



**NMHH**

Nemzeti Média- és Hírközlési Hatóság

# **Summary of the tasks related to the implementation of the National Roadmap for the utilisation of the VHF III and UHF frequency bands**

Public hearing of 23 November 2017

21 December 2017.

## **1. Introduction**

Pursuant to Section 39 (1) of Act C of 2003 on Electronic Communications (hereinafter: Electronic Communications Act), the Office of the National Media and Infocommunications Authority (hereinafter: NMHH) held a public hearing on 23 November 2017 on the tasks related to the implementation of the National Roadmap for the utilisation of the VHF III and UHF frequency bands. NMHH published the announcement for the public hearing on 16 October 2017<sup>1</sup>. NMHH published a preparatory document entitled “Public hearing on plans regarding the frequency bands available for the provision of wireless broadband services and the future use of the VHF III band”<sup>2</sup> and the information on the relevant frequency bands<sup>3</sup> on 10 November 2017.

In accordance with Section 39 (5) of the Electronic Communications Act, the Authority will prepare a summary or record on the public hearing containing the comments and proposals presented and expressed at the hearing, except data classified by commenters or proposers as trade secrets. The Authority shall publish the summary within thirty days of the date of the hearing on its website.

Accordingly, this summary covers the key messages delivered at the public hearing held on 23 November 2017 and its annex contains the comments submitted in writing in relation to the public hearing. Pursuant to Section 39 (5) of the Electronic Communications Act, the document to be published will not contain any data classified by commenters as trade secrets.

The public hearing was opened by **Dr. László Pados**, the Chair presiding over the meeting. Dr. László Pados informed participants that, in the absence of any opposition, an audio recording of the event would be made by the NMHH. When explicitly asked, no one raised any objections to the plan to make a recording.

Participants in the public hearing were welcomed by Director General of the Office of the NMHH **Dr. Janka Aranyos-Börcs**. In her introduction, the Director General stressed that as the name suggests, the public hearing is aimed at learning about the opinions, views, objectives and market needs of the market players regarding the subject matter.

Deputy Director General **Dr. Péter Vári** recalled the public hearing held in the summer, as a result of which NMHH published the National Roadmap in August, and he also thanked the partners for their active contribution in creating the Roadmap. The Deputy Director General went on to describe the available frequency set, the plans for utilising the bands and the domestic and international legislative environment, with special emphasis on the European Union. The set of slides used was published by NMHH<sup>4</sup>

## **2. Summary of comments and contributions made verbally at the public hearing**

### **Telenor Magyarország Zrt.**

They thanked NMHH for the professional preparatory document, whose specific questions help focus the discussion in the right direction. The representative of Telenor welcomed as a positive result that at last there are enough frequency bands available for mobile communications and thus frequency band shortage can no longer hinder progress. Telenor highlighted three issues that were not included in the

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[http://nmhh.hu/esemeny/190542/Nyilvanos\\_meghallgatas\\_a\\_VHF\\_III\\_es\\_az\\_UHF\\_sav\\_hasznositasarol\\_szolo\\_nemzeti\\_utemterv\\_vegrehajtásával\\_összefuggo\\_feladatokról#a-linked](http://nmhh.hu/esemeny/190542/Nyilvanos_meghallgatas_a_VHF_III_es_az_UHF_sav_hasznositasarol_szolo_nemzeti_utemterv_vegrehajtásával_összefuggo_feladatokról#a-linked)

2

[http://nmhh.hu/cikk/190953/Elokeszito\\_anyag\\_a\\_vezetek\\_nelkuli\\_szelessavu\\_szolgáltatások\\_nyujtására\\_felhasználható\\_frekvenciasávokkal\\_kapcsolatos\\_elképzelesek\\_ről\\_es\\_a\\_VHF\\_III\\_sav\\_jövobeli\\_felhasználásáról\\_szolo\\_nyilvanos\\_meghallgatáshoz](http://nmhh.hu/cikk/190953/Elokeszito_anyag_a_vezetek_nelkuli_szelessavu_szolgáltatások_nyujtására_felhasználható_frekvenciasávokkal_kapcsolatos_elképzelesek_ről_es_a_VHF_III_sav_jövobeli_felhasználásáról_szolo_nyilvanos_meghallgatáshoz)

