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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 | **Document 76-E** |
|  | **18 October 2023** |
|  | **Original: English** |
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| Australia/New Zealand/Samoa (Independent State of)/Singapore (Republic of)/Thailand/Tonga (Kingdom of)/Vanuatu (Republic of) |
| Proposals for the work of the conference |
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| Agenda item 1.6 |

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

Introduction

To address this agenda item, the ITU‑R undertook studies pursuant to Resolution **772 (WRC‑19)**. In particular, the ITU‑R is invited to study the spectrum and regulatory needs for stations on board sub-orbital vehicles, any appropriate modification to the Radio Regulations (RR), excluding any new allocations or changes to the existing allocations in RR Article **5**, and to identify whether there is a need for access to additional spectrum.

Proposals

This proposal is based on elements of Method B of the CPM text on WRC‑23 agenda item 1.6 and does not identify a need for additional spectrum.

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DRAFT NEW RESOLUTION [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 transit 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 may require 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 to accommodate safe transit through the same airspace as conventional aircraft;

*g)* that some satellite launch rocket systems or components may be considered as sub-orbital vehicles,

noting

*a)* 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;

*b)* 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 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 cause interference to nor claim protection beyond what currently applies for existing aircraft applications of the same service and on other radiocommunication services in the same and adjacent frequency bands;

4 that for the purpose of this Resolution, a sub-orbital vehicle is a vehicle expected to reach the upper atmosphere and higher altitudes than conventional aircraft in portions of its flight, without completing a full orbit around the Earth;

5that for the purpose of this Resolution, a sub-orbital vehicle shall not have the capability to become a satellite (see No. **1.179**);

6 that stations onboard sub-orbital vehicles are expected to operate in accordance with International Civil Aviation Organization (ICAO) SARPs or other internationally recognized aeronautical standards where they exist and are appropriate,

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 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 on any difficulties or inconsistencies encountered in the implementation of this Resolution.

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RESOLUTION 772 (WRC‑19)

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

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