Installation Management Agency

Department of the Army

Department of the Air Force

Department of the Navy

Army Contracting Agency

White Sands Missile Range

Defense Threat Reduction Agency

Team White Sands

Test Measurement and Diagnostic Equipment

27 April 2004

Army Research Laboratory

National Geospatial-Intelligence Agency

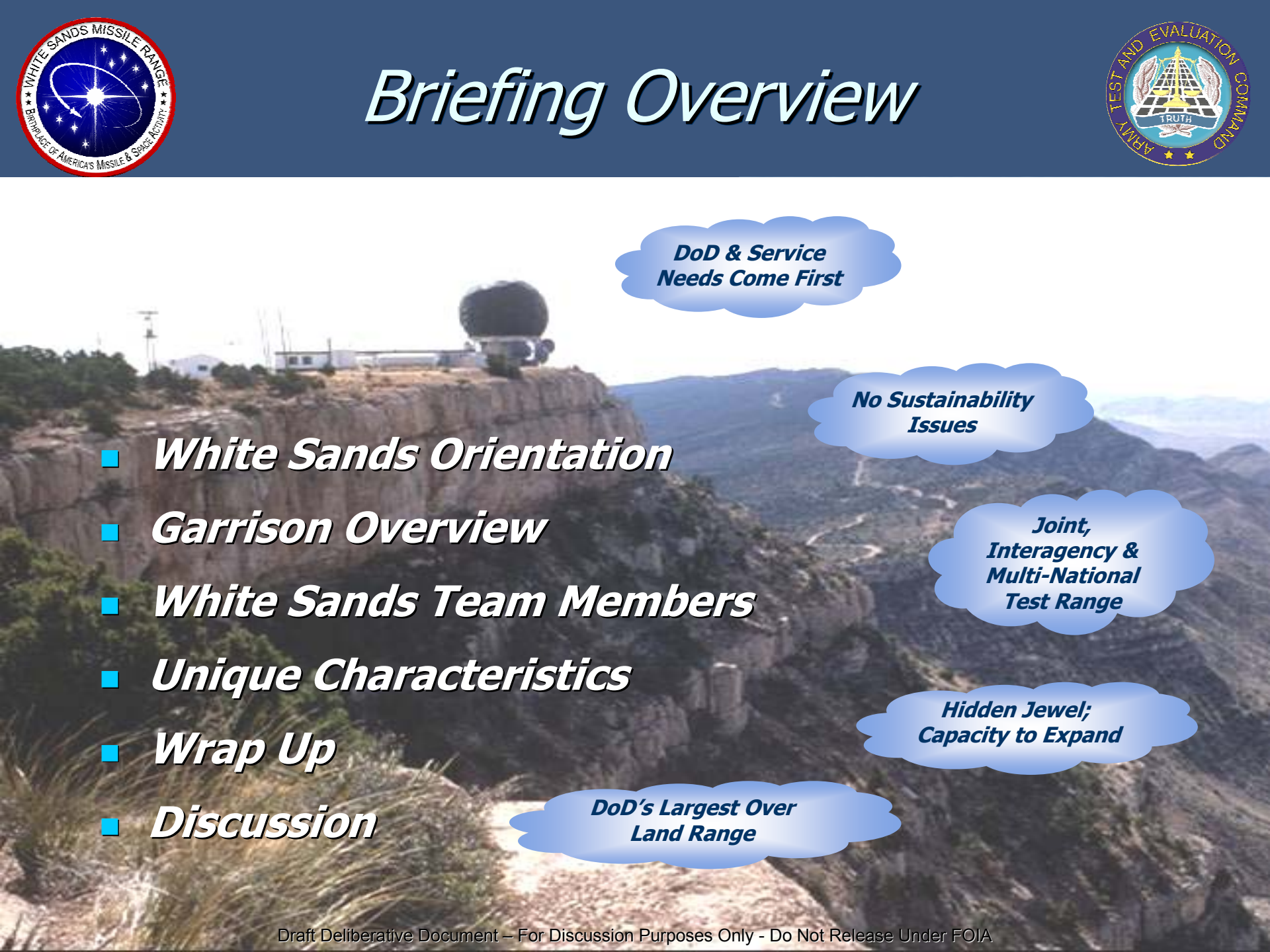
Center for Countermeasures

TRADOC Analysis Center

High Energy Laser Systems Test Facility

National Aeronautics and Space Administration

Briefing Overview



- White Sands Orientation
- Garrison Overview
- White Sands Team Members
- Unique Characteristics
- Wrap Up
- Discussion

DoD & Service Needs Come First

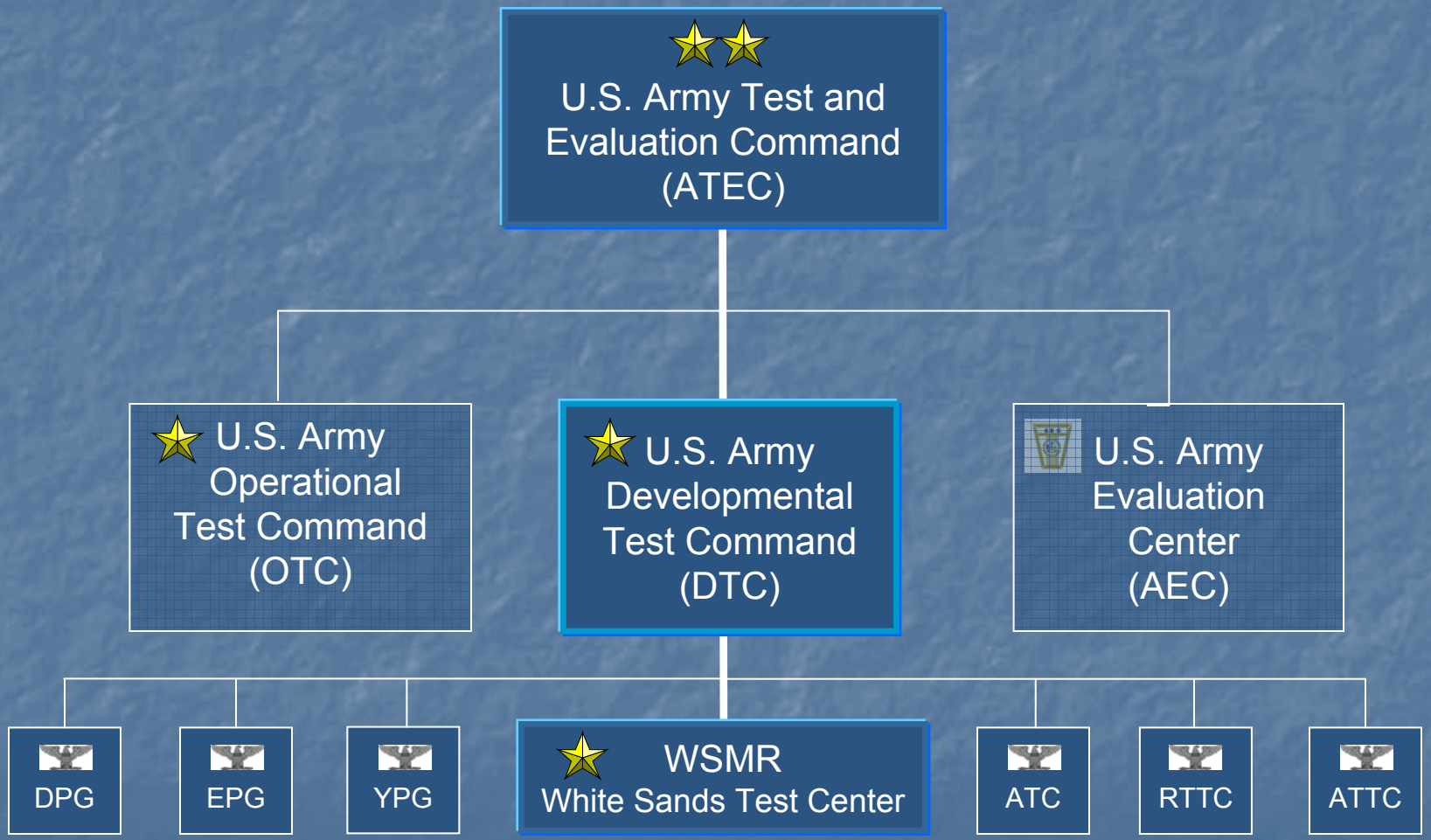
No Sustainability Issues

Joint, Interagency & Multi-National Test Range

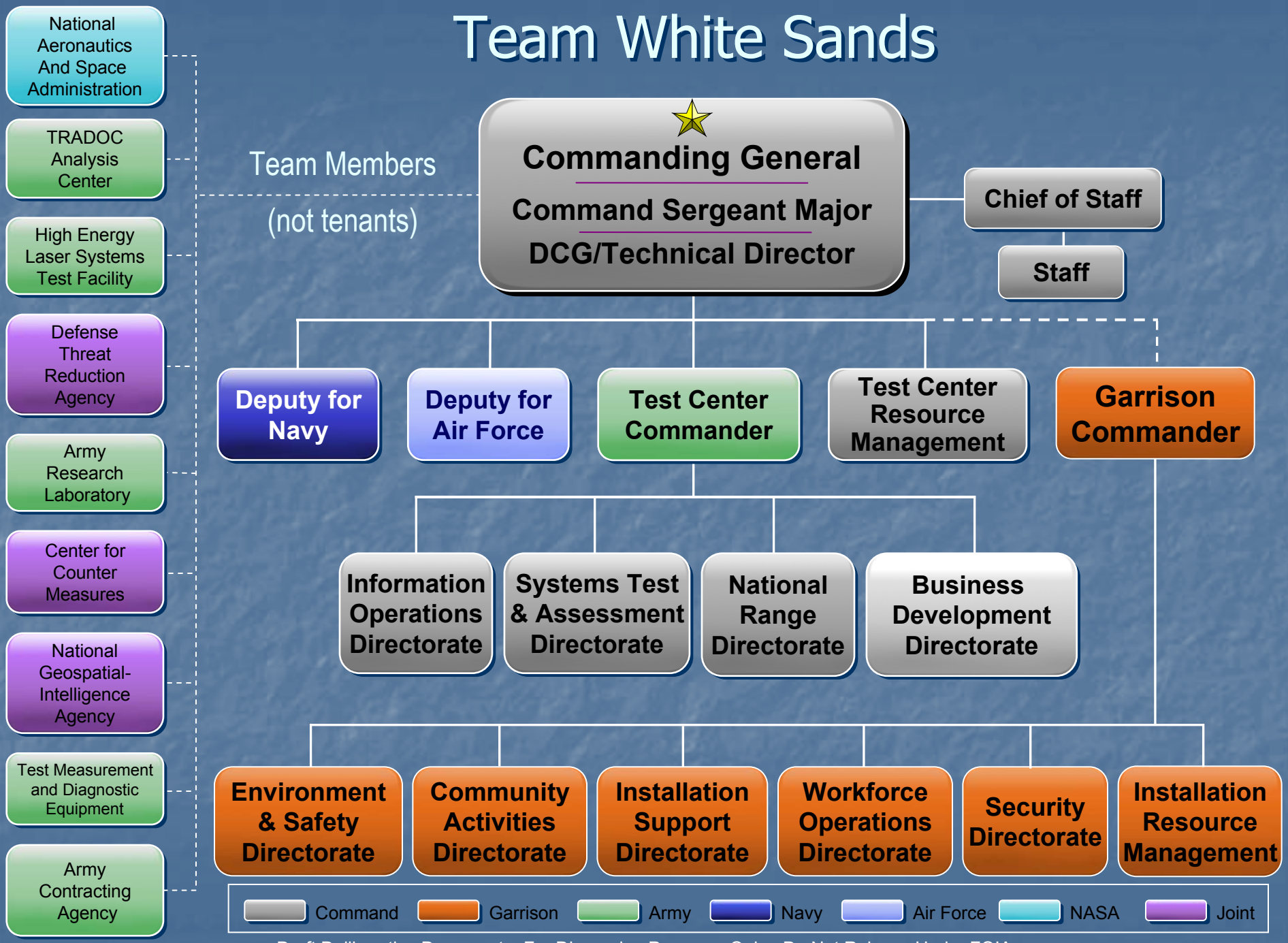
Hidden Jewel; Capacity to Expand

DoD's Largest Over Land Range

WSMR Command



Team White Sands



White Sands Mission

Provide

Army, Navy, Air Force, DoD

and other customers

with high quality services

for experimentation, test, research

assessment, development, and training

in support of the Nation at war

Land Space & Climate

Reliable Year- round Test & Training

- **Stable / Mild Climate**

20yr Avg. Temperature.

	Winter	Summer
High	61°F	92°F
Low	36°F	69°F

- **Dry / Clear Atmosphere**

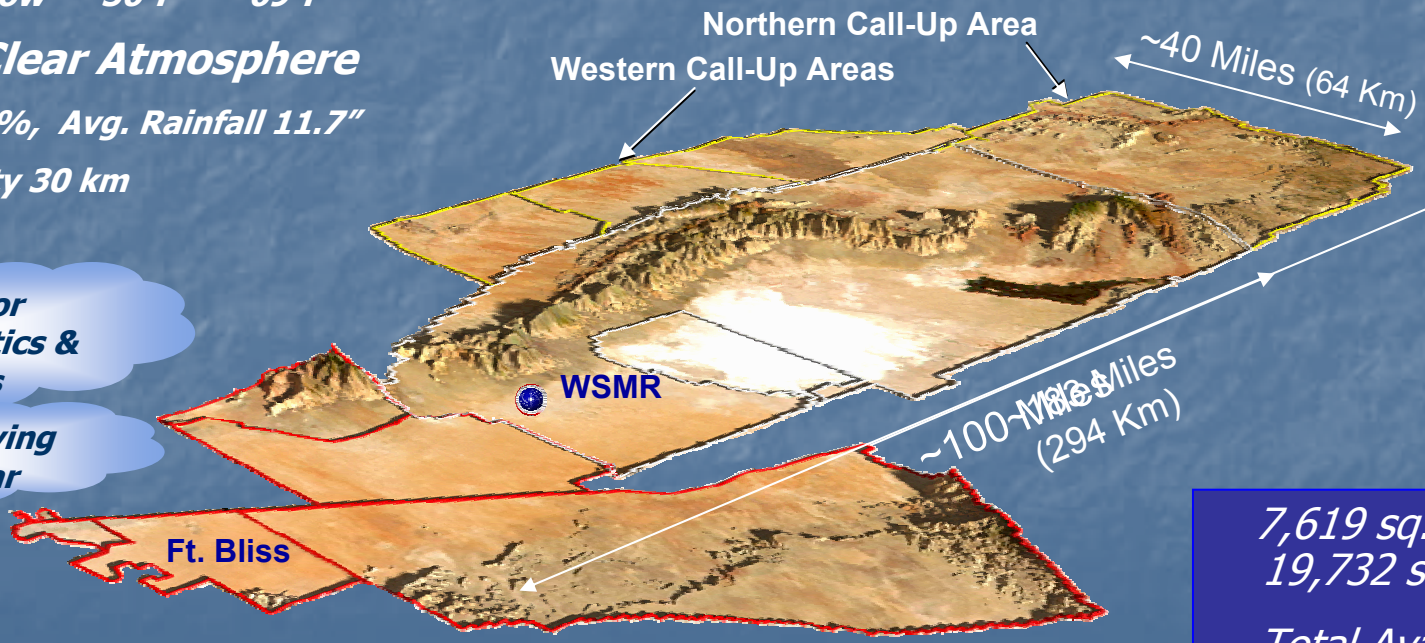
Avg. RH- 42%, Avg. Rainfall 11.7"

Avg. Visibility 30 km

Great for Electro-optics & Lasers

345 VFR Flying Days/year

- *White Sands owns 3,421 sq. miles (8,859 sq. kilometers)*
- *Lease agreements add 2,453 sq. miles (6,353 sq. kilometers)*
- *Partner with Ft. Bliss add 1,745 sq. miles (4,520 sq. kilometers)*



7,619 sq. Miles
19,732 sq. km

Total Available

Vast / Diverse Terrain

World-Wide Overland Backgrounds - Ideal for Test & Train

High & Hot Right Out of the FCS O&O!

2,189,225 acres – size of Delaware and Rhode Island combined.

High desert valley floor - 4,000′

Rolling grasslands, lava flows and rugged canyons

Desert and wooded mountains to 9,000′

Barren dry lake beds, sand dunes to Creosote bushes

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Garrison Overview

COL DONALD GENTRY, COMMANDER

Test Measurement and Diagnostic Equipment

Army Research Laboratory

National Geospatial-Intelligence Agency

Center for Countermeasures

TRADOC Analysis Center

High Energy Laser Systems Test Facility

National Aeronautics and Space Administration

WSMR Garrison

Mission

U.S. Army Garrison, White Sands Missile Range, provides command and control of Garrison activities to support testing and research at WSMR and to provide for quality well-being for all members of TEAM WSMR.

Not Your Ordinary Garrison

- Remote support locations
  - 3 Range Camps
  - Test Facilities/Launch Complexes
- Support the Customer's Customer
- Different focus than that of surrounding Garrisons

Installation Status Report Summary

ISR I
Infrastructure

OPS & TNG	C3	C2
MAINT & PROD	C3	C1
RDT&E	C3	C1
SUPPLY	C3	C1
MEDICAL	C3	C1
ADMINISTRATIVE	C3	C1
HSG & COMMUNITY	C3	C2
UTIL & GRD IMPROV	C3	C1
MOBILITY	C4	C1

ISR II
Environmental

COMPLIANCE	C1	C3
CONSERVATION	C1	C4
RESTORATION	C1	N/A
POLLUTION PREVENTION	C2	C1
FOUNDATION	C2	C2

1148 miles of paved roads 70% need repair

Quality	Quantity

ISR III
Services

PERSONNEL AND COMMUNITY	C 2
INFORMATION TECHNOLOGY	C 2
OPERATIONS	C 1
LOGISTICS	C 2
ENGINEERING	C 2
ACQUISITIONS	C 1
RESOURCE MGMT	C 2
HEALTH SERVICES	C 2
COMMAND AND STAFF	C 2

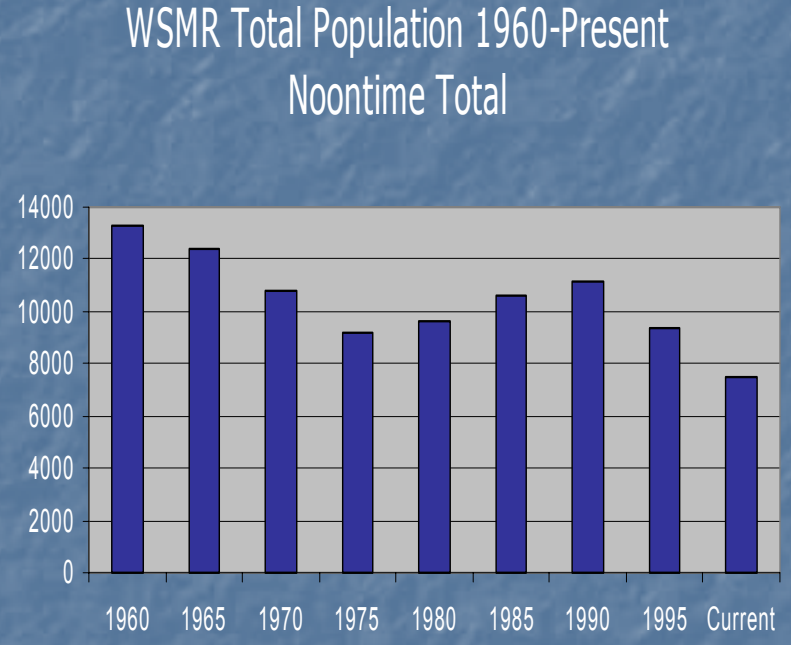
C-1 Meets Unit Needs and DA Standards

C-2 Meets Unit Needs and Partly meets DA Standards

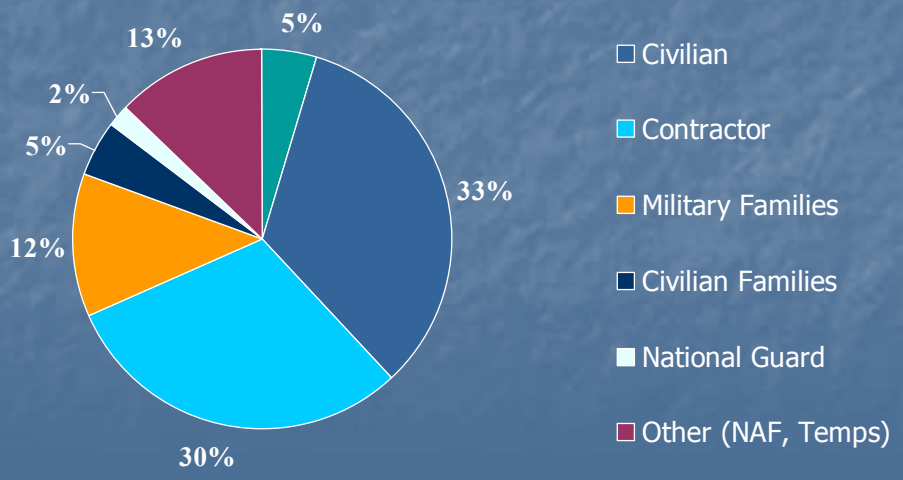
C-3 Meets Most Unit Needs with Some Deficiencies

C-4 Does not Meet Unit Needs, Major Deficiencies

WSMR Demographics



Current Noon Time Population ~7400



Buildable Parcels Range Area

Trinity National Historic Landmark Joint Use Area

17% of CONUS Army Land

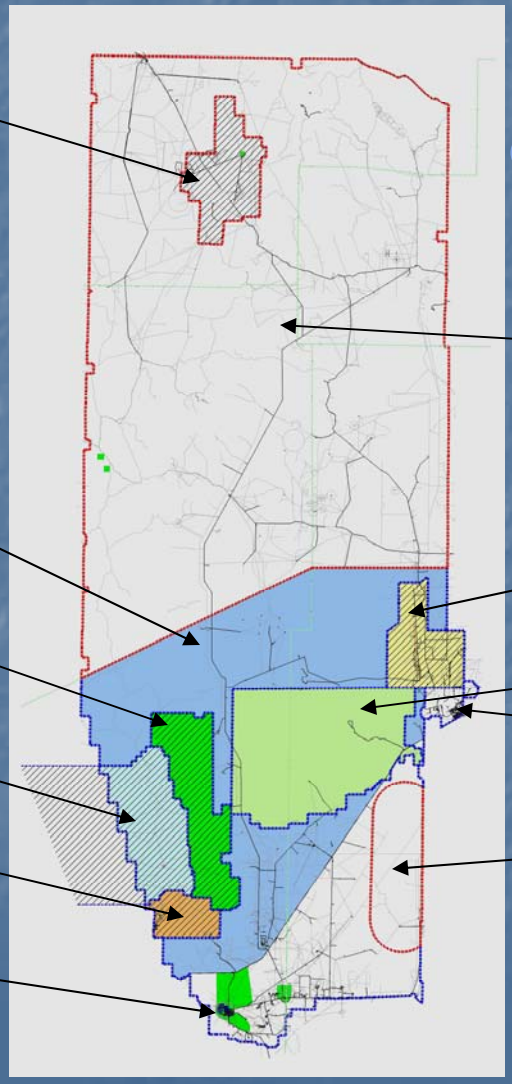
Exclusion Area

San Andres National Wildlife Refuge Joint Use Area

Jornada Experimental Range Joint Use Area

NASA Joint Use Area

Main Post Area



TRACT #1 and TRACT #2 are Periodic Safety Evacuation Areas

TRACT #1 Buildable Multiple Use

Holloman AFB/ WSMR Joint Use Area

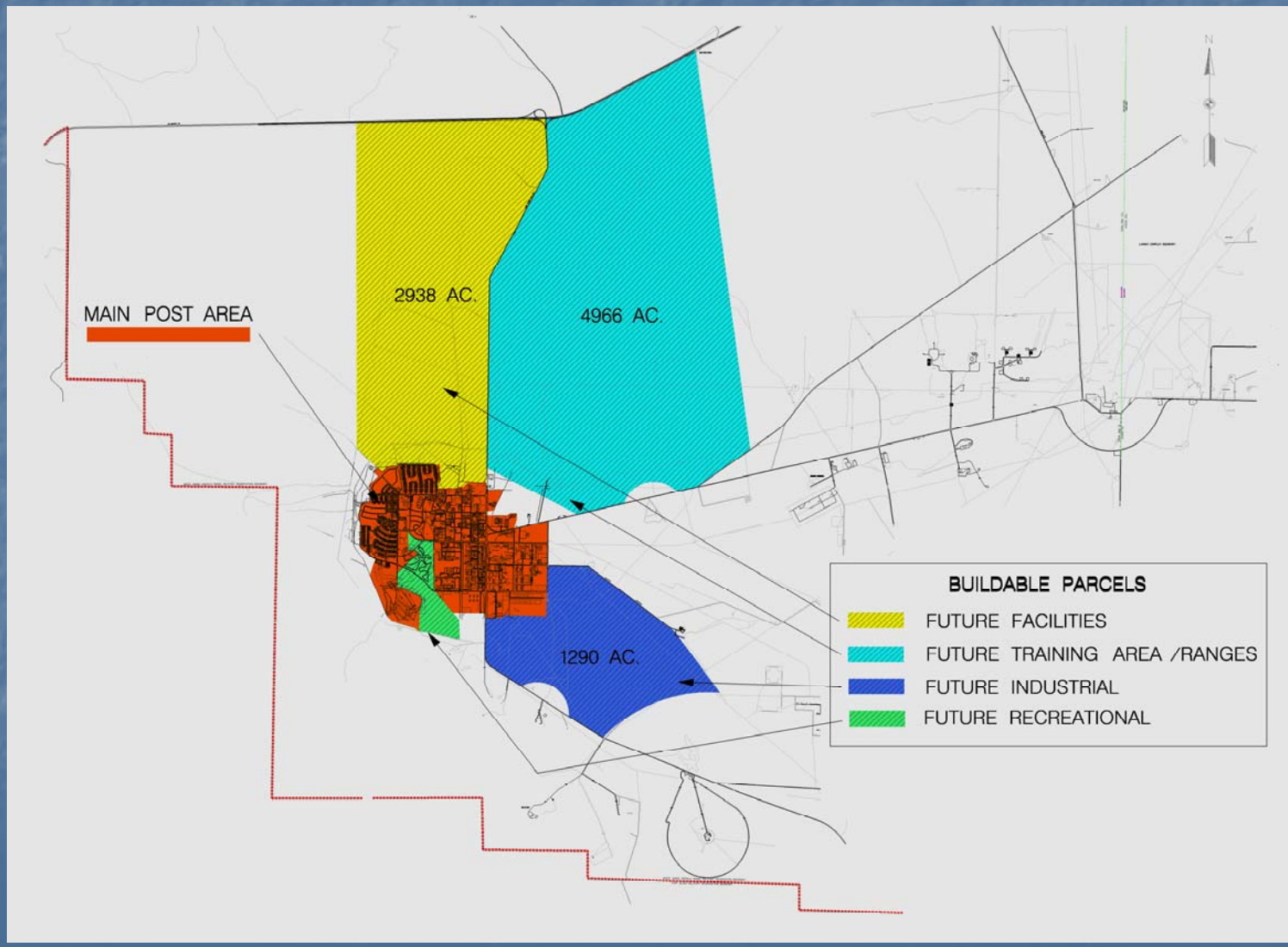
White Sands National Monument

Holloman AFB

TRACT #2 Buildable Multiple Use

10% of CONUS Army Roads

Buildable Parcels Post Area



MILCON Program

Programmed Projects

Electromagnetic Vulnerability Assessment Facility	FY05	$33M
Physical Fitness Center	FY08	$8M
Launch Complex Revitalization	FY08	$15.5M
War Road Revitalization	FY09	$37M

