



# 2007 Air Armament Symposium

## AAC/XR

*Linking Capabilities to Warfighter Needs*

# Armament Initiatives: Just Over The Horizon

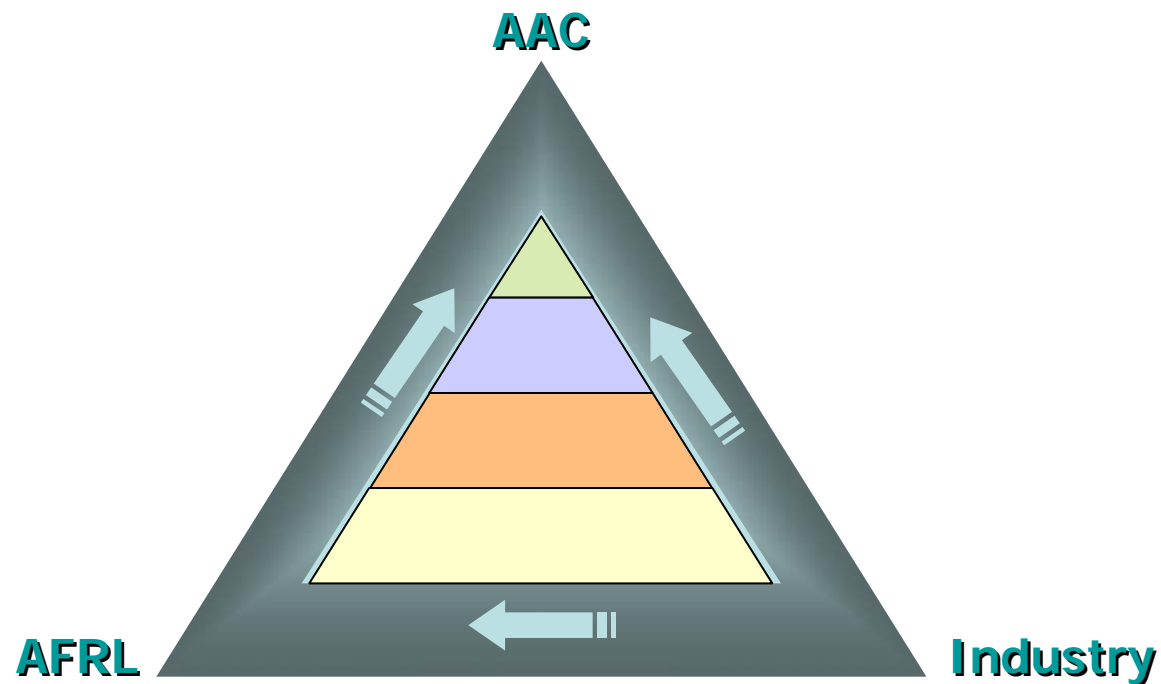
Dr. John D. Corley  
Director, Capabilities Integration Directorate  
Eglin AFB, Florida





# Purpose

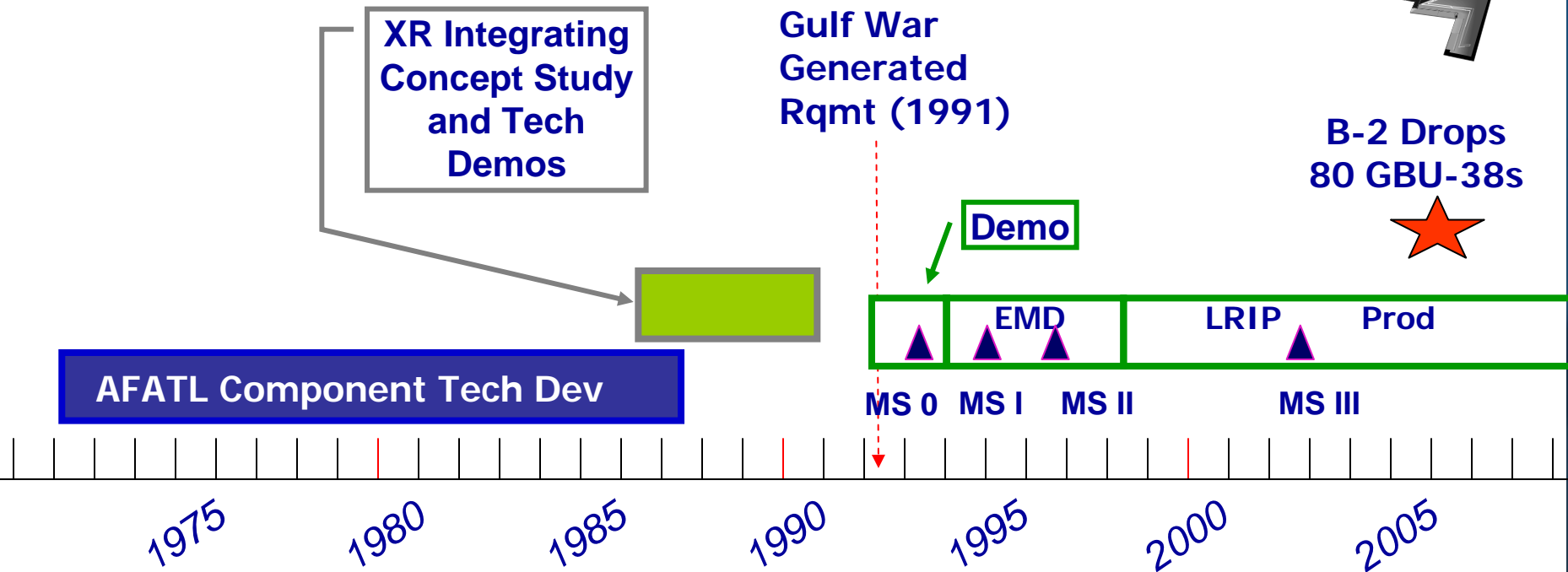
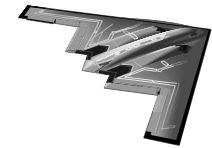
Provide industry partners insight into the near term Air Armament Center planned investments





