

International Telecommunication Union

ITU Sub-Regional Seminar and Ministerial Round Table on
**Switchover from Analogue to Digital
Terrestrial Television Broadcasting
in Central and Eastern Europe**

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Belgrade, Serbia

ITU Case Studies
for
Serbia, Germany, Poland and Hungary

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Organized by:

 REPUBLIC OF SERBIA
MINISTRY OF TELECOMMUNICATIONS
AND INFORMATION SOCIETY

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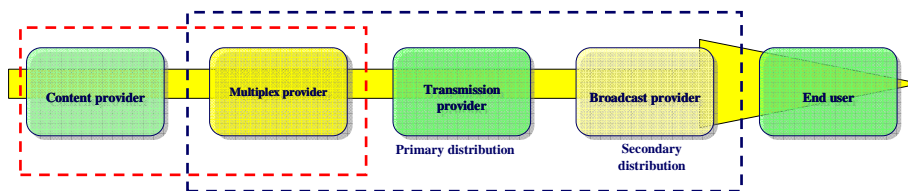
<http://www.itu.int/ITU-D/eur/>

Policy and regulatory aspects

- **Hungary:** The Prime Minister's Office prepared the strategy of the digital switchover, which was accepted by a governmental decision in March 2007.
- **Germany:** The ASO in last year. How to use the dividend ? Germany
- **Serbia:** The Ministry for Telecommunications and Information Society published the "Basic Principles of the Strategy for Switchover from Analogue to Digital Broadcasting of Radio and Television Programmes in the Republic of Serbia" in January 2009.
- **Poland:** The Ministry of Infrastructure published the Strategy for Switchover from Analogue to Digital Broadcasting of Television Programmes in 2005. (necessary update)

Policy and regulatory aspects

- The strategies are based on value chain



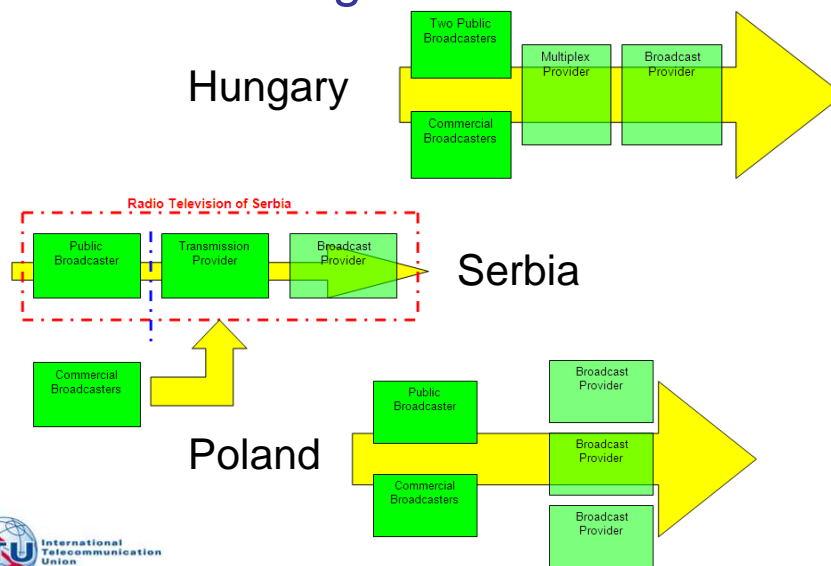
Licensing /Authorization schemes

- **Hungary:** The strategy and the law defined the rules of the implementation and operation of the digital television network. Basically the tender was a beauty contest, but the tender documentation gave some rules how to support the digital switchover by the winner.
- **Germany:** -
- **Serbia:** It has not been decided.
- **Poland:** Frequency reservation for terrestrial transmission of programme service is granted by the Office of Electronic Communications in agreement with the National Broadcasting Council.
Receiving the right to operate the DVB-T and DVB-H will be different in the upcoming years.

Spectrum planning

- **Hungary:** The authority gives the frame regulation and the winner has a right to plan their network. Hungary was allocated: 7 layers (UHF)1 layer (VHF). Five of eight multiplexes were open to tender, the planning is based on MFN.
- **Germany:** Digital dividend planning
- **Serbia:** was allocated 7 layers (UHF)1 layer (VHF). Frequency planning is fundamentally based on MFN with SFN based allotments.
- **Poland:** was allocated 7 layers (UHF)1 layer (VHF) The frequency planning is fundamentally based on MFN but SFN based in the given allotment (region).

