Providing America Advanced Armaments for Peace and War

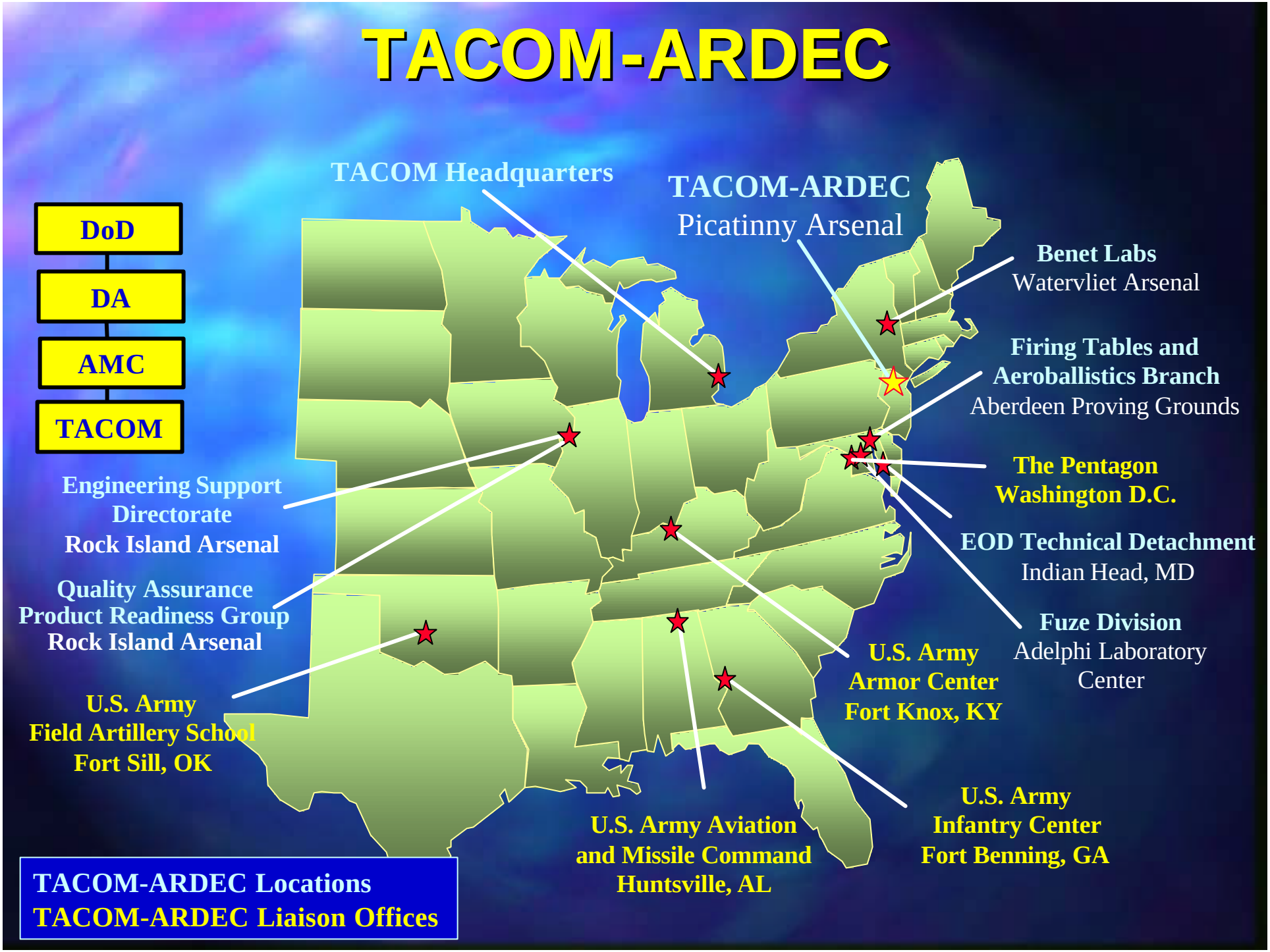
TACOM-ARDEC Fuze Perspective

47th Annual Fuze Conference

9 April 2003

COL Michael G. Padgett
Commander, Close Combat Armaments Center

TACOM-ARDEC


DoD
DA
AMC
TACOM
TACOM Headquarters
TACOM-ARDEC
Picatinny Arsenal
Benet Labs
Watervliet Arsenal
Firing Tables and
Aeroballistics Branch
Aberdeen Proving Grounds
The Pentagon
Washington D.C.
EOD Technical Detachment
Indian Head, MD
Fuze Division
Adelphi Laboratory
Center
Engineering Support
Directorate
Rock Island Arsenal
Quality Assurance
Product Readiness Group
Rock Island Arsenal
U.S. Army
Armor Center
Fort Knox, KY
U.S. Army
Field Artillery School
Fort Sill, OK
U.S. Army Aviation
and Missile Command
Huntsville, AL
U.S. Army
Infantry Center
Fort Benning, GA
TACOM-ARDEC Locations
TACOM-ARDEC Liaison Offices

TACOM-ARDEC Vision – Providing America Advanced Armaments for Peace and War