# Historical Tech Transition

## Example: JDAM



- 3 Years from Identified Need to Program Start
- 5 Years from Technology Demonstrations
- 17 Years from XR Vision to B-2 Weapons drop



# Opportunities for Industry

PA#09-20-06-453



- **Hard Target Defeat**



- **Time Sensitive Target Defeat**

PA#09-20-06-453



- **Weaponization of Directed Energy Technologies**

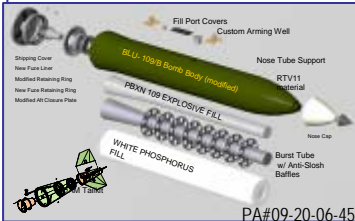
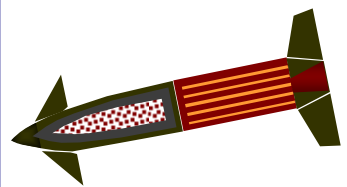


# Opportunities for Industry

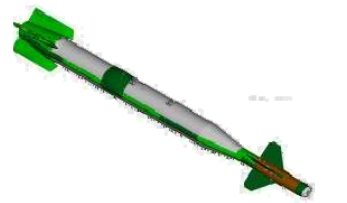
## Hard Target Defeat



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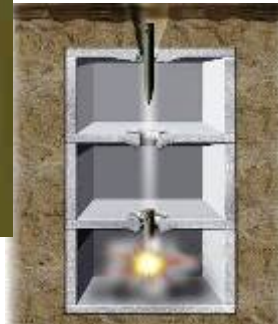
- Hard Target Void Sensing Fuze
- Boosted 2000 lb Penetrator
- Chemical Biological Agent Defeat
- Eglin Steel Producibility Enhancement
- Insensitive Munitions Improvements for Large Bombs



# Hard Target Void Sensing Fuze

## Warfighter Benefit

- Mitigate Intel Uncertainties
- Increased Weapon Effectiveness
- Higher Confidence Weapon/Target Pairing
- Reduces Re-strike Rate



## Attributes

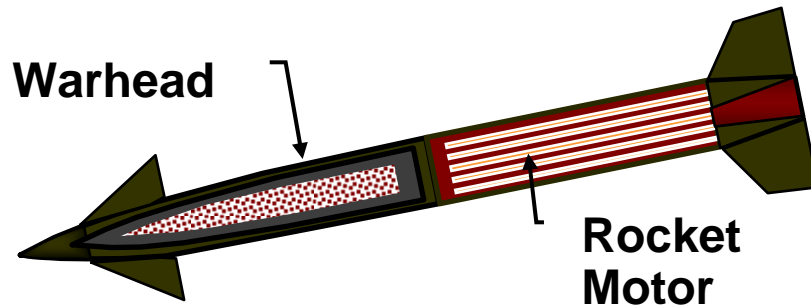
- Void Sensing
- Harder Target Survivable
- Increased Reliability
- Compatible with Inventory Penetrators (BLU-109, BLU-113)
- Aircraft Programmable

## Business Opportunities

- Joint Capability Technology Demonstration
  - RFP Release Fall 07
  - Contract Award Spring 08
- System Development & Demonstration
  - FY10 POM submission



