Briefing

EU Legislation in Progress

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European Parliament

New radio frequencies for mobile internet services

SUMMARY

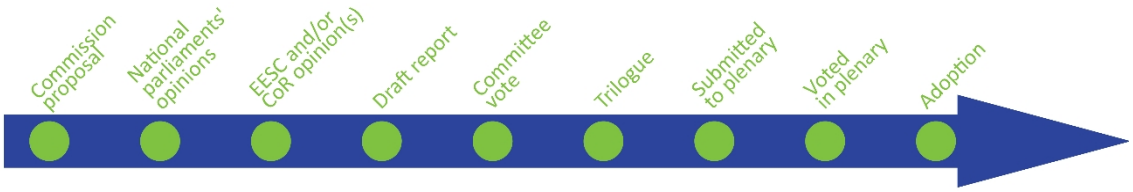
While radio spectrum management is predominantly a national competence, EU policy plays an increasingly important role in its coordination and harmonisation. The EU actively seeks ways to harmonise use of the different bands of the spectrum to meet the ever-growing demand for wireless mobile broadband. Nevertheless, spectrum allocation in the EU remains fragmented and varies among Member States.

Following developments in the international framework, as well as the considerations of high-level expert groups and a public consultation, the Commission adopted a long-term strategy for use of the 470-790 MHz frequency band. The strategy proposes to repurpose the 694-790 MHz band, to use it for wireless broadband rather than television broadcasting. The latter is to have priority in the 470-694 MHz band.

Under the agreement among the co-legislators, Member States will reassign the 694-790 MHz band by 30 June 2020. This reallocation may be delayed by up to two years in duly justified cases, examples of which are given in the agreed text. Broadcasting services will maintain priority in 470-694 MHz band at least until 2030, but the Member States will have certain flexibility to use this range for other purposes.

Proposal for a decision of the European Parliament and of the Council on the use of the 470-790 MHz frequency band in the Union

Committee responsible:	Industry, Research and Energy (ITRE)	COM(2016) 46 *of* 2.2.2016
Rapporteur:	Patrizia Toia (S&D, Italy)	*procedure ref.:* 2016/0027(COD)
Procedure completed	Decision (EU) 2017/899 OJ L 138 25.5.2017, p. 131	Ordinary legislative procedure



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Introduction

EU radio spectrum policy seeks to maximise the efficiency of spectrum use and increase access possibilities, by identifying spectrum bands which can meet increasing user demand, and organising their allocation and trading, among other measures. A high-level group established by the European Commission specifically examined the use of ultra-high frequencies (UHF) in the EU. The group's chair, Pascal Lamy, issued a report recommending an increased allocation of spectrum for mobile services, while safeguarding the broadcasting industry's access to radio frequencies.

A subsequent public consultation and the recommendation of a separate high-level expert forum, the Radio Spectrum Policy Group (RSPG), both supported harmonisation at EU-level. As a consequence, and to further implementation of the Digital Single Market project, the Commission developed a strategy for long-term use of the UHF band. The strategy is designed to implement important international agreements, namely the outcome of the 2012 and 2015 World Radiocommunication Conferences under the auspices of the International Telecommunications Union.

Context

With the development of information and communications technologies, the demand for frequencies in the radio spectrum is growing. Technological progress may bring efficiencies in spectrum use to partially address this frequency shortage. A paramount example is the transition from analogue to digital television technology, which liberated a considerable amount of high quality radio spectrum frequencies that could be redeployed for new services and technologies. The spectrum made available for new use as a consequence of this redistribution is referred to as the 'digital dividend'.

The Commission reports that spectrum allocation in the EU remains fragmented, and many countries do not respect their obligations to assign bands. For example, only five of 28 Member States had assigned almost all the harmonised spectrum band (3.4-3.8 GHz, 2.5-2.69 GHz, and 900-1 800 MHz) for mobile broadband before the agreed deadline of 31 December 2012. The Commission's data show that, on average, only about two thirds of the entire available spectrum for wireless broadband in the EU has been awarded. The situation varies among the Member States in terms of overall allocation and by spectrum bands.