Future Development Projects

- Kinetic Energy Missile Complex
- New QA Building
- Cantonment Fence and Gates
- Storage Vault and Elevator
- Public Affairs Building
- Consolidated Maintenance Building
- Telecom and Network Operations Building
- Child Development Center (Children 6-10)
- Public Safety Building
- New Emergency Operations Center
- Branch Fire Station

WSMR Housing Revitalization Program

Programmed Housing

Year	No.	Cost ($M)
FY04	58	14.6
FY06 (PB FY05)	123	31
FY07 (PB FY06)	101	20

282 New Homes

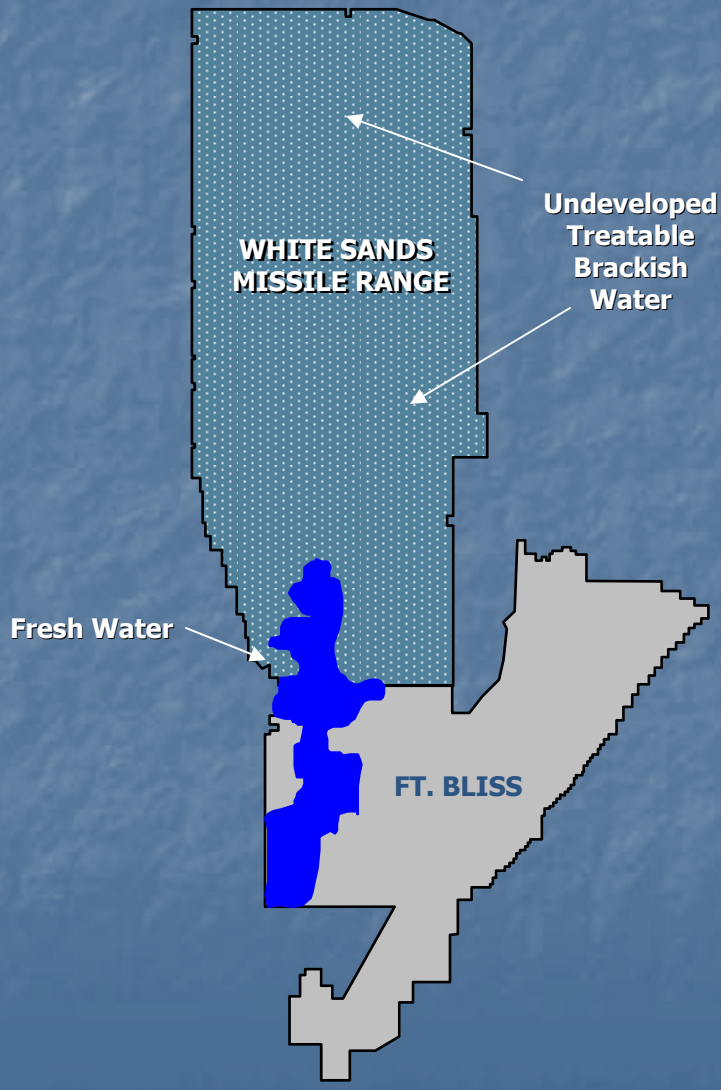
- AFH houses after revitalization 428
- UPH houses after revitalization 119
- Total end state 829 houses if demolition halted

Utilities

- Electrical system (~500 miles) being privatized; contractor can expand without limits
- Gas system expandable in south range area

Water System

- Self-contained independent system
- Existing capacity 2X current peak production without conservation measures



Medical Facilities

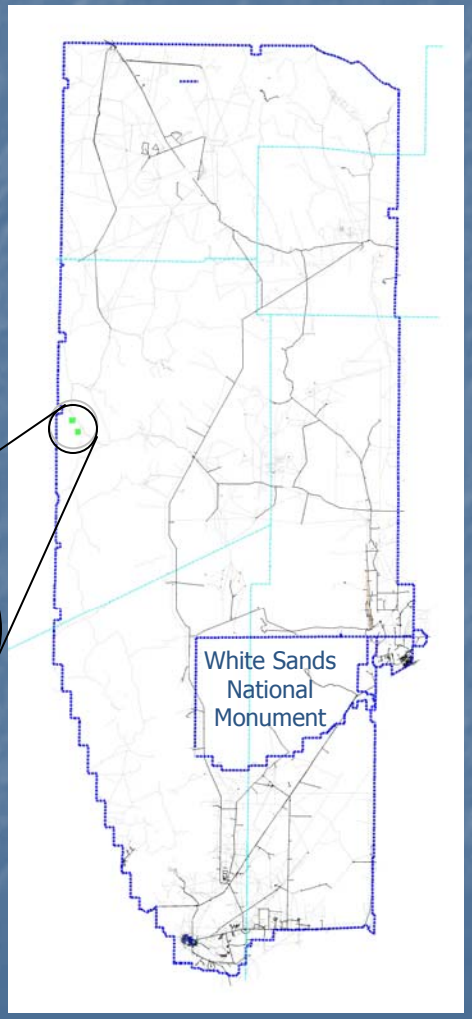
- 15,000 sq. ft. extra space in existing medical clinic, but modernization needed
- With current staffing, excess capacity of ~2,000 outpatients
- Evacuation to Military Hospital (Wm Beaumont Army Medical Center)
  - Ground: 3 ambulances on-site, 47 miles / 50 minutes (civilian hospital 30 minutes away)
  - Air: Air Ambulance Detachment located at Ft. Bliss, 60 minutes
- 5 chair dental clinic expandable to 9

Excess Capacity

- MWR Facilities
  - Many sized for larger population
  - Most adequate in size
- Family Housing
  - Excess housing capacity
- Logistics Facilities
  - Large excess of covered storage due to remote range mission needs

Environmental Considerations

Todsen's Pennyroyal Endangered Species Habitat < 500 Acres



- Only one endangered species (plant) – size and location make impact insignificant
- No jurisdictional wetlands or waters
- No mammal or marine environmental issues
- No noise issues or complaints
- No NEPA lawsuits
- No critical air quality regions within 100 miles that affect or restrict activities

Todsen's Pennyroyal

WSMR School

- Elementary and Middle School located on Post, grades 9-12 bused to Las Cruces
- Currently at 50% capacity
- Middle School transitioning to an Aerospace Magnet School
- Administered by Las Cruces Public School System
- Currently owned by US Dept of Education
  - $3.7M invested last 3 years
  - Will transition to Las Cruces Public School System

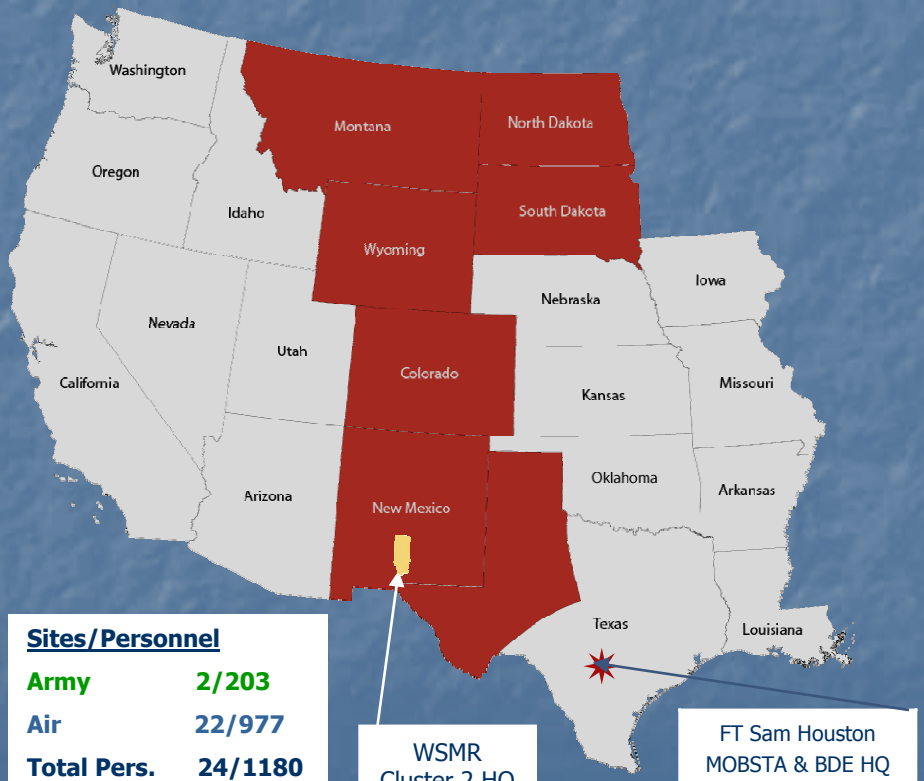
Public Safety

- Police Academy certified as a Federal Police Training Program
- Only 911 center in DoD capable of vehicle tracking all emergency response units
- Five active Fire Stations (one operated by NASA)
  - Aggressive EMT training program
  - Hazmat certified

Homeland Security Support

Base Cluster Headquarters

Task Force 4-200 ADA (NG)



Sites/Personnel	
Army	2/203
Air	22/977
Total Pers.	24/1180

Exercises include WMD, terrorist incidents, hazardous material releases, natural disasters

SOF Training, Aviation Support to JTF-6, and Western Area Defense Sector Exercises

Remote WSMR Sites

Name	Location	Area	Purpose
Menefee Peak	Colorado	1 acre leased land	Commo site
Idaho Launch Complex	Idaho	34 acres leased land	Launch site
Green River Test Complex	Utah	1619 acres withdrawn land 2009 acres leased land	Launch site
El Paso Site	Texas	12 acres owned	Commo site
Fort Wingate	New Mexico	6520 acres owned	Launch site

Fort Wingate is not WSMR Property, but is used by WSMR for Testing

Supporting Communities

Total Economic Impact: $1.5B/yr

Regional Communities
- Las Cruces, NM
- Alamogordo, NM
- El Paso, TX
- Socorro, NM

Resources & Room to Grow!

Quality of Life
- Low Crime Rate
- Cost of Living Index 93.1 (below average)
- Year Round Outdoor Recreation, Entertainment
  - Fishing, Hunting, Water Sports, Skiing, Rock Climbing, Ballooning, Arts, Music, Theatre, Opera
- Population Density people/sq. mile: NM – 15, US – 79

Resources
- Local Communities have excess capacity and are growing

Taxes
- N.M. Tax Deductions for DoD
- No Inventory Taxes
- 3rd Lowest Property Taxes in Nation
- Texas has no Income Tax

Academia
- New Mexico State University
- New Mexico Institute of Mining and Technology
- University of Texas at El Paso

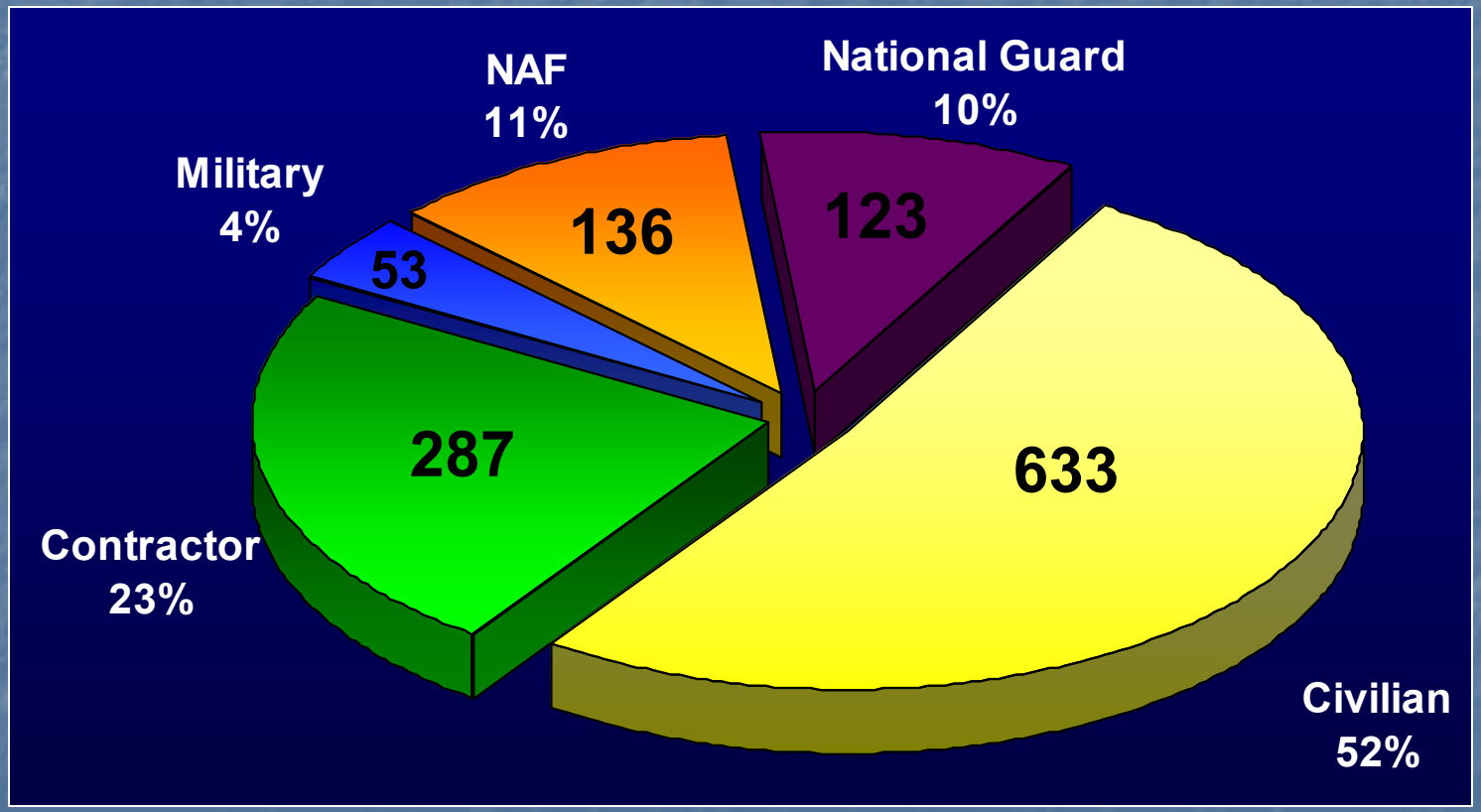
Planning and Partnering for the DoD Mission
- N.M. State Executive Order – Ensuring Development Compatible with the DoD Mission
- Alliance for Regional Military Support

Transportation
- Intersection of 2 Interstate Highways, I-25 and I-10
- 2 Primary Railways (60 – 90 Trains/Day)
- International and Regional Airports
- Major DoD Deployment Center – Ft. Bliss
- Within 24 Hour Deployment by Sea* (Gulf and Pacific)

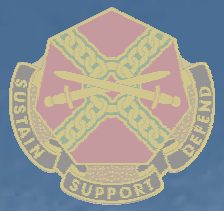
* UA Requirement

FY04 Workforce & Budget

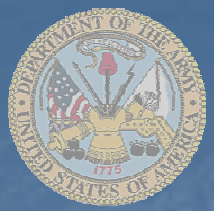
Total Workforce: 1,232



Total Budget: $123.7 million



Installation Management Agency



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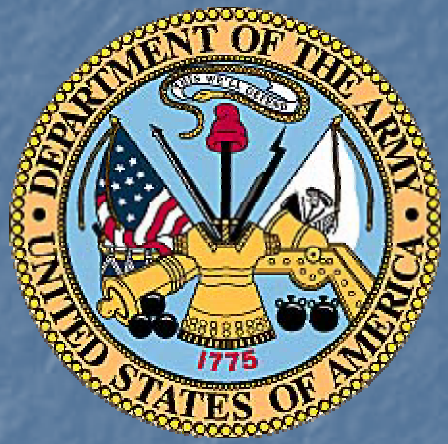

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

White Sands Test Center

COL DONALD C. HUFF, COMMANDER

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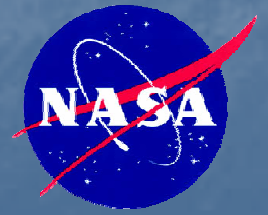


National Aeronautics and Space Administration

White Sands Test Center

Mission

The White Sands Test Center provides test and training solutions through expertise, technology, techniques and innovative use of infrastructure

Core Capabilities

Test & Evaluation Services

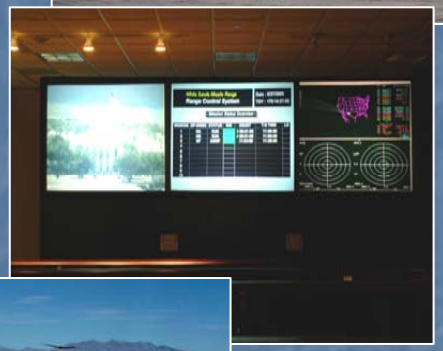
Supporting All Aspects of System Design, Development & Fielding in Support of the Warfighter

- *Complex Range Operations*
- *Systems Performance*
- *Instrumentation & Data Acquisition*
- *Threat Presentation & Lethality*
- *Operational Environments*
- *Survivability & Vulnerability*

Core Capabilities

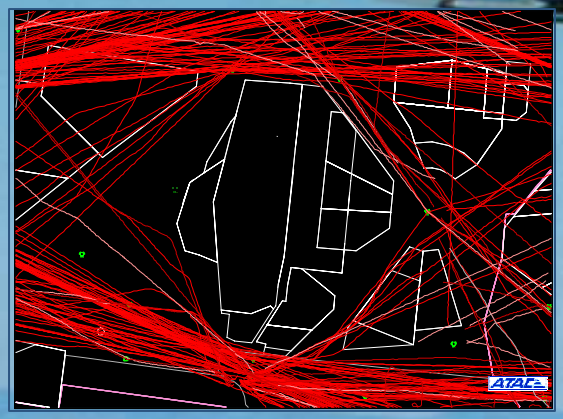
Complex Range Operations

- *Complex and Multi-mission Command & Control*
- *Comprehensive Launch & Live Fire Test Sites*
- *Network Operations*
- *Air Traffic Command & Control*
- *EOD & Recovery Operations*
- *Aerial Cable Test Facility*
- *Weapons, Flight & Radiation Safety*
- *Meteorology*



DoD's Most Advanced Test Control Facility

Unique Asset
WSMR Air Space



FAA "WSMR SHADOW"

Commercial Air Traffic routes around WSMR

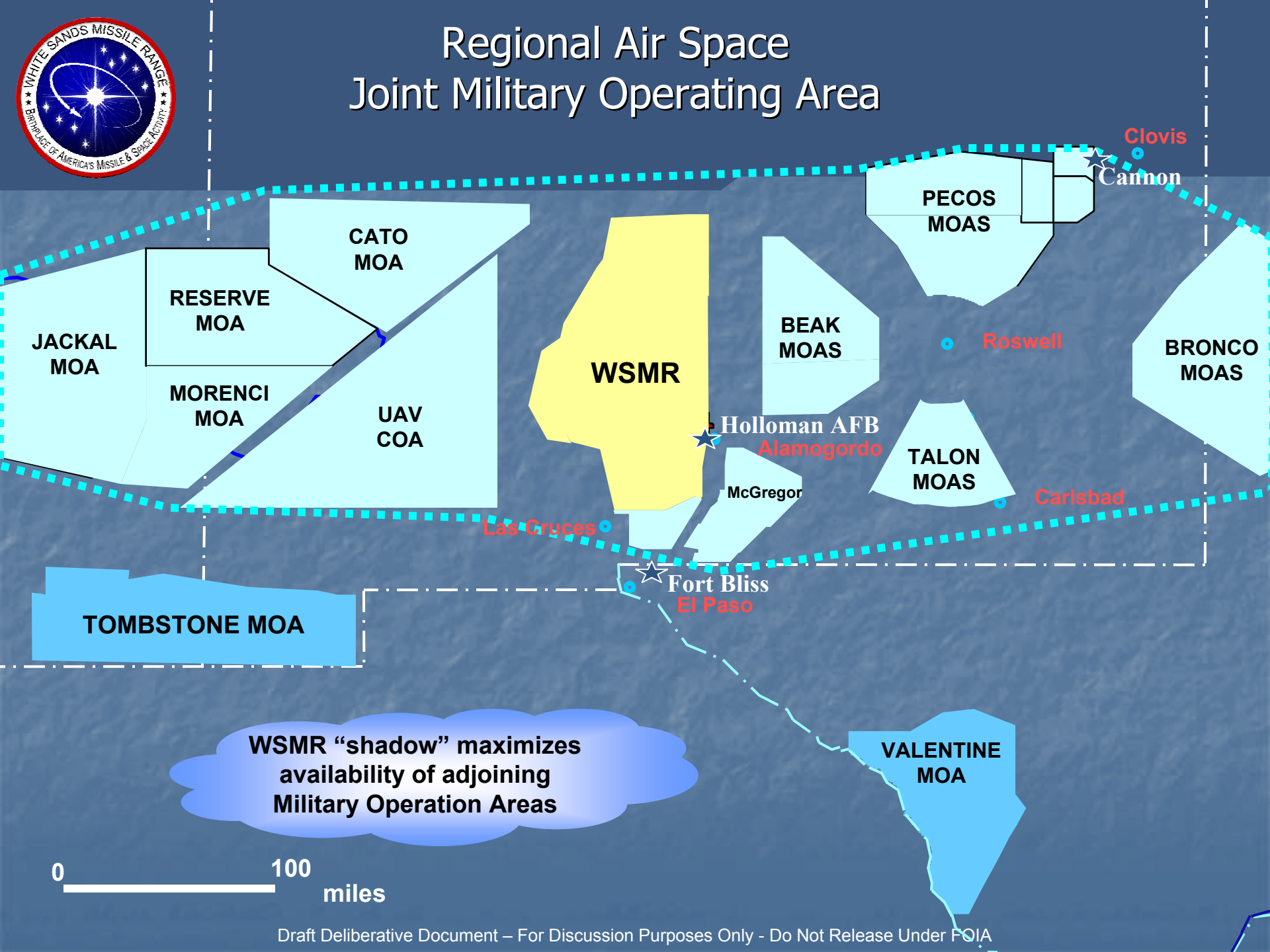
- *FAA Command and Controlled Airspace*
- *WSMR Command and Controlled Air Space*

- **DoD Restricted Airspace with full command & control authority of the FAA – Ground to Space 24/365**
- **WSMR is the Controlling Authority and Manager of the Air Space**

Air Traffic Control Center;
Army Owned (WSMR)
Air Force Operated (49th FW)
Joint and Multi-national Critical

FAA Certified Air Traffic Control Center at WSMR

Regional Air Space
Joint Military Operating Area



Unique Capability
Off Range Launch & Flight Corridors

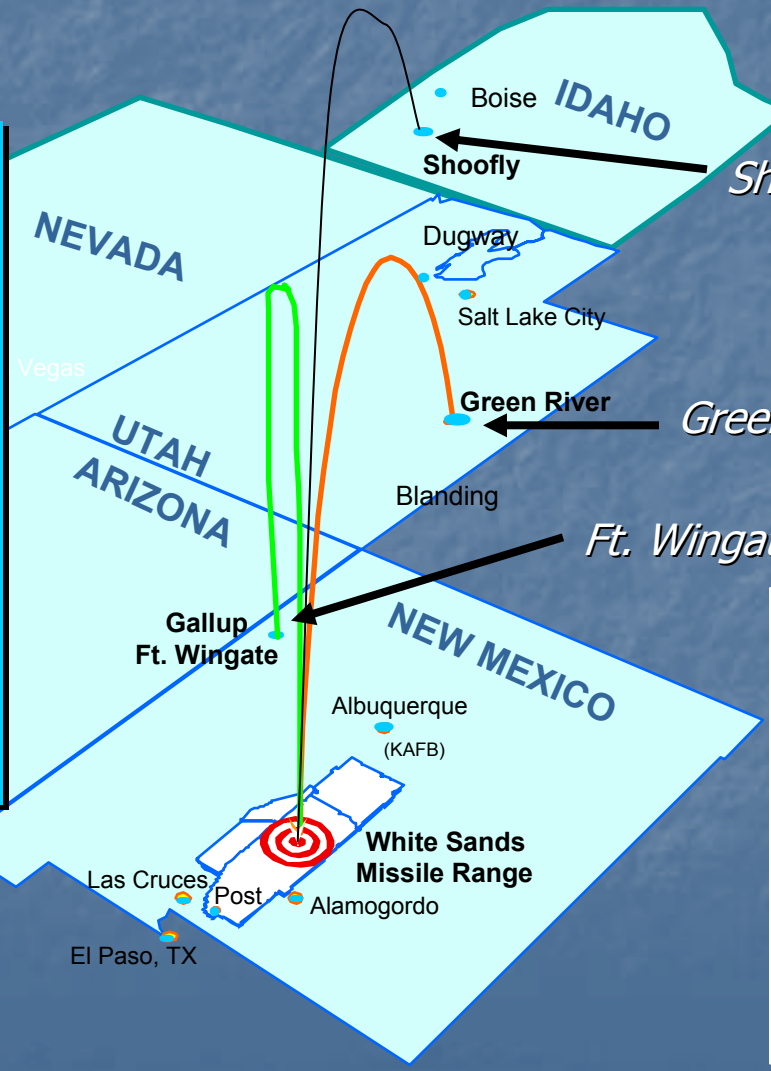
Key for current & future long stand off weapons

