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RADIO SPECTRUM POLICY GROUP

DRAFT Opinion on WRC-27

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RSPG Opinion on WRC-27

1. Introduction

1.1 Role of RSPG

The role of the Radio Spectrum Policy Group (RSPG) is to assist and advise the European Commission on radio spectrum policy issues. This includes advice on the coordination of policy approaches, on the preparation of multiannual radio spectrum policy programmes and, where appropriate, on harmonised conditions with regard to the availability and efficient use of radio spectrum necessary for the establishment and functioning of the internal market. In particular, the RSPG *"[…] shall assist the Commission in its preparatory work on proposals to the Council for the adoption of decisions in accordance with Article 218(9) of the Treaty on the Functioning of the European Union establishing the positions to be adopted on the Union's behalf in international organisations competent in radio spectrum matters."*[1]

The RSPG notes that under the principle of subsidiarity, in areas which do not fall within its exclusive competence, the Union shall act only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local levels, but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level. The reasons for concluding that a Union objective can be better achieved at Union level shall be substantiated by qualitative and, wherever possible, quantitative indicators. Draft European legislative acts shall take account of the need for any burden, whether financial or administrative, falling upon the Union, national governments, regional or local authorities, economic operators, and citizens, to be minimised and commensurate with the objective to be achieved.

1.2 Scope of this Opinion

This Opinion on WRC-27 addresses the following matters regarding the preparation of the next ITU World Radiocommunication Conference in 2027 (WRC-27) in accordance with the legal European framework:

- an analysis of the WRC-27 Agenda taking into account policy objectives of the Union and existing EU harmonisation decisions;
- the relevant EU radio spectrum policy issues in the context of sector-specific and/or horizontal European Union policies (see sections 1.4 and 2)
- identification of Agenda items including in their current preparation within CEPT[2], with regards to whether or not a decision by WRC-27 may affect common EU rules.

1.3 World Radiocommunication Conference (WRC) 2027

The next WRC is planned to be held in 2027 (18th October to 12th November 2027) and will be the culmination of several years of preparatory work within the International Telecommunication Union (ITU). WRC-27 will

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1 Art. 2 (4) of Commission Decision 2019/196/EC on setting up the Radio Spectrum Policy Group and repealing Decision 2002/622/EC.

2 Conference of European Postal and Telecommunication administrations (CEPT)

address necessary revisions of the Radio Regulations (RR)[3], an international treaty between the 194 Member States of the ITU on the use of the radio spectrum and coordination rules to provide access to it.

The RR are applicable to the relationship between ITU Member States. The contained provisions govern the relation between administrations, by setting technical conditions and regulatory procedures to avoid harmful interference into stations of other countries. A specific provision of the RR[4] provides administrations with the latitude to make assignments of any frequency to any type of radio usage, providing that the station using such frequency does not cause harmful interference to and does not claim protection from harmful interference caused by other stations operating in accordance with the RR in another ITU Member State.

Noting the two aspects above, the RR cannot affect the rights of the European Union and its Member States to implement, within their territories, any desired harmonised technical conditions and to make available spectrum for stations of any type of application(s), providing that it does not impact the operation of stations of countries outside the Union.

WRC-27 work will follow an Agenda proposed by the preceding WRC held in 2023 (WRC-23), which was finally adopted by ITU Council as Resolution 1422 (see Annex). This Agenda addresses several questions on the allocation of spectrum to radiocommunication services as defined in the RR. Allocations to radiocommunication services are different from actual implementation and use of spectrum by systems and applications. It is up to each ITU Member State or group of ITU Member States (such as the Member States of the European Union) to decide on the actual use of frequencies in their territories, taking into account the sharing conditions and coordination requirements defined in the RR in order to protect the use of frequencies in other countries.

The preparation of proposals for the conference is done by CEPT, a specialised regional organisation without legal personality comprised of 46 members including the 27 EU Member States. CEPT is also one of the six main regional telecommunication organisations regularly preparing for WRCs and recognised by the ITU in accordance with Resolution 72 (Rev.WRC-19). The preparation of the CEPT is carried out by a working group named Conference Preparatory Group - CPG. This group has the responsibility to develop and agree European Common Proposals (ECPs) for the WRCs, to prepare and approve CEPT Positions and background material in CEPT-Briefs for the members[5] of CEPT national delegations and to coordinate CEPT actions during the course of the conference.

The preparatory proposals are carried out in accordance with guidelines by the ITU and contain specific terminology in relation to the treaty of RR. For example, no change – or as conference proposal order “NOC” – for one Agenda item means that a specific provision or up to the whole RR, whatever is applicable, should be retained without modifications. Besides such treaty related proposals, other proposed actions at ITU level that do not belong to the RR may often allow a conference to decide that no change is the most viable decision. Such decisions then relate often to the follow-up development of ITU-R Resolutions or ITU-R Recommendations that are non-mandatory in their legal nature, but form an integral part of the global technical harmonisation of spectrum management.

1.4 The need for an RSPG Opinion

The RR are key for services of an international nature, such as electronic communications, connectivity, aeronautical, maritime, defence, security, space or research services and are essential in achieving worldwide

[3] Radio Regulations (RR)

[4] See No. 4.4 of Article 4 of the Radio Regulations

[5] Telecommunications Administrations of the 46 European countries

harmonisation of spectrum use. Where worldwide harmonisation cannot be achieved, harmonisation within a Region as defined by the RR[6] may be possible. Such harmonisation potentially translates into economies of scale and an opportunity for the circulation of equipment and the cross-border provision of services (e.g. roaming), thus bringing benefits to the EU economy and citizens.

The importance of the process to modify the RR is reflected in the RSPG Opinion on the preparation of ITU World Radiocommunication Conferences[7] which recommends:

> *"to develop and adopt an RSPG opinion for each WRC […] for the corresponding conference, to be adopted in time for the CPM (i.e. 9 months before WRC);"*

Therefore, it is important that the EU and its Member States identify as early as practicable relevant EU policies in relation to WRC-27 Agenda items (see section 2 of this Opinion). Since the RR relate to the right of individual administrations to provide access to spectrum and not to harmonised technical conditions within the EU, the modifications of the RR cannot affect the EU common rules on spectrum. On the other hand, EU Member States are obliged to support EU policies deriving from EU law at international fora. As such, the RSPG has to identify relevant EU policies and EU law to provide advice on the EU position towards WRC-27. Finally, the RSPG has to consider elements on which the Member States would like to set common objective(s) for WRC-27.

1.5 Towards WRC-27

It should be noted that the advice from RSPG has to balance satisfying EU policies with those interests not subject to an EU policy across the WRC-Agenda. In addition, there might be cases where negotiations at WRC require balancing among the EU policies.

Therefore, the aim of the preparatory activities of RSPG is to:

- assist the European Commission in developing a proposal for a Council Decision on the EU position(s) for WRC-27;
- provide guiding material for the development of ECPs within CEPT;
- identify actions for the European Commission, as necessary, in order to provide political support to promote European Union position(s) in regular meetings between EC and non-EU countries;

As with previous RSPG opinions addressing WRCs and following the previous successful practice to address EU policy interest most efficiently, the RSPG opinion on WRC-27 will be developed in two stages:

Stage 1: The Interim Opinion identifying the main Agenda items of WRC-27 where there is an EU policy in place as well as relevant spectrum harmonisation decisions[8];

Stage 2: Based on the results of stage 1, the development of a final Opinion containing information on the main Agenda items based on emerging results from studies conducted in the overall framework of WRC-27 preparation and advice on common positions for those Agenda items.

The final Opinion will – in particular – address the following:

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6 See No. 5.2 of Article 5 of the Radio Regulations

7 See RSPG09-294

8 "Spectrum harmonisation decisions" encompass Implementing Decisions on technical harmonisation as well as other decisions.

- recommendation(s) of an appropriate course of action during the preparation towards WRC-27 for Agenda items identified as:

  Case a) which require an EU position to be proposed by the European Commission for adoption by the Council because a WRC decision may affect common rules.

  Case b) for which an EU position to be proposed by the European Commission for adoption by the Council is desirable in the view of RSPG (e.g. common rules are expected in the future or essential EU policy objectives).

- if necessary, recommendation(s) of an appropriate course of action by the Member States for instances where RSPG notes an emerging convergence of views, but where an EU position is not required.
- the extent to, and manner in which the public has been consulted with regard to the issue under consideration.

2. Identification of relevant EU Policies for WRC-27

The identification of EU policies relevant to WRC-27 Agenda items is a complex task. Agenda items are formulated in terms of allocations to radiocommunication services as defined in the RR (e.g. mobile, fixed, fixed-satellite, broadcasting services, etc.) and conflicting interests may exist between users of these services. Changes to the international regulatory framework, as addressed through an Agenda Item, generally have an impact on several radiocommunication services and may require a thorough analysis of current EU policies.

Some Agenda items are broad in nature and it may not be possible to determine all relevant policies impacted (e.g. for those Agenda items which are not limited to specific frequency bands). Moreover, Member States will have to balance the need for a new allocation for some radiocommunication services against the need for continuing operation and protection of other services in the same frequency range. In order to provide a strategic input to the preparation on WRC-27 through this Opinion process, the RSPG has made every effort to balance these interests.

The EU policy areas relevant to WRC-27 Agenda items are described in the following subsections.

2.1 Union Space Policy

The Union Space Policy addresses some of the most pressing challenges today, such as fighting climate change, stimulating technological innovation, and providing socio-economic benefits to citizens.

In accordance with the Union Space Policy, space and satellite communications can improve connectivity for Europe's digital society and economy in various ways, including by connecting people and assets in remote and offshore areas, or as part of future 5G/6G networks. In addition, numerous applications and services will use data collected from space that will also require uninterrupted connectivity. The Union is also aiming to develop a European competitive, independent, and globally acting space industry to preserve its leadership in space.

The components of Programmes under the Union Space Policy, which are potentially affected by decisions to be made at WRC-27, are listed in the following subsections.

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2.1.1 Copernicus

The Copernicus component of the Union Space Programme[9] ensures autonomous access to environmental knowledge and key technologies for Earth observation and geo-information services. It supports the EU to achieve independent decision-making and actions in the fields of, inter alia, the environment, climate change, marine, agriculture and rural development, preservation of cultural heritage, civil protection, land and infrastructure monitoring, security, as well as the digital economy.

The following Copernicus missions are specifically relevant for WRC-27:

- The Copernicus Imaging Microwave Radiometer (CIMR) mission, one of the six high-priority Copernicus missions, will measure sea-ice concentration, sea-surface temperature, sea-surface salinity and snow. It provides evidence of climate change and impact in the Polar Regions, with a focus on the Arctic.
- The Copernicus Sentinel-3 systematically measures Earth's oceans, land, ice and atmosphere to monitor and understand large-scale global dynamics. It provides essential information in near-real time for ocean and weather forecasting.
- The Copernicus Sentinel-6 measures sea surface height. The data are used for weather forecasting and seasonal forecasting models, and to forecast the development and track of hurricanes.
- The Copernicus Polar Ice and Snow Topography Altimeter (CRISTAL), one of the six high-priority missions of the Copernicus programme, will measure and monitor sea-ice thickness, overlying snow depth and ice-sheet elevations, thereby supporting maritime operations in the polar oceans and contribute to a better understanding of climate processes.

2.1.2 Space Situational Awareness

Under the Space Situational Awareness component of the Union space programme, the Space Weather Events (SWE) sub-component aims at assessing the space weather risks and corresponding user needs, raising the awareness of space weather risks, ensuring the provision of user-driven SWE services, and improving Member States' capabilities to provide the SWE services. Space weather observations, predictions and early warnings allow users to assess risks posed by SWE and to undertake mitigating actions, for example to prevent power grid failures, damage to satellites or exposures to harmful radiation, etc.[10]

2.1.3 GOVSATCOM

The Governmental Satellite Communications (GOVSATCOM) component of the Union Space Programme provides secure, resilient, and cost-efficient satellite communications capabilities to security and safety-critical missions and governmental operations managed by the EU and its Member States, including national security actors and EU Agencies and institutions. It is implemented in close collaboration with EU Member States, with the EU Agency for the Space Programme (EUSPA), the European External Action Service (EEAS), the European Space Agency (ESA), and with many other EU agencies and actors. GOVSATCOM pools existing capacities of Member State governmental and commercial satellite communication providers and shares that capacity with authorised governmental users to provide an appropriate level of European non-dependence in terms of technologies, assets, operations, and services. GOVSATCOM will provide support to several EU policies but, before all, it will strengthen the EU's capacity to protect its citizens.

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9 Regulation (EU) 2021/696

10 See JRC Science for Policy Report "Space weather & Critical Infrastructures: Findings and Outlook"

2.1.4 GALILEO

Galileo, another component of the Union Space Programme, is the Union's autonomous civil global navigation satellite system (GNSS), ensuring the Union's strategic autonomy in satellite navigation. Besides a free Positioning, Navigation, and Timing (PNT) service with down to 1 meter accuracy, Galileo provides, inter alia, a real-time precise positioning service with down to 20 cm accuracy, for utilisation with many and varied use cases such as farm machinery positioning, drone positioning, autonomous vehicle operation, in addition to providing support for life-saving missions (which can allow for the location of people in distress in less than 10 minutes) and service continuity during emergencies or crisis situations for governmental use, such as defence, civil protection, customs officer and police services.

2.1.5 IRIS²

The **EU secure connectivity programme (2023–2027)**[11] aims at deploying Infrastructure for Resilience, Interconnectivity and Security by Satellite (IRIS²), an EU satellite multi-orbital constellation. It is set to provide secure connectivity services to the EU and its Member States, as well as broadband connectivity for governmental authorities, private companies, and European citizens, while ensuring high-speed internet broadband to cope with connectivity dead zones. It will provide EU Member States with ultra-fast, low-latency and highly secure, sovereign, and global connectivity services that match their operational needs, such as protection of critical infrastructure, surveillance and support for external action or crisis management, along with military applications. IRIS² will also enable the provision of a commercial infrastructure to provide high-speed broadband and seamless connectivity in the EU and in geographical areas of strategic interest beyond European borders, such as the Arctic region and Africa. In December 2024, the Commission signed the concession contract for the realisation of a constellation of 290 MEO and LEO satellites with the SpaceRISE consortium.

