

United States of America
DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.18: to consider a primary allocation to the radiolocation service for automotive applications in the 77.5-78.0 GHz frequency band in accordance with Resolution **654 (WRC-12)**

Background information

Resolution **654 (WRC-12)** calls for WRC-15 to consider a primary allocation to the radiolocation service in the 77.5-78 GHz frequency band for automotive applications, based on appropriate technical, operational and regulatory studies, including sharing studies with services operating in the band and compatibility studies in nearby bands. The resolution also calls for evaluation of Intelligent Transportation System (ITS) safety-related applications that would benefit from global or regional harmonization.

The worldwide automotive industry is continuing development of vehicular radar systems that would operate in portions of the 76-81 GHz band for safety and operational purposes, including additional higher precision and full surrounded “cocoon” vehicle safety and assisted self driving capabilities. Such systems may contribute substantially to road safety, diminishing the increasing incidence of traffic fatalities and injuries due to driver distraction. The systems may also contribute to assisted and autonomous driving thrusts, helping meet consumer demands for assisted driver and support drive time needs.

The primary amateur and amateur-satellite allocation in the 77.5-78 GHz band was relocated from 75.5-76 GHz by action of WRC-03. Amateur service operation is almost universally point-to-point at high elevations using antennas with narrow beamwidths and narrow bandwidths compared to radiolocation systems. The band is shared with the secondary radio astronomy and space research (space-to-Earth) services. Additionally, radio astronomy observatories worldwide, including the Atacama Large Millimeter Array, built through an international collaboration, observe in the 76-81 GHz band. No. **5.149** states that, in this band, “administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference.” ITU-R and private sector studies are evaluating compatibility and appropriate sharing criteria with these services.

Proposal:
USA/1.18/1

MOD

76-81 GHz

Allocation to services		
Region 1	Region 2	Region 3
...		
76-77.5	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	
77.5-78	AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.A118 Radio astronomy Space research (space-to-Earth) 5.149	
78-79	RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	
79-81	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	

[Editor's Note: Sharing studies will assess whether emission power limits are needed to avoid potential interference with the amateur and radio astronomy services. If studies conclude that emission power limits are needed, it would be necessary to add appropriate text referring to the system characteristics including power limits. It is anticipated that automotive radars will standardize their system and operational characteristics in order to harmonize operations on a world-wide basis in the band. WP 5A is developing a Recommendation ITU-R M.[AUTO] which describes the system and operational characteristics including power levels for automotive radars operating in the 76-81 GHz band.]

USA/1.18/2

ADD 5.A118

The use of the 77.5-78 GHz frequency band by the radiolocation service is limited to on-vehicle, on-ground automotive applications. [Emission power limits will be designated here if deemed necessary to avoid potential interference with the AS and RAS.]

USA/1.18/3

SUP

RESOLUTION 654 (WRC-12)

**Allocation of the band 77.5-78 GHz to the radiolocation service to support
automotive short-range high-resolution radar operations**
