

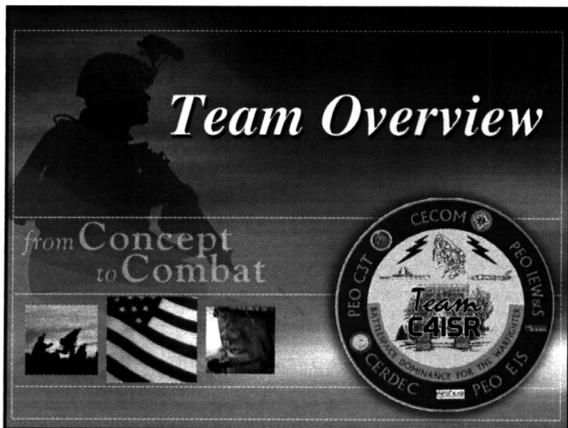


TEAM C4ISR FORT MONMOUTH, NJ

Agenda

- Team Overview
- C4ISR Mission
- Support to Current Operations
- Modularity
- Transformation
- Facilities
- Demonstration/Tours

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TEAM C4ISR FORT MONMOUTH, NJ

Team C4ISR

Mission:

*As an Integrated Entity, **Team C4ISR** Develops, Acquires, Fields and Sustains Tactical, Strategic, and Sustaining Base Command and Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Systems for the Joint Warfighter*

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TEAM C4ISR FORT MONMOUTH, NJ

C4ISR Life Cycle Management Center of Excellence

Program Management & System Acquisition

A Multi-disciplined Team Linked to Accomplish the Lifecycle C4ISR Mission for the Joint Warfighter

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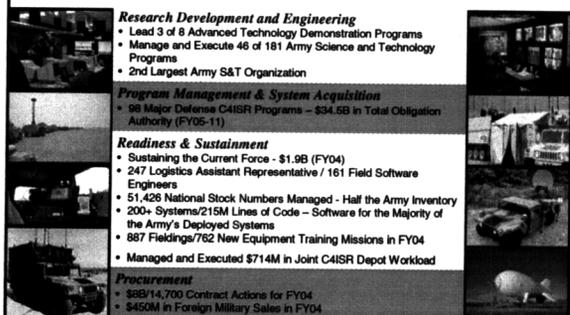
TEAM C4ISR FORT MONMOUTH, NJ

Team C4ISR Overview

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TEAM C4ISR FORT MONMOUTH, NJ

What We Execute

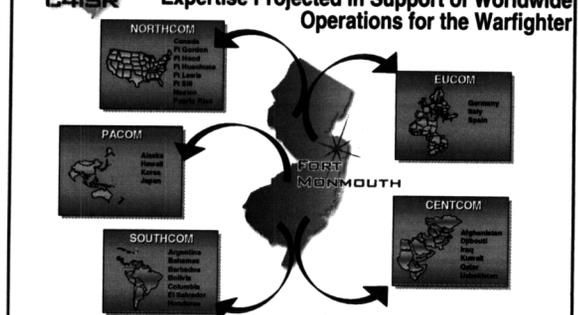


- Research Development and Engineering**
 - Lead 3 of 8 Advanced Technology Demonstration Programs
 - Manage and Execute 46 of 181 Army Science and Technology Programs
 - 2nd Largest Army S&T Organization
- Program Management & System Acquisition**
 - 98 Major Defense C4ISR Programs - \$34.5B in Total Obligation Authority (FY05-11)
- Readiness & Sustainment**
 - Sustaining the Current Force - \$1.9B (FY04)
 - 247 Logistics Assistant Representative / 161 Field Software Engineers
 - 51,426 National Stock Numbers Managed - Half the Army Inventory
 - 200+ Systems/215M Lines of Code - Software for the Majority of the Army's Deployed Systems
 - 887 Fieldings/762 New Equipment Training Missions in FY04
 - Managed and Executed \$714M in Joint C4ISR Depot Workload
- Procurement**
 - \$8B/14,700 Contract Actions for FY04
 - \$450M in Foreign Military Sales in FY04

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TEAM C4ISR FORT MONMOUTH, NJ

Expertise Projected in Support of Worldwide Operations for the Warfighter



Deployed in 25 Countries

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TEAM C4ISR FORT MONMOUTH, NJ

Single Portal For the Warfighter



Fort Monmouth Provides Around the Clock Support to the Joint Warfighter

- 24/7 Emergency Operations Center for C4ISR Systems
- Quick Reaction Solutions
- Immediate Access to Subject Matter Experts
- Urgent Acquisition of Supplies and Services