2.2 Common Security and Defence Policy

The Common Security and Defence Policy (CSDP) is an integral part of the EU's common foreign and security policy (CFSP). The CSDP is the main policy framework through which Member States can develop a culture of strategic European security and defence, address conflicts and crises together, protect the Union, its values and its citizens, and strengthen international peace and security. Under this policy, a Strategic Compass for Security and Defence[12] aims to better link the EU's strategic, operational and capability needs for a shared vision for EU security and defence, inter alia to contribute to global and transatlantic security (in complementarity to NATO, which remains the foundation of collective defence for the Union).

2.3 Electronic communications and connectivity policy

The Union's policy on electronic communications and connectivity aims to provide very high-capacity broadband connectivity to all European citizens, including when travelling. One of the objectives of the European Electronic Communications Code[13] that, inter alia, sets the general principles and rules of radio spectrum management, is to promote connectivity, access, and the take-up of very high-capacity networks,

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[11] Regulation (EU) 2023/588

[12] A STRATEGIC COMPASS FOR SECURITY AND DEFENCE | EEAS

[13] Directive (EU) 2018/1972

including mobile and wireless networks. The 2002 Radio Spectrum Decision[14] allows the Commission to adopt implementing decisions to harmonise technical conditions with regard to the availability and efficient use of spectrum for the proper functioning of the single market. Additionally, various EU initiatives have been setting connectivity targets; the most recent is the Digital Decade Policy Programme 2030[15], under which *'all end users at a fixed location are covered by a gigabit network up to the network termination point, and all populated areas are covered by next-generation wireless high-speed networks with performance at least equivalent to that of 5G, in accordance with the principle of technological neutrality'*.

2.4 Transport policy

Transport policy aims to create and open transport markets and establish competitive conditions both within individual transport modes (i.e. road, rail, air, maritime) and between them, taking into account, inter alia, transport efficiency and safety.

Decisions to be made at WRC-27 could potentially affect Union civil aviation and maritime transport safety policies.

2.4.1 Civil aviation policy

The European aviation safety policy establishes rules and processes which are used to manage the safety of civil aviation in the Union[16]. Those rules and processes ensure a high and uniform level of safety in civil aviation, and facilitate the free movement of products, services, persons and capital. The European aviation safety management system is based on a close collaboration between the Commission, the European Union Aviation Safety Agency (EASA), Member States, as well as the aviation industry. The high and uniform level of protection of European citizens and of passengers relies primarily on the adoption of common safety rules, and on measures that ensure that products, persons and organisations within the EU comply with such rules.

Air traffic management (ATM) is a central component of the air transport ecosystem and an essential safety- and security-critical infrastructure for Europe, with core functions (communications, navigation and surveillance) enabled by specific spectrum bands. ATM's main objective is to ensure that all types of aircraft fly as safely and efficiently as possible. ATM relies on a complex organisation of procedures and technologies requiring a high level of coordination, harmonisation and interoperability between all stakeholders. It plays a crucial role in supporting economic activities and connecting people across the globe.

The EU policies on ATM are implemented within the Single European Sky (SES) framework that sets EU policy objectives to make the EU airspace less fragmented and improve air traffic management in terms of safety, capacity, cost-efficiency and the environment. The most recent act to update the SES legal framework (SES 2+)[17] was signed on 23 October 2024.

As part of the SES, the European ATM Master Plan is the adopted planning tool for ATM modernisation across Europe. It sets out the vision for the Digital European Sky and defines how solutions from SESAR (Single European Sky ATM Research) have to be implemented to make Europe the most efficient and environmentally friendly sky to fly in the world by 2045. The updated version of the ATM Master Plan was approved by the European Commission, aviation stakeholders and EUROCONTROL in December 2024.

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[14] Decision No 676/2002/EC

[15] Decision (EU) 2022/2481

[16] Regulation (EU) 2018/1139

[17] Regulation (EU) 2024/2803

2.4.2 Maritime transport safety policy

The Union's maritime policy aims to maximise safety and efficiency in the maritime sector, in particular by improving logistics. Safety at sea is a key element of maritime transport policy with a view to protecting passengers, crew members, the marine environment and coastal regions. Given the global nature of maritime transport, the International Maritime Organisation (IMO[18]) develops uniform international standards and agreements. The primary international agreements include the International Convention for the Prevention of Pollution from Ships (MARPOL[19]), the International Convention for the Safety of Life at Sea (SOLAS[20]) and the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW). Regulatory actions made at WRC-19 and WRC-23 supported the modernisation of the Global Maritime Distress and Safety System (GMDSS) as the outcome of the review of the SOLAS convention.

2.4.3 Road transport safety policy

The European Union's road safety policy aims to significantly reduce road fatalities and serious injuries while promoting safer, smarter, and more sustainable mobility across Europe. Through the EU Road Safety Policy Framework 2021–2030[21], the EU has established ambitious targets and encourages Member States to adopt innovative measures that improve road infrastructure, vehicle safety, and traffic management.

Intelligent Transport Systems (ITS) play a key role in achieving these objectives. By using technologies such as real-time traffic monitoring, connected vehicle systems, automated warning solutions, and advanced driver assistance systems, ITS helps prevent accidents, improve traffic flow, and enhance overall transport efficiency. ITS also supports data-driven decision-making and adaptive traffic management, contributing to safer and more resilient road networks throughout the European Union

2.5 Research policy

Horizon Europe[22] is the EU's key funding programme for research and innovation. This programme promotes collaboration, enhancing the benefits of research and innovation in an EU policy (and further international) context. One of the main objectives of the programme is to promote scientific and technological excellence in the EU and to strengthen the European Research Area (ERA). Pillar I of the Horizon 2020 Programme centres around *"Excellent Science"*.

Under this programme, the Joint Institute for Very Long Baseline Interferometry as a European Research Infrastructure Consortium (JIV-ERIC)[23], operates or coordinates various radio astronomy projects. The RADIOBLOCKS project[24] involves 33 major European research infrastructures for radio astronomy and several global facilities are of significant interest to Europe, including the Square Kilometre Array Observatory (SKAO) and the Atacama Large Millimetre Array (ALMA).

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18 International Maritime Organisation (IMO)

19 MARPOL

20 Safety of Life at Sea (SOLAS)

21 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52018DC0293

22 Council Decision (EU) 2021/764

23 Commission Implementing Decision 2014/923/EU

24 RADIOBLOCKS project

Furthermore, it is noted that some European countries are involved in ASTRONET[25], a network of European funding organisations and infrastructures dedicated to providing a strategic plan for all of European astronomy (for which the data collected by both these observatory stations are also used). Moreover, ASTRONET provided, in its roadmap for 2022-2035, priorities in eight different areas covering the following set of observatory facilities: computing and data management, new ground-based facilities, new instruments and facilities upgrades, space-based facilities, laboratory astrophysics, technology development for facilities beyond 2035, sustainability and accessibility and training, education and public engagement.

2.6 Audio visual media policy

The EU audiovisual media policy objective is to create a fair, competitive, and culturally diverse media landscape across Europe while protecting viewers—especially children—and promoting European content. It fosters cooperation of Member States' audiovisual policies and covers areas of significant societal impact such as safeguarding pluralism and preserving cultural diversity. It further supports EU policies on cohesion, enlargement, neighbourhood and trade relations. A pillar of this policy, the Audiovisual Media Services Directive (AVMSD), governs EU-wide coordination of national legislation on all audiovisual media – traditional TV broadcasts and on-demand services – and includes specific rules for media distribution, with stricter rules applying for TV broadcasting in certain areas such as the protection of minors, promotion of European works, events of major importance and right of reply, advertisement, due to their impact on society. The European Commission is proposing a revision of the AVMSD under the European Democracy Shield, to pursue a stronger and more prominent EU media sector for the resilience of our democracies, including appropriate visibility for European media, a better level playing field between traditional and new digital players, and adequate protections for viewers.

3. Response to public consultation

A public consultation is planned on the draft Final Opinion in June 2026. Received comments will be considered when elaborating the final Opinion and the result will be outlined in this section.

It should be noted that, where made, the proposed RSPG Recommendations identified under Section 4 for the relevant Agenda items are based on the understanding that accurate and appropriate information has been supplied by relevant stakeholders to ongoing studies (e.g. provided to CEPT, ITU, etc.).

4. Identification of relevant EU policies and EU legislation

The RSPG is of the opinion that the following specific WRC-27 Agenda items are of relevance for some EU policies which are referenced under section 2. This identification is based on the objectives of the WRC-27 Agenda items and includes references, if any, to harmonisation decisions under the Radio Spectrum Decision.

It is important to note that the description given in the first section for each of the respective Agenda item seeks solely to provide the background and motivations for that particular Agenda item. The RSPG recommendation for each Agenda Item is given in the last subsection for that specific Agenda Item, at its Final Opinion.

[25] ASTRONET

4.1 WRC-27 Agenda Item 1.1

This Agenda item considers the technical and operational conditions to facilitate the use of the frequency bands 47.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space), or parts thereof, by aeronautical and maritime earth stations in motion (ESIM) communicating with geostationary (GSO) and non-geostationary (NGSO) space stations in the fixed-satellite service (FSS), and developing regulatory measures, as appropriate.

The aim of this Agenda item is to respond to the rapidly increasing demand for in-flight and maritime broadband connectivity.

The existing Resolutions from previous WRCs, such as Resolution 156 (WRC-15), Resolution 169 (WRC-19), Resolution 121 (WRC-23) as well as Resolution 123 (WRC-23), that regulate the operations of ESIM in different frequency bands, can serve as basis for developing the appropriate framework to enable operations of ESIM in the 47.2-50.2 GHz and 50.4-51.4 GHz frequency band as well, covered under this AI.

The necessary sharing and compatibility studies between ESIM and stations of primary services allocated in the above-mentioned frequency bands and in adjacent frequency bands, including passive services in adjacent and near-adjacent frequency bands, will be conducted in order to ensure the protection of those services, and not impose undue constraints on them.

At European level, discussions are underway in relation to establishing procedures for interference management that also allow the identification of the entities involved and, in line with that, the drafting of a recommendation for the Network Control and Monitoring Centre (NCMC) to monitor ESIM transmissions, without jeopardising the development of these systems.

4.1.1 Link with EU policies:

The development of ESIM contributes to an improved connectivity for European citizens (including those in motion), thus implementing further EU electronic communications policy aiming to deliver broadband connectivity.

In addition, IRIS² would benefit from an efficient framework for ESIM.

Given that this Agenda item concerns GSO and NGSO satellites, the future framework for operations of ESIM in 47.2-50.2 GHz and 50.4-51.4 GHz will be beneficial for both the GSO and NGSO domains of the Union Space Policy.

Furthermore, such a framework will be advantageous for the maritime and aviation transport sector, as the provided in-flight and maritime broadband connectivity will be significantly enhanced, allowing for higher flexibility, increased throughput and more opportunities for stakeholders. The combination of those improvements could potentially lead to the reduction of cost of services for the benefit of end users. The development of ESIM will contribute further to a prosperous and competitive Europe, a goal highlighted in the EU Strategic Agenda 2024-2029.

The protection of incumbent radiocommunication services is important, to ensure that Copernicus observations (in adjacent bands) and radio astronomy observations in the 48.94-49.04 GHz and adjacent 51.4-54.25 GHz bands under the EU Space and Research policies will not be negatively affected, nor terrestrial services falling under the Electronic Communication and Connectivity policy. It should be noted that some member states have IMT identifications in the bands 45.5-47 GHz and/or 47.2- 48.2 GHz.[26]

[26] Footnote 5.553B (identification of the frequency band 47.2-48.2 GHz for IMT in Lithuania, Slovenia and Sweden) and Footnote 5.553A (identification of the adjacent frequency band 45.5-47 GHz for IMT in Croatia, Greece, Hungary, Latvia, Lithuania, Slovenia and Sweden).

4.1.2 Relevant spectrum harmonisation decisions:

None.

4.1.3 RSPG recommendation:

The RSPG recommends that, as a common policy approach, Member States support the development of a regulatory framework to allow operations of aeronautical and maritime ESIM communicating with GSO and NGSO space stations in the frequency bands 47.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space). These operations should be subject to protection of services currently allocated on a primary basis in these frequency bands, including fixed and mobile service, as well as passive services in adjacent and near-adjacent frequency bands, including the protection of the in-band radio astronomy service in the 48.94-49.04 GHz band, and consider how best to address the protection in the adjacent radio astronomy band 51.4 – 54.25 GHz.

Furthermore, the description of a Network Control and Monitoring Centre (NCMC) should be satisfied via the development of a relevant ITU-R Recommendation, based on existing standards on ESIM.

This recommendation is falling under case b).

4.2 WRC-27 Agenda Item 1.2

This Agenda item considers a possible revision of the sharing conditions in the frequency band 13.75-14 GHz to allow the use of uplink fixed-satellite service (FSS) earth stations with smaller antenna sizes. Sharing conditions are currently defined under RR Nos. 5.502 and 5.503 for the use of uplink FSS earth stations to ensure the protection of the radiolocation service (RLS) and space research service (SRS) from FSS.

There is a demand for additional uplink Ku-band spectrum to meet the increasing connectivity needs to complement the downlink capacity in the frequency range 10-13 GHz. It is to be noted that, given the frequency band 14-14.5 GHz is already available for smaller user terminals, therefore the frequency band 13.75-14 GHz, by enabling the use of smaller terminals in this band also, could be considered as an extension of this band.

It is also essential that the frequency band 13.75-14 GHz, currently used for radiolocation systems, operated worldwide in particular for maritime and airborne radars, remains available for these radar applications.

