



**AFPEO Weapons  
Armament Directorate**



**Mission:**

**Equip Warfighters By Acquiring and Supporting War-Winning Capabilities**

**NDIA Fuze Conference  
AFPEO for Weapons Perspective  
10 May 2017**

DISTRIBUTION STATEMENT  
A. Approved for public  
release; distribution is  
unlimited 96TW-2017-0144.

*“Celebrating 60 Years of Fuzing Excellence”*

**Dr. Yvette Weber  
Deputy AFPEO for Weapons**

Distribution A: Approval for public release; distribution is unlimited

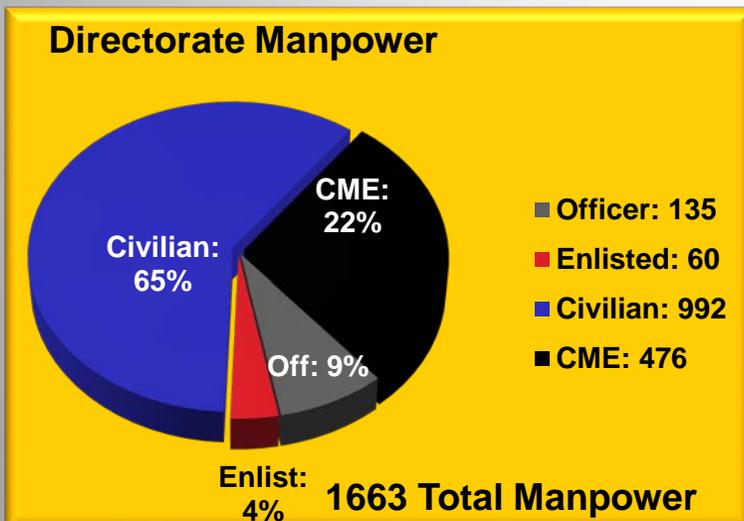
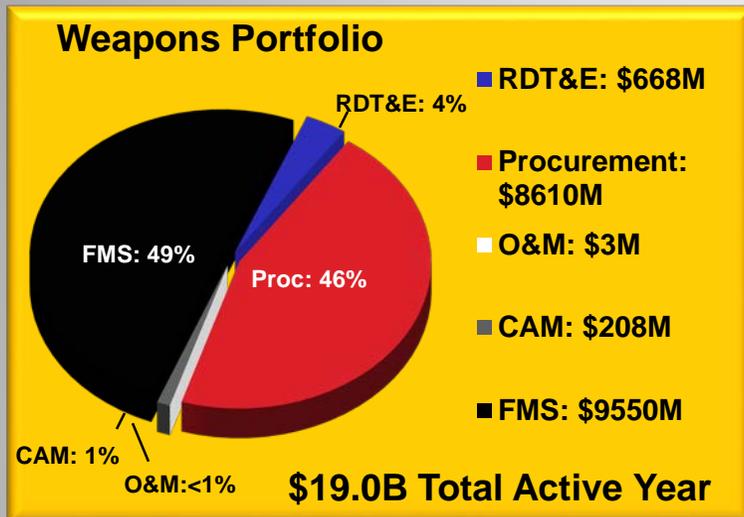
**Vision:**

**Deliver Affordable World-Dominant Armament Capabilities...On Time, On Target**



# Armament at a Glance

DELIVERING AFFORDABLE WORLD-DOMINANT ARMAMENT CAPABILITIES...ON TIME, ON TARGET



### \$72B Armament Directorate Portfolio

WML – 95	AML – 31
ACAT I – 9	
ACAT II – 3	
ACAT III – 19	
FMS Cases - 264	



# AFPEO Weapons Priorities

DELIVERING AFFORDABLE WORLD-DOMINANT ARMAMENT CAPABILITIES...ON TIME, ON TARGET

## NOW (CAPACITY)

- Must address current inventory challenges (legacy programs)
- UONs...rapidly field critical capability (APKWS)

## TOMORROW (CAPABILITY)

- Improve legacy weapons (M-code, CryptoMod)
- Field next generation weapons (SDB II, A2K, A5K)