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TEAM C4ISR FORT MONMOUTH, NJ

Intellectual Capital

Today's Status Report

- Government Engineers and Scientists: 1,885
- Government Technical and Subject Matter Experts: 1,164
- Mission Support: 1,095
- Government Other: 632
- Scientific and Engineering Technical Assistance (Embedded): 1,543

1,000's more outside the gates
6,319

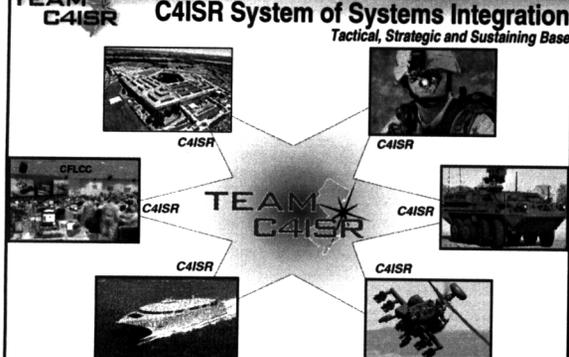
Certified Acquisition Positions: (2,135)
Patents: 46 Applications Filed in FY04 (Portfolio of Over 3,000)
Degrees: 66% with Bachelors Degrees
25% with Masters Degree or Higher

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C4ISR System of Systems Integration

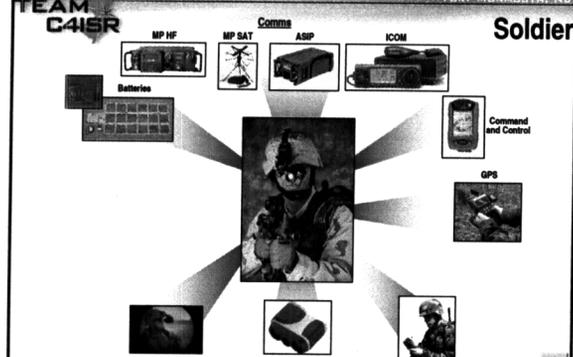
Tactical, Strategic and Sustaining Base



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Soldier



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TEAM C4ISR FORT MONMOUTH, NJ

Aviation

Comms
HF/HCARS PRC 112
Antenna Design
Coast Analysis
GPS
Target Acquisition
and Pilotage Vision
Embedded IBC
BFT
Aircraft Survivability
Equipment
Night Vision

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TEAM C4ISR FORT MONMOUTH, NJ

Homeland Defense Video

Team C4ISR Support to World Trade
Center Search and Rescue

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TEAM C4ISR FORT MONMOUTH, NJ

C4ISR for Homeland Defense

- The Army and the Department of Homeland Security Should Join Forces to Better Equip Emergency Responders to Handle Terrorist Attacks
- Improved C4ISR for Homeland Security Would Yield a High-payoff Capability that Offers Great Return On Investment for the Nation
- The Army's Network-centric Approach to Operations Could Serve Emergency Responders Equally Effectively
- The Requirement for C4ISR is Ubiquitous, Whether for The Army's Future Force or for the Future Emergency Responder

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TEAM C4ISR FORT MONMOUTH, NJ

Support to Homeland Defense

- NYC Critical Infrastructure Protection
- Port Authorities NY/NJ Emergency Operations Center
- First Responder Communications
- Network Information Assurance Solutions for New Jersey
- Federal Emergency Management Agency Region II and Corps of Engineer Continuity of Operations Site

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TEAM C4ISR FORT MONMOUTH, NJ

... from Current to Future Force

Enhanced Capabilities Accelerated Fielding
And Development

Simultaneously:

- Supporting Current Operations
- Architecting and Equipping Modular Brigades and Deploying Units
- Developing Future Force Capabilities

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C4ISR Mission

from Concept
to Combat

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TEAM C4ISR FORT MONMOUTH, NJ

Out Think

Operational











Tactical





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Survive

Aircraft Survivability









Ground Survivability









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Survive (Cont'd)

Force Protection










Mine Detection



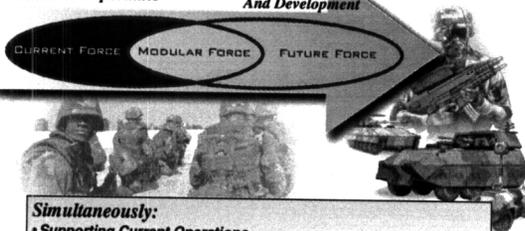

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TEAM C4ISR FORT MONMOUTH, NJ

