

DATE: 31 Jan 2020

FROM: Russ Herrell, General Atomics Aeronautical Systems, Incorporated

To: FCC OET Office

Subject: Explanation of Need for Lynx Synthetic Aperture Radar (SAR)

General Atomics Aeronautical Systems, Incorporated (GA-ASI) has partnered with NASA and the FAA to conduct a demonstration flight in the national airspace which demonstrates the commercial applicability and utility of unmanned aerial systems (UAS). This program, coined Systems Integration and Operationalization (SIO), involves design, development, integration, and testing, of hardware and software for both an autonomous detect and avoid system and a new command and control data link based on command non-payload communication (CNPC) C-band radio prototypes currently being developed by the aeronautical industry for use on UAS.

This partnership with NASA is expected to last for approximately two years, with the demonstration flight occurring in March 2020. GA-ASI's Lynx SAR system will be used in support of this demonstration, as it has ground imaging capability that can provide high resolution photographic-like products through clouds, rain or fog and during day or night.

This license application is for permission to operate a Lynx SAR on an UAS while airborne in the southern California region of the NAS. The coordinates for the airfield at which the UAS will take off and land are (N34deg, 34.00min) / (W117deg, 40.22min) (General Atomics' Gray Butte airfield). Flight operations will be conducted at 12,000 ft to 15,000 ft MSL at a radius of 130 nm centered at (N33deg, 30.00min) / (W116deg, 30.00min), while avoiding airspace above the greater Los Angeles area entirely. This flight will be conducted in conjunction with NASA and the FAA as a proof of concept flight for operating UAS in the NAS for commercial purposes and to demonstrate a viable path for UAS to obtain an FAA type certificate for future operations in the NAS.