## THE DAY AFTER TOMORROW

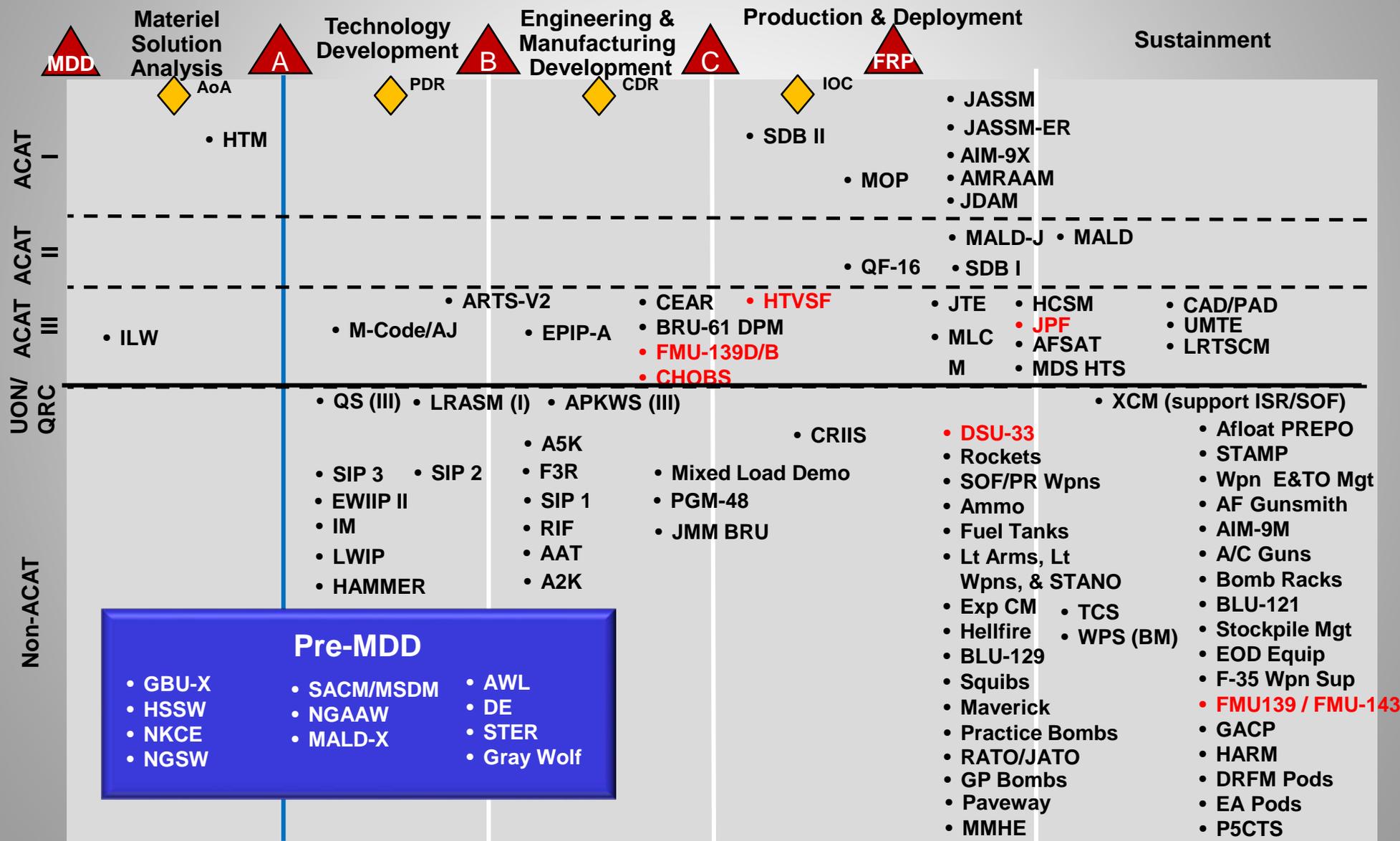
- Third Off-Set...identify, partner, accelerate and field game-changing technologies



