U.S. ARMY COMBAT CAPABILITIES DEVELOPMENT COMMAND – ARMAMENTS CENTER

ARMY Fuze S&T Overview at the 64th NDIA Fuze Conference

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Fuze and Precision Armaments Directorate, Fuze Division

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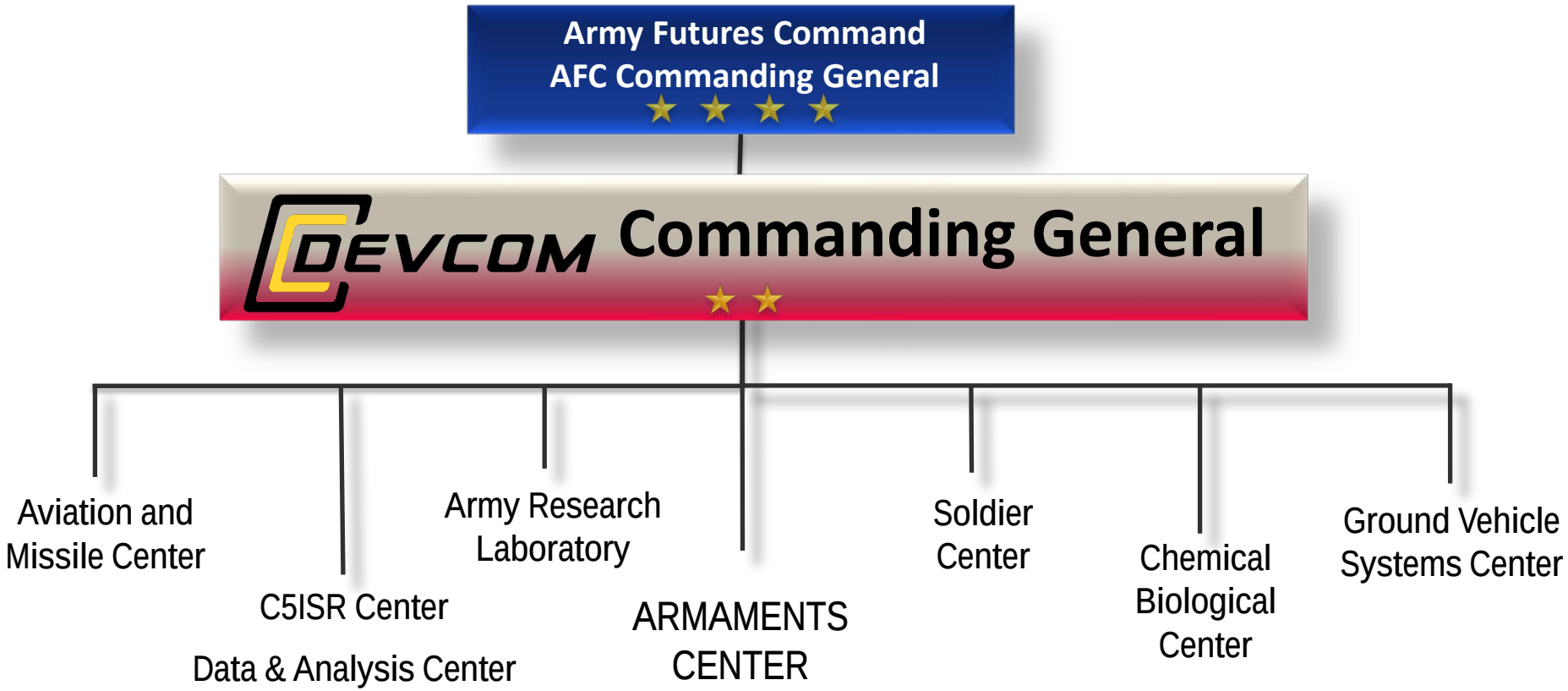
AGENDA

- Organization
- Facilities
- Fuze S&T Overview
  - –Current Investment Areas
  - –Ongoing Projects
  - –Thrust Areas
- Collaboration Opportunities
- 64th Annual Fuze Conference Presentations

