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

Fuze S&T Overview at the 65th NDIA Fuze Conference

Laura Ostar-Exel

Fuze and Precision Armaments Directorate, Fuze Division

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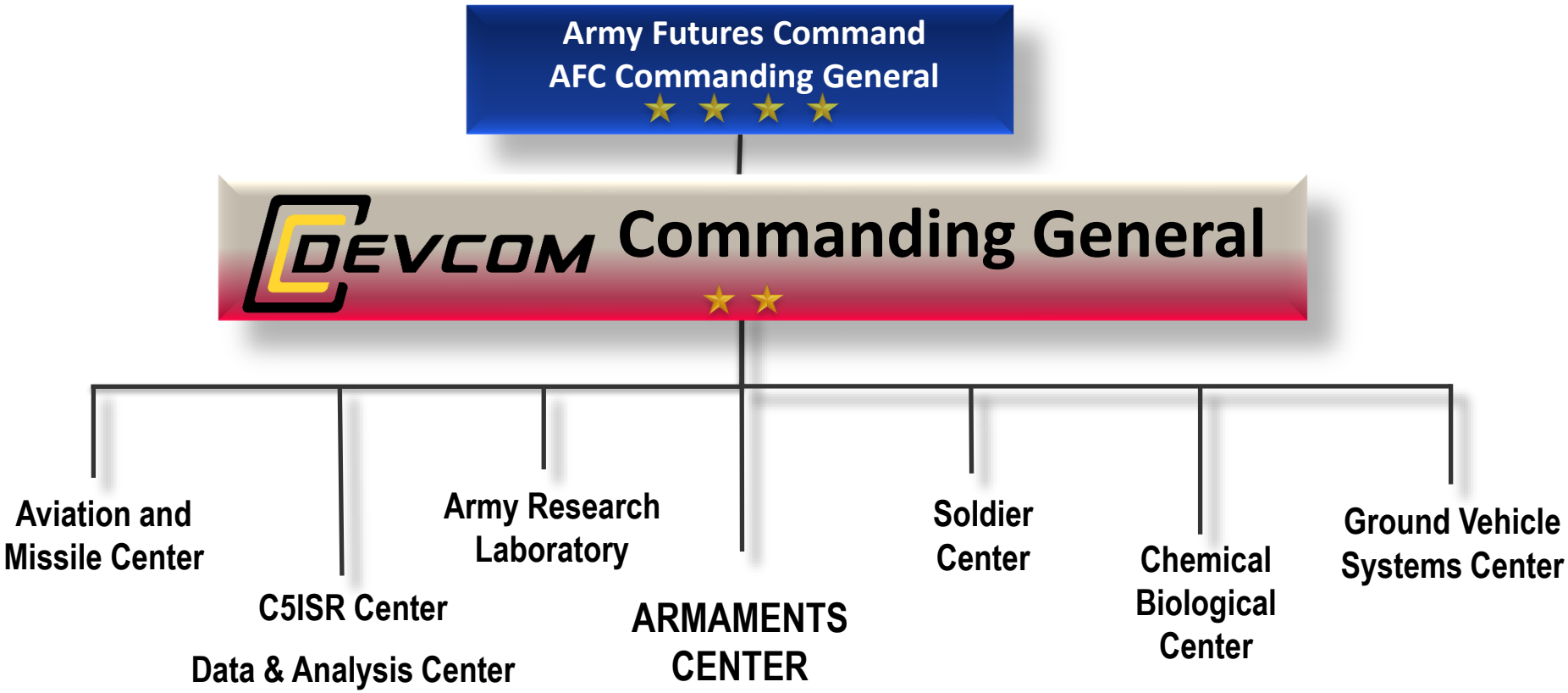
AGENDA

- Armaments Center Organization
- Facilities
- Fuze S&T Overview
  - –Current Investment Areas
- Ongoing Challenges
- Conference Presentations

