

# ENGINEERING VICTORY



## Prime Contractors vs Program Managers “And other Technology Transfer Stories”

Presented to FLC NE Region

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By

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- Who is ARDEC?
- The changing world
- Why we partner
- How we partner
- Partnering with Contractors & PMs
- Summary

### The Brainpower Behind the Firepower



Research



Development



Production

Field Support



Demilitarization



# ENGINEERING VICTORY



ARDEC

## Products



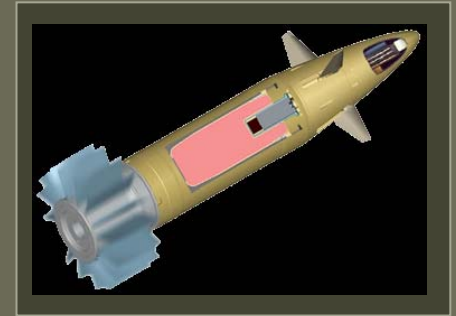
**Weapon Systems  
& Technology**



**Munitions Systems  
& Technology**



**Fire Control Systems  
& Technology**



**Fuze and Precision  
Armaments Technology**



**Energetics, Warheads  
& Environmental Technology**



**Explosive Ordnance  
Disposal Technology**



**Logistics  
Management**

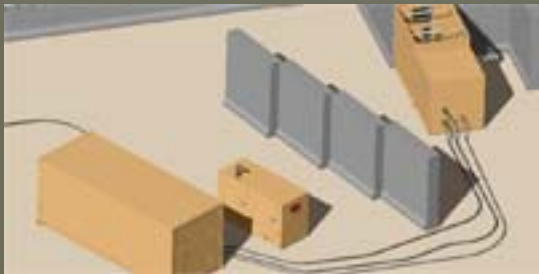


**Systems Engineering and  
Configuration Management**



- Personnel = approximately 3000
- **Locations:**
  - HQ at Picatinny Arsenal, New Jersey
  - Benet Labs, Watervliet, New York
  - Systems Engineering Directorate, Rock Island, Illinois
  - Munitions Directorate, Aberdeen, Maryland
  - Fuzing & Precision Armaments Directorate, Adelphi, Maryland
- Scientists and engineers avg. 20 years experience (30,000+ aggregate man-years)
- New hires **FY99-06 = 758**
- Recipient of numerous prestigious national awards
- Major modernization in progress

- Rapid/sweeping changes in technology and Federal Labs are less and less the catalyst
- Changing customer (PM moving to Lead System Integrators)
- GWOT driving need to transition to warfighter quicker
- Increasing emphasis on controlling costs (e.g., BRAC)
- Pentagon shifting to “jointness”



