

L-3 Communications-LNR/Satellite Transmission Systems
125 Kennedy Drive
Hauppauge, New York 11788

Federal Communications Commission
Experimental Radio Services
P.O. Box 358320
Pittsburgh, PA 15251-5320

RE: L-3 Communications Corp.-LNR/Satellite Transmission Systems Division
Request for Special Temporary Authority for Testing and Development

Dear Sir or Madam:

L-3 Communications Corp.-LNR/Satellite Transmission Systems Division ("LNR/STS") hereby requests Special Temporary Authority to test and develop a satellite communication link for ultimate deployment at the National Science Foundation ("NSF") Amundsen-Scott South Pole location (the "South Pole Station"). The purpose of the project is to develop South Pole Combined Terminal (SPCT) technology that will be used by the NSF. LNR/STS will transmit over GOES-3 and MARISAT F2 satellites during this testing, in the L and S bands, but only over one band at a time. The South Pole Station is located at 90 degrees South Latitude, not within the arc of geo-stationary satellite coverage. Therefore, use of inclined satellites is necessary. The specific frequencies that the station will utilize are:

MARISAT:

Transmit = 1638.5 to 1642.5 MHz
Receive = 1537.0 to 1541.5 MHz

GOES:

Transmit = 2024.1 to 2034.1 MHz
Receive = 1682.1 to 1692.1 MHz

ANTENNA:

LNR/STS will utilize a 9.0 Meter Vertex model 9.0FMA antenna for the SPCT project.

EIRP: Effective Isotropic Radiated Power (EIRP):

The SPCT shall provide a single carrier EIRP of 62.6 dBW for the MARISAT transmit band, and 64.8 dBW for the GOES transmit band. This EIRP shall be achieved at the 1 dB gain compression point of the Solid State Power Amplifier (SSPA).

G/T:

Ratio of Gain to Noise Temperature (G/T). The SPCT shall meet the minimum G/T requirements (measured under clear skies at 1537 MHz and 10° elevation angle) of 16.0 dB/°K.

Modulation type:

Digital QPSK

Temporary Initial Service Pointing Data:

The earth station will be pointed at GOES-3 and MARISAT F2 spacecraft

Antenna Range of movement; +/-100 degrees

Testing is scheduled to take place at the Kilgore, Texas headquarters of Vertex RSI ("Vertex"), a leading manufacturer of satellite earth station equipment. Vertex is the licensee of experimental station KA2XCI, licensed for a 9.0-meter antenna to communicate with MARISAT F2 and GOES-3 in the L, S and C bands. This experimental station, which uses a model 9.0 KPC antenna, shall act as the C-Band gateway for testing of the SPCT. A copy of the license is attached as Exhibit I. This integrated overall system testing, performed at the Vertex facility, will verify end to end performance of the SPCT system. LNR/STS will control the testing of the SPCT.

A 9.0-meter antenna operated by the NSF at the University of Miami in Malabar, Florida (the "Florida station") will also act as a gateway for testing, exclusively in the S-Band, and will be an eventual point of contact for the SPCT once it is deployed to the South Pole. The Florida station utilizes a 9.0-meter terminal and is part of an NTIA/IRAC Stage 3 review with the IRAC Spectrum Planning Subcommittee. NSF has received clearance from NTIA and IRAC to operate this station.

Vertex has contracted Comsearch, an engineering coordination company, to conduct frequency coordination for this test, and that coordination is expected to be completed in the next few weeks. If necessary for FCC processing, LNR/STS will file the results of that frequency coordination as a supplement to this STA request. A diagram of all terminals and satellites involved in the testing is attached as Exhibit II.

LNR/STS requests that the STA be granted for a term starting September 12, 2000 through November 30, 2000. In order to meet the requirement to install the earth station system at the South Pole during the 'summer' season (December 2000 - January 2001), it is critical that the testing and development of the system take place during this time frame.

LNR/STS submits the public interest will be served by grant of this STA. The SPCT is being developed to support the National Science Foundation's scientific research mission as mandated by the United States Congress. The data collected and studied will advance the field of scientific study and the scientific initiatives of the Federal Government and the NSF. The system will provide users at the South Pole station with standard TCP/IP Internet services, voice communications linked to the public switched telephone network through South Pole Telecommunications, remote data collection, videoconferencing, email, voice mail and facsimile transmittal, and will enable the NSF staff to remotely command and control their experiments as well as to collect and disseminate scientific data.

By my signature below, I certify that no officer, director or shareholder of LNR/STS is subject to denial of Federal benefits pursuant to Section 5301 of the Anti-Drug abuse Act of 1988, 21 USC §862a.

Respectfully Submitted,
L-3 Communications Corporation-Satellite Transmission Systems

By Eugene Kelly
Mr. Eugene Kelly, Chief Financial Officer

Date 8/18/00