



# DoD Joint Fuze Technology Program (JFTP)

60<sup>th</sup> Annual NDIA Fuze Conference

Cincinnati, OH

10 May 2017

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Naval Surface Warfare Center  
Indian Head EOD Technology Division



# Outline

- **BLUF and Background**
- **JFTP Process**
- **JFTP Project Highlights**
- **Key JFTP and Fuze IPT Events**



# Bottom Line Up Front

- This program addresses, from a Joint Service perspective, advanced Fuze technology development associated with improving the lethality, reliability, and survivability of munitions and weapon systems.
  - Main JFTP Thrusts: Cluster munitions replacement fuzing, hard target fuzing M&S and characterization, next generation proximity fuzing
  - GOTChA process technology planning conducted and ongoing for all four FATGs
  - Fuze Technology transitions to weapon applications – insertion into weapon R&D roadmaps/plans, secure PM/PEO endorsements, collaborative efforts with Industry

**Strategic Thrusts > Technology Planning > Technology Application**

- FY17: 6.2 - \$5.9M, 6.3 - \$6.2M

**JFTP FY18 Proposal Process ongoing  
FY19 Call for White Papers will come out in 1QFY18**



# Joint Fuze Technology Program Management Structure



**OUSD(AT&L)/(A)/  
TWS/LW&M**



**Technical Advisory  
Committee**

**JOINT FUZE TECH PANEL OVERSIGHT COMMITTEE**

**PROGRAM MANAGERS (OSD, Army Air Force, Navy)**

**JFTP Support Staff**

## FUZE AREA TECHNOLOGY GROUPS

**FATGI – Hard Target  
/ Survivable Fuzing**

Army, Navy, Air Force  
Co-Chairs

SME Participants

**FATGII – Tailorable  
Effects &  
Initiation**

Army, Navy, Air Force  
Co-Chairs

SME Participants

**FATGIII – High  
Reliability Fuzing**

Army, Navy, Air  
Force Co-Chairs

SME Participants

