

**Public consultation**

on ideas and market demands for frequency bands that can be used to provide wireless broadband services

**Preparatory documentation**

16 February 2022

1. **Introduction**

The mission of the National Media and Infocommunications Authority (hereinafter referred to as the NMHH) is to ensure conditions of effective competition in the electronic communications sector for the benefit of consumers and users. Responsible and efficient spectrum management is a key issue for the smooth operation and development of wireless solutions. Efficient management of scarce resources will also play a prominent role in achieving the overall strategic objective of boosting competitiveness and investment.

The main objective of the NMHH’s Radio Spectrum Strategy 2021-25 is to ensure, by means of responsible spectrum management, that the availability and usability of the frequency assets, which is a limited resource for the development of the digital ecosystem, is not a bottleneck in the short or medium term. The Radio Spectrum Strategy also focuses on meeting mobile, PPDR[[1]](#footnote-1) and other government spectrum needs.

In view of the international regulatory environment, in particular the obligations as a member of the European Union, the NMHH has committed itself to ensuring the radio spectrum needed for mobile services, especially for the further dynamic development of mobile broadband services, and when reutilization spectrum with expiring entitlements to spectrum use the aim must be to ensure conditions for technology-neutral use. The Radio Spectrum Strategy has identified the following sub-objectives:

• Preparations must be started in due course and relevant tasks must be executed to enable the use of the 24.25-27.5 GHz frequency band for mobile (5G) purposes.

• Provision must be made for the use of the 32 GHz frequency band for fixed point-to-point and point-to-multipoint applications, and the necessary regulatory steps must be taken to migrate the 26 GHz band applications to be used for the purposes of mobile and fixed communications networks (hereinafter referred to as: MFCN[[2]](#footnote-2)) capable of providing wireless broadband communication services.

In the area of non-civil spectrum management, the Radio Spectrum Strategy sets out the following key ideas:

• tasks related to the development of BB-PPDR systems, joint management of the frequency bands 380-385/390-395 MHz (currently used by TETRA), 410-430 MHz, 450 MHz and 700 MHz,

• there is a non-civil 5G demand in the upper 1 GHz band of 26 GHz, so consultations are needed on the use of 26 GHz, especially as a decision was taken at WRC-19 to identify the band for IMT2020 purposes; when implementing WRC-19 resolutions, the interests of non-civil bands should be taken into account in order to preserve positions in accordance with demands, and

• preparations must be conducted to handle and satisfy the spectrum demands arising under the Government’s National Defence and Armed Forces Development Programme.

On 9 March 2021, the Commission adopted the Communication “2030 Digital Compass: the European way for the Digital Decade” (hereinafter referred to as: the Digital Compass Communication)[[3]](#footnote-3). The communication outlines the vision and goals as well as how the European Union will successfully achieve its digital transformation by 2030. The 2030 digital goals are based on four pillars: digital skills, digital infrastructures, digitalisation of businesses and public services. With regard to infrastructure, the main goal is high quality (excellent and secure) access to everyone, everywhere (“including rural and remote areas[[4]](#footnote-4)”). Networks with gigabit speeds are meeting the growing demand for data transmission. Among the wireless technologies, new generation mobile networks are playing a major role in this.

The NMHH made the spectrum needed for the deployment of high-quality 4G networks available in 2014, followed by an auction in 2020, which also enabled the introduction of 5G, and where the entitlements to radio spectrum use for the 700 MHz, 2100 MHz and 3600 MHz frequency bands were auctioned. However, this did not yet make all the accessible spectrum available.

In December 2018, the European Electronic Communications Code[[5]](#footnote-5) (hereinafter referred to as: the Code) set out a series of measures to promote the roll-out of 5G. Article 54 of the Code requires Member States to allow the use of all or part of the 3.6 GHz and 26 GHz frequency bands for electronic communications networks capable of wireless broadband data transmission by 31 December 2020, where there is clear evidence of market demand and there are no significant barriers for migration of users with existing entitlements to radio spectrum use or band clearance.

