



NMHH

Nemzeti Média- és Hírközlési Hatóság

Band introduction

The 1500 MHz band

7 November 2017

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1. Summary

In the European countries, the majority of the 1452–1492 MHz band (1452-1479,5 MHz) was earlier designated for terrestrial digital audio broadcasting (hereinafter: T-DAB¹) based on the Maastricht Special Arrangement signed in 2002 and revised in 2007 (hereinafter: MA02revCO07)², but the introduction of the T-DAB did not come into general use in this band, leaving the band unutilised. Considering the increasing spectrum demand in broadband communications, in coherence with the EU's radio spectrum programme, an EU decision has been made on the amendment of the band's regulation, freeing it up for wireless broadband electronic communications services.

Based on the results of the World Radiocommunication Conference held in November 2015 (WRC-15³), the elaboration of harmonised technical conditions for the use of the 1427-1452 MHz and 1492-1518 MHz bands adjacent to the 1452-1492 MHz band has also begun.

The Commission Implementing Decision, adopted in respect of the 1452-1492 MHz band, harmonised the band, taking into account the principle of technology neutrality, for the purpose of serving mobile and fixed communications networks (hereinafter: MFCN⁴) suitable for the provision of wireless broadband services, exclusively for providing supplemental downlink connections (hereinafter: SDL⁵) required due to the increased traffic. SDL exclusively provides downlink use where the spectrum is used only for one-way broadcasting from the base station when providing electronic communications services, by linking it to use with a (basic) spectrum available in another frequency band.

Hungary has implemented the EU regulation for the MFCN use of the 1452-1492 MHz band; the NMHH Decree 7/2015 (XI.13.) on the national frequency allocation and the rules of using frequency bands (hereinafter: NFFF) contains the technical and bandwidth usage-related provisions enabling sale of the band. Coordination arrangements for the use of radio frequencies in national border zones are currently being negotiated. Since one of our neighboring countries, Ukraine, operates aeronautical telemetry systems as well, negotiations have begun with Ukraine to conclude a co-ordination agreement that also provides for the undisturbed use of MFCN and aeronautical telemetry systems.

The EU harmonisation process is also under way with respect to the 1427-1452 MHz and 1492-1518 MHz bands. The CEPT must prepare for the Commission a report to be used as the basis for decision-making, by November 2017. The relevant implementing decision is due in the first trimester of 2018.

In line with international efforts, the provision and the licensing, as required, of the radio spectrum necessary for the further development of mobile broadband services is one of the key strategic goals of the National Media and Infocommunications Authority (hereinafter: NMHH) for the period between 2016-2020, and in this context it has been specified as a specific target area, that the conditions for mobile band usage in the 1452-1492 MHz band must be prepared and the sale must be completed.

Given that the sale of the 1500 MHz band takes place after the publication of the EU regulation concerning the 1427-1452 and 1492-1518 MHz bands, the entire 1427-1518 MHz band can be sold for MFCN in presence of market demand.

1 Terrestrial Digital Audio Broadcasting (T-DAB)

2 The Special Arrangement of the CEPT (European Conference of Postal and Telecommunications Administrations) on the use of the 1452–1479,5 MHz band for terrestrial digital audio broadcasting (T-DAB), Maastricht, 2002, Constanta, 2007

3 World Radiocommunication Conference 2015, Genf, 2015.11.2-27

4 MFCN: Mobile/Fixed Communications Networks (With regards to the convergence of the fixed and mobile wireless communication services, the CEPT regulation introduced the umbrella term 'MFCN' (Mobile/Fixed Communication Networks). This also includes the IMT (International Mobile Telecommunication) systems used in ITU terminology.)

5 Supplemental Downlink, SDL

2. Introduction

One of the main objectives of the Europe 2020 strategy is to enable all EU citizens to access a broadband service of at least 30 Mbps speed by 2020, and to enable the EU possess the highest possible broadband speed and capacity. Due to increased demands for a frequency spectrum that can be used for broadband mobile services, investigations have started, at international level, on how to release for mobile purposes those frequency bands that have been designated for other service providers and are currently used by them.

The majority of the 1452–1492 MHz band (1452–1479,5 MHz) was earlier designated in the member states for terrestrial digital audio broadcasting (T-DAB) based on the Maastricht Special Arrangement signed in 2002 and revised in 2007 (MA02revCO07), but the introduction of the T-DAB did not come into general use in this band, leaving the band unutilised. The Commission's report on spectrum inventory⁶ established that the use of the 1452–1492 MHz band is quite limited in the EU, and the designation of the band will have to be modified in coherence with the objectives of the radio spectrum-policy programme⁷ (hereinafter: RSPP), freeing it up for wireless broadband electronic communications services.

