Space and Missile Systems Center

Military GPS User Equipment (MGUE)

Lt Col James “Mutt” Wilson
Program Manager

29 Apr 15

Information contained in this briefing cannot be construed as contractual direction

Overview

- MGUE Acquisition Strategy
- MGUE Increment 1 (Inc 1) Schedule
- MGUE Inc 1 Test Plan
- MGUE Increment 2 (Inc 2) Plan
- M-Code Receiver Statistics

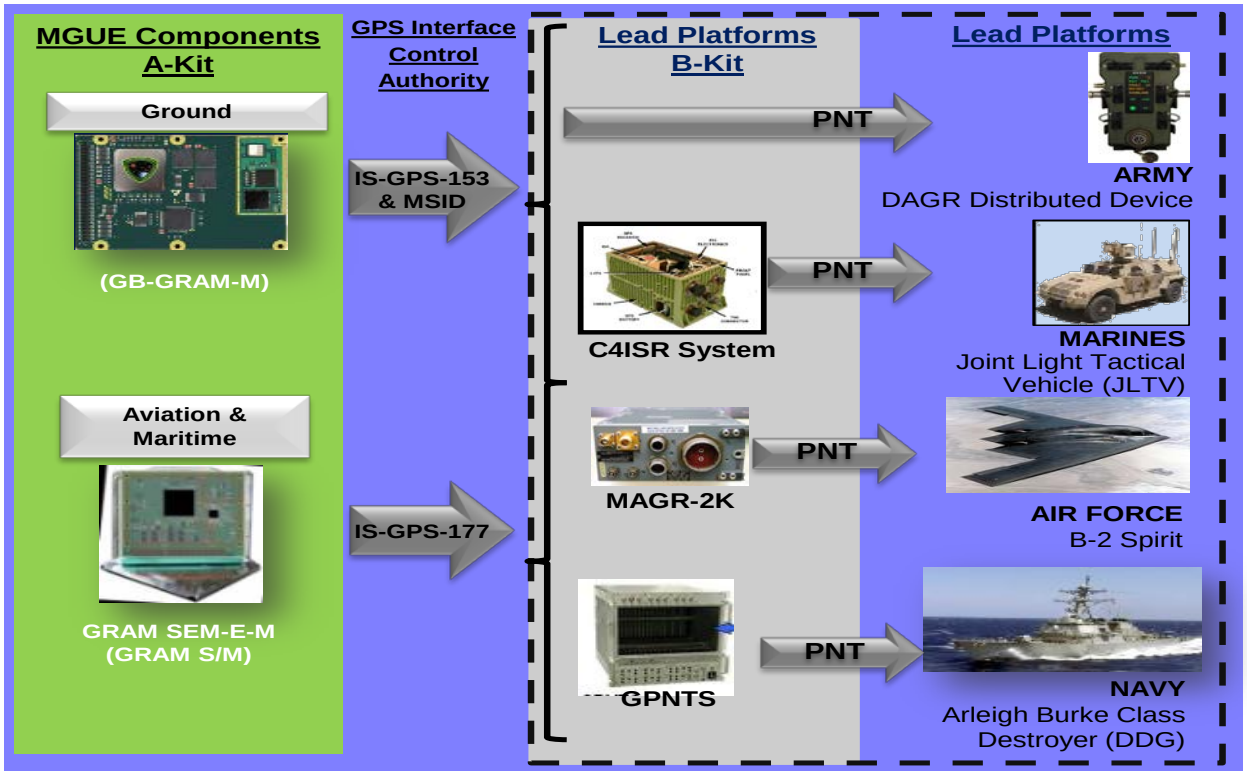
MGUE Program Summary

- Incremental Acquisition effort to develop form factors
  - Increment 1 (Inc 1): Ground (GB-GRAM-M) and Aviation/Maritime (GRAM-S/M)
  - Inc 1 form factors evaluated to be at high level of maturity
- Responded to Acquisition Decision Memorandum 20 Feb 14
  - Direction from USD(AT&L) to accelerate MGUE Increment 1
  - Pulled forward items from EMD phase and proceeding to MS B/C
  - Updated Acquisition Strategy Document, signed 10 Apr 15
- Requirements approved by JROC on 24 Jul 14
- Integrate Inc 1 form factors into service-nominated lead platforms
  - Ground: DAGR Distributed Device (D3) and Joint Light Tactical Vehicle (JLTV)
  - Air: B-2
  - Maritime: Arleigh Burke Class Missile Destroyer

MGUE Inc 1 Is On An Accelerated Path

MGUE Inc 1 Content

- A commercial market driven acquisition approach
- Accelerating from TD phase to production



