Team Redstone

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Base Realignment and Closure

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dcn: 10098

Overview

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Introduction

U.S. Army Aviation & Missile Command
BG (P) James Pillsbury, Cdr

U.S. Army Garrison, Redstone Arsenal
COL Robert Devlin, Cdr

Letterkenny Army Depot
COL William Guinn, Cdr

Corpus Christi Army Depot
COL James Budney, Cdr

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Overview

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Aviation & Missile Research, Development & Engineering Center

Defense Acquisition University

NATO Medium Extended Air Defense System Managment Agency

U.S. Army Space & Missile Defense Command

PEO Aviation

Missile Defense Agency

PEO Tactical Missiles

Corpus Christi Army Depot

Ground Based Midcourse Defense Joint Project Office

Theater High Altitude Air Defense Project Office

Letterkenny Army Depot

PEO STRI PM Instrumentation Targets & Threat Simulaton

TEAM REDSTONE

PEO C3T PM Tactical Operations Center/ Air & Missile Defense Command & Control Systems

Ordnance, Munitions & Electronics Maintainence School

Marshall Space Flight Center

Federal Bureau of Investigation

U.S. Army Garrison-Redstone Arsenal

Defense Enterprise Computing Center

MDA PM Targets & Countermeasures

PEO Air, Space & Missile Defense

U.S. Army Aviation & Missile Command

Missile & Space Intelligence Center

AMC Logistics Support Activity

PEO GCS PM Robotic Systems

Redstone Technical Test Center

PEO IEW&S PM Aviation Electronic Systems

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Capabilities

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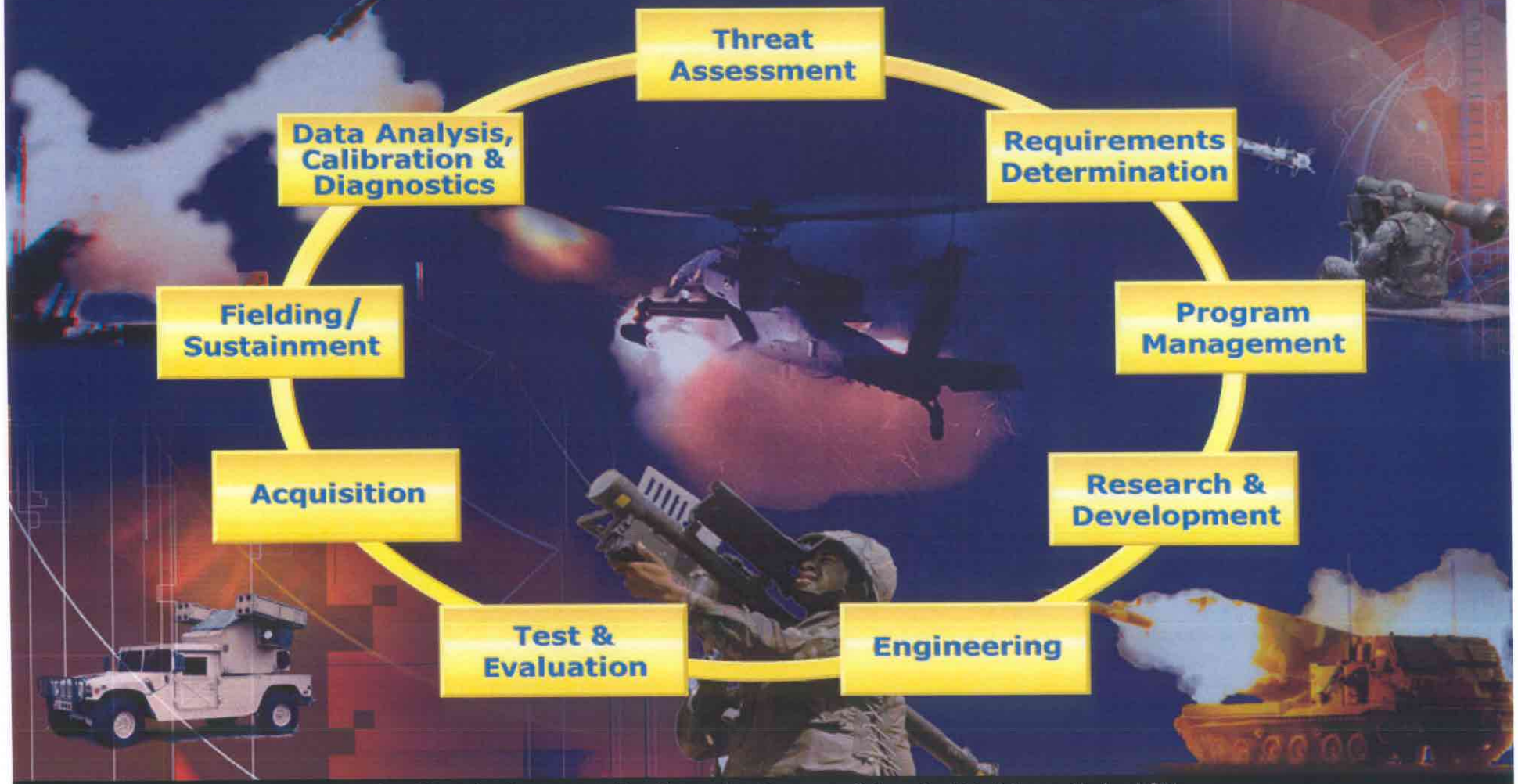
How We Provide Capability to the Joint Warfighter



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Capabilities

Threat Assessment

Aviation & Missile Research, Development & Engineering Center

PEOs
Joint Program Offices

CIA

Defense Intelligence Agency

National Air and Space Intelligence Center

National Ground Intelligence Center

Office of Naval Intelligence

MISSILE AND SPACE INTELLIGENCE CENTER

Threat Assessment

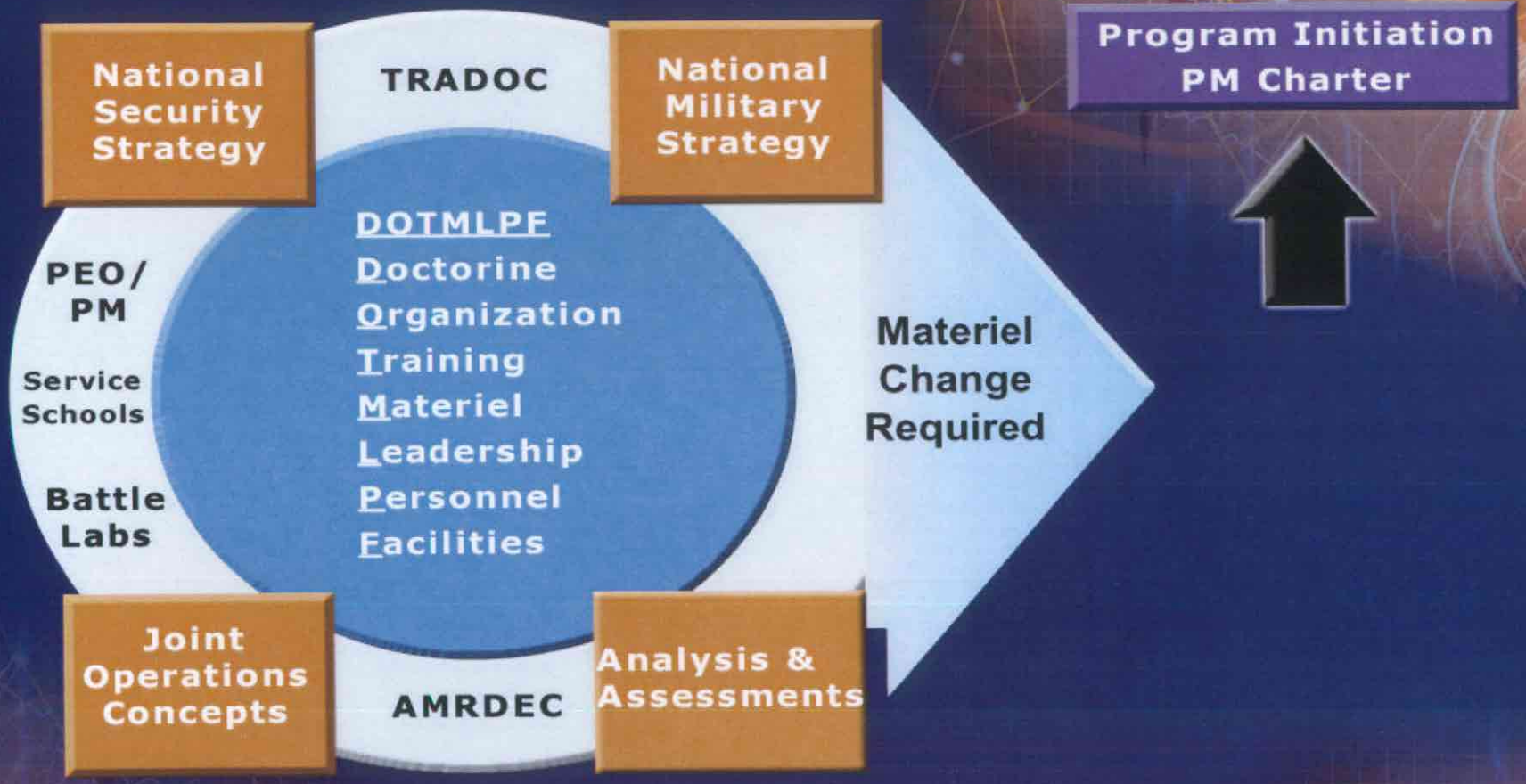
TRADOC
PEO/PM

Army Aviation and Missile Command

Redstone Technical Test Center

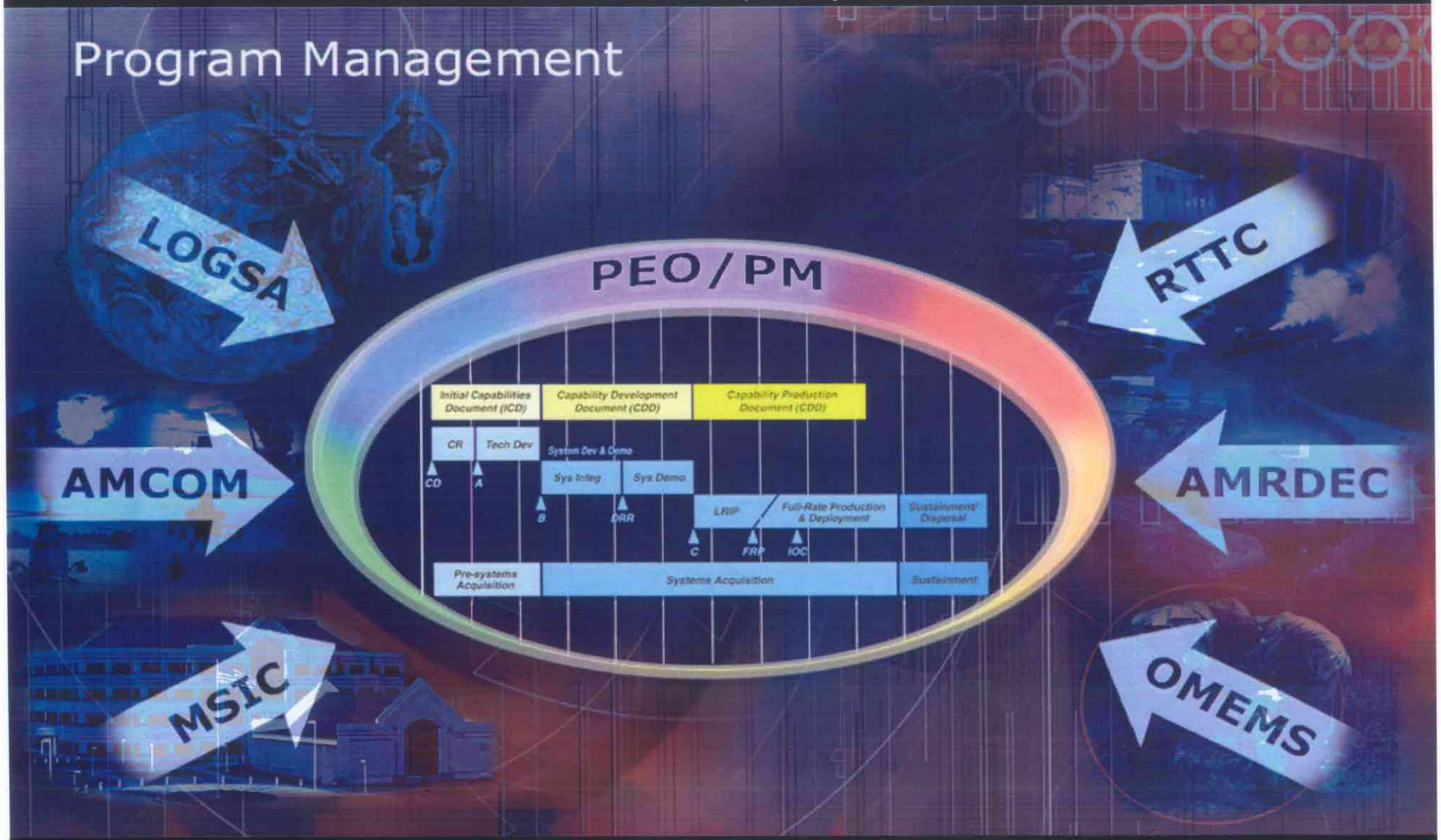
Intelligence Support to Define Adversary Capabilities and Ensure Robust Army Weapon Systems

Capabilities



Capabilities

Program Management



Capabilities

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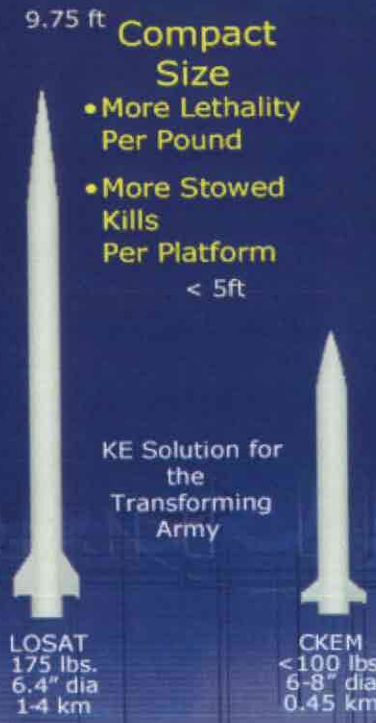
Research - Develop Technologies which Create Overwhelming Lethality and Decisive Survivability

- CKEM Research Objectives
  - Provide Future Combat System and Future Force with a lightweight kinetic energy weapon delivering overwhelming lethality against present and future threats

"Super Roadrunner sets World Record at 6,453 mph."

- Research Accomplished Through
  - Innovative early partnering with industry
  - Exploiting novel kill mechanism
  - Identifying and developing enabling technologies
  - Simulation and Modeling for Acquisition, Requirements, and Training



Army's Kinetic Energy "Silver Bullet"

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Capabilities

Development - Perform System Engineering and Integration and Rapidly Transition Technologies to the Soldier

Guided MLRS (GMLRS)

Top Army Example in 2001 of Successful Transition from S&T to EMD

To Defeat 24 MLRs
- 88% Reduction in Number of Rockets
- 86% Reduction in Logistics Burden
- 84% Reduction in Total Cost

Accuracy Improvement (plus Range Increase):

500m CEP (at 30km) for MLRS
Reduced to
2m CEP (at 48km) for GMLRS

GMLRS displays 2m accuracy in Baghdad strike.

Yields

Team Redstone Collaborative Development Resulted in a 57% Savings in EMD (From $280M to $120M) and an 84% Reduction in Total Cost to Defeat Target Set

Capabilities

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Engineering - Provide Critical Life Cycle Engineering Support Throughout Development, Production, Material Fielding, and Sustainment

SAM-D → **PATRIOT** → **PATRIOT** → **PATRIOT Family**

BASIC
PAC-2
GEM+
PAC-3

1.8B Life Cycle Cost Available

Concept and Technology Development

System Requirements Generation
Integrate Users' Need
Verify/Validate Requirements
New Technology Generation

System Development and Demonstration

Reliability Growth
Contract Requirements
Performance Specifications
Test Management
Qualification
Production Planning

Production and Deployment

Field Support
First Article
Production Verification
Certification

Operations and Support

Rapid Prototyping/ Field Fixes
Spares/Depot Engineering Support
Post Deployment Software Support

Life Cycle Engineering Support for the Joint Warfighter Improves Survivability and Ability to take the Battle to the Enemy

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Capabilities

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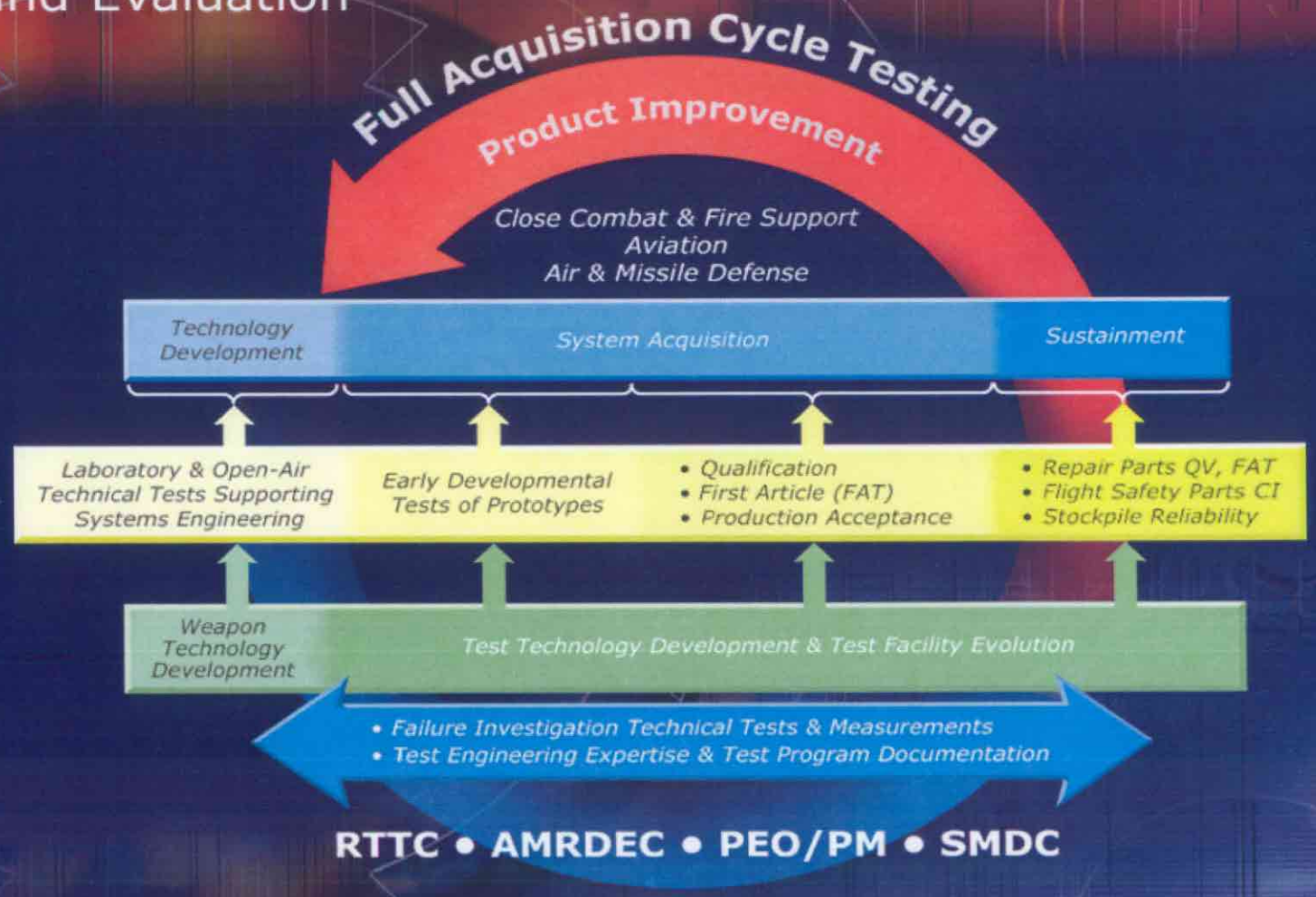
Test and Evaluation