# AFPEO (W) Acquisition Portfolio

Mar 2017

DELIVERING AFFORDABLE WORLD-DOMINANT ARMAMENT CAPABILITIES...ON TIME, ON TARGET



# AFPEO Weapons In Today's Fight

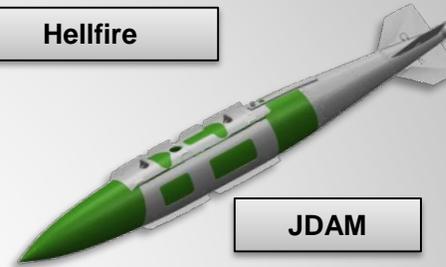
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SDB-I



Hellfire



JDAM

400,000+ weapons expended by US in current Overseas Contingency Operations

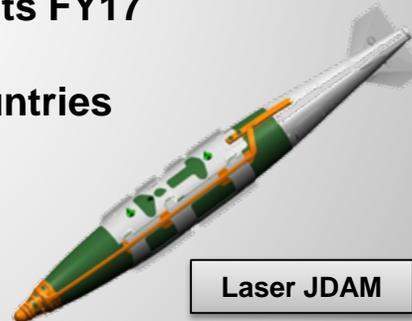
Production expected to exceed 65,000 units FY17

314 active FMS cases supporting 55 countries



Paveway II

AGR-20/A-APKWS



Laser JDAM



25MM Ammo



Maverick

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# Direct Attack Division Portfolio

DELIVERING AFFORDABLE WORLD-DOMINANT ARMAMENT CAPABILITIES...ON TIME, ON TARGET

## DIRECT ATTACK

Hard  
Targets

Area  
Targets

Fixed  
Targets

Mobile  
Targets

Warhead Design

Energetics

Mod & Sim

Guidance & Control

Aircraft Integration

Weapon Planning

Fuzes & Sensors

Future Competencies

MMHE

Enterprise Competencies

Key Enablers: PM – EN – LG – FM – PK – Test – FMS – Industry – Training

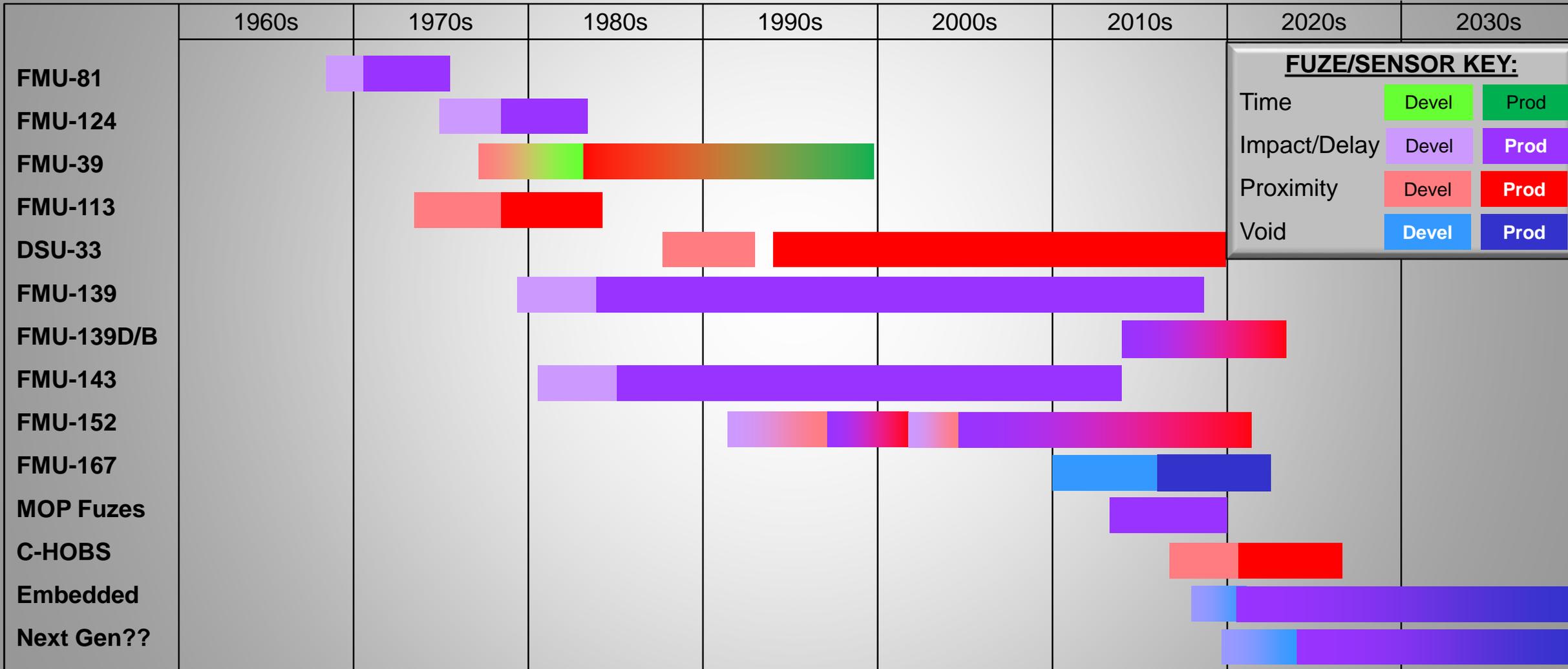
Critical Infrastructure: Facilities – IT

