

PROGRAM OF EXPERIMENTAL OPERATION

Radio Propagation Services, Inc. ("RPSI") hereby requests permanent authorization pursuant to Part 5 of the Commission's rules to operate a "Chirpsounder®" transmitter on an experimental basis as described below and in accordance with the parameters specified in the accompanying application for authorization on FCC Form 442.

RPSI has been operating the subject facility on an experimental Special Temporary Authorization ("STA") basis pursuant to Section 5.61 of the Commission's rules since December 16, 1999.¹ Owing to the valuable information derived from RPSI's experimental operation thus far, and the high potential for additional gains from continued research, RPSI is accordingly herein requesting authorization to operate for up to 5 years as a licensed entity on a permanent basis.

1. Description Of Why An Experimental Authorization Is Needed

RPSI is seeking authority to employ a proven technology – ionospheric sounding – to enhance the reliability and ease of use of HF communications systems. While the Commission's rules already authorize, by rule, the use of this technology in the maritime service,² no similar authorization exists for non-maritime services. As a result, RPSI cannot test the benefits of this technology for non-maritime users, and land mobile HF system operators cannot investigate those benefits and determine how they could be integrated into their systems, absent continued experimentation under licensed conditions.

2. Type And Purpose Of Operation To Be Conducted

RPSI is developing a Chirpsounder-based frequency management system for use with non-maritime HF communications systems. In the immediate term, the focus would be on developing a Chirpsounder system for use with HF land mobile systems. Testing would be conducted using a single Chirpsounder

¹ RPSI's initial application for Special Temporary Authorization was granted on December 16, 1999 (FCC File No. 0409-EX-ST-1999; Call Sign WA9XHM). RPSI subsequently was granted renewal of STA on June 16, 2000 (FCC File No. 0202-EX-ST-2000) and December 18, 2000 (FCC File No. 0574-EX-ST-2000).

² 47 C.F.R. 80.229.

transmitter,³ and a single land mobile system operator would participate in the development effort.⁴ The ultimate purpose of RPSI's effort is to demonstrate the benefits of ALE in the non-maritime context and to seek a rule change authorizing ALE for non-maritime operations.

The Chirpsounder system employs a proven technology that has been used by government and military communications commands in the United States and other countries for more than 30 years. Briefly stated, the Chirpsounder system measures HF propagation conditions in real time and uses those measurements to determine which HF frequencies are propagating in a given location at a given time. The propagation data then is used by a licensed service provider to select operating frequencies from among the service provider's authorized frequencies.

Extensive testing of how the Chirpsounder system could be used in support of maritime communications already has been conducted by BR Communications ("BRC").⁵ Based in large part on the results of BRC's developmental effort, the Commission in 1997 concluded that ALE systems do not pose an interference risk and are in the public interest,⁶ and authorized by rule the use of ALE technologies in support of maritime communications.⁷

While RPSI's target market and specific implementation differ from BRC's, the benefits mirror those demonstrated by BRC: dramatically improved system connectivity (the fraction of time one can make a connection in one or a few tries); substantially increased HF link reliability; improved spectrum use; and enhanced competition between HF and other services. Moreover, the non-interfering nature of Chirpsounder transmissions is identical whether the results of these transmissions are used to enhance maritime or non-maritime communications.

³ While additional Chirpsounder transmitters may be required in the future, RPSI would seek modification of its authorization for any such transmitters.

⁴ The Commission's Wireless Telecommunications Bureau has authorized several entities under Part 90 to operate commercial data messaging systems using HF spectrum, on a secondary basis and subject to certain technical and operational limitations. *See, e.g., Flash Comm, Inc., Request for Waiver of the Commission's Rules Regarding Its Application for Authorization in the High Frequency Band, Order*, DA 97-1451 (released July 10, 1997); Terion Inc. License, Call Sign WPKU683, File Nr. 9602D021443 (issued July 23, 1997).

⁵ *See, e.g.,* 7120-4, Dev/STA 5.95 (granted May 5, 1995).

⁶ ALE operations must be conducted on a secondary, non-interference basis and must avoid certain designated frequencies. *Id.*

⁷ *See* 47 C.F.R. 80.229; *Amendment of the Commission's Rules Concerning Maritime Communications, Second Report and Order and Second Further Notice of Proposed Rulemaking*, 12 FCC Rcd 16949, ¶¶37-44 (1997).

All transmissions would be on a secondary, non-interference basis and would comply with all technical restrictions set forth in Section 80.229 of the Commission's rules.

3. Times Of Proposed Operation

Operations would commence upon authorization. Chirpsounder transmissions would occur no more than four times per hour, at a minimum sweep rate of 60 kHz per second, occupying any 3 kHz bandwidth for less than 50 milliseconds per sweep.