<sup>3</sup> [http://nmhh.hu/cikk/190937/Savismerteto\\_23002400\\_MHz\\_sav](http://nmhh.hu/cikk/190937/Savismerteto_23002400_MHz_sav),

[http://nmhh.hu/cikk/190939/Savismerteto\\_26\\_GHz\\_sav](http://nmhh.hu/cikk/190939/Savismerteto_26_GHz_sav),

[http://nmhh.hu/cikk/190941/Savismerteto\\_694790\\_MHz\\_sav](http://nmhh.hu/cikk/190941/Savismerteto_694790_MHz_sav),

[http://nmhh.hu/cikk/190943/Savismerteto\\_1500\\_MHzes\\_sav](http://nmhh.hu/cikk/190943/Savismerteto_1500_MHzes_sav),

[http://nmhh.hu/cikk/190945/Savismerteto\\_34003800\\_MHzes\\_sav](http://nmhh.hu/cikk/190945/Savismerteto_34003800_MHzes_sav),

[http://nmhh.hu/cikk/190947/Savismerteto\\_192019802102170\\_MHz\\_sav](http://nmhh.hu/cikk/190947/Savismerteto_192019802102170_MHz_sav)

<sup>4</sup> [http://nmhh.hu/dokumentum/191175/mobil\\_savok\\_atekint\\_01\\_2017\\_11\\_22.pdf](http://nmhh.hu/dokumentum/191175/mobil_savok_atekint_01_2017_11_22.pdf)

preparatory document of the public hearing, which they believed were fundamental to address before discussing any details.

First, Telenor stressed that each frequency band needs to be evaluated in economic terms. The annual fees - the price - have a significant impact on market needs. All consequences, especially price, must be taken into account for decision-making. Based on existing experience (these are not positive), the financial conditions must be also known to make a decision. The annual frequency fees in Hungary are the highest or at least one of the highest in European comparison. Telenor believes that the abundance of frequencies offer a chance for change. They stressed that the backbone of the service is no longer voice but rather data communication, which does not generate additional revenues with the same or higher number of frequencies as it does not increase effective demand.

Second, Telenor objected to the use of the term “competitive procedure” and instead recommended “auction” as the form of the procedure. They argued that as secondary trading is not typical, there is no fixed market price either and thus several rounds of auction should be used to distribute entitlements to frequency use. Creating frequency packages optimal for service providers also means a significant task. It would not be a good idea for the Authority to take on this activity in advance. They recommended an auction form where service providers themselves can assemble the optimum frequency set.

Third, Telenor addressed the issue of timing. Basically they believe the plan is good but they find it unfortunate to separate availability from actual usability. They propose to pay for the frequency band only when it can be used.

#### **Dr. Péter Vári**

In his response, Dr. Vári pointed out that based on the currently effective legislation, competitive procedure is the general category that offers options for auction and implementation of the tender. We are going to return to this issue at a later time when, after clarifying the market needs, the Authority will present the plan for the specific sales procedure within the context of an additional public consultation. Price is in fact an important factor but the objective of the current public hearing is to clarify the technical criteria. First we need to see if market players are interested in the frequency bands at all. The timing is influenced by the EU regulation and NMHH is currently working on the rules applicable to the payment of fees.