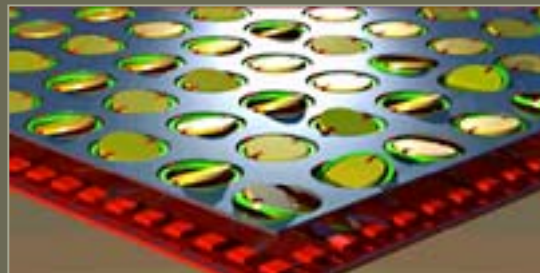
IEDs/Asymmetric Threats



Remote Armament Systems



Novel Power & Energy Systems



Advanced Materials & Nanotechnologies



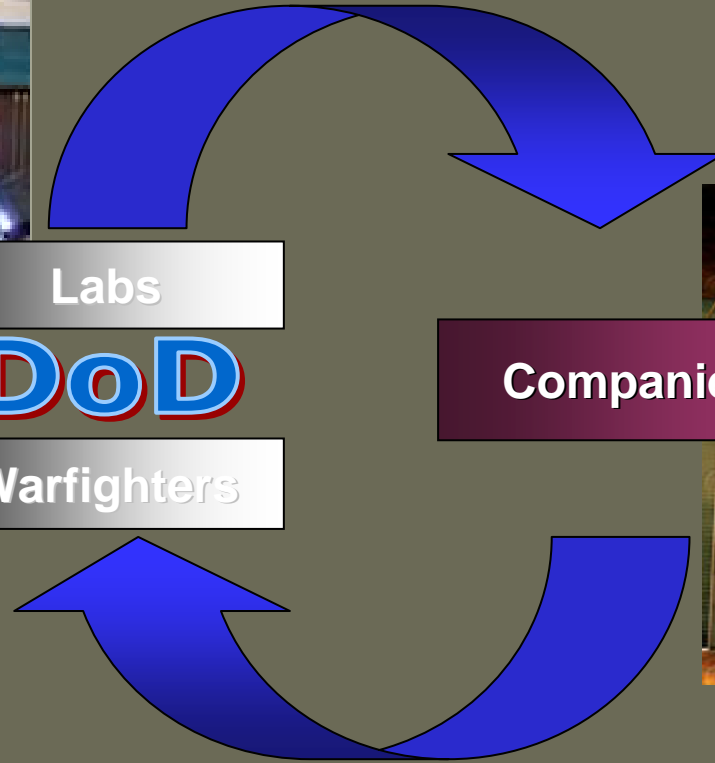