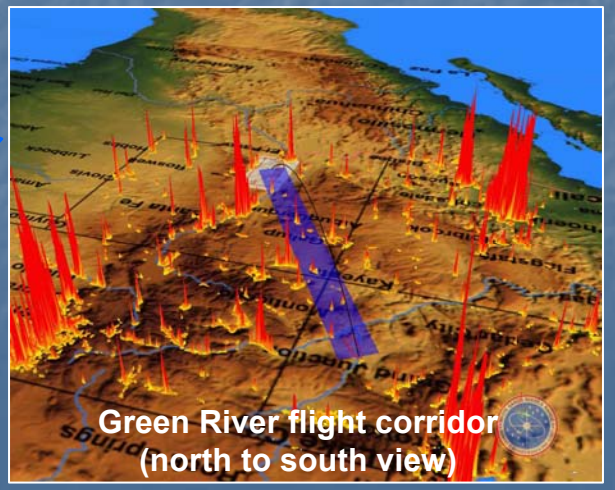
–

Missile Defense

Small Diameter Bomb

Tri-Service land attack





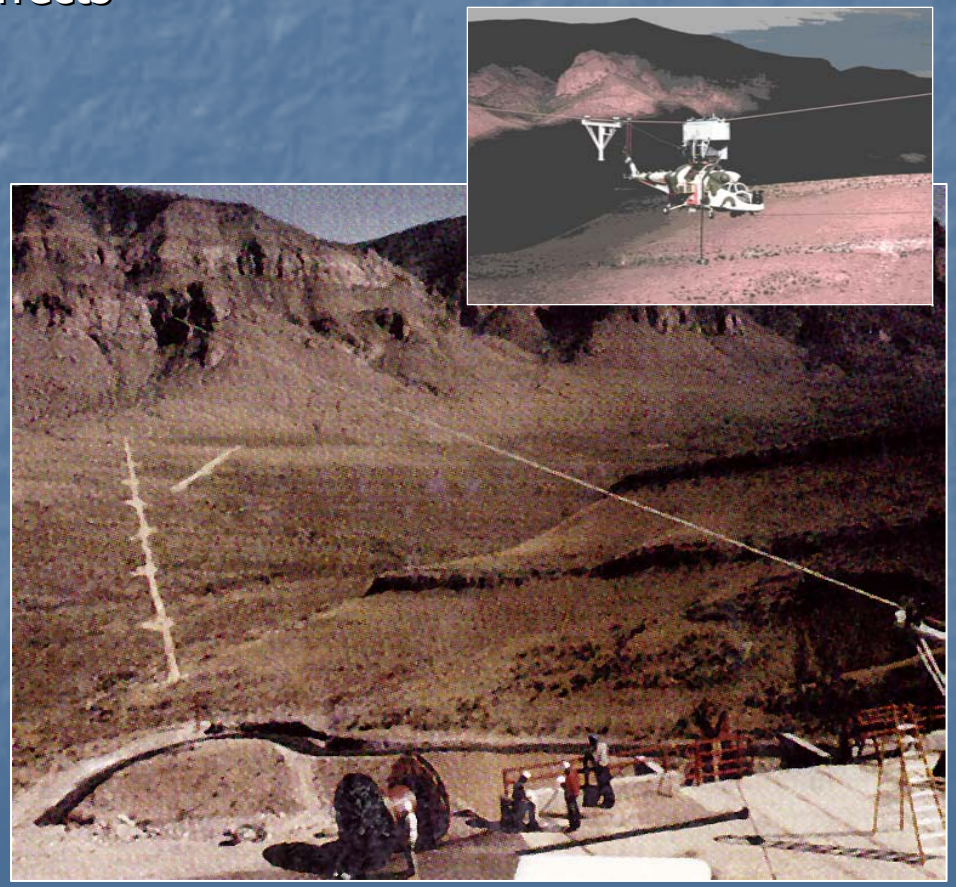
Unique Asset
Aerial Cable Range

Tactical developmental/operational test & training

- Live fire weapons countermeasure effects
- Prototype aircraft, bombs, sensors
- Targets, gunnery skills

Only facility of its kind in the DoD

- 3 mile Kevlar cable between two mountain peaks
- Precision instrumentation



Core Capabilities

Systems Performance

Ensuring the Warfighter has the Right Capability

- Test design, planning & conduct
- Data reduction, display & analysis
- System software validation & configuration management
- Human factors & safety

Leap ahead development through workforce experience & corporate knowledge

Rapid, comprehensive systems development

- Technical system diagnostics & solutions
- Nondestructive inspection

Technical Staff of Engineers & Scientist

Core Capabilities

Instrumentation & Data Acquisition

Reliable, Accurate & Precise Measures of Performance

- Technology development
- Long range – high altitude electro-optics
- High speed digital visible/IR
- Telemetry –fixed and mobile
- Laser, radio frequency & high power microwave
- Radar & global positioning system

Army's leader in Open Air Range Instrumentation technology development

Tri-Service technology sharing via range commanders council

All Aspects of Component to Systems of Systems Measurements

Core Capabilities

Threat Presentation & Lethality

Ensuring the Warfighter is On Target and Dominant In All Scenarios

- *Full-scale and Sub-scale Aerial Targets*
- *Precision Formation & Control*
- *Ground Targets Formation Control*
- *Urban & Unconventional targets*
- *Warhead Impact Areas*
- *Target Effects Measurements*
- *Threat Simulations*
- *Ballistic Missile Target Operations*

STORM
Ballistic Target

Core Capabilities

Operational Environments

Ensuring the Operational Capability – Anywhere Under Any Condition

- *World-wide Climatic Conditions*
- *Service Life Shock & Vibration*
- *Missile Thrust & Safety Performance*
- *Systematically Controlled Conditions*
- *Imperative to Systems Development*

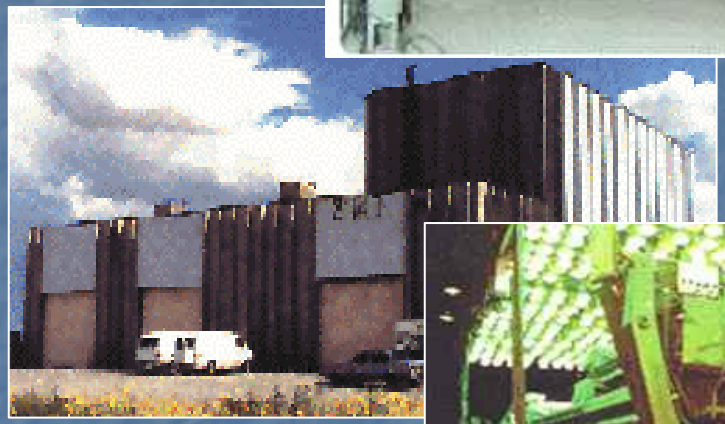
Co-Located with Test Ranges
- Key To Accelerated / Efficient Development & Acquisition

Unique Capability
Temperature Test Facility

- *DoD's Largest Explosive Rated Environmental Chamber*

  All in one location

  - *High & Low Temperature*
  - *Solar Radiation*
  - *Salt Fog*
  - *Rain*
  - *Icing*
  - *Humidity*



Instrumented for Systems Performance and Diagnostics

Core Capabilities

Survivability & Vulnerability

Ensuring the Warfighter's Capable – Anywhere Under Any Condition

- *Electro-magnetic Radiation & Emissions*
- *High Altitude Electromagnetic Pulse*
- *Direct Strike Lightning*
- *Electro-optical Signature Measurements*
- *Laser Protection and Effects*
- *Jamming & Compatibility*


Linear Accelerator


Pulsed Laser Vulnerability


Direct Strike Lightening

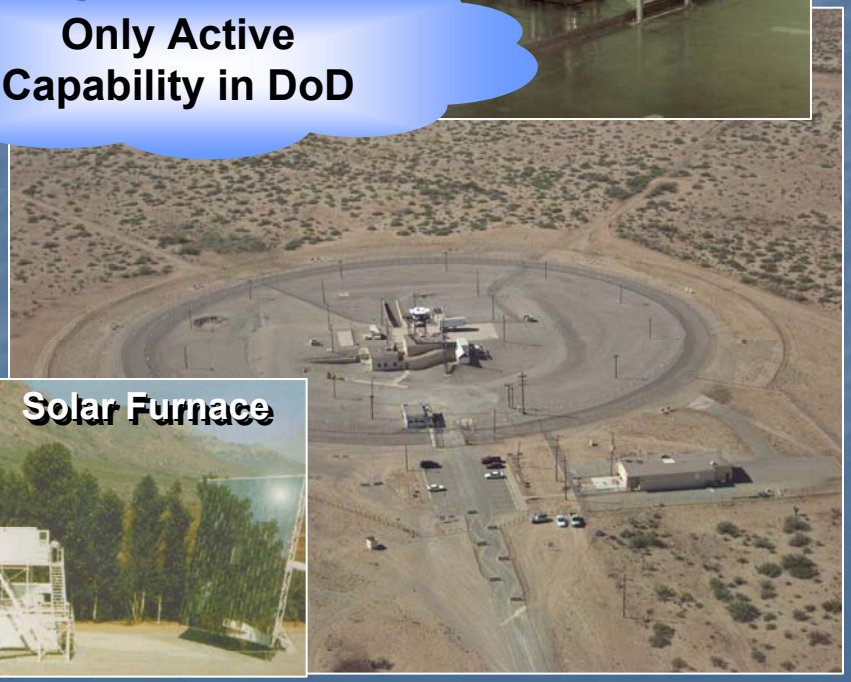

Electro-Magnetic Radiation

Unique Capability
Fast Burst Reactor

Nuclear Effects Testing & Characterization

- *Full Range of Required Nuclear Environments*
  - *Weapons & Components Survivability*
  - *Space Components Radiation Effects*
  - *Missile Defense Sensors and Electronics*
- *Fielded System Sustainability*
  - *Obsolescence Program*
  - *Radiation Tolerance Program*

Only Active Capability in DoD



Supports to All Services, Commands & Agencies (MDA, SMDC…..)

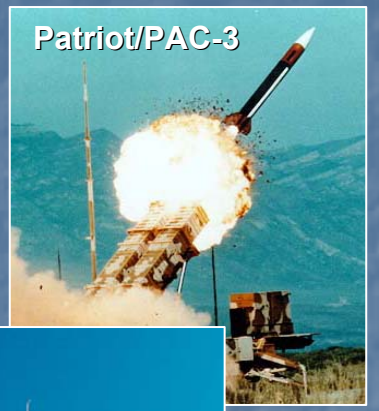
Solar Furnace

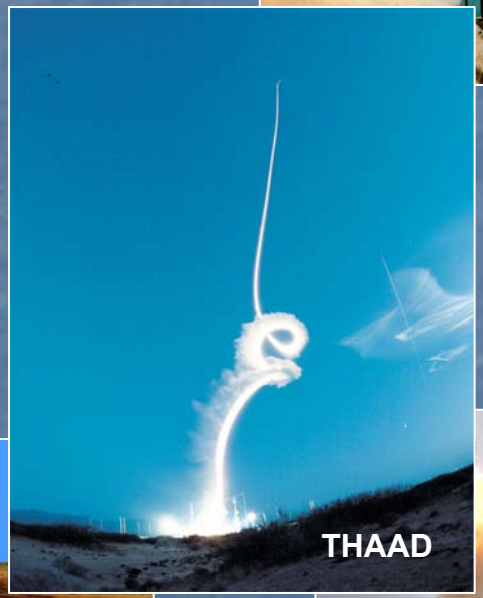
Mission Focus Area

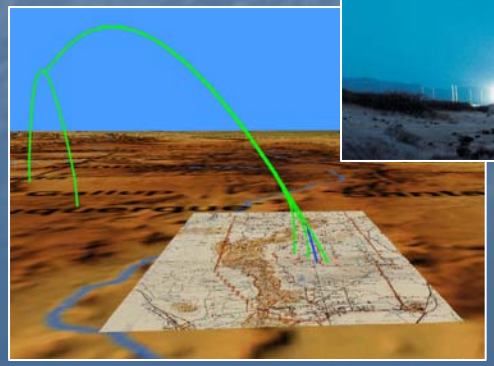
Air & Missile Defense

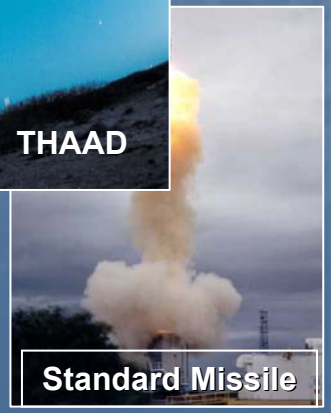
- *Terrain Masking & Long Range Aerial Target Engagements*
- *Ballistic Missile Defense Engagement*
- *High Altitude Intercepts*
- *Long Range Precision Instrumentation*
- *Countermeasures*
- *Multiple Engagement Target Scenarios*

Only range capable of "many-on-many" over land Air & Missile Defense scenarios

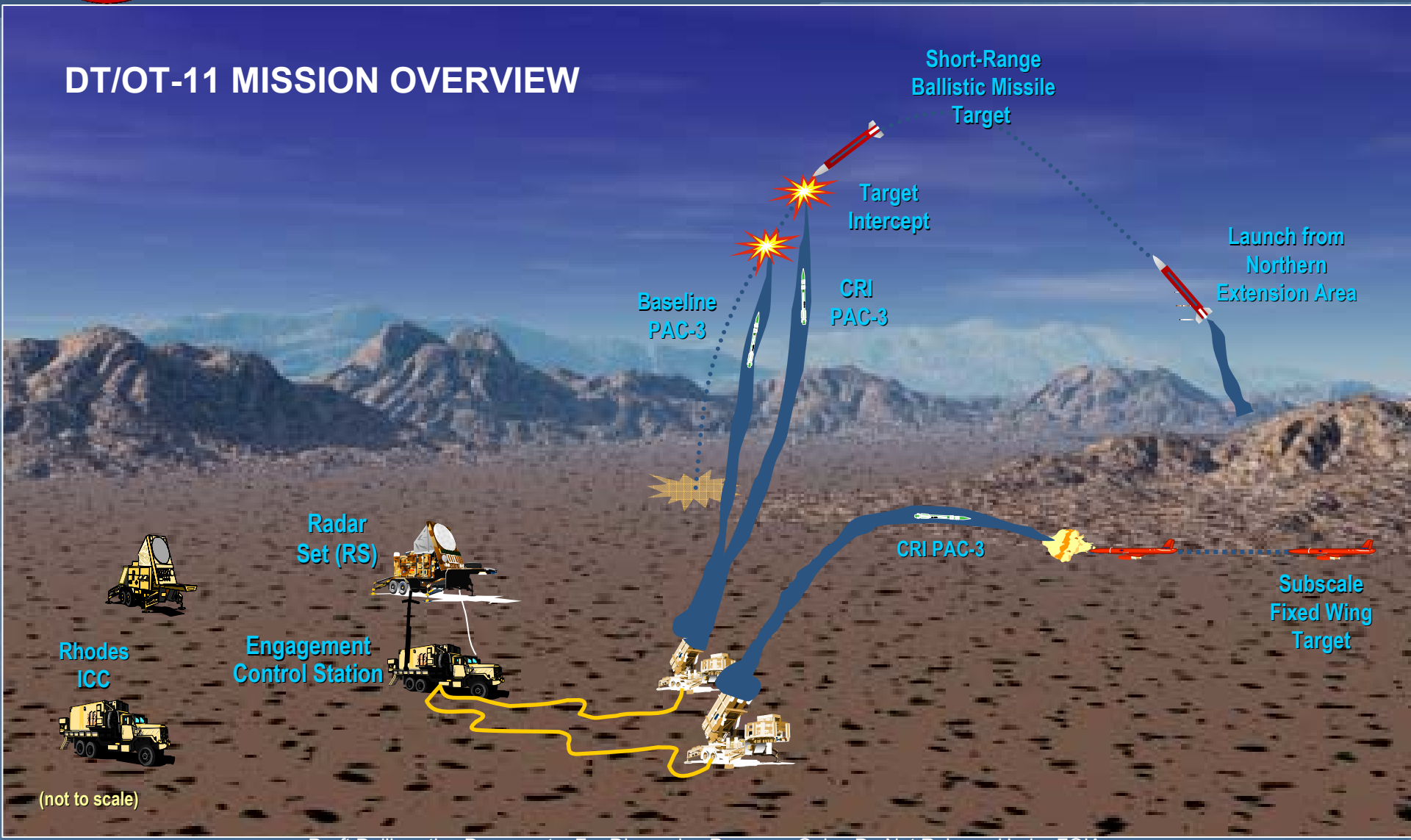








Unique Capability
Complex Operational Missions



Mission Focus Area

Indirect & Direct Attack Weapons

- *Precision Strike Missiles*
- *Extended & long range artillery*
- *Cruise Missiles*
- *Smart Munitions*
- *Long range – live impact areas*
- *Ground, hardened & deeply buried infrastructure targets*
- *Precision instrumentation*
- *Tactical environment*
- *Recovery – post mortem analysis*

Only Overland Range for Extended Range Missile, Munitions & Artillery

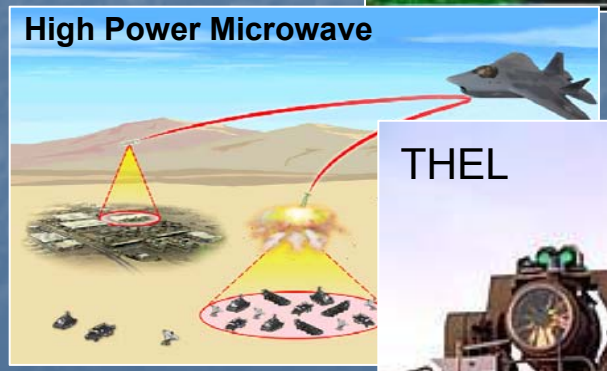
Mission Focus Area

Directed Energy

Transformation – Directed Energy Test & Evaluation Capability (DETEC)

- *Remote location, mountain backstop*
  - *Radiation safety buffers*
- *Large airspace extending to space*
  - *Dynamic engagements*
- *Threat & Developmental Targets*
  - *Missiles, artillery, aircraft, vehicle*
- *Clear, dry air*
  - *Laser beam propagation*
- *RF quite & remote area*
  - *No collateral effects*

DETEC
ARMY LEAD



Mission Focus Area

Unmanned Systems

- Armed & Autonomous
  - Large stand-off buffers
  - Ground & air targets
  - Diverse terrain
  - Joint tactical operations

WSMR has been flying UAVs for over 50 years

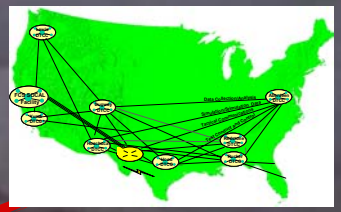
Mission Focus Area

Distributed Testing

Networked Systems in a Joint, Multinational Live, Virtual & Constructive Environment

- ***ATEC's Inter-Range Control Center (IRCC)***
- ***Expertise in modeling & simulation and complex mission control***
- ***Network Operations Center.0***

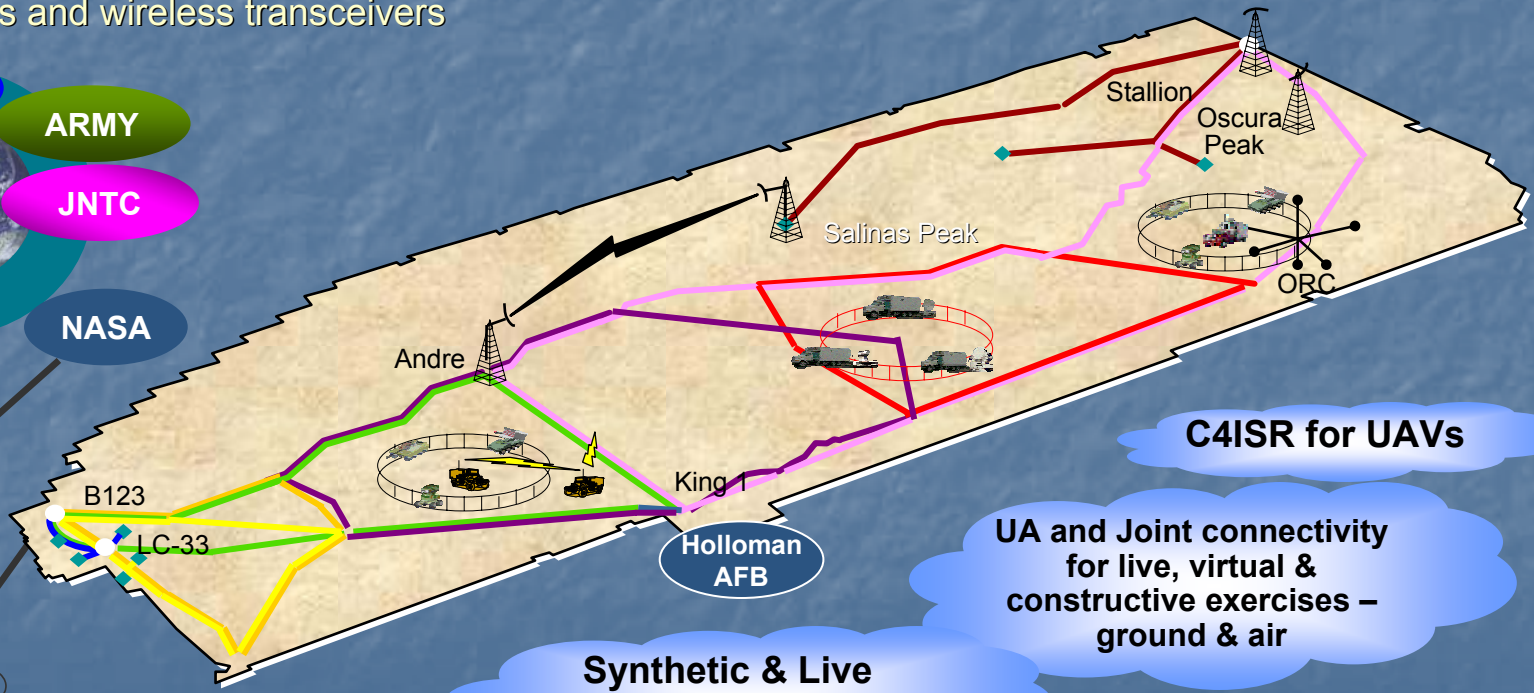
UA integration entry point



Enabling Capability
Network Connectivity

Distributed Testing

- *Test/Training Support Network (TSN)*
  - 8 fiber optic rings, 1100 miles of fiber
  - 255 nodes – data/coms entry
  - Direct connect instrumentation, voice (radio), video, telemetry, radar and tactical sensors or systems and wireless transceivers
- *Secure Wireless Network Initiative*
  - Mobile Information flow
  - Tactical systems and C4ISR data



Edwards AFB

Ft. Bliss Network

C4ISR for UAVs

UA and Joint connectivity for live, virtual & constructive exercises – ground & air

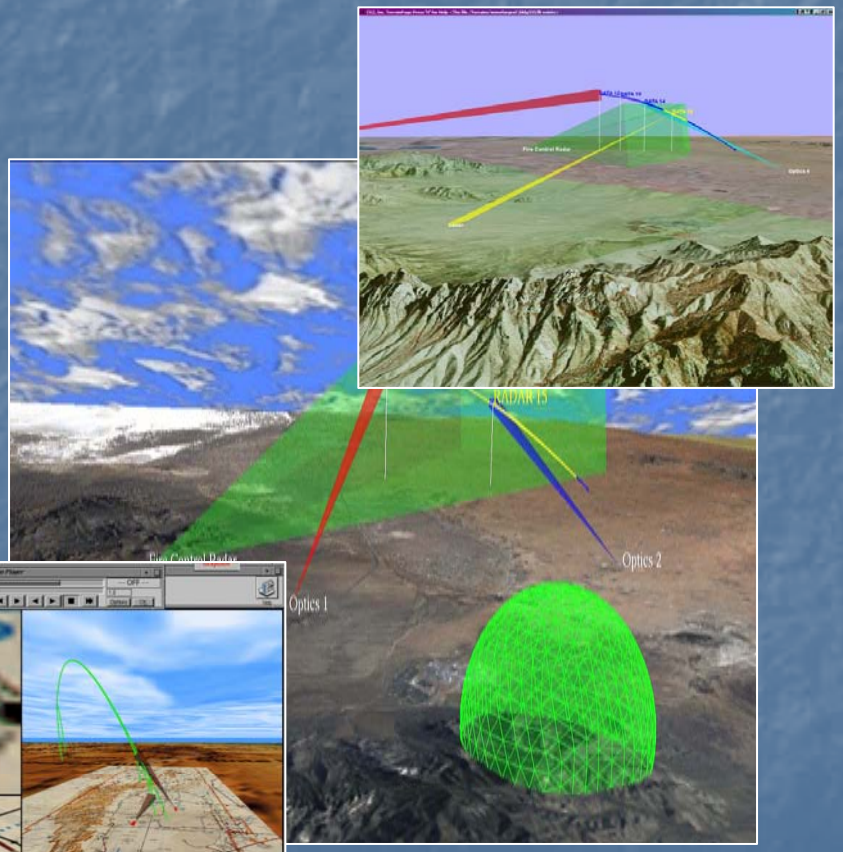
Synthetic & Live OPFOR & kill adjudication

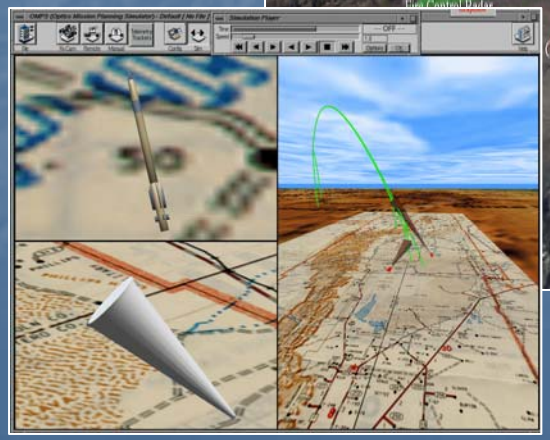
- *155 Mb/s External, 2.4Gb/s Internal*

Enabling Capability Modeling and Simulation

Distributed Testing

- *Mission Planning & Analysis*
  - *System & Force Performance*
- *Mission Command & Control*
  - *Kill Adjudication – live training*
- *Mission Playback*
  - *After Action Review*
- *Effects Simulations*
  - *Nuclear Effects*
  - *Directed Energy*



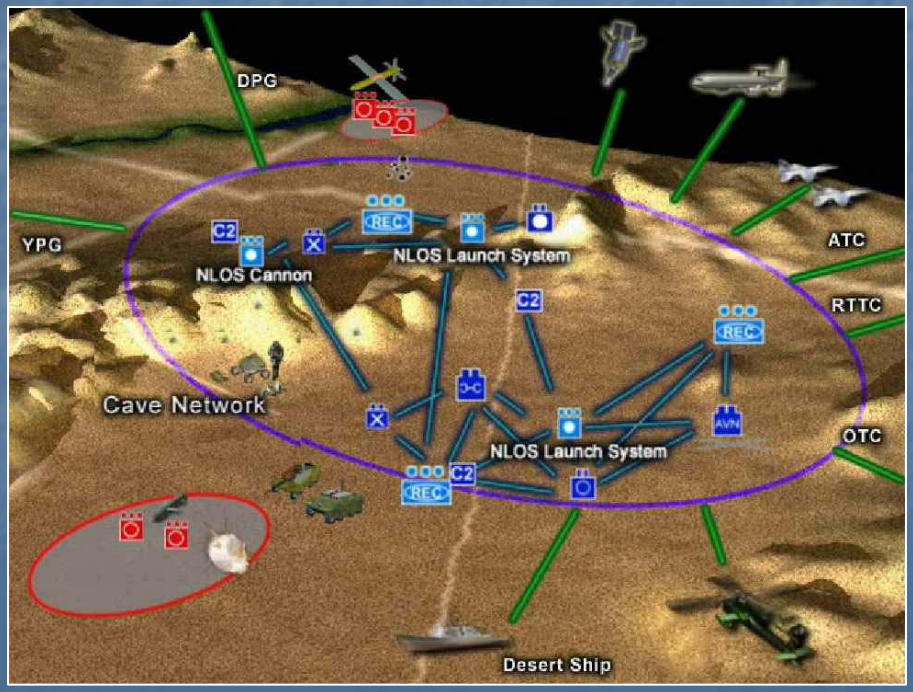


Mission Focus Area

Systems of Systems Testing

- *Distributed Test Control*
- *360º Asymmetrical Battle Space*
- *Comprehensive Instrumentation & Connectivity*
- *Air Space, Terrain, and Climate*
- *Air & Ground Maneuver*
- *Complex Mission Control*