To date, there has been no market demand for MFCN in the 26 GHz frequency band. It should be noted that the assessment of market demand for the 26 GHz frequency band was already on the agenda of 2 public consultations, as for the 1500 MHz frequency band, which is also subject to EU obligations, and the remaining 15 MHz in the 2600 MHz frequency band. The 2300 MHz frequency band, which expands the wireless options available for providing broadband services, was also the subject of a previous needs assessment. In the 700 MHz frequency band, a 2x5 MHz block is planned for MFCN use, and 2x5 MHz and 2x3 MHz dedicated spectrum is also planned for PPDR in the 700 MHz frequency band. This is the frequency band where the correlation between overall 5G societal and government broadband needs is strongest.

Since the last public consultation in 2019, technological progress has been unrelenting, several new international documents have been published, 5G services are available in Hungary, and the NMHH believes the time has come to consult on the use of the frequency bands capable of providing wireless broadband services, in addition to the opinions and needs related to the reuse of the expiring entitlement to radio spectrum use in the 450 MHz band.

Effective spectrum use requires careful planning, extensive market needs assessment and consultation, the identification of all stakeholders and then listening to their views and needs. Consideration must be given to market and non-civil needs, governmental objectives, as well as the decisions, study results and objectives of international organisations. This is the purpose of this preparatory document for the public consultation announced for 22 March 2022 and the detailed descriptions of each of the frequency bands concerned (450 MHz, 700 MHz, 1500 MHz, 2300 MHz, 2600 MHz, 26 GHz and 32 GHz). This document contains text boxes containing the statements and questions on which the NMHH is asking for comments from interested parties.

1. **Overview of frequency bands**
2. ***Frequency bands below 1 GHz suitable for broadband PPDR***

Parallel to the development of broadband technologies, there is also an increasing focus on broadband systems supporting cooperation between security and emergency services (i.e. natural disasters, migrant crisis, terrorist attacks, etc.). Today, it is also expected that the systems should not only allow voice calls (current solution in Hungary: TETRA), but also provide information on the situation via images and video for the remote control centres of the emergency services. Currently, the narrowband TETRA network handles voice calls. The provision of adequate radio spectrum is essential to meet the continuous capacity demands of public protection and disaster relief (PPDR[[6]](#footnote-6)) systems, as well as the capacity demands of that systems that increase in the case of emergencies and disasters. International studies show that below 1 GHz, the 400 MHz and 700 MHz frequency bands are the most appropriate for radio spectrum management. International documents have also shown, among other things, that national needs and solutions may differ.

4G broadband wireless systems already exist and are being further developed to meet the higher requirements of emergency services (availability, reliability, group calling, etc.). These will be the broadband PPDR systems (BB PPDR) of the future.

The various forums of international organisations responsible for radio spectrum management (ITU, CEPT) and users (EU LEWP, etc.) have in recent years produced several studies, recommendations and position papers on the implementation and harmonisation of broadband PPDR.

The most relevant of the international documents is CEPT Report 199 adopted in 2014, which contains the results of the end-user requirements assessment for broadband PPDR systems and of the resulting study on spectrum needs. The report states that 2x10 MHz of radio spectrum should be designated for broadband PPDR. The report also confirms that national needs may differ. The harmonised technical conditions at CEPT level are laid down in Decision ECC/DEC/(16)02[[7]](#footnote-7). In addition to the 700 MHz band, it also designates the 450-470 MHz band and the 410-430 MHz band for harmonised broadband PPDR.

1. **450-470 MHz frequency band**

In Hungary, broadband mobile systems and analogue and digital narrowband Professional/Private Mobile Radio (PMR) systems operate in the 450-470 MHz frequency band (hereinafter referred to as: 450 MHz frequency band).

Within the 450 MHz frequency band, MVM Net Zrt.[[8]](#footnote-8) was awarded the entitlement to radio spectrum use for 10 years in the 450-457.38/460-467.38 MHz frequency band designated for mobile broadband systems in the tender conducted in 2014. This entitlement of MVM Net Zrt. expires on 30 April 2024. The regulator will have to decide on the use of the frequency band beyond its expiry date in a renewed regulatory environment, based on new principles and new procedural rules, thanks to the transposition of the European Electronic Communications Code (hereinafter referred to as: the Code) into Hungarian law.

The basic principle, the fundamental objective of ensuring the professional and efficient use of radio spectrum, has not changed. The renewal introduced a new and tight schedule as well as a formalised competition impact assessment system into the field of radio spectrum management. If the possibility for renewal was not excluded when the entitlement to radio spectrum use was obtained, it is possible to obtain a new entitlement without a competitive procedure.

