

GROUND BASED AIR DEFENSE



Program Background

The Marine Corps' organic Ground Based Air Defense (GBAD) capabilities are centered on the Low-Altitude Air Defense (LAAD) Battalions of Marine Air Wings. LAAD units currently use the Stinger missile, originally fielded in 1981 and upgraded since, as its primary weapon for air defense. It is expected that the Stinger missile will be the primary GBAD asset for the near future, but the missile will require a SLEP to maintain its operational effectiveness. Future GBAD systems are being investigated to take advantage of the new G/ATOR system capabilities and may possibly employ advanced technology, to include a pulsed energy system.

Programs and projects included in the GBAD portfolio are the:

- 1) Stinger Missile SLEP.
- 2) Advanced Man-Portable Air Defense System

Increments 0 & I.

- 3) Low Altitude Air Defense (LAAD) Sustainment.
- 4) Directed Universal Needs Statement (D-UNS) for Stinger Night Sight Replacement.
- 5) Identification Friend or Foe (IFF) Mode IV Replacement.
- 6) GBAD Future Weapon System.

Program Status

Stinger Missile SLEP

- 1) A Stinger Missile SLEP is required to meet the War Reserve Munitions Requirement and to provide sufficient training rounds after 2019.

A-MANPADS Increment I

- 1) Designated an Abbreviated Acquisition Program (AAP) in 2005.
- 2) The program is executing a single-step to full capability acquisition strategy by integrating commercial off-the-shelf (COTS) and Non-Development Item (NDI) subsystems.
- 3) Approved Acquisition Objective (AAO) for Increment I conversion; 37 Section Leader Vehicles (SLV) and 138 Fire Unit Vehicles (FUV); Actual Acquisition Quantity (AACQ) is 13 SLV, 50 FUV.
- 4) JRE contractor logistics support contract awarded to Engility in September 2013 for five years.

5) A-MANPADS Increment 0 and Increment I FUV to be upgraded to a M1114 HMMWV.

LAAD Sustainment

1) Target support; Six Firing Exercises (FIREX) planned for FY14.

2) Ground Support Equipment support; 47 Tracking Head Trainers repaired and ready to fill shortfalls.

3) Improved Moving Target Simulator (IMTS) contract awarded to Aegis in August 2013 for 11 months, with two option years.

D-UNS for Optics

AN/PAS-18 Stinger Night Sight replacement being investigated.

IFF Mode IV Replacement

Plan to procure a replacement IFF in FY17 from U.S. Army to meet JROC requirement to be Mode V capable by 2020.

GBAD Future Weapon System replacement is being investigated, including the GBAD On-the Move (GBAD OTM) FNC program being funded by the Office of Naval Research.

GBAD's Top Two Program Technology Issues

1. Stinger Night Sight Replacement D-UNS

Technologies are needed to produce a Stinger missile mountable day/night sight with the following characteristics:

1) Multi-spectral infrared in Low and High wavelengths and electro-optical to detect traditional air-breathing as well as emerging small/light UAS and cruise missiles.

2) Large focal plane array (1280x1024 or higher) and optical/digital zoom capability to enable both detection and identification of the target at maximum ranges.

3) Wide Field of View of 20 degrees horizontal and 10 degrees vertical.

4) Cooled or uncooled technology with a maximum time from off-to-operate, or from standby-to-operate, of 10 seconds.

5) Capable of using MIL-SPEC batteries with an operating time of 6 hours and standby time of 12 hours.