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# 60 Years of Bomb Fuzing Excellence

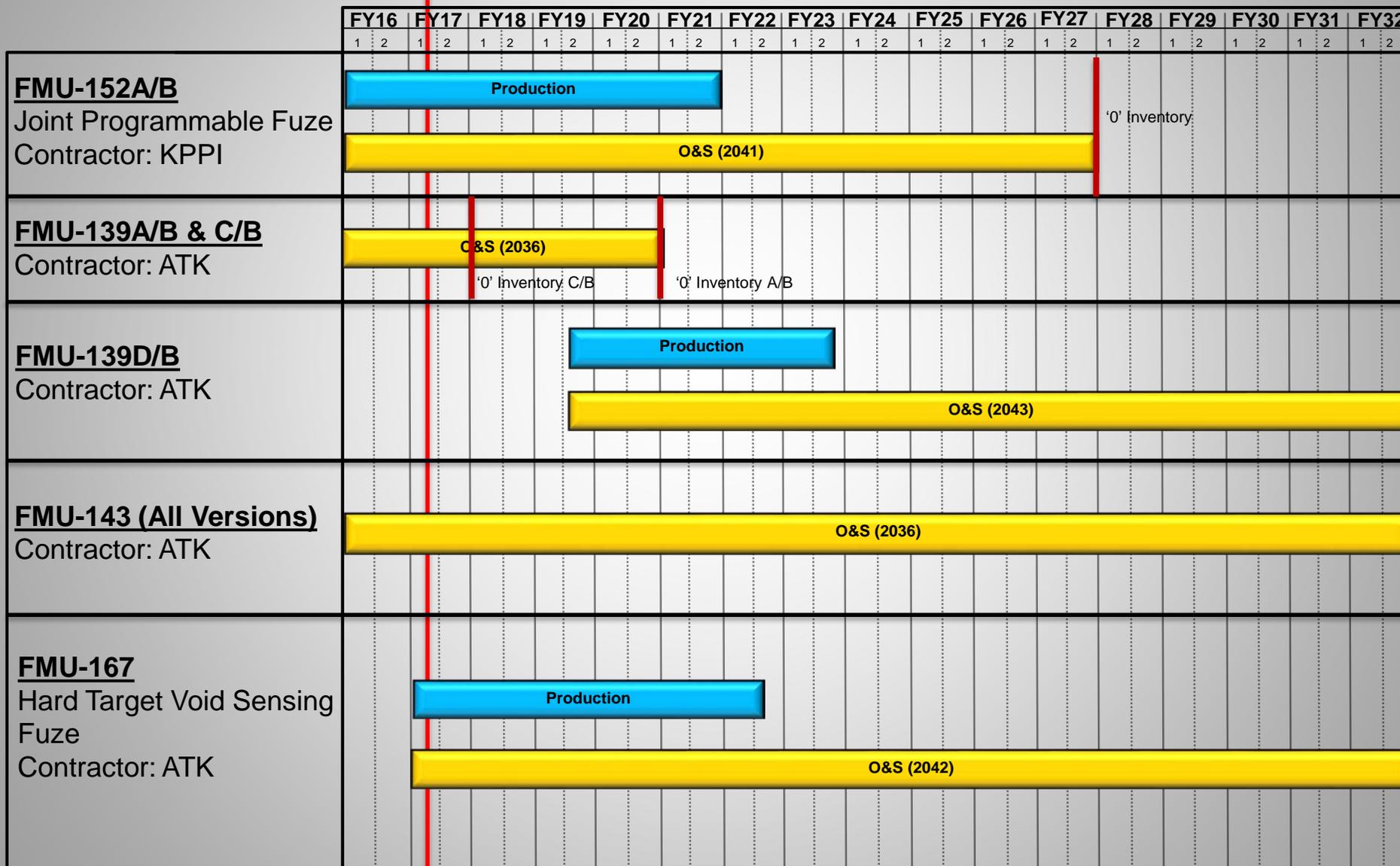
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# USAF Fuze and Sensor Roadmap