Rated #1 site by Boeing (LSI) & selected by ATEC for UA (FCS) Technical Field Test



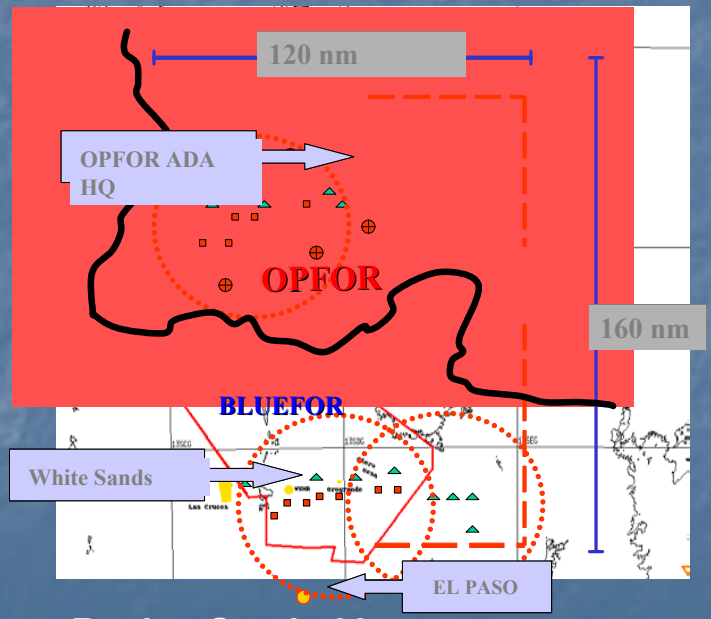
Team White Sands, Ft. Bliss & ATEC

No Other DoD Region Has The Combined Resources Needed to Test and Train the UA

Mission Focus Area

Joint Interoperability

- *Extensive proven experience in supporting joint exercises and joint tests, (i.e. Roving Sands, Millennium Challenge 02, Patriot DT/OT)*
- *WSMR is key to Roving Sands – Largest Joint & Multi-National Air Defense Exercise*
  - *Instrumentation*
  - *Air & Land Space*
  - *Kill Adjudication*
  - *JFCOM Survey Team identified WSMR as a key asset to JNTC*
  - *JFCOM rated WSMR capable on 25/30 Live Joint Tactical Tasks*

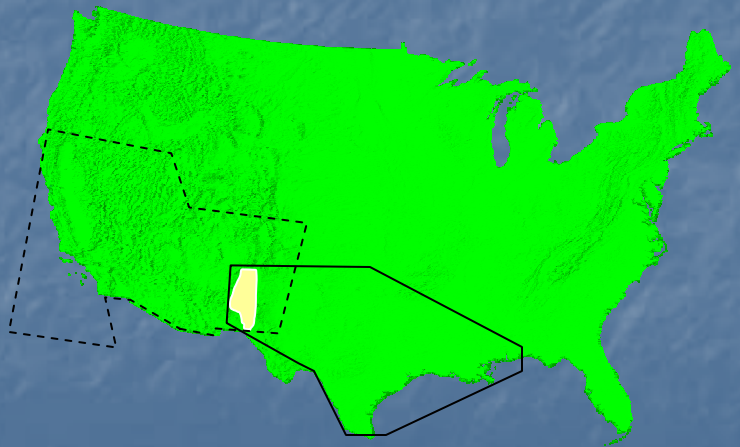


Roving Sands 03

Mission Focus Area

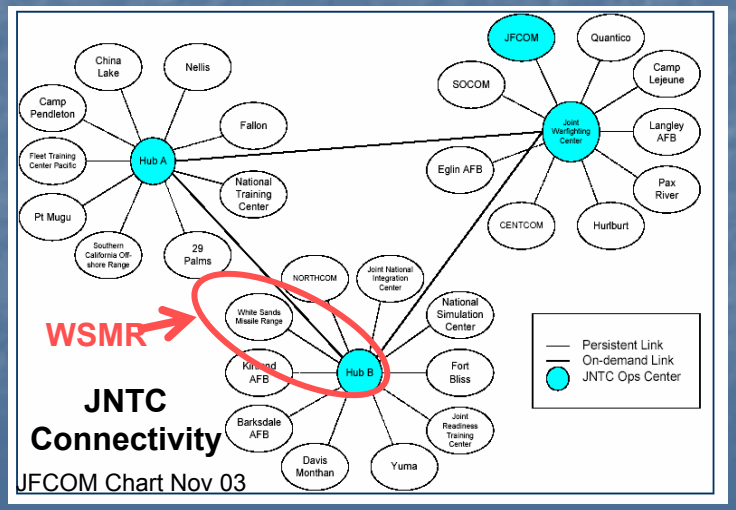
Joint Interoperability

- *Air Force, Navy & Army assets are within the WSMR battle space*
- *WSMR included in both the Southwest & Gulf range complexes*
- *WSMR has extensive infrastructure, instrumentation & experience*
- *Ability to train Atlantic & Pacific Fleets within strike distance of Gulf & Pacific Ocean*



Southwest Range Complex

Gulf Range Proposal



A Multi-National Test Center

- 14 Nations have selected WSMR as THE place to test & train
  - Foreign Military Sales
  - Foreign Developed Systems

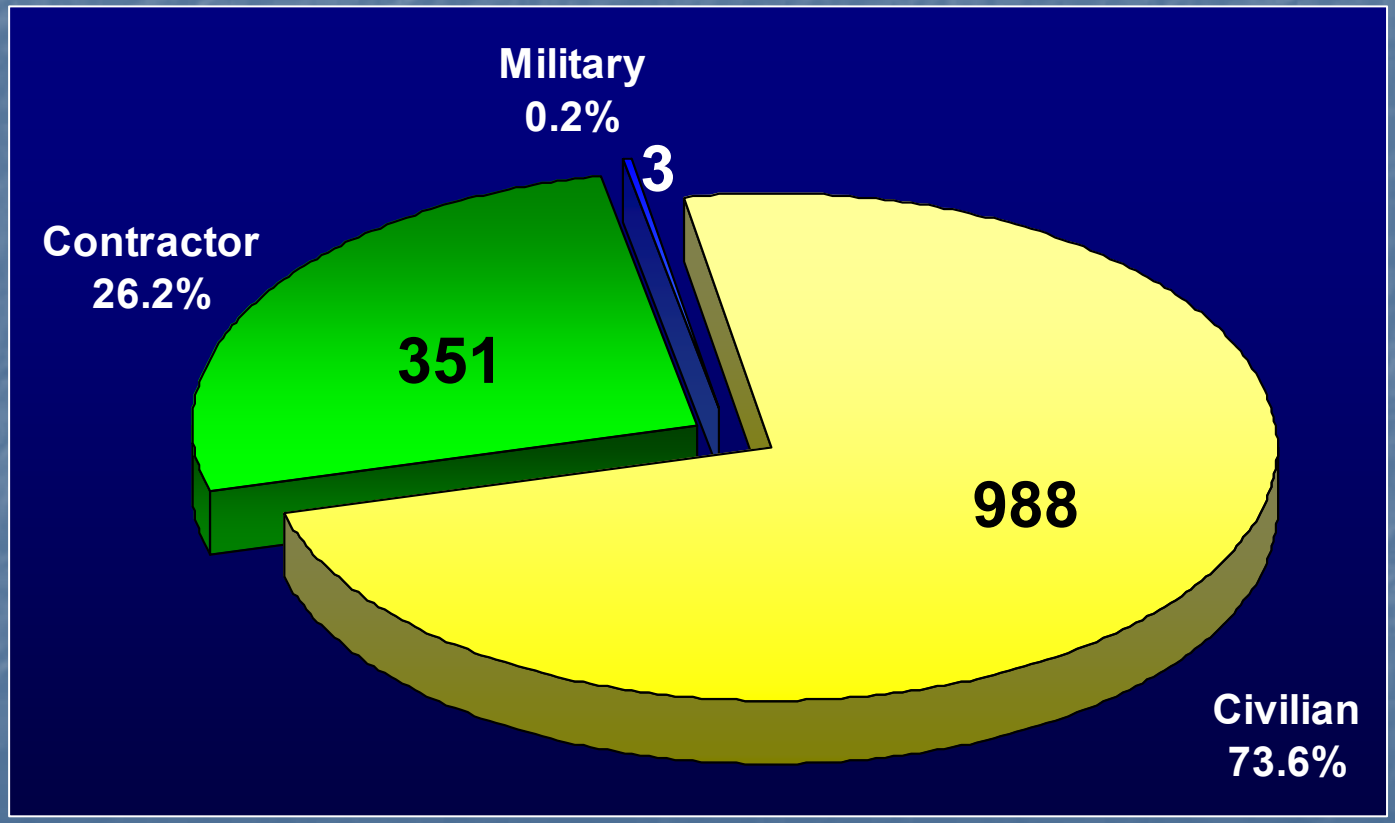
- United Kingdom
- Japan
- South Korea
- Bahrain
- Italy
- France
- Denmark
- Netherlands
- Germany
- Israel
- Turkey
- Canada
- Norway
- Saudi Arabia

They come for the controlled air space, real estate, & instrumentation

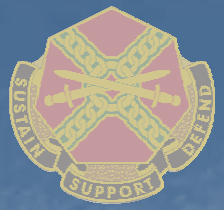
FY04 Workforce & Budget

Army Test & Evaluation

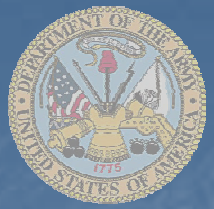
Total Workforce: 1,342



Total Budget: $168 million



Installation Management Agency



Department of the Army

Department of the Air Force

Department of the Navy

Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

46th Test Group Holloman Air Force Base

COL JOSEPH E. ZEIS, JR., COMMANDER

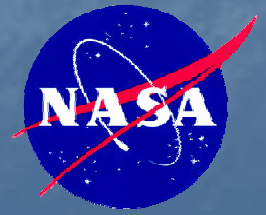
Army Research Laboratory

National Geospatial-Intelligence Agency

Center for Countermeasures

TRADOC Analysis Center

High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

46th Test Group
Holloman Air Force Base

Mission

- We provide a unique combination of test and evaluation services to our customers with our dedicated people and state-of-the-art measurement and support capabilities in the areas of
  - Guidance and Navigation T&E
  - High Speed Sled Track Testing
  - Radar Cross-Section Testing
  - Flight Testing
  - White Sands Missile Range Liaison

Infrastructure
A National Resource

TEST TRACK - $178M

CIGTF - $141M

NRTF - $262M

OTHER - $19M

TOTAL Investment
$600M

TOTAL Replacement
3X or $1.8B

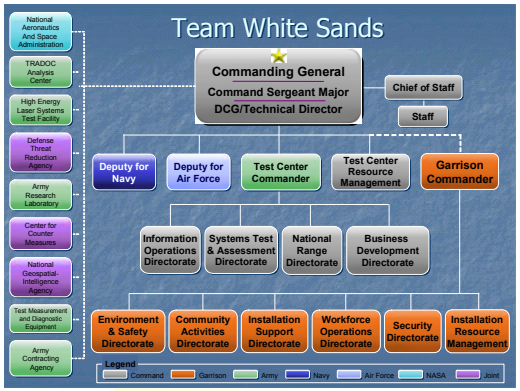
Why USAF at WSMR?

- **Ability to fly over all terrain types**
  - With exception of littoral
- **Critically large Air/Ground space**
  - Isolated
  - Extended weapons range
  - Spectrum availability
  - Recovery forensics
- **Unique natural development test sites**
  - 3000’ peak sites
    - Look up/Look down – Shoot down
    - 180 to 300 degree field of regard
    - Seismic stability
- **Secure fixed sites**
  - NRTF and High Speed Test Track

Chain of Command

AFMC
Wright-Patt
AFB OH

Commander Wears 3 Hats



AAC
Eglin
AFB FL

46 TW
Eglin
AFB FL

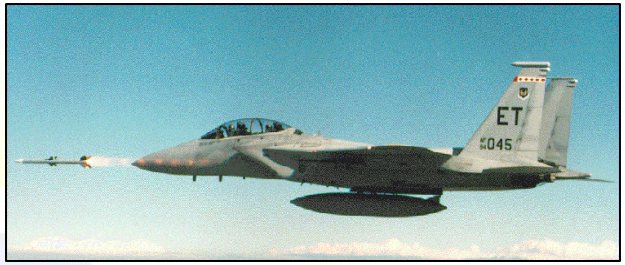
46 TG
Holloman
AFB NM

USAF Lead for
Directed Energy Test &
Evaluation Capability

586th Flight Test Squadron

SQUADRON MISSION…

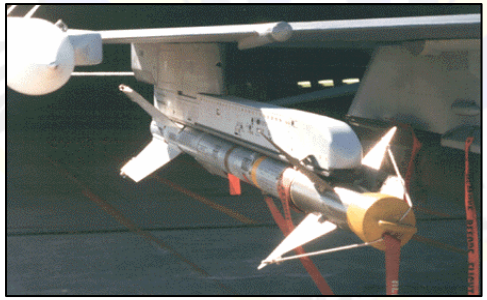
- Flight Test Over WSMR
- Photo and Safety Chase
- Advanced Avionics Testing



AMRAAM Test and Evaluation

Photo and Safety Chase

F22 Live Fire Testing Conducted at WSMR



GPS TSPI and a Centerline Pylon

746th Test Squadron

SQUADRON MISSION…

- **Operate DoD's Central Inertial Guidance Test Facility (CIGTF)**
- **Verify Aircraft Navigation Systems**
- **GPS Center of Excellence:**
  - Test User Equipment
  - Accuracy & Jamming

Standing FAA Freq Clearances

Precision Laboratory Tests are Performed on Systems

Flight and Ground Vehicle Testing Supplements Rigorous Laboratory Tests

Missile Guidance Systems are Tested

Precision test in a jamming environment

Inertial & EW Testing

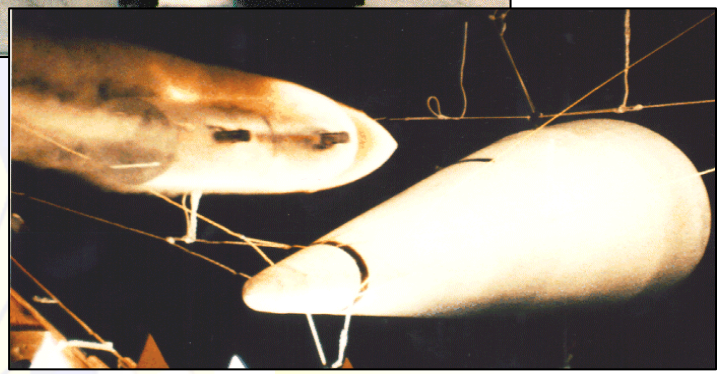
- Precision Centrifuges
  - 100 & 120 inch Centrifuges
    - Critical to military aviation inertial guidance and navigation testing
    - Supports current tech trend in combined GPS/INS systems
  - Requires WSMR's unique seismic stability
- Field Jamming Systems
  - WSMR RF quiet environment critical to test
  - Remote location with minimal impact on civilian population
  - Standing clearances with FAA

846th Test Squadron

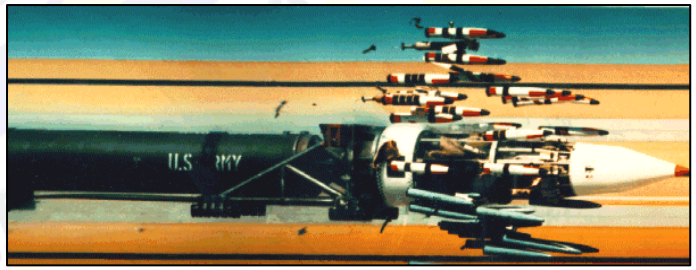
SQUADRON MISSION…

- Lethality Testing
- Aircrew Escape Systems
- Guidance/Navigation Systems Test
- Munition/Missile Performance
- Aircraft Infrared Countermeasures

Certification of USAF Egress Systems



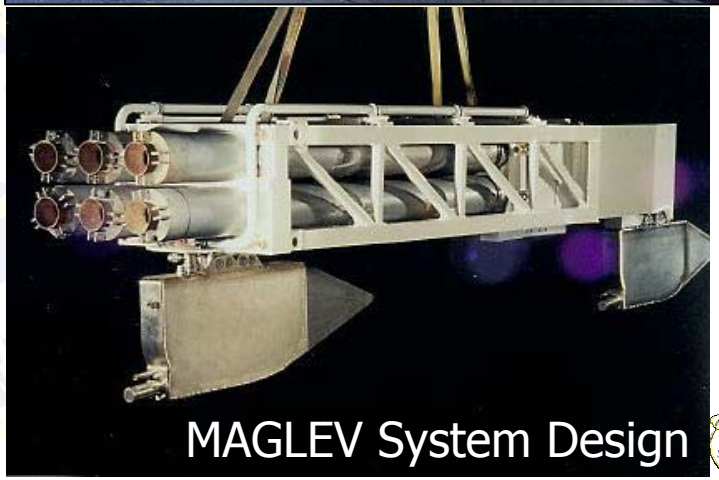
Test Interceptors to Measure Lethality



Ideal Setting to Study Submunition Dispensing

High Speed Test Track

- World Land Speed Record set on April 30, 2003
- 192 lb payload traveled at 9,465 ft/sec, MACH 8.6
- Longest & most precisely aligned track in the world - 50,788 feet!
- WSMR ideal location due to weather and minimal seismic disturbance



MAGLEV System Design

Hypersonic Upgrade

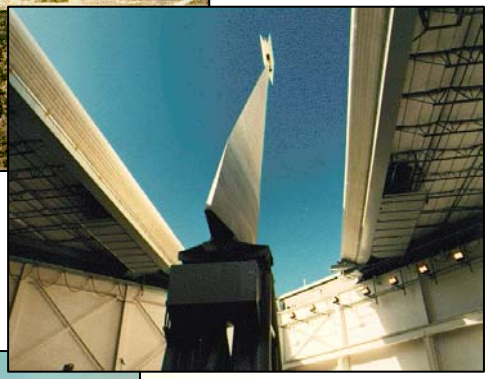
National RCS Test Facility

DIVISION MISSION…

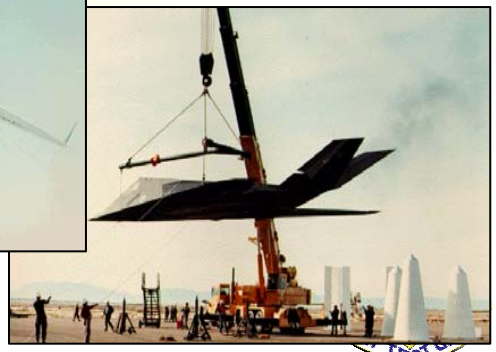
- **Radar Cross Section (RCS) Measurement**
  - Full-scale Flyable Aircraft
  - Extremely LO Models
- **Radar Signature Prediction**
- **Antenna Pattern Measurements**

Secure Test Environment:
RAMS & Main Site
(100 Mhz to 35 Ghz)

RAMS Offers a Remote, Modern, Secure, Test Facility



High Fidelity Sub-scale Models



Full-Size Aircraft and Bistatic Testing

UAV Test & Evaluation Center (UTEC)

- **Joint Regional UAV Test Center**
  - **Physical Sciences Laboratory (PSL)/NMSU**
  - **White Sands Missile Range**
  - **46th Test Group**
- **Synergy**
  - **Experienced in National Airspace Management**
    - **File and fly capability**
  - **Environmental Capabilities**
    - **Climatic testing**
    - **Electromagnetic effects testing**
    - **Thermal survivability testing**

Active Programs

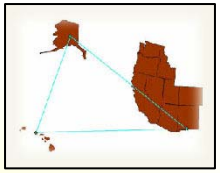
- Air-to-Air
  - AMRAAM
  - AIM-9X
- Air-to-Ground Munitions & Missiles
  - JDAM, WCMD, JSOW, GBU-24, 27, & 28, SDB
  - JASSM, CALCM
- Directed Energy
  - Airborne Laser
  - Advanced Tactical Laser – ACTD
  - AFRL NOP Laser Facility
  - Imaging & Designating System
- Countermeasure
  - Aerial Cable Live Fires
    - LIFE, LAIRCM
- 46TG
  - 586TS: Special Programs
  - 746TS: GPS & GPS Vulnerability
  - 846TS: High Speed Test Track
  - NRTF: Radar Signature & LO Measurements
- Other
  - Real Time Link WSMR to Edwards AFB

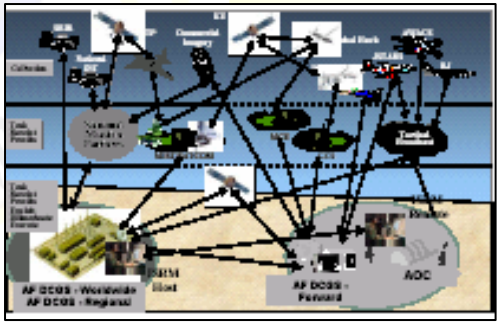
Synergy

- Customer Base
  - Eglin AFB: Munitions & Air-to-Air Programs
  - Edwards AFB: Aircraft & ABL Programs
  - Kirtland AFB: DE Lab & AFOTEC Programs
  - AFRL NOP Laser Facility
  - Nellis AFB: FOT&E Programs
  - Barksdale AFB: OT&E Programs
- Aircraft Platforms
  - Fighters: F-15, F-16, F-22, JSF
  - Bombers: B-1, B-2, & B-52
  - UAV's
- Targets
  - DTRA
    - Hard & Deeply Buried Targets
    - Tunnel Targets
- Toby Town
  - Live & Inert
  - Located in the Mid Range Area
- Army Target Management Office
  - Foreign & Domestic Ground Targets
- Boosting Missile
  - Army w/ Lance & FMA
  - Navy w/ Terrier Lynx
- Air Breathers
  - Full Scale: AF QF-4
  - Sub-Scale: Navy, AF, & Army BQM-74, BQM-34 & MQM-107

Strategic Focus Areas

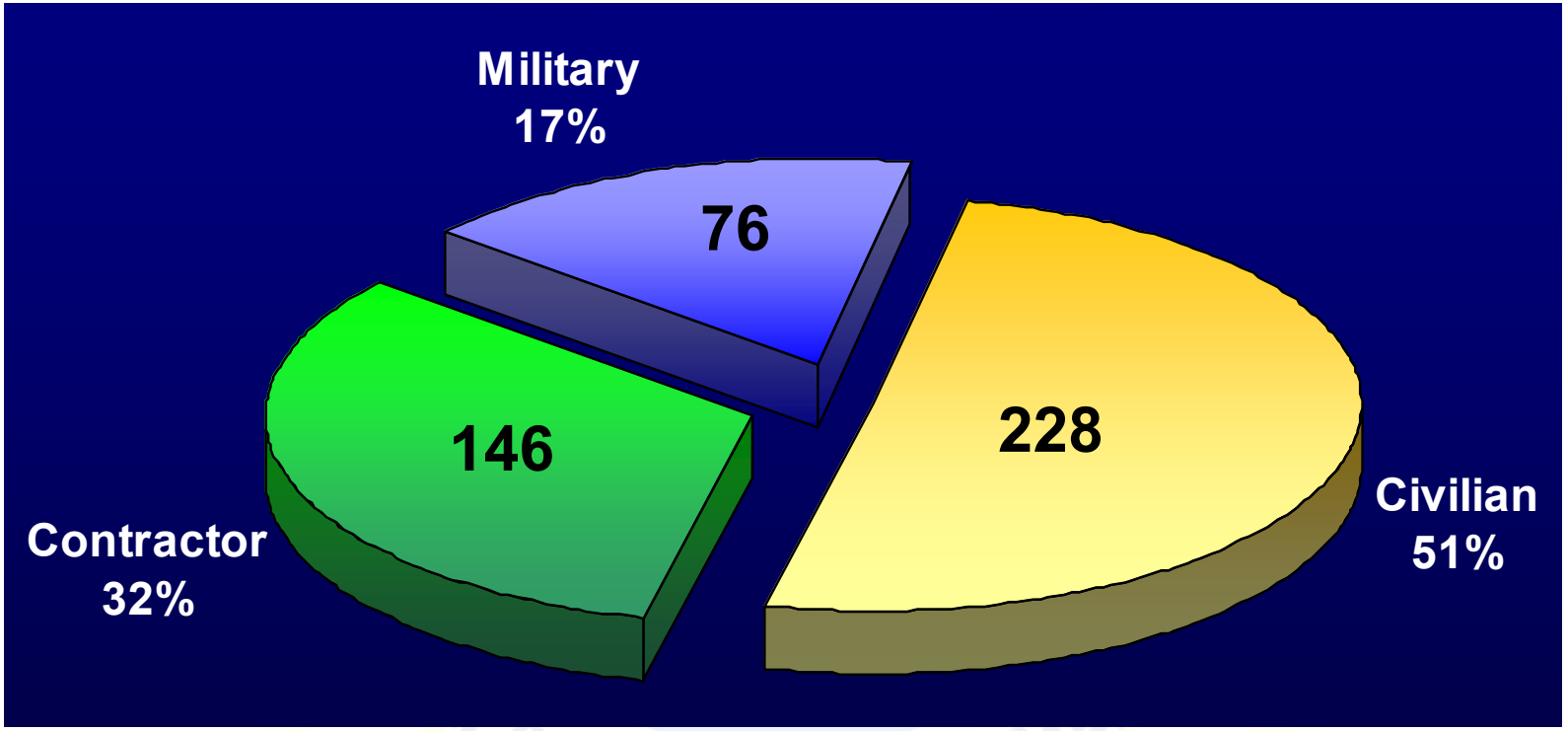
- **UAV**
  - Sensors – Expand niche to include sense and avoid technology
  - Navigation/INS systems
  - Low observable technology
  - Army's Unit of Action
- **Directed Energy – AFRL/ABL/ATL**
- **Precision Munitions**
- **Effects-based testing & Battlespace presentation**
  - Integration of manned, unmanned, and space assets
    - Sense and avoid technology
    - RF and laser communications
- **Homeland Defense**
  - Missile Defense
  - GPS Denial