ARMY FUTURES COMMAND ORGANIZATION



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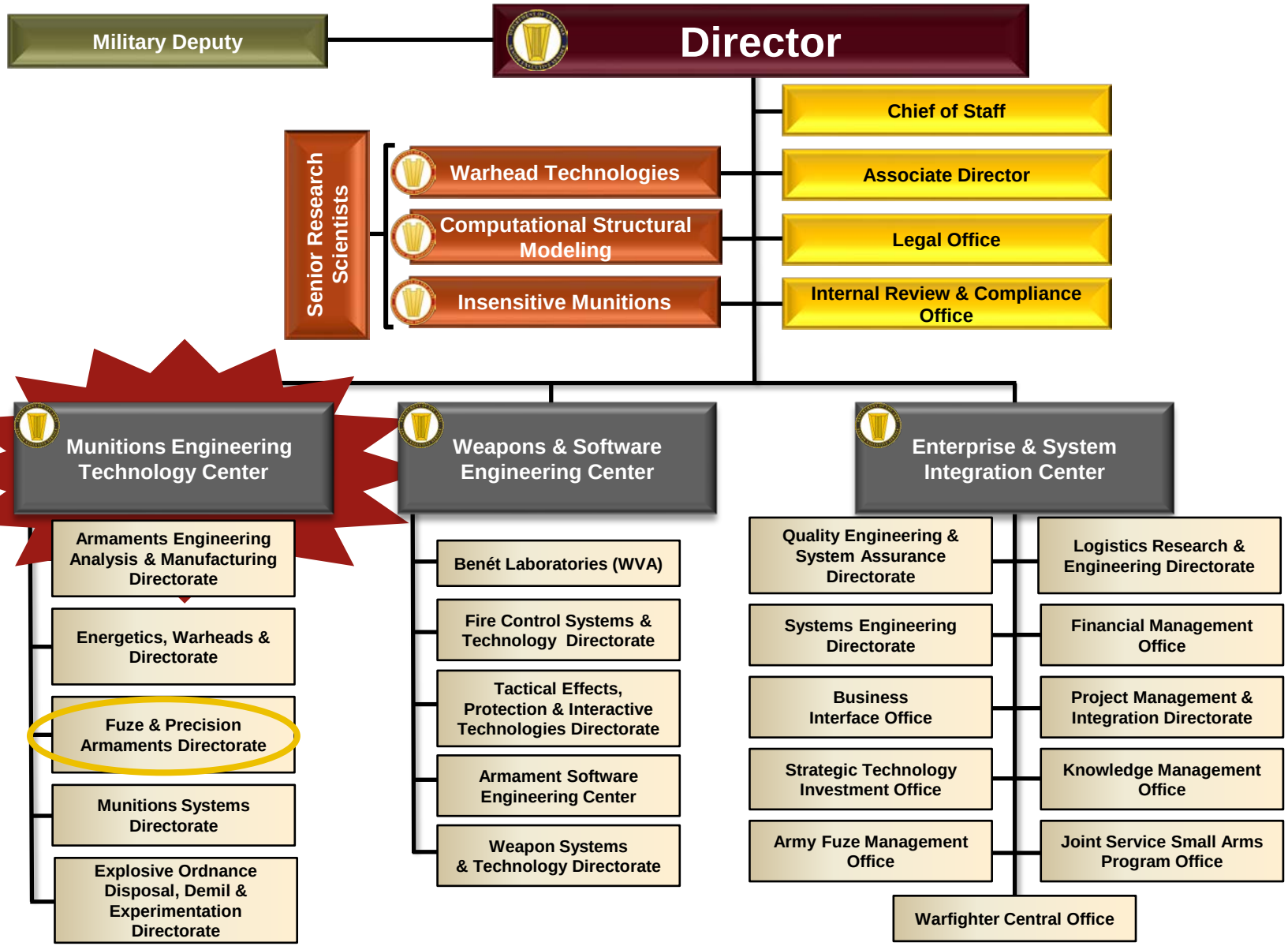
ARMAMENTS CENTER ORGANIZATION



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PICATINNY'S OTHER TENANTS

DEVCOM ARMAMENTS CENTER

Combat Capabilities Development Command – Armaments Center DEVCOM-AC

PEO Ammunition

CG/JPEO Armaments & Ammunition

Joint Munition & Lethality LCMC

PEO Soldier
PM Soldier Weapons

PEO Ground Combat Systems
PM Ground Combat Vehicle

DCMA - Springfield

Garrison Commander

PM CCS
PM CAS
PM MAS
PM TAS
PM JS
PM JB

Office of the Executive Director for Conventional Ammunition O/EDCA

Civilian Human Resources Agency

Naval Surface Warfare Center

Marine Corps G Co 2-25

Army Contracting Center – CCNJ

Recruiting Northern NJ HQ (Company)

