

EXHIBIT 1

Before
Federal Communications Commission
Washington, D. C. 20554

Wireless OnLine, Inc.

Application for Experimental Authorization
to Conduct Limited Tests of
Narrow Band Personal Communications Networks

Wireless OnLine, Inc.

2 North First St.
Fourth Floor
San Jose, CA. 95113
(408) 535-2777
(408) 297-9030 FAX

Table of Contents

1.0 INTRODUCTION.....	3
2.0 QUALIFICATIONS OF THE APPLICANT.....	4
3.0 DESCRIPTION OF THE EXPERIMENT	5
3.1 Specific Objective.....	5
3.2 Technical and Operational Features	6
3.2.1 Frequency.....	6
3.2.2 Power	7
3.2.3 Emission and Bandwidth.....	7
3.2.4 Areas of operation	8
3.2.5 Number of units.....	9
3.2.6 Description of equipment.....	9
3.3 Projected course of the experiment.....	9
3.3.1 Coordination with existing licensees on FCC NBPCS bands 18 through 26.....	10
3.3.2 Coordination with NBPCS Band 18 through 26 licensees.....	10
3.3.3 System Engineering and network design.	11
3.3.4 Evaluation and selection of test range equipment.	11
3.4.5 Construction and installation of experimental system.....	11
3.4.6 Operational tests of installed equipment.....	11
3.4.7 Technical tests of installed equipment.....	11
4.0 CONDUCT OF THE EXPERIMENT.....	12
5.0 CONCLUSION.....	12

1.0 Introduction

Wireless OnLine Incorporated (WOI) herein seeks experimental authority, pursuant to Part 5 of the Commission's Rules, 47 C.F.R. (Revised October 1, 1995), to use Narrowband PCS (NBPCS) bands 18 through 26 (901 to 902, 930 to 931 and 940 to 941 MHz.) to conduct over the air technical testing of Wireless OnLine Flexible Narrowband Personnel Communications Systems (WOLF NBPCS) technology. The WOLF NBPCS technology will allow a substantial increase in customer loading, user throughput and message delivery reliability to be achieved by NBPCS systems. The over the air experimental program envisioned by WOI will allow the theoretically predicted performance of the WOLF systems technology to be verified.

WOI is requesting experimental use of NBPCS bands 18 through 26 as these bands are designated for NBPCS, but have yet to be licensed by the FCC. Further, WOI anticipates its experiments will be completed before any future licensee of these bands starts commercial service. WOI requests authorization to these bands 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 NBPCS.

Specifically, WOI 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 Narrowband Personal Communication Service being introduced by the FCC in the 900 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 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 NBPCS service.

2.0 Qualifications of the Applicant

The WOLF NBPCS technology has been developed in by the WOI 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.

The WOI team is under the leadership of Haim Harel, founder and CEO of Wireless OnLine, Inc. Mr. Harel is both a wireless entrepreneur and engineer, with many years of engineering and management experience in the wireless industry. Mr. Harel's most recent accomplishment was the founding and building of 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 WOI's technical team are Dr. Anthony Weiss, and Mr. Nathan Silberman. Dr. Anthony Weiss is WOI'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 NBPCS 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.

Mr. Nathan Silberman, the Chief Technical Officer of WOI, 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 NBPCS technology under a variety of real world propagation conditions. System robustness will be quantitatively determined by measuring system key system performance parameters under various conditions. 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

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 WOI's experimental program are described below.

The power, emissions and bandwidth used by WOI will all comply the FCC regulations for NBPCS operation in above referenced bands as stated in Sections 24.129 -23.135 of the Commission's Rules.

3.2.1 Frequency.

WOI requests specific authority to operate in NBPCS bands 18 through 26. While these bands have been allocated for NBPCS, as of this date, the FCC has not yet scheduled the auctions for these bands. Wireless OnLine estimates that these bands will not begin to be occupied by new PCS operators until early 1998.

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

Table 3.2.1-1 Operating Frequencies

FCC Band Number	Center Frequency Base Station (MHz)	Bandwidth Base Station (KHz)	Center Frequency Portable Station (MHz)	Bandwidth Portable Station (KHz)	Service Area
18	940.37500	50	901.37500	50	MTA
19	940.42500	50	901.42500	50	MTA
20	930.77500	50	901.84375	12.5	MTA
21	930.82500	50	901.85625	12.5	MTA
22	930.87500	50	901.86875	12.5	MTA
23	940.92500	50	not paired	none	MTA
24	940.97500	50	not paired	none	MTA
25	930.92500	50	901.88125	12.5	BTA
26	930.97500	50	901.89375	12.5	BTA

3.2.2 Power

The WOI transmitters will operate within the power and antenna height restrictions of Section 24.132 of the Commission's Rules. Specifically, the base stations will operated in the 930 to 931 MHz and 940 to 941 MHz bands and will be limited to 3500 watts e.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 7 watts e.r.p. regardless of operating frequency.