WRC-2003 adopted the latest modifications to Nos. 5.502 and 5.503 of the RR to protect both the radiolocation service and the space research service. Currently, GSO earth stations are limited to a minimum 1.2 m antenna size and NGSO earth stations are limited to a minimum 4.5 m antenna size, and there are also EIRP limits placed on FSS earth stations. These WRC-2003 restrictions on minimum antenna diameters were aimed at ensuring a limitation on the deployment of FSS Earth stations. Reduction of the antenna diameter could increase the number of FSS Earth Stations and, in turn, the potential for interference (taking into account all terminal characteristics, including transmit power) and may lead to loss of detection performances affecting airborne, maritime, and ground radar operations.

4.2.1 Link with EU policies:

Satellite communications provided by Ku-band FSS can improve connectivity for Europe’s digital society and economy in support of the electronic communications policy. Satellites can, in particular, provide cost-effective solutions to connect assets and people in remote and offshore areas, or as part of future 5G networks.

Commercial services offered by IRIS^2 may have interest in using the frequency band 13.75-14 GHz for smaller transmitting terminals in addition to the frequency band 14-14.5 GHz, and also to other uplink FSS spectrum in Ku- and Ka-bands.

The frequency band 13.75-14 GHz is essential to the CSDP, as it is NATO harmonised and utilised by defence systems within the radiolocation service by airborne, maritime, and ground operations in any location worldwide. Any possible relaxation of the limits currently imposed in Nos 5.502 and 5.503 to facilitate the use for smaller terminals will have to ensure the continued protection of the radiolocation service utilisation.

Protection of Copernicus components (CRISTAL, Sentinel-3 and Sentinel-6) in the adjacent 13.25-13.75 GHz band, as well as remote meteorological sensing instruments, operating under EESS (active) is not expected to be problematic subject to further confirmation, based on the experience from the studies carried out under WRC-23 Agenda item 1.15 (regarding the compatibility between FSS uplink in the frequency band 13.75-14 GHz and EESS (active) in the adjacent band), and should not be impacted by the potential changes in FSS operations.

4.2.2 Relevant spectrum harmonisation decisions:

None.

4.2.3 RSPG recommendation:

The RSPG recommends that, as a common policy approach, the continued protection of the radiolocation and space research services needs to be ensured. Therefore, Member States do not support any changes to the regulatory provisions regarding the frequency band 13.75-14 GHz unless it can be reliably demonstrated by studies that any relaxation of such provisions on the minimum antenna diameters and its associated power limits of GSO and NGSO FSS Earth stations, or introduction of other potential mitigation measures, would preserve the protection of the relevant incumbent services.

This recommendation is falling under case b).

4.3 WRC-27 Agenda Item 1.3

This Agenda item considers, on the basis of the results of ITU-R studies, the possible revision of the conditions related to allocations to the FSS in the frequency band 51.4-52.4 GHz, to enable its use also by non-GSO FSS feeder link/gateway earth stations on a primary basis, in addition to any other related regulatory provisions.

The Agenda item is being considered in response to the increasing use of satellite systems for the provision of broadband services, to help deliver universal broadband access.

Although *Footnote No* ***5.555c (WRC-19)*** makes this band available for GSO systems, no such provision has been made for NGSO use. Furthermore, in light of developments and expansion in the proliferation of NGSO systems, increasing interest has more recently been generated around use of the 51.4-52.4 GHz frequency band for NGSO FSS feeder links. Thus, taking into account such interest, the main aim of this Agenda item is to assess the feasibility of permitting the use of prospective NGSO systems (e.g., large low-Earth orbit (LEO) constellations) in the band for "Earth-to-space" transmissions through gateway earth stations.

In considering the above, this Agenda item also indicates that NGSO feeder link/gateway operation should only be considered on the basis of ensuring the continued protection of:

1. EESS (passive) operation in the adjacent frequency band 52.6-54.25 GHz, as is currently afforded through Resolution **750 (Rev.WRC-19)**. The introduction of NGSO to the 51.4-52.4 GHz frequency

band will therefore necessitate a review of Resolution 750 and possible revision to ensure continued protection of these EESS (passive) services, further taking into account the cumulative effect of GSO and NGSO interference.

2. Radioastronomy observations carried out in the frequency band 51.4-54.25 GHz (in conformity with ITU Footnote No. **5.556**.)
3. GSO FSS space stations from the emissions of non-GSO FSS gateway earth stations. This will require associated regulatory actions such as inclusion of the frequency band 51.4-52.4 GHz in the scope of Resolutions **769 (WRC-19)** and **770 (Rev.WRC-23).**

4.3.1 Link with EU policies:

European space policy supports the establishment of a sustainable regulatory environment, which is necessary for the development and production of non-geostationary satellites operating in this frequency band. It is expected that IRIS[2] will use the frequency band 51.4-52.4 GHz in the future for gateway stations.

The EU collaborates with EUMETSAT and ESA in the garnering of earth observational data for environmental monitoring. Of note in particular, both the European Environmental Agency (EEA) and the European Maritime Safety Agency (EMSA) have closely affiliated interests in common with both EUMETSAT and the ESA. This is especially evident with the Meteorological Operational Satellite (MetOp) series, a collaboration between the ESA and EUMETSAT, which is supported by the EU. The MetOp satellites use spectrum in the adjacent 50.2-50.4 GHz and 52.6-54.25 GHz frequency bands to take measurements used by hydrological and meteorological prediction systems to forecast, for example, air temperature, wind speed, and rainfall, which in turn allows for the prediction of severe weather events.

The RSPG has also consistently recognised the importance of protecting scientific uses of the radio spectrum, particularly for passive services such as radio astronomy, through a series of reports and opinions. The RSPG Opinion and Report on a Coordinated EU Spectrum Approach for Scientific Use of Radio Spectrum[27] proposed a harmonised EU-wide strategy to protect spectrum allocations essential for scientific research, including radio astronomy. The RSPG Report on Strategic Sectoral Spectrum Needs[28] assessed the spectrum needs of different sectors, highlighting the critical importance of passive scientific services such as radio astronomy, in addition to those operating under the Space Research Service allocations (in the 50.2-50.4 GHz and 52.6-54.25 GHz bands). Additionally, it is noted that some European countries are involved in ASTRONET and the RADIOBLOCKS project. The Horizon Europe programme is also engaged in the RADIOBLOCKS project to enhance European major research infrastructure in Radioastronomy.

Taking all of the above factors into account, the need to protect adjacent passive EESS and Space Research Service (SRS) allocations, as well as the existing RAS observations carried out under RR 5.556 and GEO systems operating in the 51.4-52.4 GHz band, is therefore firmly supported by EU Policy considerations.

Radioastronomy observation stations' protection from NGSO FSS gateway earth stations emissions in the 51.4-52.4 GHz band should be ensured at national level and by cross-border coordination agreement.

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[27] RSPG Opinion and Report on a Coordinated EU Spectrum Approach for Scientific Use of Radio Spectrum

[28] RSPG Report on Strategic Sectoral Spectrum Needs

4.3.2 Relevant spectrum harmonisation decisions:

For the protection of Radioastronomy:

Whilst there are no current EU Decisions which afford explicit protection of Radio Astronomy from systems in the NGSO orbit, some existing Decisions aim to ensure the protection of radioastronomy observations in other frequency bands allocated to the RAS. Examples of such protective measures extended to RAS can be seen in Commission Decision 2005/50/EC (Articles 6(2) & 7) and Commission Implementing Decision (EU) 2024/1983 (Article 3), thus highlighting the importance apportioned to Radio Astronomy activities at EU level. The protection of the radio astronomy service is of importance for European science policy promoting research and technological development (TFEU 179-190).

4.3.3 RSPG recommendation:

The RSPG recommends that, as a common policy approach, Member States support the development of a regulatory framework for non-geostationary FSS systems that ensures the coexistence with geostationary FSS systems, so that both may operate gateway earth stations in the frequency band 51.4-52.4 GHz, provided that the continued protection of the in-band or adjacent bands' GSO FSS, earth exploration satellite and space research services are ensured.

This recommendation is falling under case b).

4.4 WRC-27 Agenda Item 1.5

This Agenda item considers, based on the results of studies, the introduction of *regulatory* measures:

a) to limit the unauthorised operations of non-geostationary-satellite orbit (NGSO) earth stations in the Earth-to-space direction in the fixed-satellite service (FSS) and mobile-satellite service (MSS) taking technical and operational aspects into account; *and*
b) to exclude the territory of a country from the service area of the NGSO satellite system, if this is implementable, without adversely affecting the provision of service in the rest of the service area of the NGSO satellite system.

The issue under a) is associated with reported challenges faced by some ITU Member States in relation to the unauthorised operation of user terminals operating in their territory. There are already regulatory measures in place that prevent unauthorised earth station transmissions. **Article 18** of the RR require a licence/authorisation for any transmitting earth station from the territory of an administration. Resolution **22 (Rev.WRC-23)** resolves that "the operation of transmitting earth stations within the territory of an administration shall be carried out only if authorized by that administration" and Resolution **25 (Rev.WRC-23)** that such earth stations "can be operated only from the territory or territories of administrations having authorized such service and stations". Additional regulatory measures are under consideration in order to ensure that NGSO systems have capabilities to hinder operation of unauthorised NGSO earth stations, related to issue a).

The issue under b) relates to possible additional measures which can have technical and operational implications as a consequence of the possible exclusion of the territory of a country from the service area of a NGSO satellite system. However, it should be noted that the development of possible additional measures as mentioned under issue a) could also satisfy the issue under b), since these measures would ensure no service provision in the territory of countries that have not given their authorisation.

Exclusion of territories from the service area (under issue b)), besides being ineffective against unauthorised user terminal transmission, may not be technically feasible, and could have significant implications on the

protection rights and coordination process for satellite systems/networks; they may also create gaps in NGSO service provision. Furthermore, new regulations should be carefully weighed against the possible negative impact of such regulations (i.e. increased costs and complexity). In particular, obtaining "*explicit* agreement" would also create unnecessary administrative burden for any ITU member states.

Additionally, discussions or potential proposals such as to:

- apply any regulatory measure on the coverage area (i.e. the area illuminated by the satellite system);
- obtain *explicit* agreement from an administration for inclusion of its territory in the service area,

are beyond the scope of Resolution **14 (WRC-23)**. An analysis of the scale of cases involving the unauthorised operation of NGSO ground stations is needed before any changes of the existing or further new regulations are considered.

4.4.1 Link with EU policies:

Member States need to take all measures[29] to ensure the smooth functioning of the IRIS^2 programme globally, especially over geographical areas of strategic interest such as Africa and the Arctic as well as the Baltic, the Black Sea, Mediterranean regions and the Atlantic. Possible additional measures, resulting from this Agenda item, that would result in unavoidable gaps in coverage and in general impair IRIS^2 service provision should be avoided.

NGSO FSS and MSS systems for internet bearing commercial satellite services are of significant interest and importance for the CSDP and its relations with NATO, which relies on these services. Possible additional measures for the authorisation of NGSO FSS and MSS earth stations could negatively impact alternative and contingency options for satellite connectivity.

4.4.2 Relevant spectrum harmonisation decisions:

None.

4.4.3 RSPG recommendation:

The RSPG recommends that, as a common policy approach, Member States

- Under issue a), support regulatory measures limited only to the introduction of practical elements associated with the capabilities of non-GSO satellite systems to identify and hinder unauthorised operations of earth stations communicating with these non-GSO satellite systems, such as the ability to:
    - determine the location of earth stations; *and*
    - disable transmissions of earth stations where not authorised.
- Under issue b), oppose any regulatory measures, including exclusion of territories from the service area.

This recommendation is falling under case b).

[29] In line with Regulation (EU) 2023/588

4.5 WRC-27 Agenda Item 1.7

This Agenda item considers, based on the results of sharing and compatibility studies, possible identification of various frequency bands for International Mobile Telecommunications (IMT). The list of bands depends on the ITU Region (Europe is part of Region 1):

- 4 400-4 800 MHz, or parts thereof (Region 1 and Region 3);
- 7 125-8 400 MHz, or parts thereof (Region 2 and Region 3);
- 7 125-7 250 MHz and 7 750-8 400 MHz, or parts thereof (Region 1);
- 14.8-15.35 GHz (globally).

The studies under this Agenda item will have to ensure the protection of other services and not impose to additional constraints on these services. This includes the protection of stations operating in international waters or airspace, which is of particular importance for maritime and aeronautical use of these bands and, of specific note, for applications within the CSDP. Previous studies in relation to WRC-23 Agenda item 1.1, on protection of stations operating in international waters or airspace from IMT in the frequency band 4 800-4 990 MHz (which presents similar usage as 4 400-4 800 MHz), will be helpful for concluding the final position for this opinion.

This Agenda item is also linked with the current development of IMT-2030, within ITU and external organisations, such as 3GPP, which is expected to be implemented after 2030.

Ultra-wideband (UWB) applications in the 7750-8400 MHz frequency band, such as tracking and car key systems, make use in particular of the 7 750-8 250 MHz spectrum range (UWB channel 9) in both the single market and on a global basis. In addition, the 4.4-4.8 GHz frequency band is used by UWB applications in the building industry, such as for the characterisation and inspection of building infrastructure and components.

4.5.1 Link with EU policies:

All the candidate frequency bands under this Agenda item may affect usages relevant to the civil aviation policy, the CSDP or the Union's Space policy. Furthermore, some candidate bands may affect the use of EU-harmonised spectrum for ultra-wideband (UWB) applications in the context of the Union's connectivity policy.

In particular, **for the CSDP**:

- The frequency band 4 400-4 800 MHz is NATO harmonised and highly utilised by defence and governmental systems operating within the fixed and mobile service. This includes maritime and aeronautical applications, with the possibility of deployment of stations at short notice to any locations within national territories or in international spaces, which are incompatible with IMT networks.
- The frequency range 7 250-8 400 MHz is essential for defence and governmental systems. In particular, the frequency bands from 7 250 to 7 750 MHz (downlink) and 7 900 to 8 400 MHz (uplink) are NATO harmonised for defence/governmental satellite with the possibility of deployment of earth stations at short notice to any locations within national territories or in international spaces, which are incompatible with IMT networks. The protection of satellite reception, including for future constellations, is crucial.
- The frequency band 14.8-15.35 GHz is NATO harmonised and highly utilised by defence and government systems operating within the fixed and mobile services. This includes maritime and aeronautical applications, with the possibility of deployment of stations at short notice to any locations within national territories or in international spaces, which are incompatible with IMT networks.