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Capabilities

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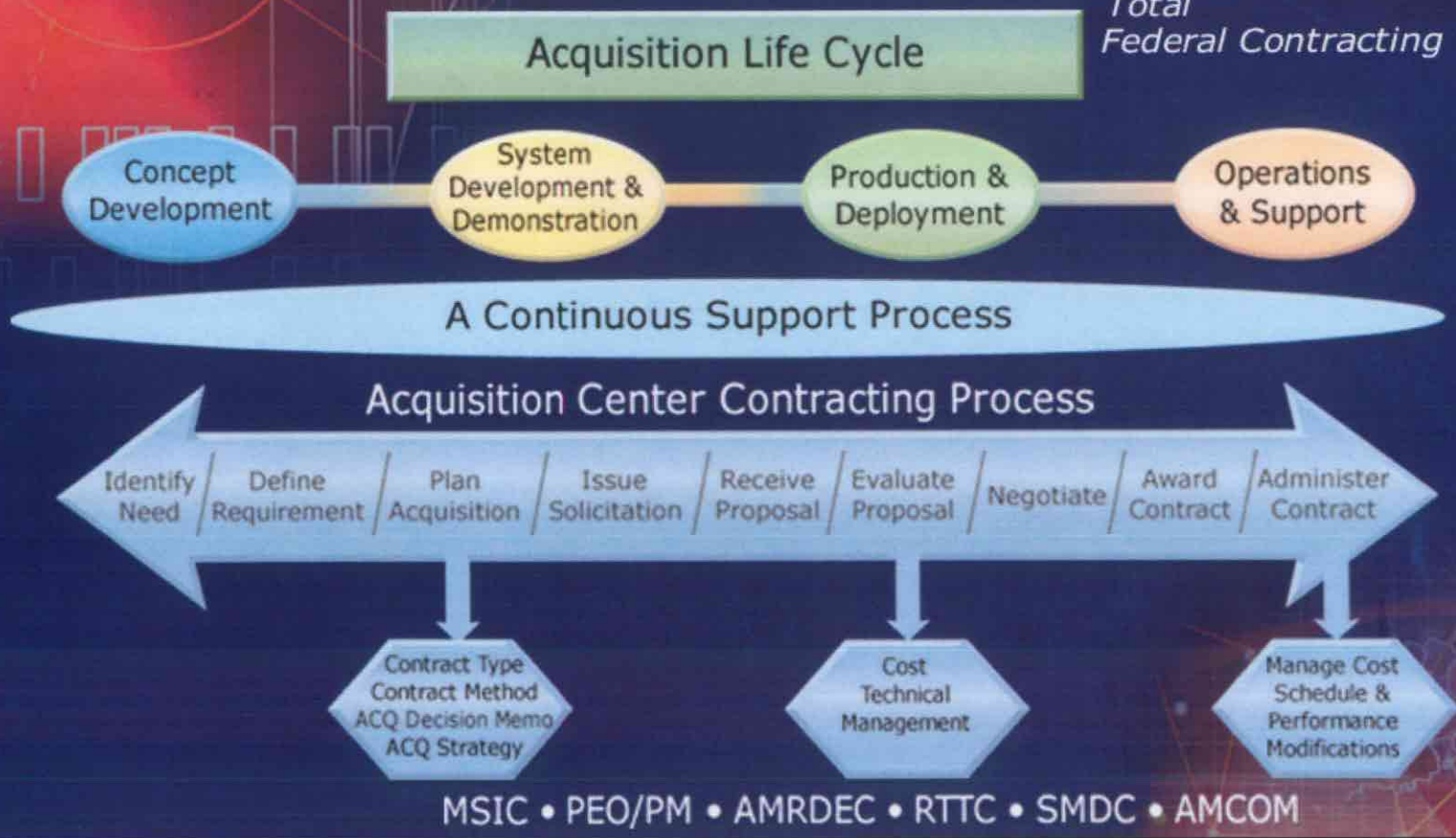
Acquisition

The Acquisition Process provides support for the entire life of the Requirement by utilizing DoD 5000 and Statutory Regulations

Team Redstone FY03

AMCOM Aquisition Center	*$10.1B*
Other DoD	*$ 1.2B*
NASA	*$ 2.2B*
Total	*$13.5B*

Federal Contracting Through Redstone



MSIC • PEO/PM • AMRDEC • RTTC • SMDC • AMCOM

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Capabilities

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Fielding & Sustainment

Depot Forward | Patriot MLRS | Forward Technical Support | Aircraft & Missile Modification Facilities | Logistics Centers of Excellence | Field Repair Activities | Field Engineers

207 Logistics Assistance Representatives

81 Contract Field Service Representatives

Supply Support

- Support to Deployed Forces
- War Reserves
- Contingency Support
- Supply Management
- Plus Up Authorized Stockage Lists
- Single Stock Fund
- Transportation
- Packaging/Handling
- Distribution Management

Maintenance Support

- Support to Deployed Forces
- RESET
- Recapitalization
- Modifications
- Overhaul
- Depot Forward
- Industry Partnerships
- National Maintenance Contracts
- National Maintenance Points

Engineering Technical Support

- Support to Deployed Forces
- Engineering Services
- Flight Safety/Airworthiness
- Stockpile Reliability
- Technical Data
- Safety/Quality Deficiency Reports
- Log Data
- Training & Training Support

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Capabilities

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Data Analysis

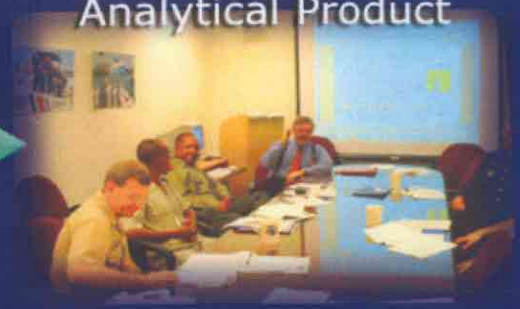
Field Data Inputs

Logistics Assistance Representative Input
Readiness Reporting
STAMIS Reporting
Maintenance Data

LOGSA
Logistics Support Activity

Strategic Analysis

Customer Specific Analytical Product



Tactical Theater Level Analysis

Data Analysis Supports All Levels of Army/Joint Logistics

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Capabilities

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Calibration & Diagnostics

LABS

MOBILE TEAMS

GENERAL PURPOSE & SPECIAL PURPOSE TEST MEASUREMENT AND DIAGNOSTIC SUPPORT EQUIPMENT

CONFIDENCE
READINESS
SAFETY
PRECISION

NIST

MICROWAVE
TORQUE
METERS
SCOPES
RADIAC
GAGES
ETC

Calibrate and repair the Army's Test, Measurement, and Diagnostic Equipment (TMDE) with measurement accuracies traceable to the National Institute of Standards and Technology (NIST).

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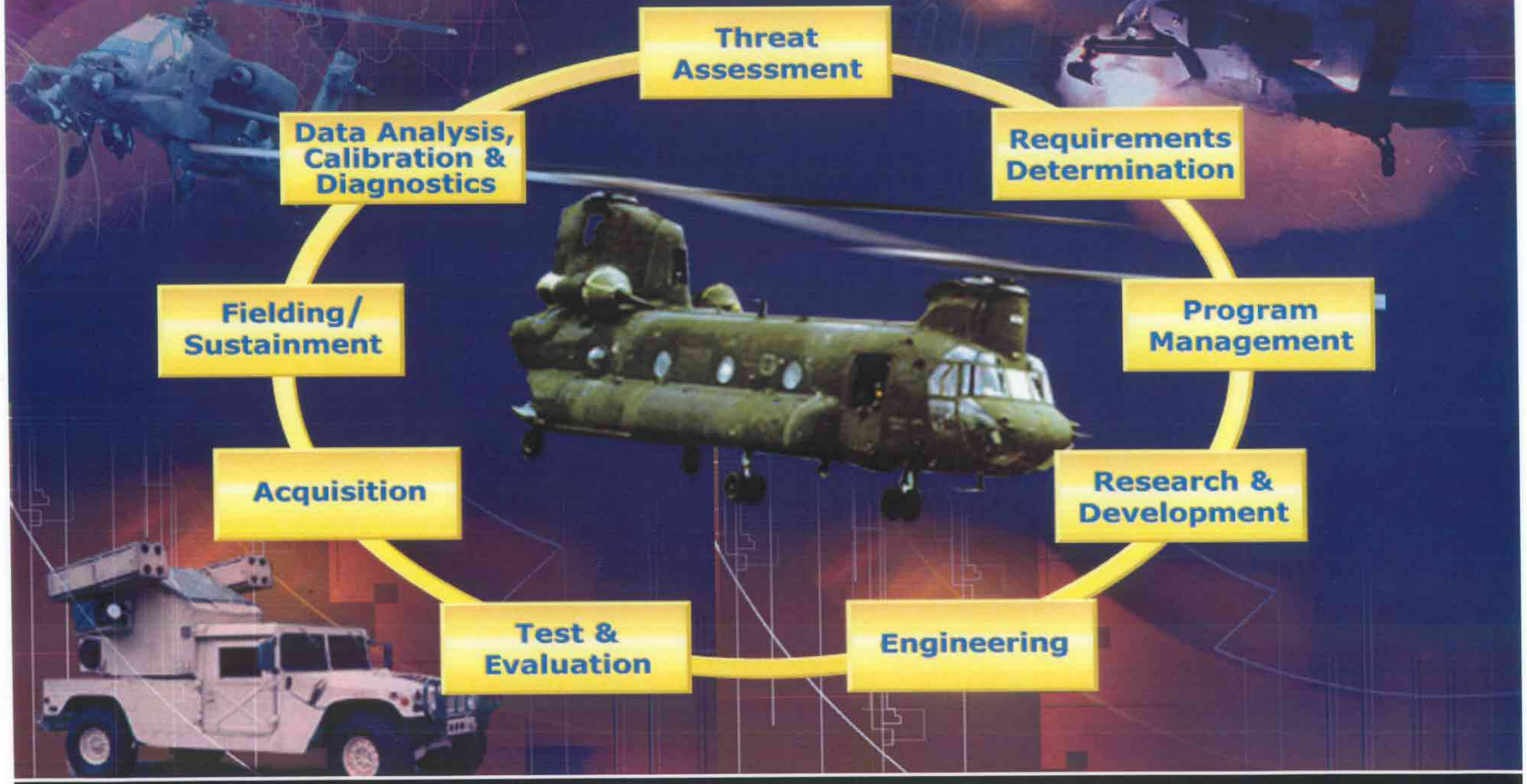
Soldier Focused Logistics



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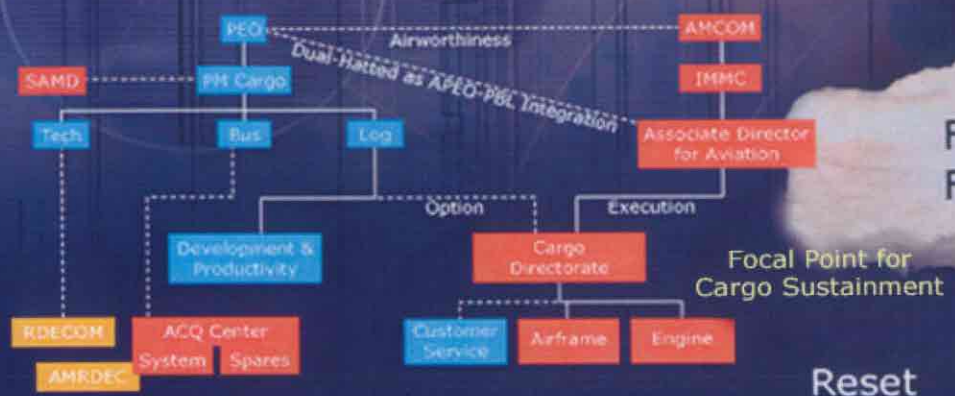
Soldier Focused Logistics: The Way it Was, Where We're Going



Facilitates Soldier Focused Logistics

Reset

Recap

PEO/PM

Total Life Cycle System Management

Development, Acquisition and Fielding

Seamless Integration of ASA (ALT) and AMC Missions

Supply, Maintenance, Field Support

AMC/AMCOM

Sustainment Logistics

Deployment

Contingency Support

Safety

Today and Tomorrow!

Goal: Fully Integrated Sustainment

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Overview

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Aviation & Missile Research, Development & Engineering Center

Defense Acquisition University

NATO Medium Extended Air Defense System Managment Agency

U.S. Army Space & Missile Defense Command

PEO Aviation

Missile Defense Agency

PEO Tactical Missiles

Corpus Christi Army Depot

Ground Based Midcourse Defense Joint Project Office

Theater High Altitude Air Defense Project Office

Letterkenny Army Depot

PEO STRI PM Instrumentation Targets & Threat Simulaton

TEAM REDSTONE

PEO C3T PM Tactical Operations Center/ Air & Missile Defense Command & Control Systems

Ordnance, Munitions & Electronics Maintainence School

Marshall Space Flight Center

Federal Bureau of Investigation

U.S. Army Garrison-Redstone Arsenal

Defense Enterprise Computing Center

PEO Air, Space & Missile Defense

MDA PM Targets & Countermeasures

U.S. Army Aviation & Missile Command

Missile & Space Intelligence Center

AMC Logistics Support Activity

PEO GCS PM Robotic Systems

Redstone Technical Test Center

PEO IEW&S PM Aviation Electronic Systems

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Missile Defense Agency

MDA Mission:

Develop and Field an Integrated Missile Defense System Capable of Providing a Layered Defense for the United States and its Deployed Forces, Friends and Allies Against Ballistic Missiles of All Ranges in All Phases of Flight

Ground-Based Mid-Course Defense Joint Project Office:

Responsible for Research, Development, Testing and Evaluation, Deployment and Sustainment of the Ground-Based Midcourse Defense System

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Team Redstone

GMD Mission and Tasks

"In light of the changed security environment and progress made to date in our development efforts, the United States plans to begin deployment of a set of missile defense capabilities in 2004."

White House Press Release - 20 May 03

GMD Mission

Develop and Deploy a Credible Capability to Defend Against Intermediate and Long Range Ballistic Missile Attacks in the Midcourse Phase of Flight.

Tasks

* Build, Test, and Verify an Initial Defensive Operations Capability
* Place the GMD on Alert
* Execute Concurrent Testing and Defensive Operations
* Continue Development to Incrementally Improve Capability

Bottom Line: Field Initial Missile Defense Capability

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Ground Base Midcourse Defense Joint Program Office

Secretary of Defense

Director MDA

HSV, DC

Program Director	MG, USA
Principal Dep Dir	SES4
Dep for Development	IPA
Dep for T&E and Dir, CTF	SES3
Dir, Operations	IPA

Redstone Arsenal Workforce

Military	17
Civilian	377
Contractor	480

- Test and Evaluation Directorate
- Logistics Directorate
- Site Activation Worldwide
- System Engineering & Integration Directorate
- Program Protection Directorate

- Prod & Qual Opns Directorate
- GMD Fire Control & Communications
- Upgraded Early Warning / Cobra Dane Radar Program
- X Band Radar Project Office
- Ground Based Interceptors Project Office

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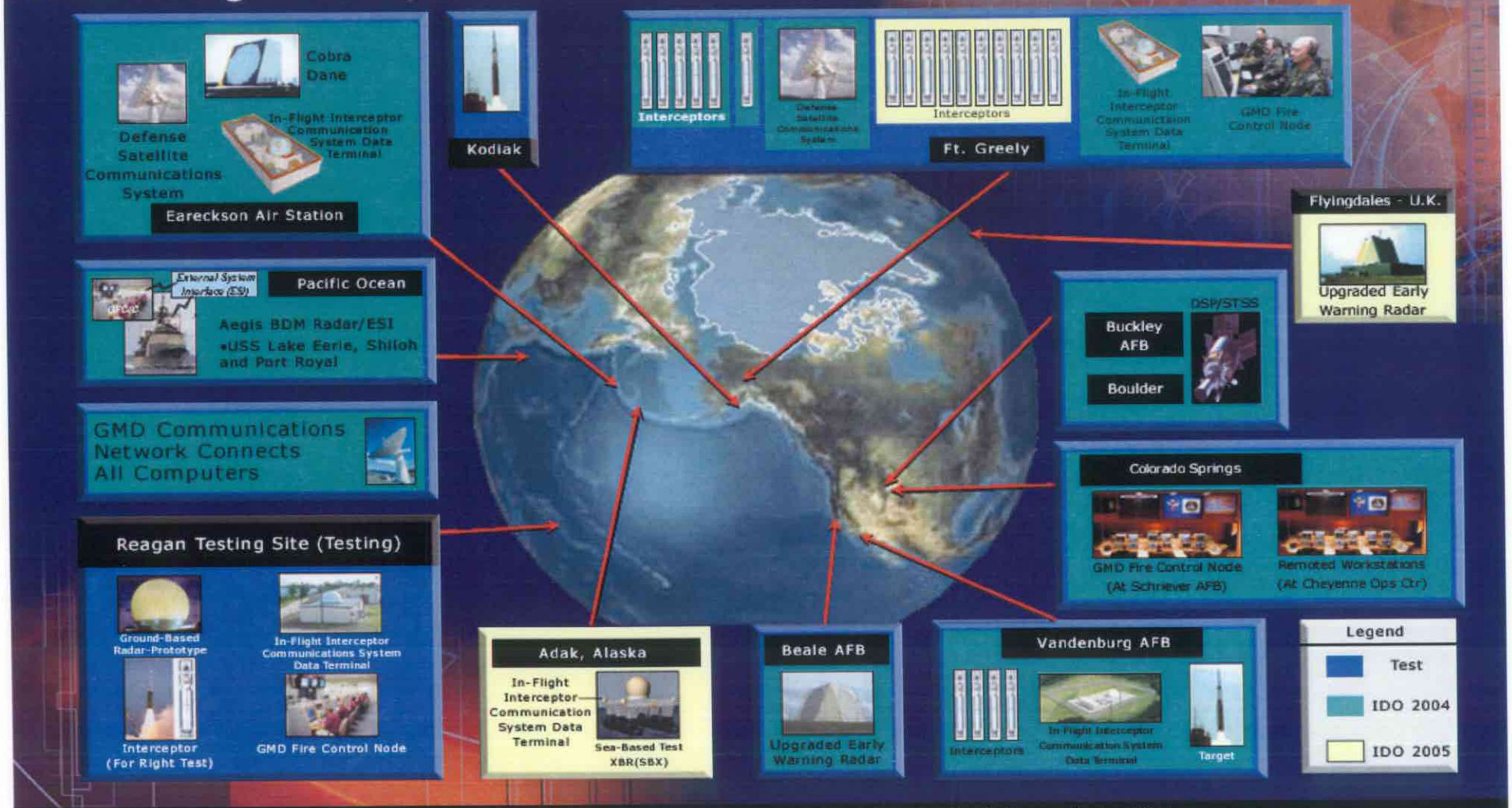
GMD Program Capabilities



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GMD Tennessee Valley Activities

System Test and Evaluation Planning and Analysis Lab
COLSA ARC

GMD Test Evaluation & Reporting Lab
COLSA

GMD JPO
Bradford Center

MDA Data Distribution Center (MDDC)
CAS, Inc.

Test & Evaluation Data Analysis Center
COLSA ARC/Bradford Center/Redstone Arsenal

GMD System Trainer (GST) Software & Hardware Development & Manufacture
Northrop-Grumman

Space & Missile Defense Command (SMDC)
Redstone Arsenal

GMD Fire Control (GFC) Software & Hardware Development & Manufacture
Northrop-Grumman

Corps of Engineers, Huntsville Center

GMD JPO
Bldg 4505

Redstone Arsenal

GBI Assembly Test & Checkout (ATC)
Redstone Arsenal

AMRDEC
AMCOM IMMC
Redstone Arsenal

2,830 Jobs
$627.1 M Annual Salaries

Tullahoma, TN

GBI 10V Chamber Light Gas Gun Facility
Arnold Engineering Development Center

Boeing Jetplex Huntsville

- GMD JPO Combined Test Force (CTF)
- GBI Assembly Test & Checkout (ATC)
- GBI Interceptor Integration Facility (IIF)
- GBI Development & Integration Lab (GDIL)
- Prime Consolidated Integration Lab (PCIL)
- Central Software Repository (CSR)
- Embedded Test (ET) Software and Hardware Development and Manufacture
- Logistic Support Control Center

Courtland, AL

Booster Stack & Booster Avionics Module Facility
Lockheed Martin

Cullman, AL

Beryllium Manufacturing
Axsys, Inc.