For better utilisation of the band, bearing in mind the strategic challenges resulting from increasing spectrum demand of broadband communications and the principle of technology-neutrality, the possibility of providing broadband communications services in the band had to be examined, which also ensures the long term protection of the existing terrestrial broadcasting systems including the case if their licenses are renewed. In accordance with the given conditions, Commission Implementing Decision (EU) 2015/750 was accepted in 2015⁸, which harmonised the 1452–1492 MHz band for supplemental downlink (SDL) connection of wireless broadband electronic communications services (MFCN) that can be implemented by mobile and fixed communications networks, simultaneously allowing the member states to adhere to national particularities in certain parts of the band (e.g. 1452–1479,5 MHz for terrestrial broadcasting).

The 1452–1492 MHz band, forming part of the so-called L band is a valuable one from the perspective of introducing MFCN, as its propagation properties are suitable for purposes of capacity increase in rural conditions and are also advantageous for internal coverage. Considering that most countries only use the band to a marginal extent or do not use it at all, the general use of wireless broadband services can become reality in most European countries over a short time.

The SDL is a broadcast starting from an only downlink (i.e. unidirectional) base station, forming part of a terrestrial wireless broadband electronic communications service, whose purpose is the increase the downlink capacity of the service, thereby managing the asymmetry of data traffic. The 1452–1492 MHz band SDL – by unifying with a spectrum in other bands – may provide the opportunity to provide audiovisual speeds requiring high download speeds (e.g. playing videos, multimedia content and music downloading, software updates, etc.).

Following publication of the Commission Implementing Decision on the harmonised technical conditions of using the 1452–1492 MHz band for SDL purposes, the WRC-15 identified at a global level the 1427–1452 MHz and 1492–1518 MHz bands adjacent to 1452–1492 MHz for IMT purposes.

6 Report from the Commission to the European Parliament and the Council on the Radio Spectrum Inventory (COM(2014) 536 final) <http://ec.europa.eu/transparency/regdoc/rep/1/2014/EN/1-2014-536-EN-F1-1.Pdf>

7 Radio Spectrum Policy Programme, RSPP - Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme

8 COMMISSION IMPLEMENTING DECISION 2015/750/EU of 8 May 2015 on the harmonisation of the 1452–1492 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union (notified under document C(2015) 3061).

Based on the mandate of the Commission in March 2017⁹ the CEPT's¹⁰ responsible workgroups began elaborating the European harmonised technical conditions of the 1427-1492 MHz and 1492-1518 MHz bands; the report for the decision will have to be prepared for the Commission by November 2017. In the course of the tests, the aspects of 5G suitability of the band must be taken into account.

The agenda of RSC's¹¹ October session included the harmonisation of the technical conditions for the use of the entire 1427-1517 MHz frequency band for purposes of wireless broadband electronic communications services that can be implemented by mobile and fixed communications networks. In case of using the adjacent 1427-1452 MHz and 1492-1518 MHz bands for MFCN purposes, the broadcasting conditions also change for the 1452-1492 MHz band as well, therefore the Commission plans to amend the Commission Implementing Decision (EU) 2015/750 before 2017 is over. Therefore, the sales process can be executed for the entire band in case of market demand.

9 Mandate to CEPT to develop harmonised technical conditions in additional frequency bands in the 1.5 GHz range for their use for terrestrial wireless broadband electronic communications services in the Union; <https://ec.europa.eu/digital-single-market/en/news/radio-spectrum-cept-mandates-0>

10 CEPT: Conférence européenne des Administrations des postes et des télécommunications – European Conference of Postal and Telecommunications Administrations

11 RSC: Radio Spectrum Committee

3. Current use

On an international scale, in Europe as well as other regions, use for MFCN is characteristically marginal in 1452-1492 MHz, and in the 1427-1452 MHz and 1492-1518 MHz bands under harmonisation as well.

The 1452-1492 MHz band (and within that the 1452-1479.5 MHz sub-band) was emptied in most European countries for T-DAB (L band T-DAB), but only a few countries started broadcasting in this band. DAB broadcasting did not start in Hungary either; according to the effective regulations, the band may be designated for MFCN. Following the EU harmonisation for SDL purposes, most EU countries implemented the decision and plan to introduce MFCN.