For the Union's Space Policy:

- The use of the frequency bands from 7 250 to 7 750 MHz (downlink) and 7 900 to 8 400 MHz (uplink) by defence/governmental satellite is also relevant for the EU space policy,to promote and facilitate other

policies in areas such as security and defence, and includes the GOVSATCOM initiative to provide national authorities with access to secure satellite communications.

- The frequency range 7 125-8 400 MHz is also used by many meteorological and Earth-exploration satellites, including Sentinel satellites under the Copernicus programme and EUMETSAT satellites. The corresponding satellites and Earth stations operated under these services need to remain fully protected without additional constraints placed on their future development. In particular, there is a need to enable unconstrained ubiquitous worldwide deployment of EESS receiving Earth stations in the 8 025-8 400 MHz band (used to collect data from EESS satellites) as well as of METSAT receiving Earth stations in the 7 450-7 550 MHz (GSO) and 7 750-7 900 MHz (NGSO) that will broadcast data to users and to meteorological agencies.
- The frequency band 7 125-7 250 MHz is a portion of the frequency range 6 425-7 250 MHz and it is used, and planned to be used, globally for Sea Surface Temperature (SST) measurements under RR 5.458, which states that *"In the band 6 425-7 075 MHz, passive microwave sensor measurements are carried out over the oceans. In the band 7 075-7 250 MHz, passive microwave sensor measurements are carried out. Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the bands 6 425-7 075 MHz and 7 075-7 250 MHz."*. This recognition of usage does not guarantee rights for international protection.
- SST measurements are being carried out by the Copernicus Imaging Microwave Radiometer (CIMR) in the adjacent frequency band 6 675-7 075 MHz.
- Initial studies carried out before WRC-23 concluded that SST measurements by satellite in the frequency range 6 425-7 125 MHz would be significantly degraded in the forthcoming years due to the amount of interference from the foreseen increased usage under the existing mobile allocation (at a level which is contingent upon the application).
- Therefore, in order to achieve continuous SST measurements on a long-term basis, Europe proposed at WRC-23 to consider new primary EESS (passive) allocations in all regions in the 4.2-4.4 GHz and 8.4-8.5 GHz frequency bands. These studies, to complement the band 6 425-7 250 MHz, are being carried out under WRC-27 Agenda item 1.19.
- The frequency range 6 425-7 250 MHz offers the highest sensitivity, and therefore will continue to be used for SST measurements despite the possible allocation of 4.2-4.4 GHz and 8.4-8.5 GHz frequency bands to EESS (passive) and the identification of 6 425-7 125 MHz for IMT by WRC-23. The 7 125-7 250 MHz range is the only part not identified for IMT.
- ITU will not consider any studies for the protection of EESS (passive) in 7 125-7 250 MHz in WRC-27 preparation due to its footnote status. However, it will be essential to protect these new primary EESS (passive) allocations in the 4.2-4.4 GHz and 8.4-8.5 GHz from potential unwanted IMT emissions in adjacent frequency bands, studied under Agenda item 1.7.
- The 7 145-7 190 MHz band is used for tracking and communications of ESA Earth stations (in Spain, and planned in Italy) with spacecraft in the space research (deep space) (Earth-to-space) service and the 7 190-7 235 MHz band for tracking and communications of ESA Earth stations with spacecraft operating in the SRS (near-Earth) (Earth-to-space). Continuous operation of these earth stations in the EU should be ensured without imposing additional regulatory or technical constraints on them.
- According to Resolution **256**, the protection of these SRS uplinks, operating under a primary allocation, should be ensured without imposing additional regulatory or technical constraints on them.

For the Union's civil aviation policy:

- Radio altimeters operated in the band 4.2-4.4 GHz provide height above ground level (HAGL) measurements to other craft, safety, navigation, and automation systems, and are critical in particular

for take-off, climb, final approach, and landing phases – for example, safe landing in low-visibility conditions is only possible using flight automations enabled by the Radio Altimeter. The EU aviation safety system relies, amongst other application, on radio altimeters which provide precise height measurements that are critical for various safety functions in aviation. Thus, it will be necessary to ensure the protection of radio altimeters from any IMT operations above 4.4 GHz using a level of caution commensurate with the preservation of life.

- For the Union's connectivity policy: While UWB use is on a non-interference and non-protection basis, ensuring sustainable spectrum access for UWB connectivity is essential for the Union's automotive and broader economic ecosystem, as global mass deployment of UWB is ongoing and it contributes to the Union's digital autonomy. UWB is used for location tracking, material analysis, motion detection and automotive applications. Special focus is on the Digital Key which uses UWB channel 9 (7737.6-8236.8 MHz), already available in mobile phones, and to safe-guard the existing harmonisation in CEPT and the EU, to provide for continued use of existing and future UWB products and services.

4.5.2 Relevant spectrum harmonisation decisions:

Commission Implementing Decision (EU) 2019/785 amended by (EU) 2024/1467[30].

4.5.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council to:

1) oppose IMT identification in the bands 4.4-4.8 GHz, 7.250-8.400 GHz and 14.8-15.35 GHz,
2) support an IMT identification of the frequency band 7125-7250 MHz, on the basis that studies confirm the protection of incumbent in-band and adjacent-band services alongside feasible IMT deployment scenarios, and if the protection of incumbent services through relevant RR provisions is ensured, noting e.g. the need for continued operation of SRS earth stations in the EU,
3) support existing and future operations of UWB channel 9 (7.7-8.2 GHz), noting its use on a non-interference non-protected basis, in accordance with the relevant Commission decision and EU framework.

This recommendation is falling under case a).

4.6 WRC-27 Agenda item 1.8

This Agenda item considers new radiolocation service (RLS) allocations in the frequency range 231.5 – 275 GHz and new identifications for RLS systems and applications in the frequency range 275 – 700 GHz. Foreseen applications are ranging, imaging (including material analysis) and localisation, which are designed in two main configurations: active (radars) and receive-only (radiometers). The scope of the agenda item covers scientific, governmental, public safety and near range ITS applications.

[30] Commission Implementing Decision (EU) 2019/785 of 14 May 2019 on the harmonisation of radio spectrum for equipment using ultra-wideband technology in the Union and repealing Decision 2007/131/EC, as amended by Commission Implementing Decision (EU) 2024/1467 of 27 May 2024.

4.6.1 Link with EU policies:

While this Agenda item offers future potential for road-safety related ITS applications in the transport sector and for safety aspects of other EU policies, the protection of incumbent radiocommunication services remains very important for MS when defining primary allocations to new services. Of interest under AI 1.8 is the protection also of the observations of the Earth exploration-satellite service EESS (passive) and the radio astronomy service (RAS) in relevant bands which fall under the EU Space and Research policies, and that they will not be negatively affected. The bands under consideration are not utilised by terrestrial applications in the fixed or mobile services falling under the EU Electronic Communication and Connectivity policy.

Advanced EESS systems are providing crucial data for European and global weather forecasting, from short-term "nowcasting" to medium-range numerical weather prediction with Microwave Sounder (MWS) on the Metop-Missions using the EESS (passive) bands 226-231.5 GHz, and the Ice Cloud Imager (ICI) will use several frequency bands covered under this Agenda item, namely 239.2-242.2 and 244.2-247.2 GHz (both shared with active services) as well as bands above 275 GHz. Further, missions are planned for the EPS-Sterna constellation of up to 18 satellites. The Radiometer on-board systems within this constellation will use the bands 313-318, 318-333 and 333-356 GHz, where, although there are currently no allocations in the RR, they have been identified for use by applications of the EESS (passive).

Parts of the millimetre frequency ranges 231.5-275 GHz and 275-700 GHz are widely used by radioastronomy for spectroscopy applications (including those observing CO spectral lines and complex molecular spectral lines) and continuum observations (black holes, earliest galaxies, etc.). Major research infrastructure in Radioastronomy using these bands are linked with the ASTRONET and the RADIOBLOCKS project, including via the Horizon Europe programme.

4.6.2 Relevant spectrum harmonization decisions:

None.

4.6.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council to support a new primary allocation to the RLS in the frequency range 252-275 GHz, and identifications for RLS applications in the frequency ranges 275-296 GHz and 356-439 GHz.

Further, the position should emphasise the necessary protection of the incumbent MS, FS, RAS, and specifically EESS (passive) from the supported possible new RLS allocation, and identifications of frequencies for the use by RLS applications through relevant RR provisions..

This recommendation is falling under case a).

4.7 WRC-27 Agenda Item 1.12

This Agenda item considers, based on the results of studies, possible new allocations to the mobile-satellite service (MSS) and possible regulatory actions in the frequency bands 1 427-1 432 MHz (space-to-Earth), 1 645.5-1 646.5 MHz (space-to-Earth) (Earth-to-space), 1 880-1 920 MHz (space-to-Earth) (Earth-to-space) and 2 010-2 025 MHz (space-to-Earth) (Earth-to-space) required for the future development of low-data-rate non-geostationary (NGSO) MSS systems.

A global allocation to the MSS is key to enhance the future development of low-data-rate NGSO MSS as required by spectrum needs, and a global allocation could create well needed surety for the industry.

Low-data-rate mobile-satellite applications are, in addition to terrestrial systems, of great importance for the rollout of Internet of Things (IoT). Satellite-based IoT applications can deliver actionable information, services and solutions that promote and support human welfare, and they require a global access to frequency spectrum in order to proliferate. These systems can be used for a variety of applications in different environments and for different sectors such as agriculture, energy, environmental research, and transport.

4.7.1 Link with EU policies:

In line with 'Shaping Europe's digital future', a set of supporting policy actions have been adopted by the European Commission in order to accelerate the take-up of IoT and thus unleash its potential in Europe for the benefit of European citizens and businesses, and minimise any dependency on parties outside Europe.

The bands 1 427-1 432 MHz, 1 880-1 910 MHz and 2 010-2 025 MHz are already harmonised for a variety of applications. The studies under this Agenda item should demonstrate the possibility for coexistence of LDR MSS with these harmonised applications without harmful interference.

The adjacent frequency band, 1 400-1 427 MHz, to the band under study (1 427-1 432 MHz), is allocated on a primary basis to the following passive services: the EESS (passive), the RAS and the SRS (passive). This band is subject to RR No. **5.340** (which stipulates that all emissions are prohibited). In short, therefore, any compatibility in between a future LDR MSS in the space-to-Earth direction with the existing services will be difficult.

The band 1 880-1 910 MHz is identified for FRMCS and DECT, for sensitive applications, and any potential new LDR MSS use in this band will need to ensure the protection of these systems. Furthermore, the adjacent band 1 910-1 920 MHz, is also starting to be harmonised for DECT.

The band 1645.5-1 646.5 MHz is identified in the RR for Global Maritime Distress and Safety System (GMDSS) and limited to distress, urgency, and safety communications. The International Maritime Organization (IMO) stated that "*the 1.6 GHz Emergency position-indicating radiobeacon (EPIRB) service has been withdrawn from GMDSS by the IMO and this band has remained unused for many years*".

To this end, there is, in practice, no link to EU policy on maritime transport safety.

4.7.2 Relevant spectrum harmonisation decisions:

- Commission Implementing Decision (EU) 2015/750 of 8 May 2015 on the harmonisation of the 1 427-1 517 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union, as amended by (EU) 2018/661 of 26 April 2018.
- Council Directive 91/287/EEC of 3 June 1991 on the frequency band to be designated for the coordinated introduction of digital European cordless telecommunications (DECT) into the Community[31].
- Commission Decision 97/524/EC of 9 July 1997 on a common technical regulation for the telephony application requirements for digital enhanced cordless telecommunications (DECT)[32].
- Commission Implementing Decision 2021/1730/EU of 28 September 2021 on the harmonised use of the paired frequency bands 874.4-880.0 MHz and 919.4-925.0 MHz and of the unpaired frequency band 1 900-1 910 MHz for Railway Mobile Radio[33].

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31 Council Directive 91/287/EEC

32 Commission Decision 97/524/EC

33 Commission Implementing Decision 2021/1730/EU

- Commission Implementing Decision 2016/339/EU of 8 March 2016 on the harmonisation of the 2 010-2 025 MHz frequency band for portable or mobile wireless video links and cordless cameras used for programme making and special events[34].

4.7.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council to support only a global MSS primary allocation of the frequency band 2010-2025 MHz to support low-data-rate non-GSO satellite communications, with regulatory conditions to protect other services, and in particular portable or mobile wireless video links and cordless cameras used for programme making and special events.

This recommendation is falling under case a)

4.8 WRC-27 Agenda Item 1.13

This Agenda item considers appropriate regulatory actions, including possible new allocations to the mobile-satellite service (MSS), in order to provide direct connectivity between space stations and IMT user equipment (D2D-IMT[35]) to complement the coverage of terrestrial IMT networks in the frequency range between 694/698 MHz and 2.7 GHz, taking into account the IMT frequency arrangements addressed in Recommendation ITU-R M.1036. Studies will also determine technical, operational, and regulatory conditions related to the allocation of the MSS in IMT bands for direct connectivity to the IMT user equipment.

Several bands implemented for IMT mobile networks are under consideration: 694/698-960 MHz, 1 427-1 518 MHz, 1 710-2 200 MHz, 2 300-2 400 MHz, and 2 500-2 690 MHz, following different FDD frequency arrangements. It has to be noted that some bands (e.g. 2 300-2 400 MHz) are not harmonised for ECS within Europe. It should be further noted that some of the proposed channelling arrangements are not compliant with ITU-R Recommendation M.1036. The frequency bands under consideration are used, for example, by many other applications and services, including video PMSE, aeronautical telemetry, radioastronomy (on a secondary basis) etc. which also require protection in the long term even if countries outside the EU are interested in providing D2D services in those bands. Radioastronomy services and EESS in adjacent bands or near-adjacent bands have also to be protected.

