

United States of America

DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda Item 1.3: in accordance with Resolution **747 (WRC-03)**, consider upgrading the radiolocation service to primary allocation status in the bands 9 000 - 9 200 MHz and 9 300 - 9 500 MHz, and extending by up to 200 MHz the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9 500 - 9 800 without placing undue constraint on the services to which the bands are allocated.

Background Information: The proposal addresses the upgrade of radiolocation service in the band 9 000-9 200 MHz and 9 300-9 500 MHz. As identified in Resolution **747 (WRC-03)**, there is a need to provide contiguous primary spectrum around the 9 GHz band in order for existing and planned radiolocation systems to satisfy their required missions. Changes in technology and emerging requirements for increased image resolution and increased range accuracy necessitate wider contiguous emission bandwidths. Therefore, there is a need to upgrade the status of frequency allocations to the radiolocation service in the frequency range 9 000 - 9 200 MHz and 9 300 - 9 500 MHz.

The bands 9 000 - 9 200 MHz and 9 300 - 9 500 MHz are allocated on a primary basis to aeronautical radionavigation and radionavigation, respectively. The Radio Regulation No. **4.10** recognizes radionavigation as a safety service. The radiolocation services and the radionavigation service have demonstrated compatible operations over many years through the use of similar system characteristics such as low-duty cycle emissions, scanning beams and interference reduction techniques. For example, past operational experience in the 2 900-3 100 MHz band as found in Report ITU-R M.2032 “Tests illustrating the compatibility between maritime radionavigation radars and emissions from radiolocation radars in the band 2 900 - 3 100 MHz” confirms that it is possible to mitigate interference from radiolocation radars to maritime radionavigation radars in the band.

Some studies have been completed within ITU-R WP 8B that characterize the technical performance and protection criteria of radiolocation and radionavigation systems that ensure compatible operations in the bands 9 000 - 9 200 MHz and 9 300 - 9 500 MHz. Recommendation ITU-R M.1313 contains the technical characteristics and protection criteria for maritime radars in the band 9 300 - 9 500 MHz and that Recommendation ITU-R M.1372 identifies interference reduction techniques which enhance compatibility among radar systems.

The ITU-R studies that have been completed so far, such as on maritime radionavigation radars and emissions from radiolocation radars in the band 9 200 – 9 500 MHz illustrate compatibility between the two services in this band and are an indicator of how the sharing would be with other radionavigation systems. These studies indicate that typical maritime radionavigation radars can suppress emissions from other radars, even when the

maritime radars receive interference with very high interference-to-noise (I/N) ratios if the unwanted pulsed waveform is asynchronous and has a low effective duty cycle. These study results support the successful historical sharing experience between the two services in the 9 200-9 500 MHz band. As most maritime radars in the 9 000 - 9 500 MHz bands are very similar in design and operation, one does not expect a great variation from the protection criteria that was derived from the radars that were used for these studies. Therefore, there is an indication that the results could apply to other similar radars that operate in the 9 000 - 9 500 MHz bands as well. Therefore a primary allocation for radiolocation can be added to the 9 000 - 9 200 and 9 300 - 9 500 MHz bands.

Proposal

USA/ /01 MOD

8 500-10 000 MHz

Allocation to services		
Region 1	Region 2	Region 3
....		
9 000-9 200	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION Radiolocation	5.471 ADD_5.472[A]
9 200-9 300	RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474	
9 300-9 500	RADIONAVIGATION 5.476 RADIOLOCATION Radiolocation	5.427 5.474 MOD_5.475_ADD_5.472[A]
....		

Deleted: ¶

Reasons: Provides a worldwide contiguous primary allocation to meet the required missions of radiolocation systems.

USA/ /02 MOD

5.475 The use of the band 9 300-9 500 MHz by the aeronautical radionavigation service is limited to airborne weather radars and ground-based radars. In addition, ground-based radar beacons in the aeronautical radionavigation service are permitted in the band 9 300-9 320 MHz on condition that harmful interference is not caused to the maritime radionavigation service. ~~In the band 9 300-9 500 MHz, ground-based radars used for meteorological purposes have priority over other radiolocation devices.~~

Reasons: Priority of the meteorological ground-based radars is included in added provision RR 5.472[A].

USA/ /03 ADD

5.472[A] In the bands 9 000 - 9 200 MHz and 9 300 - 9 500 MHz, stations operating in the radiolocation service shall not cause harmful interference to, nor claim protection from systems operating in the aeronautical radionavigation service (9 000 - 9 200 MHz) or in the radionavigation service (9 300 - 9 500 MHz). In the 9 300 - 9 500 MHz band, ground-based radars used for meteorological purposes have priority over other radiolocation uses.

Reasons: Provide primary allocation to the radiolocation service, contiguous across 8 500 – 10 000 MHz, with sufficient bandwidth to meet emerging requirement for increased image resolution and increased range accuracy. The radionavigation service and the meteorological ground-based radars will continue to be protected from stations of the radiolocation service.