Frequencies were primarily allocated in the 1427-1452 MHz and 1492-1518 MHz bands for the systems of fixed services; besides this, typically tools for programme production and special events (hereinafter: PMSE¹²), and military tools are in operation.

In the 1429-1518 MHz band, the aeronautical telemetry systems of the aerial mobile services operate in some countries (e.g. Ukraine, Russia and the USA).

3.1. International regulation

The global harmonisation of the 1452-1492 MHz band and making it available for IMT was broadly supported by market players, therefore the establishment of appropriate regulatory frameworks was a key question in the international organisations concerned and the groups responsible for frequency management (ITU¹³, CEPT¹⁴, European Commission, RSPG¹⁵ and RSC¹⁶).

The global identification of the 1452-1492 MHz band for IMT purposes was only implemented partly in the ITU International Radio Regulations, while the adjacent 1427-1452 MHz and 1492-1518 MHz bands can be used globally for IMT, based on the amendment accepted at the WRC-15.

The use of the 1452-1492 MHz band for IMT/MFCN purposes may be implemented based on the existing CEPT and EU regulations; the elaboration of the European level harmonised technical conditions of the 1427-1492 MHz and 1492-1518 MHz bands is underway.

3.1.1. ITU

Annex 1 of the NFFF contains the international allocation according to the International Radio Regulations.

The ITU's International Radio Regulations, in the Region 1 including the EU member states, allocates the 1452–1492 MHz frequency band to fixed and mobile (with the exception of aerial mobile), broadcasting and satellite broadcasting services, with a shared primary nature.

The use of the 1452-1492 MHz band by broadcasting and satellite broadcasting services is limited to digital audio broadcasting (DAB), in accordance with footnote 5.345 of the Radio Regulations.

The 1429–1535 MHz band (and within that the 1452-1492 MHz band) is also allocated for aerial mobile services as well in a few countries, such as Ukraine, Hungary's neighbour to the east, according to footnote 5.342 of the Radio Regulations:

12 PMSE: Programme Making and Special Events

13 ITU: International Telecommunication Union

14 CEPT: Conférence européenne des Administrations des postes et des télécommunications – European Conference of Postal and Telecommunications Administrations

15 RSPG: Radio Spectrum Policy Group

16 RSC: Radio Spectrum Committee

5.342 **Additional allocation:** *In Armenia, Azerbaijan, Belarus, the Russian Federation, Uzbekistan, Kyrgyzstan and Ukraine, the band 1429–1535 MHz and the band 1525–1535 MHz in Bulgaria are also allocated to the aeronautical mobile service on a primary basis exclusively for the purposes of aeronautical telemetry within the national territory. As of 1 April 2007, the use of the band 1452–1492 MHz is subject to agreement between the administrations concerned. (WRC-12)*

The ITU-R M.2324 Report¹⁷ contains the results of the compatibility tests between the aeronautical telemetry systems operating in the 1429-1535 MHz and the IMT systems.

The agenda of the WRC-15 organised by the ITU did include the global identification of 1427-1518 MHz band – and within that the 1452-1492 MHz band – for the IMT applications within the mobile service. The global identification of the band for IMT purposes was supported in all three ITU regions, but was only partly implemented, as the countries in footnote 5.342 set more disadvantageous conditions for protecting aeronautical telemetry from the aspect of IMT than the existing regulation. Therefore, introducing MFCN in the 1452-1492 MHz band is only possible based on the European regulation.

For the 1427-1452 MHz and 1492-1518 MHz bands, the WRC-15 made the use for IMT purposes possible, by accepting the footnote 5.341A:

5.341A *In Region 1, the frequency bands 1427–1452 MHz and 1492–1518 MHz are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-15)**¹⁸. This identification does not preclude the use of these frequency bands by any other application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of IMT stations is subject to agreement obtained under **No. 9.21** with respect to the aeronautical mobile service used for aeronautical telemetry in accordance with **No. 5.342**. (WRC-15)*

The amendments accepted by the WRC-15 will be implemented during the next general overview by the NFFF.

3.1.2. CEPT

In accordance with the international allocation valid for Europe, the 1452–1492 MHz frequency band is allocated with primary nature for fixed, mobile (with the exception of aerial mobile), broadcasting and satellite broadcasting services. The adjacent 1427-1452 MHz and 1492-1518 MHz bands are primarily allocated for fixed and mobile (with the exception of aerial mobile services) services within the CEPT.

