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Author: Mr. Attila MATAS
International Telecommunication Union (ITU), Switzerland

RADIONAVIGATION SATELLITE SERVICE (RNSS) AND THE ITU RADIO REGULATIONS

Abstract

Mr. Attila Matas International Telecommunication Union (ITU) Geneva, Switzerland,
e-mail: matas@itu.int

The Radionavigation satellite service (RNSS) is probably today the most dynamic satellite service, creating a big professional as well as public interest. Starting in 1980's from a closed 2 satellite services (NAVSTAR GPS/USA and GLONASS/RUS) in the L1 and L2 bands, there is a significant change after the ITU World Radiocommunication Conference WRC-2000. The WRC-2000 introduced a new RNSS service in the band 1164-1215 MHz, open for all new RNSS systems but in the same time protecting the existing Aeronautical Navigation Service (ARNS) already allocated in this band.

1. RNSS definition from the ITU Radio Regulations: No. 1.43 radionavigation-satellite service (RNSS): A radiodetermination-satellite service used for the purpose of radionavigation

2. RES 609 Consultation Meeting - The new band 1164-1215 MHz is managed in application of RES-609. This presentation will explain in details the RES-609 process in this band, address interference issues and maybe interference avoidance and regulation in the existing L1 and L2 bands.

2.1 Basic concept of the RES-609:

a) All potential RNSS system operators and ADMs are given full visibility of the process

b) No single RNSS system shall be permitted to use up the entire interference allowance

c) ADMs operating or planning to operate RNSS systems will need to agree cooperatively to achieve the level of protection for ARNS

d) ADMs participating in this process of epfd calculation should hold Consultation meetings on a regular basis

3. RNSS related studies in the ITU-R This paper will address also a summary of the key findings of the studies listed below. ITU-R Working Party (WP) 4C is responsible for studies related to all mobile-satellite services including RNSS. These studies are very active:

a) Sharing and protection criteria have been intensively investigated for existing spectrum allocation for RNSS

b) Studies are also on-going for newly allocated bands for future enhancements and newly planned RNSS systems, addressing frequency sharing with other services

3.1 List of most important ITU-R Recommendations related to RNSS:

ITU-R M.1088 - Considerations for sharing with systems of other services operating in the bands allocated to the radionavigation-satellite service

ITU-R M.1787 - Description of systems and networks in the radionavigation-satellite service and technical characteristics of transmitting space stations operating in the bands 1 164-1 215 MHz, 1 215-1 300 MHz and 1 559-1 610 MHz