

Exhibit A

Program Description - The Advanced Aviation Reconnaissance System (AARS) radar is being developed as a replacement for an existing system. This new design represents major advances in the digital generation of complex waveforms while, at the same time, simplifying the receiver chain and eliminating obsolete components. The design of the AARS Radar is intended to be a foundation for several system variations that may be developed for future applications.

The system utilizes a combination of custom hardware and COTS components. The radar antenna and transmitter are commercial subsystems. Commercial circuit boards include the Single Board Computer (SBC) and the Analog-Digital Converter.

Requested Radiation Permission – The system will initially be installed in a rooftop test laboratory for checkout. After rooftop testing, the system will be installed on a Lockheed Martin Sabreliner 60 aircraft and flown near the Phoenix metropolitan area. These flights will be used to fine-tune the radar performance and to determine that the radar meets its performance requirements. It is anticipated that a maximum of eight flights will be required over a 6 month period. The altitudes to be used for the demonstration flight tests will be bounded by an upper limit of 28,000 feet MSL and a lower limit of 12,000 feet MSL. Lockheed Martin regularly conducts flight tests in this area and maintains close coordination with local FAA personnel via flight plans filed prior to test and communications with the FAA during flight tests.

The radar will then be installed in an avionics pod which will be flown on a Boeing F-15 aircraft near the St. Louis metropolitan area. A maximum of six flights are anticipated over a 6 month period. The altitudes to be used for the demonstration flight tests will be bounded by an upper limit of 50,000 feet MSL and a lower limit of 12,000 feet MSL. Boeing regularly conducts flight tests in this area and maintains close coordination with local FAA personnel via flight plans filed prior to test and communications with the FAA during flight tests.

Radar Description - The radar transmits pulses with Linear Frequency Modulation on the carrier during each pulse. The radar has two basic types of operation: Fixed Target Indication (FTI) and Ground Moving Target Indication (GMTI). In FTI operation, the radar produces a photograph-like image of ground objects. In GMTI operation, the radar produces a listing of objects on the ground that are moving.

The exact transmitted characteristics depend on the mode and on the range from the aircraft to the objects on the ground being imaged. The peak transmitter power is 3500 Watts in all modes. The first four modes in the table below are used for FTI operation. The last four modes are used for GMTI.

Radar Modes and RF Characteristics

Mode	Center Frequency (MHz)	Bandwidth (MHz)	Pulse Width (μsec)	Pulse Repetition Frequency (Hz)
1	9500	604.20	125.00	680.00
2	9500	604.20	125.00	800.00
3	9500	181.26	125.00	680.00
4	9500	181.26	125.00	800.00
5	9500	60.42	125.00	680.00
6	9500	60.42	125.00	800.00
7	9500	30.21	112.00	892.86
8	9500	9.06	125.00	680.00