According to the effective CEPT regulation, the 1452-1492 MHz band may be used for SDL connections of mobile and fixed communications networks suitable for providing wireless broadband communications services, while terrestrial digital audio broadcasting (T-DAB) and terrestrial multimedia systems compatible with the DAB technology may also operate in the 1452-1479.5 MHz sub-band, based on the Maastricht Special Arrangement signed in 2002 and revised in 2007. This agreement also determines the procedures required for cross-border coordination between T-DAB and the wireless broadband electronic communications services.

In accordance with the CEPT regulation introduced in the mid-1990s, the 1452-1479.5 MHz band has been made available for T-DAB in most European countries, but T-DAB did not come into general

¹⁷ Report ITU-R M.2324: Sharing studies between potential International Mobile Telecommunication systems and aeronautical mobile telemetry systems in the frequency band 1 429-1 535 MHz

¹⁸ RESOLUTION 223 (REV.WRC-15) Additional frequency bands identified for IMT

use, and the band remained unutilised. The Commission's report on spectrum inventory¹⁹ also established that this band is not fully utilised in the EU, and the designation of the band will have to be modified in coherence with the spectrum objective of the RSP, freeing it up for wireless broadband electronic communications services. The existing terrestrial broadcasting systems must, however, be protected on the long run, including the renewal of the licences.

In response to the mandate of the Commission on 19 March 2014, the CEPT issued CEPT Report 54 on 28 November 2014²⁰, in which it recommended the harmonisation of the 1452–1492 MHz for purposes of wireless broadband supplemental downlink connections, permitting adherence of the member states to national particularities in certain parts of the band (e.g. 1452–1479.5 MHz for terrestrial broadcasting).

The CEPT Report 54 compiled for the Commission determines the technical conditions and fundamental principles required for cross-border coordination – including the borders of the European Union – between wireless broadband electronic communications services and T-DAB, and aeronautical telemetry services in the 1452–1492 MHz band.

Concerning the use of the 1452-1492 MHz band, the following documents approved by the ECC²¹ have also been accepted in the responsible workgroups of the CEPT:

- Decision ECC/DEC/(13)03²² containing the harmonised technical conditions of the use of the 1452–1492 MHz band for MFCN purposes, the recommended channel arrangement and the maximum broadcasting power values ensuring the coexistence of the various radio services;
- Recommendation ECC/REC/(15)01²³ It concerns the cross-border coordination for mobile / fixed communications networks (MFCN) in the 1452-1492 MHz, 3400-3600 MHz and 3600-3800 MHz frequency bands;
- ECC REPORT 202²⁴ containing the out of band radiation requirements for supplemental downlink (SDL) mobile/fixed communications networks (MFCN) operating in the 1452–1492 MHz band;
- ECC REPORT 227²⁵ containing the compatibility tests between supplemental downlink (SDL) mobile/fixed communications networks (MFCN) and other affected services (broadcasting, aeronautical telemetry, etc.) operating in the 1452–1492 MHz band;

The frequency arrangement in accordance with Decision ECC/DEC/(13)03 in the 1452-1492 MHz band is shown in the figure below:

19 Report from the Commission to the European Parliament and the Council on the radio spectrum inventory (COM(2014) 536 final)

20 CEPT REPORT 54 approved 28 November 2014 Report from CEPT to the European Commission in response to the Mandate "To develop harmonised technical conditions in the 1452-1492 MHz frequency band for wireless broadband electronic communications services in the EU";

21 ECC – Electronic Communications Committee

22 ECC DECISION (ECC/DEC/(13)03) approved 08 November 2013 The harmonised use of the frequency band 1452-1492 MHz for Mobile/Fixed Communications Networks Supplemental Downlink (MFCN SDL) (amended 3 July 2015)

23 ECC Recommendation (15)01 Cross-border coordination for mobile / fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1452-1492 MHz, 3400-3600 MHz and 3600-3800 MHz Approved 13 February 2015

24 ECC REPORT 202 Out-of-Band emission limits for Mobile/Fixed Communication Networks (MFCN) Supplemental Downlink (SDL) operating in the 1452-1492 MHz band (approved September 2013)

25 ECC REPORT 227: Compatibility Studies for Mobile/Fixed Communication Networks (MFCN) Supplemental Downlink (SDL) operating in the 1452-1492 MHz band (approved January 2015)

1452 -1457	1457-1462	1462-1467	1467-1472	1472-1477	1477-1482	1482-1487	1487-1492
Downlink (base station transmit)							
40 MHz (8 blocks of 5 MHz)							

The adjacent 1427-1452 MHz and 1492-1518 MHz bands under MFCN harmonisation within the CEPT may be allocated for low capacity fixed connections based on the technical recommendation T/R 13-01²⁶, and military systems may operate in the bands. SRD²⁷ applications may also operate, according to the CEPT regulation, in the 1492-1518 MHz band, based on the ERC/REC 70-03²⁸ recommendation.