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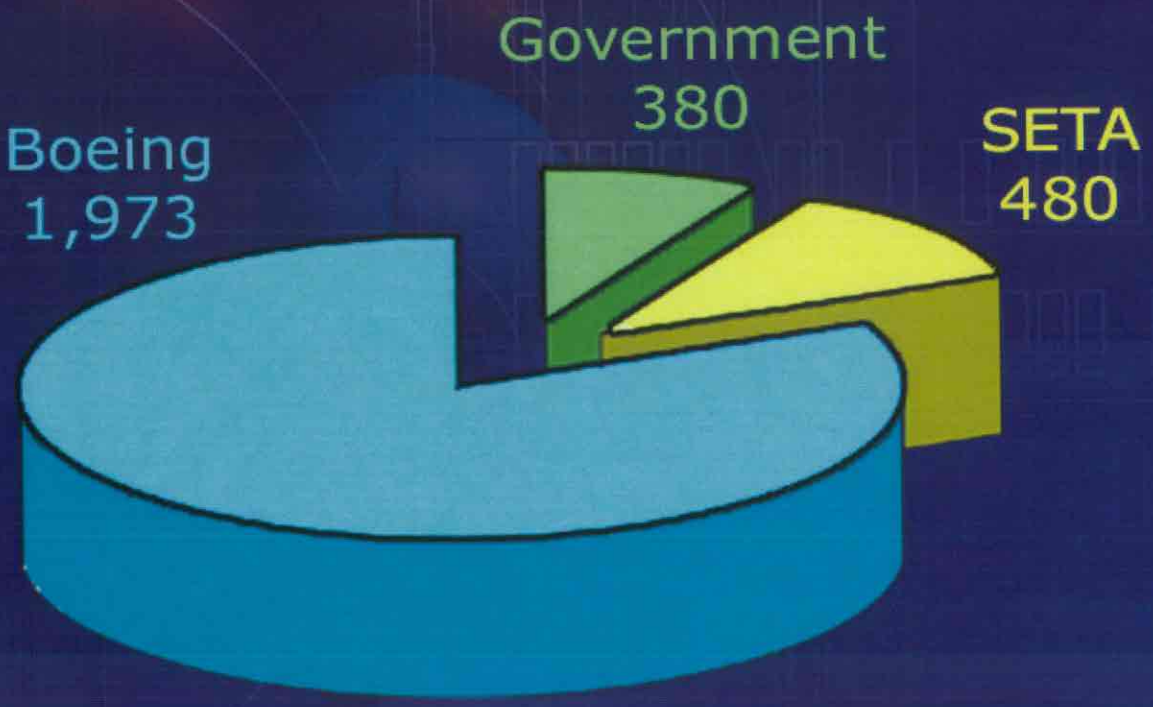
GMD JPO Workforce

Total Huntsville Jobs



Bottom Line: Field Initial Missile Defense Capability

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U.S. Army Space and Missile Defense Command

Workforce
716 Civilian
29 Military
213 Active Contracts: $2.4B

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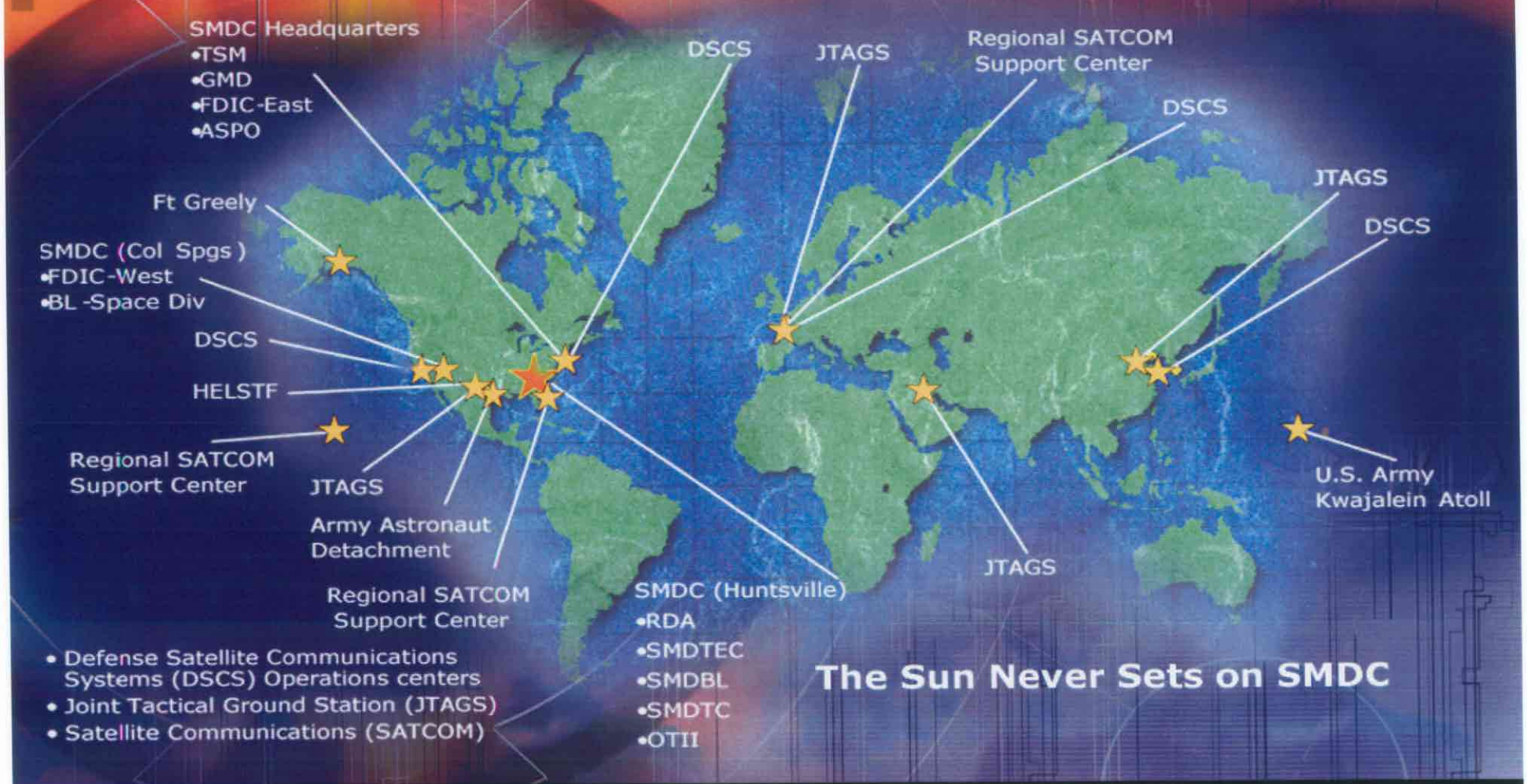
SMDC Locations



- Defense Satellite Communications Systems (DSCS) Operations centers
- Joint Tactical Ground Station (JTAGS)
- Satellite Communications (SATCOM)

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SMDC Initiatives

JLENS

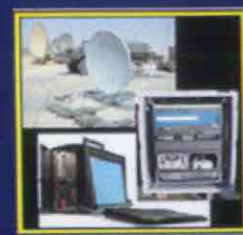
Tactical High Energy Laser

Eagle Vision II

Tactical Exploitation System

Battlefield Ordnance Awareness

Grenadier Brat



SSET-L

Future Operational Capability TOC

Space and Missile Defense War Games

Hyperspectral Imaging

ZEUS

Space Based Radar

Functional Area 40 Space Operations

Solid State Laser

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Space and Missile Defense Command (SMDC)

SMDC Support to the Warfighter

ARSST/SSET

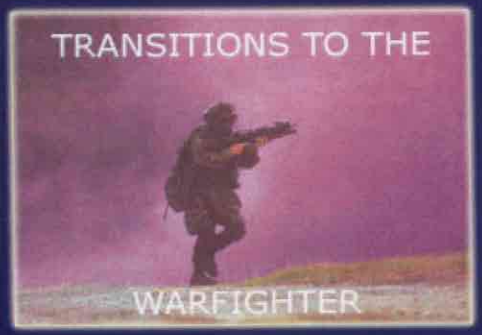
* Army Space Support Teams
* Space Support Element Toolset
* OIF / OEF
* Soldiers Supporting Soldiers

Missile Warning

* ARSTRAT soldiers in a joint team (JTAGS)
* Real-time missile warning
* Used in OIF

FOC

* Future Operational Capability TOC
* Used in OIF, OEF, Noble Eagle, Clear Skies



Zeus

* Strategic technology, tactically applied
* Stand-off mine / EOD clearance
* Used in OEF

Homeland Security

* Noble Eagle / Clear Skies
* Local and State Support

GMD

* Ground-based Midcourse Defense
* Operators (GMD Brigade)

JLENS MTHEL
PATRIOT JTAGS
TES THAAD

FROM CONCEPT.... ...TO... ...OPERATIONS!

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U.S. Army SMDC

Single POC for Military Space Operations

Army Component to U.S. Strategic Command

Integrate & Coordinate DoD Information Operations

Develop Desired Characteristics for Space Operations, Global Missile Defense Warning, BMC3I, CNO & EW

Plan, Integrate, & Coordinate Global Missile Defense Operations

Task & Coordinate C4ISR in Support of Global Strike & Missile Defense

Plan for and Support Global Strike Operations

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U.S. Army Space and Missile Defense Command Partner Relationships

PEO Aviation

PEO Tactical Missiles

Marshall Space Flight Center

PEO Air, Space and Missile Defense

Ground-Based Midcourse Defense Joint Program Office

U.S. Army Aviation and Missile Command

U.S. Army Garrison — Redstone Arsenal

Civilian Contractors

Alabama A&M University

Missile and Space Intelligence Center

Aviation and Missile Research Development and Engineering Center

University of Alabama in Huntsville

Redstone Technical Test Center

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Team Redstone

U.S. Army Aviation and Missile Command

Commanding General

Deputy to the CG

DC Systems Support

Chief of Staff

Letterkenny Army Depot

Corpus Christi Army Depot

Aviation Center Logistics Command

Special Programs (Aviation)

Integrated Materiel Management Center

Test, Measurement, & Diagnostic Equipment Activity

Security Assistance Management Directorate

Acquisition Center

Civilian	
HQ AMCOM	3188
TMDE	730
LEAD	1000
CCAD	2970
Total	7888

Military	
HQ AMCOM	63
TMDE	158
LEAD	2
CCAD	5
Total	228

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U.S. Army Aviation and Missile Command

Core Capabilities	Scope
Logistics Support AMCOM is the logistics integration manager for Army aviation and missile systems and provides worldwide supply and maintenance support.	Items Managed: 43,917 Annual Sales: $4.2B > 50% Total Army Sales Depot Maint. Prog.: 3,936 • $2.5B > 50% of Total Army Annual Requisitions 116,453
Acquisition Support AMCOM provides acquisition support during the entire life cycle of Army aviation and missile systems ensuring Team Redstone contractual requirements of DoD 5000 and Statutory Regulations are met.	Contractual Programs: $10.1B 1/6 of dollars contracted by the Army 1/3 of dollars contracted by the AMC 13,000 Contract Actions valued at $108B
Foreign Military Sales AMCOM manages the international sales of Army aviation and missile systems and coordinates deployment of weapon systems to security assistance recipients.	50% of all Army Foreign Military Sales

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How We Support the Soldier

207 Logistics Assistance Representatives

- National Maintenance Program
- Analysis / National Maintenance Work Requirements
- Depot Maintenance
- Field Operations
  - OLR
  - Logistics Center of Excellence
- Integrated Logistics Support
- Technical Publications
- Recapitalization
- Modifications
- RESET

81 Contract Field Service Representatives

- Distribution & Technology
- Legacy System Spt
- Mobilization/ Ammo
- Single Stock Fund/Asset Management
- Reqmts/Log Data Systems
- Log Modernization
  - Logistics Modernization Program
  - Integrated Data Support

Aviation Operation Center 24/7

- Log/Assist
- Total Package Fielding/ New Equipment Training
- Readiness Analysis
- AMCOM Supply Depot Operations
- System Sustainment
- Field Unit Program
- NG Liaison Officers
- AVCRAD
- War Plans

→ = Sustainment

Maintaining DA Readiness Goals

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Supporting Army Readiness

Nearly 50% of the Army's Primary Warfighting Systems

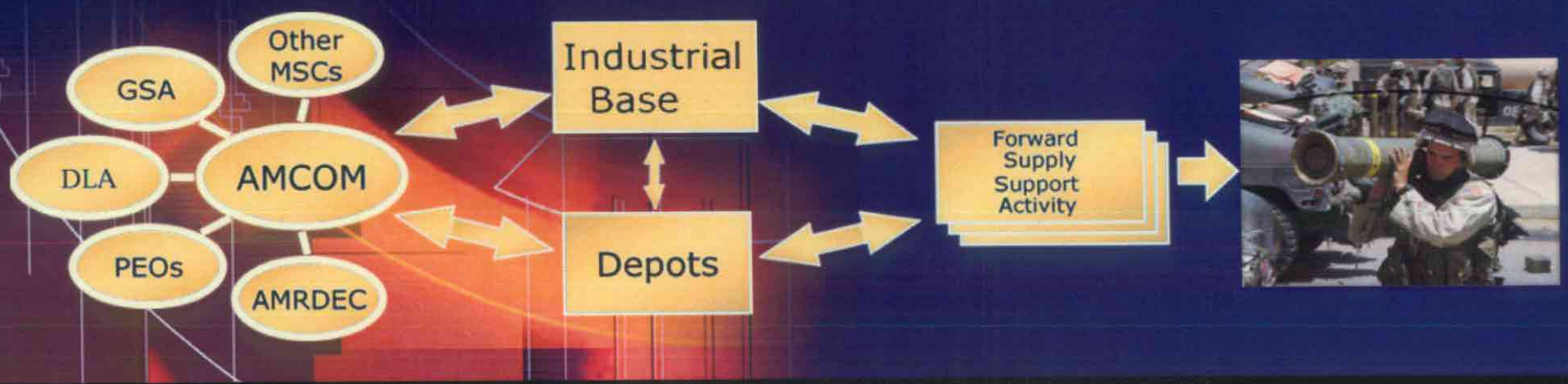
AVIATION

AH-64 Apache
OH-58D Kiowa Warrior
CH-47D Chinook
UH-60 A/L Black Hawk

MISSILE

PATRIOT
Multiple Launch Rocket System
Avenger

60 Others & CL V



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Team Redstone

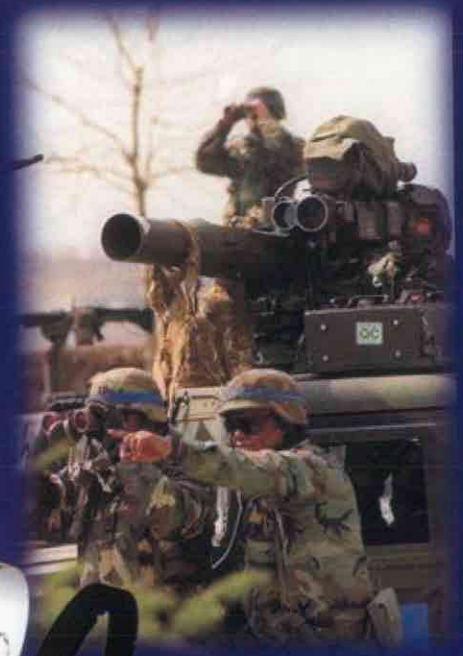
Hellfire

Team Redstone

UAV Shadow

Team Redstone

TOW



Team Redstone

ARMY TACMS

Team Redstone

JAVELIN

Team Redstone

AMCOM Worldwide Support

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Team Redstone

AMCOM Calibration and Repair Support

Who: Military, civilian, and contractor support personnel.

Where: Divisional and Corps (Brigade-level for lesser contingencies).
Echelons Above Corps (EAC) during peacetime.
Civilian support at EAC through depot.

When: Peacetime and whenever Army units deploy (war, hostilities, peacekeeping, humanitarian, etc.)

How: Deployable mobile military teams stationed worldwide.
Civilian laboratories, fixed and mobile.

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AMCOM Security Assistance

1/2 of Army Foreign Military Sales contracts

Team Redstone

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AMCOM Depot Maintenance Programs

Aviation & Missile Maintenance

Centers of Industrial & Technical Excellence

Letterkenny
Air Defense & Tactical Missile Ground Support Equipment
(less missile guidance & control)

Corpus Christi
Rotary Wing Aircraft
(less avionics)

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Team Redstone

Fort Rucker Aviation Center Logistics Command

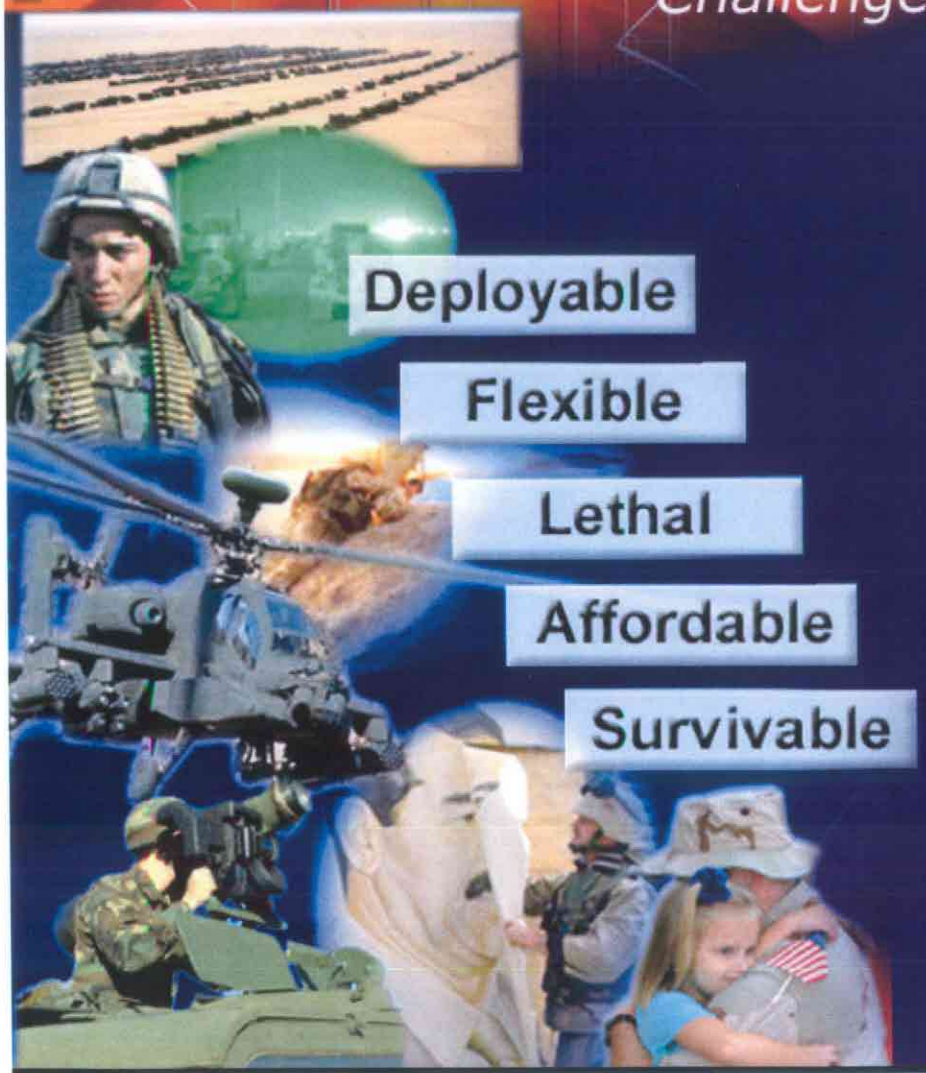
Home of Army Aviation

1/3 of Army's Flying Hour Program

Team Redstone

Aviation & Missile Research, Development & Engineering Center

Challenge and Vision



Provide a CONUS-Based Airliftable Force with the Platform and Weapon Technology to Ensure High Survivability and Lethality to Enable *Swift Decisive Victory*

Via:

Focused Technology Base/Demonstrations
System Modeling and Simulation
Real/Virtual Prototyping

AMRDEC'S Vision
"Weapon System Technology for Swift Decisive Victory Without Casualties

Team Redstone

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Aviation and Missile Research, Development, and Engineering Center

Conducts research, exploratory and advanced development and provides one-stop life cycle engineering support for aviation and missile weapon systems and UAV/UGV platforms.

