



**NMHH** National Media and Infocommunications  
Authority • Hungary

# *Hungarian roadmap and its regulatory background*

**Dr. Péter Vári**

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# The current state of digital terrestrial television in Hungary

There are five DVB-T - national terrestrial digital television networks in the 470 MHz to 790 MHz (UHF) frequency band.

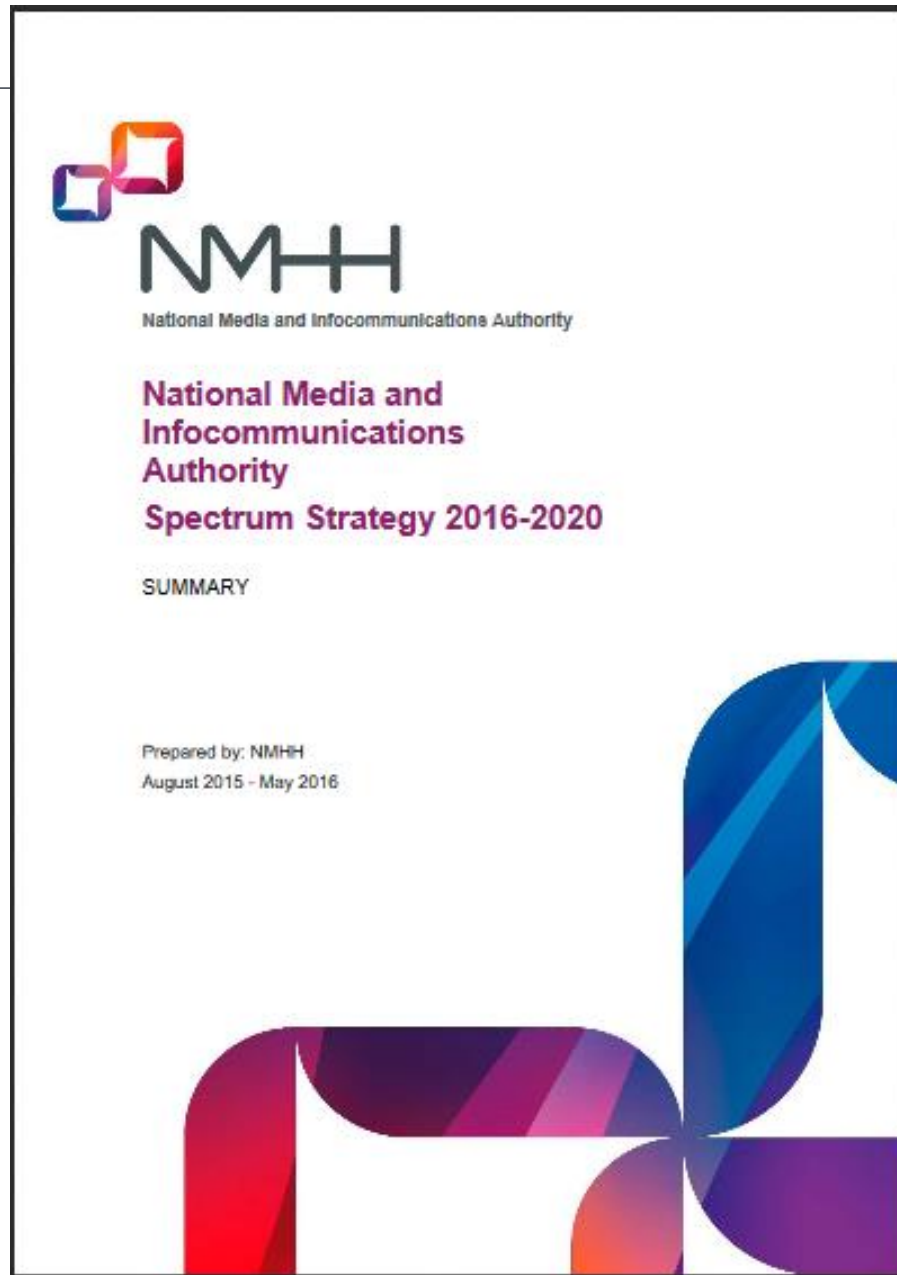
In 2008, the legal predecessor of NMHH announced a tender for their operational rights, which was won by Antenna Hungária Zrt. for 12 years.

