

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:

Amendment of the Commission's Rules)
Regarding Dedicated Short-Range Communication) WT Docket No. 01-90
Services in the 5.850-5.925 GHz Band (5.9 GHz)
Band))

Amendment of Parts 2 and 90 of the Commission's) ET Docket No. 98-95
Rules to Allocate the 5.850-5.925 GHz Band to the) RM-9096
Mobile Service for Dedicated Short Range)
Communications of Intelligent Transportation)
Services)

COMMENTS OF THE NATIONAL RADIO ASTRONOMY OBSERVATORY

The National Radio Astronomy Observatory (NRAO), by its attorneys, Reynolds and Manning, P.A., hereby submits its Comments with regard to the Commission's Notice of Proposed Rule Making and Order, FCC 02-302, released November 15, 2002 (Notice and Order).

1. In the Notice and Order, the Commission proposes service rules to govern the licensing and use of the 5.850-5.925 GHz band (5.9 GHz band) for Dedicated Short-Range Communications (DSRC) services in the Intelligent Transportation System (ITS) radio service. In relevant part, the 5.9 GHz band was designated for use by DSRC operating in the Intelligent Transportation Radio Service. DSRC service consists of "[t]he use of non-voice radio techniques to transfer data over short distances between roadside and mobile radio units, between mobile units, and between mobile and portable units to perform operations related to the improvement of traffic flow, traffic safety, and other intelligent transportation service applications in a variety of public and commercial environments. DSRC systems may also transmit status and instructional messages related to the units involved. 47 C.F.R. § 90.7; see Notice and Order at ¶ 12.

2. DSRC operations involve the following two types of devices: a Roadside Unit (RSU) and an On-Board Unit (OBU). An RSU is a DSRC transceiver and although it is normally mounted along a road or a pedestrian passageway, it may also be mounted on a vehicle or hand carried, but may only operate when stationary. An RSU is designed for uses that are temporary, such as work zone warnings. An OBU, also a DSRC transceiver, is mounted on a vehicle or hand-carried and is operational while in motion or stationary. The Commission states that a portable OBU could be used, for example, at the scene of a car crash. According to the Commission, the majority of DSRC-based ITS wireless transmissions will occur either between vehicles or between a moving vehicle and a fixed transmitter in a line-of-sight, point-to-point, or point-to-multipoint configuration. Notice and Order at ¶ 13.

3. ITS America advocates licensing RSUs on a shared, site-specific basis which authorizes the operation of a station at a specific location only and with a specific frequency or frequencies. The normal process of frequency coordination would be used and the application would be filed through the Universal Licensing System specifying a transmission frequency, geographical coordinates, and other technical information, including its potential for electromagnetic interference. A licensed RSU would be associated with a specific "communications zone," within which all transmissions associated with it would be required to take place.

Notice and Order at ¶ ¶ 41, 42.

4. The Commission, however, feels that geographic licensing would be a better scheme for RSUs for several reasons. The disadvantages of site-specific licensing are that this procedure can be very cumbersome for radio systems with several hundred sites; site-based licensing deprives licensees of flexibility to relocate transmitter sites within a defined service area without obtaining the Commission's prior approval; an application fee for each application; a regulatory fee for each license is required; applicants are required to pay for the services of a frequency coordinator every time they wanted to activate a new RSU or relocate an existing RSU; and all licensees would be required to be licensed for the control channel in addition to specific service channels. Id. at ¶ 46.

5. The Commission cited several advantages in support of geographic licensing: the licensee is authorized to operate within its geographic service area and can operate anywhere within the service area without filing applications for individual stations, eliminating the need for FCC authorization before modifying, moving, or adding to its facilities. An increase in licensee flexibility and a reduction of administrative burdens and operating costs are byproducts of geographic licensing and, in addition, this licensing method fosters interoperability and can lead to the development of less expensive equipment. Id. at ¶ 47.

6. The NRAO was established in 1957 to provide sophisticated telescopes and related facilities to radio astronomers affiliated with universities, other observatories, government laboratories and private industry who might otherwise not have these resources available to them. Under the terms of a cooperative agreement with the National Science Foundation, the NRAO facilities are operated by a nonprofit corporation, Associated Universities, Inc., which was founded by nine universities: Columbia, Cornell, Harvard, Johns Hopkins, Massachusetts Institute of Technology, Pennsylvania, Princeton, Rochester and Yale. The NRAO currently oversees operations of radio astronomy observatories from Green Bank, West Virginia and Socorro, New Mexico.

7. The major telescope system operated at Green Bank is the new \$75 million Green Bank Telescope funded by Congress to replace one which collapsed. Green Bank is located within the National Radio Quiet Zone, a 13,000 square mile, rectangular area which was designed to minimize interference to radio astronomy research conducted there.

8. The observations made with many of the NRAO's telescopes could be significantly degraded if the Commission continues to chip away at the regulatory protections afforded the NRAO by site-by-site licensing and third-party determination of potential interference, relying instead on self-policing by Commission licensees. NRAO supports the Commission's efforts to facilitate the public safety community by removing unnecessary impediments to the provision of important services. However, by indiscriminately opening the doors to unfettered public safety users without some measures of control to reduce the chances of interference only exacerbate the potential harm to radio astronomy research which are supposed to be protected under the Commission's rules.

9. The geographical licensing scheme employed by the Commission in other services and proposed to be used in the instant Notice and Order causes great concern to NRAO. The ability of the NRAO to identify the source of harmful interference is a difficult one, at best. However, the trend toward geographic and blanket licensing has hampered NRAO's efforts to identify, locate and contact the source for purposes of coordination and elimination of interference. It is one thing to encourage radio spectrum users "to make every practicable effort to protect radio astronomy facilities" but it is quite another when such effort fails, either through inadvertence, ignorance or, though rarely, by design. The NRAO urges the Commission to adopt a licensing methodology that will permit rapid identification of the spectrum user in the event that harmful

interference is received at a radio astronomy facility. As the Commission itself notes, "the number and kinds of DSRC-based ITS applications have changed and continue to evolve." Notice and Order at ¶ 14. As these services grow, it is imperative that the NRAO's ability to prevent the contamination of its research be allowed to keep pace.

10. For the reasons outlined above, the NRAO opposes the use of geographic licensing for RSUs when such a license would permit operation of such services anywhere within the National Radio Quiet Zone.

Respectfully submitted,

NATIONAL RADIO ASTRONOMY OBSERVATORY

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