

Exhibit No. 1 Project Description

ADVANCED GUN SYSTEM/LONG-RANGE LAND ATTACK PROJECTILE

AGS/LRLAP™



System Description

- LRLAP is part of a family of 155mm projectiles for the DD-21 Advanced Gun Systems for the U.S. Navy's next-generation DD(X) destroyer
 - Optimized mix of guided and ballistic projectiles
 - Multiple payloads and multiple guidance approaches (GPS/INS) baseline, with seeker variants
- Initial concept focused on long-range land attack requirement
- The LRLAP provides single-strike lethality from offshore against a wide range of targets with minimal risk of fratricide or collateral damage
- Minimized risk: proven hardware, flight validated models, adequate margin
- Most experienced team in both development and production: Copperhead, Deadeye, HICAP, and DTRA Projectile.

AGS/LRLAP is a trademark of Lockheed Martin Corporation.

Under contract with the AGS prime contractor, British Aerospace Engineering (BAE), Lockheed Martin is developing the tactical baseline LRLAP design. The AGS LRLAP uses the most advanced, g-hardened electronics, including a global positioning system (GPS) and inertial measurement unit (IMU), providing a precision munition that maximizes effectiveness and minimizes collateral damage. LRLAP development is in the fourth program development phase, the System Development and Demonstration (SDD) Phase, which began in 2006 and will continue through fiscal year 2010. The purpose of this phase is to verify the performance of the tactical LRLAP.

In the final tactical configuration, each LRLAP will be initialized during the gun-loading sequence. Initialization data; including launch conditions, GPS data, and targeting data; is stored in the projectile in preparation for launch. The guidance electronics, inclusive of the Deeply Integrated Guidance and Navigation Unit (DIGNU), begins to function post gun launch, after the mission battery begins supplying power. Shortly after motor burnout, the canards are deployed and 4-axis attitude and stability control is initiated. This orients the GPS antenna for satellite acquisition. The GPS receiver performs a Direct-Y acquisition, tracks the GPS satellite signals and the navigation algorithm begins blending the GPS and inertial data. The GPS-INS then converges on a calibrated INS solution and trajectory steering begins.

Navy Procurement Agency:

Contract No: N0024-05-C-5117
Matthew Marshman, NAVSEA 02545 Contracts
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Each of the above four systems will use a Navtech GPS, Inc. passive transmitting GPS antenna, P/N 3G1215PXS-1.

- Antenna Orientation: 180 degrees vertical, 360 degrees horizontal. All antennas are directional facing down towards the ground.
- Antenna Polarization: Right hand circular polarization (RHCP)
- Frequencies: 1227.6 MHz, 1575.42 MHz (GPS L2/L1)
- ¹Safety Margin (L1): 20.4 dB
- ¹Safety Margin (L2): 20.3 dB

Note 1: Refer to Exhibit 2, *Reradiation Analysis*

Conditions of License

The following conditions will apply:

The experimental period will last for four years or 48 months.

In order to ensure no GPS re-radiated signal adversely affects safety-of-life applications, Lockheed Martin will only transmit:

- Indoors;
- Such that no GPS re-radiated signal level greater than or equal to -140 dBm, measured 100 feet from the re-radiation antenna will occur; and
- Only when testing indoors is considered necessary by test personnel.

In addition:

- The “Stop Buzzer” emergency point of contact (POC) will be Bruce Earl, 407/356-3588, cell 407/340-0913
- If the POC changes, Lockheed Martin will immediately notify the FCC, FAA, DoD, and any other interested agency.
- The location of the GPS transmitters will be located in such a way that the entire area of potential interference is under the control of Lockheed Martin personnel. The facility where the transmitters will be located is a “secure” facility where security personnel control ingress and egress.