#### **UPC Magyarország Kft.**

In addition to thanking NMHH for the well-prepared public hearing session, the representative of UPC pointed out four issues the consultation material failed to address. These are: timing, side effects, required NMHH resources and mobile market competition. Decisions on frequency will directly impact not only the mobile market but also the landline market. This impact will be bigger than the ones seen in the case of the 800 MHz frequency band. Back then the switch to a new usage method was also preceded by serious preparations. The planned migration will impact a greater number of users; in fact, it is expected to affect the entire cable network to some extent. Therefore, careful preparations are needed as interference-free frequency usage is a priority issue, as it is an important precondition for band usage; however, the scope of the work is currently unknown. This scope of work will be affected by a number of minor issues such as the specification of end user equipment. Even extensive maintenance on the cable networks may be necessary, so this is going to be a major project. This is important for two reasons. One is that such a big project is likely to be time consuming and the other is that it has heavy resource needs. It also appears to be logical and reasonable that the revenues from frequency sales would provide coverage for the maintenance and the necessary conversion of the cable networks. To the best of their knowledge, NMHH is already working on this, so they requested that this work is continued as appropriate to the volume and importance of the task. With regards to competition on the mobile market, UPC stressed that all interventions in the industry processes with regards to frequency sales should support sustainable mobile market competition. Therefore, the shaping of the criteria of the frequency sales could also support the development of the MVNO model.

#### **Hungarian Cable Television and Telecommunication Association (HCTTA)**

They welcomed the extension of the National Roadmap with the information on cable networks. Based on past experience with the 800 MHz band, they believe major issues can be expected with the transfer of the 700 MHz band. Cable service providers use a lot of frequencies also in the VHF band. Primarily end-user equipment and in-house networks present the greatest challenges. These are technical issues that cannot be solved with legislation. This can be addressed within the context of a different consultation



in cooperation with the mobile service providers by formulating a common position. The disputes emerged with regards to the 800 MHz band were successfully settled but the current issue is at least five times bigger. As the 700 MHz frequency band will be highly valuable for mobile service providers, the proceeds from that will be also very significant. They want a share of that revenue for the development of the cable networks.

**National Broadcasters' Cluster** They also stressed that a task force needs to be created as soon as possible to investigate the issues related to the 800 MHz band. These issues must be taken seriously and managed in a coordinated manner. Approximately 70–80% of cable service providers are expected to be affected by the change in the method of use of the 700 MHz band.

#### **Antenna Hungária Zrt.**

They highlighted four elements in which Antenna Hungária is affected.

The first is the transfer of the 700 MHz band. The large number of households using terrestrial broadcasting definitely needs to be taken into account. The transition planned for 2020 must be implemented in a seamless and problem-free manner. The transition period left is relatively short to prepare a completely acceptable transition. Therefore, they proposed to transfer this band in unison and even at a later date to avoid the operation of different services in different parts of the country at the same time.

Being the state wireless Competency Centre, Antenna Hungária uses the 26 GHz frequency band and plans with it in the long run (past 2027).

With regards to limiting the amount of spectrum per service providers, they pointed out that shared equipment use or the installation of a shared network can save frequencies. Therefore, they proposed that the Authority examine the option to support in the tendering process the building of shared networks or using the services of an external network operator by the bidders.

With regards to the T-DAB and the VHF bands, they prefer digital radio broadcasting and hope for its nationwide spread in the future.

#### **Hungarian Cable Communications Association**

They joined those speaking before them with some additional comments. “Losing” the 800 MHz band basically did not create an issue for cable television service providers. A total of 10–20 service providers were affected. Out of the 150 members of the Association, approx. 120 will be affected by the upcoming refarming of the 700 MHz frequency band. This one is an issue on a national scale. Currently 2.5 million people watch cable television and over half of the population of the country uses the internet service via cable networks. We are talking about households in the millions. In cooperation with the Authority, they need to be convinced that their cabling does not comply with any standard, especially not future ones, and therefore needs to be replaced. They would like to see a major residential campaign in cooperation with the Authority. They also thanked NMHH for including cable television issues in the National Roadmap. However, they missed a description about the Authority's role. They also thanked NMHH for the current practice of initiating an exchange of ideas between cable service providers and the Authority. Their association will provide maximum assistance to support this joint effort. They ask for the Authority's continued support.

#### **HÉT spectrum task force**

The representative of the task force disagreed with the cable television service providers' assessment on the magnitude of the issue mentioned. The wording that “they lost the band” is incorrect as cable tv service providers do not have entitlements to frequency use as cable tv service is not a radio service.