The International Telecommunications Union (ITU) is a United Nations agency which is responsible for the global allocation of the radio spectrum. Every three to four years it organises a World Radiocommunication Conference (WRC) in which the Radio Regulations are reviewed and revised by its members (193 national governments). These regulations constitute an international treaty governing the use of the radio-frequency spectrum. The ultra-high frequency (UHF) broadcasting band, which is very useful for both mobile broadband services and broadcasting, due to its wide coverage and high speeds, comprises frequencies between 470 and 862 MHz. The WRC 2012 (WRC-12) conference adopted the decision that the 700 MHz part of the UHF band (more precisely, frequencies between 694-790 MHz) was to be allocated to both broadcasting and mobile services in Region 1 (Europe, Africa and the Middle East) as of 2015. Three years later, the WRC 2015 conference (WRC-15) concluded international negotiations on technical and regulatory parameters for the use of the 700 MHz band for wireless broadband. Importantly, WRC-15 also decided on allocation of the other part of the UHF spectrum

(470-694 MHz, a sub-700 MHz band) by confirming the exclusive use of this frequency band by broadcasting services in Region 1.

Existing situation

The allocation and management of the radio spectrum in the EU is administered by national administrations, as radio spectrum remains principally the responsibility of Member States. The legal right to sell their natural resources also includes the radio spectrum. Most Member States assign spectrum for commercial use via auctions and retain the proceeds. While the European Commission does not manage radio spectrum directly, its role is to make sure that the use and management of radio spectrum in the EU is consistent with all relevant EU policies.

Over the past 15 years, the EU has become increasingly involved in radio spectrum policy, in recognition of its importance for the Digital Single Market and information society. In 2002, the Council and the European Parliament established common general rules for spectrum management. Two key directives, the Framework Directive and Authorisation Directive on electronic communications, defined EU and Member State competence in radio spectrum management, and set out guidelines for assigning spectrum. They were complemented by the Radio Spectrum Decision, which established an EU Radio Spectrum Policy. This created a legal basis allowing the Commission to adopt decisions on harmonised conditions for the use of radio spectrum bands in the EU.

In 2012, the EU established a multiannual Radio Spectrum Policy Programme (RSPP), with the aim of improving efficiency and flexibility of spectrum use and promoting investment, competition and innovation. To achieve the RSPP policy objectives the Commission and Member States are to work together on specific actions such as: (i) identification of at least 1 200 MHz of spectrum in the EU to meet the increasing demand for wireless data traffic; (ii) allowing spectrum trading in bands where flexible use has already been initiated; and (iii) promoting spectrum sharing to ensure its efficient use and to boost spectrum access opportunities. In particular, the Member States were asked to authorise the use of certain frequency bands to be reallocated for high speed electronic communication services. Concerning UHF, the radio spectrum in the 800 MHz band (790-862 MHz) was to be made available for this purpose.

Parliament's starting position

The European Parliament (EP) supports the EU-level coordination of spectrum management, ensuring that sufficient spectrum is allocated to satisfy the ever-growing demand for wireless services. In its 2011 resolution on the first Radio Spectrum Policy Programme, the EP welcomed freeing up the 800 MHz band for wireless broadband and also asked for bands of 1.5 GHz and 2.3 GHz to be made available. MEPs set an overall target for the spectrum allocated for mobile data traffic to be at least 1 200 MHz by 2015. The Parliament also called on the Commission to assess whether additional frequencies (such as the 700 MHz band) should also be harmonised and made available for new users and services.

Furthermore, amendments to the Connected Continent proposal, adopted at first reading in April 2014, supported facilitating spectrum trading and leasing licences, and proposed long-term licence durations to incentivise investment. Referring to problems at Member State level with making the 800 MHz band available for wireless broadband, the EP underlined that there is a need for improvement in the Commission's exercise of powers,

and stringent efforts should be made to enforce the adopted measures concerning repurposing spectrum for wireless broadband.