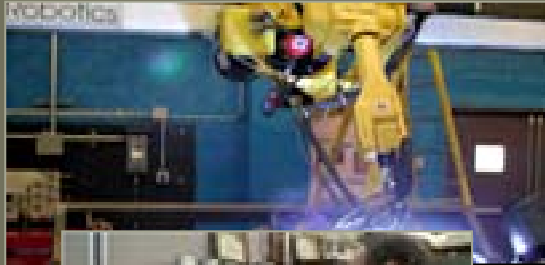
Rapid Prototyping for the Current Force

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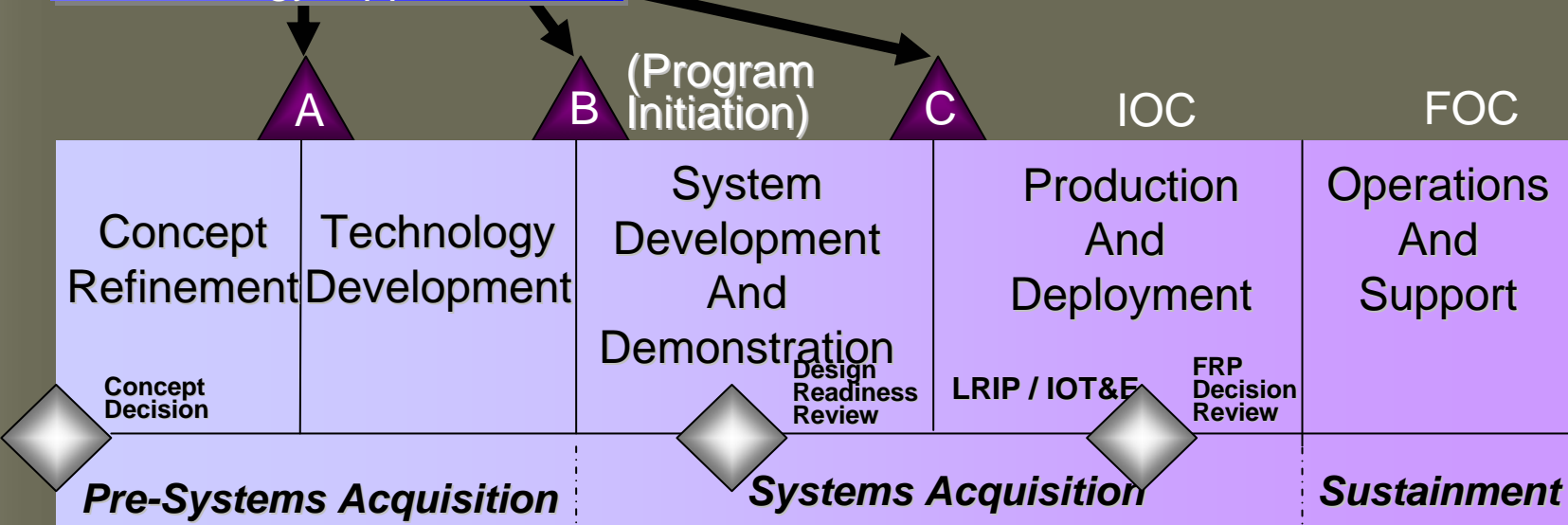
Our Conclusion – We Must Partner