... from Current to Future Force

Enhanced Capabilities

Accelerated Fielding And Development



Simultaneously:

- Supporting Current Operations
- Architecting and Equipping Modular Brigades and Deploying Units
- Developing Future Force Capabilities

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TEAM C4ISR FORT MONMOUTH, NJ

From Concept to Combat

92 Systems in 5 Weeks
10,000 Fielded to Date



WARLOCK

384,000 Systems in 90 Days



Joint Combat ID

650 Systems in 36 Months



HSTAMDS

1,200 Systems in 5 Months



FBCB2

Quick Reaction Capabilities
Adapted and Adopted to Wartime Needs

TEAM C4ISR FORT MONMOUTH, NJ

From Concept to Combat (Cont'd)

62 Units in 1 Month



Omni Sense

3 Systems in 3 Months



Lynx SAR

2 Systems in 4 Months



GUARDRAIL

29 Systems in 12 Months



LCMR

Quick Reaction Capabilities
Adapted and Adopted to Wartime Needs

TEAM
C4ISR

Fort Monmouth, NJ

Lightweight Counter Mortar Radar

Army Greatest Invention 2004



- Rapid Response to Special Operation Forces Requirements and three Operational Need Statements
- 18 Systems Delivered in 2004 (29 Total)
- Detects and Locates Mortar Fire Beyond Mortar Range; 360 Degree Coverage
- Locates with Accuracy Sufficient to Respond with Combat Air or Counter Fire
- Man Packable
- Communicates with Operator via Personal Digital Assistant

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PEROCC

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C4ISR

Fort Monmouth, NJ

TEAM C4ISR Radar Roadmap

Fort Monmouth, NJ

Past **Present** **Future**

AN/TPQ-36 Sentinel MMR

AN/TPQ-37 AN/TPQ-36 CRAM LCMR

AN/TPQ-37 LCMR Long Range Counterfire

Systems and Capabilities Have Been Developed, Updated and Upgraded as the Threat Evolves, to Enhance and Extend the Product's Life

TEAM C4ISR Support to Current Ops

Fort Monmouth, NJ

- National Inventory Control and National Maintenance Point**
 - \$2.3B in FY05 for Spares Acquisition and Hardware Repair
 - 595,000 Requisitions in Support of OEF/OIF - \$1.6B parts supplied
 - Conduct Anticipatory Logistics and Readiness Analysis
- Reset**
 - \$2.0B Through FY05
 - \$721M Executed in FY05 to Date
 - 180 Battalions
 - 75 Different Weapon Systems
 - 4,465 Items Done to Date
- Forward Deployed Troubleshooting and Repair Facilities - Electronic Sustainment Support Center (ESSC)**
 - 9 ESSC Sites in Theater
 - 64,000 Repair Work Orders
 - 247 Logistics Assistance Representatives
 - Average 55 in Theater at Any Time
- Software Support**
 - Responded to Over 8,500 Software Support Requests (OEF/OIF)
 - 171 C4ISR Software Upgrades Fielded in the Last 12 Months
 - 83 to OEF/OIF
 - 161 Field Software Engineers
 - Average 45 in Theater at Any Time

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TEAM C4ISR Support to Current Ops (Cont'd)

Fort Monmouth, NJ

- Specialized Services to Warfighters
 - The Network Operations Center for Logisticians
 - The Network Operations Center for Joint Task Force
 - Other Contingency Sites Both Classified and Unclassified

What does the Ft Monmouth NOC do?

- Information Hub via Reachback
- Provide Coverage for Units Training to Redeploy OCONUS
- Diagnostic Cell for Testing and Integration

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TEAM C4ISR ... from Current to Future Force

Fort Monmouth, NJ

Enhanced Capabilities **Accelerated Fielding And Development**

CURRENT FORCE MODULAR FORCE FUTURE FORCE

Simultaneously:

- Supporting Current Operations
- Architecting and Equipping Modular Brigades and Deploying Units
- Developing Future Force Capabilities

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TEAM C4ISR Building the Modular Army as We Execute the War on Terrorism

Fort Monmouth, NJ

Modularity: The Army's Major Force Transformation Initiative that Involves the Total Redesign of the Operational Army into a Larger, More Powerful, Flexible and Rapidly Deployable Force

Fielded Over 10,000 Items

- Reengineered the Architecture to Allow for Technology Insertion
- Integrated and Delivered 20 Battle Command, 7 Communications and 15 ISR Systems (42 total)
- Inserted Selected Capability Upgrades
- Sustained the Unit (\$48M, 73,000 parts)
- Reset (\$23M)