L3 communications

Raytheon

Rockwell Collins

U.S.ARMY

Marines

Incremental acquisition strategy sets basis for future

MGUE Inc 1 Program Schedule

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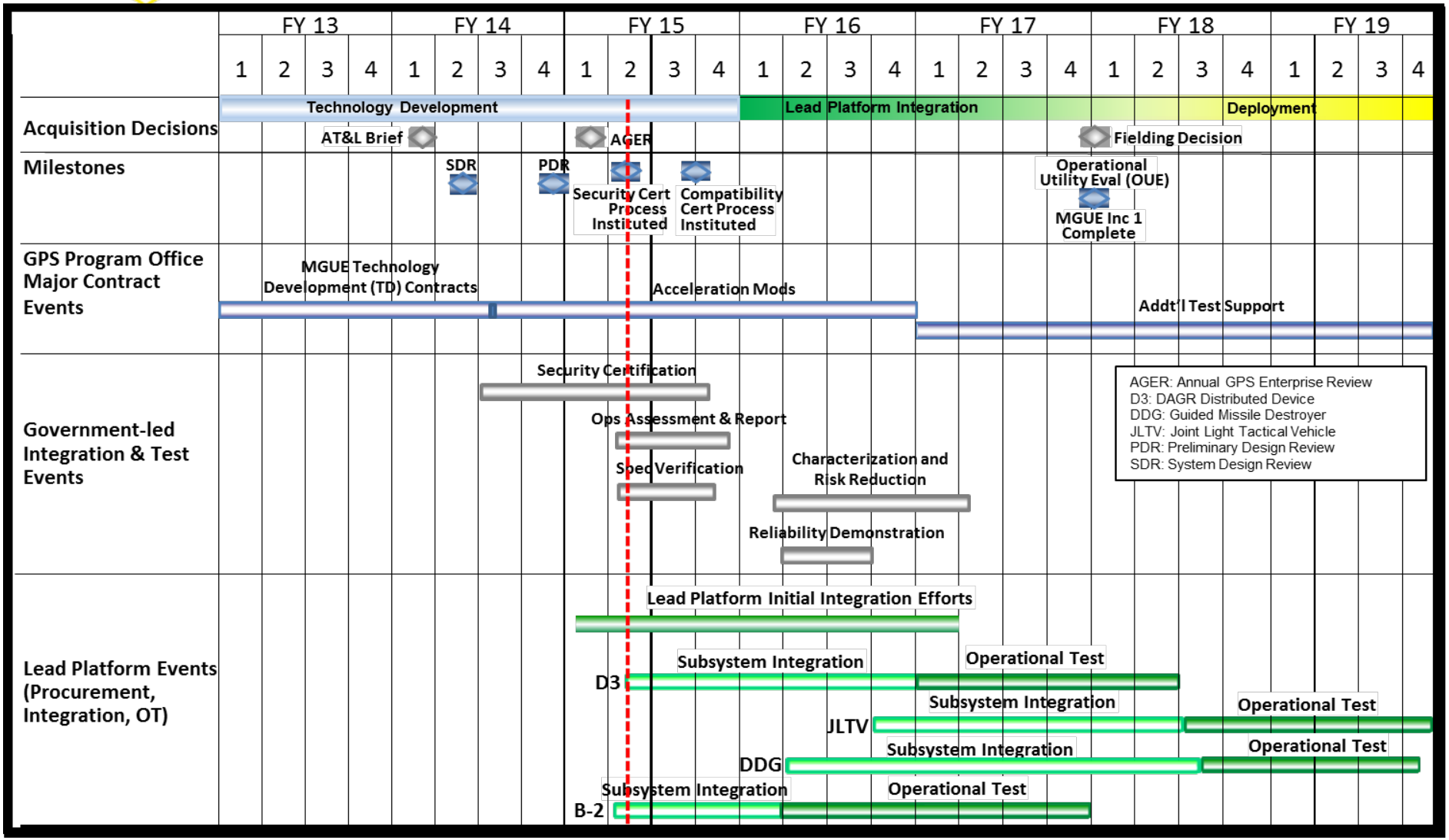