## Technology Transfer



## Technology Transition

User Needs and  
Technology Opportunities



*Most Partnerships Here*

- CRADAs
- Test Service Agreements
- Insitech
- OGA
- Consortia
- International
- Educational Partnerships
- Info-sharing/Networking

*Growing numbers here: supporting PORs*

- CRADAs
- Test Service Agreements

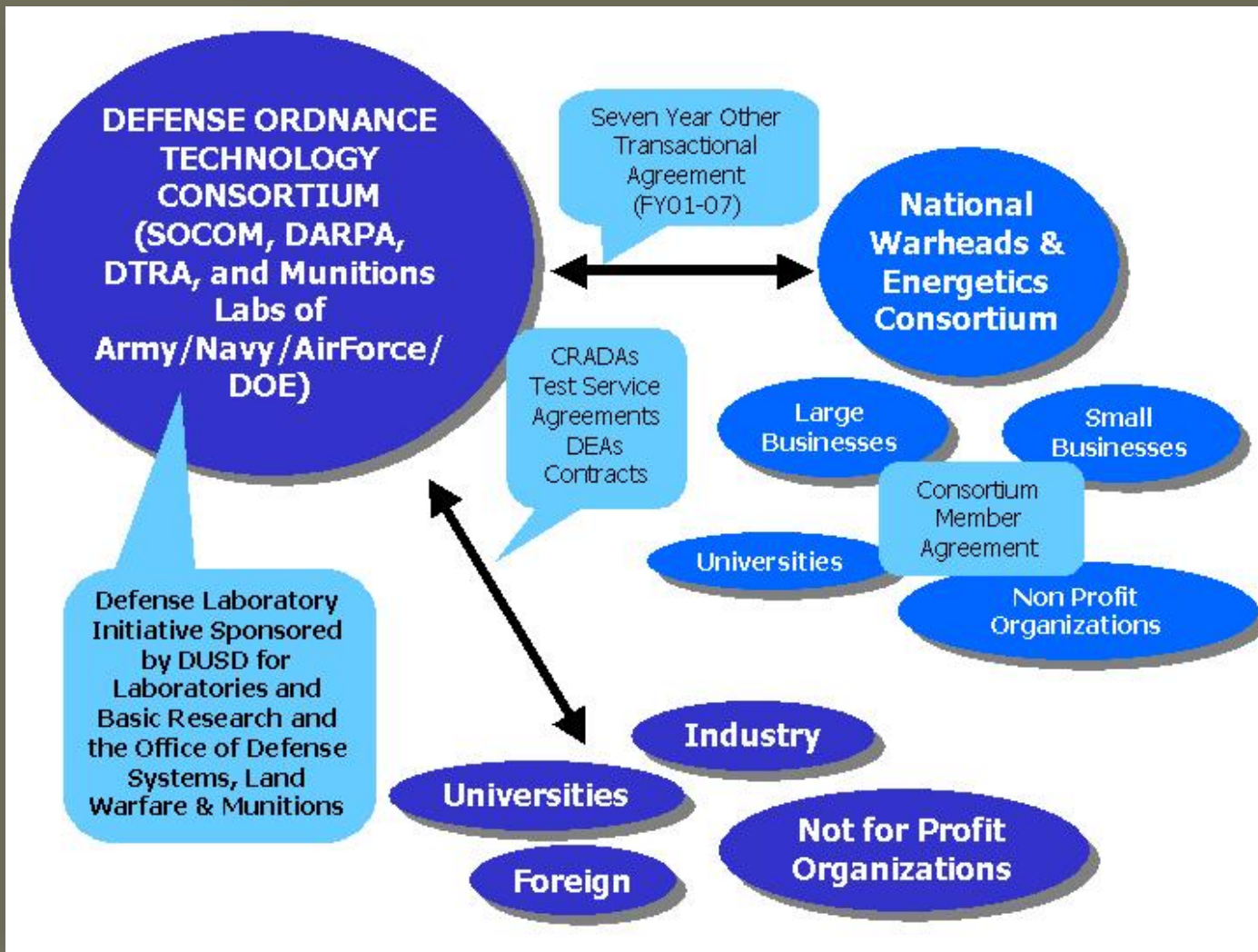
# ENGINEERING VICTORY



## Relationships

- US Army Armament Research, Development and Engineering Center (ARDEC)
- PEO Ammunition & Program Managers
- PEO Ground Combat Systems Program Managers
- PEO Soldier Program Manager for Soldier Weapons
- TACOM Contracting and Commerce Center
- Industry/Academia/OGA Partners
- Installation Management Agency







*“ARDEC Technical Director Michael P. Devine (right) and CEO and President of United Defense Industries, Inc. Tom Rabaut sign a Cooperative Research and Development Agreement Feb. 12, 2003.”*

The CRADA is a vehicle that allows ARDEC to insert technology into FCS (NLOS-C, NLOS-M, ICV, MCS) that will make future armament systems lighter, more precise, more lethal, and easier to deploy and support logistically.

**Annexes to date with BAE Systems:**

- Stryker Reactive Armor
- Modeling & Simulation
- XM291 Cannon
- Hybrid Electric Propulsion
- Trajectory Correcting Fuze
- Gun Barrel Technology
- Non Line of Sight Mortar
- Artillery Weapon Demonstrator
- Non Line of Sight Cannon
- Advanced Energy
- Electromagnetic Technology
- ETC Ignition
- Fire Control Software for NLOS-M
- Firing Tables & Aiming Data for ICV, NLOS-M, NLOS-C