Aeroflightdynamics Directorate
NASA Ames – Moffett Field, CA

Aviation Applied Technology Directorate
Ft. Eustis, VA

AMRDEC HQ
Redstone Arsenal, AL

Joint Research Program Office
NASA Langley - Hampton, VA

AMRDEC HQ

Moffett Field, CA
2 Military
93 Civilian*
*Inc 12 Civ at Langley
Aviation Research and Development

Comanche

Ft. Eustis, VA
8 Military
216 Civilian
392 Contractor
Aviation Systems Engineering and SOF Support

Apache Longbow

Missile Research and Development

COUGAR

Redstone Arsenal, AL
5 Military
2,146 Civilian
2,594 Contractor
Aviation & Missile Systems Engineering

Predator / HELLFIRE Weaponization

Aviation & Missile Sustainment Engineering and Field Support

Patriot

AMRDEC Provides Transformational Systems to Today's Warfighter and Develops Transformational Technologies and Systems for Tomorrow's Warfighter

Team Redstone

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Aviation & Missile, Research, Development, & Engineering Center

Research, Development, and Engineering Command

Executive Director

Deputy Director

Workforce
Other Locations

Military	10
Civilian	309
Contractor	392
Total	711

Workforce
Redstone Arsenal

Military	5
Civilian	2,146
Contractor	2,594
Total	4,745

- Aviation Applied Technology Directorate (Ft. Eustis, VA) ST
- Advanced Sensors Directorate
- Aeroflight Dynamics Directorate (Moffett Field CA) ST
- Aviation Engineering Directorate
- Technical Management Directorate
- Software Engineering Directorate
- Engineering Directorate
- Applied Sensors, Guidance & Electronics Directorate 2-ST
- Propulsion and Structures Directorate ST
- Systems Simulation & Development Directorate
- Weapon Sciences Directorate ST
- Applied Technology Initiative

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Team Redstone

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Aviation and Missile RD&E Center Core Competencies & Metrics

Core Competencies

- Develop Technologies which Create Overwhelming Lethality and Decisive Survivability on the Battlefield
- Perform System Engineering and Integration and Rapidly Transition Technologies to the Soldier
- Provide High Quality Technical Support to Weapon Systems Throughout the Life Cycle

AMRDEC Strives to Assure that the Joint Warfighter Never Plays on a Level Field!

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AMRDEC Part Laboratory / Part Engineering Services

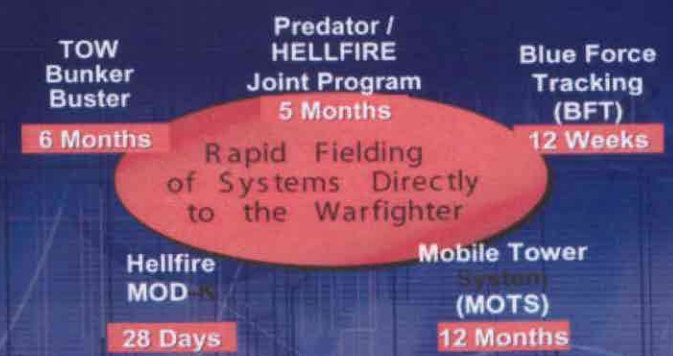
75% of all revenues

Science & Technology Programs

- Missile Seekers
- Rocket and Turbine Propulsion
- Target Acquisition Systems
- Precision Guidance Systems
- Kinetic Energy Missiles
- Aerodynamics and Structures
- Rotorcraft Drives and Controls
- Platform and Weapon Systems Integration

Engineering Services

- Life Cycle Aviation / Missile / UAV / UGV Software Engineering
- Life Cycle Systems Engineering
- High-Fidelity System Level Simulations
- Independent Product / Process Assessment
- Airworthiness Qualification and Release Authority
- Sustainment Engineering Support
- Rapid Prototype Engineering / Integration



Engineers and Scientists Working Both Sides Create a Smart Buyer Organization Which Increases Warfighter Lethality / Survivability and Improves Readiness

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Team Redstone

PEO Tactical Missiles

Core Capabilities

Programs Managed: 25

- APKWS
- Unguided APKWS
- Laser HELLFIRE
- Longbow HELLFIRE
- Dragon Missile System
- Improved Target Acq. System
- Improved Bradley Acq. System
- Javelin
- Line-of-Sight Anti-Tank
- TOW Missile System
- Joint Common Missile
- Army Tactical Missile Systems
- (ATACMS) Block I
- ATACMS Block IA3
- ATACMS Quick Reaction Unitary
- ATACMS Block II/BAT
- ATACMS Penetrator
- Eagle Eyes
- Guided Multiple Launch Rocket System (GLMRS)
- Dual Purpose Improved Conventional Munitions (DPICM)
- GMLRS Unitary
- High Mobility Artillery Rocket System (HIMARS)
- Multiple Launch Rocket System (MLRS) M270
- MLRS M270A1
- MLRS Reduced Range Practice Rockets (RRPR)
- MLRS Joint Technical Architecture (JTA)
- Viper Strike

Scope

Contracts	**148**
Value	$13.168B

46% of the Army's Missile Purchasing Budget

International

Partners with Germany, Italy and the UK

Sales: $6.177B

Team Redstone

PEO Tactical Missiles

Requirements Generation
- Ft. Benning, GA
- Ft. Rucker, AL
- Ft. Sill, OK

Development Support
- Aviation & Missile Research, Development and Engineering Center
- AMCOM Integrated Materiel Management Center

Development for Future Forces
- Advanced Precision Kill Weapon System (APKWS)
- Joint Common Missile (JCM)
- Line-of-Sight-Anti-Tank (LOSAT)
- Non Line of Sight Launch (NLOS LS)

Team Redstone

PEO Air, Space and Missile Defense (ASMD)

Develop, integrate, acquire, field and sustain systems to enable the Army to dominate, control and exploit aerospace in a joint environment.

Team Redstone

PEO Air, Space and Missile Defense (ASMD)

WORKFORCE

Core	Auth
Mil	44
Civ	208
Matrix	
Mil	13
Civ	242
TOTAL	507

Co-located Ctr Spt - 125

Program Executive Officer

Deputy PEO

- **Lower Tier Project Office (LPTO)**
- **SHORT RANGE AIR DEFENSE (SHORAD)**
- **SPACE CONTROL**
- **Army Space Program Office (ASPO)**
- **Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS)**
- **Joint Tactical Ground Station (JTAGS)**

Team Redstone

PEO ASMD

JLENS / RAID
Battlefield Awareness
Communications Relay
Attack Operations
Force Protection Surveillance

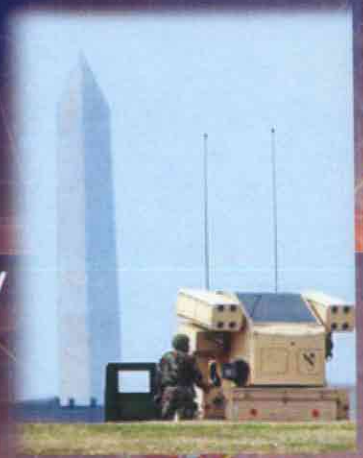
JTAGS
Tactical Ballistic
Missile Early Warning
Theater-Wide
Data Analysis

Joint Range Extension
Sensor Fusion Provided
Theater Wide Airspace
Situational Awareness

TES /Blue Force Tracking
Enemy Target
Location Support to
Maneuver Forces

PATRIOT
Conducted Engagement Data Analysis and
Provided Findings / Feedback to Warfighter
Deployed Personnel to Support 32nd Army
Air & Missile Defense Command

Homeland Security
Short-Range
Air Defense Protect
Critical Assets



Team Redstone

PEO ASMD

Core Capabilities

- PATRIOT, PAC-3
- MEADS
- Mobile Tactical High Energy Laser (MTHEL)
- Stinger
- Avenger
- Surface-Launched Medium-Range Air-to-Air Missile(SLAMRAAM)
- Sentinel
- Army Core Space Control System (ACSCS)
- Blue Force Tracking
- Tactical Exploitation System
- Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS)
- Joint Tactical Ground Station (JTAGS)
- Single Integrated Air Picture
- Joint Range Extension
- Theater Air and Missile Defense (TAMD)

Army
International Cooperation
Joint

Scope

- Cruise Missile Defense
- Theater Ballistic Missile Defense
- Space Control / Exploitation
- Total Programs Managed: 15
  - FY 04 Budget: $1.8B
  - FY 05-09 $8.4B
  - FMS Partners: 19 ($20.4B Total Case Value)
  - Number of Prime Contracts: 30 >$1M in 14 States
  - Operations Supported: Noble Eagle, Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF)

Team Redstone

PEO ASMD

System-of-Systems Integration is Critical to the Success of the Future Force

Team Redstone

RTTC Mission

RTTC Core Value - Our ultimate customer is the soldier, our sons and daughters, who will judge our efforts with their lives and their mission accomplishment. This is a sacred trust which will not be compromised.

Army Technical Tester for Tactical Rockets and Guided Missile Systems

Army Technical Tester for Missile and Aviation Components / Subsystems

RTTC is also the DOD Lightning Tester for Explosive / Hazardous Material

RTTC Assures Safety, Performance and Reliability for the Soldier

Team Redstone

Redstone Technical Test Center (RTTC)

WORKFORCE

Government	194
Contractor	381
TOTAL	575

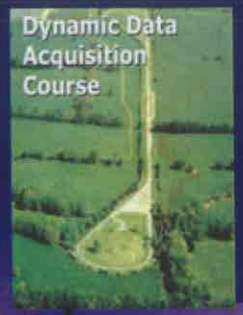
RESOURCES

Ranges	Over 14,000 acres
Buildings	265
Test Areas	8
Test Facilities	56
Airspace to 30K Ft. MSL	

Team Redstone

Key RTTC Test Areas, Ranges and Facilities

$400M Replacement Cost

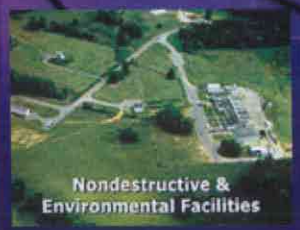


Defense Research & Engineering Network Connection For Distributed Tests

DoD Unique

DoD Unique

Army's Most Extensive



Army's Most Extensive

Team Redstone

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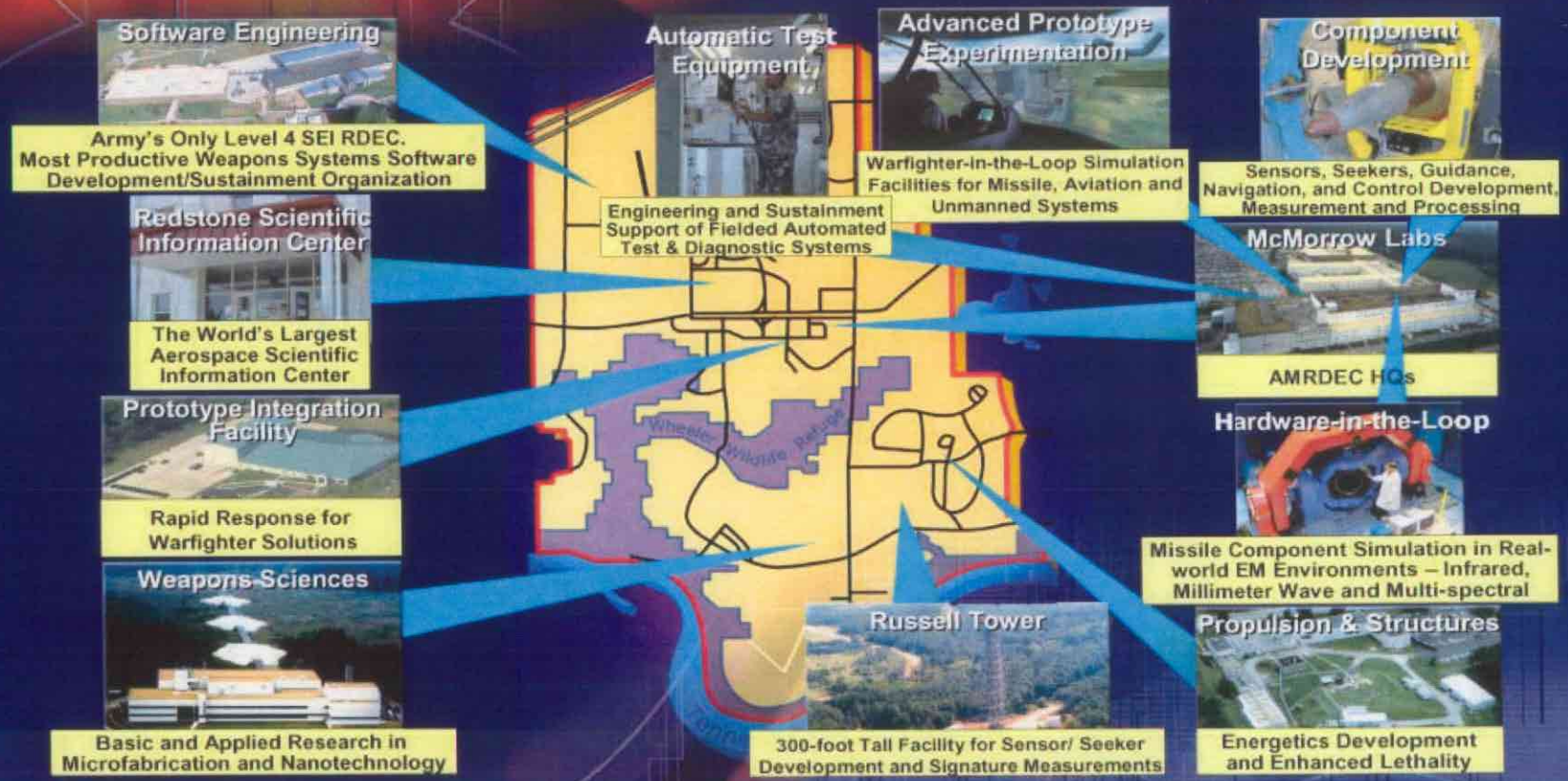
AMERDEC's Unique/Critical on RSA



Modern and Diverse Complex of Facilites Enables AMRDEC to Achieve Critical Performace and Affordability Joint Warfighter Goals

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Team Redstone

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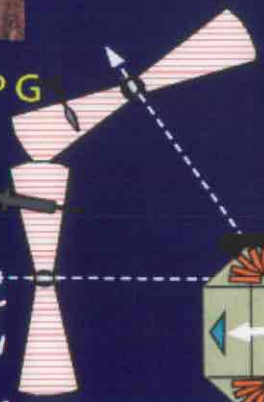
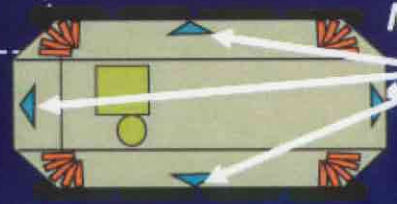
Close-In Active Protection System (CIAPS)
RPG/ATGM Defense for Stryker / LAV / HMMWV / Rotorcraft

Small Interceptor
- On-board sensors
- Aimable warhead
- Focused frag pattern

Sensor/Launcher Module
- Central mounting
- May use existing aircraft sensors

Defeated RPG Warhead





Multiple Staring Radar Sensors
- Unobstructed fields of view
- Ballistic protection

Side Attack Interceptor
- Destroy shaped charge warhead with no residual penetration
- Wide overlapping coverage gives maximum multi-shot capability

Engages near simultaneous threats.
Defeats RPGs fired from very close range.
Effective against ATGMs fired from longer ranges.

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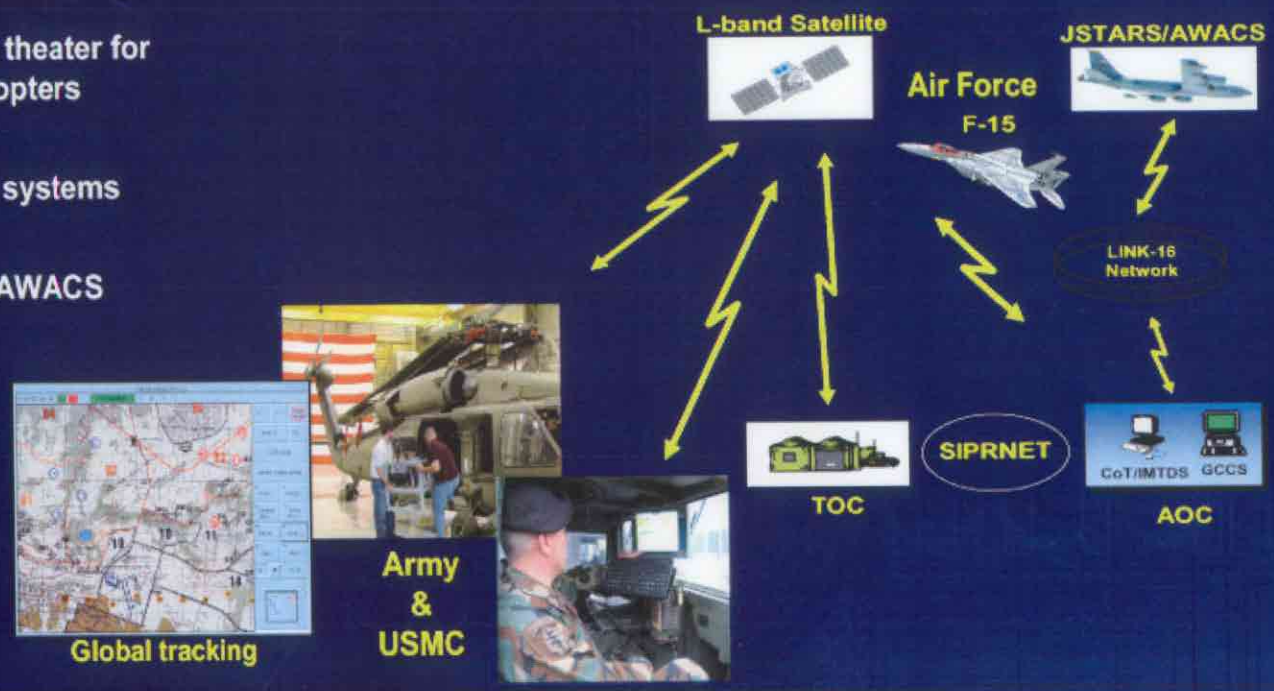
Team Redstone

Blue Force Tracking

"Weapon System Technology for Swift Decisive Victory Without Casualties"

- Army systems installed and fielded in theater for OIF, OEF, Bosnia & Kosovo on helicopters and ground platforms
- BFT Interoperable with USMC ground systems and USMC Aviation platforms
- BFT integration in Air Force JSTARS/AWACS and LINK-16 on-going



As fighting began on 20 March, Commanders at Camp Doha as well as senior leaders in the Pentagon, watched the forces maneuver in near real-time and could chore-ograph troop movements as never before.

" I was able to see where my friendly units were to my left, to my right, to my front, to my rear, and I was able to pass that information immediately down to my platoon ...*fratricide was basically eliminated.*"
-- CPT Stuart James after nighttime assault east of Karbala, near Iraq's Euphrates River

Team Redstone

Homeland Defense

AMRDEC Is Developing A Low Cost Radar To Cover The Continental United States For Homeland Defense

- **Leverage 2700+ Widely Distributed and Strategically Placed Commercial FM Stations**
- **Most Affordable Solution for Homeland Air Defense**
- **Can be Networked with Existing FAA Radars**
- **Contributes to Nation Wide Single Integrated Air Picture with Rapid Track Update Rates**

Passive Radar Has Almost No Impact On Civilian Infrastructure Or Environment

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Team Redstone

Aviation and Missile RD&E Center Summary

Developing Overwhelming Lethality and Decisive Survivability for the Battlefield

Predator / HELLFIRE Weaponization

Rapidly Transitioning Technology into Fielded Solutions!

Providing Critical Technical Support Throughout the Life Cycle

Synergistic Expertise that our Customers Can't Buy Anywere Else....

... World Class Aviation & Missile Systems Technology with a Proven Track Record....

... to Achieve Swift Decisive Victory without Casualties

Team Redstone

Missile and Space Intelligence Center

Providing High Quality, Responsive, Scientific and Technical Intelligence to Warfighters, Force Developers, Policy Makers and Homeland Security Efforts

Short Range Ballistic Missiles
Surface-to-Air Missiles
Anti-Tank Guided Missiles
Ballistic Missile Defense Systems
Directed Energy Weapons
Anti-Satellite Weapons
Associated Command, Control, Communications, and Computers

Team Redstone

Missile and Space Intelligence Center

- **Director**
  - **Technical Director**
  - **Defensive System Office**
  - **Offensive System Office**
  - **Integrated Intelligence Office**
  - **Analytical System Office**
  - **Program Management Office**

Team Redstone

Missile and Space Intelligence Center Capabilities

Core Capabilities

National-level combat support agency providing scientific intelligence analysis of foreign threat missiles and related systems.

Direct support for organizations on Redstone Arsenal, as well as sharing of laboratories and testing support infrastructure.

Provide Disaster Recovery, Continuity of Operations, and alternate command support to the national Defense Intelligence Community.

