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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| PLENARY MEETING | **Addendum 18 to Document 86-E** |
|  | **19 October 2015** |
|  | **Original: Arabic** |
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| Sudan (Republic of the) | |
| Proposals for the work of the conference | |
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| Agenda item 1.18 | |

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)**;

Introduction

Portions of the frequency band 76-81 GHz are allocated to the RAS, ARS, ARSS and RLS on a primary or secondary basis and to the SRS (space-to-Earth) on a secondary basis. At frequencies above 30 GHz, radio propagation decreases more rapidly with distance than at lower frequencies and antennas that can narrowly focus transmitted energy are practical and of modest size. While the limited range of such transmissions might appear to be a major disadvantage for many applications, it does allow the reuse of frequencies over very short distances and, thereby enables a higher concentration of transmitters to be located in a geographical area than is possible at lower frequencies.

The attenuation of the transmissions, however, varies depending on the water vapour content of the atmosphere and other atmospheric factors.

There has been significant growth in the use of automobile radar systems, and these systems are expected to become relatively commonplace within a few years because of consumer demand for increased vehicle safety. Studies have shown that the use of collision avoidance technology can prevent or lessen the severity of a significant number of traffic accidents. In certain parts of the world, automotive radars have successfully operated in this portion of the spectrum, particularly the frequency band 76-77 GHz, for many years without mitigation methods or deactivation methods and without increased reports of interference to other services.

The ITU Council, in adopting Resolution 1318 (Council 2010), stated that information and communication technologies (ICTs), including intelligent transport systems, provide mechanisms for human and vehicle safety; and invited members of the union to take practical steps to further national and domestic policies, programs and/or educational initiatives in the use of ICTs to improve global road safety.

Regulatory status of the RLS in the frequency band 76-81 GHz

Currently, the RLS is allocated globally on primary basis in the frequency bands 76-77.5 GHz, and 78-81 GHz. Obtaining a possible global primary radiolocation allocation in the frequency band 77.5-78 GHz provides for a harmonized, contiguous band for radiolocation service, including collision avoidance related automotive radar applications in the frequency band 76‑81 GHz. It should be noted that RR No. 5.149 urges administrations to take all practicable steps to protect the radio astronomy service from harmful interference in the band. A primary allocation to the RLS in the frequency band 77.5-78 GHz would establish regulatory priority over the RAS and SRS (space-to-Earth) , which are allocated on a secondary basis. Means to ensure that the provisions of RR No. 5.149 are not diminished may need to be considered.

The Sudanese Administration supports the use of the radiocommunications for enhancing road safety and collision avoidance, and supports the primary allocation to the radiolocation service in the band 77.5-78 GHz, provided that this allocation is limited to automotive applications.

Proposals

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations  
(See No. 2.1)

MOD SDN/86A18/1

66-81 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 ADD 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 | | |

ADD SDN/86A18/2

5.A118 The use of the 77.5-78 GHz frequency band by the radiolocation service is limited to automotive applications.

**Reasons:**

– Provides worldwide harmonization for safety and collision avoidance related automotive radar applications in the frequency band 76-81 GHz, which, if implemented, will very likely result in reduced traffic fatalities and injuries on the road.

– Provides a broader manufacturing base and increased volume of equipment (globalization of markets) resulting in economies of scale and expanded equipment availability

– The nature of these short-range automotive radars along with the propagation characteristics of the frequency band 76-81 GHz will facilitate sharing with incumbent services.

SUP SDN/86A18/3

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

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