

EXHIBIT 1

Before
Federal Communications Commission
Washington, D. C. 20554

Wireless OnLine, Inc.

Application for Experimental Authorization
to Conduct Limited Tests on
Broad Band Personal Communications Networks

Wireless OnLine, Inc.

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1.0 Introduction

Wireless OnLine Incorporated (WOL) has developed and has filed patents for Wireless OnLine Flexible (WOLF) technology. WOLF technology has the potential of substantially increasing the spectral efficiency that can be achieved by both Narrow and Broadband PCS systems. WOLF technology is currently being tested for use with Narrow Band PCS in the 900 MHz. This testing is being done under FCC experimental license WA2EXH which provides WOL with authorization for experimental testing in the 900 MHz. Narrowband PCS bands.

These 900 MHz tests are going very well and are proving that WOLF technology, when used in the 900 MHz band can achieve it predicted performance. Based on the success achieved to date, Wireless OnLine plans to extend the WOLF technology to Broad Band PCS. WOLF Broad Band PCS has the potential of bringing to the 1900 MHz. PCS operators the same magnitude of enhanced capacity as is provided by WOLF-Narrowband PCS in the 900 MHz band.

WOL is hereby submitting a formal request to the FCC is for experimental authority to perform propagation testing of the WOLF-technology in the 1900 MHz Broad Band PCS bands C through F in the San Francisco MTA region. Although these bands have been licensed by the FCC, at the present time for a variety of reasons, non of these bands is currently being used for commercial service. WOL anticipates its experiments will be completed before all of the current licensee, or new licensees if some or part of these bands are re-auctioned, starts commercial service.

Although WOL is requesting a broader authorization, in practice WOL anticipates it will perform all of its experiments in the San Francisco BTA region using either Band C or Band F, the Designated Entities (DE) bands. The reason WOL is requesting a broader frequency and geographic authority to assure that WOL's authorization is flexible enough to allow WOL to complete its experiments should both the C and F band in the San Francisco BTA become unavailable within the experimental authorization period.

Therefore WOL here by seeks experimental authority, pursuant to Part 5 of the Commission's Rules, 47 C.F.R. (Revised October 1, 1995), to conduct over the air technical testing of Wireless OnLine Flexible (WOLF) technology in Broad Band Personnel Communications Systems PCS bands C through F

WOL requests authorization to these bands on a non interfering basis within the San Francisco MTA, using technical parameters (power, frequency and band width, etc.) in accordance with the FCC rules and regulations the FCC has established for Broad Band PCS.

Specifically, WOL requests authority pursuant to Section 5.202 (i) of the Commission's Rules to conduct experiments to develop "radio technique, equipment, operational data or engineering data related to an existing or proposed radio service."

The objective of the Broad Band Personal Communication Service being introduced by the FCC in the 1900 MHz band is to foster the development of a data efficient radio service that will thereby avail to a large portion of the population the benefits of a low cost personal communication service. A key element in achieving this vision is technology that can efficiently use, and reuse, the radio spectrum. A wide variety of radio modulation and multiplexing protocols have been developed to enhance spectrum utilization. Wireless OnLine Inc. is conversant in these other technologies and has invented the Wireless OnLine Flexible (WOLF) technology that addresses some of the limitations of other approaches. Proving the viability of the WOLF technology will significantly enhance the FCC's ability to achieve its ultimate objective with the BBPCS service.

2.0 Qualifications of the Applicant

The Wireless OnLine Flexible (WOLF) Narrowband PCS technology has been developed in by the WOL technical team based on their collective many years of experience in the wireless industry. This experience has enabled the evolution of an innovative and practical technique that will significantly enhance the utilization of the radio spectrum.

Based on experimental demonstrations completed by WOL using WOLF Narrowband PCS technology, WOL has completed two rounds of venture funding for over \$7,000,000. The success of the work completed so far has supported the development WOLF technology for use with Broad Band PCS in the 1900 MHz Band.

The WOL team is under the leadership of Mr. Haim Harel, founder and CEO of Wireless OnLine, Incorporated. Mr. Harel is both a wireless entrepreneur and engineer, with many years of engineering and management experience in the wireless industry.

Prior to founding WOL, Mr. Harel's founded Nexus Telecommunications Systems, a public company now traded on the NASDAQ stock exchange (NXUSF). Nexus is a developer of radio location and two-way paging equipment.