Artillery & Mortar Systems

Advanced Fuze Technologies

Special Operations Weapons & Demolitions

Smart Munitions

R&D

DEMIL

TOTAL LIFE CYCLE

PROD

FIELD SUPPORT

Advanced Explosives & Warhead Development

Combat Vehicle Armaments & Fire Control

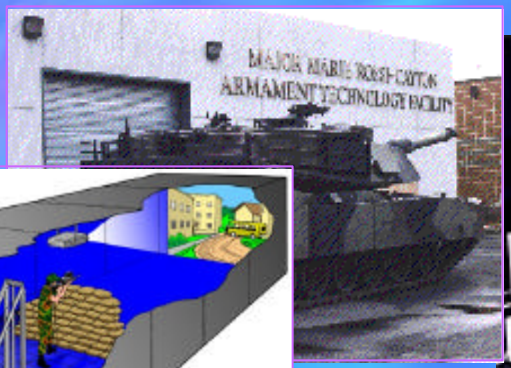
Logistics R&D

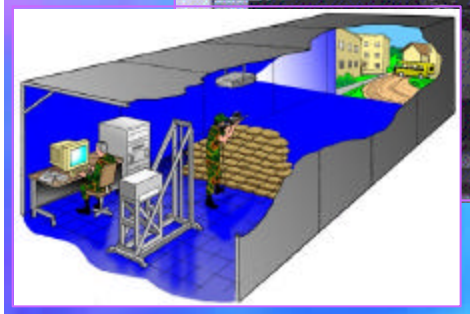
Non-Lethal Technologies

Future Small Arms

PROVIDING OVER 90% OF THE ARMY'S LETHALITY...

World Class Facilities



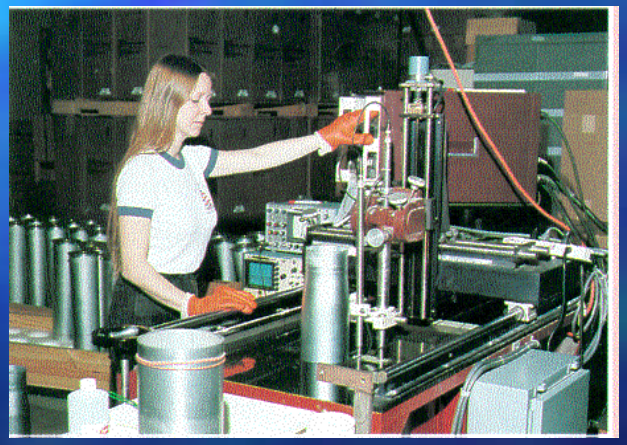


Armament Technology Facility

Army Propellant Surveillance Laboratory

Davidson Advanced Warhead Development Facility

Acoustics Technology Laboratory



Non Destructive Evaluation Facility

Electromagnetic Environmental Effects Facility

Core Capabilities

"We Integrate Complex Armament Technologies into Guns, Ammunition, and Fire Control Systems through Research, Development, Acquisition & Sustainment"