It is noted that several frequency arrangements under consideration are different from those harmonised in Europe. In those cases, there is a need to address the protection of base station (BS) reception from satellite interference and satellite-to-satellite interference.

In many coastal states, mobile coverage from land-based BS's provide voice and data services to vessels sailing along the coast, providing an important service within territorial waters (12 nautical miles). There are also IMT base stations on fixed platforms and on-board ships ("mobile communication on-board vessels") in territorial and international waters. Services outside territorial waters are possible due to authorisations given by the flag state of the ship(s) or coastal administrations for platforms[36]. Therefore, D2D-IMT provided in international waters may also be considered under this agenda item.

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[34] Commission Implementing Decision 2016/339/EU

[35] Equivalent to DC-MSS-IMT

[36] Some Member States are handling IMT base stations located on fixed platforms in their Exclusive Economic Zones (up to 200 nm) in the same way as IMT base stations in their national territory

Decisions taken at WRC-27 will not affect the sovereignty of each administration to decide the relevant authorisation regime, but will define the allocation status and operational parameters for mobile-satellite service in these frequency bands and also define related provisions.

4.8.1 Link with EU policies:

D2D-IMT could benefit the Union's policy on electronic communications and connectivity as it could provide complementary coverage – to rural, remote and sea areas - or when mobile ECS networks are temporarily unavailable due to external damage (e.g. flooding or earthquakes) or in case of temporary failure of mobile networks. On the other hand, given the high number of frequency bands under consideration, almost all EU policies (e.g. aviation, maritime) with a spectrum component may be affected by this Agenda item, including EU space policy (in particular Copernicus and IRIS[2]) and the CSDP, with various usages to be protected. .

The proposed EU approach to generally address direct-to-device communication in the Union is addressed by the RSPG opinion RSPG25-020[37] (17 June 2025).

The frequency bands which would be considered in Europe for D2D-IMT will be amongst those harmonised for ECS. These are covered by many Commission implementing decisions pursuant to the Radio Spectrum Decision[14], as listed in the following section. Any deployment in Europe is based on the understanding that the operation of D2D-IMT requires a national agreement between MNO's & SNO's.

The EU has harmonised, among others, the use of IMT in various bands on board vessels[38]. Even though these harmonisations only cover use within the territorial waters (within 12 nm) of the member states, IMT on board vessels are widely used on board ships in international waters under the flag state principle.

The EU mobile satellite service framework[39] in the 2 GHz frequency band provides an opportunity to offer D2D services in a band not shared with terrestrial networks, as explained in the RSPG Opinion on "Assessment of different possible scenarios for the use of the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz by the Mobile Satellite Services beyond 2027"[40]. Since the band already has an MSS allocation, it should be considered outside the scope of any 'new' MSS allocations. However, since this band is also overlapping with terrestrial frequency arrangements, the protection of MSS will be of interest for the EU.

The provision of D2D satellite services in terrestrial mobile bands are not yet contemplated for services intended to be offered by the commercial component of IRIS[2] but may be of interest at a later stage.

4.8.2 Relevant spectrum harmonisation decisions:

This Agenda item involves the EU spectrum harmonisation measures relating to the provision of electronic communications services (ECS) – in particular, the following Commission Implementing Decisions:

- Commission Decision 2008/477/EC of 13 June 2008 on the harmonisation of the 2 500–2 690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community as amended by Commission Implementing Decision (EU) 2020/636 of 8 May 2020[41];

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37 RSPG25-020:" the EU-level policy approach to satellite Direct-to-Device connectivity and related Single Market issues"

38 Commission Implementing Decision (EU)2024/340

39 In particular, Decision 2008/626 and Decision 2007/98/EC

40 RSPG Opinion

41 Commission Decision (EU) 2008/477/EC

- Commission Implementing Decision 2012/688/EU of 5 November 2012 on the harmonisation of the frequency bands 1 920-1 980 MHz and 2 110-2 170 MHz for terrestrial systems capable of providing electronic communications services in the Union as amended by Commission Implementing Decision (EU) 2020/667 of 6 May 2020[42];
- Commission Implementing Decision (EU) 2015/750 of 8 May 2015 on the harmonisation of the 1452-1517 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union as amended by Commission Implementing Decision (EU) 2018/661 of 26 April 2018[43];
- Commission Implementing Decision (EU) 2022/173[44] of 7 February 2022 on the harmonisation of the 900 MHz and 1 800 MHz frequency bands for terrestrial systems capable of providing electronic communications services in the Union and repealing Decision 2009/766/EC;
- Commission Implementing Decision 2010/267/EU[45] of 6 May 2010 on harmonised technical conditions of use in the 790-862 MHz frequency band for terrestrial systems capable of providing electronic communications services in the European Union;
- Commission Implementing Decision (EU) 2016/687[46] of 28 April 2016 on the harmonisation of the 694-790 MHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services and for flexible national use in the Union;
- Commission Implementing Decision (EU) 2024/340[47] of 22 January 2024 on harmonised conditions for the use of radio spectrum for mobile communication services on board vessels in the Union, repealing Decision 2010/166/EU (MCV);
- Commission Implementing Decision 2008/294/EC of 7 April 2008 on harmonised conditions of spectrum use for the operation of mobile communication services on aircraft (MCA services) in the Community as amended by Commission Implementing Decision (EU) 2022/2324 of 23 November 2022[48].

Furthermore, the following EU legislation and RSPG Opinion may be affected or might be of relevance:

- Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme[49] (RSPP)(in particular Art. 8)
- Decision (EU) 2022/2481 of the European Parliament and of the Council of 14 December 2022 establishing the Digital Decade Policy Programme 2030[50]
- Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (EECC)[51]

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42 Commission Implementing Decision 2012/688/EU

43 Commission Implementing Decision (EU) 2015/750

44 Commission Implementing Decision (EU) 2022/173

45 Commission Implementing Decision 2010/267/EU

46 Commission Implementing Decision (EU) 2016/687

47 Commission Implementing Decision (EU) 2024/340

48 Commission Implementing Decision 2008/294/EC

49 Decision No 243/2012/EU

50 Decision (EU) 2022/2481

51 Directive (EU) 2018/1972

- RSPG Opinion on assessment of different possible scenarios for the use of the frequency bands 1980-2010 MHz and 2170-2200 MHz by the Mobile Satellite Services beyond 2027 (RSPG24-007 FINAL (PUBLIC VERSION)[52];
- Commission Implementing Decision 2006/771/EC of 9 November 2006 on harmonisation of the radio spectrum for use by short-range devices as amended by Commission Decisions 2008/432/EC, 2009/381/EC and 2010/368, Commission Implementing Decisions 2011/829/EU and 2013/752/EU, and Commission Implementing Decisions (EU) 2017/1483, (EU) 2019/1345, (EU) 2022/180 and (EU) 2025/105[53].
- Commission Implementing Decision (EU) 2018/1538 of 11 October 2018 on the harmonisation of radio spectrum for use by short-range devices within the 874-876 and 915-921 MHz frequency bands as amended by Commission Implementing Decision 2022/172/EU of 7 February 2022 and Commission Implementing Decision (EU) 2025/650 of 26 March 2025[54]
- Commission Implementing Decision (EU) 2016/339[55] of 8 March 2016 on the harmonisation of the 2010-2025 MHz frequency band for portable or mobile wireless video links and cordless cameras used for programme making and special events
- Commission Implementing Decision 2021/1730/EU[56] of 28 September 2021 on the harmonised use of the paired frequency bands 874.4-880.0 MHz and 919.4-925.0 MHz and of the unpaired frequency band 1 900-1 910 MHz for Railway Mobile Radio.
- For the protection of radio astronomy: Whilst there are no current EU Decisions which afford explicit protection of radio astronomy from D2D-IMT systems in the NGSO orbit, some existing Decisions aim to ensure the protection of radio astronomy observations in other frequency bands allocated to the RAS. The protection of the RAS is of importance for European science policy promoting research and technological development (TFEU 179-190).

4.8.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council to:

1) support a secondary MSS allocation limited to satellite systems or networks complementing the IMT networks in relevant EU harmonised bands below 2.7 GHz for terrestrial systems capable of providing electronic communications services. This MSS allocation is to be limited with the following technical, operational and regulatory provisions, to:
   - protect the IMT terrestrial networks in neighbouring countries,
   - protect all other incumbent services, including passive services operating in adjacent and near-adjacent frequency bands,
   - ensure that D2D-IMT operations over a territory (including territorial waters) will be duly authorised by the administration of the territory,
   - ensure that the MSS notifying administration will be responsible for ensuring the compliance with all related provisions and for resolving any interference case.

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52 RSPG24-007 FINAL

53 Commission Implementing Decision 2006/771/EC

54 Commission Implementing Decision (EU) 2018/1538

55 Commission Implementing Decision (EU) 2016/339

56 Commission Implementing Decision 2021/1730/EU

2) accept an MSS allocation limited to satellite systems or networks for coverage outside the EU, and also in other frequency bands identified for IMT below 2.7 GHz with diverging FDD channelling arrangements, but still in compliance with the current version of ITU-R Recommendation M.1036 and above provisions.
3) oppose any provisions allowing the usage of TDD bands below 2.7 GHz by satellite systems or networks, unless the feasibility of TDD implementation for such systems or networks can be proven.

This recommendation is falling under case a).

4.9 WRC-27 Agenda Item 1.14

This Agenda item considers possible additional allocations to the MSS in the frequency bands 2 010-2 025 MHz (Earth-to-space) and 2 160-2 170 MHz (space-to-Earth) in Region 1 and Region 3 and 2 120-2 160 MHz (space-to-Earth) in all Regions.

The studies under this Agenda item should be regarded in light of Agenda item 1.12 (possible allocations to low-data-rate NGSO MSS) and 1.13 (possible new allocations to the MSS for DC-MSS-IMT) of WRC-27 due to the consideration of multiple frequency bands under these Agenda items.

4.9.1 Link with EU policies:

Within Europe, the frequency band 2 120-2 170 MHz, and the adjacent band 2 110-2 120 MHz, have been harmonised for terrestrial systems capable of providing electronic communications services. This band was used for the introduction of UMTS/3G and has been progressively re-farmed for 4G and 5G technologies. Whilst the coexistence between terrestrial networks and complementary non-terrestrial/satellite services is considered under item 1.13, a generic mobile satellite allocation under Agenda item 1.14 would endanger the operation of terrestrial networks in Europe and in a large part of the world, with this band being one of the most harmonised worldwide. The possibility of operation in other areas (e.g. in international waters) is also studied under Agenda item 1.13.

Therefore, a possible allocation of (any portion of) the band 2 120-2 170 MHz to MSS in the space-to-Earth direction may only be considered in the context of WRC-27 Agenda item 1.13.

Concerning a possible allocation of the frequency band 2 010-2 025 MHz to the MSS in the Earth-to-space direction under this agenda item, there is some satellite interest to use this band as an uplink-only band. There is also a need to consider if there is any compatibility of future generic MSS with portable or mobile wireless video links and cordless cameras, as widely used in Europe.

4.9.2 Relevant spectrum harmonisation decisions:

- Commission Implementing Decision (EU) 2016/339[57] of 8 March 2016 on the harmonisation of the 2 010-2 025 MHz frequency band for portable or mobile wireless video links and cordless cameras used for programme making and special events.
- Commission Implementing Decision (EU) 2020/667/EU[58] of 6 May 2020 amending Decision 2012/688/EU as regards an update of relevant technical conditions applicable to the frequency bands 1 920-1 980 MHz and 2 110-2 170 MHz.

[57] Commission Implementing Decision (EU) 2016/339

[58] Commission Implementing Decision 2020/667/EU

4.9.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council to not support any changes to the regulatory provisions in the frequency bands under consideration.

This recommendation is falling under case a)

4.10 WRC-27 Agenda Item 1.15:

WRC-27 Agenda item (AI) 1.15 will examine spectrum needs and potential new or modified Space Research Service (SRS) (space-to-space) frequency allocations. These allocations are intended to enable communications on the lunar surface and between lunar orbit and the lunar surface. They also intend to ensure the protection of incumbent services and RAS, including in the Shielded Zone of the Moon (SZM).

WRC-23 Resolution 680 identified specific frequency ranges for studies of spectrum needs of SRS systems that may operate on or near the lunar surface. These frequencies include: 390–406.1 MHz; 420–430 MHz; 440–450 MHz (outside the SZM) and 2400–2690 MHz; 3500–3800 MHz; 5150–5570 MHz; 5570–5725 MHz; 5775–5925 MHz; 7190–7235 MHz; 8450–8500 MHz; 25.25–28.35 GHz.

Specifically, Resolution 680 requires, amongst others, studies regarding the sufficiency of the existing provisions of the ITU RR and whether future lunar radio communications can be accommodated within existing space radio communications services, as well as to ensure the protection of relevant services (in-band and adjacent-band). In this regard, close coordination with the European scientific and space stakeholder communities is necessary to define EU protection criteria for the SZM and priority European mission requirements for lunar communications.

4.10.1 Link with EU Policies:

Agenda item 1.15 plays an important role in supporting the long-term viability of EU Space Policy objectives as future European and international moon missions require reliable, interference-free lunar communications infrastructure. This Agenda item is also relevant to EU research policy. The protection of RAS, particularly the SZM, is consistent with EU objectives to support space scientific research. Under the ITU Recommendation ITU-R RA.479-5, the SZM is explicitly recognised as a uniquely valuable radio-quiet environment enabling radio astronomy observations not feasible from Earth. In addition, this Agenda item is relevant to broader EU objectives on strategic autonomy and resilience in space-based infrastructure.