Available content: 12 free and 47 pay-TV channels as well as 4 public radio channels.

"Ignoranti, quem portum petat, nullus suus ventus est."  
(„The wind is never favorable to those who don't know where they are going.”)



Lucius Annaeus Seneca



## **1. Meeting the increasing demands in mobile broadband**

For mobile services and to ensure the continuing advancement of mobile broadband, spectrum must be provided and assigned as needed.

## **2. Meeting the demands of terrestrial audiovisual broadcasting and digitalisation**

Spectrum required for terrestrial audiovisual broadcasting, the continuing advancement of broadcasting, the digitalisation of radio broadcasting must be ensured in line with demands expected at national, regional and local levels alike.

## **3. Meeting the demands of narrow and broadband PPDR applications**

Demands for spectrum necessary for the operation and development of PPDR applications must be met and narrow band spectra must be kept available for future applications for at least another 10 years, while preparing for surges in

demand for broadband and taking into account the possible frequencies both currently available and newly released (sale of the 700 MHz band, future regulations of the 410-430 and 450-470 MHz bands).

## **4. Preserving the value of non-civilian radiocommunications and meeting relevant demands:**

Demands for spectrum for the development of non-civilian radiocommunications must be met.



## NATIONAL ROADMAP

FOR THE UTILISATION OF  
THE VHF III. (174–230 MHz)  
AND THE UHF (470–790 MHz)  
FREQUENCY BANDS

THE FUTURE OF  
DIGITAL BROADCASTING  
AND MOBILE BROADBAND  
FREQUENCY USE OPTIONS

20 August 2017

[http://english.nmhh.hu/document/190192/uhf\\_vhf\\_3\\_national\\_roadmap\\_eng.pdf](http://english.nmhh.hu/document/190192/uhf_vhf_3_national_roadmap_eng.pdf)

# Why is the tender now being launched?

Operating rights for existing networks expire on September 5, 2020. The authority is already launching the tender procedure to avoid any disruption

- building networks for the service provider, and
- viewers should have enough time to prepare.

Some of the frequencies used in the current networks are the 700 MHz (694-790 MHz) frequency band.

This band must be free by the Hungarian Communications Authority on the basis of EU directives until 30 June 2020.

## The content of the tender

The winner of the application can build and operate five networks from 6 September 2020 for 12 years.

The requirements for access to public service in the new television and radio content are:

- without subscription fees
- continuously
- in unchanged quality.

For free access to nationwide commercial television, an agreement between the winning tenderer and media service providers will be required.



# Requirements

There will have to be a solution that does not involve any financial burden, interference with the population, which only watches for free channels that is, the existing DVB-T MPEG-4 AVC set-top box or television set need not be replaced.

The content of the packages available with the subscription will be determined by the winner on the basis of own business decision, for which he / she must provide - free of charge or for a fee - DVB-T2 HEVC set-top box.

