

Team C4ISR

Team C4ISR and Industry...
Partnering in Support
of the Joint Warfighter
June 1-2, 2004

Advance
Planning
Briefing for
Industry



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REPLY TO
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DEPARTMENT OF THE ARMY
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AND FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5000

Office of the Deputy Chief of Staff for Operations and Plans

Ladies and Gentlemen:

On behalf of the Army Team, Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR), it is my pleasure to welcome you to the 2004 Advance Planning Briefing for Industry (APBI). The theme of this year's conference is "Team C4ISR and Industry Partnering in Support of the Joint Warfighter."

Global security demands one flexible, formidable and joint fighting force equipped with the most sophisticated and technologically superior equipment. The APBI Program continues to be one of our most successful ways of strengthening the government's partnership with industry and ensuring improved combat effectiveness for our military forces. The exchange of information at these forums is key to enabling Joint Warfighters to fight smarter with less risk.

A printed copy of the proceedings and a compact disk containing information about the APBI presentations are being provided to you. The presentations include our Army requirements, sustainment efforts and corresponding contract opportunities available to industry.

I thank you for your participation in the APBI and hope you pursue future business opportunities with Team C4ISR.

Sincerely,

A handwritten signature in black ink, appearing to read "William H. Russ", is written over a horizontal line.

William H. Russ
Major General, U.S. Army
Commanding

NOTICE

This publication contains the briefings presented during this Advance Planning Briefing for Industry (APBI). Following the APBI, you may obtain a Proceedings Book for a minimal fee by contacting the Defense Technical Information Center (DTIC). The telephone number is: (800) 225-3842.

We hope that the above publication proves beneficial to your long-range planning efforts. If you have any additional questions and/or suggestions, please contact Denise Ellison, email: Denise.Ellison@us.army.mil, (732) 532-8674.

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WELCOMING REMARKS

MG WILLIAM H. RUSS



**COMMANDING GENERAL
CECOM**

 **CECOM Acquisition Center** 

Contractors Accompanying the Force



Mr. Edward G. Elgart
Director, CECOM Acquisition Center
2 June 2004

CECOM Bottom Line: The WARFIGHTER

 **Agenda** 



- ☆ Background
- ☆ Management of Contractors
- ☆ Regulations & Policies
- ☆ What's In the Future
- ☆ The Good, the Bad & the Ugly
- ☆ CECOM Top Ten Lists
- ☆ Team C4I/EWS Contract Opportunities

CECOM Bottom Line: The WARFIGHTER



Background

CECOM Bottom Line: The WARFIGHTER

 **Background** 



- Contractor support is designed to augment military force structure -- not replace it
- Contractor support is used on an "as needed" basis
- Contractor contributions are a valuable force multiplier to the success of our Armed Forces
- Army's ability to manage operational contractor support (OCS) directly impacts readiness and sustainment
- New regulations lay out specific guidelines about chain of command and contract requirements

CECOM Bottom Line: The WARFIGHTER 4

 **Background** 


- Army has become increasingly more reliant on private companies
 - Logistical, technical support, combat support (CS), and combat service support (CSS) functions
 - Operation Desert Storm- 916 contractors personnel deployed to provide maintenance, technical assistance, and equipment support
 - Operation Enduring Freedom (OEF)/ Operation Iraqi Freedom (OIF) - 32,000 repair contractor personnel in the Central Command region sent by AMC alone

CECOM Bottom Line: The WARFIGHTER 5


 **Management of Contractors** 

Management of Contractors

CECOM Bottom Line: The WARFIGHTER 6



Management of Contractors




•The management mechanism is the contract itself as defined by the terms and conditions


- Not under the direct supervision of military personnel
- The PCO and/or COR will monitor contractor performance and maintain day-to-day liaison activities

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CECOM Bottom Line: The WARFIGHTER



Management of Contractors




• Following clauses are included in all contracts that require contractor deployment:


- FAR 52.228-3 Worker's Compensation Insurance:
 - As required by the Defense Base Act, Contractor must provide workers' compensation insurance
- FAR 52.228-4 Worker's Compensation and War Hazards Insurance Overseas
 - Benefits not otherwise covered by workers' compensation insurance are covered under the standards of the War Hazards Compensation Act
 - Contractor shall include this clause in all subcontracts or be responsible/liable for subcontractor employees

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CECOM Bottom Line: The WARFIGHTER





Management of Contractors



- DFARS 252.228-7000 Reimbursement for War Hazard Losses
 - Contractor will be reimbursed by the Government costs for providing employee war-hazard benefits in accordance with the Workers' Compensation and War-Hazard Insurance clause
- DFARS 252.228-7003 Capture and Detention
 - The Government will reimburse the Contractor monies paid to captured person or person's dependents
 - Monies will not be paid if the employees were entitled to compensation for capture and detention under the War Hazards Compensation Act

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CECOM Bottom Line: The WARFIGHTER

Management of Contractors



- DFARS 252.225-7043 Antiterrorism/Force Protection Policy for Defense Contractors Outside the US
 - Requires contractors to affiliate with the Overseas Security Advisory Council
 - Requires contractor and subcontractor personnel to register with the U.S. Embassy and comply with any security related requirements
- DFARS 252.209-7001 Disclosure of Ownership or Control by Government of a Terrorist Country
 - If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclose such interest

CECOM Bottom Line: The WARFIGHTER 11

Exiting and Forthcoming Regulations and Policies



CECOM Bottom Line: The WARFIGHTER 11

Existing

- Army doctrine:
 - FM 3.100-21 - Contractors on the Battlefield
- Army regulation:
 - AR 715-9, Contractors Accompanying the Force
 - AFARS Clause 5152.225-74-9000 Contractors Accompanying the Force
- Army policy
 - AFARS Manual #2, Contingency Contracting

CECOM Bottom Line: The WARFIGHTER 12



FM 3.100-21

FM 3.100-21 - Contractors on the Battlefield

- Theater support command is the lead organization to manage and maintain visibility for all contractors
- Commanders do not have direct control over contractor employees (only contractors manage and supervise their employees)
- The terms and conditions of contract establishes relationship between military and contractor – the link is the PCO/COR
- Contractors are required to perform all tasks identified within the Statement of Work (SOW)/Statement of Objectives (SOO)

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CECOM Bottom Line: The WARFIGHTER






FM 3.100-21

- Military units retain responsibility for ensuring all contractors deployed are prepared in accordance with AR 715-9
- Contractors may operate in the combat zone (if contract provides)
- Contractors can perform potentially any function except inherently governmental functions
- Establishes three conditions that must be met before contractor personnel can carry firearms
 - Commander in the area of operations must approve the carrying of firearms by contractors
 - Contractor company policy must permit its employees to carry arms
 - Contractor employee must agree to carry a firearm

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CECOM Bottom Line: The WARFIGHTER


AR 715-9

AFARS 5152.225-74-9000 Contractors Accompanying the Force


- Provides uniform, Department-wide guidelines for contractors accompanying military forces in hostile environments
- Clause addresses top-level issues
 - Assure coordination of operational requirements in the contract; and with the Combatant Commander in theater
 - Notification that operations may be in a dangerous environment
 - Be aware of pertinent rules and regulations in an OCONUS location
- Other critical areas covered
 - Purchasing Limited Resources
 - Vehicle and Equipment Operation
 - Contractor Personnel Administration
 - Compliance with Combatant Command Orders
 - Clothing and Equipment Issue
 - Weapons and Training
 - Passports, Visas and Customs

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CECOM Bottom Line: The WARFIGHTER




AFARS Manual #2




- Provides guidance for implementing the FAR, DFARS, and AFARS
- Provides general information on:
 - Legal Authorities, Limitations, and Policies
 - International Relations
 - Duties and Responsibilities
 - Contracting Procedures During Contingency Operations
 - Claims, Seizures, Disputes and Appeals
 - Contingency Contracting Support Kit

CECOM Bottom Line: The WARFIGHTER

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Forthcoming




- New DOD Directive/DOD Instruction
- New DFARS clause
- Update AFARS Manual #2 (Contingency Contracting)
- Develop AFARS Manual #3 (Contractors on the Battlefield)
- Revise FM 3.100-21 (Contractors on the Battlefield)

CECOM Bottom Line: The WARFIGHTER

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DFARS Clause



- Pending DFARS clause 252.225-70XX
 - Issued for comment in Federal Register, dated March 23, 2004 (Volume 69, Number 56); comments due March 24, 2004
 - Contractor accepts the risks associated with required contract performance
 - Contractor is responsible for all resources required to perform contractual effort
 - Contractor shall comply with all laws and regulations (Host Nation, treaties, etc.)
 - Contractor shall have a plan to remove/replace any personnel who jeopardize mission completion
 - Provides contractor all pre-deployment requirements
 - Instructions of the Combatant Commander take precedence of any existing terms of this clause
 - Authorizes contractors to carry privately-owned weapons


CECOM Bottom Line: The WARFIGHTER


**Contractors Accompanying
the Force:
The Good, Bad, and Ugly**

CECOM Bottom Line: The WARFIGHTER

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The Good




- Contractor deployment provides for the increase/decrease of available support resources quickly in response to changing requirements
 - Can extend existing military capability,
 - Provide alternative sources of supplies and services, or
 - Provide capabilities for which no military capability exists

CECOM Bottom Line: The WARFIGHTER

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The Bad - RISK



- Contractors cannot provide their own security; require military escorts resulting in additional military personnel
- Proximity to the battlefield
- Nuclear, Biological, Chemical (NBC) threat – protective gear not guaranteed
- Classified as noncombatants
 - An individual in any unit of the armed forces which is unarmed at all times
 - When armed, unclear distinction as to combatant/noncombatant
 - Result is contractor is afforded some, but not all, of the protections

CECOM Bottom Line: The WARFIGHTER

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The Ugly

- Lack of contractor performance
 - Poor performance/no performance
 - Potential of individuals to walk off the job
 - Legal ramifications (i.e. Contract termination, consideration)
- Limited or no alternatives/remedies available to commander in the field

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CECOM Bottom Line: The WARFIGHTER

CECOM Top 10 Lists

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CECOM Bottom Line: The WARFIGHTER






CECOM Top Ten Large Businesses - FY2003

Contractor	# Actions	Total \$
•Raytheon	292	492.0M
•General Dynamics	404	415.0M
•Lockheed	503	325.0M
•ITT	179	269.0M
•MITRE	92	259.0M
•Northrop Grumman	344	219.0M
•ARINC	324	182.0M
•TRW	168	167.0M
•Harris	87	129.0M
•Computer Sciences	166	112.0M

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CECOM Bottom Line: The WARFIGHTER






CECOM Top Ten Small Businesses - FY2004 to Date*

Contractor	# Actions	Total \$
•TAMSCO	40	78.0M
•EIOR Technologies, Inc.	101	46.0M
•Ultralife Batteries, Inc.	08	43.0M
•Signal Corp/Veridian IT Services	93	43.0M
•Datapath, Inc.	25	41.0M
•Sytex, Inc.	61	24.0M
•Choctaw Manufacturing	07	22.0M
•Engineering & Professional Services	26	20.0M
•Bren-Tronics, Inc.	04	17.0M
•FiberTek, Inc.	86	16.0M

* As of 10 May 2004

CECOM Bottom Line: The WARFIGHTER
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CECOM Top Ten 8(a) Businesses - FY2004 to Date*

Contractor	# Actions	Total \$
•Choctaw Manufacturing	07	22.0M
•Janus Research Group, Inc.	15	11.0M
•Custom Manufacturing & Engineering	09	7.0M
•Chenega Technology	13	6.0M
•ASRC Communications LTC	08	1.4M
•Aerospace Integration Corp	09	1.3M
•Binary Consulting, Inc.	04	1.0M
•New World Environmental, Inc.	04	0.5M
•R&D Electronics	01	0.2M
•Aquia Management, Inc.	01	0.2M

* As of 10 May 2004



CECOM Bottom Line: The WARFIGHTER
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Source of Information


- **AMC Website:** <http://www.amc.army.mil/amc/rda/rda-ac/ck/ck-prime.htm>
- Regulatory documents and suggested contract clause language
- Other related documents
 - Organizational/Institutional information
 - Technical information
 - Deployment/Health/Personnel information
 - Other information (Country/Cultural, Articles)

CECOM Bottom Line: The WARFIGHTER
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**CECOM Acquisition Center
Our Ingredients To Success**



**PROACTIVE
APPROACH TO
CONTRACTING
EXCELLENCE**



THROUGH

**PEOPLE
AUTOMATION
CONTINUOUS PROCESS IMPROVEMENT
EDUCATION**

CECOM Bottom Line: The WARFIGHTER 34

Contract Title

- TITLE:
- CONTRACT TYPE:
- ESTIMATED VALUE:
- KEY MILESTONES:
- TECHNICAL POC:
- ACQUISITION CONTACT:
- SOLICITATION # or RFQ #:

CECOM Bottom Line: The WARFIGHTER 35



Contract Opportunities



Mr. Anthony LaPlaca

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CECOM Bottom Line: THE WARFIGHTER

Page # 1




Long Term Contract Definitions




- **Flexible Long Term Contract (FLTC):** range quantity contracts of three or more years covering the production and/or repair of one or more spare parts.
- **Indefinite Delivery Indefinite Quantity (IDIQ) Contract:** a vehicle that provides for an indefinite quantity, within stated limits, of specific supplies or services during a fixed period, with deliveries to be scheduled by placing orders with the contractor. The Government is obligated to a stated minimum. Funds other than the minimum are obligated at the time of subsequent orders.
- **Requirements Contract:** An instrument that provides for filling all purchase requirements of designated Government activities for specific supplies or services during a specified contract period with deliveries to be scheduled by placing orders with the contractor. No money is obligated at award; funds are obligated when delivery orders are written. There is no guaranteed minimum quantity.

