



# **Analogue to Digital Television Broadcasting Switchover Strategy for the Republic of Croatia**



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# National TV Broadcasting Switchover Strategy

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- ❖ National TV Broadcasting Switchover Strategy – adopted by the Government of the Republic of Croatia on **31 July 2008**
- ❖ This Strategy stipulates fundamental strategic guidelines for the introduction of digital television in the Republic of Croatia
- ❖ The main strategic goal of the Republic of Croatia – **full digital television switchover by 1 January 2011 at the latest**
- ❖ Another two documents were also adopted:
  - Decision on the start of digital TV broadcast and the end of analogue TV broadcast in the Republic of Croatia
  - Decision on manner of distribution of subsidies and criteria and conditions of granting the subsidies to the TV subscribers (natural persons), in order to purchase TV adapters for the reception of DTV programmes (Set Top Boxes)

# National TV Broadcasting Switchover Strategy

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- ❖ Ministry of the Sea, Transport and Infrastructure, in cooperation with the **Croatian Post and Electronic Communications Agency (HAKOM)**, is responsible for the preparation and adoption of the secondary legislation relevant for the introduction of digital television
- ❖ **19 December 2008** – the *Ordinance on Analogue to Digital Radio and Television Broadcasting Switchover and Access to Multiplex Positions in Terrestrial Digital Broadcasting (OG 148/08)* was adopted by the Ministry of the Sea, Transport and Infrastructure, on the proposal by HAKOM
- ❖ This Ordinance (together with other secondary legislation related to the radio frequency spectrum management) provides legal basis for the introduction of digital television and digital terrestrial television switchover in Croatia

# National TV Broadcasting Switchover Strategy

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❖ The Strategy also includes two Action plans:

## 1. Action Plan for the Analogue to Digital Terrestrial Television Broadcasting Switchover in "digital regions"

- official commencing of "simulcast" – simultaneous broadcasting of nationwide television programmes in digital and analogue technology
- promotion campaign – informing consumers on details referring to analogue to digital television broadcasting switchover in relevant "digital region", and on possibilities of purchasing digital receivers
- delivery of subsidy vouchers and purchase of digital receivers enabling consumers – viewers to receive digital television contents
- analogue transmitter switch-off – upon the completion of the "simulcast" period, analogue terrestrial television network in a specific "digital region" shall be completely switched off, indicating a complete switchover to digital technology