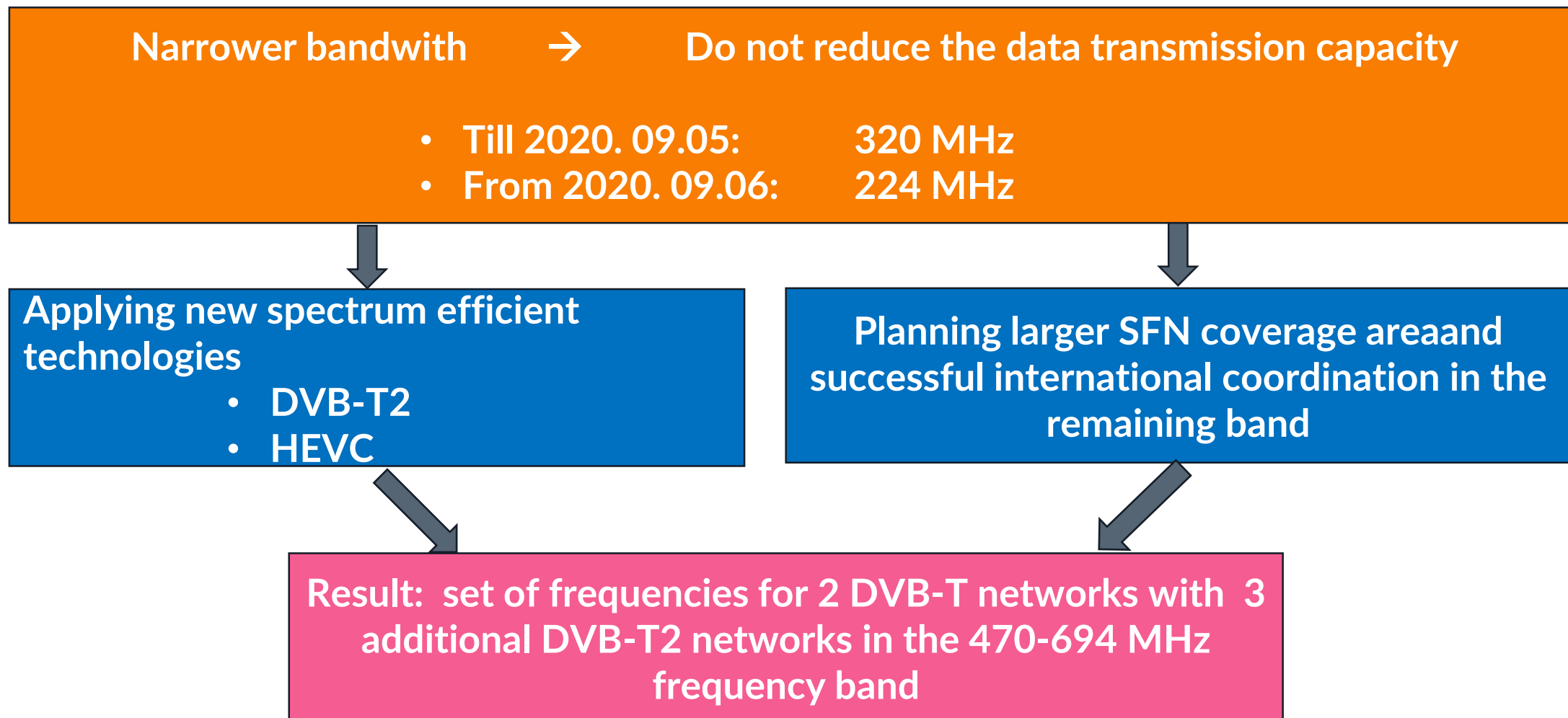
# 5G is coming

Two of the new networks will be DVB-T, MPEG-4 AVC, and three are DVB-T2, HEVC compliant new technologies.

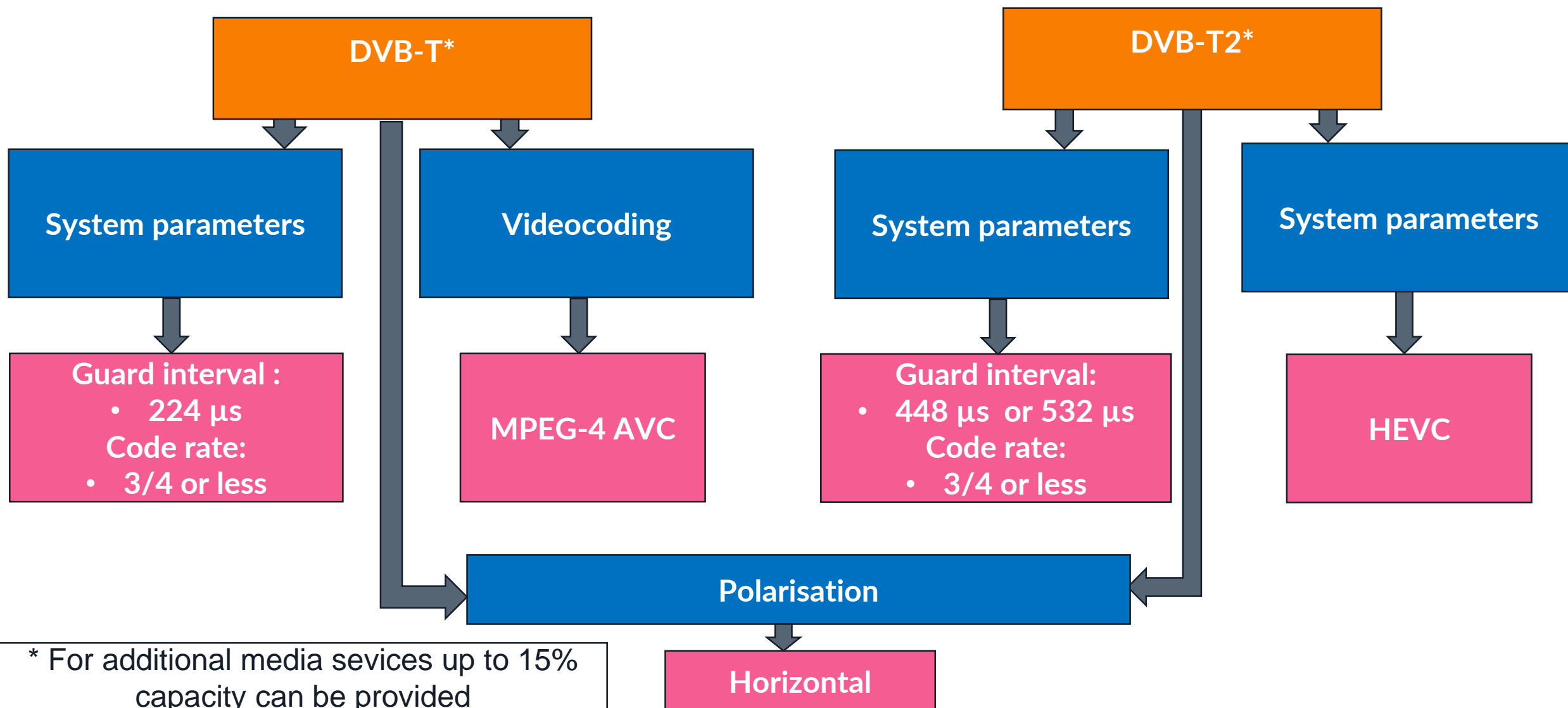
The last one may also allow access to more than one pay-per-view TV channel or better reception of existing ones.