7245th Installation Medical Support Unit

DoD Joint Specialty Site for Guns and Ammunition

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ARMAMENTS CENTER CAPABILITIES

RESEARCH

DEVELOPMENT

PRODUCTION

FIELD SUPPORT

DEMILITARIZATION

Advanced Weapons:

- Line-of-sight (LOS), beyond line-of-sight (BLOS) and non line-of-sight (NLOS) fire
- Scalable effects; non-lethal; directed energy; autonomous weapons.

Ammunition:

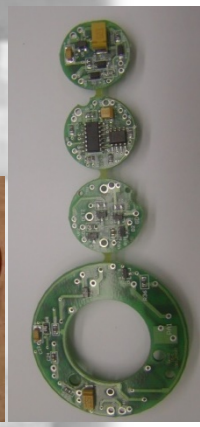
- Small, medium, large caliber
- Propellants; explosives; pyrotechnics; warheads; advanced munitions
- Fuzes
- Logistics; packaging; environmental technologies and explosive ordnance disposal

Fire Control:

- Battlefield digitization; embedded system software; aero ballistics and telemetry

"Center of Lethality" for Armament Systems and Munitions for Joint Services

ARMAMENTS CENTER FUZE DIVISION MUNITION PRODUCTS



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ARMAMENTS CENTER FACILITIES

Armament Software Engineering Center

Ballistic Gun Range Complex

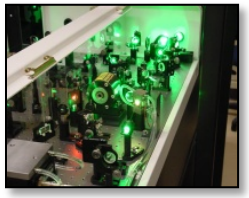
Energetics Synthesis, Formulation and Scale-up Complex

High Performance Propellants Complex

Davidson Warhead Facility

Automated Test Sets Facility

Fuze Development Center



Directed Energy Facility

Electromagnetic Effects Complex

Remote Armaments Facility

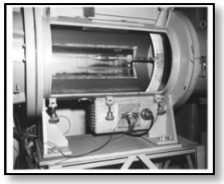
Soft Catch Gun Facility

Our Organic Facilities Enable Integrated Armament System Solutions

Demilitarization Facility

Drop Tower Facility

Non-Destructive Evaluation Facility



Wind Tunnel Facility

Precision Armaments Complex

DoD Joint Packaging, Handling, Storage, and Transportation Complex

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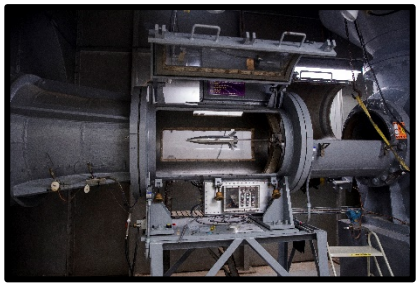
FUZE AND PRECISION ARMAMENTS FACILITIES