**Similar Agreement with General Dynamics**



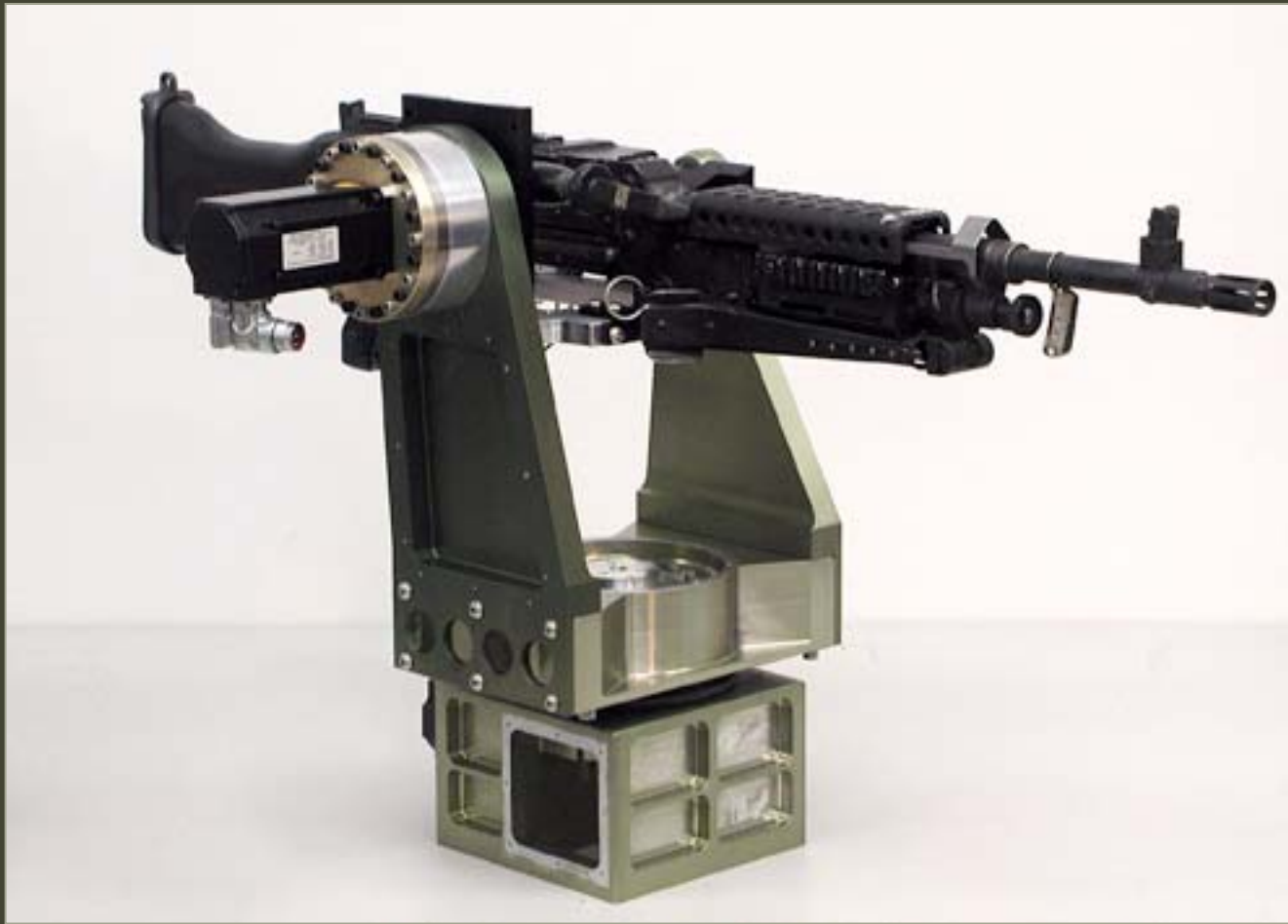


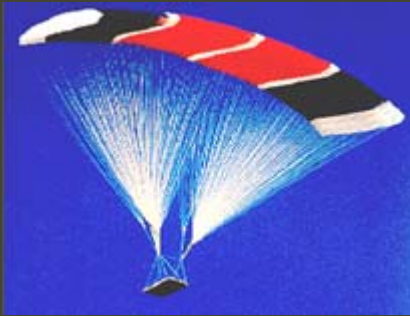
Future Combat Systems Non-Line of Site Mortar



Future Combat System Non-Line of Sight Cannon



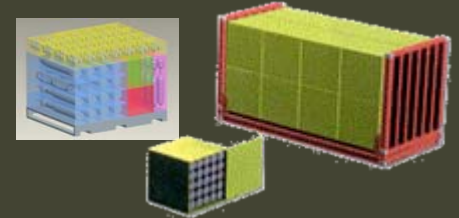




Joint Modular  
Intermodal Platform (JMIP)