12 Months from Concept to Combat

TEAM C4ISR Army Force Generation Model

Fort Monmouth, NJ

Our Role:

- Engineer the Architecture to Allow for Capability Upgrades
- Equip and Reset the Unit
- Train the Unit
- Field Selected Systems
- Sustain the Unit
- Assess for Technology Insertion

20 BCTs Available for Worldwide Deployments

77 Brigade Combat Teams (BCT) to Be Built OpTempo Has Increased

Laboratory, Experimentation, and Certification Facilities

from **Concept to Combat**

Team C4ISR

CECOM
PEO CST
PEO EW&S
CERDEC
PEO EIS

Facilities in Support of Program Lifecycle Management

Concept Refinement	→	Modeling and Simulation
Technology Development	→	Laboratories and Fabrication Facilities
System Development and Demonstration	→	System of Systems Integration and Test and Field Experimentation
Production and Deployment	→	National Test Facilities
Operations and Support	→	Certification and Sustainment Facilities

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Modeling and Simulation

Virtual Prototyping Lab

- Allows for interaction between design engineers and customers/users to compare alternatives prior to investing large resources in manufacturing
- Networked with computer-aided design and manufacturing for rapid hardware prototyping

Antenna Simulation Lab

- Optimizes installed antenna performance on platforms
- Minimizes co-site interference between multiple antennas on individual platforms

Government Integration Center

- Network Hub which provides connectivity between virtual and live experimentation facilities

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Laboratories

Command and Control Development Lab

- Supports development of command and control applications for tactical and strategic levels
- Interconnected to communications labs for system level performance assessments

Electronic Warfare and Signals Intelligence Lab

- Simulates Guardrail/Common Equipment representative of all Army fielded systems
- Provides near real-time Enemy Situational Awareness, Intercept ID, Precision Location
- Supports Analysis of Communications and Electronic Intelligence Emitters

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System of Systems Integration and Test

Anechoic Chamber

- Shielded Facility which protects highly sensitive Testing from counter-intelligence
- Controlled environment which allows for the measurement of technical performance with the greatest accuracy without external interference

Mine Lane Facility

- Environmentally controlled and instrumented facility to test state of the art mine detection technology in world wide representative soils.
- Supporting military and humanitarian demining efforts

Aviation Fabrication and Test

- Installation of C4ISR Mission Packages
- Designated as Joint UAV Flight Test Facility
- Designated As An Experimental Flight Activity

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Certification and Sustainment

Replication, Distribution, Installation, and Training Support Facilities

- Provides software/firmware and data products and services such as battlefield software, digitized maps, etc. to the soldier on the battlefield

Satellite Communications Facility

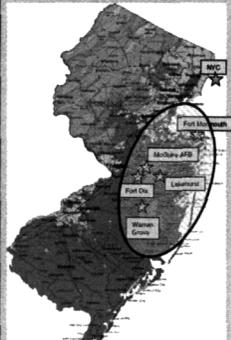
- Provides the Capability to simulate actual problems reported from the field, develop fixes and test proposed solutions

Joint DOD Satellite Communications Certification Facility

- Strategic Satellite Ground Station Teleport Mega Center
- Tactical Satellite Ground Station Center
- DOD Global Information Grid Access to all Command, Control, Intelligence and Communications Centers

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TEAM C4ISR **C4ISR On-The-Move Live Experimentation**



Testbed and Ranges

- Access to a Unique Environment, Distributed Between the Laboratories and Workshops at Fort Monmouth and the Fields, Forests and Ranges of Fort Dix, McGuire AFB and Lakehurst NAES
 - Extensively Instrumented and Calibrated to Collect C4ISR Data
- Access to U.S. Army Reserve and National Guard Units
- Connectivity to TRADOC Battle Labs, Industry, Academia and Coalition Partners

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TEAM C4ISR **C4ISR OTM Testbed Overview**



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TEAM C4ISR **Major Ranges and Test Centers**



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TEAM C4ISR **Summary**

- Team C4ISR Has Extensive Intellectual Capital in the Engineering, Development, Acquisition and Sustainment of Complex C4ISR Systems
- Team C4ISR's Location in NJ Provides Ready Access to Highly Trained Personnel from Both Industry and Academia
- Team C4ISR Simultaneously Leads the Execution of Support to Current Operations, Modularity, and Transformation to the Future Force
- Access to the Fort Dix Testbed Enhances Our Ability to Characterize Integrated C4ISR Systems of Systems Prior to Independent Testing at a Variety of Test Centers Around the US

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TEAM C4ISR **Chief of Staff of the Army**



Winter AUSA

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TEAM C4ISR

Back-ups

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TEAM C4ISR FORT MONMOUTH, NJ

Command And Control

MCS
IMETS
DTSS
ASAS
TAIS
AFATDS
FAADC2
Battle Command
GCCS-A

"Navigating through a hostile zone can consume 80 percent of a soldier's time. Now I've got 80 percent of my time to think about how I'm going to kill him, instead of figuring out where he is."

