Commission Implementing Decision (EU) 2019/235 of 24 January 2019 on amending Decision 2008/411/EC as regards an update of relevant technical conditions applicable to the 3400-3800 MHz frequency band (notified under document C(2019) 262) (Text with EEA relevance)

COMMISSION IMPLEMENTING DECISION (EU) 2019/235

of 24 January 2019

on amending Decision 2008/411/EC as regards an update of relevant technical conditions applicable to the 3 400-3 800 MHz frequency band

(notified under document C(2019) 262)

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code[(1)],

Having regard to Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision)[(2)], and in particular Article 4(3) thereof,

Whereas:

(1) Commission Decision 2008/411/EC[(3)] harmonises the technical conditions for using the spectrum in the 3 400-3 800 MHz frequency band for the terrestrial provision of electronic communications services in the Community and was amended by Commission Implementing Decision 2014/276/EU[(4)].

(2) Article 6(3) of Decision No 243/2012/EU of the European Parliament and the Council[(5)] establishing a multiannual radio spectrum policy programme, requires Member States to help providers of electronic communication services regularly upgrade their networks to the latest, most efficient technology, in order to create their own spectrum dividends in line with the principles of service and technological neutrality. Initial commercial deployments around the world of next-generation (5G) terrestrial systems are expected as of 2020.

(3) The Commission's Communication ‘Connectivity for a Competitive Digital Single Market — Towards a European Gigabit Society’[(6)] sets out new connectivity objectives for the Union to be achieved through the widespread deployment and take-up of very high capacity networks. To this end, the Commission's Communication ‘5G for Europe: An Action Plan’[(7)] identifies the need for action at the EU level, including the identification and harmonisation of spectrum for 5G based on the opinion of the Radio

Spectrum Policy Group (RSPG), in order to ensure the objective of uninterrupted 5G coverage in all urban areas and major terrestrial transport paths by 2025.

(4) In its 'Strategic roadmap towards 5G for Europe: Opinion on spectrum related aspects for next-generation wireless systems (5G)'[(8)], the Radio Spectrum Policy Group (RSPG) identifies the 3 400-3 800 MHz frequency band as the primary pioneer band for 5G use in the Union.

(5) In its complementary opinion 'Strategic roadmap towards 5G for Europe: RSPG second opinion on 5G networks'[(9)], the RSPG acknowledges that the availability of the primary 5G band, 3 400-3 800 MHz, will be key for the success of 5G in the Union. It therefore urges Member States to consider appropriate measures to defragment this band in time to authorise sufficiently large blocks of spectrum by 2020.

(6) The European Electronic Communications Code requires Member States to allow the use of 3 400-3 800 MHz band for terrestrial systems capable of providing next generation (5G) wireless broadband electronic communication services by 31 December 2020. It also requires Member States to take all appropriate measures to facilitate the roll-out of 5G, including reorganising the 3 400-3 800 MHz band to allow sufficiently large blocks of spectrum. Therefore, to enable the roll-out of 5G, a timely amendment of the harmonised technical conditions is necessary.

(7) In December 2016, pursuant to Article 4(2) of Decision No 676/2002/EC, the Commission gave the European Conference of Postal and Telecommunications Administrations (CEPT) a mandate to develop harmonised technical conditions for spectrum use in support of the introduction of next-generation (5G) terrestrial wireless systems in the frequency bands 3 400-3 800 MHz and 24,25-27,5 GHz in the Union.

(8) In response to that mandate, on 9 July 2018 the CEPT issued a report (CEPT Report 67) on the technical conditions for spectrum harmonisation in support of the introduction of next generation (5G) terrestrial wireless systems in the 3 400-3 800 MHz frequency band. CEPT Report 67 provides harmonised technical conditions for both non-active antenna systems (non-AAS) and active antenna systems (AAS), which are terrestrial wireless systems capable of providing wireless broadband electronic communications services under synchronised, semi-synchronized and unsynchronised operations. It also calls for the co-existence of wireless broadband electronic communications services with services in adjacent bands (below 3 400 MHz and above 3 800 MHz).

(9) The results of CEPT Report 67 should be applied across the Union and implemented by the Member States without delay. This will foster the use of the entire 3 400-3 800 MHz frequency band with the aim of putting the Union at the forefront of 5G deployment. When applying this implementing Decision, Member States should choose their preferred next generation (5G) terrestrial wireless systems based on either synchronised, semi-synchronised and unsynchronised network operations and ensure an efficient use of spectrum. Member States should also take into account the results of the ECC Report 296 on synchronisation.

(10) Taking into account Article 54 of the European Electronic Communications Code, Member States should aim at ensuring a defragmentation of the 3 400-3 800 MHz

frequency band so as to provide opportunities to access large portions of contiguous spectrum in line with the goal of gigabit connectivity. This includes facilitating trading and/or leasing of existing rights of use. Large contiguous spectrum portions of preferably 80-100 MHz facilitate the efficient deployment of 5G wireless broadband services, for example using Active Antenna Systems (AAS), with high throughput, high reliability and low latency in line with the policy objective of gigabit connectivity. This objective is of particular importance for a defragmentation.