MGUE Test Strategy: Path to Operational Test in FY16

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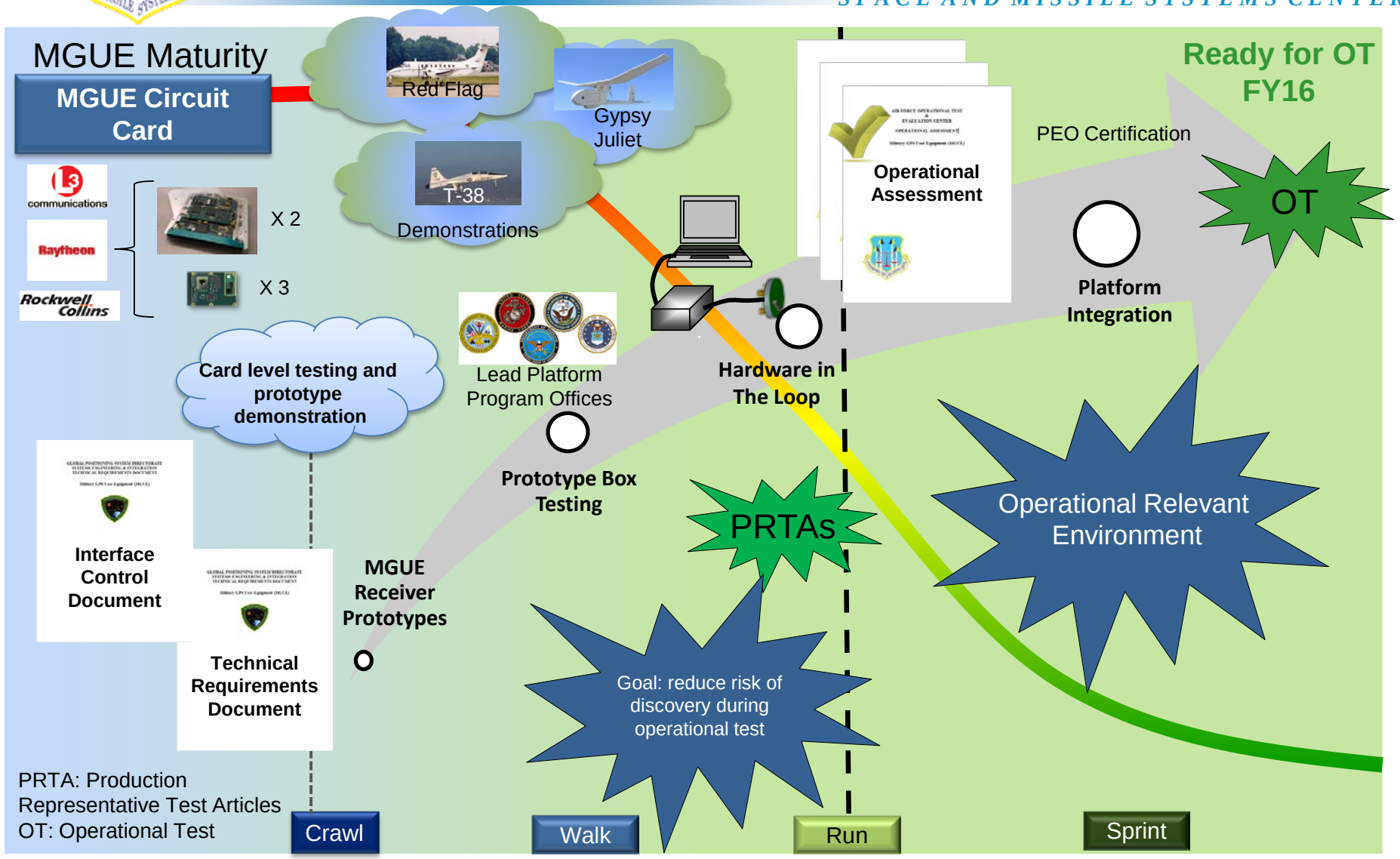


MGUE Performance: NavFest 2015

- Utilized C-12J to showcase MGUE capabilities
  - More mature hardware/software than Red Flag
  - Additional early integration of B-2 receiver
  - Able to track M-Code in jamming environment
- Test Successful – MGUE card held lock!
  - M-Code tracked in both contested & benign environments

Aviation Receiver Held M-Code, All Other GPS Receivers Lost Lock

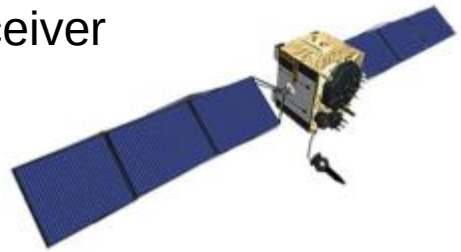
MGUE Inc 2 Current Status

- JCIDS: Inc 2 Capabilities Development Document (CDD) in coordination
  - AFROC approved Draft CDD
  - Defines 3 items:
    - Precision Guided Munitions (PGM)
    - Space Receiver
    - Handheld (HH)

- PPBE: FY16 PB adds MGUE Inc 2
  - Starts in FY17, accelerating two years from FY19 start

Inc 2 Acceleration: Ongoing Efforts to Leverage Inc 1

- Possible Materiel solutions exists for 2 of 3 Inc 2 Platforms
  - Teaming with Army to integrate Increment 1 (Inc 1) technology into Precision Guided Munitions (PGM)
    - Analysis indicates Inc 1 technology can withstand PG environments
  - AF developing low size/weight/power GPS M-Code space receiver
    - Completed Preliminary Design Reviews – Mar 2015