Brigadier General Robert Durbin, 1st CAV
Tactical Operation Centers

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TEAM C4ISR FORT MONMOUTH, NJ

Stryker C2 Vehicle

SINCARS
Comm EPLAS
WNT
FBCE/BFT
Laser Range Finder
GPS
W/Driver Aids
LRAS

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TEAM C4ISR FORT MONMOUTH, NJ

Theatre Support Vessel

16 SEAT EMBARKED UNIT BATTLE COMMAND CENTER FOR ENROUTE MISSION PLANNING AND REBARSAL WHILE ABOARD

INTEGRATED CREW/EMBARKED UNIT TACTICAL RADIO SUITE WP-FM, UHF LOS, UHF TACSAT HPW, HF ALE

2m C-BAND WIDEBAND SATELLITE - ALL WEATHER BLUE WATER AUTO ACQUIRE - AUTO TRACK SATELLITE

DUAL 84Kbps INMARSAT L BAND RECEIVERS FOR BACKUP WIDEBAND CONNECTIVITY

ROBUST C2 SERVICES ON MULTILEVEL THIN CLIENT ENVIRONMENT SUPPORTING THREE CLASSIFIED ENCLAVES

EMBARKED UNIT C4ISR PLATFORM NETWORK, HOOKUPS TO SHIPS WIDEBAND NETWORK

TSV Embarked Unit Battle Command Center

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TEAM C4ISR FORT MONMOUTH, NJ

Future Force C4ISR Systems

Intelligence Surveillance Reconnaissance	<ul style="list-style-type: none"> Aerial Common Sensor - Multi Intelligence, Long Endurance Prophet - Ground Based Intelligence and Jamming UAV Payloads - Radar, Electro Optical, Electronic Intelligence Unattended Ground Sensors and Intelligent Munitions Distributed Common Ground Station - Army - Multi Intelligence Processing and Fusion Night Vision/Target Acquisition Systems - Long Range Targeting
Communications	<ul style="list-style-type: none"> Joint Tactical Radio System - Ground, Aviation and Soldier Borne Warfighter Information Network - Tactical - Terrestrial/Satellite Communications Backbone Wideband Networking Waveforms Soldier Radio Waveform
Battle Command	<ul style="list-style-type: none"> Army Battle Command Systems "Good Enough" to Modular Forces Force XXI Battle Command Brigade and Below Blue Force Tracking for Joint/Coalition Forces Joint Battle Command Command Post of the Future Battle Command Applications from FCS

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TEAM C4ISR FORT MONMOUTH, NJ

OSD Future Force Critical Technologies

<p>Communications</p> <ol style="list-style-type: none"> Software Programmable Radio Interface & Information Exchange Security Systems & Algorithms Mobile Ad Hoc Networking Protocols Quality of Service Algorithms Unmanned Systems Relay Wideband Waveforms <p>Command and Control</p> <ol style="list-style-type: none"> Advanced Man-Machine Interfaces Decision Aids/Intelligent Agents Rapid Battlespace Deconfliction Distributive Collaboration of Manned/Unmanned Platforms Tactical Engagement Simulation <p>Sensors and Data Fusion</p> <ol style="list-style-type: none"> Multi-Spectral Sensors & Seekers Sensor/Data Fusion & Data Compression Algorithms LOS/BL/OS/MS/OS Precision Munitions Terminal Guidance Active/Automated Target Recognition Rapid Battle Damage Assessment 	<p>Survivability</p> <ol style="list-style-type: none"> Combat Identification Active Protection System Signature Management Advanced Countermeasure Technology <p>Other</p> <ol style="list-style-type: none"> Dynamic Sensor-Shooter Pairing Algorithms & Fire Control Power Management & Lightweight Components High-Power Density/Fuel Efficient Processor Embedded Predictive Logistics Sensors & Algorithms Water Generation & Purification Computer Generated Forces Lightweight Hill & Vehicle Armor Health Monitoring & Casualty Care Interventions Power Distribution & Control High Density Packaged Power
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Providing 67% of Future Force Critical Technologies

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