Scope

Analyze 400 threat systems
Provide Super Computer support to IntelComm S&T analysis.
Personnel: approximately 500
Economic impact: $80-100M

Provide Intel support to missile and aviation organizations; Shared laboratories/test facilities for Foreign Missile Exploitation programs.

Extensive communications and computing infrastructure.

Team Redstone

Missile and Space Intelligence

Providing High Quality, Responsive, Scientific and Technical Intelligence to Warfighters, Force Developers, Policy Makers, and Homeland Security Efforts.

Short Range Ballistic Missiles
Surface-to-Air Missiles
Anti-Tank Guided Missiles
Ballistic Missile Defense Systems
Directed Energy Weapons
Anti-Satellite Weapons
Associated Command, Control, Communications, and Computers

Team Redstone

Intelligence Support to the Redstone Community

Characteristics and Performance of Over 300 Foreign Weapons Systems
Assessments of Foreign Technologies
Direct Support to Army Weapons Development Programs

High Fidelity All-Source Validated Threat Assessments

Foreign System Expertise for Joint Test Programs

MSIC Customers

All Services
PEO Air, Space, & Missile Defense
PEO Aviation
PEO Tactical Missiles
Space & Missile Defense Command
Project Offices
Redstone Technical Test Center
AMRDEC
Targets Management Office

Team Redstone

RTTC Facilities and Capabilities

RTTC Has A Highly Experienced and Skilled Test Management Team to Support Customers in All Testing Throughout the Weapons Lifecycle

Test Ranges:
- Propulsion Test Facilities Solid, Hypergolic, and Liquid Rocket Motor Testing & Some Limited Turbine Engine Testing.
- Dynamic (Sled) and Static (Arena) Warhead Testing.
- Insensitive Munitions Testing.
- Aviation Hanger and Integration Capabilities
- Three Separate Ranges.
  - Tactical Missiles, Munitions and Rockets
    - R&D, Acceptance & Production, Sensor & Designator Testing.
  - Extensive Built in Infrastructure, State of the Art Advanced Instrumentation.

State of the Art Capabilities Include:
- Armys Most Extensive Propulsion and Insensitive Munitions Test Capability.
- Armys Most Extensively Instrumented Tactical Missile and Sensor Test Ranges.
- Temperate Test Ranges (Vs. Desert)
- Battle Field Obscurants: Smokes, Dust, Chaff, Fires.
- Range Spectral Characterization Captive Carry Capability.

Environmental Testing:
- Complete Suite of Environmental Test Capabilities:
  - Climatic, Dynamic and Electromagnetic Testing
    - Testing of Hazardous / Explosive Materials.
  - Full Range of Nondestructive Test (NDT) Services.
  - Live Missile Assembly / Disassembly

State of the Art Capabilities Include:
- An Army Lead Electromagnetic Environmental Test Capability
- Joint Army/Air Force Management of PRIMES Electromagnetic Effects Testing of Large Items.
- DoD Unique Lightning Test Capabilities for Hazardous and Explosive Items.
- Unique 6DOF Vibro Acoustic Test Capability

Team Redstone

RTTC Facilities and Capabilities

RTTC's Full Spectrum of Test Capabilities was Developed for Missiles and Aviation and is readily adaptable to other Commodity Areas

Laboratory Testing:

- Subsystem, Component and Sensor Laboratories:
  - Electrical, Electronic, Mechanical, Hydraulic, Pneumatic, Optical, Radar, Multispectral, and Electro-Optical.
  - IR Sensor & Seeker HWIL
  - Large Scale and Complex Shape Metrology Test Capabilities.
- Missile Acceptance and Lifecycle Test Facilities
- Stockpile Reliability.

State of the Art Capabilities Include:

- Unique Full Up Live Missile HWIL Facilities MMW (existing) and Multispectral (in progress).
- Over $20M Investment in World Class Electro-Optical Test Facilities.
- Army Unique Component and Subsystem Test Capabilities for Spare / Safety Parts.

Distributed / Mobile Testing:

- High Capacity Fiber Optic Infrastructure Links All RTTC Assets with AMRDEC and Other RSA Organizations.
- DREN Connection Connects RTTC and RSA with Outside Organizations.
- Distributed Test Control Center Focal Point for Distributed Testing.
- RTTC is a DoD High Performance Computer Distributed Site.
- Extensive Mobile Capabilities that Allow for Test Portability.

State of the Art Capabilities Include:

- Over $8M investment in High Performance Computing.
- Extensive Multi-Million Dollar Underground Fiber Optic Infrastructure.
- Demonstrated Leadership in Distributed Test Applications World-Wide Portability.

Team Redstone

RTTC Recent Rapid Test Response Efforts

Task Force Rocketeers

Stryker ATGM

Urgent Fielding

A2C2S
Urgent Fielding

Gladiator UGV
A2C2S on UH-60 Blackhawk

RTTC's Working Relationship and Proximity to Various Critical Partners Is Essential to Support the Test Elements of Rapid Test Response Efforts that Resolve Critical Safety, Performance and Reliability Issues for the Soldier
Critical Partners Include: AMRDEC
PEO Tactical Missile, PEO Aviation, MSIC and ATTC

Other Projects:
Grenadier BRAT (Urgent Fielding)
AH-64 IFR/IMC Kit
Engine Barrier Filter UH-60 Blackhawk
APU Barrier Filter
EGI Brownout Solution for UH-60 Blackhawk

Blue Force Tracker

Urgent Fielding

TOW Bunker Buster

Urgent Fielding

HELLFIRE on Predator

Kuwait -RESET

Team Redstone

RTTC is the Test Element of the Team Redstone
"Cradle to Grave" and "Rapid Response"

AMRDEC
-Propulsion & Structures
-Systems Simulation & Development
-Aviation Engineering
-Software Engineering
-Prototype Integration Facility
-Applied Sensors Guidance and Electronics
-Others

PEO
- Tactical Missiles
- Air & Missile Defense
- Aviation

Prototypes and Mods

Tactical Systems

Redstone Technical Test Center
Technical Excellence
United States Army
Developmental Test Command

Foreign Material

Spare Parts

MISSILE & SPACE INTELLIGENCE CENTER

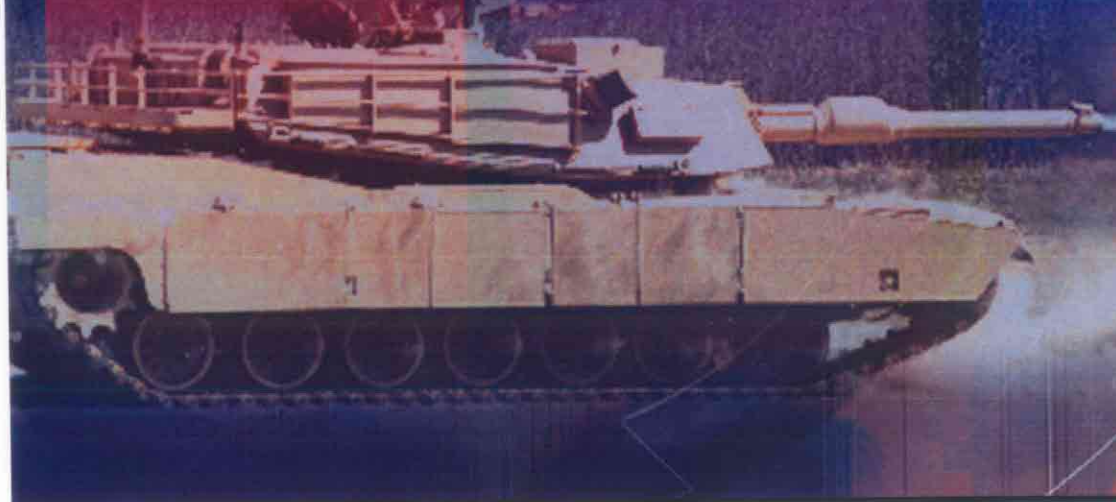
AVIATION & MISSILE COMMAND

Services/ Reports

Team Redstone

Ordnance Munitions and Electronics Maintenance School

The purpose of the Ordnance Corps is to support the development, production, acquisition and sustainment of weapons systems and munitions, and to provide Explosive Ordnance Disposal, during peace and war, to provide superior combat power to current and future forces of the United States Army.



Battlefield Functions

Maintenance
Ammunition
EOD

Team Redstone

Ordnance Munitions and Electronic Maintenance School
59th Ordnance Brigade

Student Input FY04 5,157

Redstone Arsenal Workforce

Military	599
Civilian	188
Contractor	13
Total	800

Workforce Other Locations

Military	87
Civilian	15
Contractor	15
Total	117

- Commander
  Deputy to the Commander
  - 73rd Ordnance Battalion (Fort Gordon)
  - Supporting Staff, Activities and Offices
  - Directorate of Training
    - Electronics Maintenance Training Department (Fort Gordon)
    - Explosive Ordnance Disposal (EOD) Training Department
      - Explosive Ordnance Disposal (EOD) Training Detachment (Eglin AFB)
      - Hazardous Devices Division - FBI
    - Munitions Training Department
    - Electronics Technology Training Department
      - Ordnance Training Detachment (Fort Sill)
      - PATRIOT Training Detachment (Fort Bliss)
    - Missile Systems Training Department
  - 832nd Ordnance Battalion
  - US Marine Training Detachment

Team Redstone

Ordnance Munitions and Electronics Maintenance School

Core Capabilities	Scope
Conduct technical training for soldiers, civilians and members of other services and nations in ordnance skills and functions and the Warrior Ethos.	Conduct - 17 total MOS producing Advanced Individual Training courses. 8 at Redstone Arsenal. Conduct 20 advanced and additional skill courses. Trained 2041 enlisted Soldiers at Redstone & 1904 at other sites for FY 03. Trained 160 officers at Redstone in FY 03. Trained 42 international students at Redstone & 56 at other sites in FY 03. Trained 178 other service students at Redstone & 806 at other sites in FY 03.
Develop Leaders through professional development and leadership courses for Warrant Officers and Noncommissioned Officers.	Conduct 13 NCO professional development courses at Redstone. Trained 1050 NCOs at Redstone in FY 03. Conduct 6 Warrant Officer Professional Development courses at Redstone and 2 at other installations. Trained 90 warrant officers at Redstone & 73 at other sites in FY 03.
Develop doctrine, training, leader development, organization, material and Soldier support solutions that enable us to provide effective and efficient maintenance, munitions and explosive ordnance support to the Army now and in the future.	Personnel Proponent for 2 Ordnance CMFs and 17 Ordnance MOSs. Develop MOS specific training material. Conduct MOS producing and Leader Development training. Training proponent for those same MOSs.

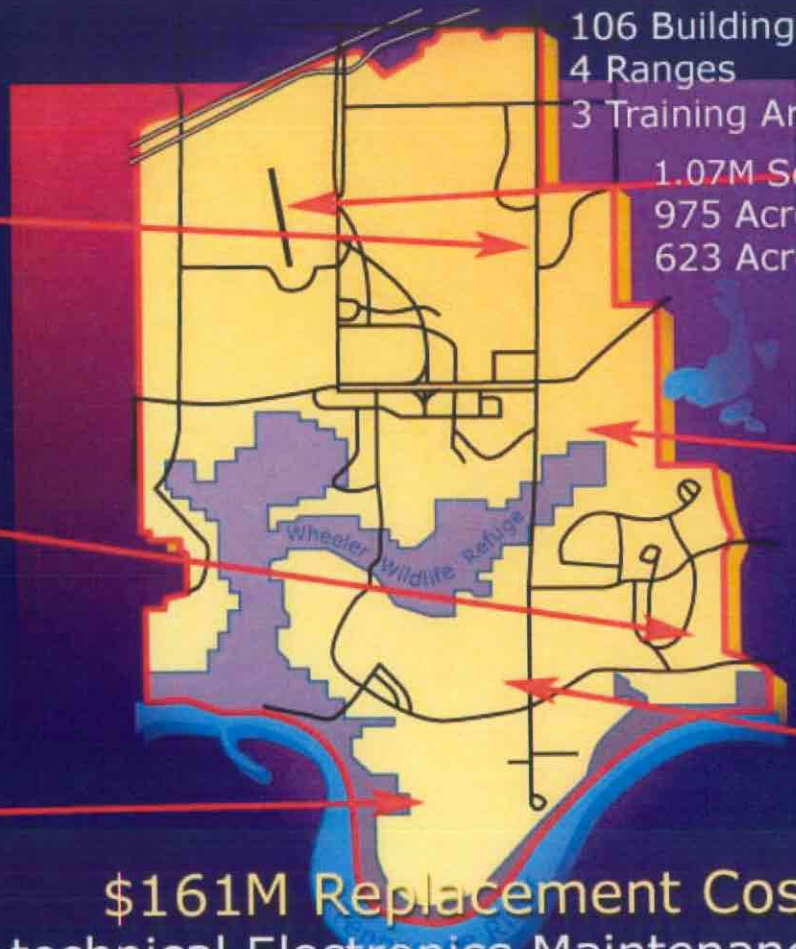
Team Redstone

Ordnance Munitions and Electronics Maintenance School

Training Ammunition
Supply Point
Army Munitions Handling
Training Areas

Corkern Range -
Munitions Handling and Storage

Corps Storage Area -
Munitions Storage Training Area



106 Buildings
4 Ranges
3 Training Areas

1.07M Sq Ft
975 Acres
623 Acres

OMEMS Campus
Instructional, Support

FBI Training Complex -
Hazardous Devices Training

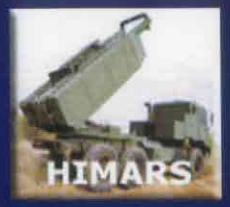
Army Explosive Ordnance
Disposal Training

$161M Replacement Cost

OMEMS performs technical Electronics Maintenance, Munitions Handling, and Explosive Ordnance Disposal Training for the Army

Team Redstone

Ordnance Munitions and Electronics Maintenance School



Apache Attack Helicopter Avionics Maintenance

all variations of:

- *Multiple Launch Rocket System (MLRS)*
- *High Mobility Artillery Rocket System (HIMARS)*

Dragon Missile System
Improved Bradley Acquisition System
Javelin
TOW Missile System
Avenger
Apache Attack Helicopter weapons systems

Army Tactical Missile Systems (ATACMS) Block I
ATACMS Block IA3 ATACMS Quick Reaction Unitary
ATACMS Block II/Brilliant Anti-Armor Technology (BAT)
ATACMS Penetrator
Guided Multiple Launch Rocket System (GMLRS)

GMLRS Unitary
High Mobility Artillery Rocket System (HIMARS)
Multiple Launch Rocket System (MLRS) M270
MLRS M270A1
MLRS Reduced Range Practice Rockets (RRPR)
MLRS Joint Technical Architecture (JTA)

Team Redstone

USAMC Logistics Support Activity

Workforce	
Civilian	303
Military	20
Contractors	200

Team Redstone

USAMC Logistics Support Activity

Core Capabilities	Scope
Logistics Support The Army and DoD champion for the integrity, integration and analysis of logistics data in support of major weapon systems and reportable equipment for maintenance; readiness; supply; transportation; equipment authorizations, asset and intransit visibility. LOGSA is the Program Manager for the Army Oil Analysis Program (AOAP); responsible agent for Packaging, Storage and Containerization Center (PSCC) to include handling of hazardous materials; operation of the Army's only Automatic Identification Technology Equipment Acquisition Lab, and assignment and management of critical codes in support of peace and war time operations.	Logistics Integrated Data Base Queries/Reports: 140,302 AOAP: 1,091,364 Samples PSCC: 231 Major projects Transportation Management: Cost Avoidance: $208,378,556 Assigned Codes: 33,307
Acquisition Support Provide acquisition and supportability analysis support to materiel developers, program managers and the fielded support units. Develop, test, train, field, and support software for developing and fielding supportable systems and to ensure application of Integrated Logistics Support (ILS), program planning and execution. Prepare and maintain DoD and Army policy, procedures, guidance, specifications, and standards for ILS, Logistics Management Information (LMI), Level of Repair Analysis (LORA), Provisioning, and technical publications.	Logistics Engineering Software Products: 5000 Registered Users Electronic Tech Manuals: 11,500 conversions DoD/DA Acquisition policy & standards: Numerous leading policies, regulations and pamphlets.

Team Redstone

Critical Local Expertise

Plus Technically Skilled Non-Defense Industry
Intergraph, Toyota, Daimler-Chrysler, PPG Ind., SCI-Sanmina, ADTRAN
11,000 Local Employees

Original Equipment Manufacturers
Lockheed Martin • Karibou • Honeywell • Raytheon • Sikorsky • Boeing • Bell Helicopter • GE • Parker Hannifin

Technical Advisory
LESCO • AEPCO • TBE • S3 • CSC • CAS • SAIC • BAE • Sigmatech • Westar • Morgan Research

Plus over 100 subcontractors locally 10,000 Local Employees

Base Ops / IT
Chugash (Alaskan Native) • Sverdrup

FY03 Over $400M in Both Categories

Small Business and Local Higher Education
Hub Zones • Veteran Owned • 8a's • WOSB5 • UAH • Alabama A&M

Team Redstone

The Redstone Advantage: Synergy

syn·er·gy, *noun*, "the interaction of two or more agents or forces so that their combined effect is greater than the sum of their individual effects"

Team Redstone

Team Redstone Synergy Aircraft Survivability Equipment (ASE)

Problem Identification

Operation Iraqi Freedom

Threat Assessment

Missile & Space Intelligence Center (MSIC)

ASE Status

PM Aviation Electronic Systems (AES)

Platform Status

PEO Aviation (AVN)

Development of Alternatives

- PEO Aviation
- PM AES
- AMCOM
- AMRDEC

Implementation

- AMCOM
- PEO Aviation
- PM AES

Team Redstone

Safety of the Aviation Fleet

Team Redstone

Prototype Integration Facility (PIF)

SYNERGY: The result of many outstanding organizations located in Huntsvlille pulling together, thereby significantly reducing acquisition lead time and ensuring that the warfighter gets the absolute best technical solution at the best price and at the highest quality

DARPA

RTTC

Army Depots

NASA MSFC

AMRDEC

ATTC

Other Governmental

Industry

Academia

Team Redstone and the Huntsville Industry Team have repeatedly demonstrated that technology concepts could be rapidly transitioned into fielded solutions in DAYS, WEEKS, or MONTHS rather than YEARS.

Team Redstone

Prototype Integration Facility (PIF)

PIF PRIME CONTRACTOR:

JVYS: A Joint Venture of Yulista Management Services, Inc and Science & Engineering Services, Inc.

An Alaskan Native and Small Disadvantaged Business Partnership

$1.1B / 10 Year Contract

SYNERGY: *Other Major Contributors to the PIF Team include Bell, Raytheon, Sikorsky, Boeing, Northrup Grumman, Honeywell, General Electric, Enabling Technologies, other local small businesses, Army Depots, and area colleges and universities*

Making the PIF a reality: Local military leaders meet with Alabama SEN Jeff Sessions (second from left)and the JVYS

"We offer our customers a 'One-Stop Shopping' and 'Turn-Key' environment."

Team Redstone

Prototype Integration Facility (PIF)

Reducing Technology Transition Timelines!

The PIF enhances Team Redstone Smart Buyer-Plus capability through inclusive collaboration within the materiel acquisition community

AMRDECs PIF provides high-quality product solutions rapidly through the use of agile development and rapid acquisition, engineering, development, prototyping, fabrication, integration and fielding of capabilities (Warfighting, Homeland Defense, and OGAs).

AMRDECs PIF integrates ongoing Army S&T with industry expertise to provide our soldiers the technology for "***Swift Decisive Victory.***"

Innovatively improving our process of transitioning technology to Soldiers.... from YEARS.... to MONTHS, WEEKS, OR DAYS!

