RESOLUTION 753 (WRC-07)

Use of the band 22.55-23.15 GHz by the space research service

The World Radiocommunication Conference (Geneva, 2007),

considering

a) that there is growing interest around the world in the comprehensive space exploration in particular around the Moon;

b) that the lunar exploration missions, examining the terrain, environment and potential landing sites, will be robotic for the foreseeable future and manned in the long term;

c) that a primary space research service (space-to-Earth) allocation in the band 25.5-27.0 GHz was added to the Table of Frequency Allocations to support a wide range of space research missions;

d) that space research service (space-to-Earth) transmissions in the 25.5-27.0 GHz band will be used to support space research service missions in near-Earth orbit, including missions in transit to the Moon and at or near the Moon;

e) that the space research service (space-to-Earth) transmissions in the 25.5-27.0 GHz band will be used for both scientific data retrieval and voice/video communication with the Earth;

f) that there is a need for a companion uplink space research service (Earth-to-space) band to provide the mission data, command and control links for the lunar exploration missions;

g) that due to the potential for many concurrent exploration-related systems and the large bandwidth requirements of these systems, especially those supporting manned missions, it is envisaged that a total uplink bandwidth of at least several hundred MHz will be needed;

h) that the 22.55-23.15 GHz band is far enough from the 25.5-27.0 GHz band to provide adequate frequency separation;

i) that the 22.55-23.55 GHz band is used by data relay satellite systems to communicate with user satellites (forward links) in the existing primary inter-satellite service allocation;
that the 22.55-23.15 GHz band is the logical companion band to provide the necessary uplink bandwidth and by using the same band as data relay satellite systems in considering j) for radiocommunication in the Earth-to-space direction, it provides a degree of redundancy and coverage that may prove vital for future missions,

recognizing

1 that the band 22.55-23.55 GHz is allocated to the fixed, inter-satellite and mobile services;

2 that the inter-satellite forward links in the 22.55-23.55 GHz band are paired with inter-satellite return links in the 25.25-27.5 GHz band;

3 that non-GSO inter-satellite service links have been operating for several years and are expected to continue to operate in the 23.183-23.377 GHz band and that these links are increasingly being used in situations of emergencies and natural disasters;

4 that systems referred to in recognizing 1 need to be protected and their future requirements be taken into account,

resolves

1 to invite ITU-R to conduct sharing studies between space research service systems operating in the Earth-to-space direction and the fixed, inter-satellite and mobile services in the band 22.55-23.15 GHz, and to recommend appropriate sharing criteria for an allocation to the space research service in the Earth-to-space direction;

2 to invite WRC-11 to review the results of the studies under resolves 1 and consider the inclusion of the sharing criteria within the Radio Regulations and appropriate modifications to the Table of Frequency Allocations,

invites administrations

to contribute to the sharing studies between the space research service and the fixed, inter-satellite and mobile services in the 22.55-23.15 GHz band,

invites ITU-R

to complete the necessary studies, as a matter of urgency, taking into account the present use of the allocated band, with a view to presenting, at the appropriate time, the technical information likely to be required as a basis for the work of the conference,

instructs the Secretary-General

to bring this Resolution to the attention of the international and regional organizations concerned.