CECOM Bottom Line: THE WARFIGHTER

Page # 2



Long Term Contract Definitions (continued)



- **Blanket Purchase Agreement (BPA):** A simplified method of filling the government's anticipated repetitive needs for supplies or services by establishing charge accounts with qualified sources of supply. (FAR 13.303)
 - BPAs are designed to reduce administrative costs in accomplishing simplified acquisitions by eliminating the need for individual purchase documents.
 - Individual purchases under BPAs may not exceed the dollar limitation for simplified acquisitions, and the existence of a BPA does not justify sole source purchasing.
 - BPAs are also being used with vendors that have products or services on the Federal Supply Schedule (FAR 8.404 (b)4).

CECOM Bottom Line: THE WARFIGHTER

Page # 3



LTCs Projected for FY 04-05



- LRC Omnibus III
- Main Alternators for Military Standard Generators
- Repair of AN/APN-209 LRUs
- T-611 and CN-405
- AN/VVS-2(V) Systems Buy
- Spare Parts for AN/VVS-2
- Night Vision Spare Parts
- AN/PVS-4A and AN/TVS-5 Spares
- AN/PVS-7A and AN/PVS-10 LIFs
- Mechanical Scanner
- Arctic LCSS Support System
- Light Emitting Diode Arrays
- AS-3900A and AS-3916 Antennas and Spares

CECOM Bottom Line: THE WARFIGHTER

Page # 1



LRC Omnibus III



- Acquire a full range of life cycle integrated logistics, technical, engineering and administrative support services
- Services will support the LRC and any CECOM activity or organization requiring personnel, facilities, and materials.
- The goal of this program is to assure maximum mission effectiveness and system operational availability in the most cost effective manner by providing contractor personnel with skill levels and expertise to complement present organic Government capabilities

CECOM Bottom Line: THE WARFIGHTER

Page # 2



LRC Omnibus III



- Objective: Award an OMNIBUS Services contract to meet current and future requirements relative to Field and Weapon System Support
- Contract Type: IDIQ, Multiple Awards, 5 years (2 year basic, 3 one-year award terms)
- Estimated Value: \$500M - \$700M
- Key Milestones: Solicitation release: August 2004
Award: December 2004
- Technical Contact: Jean Cash, 732-532-3042
- Acquisition Contact: Gail Jablonski, 732-532-4847
- Solicitation #: W15P7T-04-R-D624

CECOM Bottom Line: THE WARFIGHTER

Page # 3

Main Alternators for Military Standard Generators

CECOM Bottom Line: THE WARFIGHTER Page #7

Main Alternator for Military Standard Generators

- Military Standard Generators are utilized by many different units to provide power in support of their mission
- End Items are: MEP-701, MEP-002, MEP-003, MEP-004, MEP-005, MEP-006
- 22 secondary components
- Engines: 4 and 6 cylinder
- Fuels: Diesel: DL-1,2, and Jet Fuel: JP-8, Jet A-1
- Environmental Capability: -25 deg F (-65 deg w/winterization kit) to 125 deg F, rain, humidity, altitude, sand/dust, transportation, cold storage, salt spray, fungus

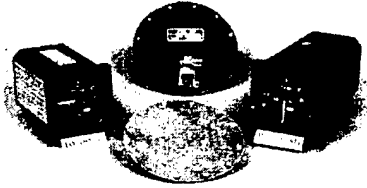
CECOM Bottom Line: THE WARFIGHTER Page #8

Main Alternator for Military Standard Generators

- Objective: To support current and future requirements by awarding a Firm Fixed Price contract.
- Contract Type: 5 year basic contract with 5 year option
- Estimated Value: \$3M-\$9.5M
- Key Milestones: Solicitation release: September 2004
Award: November 2004
- Technical Contact: William Hogelin, 732-427-6321
- Acquisition Contact: William Frantz, 732-532-5248
- Solicitation #: DAAB07-03-R-D620

CECOM Bottom Line: THE WARFIGHTER Page #9

Repair of AN/APN-209 LRUs



CECOM Bottom Line: THE WARFIGHTER

Page # 10

Repair of AN/APN-209 LRUs

- The AN/APN-209(V) Radar Receiving Set is an absolute altimeter that provides an accurate indication of the altitude of an aircraft over all types of terrain.
- Provides safe Nap-of-Earth flying capabilities for helicopters.
- Newest models provide voice warning when the aircraft is above or below certain fixed or pilot adjustable altitudes.

CECOM Bottom Line: THE WARFIGHTER

Page # 11

Repair of AN/APN-209 LRUs

- Objective: To award a contract for repair of various AN/APN-209 Line Replaceable Units (LRUs).
- Contract Type: IDIQ, 5 years, Best Value
- Estimated Value: \$210K-\$3.5M
- Key Milestones: Solicitation release: August 2004
Award: December 2004
- Technical Contact: David Savitsky, 732-532-1627
- Acquisition Contact: Thomas McConnell, 732-532-5486
- Solicitation #: TBD

CECOM Bottom Line: THE WARFIGHTER

Page # 12

**Induction Compass Transmitter T-611
& Magnet Flux Compensator CN-405**

INDUCTION COMPASS TRANSMITTER T-611-12A

DIRECTIONAL GYRO ON AN/ASN-43

MAGNETIC FLUX COMPENSATOR CN-405-100

AN/ASN-43 () Gyro Magnetic Compass Set

CECOM Bottom Line: THE WARFIGHTER

Page # 13

**Induction Compass Transmitter T-611
& Magnet Flux Compensator CN-405**

- The T-611 and the CN-405 are the magnetic slaving units of the AN/ASN-43() Gyromagnetic Compass Set, which is used on the UH-60 and the CH-47 aircraft.
- The AN/ASN-43() provides accurate heading information in the DG mode (free gyro) or the MAG mode (magnetically slaved).
- The T-611 detects the earth's magnetic field whereas the CN-405 compensates for stray magnetic fields.

CECOM Bottom Line: THE WARFIGHTER

Page # 14

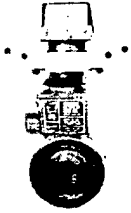
**Induction Compass Transmitter T-611
& Magnet Flux Compensator CN-405**

- Objective: To award a contract for production of the T-611 and CN-405
- Contract Type: IDIQ, 5 years
- Estimated Value: \$436K-\$1.5M
- Key Milestones: Solicitation release: 1Q FY05
Award: 3Q FY05
- Technical Contact: Ivan McGowan, 732-532-4974
- Acquisition Contact: Mark Young, 732-532-1983
- Solicitation #: TBD

CECOM Bottom Line: THE WARFIGHTER

Page # 15

AN/VVS-2(V) Systems Buy



CECOM Bottom Line: THE WARFIGHTER

Page # 16

AN/VVS-2(V) Systems Buy

- The AN/VVS-2 Driver's Viewer enables a closed-hatch vehicle to be driven during night time conditions without active illumination.
- The Driver's viewer is a through-the-hull/hatch night periscope for armored vehicles.
- There are different versions: AN/VVS-2(V)1A, AN/VVS-2(V)2A, AN/VVS-2(V)3 & AN/VVS-2(V)4. The Driver's Viewers are self-contained night vision devices that improve night vision using available light from the night sky for a vehicle driver. The area viewed is presented as a green image display. It is lightweight enough to be installed from within the vehicle and can be manually rotated from between 30° to 45° depending on the vehicle in which it is to be mounted.

CECOM Bottom Line: THE WARFIGHTER

Page # 17

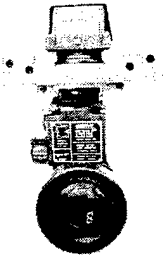
AN/VVS-2(V) Systems Buy

- Objective: To award a production contract for four versions of the AN/VVS-2 Driver's Night Viewer.
- Contract Type: IDIQ, 5 years
- Estimated Value: \$3.5M-\$50M
- Key Milestones: Solicitation release: April 2005
Award: July 2005
- Technical Contact: Susan Weir, 732-427-5722
- Acquisition Contact: Jo-Ann Lee, 732-532-2315
- Solicitation #: TBD

CECOM Bottom Line: THE WARFIGHTER

Page # 18

Spare Parts for the AN/VVS-2



CECOM Bottom Line: THE WARFIGHTER Page # 19

Spare Parts for the AN/VVS-2

- The AN/VVS-2 Driver's Viewer enables a closed-hatch vehicle to be driven during night time conditions without active illumination.
- The Driver's viewer is a through-the-hull/hatch night periscope for armored vehicles.
- 5 spare parts being purchased are Objective Lens Assembly, 2 different Mount Housing Assemblies, Plate Assembly, and Eyepiece Lens Assembly.

CECOM Bottom Line: THE WARFIGHTER Page # 20

Spare Parts for the AN/VVS-2

Objective: To award a contract for production of five spare parts required for the Driver's Night Vision Viewer, AN/VVS-2.

Contract Type: IDIQ, 5 years

Estimated Value: \$3.65M-\$43.8M


Key Milestones: IFB: April 2004
Award: July 2004

Technical Contact: Susan Weir, 732-427-5722

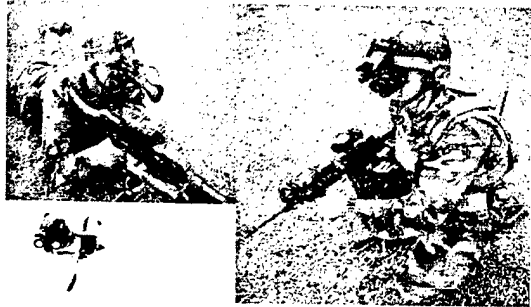
Acquisition Contact: Jo-Ann Lee, 732-532-2315

Solicitation #: W15P77-04-R-L210

CECOM Bottom Line: THE WARFIGHTER Page # 21




Night Vision Spare Parts



CECOM Bottom Line: THE WARFIGHTER

Page # 22



Night Vision Spare Parts

- Gen III I² spares will sustain the U.S. Armed Force's ability to perform tasks at night with an efficiency approaching that under daylight conditions.
- The Gen III I² spares support passive devices, which amplify available light.
- 33 spare parts (including tubes) to be purchased include parts for AN/AVS-6(V)1A, (V)1B, (V)3Aviator's Night Vision Imaging Systems (ANVIS), AN/PVS-7A, B & D Night Vision Goggles, and AN/PVS-14 Monocular Night Vision Device (MNVD).
- Gen III 25mm Image Intensifier Tubes, MX-11619 and MX-11620 are also being purchased which are parts for AN/VVS-2 Drivers Night Vision Viewer, AN-PVS-4 Individual Served Weapon Night Vision Sight, and AN-TVS-5 Crew Served Weapon Night Vision Sight.

CECOM Bottom Line: THE WARFIGHTER

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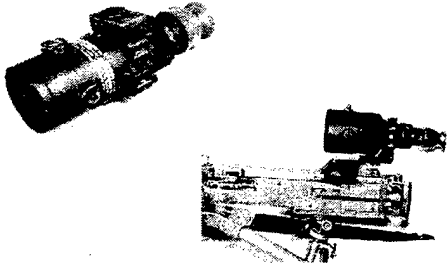
Night Vision Spare Parts

- Objective: To replace IDIQ contracts which have exceeded quantity thresholds
- Contract Type: Multiple BPAs, 5 years
- Estimated Value: \$10M - \$15M
- Key Milestones: Initial BPA Awards: May-July 04
Additional call orders will be placed thru FY09
- Technical Contact: Susan Weir, 732-427-5722
- Acquisition Contact: Deborah Gilligan, 732-532-5454
- Solicitation #: W15P7T-04-R-J204

CECOM Bottom Line: THE WARFIGHTER

Page # 24

AN/PVS-4 and AN/TVS-5 Spares



CECOM Bottom Line: THE WARFIGHTER Page # 25

AN/PVS-4 and AN/TVS-5 Spares

- The AN/PVS-4 provides passive sighting and viewing of targets using second generation image intensifier techniques.
- When mounted on individual weapons, the scope will provide the capability for delivery of accurately aimed fire during hours of darkness.
- The system is easily installed and removed from the weapon using suitably designed brackets which require no modification to the weapon.
- AN/PVS-4 is primarily designed for use with the M14, M16 and M4 Rifles, M60 and M240B Machine Gun, M249 Squad Automatic Weapon, M72A1 Rocket Launcher and M203 Grenade Launcher, M4 Carbine and M240B Machine Gun. The sight can be used in the hand-held mode for night surveillance.
- AN/PVS-4 spare parts being purchased are the Objective Lens Assembly and the Eyepiece Lens Assembly.

