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| U.S. Radiocommunications SectorFact Sheet |
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| **Purpose/Objective:** This contribution initiates regulatory, operational, and technical studies to respond to Resolution **772** (**WRC-19**). |
| **Abstract:** Resolution **772** (**WRC-19**), in preparation for Agenda Item 1.6 (WRC-23), invites the ITU-R to study the spectrum needs for stations on board sub-orbital vehicles, any appropriate modification to the Radio Regulations, excluding any new allocations or changes to the existing allocations in Article **5**, and to identify whether there is a need for access to additional spectrum that should be addressed after WRC-23 by a future competent conference. This contribution initiates those studies to support the agenda item. |

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| **Radiocommunication Study Groups** |  |
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| wd-pdn report itu-r m.[SUBORBITAL studies]**Regulatory, operational, and technical studies of radiocommunications for suborbital vehicles** |
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**Introduction**

Resolution **772** (**WRC-19**), in preparation for Agenda Item 1.6 (**WRC-23**), invites the ITU-R to study the spectrum needs for stations on board sub-orbital vehicles, any appropriate modification to the Radio Regulations, excluding any new allocations or changes to the existing allocations in Article **5**, and to identify whether there is a need for access to additional spectrum that should be addressed after WRC-23 by a future competent conference. The United States offers this contribution to initiate those studies to support the agenda item.

Attachment: 1

ATTACHMENT

wd-pdn report ITU-r m.[SUBORBITAL studies]

**Regulatory, operational, and technical studies of radiocommunications for suborbital vehicles**

# 1 Introduction

Resolution **772** (**WRC-19**), in preparation for Agenda Item 1.6 (WRC-23), invites the ITU-R:

1 to study spectrum needs for communications between stations on board sub-orbital vehicles and terrestrial/space stations providing functions such as, *inter alia*, voice/data communications, navigation, surveillance and TT&C;

2 to study appropriate modification, if any, to the Radio Regulations, excluding any new allocations or changes to the existing allocations in Article **5**, to accommodate stations on board sub-orbital vehicles, whilst avoiding any impact on conventional space launch systems with the following objectives:

– to determine the status of stations on sub-orbital vehicles, and study corresponding regulatory provisions to determine which existing radiocommunication services can be used by stations on sub-orbital vehicles, if necessary;

– to determine the technical and regulatory conditions to allow some stations on board sub-orbital vehicles to operate under the aeronautical regulation and to be considered as earth stations or terrestrial stations even if a part of the flight occurs in space;

– to facilitate radiocommunications that support aviation to safely integrate sub-orbital vehicles into the airspace and be interoperable with international civil aviation;

– to define the relevant technical characteristics and protection criteria relevant for the studies to be undertaken in accordance with the bullet point below;

– to conduct sharing and compatibility studies with incumbent services that are allocated on a primary basis in the same and adjacent frequency bands in order to avoid harmful interference to other radiocommunication services and to existing applications of the same service in which stations on board sub-orbital vehicles operate, having regard to the sub-orbital flight application scenarios;

3 to identify, as a result of the studies above, whether there is a need for access to additional spectrum that should be addressed after WRC-23 by a future competent conference.

This report will be organized into sections as outlining in Resolution 772 (WRC-19) for Agenda Item 1.6 (WRC-23):

* Section 2: relevant ITU-R Recommendations and Reports
* Section 3: to study spectrum needs for communications between stations on board sub-orbital vehicles and terrestrial/space stations.
* Section 4: to study appropriate modification, if any, to the Radio Regulations, excluding any new allocations or changes to the existing allocations in Article **5,** to accommodate stations on-board sub-orbital vehicles.
* Section 5: summary of studies.

# 2 Relevant ITU-R Recommendations and Reports

[To be added]

# 3 Spectrum needs for communications between stations on-board sub-orbital vehicles and terrestrial/space stations

[This section will study spectrum needs for communications between stations on board sub-orbital vehicles and terrestrial/space stations providing functions such as, *inter alia*, voice/data communications, navigation, surveillance and TT&C.]

# 4 Appropriate modification, if any, to the Radio Regulations, excluding any new allocations or changes to the existing allocations in Article 5, to accommodate stations on-board sub-orbital vehicles

4.1 The status of stations on sub-orbital vehicles

[This section will consider the status of stations on sub-orbital vehicles and study corresponding regulatory provisions to determine which existing radiocommunication services can be used by stations on sub-orbital vehicles.]

4.2 Technical and regulatory conditions that allow some stations on board sub-orbital vehicles to operate under the aeronautical regulation

[This section will study the technical and regulatory conditions to allow some stations on board sub-orbital vehicles to operate under the aeronautical regulation and to be considered as earth stations or terrestrial stations even if a part of the flight occurs in space.]

4.3 Potential modifications to the Radio Regulations, in accordance with *invites 2*, Resolution **772** (**WRC-19**), that facilitate radiocommunications that support aviation to safely integrate sub-orbital vehicles into the airspace and be interoperable with international civil aviation

[This section will study any appropriate modifications to the Radio Regulations permitted by Resolution 772 (WRC-19) that facilitate radiocommunications that support aviation to safely integrate sub-orbital vehicles into the airspace and be interoperable with international civil aviation.]

4.4 Sharing and compatibility studies

4.4.1 Technical characteristics and protection criteria relevant for the following studies

[to be determined]

4.4.2 Sharing and compatibility studies

[This section will contain sharing and compatibility studies with incumbent services that are allocated on a primary basis in the same and adjacent frequency bands in order to avoid harmful interference to other radiocommunication services and to existing applications of the same service in which stations on board sub-orbital vehicles operate, having regard to the sub-orbital flight application scenarios.]

# 5 Summary of studies

[To be added]