# National TV Broadcasting Switchover Strategy

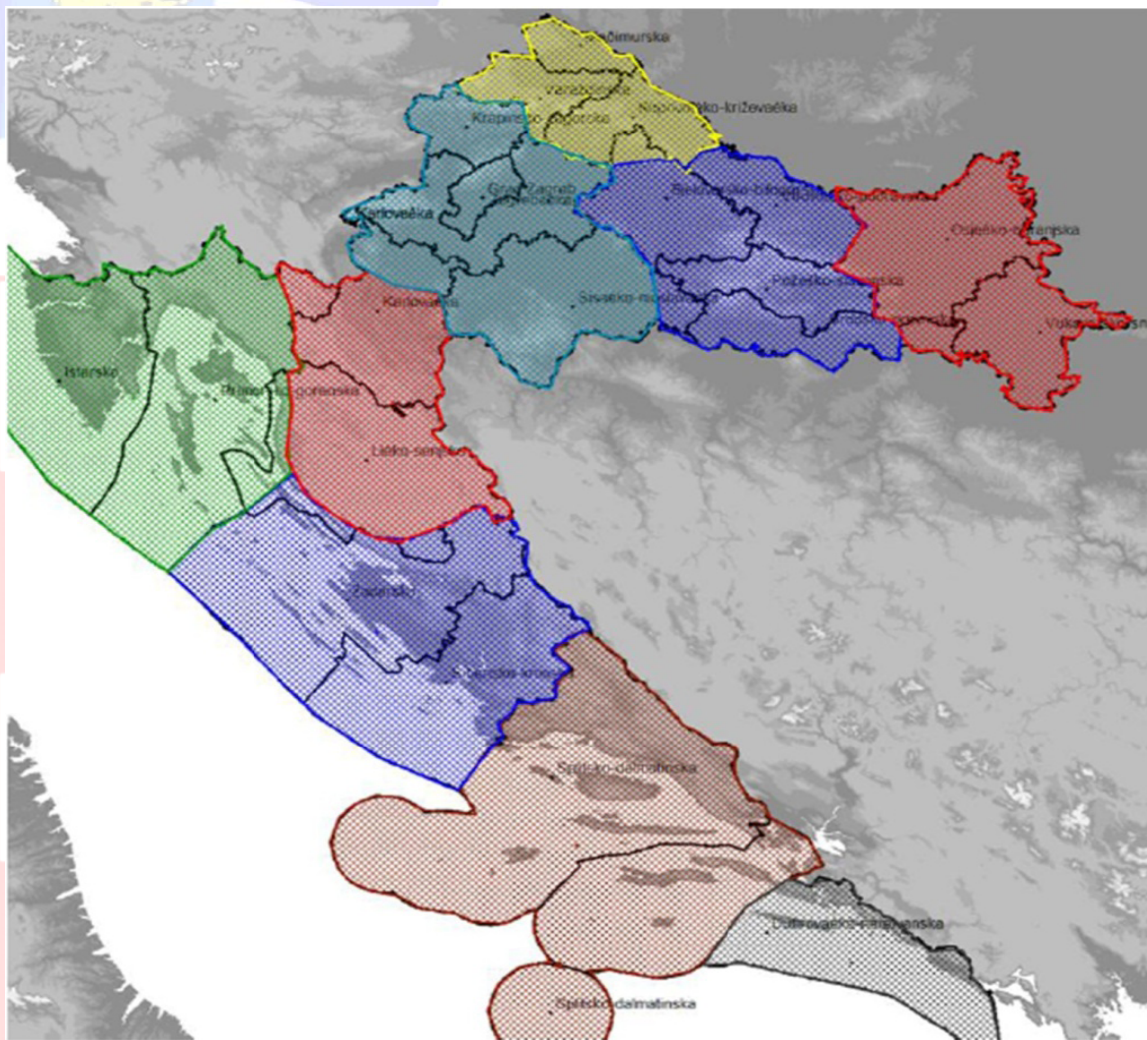
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❖ The Strategy also includes two Action plans:

## 2. Action Plan for the Implementation of the Promotion Campaign

- **to inform the public on the reasons for analogue to digital terrestrial television broadcasting switchover:**  
Informative TV commercials, designing the mascot and logo, an informative brochure, "My administration" web portal update, designing web site, etc.
- **to educate the public on digital television benefits:**  
Indirect contacts with the public – TV shows, conferences, workshops and round tables, *on-line* quiz, banners, etc.  
Direct communication with the public – "*Digital Switchover Road Show*" across Croatia's towns
- **to ensure the right to information and help in the process of the analogue to digital television broadcasting switchover for all the citizens of the Republic of Croatia:**  
**DTV Call Centre (0800-1-1-2011), "DTV for everybody" event, etc.**

# National TV Broadcasting Switchover Strategy



- ❖ 9 “digital regions” in the Republic of Croatia
- ❖ Pilot-project in the County of Istria – “Digital Istria” (100% DTV coverage)
- ❖ On 1 September 2008 the Government launched a two-year national DTV Educational Campaign



# National TV Broadcasting Switchover Strategy

## MUX A coverage

### Most important DVB-T transmitters (SDTV):

HRT Headquarters

Sljeme

Učka

Stipanov Grič

Čelevac

Ugljan

Promina

Labinštica

Vidova Gora (Brač)