CECOM Bottom Line: THE WARFIGHTER Page # 26

AN/PVS-4 and AN/TVS-5 Spares

- The AN/TVS-5 provides sighting and viewing of targets.
- When mounted on crew served weapons, the scope will provide the capability for delivery of accurately aimed fire during hours of darkness.
- AN/TVS-5 is primarily designed for use with the M2 and M60 Machine Gun and the 106mm Recoilless Rifle.
- The sight can be used in the handheld mode for night surveillance by individual soldiers, commanders and reconnaissance elements.
- Spare part being purchased is the Objective Lens Assembly.

CECOM Bottom Line: THE WARFIGHTER Page # 27

AN/PVS-4 and AN/TVS-5 Spares

Objective: To award a small business contract for the Eyepiece Assembly for the AN/PVS-4 and Objective Lens Assemblies for the AN/PVS-4 and AN/TVS-5.

Contract Type: IDIQ, 5 years

Estimated Value: \$772K-\$4.85M

Key Milestones: Solicitation release: 1Q FY05
Award: 2Q FY05


Technical Contact: Daniel McClendon, 732-532-6241

Acquisition Contact: Pat Kofron, 732-427-1484

Solicitation #: TBD

CECOM Bottom Line: THE WARFIGHTER Page # 21

AN/PVS-7A and AN/PVS-10 Light Interference Filters (LIFs)



CECOM Bottom Line: THE WARFIGHTER Page # 29

AN/PVS-7A and AN/PVS-10 Light Interference Filters (LIFs)

- The AN/PVS-7 is a helmet - mounted image intensification system used by individual soldiers for night operations including such tasks as driving, walking, first-aid, map reading and maintenance.
- The system is designed for use in conjunction with rifle mounted aiming lights.
- Technology: Passive, Third Generation Image Intensification (18mm Image Intensifier Tube).

CECOM Bottom Line: THE WARFIGHTER Page # 30



AN/PVS-7A and AN/PVS-10 Light Interference Filters (LIFs)



- The AN/PVS-10 is an integrated day/night sight for the M24 sniper rifle that provides the sniper with the capability to acquire and engage targets under both day and night conditions.
- For nighttime operation, the system utilizes third generation image intensification technology.
- The system mounts to the existing rail of the M24 rifle and uses the standard mil-dot reticle.
- The LIF protects the user from eye injury and protects the image intensifier from damage from battlefield lasers.

CECOM Bottom Line: THE WARFIGHTER

Page # 31



AN/PVS-7A and AN/PVS-10 Light Interference Filters (LIFs)



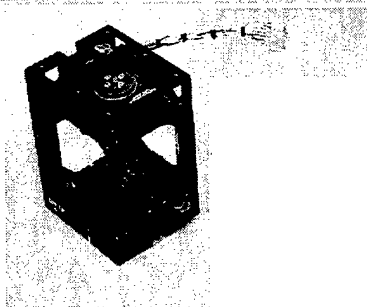
- Objective: To award a contract for production of two spare parts required for the AN/PVS-7A Night Vision Goggle & AN/PVS-10 Snipers Night Sight.
- Contract Type: IDIQ, 5 years
- Estimated Value: \$1M-\$3.7M
- Key Milestones: Solicitation release: 1Q FY05
Award: 2Q FY05
- Technical Contact: Susan Weir, 732-427-5772
- Acquisition Contact: Pat Kofron, 732-427-1484
- Solicitation #: TBD

CECOM Bottom Line: THE WARFIGHTER

Page # 32




Mechanical Scanner




CECOM Bottom Line: THE WARFIGHTER

Page # 33



Mechanical Scanner



- The Mechanical Scanner is a subcomponent to 1st Generation Forward Looking Infrared Systems (FLIR).
- Utilizes a two-sided mirror to scan Infrared energy on one side and visible light on the opposite. There are several motors utilized to perform the scanning function as well as several transducers to assure proper interlacing of the images.
- There are several different versions/configurations of the scanner dedicated to various end item/platform requirements.
- Must be fully operational in ambient temperatures of +71C and -54C.
- Must be able to withstand mechanical shock of 100G for a duration of 11 msec.

CECOM Bottom Line: THE WARFIGHTER

Page # 34




Mechanical Scanner




- Objective: Maintain source of supply for Mechanical Scanners to meet Army requirements
- Contract Type: IDIQ, 5 years, Best Value
- Estimated Value: \$10M-\$20M
- Key Milestones: Solicitation release: 1Q FY05
Award: 2Q FY05
- Technical Contact: John Chiesa, 732-427-5804
- Acquisition Contact: Pat Kofron, 732-427-1484
- Solicitation #: TBD

CECOM Bottom Line: THE WARFIGHTER

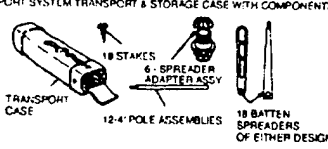
Page # 35



Arctic LCSS Support System



SUPPORT SYSTEM TRANSPORT & STORAGE CASE WITH COMPONENTS



CECOM Bottom Line: THE WARFIGHTER

Page # 36

Arctic LCSS Support System

- Lightweight Camouflage Screen System (LCSS) is a legacy system, to be replaced by Arctic ULCANS in the FY 05 – 06 timeframe.
- Provides concealment from Visual, Near IR/Thermal and Radar sensors.
- The support system, snow (NSN: 1080-01-256-0678) is white in color and is used with the snow, radar scattering or radar, transparent screen systems.
- The support system consists of:
 - Twelve each four foot aluminum (Type 1) pole sections.
 - Eighteen each aluminum stakes.
 - Eighteen each batten spreaders, which support the screens.
 - A locking device called a spreader adapter assembly.
 - A repair kit is furnished containing enough material for users to perform repairs on the screen.
 - A carrying case for the support system.

CECOM Bottom Line: THE WARFIGHTER Page # 37

Arctic LCSS Support System

Objective: To fill requirements for Arctic LCSS Support Systems

Contract Type: IDIQ, 5 years, Best Value

Estimated Value: \$1.9M-\$2.1M

Key Milestones: Solicitation release: 4Q FY04
Award: 1Q FY05

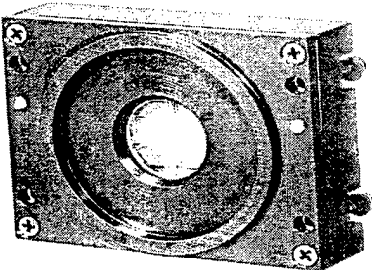
Technical Contact: Troy Hayes, 732-427-5420

Acquisition Contact: Pat Kofron, 732-427-1484


Solicitation #: TBD

CECOM Bottom Line: THE WARFIGHTER Page # 38


Light Emitting Diode Arrays



CECOM Bottom Line: THE WARFIGHTER Page # 39




AS-3900A and AS-3916 Antennas and Spares




	AS-3900A	AS-3916
Description	9' bi-pole fiberglass whip antenna consisting of upper and lower element and base subassembly	6' mono pole steel whip attached to a base subassembly
Used with	SINGARS Ground Radios in wheeled vehicles	SINGARS Radios in tracked vehicles
Frequency	30-88 MHz range, frequency hopping capability	30-88 MHz
Range	Approx 22 miles	Approx 17 miles
Components/NSNs	Antenna 5985-01-353-4943 Base 5985-01-353-8696 Upper element 5985-01-306-4622 Lower element 5985-01-306-8110	Antenna 5985-01-353-4943 Base 5985-01-376-8012

CECOM Bottom Line: THE WARFIGHTER
Page # 43



AS-3900A and AS-3916 Antennas and Spares



Objective: To replace expiring contracts for the antennas and associated spare parts.

Contract Type: IDIQ, 5 years, Best Value

Estimated Value: \$30M-\$50M

Key Milestones: Solicitation release: July 2004
Award: November 2004

Technical Contact: Man Bun Lau, 732-532-9177

Acquisition Contact: Michael Neeb, 732-532-5512

Solicitation #: W15P7T-04-R-G634

CECOM Bottom Line: THE WARFIGHTER
Page # 44

PEO C3T

PEO C3T Overview

Mr. John Ferrapato
Deputy Program Executive Officer
Command, Control and Communications Tactical

OUR ARMY AT WAR - RELEVANT AND READY

PEO C3T

Mission Statement

To rapidly develop, field, and support leading edge, survivable, secure and interoperable tactical, theater, and strategic command and control and communications systems through an iterative, spiral development process that results in the right systems, at the right time and at the best value to the warfighter.

"System Architect for Tactical Army"

OUR ARMY AT WAR - RELEVANT AND READY


PEO C3T

Vision Statement

To be the premier provider of integrated C3 solutions to the Joint Warfighter while supporting transformation of the collective force. PEO C3T has evolved as the "C3 Expert" and is dedicated to providing information superiority to the Warfighter and Homeland Defense. We provide the right system, at the right time and at the best value.

OUR ARMY AT WAR - RELEVANT AND READY

Warfighter Information Network-Tactical
WIN-T



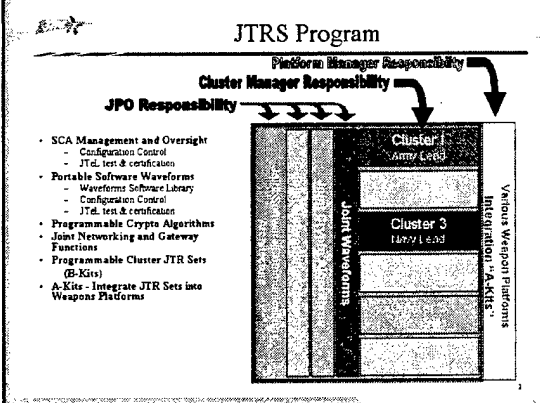
Advance Planning Brief for Industry
Joint Tactical Radio System; Cluster 1

Mr. Graciano Nikolich, JTRS C1 Systems Engineer
732-427-3989

Agenda

- JTRS C1 Program Overview
- Program Schedule
- Program Requirements
- Technical Challenges
- Summary
- Take-Aways

JTRS Program



JPO Responsibility

- SCA Management and Oversight
 - Configuration Control
 - JTD, test & certification
- Portable Software Waveforms
 - Waveforms Software Library
 - Configuration Control
 - JTD, test & certification
- Programmable Crypto Algorithms
- Joint Networking and Gateway Functions
- Programmable Cluster JTR Sets (B-Kits)
- A-Kite - Integrate JTR Sets into Weapon Platforms

Platform Manager Responsibility

Cluster Manager Responsibility

Cluster 1 Army Lead

Cluster 3 Navy Lead

Joint Waveforms

Various Weapon Platforms

Integration "A-Kite"

JTRS C1 HW

HW											
Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground
TACP	TACP	TACP	TACP	TACP	TACP	TACP	TACP	TACP	TACP	TACP	TACP
1. GPS	2. GPS	3. GPS	4. GPS	5. GPS	6. GPS	7. GPS	8. GPS	9. GPS	10. GPS	11. GPS	12. GPS

HW											
Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground	Ground
TACP	TACP	TACP	TACP	TACP	TACP	TACP	TACP	TACP	TACP	TACP	TACP
13. GPS	14. GPS	15. GPS	16. GPS	17. GPS	18. GPS	19. GPS	20. GPS	21. GPS	22. GPS	23. GPS	24. GPS

P2 - LRUs - (IAV CV 5 Channel)

No	Qty
1	1
2	2
3	2
4	2
5	1
6	3
7	1
8	1
9	1
10	1
11	1
12	1

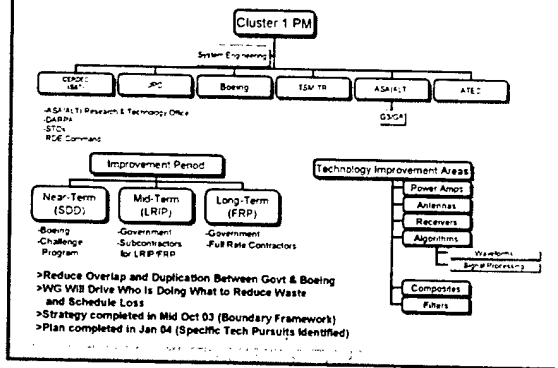
P2 - Antennas - (IAV CV 5 Channel)

No	Qty	Height
1	1	12'
2	1	2'
3	2	100'
4	1	100'
5	1	16-32'
6	1	16-32'
7	1	16-32'
8	1	16-32'

Technical Challenges

- Power Dissipation
- Requirements that significantly impacted Size/Weight/Power (SWaP)
 - Flexibility to run any waveform in any channel
 - Multiple Single Level Security (MSLS)
 - Software Communications Architecture (SCA)
 - Universal wideband amplifiers
- Industrial grade components require more cooling
- CE-101 not waived for Rotary Wing JTRS added 60 lbs
- Wide band antenna performance