# Boosted 2000 lb Penetrator



## Attributes

- Higher impact velocities
- 2000 lb class weapon
- Direct attack
- Blast/Frag Warhead
- Insensitive Munitions (IM) compliant

## Warfighter Benefit

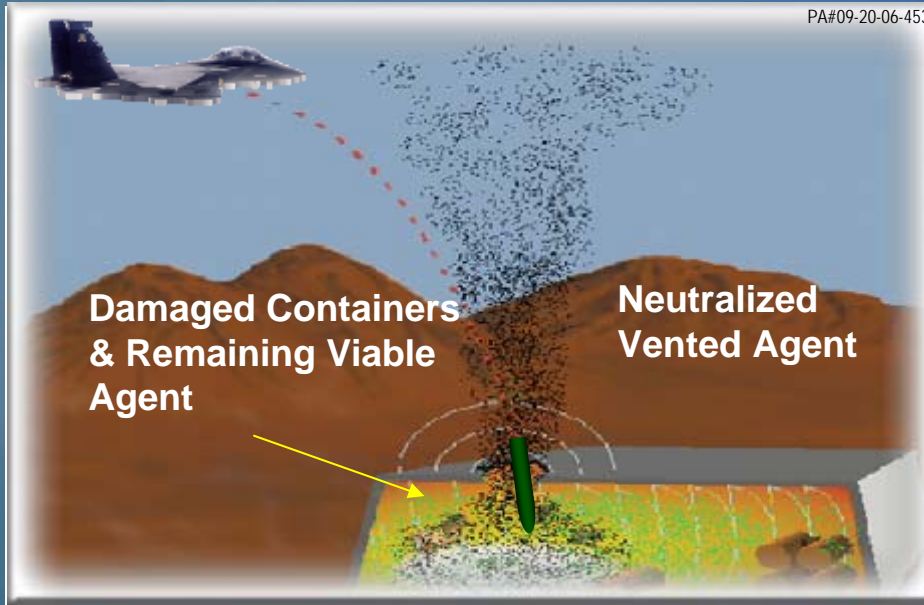
- Increased Capability for 2000 class weapon
  - Increased Penetration or Standoff
  - Near 5000 lb class weapon effectiveness
- Compatible with multiple Platforms

## Business Opportunities

- Potential Technology Demonstrations, FY10
  - Studies/Analysis
  - Sled Testing
- Planned FY12 POM submission
- Independent Research and Development (IRAD)



# Chemical Biological Agent Defeat (CBAD)



## Warfighter Benefit

- Disrupts and Denies Enemy Access to Biological or Chemical Agent in a Hardened Target
- Reduces viable Agent Released from Target (reduced Collateral Damage)

## Attributes

- 2000 lb class weapon
- Penetrator Weapon
- Agent Defeat Payload
- Direct Attack Weapon

## Business Opportunities

- FY10 POM Submission
- IRAD





# Eglin Steel Producibility Enhancement

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## Attributes

- Gravity-drop
- 5000 lb class
- Hard Target Penetrator
- Precision Guidance

## Warfighter Benefit

- Harder Deeper Targets held at Risk
  - Tunnels
  - Bunkers
- Qualified and Fielded

## Business Opportunities

- FY08/09 Producibility Enhancement Program
  - Refine/Document production process for ES-1
  - BLU-122 wall thickness
  - Leverage USA (Picatinny Arsenal) DOTC Contract
- FY10 POM submission
  - BLU-122 Follow-on Program



# Inensitive Munitions(IM) Improvements for Large Bombs



## Attributes

- **IM Improvements for Large Bombs compliance**
- Maintain system lethality and initiability/ fuzing
- Maintain compatibility with existing guidance packages and tail kits

## Warfighter Benefit

- Increase weapon storage densities
- Decreased risk of sympathetic detonation, e.g. unplanned detonation

## Business Opportunities

- **FY10 POM submission**
- **IRAD**



# Opportunities for Industry

## Time Sensitive Target Defeat



- High Speed/Hypersonic Weapons



- Small Weapons



# High Speed/Hypersonic Weapons



## Warfighter Benefit

- Rapid response from long ranges
- High Value/Time Sensitive Target Solution
- Operation in Anti-access Environments

## Attributes

- High speed, Mach 3-5
- Hypersonic, Mach 5+
- 300 mi+ range
- Air-breathing engines
- Hypersonic Flight Demonstration (HyFly)
- RATTLRS

## Business Opportunities

- High Speed/Hypersonic IPT
  - Potential Studies/Analyses
  - S&T programs
- IRAD
- Tech Maturity and Tech Transfer Timelines being assessed