Team Redstone

Prototype Intergration Facility

Repeatedly Transitioning Technology into Fielded Solutions Rapidly

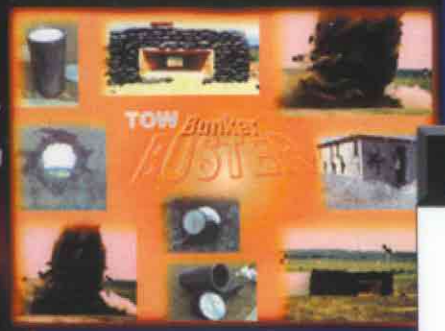
Blue Force Tracking (BFT)

12 Weeks

Hellfire MOD-K

28 Days

TOW Bunker Buster



6 Months

Battle Damage Assesment / Repair

30 Days

Vibration Mgt Enhancement Program

8 Weeks

AH-64 with IMC/IFR

6 Months

Providing Solutions in Days, Weeks or Months - not Years

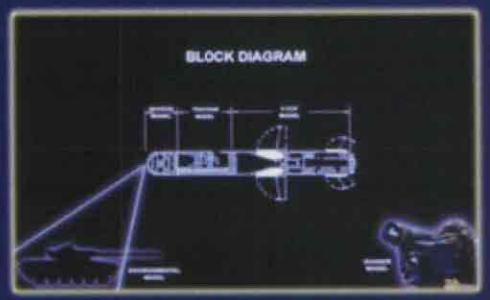
Team Redstone

Javelin

Javelin Technology Preservation

* During the middle of a new tracker design in FY99, the prime contractor for Javelin closed down its Lewisville, TX facility and relocated to Tucson, AZ.
* The Javelin Project Office, faced with schedule risks, a loss of technology and a software nightmare, turned to Team Redstone for assistance.

Preflight Analysis



Software Design & Simulation Analysis

HWIL Testing

Lethality

Post Flight Results

Team Redstone Accomplishments:

* Preserved the technology and process by developing an "unmatched" software and simulation center of excellence.
* Established Javelin as the leader in software based missile systems and simulation based acquisition.
* Transitioned the software process in Huntsville to the prime contractor in Tucson
* Established a high-speed fiber-optic network connecting Team Redstone to the SDREN and several HPCs.

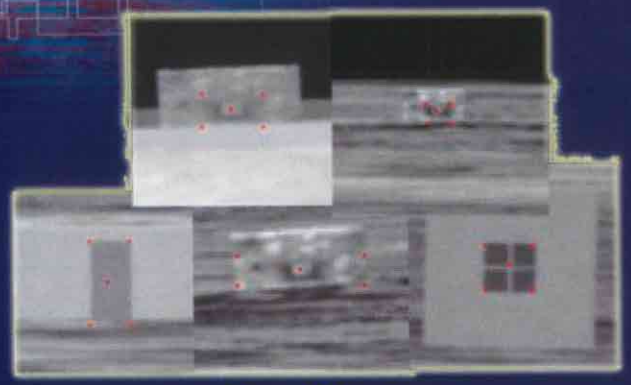
Provided the foundation for success for future software-based missile systems.

Team Redstone

Javelin

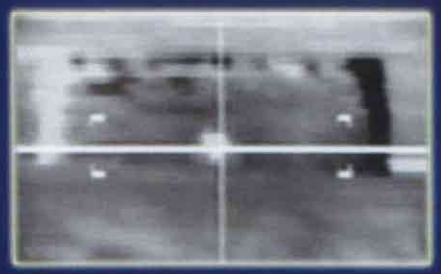
Javelin Training

* Javelin gunners had not received training using the system against targets other than wheeled, tracked, or other heavy armor targets.
* The system prime contractor had not conducted studies nor provided data to support recommendations.



Target Selection

Hands-On Training the Day Before the Test



Post Flight Review and Analysis

Team Redstone Accomplishments:

* System analysis procduced usage recommendations, explanation and examples to the gunners and Javelin Project Office.
* Provided the gunner with hands on system usage, instruction and practice.
* Javelin live-fire tests against MOUT targets were an overwhelming success.
* The concept-to-testing process was accomplished in just two weeks.

Provided crucial battlefield simulation training to support our soldiers in the field.

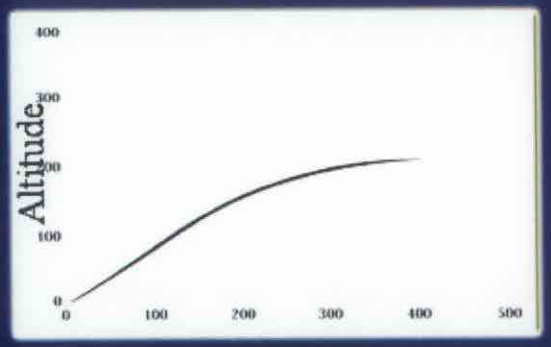
Team Redstone

Javelin [redacted]

Capability Analysis & Demonstration

Questions about Javelin's capability against targets that are elevated or downhill from the gunner were identified to support possible engagement scenarios during Operation Enduring Freedom (OEF).

Scenario development, Analysis, and Prediction



Test Support and Analysis

Live Test Fire, Results and Validation

Team Redstone Accomplishments:

* System analysis showed that Javelin could perform well under the conditions specified.
* Javelin live-fire tests against uphill and downhill targets were a success.
* The concept was accomplished in just a few weeks.

Successful live-fire tests provided evidence and data necessary for the Javelin Project Office to make deployment decisions rapidly.

Team Redstone

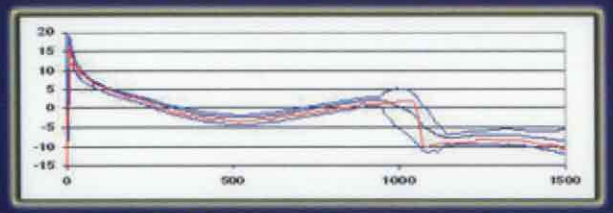
Javelin

Multi-Government Coordination

The Javelin Project Office needed an impressive analysis capability demonstration for several Foreign Military Sales (FMS) customers worldwide.

Target and Background Signature Development

Scenario Development and Simulation



Performance Assessment

Lethality Analysis

HWIL Facility

Team Redstone Accomplishments:

* FMS customers tour HWIL facility/environment testing capability/Javelin training capability/live-fire testing in one day.
* Customers partcipated in preflight simulation runs, witnessed the test, and participated in the data analysis that supported the simulation validation.
* The Javelin Project Office and its customers were able to exchange information in real time ensuring the credibility of Javelin's simulation and analysis capability.

All customers have walked away assured of the Javelin Software Based Acquisition (SBA) approach.

Team Redstone

Aviation Desert Kits

Desert Kit Purpose

Mitigate Harsh Effects of Extended Desert Operations

Problem Identification

- Field (OIF)
- PEO AVN
- AMCOM IMMC
- RDECOM AMRDEC

Identification of Alternatives

- PEO AVN
- RDECOM AMRDEC
- AMCOM PM AVN Reset

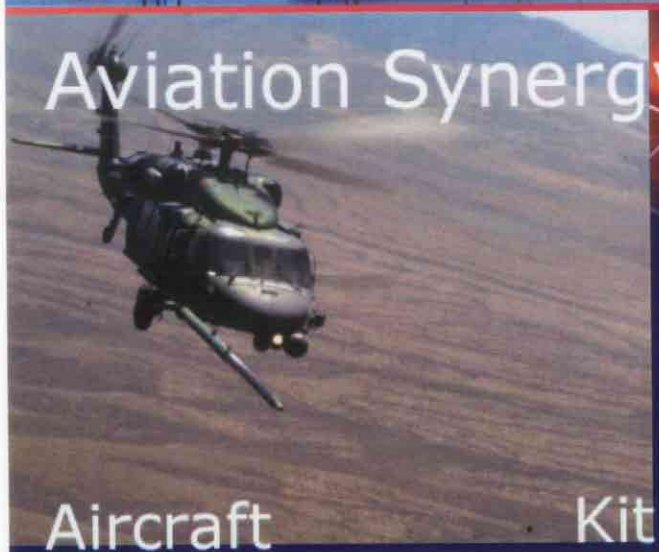
Program Execution

- PEO AVN
- AMCOM
  - -IMMC
  - -Acq Center
  - -PM AVN Reset

Draft Deliberative Document—For Discussion Purposes Only – Do Not Release Under FOIA

Team Redstone

Aviation Synergy - Desert Kit



Aircraft	Kit	Purpose
OH-58	Main Engine Barrier Filter	Protect Engines from Sand Erosion
	APU Barrier Filters	Protect the APU from Sand Dam
	Blade Tape Kits	
AH-64	Pitch Change Links	
CH-47	Ballistic Protection System	

Team Redstone

Redstone Arsenal Installation Familiarization Briefing

Aerial Photo of Redstone Arsenal

Team Redstone

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Draft Deliberative Document—For Discussion Purposes Only – Do Not Release Under FOIA

Team Redstone

Redstone Arsenal, AL

Team Redstone

Agenda

History
Demographics
How We Provide Capability to the Joint Warfighter
National Guard/Reserve Regional Support
Quality of Life (QOL)
Force Protection
Homeland Defense
Infrastructure & Land Usage
Summary

Team Redstone

History of Redstone Arsenal

Draft Deliberative Document—For Discussion Purposes Only – Do Not Release Under FOIA

Video: RSA History

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Team Redstone

Demographics

Nashville
109 miles

- **1,944 Active Duty Military & 4,735 Family Members**
- **5 US General Officers**
- **1 French General Officer (NATO)**
- **40 Senior Executive Service (SES)**
- 59,960 Retired Military & 90,000 Family Members
- 13,938 Civil Service
- 12,211 Contractors
- 55,303 North Alabama & South Tennessee Civil Service Retirees
- Almost 20,000 supported Army, Navy & AF Reserve, National Guard, Marines and other regional units

Birmingham
90 miles

Atlanta
193 miles

Team Redstone

Demographics -- Current Financial Data

	Army	NASA
Payroll	$1.2B	$0.2B
Procurement	$11.3B	$2.2B
Total Budget	$18.6B	$2.4B

Contracts	Army	NASA
Alabama	$1.9B	$0.9B
Local	$1.9B	N/A

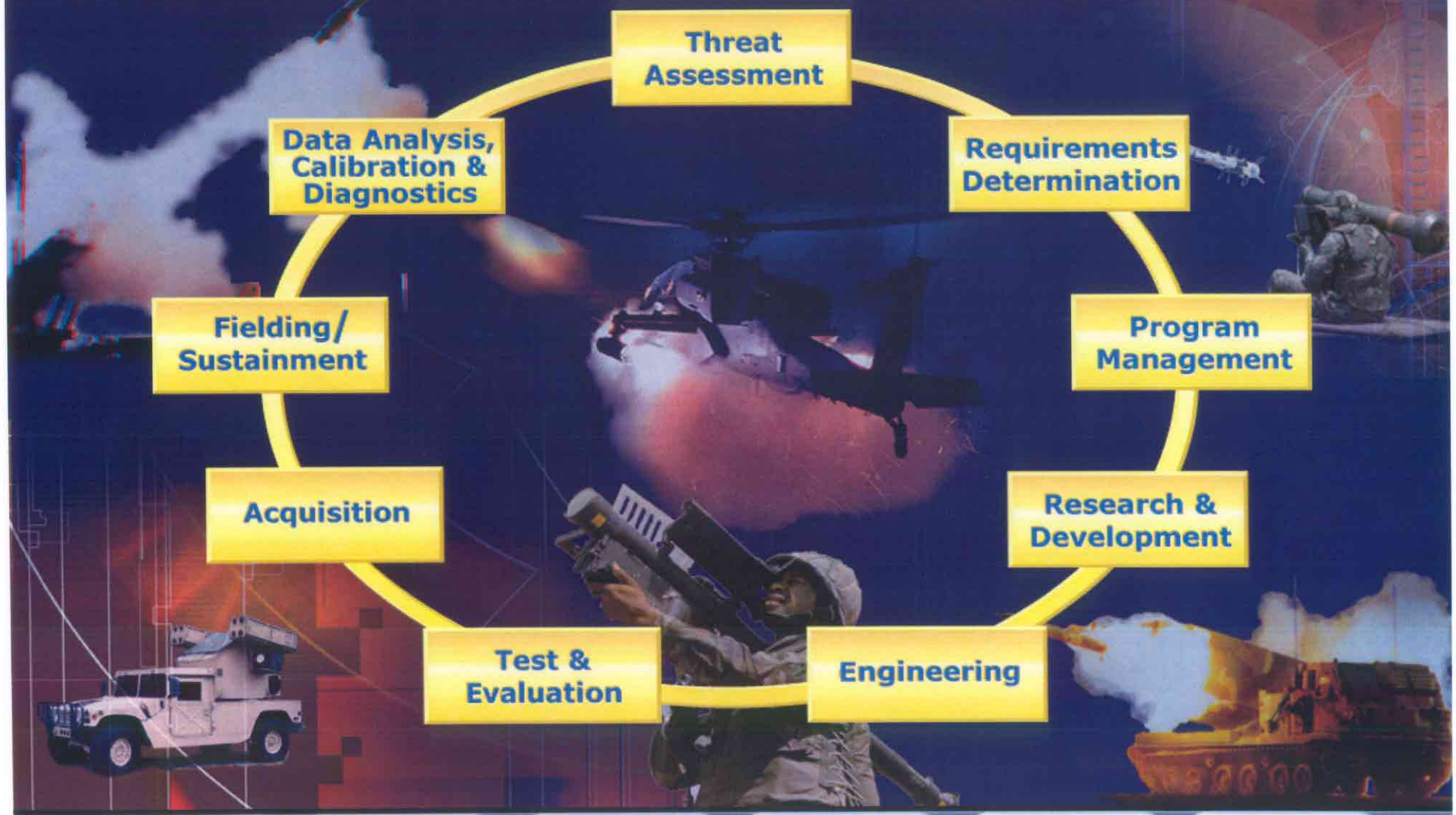
Comparison to

State Private Industry
(Payroll)

Mercedes	$101M
Honda	$64M
Boeing	$174M
Total	$339M

Team Redstone

How We Provide Capability to the Joint Warfighter



Team Redstone

Cummings Research Park (CRP) Mission

To provide a home and facility support for one of the leading science and technology parks in the world. Beginning as a visionary public-private partnership, CRP has been firmly established for over 38 years, and is now the second largest research park in the U.S. and the fourth largest in the world

Key Facilities

- 3800 acres adjacent to Redstone
- 150 Bldgs - 8.3M Sq Ft
- **2nd largest Research Park in US**
- Alabama Supercomputer Center

Top 10 Regional Small Business Innovative Research (SBIR) awards. Based upon 1983-1997 total of 664 SBIR grant awards $118.5M

Army/Cummings Park Research Synergy

- RDT&E for:
  - SMDC
  - MDA/GMD
  - MSIC
  - Three Program Executive Offices
- Numerous Fortune 500 companies
  - Lockheed - local & national
  - Boeing
  - Northrop-Grumman
- Huntsville Office - Nat'l Weather Svc
- **2nd highest concentration of hi-tech workers in the US**

$1.5B Replacement Cost

Team Redstone

Marshall Space Flight Center (NASA)

Key Facilities

- 1841 Acres
- 166 Buildings
- 66 Structures

}4.1M Sq Ft

- Protective Services Training Facility
  3600 Sq Ft - 3 classrooms - 3 offices
- NASA Antenna Facility
  (Army and Air Force use)
- Electro-magnetic interference Facility
- Army/NASA Virtual Innovations Lab
- Moon/Mars Program Test Stands
- Joint Visualization Facility

NASA Mission

To enable, through our values-based culture, the unbounded access to and use of space to benefit humanity

Army/NASA Synergy

$0.7B Replacement Cost

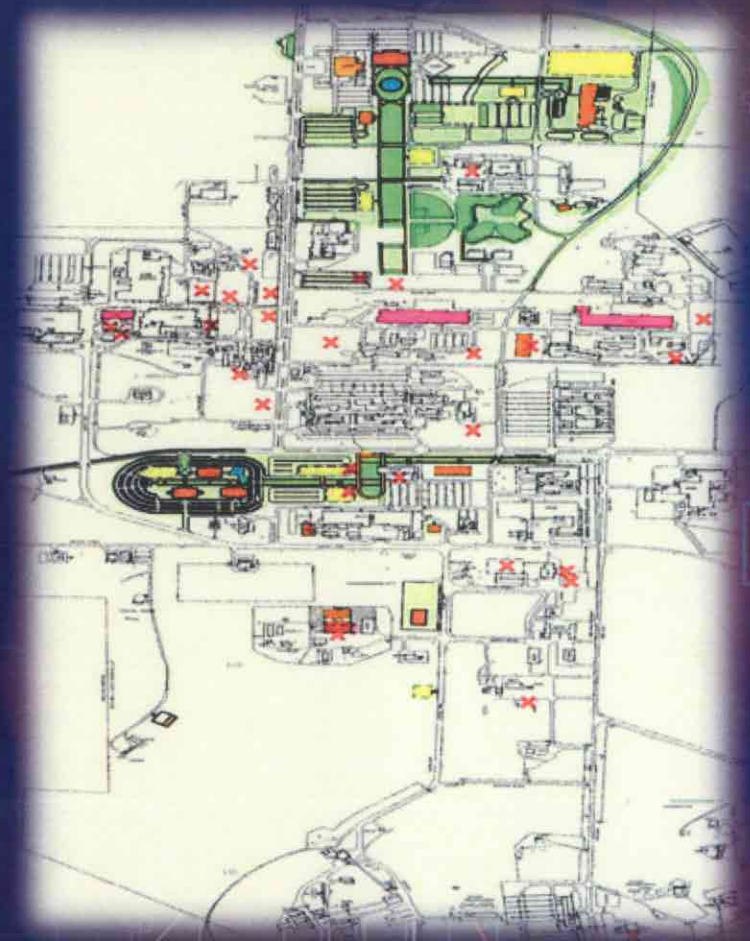
- NASA conducts $0.5BM Basic Research and Development
- Army/DOD benefits include:
  - Propulsion Research
  - Joint Visualization Benefits (Video Image Stabilization & Registration used at '96 Olympics)
  - Electro-Magnetic Interference Research
- Army provides security, basic base ops and QOL Services
- NASA & AMRDEC collocating Aero Flight Test Dynamics research at NASA Ames Research Center, Moffett Field, CA

Team Redstone

Marshall Space Flight Center 2022

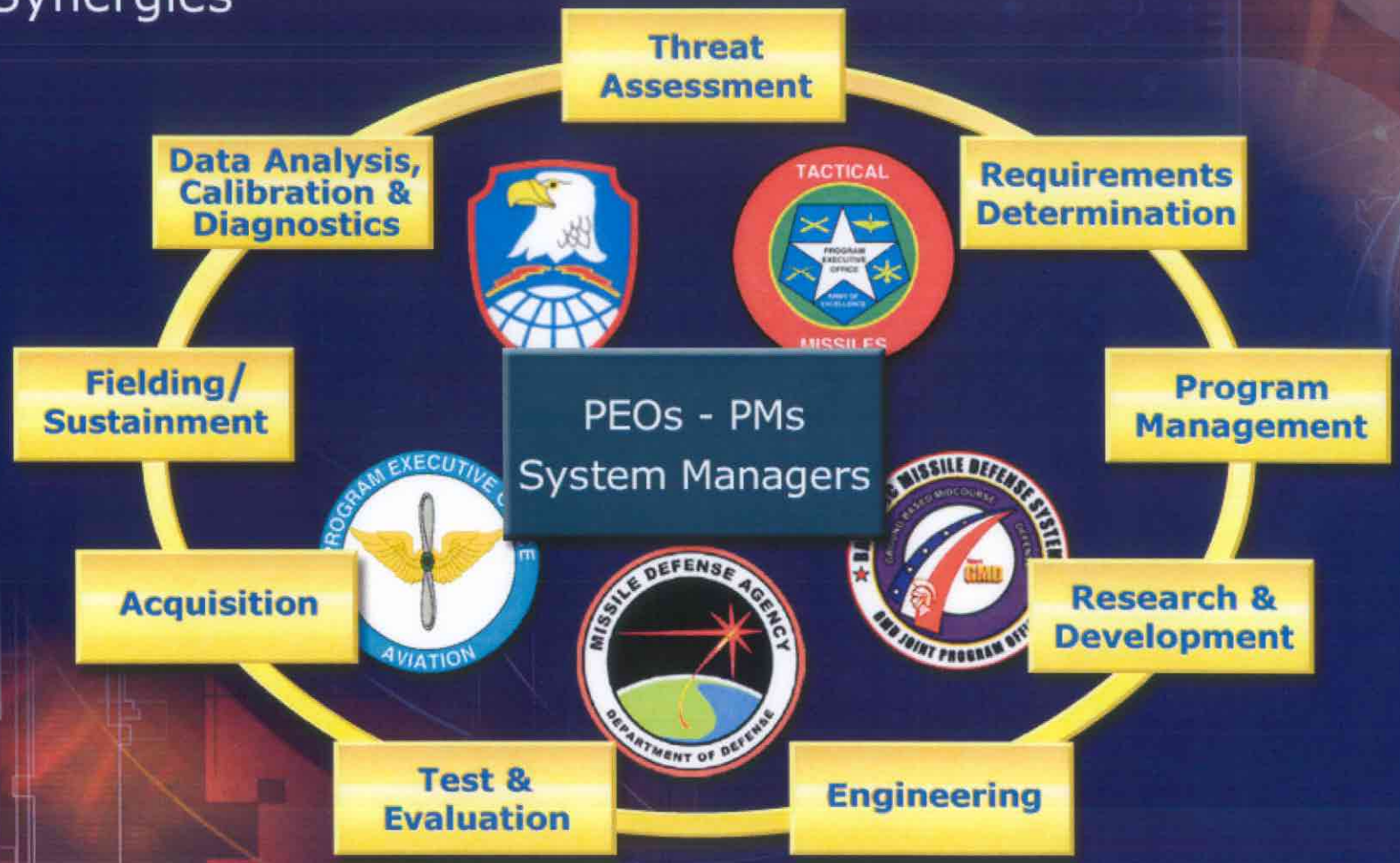
New Propulsion Research Lab

New Engineering Facility



Team Redstone

Key Synergies



Our Partners are collocated with the Science & Technology communities, the Intelligence & Threat Assessment Labs, Test & Engineering expertise, and the Sustainers.

