# UNITED STATES OF AMERICA

# PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda item 10

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10to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention,

**Background information**:

The need for services provided by earth stations on aircraft communicating with GSO space stations in the FSS continues to grow with the increasing demand for internet based applications for the aviation industry and their passengers. The availability of the band 12.75-13.25 GHz, allocated to the fixed satellite service (FSS), for the use by earth stations on aircraft would allow satellite network operators to provide additional capacity for the growing needs in this sector.

The frequency band 12.75-13.25 GHz is currently allocated on a primary basis to the fixed, fixed-satellite (Earth-to-space)[[1]](#footnote-2), and mobile services, and on a secondary basis to the Space research (deep space) (space-to-Earth) services.

Currently, satellite networks operating in this frequency band can provide services to earth stations on aircraft only under No. **4.4**, which requires the associated transmissions not to cause harmful interference to, and not to claim protection from harmful interference caused by, a station operating in accordance with the provisions of the Constitution, the Convention, and the Regulations.

Given the growing need for connectivity for aviation, it is proposed to study the viability of allowing the operation of earth stations on aircraft communicating with GSO space stations in the FSS in the 12.75-13.25 GHz (Earth-to-space) frequency band, with the aim of developing regulatory means and associated conditions for this type of application.

Proposals

SUP USA/10/1

RESOLUTION 810 (WRC‑15)

**Preliminary agenda for the 2023 World Radiocommunication Conference**

The World Radiocommunication Conference (Geneva, 2015),

**Reasons:** This Resolution must be suppressed, as WRC-19 will create a new Resolution that will include the agenda for WRC-23.

ADD USA/10(XXX)/2

Draft New Resolution [USA-2023]

Agenda for the 2023 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that, in accordance with No. 118 of the ITU Convention, the general scope of the agenda for a world radiocommunication conference should be established four to six years in advance and that a final agenda shall be established by the Council two years before the conference;

*b)* Article 13 of the ITU Constitution relating to the competence and scheduling of world radiocommunication conferences and Article 7 of the Convention relating to their agendas;

*c)* the relevant resolutions and recommendations of previous world administrative radio conferences (WARCs) and world radiocommunication conferences (WRCs),

resolves

to recommend to the Council that a world radiocommunication conference be held in 2023 for a maximum period of four weeks, with the following agenda:

1 on the basis of proposals from administrations, taking account of the results of WRC‑15 and the Report of the Conference Preparatory Meeting, and with due regard to the requirements of existing and future services in the bands under consideration, to consider and take appropriate action in respect of the following items:

1.[XXX] to consider, on the basis of ITU-R studies in accordance with Resolution **[USA/10/FSS 12.75-13.25 GHZ] (WRC-19)**, appropriate regulatory actions, the use of the frequency band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft communicating with geostationary space stations in the fixed-satellite service.

…

resolves further

to activate the Conference Preparatory Meeting,

invites the Council

to finalize the agenda and arrange for the convening of WRC‑23, and to initiate as soon as possible the necessary consultations with Member States,

instructs the Director of the Radiocommunication Bureau

to make the necessary arrangements to convene meetings of the Conference Preparatory Meeting and to prepare a report to WRC‑23,

instructs the Secretary-General

to communicate this Resolution to international and regional organizations concerned.

**Reasons:** To allow additional uses of the FSS frequency band 12.75-13.25 GHz to meet growing demand for spectrum for earth stations on aircraft.

**ADD** USA/10/3

DRAFT RESOLUTION [USA/10/FSS 12.75-13.25 ghZ] (WRC-19)

**Operation of earth stations on aircraft communicating with geostationary space stations in the fixed-satellite service in the frequency band 12.75-13.25 GHz (Earth-to-space)**

The World Radiocommunication Conference (Sharm el-Sheik Egypt, 2019),

*considering*

*a)* that the frequency band 12.75-13.25 GHz is currently allocated on a primary basis to the fixed, mobile and fixed-satellite (Earth-to-space) services, and on a secondary basis to the space research (deep space) (space-to-Earth) services globally;

*b)* that the use of the fixed-satellite service (FSS) in this band is subject to Appendix **30B** and that any actions under this agenda item should not impact the integrity of the Appendix **30B** Plan;

*c)* that in order to meet the growing demand for connectivity on aircraft, networks operating in this frequency band are already providing services to earth stations on aircraft under No. **4.4**;

*d)* that the advances in earth station technology, including the use of tracking techniques, allow earth station on aircraft to operate within the characteristics of fixed earth stations in the FSS;

*e)* that the availability of the band 12.75-13.25 GHz (Earth-to-space) for earth stations on aircraft will provide administrations with more flexibility to use their allotments in the Appendix **30B** Plan;

*f)* that operations of earth stations on aircraft should protect allocated services or uses and not constrain their future development;

*g)* that a consistent approach to the use of the 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft will provide regulatory certainty and support the growing need for inflight connectivity globally;