ARMY FUTURES COMMAND ORGANIZATION



PICATINNY'S TENANTS

PEO Soldier
PM Soldier Weapons

PEO Ground Combat Systems
PM Ground Combat Vehicle

DCMA - Springfield

Civilian Human Resources Agency

Combat Capabilities Development Command – Armaments Center DEVCOM-AC

Garrison Commander

CG/JPEO Armaments & Ammunition

- PM CCS
- PM CAS
- PM MAS
- PM TAS
- PM JS
- PM JP

Joint Munition & Lethality LCMC

Office of the Executive Director for Conventional Ammunition O/EDCA

Naval Surface Warfare Center

Marine Corps G Co 2-25

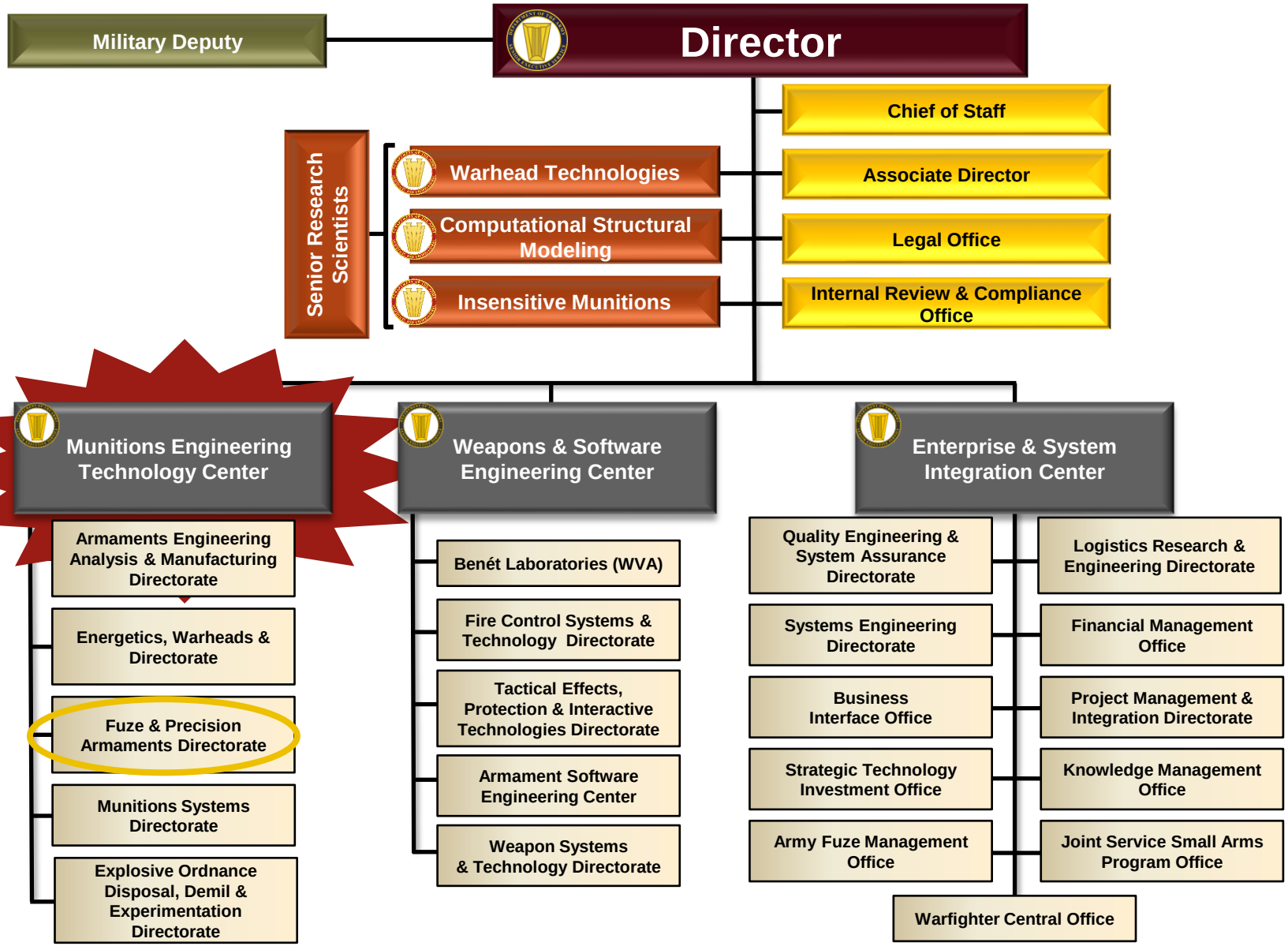
Army Contracting Center – CCNJ

Recruiting Northern NJ HQ (Company)

7245th Installation Medical Support Unit

DoD Joint Specialty Site for Guns and Ammunition

ARMAMENTS CENTER ORGANIZATION



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; insensitive 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 FACILITIES

Armament Software Engineering Center

Ballistic Gun Range Complex

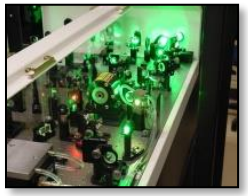
Energetics Synthesis, Formulation and Scale-up Complex