The NMHH received a timely request for the renewal of the expiring entitlement. If renewing is possible, the NMHH will assess the need for renewal, i.e. weighing the competitive impact of renewing awarded rights against the effect that promoting more efficient exploitation or innovative new uses might produce, if the band were opened up to a new type of use and a new right holder. In the renewal process, of course, market needs must also be assessed and their validity considered. As the entity in charge of radio spectrum management, the NMHH will decide on the renewal in view of the frequency band as a whole, and all existing entitlements to radio spectrum use within the frequency band(s).

In the case of the 450 MHz frequency band, the Government’s vision for implementing a broadband Public Protection and Disaster Relief (PPDR[[9]](#footnote-9)) system also plays a significant role. Under the current regulation, the 410-415/420-425 MHz band within the 410-430 MHz frequency band with similar wave propagation characteristics is planned for PPDR systems. The level of harmonisation is also an important aspect. It should be noted that the 450 MHz frequency band is also a harmonised frequency band for PPDR under European regulations.

The NMHH intends to limit the number of potential right holders and considers a competitive procedure justified, at least for a significant part of the band, with regard to:

* the potential broadband use of the 450 MHz frequency band, i.e. the operation of systems capable of providing wireless broadband electronic communications services,
* its suitability to provide services throughout the country, and
* the amount of radio spectrum available.

1. **410-430 MHz frequency band**

According to the international Radio Regulations, the 410-430 MHz frequency band in ITU Region 1 is allocated to the fixed and mobile (except aeronautical mobile) services on a primary basis. This band is not yet included in the IMT frequency bands adopted by the ITU.

In Hungary, the lower 2x7 MHz part of the 410-430 MHz frequency band (410-417/420-427 MHz) can be used for non-civil purposes, where fixed point-to-point, point-to-multipoint, single- and two-frequency mobile services systems are operated on a primary basis. According to Decree No. 7/2015 (XI.13.) NMHH on the national frequency allocation and the rules of using frequency bands (hereinafter referred to as: NFFF Decree), the introduction of digital public protection and disaster relief (PPDR) systems is planned in the 410-415/420-425 MHz band, and the current systems in the 410-415/420-425 MHz band can only be operated until the digital PPDR systems are rolled out.

In the upper 2x3 MHz part of the frequency band (417-420/427-430 MHz), civil two-frequency narrowband digital PMR systems with repeater stations are in operation.

Hungary took the initiative at international level to investigate the feasibility of introducing broadband mobile systems in the 410-430 MHz frequency band. Based on the results of the studies, the following 5 MHz frequency bands are available for broadband systems under Decisions ECC/DEC/(19)02[[10]](#footnote-10) and ECC/DEC/(16)02[[11]](#footnote-11):

410-415/420-425 MHz (3GPP Band 87),

411-416/421-426 MHz (not standardised),

412-417/422-427 MHz (3GPP Band 88).

The possible locations of these channels are shown in Figure 1.

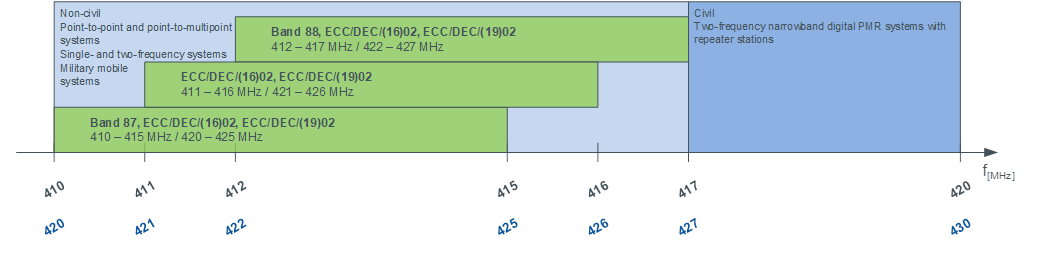


Figure 1 – Location of possible channels in the 410-430 MHz frequency band

Of the possible 5 MHz channels, the standardised 410-415/420-425 MHz band (3GPP Band 87) is planned for PPDR purposes under the NFFF Decree. This channel offers the greatest frequency separation between PPDR systems and civil narrowband PMR systems, thus reducing the potential for interference between the two systems. Apart from that, 3GPP Band 88 would be another standardised alternative, but this channel is directly adjacent to the band designated for civil systems and therefore does not provide an adequate guard band, or doing so would be difficult.