FY04 Workforce & Budget

Total Workforce: 450

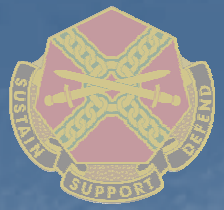


Total Budget: $71.8 million

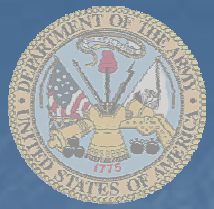
49FW
HAFB Infrastructure

- ***Capacity*** - Large AFB (Runway, Support, Munitions Handling, etc)
- ***Secure*** **-** Ability to Support Sensitive Efforts
- ***Joint*** **-** 49 FW (F-117)
- ***Coalition*** **-** German AF (F-4 & Tornado)
- ***Live-fire*** **-** Full-scale/Sub-scale Drones
- ***Expandable*** **-** Within Flying Distance, Special Ops, F-16, Research Labs
- ***49 FW Training Sortie Scheduling*** - 98% scheduled versus requested, 99.9% scheduled versus requested for high-priority "graduation" training

Over 10,000 sorties per year



Installation Management Agency



Department of the Army

Department of the Air Force

Department of the Navy

Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

Naval Surface Warfare Center
Port Hueneme Division
White Sands Detachment

CMDR GREGORY F. DEVOGEL, OFFICER IN CHARGE

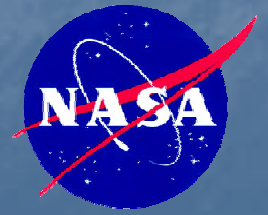
Army Research Laboratory

National Geospatial-Intelligence Agency

Center for Countermeasures

TRADOC Analysis Center

High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

Mission

- Land Based Firing Test and Evaluation and Build-up of Naval Weapon Systems
  - Support Standard Missile, Extended Range Guided Munitions, Directed Energy Weapons, Evolved Sea Sparrow Missile, Tactical Tomahawk Penetrator Variant
- Launch of Suborbital Research Rocket Systems
  - NASA Research Rockets
  - Ballistic Missile Targets
- Navy Deputy to the Commanding General
  - Avenue for Navy to conduct Joint Interoperability Weapons Testing with organic assets

Naval Surface Warfare Center
Port Hueneme Division
White Sands Detachment

- Established March 1946
- Why over land testing at WSMR?
  - Live fire precursor to at-sea DT/OT
    - Weapon Explosive Safety Review Board (WESRB)
  - High quality instrumentation of entire flight
  - Recovery forensics and materials performance
  - Scenario control and flexibility
  - Real-time communications, display and processing flexibility/quality
  - Scheduling flexibility
  - Development and integration cycle (software/hardware)
  - Land targets available

Current Programs

- Standard Missile (SM-2 all variants)
- Standard Missile (build up only)
- Directed Energy Weapons
- Extended Range Guided Munitions (ERGM - all variants)
- Navy Radar Program
- Research Rockets
- Ballistic Missile Targets
- DD(X)
- OSD Special TM Package Test
- Naval Integrated Fire Control – Counter Air (NIFC-CA)
- Standard Missile SM-6/Extended Range Active Missile (ERAM)

Unique Capabilities

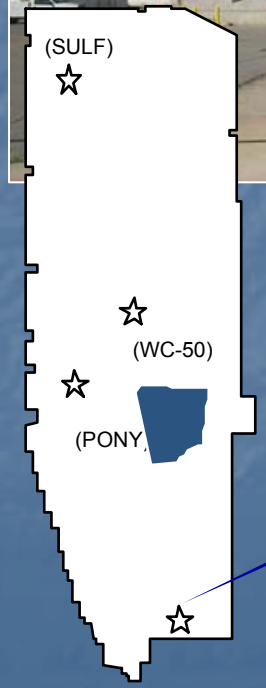
- USS Desert Ship
- 4 cell missile assembly building for diverse customers
- Over land long range (40+ nm) gun site
- MK74 radar that can simulate an airborne radar
  - Salinas Peak
- White Sands launch complexes
  - Sulf Site
  - LC34 Rolling Airframe Missile
  - LC36

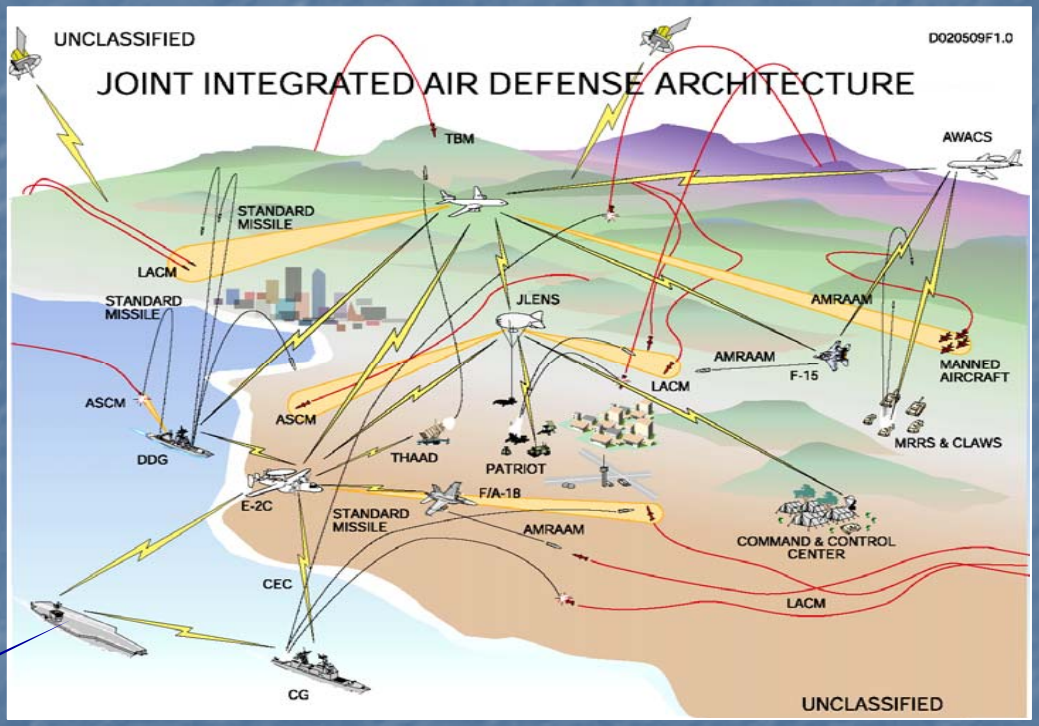
Team White Sands Synergy

- Navy missions/tests rely heavily on Army host for instrumentation, communication, target services and range coordination
- Navy laser testing relies heavily on HELSTF for coordination, instrumentation, and facilities
- Navy used targets developed by 46th Test Group and DTRA
- Navy uses Ft Bliss and Holloman AFB to support testing

Transformation Initiatives

Make Desert Ship a critical node in Joint T&E





Transformation Initiatives Future Vision

White Sands Detachment will continue to be the Surface Navy's over land test site.

- NIFC-CA can only be tested here
- Radar tests against Ballistic Missiles and Land Attack Cruise Missiles could be tested here
- All long range over land gun testing could be moved to White Sands
- All overland air dropped and air-to-air testing could be moved to White Sands
- All surface weapon systems (that require over land testing) should be tested here

Training

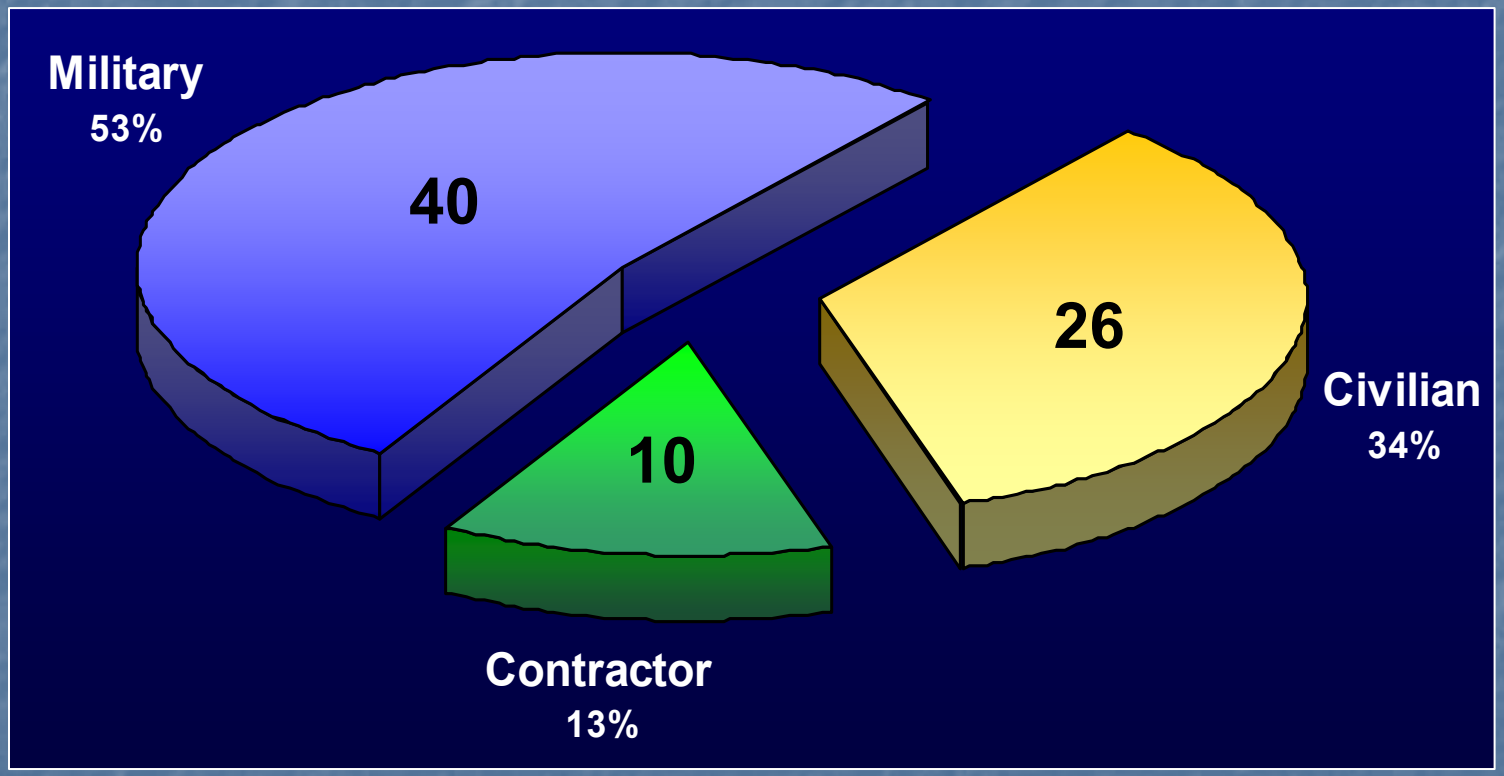
- Excellent training area for joint and deep strike missions. Can support BOTH coasts at a single training area!

Transformation Potential

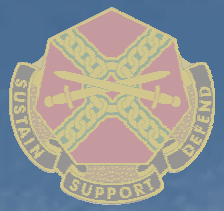
- Peak Navy population at White Sands was over 1000 employees (1970)
  - Site had major fleet training role
- Navy owns 58 buildings, 50% of which are not heavily used
- Navy White Sands has the capacity to absorb many of the tests conducted at China Lake with little or no impact

FY04 Workforce & Budget

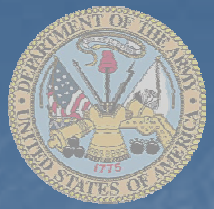
Total Workforce: 76



Total Budget: $17 million



Installation Management Agency



Department of the Army

Department of the Air Force

Department of the Navy

Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

Defense Threat Reduction Agency

Technology Development Directorate

Test and Technology Support Division (TDT)

COL JEFFREY THOMAS, CHIEF TDT

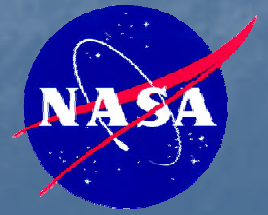
Army Research Laboratory

National Geospatial-Intelligence Agency

Center for Countermeasures

TRADOC Analysis Center

High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

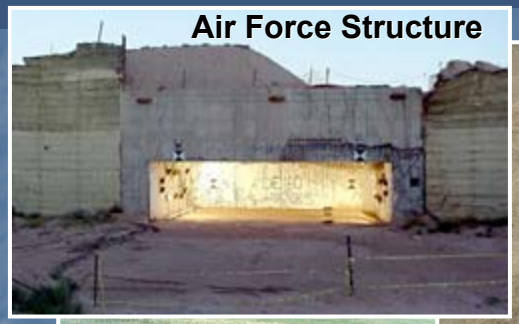
Defense Threat Reduction Agency

Mission

Provide end-to-end test event planning, management, safe execution and results analysis supporting DoD, Federal Agencies, and friendly nations' programs to counter proliferation of Weapons of Mass Destruction

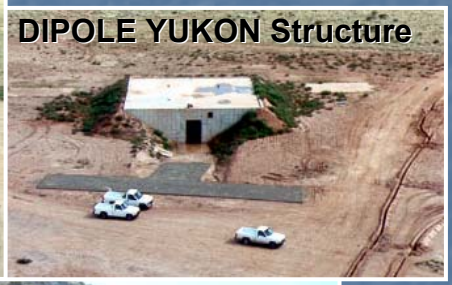
Unique Capabilities

- Focus Areas
  - Tunnel tests
  - Large-scale explosives
  - Thermobaric ACTD
  - Aerial deliveries
- Test Beds
  - Capitol Peak Tunnel Site
  - High Explosives (PHETS) test beds
  - SHIST Sites and Alternate SHIST Sites
  - Large Blast Thermal Simulator

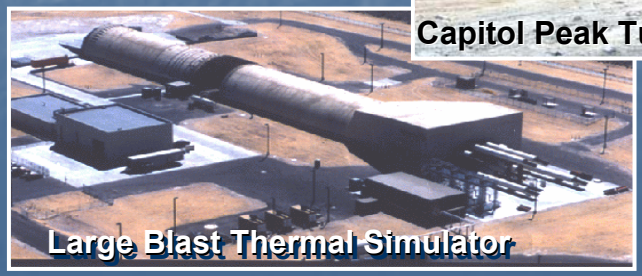

Air Force Structure


HUMBLE ASPEN


JASSM Hard Target Structure

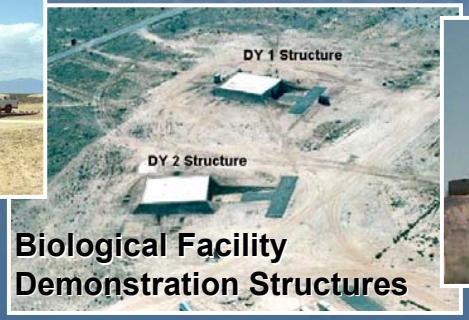

DIPOLE YUKON Structure


Capitol Peak Tunnel Site


Large Blast Thermal Simulator

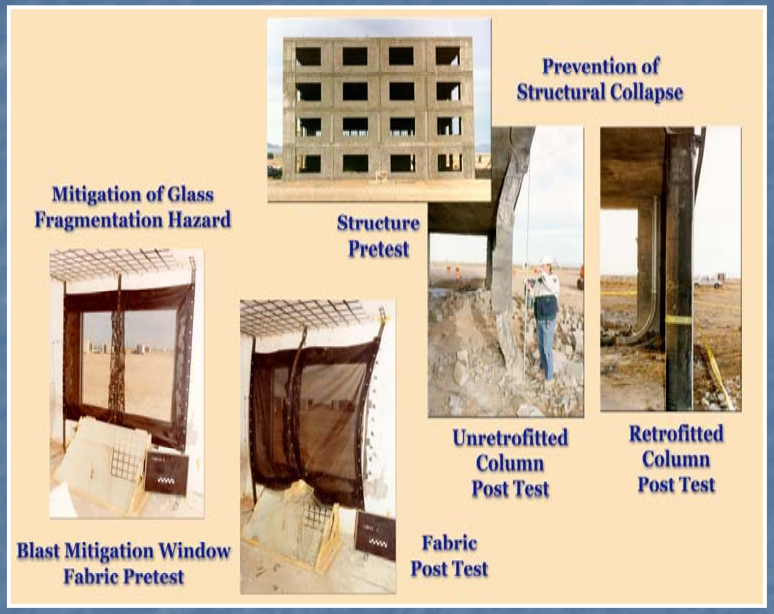
Team White Sands Synergy

- Hard Targets – Joint/Multinational
- WSMR Instrumentation/Infrastructure
- C4ISR Targets – UAV, UGV, UA
- Systems Survivability - LBTS



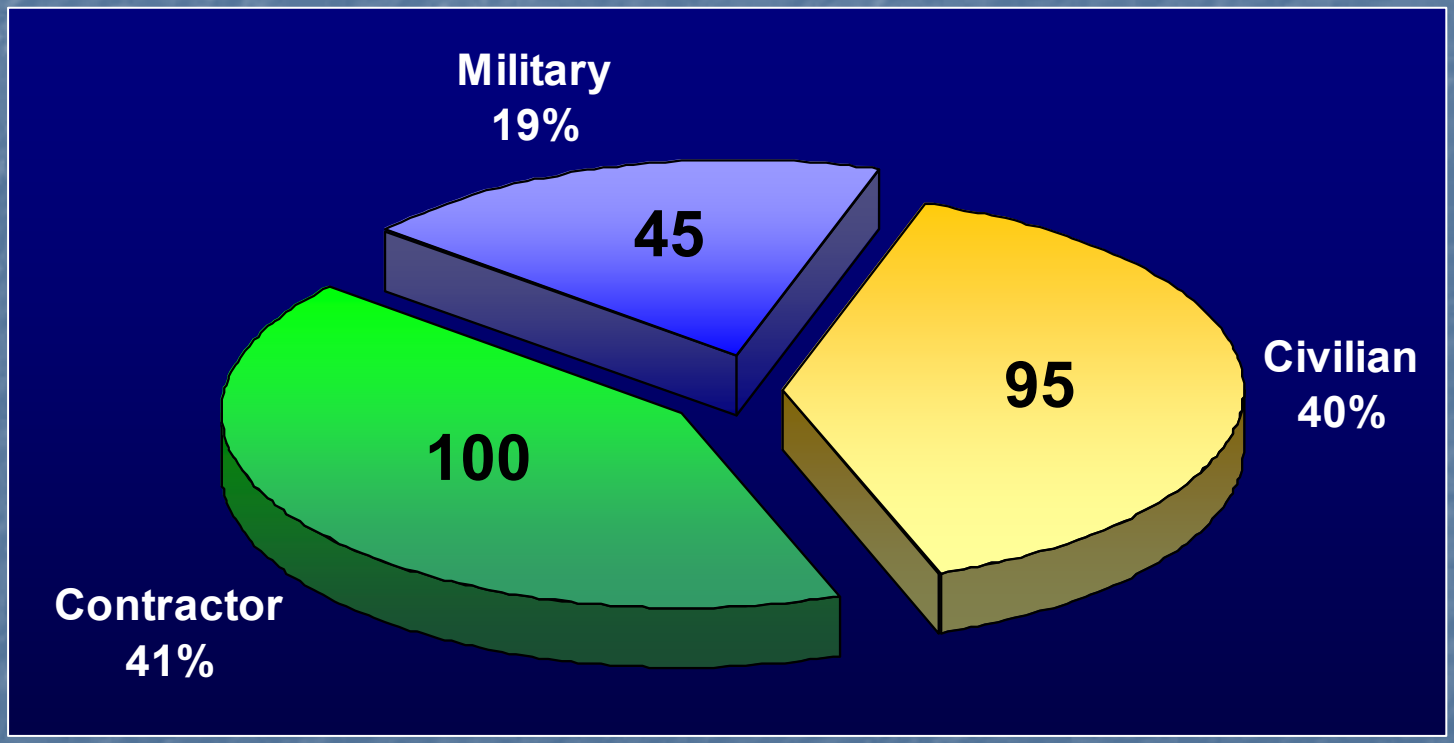
Transformation Initiatives

- Expanded Experimentation – quick response
- Homeland Defense
- Counter-Terrorism Defense & Detection
- Unmanned/Remote Battlefield Damage Assessment
- Non-conventional Targets Effects

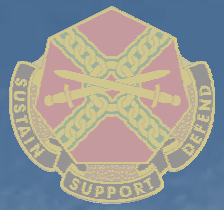


FY04 Workforce & Budget

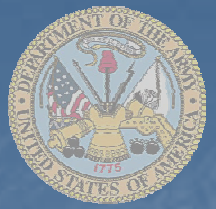
Total Workforce: 240



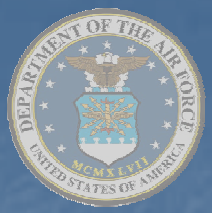
WSMR Associated Budget: $13.4 million



Installation Management Agency



Department of the Army



Department of the Air Force

Department of the Navy

Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

Army Research Laboratory

MR. JOSE PALOMO

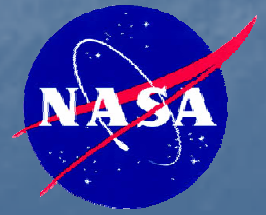
Army Research Laboratory

National Geospatial-Intelligence Agency

Center for Countermeasures

TRADOC Analysis Center

High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

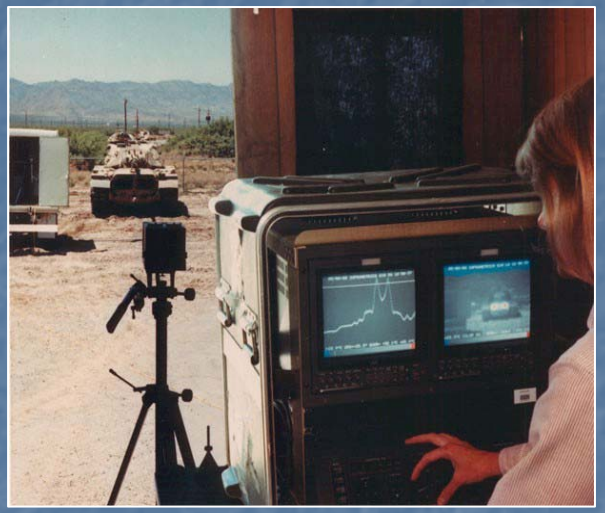
Army Research Laboratory

Mission

- *To provide the premier source of survivability, lethality, and vulnerability expertise, ensuring that U.S. personnel and equipment survive and function in hostile circumstances. To provide experimentation, testing, and analysis throughout a system's life cycle and develop the techniques required to better understand, quantify, and enhance its survivability and lethality.*
- *To perform research that solves complex Army-scale atmospheric problems and results in joint weather intelligence and Army-specific products for global warfighters survivability, lethality, mobility and situational awareness.*

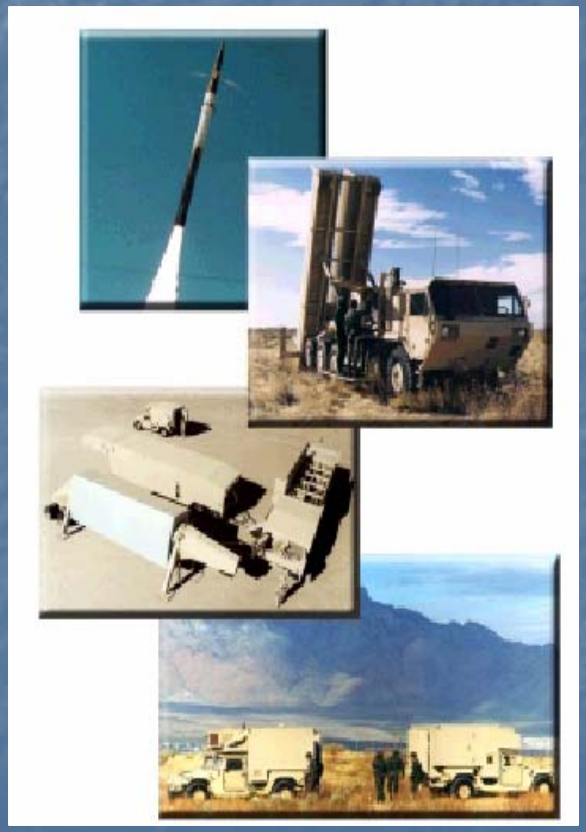
Unique Capabilities

Information Operations Vulnerability/Survivability Assessment



Signature Analysis

Vulnerability Analysis of O/EO Devices

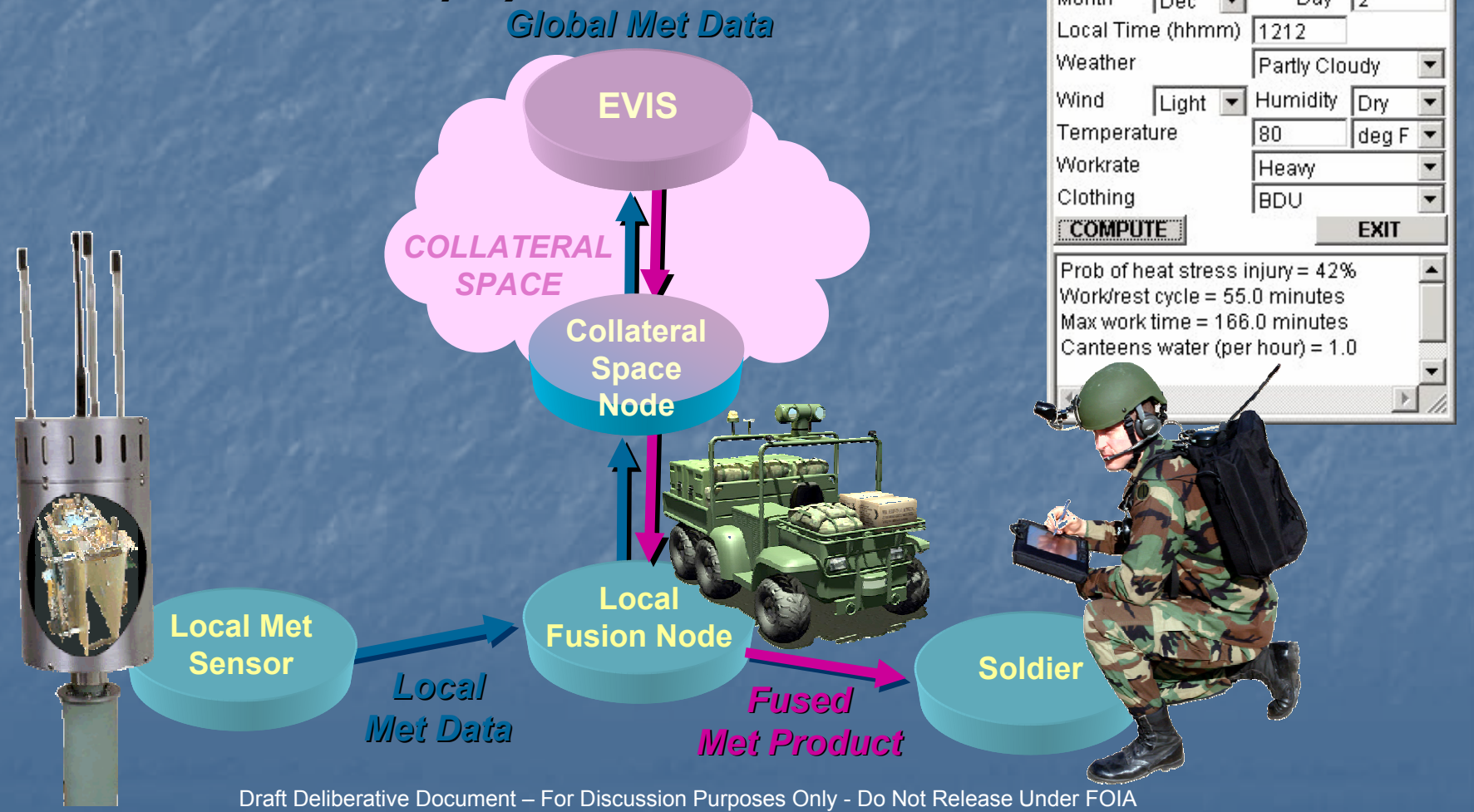


Countermeasure Testing & Backlobe Investigations

Hardware-In-The-Loop Simulators

Unique Capabilities

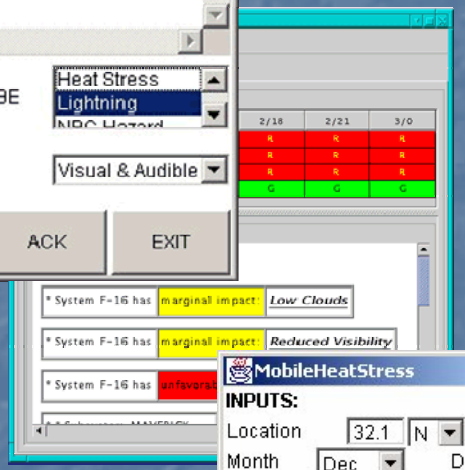
Integrated Tactical Weather Information
for Decision Aid Displays