Team Redstone

Defense Intelligence Agency - Missile and Space Intelligence Center (MSIC)

Mission:

Providing High Quality, Responsive, Scientific and Technical Intelligence to Warfighters, Force Developers, Policy Makers, and Homeland Security Efforts

$50M Replacement Cost

Key Facilities

- Shelby Center-1999-208k sq. ft. - $31M
  - High-Performance Computing with Cray super computer and 1800 Hi-Performance Processors in complex cluster for modeling & simulation of threat systems
- Foreign Materiel Exploitation Laboratories
  - 6 Lab Bldgs - 60K Sq Ft
  - 12 Explosive Storage Bunkers
- Crisis Operations Center

Army/MSIC Synergy

- Threat Assessment using Shared Laboratories, Test Facilities and Engineering Expertise for Threat Analysis
- Collocated with the Science & Technology communities, the Intelligence & Threat Assessment Labs, Test & Engineering expertise and the Sustainers
- Largest S&T Intel Lab in DOD
- Collaborative Agreements for Research
- Services provided to DOD, DA, PEO's PM's and other Federal, State, and International agencies
- Army provides security, basic base ops, and QOL services

Team Redstone

Missile Defense Agency (MDA) and the Ground Based Midcourse Defense Joint Program Office (GMD)

Mission:

To develop and field an integrated Ballistic Missile Defense System capable of providing a layered defense for the United States and its deployed forces, friends and allies against ballistic missiles of all ranges in flight. MDA is responsible for research, development, testing and evaluation

Key Facilities

- Bldg 4505 Command & Control 48K Sq Ft - $7.2M
- Bldg 7575 Ground-Based Interceptor Assembly, Test & Checkout - 5.9K Sq Ft - $1.9M
- Bldg 7649 Test & Evaluation Data Analysis Center & Reporting Lab - 28K - $4.3M
- Bldg 7558 - 7.6K Sq Ft - $2.5M

Key Synergy

- Collocated with the Science & Technology communities, the Intelligence & Threat Assessment Labs, Test & Engineering expertise, and the Sustainers
- Requirements determination, R&D, Production and Program Management for Ground Based Interceptor
- Systems provided to DOD (all services) and Allies
- Army provides security, basic base ops and QOL services

Team Redstone

MDA/GMD Tennessee Valley Activities

System Test and Evaluation Planning and Analysis Lab
COLSA ARC

GMD Test Evaluation & Reporting Lab
COLSA

GMD JPO
Bradford Center

MDA Data Distribution Center (MDDC)
CAS, Inc.

Test & Evaluation Data Analysis Center
COLSA ARC/Bradford Center/Redstone Arsenal

GMD System Trainer (GST) Software & Hardware Development & Manufacture
Northrop-Grumman

GMD JPO
BLDG 4505

GMD Fire Control (GFC) Software & Hardware Development & Manufacture
Northrop-Grumman

Corps of Engineers, Huntsville Center

GBI Assembly Test & Checkout (ATC)

Space & Missile Defense Command (SMDC)

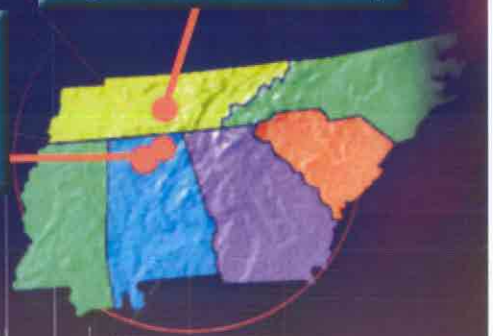
AMCOM REDEC Engineering Directorate

Tullahoma, TN
GBI 10V Chamber Light Gas Gun Facility

Boeing Jetplex Huntsville

- GMD JPO Combined Test Force (CTF)
- GBI Assembly Test & Checkout (ATC)
- GBI Interceptor Integration Facility (IIF)
- GBI Development & Integration Lab (GDIL)
- Prime Consolidated Integration Lab (PCIL)
- Central Software Repository (CSR)
- Embedded Test (ET) Software and Hardware Development and Manufacture

Courtland, Alabama
Booster Stack & Booster Avionics Facility
Lockheed Martin



2,830 Jobs
$627.1M Annual Salaries

Team Redstone

Space and Missile Defense Command (SMDC)

Mission:

ASCC to USSTRATCOM conducts space ops & provides planning, integration, control & coordination of Army forces & capabilities.
Proponent for space & ground based midcourse defense
Army operational integrator for global missile defense.
Conduct mission related RD&A in support of Title 10 responsibilities·
Focal point for desired characteristics & capabilites in support of STRATCOM mission.

Key Facilities

- Bldg 5220 (Von Braun Complex)
  Command & Control - 220k Sq Ft - $39M
- Wynn Drive in HSV
- Cummings Research Park

Key Synergy

- Collocated with the Science & Technology communities, the Intelligence & Threat Assessment Labs, Test & Engineering expertise, and the Sustainers.
- Technical support for :
  - PATRIOT
  - Zeus/HUMVEE with Laser
  - MTHEL
  - AVENGER
  - SLAMRAAM
  - JLENS
  - Blue Force Tracking
  - NATO MEADSMA - only NATO flag outside Europe
- Customers include all DOD services and Allies
- Army provides a Common Level of Support

Team Redstone

PEO Tactical Missiles

Key Facilities

- Building 5250
- ATACMS Brilliant Anti-Armor Submunition (BAT) Production Facility
  7 Bldgs total 98,000 sq. ft.
- Javelin All-Up-Round Facility
- Contractor Bldgs in CRP
- Warehouse near Huntsville Airport
- Brimstone Facility

Mission:

To provide the American soldier with the finest, combat effective, and supportable tactical missile systems in the world in a timely and cost effective manner, while supporting the Army's Transformation

Key Synergy

- Collocated with the Science & Technology communities, the Intelligence & Threat Assessment Labs, Test & Engineering expertise, and the Sustainers

Program Management for:

- MLRS
- HIMARS
- Hydra 70
- ATACMS
- Longbow Hellfire
- Improved Bradley Acquisition Subsystem (IBAS)
- Javelin
- Improved Target Acquisition System (ITAS)

- Customers include all DOD and Allies
- Army provides a Common Level of Support

Team Redstone

PEO Aviation

BRAC 95 created Central Missile & Aviation IMMC

Key Facilities

- Building 5681
- Building 5678
- Logistics Support Facility (LSF)
  5 Bldgs - 160K Sq Ft
  Contractor Integration facility collocated with AMRDEC and PEO's

PEO Aviation Mission:

Provide the Army with technologically superior and affordable Systems that are:
Capable
- Safe
- Survivable
- Sustainable

Key Synergy

- Collocated with the Science & Technology communities, the Intelligence & Threat Assessment Labs, Test & Engineering expertise, and the Sustainers
- Manage 4 of 16 Key Combat Systems including:
  - Apache
  - Kiowa Warrior
  - Chinook
  - Black Hawk
  - Hunter Unmanned Aerial Vehicle
  - Plus Comanche and Aviation systems
- Customers include all DOD and Allies
- Army provides a Common Level of Support

Team Redstone

PEO Air, Space and Missile Defense

Key Facilities

- 215 Wynn Drive, Huntsville
- Contractor Buildings
- Data Analysis Center in Huntsville

PEO ASMD Mission

Develop, integrate, acquire, field and sustain systems to enable the Army to dominate, control and exploit aerospace in a joint environment

Key Synergy

- Collocated with the Science & Technology communities, the Intelligence & Threat Assessment Labs, Test & Engineering expertise, and the Sustainer
  - PATRIOT
  - Zeus (HUMVEE with Laser)
  - MTHEL
  - System Support Team - Warfighter Communications Satellite Operations
  - AVENGER
  - SLAMRAM
  - JLENS & others

Team Redstone

Aviation and Missile Command (AMCOM)

Key Facilities

- Sparkman Complex
  - 1.016 M Sq Ft - $110M
  - Integrated Materiel Management Center
  - Acquisition Center
- Primary Standards Lab for Army - Building 5435 - 76K Sq Ft - $15.2M
- Radiation Standard & Dosimetry Labs - Bldg 5417 - 28K Sq Ft. - 6.4M
- Security Assistance Complex - 3 Bldgs - 75K Sq Ft - $11.2M

AMCOM Mission

Provide sustainment support to Joint Warfighters and Allies, ensuring aviation and missile system readiness with seamless transition to combat operations; support PEOs/PMs to enable the development, acquisition, and fielding of superior aviation and missile systems; and ensure the integration of aviation and missile technology for sustainment

Key Synergy

- Acquisition, Sustainment, Data Analysis & TMDE for:
  - APACHE
  - Blackhawk
  - Chinook
  - Kiowa Warrior
  - PATRIOT
  - MLRS
- Supports MDA/GMD, PEOs, PMs, Field Units, all services and Allies
- Army provides Common Level of Support

Soldier Focused Logistics moves PEO Aviation to Sparkman Center

Team Redstone

Aviation and Missile, Research, Development and Engineering Center

AMRDEC Mission:

To plan, manage and conduct research, exploratory and advanced development, and provide one-stop life cycle engineering, technical, and scientific support for aviation and missile weapon systems and their support systems, UAV platforms, robotic ground vehicles, and all other assigned systems, programs and projects

BRAC 95 created Central Aviation & Missile RDEC

Key Facilities

- McMorrow Labs - 718K Sq Ft
- Software Eng Complex - 284K Sq Ft
  - Army's Only Level 4 SEI Lab
  - Annex added in '00 - 182K Sq Ft - $27M
- Prototype Integration Facility
  - 59K Sq Ft - Mar 02
- Russell Tower - 329 Ft
- Weapon Sciences Lab Bldg 7804 - 93K Sq Ft
- Propulsion & Structures Complex
- Redstone Scientific Information Center, Largest Science Lab in the Army

Key Synergy

- R&D -Broad Scope for all Services
- Engineering other systems managed-RSA
  - Rocket Motor R&D
  - Propellant Development & Demilitarization
  - Develop Critical RF Sensors (Russell Tower)
  - Electromagnetic effects: Missile Components

Team Redstone

AMRDEC's Unique/Critical Facilities

AMRDEC Provides Transformational Systems to Today's Warfighter and is Developing Transformational Technologies and Systems for Tomorrow's Warfighter

Team Redstone

Redstone Technical Test Center (RTTC)

Key Facilities

- Over 14,000 acres or 1/3 of the land area of Redstone Arsenal for Test Areas which includes some of the Army's most instrumented Test Ranges
- Over 825,000 square feet of building space
- Only DOD Lightning Test Capability
- Over 265 buildings
- Climate Test Facility - 27K Sq Ft

RTTC Mission:

Primary service is to provide advanced testing of weapons systems for the Department of Defense (DoD), its contractors and friendly governments.

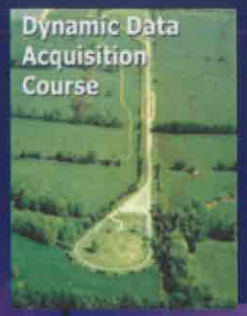
Key Synergy

- Test & Evaluation for systems developed & managed on RSA
- Major engineering partner with all R&D elements including NASA
- DOD Standards for Concrete Walls
- Propulsion
- Flight Test
- Non-destructive Testing/Inspection
- Provide support for GMD, THAAD, ARROW, SMDC, PEO, TM, PEO Soldier, PEO Aviation, AMCOM, other Services and Allies
- Army provides Common Level of Support

Team Redstone

Key RTTC Test Areas, Ranges and Facilities

$400M Replacement Cost

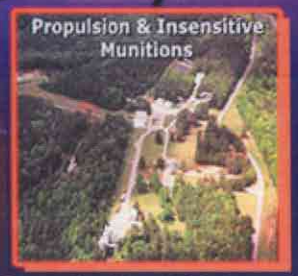


Defense Research & Engineering Network Connection For Distributed Tests

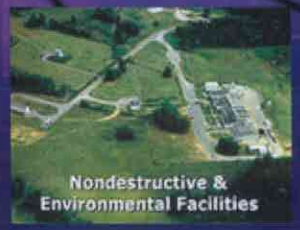
Redstone Airfield

DoD Unique

DoD Unique



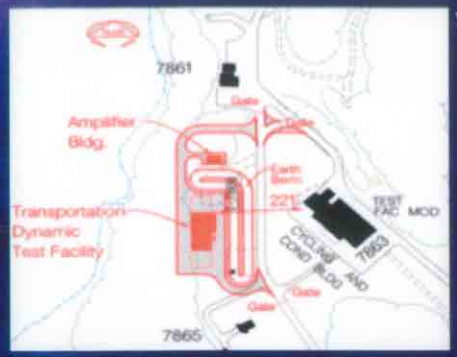
Army's Most Extensive



Army's Most Extensive

Team Redstone

RTTC Construction Projects



Vibration Dynamic Test Facility

- Facility used to conduct vibration, shock, and rough handling tests on large items and items containing Class 1.1 explosives
- Total Area - 6,650 Sq. Ft. (primary facility)
  864 Sq. Ft. (power amplifier building)
- Programmed amount is $5.4M
- In the FY04 FYDP

Combined Environments Simulation Facility

- Facility to climatically test helicopters, launchers, and entire systems with multiple vehicles/launcher
- Total area - 15,580 Sq. Ft.
- Programmed amount is $17.5M
- In the FY08 FYDP

Military System Test & Integration Facility

- Project will construct a 140,362 Sq. Ft. Aviation Test and Integration Support Facility at a cost of $36M
- Required to augment the current capability offered by Redstone Technical Test Center's (RTTC) Bldg 4832
- In the FY08 FYDP

Team Redstone

59th Ordnance Brigade & Ordnance Munitions and Electronics Maintenance School (OMEMS)

Mission:

Train disciplined, confident, motivated, fit, values based, tactically and technically proficient, combat-ready Soldiers and leaders for worldwide assignment capable of immediately contributing positively to their unit. Provide command, control, and administration, training and logistics for 73rd Ordnance Battalion, 832nd Ordnance Battalion, Patriot Training Detachment, Explosive Ordnance Detachment and the Radar Repair Training.

Key Facilities

- Ordnance University Campus
- Corkern Range
- McKinley Range
- Barracks Capacity -
  - 1346 beds
  - 8 barracks buildings
  - Two primary types ("Y" and "Tower")

Training on Army Missile Systems & Support Systems:
MLRS - HIMARS
Dragon - PATRIOT
TOW - Javelin
Avenger - LOSAT
SLAMRAAM

Key Synergy

- Interface with PEO and PMs for requirements determination
- EOD technical advice and assistance
- Training skills in support of PEO Aviation, PEO TM, PEO ASMD, PEO Soldier and others
- Trains 5157 Soldiers & Marines/ Year
- Army provides Common Level of Support

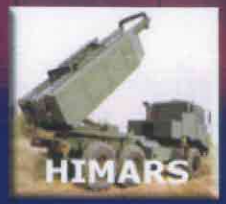
Team Redstone

Army of One Team Redstone

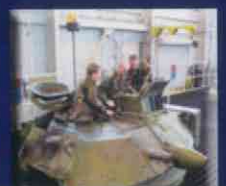
DOTMLPF
- D octrine
- O rganization
- T raining
- M ateriel
- L eadership
- P ersonnel
- F acilities

AMRDEC

RTTC
TMDE



OMEMS



Apache Attack Helicopter
Avionics Maintenance

all variations of:

- *Multiple Launch Rocket System (MLRS)*
- *High Mobility Artillery Rocket System (HIMARS)*

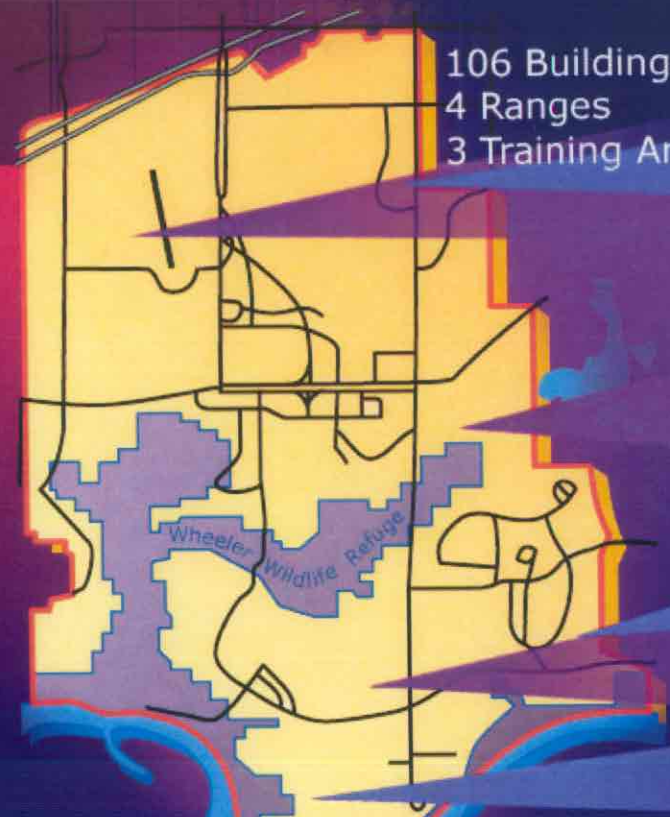
Army Tactical Missile Systems (ATACMS) Block I
ATACMS Block IA3 ATACMS Quick Reaction Unitary
ATACMS Block II/Brilliant Anti-Armor Technology (BAT)
ATACMS Penetrator
Guided Multiple Launch Rocket System (GMLRS)

Dragon
PATRIOT
LOSAT
Javelin
TOW
Avenger
SLAMRAAM

GMLRS Unitary
High Mobility Artillery Rocket System (HIMARS)
Multiple Launch Rocket System (MLRS) M270
MLRS M270A1
MLRS Reduced Range Practice Rockets (RRPR)
MLRS Joint Technical Architecture (JTA)

Team Redstone

Ordnance Munitions and Electronics Maintenance School Facilities



106 Buildings	1.07M Sq Ft
4 Ranges	975 Acres
3 Training Areas	623 Acres

Training Ammunition Supply Point Army Munitions Handling Training Areas

Corkern Range - Munitions Handling and Storage

Corps Storage Area - Munitions Storage Training Area

OMEMS Campus Instructional, Support

FBI Training Complex - Hazardous Devices Training

Army Explosive Ordnance Disposal Training

OMEMS performs technical Electronics Maintenance, Munitions Handling, and Explosive Ordnance Disposal Training for the Army

Team Redstone

OMEMS Construction Projects

FBI Hazardous Devices Training Facility

- The Federal Bureau of Investigation (FBI) Bomb Data Center funds the existing FBI Hazardous Devices School at Redstone Arsenal. The school is operated by the U.S. Army Ordnance Munitions & Electronics Maintenance School.
- Proposed facilities will support increased student loads with expanded course material, to include training on robots.
- Project includes general instruction building, operational deployment building, instructor support area, and 11 mock villages.
- Total project cost is $23M – funded by the FBI

Munitions Training Facility

- Construct a munitions training facility (MTF) to support the ammunitions supply activity (ASA) and the corps storage activity (CSA) training
- The MTF will consist of an academic building, pseudo-magazines, hardstands and outdoor ammunition (inert) storage areas for required training.
- Currently this training is conducted at multiple and dispersed locations.
- The estimated cost is $4.3M.
- In the FY 06 FYDP

Ordnance University - OMEMS Master Planning Study

- A fully functional, master planned, "Ordnance University" area which lends itself to a campus type atmosphere.
- To provide a basis for short-term and long-term programming of new construction and renovations for the school area.