The existing use and future plans of neighbouring countries are also important considerations in the selection of the channel and the choice of system operating parameters. Based on the data currently available, given that the mode of use and the associated channel have not yet been decided, particular attention should also be paid to international coordination between broadband systems and between broadband and narrowband systems to ensure interference-free operation.

The international platform for international coordination conditions regarding cross-border radio spectrum usage is set out in Recommendation T/R 25-08[[12]](#footnote-12). This document partly addresses the coordination conditions between narrowband and broadband systems, but does not cover all the cases that may arise in practice.

We have bilateral and/or multilateral coordination agreements with neighbouring countries, mainly for narrowband systems. The international coordination of broadband systems is addressed only by the agreement signed with Croatia and Serbia in 2016.

***Please comment on the following statements!***

1. *The NMHH plans non-civil use of 450 MHz after the existing entitlement to radio spectrum use expires in 2024.*
2. *If you are planning civil use in the 450 MHz frequency band, contrary to point a), please describe it in sufficient detail to enable an assessment of market demand.*
3. ***5G pioneer bands***
4. **700 MHz frequency band**

The EU legal acts establishing obligations for the use of the 694-790 MHz frequency band (hereinafter referred to as: 700 MHz frequency band) provide a flexible framework for Member States to regulate use of the 700 MHz band. Within the regulatory framework, 2×30 MHz in the 700 MHz band should be made available on a mandatory basis for mobile and fixed communications networks (MFCN) capable of providing wireless broadband communications services, while in other parts of the band, the options for use can be chosen at national level, subject to compliance with specified technical conditions. Such options include broadband radio applications for public protection and disaster relief (hereinafter referred to as: BB-PPDR[[13]](#footnote-13)), supplemental downlink communications (SDL[[14]](#footnote-14)) for increased downlink traffic, applications related to broadcasting and programme making as well as special events (hereinafter referred to as: PMSE[[15]](#footnote-15) applications) and machine-to-machine communications (hereinafter referred to as: M2M[[16]](#footnote-16)). The key decisions on the future of the 700 MHz frequency band are set out in the National Roadmap[[17]](#footnote-17) prepared in line with EU obligations.

The utilisation of the 700 MHz frequency band affects several interrelated radio spectrum management processes, and several sectors using radio spectrum.

One key issue is the deployment of broadband PPDR networks in the 700 MHz band, for which there are several options in terms of the frequency bands that can be chosen (e.g. the 400 MHz band can be used in addition to the 700 MHz band) and the type of implementation (dedicated government network operation, commercial service use or a hybrid solution combining the two).

From the 2x30 MHz band available for MFCN systems under the EU obligation, 2x25 MHz was distributed in the 2020 auction, with the remaining 2x5 MHz remaining in the planned category until the spectrum needs of broadband PPDR systems in Hungary are clarified.

In this consultation we will reassess the demands, taking into account the growing need for spectrum in next-generation networks, as well as the demands for PPDR systems.

***Please comment on the following statements!***

1. *The NMHH considers the 400 MHz frequency band to be the primary solution for broadband PPDR needs, in addition to the 2x5 and 2x3 MHz sub-bands available in the dedicated 700 MHz frequency band.*
2. *The NMHH intends to change the planned status of the harmonised 2x5 MHz identified for MFCN commercial services to ‘designated’, and by 2024 launch a competitive procedure applying PPDR obligations in the case of market demand.*
3. *The NMHH is investigating the possibility of using the 2x5 and/or 2x3 MHz sub-bands available in the 700 MHz frequency band for broadband PPDR demands for other purposes (e.g. M2M, PMSE).*
4. *In the NMHH’s opinion there is no market demand for the use of SDL in the duplex gap.*
5. **26 GHz frequency band**

In the 24.5-26.5 GHz frequency band, fixed point-to-point and point-to-multipoint systems are currently in operation. The necessary entitlements to radio spectrum use were acquired by the right holders in competitive procedures, and are mainly used to implement the necessary backhaul network links for mobile services in the frequency band. The entitlements to radio spectrum use expire in 2024 and 2027 (the vast majority in 2027).