Preparation of the proposal

In 2013, the Commission's then-Vice-President Neelie Kroes set up a high-level group of representatives of the mobile, broadcasting and media sectors, under the chairmanship of former Commissioner Pascal Lamy. The aim of this group was to find a common position on the UHF band's long-term use and distribution. While the group has not been able to reach a consensus, the chair published a report in his own capacity (the 'Lamy Report'). This report recommended repurposing the 694-790 MHz band, used by terrestrial broadcasters, for wireless broadband, while ensuring regulatory security and stability by safeguarding broadcaster access to the remaining UHF spectrum below 700 MHz until 2030.

In a public consultation on the Lamy Report, the majority of respondents supported the EU-coordinated approach to releasing the 700 MHz band. There was also general support for promoting spectrum-efficient DTT technologies, however contributors opposed mandatory measures imposing a specific technology. The concept of limiting the alternative technology permitted in the 470-694 MHz band to downlink-only use was also rejected. Furthermore, the cultural and creative industries asked for EU guidance on availability of funding and financial resources needed to cover the transition costs and the clearance of the 700 MHz band. Electronic manufacturers called on the EU to promote industry collaboration.

The RSPG 2013 Report on a 'Proposed spectrum coordination approach for broadcasting in the case of a reallocation of the 700 MHz band' concluded that the reallocation would be significantly disruptive for broadcasting services, which would be affected in different ways across the EU, as well as within the Member States. The RSPG therefore recommended that a period of more than three years would be needed to conclude cross-border coordination agreements, and that bilateral and multilateral coordination was essential to reach harmonisation.

In 2014, the Commission ordered a study on the 'Challenges and opportunities of broadcast-broadband convergence and its impact on spectrum and network use', which examined broadcast-broadband convergence. Currently this convergence is focused on combining broadcast and fixed broadband through the development of connected TVs and hybrid services. The study concluded that there is currently no case for policy interventions which would help to extend this convergence to broadcast and mobile broadband, since costs incurred are not guaranteed to be offset by the benefits from extra spectrum freed in the process.

In 2015, the RPSG issued an opinion on a 'Long-term strategy on the future use of UHF band (470-790 MHz) in the European Union', in which it supported making the 700 MHz band available for wireless broadband services by the end of 2020, and encouraged Member States to start preparations as soon as possible.

The same year, the Commission tendered an independent study on the 'Economic and Social Impact of Repurposing the 700 MHz frequency band for Wireless Broadband Services in the European Union', which estimated that clearing the 700 MHz band in 2020 and upgrading to the next generation of terrestrial broadcasting technology would cost between €1.2 and €4.4 billion. Upgrading the reception equipment between now and 2020, which is likely to occur, for the majority of consumers within a normal replacement

cycle, would represent the majority of these costs. The adaptation of DTT networks across the EU is estimated to cost, at the most, €890 million.

The Commission Impact Assessment accompanying the proposal considered four options: (i) no EU-level action, (ii) releasing 700 MHz band for wireless broadband and keeping sub-700 MHz exclusively for DTT and PMSE, (iii) releasing the 700 MHz band for wireless broadband and keeping sub-700 MHz for DTT and PMSE, with a possibility of downlink-only alternative transmission, and (iv) designating the whole UHF band for wireless broadband communication. The Commission selected option three, arguing that it frees up the spectrum while safeguarding the long-term interests of broadcasters. Furthermore it is compatible with the outcome of WRC-15. The Commission also noted that a conservative estimate of the overall revenues from spectrum auctions of the 700MHz band in the EU would be around €11 billion by 2020.

The European Parliamentary Research Service, in its Initial Appraisal of the Commission's Impact Assessment concluded that the combination of qualitative and quantitative measures deployed by the Commission appears to constitute a well-grounded basis for the policy choices made in the proposal.

The changes the proposal would bring

Currently, the rest of the UHF band (470-790 MHz) is used mainly for (i) Digital Terrestrial Television (DTT) transmission (TV broadcasting); and (ii) for programme making and special events (PMSE), namely wireless microphones. France and Germany have already authorised the use of the 694-790 MHz band for mobile services, while Denmark, Finland, Sweden and the United Kingdom have outlined plans to reassign the band in the course of the next few years. The Commission proposal introduces two main changes:

- a schedule for making **the 694-790 MHz band** available for mobile services by 30 June 2020;
- long-term priority for the distribution of audio-visual media services **in the 470-694 MHz band**.

