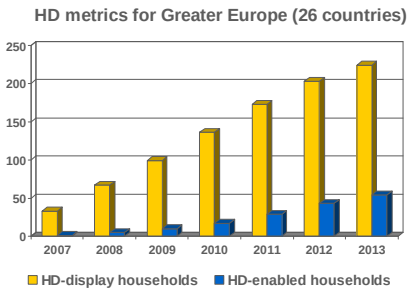
>HD format

>Other supplementary services

FTA versus PayTV: Only the DVB-T platform can offer free-to-air HD channels.

Content (HD)

- 4.6 million European households watched HDTV at the end of 2008, forecasted at 54 million in 2013.
- Penetration of HD-ready displays reached the critical mass in 2008, 90% of new TV-sets over 26-inch now sold in Europe are flat-panel HD-ready products.
- Number of HD channels broadcast in Europe doubled in 2008, totalling 173.
- UK and France are taking the lead, 6% of the homes already converted to HD (1.2 m in the UK and 1.5 m in France), the number of available HD channels reached 20 in France and 30 in the UK.
- It is a world tendency that public broadcasters are the drivers in bringing their HD content to the digital platforms.



Campaign

- **Inform** the citizens about the definition and nature of digital television and about the reasons of the switchover;
- **Educate** the citizens about the benefits of digital television;
- **Provide** all citizens with **the right to information** on the dynamics and other details of the switchover from analogue to digital broadcasting of television programmes, and to offer assistance to citizens in the process of the digital switchover.

Digital Dividend

Digital dividend is an opportunity for both broadcast and for telecoms :

Broadcast : More DTT channels (FTA/pay-TV, local/national), more quality (HD), new services (push-VoD, interactive services, …)

Telecoms : access to additional low frequencies suitable for very high-speed wireless broadband (LTE/Wimax/4G)

Be very cautious on “paper” studies claiming billions € economic value for telecoms use of UHF spectrum (remember that telecom spectrum allocation is not always a success : WLL, Wimax, TDD UMTS, PAMR, …)

Key issues to address for a successful transition
How to implement an efficient and fair process and make sure that all parties will be working together

1/ To find acceptable replacement and development frequencies for broadcast

2/ To find realistic funding for migration costs, not to be borne by existing users

3/ To fully protect from interferences the reception of broadcasting services within the remaining UHF band, at no cost for broadcast users

To find acceptable replacement and development frequencies for broadcast

- In most countries, there is a need to identify additional frequencies that can be used by broadcasters within the UHF spectrum
  - **For Member States deciding to reallocate the 800MHz band, necessity to find replacement frequencies**
  - **In most cases, broadcasters also need additional frequencies for current and future development (additional channels, HD, new services, …). Remember that economic crisis will not last forever.**
- This needs a large frequency planning optimization work both at a national and international (for coordination purpose) level

To find realistic funding for migration costs

- The costs to migrate broadcasting from channels 61-69 to other channels may be very high :
  - **Frequency planning and network modification**
  - **Cost/inconvenient for viewers (retuning, in some cases antennas replacement or re-orientation)**
  - **Costs due to measures necessary to solve interference problems**
  - **Public information/assistance including potential help scheme**
  - **Ofcom estimated migration costs in the UK lie in the range of 90-200 M£ (for the clearing of only 3 channels : 61, 62, 69)**
- The migration costs may vary a lot depending on the local situations :
  - **Costs depend on the number of frequencies to be moved. In countries using heavily channels 61-69, the cost will be higher**
  - **Significant part of the cost can be mutualized with switchover operations if and only if migration is undertaken at the time of ASO.**

=> Where ASO process is just starting or has not yet started, Member states should privilege aligning migration and ASO calendar to avoid increasing migration costs and drawbacks for viewers

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To find realistic funding for migration costs

- The migration costs must not be borne by existing users, in order to ensure a cooperative project :
  - **"Funding should be made available so that the existing and planned users of this spectrum do not have to bear extra costs as a result of these changes" – Ofcom Feb 2009**
  - **But some Members States are willing to impose DTT licensee to bear the costs for potential migration. Eg : Hungary**

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To fully protect remaining broadcast frequencies from interferences

- The planning of new services as Mobile service with disseminated sources in the same band as broadcasting has to be cautious :
  - **Thousands of Base stations and millions of user equipments are as many transmitters**
  - **Existing receivers with tuners seeing channels 61 – 69 as TV channels**
- An efficient and adequate protection of broadcasting signal reception needs to be ensured :
  - **All reception modes (rooftop, outdoor, indoor) to be protected. In some market DTT reception is mainly indoor (eg : Germany)**
  - **No changes acceptable on (already hundreds of millions sold) receivers**
  - **Potential costs (including technical support to solve local problems) not to be borne by broadcasters**

To fully protect remaining broadcast frequencies from interferences

- Some interesting solution might considerably limit interferences :
  - **Studies in Europe should end by April within SE42, and a bit later at the ITU level**
  - **A promising option to be studied : a study from Progira for PTS (Swedish administration) pushed the idea to have a guard band of 2 MHz between the BS and the MS (790-792 MHz). These 2 MHz would be taken from the duplex gap of the sub-band which then be of 10 MHz rather than the 12 MHz initially proposed**

Control the process

After the service launched the state must:

- work together with the market players. (e.g. Public TV, campaign, subsidy)
- control the process

for the success of digital switchover

Thank you for your attention