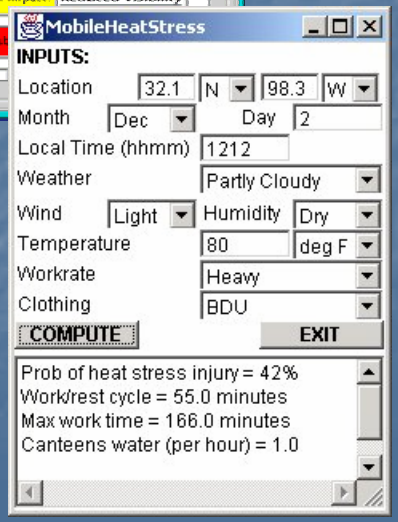
Unique Capabilities

- Integrated Weather Effects Decision Aid (IWEDA)
  - Provides detailed graphic and text information regarding weather impacts on hundreds of military operations and weapon systems (includes threat)
- Mobile Heat Stress
  - Predicts soldier impacts for various work rates and activity levels as a function of simple weather related inputs
- Weather Alert
  - Provides a visual or visual and audible alert notification for client weather related subscriptions
- Local Observation Broadcast
  - Allows a remote user to enter and send a local weather observation to the Collateral Space
- Chemical Hazard & Optimal Night Vision Goggle Usage
  - Two legacy DOS applications for determining the time evolving dimensions of a chemical hazard and optimal times of night vision goggle usage (to include simple graphics)

Weather Alert



IWEDA



Mobile Heat Stress

Team White Sands Synergy

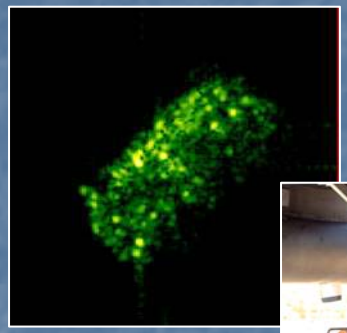
- **WSTC**
  - Provide IR and ECM support to developmental and operational testing of Army (and foreign national) air defense missile systems
  - Development of RF and IR counter-measure models for inclusion in element/system models
  - Collect real-time wind data via laser Doppler velocimeter for MLRS, GMLRS, and ATACMS
- **TRAC**
  - Insertion of realistic weather parameters into Janus war gaming simulations
  - Combat XXI/CASTFOREM M&S support

Team White Sands Synergy

- **Air Force**
  - Assessing airborne ECM
  - Verification of air & missile defense CCM algorithms
  - Provide ECM support for F-22 program
- **Center for Countermeasures**
  - Leverage threat based ARL-developed CM, CM materiel, technology, and methods for tri-service applications
  - Leverage ARL-planned, system-specific tests and evaluations for CM effectiveness assessment
- **HELSTF**
  - Joint data collection, analysis, instrumentation and model evaluation for environmental data

Transformation Initiatives

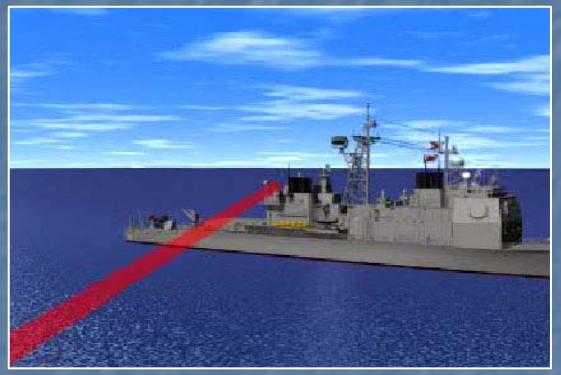
- UA Testing and Training
  - Providing support for the development testing and training of UA capabilities at the WSMR/Ft. Bliss combined ranges, including actionable weather intelligence for C4ISR, mobile communications, robotics, and battlefield visualization



Signature Measurements and Modeling of Stryker

Contributed to Analysis of Alternatives Study and participating in technology tradeoff decisions

Transformation Initiatives

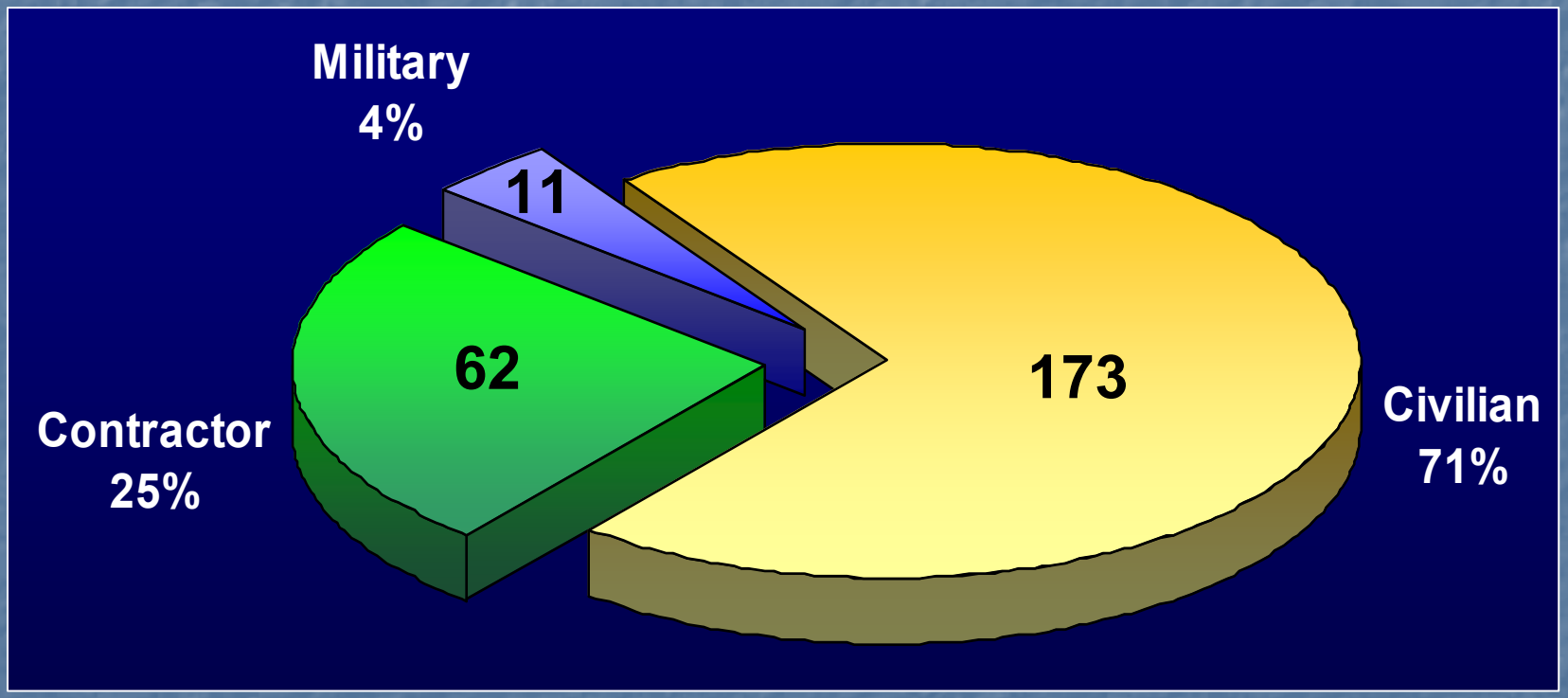


Analysis support to Directed Energy T&E capabilities

"The FCS (UA) FoS must be sufficiently hardened from the effects of Directed Energy weapons" (ORD 2737)

FY04 Workforce & Budget

Total Workforce: 246



Total Budget: $37.3 million

Installation Management Agency

Department of the Army

Department of the Air Force

Department of the Navy

Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

NASA Johnson Space Center

White Sands Test Facility

MR. STEVE NUNEZ, SITE MANAGER

Army Research Laboratory

National Geospatial-Intelligence Agency

Center for Countermeasures

TRADOC Analysis Center

High Energy Laser Systems Test Facility

National Aeronautics and Space Administration

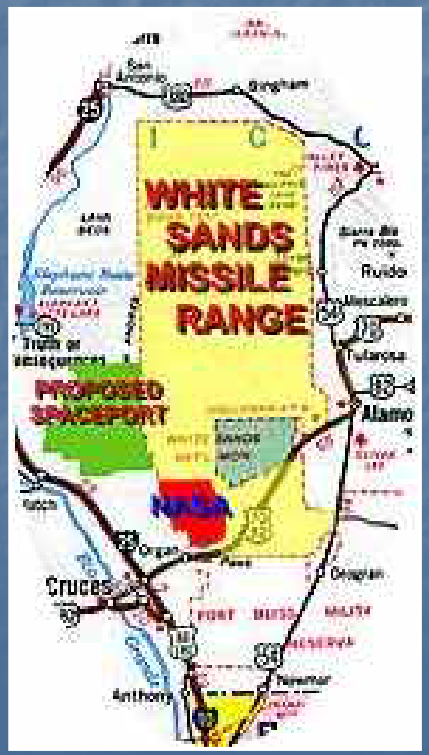
Mission

Our mission is to provide the expertise and infrastructure to test and evaluate spacecraft materials, components, and propulsion systems to enable the safe exploration and use of space.

WSTF Overview

Johnson Space Center *White Sands Test Facility*

- Constructed in 1962-64 to support project Apollo
- Component of JSC Houston
- Occupies 28 square miles – SW Corner of WSMR



Aerial View Looking North

Unique Features

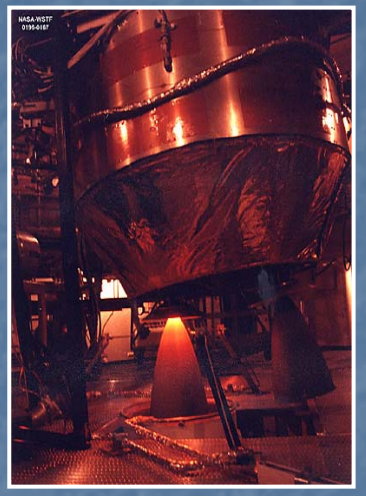
- Large buffer zone for hazardous testing: A significant Agency asset
- Benign environment extends life of facilities, reduces risk, and minimizes maintenance costs
- Existing environmental permits enable accomplishment of hazardous testing

Unique Capabilities

Johnson Space Center *White Sands Test Facility*

- Simulated altitude testing of full-scale hypergolic propulsion systems
- Certified repair depot of hypergolic propellant, oxygen, and hydrogen systems aboard Shuttle & ISS
- White Sands Space Harbor (WSSH) for Orbiter approach and landing training and contingency landing
- Agency facility for hypervelocity impact testing
- Materials testing - NASA Standard 6001 (NHB 8060.1C)

Full Scale Shuttle OMS Pod



Cassini – Saturn Orbit Insertion Engine Test

Materials Testing

Hypervelocity Impact Testing

STS – 3 Orbiter Landing at WSSH

Water Flushing Shuttle PRCS

Unique Capabilities

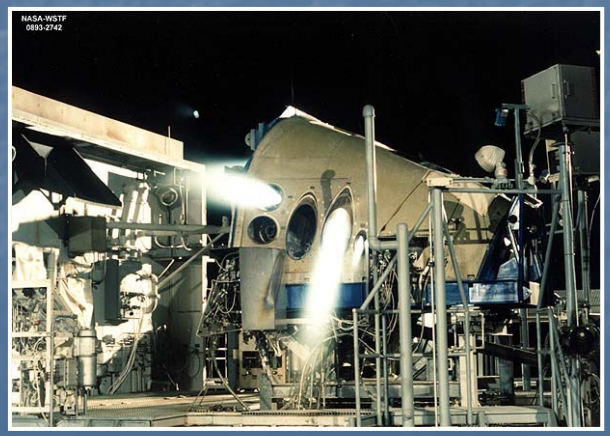
Johnson Space Center *White Sands Test Facility*

- Large-scale explosion testing of hypergolic, cryogenic, and solid propellants
- Shuttle flight-representative test articles
- Component testing in high temp/high flow gaseous oxygen and hydrogen
- TDRSS Ground Terminal

Tank Drop Test -- Explosion of 2,200 lb. LOX/LH2

60-ft. diameter microwave antennas for communication with TDRSS satellites

Component Testing



Night firing of Shuttle Forward RCS

Team White Sands Synergy

Johnson Space Center *White Sands Test Facility*

- WSTF provides calibration and component cleaning services
- Materials Safety
- WSMR provides infrastructure instrumentation and range services to NASA White Sands Space Harbor for Shuttle training and landing activities

Team White Sands Synergy

Johnson Space Center *White Sands Test Facility*

- Space vehicle launch, test and research
  - DCX
  - Pad Abort Demonstrator
- Expertise in liquid propellant targets for DoD testing
  - SCUD
  - Peacekeeper

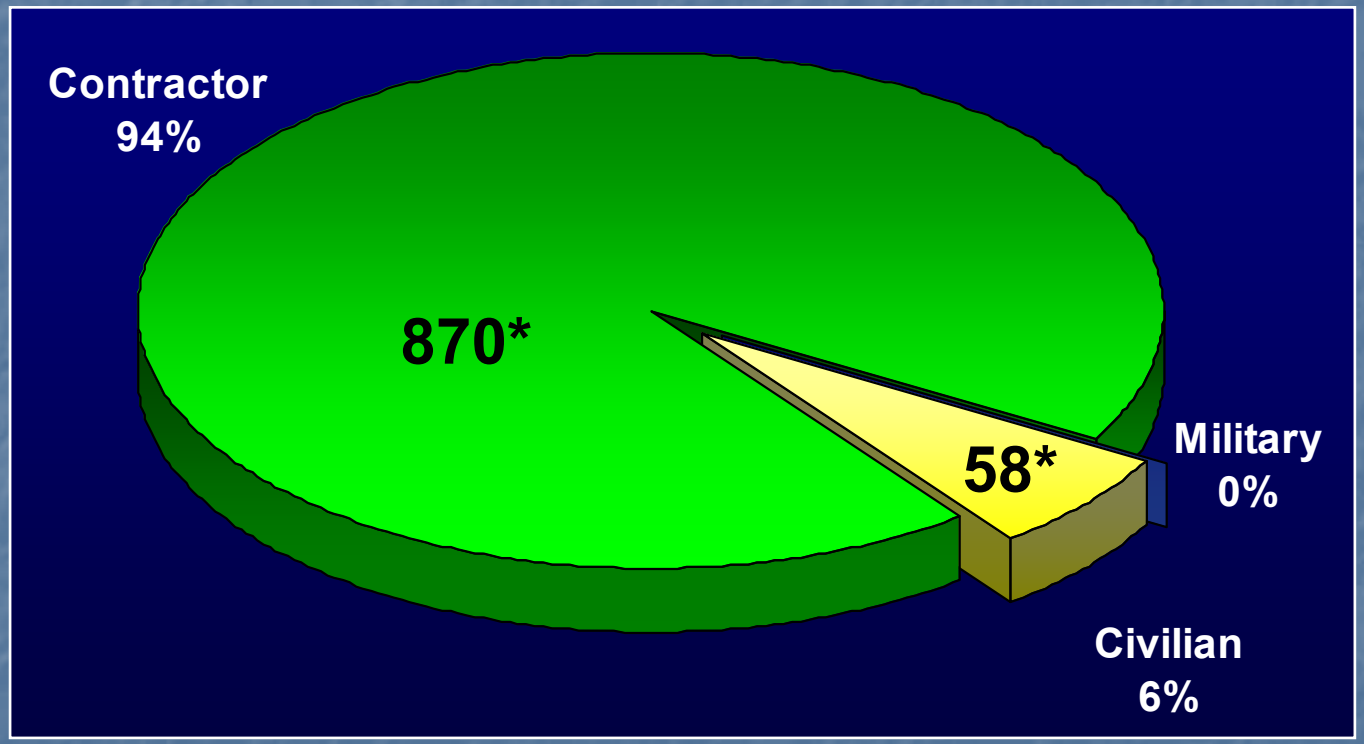
Static firing of DC-X with 4 LOX/Hydrogen RL10-A5 Engines

DC-X executes vertical landing at WSMR

FY04 Workforce & Budget

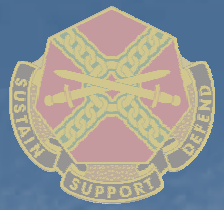
Johnson Space Center *White Sands Test Facility*

Total Workforce: 928*

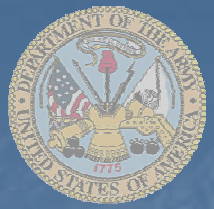


*Includes GSFC/WSC

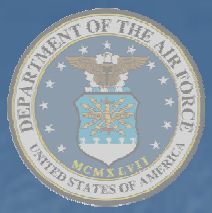
Total Budget*: $115 million



Installation Management Agency



Department of the Army



Department of the Air Force

Department of the Navy

Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

High Energy Laser Systems Test Facility

MR. TOM HODGE, DIRECTOR

Army Research Laboratory

National Geospatial-Intelligence Agency

Center for Countermeasures

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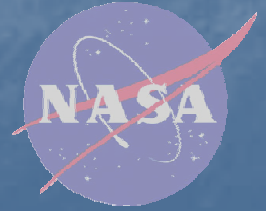
High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

HELSTF

HIGH ENERGY LASER SYSTEMS TEST FACILITY, WSMR, NEW MEXICO

Mission

Plan & Conduct High Energy Laser Test and Evaluation In Operationally Relevant Environments

Unique Capabilities

- Approved Above-the-Horizon HEL Test Range
- 3,200 Square Miles of Controlled WSMR Land
- 7,000 Square Miles of Controlled WSMR Air Space
- Laser Clearinghouse
- Weather conducive and well characterized for DE Testing

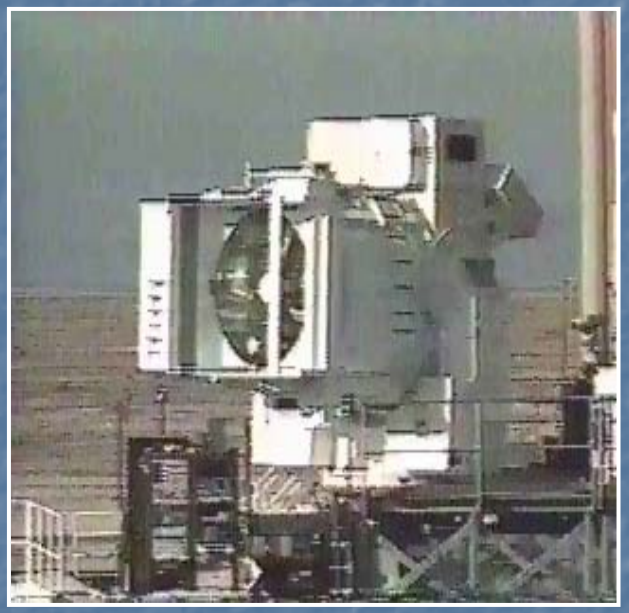
Unique Capabilities

- Mid-Infrared Advanced Chemical Laser
- Sea Lite Beam Director
- Hazardous Test Area
- Mobile Tactical High Energy Laser
- Solid State Heat Capacity Laser Test Bed
- Vacuum Test System


Hazardous Test Area

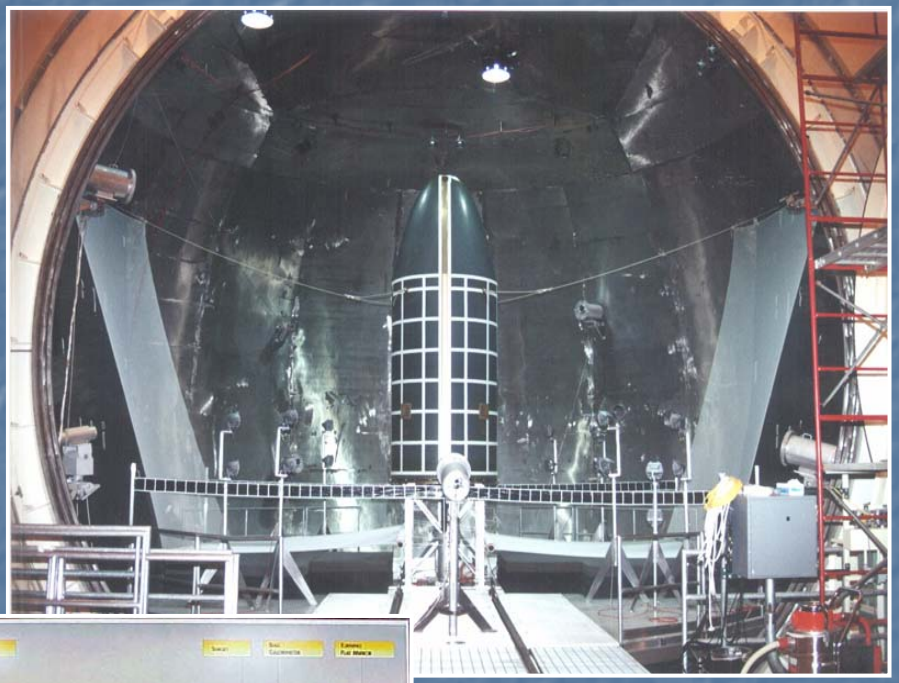
Solid State Heat Capacity Laser Testbed

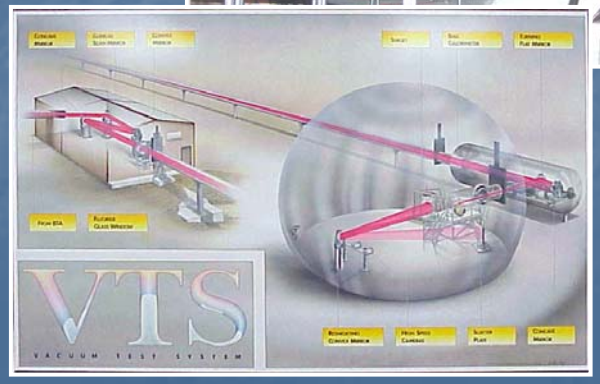
Unique Capabilities



Sea Lite Beam Director

Vacuum Test System





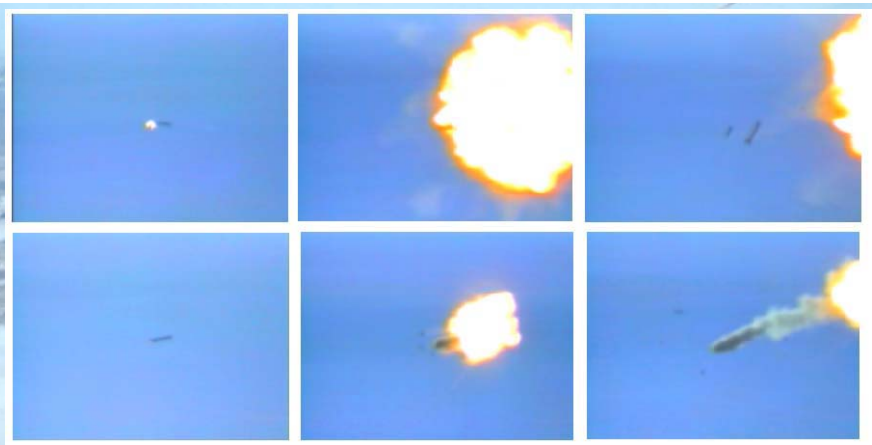
High Energy Laser Against Space Targets

MTHEL
Mobile Tactical High Energy Laser

HELSTF NAUTILUS PROOF-OF-CONCEPT SUCCESSES LEAD TO THEL DEVELOPMENT

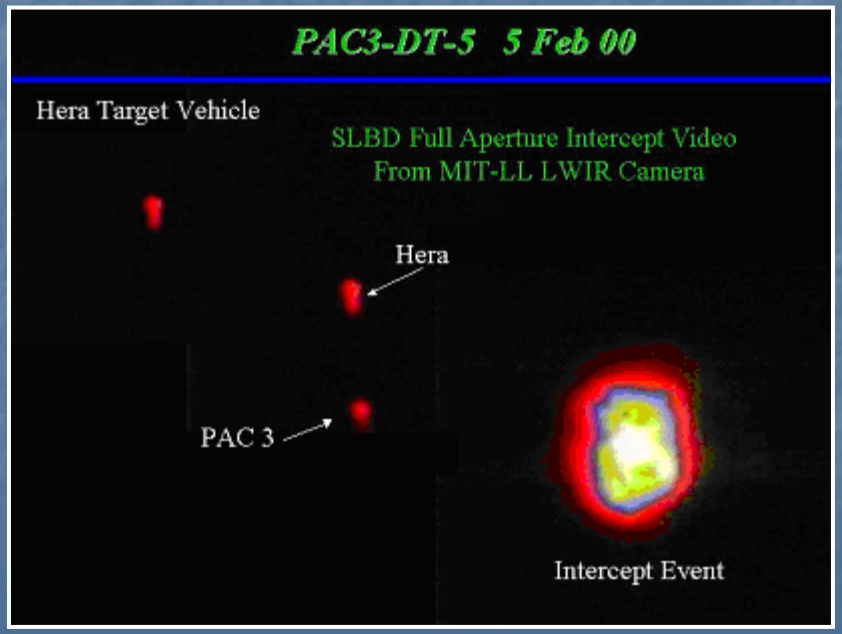
TEST SUPPORT

- Coordinates Target Launch Support
- Coordinates HELSTF Support for Subsystem and System Level Testing
- As Test Director, Provides Test Execution Liaison With WSMR
- Coordinates Target Launch
- Provides CCTV Coverage of Target Launch
- Coordinates Ancillary Test Programs