3.1.3.EU

Based on the objectives set out for 2020 in the European Union's Digital Agenda, broadband access must be implemented in every household of the European Union by 2020, with speeds at least 30 Mbit/s and with 100 Mbit/s for at least 50% of households. Therefore, the provision of the frequency band required for the targeted data transmission speeds and coverage has become a primary aspect in RSPP as well. In order to realise the objectives set out in the RSPP, the RSPG assessed the future spectrum demand and possible solutions in connection with wireless broadband electronic communications services, in the course of which the examination of the 1500 MHz band in little use by European countries emerged, among other issues.

By considering the results of the compatibility tests carried out by CEPT Commission Implementing Decision (EU) 2015/750 of 8 May 2015 on the harmonisation of the 1452-1492 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union;

The Commission Implementing Decision (EU) 2015/750 contains the following provisions for the member states:

- On a non-exclusive basis, the 1452-1492 MHz frequency band must be designated for terrestrial systems capable of providing wireless broadband electronic communications services (MFCN);
- The wireless broadband electronic communications systems must provide adequate protection for the systems operating in the adjacent bands, and in the 1452–1479.5 MHz frequency band, based on the licence valid at the date of the notification on the present Decision, or the renewal thereof, the terrestrial broadcasting systems operating according to the parameters set out in the Maastricht Special Arrangement signed in 2002 and revised in 2007.
- For enabling the operation of the MFCN systems, the member states shall promote the establishment of cross-border coordination agreements, considering the existing regulatory procedures and rights and the corresponding international agreements;
- The member states will not be bound by these obligations in geographical areas where deviation from the parameters set out in the Annex is necessary due to reconciliations with third countries. The member states shall strive to minimise the duration and the geographical effect of such deviations.

²⁶ Recommendation T/R 13-01 E (Montreux 1993, Revised Rottach-Egern, February 2010) PREFERRED CHANNEL ARRANGEMENTS FOR FIXED SERVICE SYSTEMS OPERATING IN THE FREQUENCY RANGE 1 - 2.3 GHz

²⁷ Short Range Device (SRD)

²⁸ ERC Recommendation 70-03 Relating to the use of Short Range Devices (SRD) (<http://www.erodocdb.dk/Docs/doc98/official/pdf/REC7003E.PDF>)

According to the Decision, if a member state designates the 1452-1492 MHz band for MFCN, the frequency band must be used in accordance with the following technical conditions:

- The operational mode within the 1452–1492 MHz frequency band is limited to transmission of base stations (“downlink”).
- The block sizes in the 1452–1492 MHz frequency band must be determined as integer multiples of 5 MHz. The lower frequency limit of a designated block must either coincide with the lower band limit of 1452 MHz, or must be shifted by an integer multiple of 5 MHz.
- The transmission starting from the base station must comply with the block edge mask determined in the Annex of the Decision (hereinafter: BEM²⁹).

3.2. National regulation

The national regulation corresponding to the 1452-1492 MHz band and the adjacent 1427-1452 MHz and 1492-1518 MHz bands is described in Annex 2 of the effective NFFF.

In Hungary, the 1452-1492 MHz band is allocated for fixed and mobile services (with the exception of aerial mobile services) according to the effective NFFF. The 1427-1452 MHz and the 1492-1518 MHz bands are primarily allocated for fixed services and mobile services (with the exception of aerial mobile services) respectively.

According to Annex 2 of the NFFF, frequencies may be designated on a primary basis for terrestrial systems capable of providing electronic communications services in the 1452-1492 MHz band. Likewise with a primary nature, the passive research of deliberate transmissions from extra-terrestrial sources may also be pursued, based on footnote 5.341. On a tertiary basis, civilian and non-civilian SRD radio determination applications may also operate in the band.