Technology Development Strategy Working Group



Technology Development Strategy (TDS)

- Seize earliest opportunities for mature improved affordable and reliable WNW supporting PA, Antenna and Filter technology insertion to Cluster 1 in all Phases while simultaneously maintaining the current program progress with recognized technology shortfalls
- Demonstrate incremental improvement by using phased approach to mitigate and avoid unnecessary programmatic risk and cost
- Leverage and influence DoD and Army R&D programs such as STOs and ATDs
STO CER-05 Radio Enabling Technologies & Networking Applications (RETLA)
- Assess Technology and affordability through BAAs and SBRs

Initiated Efforts via CERDEC S&TCD Broad Agency Announcements

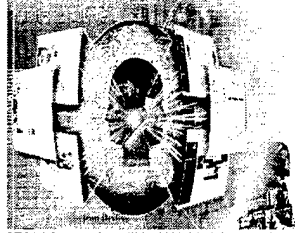
- Mid-High Power amplifier (MHPA): BAA Solicitation DAAB07-03-R-P650, Topic # S0404 "Software Defined Radio".
- Antenna for Mid-High Band: BAA Solicitation DAAB07-03-R-P650, Topic # S0405 "Antennas for Tactical and Strategic Military Communications"
- Schedule: Awards Made Mar-April 04
- Continue pursuit of additional technologies

Take-Aways

- TDS supports BAAs
- BAAs must provide usable products
- CERDEC developing a STO to support TDS
- Strong focus on third party development
 - Emphasis on expansion of the industrial base
- Strong focus on tech insertion
- Two points of entry
 - Cluster 1 TDS Working Group (PM JTRS C1 lead)
 - RETNA STO (CERDEC lead)

US Army Research, Development and Engineering Command

Sensor Fusion



Purpose: Provide Multi-spectral, Multi-discipline Sensors and Fusion Tools Required to Understand the Enemy Situation and the Battlespace Environment As Required for the Unit of Action.

Products: Software for Knowledge Generation and Explanation to Answer Warfighting CCIR's in a Timely Manner; Ontology Based Information Agents for Objective Force Systems (FCS, DCGS-A, C2 Systems); Battle Damage Assessment Agents, and User-directed Knowledge Discovery Tools

Payoff: The Ability to Make Quick War-fighting Decisions After Having Fully Leveraged the Huge Volumes of Information That the UoA Will Receive.

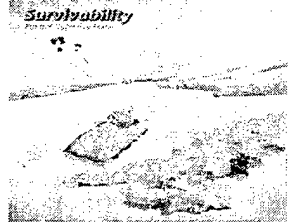
STO(s) Supporting: III.IS.2002.01, III.IS.2003.06, III.BA.2003.01

Value: \$12.6M (FY04) /\$117M (FY05-09)

CERDEC Technology to the Warfighter Quicker **RDE**

US Army Research, Development and Engineering Command

Survivability



Purpose: Provide the Warfighter Affordable Aircraft and Ground Electronic Sensors and Systems Which Enhance Survivability and Lethality Through the Development of Technology to Avoid Acquisition and Avoid Being Hit.

Products: Warning Sensors to Cue EW and APS Countermeasure Systems; Electronic Countermeasure Systems and Techniques to Neutralize Smart Munitions; Detection, Location, Identification, Jamming and Deception of Enemy Battlefield Surveillance and Targeting Radar Systems.

Payoff: Survivability and Information Dominance Through Degradation, Denial, and Deception of Enemy Sensors and Remotely Controlled Weapon Systems

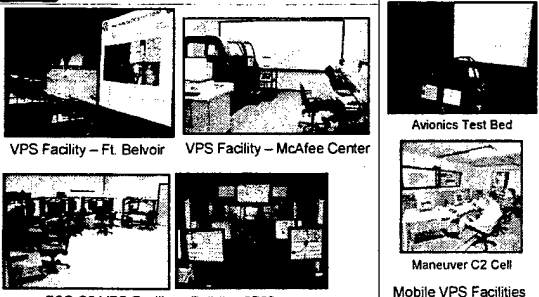
STO(s) Supporting: IV.EW.2000.01, III.IS.2003.01, IV.SN.2003.01

Value: \$10.9M (FY04) /\$5.3M (FY05-09)

CERDEC Technology to the Warfighter Quicker **RDE**

US Army Research, Development and Engineering Command

Virtual Prototyping



VPS Facility – Ft. Belvoir VPS Facility – McAfee Center Avionics Test Bed

FCS C2 VPS Facility – Building 2705 Maneuver C2 Cell Mobile VPS Facilities

CERDEC Technology to the Warfighter Quicker **RDE**

US Army Research, Development and Engineering Command

Rapid Prototyping Facilities

CERDEC Technology to the Warfighter Quicker RDE

US Army Research, Development and Engineering Command

T&E Assets and Facilities

Anechoic Chamber Facility – McAfee Center
 Countermine Facility – Ft. Belvoir
 Flight Test Facilities – Ft. Belvoir/Lakehurst
 Field Test Facilities – Ft. Belvoir/Lakehurst/Ft. Dix

CERDEC Technology to the Warfighter Quicker RDE

US Army Research, Development and Engineering Command

S&T Near Term Investments

- Over the next POM CERDEC Will Deliver Technology to support Networking, Command and Control and Sensors
 - Networking
 - Small Unit Communications
 - Advanced Antennas
 - Tactical Wireless Network Assurance
 - Mobile Networking
 - Data Links
 - Bandwidth Management
 - Command and Control
 - Maneuver C2 Tools and Visualization Systems
 - Knowledge Management
 - Intelligent Agent Development and Application

CERDEC Technology to the Warfighter Quicker RDE

US Army Research, Development and Engineering Command

S&T Near Term Investments

- **Sensors**
 - Second Generation Unattended Ground Sensors
 - Distributed Aided Target Recognition
 - Advanced Soldier Vision Systems
 - Low Cost, Un-cooled Sensors
 - Thru Wall Sensing
 - Multi-mission Radar
 - Long Range SAR/MTI
 - Digital RF Tags
- **Countermeasures**
 - Countermeasures and Counter IED

CERDEC Technology to the Warfighter Quicker RDE

US Army Research, Development and Engineering Command

CERDEC Contract Opportunities

- **Specific Business Area Opportunities**
 - Space & Terrestrial Communications Dir.
 - Command & Control Dir.
 - Night Vision & Electronics Sensor Dir.
 - Intelligence & Information Warfare Dir.
- **CERDEC Wide Opportunity**
 - Small Business Innovation Research

CERDEC Technology to the Warfighter Quicker RDE

US Army Research, Development and Engineering Command

Wearable Antenna Integration

<p>DEFINITION</p> <ul style="list-style-type: none"> - Apply wearable antenna prototypes to useable ensembles for dismounted soldier operational scenarios. - Existing prototypes to integrate into existing and/or projected soldier ensembles. - Characterization of the antenna transmit/ receive properties after integration efforts. - Testing to transmit and receive voice, data and video under operational scenarios may be included to determine actual properties (e.g., gain, bandwidth, etc.) <p>CONTRACT OPPORTUNITY</p> <p>OBJECTIVE: Integrate antenna prototypes into soldier ensemble</p> <p>CONTRACT TYPE: Cost Plus</p> <p>ESTIMATED VALUE: \$300k-700k</p> <p>KEY MILESTONES: BAA/RFP Released 4Q FY04 Contract Award 2Q FY05 Delivery: 2Q FY07</p> <p>TECHNICAL CONTACT: Dr. John M. Tobias (732) 427-0221 Delivery: (732) 427-1381</p> <p>SOLICITATION #: BAA DAAB07-C3-R-P550, topic #S0405</p>	<p>TECHNICAL SPECIFICATIONS</p> <ul style="list-style-type: none"> • Frequency Range: 30-2500 MHz • Inputs: RF and JTRS Control Input • "Soldier Radio" compatible • RF Input Power: <math>\leq 8</math> Watts • Form Factor: Various/Scorpion Ensemble <p>TECHNICAL CHALLENGES NEEDING MITIGATION</p> <ul style="list-style-type: none"> • Interference from ensembles • Characterization difficulties • Variable platform (soldier) • Multiple antennas
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CERDEC Technology to the Warfighter Quicker RDE

US Army Research, Development and Engineering Command

MARCON-i

DEFINITION

The Multi-dimensional, Assured, Robust Communications for an On-the-Move Network (MARCON-i) Science and Technology Objective (STO) is targeting technology development in two areas:

- 1) Automated link selection algorithm(s)
- 2) Directional networking technologies

CONTRACT OPPORTUNITY

OBJECTIVE: Automate Link Selection to dynamic environment and test technologies that support a dynamic, on-the-move network for different transmission paths to include network for power, data, and video.

Directional Networking: To develop, implement and test set of high and low frequency (up to 100 GHz) of dynamic communications in both static and dynamic environments for both

CONTRACT TYPE: Cost Plus Fixed Fee

ESTIMATED VALUE: Approx. \$1400 hour (FY04 FY07)

KEY MILESTONES: BAA Release - 11 May 04
BAA Milestones Proposed - 11 June 04
Contract Award - 4/20/04

TECHNICAL CONTACT: Larry M. Jozwiak (732) 532-0712

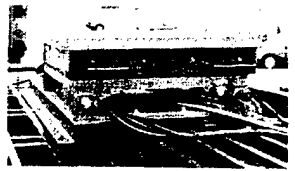
ACQUISITION CONTACT: Virginia Knight (732) 532-4344

SOLICITATION # or RFP #: DAAR07-03-R-14650, Topic 8.5201*

Technology to the Warfighter Quicker **RDE**

US Army Research, Development and Engineering Command

Affordable Phase Shifters for Phased Arrays MTO



MEMS

• Pictures are representative only current state-of-the-art is proprietary / patent(s) pending

Technology to the Warfighter Quicker **RDE**

US Army Research, Development and Engineering Command

Affordable Phase Shifters for Phased Arrays MTO

DEFINITION

Provide the means to achieve high data rate on-the-move communications for the Army's Future Combat Systems (FCS) and Transformational Communications (TC).

Receive antenna cost is dominated by the high cost of packaged Monolithic Microwave Integrated Circuit (MMIC) phase shifters (\$80-100). Micro Electro-Mechanical Switch (MEMS) and Ferroelectric (FE) phase shifter technologies offer low cost (<\$10) alternatives to MMICs, making affordable Phased Arrays a reality.

Optimize manufacturing processes for mature 20/30/40GHz MEMS and FE devices to produce low loss, high reliability phase shifters with a total packaged cost of <\$10

CONTRACT OPPORTUNITY

OBJECTIVE: 20/30/40GHz Phase Shifters - \$10 ea

CONTRACT TYPE: Cost Plus Fixed Fee

ESTIMATED VALUE: MEMS - \$1-2M/yr (FY06-08)

KEY MILESTONES: MEMS solicitation - 30 FY05
MEMS award - 10 FY05

TECHNICAL CONTACTS: Louis Corryell & John Nelson (732) 532-9210

ACQUISITION CONTACT: Kristina Weaver (732) 427-1381

SOLICITATION # or RFP #: MEMS - DAAR07-03-R-14650 Topic 8.0401 (OO FY05)

Technology to the Warfighter Quicker **RDE**

TECHNICAL SPECIFICATIONS

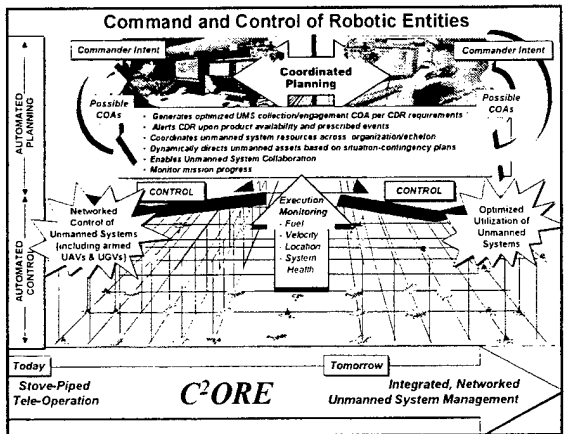
- Up to \$10M over 4 years (FY05-08)
- MEMS - 1 contract, up to \$5M (FY06-08)
- Manufacturing Technology Objective
 - Optimize manufacturing processes for mature (TRL/MRL: 4-7) phase shifter device technology
- Improve loss, yield, reliability and cost

TECHNICAL CHALLENGES

NEEDING MITIGATION

MEMS

- Increasing Reliability to > 1012 cycles
- Eliminating attrition / dielectric charging
- RF power handling
- Increasing yield to > 95%
- Hermetic encapsulation
- Size reduction
- < \$10 ea



US Army Research, Development and Engineering Command

C²ORE

DEFINITION
Command and Control Entities (C²ORE)
 C²ORE will develop and demonstrate an integrated network battle management capability for unmanned systems. This will be accomplished via a System of System (SoS) integration of Unmanned System (UMS) technology from across RDE/CDM and development of a suite of System of System Common Operating Environment (SoSCOE) compliant C2 decision aids and services.

