Exhibit I.

EXPANSION OF INFORMATION REQUIRED ON FCC FORM 442 ITEM 10

Part (a) - Project Description.

Bendix/King General Aviation Avionics Division (GAAD) is conducting an independent research and development program aimed at producing Traffic Alert and Collision Avoidance Systems, TCAS I and TCAS II Airborne Equipment. The basic function of TCAS is to determine the presence of other aircraft in the vicinity of the TCAS equipped aircraft and to annunciate their locations to the pilot. These systems will interrogate airborne ATCRBS and Mode S transponders using a frequency of 1030 Mhz and receive replies using the frequency of 1090 MHz. The TCAS I equipment will be designed to meet the requirements of FAA TSO-C118 which references RTCA/DO-197 as the Minimum Operational Performance Standard and the TCAS II equipment will be designed to meet the requirements of FAA TSO-C119 which references RTCA/DO-185 as the Minimum Operational Performance Standard. This project will be conducted during the time period from now till approximately December 1993.

Part (b) - Specific Objectives.

As part of the program described in Part (a) above, we would like to perform tests in which the TCAS equipment will interrogate aircraft from a fixed ground-based antenna located on the roof of our facilities in Olathe, Kansas. These tests will allow us to expose our equipment to an actual airspace RF environment without having to fly it and all of the associated development test equipment in a test aircraft.

Part (c) - Contribution of the Program.

This program will contribute to the expansion and utilization of the radio art in that it will provide new TCAS I and II Airborne Equipment for the aviation industry.

Exhibit II.

Excerpt from RTCA/DO-185, MINIMUM OPERATIONAL PERFORMANCE STANDARDS FOR TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) AIRBORNE EQUIPMENT, VOLUME I pages 22-25. See attached.

2.2.3.2.1 Interrogation Spectrum

The spectrum of a TCAS Mode S or ATCRBS interrogation shall not exceed the following:

Frequency Difference (MHz From Carrier)	Maximum Relative Power (dB Down From Peak)
.GE. 4 and .LT. 61	6
.GE. 6 and .LT. 8	11
.GE. 8 and .LT. 10	15
.GE. 10 and .LT. 20	19
.GE. 20 and .LT. 30	31
.GE. 30 and .LT. 40	38
.GE. 40 and .LT. 50	43
.GE. 50 and .LT. 60	47
.GE. 60 and .LT. 90	50
.GE. 90	60

2.2.3.2.2 Unwanted Output Power

When the TCAS interrogator is in the inactive state, the RF power at 1030 +3 MHz at the terminals of the antenna shall not exceed -70 dBm. The inactive state is defined to include the entire period between ATCRBS and/or Mode S interrogations less 10 μs transition periods, if necessary, preceding and following the extremes of the interrogation transmission.

Note: *This power restriction is necessary to ensure that TCAS does not prevent the on-board Mode S transponder from meeting its sensitivity and interference rejection requirements. It assumes that the isolation between the TCAS antenna and the Transponder antenna exceeds 20 dB.*

2.2.3.3 Interrogation Repetition Interval

The nominal surveillance update interval shall be one second for all ATCRBS and Mode S aircraft under surveillance.

The nominal interval between TCAS Broadcast Interrogation Transmissions (subparagraph 2.2.8.2.4) shall be 10 seconds.

2.2.3.3.1 Interrogation Interval Jitter

The transmission time of each ATCRBS interrogation sequence and each TCAS Broadcast Interrogation shall be intentionally jittered about nominal update intervals of one second and 10 seconds respectively. The jitter shall vary randomly and be sufficient to prevent synchronous interference with other ground-based and airborne interrogators. The maximum value of the jitter shall not exceed 10 percent of the nominal update interval.

Note: *It is not necessary to intentionally jitter Mode S surveillance interrogations because of the inherently random nature of the Mode S interrogation scheduling process (subparagraph 2.2.8.9).*

2.2.3.3.2 Interrogation Rate

The total interrogation rate shall be controlled by the interference limiting procedures of subparagraph 2.2.6.2.

TCAS ATCRBS PULSE SHAPES
(All values in μs)

Pulse Designator	Pulse Duration	Duration Tolerance	Rise Time		Decay Time	
			Min.	Max.	Min.	Max.
S_1, P_1, P_3, P_4,	0.8	+0.05	0.05	0.1	0.05	0.2

The pulse spacing tolerances shall be as follows:

P_1 to P_2: 2 +0.10 μs;
P_1 to P_3: 21 +0.10 μs;
P_3 to P_4: 2 +0.04 μs.