In the 1427-1452 MHz band adjacent to the 1452-1492 MHz frequency range, according to the effective NFFF, primarily 1.4 GHz fixed digital (point-to-point and point-to-multipoint) systems may operate based on the T/R 13-01 technical recommendation, while non-civilian point-to-point, point-to-multipoint and general multipoint (one and two frequency) systems may operate in the 1492-1518 MHz band. On a tertiary basis, both civilian and non-civilian SRD applications may operate in the 1427-1452 MHz and the 1492-1518 MHz bands.

Investigations and decisions regarding the MFCN use of the 1452-1492 MHz band have been concluded on an international scale, and the corresponding EU regulation has been implemented in the national regulation. The harmonisation of the adjacent 1427-1452 MHz and 1492-1518 MHz bands for MFCN purposes is as yet underway.

The band use conditions and frequency management requirements of the terrestrial systems capable of providing electronic communications services in the 1452–1492 MHz band can be found in Chapter 4.3a of Annex 3 of the NFFF.

In coherence with the harmonised European regulations, the operational mode within the 1452-1492 MHz band is limited to supplemental downlink transmission (SDL) of fixed stations.

The division of the band into basic blocks is shown in the table below:

Basic block ID	Frequency range [MHz]
1	1452–1457
2	1457–1462
3	1462–1467

²⁹ BEM: Block Edge Mask

4	1467–1472
5	1472–1477
6	1477–1482
7	1482–1487
8	1487–1492

By consolidating the basic blocks of the band user blocks can be formed, whose magnitude and quantity is established in the announcement documentation of the tendering procedure.

The conditions of acquiring the right of frequency use and the provisions regarding band use are shown in the following table:

Subject of condition	Specification
Purpose of use	electronic communications service provision
Method of frequency allocation	tendering procedure
Quantity of available frequency range	the quantity of the basic blocks that can be acquired by the participant of the tendering procedure and the size of the user blocks are determined in the announcement documentation
Term of the right of frequency use	a minimum of 9 and a maximum of 20 years, with the actual duration determined by the announcement documentation of the tendering procedure and the resolution concluding it, or a public contract.
Territorial extension of the entitlement to frequency use	National
Method of management	block management
Secondary trading	the entitlement to frequency use and right may be transferred or leased with any territorial or temporal restrictions, in part or in whole, i.e. without limitation to the smallest unit or quantity of the frequency band

Regarding the services, no limiting provisions are in force, as technology and service neutrality must be ensured in the band. Taking technology neutrality into consideration, the band may only be used in SDL mode, if the harmonised technical conditions set out in Decision 2015/750/EU are fulfilled.

In the 1452-1492 MHz band, the transmissions starting from the base stations must meet the requirements set out in the Annex of Decision 2015/750/EU. It contains BEM power limits inside and outside the block specified for the base station. The power limit within the block corresponds to a block designated to an operator. The out-of-block capacity limits apply to sub-bands within the 1452-1492 MHz frequency band, or outside the block designated to the service provider in question.

3.3. Actual use

In Hungary, there is currently no licence-bound primary use in the 1452-1492 MHz band. The band may be designated for MFCN.

In the 1427-1452 MHz band, currently 1.4 GHz may be designated for fixed digital (point-to-point and point-to-multipoint) systems, but there is no such use at the moment.



Non-civilian point-to-point, point-to-multipoint and general multipoint (one and two frequency) systems may operate in the 1492-1518 MHz band, but there is presently no actual national, non-civilian use.

The SRDs for tertiary use are exempt from individual licensing; we have no information on their operation.

4. Future use

According to the effective regulation, the use of the 1452-1492 MHz band for MFCN is exclusively limited to supplemental downlink, primarily serving as a capacity extension spectrum. The SDL is a broadcast starting from an only downlink (i.e. unidirectional) base station, forming part of a terrestrial wireless broadband electronic communications service, whose purpose is the increase the downlink capacity of the service, thereby managing the asymmetry of data traffic.

Thanks to the carrier aggregation technology, the 1452-1492 MHz band SDL – as a supplemental downlink for a spectrum in other bands – may provide the opportunity to provide audiovisual speeds requiring high download speeds (e.g. playing videos, multimedia content and music downloading, software updates, etc.).

The carrier aggregation technique can be applied for the more advanced 3G and 4G systems, with respect to the bands determined in the standards. At an international level, the 5G suitability conditions of the 1452-1492 MHz band (and the 1427-1518 MHz band including the band's extension) are currently being examined.

