

Section 7.4 PEO LS Program

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 battalions currently use the Stinger missile, originally fielded in 1981 and upgraded since to Block I configuration, as its primary weapon system for air defense. It is expected that the Stinger missile will be the primary GBAD asset for the near future, and the missile is currently undergoing a Service Life Extension Program (SLEP) to maintain its operational effectiveness and longevity. An Analysis of Alternatives (AoA) for the GBAD Next Generation Weapon System (NGWS) has begun, which will result in a Capability Development Document by the end of fiscal year (FY) 2016. In addition to the AoA, there is the GBAD On-the-Move (OTM) FNC project. This program seeks to develop an agile and cost-effective, detect and-engage capability against low-altitude, observable, and low-radar cross-section air threats.

Programs and projects included in the GBAD portfolio are:

- ▶ Stinger Missile SLEP
- ▶ Advanced Man-Portable Air Defense (A-MANPADS) System Increments 0 & 1
- ▶ Stinger Night Sight Replacement
- ▶ Identification Friend or Foe (IFF) Mode IV Replacement
- ▶ GBAD NGWS

Program Status

Stinger Missile SLEP

A Stinger Missile SLEP began in FY14 and is scheduled to complete delivery in FY18. The SLEP is essential and required to meet the War Reserve Munitions Requirement and to provide sufficient training rounds after 2019. The SLEP is a joint effort with the Army's Program Executive Officer – Missile System to prolong the life of the Stinger Missile by replacing aging components such as the flight motors and missile energetics.

Advanced Man-Portable Air Defense (A-MANPADS) Increments 0 & 1

A-MANPADS was designated an Abbreviated Acquisition Program (AAP) in 2005 and is executing a single-step to full capability acquisition strategy by integrating commercial off-the-shelf (COTS) and NDI subsystems. The concurrence to pursue the full Approved Acquisition Objective for Increment I of 38 Section Leader Vehicles (SLV) and 143 Fire Unit Vehicles (FUV) was received in 2015. A-MANPADS

Increment I vehicles contains hardware and software for a tactical data link capability, which allows the LAAD BN to connect to various C2 agencies to receive an air picture down to the LAAD Fire Teams. The fielded datalink capability is supported by a Joint Range Extension Sustainment contract that was awarded in September 2013 for five years. An Engineering Change Proposal (ECP) has been approved for all A-MANPADS FUVs, which will be transitioning to a HMMWV Prime Mover platform to rectify obsolescence and operational deployability of the current chassis. Included in this ECP is the replacement solution for the Harris Communication secure tactical wireless capability, SECNET-11, which has reached obsolescence and is being replaced with the AN/PRC-152A radio.

Stinger Night Sight Replacement

The AN/PAS-18 Stinger Night Sight is being replaced in a joint acquisition with the Army through the Army's Family of Weapon Sights – Crew Served development and production efforts. The future optic will be replaced with a state-of-the-art, high-definition Focal Plane Array (FPA), providing greater target resolution and detection capability against the full spectrum of threats to include UASs.

IFF ModeV

GBAD plans to procure a replacement IFF system in a joint acquisition with the Army to meet a Joint Requirements Oversight Council requirement to be Mode V capable and compliant by 2020. The effort will replace the current AN/PPX-3B analog interrogator with a new digital Mode V interrogator, which can operated with Stinger Missile or Army Avenger system. Efforts will include AIMS box level and platform integration testing.

GBAD

The GBAD Program Office is currently investigating potential kinetic and non-kinetic capability to

counter the full spectrum of threats to include UASs. Efforts include the GBAD On-the-Move (OTM) Future Naval Capability program, funded by the Office of Naval Research and developed by Naval Surface Warfare Center, Dahlgren, VA. This effort is investigating the feasibility of hosting a directed energy solution on tactically relevant vehicles such as the Joint Light Tactical Vehicle (JLTV) or High Mobility Multipurpose Wheeled Vehicle (HMMWV).

GBAD's Top Technical Issues

1. Stinger Night Sight Replacement

Enabling technologies are needed to produce a lightweight, compact night sight, compatible with the stinger missile and suitable to achieve detection and identification of thermal targets (i.e. Type 1-3 UAS, rotary/fixed aircraft) at ranges suitable for man-portable air defense operation. Technologies required are 1) lightweight, quiet, and efficient micro chiller that can be incorporated into a hand held Mid Wave IR (MWIR) thermal sight; 2) High Density Focal Plane Array (FPA) (16:9 ratio of 1280 or 1920 horizontal pixels) with small 12 micron or smaller pixel pitch; and 3) lightweight compact optical zoom that provides a 20 degree Field of View (FOV) for missile engagement and narrow FOV for target identification.

2. Counter Unmanned Aircraft System (UAS)

Based on the proliferation of inexpensive Low and Small (LSS) Unmanned Aircraft System (UAS); a cost effective kinetic and/or non-kinetic counter UAS capability is required to negate the threat at the system's weapon keep out or sensor ranges. Counter UAS system should provide a low cost per shot system with a high probability of kill against a group 1 UAS, integrated detection, tracking, and identification sensors, and capable of being mounted and transported on a lightweight tactical vehicle.

3. Secure Wireless Communication

The A-MANPADS Increment 1 FUV currently has a requirement to allow the gunner to dismount the vehicle and maintain connectivity to the Adaptive Networking Wideband Waveform (ANW2) data network remotely for situational awareness of the current air threat, with the capability for Voice over Internet Protocol transmissions, and with a remote distance of 50-100m. These radios must be in the smallest form factor that allows for secure (NSA accredited Type I encryption) data/voice transmission over the ANW2 network.