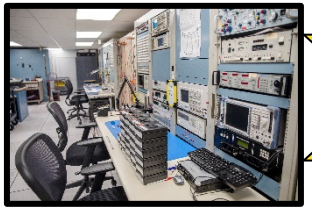

Precision Armaments Lab


Encapsulation Lab


Wind Tunnel Facility

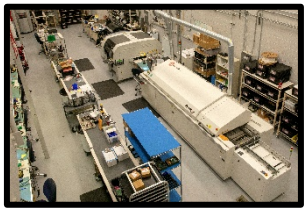

Environmental Lab


Hardware In the Loop Lab


Telemetry Ground Station & Electronics Lab

Our Organic Facilities Enable Integrated Armament System Solutions

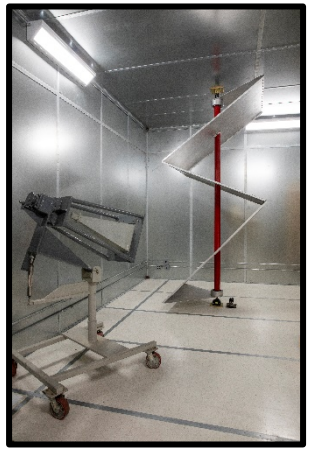

Electronics, Electro-Mechanical & Prototype Facility


Fuze Development Center


RF Anechoic Chamber

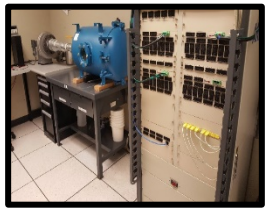

Integration Lab


Electromagnetic Sensor Test Facility


Electromagnetic Environmental Effects Lab

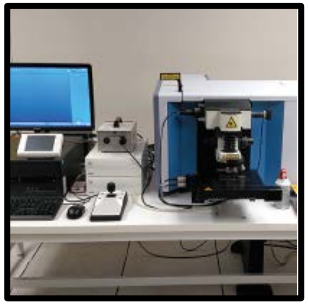

Soft Catch Gun Facility


Sensor Calibration Lab


Battery Test Lab


Fuze Division Lab


Soldering Inspection Facility

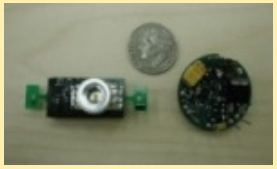

Raman Spectroscopy Lab

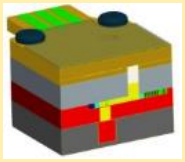
FUZE S&T INVESTMENT AREAS

Advanced Fuze Setting
- Next Gen Large Caliber Setter (NGLCS)
- High speed wireless setting

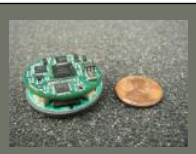
NGLCS

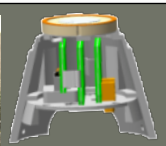
Advanced Warhead Initiation Schemes
- High count multi-point initiation
- Scalable and selectable initiation for Collaborative Munitions
- Micro-Scale Firetrain (MSF)

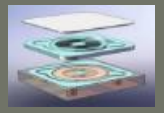





Launch and Target Sensing
- Next Gen prox, tracking prox, dynamic triggering, optical prox, active imaging
- G-Switch, Target Media Sensing





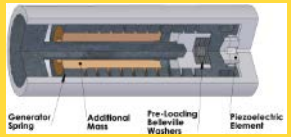



Fuze Decision Logic

Novel Power & Energy
- Thermals, liquid reserve, harvesters

Thermals



Liquid Reserves

Advanced Safe and Arming
- MEMS S&A, Low Cost ESAD


CURRENT FUZE PROJECTS

Emerging & MaturingTechnologies

6.2 OSD Joint Fuze Technology Program JFTP (JEMTP)

- EPIC-ABAQUS Subroutines
- Low Cost Tracking Proximity Sensor
- Fracture & Damage Mechanisms of LIGA MEMS
- TPV Power Generation for HVP
- Time Integrating Miniature Setback Switch
- SHF Command Link for CUAS Munitions
- AI/ML for HOB applications in Contested Environments

6.3 OSD Joint Fuze Technology Program JFTP (JEMTP)

- Determination Optimal Potting Hi-G Electronics & Fuzes
- COTS Accelerometer As Impact Sensor
- Glass Ampoule Analysis Capability Transition
- SiC High Voltage Switch Maturation