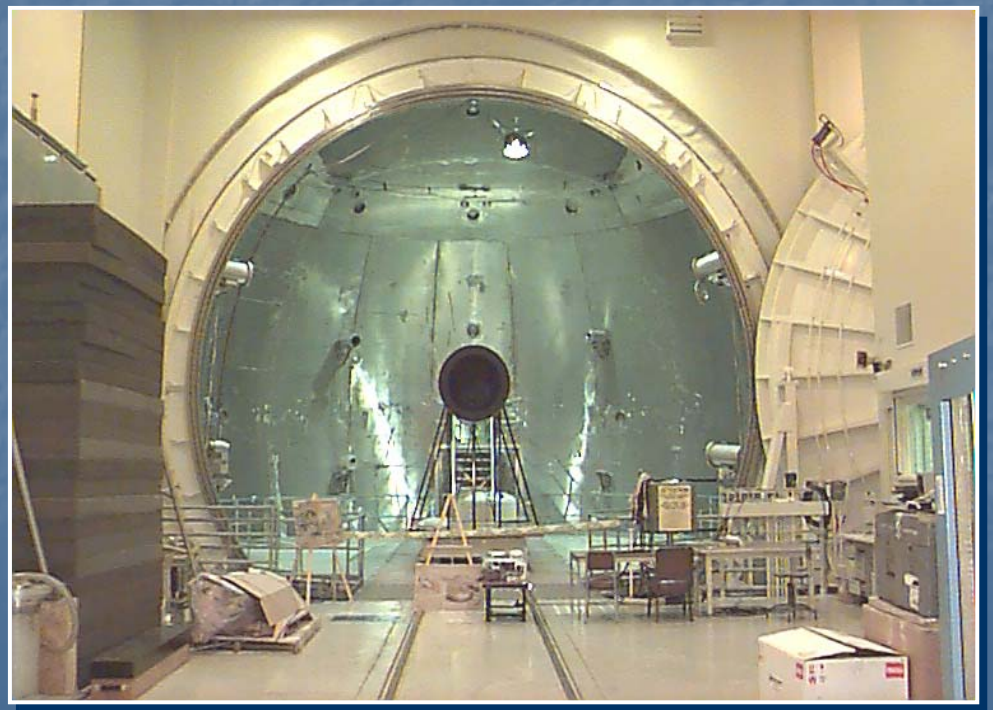
Team White Sands Synergy

- SeaLite Beam Director Asset for WSMR High Resolution Imaging & Sensor Array



Team White Sands Synergy

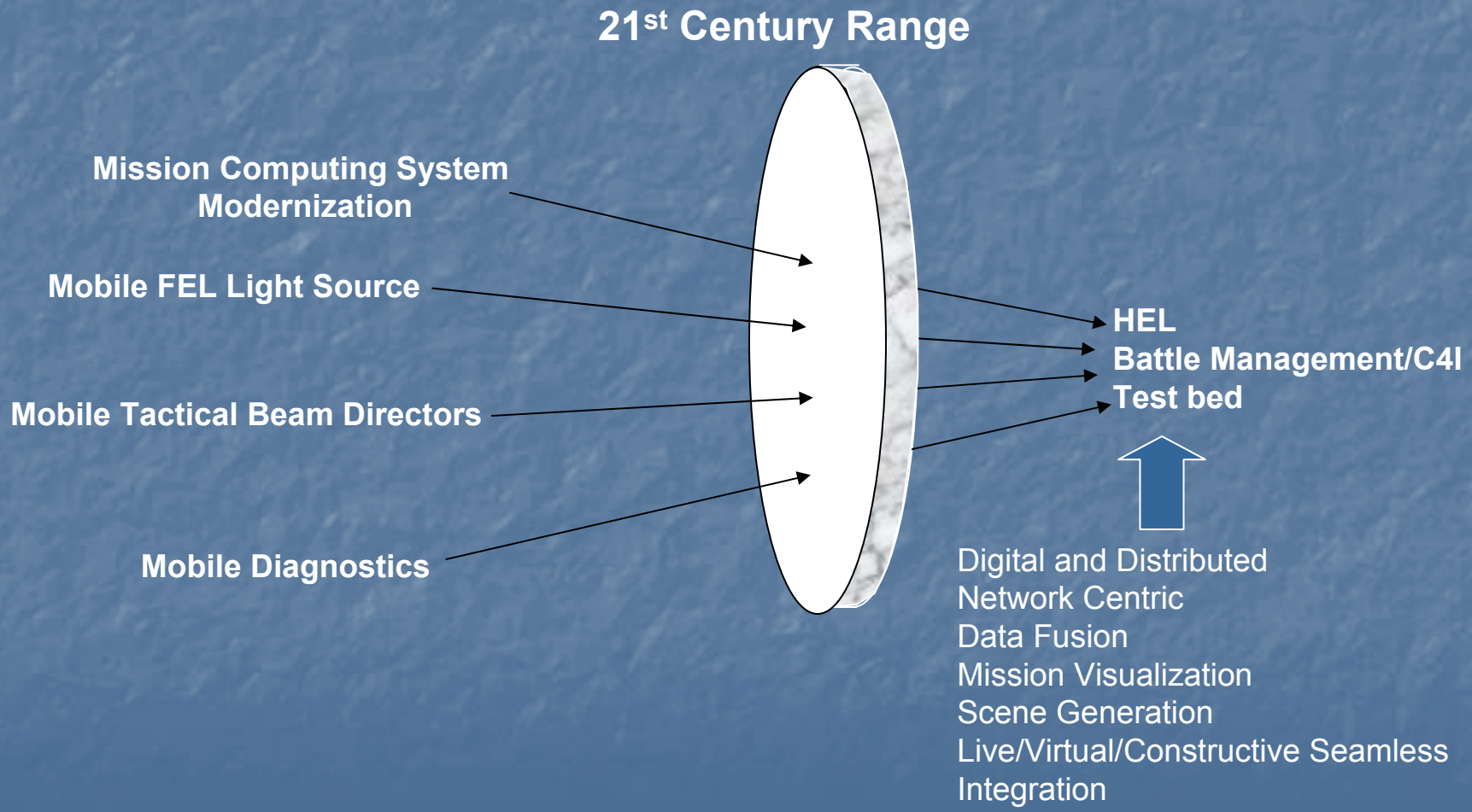
- Large Vacuum Chamber:
  - Simulated High Altitude Chamber for Rapid Decompression Testing of Air Transported Army Support Equipment



Team White Sands Synergy

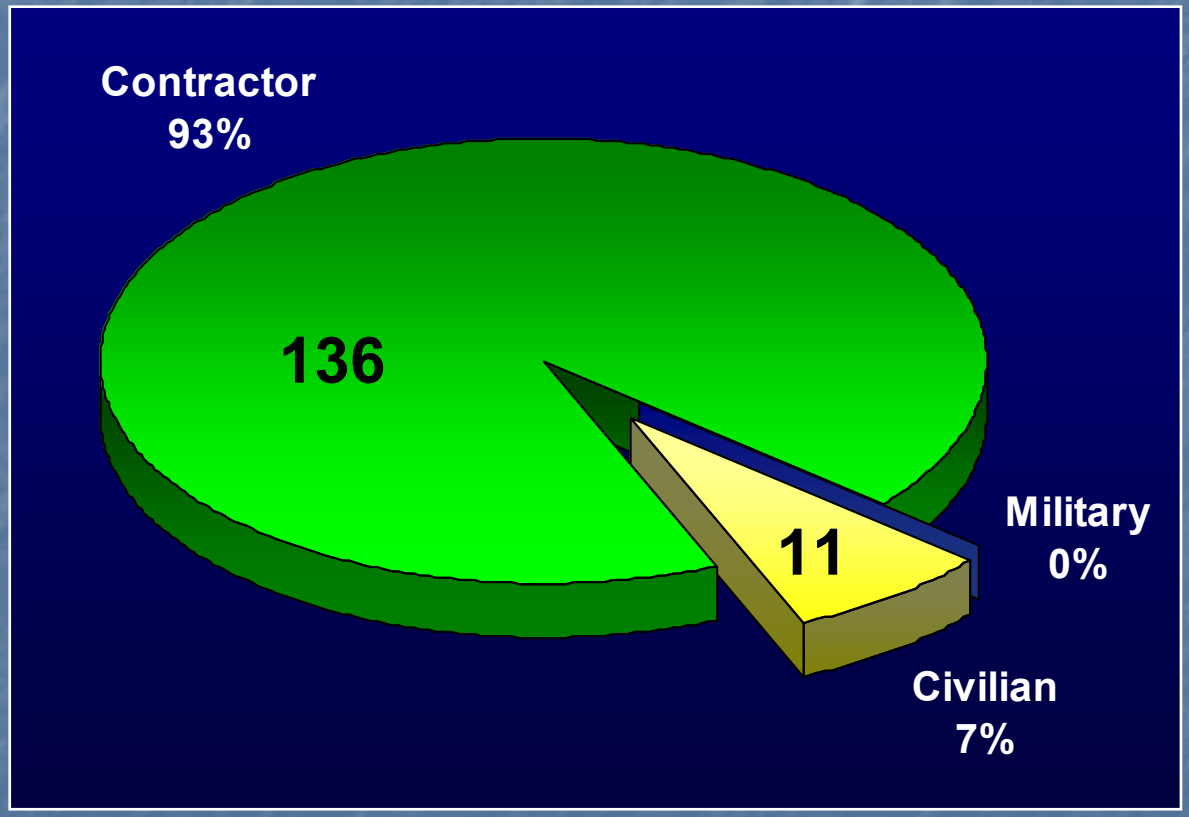
- Pulsed Laser Vulnerability Test System, Utilization of HELSTF assets for High Energy CO2 Laser Testing for Lethality, Vulnerability and Propagation
- The transportable Advanced Pointer Tracker (APT) is a 60 cm beam director for the PLVTS to conduct dynamic tactical engagements.

Modernization Program is Focused on 21st Century Range

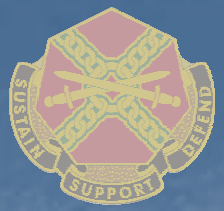


Workforce and Budget

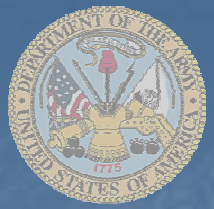
Total Workforce: 147



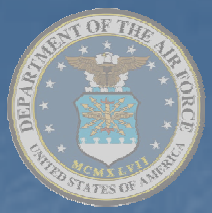
Total Budget: $19.5 million



Installation Management Agency



Department of the Army



Department of the Air Force

Department of the Navy

Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

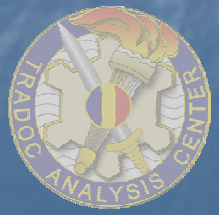
U.S. Army TRADOC Analysis Center, White Sands Missile Range

COL JEFFREY A. APPLEGET, DEPUTY DIRECTOR

Army Research Laboratory

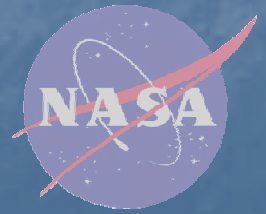
National Geospatial-Intelligence Agency

Center for Countermeasures



TRADOC Analysis Center

High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

TRADOC Analysis Center

Mission

- Provide relevant, credible analysis to inform decision making.
- Mission Essential Task List
  - Conduct studies & analyses to enable Army decisions.
  - Lead analysis for Army training and experimentation.
  - Develop scenarios to underpin Army transformation.
  - Develop and apply verified and validated models & simulations.
  - Research battlefield phenomenology to improve modeling & analysis.

Unique Capabilities

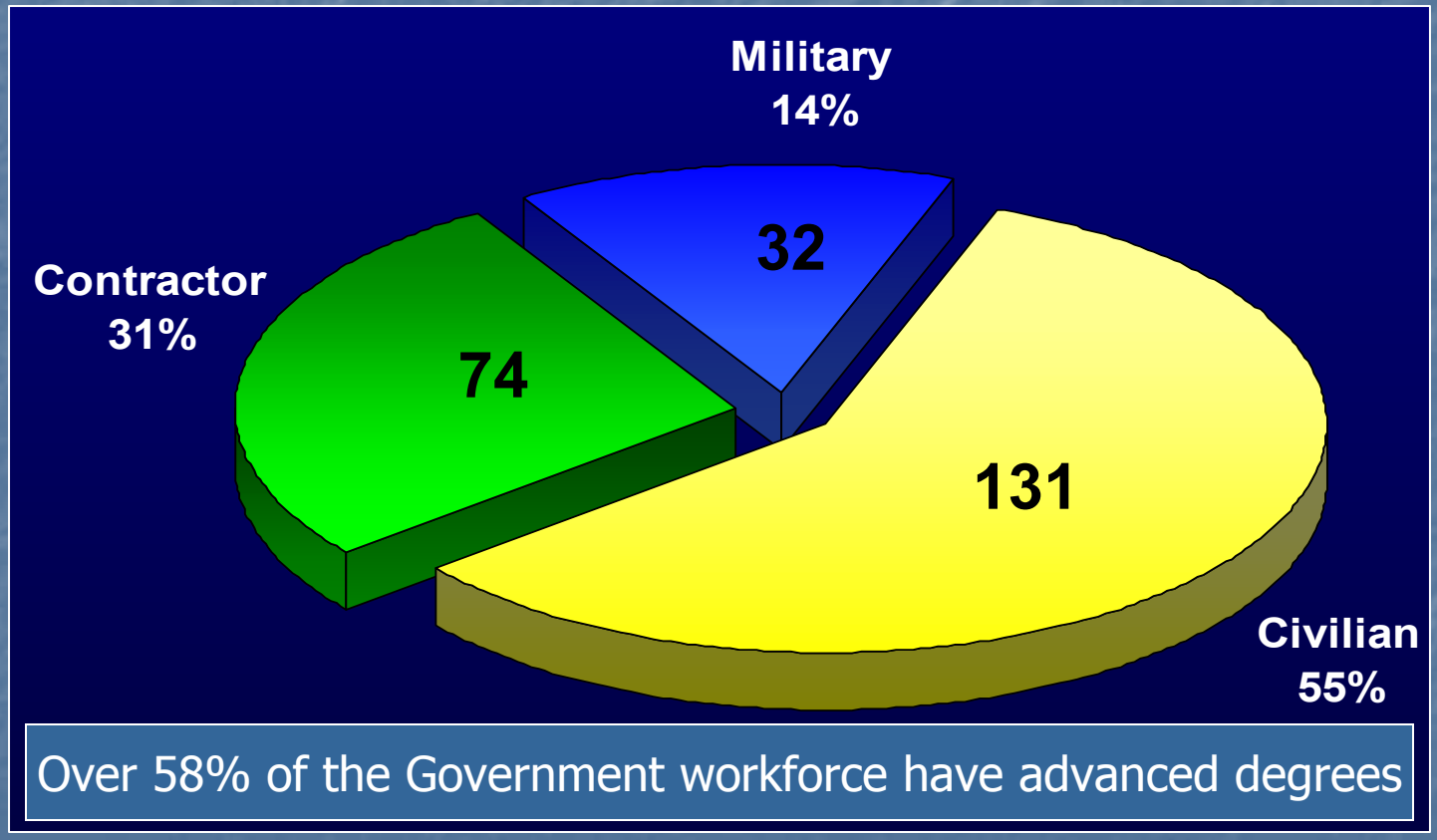
- Use, maintain and improve models and simulations for Army and DoD analysis:
  - Janus: Unit of Action (UA) Current and Future Force capabilities and Joint, Interagency, and Multinational (JIM) ISR and Effects.
  - Combined Arms Support Task Force Evaluation Model (CASTFOREM): UA Current and Future Force capabilities, including extensive modeling of the UA network and JIM ISR and Effects.
  - Emergency Preparedness Incident Command Simulation (EPiCS): Homeland Defense, Homeland Security, and other government agency exercises, currently being adapted for Military Operations in Urban Terrain (MOUT)
- Developing COMBAT XXI, next-generation combat simulation designed to explicitly represent USMC-US Army ground combat operations in a Joint Environment
- Highly educated workforce

Team White Sands Synergy

- Extensive Army Transformation Modeling and Simulation Experience:
  - DARPA Industry Teams initiative (1999-2001).
  - Future Combat Systems (FCS) Analysis of Alternatives (AoA) and Key Performance Parameter (KPP) analysis (2001-Present).
  - Task Force Modularity analyses for CSA (ongoing).
- Extensive experience linking Live, Virtual, and Constructive simulations for Testing, Training, and Analysis.
- Partnership with ATEC using Model-Test-Model (MTM) analytical process:
  - Combines simulation and live test results to refine modeling and testing process.
  - Maximizes use of limited resources available for live testing.
  - Most recent MTM analysis completed-Stryker IOT&E; FCS to follow.
- Working with DTRA on Homeland Defense/Homeland Security Issues.
- Working with ARL-SLAD to develop the communications modules of COMBAT XXI.
- Graduate Education Program and research initiatives with NMSU.

FY04 Workforce & Budget

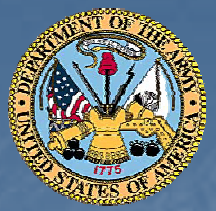
Total Workforce: 237



Over 58% of the Government workforce have advanced degrees

Total Budget: $20 million

Installation Management Agency



Department of the Army

Department of the Air Force

Department of the Navy

Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

Wrap Up

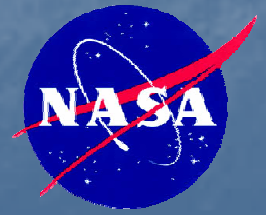
Army Research Laboratory

National Geospatial-Intelligence Agency

Center for Countermeasures

TRADOC Analysis Center

High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

Unique Capabilities & Resources

- Broad User Base
  - All Services
  - DoD/Joint Agencies
  - Multiple Nations
- Facilities & Resources (examples)
  - Air Space, Air Space, Air Space…
  - Largest Over Land DoD Installation
  - Only Active Army Nuclear Reactor
  - World Premier High Speed Track
  - White Sands Space Harbor
  - Only Land Based Navy Ship
  - Extensive Tunnel Test Network
  - Most Powerful Laser in U.S. (HELSTF)
  - National Radar Cross-Section Test Fac.
  - 3 Mile Aerial Cable
- Joint Interoperability
  - UA (FCS) Technical Field Testing
  - Integrated Range Control Center
  - Training Exercises
- Workforce
  - Experienced & Stable
  - Primarily Engineering & Hard Sciences
- Regional Support
  - Ft. Bliss, Holloman AFB, Kirtland AFB
  - NMSU, NM Tech, UTEP
  - Technology Research Corridor
  - Alliance for Regional Military Support
- Heritage of Innovation….
  - Birthplace of Space and Missile Activity
  - 60 years of Air and Naval Innovation

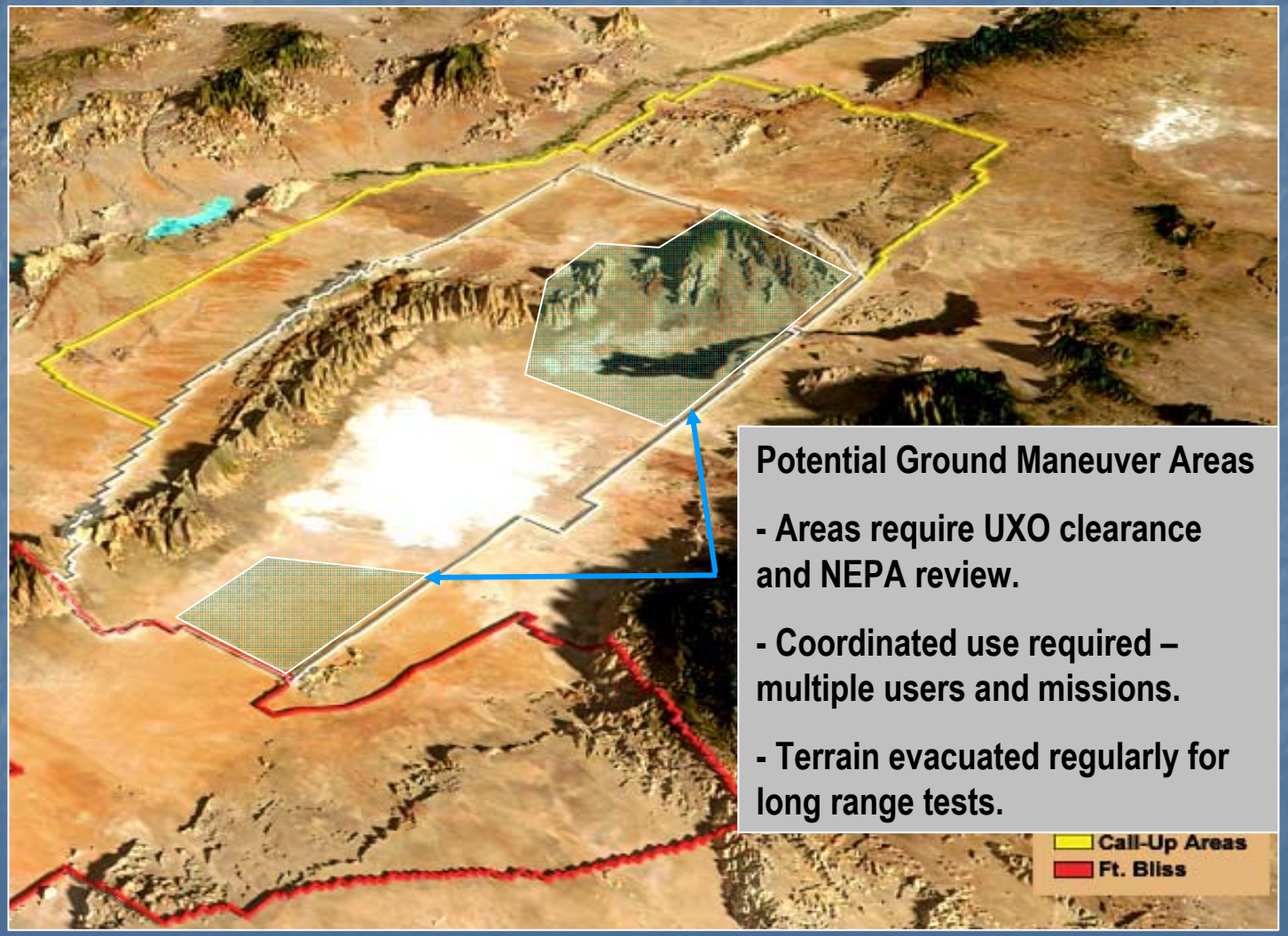
Potential Mission and Functions

- **Capacity to Expand Across all Current Mission Areas**
- **Unit of Action (in conjunction with regional partners)**
  - Basing site for UA
  - First UA equipped with FCS/FCS dedicated unit
  - FCS fielding and certification site
- **Test and Training**
  - Expanding multi-service/joint test mission
  - Unused capacity available for training
  - Expanding DoD center for directed energy development, test, and training
- **Joint Interoperability**
  - Service pieces in place to support escalating joint test requirements
  - Major JNTC node
  - Portal for joint distributed test

Potential Mission and Functions

- **Homeland Defense & Combating Terrorism**
  - Expanding SOF training
  - Homeland Defense development & test
  - Interagency training and certification
- **Center for Combined Test and Training of Extended Range Cannon and Rocket Artillery**
- **DoD Mountain Training Range**
- **TDA Headquarters**

Potential Maneuver Areas

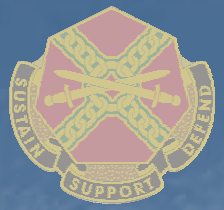


Team White Sands

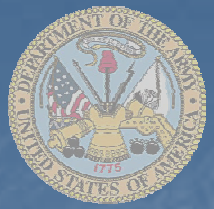
Coordinated Activities in Support of the Warfighter

Goal Oriented Team Effort

Discussion



Installation Management Agency



Department of the Army

Department of the Air Force

Department of the Navy

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Test Measurement and Diagnostic Equipment

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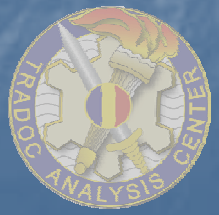
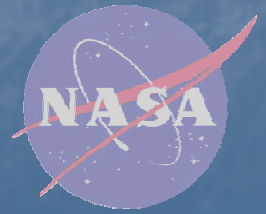
Center for Countermeasures



TRADOC Analysis Center

High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

Mission

- Direct, coordinate, support, and conduct countermeasure/counter-countermeasure test and evaluation activities applicable to all precision guided weapon systems and related componentry.
- Such other T&E activities as the Office of the Secretary of Defense (OSD), Director, Operational Test and Evaluation (DOT&E) may direct.