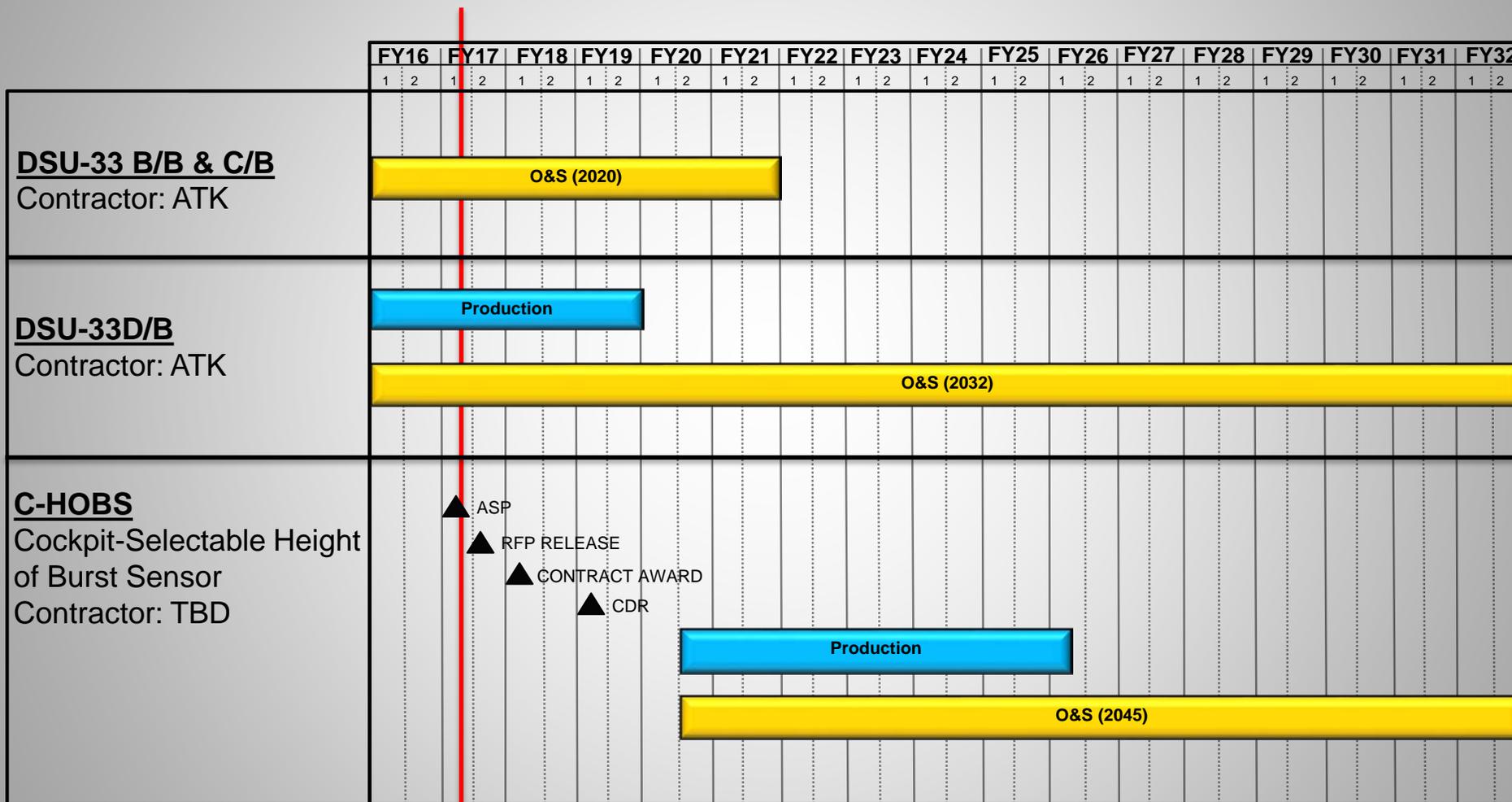
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"0" Inventory" based on current expenditures and expirations