TECHNICAL SPECIFICATIONS

- SoS integration of unmanned systems for the unit of action
- Suite of distributed C2 decision aids and services optimized for unmanned systems
- SoSCOE compliant service based architecture

CONTRACT OPPORTUNITY
OBJECTIVE: C²ORE will develop and demonstrate an integrated network battle management capability for unmanned systems. This will be accomplished via a System of System (SoS) integration of UMS technology from across RDE/CDM and development of a suite of SoSCOE compliant C2 decision aids and services.

CONTRACT TYPE: T&M for Systems Engineering Support
 - BA for Software Development
 - BA for Software Development

ESTIMATED VALUE: T&M: \$ 5.5M; P: \$ 2.5M; BA: \$ 15.5M; T&M: \$ 4.2M

KEY MILESTONES:

- T&M Contract PFP: 2nd Award: 10F/01
- BA PFP: 10F/05
- BA Award: 20F/02

TECHNICAL CONTACT: Jason Phelan: (732) 427-0252
ACQUISITION CONTACT: Kristina Weaver: (732) 427-1351
SOLICITATION # or RFP #: TED

Technology to the Warfighter Quicker **RDE**

US Army Research, Development and Engineering Command

Minefield Neutralization for Assured Mobility

DEFINITION
MULE - Multifunction Utility/Logistics Equipment Vehicle
 Minefield Neutralization for Assured Mobility will develop the technology for a precision neutralization capability to rapidly breach antitank (AT) minefields from standoffs of 500m to 25km and produce a prototype capability for the Unit of Action as an organic MULE payload scalable to the threat.

TECHNICAL SPECIFICATIONS

- In creased standoff capability and mine depth neutralization
- Precision guided delivery of neutralizers
- Tailored neutralizer technology that rapidly penetrates soil and delivers kill mechanism directly into the mine

CONTRACT OPPORTUNITY
OBJECTIVE: Ensure maximum warfighter standoff and freedom of maneuver flexibility by developing selectable cleared lane neutralizer and using
CONTRACT TYPE: S1 DM: Multiple Awards, Multiple Phases

KEY MILESTONES:

- Feasibility Announcement: Summer FY04
- Late Nov 04-Dec 04: Briefing on program objectives to prospective bidders
- 20FY05 award contract
- Request for proposal in January FY05
- Transition to P&I CDE, FCS support in FY05

TECHNICAL CONTACT: Noel Wright: (703) 764-2461
ACQUISITION CONTACT: Kristina Weaver: (732) 427-1351
SOLICITATION # or RFP #: TED

Technology to the Warfighter Quicker **RDE**



PEO EIS Contract Opportunities

Art Reiff
Deputy Project Manager
Defense Communications and Army Transmission Systems (DCATS)
Arthur.Reiff@us.army.mil
(732)532-5517, DSN 992-5517
DD MMM 2004



Outline

- PEO EIS Overview
- PM DCATS Mission
- Contract Opportunities
 - Multiband Enterprise Terminal
 - DoD Standard SATCOM Internet Protocol (IP) Modem



We are PEO Enterprise Information Systems

- Provide DoD, the Army and other federal agencies with network-centric, knowledge-based business and combat service support solutions.
- Implement Army's Enterprise infrastructure & business systems which support Combatant Commanders
- Provide Automated Systems which:
 - Assist with the accession and training of our Soldiers,
 - Track the Army's personnel
 - Provide and maintain the Warfighter's equipment
 - Plan the movement of their supplies and assets.



PM DCATS Program Offices

GERMANY
Mannheim and Stuttgart

KUWAIT
Camp Doha, Camp Arifan

IRAQ
LSA Anaconda, Balad Southwest
Airfield, Camp Victory Base, CPA Green Zone

Core Employees - 76 Civilians, 9 Military
PM DCATS Team (Core, Matrix, Contractor) - 362

PE EIS

Army/PM DCATS' Enterprise Earth Terminals

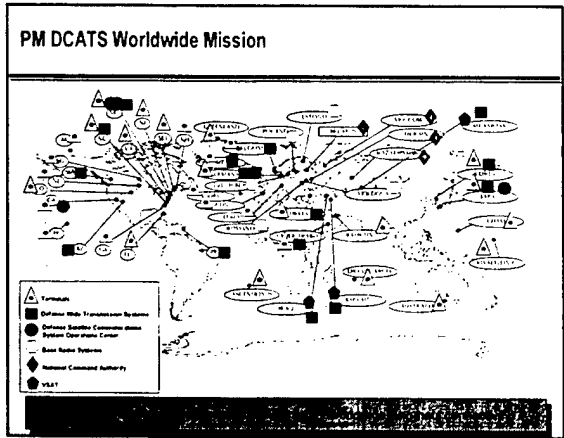
<p>1977-2010</p> <p>AN/FSC-78 & GSC-39 (X-Band)</p>	<p>1985-2015</p> <p>AN/GSC-52 (X-Band)</p>	<p>2004-2020</p> <p>KaSTARS (Ka-Band)</p> <p>Teleport (C & Ku-Band)</p>
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PE EIS

Army/PM DCATS' Earth Terminal Baseband

<p>1977-2020</p> <p>Digital Communications Satellite Subsystem</p> <p>STEP FUNCTIONAL DIAGRAM</p> <p>Standardized Tactical Entry Point (STEP)</p> <p>1995-2010</p>	<p>2004-2020</p> <p>Teleport Baseband</p>
--	---

PE EIS



Multiband Enterprise Terminal (MET)

- V(1) – X/Ka Band
- V(2) – Ka/EHF Band
- Supports Internet Protocol (IP) and Dedicated Circuits
- Capable of High Speed Interconnectivity to Global Information Grid (GIG)
- Critical Reachback Capability for the Warfighter

PE EIS

MET Risk Mitigation Phase

- FY06 - FY08
- Low Cost Component Development and Experimentation
- Risk Mitigation Candidates
 - Simultaneous X/Ka Band
 - Antenna Feed Horn
 - Frequency Converters
 - Solid State Power Amplifiers
 - JTRS/SCA Compliance
 - Modern Waveform Developed by Joint Tactical Community
 - Ported to any SATCOM System General Purpose Processor
 - All Digital SATCOM Receiver
 - Remote Control – Minimize Need for Operator

PE EIS

MET Full Rate Production Phase



- FY09 – FY20
- V(1) X/Ka Band
 - Supports Wideband Gapfiller Satellite Constellation
 - Replace FSC-78, GSC-39, GSC-52, KaSTARS at end of life
- V(2) EHF/Ka Band
 - Teleport for Transformational Satellite Constellation
- Contract Requirements
 - Prototype
 - Test
 - Production Quantity – 79 Terminals
 - Install 8 – 10 per year
 - Spares
 - Contractor Depot

PE EIS

Multiband Enterprise Terminal (MET)



- OBJECTIVE: Develop and Procure X/Ka & Ka/EHF SATCOM Earth Terminals
- CONTRACT TYPE: TBD
- Risk Mitigation Phase
 - FY05-08
 - Contract Value - \$4.8M
- Full Production Phase:
 - FY09-FY20
 - Contract Value - \$100 - \$300M
- TECHNICAL CONTACT: Art Reiff, (732) 532-5517
- ACQUISITION CONTACT: TBD
- SOLICITATION # or RFQ #: TBD

PE EIS

DoD Standard IP Modem



- Provide Standard Internet Protocol (IP) based Bandwidth on Demand Capability for Wideband MILSATCOM
 - Efficient use of Satellite Bandwidth
 - Mesh and/or Hub-Spoke Topology
- OSD/DISA Publishing a Transponded SATCOM IP Modem Functional Requirements Document - June 2004



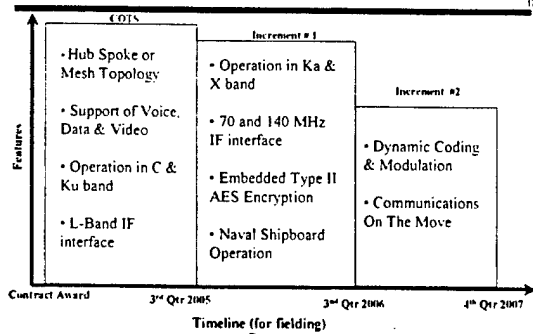
PE EIS

PM DCATS Proposed Procurement Approach

- **One Contract, Three Phases**
- **Phase I – Purchase Commercial off the Shelf (COTS) Units**
- **Phase II – Engineer and Upgrade COTS Units with Increment #1 Capability (Minimum DoD Standard Features)**
- **Phase III – Engineer and Upgrade Units with Increment #2 Capability (Full DoD Standard Features)**
- **DoD Benefits**
 - Quick procurement that satisfies user needs
 - Cost effective & early implementation
 - Interoperability – DoD Std. Modem
 - A solution that meets the requirements of the community

PE EIS

Proposed IP Modem Roadmap



PE EIS

DoD Standard IP Modem

- **OBJECTIVE:** Procure Commercial Off-the-Shelf IP Modem and Control System Capable of Upgrade to DoD Standard
- **CONTRACT TYPE:** Firm Fixed Price, with T&M
- **Contract Value - \$20-50M**
- **Major Milestones:**
 - Contract Award – May 2005
 - COTS Fielding – Aug 2005
 - DoD Standard Modem Increment #1 Fielding - 2006
 - DoD Standard Modem Increment #2 Fielding - 2007
- **TECHNICAL CONTACT:** Art Reiff, (732) 532-5517
- **ACQUISITION CONTACT:** Susan Stroud, (732) 532-1109
- **SOLICITATION # or RFQ #:** TBD

PE EIS

PEO EIS Contract Opportunities



- Art Reiff
- PEO EIS, PM DCATS, Deputy Project Manager
- Phone: (732)532-5517
- Email: Arthur.Reiff@us.army.mil
- PEO EIS Web Page: <http://www.eis.army.mil>



GUEST SPEAKER

MAJOR GENERAL MARILYN A. QUAGLIOTTI

**VICE DIRECTOR
DEFENSE INFORMATION SYSTEMS AGENCY**



Total Engineering and Integration Services (TEIS) Re compete



Craig Engel
USAISEC Critical Skills Expert
(520) 538-3172
Craig.Engel1@us.army.mil

CECOM Bottom Line: THE WARFIGHTER

1



Total Engineering and Integration Services (TEIS) Re compete



DEFINITION

Information systems engineering and information technology support services to USAISEC and other federal agencies worldwide. The services will include engineering related activities in support of all aspects of information and communication systems. Support will be required for the full life cycle of USAISEC projects to include planning, design, development, engineering, implementation, procurement, logistics, evaluation, sustainment and ancillary services.

CECOM Bottom Line: THE WARFIGHTER

2



Total Engineering and Integration Services (TEIS) Re compete




CHARACTERISTICS


- Indefinite Delivery Indefinite Quantity
- Firm Fixed Price Labor Categories
- Cost Reimbursable Line Items
- Performance Based Attributes
- CONUS and OCONUS Performance

CECOM Bottom Line: THE WARFIGHTER

3



Total Engineering and Integration Services (TEIS) Re compete




STATUS/PROGRAM DIRECTION

KEY MILESTONES:


- Draft RFP Released on the IBOP April 2, 2004
- Pre-Solicitation Conference Held April 23, 2004
- Final RFP Anticipated October 4, 2004
- Anticipated Award January 31, 2005

CECOM Bottom Line: THE WARFIGHTER

4



Total Engineering and Integration Services (TEIS) Re compete




CHALLENGES


- RECRUITMENT AND RETENTION OF LABOR
- USAISEC'S CHANGING MISSION
- ORGANIZATIONAL CONFLICT OF INTEREST

CECOM Bottom Line: THE WARFIGHTER

5



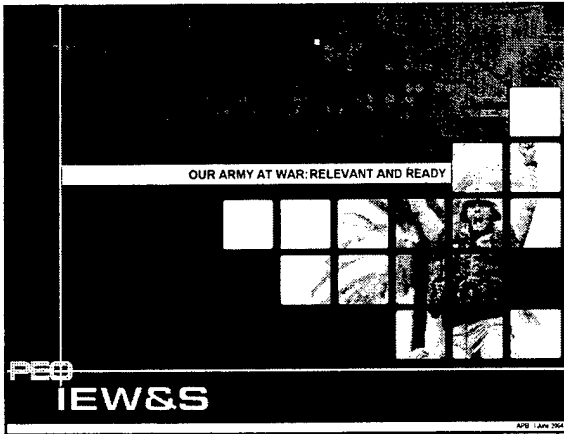
Total Engineering and Integration Services (TEIS) Re compete