# Small Weapons

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## Warfighter Benefit

- Low Collateral Damage
- Deep Magazine/High Loadout
- Moving Target Capability
- Urban and Difficult Terrain Operation
- Multiple Platform Delivery
  - Manned
  - Unmanned

## Attributes

- 5-10Km effective range
- < 100 lb Class
- Low cost
- Mature Technologies
- Semi-Active Laser Seekers (current)
- Glide and Powered

## Business Opportunities

- Potential Near Term Demonstrations
- Potential Next Generation Gunship Weaponization
- Potential Next Generation Multi-Use UAS Analysis of Alternatives – FY10



# Opportunities for Industry

## Weaponization of Directed Energy Technologies



– Airborne Tactical Laser Weapon



– Counter – Electronics JCTD



– Active Denial System



# Airborne Tactical Laser Weapon



## Attributes

- 100KW-class high energy laser
- Integrated in a multi-mission C-130 type airframe
- 10 Km+ effective range
- 20+ targets per mission

## Warfighter Benefit

- Ultra-precision target engagement
- Speed of light engagement
- Reduced collateral damage
- Scalable effects
- Covert - Plausible deniability
- Improved ISR supporting BMC<sup>4</sup>I
- Encompasses entire kill chain

## Business Opportunities

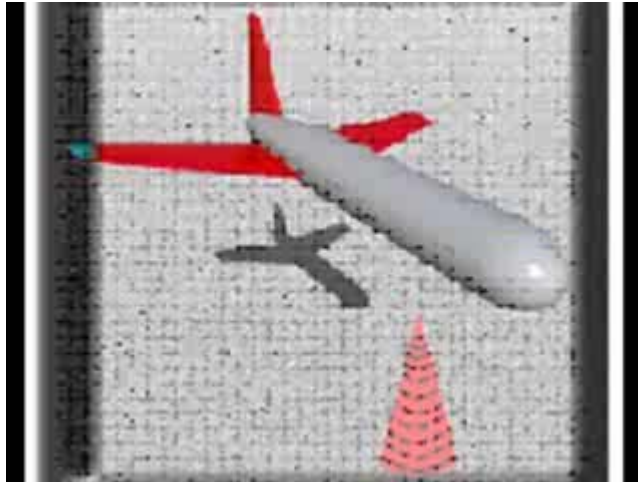
- Advanced Tactical Laser (ATL) Extended User Evaluation (EUE) FY08
- FY10 POM Submittal
- FY12 Projected Program Start



# High Power Microwave (HPM) Counter-Electronics

## Warfighter Benefit

- Selective target engagement
- Speed of light engagement
- Reduced collateral damage
- Scalable effects - Disrupt to Destroy



## Attributes

- Packaged in inventory munitions mold line
- Services multiple targets
- Capability to selectively target infrastructure and communication node electronics

## Business Opportunities

- RFI FY08
- Potential JCTD FY09
- FY10 POM Submittal
- FY12 Projected Program Start





# Active Denial System



## Attributes

- Repels Adversary Without Causing Injury
- Non-lethal engagement
- Long range
- Useful in multiple scenarios

## Warfighter Benefit

- Improved force protection
- Provides non-lethal option
  - Repels Adversary Without Causing Injury
  - Selectively engage combatants
  - Determine intent
  - Defuse escalating situations

## Business Opportunities

- FY08-FY09 Trade Studies (BAA)
- Possible quick reaction procurements
- FY10 POM Submittal



# Projects POC

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Project	POC	Opportunities
Hard Target Void Sensing Fuze	Maj Corey Harris	RFP Release Fall 07
Boosted 2000 lb Penetrator	Ms Marya Bard	Potential FY12 POM Submission/IRAD
Chemical Biological Agent Defeat	Mr Frank Fairchild	FY10 POM Submission/IRAD
Eglin Steel Producibility Enhancement	Maj George Woodworth	USA DOTC Contract FY07
Insensitive Munition Improvements for Large Bombs	Ms LuAnn Cutler	FY10 POM Submission/IRAD
High Speed/Hypersonic Weapons	Mr Ron Rapp	Potential S&T Opportunities
Small Weapons	Mr Ron Johnson	AOA FY10
Airborne Tactical Laser Weapon	Mr Ken Yates	SSS FY08
Counter Electronics JCTD	Maj Kevin Anchor	RFI FY08
Active Denial System	Mr Steve Whitten	BAA FY08/09



# Summary

## Linking New Capabilities to Warfighter Requirements

- Hard target Defeat
- Time Sensitive target Defeat
- Weaponization of Directed Energy Technologies

**Counting On  
Industry To Make  
Those Initiatives A Reality**