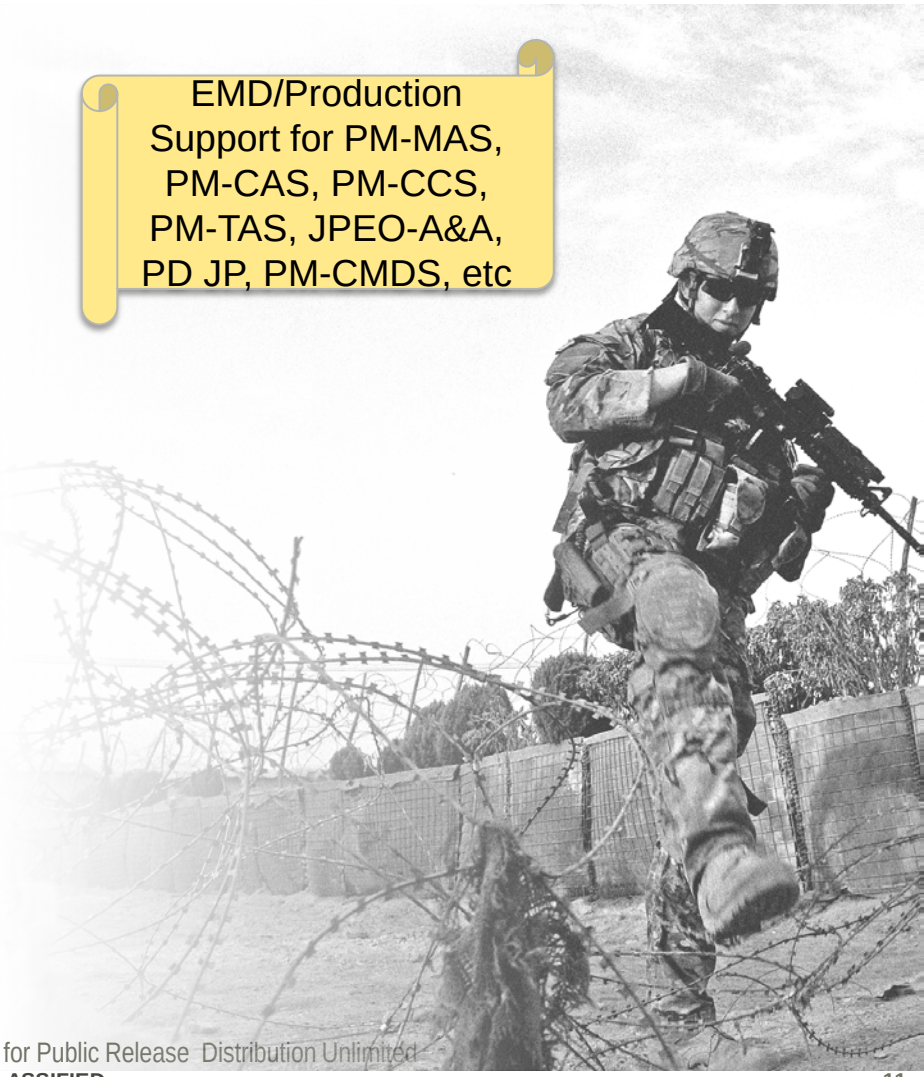
DEVCOM S&T Projects & Demonstrations

- Fuze & Power Tech Enablers: Tracking Proximity Sensors, Advanced Initiation, Wireless Setting, Novel Power
- XM1155 Development
- XM1182, XM1204, and XM1206 Hardware Development
- MOFA2/iMOFM Development

6.7 JPEO A&A Fuze Technology Integration (FTI) Program

- M550 S&A Spin Lock Improvements
- Hand Grenade Improvements (M213)
- M739A1 Impact Delay Improvements
- M783 Product Improvements
- M734A1 Microcontroller Replacement
- MEMS Impact Switch Producibility & Implementation
- Proximity Sensor MMIC Transceiver Translation
- Proximity Fuze Alternate Transceivers
- Long Range Artillery Fuze Compatibility
- Alternate Suppliers for Critical Fuzing Components

EMD/Production Support for PM-MAS, PM-CAS, PM-CCS, PM-TAS, JPEO-A&A, PD JP, PM-CMDS, etc



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FUZE S&T THRUST AREAS

- Novel Power for Long Range Applications
- MEMs Sensing and MEMs S&A
- Advanced Initiation Schemes – High count multi-point initiation
- Fuze Proximity - Low Cost Tracking Proximity Sensors, Dynamic Triggering, Optical Proximity and Active Imaging
- Secure Wireless Data Transmission for Fuze Setting
- Collaborative Fuzing Architectures
- Moving toward highly integrated electronic fuzing – (ESAD, Prox, Setting)

COLLABORATION OPPORTUNITIES

- **Industry to DEVCOM-AC engagements**
  - Technology Transfer Office (Contact us for more information)
  - Cooperative Research and Development Agreements (CRADAs)
  - Test Service Agreements (TSAs)
- **NAC/DOTC**
- **Joint Enhanced Munition Technology Program (JFTP)**
- **DOD Fuze IPT**
- **SBIR**
- **Broad Agency Announcement (BAA)**

ARMAMENTS CENTER BRIEFINGS AT 64TH NDIA FUZE CONFERENCE

Presenter/Author	Titles	Time
Richard Johnson	Design of a Test Methodology to Simulate Rain Environments	Tue 12:35p
Tyler Wilson	Cannon Caliber Fuze Setter Overview	Wed 1:30PM
Viktor Bana	Software Defined Radio for Medium Caliber Applications	Wed 3:10PM

Thanks for your time and attention