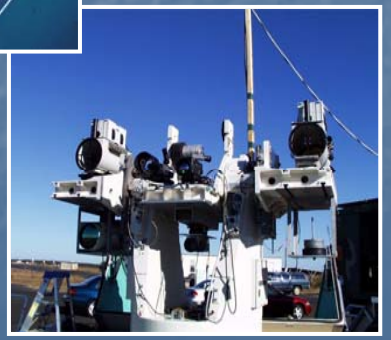
Unique Capabilities

- Millimeter Wave ECM Threat Simulator (METS)
- Remote Radiometrics II vehicle
  - Remote tracking/control
  - All terrain/weather
- Suite of Countermeasures (CM)
  - Over 50 lasers for CM testing
- KTM tracking mount for live fire & aircraft tracking scenarios

METS Test Bed (R2D2)

METS Van

Radiometrics II Vehicle



Tracking mount with sensors

Unique Capabilities

- Digital Enhanced Seeker Van (53')
  - Remote Kineto Tracking Mount (KTM)
  - Eight Seeker Capability (Foreign & Domestic)
  - Acquires 96 analog and 256 digital signals
  - Digital Data Acquisition rate: 1.1 Mbytes/sec

Tube Mounted

Seeker Van & Tracking Mount

Mirror Mounted

Team White Sands Synergy

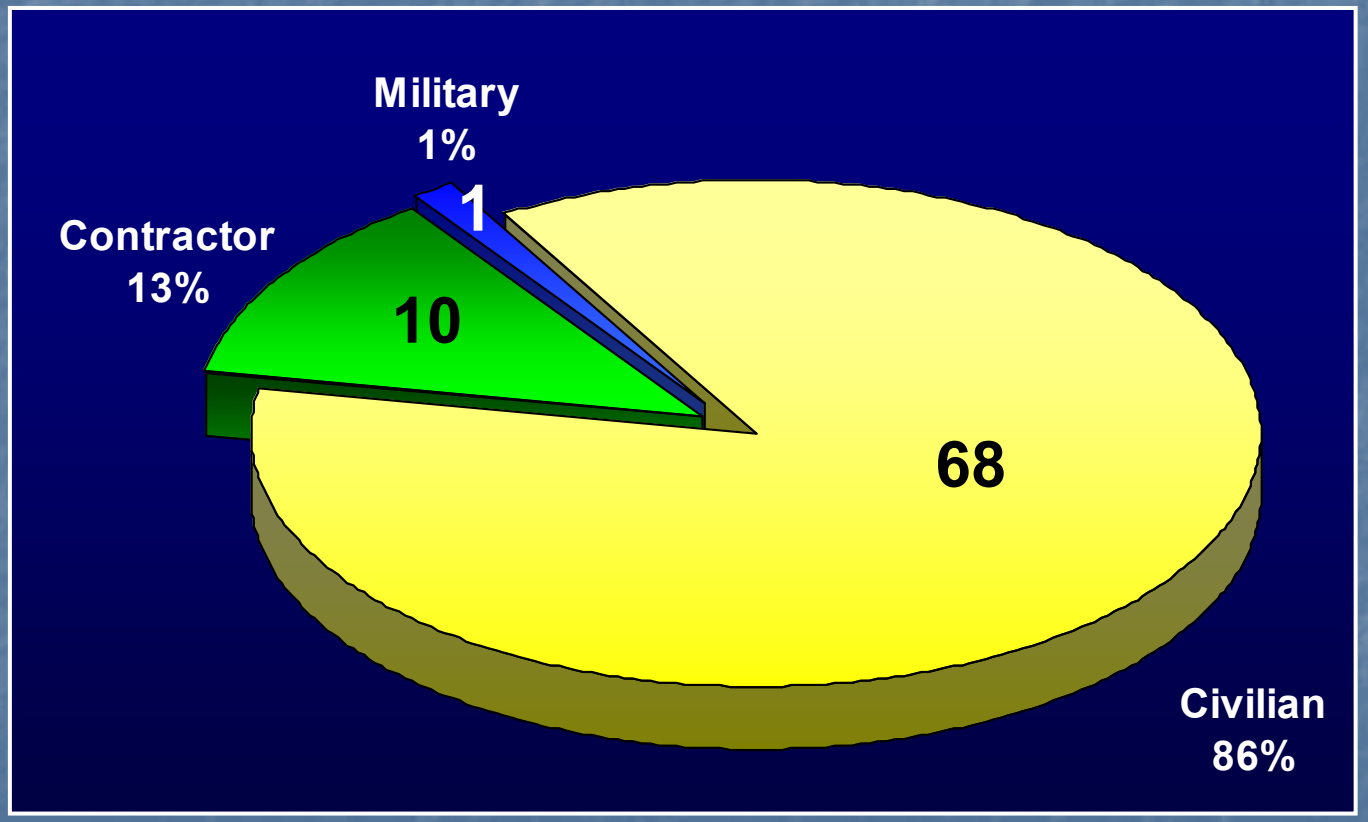
- The Center for Countermeasures tests EO, IR and MMW systems for all four Services
  - Joint Precision Approach Landing System (JPALS) Aircraft Landing Capability (ALC)
    - Service Supported: **Air Force**
  - Battle Space Laser Detection System (BLADES)
    - Service Supported: **Air Force** (Air Force Air Expeditionary Force (AEF))
  - Extended Range Guided Munitions (ERGM)
    - Service Supported: **Air Force** (746th Test Squadron) – Partial CM susceptibility analysis for eventual Navy CM test
  - STARLIGHT (CM Beam rider)
    - Service supported: **Navy**
  - Foreign Laser Beam rider (FLBR)
    - Service supported: **Army**
  - Roving Sands Joint Training Exercise
    - Service supported: **Joint**

Transformation Initiatives

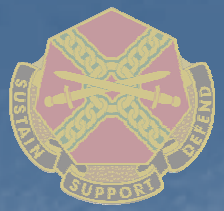
- Reorganization into technology areas and away from service areas – crossing Service boundaries to become more joint
- Assumption of new countermeasure missions
- Assumption of responsible test organization role in support of DOT&E and JFCOM

FY04 Workforce & Budget

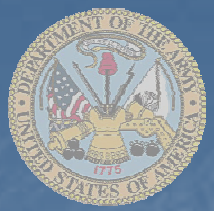
Total Workforce: 79



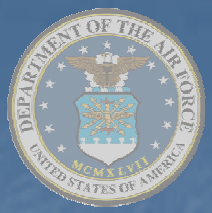
Total Budget: $13.6 million



Installation Management Agency



Department of the Army



Department of the Air Force

Department of the Navy

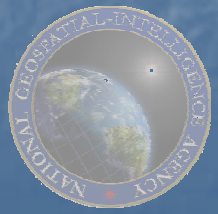
Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

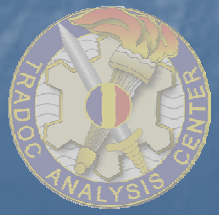
National Geospatial-Intelligence Agency

Army Research Laboratory



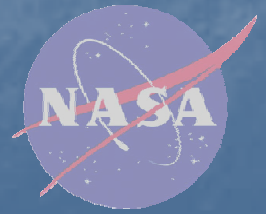
National Geospatial-Intelligence Agency

Center for Countermeasures



TRADOC Analysis Center

High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

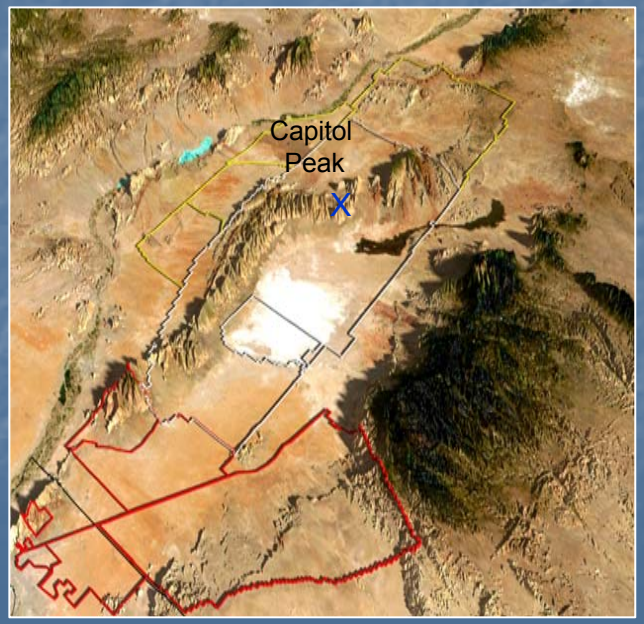
National Geospatial-Intelligence Agency

Mission

- Provide accurate and timely expert analysis of worldwide gravity, satellite and positional information including imagery and mapping control for navigation, safety, intelligence, positioning and targeting in support of national security objectives.

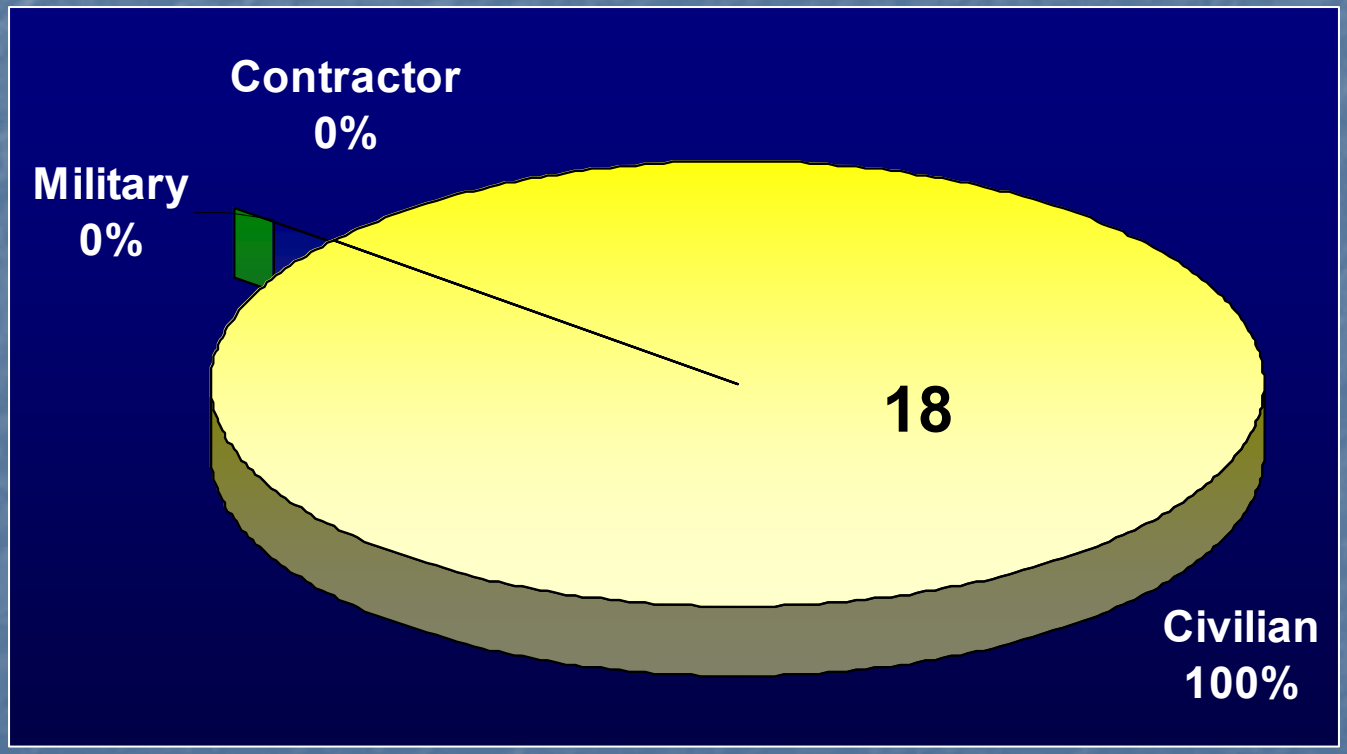
Team White Sands Synergy

- Provide Army MLRS/ATACMS launcher azimuth verification for Missile Flight Safety Operations
- Perform precise locations for test instrumentation data acquisition
- Precise target and impact locations
- Established large, GPS derived, geodetic control network at Capitol Peak tunnel facility

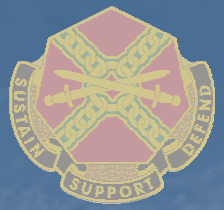


FY04 Workforce & Budget

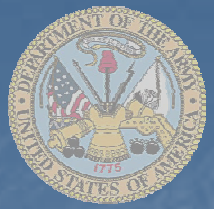
Total Workforce: 18



Total Budget: $1.6 million



Installation Management Agency



Department of the Army

Department of the Air Force

Department of the Navy

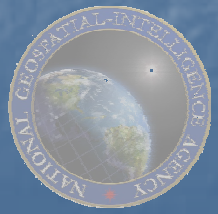
Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

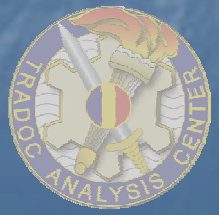
Test Measurement and Diagnostic Equipment

Army Research Laboratory



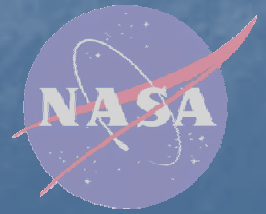
National Geospatial-Intelligence Agency

Center for Countermeasures



TRADOC Analysis Center

High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

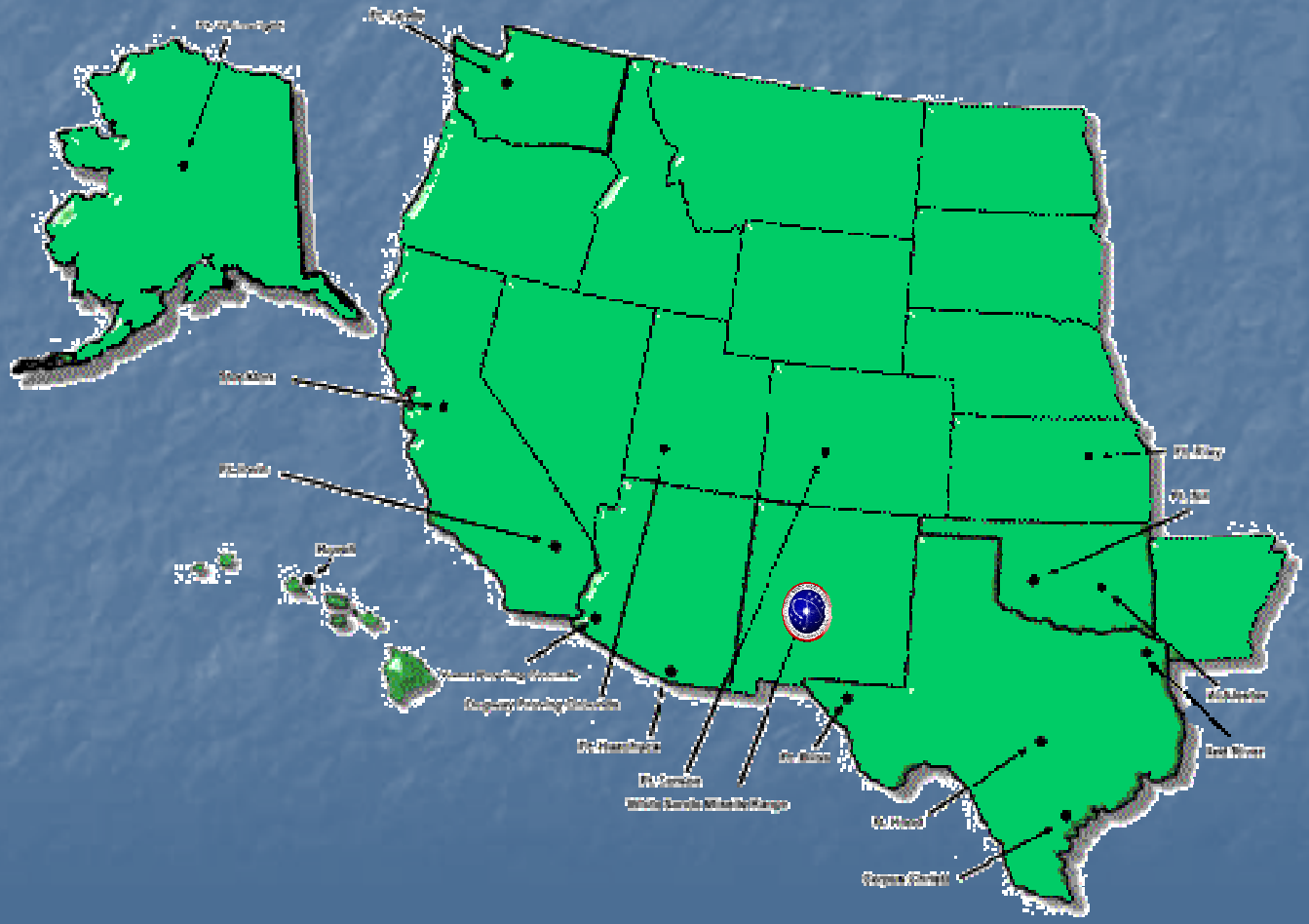
Test Measurement and Diagnostic Equipment

Mission

- Provide a metrology and calibration measurement source for electrical, electromagnetic, physical, dimensional, radio frequency and nucleonics radiation measuring instrumentation located at White Sands Missile Range and other DOD locations throughout the Western United States, Hawaii and Alaska.
- Plan and perform research, development, and related engineering efforts required to provide calibration support for systems peculiar to the Western Region as well as world wide missions
- Develop measurement standards, theory, and techniques in support of the Western Region when timely support for U.S. Army Test, Measurement, and Diagnostic Activity (USATA) Directorate or other DOD sources are not available
- Operate Calibration Standards Laboratories providing reference and as required primary calibration support for Test, Measurement and Diagnostic Equipment (TMDE) throughout the Western United States Hawaii and Alaska

Test Measurement and Diagnostic Equipment

REGION - 3

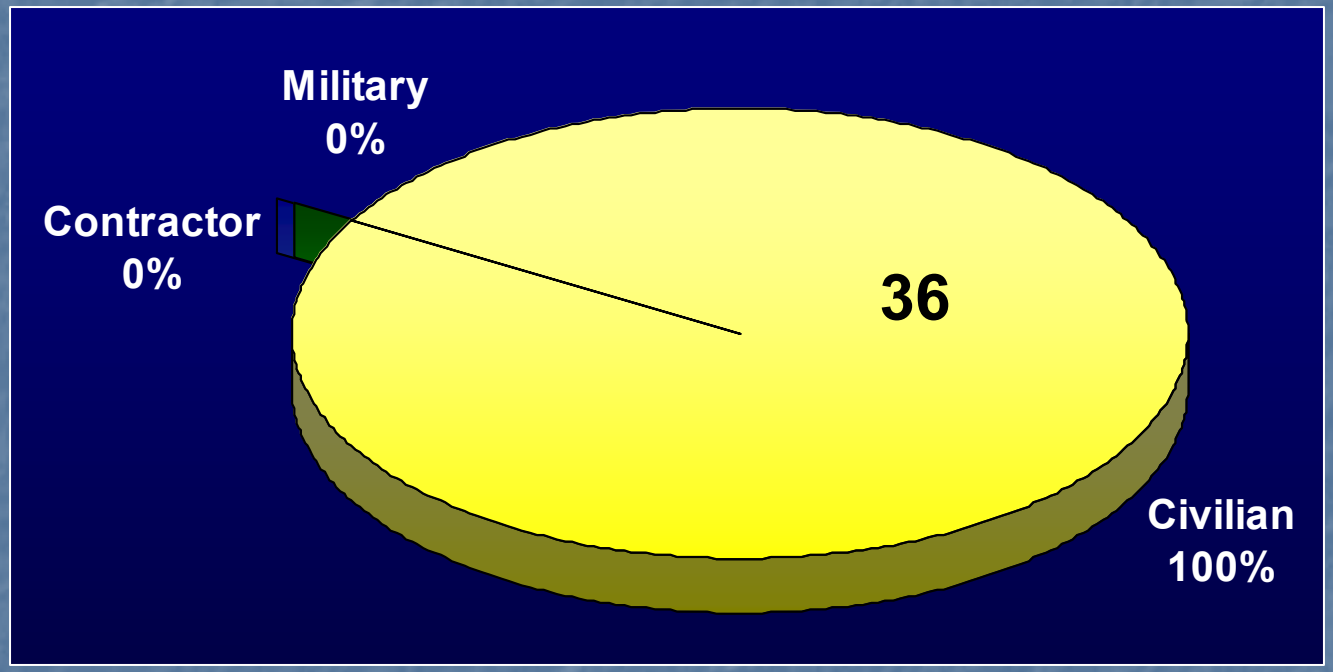


Team White Sands Synergy

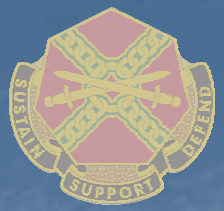
- Provides calibration and repair support (C&RS) for WSMR and all its testing activities and organizations.
- Provides reference level (next echelon) support of calibration standards for the other Region 3 Laboratories, contract laboratory on Kwajelein Atoll and the U.S. Army 95th Maintenance Companies located within Region 3.
- Maintains primary level and unique capabilities in numerous parameters allowing for support of Army customers worldwide.
  - These parameters include Radio Frequency (RF) anechoic chambers providing non-ionizing metrology support from 10MHz-40GHz. Airspeed/air velocity using Wind Tunnel located in building 21740.

FY04 Workforce & Budget

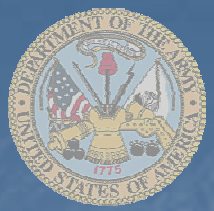
Total Workforce: 36



Total Budget: $14.3 million



Installation Management Agency



Department of the Army

Department of the Air Force

Department of the Navy

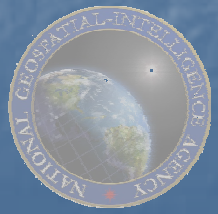
Army Contracting Agency

Defense Threat Reduction Agency

Test Measurement and Diagnostic Equipment

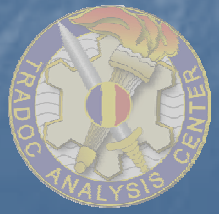
Army Contracting Agency

Army Research Laboratory



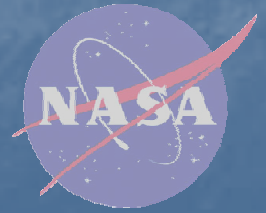
National Geospatial-Intelligence Agency

Center for Countermeasures



TRADOC Analysis Center

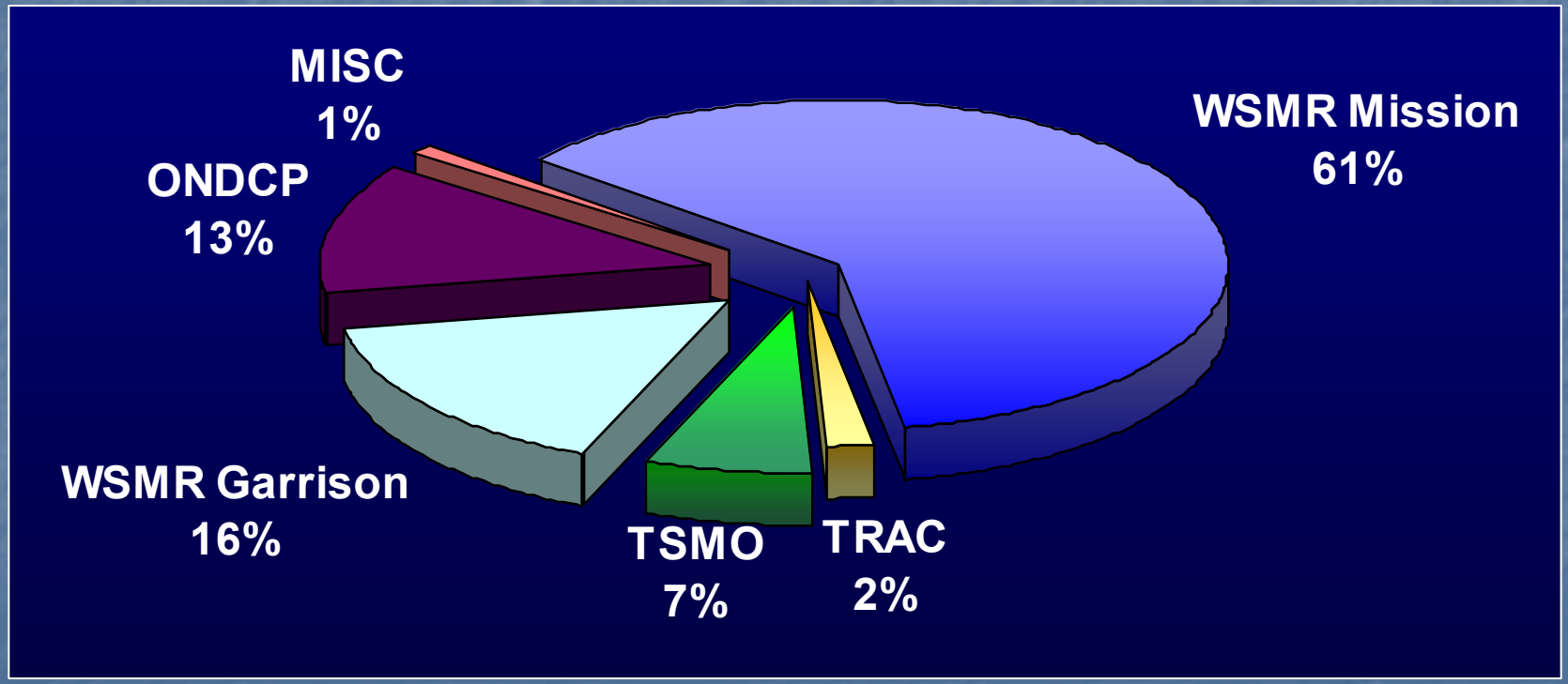
High Energy Laser Systems Test Facility



National Aeronautics and Space Administration

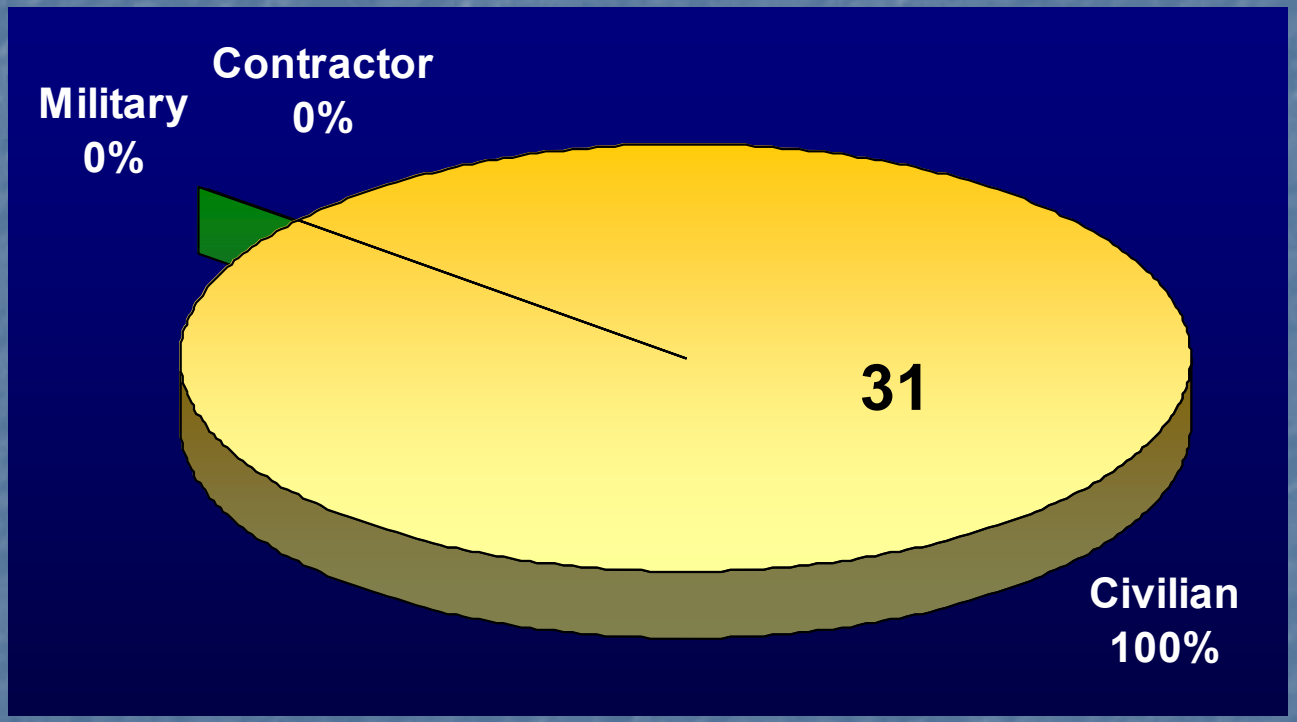
Team White Sands Synergy

77% of the Army Contracting Agency's workload is in support of the WSTC and Garrison Mission



FY04 Workforce & Budget

Total Workforce: 31



Total Budget: $2.5 million