Supporting Mr. Harel as key members of WOL's technical team are Dr. Anthony Weiss, and Mr. Nathan Silberman. Dr. Anthony Weiss is WOL's Chief Scientist and also an Associate Professor at Tel Aviv University, Faculty of Engineering. Dr. Weiss's area of expertise is advanced signal processing techniques critical to the WOLF BBPCS technology. In addition to his current work, Dr. Weiss has consulted to many organizations including Massachusetts Institute of Technology, SAXPY Computer Corporation, and Signal Processing Technology.

Table 3.1-2 Test Conditions

Factor	Comments
Simulcast environment	Determine the effect of simulcasting and resulting inter-symbol interference
Propagation	Determine the sensitivity of WOLF to propagation conditions
• Urban	Effects of various types of building constructions
• Suburban	Effects of various types of building constructions
• Vegetation	Effect of signal penetration into various types of vegetation
• Over water	what are special considerations for over water propagation
• Terrain	Rolling foothills and rocky mountains

3.2 Technical and Operational Features

The technical parameters of the radio transmission, specific areas of operation, and types and projected quantities of equipment to be deployed in WOL's experimental program are described below.

The power, emissions and bandwidth used by WOL will all comply the FCC regulations for BBPCS operation in above referenced bands as stated in Sections 24.229 -24.238 of the Commission's Rules.

3.2.1 Frequency.

WOL requests specific authority to operate in Broad Band PCS bands C through F. While these bands have been licensed for Broad Band PCS, as of this date, non of these bands is being used operationally. WOL estimates that many of these bands will not be occupied by the new PCS operators until late 1998 or early 1999 at which time WOL will have completed its testing.

Specifically, authority is requested for WOL's experimental transmitters to operate on the following frequencies:

Table 3.2.1-1 Operating Frequencies (MHz.)

	Lower Band		Upper Band		
FCC PCS Band	Lower Frequency	Upper Frequency	Lower Frequency	Upper Frequency	Service Area
C	1895	1910	1975	1990	MTA
D	1865	1870	1945	1950	MTA
E	1885	1890	1965	1970	MTA
F	1890	1895	1970	1975	MTA

3.2.2 Power

The WOL transmitters will operate within the power and antenna height restrictions of Section 24.232 of the Commission's Rules. Specifically, the base stations will operated in the C, D, E and F bands will be limited to 1640 watts e.i.r.p., subject further to power restrictions as determined by proximity to the border of the MTA or BTA area, as appropriate. Mobile stations will be limited to 2 watts e.i.r.p. regardless of operating frequency.

3.2.3 Emission and Bandwidth

Three basic modulations will be used for the WOLF BBPCS technology: IS-95 CDMA, IS-136 TDMA and GSM-1900 TDMA. These modulations are all in accordance with the FCC regulations for these Broad Band PCS bands.

Table 3.2.1-1 Operating Frequencies

Modulation Type	Technical Description	Modulation Rate (kHz)	Multiple Access Method	Channel Spacing (kHz.)	Modulation designator
CDMA	IS-95	1,288	CDMA/FDM	1250	QPSK
TDMA	IS-136	48.6	TDMA/FDM	30	$\pi/4$ DQSPK
TDMA	GSM-1900	270.833	TDMA/FDM	200	GMSK

3.2.4 Areas of operation

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WOL is requesting authority to conducted these experimental tests in all the BTAs, within the San Francisco MTA. WOL is mindful that as of this date these bands have been licensed to the operators shown in the following table. WOL will continue to monitor the status of these operators to assure WOL does not interfere with either the pre-commercial testing or their commercial operation.