There are a number of international regulatory documents on the future use of the 24.25-27.5 GHz frequency band (known as the 26 GHz frequency band in the context of EU spectrum policy efforts). The most prominent of these from a regulatory point of view are the EU legal acts establishing the obligation to designate and make available the 26 GHz frequency band ( which is wider than the frequency band mentioned in the first paragraph and currently used for fixed links) for terrestrial systems capable of providing wireless broadband electronic communications services over mobile and fixed communications networks (MFCN[[18]](#footnote-18)). The 26 GHz frequency band is one of the frequency bands identified by the EU for early 5G deployment (5G pioneer band).

Understanding the demands for use of the 26 GHz frequency band for introducing next-generation radio systems (5G NR[[19]](#footnote-19)) is necessary to identify specific future regulatory actions.

As a result of the public consultation, a decision can be taken on the future use of the frequency band, in particular on the way the band is distributed (e.g. making the frequency band fully or partially available for 5G purposes, the possibility of a competitive procedure or other licensing method, meeting national and/or local demands, etc.). Possible steps include the introduction of alternative use, shared use between national and local systems, and a mixed licensing regime adapted to this.

The NMHH already placed the issue of the 26 GHz frequency band on the agenda of its public consultations in 2017 and 2019. Both public consultations ended with the same result. In order to protect existing networks, with regard to the plans related to their own mobile services and in the context of the frequency bands available, operators of backhaul networks in the 24.5-26.5 GHz frequency band considered it premature to launch a competitive procedure for the introduction of 5G in the 26 GHz frequency band. No market demand has emerged for use of the band other than from current right holders.

By holding a public consultation, the NMHH aims to find out about the plans and demands of the current right holders, and assess the demands of those outside the current right holders.

The radio spectrum necessary to operate the backhaul network links shall be provided. If rules on the usability of the 26 GHz frequency band change, a different band will have to be made available for the subsequent period and the time needed for migration will also have to be taken into account. The 31.8-33.4 GHz frequency band (hereinafter referred to as: 32 GHz frequency band) could provide a solution for migration, both in terms of the amount of spectrum available and the band characteristics.

***Please comment on the following statements!***

1. *From the perspective of 5G deployment, the NMHH does not reckon use of radio spectrum will be efficient if only the spectrum outside 24.5-26.5 GHz in the 26 GHz frequency band is used for MFCN purposes.*
2. *In the 26 GHz frequency band, the NMHH envisages allowing the use of 200 MHz of spectrum on a first-come, first-served basis for a shorter period (up to 5 years).*
3. *If you are planning to introduce non-nationwide MFCN use with your licensed radio spectrum, please describe your plans in sufficient detail that we can start to assess the feasibility of your market demand.*
4. *For 5G to be rolled out as soon as possible, the EU obligation requires that the use according to existing entitlements to radio spectrum use be changed as soon as possible.*
5. ***Unsold bands affected by harmonisation***
6. **Utilisation of 1500 MHz frequency band**

The 1427-1518 MHz frequency band (hereinafter referred to as: 1500 MHz frequency band) is harmonised for MFCN in the European Union. The relevant EU legislation was adopted in two steps. In the first step, a Commission Implementing Decision was adopted on the use for MFCN of the 1452-1492 MHz frequency band previously planned for digital audio broadcasting in European countries, followed by an amending Decision extending it to the adjacent 1427-1452 MHz and 1492-1518 MHz frequency bands. Member States should make either all or part of the harmonised frequency band available for MFCN purposes. How much of the 1500 MHz frequency band Member States make available depends largely on existing usage and market demands. The NMHH already placed the issue of the 1500 MHz frequency band on the agenda of its public consultations in 2017 and 2019. Both public consultations ended with the same result. There was no concrete market demand and the views expressed in the NMHH’s preparatory documents were confirmed.

According to EU legislation, the entire 1427-1518 MHz frequency band (including 1452-1492 MHz and the subsequently harmonised 1427-1452 MHz and 1492-1518 MHz frequency bands) can only be used for the provision of supplemental downlinks (hereinafter referred to as: SDL).

Taking into account current domestic use and relevant international regulations, the NFFF Decree designated the 1427-1492 MHz frequency band for MFCN use, and the 1492-1525 MHz frequency band for non-civil use, of which the upper 7 MHz sub-band is not affected by the EU Decision. Up to 65 MHz spectrum from the 90 MHz spectrum available according to the European regulation in the 1500 MHz frequency band can be distributed to MFCN SDL in Hungary. In the case of market demand for use of the frequency band, the entitlement to radio spectrum use for the 1427-1492 MHz frequency band may be distributed for the provision of MFCN SDL services in a competitive procedure.

