

**The Gathering of Opinions Concerning the Provision of Electronic Communications Services for Multiplex Management in Terrestrial Broadcasting (Multiplex Operator Services) and/or Management of the Electronic Communications Network for Digital Television (Network Operator)**

The Croatian Post and Electronic Communications Agency (HAKOM), pursuant to Article 12, paragraph 1, items 12 and 22 of the Electronic Communications Act (OG 73/08, ECA), invites all interested parties to express interest for the building and management of digital terrestrial television networks and/or for the type of electronic communications services and the manner of providing these services via the available terrestrial digital television network capacity (network and/or multiplex operator).

The gathering of opinions on the basis of the expressed interest in this procedure is aimed at ensuring technical implementation of new contents and services in digital broadcasting networks that will provide added value to users compared to the existing services, and offer to providers of services the manner and conditions of use of the RF spectrum that will permit the creation of a successful and sustainable business model in the Republic of Croatia.

The delivered opinions and the expressed interest for the provision of services will be analysed and the analysis will serve as a basis for the adoption of a decision on the manner in which the remaining available RF spectrum will be used, as well as the available capacity of multiplexes intended for digital television. Special requirements for the digital television network will be determined and followed by the procedure(s) for the granting of licence(s) for the use of the radiofrequency spectrum.

**What is Necessary for the Provision of Services of Multiplex and /or Network Operators?**

A multiplex operator must, in accordance with Article 32, paragraph 1 of the ECA and Article 4 of the Ordinance on the manner and conditions for the provision of electronic communications networks and services (OG 154/08, Ordinance), notify HAKOM at least 15 days in advance about the beginning, changes and termination of the provision of electronic communications networks and services.

Pursuant to Article 32, paragraph 5 of the ECA and Article 5 of the Ordinance, HAKOM will issue a certificate to the operator. The network operator must have a valid license for use of the radiofrequency spectrum.

## The Allocation of the RF Spectrum

The use of the radiofrequency spectrum intended for digital television is based on the available radiofrequency spectrum in accordance with the rights exercised pursuant to the international agreement and the Geneva Plan 2006 (original title: „*Final Acts of the Regional Radio Communication Conference for Planning of the Digital Terrestrial Broadcasting Service in Parts of Regions 1 and 3, in the Frequency Bands 174-230 MHz and 470-862 MHz*“). The allocation of the radiofrequency spectrum intended for digital television has been defined in the digital regions, in particular for the UHF bands IV and V and for the VHF band III, in accordance with the *Radio Frequency Allocation Plan for Terrestrial Broadcasting Services in 148,5 kHz-1492,0 MHz Frequency Bands*.

## The Allocated RF Spectrum and the Granted Licenses for Use of the Radiofrequency Spectrum

HAKOM has so far granted two licenses for use of the radiofrequency spectrum for the provision of the service of management of electronic communications networks for digital television in the territory of the Republic of Croatia:

1. License RF-DTV-01/09 granted to the company Odašiljači i veze d.o.o. (Transmitters & Communications Ltd.) allows for the use of the radiofrequency spectrum for the provision of the service of management of **two** electronic communications networks for digital television for **MUX A** and **MUX B** in the territory of the Republic of Croatia.  
The license has been granted for 10 years and it expires on 24 April 2019.  
This license allows for the use of the radiofrequency spectrum in UHF bands IV and V by using 8 MHz channel width and the network built on the principle of the SFN in each of the nine digital regions.  
By using MPEG-2 encoding standard, every network (MUX A and MUX B) ensures capacity sufficient for the transmission of 5 SD quality TV channels, i.e. the total of 10 free-to-air channels in the territory of the Republic of Croatia thus ensuring the capacity necessary for digital switchover of 4 TV channels of national broadcasters and the capacity necessary for the introduction of additional 6 national channels, including the possibility to provide additional services depending on the available capacity.
2. License RF-DTV-01/10 issued to the company Odašiljači i veze d.o.o.(Transmitters & Communications Ltd.) allows for the use of the radiofrequency spectrum for the provision of the service of management of **two** electronic communications networks: one national-regional and one local electronic communications network for digital television for **MUX D** in the territory of the Republic of Croatia.  
The license has been granted for 10 years and it expires on 21 July 2020.

This license allows for the use of a part of the radiofrequency spectrum in UHF bands IV and V by using 8 MHz channel width and the network built on the principle of the SFN in each of the defined digital regions.

The national-regional network for MUX D, ensures, by using the MPEG-2 encoding standard, the capacity sufficient for the transmission of 5 free-to-air SD quality TV channels thus ensuring the capacity necessary for three national TV channels and up to two television channels at the regional level in each of the nine digital regions.