Team Redstone

Reserve and National Guard Units Supported

Mississippi:
Army Reserve:
-814th Rep. Co.
Cullman
Army National Guard:
-C/1/167th Infantry Bn

Sheffield:
Army National Guard:
-417th Chem. Det
-496th Chem. Det..
Army Reserve:
336th AG Co. (Postal)

Gordo:
Army National Guard:
-416th Rep. Co.

Decatur:
Army National Guard:
-HHC/142nd Signal Bde
-Det1/B/1/20th Special Forces

Birmingham:
Army National Guard:
-20th Special Forces Group
-167th Theater Support Command
-926th Eng. Bn
-318th Chem. Det
Army Reserve:
-81st Regional Readiness Command
Air National Guard
- 117 Air Refueling Wing

Florence:
Army National Guard:
-HHC/115th Signal Bn
-A/115th Signal Bn

Athens:
Army National Guard:
-HHB/1/203 ADA Bn.
-2117th Maintenance Co.

Arab:
Army National Guard:
-A/279th Signal Bn

Anniston:
Army National Guard:
-B/1/167th Mech. Inf.

Hartselle:
Army National Guard:
-C Batt/1/203rd ADA

Northport:
Army National Guard:
-3151 Chem. Bn

Albertville:
Army National Guard:
-C/279th Signal Bn

South Carolina:
Marine Reserve:
-Ammo Co

Tennessee:
Army Reserve:
-678th Pers Svcs Bn

Huntsville:
Army National Guard:
-HHC/279th Signal Bn
-HHC/1169th Engineer Gp
-1241 TMDE Det
-Det 1/B/279th Signal Bn
-Spt Co/1/20th Special Forces
-441st Ordnance Bn (EOD)
-1117th Ord Team
-B/1/203rd ADA Bn
-HHD/1/20th Special Forces
-3/100 Sig. Bn
-4/100th Bn
-A/1/131 Armor Div
-3rd Brig/100th Div. Combat Spt
Army Reserve:
-926th ENG Bn
-184th IMA
Naval Reserve:
NMCB #24

Gunter sville:
Army National Guard:
-B/279th Signal Bn

Blue units received only pre-MOB briefings from Redstone

Georgia:
Marine Reserve:
-Det 1, Ammo Co

Team Redstone

Quality of Life (QOL) On Redstone Arsenal

Key Facilities

- 459 Housing units
- 180 unit (235 beds) Army Lodging operation, rated 28.2 on 30 point Lodging Quality Service scale
- Over 50 "front doors" of superb QOL, well-being or recreational services including:
  - 27-hole MWR GOlf COurse with the highest useage rate in the SE Region
  - New $6.5M Bowling and Family fun Center under construction
  - Excellent Outdoor Rec services with 2 major parks on Tenn. River
  - Outdoor pool, crafts, auto skils, Rec Center, new car wash

QOL Vision:

To make Redstone Arsenal a preeminent Federal Team that provides effective and efficient support to our customers to make us the preimere home of aviation, missiles and rockets, and munitions/munitions disposal for the world.

Synergy for Team Redstone

- Best Child & Youth Services in the SE Region
- Fully accredited and re-accredited ACS (1# in the Army)
- Best Small ACS in the Army
- Active and well funded BOSS for the single soldiers
- Profitable progressive and customer oriented
- High Customer Satisfaction Rating 4.62 on 5.0 Likert Scale
- Best Army (medium sized) Bowling Program 2 out of 3 years
- No losing MWR programs ($)
- Active Army airfield that can handle any DoD aircraft in the inventory

Team Redstone

Quality of Life (QOL) On Redstone Arsenal 2

Martin Road Widening

State of Alabama is funding the widening of Martin Road from two to four lanes

- The estimated $9M will widen about 1.4 miles of roadway on Redstone Arsenal and an additional 2 miles between Arsenal and Memorial Parkway
- The project will support the increased traffic associated with the consolidation of administrative facilities along Martin Road
- Phase I (off-post) started Spring 01; completed Summer 02.
- Phase II (on-post), contract award expected Summer 04; estimated complete Summer 05

General Officer Quarters

- The General Officer Quarters on Redstone Arsenal were 1950s vintage houses with just over 2000 Sq Ft
- The City of Huntsville, working with the State of Alabama, constructed three modern, 3200 Sq Ft houses on the Arsenal
- The houses were presented to the Federal Government as a gift in Nov 03

Enlisted Personnel Dining Facility

Project will construct a 27,550 SF (500-800 Person) Standard Design Dining Facility.

- Location is northeast of Aerobee and Wasp Roads intersection.
- Replaces building 3438, built in 1960. Existing facility is in poor condition and is continually in need of repair. Demolition of building 3438 is included.
- $7.2M contract will be completed April 04

Team Redstone

Quality of Life (QOL) On Redstone Arsenal 3

Bowling Center

- The project site is located north of Honest John Road, between Zeus Drive and Patton Road
- Project will replace the existing 16-lane bowling center
- Project will construct a 32-lane Bowling Center, to include bowling lanes and support areas, Strike Zone Restaurant, Sports Bar, party/meeting rooms, arcade, control counter, offices, and support areas
- $6.5M Project begins Feb 04

Utilities Privatization

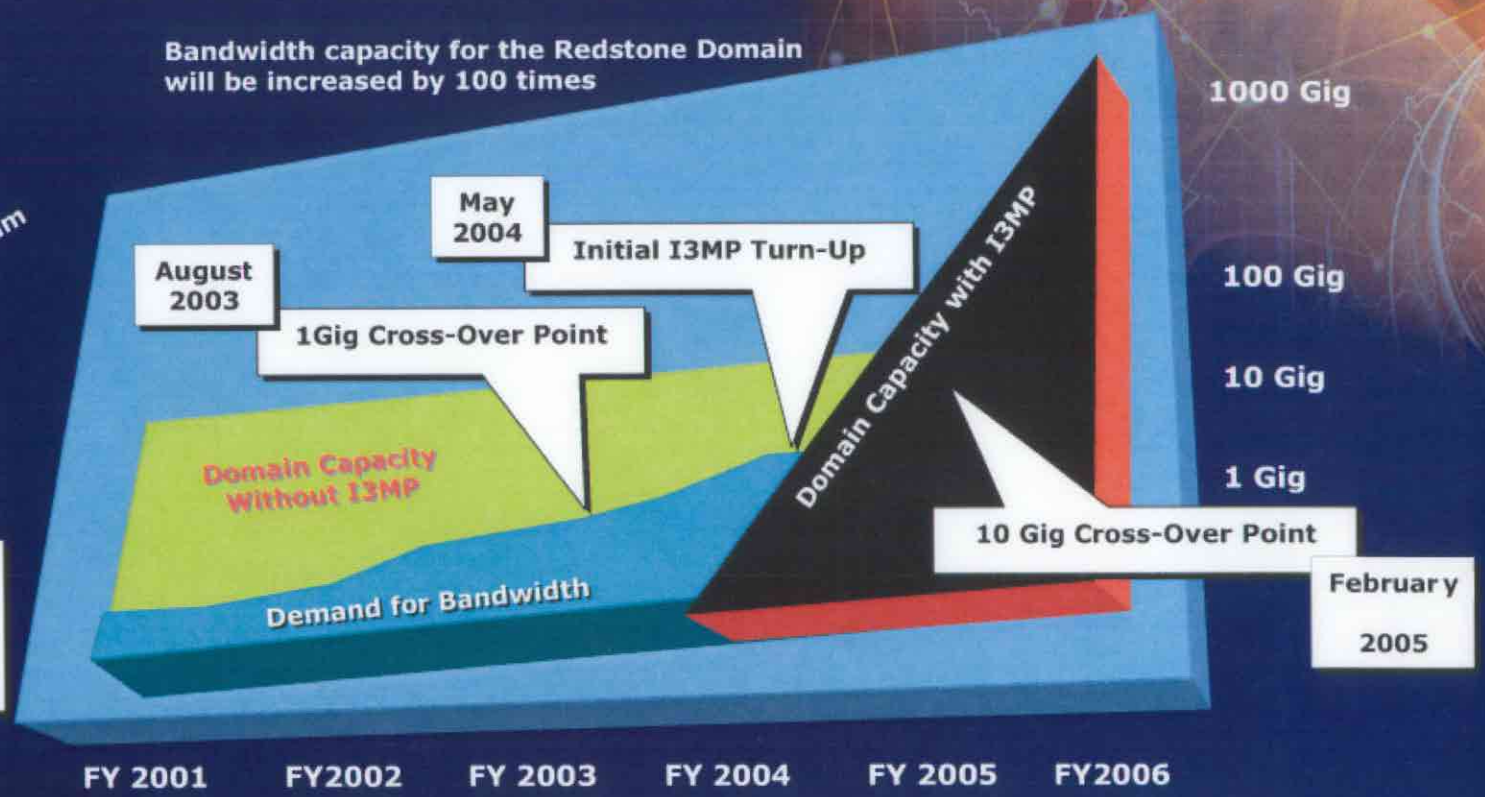
- The Waste Water Treatment Plant was privatized in 1992 under a third party contracting initiative
- The electrical, natural gas, and water systems were combined into one RFP and solicited as a sole source contract. Alpha negotiations began Jul 03
- Utility privatization contracts to be awarded approximately Jul 04
- Steam is provided by contract with the City of Huntsville's Solid Waste Disposal Authority – annual cost - $15.4M

Residential Communities Initiative (RCI) Program

- Create world Class, quality residential communities
- Leverage assets/scarce funds
- Obtain private sector expertise, creativity, innovation, capita.
- Possible DOD Pilot Site for Tax Exempt Initiative

Team Redstone

Installation Information Infrastructure Modernization Program



- 431 manholes
- 3 equipment huts
- 4 Cable Vaults
- 90+ bore holes
- 207,000 of 4" duct

- 802,000 feet of Fiber Optic Cable by Project End
  - includes 8900 optical connectors
  - includes 64 equipment racks with electronics

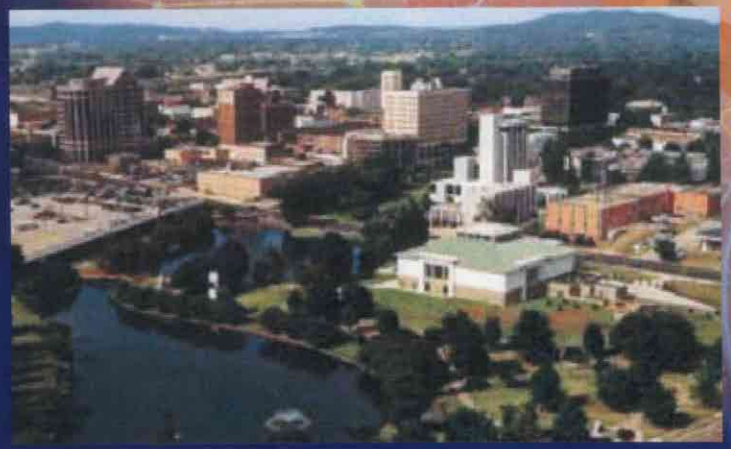
Team Redstone

QOL in Huntsville/Madison County

Huntsville/Madison County Mission:
Serve our citizens and improve our community, contributing to our States progress and the National Defense

Key Facilities

- 2nd Largest Research Park in US
- Extensive School Network
  - Univ of Alabama in Huntsville (UAH)
    - Rotocraft Center at UAH - $1M Grant
    - Propulsion Center at UAH
    - $1M SLT Grant NASA/SMDC/AMCOM
  - Alabama A&M Univ (HBCU)
  - Oakwood College (HBCU)
  - Drake State Technical College
- Inter-Modal Infrastructure
  - International Airport – C5A capable
  - more then 98 flights daily (arrivals/departures)
  - 6 flights/day to DC
  - over 1M passengers/year
  - 25M Tons of imports/28M Tons of exports/year
  - New Control Tower – 2007 - $11M
  - US Foreign Trade Zone No. 83
  - Barge Docks w/access to Tenn./Miss. Rivers & Gulf
  - I-565/65



Key Synergy

- Beneficial Community Partnerships for Fire, Police, Hospitals
- QOL for our workers – big city flavor without the traffic and crime
- 2nd highest concentration of high tech workers in the US
- Top 10 best educated cities in US

Regenerated 1200 High Tech Workers in 3 Years

Team Redstone

Force Protection

- 6 active Gates for Redstone Arsenal
  - 31,000 vehicles/day
- 65 Civilian Guards
- 21 Military Police
- 28 DOD Police
- 87 National Guard

- 1 of 2 Local Computer Incident Response Teams (LCIRT) in Army Information Assurance program ranks in the top 10% of DOD/Industry

- Leveraging Technological solutions from here and around the world
- AMRDEC R&D for FP & Homeland Defense
- First DA ICIDS III upgrade
- New Army/NASA Visitors Center – contract awarded
- First DA Gate Study for Corps of Engineers

Team Redstone

Homeland Defense

Redstone Arsenal has unique synergy:

- **WMD Training – Ordnance, Munitions & Electronics Maintenance School (OMEMS) Tech Escort School & EOD instruction**
- **OMEMS/FBI Facility – 1 of 2 in the world for Improvised Explosive Devices**
- **NASA Protective Services Facility State of the Art training facility**
- **RDEC prototype EOC based on existing GIS data using $200M of Aviation/Missile simulation expertise**
- **Missile Defense Agency Ballistic Missile Defense for CONUS**
- **Critical technologies for aerostat research, test & program management on the installation**
- **JPO Robotics - Unmanned Ground Vehicle**
- **PM for Unmanned Aerial Vehicle**

Team Redstone

Redstone Arsenal Current Land Use Map

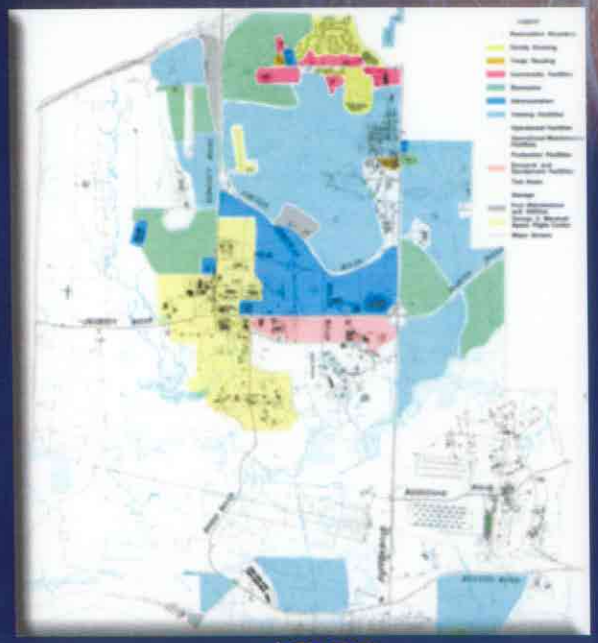
37,910 acres total
- **Developable with no constraints – over 4190 acres**
- **US Fish & Wildlife Service - 4,085 acres**
- **Tennessee Valley Authority – 2,905 acres**
- **NASA Marshal Space Flight Center – 1,826 acres**
- **Wetland – 9,221 acres**

Utility Usage	Daily Use	Daily Capacity
Electric	1.0M KWh	3.0M KWh
Steam	2,722 Klbs	9,600 Klbs
Natural Gas	924 Mcf	15,158 Mcf
Sewage	2 MG	9 MG
Potable Water	3.2 MG	7.2 MG
Industrial Water	2.5 MG	23 MG

1,772 Buildings
(Army 11.7M Gross Sq Ft)
(NASA +4.1M Sq Ft)
- **11 R&D Labs**
- **80 Training Structures**
- **619 Storage Facilities**
- **407 Earth Covered Magazines (Igloos)**
- **Above Ground Explosive Storage Warehouses**
- **459 Housing Units**

THE PENTAGON
WASHINGTON

The Pentagon sits on 583 acres open space on Redstone could holdover 7 Pentagons

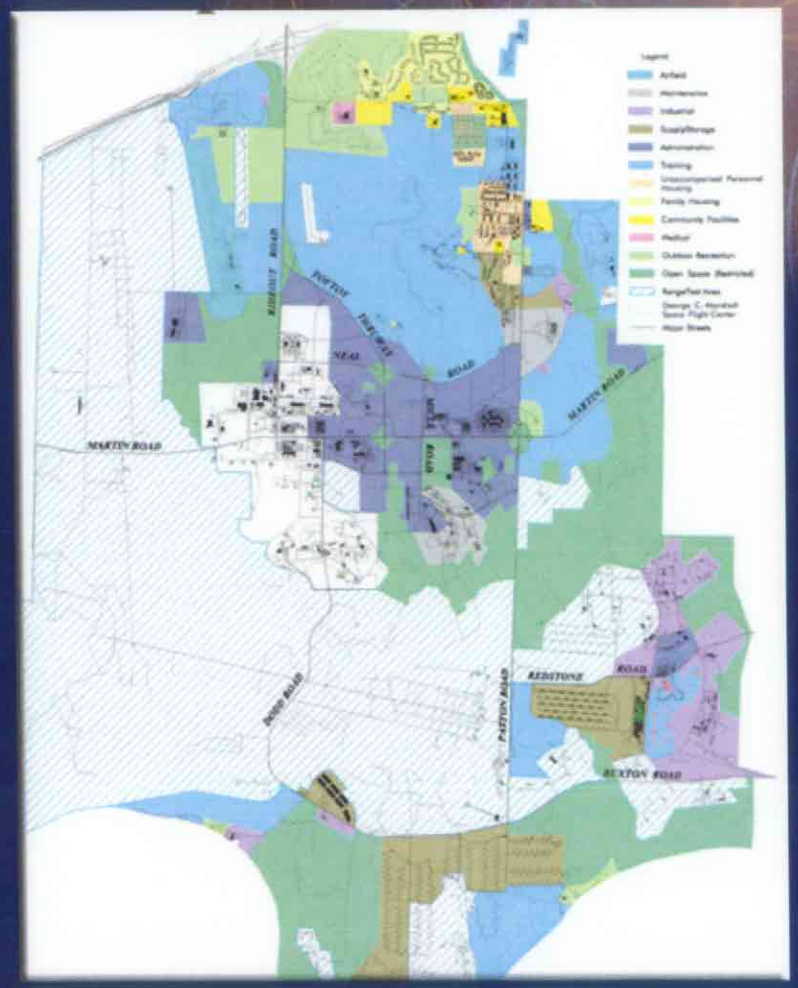


$3.5B Replacement Cost (Army $2.8B - NASA $0.7B)

Team Redstone

Redstone Arsenal Future Land Use Map

- Redstone has a unique mix of Ranges, Industrial areas, Admin space and QOL facilities
- Large areas are available for development with no restraints
- Even larger areas could be developed with minimal restraints



Team Redstone

Redstone Installation Restoration Program (IRP)

Key Findings / Issues

- Groundwater contaminated with solvents and perchlorate – but not used as drinking / industrial source, so no impact on mission capabilities.
- Selected sites have surface & subsurface soil chemical contamination and Unexploded Exploded Ordnance issues requiring limited access until remediation completed.
- Cost to Complete Estimate - $333M
- Breakout – RCRA: $10M Current IRP – $167M Potential future sites – $49M MMRP – $107M
- IRP projected completion - 2032

Background

- Selected areas contaminated by WWII era Chemical Warfare Material / Ordnance production, storage, & disposal operations; Solid Rocket Motor Production; and DDT manufacturing & disposal operations.
- Installation included as fence-to-fence listing on National Priority List in 1994.
- 353 Specific sites identified for investigation & remediation under Resource Conservation & Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 247 Army responsible sites, 84 NASA or other responsible sites, 22 Military Munitions Response Program (MMRP) sites.
- Action complete at 52 sites.
- Action Plans in place to complete all sites based on human and ecological risk criteria.

Program Status

- Partnering relationship with EPA Region IV and Alabama Department of Environmental Management.
- Excellent community relations with local citizens.
- Site Access Control Program has been able to maintain required site restrictions while enabling required mission actions within and around contaminated areas with minimal cost and no impact on final mission schedules (I3MP cleared at all locations, multiple bldg demo approved).

Team Redstone

Summary & Conclusions

- We provide capability to the Joint Warfighter fast!

- Speaking before the Alabama legislature in 1961 Dr. Von Braun passed on a challenge for transformation; he said, " 'There is a tide in the affairs of men, which, taken at the flood, leads on to fortune'...[we] as well as the other leading countries of the world, now live in a technological age. The efforts along this line that have been taken in the past... will not suffice to keep pace with the other states and nations of today."

- Redstone Arsenal has embraced that challenge to transform and developed a community synergy that makes worldwide technological leadership possible, today and in the future

We Support the Warfighter
in every unit ...
every day.