High Performance Propellants Complex

Davidson Warhead Facility

Automated Test Sets Facility

Fuze Development Center



Directed Energy Facility

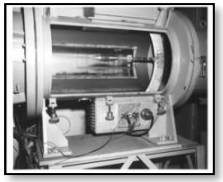
Electromagnetic Effects Complex

Remote Armaments Facility

Our Organic Facilities Enable Integrated Armament System Solutions

Soft Catch Gun Facility

Demilitarization Facility



DoD Joint Packaging, Handling, Storage, and Transportation Complex

Drop Tower Facility

Non-Destructive Evaluation Facility

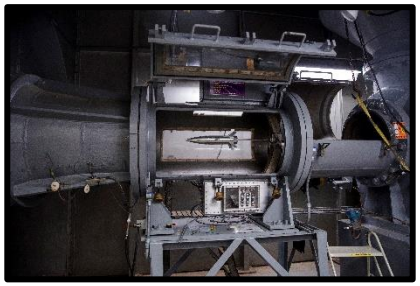
Wind Tunnel Facility

Precision Armaments Complex

FUZE AND PRECISION ARMAMENTS FACILITIES

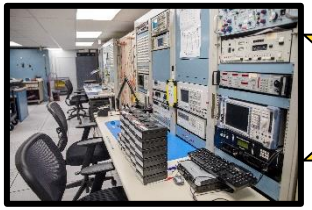

Precision Armaments Lab


Encapsulation Lab


Wind Tunnel Facility


Environmental Lab

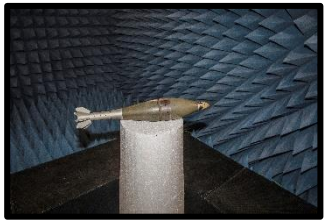

Hardware In the Loop Lab


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

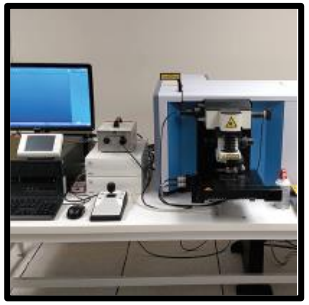

Soft Catch Gun Facility


Sensor Calibration Lab


Battery Test Lab


Fuze Division Lab


Soldering Inspection Facility


Raman Spectroscopy Lab

FUZE S&T INVESTMENT AREAS

Advanced Fuze Setting

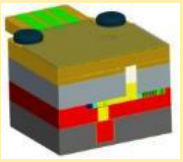
- Next Gen Large Caliber Setter (NGLCS)
- High speed wireless setting

NGLCS

Advanced Warhead Initiation Schemes

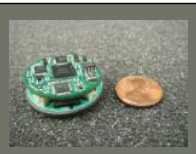
- High count multi-point initiation
- Scalable and selectable initiation for Collaborative Munitions
- Micro-Scale Firetrain (MSF)

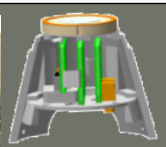


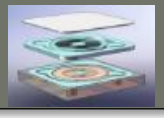
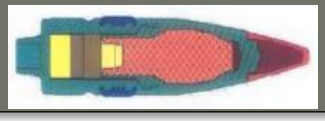