4.1. International regulation

4.1.1. ITU

No amendments of the ITU regulations are expected concerning the 1452-1492 MHz band. The agenda of WRC-15 included the achievement of the global IMT identification of the entire 1427-1518 MHz band, but in the European countries eventually only the IMT identification of the 1427-1452 MHz and 1492-1518 MHz bands was implemented. Introducing MFCN in the 1452-1492 MHz band is possible based on the European regulation.

The amendments accepted by the WRC-15 concerning the IMT use of the 1427-1452 MHz and 1492-1518 MHz bands will be implemented during the next general overview by the NFFF.

4.1.2. CEPT

For the 1452-1492 MHz band, CEPT documents ensuring harmonised use are already available at CEPT level (See point 3.1.2.).

Following the decision of the WRC-15, investigations within CEPT began in order to establish the harmonised technical and regulatory conditions for the use of the globally harmonised 1427-1452 MHz and 1492-1518 MHz bands (1500 MHz extension bands) for use for terrestrial systems capable of providing wireless broadband services.

In March 2017, the European Commission mandated³⁰ CEPT to carry out the tests in connection with the technical and regulatory questions of the 1427-1452 MHz and 1492-1518 MHz bands and the preparation of the appropriate reports. The mandate contained the requirements and scheduling of the CEPT level tests, determining the following tasks in connection with the contents of the CEPT report:

1. The possibility of using the 1427-1518 MHz band exclusively for downlink wireless broadband communications services (SDL), including the review of the 1452-1492 MHz band;
2. The appropriate channel arrangement and the least restrictive technical conditions concerning spectrum use must be elaborated for the 1427-1452 MHz and 1492-1518 MHz bands for SDL

³⁰ Mandate to CEPT to develop harmonised technical conditions in additional frequency bands in the 1.5 GHz range for their use for terrestrial wireless broadband electronic communications services in the Union

purposes, taking into account the aspects of 5G compliance; 5G compliance must be ensured in the entire 1427-1518 MHz band;

3. In connection with task 2, the harmonised technical conditions for the 1427-1452 MHz and 1492-1518 MHz bands must be elaborated, ensuring the national flexibility for the usage of the band and the necessary protection for other services.

The report must be worked out in the level of detail to provide adequate background for preparing the EU's decisions on band harmonisation.

The CEPT report must be finalised by November 2017.

In accordance with the mandate, the necessary investigations have been carried out in the CEPT ECC PT1 workgroup; based on the use recommended by the CEPT, the entire 1427-1517 MHz band is planned for SDL implementation. In addition to the 40 MHz spectrum available in the 1452-1492 MHz band, a further 50 MHz may become available for SDL. The final approval of the ECC report and decision drafts elaborated in this topic is expected in the ECC session in November 2017.

In case of the harmonised use of the 1427-1452 MHz and 1492-1518 MHz bands for MFCN purposes, the appropriate amendment of the ECC/DEC/(13)03 decision containing the technical conditions for the BEM values of the 1452-1492 MHz band is also necessary, and the review of the ECC/DEC/(13)03 decision on harmonised use of the 1452-1492 MHz band is also underway. The draft of the amended decision will be submitted for the November session of the ECC for approval for public consultation.

4.1.3. EU

The EU regulation for the harmonised use of the 1452-1492 MHz band is contained in the Commission Implementing Decision EU/2015/750.

The approval of the implementing decision regulating the harmonised European use concerning the extension of the band (1427-1452 MHz and 1492-1518 MHz) is expected to take place in 2018, in the first four months of the year. Based on the mandate of the commission, the CEPT will prepare by November 2017 the CEPT report containing the results of the technical examinations for the 1427-1452 MHz and 1492-1518 MHz bands.

The agenda of RSC's October session included the harmonisation of the technical conditions of the entire 1427-1517 MHz frequency band for purposes of wireless broadband electronic communications services that can be implemented by mobile and fixed communications networks. The Commission plans to amend the Commission Implementing Decision (EU)2015/750 before the end of 2017.

4.2. National regulatory plans

The implementation of the Commission Implementing Decision EU/2015/750 in Hungary has been completed; no amendment of the domestic regulation on the licensing of the 1452-1492 MHz band is necessary. There is currently no use in the 1452-1492 MHz band. Based on the NFFF, the band may be licensed for MFCN use.

Following approval of the EU decision on the harmonised use of the 1427-1452 MHz and 1492-1518 bands, the domestic regulation must be amended accordingly for these bands, in order to introduce MFCN. Considering the current use, following the EU harmonisation, the band may be made available for the introduction of the MFCN.

5. Frequency use and coordination beyond the borders

In national border zones, only stations meeting prevailing relevant conditions set forth in international coordination documents may be permitted.

