

EXHIBIT NO. 1

(Reference: Item No. 4(f))

The pulse duration is adjustable from 400 nanoseconds to 12 microseconds. Bi-phase (180°) modulation may be employed in minimum intervals of 400 nanoseconds.

The pulse repetition frequency is also adjusted to the mode of operation, but cannot exceed 50 KHz.

EXHIBIT NO. 2

(Reference: Item No.4(g))

Sample calculation using the minimum 400 nanosecond pulse/code cell durations yields:

Signal Level	Bandwidth;
Below Peak;	
-3 dB	2.2 MHz
-10 dB	3.7 MHz
-20 dB	12.7 MHz

These values have been confirmed by measurement.

EXHIBIT NO. 3

(Reference: Item No.6)

The antenna system will consist of one steerable micro-patch phased array planar antenna with sidelobe reduction fence. The antenna will be pointed vertically, with electronically induced delays introduced to point it 21' off vertical, in planes that are 90' from each other. The antenna will have a beamwidth of ~9' by 9' and ~26 dB of gain.

Normal operation will consist of sequential transmissions in each of three (two oblique, one vertical) or five (four oblique, one vertical) directions.

EXHIBIT NO.4

(Reference: Item No. 10)

The equipment to be employed will be the Radian Corp. LAP-3000 915 MHz Radar Wind Profiler and Radio Acoustic Sounding System (RASS).

The Radian Corp. LAP-3000 915 MHz Radar Wind Profiler and RASS was developed by Radian Corp. and Sonoma Technology, Inc. (STI) under a Cooperative Research and Development Agreement (CRDA) with NOAA's Environmental Research Laboratories. The CRDA gave the marketing rights to Radian and STI. They are selling the system as a research grade instrument to knowledgeable users.

The LAP-3000 with RASS is a remote sensing Doppler radar that produces a continuous speed and direction profile of vertical and horizontal winds in clear air three kilometers or more above ground level. The profiler produces this data by transmitting a 915 MHz pulse in three or five orthogonal pointing directions. After transmitting a signal, the profiler receives the radiation that is reflected by atmospheric turbulence. Using the returning signal's frequency and the ΔT between signal transmission and reception, the profiler then computes the wind speed and direction for a chosen number of heights above ground level. The RASS option uses acoustical waves that, in conjunction with the Doppler radar, provides virtual temperature information up to two kilometers. The system produces real-time atmospheric data with high spatial resolution.

The system that would be operated under this requested license will collect atmospheric profiles in the northern San Joaquin Valley area of southern Sacramento County, California.

The profiler will provide continuous upper atmospheric data at altitudes that have previously not been available for study by the Sacramento Metropolitan Air Quality Management District, or other agencies interested in studying and controlling the production and transportation of airborne pollutants. The system will continuously monitor conditions in the boundary layer of the atmosphere where air pollution is created and transported. The data will be used to provide test data for daily and multi-day weather and pollution forecasting and provide new input data for atmospheric pollution photochemical (airshed) computer modeling.