The local digital network MUX D ensures, by using the MPEG-2 encoding standard, the capacity sufficient for the transmission of at least 2-3 free-to-air television channels, depending on the individual local network. Both networks are realised on the principle of SFN networks in each of the defined regions.

### The Availability of the RF Spectrum

Television services that will be provided by terrestrial broadcasting by using the capacity of the remaining multiplexes (in addition to multiplexes MUX A, MUX B and MUX D) may use conditional access systems.

The above-mentioned services will be provided via electronic communications network(s) for digital television (DVB-T) in the UHF and VHF frequency bands for which the *network operator* has been granted the license for use of the radiofrequency spectrum.

The digital switchover in Croatia and countries of the region will result in the liberation of the radiofrequency spectrum sufficient for the following coverage in the UHF frequency band:

| Digital region | Included counties                                                                                  | Number of coverages |
|----------------|----------------------------------------------------------------------------------------------------|---------------------|
| D1             | Osječko-baranjska, Vukovarsko-srijemska, part of Brodsko-posavska                                  | 3 x 8 MHz           |
| D2             | Part of Bjelovarsko-bilogorska, Virovitičko-podravska, Požeško-slavonska, part of Brodsko-posavska | 2 x 8 MHz           |
| D3             | Međimurska, Varaždinska, Koprivničko-križevačka, part of Bjelovarsko-bilogorska                    | 3 x 8 MHz           |
| D4             | City of Zagreb, Zagrebačka, Sisačko-moslavačka, part of Krapinsko-zagorska, part of Karlovačka     | 3 x 8 MHz           |
| D5             | Primorsko-goranska, Istarska, part of Ličko-senjska                                                | 5 x 8 MHz           |
| D6             | part of Karlovačka, part of Ličko-senjska                                                          | 3 x 8 MHz           |
| D7             | Zadarska, Šibensko-kninska, part of Ličko-senjska                                                  | 4 x 8 MHz           |
| D8             | Splitsko-dalmatinska, part of Dubrovačko-neretvanska                                               | 3 x 8 MHz           |
| D9             | part of Dubrovačko-neretvanska                                                                     | 4 x 8 MHz           |

Additional RF spectrum can be ensured in the UHF frequency band in the territories of the cities of Zagreb, Split, Rijeka, Šibenik, Zadar, and the West coast of Istria.

Furthermore, there is radiofrequency spectrum available in the VHF frequency band for one coverage (7 Mhz) at the level of the Republic of Croatia.

*A multiplex operator* does not have to be a *network operator*, that is, it does not need to be the holder of the license for use of the radiofrequency spectrum but the provision of its services, that is, the transmission of the multiplex content, is regulated on the basis of a contract with the network operator.

**All parties interested in the provision of multiplex management services in broadcasting (multiplex operator) and/or in the provision of services of management of electronic communications networks for digital television (network operator) in the territory of the Republic of Croatia are invited to submit their proposals and projects (structured as specified in the annex to this invitation) in writing by 17 January 2011 to the Croatian Post and Electronic Communications Agency at the following address: Jurišićeva 13, 10000 Zagreb.**

**For the purpose of data protection, and if requested by the interested operator in the documentation, HAKOM will treat the submitted documents in accordance with Article 15, paragraph 7 of the ECA as classified data or a business secret.**

## Structure of Documents for the Expression of Interest

### Data on multiplex and/or network operator (1 page)

- Basic data (seat, legal form, founder...)
- Data on share capital
- Activity
- Short description of the former activities of the multiplex and/or network operator or a short company history
- Developmental goals

### Description of market and services (3-5 pages)

- Short description of the service and market needs to be satisfied
- Technical description of the service
  - For which kind of reception is the service intended (e.g. fixed reception network, mobile reception network, portable reception network ...)
  - What kind of broadcasting technology is to be used (e.g. DVB-T; DVB-H; DVB-T2...). If standard will be changed in the future, the estimated date of change needs to be mentioned
  - The required capacity of the provision of the envisaged services. The smallest and biggest acceptable capacity and the optimum capacity for the envisaged services must be specified
  - A list of different services in the multiplex, containing the number of television, radio channels and other services
  - Conditional access system to be used
  - The manner of ensuring receiver equipment for users
- Who are users and what is their location (urban/rural areas)?
- Geographic area of interest (e.g. Republic of Croatia; digital regions D1, D2, D3...; cities of Rijeka, Split...)
- What are service features important for users?
- Estimated share on the market of similar services?
- What are the sources of services to be provided (who produces the services)?
- Competition and comparison with the competitors
- Estimated start date for the provision of services
- Timeframe during which the provision of services is cost-effective (minimum duration of license)
- Dynamics of realisation – assessed number of users per arbitrarily determined periods of realisation

### Other

Completed by the multiplex and/or network operator in free form.