***Please comment on the following statements!***

1. *On request, the NMHH plans to distribute up to sixteen 5 MHz SDL basic blocks in the 1427-1518 MHz band through a competitive procedure by the end of December 2023.*
2. **2300 MHz frequency band**

The 2300-2400 MHz frequency band (hereinafter referred to as: 2300 MHz frequency band) is one of the less used bands, and opportunities to increase efficiency have been sought at European level. At the initiative of the European Commission, a harmonisation process was launched in 2014 to define the least restrictive technical requirements at EU level. Based on the results of CEPT[[20]](#footnote-20) investigations, shared use could allow the introduction of broadband radio applications and the use of the 2300 MHz frequency band for terrestrial broadband electronic communications networks (MFCNs) allowing broadband data transmission on a non-exclusive basis, while protecting existing services.

Due to the widely differing use of the band in EU Member States, the harmonisation process has stalled and no EU legislation has been adopted to impose obligations on Member States. However, the CEPT investigation findings and the resulting CEPT documents (report, decision) are available. Some European countries have already made the 2300-2400 MHz frequency band available for wireless broadband networks. CEPT is currently examining the most appropriate regulatory and harmonised technical conditions to enable the use of 5G.

According to domestic legislation, the 2300-2370 MHz band can be used for civil purposes in Hungary, while the 2370-2400 MHz band is for non-civil purposes. The 70 MHz sub-band available for civil use has a planned status for terrestrial electronic communications networks with TDD[[21]](#footnote-21) access.

In line with international efforts, ensuring the radio spectrum needed for the further development of mobile broadband services and making it available on demand, as well as ensuring efficient use of radio spectrum and supporting innovative solutions are among the NMHH’s priority strategic objectives. It is important to understand the demands and ideas for the MFCN in order to develop regulations for the future civil use of the 2300-2370 MHz frequency band for decisions on its use, including the detailed technical conditions of use and the method of distribution. The utilisation of the 2300 MHz frequency band has been raised at previous public consultations (most recently in December 2019), but no substantiated market demand was expressed at that time. A nationwide system within the band is also possible, and in this respect the NMHH is investigating the use of a competitive procedure as a possible distribution method for at least part of the frequency band.

***Please comment on the following statements!***

1. *On request, the NMHH plans to distribute up to eight 5 MHz MFCN TDD basic blocks in the 2300 MHz frequency band through a competitive procedure by the end of December 2023.*
2. ***Bands already sold and affected by harmonisation***
3. **2600 MHz frequency band**

The 2500-2690 MHz frequency band consists of a frequency division duplex (FDD[[22]](#footnote-22)) access paired band (2500-2570/2620-2690 MHz) and a time division duplex (TDD[[23]](#footnote-23)) access unpaired band (2570-2620 MHz).

In the tender procedure conducted in 2014, the NMHH distributed the entitlement to radio spectrum use for the entire FDD band, while in the TDD band (2575-2615 MHz) only the 2575-2600 MHz range was distributed. There was no interest in the remaining 2600-2615 MHz sub-band following the public consultations and competitive procedures held after the 2014 sale.

The development of technology has made it necessary to amend international and national regulations. The previous harmonisation rules were amended to allow the use of active antenna systems in the 2600 MHz frequency band to facilitate the deployment of 5G networks, and the amended rules also allow the use of supplemental downlinks (SDL) in the 2575-2615 MHz sub-band, in addition to TDD mode.

Given that the regulation of the 2500-2690 MHz frequency band has changed compared to the previous procedures, which has made the regulation of radio spectrum use also in Hungary more flexible, this consultation will again assess the demands, taking into account the increasing spectrum requirements of new generation networks.

***Please comment on the following statements!***

1. *On request, the NMHH plans to utilise the remaining 15 MHz spectrum in the 2600 MHz unpaired band by the end of December 2023, by means of a competitive procedure.*
2. **Other issues related to MFCN**
3. ***32 GHz frequency band***

Making available the 32 GHz frequency band for point-to-point and point-to-multipoint systems with fixed sites has become necessary due to the EU obligations related to the utilisation of the 26 GHz band for MFCN[[24]](#footnote-24) purposes.