# USAF Fuze and Sensor Roadmap

DELIVERING AFFORDABLE WORLD-DOMINANT ARMAMENT CAPABILITIES...ON TIME, ON TARGET



“0” Inventory” based on current expenditures and expirations



# ***Fuze Industrial Base Health***

*DELIVERING AFFORDABLE WORLD-DOMINANT ARMAMENT CAPABILITIES...ON TIME, ON TARGET*

- **Historically, Fuze quantity buys have been low**
  - **Production automation has been limited**
  - **Skilled workforces essential**
  - **Procurement quantities have varied**
- **Challenging workload for engineers has varied**
  - **It takes approximately 10 years to grow a fuze engineer**
  - **Requires steady stream of challenging efforts**
- **Working with HAF, SAF and DOD Fuze IPT**
  - **Address Intellectual Property concerns to support challenging development work**
  - **Balance quantity levels over time**



# ***USG Owned Technical Data Packages***



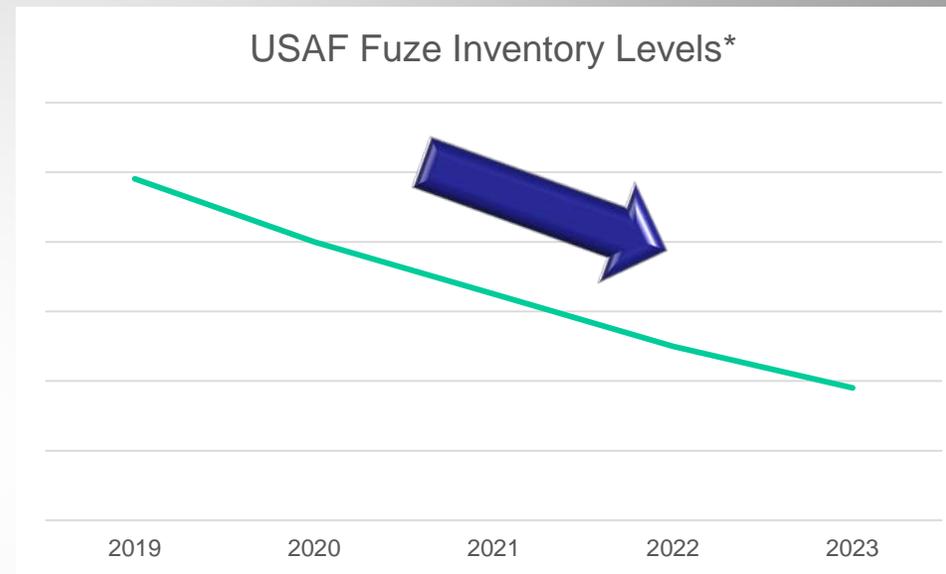
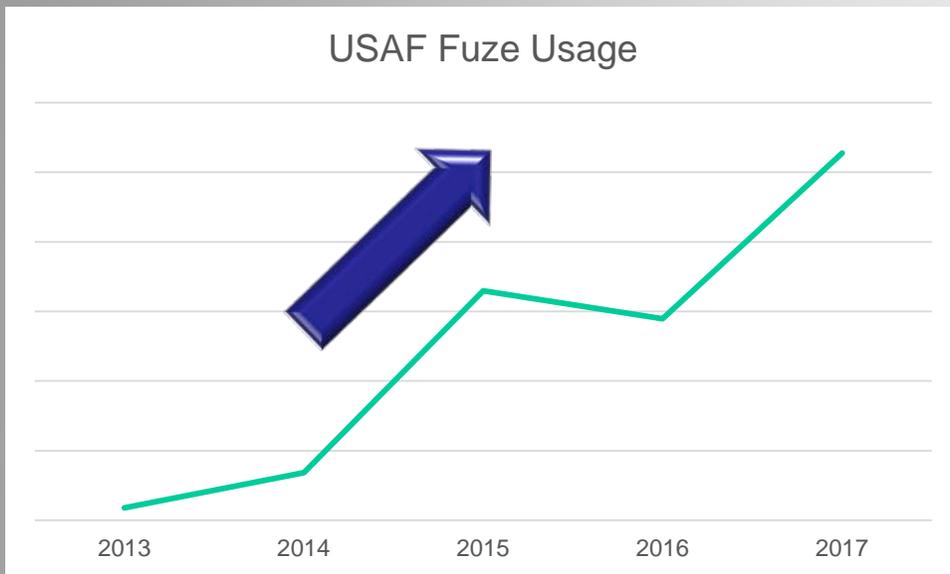
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- **USG Owned TDPs have historically been difficult to build to because**
  - **TDPs not updated as parts go obsolete**
  - **Modernization efforts not sufficient to stay ahead of obsolescence**
  - **Production know how not available -- proprietary to the previous contractor**
  - **Production tooling not always available**
- **Working with DOD Fuze IPT to**
  - **Improve guidance on TDPs - assist program offices to improve TDP quality and maintenance**
  - **Clarify intellectual property guidance to ensure that the USG owns data required to efficiently transition production**
  - **Determine when the USG owning the TDP is essential vice when it is not**