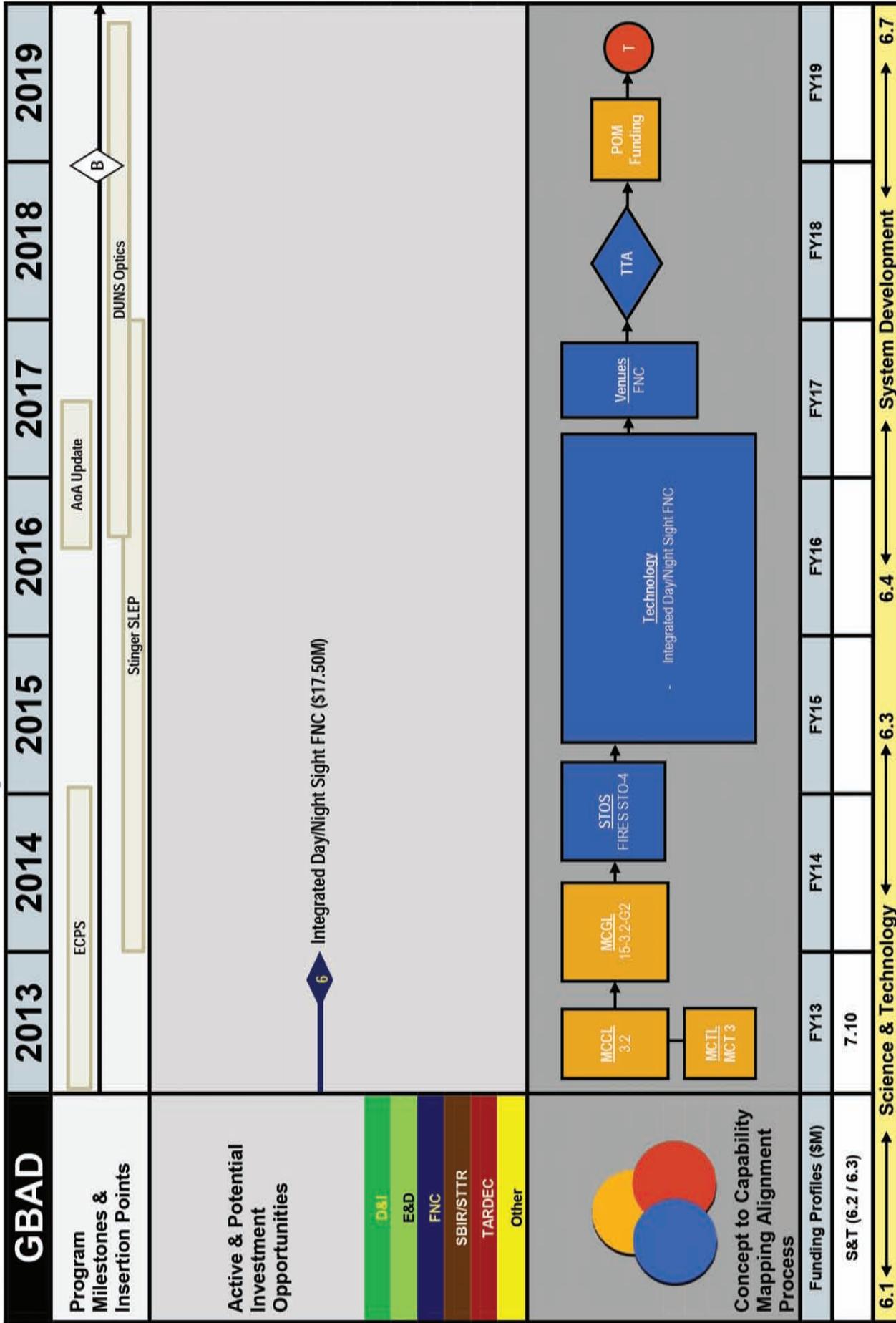
6) Size, Weight and Power (SWAP) comparable to AN/PAS-18 or smaller.

2. Frangible 50 Cal and 7.62mm Rounds

The Stinger missile has an inter-launch boundary that is mitigated through the use of M2 .50 or M240 7.62mm machine guns. These weapons also provide for negation against close-in (less than 500m distant) small UAS targets. In order to increase lethality against these targets, a frangible type round is desired that would produce multiple projectiles and achieve an increase in the probability of a kinetic hit against the target.



GBAD Technical Issue #1 Stinger Night Sight Replacement D-UNS





GBAD Technical Issue #2 Frangible 50 Cal and 7.62mm Rounds