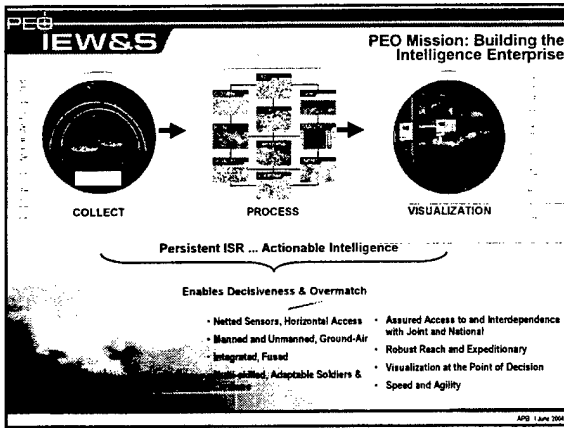


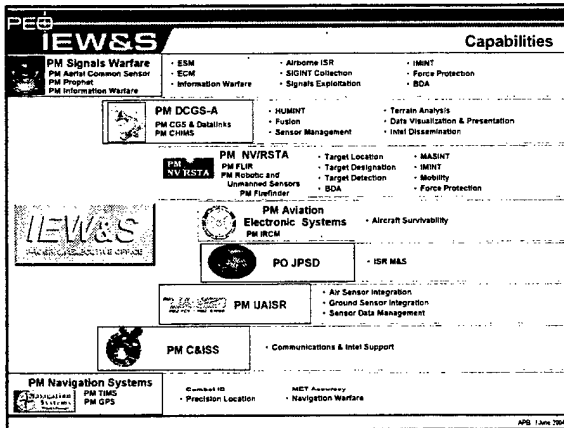
- **OBJECTIVE** Award a multiple award task order contract (three - four awards) for USAISEC system engineering and IT support services
- **CONTRACT TYPE** The Government will award an indefinite delivery/indefinite quantity services contract with fixed price (pre-negotiated loaded hourly labor rates) and time and material line items
- **ESTIMATED VALUE** Up to \$1B total requirements anticipated
- **TECHNICAL CONTACT** Brad Blau, Phone: 520-538-8792
USAISEC Technical Director
- **ACQUISITION CONTACT**
Kimberly A. Wentreck, Contracting Officer
Richard Wilson, Contract Specialist
Phone: 520-538-7413 or 520-538-7459
Email: Kimberly.Wentreck@us.army.mil Rich.Wilson@us.army.mil
- **SOLICITATION #** W9128Z-04-R-0004

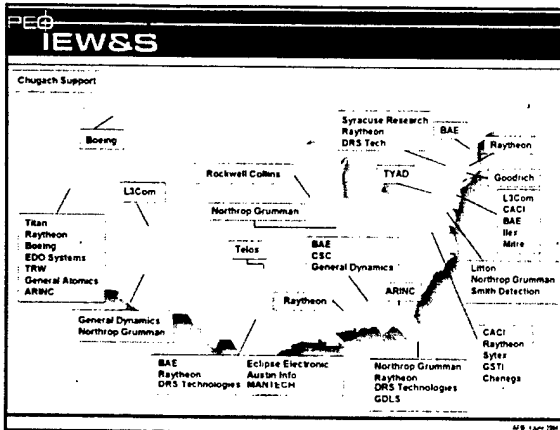
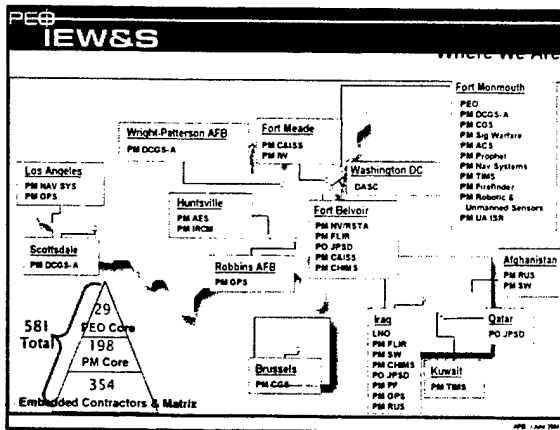
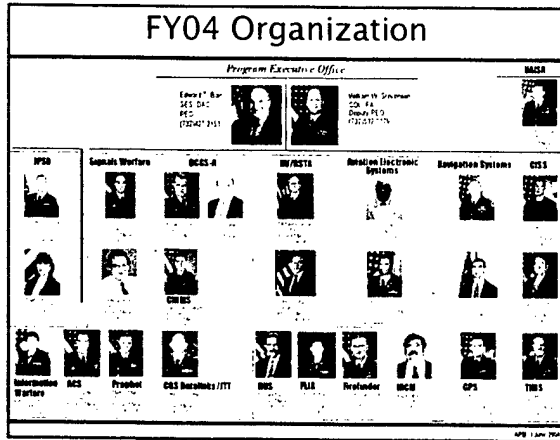
CECOM Bottom Line: THE WARFIGHTER


6









NEWS 

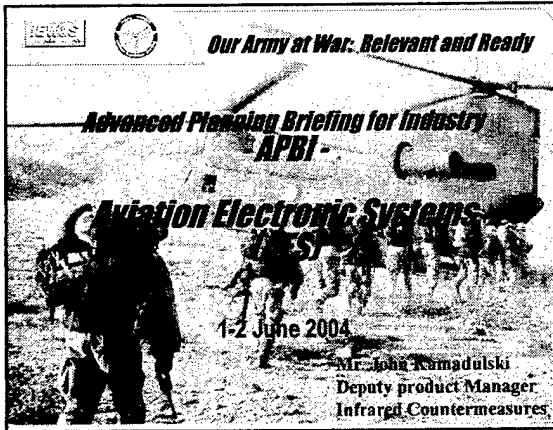
Our Army at War: Relevant and Ready


Advanced Planning Briefing for Industry
APBI -

Aviation Electronic Systems
TEST

1-2 June 2004


Mr. John Kamadulski
Deputy product Manager
Infrared Countermeasures



NEWS 

Agenda

- Battlespace Threats
- Threat Countermeasures: Currently Deployed Solutions
- Existing / Emerging requirements: Opportunities for Industry Partnerships

NEWS 

National Media

Baltimore Sun, Jan 18, 04
Helicopter Defense Systems Suffer Woes In Iraq
... critical maintenance problems with ... AN/AQ-144 ... shoulder fired missiles ... "our greatest concern" (USMC Gen John Handy)

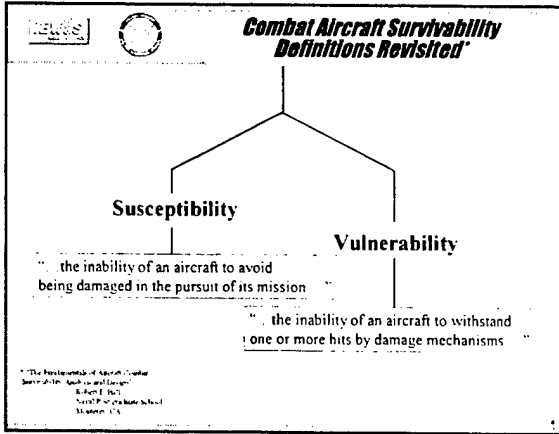
New York Times, Jan 18, 04
Iraq Rebels Seen Using More Skill to Down Copters
... including RPGs, SA-7's, SA-14's, and SA-16's

National Defense, Mar, 04
Army Rushes to Deploy Defense Gear on Aircraft
... to accelerate the production of the ATIRCM (Advanced Threat IR Countermeasures system) and SIRFC (Suite of RF Countermeasures) ...

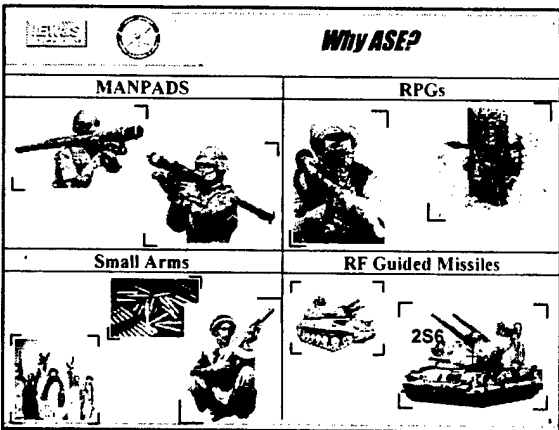
Inside the Army, 4 Jan 04
Troops in Iraq Receive Improved Missile Warning System in One Year
... the goal is to accelerate development and fielding of the Common Missile Warning System (CMWS) as soon as possible ...

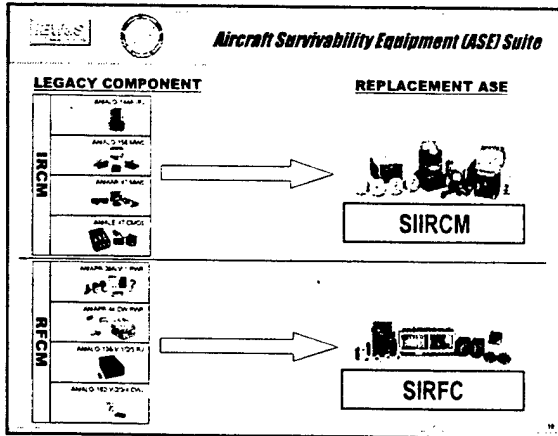
Inside the Army, 9 Mar 04
Army Seeking Gunfire Detection System for Helicopters in Iraq
... Army now wants to find a firearms detection system that can be installed on to Army aircraft ...

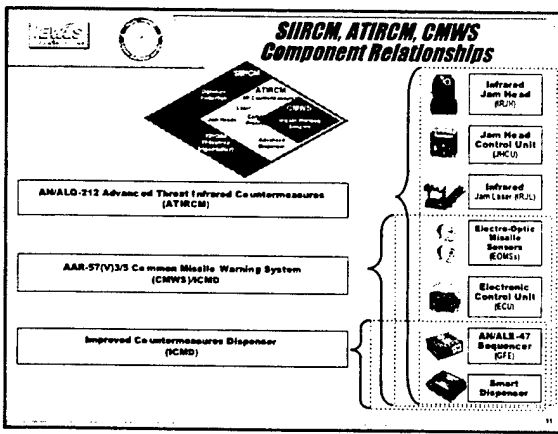
New York Times, 8 Oct 03
U.S. Can't Locate Missiles Once Held in Iraq, Aerial
... portable missiles were fired at incoming planes several times ... Missiles ... have not been reported to the public ...












IRCM Summary

- ATIRCM / CMWS is in limited production today
- Integrations on host aircraft are ongoing
- Full-up ATIRCM to follow

"I want to see, as soon as possible, a plan to equip all our helicopters in Iraq and Afghanistan with the most effective defensive systems we have in development or procurement. Affordability is not the constraint for such a plan-- only what is doable considering technology, production, acquisition, and application."
 Hon R.L. Brownlee, Acting Secretary of the Army - 7 Nov 03

AN/AVR-2A(V) Laser Detection Set



- Customers: US Army, US Navy, USMC, SDF, UK MOD
- Aircraft: AH-64D, OH-58D, UH-60L, HH-60H, CH-47E, MH-60K, MH-47E, MV-22, EH-101, AH-1W, UH-1W, RAH-66
- Performance: Bands I, II, III
ACA Quadrant
Band IV P1
- Threats: Rangefinders, Designators, Detected: Anti-Helicopter Beamriders
- Interfaces: APR-39, RS422, 1553 (Option)
- Systems Delivered: AVR-2 - 644
AVR-2A - 1157; Backlog - 113
- Future Requirements: US Army 1400
US Navy 700

• Very Low False Alarm Rate
- 1 per 4 hours

• Lightweight
- 23 pounds (4 Sensor Version)

• Highly Reliable
- 400 hours MTBF for AN/AVR-2

• Easily Maintained (Organizational and Intermediate)

• Standard Laser Warning Receiver
- Fielded by US Army Navy Marines and SDF

Addressing Future Requirements: Opportunities for Industry Partnerships

- **Miniature, low cost sensors and countermeasures capable of detecting and defeating:**
 - Small Arms fire
 - Rocket Propelled Grenades
 - Laser Guided Beam Rider Missiles
 - Anti-helicopter Mines

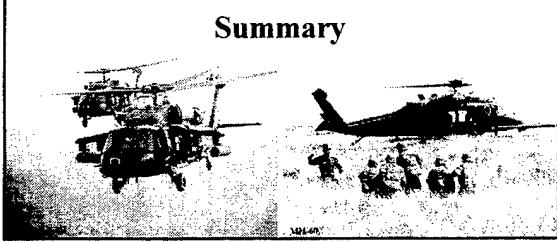
Science and Technology Objectives (STOs)