Srđ

Psunj

Papuk

Josipovac

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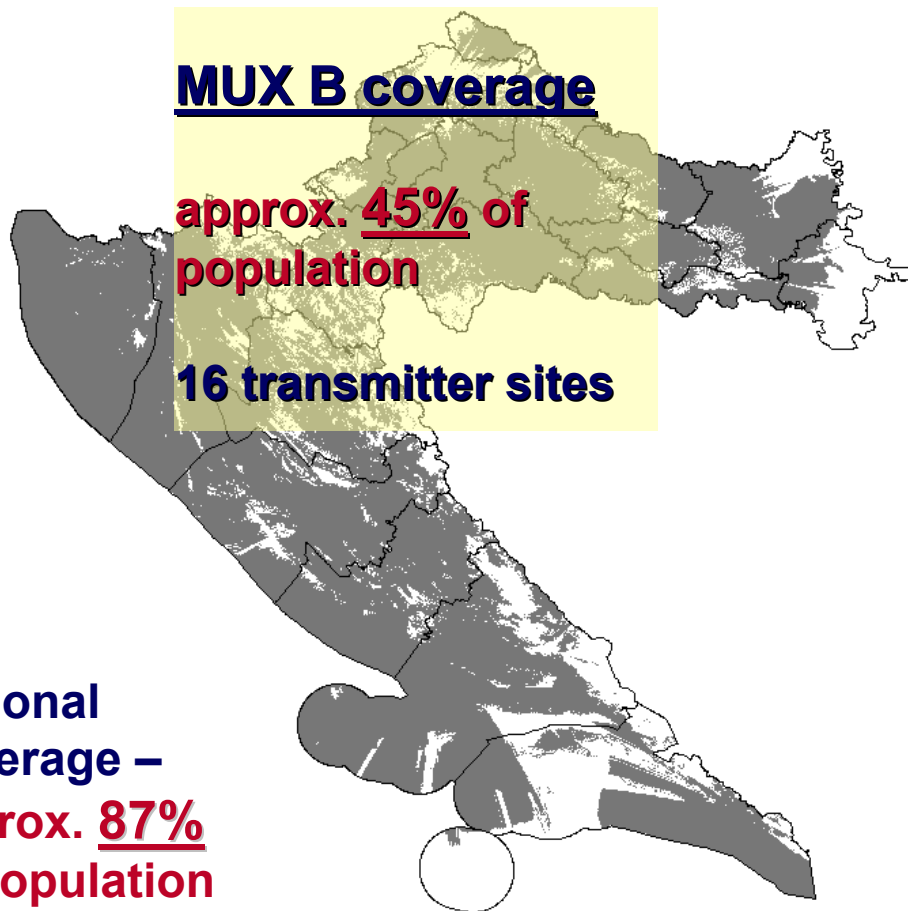
**38 sites in total**