Broadcasting network structure



Market shares of broadcasting in Hungary

Platform	Market player(s)	Market share (%)
Terrestrial (analogue)	Antenna Hungária Zrt	28
Terrestrial (digital)	Antenna Hungária Zrt	Cannot be measured
Cable (analogue)	UPC, T-kábel, Fibernet, Digi TV	59,5
Cable (digital)	UPC, T-kábel	Cannot be measured
Satellite (DTH)	UPC, T-kábel, Digi TV	12,5
IPTV	T-kábel	Cannot be measured

Market shares of broadcasting in Serbia

Platform	Market player(s)	Market share (%)
Terrestrial (analogue)	RTS	Estimated 70-80
Terrestrial (digital)	RTS	Cannot be measured (trial)
Cable (analogue)	SBB, PTT and Ikom the biggest ones from 58 operators	10,7
Cable (digital)	There is no data	Cannot be measured
Satellite (DTH)	SBB, TotalTV, DigiTV	Estimated 10-20
IPTV	Telekom Srbija (from 15 October 2008)	Cannot be measured

Market shares of broadcasting in Poland

Platform	Market player(s)	Market share (%)
Terrestrial (analogue)	TP Emitel , PSN Info-TV-FM, RSTV	30,7
Terrestrial (digital)		Cannot be measured (trial)
Cable (analogue)	UPC, Aster, Multimedia Polska, Netia TP	30,7
Cable (digital)		Cannot be measured
Satellite (DTH)	Cyfra +, Cyfrowy Polsat	38,9
IPTV	Telekomunikacja Polska	0,5

Terrestrial broadcasters in Hungary

Name of broadcasters	Coverage	Type	Channels (Terrestrial)	Remarks	Coverage Population %
MTV	Nationwide	Public	M1 M2 (satellite)	M1 (regional in the part of time)	97 %
M-RTL	Nationwide	Commercial	RTL		86 %
MTM-SBS	Nationwide	Commercial	TV2		86 %

Terrestrial broadcasters in Serbia

Name of channel	Type
RTS 1	Public
RTS 2	Public
RTV Pink	Commercial
B92	Commercial
Happy TV, <u>Kosava</u>	Commercial
<u>Avala</u>	Commercial
Fox TV	Commercial

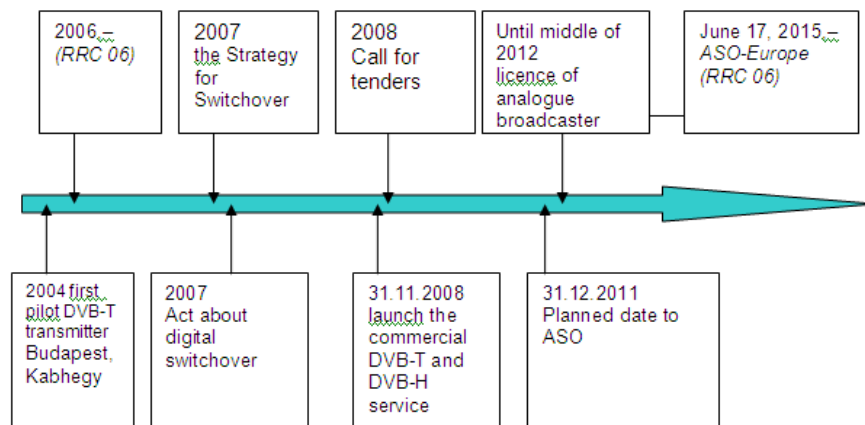
Terrestrial broadcasters in Poland

Name of broadcasters	Coverage	Type	Channels (Terrestrial)	Remarks	Coverage Population %	Coverage Area %
TVP	Nationwide	Public	TVP1, TVP2, TVP3	TVP 3 is a regional channel	TVP1 97,6% TVP2 97,6 % TVP3 72,1 %	TVP1 95,8 % TVP2 93,8 % TVP3 55,3 %
Polsat	Nationwide	Commercial	Polsat		81,1 %	64,6 %
TVN	Local, subregional	Commercial	TVN		43,1 %	18,5 %
TV4	Local, subregional	Commercial	TV4		25,1 %	11,9 %
Puls	Local, subregional	Commercial	Puls		24,8 %	11,8 %