*h)* that earth stations on aircraft must comply and operate within the envelope of fixed earth stations operating with the GSO network,

*recognizing*

*a)* that in the ITU Radio Regulations, the band 12.75-13.25 GHz is allocated on a worldwide and primary basis to the fixed-satellite service, fixed service and mobile service;

*b)* that the use of the band 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service is in accordance with the provisions of Appendix **30B** according to No. **5.441**;

*c)* that previous World Radiocommunication Conferences have adopted measures to allow earth stations on aircraft to communicate with GSO space stations in the FSS in certain frequency allocations provided they meet the technical requirements of fixed-satellite earth stations;

*d*) that these earth stations will not be used or relied upon for safety-of-life applications,

*resolves to invite ITU-R*

1 to carry out studies on technical and operational characteristics of earth stations on aircraft that communicate or plan to communicate with GSO space stations in the FSS within the existing allocation in the frequency band 12.75-13.25 GHz;

2 to study sharing and compatibility between earth stations on aircraft communicating with GSO space stations in the FSS and current and planned stations of existing services allocated in the 12.75-13.25 GHz band to ensure protection of those services;

3 to develop technical conditions and regulatory provisions for the operation of earth stations on aircraft communicating with GSO space stations in the FSS in the frequency band 12.75-13.25 GHz (Earth-to-space) taking into account the result of studies as called for in resolves 1) and 2) above and in particular without affecting any provisions of Appendix **30B**;

4 to complete studies in time for WRC‑23,

*Further resolves to invite WRC-23*

to review the results of these studies in order to adopt technical conditions and regulatory provisions that allow for the operation of earth stations on aircraft communicating with GSO space stations in the FSS in the frequency band 12.75-13.25 GHz (Earth-to-space),

*invites administrations*

to participate actively in the studies by submitting contributions to ITU-R.

**ATTACHMENT**

ANNEX 2 TO RESOLUTION 804 (Rev.WRC‑12)

**Template for the submission of proposals for agenda items**

**Subject:** Developing technical conditions and regulatory provisions and associated conditions that allowfor the operation of earth stations on aircraft communicating with geostationary space stations in the FSS in the frequency band 12.75-13.25 GHz (Earth-to-space)

**Origin**: United States of America

***Proposal:*** *To consider the use of the frequency band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft communicating with geostationary space stations in the fixed-satellite service in accordance with Resolution [USA/10/FSS 12.75-13.25 GHZ] (WRC-19).*

***Background/reason:*** According to the provisions of the Radio Regulations, FSS satellite networks operating in the 12.75-13.25 GHz frequency band can only provide services to earth stations on aircraft under No. **4.4.** This provision requires the associated transmissions not to cause harmful interference to, and not to claim protection from harmful interference caused by, a station operating according to primary or secondary frequency allocations. Previous WRCs have adopted provisions to allow earth stations on aircraft to communicate with GSO space stations in the FSS in certain FSS frequency allocations provided they meet the technical requirements of fixed-satellite earth stations and other associated provisions.

It may therefore be feasible to allow earth stations on aircraft to communicate with geostationary space stations in the FSS operating in the frequency band 12.75-13.25 GHz (Earth-to-space), which would allow the provision of such services with additional regulatory certainty.

This additional use will not impact the Appendix **30B** allotments/assignments. The earth stations on aircraft, similar to any other earth station operating in Appendix **30B** frequency assignments, are to be operated within the service area and with the characteristics notified for earth stations of the GSO FSS system (i.e. within the interference envelope established for earth stations of the GSO FSS system). Such operation therefore should not cause interference to other allotments/assignments of Appendix **30B**.

***Radiocommunication services concerned:*** FSS, FS, MS and SRS (deep space)

***Indication of possible difficulties:*** None foreseen

***Previous/ongoing studies on the issue:***

Previous WRCs have adopted technical and regulatory provisions that allow earth stations on aircraft to communicate with GSO space stations in the FSS. These decisions were based on studies carried out by the ITU-R.

One of the regional organizations of ITU-R Region 1 has conducted technical studies on introducing earth stations on aircraft in the 12.75-13.25 GHz band concluding with the derivation of a pfd mask to ensure the protection (long term and short-term criteria) of terrestrial FS stations from the aggregated interference from earth stations on aircraft communicating with GSO and non-GSO space stations in the FSS.

The above can be taken into account as proof of concept regarding the potential use of the band under consideration by earth stations on aircraft.

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| ***Studies to be carried out by:*** SG4 | ***with the participation of:*** |

***ITU-R Study Groups concerned:*** SG5 and SG7

***ITU resource implications, including financial implications (refer to CV126):***Minimal

***Common regional proposal:*** Yes/No ***Multicountry proposal:*** Yes/No

***Number of countries:***

***Remarks***

1. The use of the band 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service is in accordance with the provisions of Appendix **30B** according to No. **5.441**. [↑](#footnote-ref-2)