



TACOM

Lethality, Survivability, Mobility and
Sustainment for America's Army



OICW Future Enhancements

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History of KE Projectile Launchers



- Musket ball -> Jacketed Bullets
- Matchlocks -> Metallic Cartridge
- Notch Sights -> Optical Sights -> Night Sights



OICW Key Features

- **Advanced Fire Control**
- **Automatic Fuze Setting**
- **Air-bursting Munition**
- **Recoil Mitigation**



Committed to Excellence



Enhancement Concentration Areas

- Lethality
- Operational Flexibility
- System Adaptability
- User Interface
- Target Acquisition & Engagement
- Reductions in:
 - Size
 - Weight
 - Cost
 - Power Consumption





Current JSSAP Programs Supporting OICW



- OICW System Enhancements STO
 - MEMS S&A with MEI
 - Directed Fragmentation
 - Target Tracking / Laser Steering
- Air-Bursting Non-Lethal Munition



Planned JSSAP Programs Supporting OICW



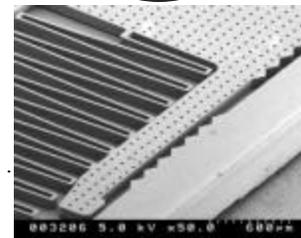
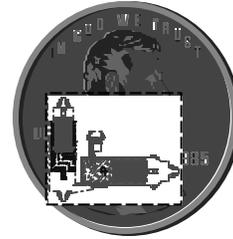
- **MEMS S&A MTO**
 - Mating of S&A with Fuze Electronics
 - Loading and Packaging of MEI into S&A
 - Assembly of Loaded Fuze into Projectile
- **Wireless Weapon Interface with LW**
- **Separate Fire Control for other Systems**
 - Exploit OICW TA/FCS
 - Commonality of components for logistical benefits
 - Economy of Scale



OICW System Enhancements STO

Rapidly develop, demonstrate and transition lethality enhancing and weight/cost reducing technologies into the OICW system platform to ensure continuing battlefield superiority

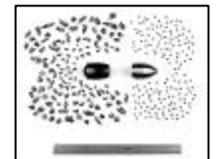
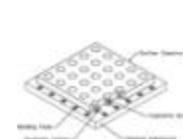
- Establishes OICW MEMS S&A w/ MEI: reduces volume by 70+%; permits significant cost reduction
- MEMS based directed air bursting munitions for $P_i > 50\%$ @ 500M
- Ruggedized laser steering/target tracking technology for:
 - 100% increase in detecting available targets
 - 50% increase in probability of correct lase
- Technology transferable to other weapon platforms



MEMS Fuzing



Fire Control
Laser Steering/Tracking



Active Fragmentation



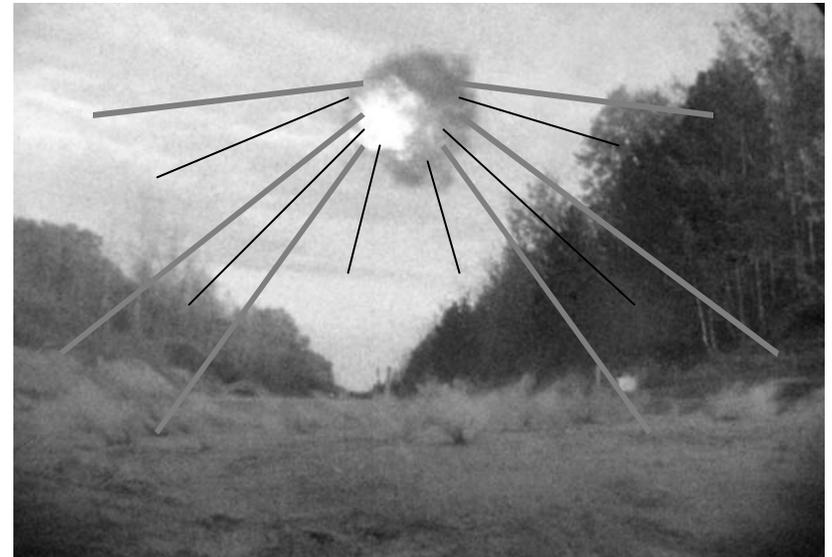
Micro Energetic Initiator

- MEI
 - Small Scale Controlled Initiation without destruction of S&A components
 - Movable by MEMS
 - May be blocked by MEMS Slider
 - Can Detonate Insensitive Explosives
 - Some Energetic Formulations being investigated:
 - Metastable Intermolecular Composite (MIC)
 - LX14
 - CL-20
 - TNAZ



Directed Fragmentation

- Fragments that go toward the sky are wasted against personnel targets
- Bias most fragments toward the ground and sides by offset initiation of warhead
- Turns counting or other sensors could determine proper burst direction

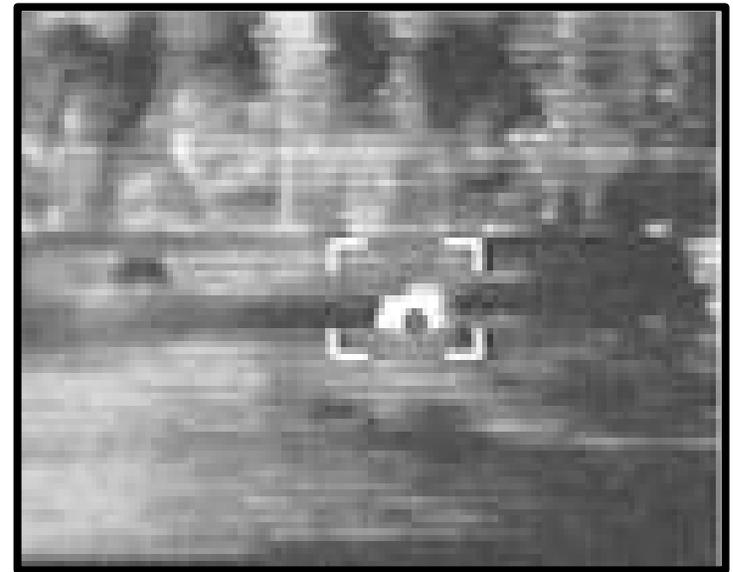




Target Tracking / Laser Steering



- Tracker determines moving target location
- Cues operator
 - Improves target engagement
- Steers laser for higher probability of correct laze while target is exposed
 - Lazing a moving target is nearly as difficult as shooting one
 - Standard rifle training may actually impair lazing on moving targets





Air-Bursting Non-Lethal Munitions



Description:

- Develop Air-Bursting Munitions for OICW / OCSW Non-Lethal Effects
- Fuze Initiated Payloads of Liquids, Aerosols, Powders & Objects

Potential Applications:

- Stingball Grenade
- Incapacitants
- Fuzed Blunt Injury
- Malodorants
- Taggants





Air-Bursting Non-Lethal Munitions



- Precise delivery of non-lethal payloads at extended ranges
- Technology could form foundation of training cartridge





Technology Insertion Roadmap

98 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15