The cooperation between mobile and cable tv service providers to prevent the interferences predicted in the 800 MHz band was exemplary. In this band it was not the mobile base station causing interference to the cable tv network but it was the cable network that caused interference to the mobile network. Within the HÉT task force a procedure was developed for the LTE 800 voluntary data reporting based on which the three incumbent mobile service providers have been reporting data even today. The Authority plays a major role in this procedure. The Authority plays the role of a sort of the Great Wall in China by aggregating data from the three mobile service providers and informing the relevant cable service providers, thereby enabling cable tv service providers to prepare for the arrival of the LTE 800 development. With regards to the 800 MHz band, the number of actual issues was much lower than expected (the number of interference cases with cable tv networks was under 10). They trust that this good cooperation will continue with the 700 MHz band. More networks are expected to be affected in the case of the 800 MHz band, but cooperation can prevent and resolve any interference issues. This

would, of course, require financial resources, primarily from cable service providers; however, the task force is willing to support the idea where NMHH would offer resources and financial aid to this project.

### **Spectrum Advise**

The 700 MHz band as the 5G pioneer band is of great importance. 5G will become a truly universal network and will comply with various use cases. There will be three main use cases: classic mobile broadband, mass machine type communication and critical machine type communication. The focus with the launch of 5G technology is clearly on classic use, i.e. mobile broadband. Nowadays 81 operators in 42 countries are launching or testing 5G pilot networks, but not a single test has been conducted in the 700 MHz frequency band. Based on the opinion of the consulting, the 700 MHz frequency band is not a focus area in terms of 5G technology, where the key bands are 26 GHz, 3.5 GHz and other bands in the higher frequency range.

### **Nagyfrekvencia Kft.**

The company's representative expressed his opinion about the T-DAB band. He stated that today local radios represent commercial radio broadcasting in Hungary. The T-DAB system, however, is not compatible with local radios. In his opinion, local radio stations have conflicting interests in launching a nationwide T-DAB system, and currently he cannot see a market model that could keep the T-DAB system alive. When planning, the per listener cost of the T-DAB systems should definitely be taken into account. He can see little logic to have the Authority provide frequency for such a not really effective service.

### **KTI Közlekedéstudományi Intézet Nonprofit Kft.**

Its representative joined the last speaker. Approx. 35–40,000 radio programs are available over the internet, and the majority of smartphone users listen to the radio via this platform. In his opinion, radio will move over to the level of applications where one can listen to radio programs without geographical limitations, and thus it would be unwise to waste frequency for this purpose.

### **Ministry of Interior**

The comments by the ministry related to the information presented at the public hearing of 11 July 2017 on the utilisation of the 700 MHz frequency band. The representatives of the ministry reasserted their statement made at the previous hearing and their written statement submitted to NMHH.

Their comment made at the current hearing is based on Government Decree 152/2014 (VI.6.) on the Responsibilities and Powers of Members of the Government. The responsibilities of the Ministry of Interior include the operation of the Unified Digital Radiocommunication System and other PPDR uses. The Ministry of Interior continues to maintain their claim for the frequency released for the use of PPDR systems in the 700 MHz band. The ministry also maintains its claim for the non-civil frequency bands and does not support their reallocation. 5G solutions were also considered in the case of PPDR systems. As a result of coordination between EU Member States, there may be certain principles that determine the directions of the PPDR systems. In light of the EU level coordination, they also maintain their claim for the frequency band affected and described in the course of the public hearing, with special emphasis on the early introduction of 5G. They indicate their claim for the spectrum necessary for the operation of the PPDR systems.

### **Vodafone Magyarország Zrt.**

They thanked NMHH for the opportunity to participate in the public hearing as well as the preparation and the preparatory document. They asked the Authority to provide a way for them to submit their written comments within 5 days.