Table 3.2.4-1 BTA Areas of Operation

Market Number	Market Name	C	D	E	F
B079	Chico-Oroville, CA.	GWl PCS, Inc.	AT&T Wireless PCS Inc.	AT&T Wireless PCS Inc.	Point Enterprises, Inc.
B134	Eureka, CA.	PCS 2000, L.P.	Triad Cellular Corporation	AT&T Wireless PCS Inc.	Polycell Communications,
B157	Fresno, CA.	PCS 2000, L.P.	AT&T Wireless PCS Inc.	AT&T Wireless PCS Inc.	Central Wireless Partners
B291	Merced, CA.	PCS 2000, L.P.	AT&T Wireless PCS Inc.	AT&T Wireless PCS Inc.	Central Wireless Partners
B303	Modesto, CA	PCS 2000, L.P.	AT&T Wireless PCS Inc.	West Coast PCS LLC	Central Wireless Partners
B371	Redding, CA.	PCS 2000, L.P.	AT&T Wireless PCS Inc.	Triad Cellular Corporation	Point Enterprises, Inc.
B372	Reno, NV	PCS 2000, L.P.	AT&T Wireless PCS Inc.	Rivgam Communicators, L.L	Aer Force Communications
B389	Sacramento, CA	GWl PCS, Inc.	AT&T Wireless PCS Inc.	West Coast PCS LLC	NextWave Power Partners I
B397	Salinas-Monterey, CA.	GWl PCS, Inc.	Entertainment Unlimited,	AT&T Wireless PCS Inc.	Alpine PCS, Inc.
B404	San Francisco-Oakland- San Jose, CA.	GWl PCS, Inc.	AT&T Wireless PCS Inc.	Western PCS BTA I Corpora	NextWave Power Partners I
B434	Stockton, CA.	GWl PCS, Inc.	AT&T Wireless PCS Inc.	West Coast PCS LLC	Central Wireless Partners
B458	Visalia-Porterville-Hanford, CA.	PCS 2000, L.P.	AT&T Wireless PCS Inc.	Entertainment Unlimited,	Central Wireless Partners
B485	Yuba City-Marysville, CA.	GWl PCS, Inc.	AT&T Wireless PCS Inc.	West Coast PCS LLC	Integrated Communications

Since the main objective of this experiment is to determine the behavior of WOLF BBPCS technology under a variety of propagation environments, several test range setups are potentially required. Each test setup will be selected to enable collection of propagation data to a specific receiving location under simulcast conditions. Requesting operation in all the BTAs that compose the San Francisco MTA region, will allow Wireless OnLine to reposition test assets to other locations if interference is encountered with other operators.

WOL is aware of Commission's Rules, Section 5.65 that requires specific notification to the FCC Engineer in Charge of the Radio District of the actual location of operation upon commencing operation under this experimental license and WOL will fully comply with that requirement.

In addition WOL will be fully compliant with FAA notifications and permits as required by Section 24.416 of the Commission's Rules.

3.2.5 Number of units.

WOL requests authority to operate up to 10 base stations and 60 mobile stations under this license. These base stations will be operated in clusters consisting of 3 to 5 base stations and authority for 12 base stations will allow two experimental clusters to be used. Two clusters will allow the different propagation conditions experiments to be done in parallel, if necessary.

The 60 mobile units will allow approximately 30 mobiles to be used on each cluster to facilitate parallel data collection.

3.2.6 Description of equipment.

The WOL BBPCS system will consist of both custom prototype and specially modified PCS equipment. All equipment will comply with the FCC regulations for operation in the PCS bands as described in Sections 24.229 -24.238 of the Commission's Rules.

3.3 Projected course of the experiment.

As discussed above, WOL proposes to build an experimental PCS system in one or more areas of the San Francisco MTA as described in Section 3.2.4 above. The experiment is expected to progress in accordance with the phased program described below. In some cases, multiple phases of the experiment will be conducted concurrently.

3.3.1 Coordination with existing licensees on FCC PCS bands C through F

WOL believes FCC PCS bands C through D are currently unoccupied in the San Francisco MTA. Licenses for these bands have been auctioned by the FCC, but for a variety of reasons the licensee of these bands C through D have not yet started to deploy their networks. This situation notwithstanding, WOL will conduct a through analysis of the radio spectrum in each area where operation is intended and will coordinate with the duly authorized system operator. In the event the authorized user is using the band, WOL will either (1) establish procedures with the licensee to avoid any interference problems which might arise, (2) move to another band, or (2) move to another geographical area. In all cases testing will be suspended until all interference issues are resolved.

Although these bands have been licenses and will eventually be used for commercial service, from a practical standpoint, WOL believes it will be able to complete testing prior to these bands being used for commercial service. Specifically, several of Designated Entity who were awarded Band C and F are experiencing financial difficulties and have yet to start network construction. Several options are being considered by the FCC to resolve the these problems. It is anticipated that between 6 to 12 months of uncertain is associated with these licenses, coupled with at least 12 months for network deployment. Thus from a practical standpoint, WOL will be able to complete its test program well before these bands will be used for commercial service.

In any case, WOL recognizes its obligation to not interfere with authorized users of the requested bands and WOL hereby assures the Commission that it will meet that obligation.