While space exploration is currently the primary responsibility of the ESA and participating members, developments in the space domain point to lunar exploitation being feasible within a ten-year timeframe. Such exploitation will require the establishment of a lunar regulatory framework and space infrastructure, including communications and navigation capabilities. At present, EU activities focus on establishing sustainable and interoperable lunar communications and navigation capabilities. For example, the ESA's Moonlight programme aims to establish shared communications and navigation infrastructure that would support future EU and international lunar missions. Furthermore, ESA contributes to international lunar communications frameworks, such as LunaNet.

The Union should contribute to shaping the framework for lunar communications systems, especially as such systems will not exist in isolation, and would be co-developed with Earth-centric space-based communications systems. The latter include, in particular, the EU owned and operated systems, IRIS^2, Copernicus, Galileo, EGNOS, as well as GOVSATCOM and Space Surveillance and Tracking (SST), which currently use Member State assets; there is a need to ensure that these current EU systems remain compatible with on-going lunar developments.

It will also be important that future evolutions of the EU Space Programme, which could include lunar or cis-lunar aspects, can take advantage of these lunar developments and are not obstructed or closed to new opportunities that may arise in that domain. In this respect, Galileo is already included in the UN Office of Outer Space Affairs documentation on the GNSS Space Service Volume, which defines GNSS performance out to lunar distances.

4.10.2 Relevant spectrum harmonisation decisions:

None.

4.10.3 RSPG recommendations:

The RSPG recommends that, as a common policy approach, Member States to

- support modification of existing space research service (space-to-space) allocations for the future development of communications on the lunar surface and between stations in lunar orbit and stations operating on the lunar surface,
- support new primary allocations to the space research service (space-to-space) in the studied frequency bands with regulatory provisions stipulating necessary conditions, including the protection of the Shielded Zone of the Moon for its use in radio astronomy observations, as well as coexistence with other relevant incumbent services.

This recommendation is falling under case b).

4.11 WRC-27 Agenda Item 1.16

This Agenda item considers three issues dealing with the growth of NGSO communications networks and the ability of the Radio Astronomy Service (RAS) to observe the Universe:

- studies on how a NGSO satellite system operating in the adjacent and nearby frequency bands to primary allocated RAS affects the operation of RAS, and based on the results of those studies, invites to consider appropriate technical and / or regulatory measures on the operations of the active space services (space-to-Earth) operated in the frequency bands 10.7-10.95 GHz, 95-100 GHz and 116-119.98 GHz,
- studies on how the aggregate interference from multiple NGSO satellite systems operating in the adjacent and nearby frequency bands to primary allocated RAS affect the operation of RAS in their primary allocated bands and nearby, without any consideration of technical and / or regulatory measures on the operations of the active space services (space-to-Earth), operated in the frequency bands 10.7-10.95 GHz, 42-42.5 GHz, 74-76 GHz, 95-100 GHz, 116-119.98 GHz, and 123-130 GHz,

and

- studies on the possible recognition of two nationally defined Radio Quiet Zones (RQZ's) with the objective to develop a potential solution to characterize those two RQZs:
  1. the Atacama Large Millimetre/sub-millimetre Array (ALMA)[59] in Chile; and,

[59] ALMA

2. the Square Kilometre Array (SKA) Observatory[60] in South Africa.

   In order to meet their scientific objectives, both of the above listed facilities are required to operate also in frequency ranges outside those currently allocated to the RAS. Furthermore, technical (excluding regulatory measures) studies are required to evaluate how the aggregate interference from single and multiple NGSO satellite systems impact on the operation of SKA Observatory in South Africa and ALMA in Chile, and to investigate new coexistence measures, recognizing that "*shall not have any technical or regulatory constraints to non-GSO FSS allocations nor their operation of non-GSO FSS systems"*.

It is worth to mention that IRIS² is one of the future non-GSO systems.

4.11.1 Link with EU policies:

The RSPG has consistently recognised the importance of protecting scientific uses of the radio spectrum, particularly for passive services such as radio astronomy, through a series of reports and opinions. The RSPG Opinion and Report on a Coordinated EU Spectrum Approach for Scientific Use of Radio[61] proposed a harmonised EU-wide strategy to protect spectrum allocations essential for scientific research, including radio astronomy. The RSPG Report on Strategic Sectoral Spectrum Needs[62] assessed the spectrum needs of different sectors, highlighting the critical importance of passive scientific services such as radio astronomy.

Some European countries are involved in ASTRONET[63] and the RADIOBLOCKS project[64]. The Horizon Europe programme is also engaged in the RADIOBLOCKS project to enhance European major research infrastructure in Radioastronomy.

All the bands studied under Resolution 681 are utilised to varying degrees in European based observatories in Belgium, Finland, France, Germany, Hungary, Italy, Poland, Portugal, Spain and Sweden, as well as outside the EU in Norway and the UK. Specific details are provided by CRAF[65].

The European Commission's communication on the Global Approach to Research and Innovation[66], recommended that the EU should seek to agree on targeted bilateral roadmaps with prioritised non-EU country partners with a strong research and innovation base, setting out joint commitments to implement framework conditions to secure a level playing field and the promotion of shared values. Over the past years, the European Commission has made significant investments in the development of research infrastructures. This commitment is reflected in the European Strategy Forum on Research Infrastructures (ESFRI) [67] (2021), which defines strategic priorities for European research infrastructures and the importance of radio astronomy facilities as part of them.

The Atacama Large Millimetre/sub-millimetre Array in Chile and Square Kilometre Array Observatory in South Africa are among the observing facilities of interest to European countries.

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60 SKA Observatory

61 Opinion and Report RSPG-06-144

62 Report RSPG-13-540 (rev2)

63 ASTRONET

64 RADIOBLOCKS project

65 CRAF

66 Global Approach to Research and Innovation Communication

67 ESFRI

The Union Secure Connectivity Programme notes that *"recent technical progress has allowed non-geostationary-orbit (NGSO) communications constellations to emerge and gradually offer high-speed and low latency connectivity services"* [(considering 7)], and that *"there is growing demand by the Union's governmental actors for secure and reliable spaced-based satellite communication services, particularly because they are the most viable option in the absence of ground-based communication systems or where they are disrupted or unreliable."* [(considering 8)]

The first objective set by the Programme is to *"ensure the provision and long-term availability within the Union's territory and worldwide uninterrupted access to secure, autonomous, high-quality, reliable and cost-effective satellite governmental communication services to government-authorised users, by establishing a multi-orbital, secure connectivity system"* [(article 3)]

4.11.2 Relevant spectrum harmonisation decisions:

Whilst there are no current EU Decisions which afford explicit protection of Radio Astronomy from systems in the NGSO orbit for the listed bands in Resolution 681, some existing Decisions aim to ensure the protection of the RAS in other frequency bands allocated to radio astronomy. Examples of such protective measures extended to the RAS can be seen in Commission Decision 2005/50/EC[68] (Articles 6(2) & 7) and Commission Implementing Decision (EU) 2024/1983[69] (Article 3), thus highlighting the importance apportioned to Radio Astronomy activities at EU level.

4.11.3 RSPG recommendation:

The RSPG recommends that, as a common policy approach, Member States support including regulatory provisions of pfd/epfd unwanted emission limits in the Radio Regulations to protect radio astronomy in the frequency bands 10.6-10.7 GHz and 100-102 GHz from NGSO systems.

This recommendation is falling under case b).

4.12 WRC-27 Agenda Item 1.17

This Agenda item considers possible MetAids (space weather) frequency allocations for receive-only space weather sensors in Article 5 of the RR. This is a follow up to the decisions of WRC-23 (under 9.1 topic a), providing a basic framework for space weather. Studies will address spectrum needs and appropriate protection criteria for receive-only space weather sensors, as well as system characteristics, in specific frequency bands in VHF and UHF between 27.5 and 614 MHz. These bands are important for space weather monitoring, nowcasts and forecasts, and shall not place any constraints on, or constrain the future development of, incumbent services in these frequency bands or in adjacent bands.

Space weather sensors already operate in a wide range of frequencies for observing space weather phenomena, in particular for the detection of solar activity and the impact thereof on the Earth, its atmosphere and its geosphere. Detection of solar activity events is becoming increasingly important as they can adversely affect national economies, human welfare and national security.

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[68] Commission Decision 2005/50/EC (as amended)

[69] Commission Implementing Decision (EU) 2024/1983

4.12.1 Link with EU policies:

This Agenda item has a clear link to the space weather events (SWE) subcomponent of the Space Situational Awareness component of the Union space programme.

Additionally, Member States and institutions across the EU are deeply involved in the operation of space weather sensor systems and significantly contribute, at both an EU and global level, to collaboration efforts and networks on space weather observations and predictions.

Some of the candidate frequency bands under this Agenda item are in use under the CSDP.

4.12.2 Relevant spectrum harmonisation decisions:

None.

4.12.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council to support primary allocations to MetAids (space weather) for receive-only sensors in the 27.5-28.0 MHz, 29.7-30.2 MHz, 32.2-32.6 MHz, 37.5-38.325 MHz, 73.0-74.6 MHz, and 608-614 MHz frequency bands without imposing constraints on the current incumbent services.

This recommendation is falling under case a)

4.13 WRC-27 Agenda Item 1.18

This Agenda item considers the protection of several EESS (passive) frequency bands above 76 GHz and radio astronomy service (RAS) frequency bands above 86 GHz against unwanted emissions from active services in adjacent frequency bands.

WRC-27 is invited to update two longstanding WRC Resolutions; Resolution **750** for the protection of EESS (passive) and Resolution **739** for the protection of radio astronomy, with the appropriate unwanted emissions limits or thresholds.

This Agenda item was made necessary due to the development of active services in the frequency ranges above 76 GHz, while those ranges have been used for decades by EESS (passive) and RAS observations.

4.13.1 Link with EU policies:

The EESS (passive) frequency bands, considered under this Agenda item, are used by the Sentinel satellites under the Copernicus programme and should therefore be protected.

Also, over the past years, the European Commission, through the Horizon Europe programme and some Member States, have made significant investments in the development of research infrastructures. This commitment is reflected in the ESFRI (2021), which defines strategic priorities for European research infrastructures and the importance of radio astronomy facilities as part of them.

4.13.2 Relevant spectrum harmonisation decisions:

None.

4.13.3 RSPG recommendation:

The RSPG recommends that, as a common policy approach, Member States support the following actions:

- For the protection of EESS (passive) frequency bands, to include the necessary unwanted emissions limits in an update of Resolution **750 (Rev.WRC-19)**, associated with an update of RR No **5.338A**.
- For the protection of RAS frequency bands, RSPG supports to define limits or thresholds in Resolution **739 (Rev.WRC-19)** for unwanted emissions from any GSO and non-GSO space stations using Recommendations ITU-R RA.769 and RA.1631.

This recommendation is falling under case b)

4.14 WRC-27 Agenda Item 1.19

This Agenda item considers a new primary allocation in all Regions to the EESS (passive) in the frequency bands 4 200-4 400 MHz and 8 400-8 500 MHz, without protection from existing services in these frequency bands and in adjacent bands.

WRC-23, through the new footnote RR No **5.457E**, identified the 6 425-7125 MHz range (i.e. the upper 6 GHz band) in ITU Region 1 for the terrestrial component of IMT and stated that this band is also used for the implementation of wireless access systems including radio local area networks (WAS/RLAN). Consequently, this Agenda item was agreed by WRC-23 to provide these primary allocations to complement the frequency band 6 425-7 250 MHz to ensure a long-term basis for the continuity of the passive measurements currently carried out in this band, under RR No **5.458**. Studies having shown that mass-market use of the 6 425-7125 MHz band by the mobile service, depending upon the application, would impair the EESS observations even at large distances from the coast. The frequency range 6 425-7 250 MHz is unique for EESS (passive) measurements since it corresponds to the peak sensitivity to SST. Thus, passive remote sensing measurements of SST are currently (and will be in the future) predominantly performed in this range, although meaningful measurements can be made between 4 to 9 GHz.

The possible new EESS (passive) allocation is without protection from existing services in these frequency bands and in adjacent bands. However, if some additional new, mass-market, applications would be used in adjacent frequency bands, some provisions to avoid interference may need to be considered, e.g. for potential IMT below 8.4 GHz and above 4.4 GHz (see Agenda item 1.7).

4.14.1 Link with EU policies:

EESS (passive) allocations under this Agenda item are necessary to ensure continuity of Sea Surface Temperature measurements which are currently (and will be in the future) carried out in the 6 GHz range. The diversification of ocean surface temperature measurement channels seems to be the key to the sustainability of these measurements in an environment that is increasingly constrained in frequency availability.

The SST is a vital component of the climate system as it exerts a major influence on the exchange of energy momentum and gases between ocean and atmosphere. SST largely controls the atmospheric response of the ocean to meteorological and climatic time scales. SST continuous measurements are crucial to ensure the protection of populations from major climatic events.

Therefore, the new allocations complementary to the frequency range 6 425-7 250 MHz considered under this Agenda item will become crucial for the SST measurements by future Copernicus programs and it would increase its ability to serve as a tool for achieving the EU Green Deal objectives addressing Climate Change.

Radio altimeters operated in the band 4.2-4.4 GHz provide height above ground level (HAGL) measurements to other aircraft safety, navigation, and automation systems and are critical in particular for take-off, climb, final approach, and landing phases. For example, landing in low-visibility conditions is only possible using

flight automations enabled by these Radio Altimeters. The EU aviation safety system relies on radio altimeters (amongst other applications), which provide precise height measurements that are critical for various safety functions in aviation. Any new allocation within this band to EESS (passive) should not impose any additional constraints on radio altimeters installed on board aircraft and the associated transponders on the ground.

4.14.2 Relevant spectrum harmonisation decisions:

Commission Implementing Decision 2025/2425[70] of 02 December 2025 on the harmonisation of the 3 800-4 200 MHz frequency band for the shared use by terrestrial wireless broadband systems capable of providing local area network connectivity in the Union. The frequency band 3 800-4 200 MHz is adjacent to the 4 200-4 400 MHz band, within which Agenda item 1.19 is considering a new primary allocation to EESS (passive).

