

AESA Radar Experimental License Request for Railgun

1. Purpose of Operation

During Railgun Exercise Raytheon will Participate in Navy High Velocity Projectile flight tests in order to provide X Band sensor data to be used for the maturation of the Railgun program sensor fusion algorithm."conduct testing and developing definitions of Vertical Scan Type, Vertical Scan Speed, and Vertical Scan Rate as applied to this antenna with software adapted electronic beam scanning. The basic operation of the antenna is mechanical rotation in azimuth, at a selectable 20 rpm or 30 rpm. In addition, the antenna beam can be scanned in azimuth electronically over +/- 45 degrees from its instant physical position. The antenna beam can be electronically scanned in elevation from – 10 degrees to + 55 degrees.

Electronic scanning can take place to any angle within the azimuth and elevation limits from one transmission dwell to the next. Each dwell transmitted at one beam position lasts for time durations in the region from 0.7 to 4 milliseconds, and the transition to the next dwell at any other azimuth/elevation position is 10 microseconds. So, the maximum scan speed could be 90 degrees per 10 microseconds.

2. The C-Band CCA Array Prototype is planned to be out at WSMR the week of 5-Oct to support the Railgun HVP live fire test event (similar to last Aug 2014). Since the sensor is a Raytheon owned and is a prototype, we will need to request a temporary license like we did last year for the other prototype sensor.

The location map from last year is still applicable. The C-Band CCA Array Prototype will likely be where G/ATOR was last year.

Files Number: 0545-EX-PL-2015
Class of Station: FIXED
Station Location: FIXED
Effective Date: 10/04/2015
Expiration Date: 10/03/2016

3. Experimental Explanations

During Railgun Exercise Raytheon will conduct developmental testing and evaluation on the radar system Most of the time, programmed search scanning is within the vertical region of 0 to 15 degrees, covering a vertical sector of sequential beams in about 13 milliseconds. Search scanning is interrupted by individual beams placed anywhere within the electronic scan volume as necessary to maintain track on previously detected aircraft or projectiles

WSMR Range Map