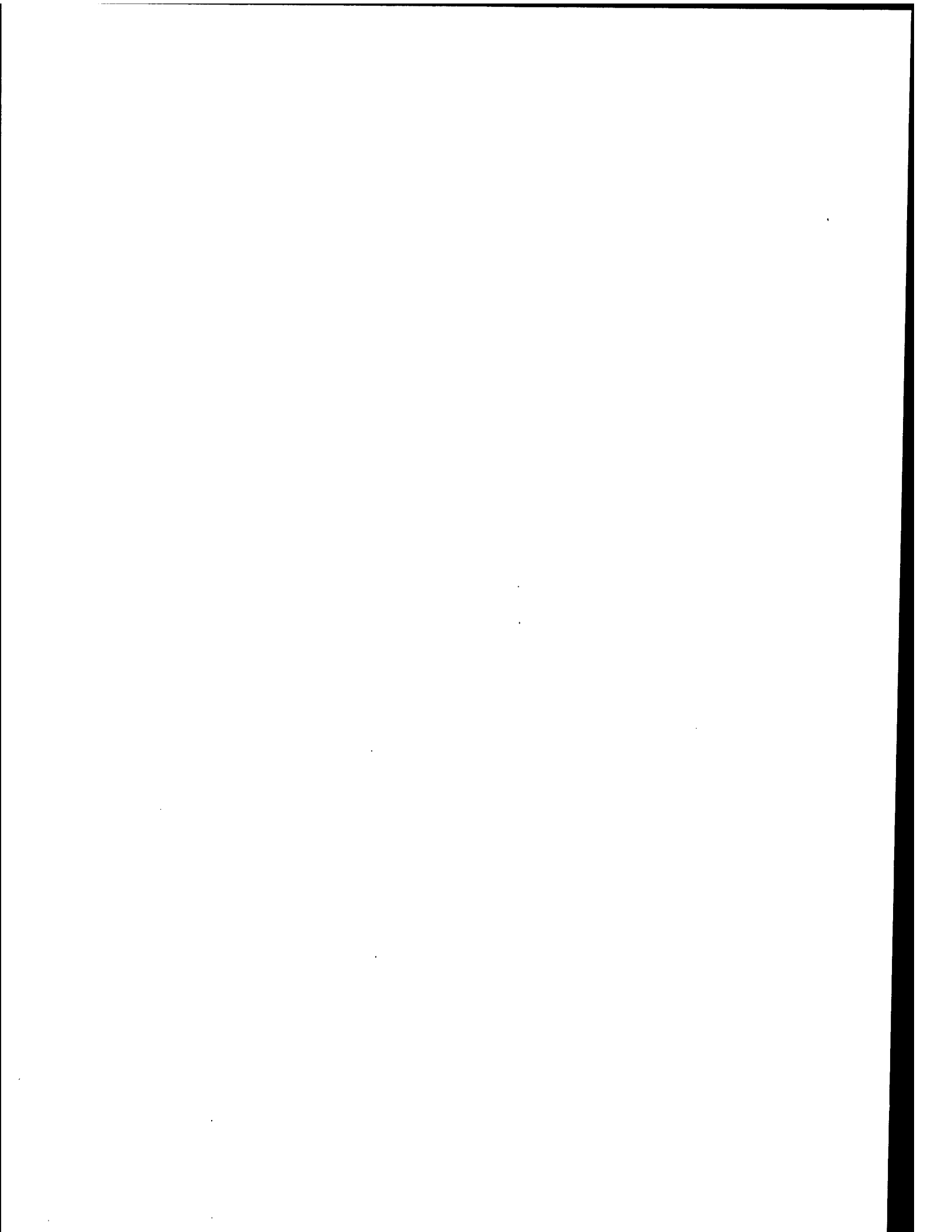
- **Multi-Role Airborne protection System (#AMR-06)**
- **Low Cost Threat Warning (transitioned to TARDEC: TAR-14 Integrated Survivability ATD in FY04)**

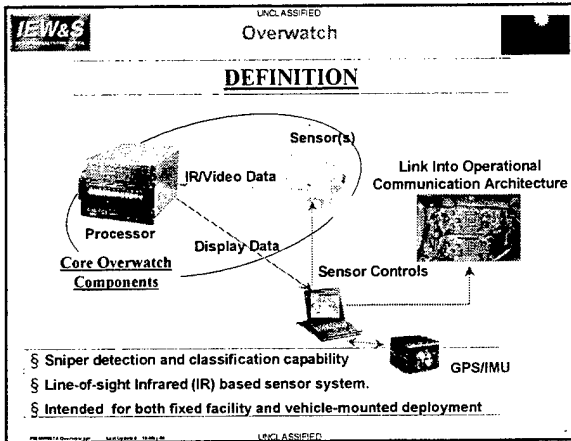
EW Countermeasures for Small Arms, RPGs, and Helicopter Mines

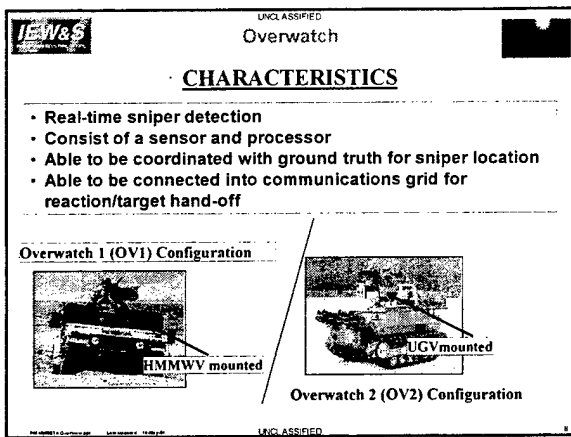


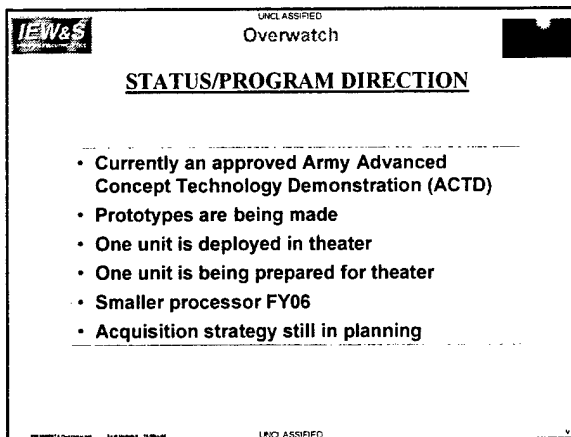
Summary











UNCLASSIFIED
Overwatch

CHALLENGES

- Low quantities
- Still in S&T phase
- Awaiting 'user' feedback
- Capability cuts across many potential programs
- Size and weight of core components

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UNCLASSIFIED
Overwatch

- OBJECTIVE: Detection and classification of sniper fire
- CONTRACT TYPE: TBD
- ESTIMATED VALUE: TBD
- KEY MILESTONES: ACTD ends FY07
- TECHNICAL CONTACT: Mr. Tom Conway, (703) 704-2661
- ACQUISITION CONTACT: TBD
- SOLICITATION # or RFQ #: TBD

UNCLASSIFIED

UNCLASSIFIED
Uncooled B-kit Demo/Qualification

DEFINITION

Design and develop a common thermal module that integrates potentially into soldier applications, ground vehicle applications, airborne applications, and missile applications.

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 LEW&S
 Uncooled B-kit Demo/Qualification

CHARACTERISTICS

- Uncooled Thermal Technology
- 640X480 FPA (U3)
- Defined by Performance Specification and Interface Control Document

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 LEW&S
 Uncooled B-Kit

STATUS/PROGRAM DIRECTION

FY03 FY04 FY 05 FY 06 FY 07

Specs & ICD

Phase I - ICD ICD

RFP/Source Selection

Phase II - Complete Draft of ICD

Phase III - System Integration & Test

Platform FPO/PM Decision to Integrate ICD

• Specification and ICD Version 1.0 completed (Mar 04)
 • Currently under contract for Phase I

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 LEW&S
 Uncooled B-kit Demo/Qualification

CHALLENGES

- Size, Weight, & Power
- Interchangeability
- Performance
- Modularity

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UNCLASSIFIED
Uncooled B-kit Demo/Qualification

- OBJECTIVE: The objective of the Uncooled B-kit Demo/Qualification phase of the program is to design and develop a module that will meet the UBK ICD and Performance Specification. In addition, multiple vendor's modules will need to be interchangeable as demonstrated in a DVE.
- CONTRACT TYPE: CPFF; approximately 12 months in duration
- ESTIMATED VALUE: 3 awards totaling \$5M.
- KEY MILESTONES: RFP release August 2004; Contract award Jan 2005
- TECHNICAL CONTACT: Major Fitzgerald McNair (703) 704-4070, DSN 654-4070
- ACQUISITION CONTACT: Ms. Debra Gilligan, CECOM Acq. Center, 732-532-5454
- SOLICITATION # or RFQ #: TBD



UNCLASSIFIED
EO/IR/LD Payload for ER/MP UAV

DEFINITION

Definition: The Army is funding the development of a new Unmanned Air Vehicle (UAV) to meet the requirements of the Extended Range/Multi Purpose (ER/MP) UAV ORD (Pending JROC Approval)

- PM UAVS under PEO Aviation will be soliciting for the Air Platform
- PM RUS under PEO IEW&S will be soliciting for the EO/IR/LD Payload



UNCLASSIFIED
EO/IR/LD Payload for ER/MP UAV

CHARACTERISTICS

- Characteristics of the payload are being finalized, but the following requirements are known:
 - Payload Weight: 100lbs or Less
 - Size: 1.9 Cu Ft or Less
 - Power: < 900 Watts
 - Recognition Slant Range: 8Km
 - Laser Designation Slant Range: > 8km
 - System Target Location Error: 25m or Less

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IEW&S EO/IR/LD Payload for ER/MP UAV

STATUS

- Request For Information sent to Industry
 - PM UAVS Hosted ER/MP Industry Day on May 5th
 - Final EO/IR/LD Solicitation being prepared for May Release
 - Anticipate EO/IR/LD Contract Award by Dec 2004.

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IEW&S EO/IR/LD Payload for ER/MP UAV

CHALLENGES

- Schedule
 - First payload required for Host Platform Integration by 2nd Quarter FY06
 - Balance of Payloads due by 4th Qtr FY06
- Performance
 - Accuracy Requirements will be demanding
- Cost
 - Minimal Development funding
 - Need to minimize recurring payload cost to support UAV application.

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IEW&S EO/IR/LD Payload for ER/MP UAV

- Contract Type
 - To Be Determined.
 - Estimated Value: \$10M
- Key Milestones
 - Award – Dec 2004
 - Initial Delivery – Jan 2006
 - Final Delivery – July 2006
- Technical Contact – Eugene Lehman, APM Payloads

Phone: DSN 987-8007 COM(732)27-8017
 FAX: DSN 987-5072 (732)27-5072
 Email: Eugene.Lehman@iew.monmouth.army.mil

Address:
 PM R1S
 Attn: SPAE-IEW&S-NV-RUS (E. Lehman)
 Bldg. 2525, Box 2
 Charles Wood Area
 Fort Monmouth, NJ 07703 5503
- Solicitation #: TBD

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Next Generation UGS

DEFINITION

- PM RUS is Responsible for the Development and Fielding of Current Generation UGS (REMBASS II) and the management of Future Combat System UGS for the Unit of Action (UA). There is also a requirement for near term UGS that are lower cost and more capable than current UGS for use in Force Protection and potentially in the Army's Task Force Modularity efforts to turn today's Army into Units of Action.
- PM RUS is looking to pursue Next Gen UGS for Force Protection, leveraging our experience with Today's UGS and our efforts with FCS UGS.