Currently, fixed point-to-point and point-to-multipoint systems can operate in the 24.5-26.5 GHz frequency band, which overlaps with most of the 24.25-27.5 GHz frequency band planned for MFCN based on EU obligations. Network operators have obtained the entitlement to radio spectrum use through competitive procedures and mainly implement backhaul network (typically point-to-point) links in the frequency band. The entitlement to radio spectrum use expire between 2024 and 2027, the vast majority in 2027.

In the NMHH’s view, it is only possible to make the 26 GHz frequency band available for MFCN if it ensures the possibility to operate backhaul networks by allowing the use of another frequency band − preferably with similar propagation characteristics and available amount of spectrum. The 32 GHz frequency band has been identified by the NMHH for this purpose. This was discussed with market players at a public consultation in December 2019. As a result of these discussions, the main elements for the conditions for using the 32 GHz frequency band needed for the network planning were defined in the NFFF Decree in 2020. Further details are included in the draft amendment to the NFFF Decree, which is currently undergoing technical notification procedure and is expected to be published and enter into force in April 2022.

The early distribution of the 32 GHz frequency band will allow new links to be established already in this band, and enable the migration of links currently operating in the 26 GHz frequency band. After the migration, the 26 GHz frequency band will also be vacated. This will remove any further obstacles to meeting the EU obligation in case of market demand, and allow the introduction of MFCN (mostly 5G NR) in the frequency band.

***Please comment on the following statements!***

1. *In 2022, the NMHH plans to launch a competitive procedure in the 32 GHz frequency band to migrate existing use in the 26 GHz frequency band as soon as possible.*
2. ***3.8-4.2 GHz frequency band***

The European Union has set itself the goal of deploying high-capacity networks providing gigabit connections across the EU as widely as possible. To this end, several initiatives have been taken to promote the deployment of 5G (e.g. the 5G Action Plan), the most important of which from a radio spectrum policy perspective are the three[[25]](#footnote-25) RSPG[[26]](#footnote-26) opinions on the European 5G strategy. Verticals were emphasised in the third opinion in particular (January 2019), with different solutions for the provision of wireless infrastructure. One of these solutions is through mobile service providers. A third-party service is also possible, but even the vertical operator itself can manage the deployment and operation of the network. The EU has set the goal of having a dedicated EU harmonised frequency band for verticals. The radio spectrum provided to verticals can facilitate the introduction and expansion of digitalisation in sectors such as transport, logistics, automotive, healthcare, energy, smart factories, media and entertainment. As the deployment of the new technology requires radio spectrum of an adequate size and transmission capacity, tailored to the areas of application, efforts have been made at EU level to harmonise 5G radio spectrum, taking into account new business models and industrial and other vertical sector solutions.

In December 2021, the European Commission issued a mandate[[27]](#footnote-27) to CEPT to facilitate the deployment of local wireless networks serving verticals, which identified the 3.8-4.2 GHz frequency band for 5G-based local area networks. Based on the mandate, the feasibility of coexistence and shared use with existing services and applications in the frequency band should be explored. The harmonised technical conditions for shared use should be defined in such a way as to ensure the protection of other systems operating in the frequency band (receiving earth stations in the fixed-satellite service and point-to-point links in the fixed service) and to ensure coexistence with applications operating in adjacent frequency bands (e.g. radio altimeters on board aircraft in the 4.2-4.4 GHz frequency band).

Depending on and building on the results of the investigations, CEPT shall develop the least restrictive harmonised technical conditions for local shared use of the 3.8-4.2 GHz frequency band. The technical conditions should be defined in such a way as to ensure that in-band and adjacent-band applications can operate without interference and that the use of radio spectrum in the border area is not hampered.

The provisional schedule is shown in the following table:

|  |  |
| --- | --- |
| **Delivery date** | **Deliverable** |
| November 2022 | Interim Report from CEPT to the Commission |
| July 2023 | Final Draft Report from CEPT to the Commission |
| March 2024 | Final Report from CEPT to the Commission, taking into account the outcome of the public consultation |

Based on NFFF Decree, the 3.8-4.2 GHz frequency band is designated for fixed point-to-point applications and fixed-satellite service (space-to-Earth) applications. In the case of satellite systems, the frequency band can therefore only be used for reception (not transmission), and therefore only receiving earth stations can be installed.

