

Narrative Statement

Description of Proposed Experimental Operation

Exhibit 1

PART-15.ORG

Chicago, IL

As the Commission is aware, the PART-15.ORG (P15) is a worldwide organization of Wireless Internet Service Providers ("WISPs") and equipment vendors who provide technical support and training in the provisioning of broadband service via license-exempt spectrum in the 902-928 MHz, 2.4 GHz and 5 GHz bands. The PART-15.ORG is also active in a number of Commission proceedings that directly or indirectly pertain to the license-exempt industry. The PART-15.ORG submits on our own behalf the following.

P15 desires to develop and deploy systems for the delivery of efficient, affordable high-speed Internet access to homes and businesses utilizing radio spectrum in the 3650 - 3700 MHz band. To support this advanced system development, P15 is requesting an authorization to conduct system performance trials in the rural and suburban Northern, IL area to determine the relationship between theoretical performance predictions and actual system performance of new technology for high speed Non-Line Of Sight ("NLOS") wireless broadband service under signal propagation conditions typical in the Northern Illinois suburban and rural areas.

The objective of the system trials proposed herein is to determine the feasibility and optimum equipment configuration requirements for utilization of the 3650 - 3700 MHz band to deploy high speed NLOS wireless data services to indoor and outdoor installations in suburban and rural Illinois area using Time Division Duplex ("TDD") technology. Additionally, these system trails will help ascertain the interference impact of system transmissions on existing co-channel and adjacent channel Fixed Satellite Service ("FSS") facilities along with various interference mitigating protocols used in the modulation. The results of these tests will be used to establish the minimum system parameters and hardware required to provide reliable, affordable high speed wireless data services without an adverse impact on existing FSS operations as well as adverse impact on additional band users as outlined in the Commissions Report and Order (ET Docket No. 04-151).

P15 proposes to utilize 14 MHz-wide channels in 14 MHz steps utilizing Quadrature Amplitude Modulation with an EIRP not to exceed 40 dBm (10 watts). All transmission devices will be fixed and located within a 20 km radius area. Primary base station and remote equipment for these trials will be the AN-100® system developed by Redline Communications and configured by the manufacturer for transmissions in the 3650 MHz band. All base stations and remote devices utilized by P15 for these tests will be professionally installed and will operate in compliance with Part 90 and within the parameters and power levels in the Report and Order, ET Docket No. 04-151. Information provided by the manufacturer for the antennas and transmission equipment is attached for reference as **Exhibit 2** and **Exhibit 3**.

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To assure protection of existing FSS earth stations and Federal Government operations in this band, a search of the IBFS database was conducted to identify facilities in the 3650 - 3700 MHz band located within 180 km of the proposed service area. This separation distance is the maximum radius of the FSS Protection Zone as defined in Report and Order, ET Docket No. 04-151. A print-out of the database study is attached as **Exhibit 4**.

As demonstrated by the database search, the nearest facilities were found to be more than 247 km distant, well outside the protection zones identified in the Report and Order. Due to the distance separation of the proposed operations to the existing facilities in the database, no interference to FSS earth stations and Federal Government operations is expected to occur.

Should interference from these experimental operations occur to existing authorized facilities, the tests will be suspended immediately pending resolution of the interference.

While this equipment does meet the Commissions intent of Interference Mitigation, this equipment does not presently meet 'the letter of the law' regarding the "contention-based" protocol requirement currently under Commission Reconsideration. The planned equipment has an excellent compliance record from its utilization in the licensed 3.5 GHz bands utilized outside the United States. Additionally, a major portion of this trial will be to provide the Commission adequate data sufficient to act on currently open Petitions for Reconsideration regarding the mandatory requirement of the use of 'contention-based' protocols.

Another specific goal of these tests is to monitor for interference in the adjacent frequency bands. From these tests, P15 can determine if additional filtering at the band edges is necessary to avoid adjacent channel interference problems. Should interference to existing adjacent channel users of this band occur, P15 will take immediate action, including discontinuance of operation, to eliminate the interference.

An important aspect of these trials is to determine the coverage capabilities of this band for fixed Part 15-type wireless communications systems to both indoor and outdoor user installations. As this band is currently being used for this type of service in Europe, the results will be used to establish the minimum system design specifications required to achieve reliable coverage in the typical rural and suburban areas of the United States under recently released changes to Part 90 of the Commissions rules.

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Parameters to be determined by the system tests will include the following:

- Maximum coverage area from a single hub site
- Signal reliability over time
- Signal penetration losses through foliage and building walls
- Changes in signal propagation due to weather conditions
- System durability based on the number of users simultaneously accessing the network
- Quality of Service (QoS) reliability based on new technologies such as VoIP, and Video Over IP.

Up to 25 test sites may be utilized at various distances from the hub site. Locations currently utilizing regular P15 service on other spectrum will be utilized for the test transmissions. By using P15's extensive customer base for these tests, the impact of an actual full system deployment can be experienced for this spectrum. Since a TDD system is proposed, a maximum of only six of simultaneous transmissions will exist at any one point in time. Once service is verified at a test site, the trial of service availability at that site continues on a 24-hour basis for at least 1000 hours. Among other collection procedures, reports from volunteer users at each site will be utilized to determine system performance and reliability.

P15 already holds significant experience providing wireless high speed two-way data services to customers in other frequency bands in a variety of markets. P15 (operating under PDQLink) currently provides License Exempt Wireless Broadband to over 900 customers in a service area of almost 1,000 square miles of rural and suburban Northern Illinois. P15 has learned how the local geography, land clutter, atmospheric conditions and frequency of operation affect propagation and interference characteristics of these systems. Along with the technical characteristics of its existing operations, P15 also has learned the business and communications demands of its customers within its service areas. From this technical and market experience, P15 is uniquely qualified to model operation in the 3650 - 3700 MHz spectrum to determine its ability to match the reliability and quality of service expected by residential, business and educational customers.

The data obtained from these tests will contribute to the further development and utilization of unlicensed operation as a secondary service to FSS earth stations and government operations in the 3650 - 3700 MHz band.

Upon successful completion of these trials, P15 will report its data and other findings from these tests to the Commission to support future Rules for this service. Should the Commission require further information or materials regarding the information submitted herein, such will be promptly furnished upon request.

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With regards to P15's selected trial area of rural Northern Illinois, the Commission is advised that these markets represent a typical rural/suburban area of planned deployment by typical Wireless Internet Service Providers across the United States. P15 views these market areas as essential to P15's 3650-3700 trial. The rural and suburban Northern Illinois area has unique hot and cold weather, rain, fog, ice, and extreme humidity along with downtown areas, commercial and industrial districts that span more than 25 miles.

Exhibits

- 1 Experimental Description
- 2 Directional Antenna Data
- 3 Equipment Information
- 4 FSS Facilities Considered
- 5 Antenna Structure Data
- 6 Modulating Signal Description
- 7 Necessary Bandwidth
- 8 TOWAIR Antenna Structure Registration Results