- **Smart Munitions (Tank, Artillery, Mortars, Mines)**
- **Fuzes**
- **Fire Control**
- **Combat Vehicle Armament & Ammo**
- **Artillery Projectiles & Platforms**
- **Mortars**
- **Small Arms & Other Soldier Weapons**
- **Mines, Countermines & Demolitions**
- **Less-Than-Lethal Systems**
- **Ammunition Logistics**

Picatinny Arsenal

U.S. Army Tank Automotive & Armaments Command (TACOM) Armaments Research Development & Engineering Center

ARDEC

Technology Development

Life Cycle Engineering

PEO GCS

Program Executive Officer Ground Combat Systems

Program Management

PEO Ammo

Program Executive Officer for Ammunition

..And Other Tenants Including PM-Soldier Weapons

Organizational Structure

COL Michael G. Padgett

Commander

Close Combat Armaments Center

U.S. Army TACOM-ARDEC

Department of the Army

Army Materiel Command

Tank-Automotive and Armaments Command

Armament Research, Development & Engineering Center

FSAC

CCAC

WECAC

Base Ops

Fuze

Heavy Armament

Light Armament

JSSAP

Benet Labs

AFMO

Fuze Division Organization

CLOSE COMBAT ARMAMENTS CENTER

COL Michael Padgett
Commander

Mr. John Hedderich
Senior Technical Executive

Fuze Division Dover

Hank Rand
Division Chief

Fuze Division Adelphi

Bill Konick
Associate Division Chief

Fuze Standard-ization Team

H. Lalbahadur
Team Leader

E^3 Team

P. Ng
Team Leader

Fuzing Systems Team

E Chesky
Team Leader

Self Destruct & Tank Team

T.McKimm
Team Leader

Advanced Concepts Team

R. Hubal
Team Leader

Mines & Mortars Team

T. Crowley
Team Leader

Artillery Fuze Team

G. Eckstein
Team Leader

Small Caliber Team

M. Derrig
Team Leader

Area Target Team

D. Errera
Team Leader

Point Target Team

B. Christopherson
Team Leader

Committed To Excellence

Production Programs

- M782 Multi Option Fuze for Artillery
- M762A1 / 767A1 Artillery Time Fuze
- M734A1 Multi Option Fuze for Mortars
- M783 Point Detonating Fuze for Mortars
- FMU 160/B Prox Fuze for High Frag 105mm (AC130 Gunship)
- M234/XM235 Self Destruct Fuze

M782 MOFA

M762A1 Time

M734A1 MOFM

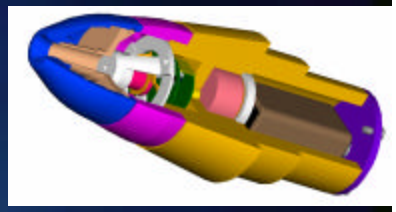
M783 PD

FMU 160 /B

Development Programs

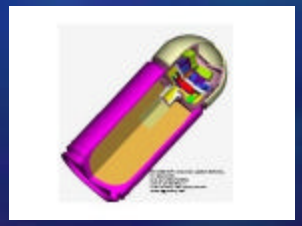
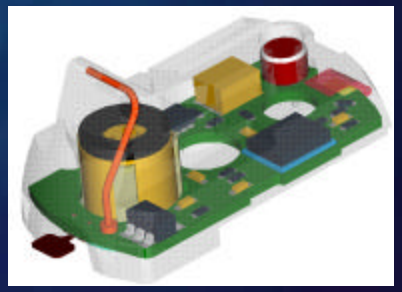
- XM784/785 ET Mortar Fuze
- XM984 Extended Range Mortar
- PGMM
- Course Correcting Fuze (CCF)
- EPIAFS (6.3)
- Medium Caliber Bursting Munitions
- Navalized MOFA
- Submunition Proximity Self Destruct Fuze
- Self Destruct Fuze (pyro) risk mitigators for M864 RECAP