AAP IN 2005

GBAD PORTFOLIO

MSC = Jul 15 2007

AAO = SLV 38 FUV 143

IOC = Dec 2012

FOC = AAO = 1 Qtr 20

*17 Apr 2015 - A-MANPADS Increment I rec'd
concurrency to complete AAO

Description: GBAD is a Portfolio of acquisition activities comprised of 2 programs: (Advanced MANPADS Increment I, and Stinger SLEP), and 4 projects: (Sustainment, GBAD Aerial Targets, D-JNS , and GBAD OTM). The GBAD program has the mission to counter low altitude aerial threats to the MAGTF. Managed by PM GBAD – G/ATOR, PEO LS.

JAN 2016

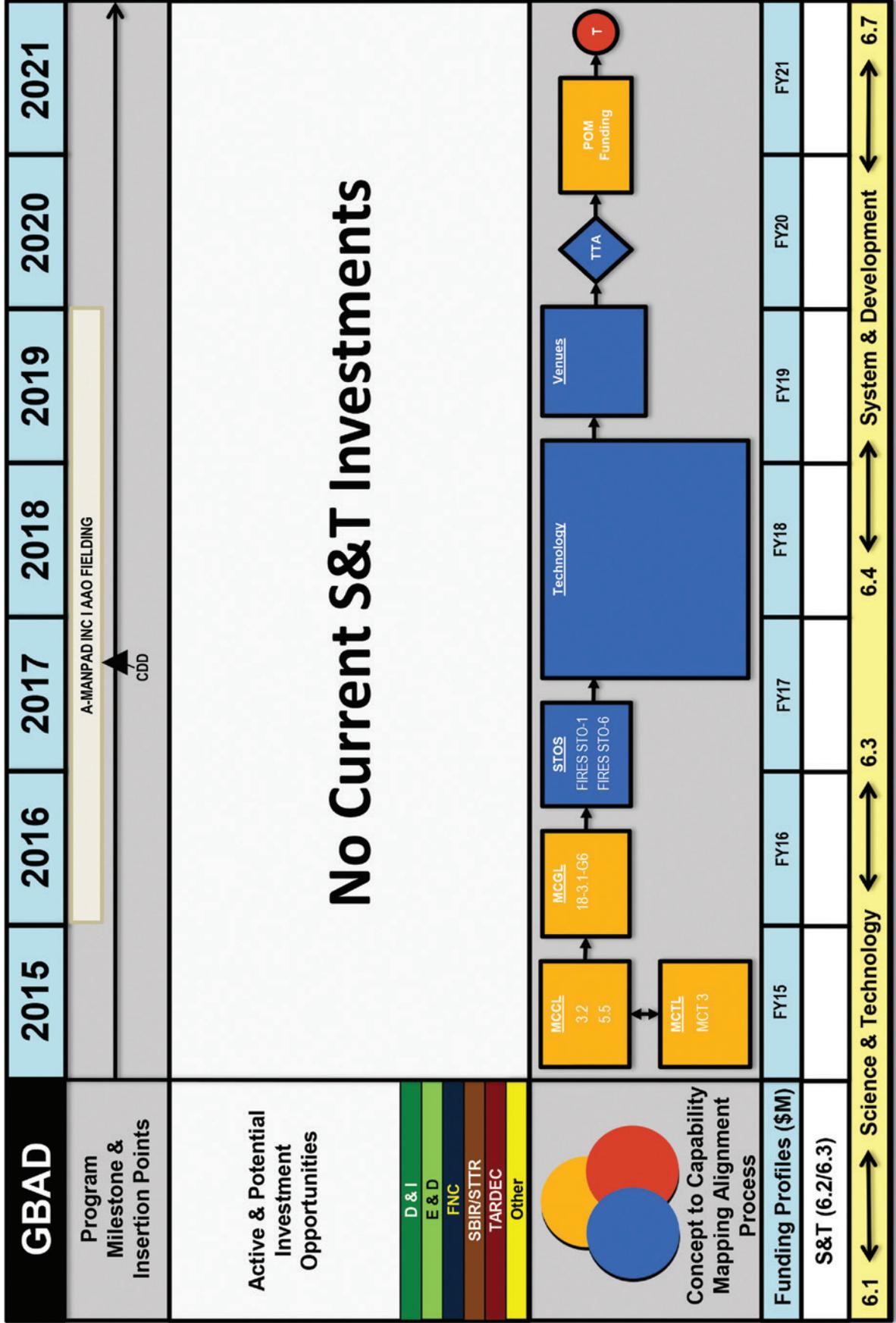
<p>KPP Survivability/Protection</p> <p>KPP Transportability</p> <p>KPP Net Ready</p> <p>N T O</p>	<p>Contract Data - FFP Contractor Engility Corporation</p> <p>Start – Complete 30 Aug 13 – 29 Aug 18</p> <p>Next Contract: GBAD Datalink</p> <p>DCMA = N/A CPI = N/A EAC = N/A</p> <p>Issues: GBAD Next Gen Weapon System Requirements</p>	
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PROGRAM	FY15				FY16				FY17				FY18				FY19				FY20				FY21							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Milestones & Phases	Stinger SLEP																SLEP Deliveries															
SETR Reviews	JIRE ATO Renewal PAT																JIRE ATO Renewal															
Test Events	Initial Demo				Halt Demo				Pause Demo																							
Contract Events	F Motors				Warheads				Datalink																							

*Based on estimated and calculated values of A-MANPADS Inc I
N – no capability T – Threshold O – Objective



GBAD Technical Issue #1 Stinger Night Sight Replacement





GBAD Technical Issue #3 Secure Wireless Communication