The rules of international coordination concerning the 1452-1492 MHz band are contained in the ECC/REC/(15)01 recommendation. The reconciliation of the draft elaborated based on the recommendation is underway. The agreement is based on the field strength limitations applicable in border zones and the use of preferred codes; accordingly, if the countries concerned adhere to the values specified in the agreement, the coordination procedure is not necessary.

Based on footnote RR. 5.342, aeronautical telemetry systems operate in Ukraine in the 1429-1535 MHz, therefore a separate agreement must be concluded with Ukraine, in which the conditions of protecting aeronautical telemetry and the rules of coordination between MFCN and aeronautical telemetry must be laid down. The question of coordination between MFCN and aeronautical telemetry is on the agenda of the CEPT PT1 workgroup, therefore the conclusion of the reconciliations concerning the agreement is expected to take place following the completion of international inspections.

6. Other potential sources of interference

Based on our knowledge to date, no sources of interference originating from domestic use are expected in the 1452-1492 MHz band.

In case of interference problems emerging in the course of operation of networks operating in accordance with the specified requirements, the provisions of the Electronic Communications Act³¹ must be followed.

³¹ Act C of 2003 on electronic communications

7. Frequency fees

Based on NMHH Decree 1/2011 (III. 31.) on frequency reservation and usage fees (hereinafter: the Fee Decree), the licensed party, and the party covered by the scope of block management by legal regulation, acquiring right of frequency use in a designated frequency band without tendering procedure, shall only pay a band fee during the validity of the entitlement to frequency use on frequency bands used for services and covered by the scope of block management acquired in the context of a tender or auction, or re-sold thereafter.

For determining the fees to be paid after the use of the 1500 MHz frequency band, the Fee Decree will have to be amended, as its Section 20 titled "Fees to be paid for service type bands with block allocation, sold at an auction or a tender" and Annex 9 do not contain this frequency band.

Related documents

List of related documents

- [1] (EU) 2015/750: Commission Implementing Decision (EU) 2015/750 of 8 May 2015 on the harmonisation of the 1452-1492 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union
- [2] ECC/DEC/(13)03: The harmonised use of the frequency band 1452-1492 MHz for Mobile/Fixed Communications Networks Supplemental Downlink (MFCN SDL)
- [3] CEPT REPORT 54: Report from CEPT to the European Commission in response to the Mandate "To develop harmonised technical conditions in the 1452-1492 MHz frequency band for wireless broadband electronic communications services in the EU"
- [4] ECC/REC/(15)01: Cross-border coordination for mobile / fixed communications networks (MFCN) in the frequency bands: 1452-1492 MHz, 3400-3600 MHz and 3600-3800 MHz
- [5] ECC REPORT 202 Out-of-Band emission limits for Mobile/Fixed Communication Networks (MFCN) Supplemental Downlink (SDL) operating in the 1452-1492 MHz band (approved September 2013);
- [6] ECC REPORT 227: Compatibility Studies for Mobile/Fixed Communication Networks (MFCN) Supplemental Downlink (SDL) operating in the 1452-1492 MHz band (approved January 2015);
- [7] Report ITU-R M.2324: Sharing studies between potential International Mobile Telecommunication systems and aeronautical mobile telemetry systems in the frequency band 1429-1535 MHz;
- [8] Recommendation ITU-R M.1036-5 (10/2015) Frequency arrangements for implementation of the terrestrial component of International Mobile Telecommunications (IMT) in the bands identified for IMT in the Radio Regulations (RR);
- [9] MA02revCO07: FINAL ACTS of the CEPT Multi-lateral Meeting for the frequency band 1452 - 1479.5 MHz, Constanța, 2007 (MA02revCO07) For the revision of the Special Arrangement of the European Conference of Postal and Telecommunications Administrations (CEPT) relating to the use of the band 1452 - 1479.5 MHz for Terrestrial Digital Audio Broadcasting (T DAB), Maastricht, 2002 Special Arrangement of the European Conference of Postal and Telecommunications Administrations (CEPT) relating to the use of the band 1452 - 1479.5 MHz for terrestrial mobile multimedia services
- [10] Recommendation T/R 13-01 E (Montreux 1993, Revised Rottach-Egern, February 2010) PREFERRED CHANNEL ARRANGEMENTS FOR FIXED SERVICE SYSTEMS OPERATING IN THE FREQUENCY RANGE 1 - 2.3 GHz.