

**ADD**

**RESOLUTION 406 (WRC-23)**

**Use of the frequency band 117.975-137 MHz by  
the aeronautical mobile-satellite (R) service**

The World Radiocommunication Conference (Dubai, 2023),

*considering*

- a)* that the optimization of air traffic management (ATM) over oceanic and remote areas necessitates appropriate aeronautical surveillance and communication means, in order to meet the required communication performance for reduced separation minima;
- b)* that the allocation of the frequency band 117.975-137 MHz to the aeronautical mobile-satellite (R) service (AMS(R)S) is intended for the relay via satellite of VHF communications under the aeronautical mobile (R) service (AM(R)S), in order to complement terrestrial communication infrastructures when aircraft are operating in oceanic and remote areas;
- c)* that the AM(R)S VHF channels have become congested in some areas and AMS(R)S systems need to operate in such a manner as not to constrain AM(R)S VHF systems, without modification to aircraft equipment,

*noting*

- a)* that there are Standards and Recommended Practices (SARPs) developed by the International Civil Aviation Organization (ICAO) detailing frequency assignment planning criteria for AM(R)S VHF communication systems;
- b)* that frequency assignment planning between stations operated under the AM(R)S allocation in the frequency band 117.975-137 MHz is performed by competent organizations under ICAO provisions;
- c)* that the development of compatibility criteria between AMS(R)S systems proposed for operations under *considering b)* and ICAO-standardized aeronautical systems in the frequency band 117.975-137 MHz is the responsibility of ICAO;
- d)* that feeder links of AMS(R)S systems are not planned to be operated in the frequency band 117.975-137 MHz,

*recognizing*

- a)* that the frequency band 117.975-137 MHz is allocated on a primary basis to the AM(R)S and is used by air-ground, air-air and ground-air systems operated in accordance with ICAO SARPs, providing critical voice and data communications for ATM on a global basis;

b) that Annex 10 to the Convention on International Civil Aviation contains SARPs for safety aeronautical radionavigation and radiocommunication systems used by international civil aviation,

*resolves*

1 that the notifying administration for the AMS(R)S satellite system authorizing the use of the frequency band 117.975-137 MHz by that system shall take into account relevant ICAO frequency assignment planning procedures in relation to *noting b*);

2 that, taking into account *resolves 1*, the frequency band 117.975-137 MHz may also be used by AMS(R)S experimental systems during the period of time that the relevant SARPs are being developed and before operational deployment;

3 that the interference from out-of-band emissions of the AMS(R)S space station operating in the frequency band 117.975-137 MHz to adjacent channels of the AM(R)S airborne receiving stations shall not be more than the interference from out-of-band emissions of AM(R)S aircraft stations;

4 that, in accordance with ICAO frequency assignment planning procedures, the identification or selection of channels for use by the AMS(R)S shall:

- take into account the operational deployment of stations operating in the AM(R)S and, when available, the aeronautical mobile (OR) service (AM(OR)S);
- not adversely affect the potential future modifications of AM(R)S channel planning when required;

5 that, in assigning frequencies to stations in the AM(OR)S, the administration needs to take into account the frequencies assigned to the AMS(R)S for which coordination under Nos. **9.14** and **9.15** has been agreed to between both administrations involved in the coordination process;

6 that space stations operating in the frequency band 117.975-137 MHz in the AMS(R)S shall not have out-of-band emissions into the frequency band 137-138 MHz that exceed a power flux-density of  $-170 \text{ dB(W/(m}^2 \cdot 14 \text{ kHz))}$  at the Earth's surface;

7 that, in the frequency band 136.8-137 MHz, AMS(R)S space station receivers shall be designed to be resilient to the interference environment resulting from satellite systems operating in the frequency band 137-138 MHz; the power level(s) contained in the Annex to this Resolution and associated percentage(s) of time are to be taken into account in the development of relevant ICAO SARPs,

*instructs the Secretary-General*

to bring this Resolution to the attention of ICAO and the International Maritime Organization,

*invites the International Civil Aviation Organization*

to take into account this Resolution in the course of developing SARPs for the AMS(R)S and planning the AM(R)S and AMS(R)S in the frequency band 117.975-137 MHz.

## ANNEX TO RESOLUTION 406 (WRC-23)

The following table provides the power levels for several percentages of time for the AMS(R)S space station channel centre frequency between 136.8 and 136.975 MHz:

Power level (dBW/25 kHz)		AMS(R)S space station channel centre frequency (MHz)							
		136.8	136.825	136.85	136.875	136.9	136.925	136.95	136.975
% of time	50	-207	-205	-203	-201	-195.75	-190.5	-185.25	-180
	10	-184	-182	-180	-178	-172.75	-167.5	-162.25	-157
	1	-175	-173	-171	-169	-163.75	-158.5	-153.25	-148
	0.1	-167	-165	-163	-161	-155.75	-150.5	-145.25	-140
	0.01	-161	-159	-157	-155	-149.75	-144.5	-139.25	-134
	0.001	-155	-153	-151	-149	-143.75	-138.5	-133.25	-128
	0.0001	-152	-150	-148	-146	-140.75	-135.5	-130.25	-125