**FATGIV – Enabling  
Fuze Technologies**

Army, Navy, Air Force  
Co-Chairs

SME Participants

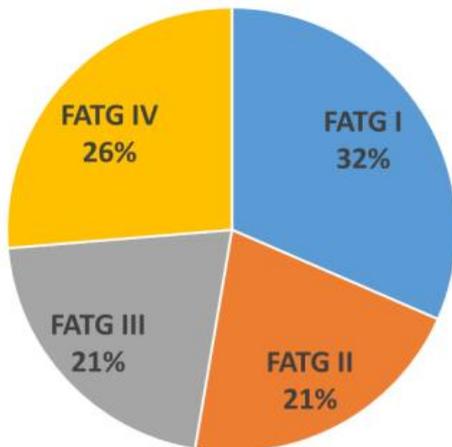


# Budget History and Projections

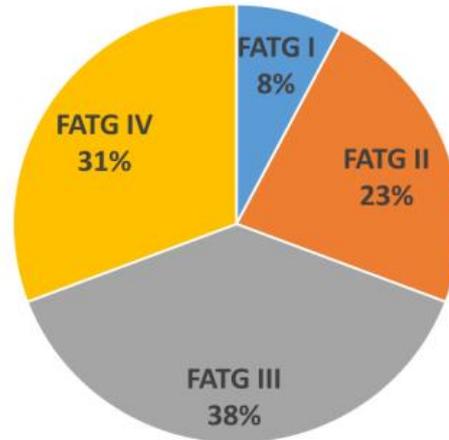
**Budget by Year (\$M)**

	FY16	FY17	FY18	FY19	FY20	FY21
6.2	6.270	5.794	6.248	6.319	6.405	6.531
6.3	6.686	6.202	6.658	6.706	6.797	6.930

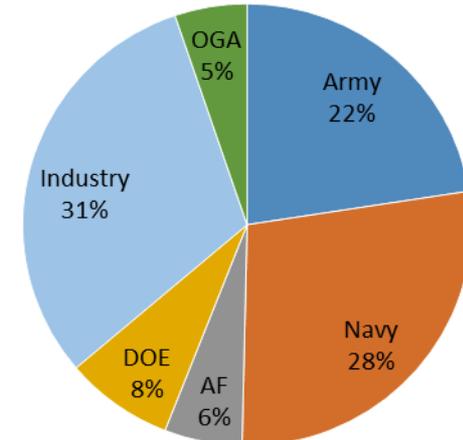
**FY16 6.2 Funding Split by FATG**



**FY16 6.3 Funding Split by FATG**

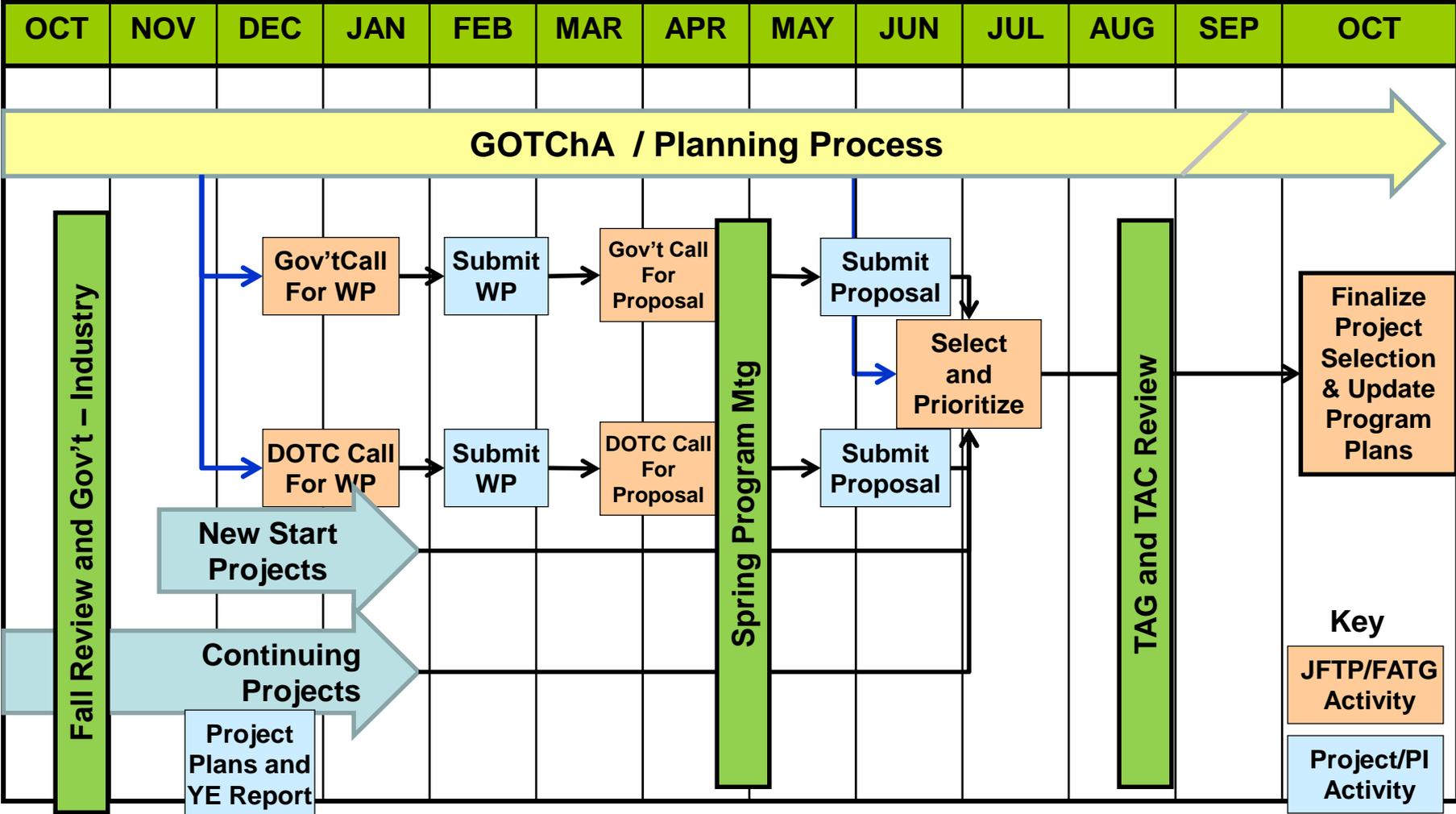


**FY16 Funding By Executing Service or Activity**





# JFTP Annual Cycle





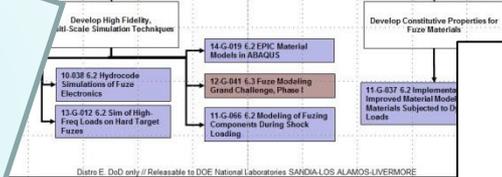
# JFTP Service Requirements Flow-Down

Air Force Weapon Gaps

Army Weapon Gaps

Navy Weapon Gaps

## GOTChA Process – Fuze Technology Plans



Drawn E. DoD only // Releasable to DOE National Laboratories SANDIA LOS ALAMOS LIVERMORE

DOTC Annual Technology Plan - FY11 (7)

UNCLASSIFIED

DEPARTMENT OF DEFENSE  
ORDNANCE  
TECHNOLOGY CONSORTIUM

ANNUAL TECHNOLOGY PLAN - FY15

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March 19, 2014

Distribution C: Distribution authorized to U.S. Government agencies and their contractors. Operational

- JFTP Project Evaluation Criteria**
1. Technology Innovation, Feasibility and Maturity
  2. Technical Approach
  3. Addresses FATG Goals & Objectives
  4. Success Metric: Deliverables/Mil
  5. Transition & Transfer
  6. Leveraging/Cost
  7. Cost Realism
  8. Experience & C
  9. Jointness & Ad Services' Need:

- Leveraging and Cost Sharing
- Meeting Joint Needs/Gaps
- Transition Strength



# Fuze Area Technology Groups

FATG I – Hard Target / Survivable Fuzing

Improved M&S  
Measure Fuze Environment  
Replicate Fuze Environment  
Next Generation Fuzing Hardware