According to the proposal, the Member States will also have the flexibility to deploy alternative technologies in the 470-694 MHz band. However, these will be limited exclusively to unidirectional transmission to receiving devices such as TV sets or tablets (known as downlink-only transmission), to ensure efficient spectrum use. This is proposed to accommodate varying situations in the EU. Some Member States hardly use the 470-694 MHz for DTT, and are therefore able to deploy alternative transmission in the frequency band, while other countries, as heavy users of DTT, are provided with a safeguard that alternative use is limited.

By 30 June 2017, Member States will adopt and make their national roadmaps on the transition process public. These roadmaps will contain information on activities and timescales for frequency re-planning, necessary technical developments, the co-existence of radio and non-radio equipment, and existing and new authorisation regimes. They will also include information on the possible compensation for migration costs, so that these costs are not entirely supported by end-users. By 31 December 2017, Member States are to finalise the cross-border frequency coordination agreements within the EU, paving the way for the upcoming use of the 700 MHz band without cross-border interference. By 30 June 2020 at the latest, Member States will allow the effective use of the 700 MHz band for wireless broadband under harmonised technical conditions.

Table 1 – Status of the UHF (470-862 MHz) band in the EU

Frequency	470 MHz	694 MHz	790 MHz	862 MHz
ITU framework	**DTT (potential candidate for Wireless Broadband)**	**DTT and Wireless Broadband use**		
Present situation	**Broadcasting – DTT and PMSE use**		**Wireless Broadband**	
New proposal	**Preference for DTT and PMSE**	**Wireless Broadband**		

Data Source: European Commission, ITU.

The 694-790 MHz band is considered helpful in providing high-quality internet access to users, even in rural areas, due to its technical qualities, such as good territorial reach and easy penetration of obstacles (e.g. buildings). Therefore, the Commission expects that, as a result of its proposal, internet coverage in both rural and urban areas will improve in terms of quality and reach. Providers will be able to offer faster and better quality broadband, and should be prepared to roll-out 5G services once the standards and equipment are available.

On the other hand, in order to move DTT to the 470-694 MHz band, the broadcasters will need to use more spectrum-efficient compression and transmission technologies. In addition, other stakeholders, such as network operators, users of wireless microphones and individual users, will need to implement technological improvements. The Commission proposal outlines how assistance with the related costs can be provided by state aid under certain conditions. Nevertheless, the Commission estimates that consumers who do not change their equipment by 2020 may need to bear the costs of a new box to be able to receive DTT services (costing around €40) and, in some cases, of a new antenna (around €100). Member States may help consumers to cope with these costs, as long as such assistance complies with the principle of technological neutrality, the EU state aid principles and EU case law.

Advisory committees

The **European Economic and Social Committee** adopted its opinion on the proposal in May 2016. The EESC welcomed the Commission's proposal, arguing that it would help mobile operators to provide wireless services as well as reduce the geographical digital divide through increased coverage of rural areas and higher transmission speeds. The Committee however expressed concerns about the possible transfer of costs of technological change that the proposal could pass onto consumers. According to the EESC, this could lead to the exclusion of vulnerable people from participation in the new digital drive. The Committee therefore called on the Member States to establish a support scheme aimed at mitigating this risk.

National parliaments

The subsidiarity deadline for national parliaments to submit comments on the proposal passed on 30 March 2016. A number of parliaments examined the proposal, but no subsidiarity concerns have been reported.

Stakeholders' views

This section aims to provide a flavour of the debate and is not intended to be an exhaustive account of all different views on the proposal. Additional information can be found in related publications listed under 'EP supporting analysis'.