The frequency band is not significantly used in Hungary:

* satellite receiving earth stations requiring protection currently operate on two sites,
* a very small number of fixed service links (currently 6 bi-directional links) operate in the frequency band only, and no increase in usage is expected in the future.

Given the ongoing EU harmonisation and the current and expected future domestic use, the use of the 3.8-4.2 GHz frequency band could be a good solution for the local deployment of wireless broadband applications, particularly to meet the needs of verticals.

***Please comment on the following statements!***

1. *The NMHH is taking steps to support private network-enabling solutions in international negotiations and will make the 3.8-4.2 GHz frequency band available for MFCN deployment as soon as international regulation allows it.*

1. Public Protection and Disaster Relief [↑](#footnote-ref-1)
2. MFCN: Mobile/Fixed Communications Networks (In connection with the convergence of fixed and mobile wireless communications services, the term MFCN (Mobile/Fixed Communications Networks) has been introduced in the regulation of CEPT. This also includes IMT (International Mobile Telecommunication) systems as used by the ITU.) [↑](#footnote-ref-2)
3. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: 2030 Digital Compass: the European way for the Digital Decade, COM(2021) 118 final/2, 9.3.2021 [↑](#footnote-ref-3)
4. A long-term Vision for the EU’s Rural Areas. COM(2021) 345 final. [↑](#footnote-ref-4)
5. Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (OJ L 321, 17.12.2018, p. 36). [↑](#footnote-ref-5)
6. Public Protection and Disaster Relief, PPDR [↑](#footnote-ref-6)
7. Harmonised technical conditions and frequency bands for the implementation of Broadband Public Protection and Disaster Relief (BB-PPDR) systems (8 March 2019) – <https://docdb.cept.org/download/1486> [↑](#footnote-ref-7)
8. At the time the preparatory document was prepared: AH Net Zrt. [↑](#footnote-ref-8)
9. Public Protection and Disaster Relief, PPDR [↑](#footnote-ref-9)
10. Land mobile systems in the frequency ranges 68-87.5 MHz, 146-174 MHz, 406.1-410 MHz, 410-430 MHz, 440-450 MHz and 450-470 MHz (8 March 2019) – <https://docdb.cept.org/download/1455> [↑](#footnote-ref-10)
11. Harmonised technical conditions and frequency bands for the implementation of Broadband Public Protection and Disaster Relief (BB-PPDR) systems (8 March 2019) – <https://docdb.cept.org/download/1486> [↑](#footnote-ref-11)
12. Planning criteria and cross-border coordination of frequencies for land mobile systems in the range 29.7-470 MHz (28 September 2018)

    − – <https://docdb.cept.org/document/909> [↑](#footnote-ref-12)
13. BB-PPDR: Broadband: Public Protection and Disaster Relief [↑](#footnote-ref-13)
14. SDL: Supplemental Downlink [↑](#footnote-ref-14)
15. PMSE: Programme Making and Special Events [↑](#footnote-ref-15)
16. M2M: Machine to Machine [↑](#footnote-ref-16)
17. National Roadmap for use of the VHF III band (174-230 MHz) and the UHF band (470-790 MHz), was published by the NMHH on its website on 8 September 2017: <http://nmhh.hu/dokumentum/189921/uhf_nemzeti_utemterv.pdf> [↑](#footnote-ref-17)
18. MFCN: Mobile/Fixed Communications Network [↑](#footnote-ref-18)
19. NR: New Radio [↑](#footnote-ref-19)
20. European Conference of Postal and Telecommunications Administrations [↑](#footnote-ref-20)
21. Time division duplex [↑](#footnote-ref-21)
22. FDD: Frequency Division Duplex [↑](#footnote-ref-22)
23. TDD: Time Division Duplex [↑](#footnote-ref-23)
24. MFCN: Mobile/Fixed Communications Network [↑](#footnote-ref-24)
25. RSPG opinion of November 2016, January 2018 and January 2019: https://rspg-spectrum.eu/rspg-opinions-main-deliverables/ [↑](#footnote-ref-25)
26. Radio Spectrum Policy Group, RSPG [↑](#footnote-ref-26)
27. https://digital-strategy.ec.europa.eu/en/library/radio-spectrum-cept-mandates [↑](#footnote-ref-27)