# Production Capacity and Modernization

DELIVERING AFFORDABLE WORLD-DOMINANT ARMAMENT CAPABILITIES...ON TIME, ON TARGET



\* Due to aging out and usage

- Inventory levels must be replenished in the next few years to support continuing ops
- Budgets expected to rise
- We need your help to:
  - Increase production capacity to support additional buys
  - Modernize equipment to support increased capacity

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# The Future of Fuzing

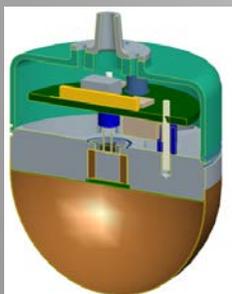
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## ■ General Purpose

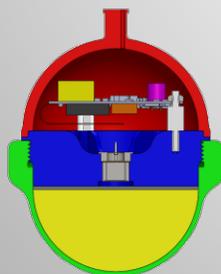
- New schemes for power, safety, and arming environments needed to support weapons that cannot have FZU holes
- Cockpit Selectivity in Height of Burst Sensors will become key to solving the weapons void left by the enactment of the Cluster Munitions Policy

## ■ Penetrating Fuzes

- Fuzes must be designed as a system in conjunction with the warhead to ensure survivability
- Embedded fuzing is an option to provide increased fuze survivability in extreme hard target environments



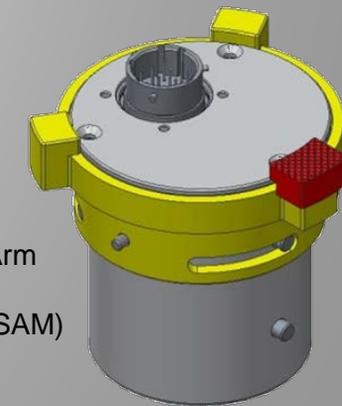
Advanced Concept Ordnance for Reliable iNitation (ACORN), 2012



Advanced Low Density Modular Ordnance for Novel Detonation (ALMOND), 2015



Precise Initiation for Next-generation Engagements (PINE), 2015



Electronic Safe & Arm Module (ESAM)  
Proximity ESAM (PESAM)

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# Key Take Aways

DELIVERING AFFORDABLE WORLD-DOMINANT ARMAMENT CAPABILITIES...ON TIME, ON TARGET

- Increased Ops tempo has resulted in lower than expected inventory levels
- We need industry's help to
  - Fill the inventory
  - Develop the next generation of fuze technologies to bring to the fight
- With ever changing target scenarios, new technologies will be the key to defeating increasingly hardened targets and fill the void left by the Cluster Munitions ban
- With your help, the US Air Force, US Navy, and our Allies can continue to “Bring the HURT!!”



# Questions?

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