3.3.3 System Engineering and network design.

WOL will complete its system engineering and network design for the experiment. The experimental system, as currently envisioned, will consist of three or four base stations, installed at conventional paging facilities. A field unit will be used to collect data at various locations in the test region. This three or four station cluster may be repeated (or the same equipment moved) at different locations so as to investigate the effects of propagation conditions.

3.3.4 Evaluation and selection of test range equipment.

WOL will be designing and developing laboratory and pre production equipment for these tests. In some cases, the equipment will be modified PCS. This equipment will be operated within the FCC regulations for Broad Band PCS.

3.4.5 Construction and installation of experimental system.

Upon completion of the above identified tasks and approval of experimental authorization by the Commission, WOL will construct the experimental system and verify that it complies with the FCC regulations and is compatible with other users in the same or adjacent frequency bands.

3.4.6 Operational tests of installed equipment.

WOL will conduct a rigorous series of operational tests of the installed system to verify complete system functionality and effects on either in band operators and/or adjacent band operators.

3.4.7 Technical tests of installed equipment.

WOL will conduct a rigorous series of technical tests of the installed system to obtain the quantitative data identified in the test objectives in section 3.1 of this document.

4.0 Conduct of the Experiment

Wireless OnLine, Incorporated seeks experimental authority pursuant to Part 5 of the Commission's Rules, 47 C.F.R. (October 1, 1995), to use the PCS Bands C through F to conduct limited technical tests of Wireless OnLine Flexible (WOLF) Broad Band PCS technology. WOL requests experimental authority for a period not to exceed 24 months pursuant to Section 5.63 of the Commission's Rules. Upon request of the Commission, WOL will provide reports on test results data to the Commission staff. If the Commission requests that WOL submit experimental reports, WOL requests these reports be withheld from the public as provided by the Commission's Rules, Section 5.204 (c). Consistent with Sections 5.67 and 5.151 of the Commission's Rules, WOL will take all necessary steps to ensure that there will be no possibility of harmful interference to existing users of the spectrum.

WOL requests a waiver of Section 5.152 of the Commission's Rules, which requires that each class of station in the experimental services must transmit its call sign at the end of each complete transmission. Compliance with this requirement is not feasible due to the technical configuration of the experimental systems proposed and the operating characteristics of the available and planned equipment. WOL thus submits that the public interest would favor a waiver of Section 5.152 of the Commission's Rules in this instance.

5.0 Conclusion

WOL asks the Commission to move expeditiously on granting the requested experimental authority to conduct the technical tests for the BBPCS systems as described in this application. WOL anticipates that engineering data gathered in the course of the proposed BBPCS experimental program will contribute significantly to the existing public body of knowledge concerning. The public interest would therefore be service by a grant of the requested experimental license to Wireless OnLine Inc.

WOL expressly recognizes, under the Commission's Rules, that grant of its application confers on it no continuing right to operate the system, and that the temporary authorization may be changed or canceled by the Commission at any time. Fully mindful of these conditions and limitations, and the costs involved, WOL remains fully committed to conducting the experimental program as proposed in this application.

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Mr. Nathan Silberman, the Chief Technical Officer of WOL, has over 25 years experience in developing advanced communication systems in the HF to UHF bands. He has held positions of Senior Technical Advisor at Nortel, Director of Engineering at Symbol and Vice President of Engineering at California Microwave. Mr. Silberman has also been a major contributor to the development of the Frequency Hopping PHY for IEEE 802.11 standardization. In all of this work, Mr. Silberman's leadership in the design and development of wireless communications has significantly advanced the state of the art.

3.0 Description of the Experiment

3.1 Specific Objective

The prime objective of this test program is to determine the robustness of the WOLF BBPCS technology under a variety of real world propagation conditions. These tests are currently underway in the 900 MHz band operating under FCC experimental license WA2XEH. The objective of these new tests are to determine the performance of the WOLF BBPCS technology in the 1900 MHz Bands.

System robustness will be quantitatively determined by measuring system key system performance parameters under various conditions when operating at 1900 MHz. These factors are tabulated below.

Table 3.1-1 Experiment Dependent Variables

Factor	Comments
Number of Users	Determine the number of users that can be supported by the WOLF approach in a given geographical area.
Traffic per Users	Determine the amount of traffic that WOLF can support per user and the latency of the message traffic
Message reliability	Determine the raw error rate and the corrected error rate