## MUX B coverage

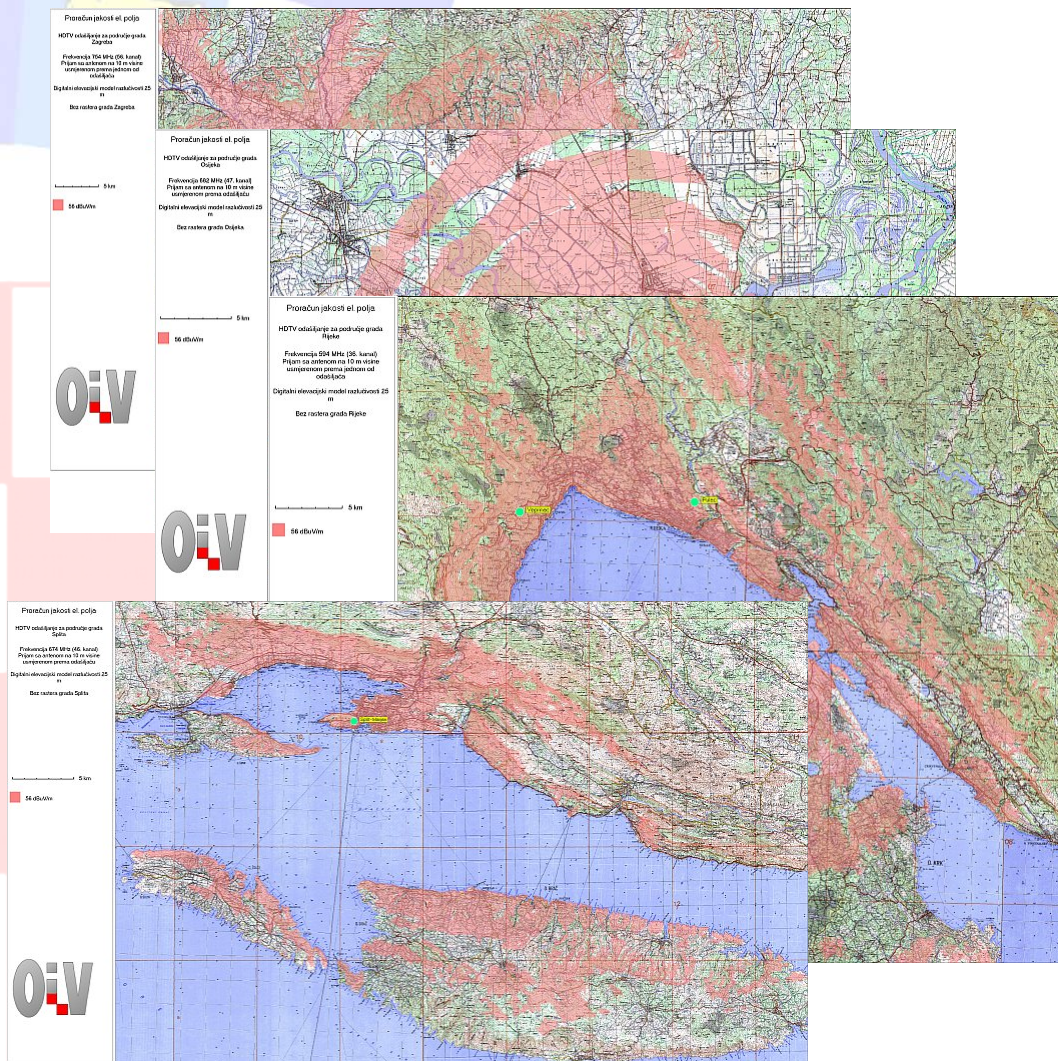
**approx. 45% of population**

**16 transmitter sites**

**National coverage – approx. 87% of population**



# National TV Broadcasting Switchover Strategy



## High definition TV signal coverage (HDTV)

Zagreb (HRT – Prisavlje 3)  
Zagreb – Kelekova 7  
Zagreb – Sveta Nedjelja  
Osijek  
Rijeka – Veprinac  
Rijeka – Pulac  
Split – Marjan

HDTV Pilot-project started on March 2007





# National TV Broadcasting Switchover Strategy

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- ❖ Before 31 December 2010, Croatia will have filled 2 following multiplexes:

**MUX A** – 4 existing national TV broadcasters in Croatia



**HRT1**

**HRT2**

**RTL**  
TELEVIZIJA

**nova**

**MUX B** – will be operational in the course of 2009 or 2010



# National TV Broadcasting Switchover Strategy

year	2008				2009								2010															
month	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
D1																												
D2																												
D3																												
D4																												
D5																												
D6																												
D7																												
D8																												
D9																												

**Time schedule for digital television switchover across 9 “digital regions” in Croatia**

# National TV Broadcasting Switchover Strategy

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- ❖ The Strategy also enables the introduction and provision of new services or business models, due to the releasing of the radio frequency spectrum for new allocations and applications upon digital switchover – **DIGITAL DIVIDEND:**
  - additional nationwide digital terrestrial television programmes in either standard definition (SDTV) or high definition (HDTV)
  - digital terrestrial television programmes at regional and local level
  - television services for mobile phones (DVB-H) and other types of mobile video and multimedia
  - mobile communications, such as voice calls or information data
  - wireless broadband communications services
  - wireless microphones for theatres, television and radio production and live music events
  - short range wireless applications, such as fixed wireless access at home
  - public safety services, such as wireless communications for the emergency services