With regards to the frequency fees, Vodafone hopes that even before the large tender is announced, they can review the key sales issues together with NMHH. They explained that a lot of new bands can be used for mobile technology, which, unless the specific fees decrease, may result in an exponential growth in the industry's burdens, with which industry revenues will not be able to keep the pace with. The increasingly better quality services on today's mobile market are implemented roughly at the same price but with increasingly larger data quantities, which trend does require new frequencies. This is why it is required to review the fees both in terms of the new bands as well as the existing ones. The overall objective is to avoid the total amount of fees being increased.

With regards to the duration of the entitlements to frequency use Vodafone explained that based on the document, the maximum period is 15 years, although they believe that the duration could be longer. At last year's 3.5 GHz tender they obtained frequencies for an 18-year period, which would be the minimum acceptable period for them. With licences over 20 years, development opportunities are better, and this





is the time span that helps the industry's development primarily because this is an industry that requires long-term investments. On the other hand, if the Authority plans to issue 15-year licences in 2019, in 2034 the Authority may very well need to decide on the renewal of too many licences at the same time. And this would urge market players in the period before 2034 to postpone investments key to the periodic service quality improvements. In Vodafone's opinion this is contrary to public policy objectives. They also stated that an important part of the public hearing and the document is the regulation of spectrum maximums. They can support the direction presented in the draft amendment of NFFF in February with specific figures, and it helps avoid situations where a single network could use a disproportionately large segment of the spectrum and thereby create a much less favourable situation for others. They will submit their additional opinions in writing.

#### **Telenor**

Telenor's representative noted that they would reply to the questions of the Authority in the documentation in writing.

Considering their strategic importance, two of the questions were answered verbally at the hearing.

They agree with the spectrum limit in theory. They can support the different handling of the band below and above 1 GHz. However, they believe that it is questionable whether any regulation is needed in the range above 1 GHz, as currently most bands in that range could be allocated on a "first come first base" basis due to the limited demand. The draft frequency cap regulation they are familiar with has a very interesting aspect: if a frequency band is used jointly, it can be counted twice by the Authority. They believe this rule is not supported by any international example, and such a regulation even lacks any logic. If a certain frequency band is used by two service providers, it increases efficiency, which should be rewarded as frequency regulation is primarily about how the large number of utilisation demands can be squeezed into the existing spectrum. In their opinion, the draft regulation is contrary to that principle. The Authority has the means to control secondary trading of frequencies and no frequency cap regulation like the one in the draft is necessary.

They support the option of the incentive auction planned for the 2100 MHz band, and they consider it a realistic initiative that can help better utilise frequency bands. Besides their in principle support, however, they stressed that the system to be created should establish a balance between the rights already acquired and those to be obtained in the future. Here additional coordination is needed about the details between the current and future service providers.

#### **DIGI Távközlési és Szolgáltató Kft.**

They thanked NMHH for preparing the documentation and providing an opportunity for the public hearing. They will submit their comments to the Authority in writing.

With regards to spectrum maximisation, they supported the proposal.

As 26 GHz is a band for point-to-point microwave links mostly used by mobile service providers, they asked the Authority represent their position even in the EU in the future so that if any refarming is required in this band prior to the expiration of the entitlement to frequency use, it should always be preceded by a transitional period as long as possible, and a replacement band should be designated for microwave systems as soon as possible.

#### **Magyar Telekom Nyrt.**

The representatives of Telekom thanked NMHH for the compiled material and shared the opinion of the other two mobile service providers spoken earlier.

They believe that further discussions are needed between the service providers and the Authority about the timing (i.e. which band is going to be sold by the Authority, when, how and in what format). They did not want to take a position on the issue of format.

The other point stressed by the other two service providers and also considered very important by Telekom is that service providers have limited payment abilities with regards to a frequency sale in the near future. Customers' solvency and willingness to pay will not improve by the mobile service providers buying a certain amount of the spectrum. Customers have specific, limited abilities to pay in Hungary. Telekom believes that legislative regulation is needed to ensure that the service provider would not pay more for the increased spectrum used on a market where the overall market does not grow. It would be more practical if service providers were encouraged to be more effective. They promised to send their comments in writing in 5 days.