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Next Generation UGS

CHARACTERISTICS

- Low Cost
- Trip Detection Capability
- Provide for Rapid/Remote Emplacement
- Extended Range Communications
- ID Capability
- Extended Operation without Battery Replacement
- Reprogramming ability
- Interface to current and future Army Battle Command Systems
- Tactical, force protection and border security operation
- Networked

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Next Generation UGS

STATUS/CHALLENGES

- Status:
 - Currently in study phase researching sensors currently in production, development and commercial as alternatives.
 - Will be soliciting in FY05 for Industry Solutions
- Challenges:
 - Schedule; Delivery in FY05 if Possible
 - Performance; Extended Communications Ranges and Operation on Battery Power
 - Cost; Will need to be expendable

UNCLASSIFIED

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I&W&S Next Generation UGS

- Contract Type: TBD
- Estimated Value: \$7M
- Key Milestones;
 - RFP Release: Nov 2004
 - Contract Award: Apr 2005
 - Delivery: Nov 2005
- Technical POC – MICHAEL C. KARPIE
 - PM Robotic & Unmanned Sensors
 - Phone: DSN 987-6848/ COM: (732)427-6848
 - FAX: DSN 987-5072/ (732)427-5072
 - Email: Michael.Karpie@iew.s.monmouth.army.mil
 - Address: PM RUS
 - Attn: SFAE-I&W&S-NV-RUS (M. Karpie)
 - Bldg: 2525, Bay 2, Charles Wood Area
 - Fort Monmouth, NJ 07703-5503
- Solicitation #: TBD

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I&W&S OWL/SADA

DEFINITION

SADA – Standard Advanced Dewar Assembly
 OWL – One Watt Linear cryogenic cooler

In support of

HTI SGF – Horizontal Technology Integration
 Second Generation Forward Looking Infrared

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I&W&S OWL/SADA

CHARACTERISTICS

- SADA is detector/cooler combined
- Cooler is similar to older; but longer life, more reliable
- 12,000 hours vs. 4,000 hours
- Interchangeable with 2nd GEN HTI in terms of form, fit & function

UNCLASSIFIED

IEW&S UFG ASS F EC
OWL/SADA

STATUS

- Customer wants longer reliability cooler
- Assembly buy possible
- RFP June 04
- Contract award Aug 04

UFG ASS F EC

IEW&S UFG ASS F EC
OWL/SADA

CHALLENGES

- 12K hour cooler
- Frequent customer requests for acceleration
- Repair turn around
- Working to combine SADA/OWL buys

UFG ASS F EC

IEW&S UFG ASS F EC
OWL/SADA

- **OBJECTIVE:** Procure SADAs... Improve life if possible
- **CONTRACT TYPE:** FFP
- **ESTIMATED VALUE:** ~ \$31M
- **KEY MILESTONES:** RFP Jun 04, Award Aug 04
- **TECHNICAL CONTACT:** Kyle Peddicord, (703) 704-0143
- **ACQUISITION CONTACT:** Janet Colyard, 732-427-1464
- **SOLICITATION # or RFQ #:** TDD

UFG ASS F EC

UNCLASSIFIED
BICU

DEFINITION

Biocular Image Control Unit (BICU)

The diagram illustrates the Biocular Image Control Unit (BICU) system. On the left, a small image shows a ship at sea. A line connects this to a central image of the BICU unit. A larger, magnified view of the BICU unit is shown on the right, highlighting its complex, multi-lens structure.

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BICU

CHARACTERISTICS

- 5 year, multi-year award with incremental funding
- FY04 procurement of 64 Block 0 BICUs (base) + 65 (options)
- FY04 procurement of 125 Block 1 BICUs (base) + 400 (options)
- Ship Block 0 units starting Oct 05
- Ship Block 1 units starting Sep 05

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BICU

STATUS

- Block 1 is an ECP to the current design
- (MIL-PRF-12978041) spec requirements

UNCLASSIFIED



FUTURE COMBAT SYSTEMS
FCS
One Team - The Army/Defense/Industry

**Network Integration for FCS Equipped Units of Action:
Bringing Net-Centricity to the Future Force**

Advance Planning Briefing for Industry
2 June 2004
Fort Monmouth, NJ

COL Jonathan Maddux PM UA Network Systems' Integration Fort Monmouth, NJ	Mr. Donald DePree Lead C4ISR IPT, LSI Huntington Beach, CA
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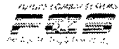
*Program Manager's Intent: Field FCS-equipped Units of Action with
Threshold Future Force Capability by the End of the Decade*

Outline

- FCS Program Overview
- C4ISR Capabilities
- C4ISR Related Challenges

3

Overarching Acquisition Strategy



- Buy Future Combat Systems; Equip Soldiers; Field Units of Action (UA)
- Embrace Evolutionary Acquisition While Requirements Mature
- Contracting via Lead Systems Integrator
- Demonstrate Live and Virtual-Force Operational Capabilities of the UA
- Balance Test and Evaluation With Modeling and Simulation
- Sustain DARPA/Army Collaborative Relationship for the Future
- Expand to Joint, Interagency, and Coalition Partners
- Design for Supportability-Performance-Based Logistics
- Identify and Manage Risk Throughout the Program

*It Is About the Networked System of Systems...
and How it Enables Dominant Land Combat.*

ARMY COMBAT SYSTEMS
13

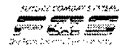
Competition Plan



- Competition is a key Tenet of the Program
- Promotes Competition to the maximum extent
- Capitalize on Broad Industry Announcement process
 - Identifies and share sources for key technology areas
 - Continued Market Research to identify and incorporate:
 - Small Businesses/Non-Traditional Defense Contractors
 - Technology requirements for technology insertion
- Involves all Major Partners in Process
- A key Flow down in all major contracts
- Strategy encompasses Boeing/LSI Best Practices
 - Best Value approach to source selection
 - Senior Government participation in all phases including final source selection approval
 - Small and Non-traditional Business participation
 - Partner involvement to achieve horizontal integration

ARMY COMBAT SYSTEMS
14

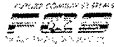
Contracting Approach



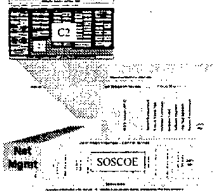
- Broad Industry Announcements (BIA's)
 - Utilize BIA process to identify and include the Best of Industry for FCS
 - Significant industry participation (over 4500 proposals evaluated)
- Conducted Nine industry briefings with over 1100 participants
- System Design and Development (SDD) Competition
 - Significant industry participation in Specification, SOW and and RFP development
 - RFPs unrestricted to industry
 - Over 1600 RFPs released to 309 suppliers for 23 subcontracts
- Conducted "Best Value" source selection
 - 23 supplier partners selected (21 large and 2 small)
 - Debriefs given to suppliers detailing ratings and rankings
- FCS policy encourages Small business participation
 - Small businesses are a large part of our "Best of Industry" team
 - Small business plan is aligned to contract goals that are flowed down to our large business partners

ARMY COMBAT SYSTEMS
15

Major C4ISR Software Components

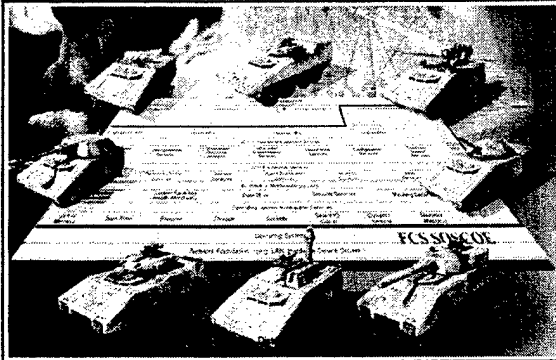
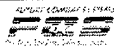


- SOSCOE – System of System Common Operating Environment
 - Admin Services
 - Application Program Interface
 - Information Management Services
 - COTS NDI
- Command and Control (C2) Applications
 - Battle Command & Mission Execution
 - Planning and Preparation Services
 - Situational Understanding
 - Warfighter Machine Interface
- Network Management

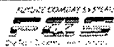


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System of Systems Common Operating Environment (SOSCOE)



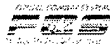
SOSCOE: The Key to System of Systems Integration



- Eliminate C2 stovepipes and reliance on special purpose systems
 - Common C2 software systems for all warfighters
 - Echelon- and mission-appropriate functionality conditioned by C2 policies
 - Minimum number of special purpose systems for specialized functions
- Develop an evolving system based on open system, standards based software architectures
 - Use of legacy codes within a modular software architecture
 - Minimum use of legacy systems
- Distribute functionality to the lowest level possible by resource allocation
 - Dynamic, automatic allocation of resources based on Commander's Intent, Priorities, and Rule Sets (Orders)
 - Rapid response of support to units (Fires, etc.)
 - New codes and capabilities to enable core NCW functionality
 - Automatic allocation
 - Dynamic adjustment
 - Commander sets thresholds and parameters
- Enable real-time, dynamic collaboration based on task similarity, situation, mission
 - Team of teams – orient to common goals
 - De-emphasize hierarchical structures
 - Erect fractal C2 structures to organize functionality and code packages by echelon, role and mission
- Mechanisms
 - Softwiring
 - Implement doctrine by configuration settings, not by hardwiring task flows
 - Design in the capability to evolve through experimentation
 - Virtual Staff
 - Services and automated agents
 - Split Staff operations
 - Reduced footprint in area of operations
 - Collaboration made transparent and ubiquitous
 - Automation
 - Dynamic task groups
 - Dynamic networking
 - Ubiquitous C2 and information management services
 - Distributed, low latency peer to peer information management

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WMI

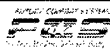


- Integrates the FCS warrior's visualization and interaction needs for data and services across all manned ground vehicles and support equipment. A key characteristic will be the ability to separate the WMI visualization and interaction methods provided to the FCS war fighter from the generation of data and services within the underlying applications
- The WMI Software Layer is an integral part of the FCS Software Architecture and integrates the FCS war fighter's visualization and interaction needs for data and services across all manned ground vehicles and associated off-vehicle equipment.
- The WMI concept also extends to control unmanned vehicles and non-developmental vehicles.

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Planning and Preparation



- Supports development of plans and the preparation of the Unit of Action to execute them.
- This package supports all planning, rehearsal, and preparation activities related to FCS UofA missions.
 - Planning packages need to support planning activities prior to, during, and after a given mission.
 - Anticipatory planning that occurs during battle execution, that is, during a mission, will utilize planning algorithms from this package as well.
 - Constructive simulation and evaluation are supported.
 - Preparation includes virtual simulation, AAR, training, and mission rehearsal.
 - Planners provide editors where necessary to allow modifications to the planner objectives, constraints, and recommendations from the operator.

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Battle Command



- Provides the functions and services to conduct, refine and execute missions
- Includes the functionality to:
 - Access data from national technical means
 - Allocate effectors to targets and conduct fires
 - Request artillery support from UE, synchronize fires with air-ground operations
 - Assess enemy actions and collect friendly force information
 - Evade and escape, protect dismounted soldiers and platforms
 - Request artillery support from UE, synchronize fires with air-ground operations

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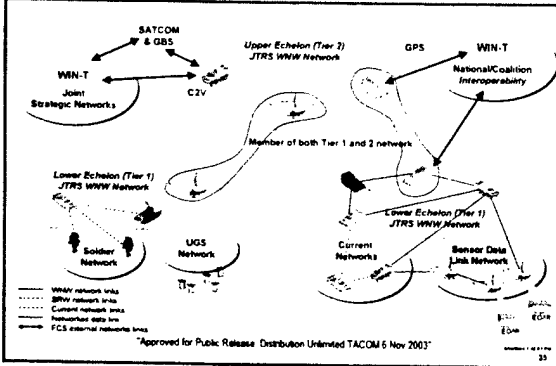
Situation Understanding

- This component of C2 contains the services needed to support the war fighter in any role, in building a sufficient understanding of the situation for that role that seeing first and acting optimally is the most likely outcome.
- It gathers the common operational picture (COP) data for the scope of that role by employing the four levels of intelligence fusion and augmenting that with high fidelity records of mission progress and readiness.
- It engages the war fighter in evaluations and reporting as needed through the War fighter Machine Interface (WMI).
- It relies on Information Management (IM) services to publish and subscribe the needed data.

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Network Communications Architecture



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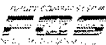
Comms Network Management Functions

- Network Management
- Fault and Performance Management
- Configuration and Reconfiguration Management
- Security Management
- Key Management
- Spectrum Management
- Policy Management
- Network Planning
 - High Level Planning
 - Detailed Mission Planning
 - Dynamic Re-Planning and Reconfiguration
- Performance
 - Capacity/Scalability
 - Bandwidth Consumption
 - Latency/Response Time
 - Accuracy

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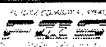
Integrated Computer System



- The C4ISR computer system will be provided by a single Prime contractor
- Deliverables
 - Hardware
 - Processors, displays, controls, storage, memory, I/O, power, etc
 - Software
 - Operating System
 - Operating System extensions
- Driving design considerations
 - Open Architectures and Standards
 - Commonality
 - Upgrade ability
 - Maximize ability to utilize technological advances
 - Minimize impacts of technology obsolescence

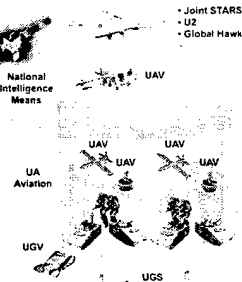
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See First/Persistent ISR



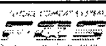
Distributed/Networked Sensors

- Provides unequalled Situational Awareness down to the Soldier System
- Enhances survivability through knowing and avoiding enemy fires
- Enables precision engagement beyond the effective range of the opponent
- Maintain contact and engagement in detail throughout the mission



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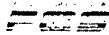
Outline



- FCS Program Overview
- C4ISR Capabilities
- C4ISR Related Challenges

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Sensor Related Challenges



- Mine Detection
- Lightweight, Low Cost, High Quality UAV Sensors
- Through the Wall Sensors
- FOPEN (sensing through foliage)
- Unattended Ground Sensors Dispenser
- Combat ID
- Directional Broadband Antennas

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Networking/C2 Related Challenges



- Ad Hoc Wireless Network
- Quality of Service Driven Network
- High Data Rate Comms
- Unmanned Relay
- Network Centric C2
- Collaborative C2 / Warfighter Machine Interface

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Facilitating the Future



.....How to "Get There" from here.....

- Unprecedented "Partnership"
- Revolutionary/Evolutionary Acquisition Approach
- "Best of Industry" Business Approach
- Spiral Development/Technology Insertion
- Integrated Simulation and Test

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