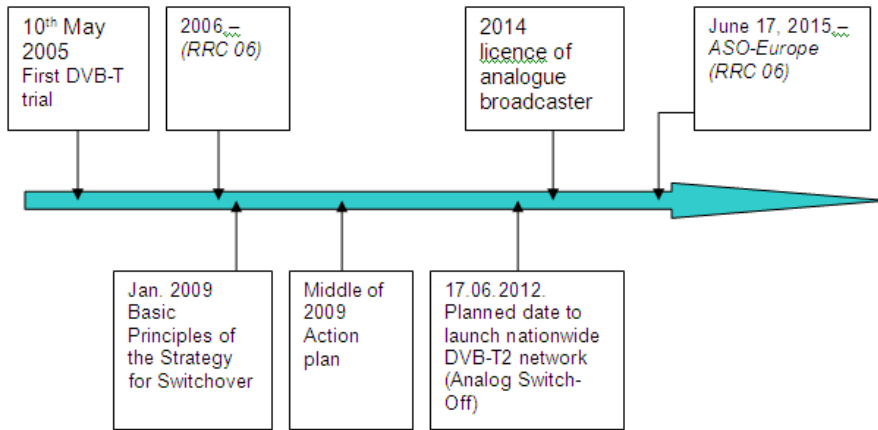
Nationwide broadcast providers

- Hungary: 1 (Antenna Hungaria)
- Germany: 1 (Media Broadcast)
- Serbia: 1 (Radio Television of Serbia)
- Poland: 4 (TP Emitel, PSN, Info-TV-FM, RSTV)

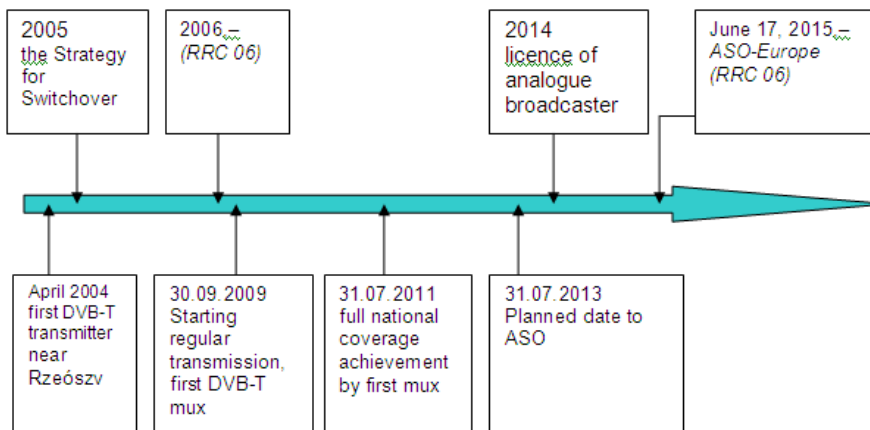
Timeline for introduction of DVB-T in Hungary



Timeline for introduction of DVB-T in Serbia



Timeline for introduction of DVB-T in Poland



Timeline for introduction of DVB-T in Germany

Completed.

Mobile TV (DVB-H)

- **Hungary:** launched the service in FTA mode last December until they agree with mobile operators about the technical and financial conditions. The service is available in the area of Budapest.
- **Germany:** (problem DVB-T FTA versus DVB-H)
- **Serbia:** The Ministry is examining the business models
- **Poland:** This year (30.09.2009) one provider has been given the right to operate the mobile TV service by Info-TV-FM in the country.

Business model and plan

- **Hungary:** The business model is not determined due to strategy, but creates the frame for it. (strong multiplex model).
- **Germany:** -
- **Serbia:** The business model has not been determined yet.
- **Poland:** The business model has been determined due to the analogue situation at the first multiplexes.

Technology

- **Hungary:** MPEG-4 standard part 10 (version 10) is working.
- **Germany:** MPEG-2
- **Serbia:** MPEG-4 standard part 10 (version 10) is planned.
- **Poland:** MPEG-4 standard part 10 (version 10) is planned.

Thank you for your attention.