The 700 MHz band will be usable for 5G in this year's mobile frequency sales.

# What is the solution?



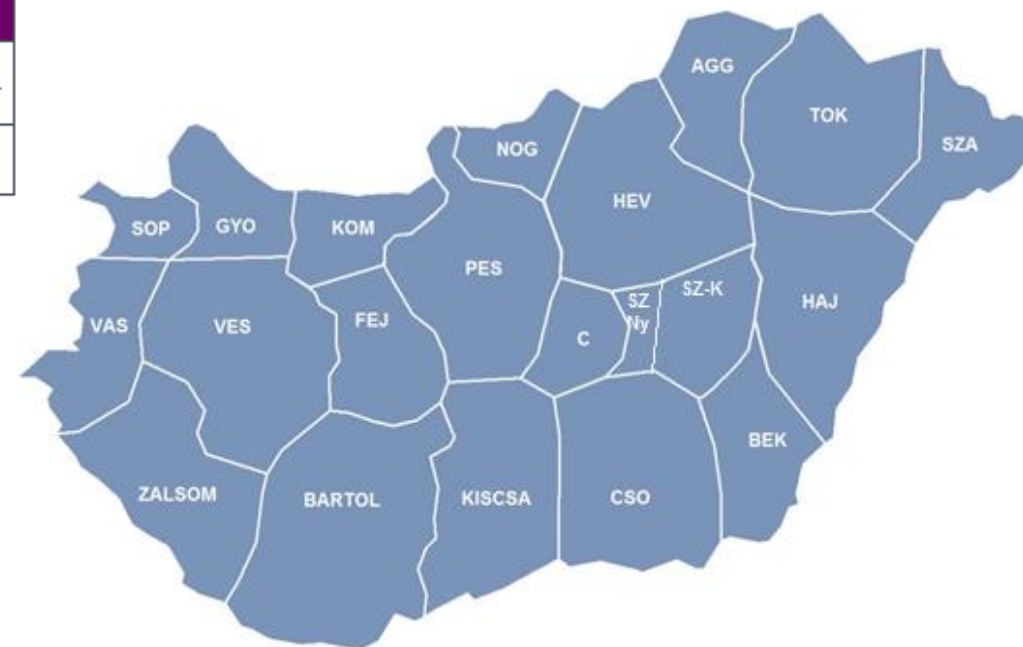
# Mandatory technical specifications for the network implementation