4.14.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council to:

- Support the primary allocation of the 4 200-4 400 MHz and 8 400-8 500 MHz frequency bands for EESS (passive) without protection from existing services within these frequency bands and in adjacent bands. Therefore, any new allocations should not impose any additional constraints on radio altimeters installed on board aircraft and on the associated transponders on the ground, operating under the aeronautical radionavigation service.
- Support the protection of these EESS (passive) allocations from any possible new IMT identifications in adjacent bands under WRC-27 Agenda items 1.7.
- Recognize that the 8 400–8 500 MHz frequency band is also allocated to the mobile, except aeronautical mobile, service, and additionally support the exclusion of high-density mobile applications in this band.

This recommendation is falling under case a).

4.15 WRC-27 Agenda Item 10 – Resolution 683 (WRC-23) Agenda Item 2.4 – ISS 3 & 6 GHz.

This preliminary Agenda item for WRC-31 considers regulatory provisions to support inter-satellite service transmissions in the frequency bands 3700-4200 MHz and 5925-6425 MHz for non-geostationary-satellite space stations communicating with geostationary-satellite space stations.

This Agenda item should develop technical studies aiming at developing sharing conditions for the inter-satellites service between a non-GSO space station and a GSO space station with the radio services operated in the above-mentioned frequency bands, notably the fixed and mobile services (including some cases of 5G/IMT). The reuse of C-band spectrum for space-to-space operations represents an evolution of service capabilities based on the experience gained from a similar agenda item concerning the Ka-band from WRC-23.

4.15.1 Link with EU policies:

Space-based data relays have been used in the context of the Copernicus programme, which focused on Earth Observation for the benefit of all European citizens. The use of the European Data Relay Service (EDRS) allows for a sovereign, reliable and fast retrieval of the acquired data.

[70] Commission Implementing Decision 2025/2425

Similar space-based data relays would expand the options for the EU to access live and improved Earth observation data and would support future EU/ESA science projects.

This preliminary Agenda item aims to enable C-band ISS links to be an alternative option for satellite relays.

In addition to the key EU policy objectives mentioned above, this agenda item also reinforces support to climate and emergency communication policies while enabling innovation through leveraging existing GSO infrastructure.

4.15.2 Relevant spectrum harmonisation decisions:

A large part of the frequency band at stake (3800-4200 MHz) has been subject to an EC harmonisation decision[71].

For 5925 – 6425 MHz, the band is subject to Commission Implementing Decision (EU) 2021/1067[72] of 17 June 2021.

4.15.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council that Members States should support the inclusion of the preliminary Agenda item 2.4 (WRC-23 Resolution 683) into the Agenda of WRC-31.

This recommendation is falling under case a).

4.16 WRC-27 Agenda Item 10 – Resolution 255 (WRC-23) Agenda Item 2.6 (sub-THz IMT)

This preliminary Agenda item for WRC-31, proposed by the RCC, is intended to consider possible IMT identification of frequency bands allocated to the mobile service in the frequency range 102 to 275 GHz in order to support an IMT ecosystem in the sub-THz frequency range.

Given the lack of support and lack of urgency for studies on IMT systems in the "sub-THz" frequency range, WRC-23 agreed to put all proposed bands in square brackets, for subsequent review at WRC-27 and a possible agenda item at WRC-31.

During the development of the interim RSPG Opinion for WRC-27, Member States decided to not include any consideration on this preliminary agenda item for inclusion into the Agenda of WRC-31. The main reason was that consideration of such an Agenda item for WRC-27 had already led to opposition within CEPT/CPG at WRC-23.

The use of sub-THz bands would bring vast bandwidth, but with high path loss, making them only suitable for line-of-sight connectivity with extremely limited range for specific indoor scenarios (e.g. data centres), accurate sensing applications, and fibre-like wireless backhaul links. 6G-related developments in this frequency range tend towards immersive, massive, and hyper-reliable low-latency communications, and may

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[71] EC Decision on the introduction in the 27 EU member states of low- and medium-power terrestrial wireless broadband ('WBB LMP') systems in 3800-4200 MHz is now adopted: Implementing decision - EU - 2025/2425 - EN - EUR-Lex

[72] Commission Implementing Decision (EU) 2021/1067 on the harmonised use of radio spectrum in the 5945-6425 MHz frequency band for the implementation of wireless access systems including radio local area networks (WAS/RLANs)

address specific requirements for extreme data rates and/or low latency in very local areas, and encompass novel use cases such as Integrated Sensing and Communication (ISAC), but both concepts do not seem to justify the consideration of a possible IMT identification. The effective benefits of other ITU-R harmonisation mechanisms need to be further assessed, taking into account the needs of incumbent services in this frequency range. Furthermore, considerations on the possible usage of this frequency range by IMT technologies increasingly deviate from the concept of cellular IMT networks as deployed by MNO's.

4.16.1 Link with EU policies:

In the context of R&D activities in the Union, such as within the Smart Networks and Services Joint Undertaking (SNS JU)[73], sub-THz bands (especially 100-300 GHz) are explored as the next spectrum frontier for 6G networks, using advanced technologies like ultra-large antenna arrays and cell-free architectures. Spectrum in the 275-450 GHz range[74] is used for demonstration of sub-THz communications.

The SNS JU deals with several projects (e.g. Hexa-X) advancing THz / sub-THz communications and microelectronics with an outlook to a later 6G deployment phase (well beyond 2030).

4.16.2 Relevant spectrum harmonisation decisions

None

4.16.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council that does not support any consideration towards a possible IMT identification of any parts of the frequency range 102-275 GHz, since the introduction of high-throughput fixed and mobile wireless applications, including ISAC, within the 102-275 GHz frequency range would be possible without an IMT identification.

This recommendation is falling under case a).

4.17 WRC-27 Agenda Item 10 – Resolution 684 (WRC23) Agenda Item 2.9

This preliminary Agenda item for WRC-31 considers possible space-to-Earth allocations for the Radionavigation Satellite Service (RNSS), to respond to requirements for higher positioning accuracy, network availability and robustness in the future. Considering both technology and signal propagation aspects such as, for instance, feasibility and maturity of user equipment and payload technologies, the C-Band (4-8 GHz) has been considered the best candidate frequency band. In particular, the frequency range 5 030-5 250 MHz appeared as a suitable option to certain new requirements for RNSS, taking into account that it would also be adjacent to the existing RNSS allocation in the 5 010-5 030 MHz band.

In addition to the 5 GHz option, a new type of LEO PNT systems using some very narrow band signals are also emerging in the VHF and/or UHF bands. These new LEO PNT systems which can transmit in VHF and UHF aim to procure high accuracy positioning indoors/outdoors, thanks to much lower attenuation through walls when compared with the L, S or C bands. The high positioning accuracy is intended to be enabled through carrier phase measurements, as is the case for current RNSS systems.

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[73] Established by Council Regulation (EU) 2021/2085. See https://smart-networks.europa.eu/

[74] Portions of this frequency range have been allocated to the Land Mobile Service at WRC-19.

4.17.1 Link with EU policies:

In the context of R&D activities on European Global Navigation Satellite System (EGNSS) evolutions and in particular on Positioning, Navigation and Timing in Low Earth Orbit (LEO-PNT), opportunities have been identified for potential new frequency bands and allocations suitable for very wide band PNT signals which, combined with lower ionospheric effects than those experienced in L-Band, would provide for very accurate and robust single frequency code measurements. The Galileo Mission Segment communicates with the Galileo satellites through a global network of Mission Up-Link Stations which operate in the current 5 GHz RNSS (Earth-to-space) band.

The frequency band 5 030-5 150 MHz is allocated to several services crucial for civil aviation in the transportation sector: aeronautical radionavigation service (ARNS), aeronautical mobile route service (AM(R)S), and aeronautical mobile-satellite route service (AMS(R)S). In particular, the 5 030–5 091 MHz frequency band for terrestrial-based (AM(R)S) and 5 030-5 150 MHz frequency band for satellite-based (AMS(R)S) command and control (C2) link systems for Remotely Piloted Aircraft Systems (RPAS) have just been standardized in ICAO Standards and Recommended Practices (SARPs). These systems support the core communication, navigation and surveillance functions of RPAS.

The frequency band 5 150-5 250 MHz is harmonised worldwide and at the EU level for RLAN.

4.17.2 Relevant spectrum harmonisation decisions:

- Commission Implementing Decision (EU) 2022/179 of 8 February 2022 on the harmonised use of radio spectrum in the 5 GHz frequency band for the implementation of wireless access systems including radio local area networks and repealing Decision 2005/513/EC, as amended by Commission Implementing Decision (EU) 2022/2307 of 23 November 2022[75];
- Commission Decision (2006/771/EC of 9 November 2006 on harmonisation of the radio spectrum for use by short-range devices as amended by Commission Decisions 2008/432/EC, 2009/381/EC and 2010/368, Commission Implementing Decisions 2011/829/EU and 2013/752/EU, and Commission Implementing Decisions (EU) 2017/1483, (EU) 2019/1345, (EU) 2022/180 and (EU) 2025/105[76].

4.17.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council to support the inclusion of a modified preliminary Agenda item 2.9 into the Agenda of WRC-31, taking into account that careful consideration of a possible global RNSS allocation for very wideband signals in the 5 GHz range and for narrowband/wideband signals in the VHF/UHF frequency ranges should be given, so as to fully safeguard the existing services and their applications, and establish a broader basis for PNT to further the accuracy and robustness of RNSS systems, including Galileo.

This recommendation is falling under case a)

[75] Commission Implementing Decision (EU) 2022/179

[76] Commission Decision 2006/771/EC

4.18 WRC-27 Agenda Item 10 – Resolution 235 (rev. WRC-23) Agenda Item 2.14

WRC-23, under Agenda item 1.5, discussed the use and spectrum needs of existing services in the 470-960 MHz frequency band and the possibility of regulatory actions in the 470-694 MHz frequency band.

In the Council Decision on the EU position(s) for WRC-23[77], Member States were requested to support a secondary allocation to the mobile service, except aeronautical mobile service, of the frequency band 470 – 694 MHz in the ITU Region 1. Additionally, the Council Decision also requested that Member States support the inclusion of the agenda item for WRC-31 to consider a possible allocation of that band in the ITU Region 1 to the primary mobile service, except aeronautical mobile service.

At the end of the conference, as a delicate compromise with proponents of varying/opposing positions, country footnote 5.295A was introduced, establishing a secondary allocation of the 470-694 MHz frequency band to the mobile, except aeronautical mobile, service. All Member States were included in the footnote, with the exception of Italy and Spain, which were excluded during negotiations – for further information, see sections 2.1.c and 2.3 in the *"RSPG Report on the result of the ITU-R World Radiocommunication Conference 2023"*.

A further compromise was also reached through the update of Resolution 235, with the aim of reviewing, after WRC-27, the spectrum use of the 470-694 MHz frequency band and considering possible regulatory actions to:

a) review the status of the allocation to the mobile service in the 614-694 MHz frequency band, limited to the countries in footnote **5.295A**; *and*

b) protect the radio astronomy service in the 608-614 MHz frequency band.

As a consequence, this preliminary Agenda item for WRC-31 considers possible regulatory actions, including a review of the allocation of the 614-694 MHz band only to the countries listed in FN 5.295A and the introduction of rules to protect the radio astronomy service (RAS) in the 608-614 MHz band. Of further note, this band is also considered for a possible future MetAids (space weather) allocation (see Agenda item 1.17).

This Agenda item should follow a review of the use of the 470-694 MHz band (or part of it) and the updating of sharing and compatibility studies for coexistence conditions and the development of new studies, if necessary, to be carried out after WRC-27.

When considering regulatory options regarding the future usage of the frequency band 470-694 MHz, aspects such as the various spectrum needs, including free-to-air audio-visual multimedia, technological developments, changes in consumer behaviour and the various political, social, cultural and economic general interest objectives, need to be taken into account.

4.18.1 Link with EU policies:

In its Opinion *'Strategy on the future use of the frequency band 470-694 MHz beyond 2030 in the EU '* of 2023, the RSPG set out some considerations for the use of the 470-694 MHz band after 2030.

In particular, the RSPG recognised

"the possibility that, for the use of the 470-694 MHz band, a single scenario may not be applicable to all Member States. Therefore, RSPG recommends any future EU regulatory action to facilitate, to the extent feasible, the implementation of various scenarios among Member States, emphasizing the pursuit of compatible uses and focusing on the means to achieve them.".

[77] Council Decision on the EU position(s) for WRC-23

Uses for mobile services in addition to WBB ECS and PMSE could emerge at national level in the face of declining broadcasting needs, but these alternative uses will need to be allowed through appropriate cross-border coordination, with due regard to uses within neighbouring countries.

In addition, the RSPG recommended that any changes in band use should ensure sufficient spectrum for PMSE applications and provide the necessary protection for radio astronomy and radiolocation, noting that RAS and MetAids are an important part of the European science policy for the promotion of research and technological development.

Any decision by WRC-27 on this Agenda item will still be compliant with Decision (EU) 2017/899, providing priority to broadcasting and PMSE usage until at least end 2030, given that the actual work on this topic is to be done for WRC-31.

In light of the objectives of the Audiovisual Media Services Directive—particularly with regard to universal access, media pluralism and the promotion of European content—it is important that EU policy continues to support the availability of all media distribution platforms, taking into proper account the need of an appropriate access to the UHF band in some Member States.

4.18.2 Relevant spectrum harmonisation decisions:

- Decision (EU) 2017/899[78] of the European Parliament and of the Council of 17 May 2017 on the use of 470-790 MHz frequency band in the Union.
- Commission Decision 2006/771/EC of 9 November 2006 on harmonisation of the radio spectrum for use by short-range devices as amended by Commission Decisions 2008/432/EC, 2009/381/EC and 2010/368, Commission Implementing Decisions 2011/829/EU and 2013/752/EU, and Commission Implementing Decisions (EU) 2017/1483, (EU) 2019/1345, (EU) 2022/180 and (EU) 2025/105[79].