FATG II – Tailorable Effects & Initiation

Robust fuze technologies (architecture and components) to increase the spectrum of targets while decreasing collateral damage  
  
Fuze initiation energetics/energetic component technologies

FATG III – High Reliability Fuzing

Area Effects Fuzing:  
Measure and Replicate Fuze Environment  
Model Fuze in chaotic environment  
  
Critical Fuzing Components

FATG IV – Enabling Fuze Technologies

Common / Modular Fuze Architecture  
  
Component and Sensor Technologies  
  
Proximity Sensors



# JFTP Project Highlights (FATG I)

## **JFTP Project, Fuze Modeling Grand Challenge: Computational Comparisons Round 3 (Session VA)**

- Provides a baseline comparison of computational modeling tools in predicting fuze response using common test platform

## **JFTP Project 15-G-015: Hard Target Detection Algorithm Using Multi-Threshold G-Switches (Session IIIB)**

## **JFTP Project: Using Modeled Impact Response of 3-D Printed Materials for High-G Survivability (Session IVB)**

## **JFTP Project: Fatigue and High Strain Rate Behavior of SAC305 Solder (Session VA)**



# **JFTP Project Highlights (FATG II)**

**JFTP Project: Vertically Integrating Switching Technology Progress and Test Results (Session IIIB)**

**JFTP Project: Hardened Selectable Multipoint Fuzing (Session IVB)**

**JFTP Project: Wireless Power Transmission for Remote Fuzing Applications (Session IVB)**

**JFTP Project: DoD MEMS Fuze Explosive Train Evaluation and Enhancement (Session VA)**



# **JFTP Project Highlights (FATG III)**

**JFTP Project : Energy Harvesting and Event Detection for ESFA in Gravity Dropped Weapons (Session VB)**

**JFTP Project: Computational Evaluation of MEMS Latching Technologies (Session VA)**

**JFTP and ONR Project : High Reliability DPICM Replacement (HRDR) (Session IIIB)**

**JFTP and ARDEC Project: DPICM-XL High Reliability Fuzing (Session IIIB)**

**JFTP Project: Micro Scale Materials and Energetic Effects Characterization (Session IVB)**

**JFTP Project: DoD MEMS Fuze Reliability Evaluation (Session IVA)**



# JFTP Project Highlights (FATG IV)

## **JFTP Project: Advanced Analysis Techniques for the Implementation of Flash Devices In Safety-Critical Applications (Session IVB)**

- Provides knowledge and issue guidance to DoD fuze and weapon community about Field Programmable Logic Devices for standardized, safe and effective use of F-PLDs in fuzing & weapons

## **JFTP Project: Imaging Fuze Experimentation for Weapon Terminal Burstpoint Control (Session IIIB)**

## **JFTP Project: Fuze Setting Technologies for Rockets & Missiles (Session VB)**

## **JFTP Project: Stacked MOSFET/IGBT Pulse Discharge Switch (Session IIIB)**

## **JFTP Project: Joint Fuze Technology's Next Generation Proximity Sensors (Session IIIB)**

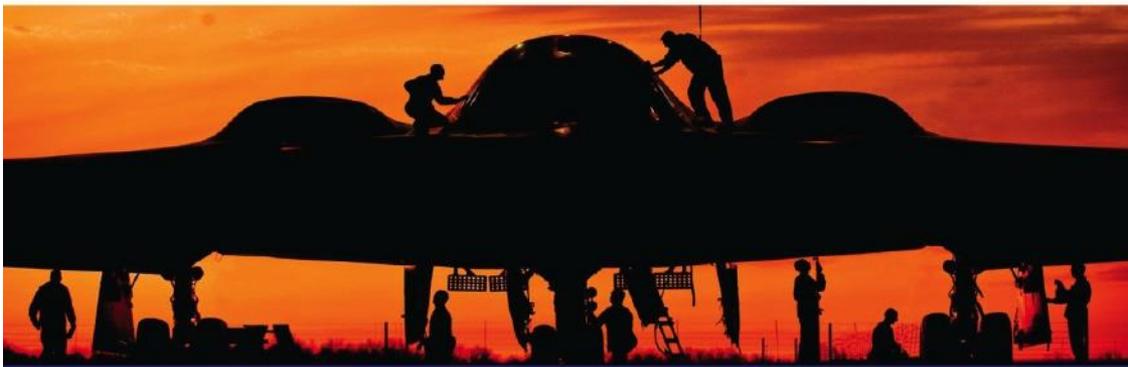


# DoD JFTP and Fuze IPT Key Dates

- **16 May 2017 – FY18 Govt Proposals due**
- **16 May 2017 – Industry / DOTC FY18 Proposals due**
- **Sept-Oct 2017 – JFTP proposers notified of acceptance/nonacceptance**
- **14-16 Nov 2017 – 49<sup>th</sup> DoD Fuze IPT / JFTP Fall Review (DoD, DOE and NAC attendees)**
- **1Q FY18 Call for FY19 JFTP White Papers**



# Questions ?



## *Developing Fuzing Solutions for the Warfighter*