# National TV Broadcasting Switchover Strategy

**Digital dividend** – UHF frequency bands IV and V – allocated to multiplexes at national and regional level and associated broadcasting services, as well as to other electronic communications services

channel	21	55	56	60	61	69	70
frequency	470MHz		750MHz		790MHz		860MHz
service	DVB-T/H		DVB-T		IMT		
<b>MUX A - national</b>	4xSD: HRT1, HRT2, NOVA, RTL + 1xSD: additionally available						
<b>MUX B - national</b>	5xSD: additionally available						
<b>MUX C - national</b>	5xSD: additionally available						
<b>MUX D - regional /national</b>	1-3xSD: existing regional programs + 2-4 SD: additionally available (regional/national)						
<b>MUX E - national</b>	DVB-H: additionally available ~30 TV programs or ~ 60 radio programs						
<b>MUX F - national /regional</b>	additionally available: DVB-T iii DVB-H						
<b>MUX G - regional /national</b>	additionally available: DVB-T iii DVB-H						
<b>MUX H - regional</b>	additionally available: DVB-T iii DVB-H						

# National TV Broadcasting Switchover Strategy

**Digital dividend** – VHF frequency band III – allocated to multiplex at national/regional level and associated broadcasting services, as well as to other electronic communications services

channel	5	12	13
frequency	174MHz		230MHz
service	DVB-T/DVB-H/T-DAB/DMB		
<b>MUX VHF - national /regional</b>	additionally available: DVB-T, DVB-H, T-DAB, DMB		

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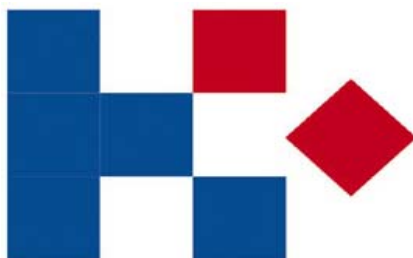
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- ❖ **28 January 2009** – HAKOM launched public tender procedure for granting the individual rights for the use of radio frequencies relating to DTV in two nationwide Multiplexes – MUX A and MUX B, with required population coverage of **95%**
- ❖ The spectrum licence to be granted will be issued for **10 years duration**, binding the successful bidder to ensure multiplexing service, must-carry obligation for existing analogue programmes, 4 to 5 SDTV programmes per multiplex with statistical multiplexing and MPEG-2 coding
- ❖ The minimum requirements for MUX A and MUX B data rates of 19.91 Mbits/s, 64-QAM modulation, 2/3 protection coding and 1/4 guard interval already planned have been defined in the tendering documentation
- ❖ Average net data rate per TV programme will be approximately 4 Mbits/s

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- ❖ Exact number of TV programmes and the total capacity of MUX A and MUX B will be known after the end of the tendering procedure and granting the licence
- ❖ The deadline for applications was 30 March 2009 and the HAKOM's decision on licence shall be announced on 24 April 2009
- ❖ In accordance with the Strategy, both Multiplexes A and B shall deliver the assigned TV programmes to the population of Croatia by the end of the year 2010 at the latest, but they may become operational in the course of year 2009



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- ❖ **12 February 2009** – a new Decision on manner of distribution of subsidies and criteria and conditions of granting the subsidies to the TV subscribers (natural persons), in order to purchase TV adapters for the reception of DTV programmes (Set Top Boxes), adopted by the Government:
  - each TV subscriber (natural person) is entitled to the subsidy in amount of **75,00 HRK (approx. 10 EUR)**, in the form of voucher, to purchase one digital receiver (Set Top Box)
  - vouchers shall be distributed to all TV subscribers by OIv company in cooperation with the Croatian Radiotelevision
  - vouchers shall be used before **31 December 2010** at the latest
- ❖ this Decision ensures the digital receivers subsidising in a **technologically neutral form**
- ❖ **the Central State Administrative Office for e-Croatia** – responsible for the daily management tasks related to the Strategy implementation



# National TV Broadcasting Switchover Strategy

Finally, we are determined to implement the Strategy before 2012 (EC Recommendation) ..... definitely to avoid following scenario:





Thank you for your attention

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Ministry of the Sea, Transport and Infrastructure