# Frequency allocation for DVB-T networks

Hálózat	SOP	GYO	VES	VAS	FEJ	KOM	BARTOL	ZALSOM	KISCSA	CSO	BEK	HAJ	SZ		C	HEV	NOG	PES	AGG	TOK	SZA
													SZ-K	SZ-Ny							
„A”	40	35	35	41	43	26	37	41	25	26	37	40	30/ 40	30/ 39	39	39	24	24	45	26	24
„B”	33	46	46	33	30	41	47	24	28	31	41	32	36/ 32	36	36	36	36	41	35	35	41

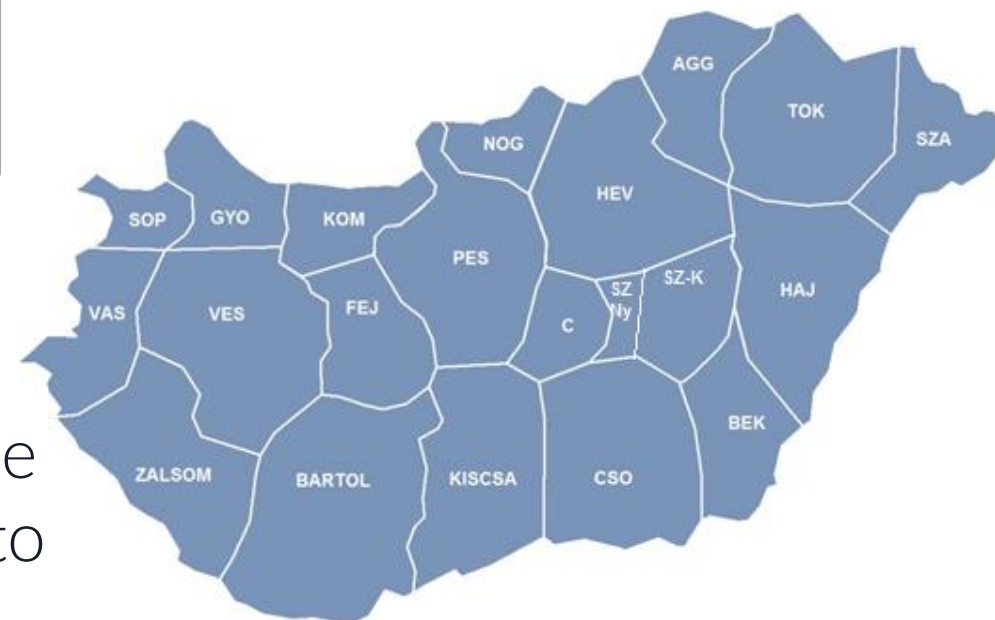
- For red colors TV channels only frequency allotments are available.
- For black colors channels the stations with the specified technical parameters may be put into operation after 5 September 2020.



# Frequency allocation for DVB-T2 networks

Hálózat	SOP	GYO	VES	VAS	FEJ	KOM	BARTOL	ZALSOM	KISCSA	CSO	BEK	HAJ	SZ		C	HEV	NOG	PES	AGG	TOK	SZA
													SZ-K	SZ-Ny							
"C"	32	25	32	32	40	38	32	32	42	42	38	38	38	44	44	44	38	38	28	43	38
"D"	42	42	29	29	29	29	45	29	45	23	23	46	46	46/23	23	46	46	29	31	31	31
"E"	22	22	22	22	34	22	27	31	27	22	22	29	34/29/22	34/22	34	34	34	34	48	29	34

- For red colors TV channels only frequency allotments are available.
- For black colors channels the stations with the specified technical parameters may be put into operation after 5 September 2020.



# Tender procedure schedule

<i>Publication of the Daft Documentation</i>	<i>2019. 03. 06.</i>
<i>Public consultation</i>	<i>2019. 03. 20.</i>
<i>Publication of Final Documentation</i>	<i>2019. 04. 10.</i>
<i>Submission of the applications</i>	<i>2019. 04. 30.</i>
<i>Decision for the closing of the applications</i>	<i>2019. 06. 13.</i>
<i>Conclusion of the contract with the winner</i>	<i>2019. 08. 23.</i>
<i>Start a service on the unchanged technology network</i>	<i>2020. 09. 06.</i>
<i>Start a new service on the new technology network</i>	<i>2020. 09. 06.</i>
<i>Full deployment of the new technology network</i>	<i>2021. 03. 06.</i>

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