3.2.3 Emission and Bandwidth

Two basic modulations will be used for the WOLF NBPCS technology. Modulation 10K0F2D will be used on the channels with a 12.5 KHz allocation and 45K0F2D will be used on the channels with a 50 KHz allocation. Additional information is shown below: (Note: Bandwidth is calculated per Section 2.202 of the Commission's Rules.)

Table 3.2.1-1 Operating Frequencies

Modulation Type	Modulation Rate (Band rate in BPS)	Deviation (KHz)	Bandwidth (KHz)	Allocated Bandwidth (KHz.)	FCC emission designator
2 Level FSK	800	4.2	10	12.5	10K0F2D
4 Level FSK	1600	3.4	10	12.5	10K0F2D
2 Level FSK	3,200	19.3	45	50	45K0F2D
4 Level FSK	6,400	16.1	45	50	45K0F2D

3.2.4 Areas of operation

WOI is requesting authority to conducted these experimental tests in several different areas within the San Francisco MTA. The specific authorization for each of the requested bands is shown in the following table.

Table 3.2.4-1 Areas of Operation

FCC Band Number	Market Number	MTA or BTA	Market Name
18 - 24	M004	MTA	San Francisco-Oakland- San Jose
25 -26	B404	BTA	San Francisco-Oakland- San Jose, CA.
25 -26	B389	BTA	Sacramento, CA
25 -26	B157	BTA	Fresno, CA.
25 -26	B434	BTA	Stockton, CA.
25 -26	B372	BTA	Reno, NV
25 -26	B303	BTA	Modesto, CA
25 -26	B458	BTA	Visalia-Porterville-Hanford, CA.
25 -26	B397	BTA	Salinas-Monterey, CA.
25 -26	B371	BTA	Redding, CA.
25 -26	B079	BTA	Chico-Oroville, CA.
25 -26	B291	BTA	Merced, CA.
25 -26	B134	BTA	Eureka, CA.
25 -26	B485	BTA	Yuba City-Marysville, CA.

Since the main objective of this experiment is to determine the behavior of WOLF NBPCS 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 the San Francisco MTA region for all requested bands, will allow Wireless OnLine to reposition test assets to other locations if interference is encountered with other operators.

WOI 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 WOI will fully comply this that requirement.

Wireless OnLine, Inc.

June 18, 1996

In addition WOI 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.

WOI 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 bases station 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 WOI NBPCS system will consist of both custom prototype and specially modified Paging and NBPCS equipment. All equipment will comply with the FCC regulations for operation in the NBPCS bands as described in Sections 24.129-24.135 of the Commission's Rules.

3.3 Projected course of the experiment.

As discussed above, WOI 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 NBPCS bands 18 through 26.

WOI believes FCC NBPCS bands 18 through 26 are currently unoccupied, having been authorized in the past to the Federal Government, but now the Federal Government has vacated these bands. This notwithstanding, WOI 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, should any be found. In the event an authorized user is encountered, procedures will be established prior to any testing to allow quick response to any interference problems which might arise, and relevant testing will be suspended until all interference issues are resolved.

3.3.2 Coordination with NBPCS Band 18 through 26 licensees.

Within the time period that WOI wishes to perform the experiments, it is expected the FCC will auction NBPCS licenses for bands 18 through 26. WOI will coordinate with these NBPCS licensee winners to assure that WOI in no way interferes with their use of these bands. As above, procedures will be established prior to any testing to allow quick response to any interference problems which might arise, and relevant testing will be suspended until all interference issues are resolved.

However from a practical standpoint, WOI feels there will not be a conflict with these new license holders. WOI will complete its experiments within 24 months, and probably within 18 months. Although the Commission has not published a time schedule for auctioning these bands, it is expected that these auctions will be in the 4th quarter of 1996 and actual licenses will not be granted till the first quarter of 1997. Realistically, a build out by the new licensee will take until early 1998. WOI plans to be done all testing by the third quarter of 1997.

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

3.3.3 System Engineering and network design.

WOI 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.

WOI will be designing and developing laboratory and pre production equipment for these tests. In some cases, the equipment will be modified NBPCS and or Paging equipment.

3.4.5 Construction and installation of experimental system.

Upon completion of the above identified tasks and approval of experimental authorization by the Commission, WOI 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.

WOI 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.

WOI 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 901 to 902, 930 to 931 and 940 to 941 MHz bands to conduct limited technical tests of Wireless OnLine Flexible (WOLF) Narrow Band PCS technology. WOI 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, WOI will provide reports on test results data to the Commission staff. If the Commission requests that WOI submit experimental reports, WOI 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, WOI will take all necessary steps to ensure that there will be no possibility of harmful interference to existing users of the spectrum.

WOI 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. WOI 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

WOI asks the Commission to move expeditiously on granting the requested experimental authority to conduct the technical tests for the NBPCS systems as described in this application. WOI anticipates that engineering data gathered in the course of the proposed NBPCS 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.

Experimental License Application , Exhibit 1

Wireless OnLine, Inc.

June 18, 1996

WOI 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, WOI remains fully committed to conducting the experimental program as proposed in this application.