

Northrop Grumman Systems Corporation
Application for Special Temporary Authority

The above-referenced application is submitted on behalf of Northrop Grumman Systems Corporation (NGSC) for an experimental Special Temporary Authority (STA) in order to permit airborne testing of an improved radar system. This work will modify an existing 5th generation radar system, including the AESA antenna, the radar receiver, and the exciter; and integrate it with frequency agile waveforms. The intention is to achieve and demonstrate operational performance over a wide band of frequencies.

The radar will be frequency agile with center frequencies spanning 8520 MHz to 8980 MHz, 9220 MHz to 9980 MHz, and 16.220 GHz to 17.280 GHz. Transmissions will be channelized based on separations of 20 MHz. On all bands the wideband waveforms will restrict center frequencies so that emissions are contained within the authorized bands of operation.

The waveform will utilize pulse widths of 1.5 usec to 110 usec. PRFs will be from 500 to 125,000 Hz. Barker Phase Code and Linear FM will be employed. The Active Electronically Scanned Array (AESA) has 35.0 dBi of gain. The beam width of the antenna is 2.8 degrees horizontal and 5.0 degrees vertical at the 3 dB points and will utilize vertical polarization. The antenna will be fixed at the given location with the main beam centered on an azimuth of 230 degrees relative to true north and scan limits of +/- 40 degrees.