

## MITRE Experiment Proposal in 1915-1920 MHz

The MITRE Corporation is a not-for-profit organization chartered to work in the public interest. As a national resource, we apply our expertise in systems engineering, information technology, operational concepts, and enterprise modernization to address our sponsors' critical needs.

MITRE manages four federally funded research and development centers (FFRDCs). MITRE also has its own independent research and development program that explores new technologies and new uses of technologies to solve our sponsors' problems in the near-term and in the future. MITRE is classified as a 501(c)(3) organization. Additional information about MITRE and its work can be found at <http://www.mitre.org/>.

As part of its independent R&D program, MITRE is developing innovative solutions for mobile ad hoc networks (MANETs). The main goal of the research is to develop network routing algorithms working on peer-to-peer prototype radios supplied by Qualcomm Corporation to enable multi-hop wireless communication networks. Prior explorations in this area have focused on the use of such radios as one-hop peer-to-peer devices.

MITRE will perform research, development, testing, and demonstrations. This experimental work will be performed over a 2-year period. Testing and demonstrations using these prototype radios are planned at MITRE research locations in Bedford, MA and McLean, VA.

To support this effort there will be up to 30 mobile devices operating in the 1915-1920 MHz band at the two locations specified below in Table 1. There will also be a single fixed transmitter with 100 W peak EIRP operating in the same band as the mobile units. The fixed transmitter will be located at only one of the two research locations at any one time. Mobile devices will operate within an 8-km radius of the fixed transmitter.

Table 1 shows the fixed site locations and the operational radius where mobiles will be operated.

**Table 1: Transmitter Location Information**

Station Type	Address	County	Latitude	Longitude	Radius (km)	Antenna Type
Fixed	202 Burlington Road, Bedford, MA 01730	Middlesex County	42-30-17 N	71-14-19 W	8	Omni
Fixed	7515 Colshire Dr., McLean, VA 22102	Fairfax County	38-55-19 N	77-12-15 W	8	Omni

Table 2 contains transmitter information for the fixed station and the mobile units.

**Table 2: Transmitter Information**

Frequency (MHz)	Station Type	Power (W EIRP)	Power (W ERP)	Bandwidth (MHz)	Emission Designator
1915-1920	Fixed	100	60.97	5	5M00W7W
1915-1920	Mobile	0.25	0.153	5	5M00W7W

A search of the online FCC databases was performed for the requested frequency range (1915-1920 MHz) within the identified experimental area of interest in Bedford, MA, and no active licenses, experimental licenses, or STAs were identified.

Similarly, a search of the online FCC databases was performed for the requested frequency range (1915-1920 MHz) within the identified experimental area of interest in McLean, VA, and no active licenses, experimental licenses, or STAs were identified.