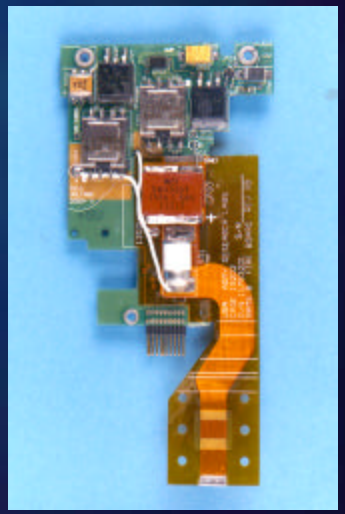
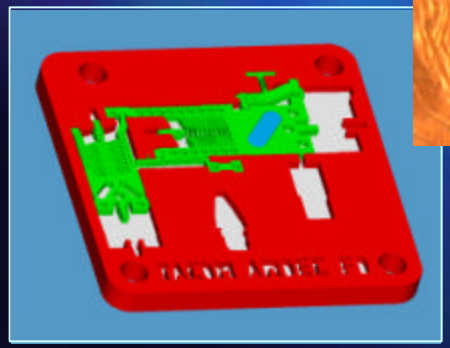



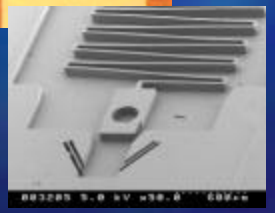
Fuze Technology Programs

- Multi-point Electronic Safe & Arming Device (ESAD) for FCS
- MEMS Safe & Arm Device (S&A)
- Power Sources (ARL/TACOM-ARDEC Effort)
- Fuze Technology Integration (FTI) Program



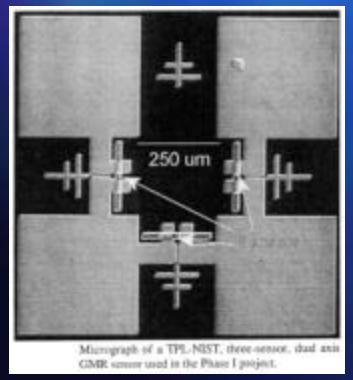


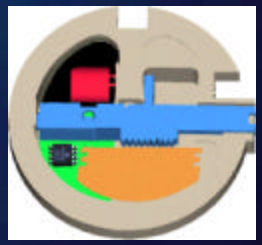



Fuze Technology Integration Program

- **Second Source Development**
  - ✓ Develop second source supplier for critical sole source fuze components
  - ✓ Fuzes Affected: M762A1/M767A1 Electronic Time (ET) Fuze, M782 Multi Option Fuze Artillery (MOFA), M234/XM235 Self Destruct Fuze (SDF), M734A1 Multi Option Fuze Mortars (MOFM)
- **Block Upgrades For Artillery**
  - ✓ Improve performance of artillery fuzes with new technology upgrades
  - ✓ Fuzes Affected: M762A1/M767A1 ET, M782 MOFA, Course Correcting Fuze (CCF)
- **Block Upgrades For Mortars**
  - ✓ Improve performance and safety of mortar fuzes with new technology upgrades
  - ✓ Fuzes Affected: M734A1 MOFM, M783 PD, XM784/785 Electronic Time Fuze Mortar (ETFM)
- **Legacy Fuze Risk Reduction**
  - ✓ Prolong life of fuze stockpile and reduce duds
  - ✓ Fuzes Affected: M762A1/M767A1 ET, M782 MOFA, M918 Target Practice, M230 submunition fuze