#### **5G Coalition**

They represented that parallel with this discussion there is a process involving 5 expert bodies as a result of which the Government of Hungary will have its official position on the strategic objectives with

regards to 5G by January. A number of colleagues present at this discussion are actively involved in that process. He stressed that the two strategic plans must be coordinated and asked NMHH to continue its active involvement in shaping the Government's 5G strategy.

**Dr. Janka Aranyos-Börcs**

She thanked the active participation by all present and stressed that the activity and constructive comments of the participants surpassed the Authority's expectations as the issues discussed at the public hearing are decisive in terms of the industry's future. She noted that the real work had just begun and as the various positions and opinions are processed by the Authority, further exchanges of ideas will take place from time to time on various topics and with various participants. She assured all those present that there will be no material issue that the Authority would not consult with the stakeholders. The Authority is determined to ensure that the frequency sale is implemented to the satisfaction of all industry players.

Although the Authority expected to receive written comments before the public hearing as required by law, participants may submit their written comments to the Authority by 8 a.m. on 27 November.

**Comments submitted in writing in relation to the public hearing are available in the following annexes.**

Annex 1: Antenna Hungária Zrt.

[http://nmhh.hu/cikk/191627/1\\_melleklet\\_Antenna\\_Hungaria\\_Zrt](http://nmhh.hu/cikk/191627/1_melleklet_Antenna_Hungaria_Zrt)

Annex 2: Belügyminisztérium

[http://nmhh.hu/cikk/191629/2\\_melleklet\\_Belugyminiszterium](http://nmhh.hu/cikk/191629/2_melleklet_Belugyminiszterium)

Annex 3: Digi Távközlési és Szolgáltató Kft.

[http://nmhh.hu/cikk/191631/3\\_melleklet\\_Digi\\_Tavkozlesi\\_es\\_Szolgaltrato\\_Kft](http://nmhh.hu/cikk/191631/3_melleklet_Digi_Tavkozlesi_es_Szolgaltrato_Kft)

Annex 4: Huawei

[http://nmhh.hu/cikk/191633/4\\_melleklet\\_Huawei](http://nmhh.hu/cikk/191633/4_melleklet_Huawei)

Annex 5: Magyar Telekom Nyrt.

[http://nmhh.hu/cikk/191635/5\\_melleklet\\_Magyar\\_Telekom\\_Nyrt](http://nmhh.hu/cikk/191635/5_melleklet_Magyar_Telekom_Nyrt)

Annex 6: MKHSZ

[http://nmhh.hu/cikk/191637/6\\_melleklet\\_MKHSZ](http://nmhh.hu/cikk/191637/6_melleklet_MKHSZ)

Annex 7: MKSZ

[http://nmhh.hu/cikk/191639/7\\_melleklet\\_MKSZ](http://nmhh.hu/cikk/191639/7_melleklet_MKSZ)

Annex 8: Nagyfrekvencia Kft.

[http://nmhh.hu/cikk/191641/8\\_melleklet\\_Nagyfrekvencia\\_Kft](http://nmhh.hu/cikk/191641/8_melleklet_Nagyfrekvencia_Kft)

Annex 9: Nemzeti Műsorterjesztő Klaszter

[http://nmhh.hu/cikk/191643/9\\_melleklet\\_Nemzeti\\_Musorterjeszto\\_Klaszter](http://nmhh.hu/cikk/191643/9_melleklet_Nemzeti_Musorterjeszto_Klaszter)

Annex 10: Telenor Magyarország Zrt.

[http://nmhh.hu/cikk/191645/10\\_melleklet\\_Telenor\\_Magyarország\\_Zrt](http://nmhh.hu/cikk/191645/10_melleklet_Telenor_Magyarország_Zrt)

Annex 11: Vodafone Magyarország Zrt.

[http://nmhh.hu/cikk/191647/11\\_melleklet\\_Vodafone\\_Magyarország\\_Zrt](http://nmhh.hu/cikk/191647/11_melleklet_Vodafone_Magyarország_Zrt)