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| A close up of a sign  Description automatically generated | **World Radiocommunication Conference (WRC-23)Dubai, 20 November - 15 December 2023** |  |
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| PLENARY MEETING | **Addendum 6 toDocument 44-E** |
|  | **13 October 2023** |
|  | **Original: English** |
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| Member States of the Inter-American Telecommunication Commission (CITEL) |
| Proposals for the work of the conference |
|  |
| Agenda item 1.6 |

1.6 to consider, in accordance with Resolution**772 (WRC‑19)**, regulatory provisions to facilitate radiocommunications for sub-orbital vehicles;

Proposals

ADD IAP/44A6/1#1588

DRAFT NEW RESOLUTION [IAP-A16] (WRC‑23)

Regulatory provisions for the operation of radiocommunications
on sub-orbital vehicles

The World Radiocommunication Conference (Dubai, 2023),

considering

*a)* that sub-orbital vehicles operate at higher altitudes than conventional aircraft;

*b)* that sub-orbital vehicles operate through the lower levels of the atmosphere, where some may operate in the same airspace as conventional aircraft;

*c)* that sub-orbital vehicles may perform various missions such as conducting scientific research or providing transportation;

*d)* that stations on board sub-orbital vehicles are expected to provide all or some of the following applications: voice/data communications, navigation, surveillance, and telemetry, tracking and command (TT&C);

*e)* that sub-orbital vehicles must be safely integrated into airspace used by conventional aircraft;

*f)* that some stations on board sub-orbital vehicles may need to communicate with air traffic management systems and relevant ground control facilities,

noting

*a)* that Report ITU‑R M.2477 provides information on radiocommunications for sub-orbital vehicles, including a description of the flight trajectory, categories of sub-orbital vehicles, technical studies related to possible avionics systems used by sub-orbital vehicles, and service allocations of those systems;

*b)* that the provisions of No. **4.10** may apply to certain operations of sub-orbital vehicles;

*c)* that the development of conditions of coexistence between International Civil Aviation Organization (ICAO) standardized aeronautical systems is the responsibility of ICAO;

*d)* that ICAO develops, in some cases, Standards and Recommended Practices (SARPs) to address the coexistence between ICAO aeronautical applications;

*e)* that Report ITU‑R M.2477 describes sub-orbital flight as an intentional flight of a vehicle expected to reach the upper atmosphere with a portion of its flight path that may occur in space without completing a full orbit around the Earth before returning back to the surface of the Earth;

*f)* that Report ITU‑R M.2477 describes a sub-orbital vehicle as a vehicle executing sub orbital flight,

recognizing

*a)* that there is no internationally agreed legal demarcation between the Earth’s atmosphere and the space domain, nor between the sovereign airspace and outer space;

*b)* that Annex 10 to the Convention on International Civil Aviation contains Standards and Recommended Practices (SARPs) for aeronautical radionavigation and radiocommunication systems used by international civil aviation;

*c)* that, due to the increase of Doppler shift, emissions from stations on board sub-orbital vehicles may impact services operating in the same and adjacent or nearby frequency bands;

*d)* that, due to the higher altitude of sub-orbital vehicles compared to conventional aircraft, emissions from stations on board sub-orbital vehicles may have a radiocommunication impact on larger areas involving additional territories and/or on space stations;

*e)* that some space launch systems may have space stations that already operate as part of existing space operation service allocations;

*f)* that stations on board sub-orbital vehicles may use systems operating under space or terrestrial radiocommunication services;

*g)* that some sub-orbital vehicles could reach altitudes for a brief period of time in space without sufficient energy to sustain its orbit,

resolves

1 that sub-orbital vehicles may use terrestrial stations (No. **1.62**) and earth stations (No. **1.63**) during all phases of flight;

2 that terrestrial stations and earth stations on board sub-orbital vehicles referred to in *resolves* 1 shall maintain their station class unchanged;

3 that the stations on board sub-orbital vehicles referred to in *resolves* 1 shall not create new constraints on the applications of the same service and on other radiocommunication services in the same and adjacent frequency bands,

instructs the Secretary-General

to bring this Resolution to the attention of ICAO,

invites the International Civil Aviation Organization

to take into account this Resolution in the course of developing standards and recommended practices (SARPs) for ICAO systems that may be used by sub-orbital vehicles,

instructs the Director of the Radiocommunication Bureau

to report to future world radiocommunication conferences any difficulties or inconsistencies encountered in the implementation of this Resolution.

**Reasons:** This new Resolution and the action in *resolves* 3 will clarify that stations on board sub-orbital vehicles may use terrestrial stations (RR No. **1.62**) and earth stations (RR No. **1.63**) and can be used in all phases of flight, within their respective service allocations. The stations shall not impose any new constraints on applications of the same service and other radiocommunication services that are allocated on a primary basis.

ARTICLE 43

Special rules relating to the use of frequencies

ADD IAP/44A6/2#1587

43.A16 Operation of stations on board sub-orbital vehicles shall be subject to Resolution **[IAP‑A16] (WRC‑23)**.     (WRC‑23)

**Reasons:** Addition of this provision to RR Article **43**, addressing special rules relating to use of frequencies, would provide the necessary reference within the Radio Regulations to the proposed new Resolution.

SUP IAP/44A6/3#1589

RESOLUTION 772 (WRC‑19)

Consideration of regulatory provisions to facilitate
the introduction of sub-orbital vehicles

**Reasons:** Studies in relation to Resolution **772 (WRC‑19)** have been completed and consequently this Resolution is proposed to be suppressed.

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