The European Telecommunications Network Operators' Association released a joint statement on behalf of the telecoms industry, in which it supported the Strategy and the

inclusion of the principles of service and technology neutrality in the text. The Association called on the Member States to be flexible regarding the conditions of spectrum use and to make efforts to achieve successful coordination with non-EU countries. They also urged the Commission and the Member States to carry out spectrum policy reform which would result in stronger coordination of spectrum management at EU-level.

Analysys Mason, experts in telecoms, media and technology, argued that freeing the 700 MHz band for wireless internet has benefits, including mobile network cost savings and better coverage, capacity and network performance. However, the drawbacks are important for incumbent users of the 700 MHz band (DTT and PMSE) and include incurring costs of modifications to DTT networks and equipment replacement. They also see the risk of broadcasting fewer channels or introducing lower quality broadcasts as a consequence of the proposal.

The European Broadcasting Union expressed its concerns regarding the proposal, stating that it places a heavy burden on broadcasters. Broadcasters would need to make costly investments in their infrastructure, and the strict deadline makes the transition challenging. Furthermore, the broadcasters argued that the Commission had allowed introduction of the downlink-only alternative prematurely, as it has not yet been validated by technical studies and market demand. The broadcasters also considered that the 2020 deadline is too short, as it would neither allow sufficient time to upgrade their DTT networks nor for consumers to upgrade their equipment. Many broadcasters also argued that the mobile industry is acting too quickly in order to obtain low frequency spectrum, which is unnecessary considering it only recently obtained the 800 MHz band.

Broadcast Network Europe called on the Commission, EP and Council to guarantee access of DTT services to the sub-700MHz band until at least 2030. They also argued that the deadline for making the 700 MHz band available for wireless broadband should be extended until the end of 2022 and that DTT services should receive compensation for the migration of their services, to be agreed at the Member State level. The broadcasters asserted that less spectrum for DTT would lead to higher costs for citizens, affect local creative industries and put at risk competition, pluralism, social inclusion and diversity.

Legislative process

On 26 May 2016, the Council adopted a general approach on the file. It proposed that the 700 MHz band be allocated to mobile services by 30 June 2020 unless prevented by duly justified reasons (such as harmful interference or coordination problems) in which case an extension of the deadline by up to two years may be granted. The Council also proposed that the sub-700 MHz band be available for DTT and PMSE until at least 2030, according to national needs.

The ITRE Committee adopted its report on 10 November 2016 (rapporteur Patrizia Toia, S&D, Italy). The committee underlined that spectrum is a public good and that it needs to be available for successful launch and development of 5G networks. The report asks for the possibility to delay (on the basis of fully justified reasons, listed in the annex to decision) the availability of the 700 MHz band for up to two years beyond the 2020 deadline. These reasons need to be mentioned in the national roadmaps, the deadline for which would be extended to 30 June 2018. The committee called on the Member States to ensure availability of the sub-700 MHz band until 2030 for terrestrial provision of broadcasting services, including free television and innovative user-driven initiatives, while respecting technological neutrality.

Agreement was found in the first trilogue meeting on 14 December. This was confirmed by the Member States' ambassadors on 20 January and by the ITRE Committee on 26 January 2017. The compromise text was formally approved by Parliament as a whole on 15 March and by the Council on 25 April. The final act was published in the Official Journal on 25 May 2017.

Under the agreement the Member States will reassign the 694-790 MHz band by 30 June 2020. This reallocation may be delayed by up to two years in duly justified cases, examples of which are given in the agreed text. Broadcasting services will maintain priority in 470-694 MHz band at least until 2030, but the Member States will have certain flexibility to use this range for other purposes, including mobile broadband, as long as the use is compatible with broadcasting needs and respects technological neutrality. The reasons for delay should be limited to unresolved cross-border coordination issues resulting in harmful interference, the need to ensure technical migration of a large amount of the population to advanced broadcasting standards, the financial costs of transition exceeding the expected revenue generated by award procedures, and *force majeure*. Furthermore, other Member States need to be informed about the delays and the reasons must be included in national roadmaps. Member States are also obliged to take all necessary steps to minimise resulting harmful interference. The Commission is to provide guidelines for compensation only on the request of the Member State.

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