Launch and Target Sensing

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





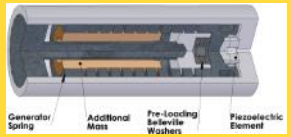

Novel Power & Energy

- Thermals, liquid reserve, harvesters, supercaps

Thermals

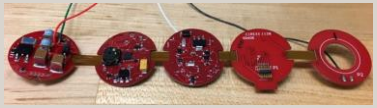


Liquid Reserves

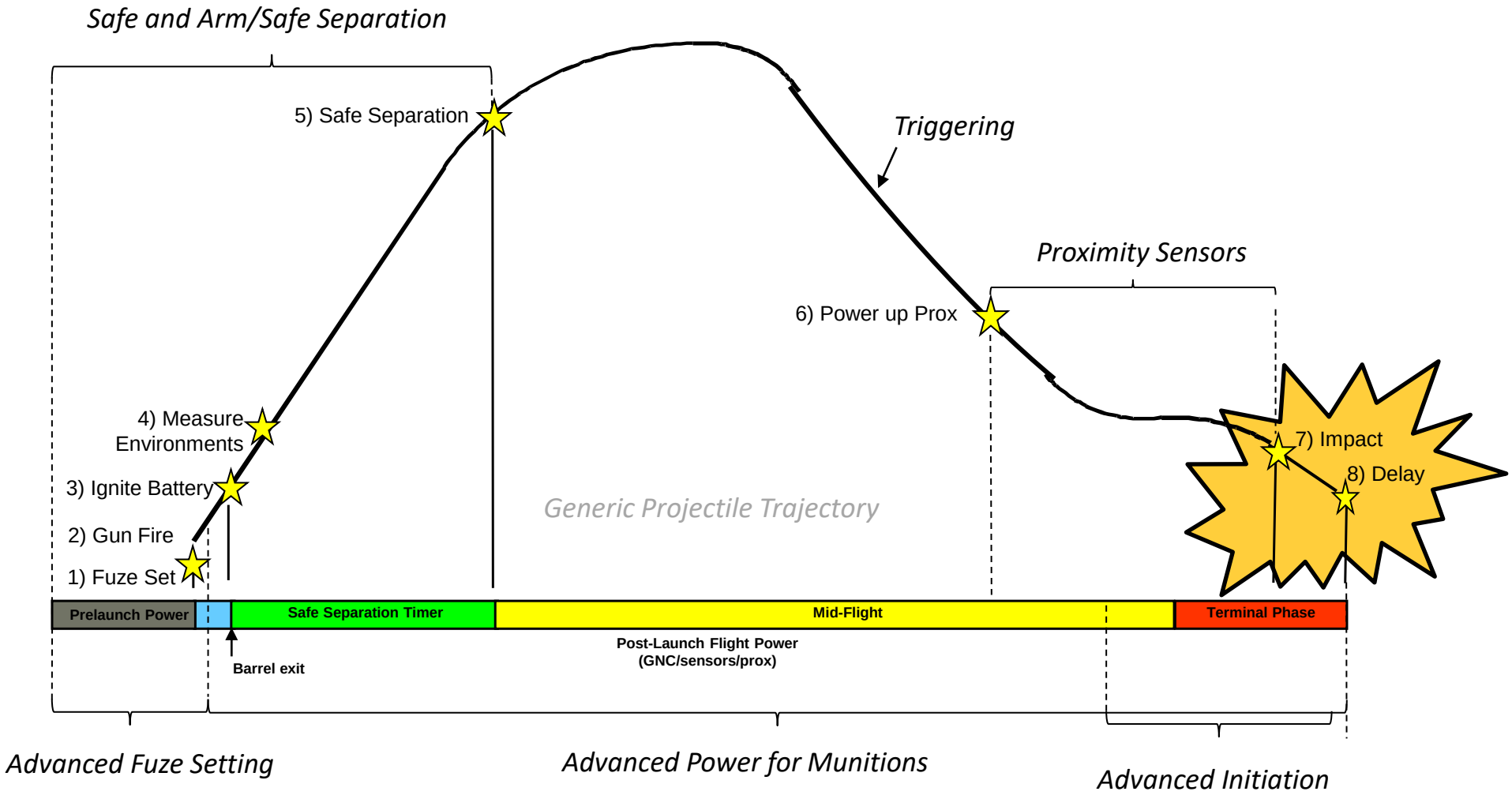


Advanced Safe and Arming

- MEMS S&A, Low Cost ESAD

OPERATIONAL VIEW AND CHALLENGES FOR INDIRECT FIRED MUNITIONS



Fuze and Power Technologies Required For the Entire Munition Engagement Timeline

ARMAMENTS CENTER BRIEFINGS AT 64TH NDIA FUZE CONFERENCE

Challenge: SWAP-C. Size, Weight, Power, and Cost

Miniaturization Efforts, MEMS Novel Power Solutions

Collaboration between Industry, Academia, and Government

Presenter/Author	Title	Time
Richard Johnson	Fabrication of Ionic Liquid Base Electrolyte/2D Material Supercapacitors to Improve Extreme Low Temperature Ultra-Fast Charge Time	Session 2A
Jintae Kim	Improved Fuze Safe and Arm Device for Submunition Grenades	Session 2B
--	Pressure Activated Battery System	Session 3B
Guiseppe DiBenedetto	Next Generation Grenade Power Source Development	Session 3B
Peggy Sanchez / Giuseppe DiBenedetto	Thermal Characterization of Materials for Improved Modeling and Simulation of Thermal Batteries	Session 3B
Lei Zheng	Characterization of Materials for EFI Performance	Session 3B
Lam Vo	Development of Miniature Low-Cost Tracking Sensor for Proximity Fuzes	Session 5B

ARMAMENTS CENTER BRIEFINGS AT 64TH NDIA FUZE CONFERENCE

Challenge: Long Range, Smarter Munitions

Advanced Setting, Tracking, Triggering, and Initiation

Investment in Hypersonics, Power, and solutions for contested environment

Presenter/Author	Title	Time
Robert Zienowicz	M782E1 Multi Option Fuze for Artillery Increment II (MOFA II) Risk Reduction Architecture	Session 1B
Evan Young	Overview 6.2/6.3 FY22 Joint Enhanced Munition Technology Program (JEMTP) Portfolio within the High Precision Placement and Target Detection/Burst Point Control Focus Area	Session 2B
Lei Zheng	Characterization of Materials for EFI Performance	Session 3B
Robert Alston	Silicon Carbide (SiC) High Voltage Switch Maturation	Session 5B
Viktor Bana	The Modeling of Command Detonation System for Burst Point Control	Session 5B
Alexander Neeb	Fuze Enhanced Airburst Response for Medium Caliber Munitions	Session 5B

We look forward to working with you!

Contact Info: Tech Transfer Office

Website: https://ac.ccdc.army.mil/collaborate/techtransfer/

Email: usarmy.pica.devcom-ac.mbx.t2@army.mil