- Potential materiel solution for third platform
  - Investigating NDI to meet Handheld requirements

MGUE Inc 2: Handheld Acceleration

- Continue accelerated commercial market driven approach by using existing Handheld with MGUE Inc 1 receiver
- Inc 2 requires handheld as an end item
- Opportunity to leverage Inc 1 efforts to andheld application
- USAF conducting market research of handheld vendors with potential to integrate MGUE Inc 1 ASIC into an existing product
- Seeking approval to pursue handheld as a non-developmental item

History of GPS User Equipment Development at SMC

Small Lightweight GPS Receiver (SLGR)

Precision Lightweight GPS Receiver (PLGR)

180,000 units, Bosnia and OIF

Defense Advanced GPS Receiver (DAGR)

500,000 units, since 2005

Ground Based-GPS Receiver Application Module (GB-GRAM)

100,000 units, since 2005

MGUE Next Step in Long History

User Equipment Fielding vs Availability

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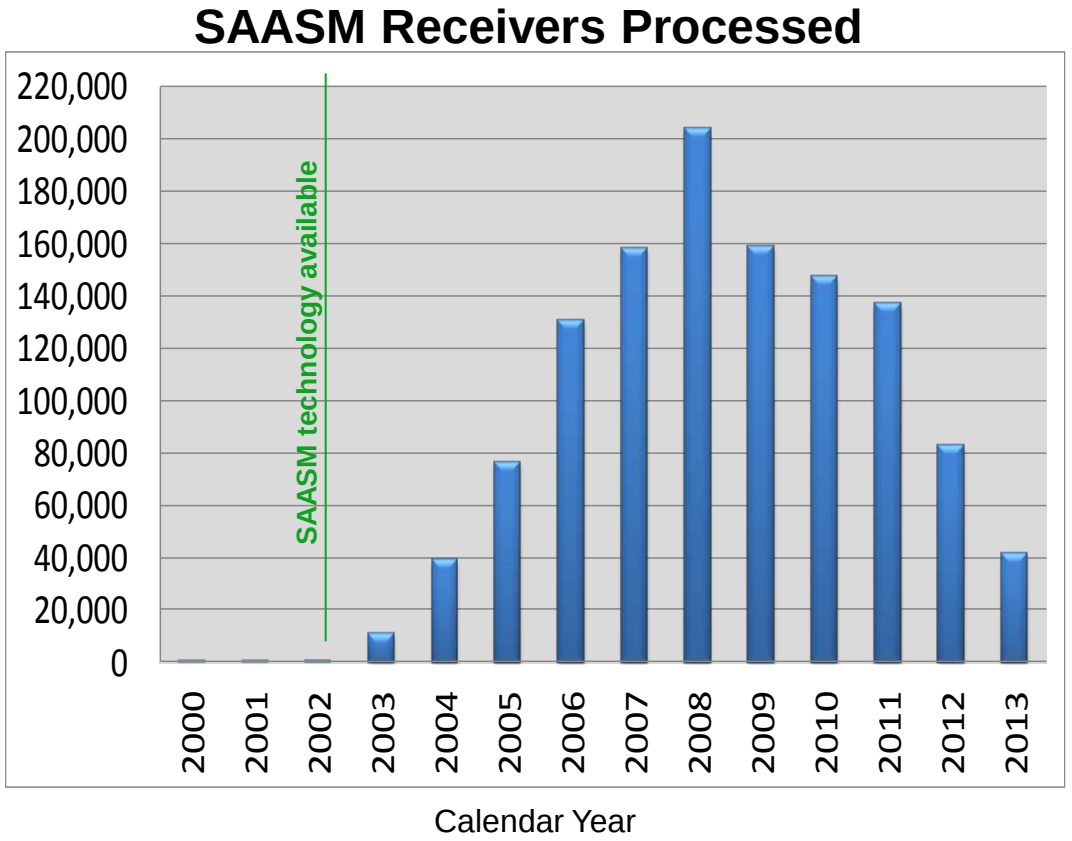
User Equipment	Quantity in the field
DAGR (SAASM)	500,000+
GB-GRAM (SAASM)	100,000+
Projected M-Code Receivers (FY17-FY30)	~1.5M+



DAGR: Defense Advanced GPS Receiver
GB-GRAM: Ground-Based GPS Receiver Application Module
SAASM: Selective Availability Anti-Spoofing Module

M-Code receiver demand expected to increase with availability

Summary

- MGUE is an incremental acquisition approach
- MGUE is operating on time
- MGUE Inc 1 accelerating to production
- MGUE Increment 2 will be a pre-planned product improvement
- M-Code is the way forward for GPS receivers