(11) The legal framework for using the 3 400-3 800 MHz frequency band set out by Decision 2008/411/EC should remain unchanged in terms of ensuring continued protection of existing services, other than terrestrial electronic communications networks, within the band. In particular, if retained in the band, earth stations in the fixed satellite service (FSS, space-to-earth) should be given continued protection through appropriate coordination between those systems and wireless broadband networks managed at national level on a case-by-case basis.

(12) CEPT's Electronic Communications Committee (ECC) has issued the ECC Report 254, which provides guidance to Member States on the coexistence between wireless broadband electronic communication services, fixed services (FS) and FSS in the 3 600-3 800 MHz frequency band. Further guidance to operators and administrations for the operation of 4G and 5G networks in the same or in adjacent channels, while ensuring an efficient use of spectrum with a view to network synchronisation, are provided in ECC report 296.

(13) Cross-border agreements may be necessary to ensure that Member States implement the parameters set by this Decision, thus avoiding harmful interference and improving spectrum efficiency and non-fragmentation in spectrum use.

(14) Decision 2008/411/EC should therefore be amended accordingly.

(15) The measures provided for this Decision are in accordance with the opinion of the Radio Spectrum Committee,

HAS ADOPTED THIS DECISION:

Article 1

Decision 2008/411/EC is amended as follows:

(1) in Article 2, paragraph 1 is replaced by the following:

1. Without prejudice to the protection and continued operation of other existing use in this band, when Member States designate and make available, on a non-exclusive basis the 3 400-3 800 MHz frequency band for terrestrial electronic communications networks, they shall do so in compliance with the parameters set out in the Annex.;

(2) Article 4a is replaced by the following:

Article 4a

Member States shall report on the application of this Decision on 30 September 2019 at the latest.;

Changes to legislation: *There are currently no known outstanding effects for the Commission Implementing Decision (EU) 2019/235. (See end of Document for details)*

(3) the Annex is replaced by the text in the Annex to this Decision.

Article 2

This Decision is addressed to the Member States.

Done at Brussels, 24 January 2019.

For the Commission

Mariya GABRIEL

Member of the Commission

***Changes to legislation:** There are currently no known outstanding effects for the Commission Implementing Decision (EU) 2019/235. (See end of Document for details)*

ANNEX

PARAMETERS REFERRED TO IN ARTICLE 2

A.DEFINITIONS

Active antenna systems (AAS) means a base station and an antenna system where the amplitude and/or phase between antenna elements is continually adjusted resulting in an antenna pattern that varies in response to short term changes in the radio environment. This excludes long-term beam shaping such as fixed electrical down tilt. In AAS base stations the antenna system is integrated as part of the base station system or product.

Synchronised operation means operation of two or more different time division duplex (TDD) networks, where simultaneous uplink (UL) and downlink (DL) transmissions do not occur, that is at any given moment in time either all networks transmit in downlink or all networks transmit in uplink. This requires the alignment of all DL and UL transmissions for all TDD networks involved as well as synchronising the beginning of the frame across all networks.

Unsynchronised operation means operation of two or more different TDD networks, where at any given moment in time at least one network transmits in DL while at least one network transmits in UL. This might happen if the TDD networks either do not align all DL and UL transmissions or do not synchronise at the beginning of the frame.

Semi-synchronised operation means operation of two or more different TDD networks, where part of the frame is consistent with synchronised operation, while the remaining portion of the frame is consistent with unsynchronised operation. This requires the adoption of a frame structure for all TDD networks involved, including slots where the UL/DL direction is not specified, as well as synchronising the beginning of the frame across all networks.

Total radiated power (TRP) is a measure of how much power a composite antenna radiates. It equals the total conducted power input into the antenna array system less any losses in the antenna array system. TRP means the integral of the power transmitted in different directions over the entire radiation sphere as shown in the formula:

$$TRP \stackrel{\text{def}}{=} \frac{1}{4\pi}\int_0^{2\pi}\int_0^{\pi} P(\theta,\varphi)\sin(\theta)d\theta d\varphi$$

where P(θ,φ) is the power radiated by an antenna array system in direction (θ,φ) given by the formula:

$P(\theta,\varphi) = P_{Tx}g(\theta,\varphi)$

where P_{Tx} denotes the conducted power (measured in Watts), which is input to the array system, and g(θ,φ) denotes the array systems directional gain along the (θ, φ) direction.

B. GENERAL PARAMETERS

Within the 3 400-3 800 MHz frequency band:

1. the duplex mode of operation shall be time division duplex (TDD);

2. the assigned block sizes shall be in multiples of 5 MHz. The lower frequency limit of an assigned block shall be aligned with or spaced at multiples of 5 MHz from the lower band edge of 3 400 MHz[(10)];