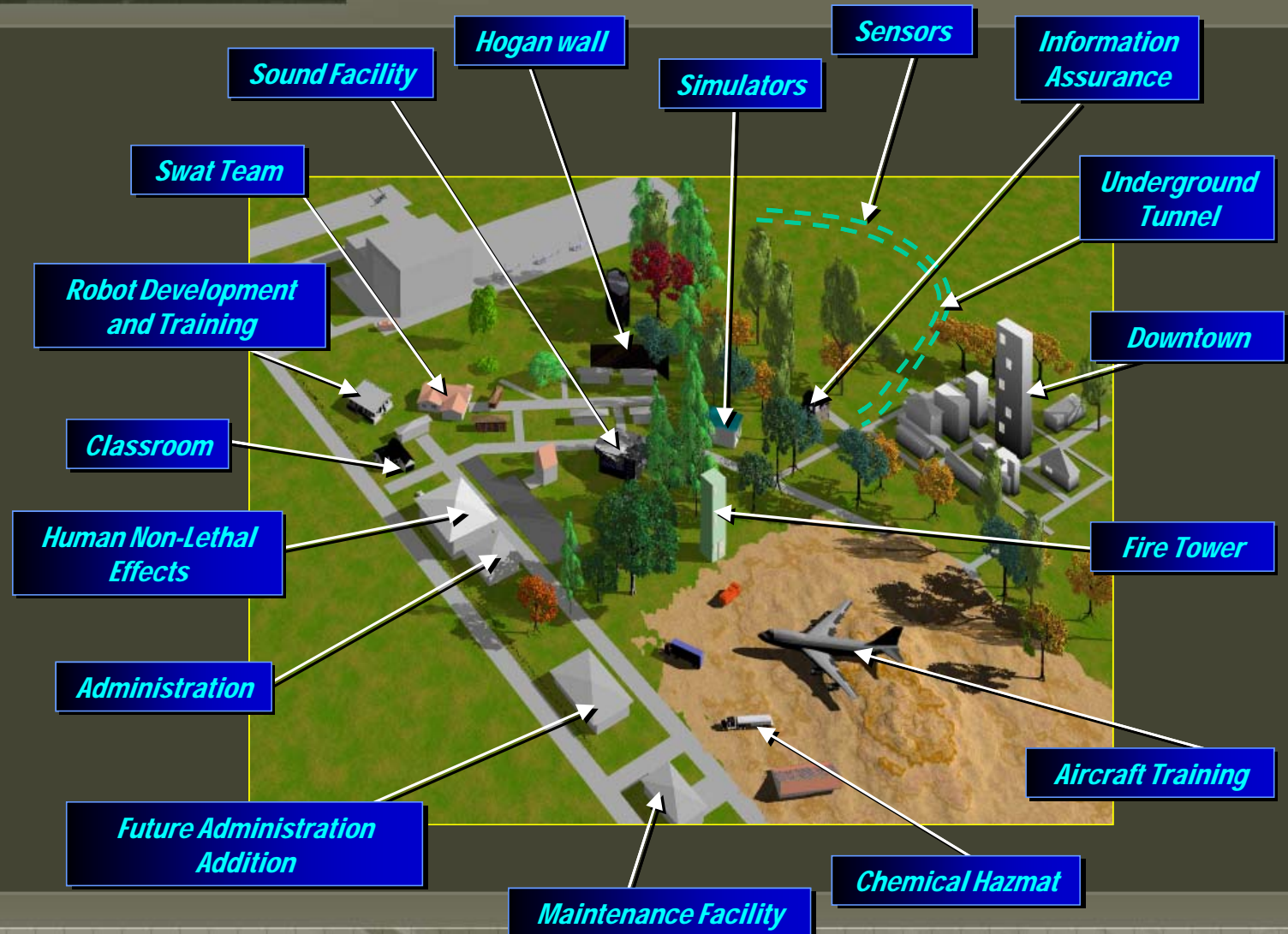
Automated Identification Technology (AIT)



Joint Modular  
Intermodal Container (JMIC)



# Homeland Defense Center



- 140+ Active CRADAs
- 12 PLAs; over \$2M to date in PLA royalties
- T<sup>2</sup> customers are an increasing portion of our inhouse S&T:
  - Cash-in (2005) = \$15M
  - Cash-in (2006) = \$24M+

- ARDEC uses partnering mechanisms to leverage our strengths to attract the technology expertise and resources of others to help us meet current and future mission requirements
- We partner in both the S&T arena and increasingly in the Acquisition arena with PMs and Systems contractors
- We're learning and hope to share best practices with our T<sup>2</sup> peers