Note: The tolerance values on these pulse widths, spacings and amplitudes are smaller than the signal-in-space tolerance values defined in Ref. B in order to provide margin for waveform distortion due to multipath.

2.2.4.2 TCAS to Mode S Transmissions

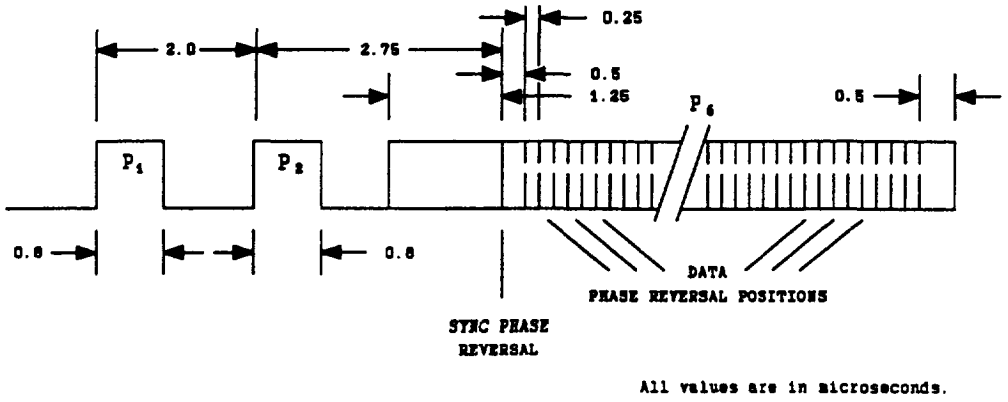
Mode S transmissions shall consist of P_1, P_2 and P_6 pulses as shown in Figure 2-2.

TCAS MODE S PULSE SHAPES
(All values in μs).

Pulse Designator	Pulse Duration	Duration Tolerance	Rise Time		Decay Time	
			Min.	Max.	Min.	Max.
P_1, P_2	0.8	+0.05	0.05	0.1	0.05	0.2
P_6 (Short)	16.25	+0.125	0.05	0.1	0.05	0.2
P_6 (Long)	30.25	+0.125	0.05	0.1	0.05	0.2

The short (16.25-μs) and long (30.25-μs) P_6 pulses shall have internal modulation consisting of possible 180-degree phase reversals of the carrier at designated times. The first phase reversal in the P_6 pulse is the sync phase reversal and is always present. The presence or absence of a subsequent phase reversal indicates a one or zero in the transmitted code respectively.

Note: The sync phase reversal is the timing reference provided to identify chip positions to Mode S interrogation decoders.



NOTE:

The P_1-P_2 pair preceding P_6 suppresses replies from ATCRBS transponders to avoid synchronous garble due to random triggering of ATCRBS transponders by the Mode S interrogation. A series of "chips" containing the information within P_6 starts 0.5 μs after the sync phase reversal. Each chip is of 0.25-μs duration and is preceded by a possible phase reversal. If preceded by a phase reversal, a chip represents a logic "1." There are either 56 or 112 chips. The last chip is followed by a 0.5-μs guard interval which prevents the trailing edge of P_6 from interfering with the demodulation process.

FIGURE 2-2 MODE S TRANSMISSION

The duration of a phase reversal in P_6 shall be less than 0.08 μs as measured between the 10-degree and 170-degree points of the phase transition. The interval between the 80-percent points of the amplitude transient associated with the phase reversal shall be less than 0.08 μs.

The tolerance on the 0- and 180-degree phase relationships in P_6 shall be +5 degrees.

The 90-degree point of each data phase reversal in P_6 shall occur only at a time (N x 0.25) +0.02 μs (N .GE. 2) after the 90-degree point of the sync phase reversal.

Note: 56 or 112 data phase reversals can occur in the 16.25- and 30.25-μs P_6 pulses respectively. This results in a four Mbit/s data rate within the P_6 pulses.

The spacing from P_1 to P_2 shall be 2 +0.04 μs between leading edges. The spacing from the leading edge of P_2 to the 90-degree point of the sync phase reversal of P_6 shall be 2.75 +0.04 μs. The leading edge of P_6 shall occur 1.25 +0.04 μs before the sync phase reversal.

The radiated amplitudes of P_2 and the initial first μs of P_6 shall be greater than the radiated amplitude of P_1 minus 0.25 dB. The maximum envelope amplitude variation between successive phase modulation chips in P_6 shall be less than 0.25 dB.