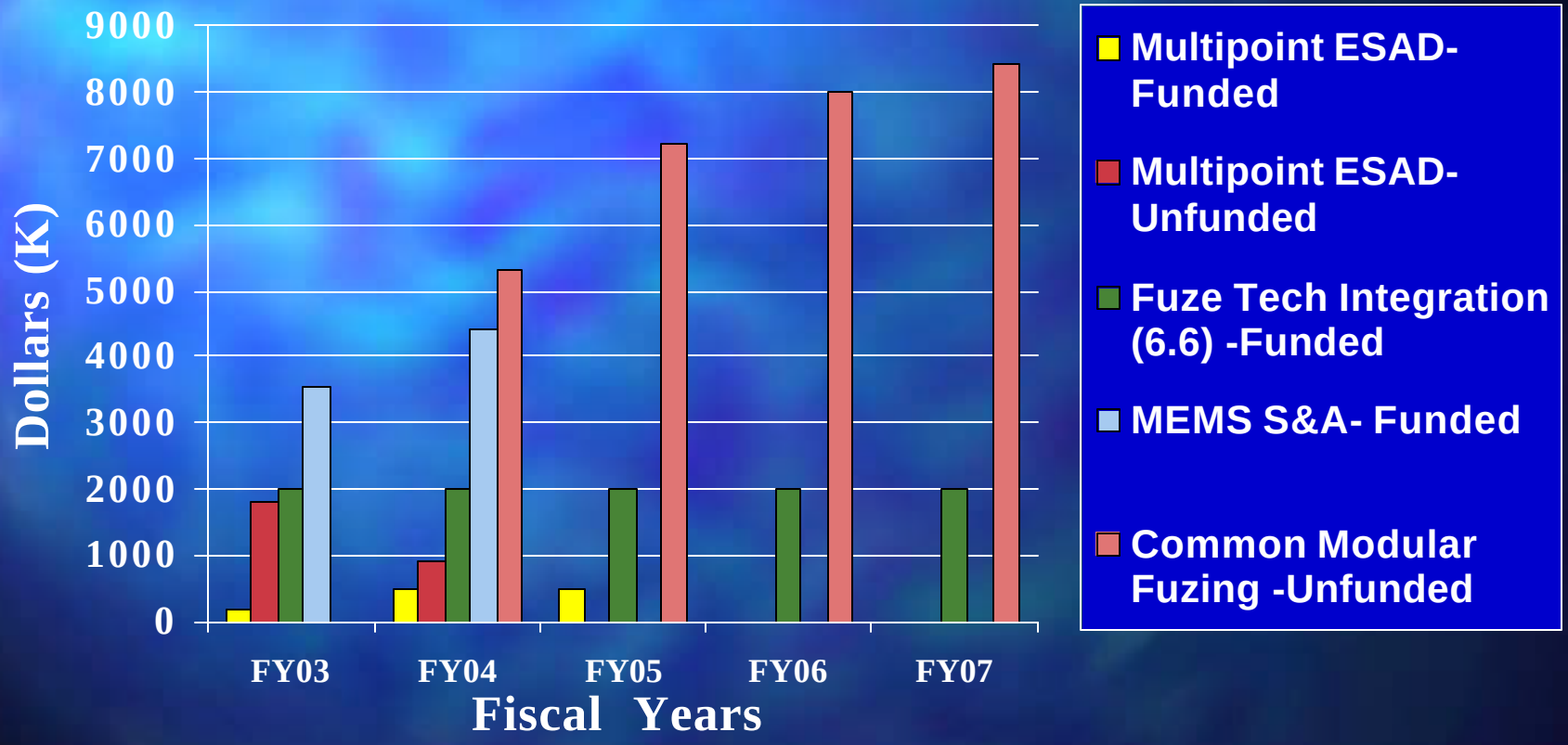
Micrograph of a TPL-NIST, three-sensor, dual axis GMR sensor used in the Phase I project.



Fuze Technology Contracting Vehicle

- **Fuze R&D Contracts through DAAE30-01-BAA-0500 (Broad Agency Announcement)**
  - 3 year duration FY01 - FY04
  - Evaluations are conducted quarterly
- **5 Topic Areas**
  - ESA Component Development
  - MEMS Fabrication
  - 2nd Environment Sensors for Non-spinning rounds
  - Inductive Setting with GPS Concepts
  - Proximity Fuze Design Support
- **FY02 Technology Awards**
  - Integrated Planar Switch (topic area 1)
  - Giant Magneto-resistive Sensor (topic area 3)
  - M74 Proximity Fuze Upgrade (topic area 5)
- **FY03 Planned Awards**
  - Mod to FY02 Award (topic area 1)
  - Digital Proximity Fuze (topic area 5)
  - 2nd Environment Sensor (topic area 3)
- **Use DOTC as contracting vehicle for future Fuze Technology contracts**

Fuze Technology Funding



Where is Fuzing Technology Going?

- Smaller
- Smarter
- Common/modular components
- Commercial off the shelf components
- Power sources still a problem
- Meets joint Requirements