



**MANDATE TO THE CEPT TO DEVELOP HARMONISED TECHNICAL AND
OPERATIONAL CONDITIONS FOR THE USAGE OF NON-ACTIVE ANTENNA SYSTEMS
AERIAL TERMINAL STATIONS IN EU-HARMONISED FREQUENCY BANDS FOR
TERRESTRIAL SYSTEMS CAPABLE OF PROVIDING ELECTRONIC COMMUNICATIONS
SERVICES**

1. PURPOSE

The purpose of this mandate to the CEPT is the feasibility study and development of harmonised technical and operational conditions, for the usage¹ of aerial terminal stations (ATS)² in EU-harmonised bands for terrestrial systems capable of providing electronic communications services. The mandate addresses the following frequency bands: 700 MHz, 800 MHz, 900 MHz, 1 800 MHz, the paired terrestrial 2 GHz band and 2.6 GHz (both, its paired and unpaired portions). It sets focus on the latest generations of mobile communications technology, namely 4G/LTE and 5G, given their tailored performance characteristics. The deliverables of the work on this mandate will be used in support of an EU-level technical harmonisation measure under the Radio Spectrum Decision (Decision 676/2002/EC³).

2. EU POLICY OBJECTIVES

The EU's digital decade policy programme⁴ sets ambitious connectivity targets and infrastructure priorities in support of the digital and green transformation.

There has been a big increase in demand across the Member States for the operation of ATSs over large distances under beyond-visual-line-of-sight (BVLOS) conditions, mainly for professional purposes, such as industrial and governmental use cases (e.g. pipelines inspections, agriculture fields monitoring, assistance in search and rescue missions) based on the most advanced mobile communication technologies (4G/LTE and 5G). The ATS is intended for wireless communications with base stations of terrestrial systems providing

¹ Currently under study by ETSI, there is need for a mechanism to differentiate between an aerial terminal station and a conventional User Equipment. This mechanism cannot be changed by the end-user and is necessary to ensure that aerial terminal stations respect no-transmit zones.

² For the purpose of this mandate and its follow-up, the term aerial terminal station (ATS) is used instead of "aerial UE", term which has been used in the CEPT studies and harmonisation initiative related to this topic and cited in this mandate. This clarification keeps terminology consistent with the EU legal framework.

³ Decision 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, OJ L 108, 24.4.2002, p. 1.

⁴ Decision (EU) 2022/2481 of the European Parliament and of the Council of 14 December 2022 establishing the Digital Decade Policy Programme 2030, OJ L 323, 19.12.2022, p. 4.

electronic communications services⁵, using EU-harmonised frequency bands. Usage of 4G/LTE and 5G technology provides high data rate, low latency, large system capacity and robust reliability, which are necessary for the operation and data exchange of ATSS. In this regard, the Commission Communication ‘5G for Europe: an Action Plan’⁶, calls for appropriate steps for the future evolution of the overall network architecture to respond to new use cases arising in key industrial sectors.

Establishing harmonised technical and operational conditions for terrestrial wireless communications with ATSS will contribute to the development of the internal market, contribute to addressing safety issues (e.g. avoiding risks for workers linked to dangerous inspections or critical missions) and ensure radio coexistence with other users. At the CEPT level, following the results of the ECC Reports 309 and 348, on 18 November 2022 the ECC adopted its ECC Decision (22)07 which sets out harmonised technical conditions for the provision of connectivity to non-AAS ATS based on 4G/LTE and 5G New Radio (NR) technology by terrestrial systems providing electronic communications services using the following EU-harmonised bands:

- 700 MHz, 800 MHz, 900 MHz, 1 800 MHz, the paired terrestrial 2 GHz band and the paired/unpaired portion of the 2.6 GHz band with non-AAS base stations.
- 1 800 MHz, the paired terrestrial 2 GHz band and the paired/unpaired portion of the 2.6 GHz band with AAS base stations.

Therefore, it is appropriate to further develop the EU framework and ensure its alignment with the CEPT framework.

3. JUSTIFICATION

Pursuant to Article 4 of the Radio Spectrum Decision, the CEPT is mandated to undertake the work required to study and develop harmonised technical and operational conditions for the operation of ATSS under the control of wireless terrestrial systems capable of providing electronic communications services, such as mobile networks (as of the fourth generation onwards) using EU-harmonised bands on the basis of the principles of technology and service neutrality laid down in the European Electronic Communications Code⁷.

For the purpose of this mandate, an ATS can be installed either on board of an unmanned aircraft (e.g. a drone) or on board of a manned aircraft (e.g. helicopters). This mandate deals exclusively with the development of harmonised technical and operational conditions (under the Radio Spectrum Decision) for wireless communications within EU-harmonised bands, between ATSS and terrestrial systems providing electronic communications services, such as mobile networks. It is without prejudice to EU-level and national regulations regarding civil aviation and flight operations.

⁵ Possibly also other types of base stations in the future.

⁶ Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions ‘5G for Europe: An Action Plan’, COM(2016) 588 final.

⁷ 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.

4. TASKS AND SCHEDULE

The CEPT is hereby mandated to undertake a study with regard to the following tasks.

Task 1

Assess the feasibility and the relevant conditions of radio communications between non-AAS ATs based on **4G/LTE and 5G NR technology** and wireless terrestrial systems capable of providing electronic communications services using the EU-harmonised frequency bands:

- 703-733 MHz/758-788 MHz ('700 MHz'), 791–821 MHz/832-862 MHz ('800 MHz'), 880-915 MHz/925-960 MHz ('900 MHz'), 1710-1785 MHz/1805-1880 MHz ('1 800 MHz'), 1920-1980 MHz/2110-2170 MHz ('paired terrestrial 2 GHz'), 2500-2570 MHz/2620-2690 MHz ('paired 2.6 GHz') and 2570-2620 MHz (unpaired 2.6 GHz), with non-AAS terrestrial base stations.
- 1710-1785 MHz/1805-1880 MHz ('1 800 MHz'), 1920-1980 MHz/2110-2170 MHz ('paired terrestrial 2 GHz'), 2500-2570 MHz/2620-2690 MHz ('paired 2.6 GHz'), 2570-2620 MHz (unpaired 2.6 GHz) with AAS terrestrial base stations.

Task 2

Pursuant to the outcome of Task 1, develop least restrictive harmonised technical and operational conditions for the radio communications between non-AAS ATs based on 4G/LTE and 5G NR technology and wireless terrestrial systems capable of providing electronic communications services using the related EU-harmonised bands. These conditions should be consistent with the existing EU regulatory framework applicable to the frequency bands under consideration. They should ensure interference mitigation and appropriate co-existence with incumbent radio services/applications in the same band and in adjacent bands, in line with the regulatory status of these services/applications.

The CEPT may develop appropriate receiver characteristics for radio equipment as part of the harmonised technical conditions. Based on such harmonised technical and operational conditions, the CEPT may further recommend to ETSI to consider the results of this study when developing relevant harmonised standards.

The CEPT should provide deliverables according to the following schedule:

Delivery date	Deliverable	Subject
November 2024	Draft Report from the CEPT to the Commission.	Description of work undertaken and final results subject to public consultation.
March 2025	Final Report from the CEPT to the Commission, taking into account the outcome of the public consultation.	Description of work undertaken and final results.

The CEPT is requested to report on the progress of its work pursuant to this mandate to all meetings of the Radio Spectrum Committee taking place during the course of the mandate.

The Commission, with the assistance of the Radio Spectrum Committee and pursuant to the Radio Spectrum Decision, may consider applying the results of this mandate in the EU, pursuant to Article 4 of the Radio Spectrum Decision.

