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Federal Communications Commission
Experimental Radio Services
P.O. Box 358320
Pittsburgh, PA 15251-5320

Attn: Office of Engineering & Technology
Experimental License Branch
Re: Application for New Experimental License

You will please find a completed electronically filed application request for a New Experimental Authorization. Also included are the electronic FCC Form 159 and the required FCC license processing fees, **\$50.00**. This request is for developmental operations at two on site locations at our **Orlando, Orange County, FL and Bithlo, Orange County, FL** facilities and tests to be conducted at the **Redstone Arsenal, AL**.

I have included their Exhibit for item 10 which explains the details of the program and its operations, as well as it's intended goals. If you have any questions relating to the program or technical operations. Please feel free to call teh Senior Staff Engineer **Alan Morone on (407) 356-2244**.

All other inquiries should be directed to teh undersigned on **(410) 682-2156**.

Very Truly Yours,

Claude E. Wells
Corporate
Tech. Support Analyst

Exhibit 1
Item #4 & 5

Lockheed Martin's Rationale for applying for an Experimental FCC License

- (a) The proposed research & development program will generate military Ka-Band radar capable of detecting, classifying and tracking moving and stationary vehicle targets. The radar will operate by transmitting an ensemble of frequency agile, phase modulated pulses. Energy reflected by the target will be separated from energy reflected by the background (ground clutter) via signal processing techniques. Target detection, classification and tracking algorithms will be executed by software. Testing of the radar will be conducted in a laboratory, in a tower facility (approximately 30-50 feet above the ground), and via helicopter flight tests (CFT's). For the CFT's, the radar will be mounted to the exterior of the helicopter.
- (b) The objectives are to demonstrate the ability of the radar to:
- Detect moving and stationary targets at predicted ranges with the predicted probability of detection and probability of false alarms.
 - Classify stationary targets at predicted ranges with predicted probability of correct classifications.
 - Track moving and stationary targets at predicted ranges with the predicted angular accuracy.
- (c) The radar development effort is unique in that the radar is integrated with imaging infrared and semi-active laser sensors in a common aperture configuration. The radar's performance must be achieved via transmission through optical elements and opto-mechanical structures. This concept affords the opportunity to implement sensor fusion algorithms and concepts.