4.18.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council to support the preliminary Agenda item 2.14 for a WRC-31 agenda item in order to study possible regulatory actions, including a review of the allocation of the 614-694 MHz band to the mobile service. This should take due account of the different current and future spectrum needs of EU Member States, with a view to ensuring more efficient and flexible use within the entire 470–694 MHz band across the EU.

This recommendation is falling under case a)

4.19 WRC-27 Agenda item 10 - Potential new agenda item on GeoVLBI

This proposal on a potential new agenda item for WRC-31 considers possible recognition (including, but not limited to, dedicated radioastronomy allocations) for the use of specific sub-bands in the frequency ranges 2 900–3 400 MHz, 4 800–5 850 MHz, 8 750–9 800 MHz and 12.75–14 GHz by geodetic Very-Long-Baseline Interferometry (VLBI) observations.

The global network of synchronised VLBI radio telescopes functions as a single unique sensor to simultaneously observe cosmic radio sources, known as quasars, as fixed reference points. These observations

[78] Decision (EU) 2017/899

[79] Implementing Decision (EU) 2025/105

are the only method for determining highly accurate celestial and terrestrial global reference frames, as well as the parameters of the Earth's rotation. The current level of accuracy in applications of navigation satellite systems for positioning and timekeeping depends either directly or indirectly on geodetic VLBI observations.

The optimal frequency range for VLBI observations extends from 2 to 14 GHz and is dictated by physical constraints. Within this range, 32 frequency bands, each with a bandwidth of just 32 MHz, have been identified. The large bandwidth required for high temporal resolution is covered by frequency bandwidth synthesis using these 32 sub-bands. They must be synchronously observed by all radio telescope stations with as little interference as possible, so that cosmic radiation components can be detected in a subsequent correlation process.

Due to the massive expansion of mobile communications, geodetic VLBI observations in the 2-3 GHz frequency range have already been abandoned, as man-made signals suppress the very weak cosmic quasar radiation.

The proposal aims to safe-guard the current and future geodetic VLBI observations in the long-term through a recognition of the use of these 32 observation bands, including through possible new radioastronomy allocations limited to this application.

This is regarded as the most effective approach to ensuring the unrivalled accuracy of geodetic VLBI and the resulting economic benefits provided by the VLBI Global Observing System (VGOS). However, noting the varying situations regarding the use of those bands and adjacent bands, Member States consider a dedicated recognition of the VLBI observations in the Radio Regulations as a more suitable starting point.

4.19.1 Link with EU policies:

This proposed agenda item is primarily linked to EU Space Policy in the first place, but also to almost every other EU policy, and in addition to impacting every sector of daily life, being essential for economic growth, the operation of earth observation[80], is also a cornerstone of national defense and disaster response. The data provided by the GeoVLBI observations allows:

- GNSS – like Galileo – to provide accurate positioning to billions of users (e.g. for navigation),
- Satellite Operators to manage satellite orbits and avoid collisions (i.e. manoeuvring and station keeping),
- Mobile Network Operators to synchronise time across their networks with microsecond precision,
- financial systems to create accurate timestamps[81] for compliance, transactions, and fraud detection,
- the energy sector to monitor power distribution in real-time,
- climate science to track millimetre-scale sea-level rise.

4.19.2 Relevant spectrum harmonisation decisions:

- Commission Implementing Decision (EU) 2019/785 of 14 May 2019 on the harmonisation of radio spectrum for equipment using ultra-wideband technology in the Union and repealing Decision 2007/131/EC, as amended by Commission Implementing Decision (EU) 2024/1467 of 27 May 2024.

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[80] https://www.euspa.europa.eu/sites/default/files/uploads/euspa_market_report_2022.pdf - EUSPA, Market Report 2022, accessed 28 May 2024

[81] https://www.gsc-europa.eu/sites/default/files/sites/all/files/Report_on_User_Needs_and_Requirements_Timing_Synchronisation.pdf - EUSPA, Report on Time & Synchronisation User Needs and Requirement 2019, accessed 28 May 2024

- WAS/RLAN: Commission Implementing Decision (EU) 2021/1067 on the harmonised use of radio spectrum in the 5945-6425 MHz frequency band for the implementation of wireless access systems including radio local area networks (WAS/RLANs)
- Commission Implementing Decision 2006/771/EC of 9 November 2006 on harmonisation of the radio spectrum for use by short-range devices as amended by Commission Decisions 2008/432/EC, 2009/381/EC and 2010/368, Commission Implementing Decisions 2011/829/EU and 2013/752/EU, and Commission Implementing Decisions (EU) 2017/1483, (EU) 2019/1345, (EU) 2022/180 and (EU) 2025/105

4.19.3 RSPG recommendation:

The RSPG recommends that the European Commission proposes an EU position to the Council to support the inclusion of GeoVLBI into the Agenda of WRC-31, to consider recognition (including, but not limited to, dedicated radioastronomy allocations) for the use of specific sub-bands in the frequency ranges 2 900–3 400 MHz, 4 800–5 850 MHz, 8 750–9 800 MHz and 12.75–14 GHz by geodetic Very-Long-Baseline Interferometry (VLBI) observations. The target in this respect is to safe-guard the long-term usability of parts of these ranges for geodetic VLBI observations to preserve the accuracy of current and future positioning/navigation applications and time-keeping, while not unduly constraining other services and applications in these and adjacent frequency ranges.

This recommendation is falling under case a)

4.20 Other Agenda Items

For other specific WRC-27 Agenda items the current information is not sufficient to assess the impact on EU policy. Therefore, they are subject to further review.

Regarding other items under Agenda item 10, the RSPG is monitoring the development closely and may provide a view at a later stage.

Annex: Agenda of the WRC-27 (Resolution 1422 (C-24))

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RESOLUTION 1422

Agenda of the World Radiocommunication Conference 2027 (WRC-27)

The ITU Council,

noting

that Resolution 813 of the World Radiocommunication Conference (Dubai, 2023):

a) resolved to recommend to the Council that a world radiocommunication conference be held in 2027 for a maximum period of four weeks;

b) recommended its agenda, and invited the Council to finalize the agenda and arrange for the convening of WRC-27 and to initiate as soon as possible the necessary consultation with Member States,

resolves

to convene a World Radiocommunication Conference (WRC-27) in 2027, preceded by the Radiocommunication Assembly, with the following agenda:

1 on the basis of proposals from administrations, taking into account of the results of WRC-23 and the Report of the Conference Preparatory Meeting, and with due regard to the requirements of existing and future services in the frequency bands under consideration, to consider and take appropriate action in respect of the following items:

1.1 to consider the technical and operational conditions for the use of the frequency bands 47.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space), or parts thereof, by aeronautical and maritime earth stations in motion communicating with space stations in the fixed-satellite service and develop regulatory measures, as appropriate, to facilitate the use of the frequency bands 47.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space), or parts thereof, by aeronautical and maritime earth stations in motion communicating with geostationary space stations and non-geostationary space stations in the fixed-satellite service, in accordance with Resolution **176 (Rev.WRC-23)**;

1.2 to consider possible revisions of sharing conditions in the frequency band 13.75-14 GHz to allow the use of uplink fixed-satellite service earth stations with smaller antenna sizes, in accordance with Resolution **129 (WRC-23)**;

1.3 to consider studies relating to the use of the frequency band 51.4-52.4 GHz to enable use by gateway earth stations transmitting to non-geostationary-satellite orbit systems in the fixed-satellite service (Earth-to-space), in accordance with Resolution **130 (WRC-23)**;

1.4 to consider a possible new primary allocation to the fixed-satellite service (space-to-Earth) in the frequency band 17.3-17.7 GHz and a possible new primary allocation to the broadcasting-satellite service (space-to-Earth) in the frequency band 17.3-17.8 GHz in Region 3, while ensuring the protection of existing primary allocations in the same and adjacent frequency bands, and to consider equivalent power flux-density limits to be applied in Regions 1 and 3 to non-geostationary-satellite systems in the fixed-satellite service (space-to-Earth) in the frequency band 17.3-17.7 GHz, in accordance with Resolution **726 (WRC-23)**;

1.5 to consider regulatory measures, and implementability thereof, to limit the unauthorized operations of non-geostationary-satellite orbit earth stations in the fixed-satellite and mobile-satellite services and associated issues related to the service area of non-geostationary-satellite orbit satellite systems in the fixed-satellite and mobile-satellite services, in accordance with Resolution **14 (WRC-23)**;

1.6 to consider technical and regulatory measures for fixed-satellite service satellite networks/systems in the frequency bands 37.5-42.5 GHz (space-to-Earth), 42.5-43.5 GHz (Earth-to-space), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space) for equitable access to these frequency bands, in accordance with Resolution **131 (WRC-23)**;

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1.7 to consider studies on sharing and compatibility and develop technical conditions for the use of International Mobile Telecommunications (IMT) in the frequency bands 4 400-4 800 MHz and 7 125-8 400 MHz (or parts thereof), and 14.8-15.35 GHz taking into account existing primary services operating in these, and adjacent, frequency bands, in accordance with Resolution **256 (WRC-23)**;

1.8 to consider possible additional spectrum allocations to the radiolocation service on a primary basis in the frequency range 231.5-275 GHz and possible new identifications for radiolocation service applications in frequency bands within the frequency range 275-700 GHz for millimetric and sub-millimetric wave imaging systems, in accordance with Resolution 663 (Rev.WRC-23);

1.9 to consider appropriate regulatory actions to update Appendix **26** to the Radio Regulations in support of aeronautical mobile (OR) high frequency modernization, in accordance with Resolution **411** (**WRC-23)**;

1.10 to consider developing power flux-density and equivalent isotropically radiated power limits for inclusion in Article **21** of the Radio Regulations for the fixed-satellite, mobile-satellite and broadcasting-satellite services to protect the fixed and mobile services in the frequency bands 71-76 GHz and 81-86 GHz, in accordance with Resolution **775 (Rev.WRC-23)**;

1.11 to consider the technical and operational issues, and regulatory provisions, for space-to-space links among non-geostationary and geostationary satellites in the frequency bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660 MHz, 1 670-1 675 MHz and 2 483.5-2 500 MHz allocated to the mobile-satellite service, in accordance with Resolution **249 (Rev.WRC-23)**;

1.12 to consider, based on the results of studies, possible new allocations to the mobile-satellite service and possible regulatory actions in the frequency bands 1 427-1 432 MHz (space-to-Earth), 1 645.5-1 646.5 MHz (space-to-Earth) (Earth-to-space), 1 880-1 920 MHz (space-to-Earth) (Earth-to-space) and 2 010-2 025 MHz (space-to-Earth) (Earth-to-space) required for the future development of low-data-rate non-geostationary mobile-satellite systems, in accordance with Resolution **252 (WRC-23)**;

1.13 to consider studies on possible new allocations to the mobile-satellite service for direct connectivity between space stations and International Mobile Telecommunications (IMT) user equipment to complement terrestrial IMT network coverage, in accordance with Resolution **253 (WRC-23)**;

1.14 to consider possible additional allocations to the mobile-satellite service, in accordance with Resolution **254 (WRC-23)**;

1.15 to consider studies on frequency-related matters, including possible new or modified space research service (space-to-space) allocations, for future development of communications on the lunar surface and between lunar orbit and the lunar surface, in accordance with Resolution **680 (WRC-23)**;

1.16 to consider studies on the technical and regulatory provisions necessary to protect radio astronomy operating in specific Radio Quiet Zones, and in frequency bands allocated to the radio astronomy service on a primary basis globally, from aggregate radio-frequency interference caused by non-geostationary-satellite orbit systems, in accordance with Resolution **681 (WRC-23)**;

1.17 to consider regulatory provisions for receive-only space weather sensors and their protection in the Radio Regulations, taking into account the results of ITU Radiocommunication Sector studies, in accordance with Resolution **682 (WRC-23)**;

1.18 to consider, based on the results of ITU Radiocommunication Sector studies, possible regulatory measures regarding the protection of the Earth exploration-satellite service (passive) and the radio astronomy service in certain frequency bands above 76 GHz from unwanted emissions of active services, in accordance with Resolution **712 (WRC-23)**;

1.19 to consider possible primary allocations in all Regions to the Earth exploration-satellite service (passive) in the frequency bands 4 200-4 400 MHz and 8 400-8 500 MHz, in accordance with Resolution **674 (WRC-23)**;

2 to examine the revised ITU Radiocommunication Sector Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with *further resolves* of Resolution **27 (Rev.WRC-19)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in *resolves* of that Resolution;

3 to consider such consequential changes and amendments to the Radio Regulations as may be necessitated by the decisions of the conference;

4 in accordance with Resolution **95 (Rev.WRC-19)**, to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

5 to review, and take appropriate action on, the Report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the ITU Convention;

6 to identify those items requiring urgent action by the radiocommunication study groups in preparation for the next world radiocommunication conference;

7 to consider possible changes, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, on advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution **86 (Rev.WRC-07)**, in order to facilitate the rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit;

8 to consider and take appropriate action on requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, taking into account Resolution **26 (Rev.WRC-23)**;

9 to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the ITU Convention:

9.1 on the activities of the ITU Radiocommunication Sector since WRC-23[1];

9.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations[2]; and

9.3 on action in response to Resolution **80 (Rev.WRC-07)**;

10 to recommend to the ITU Council items for inclusion in the agenda for the next world radiocommunication conference, and items for the preliminary agenda of future conferences, in accordance with Article 7 of the ITU Convention and Resolution **804 (Rev.WRC-23)**.

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[1] This WRC's standing agenda sub-item is strictly limited to the Report of the Director on ITU-R activities since the last WRC; and any topics outside 1.1-1.19 as listed above shall be strictly avoided, particularly those topics which require any changes/amendments to the Radio Regulations.

[2] This WRC's standing agenda sub-item is strictly limited to the Report of the Director on any difficulties or inconsistencies encountered in the application of the Radio Regulations and the comments from administrations. Administrations are invited to inform the Director of the Radiocommunication Bureau of any difficulties or inconsistencies encountered in the Radio Regulations.