

**ORDER FOR SUPPLIES OR SERVICES**

1. CONTRACT/PURCH ORDER/ AGREEMENT NO. <b>DASG60-02-D-0013</b>		2. DELIVERY ORDER/ CALL NO. <b>0017</b>		3. DATE OF ORDER/CALL (YYYYMMDD) <b>2005 Jun 27</b>		4. REQ / PURCH REQUEST NO. 4R4PEA358A		5. PRIORITY <b>DX-A2</b>		
6. ISSUED BY U.S. ARMY SPACE & MISSILE DEFENSE COMMAND [REDACTED] PO BOX 1500 HUNTSVILLE AL 35807-3801			7. ADMINISTERED BY (if other than 6) DCMA HUNTSVILLE BUILDING 4505, SUITE 301 MARTIN ROAD REDSTONE ARSENAL AL 35898-0001			8. DELIVERY FOB <input type="checkbox"/> DESTINATION <input checked="" type="checkbox"/> OTHER  (See Schedule if other)				
9. CONTRACTOR MADISON RESEARCH CORPORATION NAME AND ADDRESS 401 WYNN DRIVE HUNTSVILLE AL 35805-1962			FACILITY		10. DELIVER TO FOB POINT BY (Date) (YYYYMMDD) <b>SEE SCHEDULE</b>		11. MARK IF BUSINESS IS <input type="checkbox"/> SMALL <input checked="" type="checkbox"/> SMALL DISADVANTAGED <input type="checkbox"/> WOMEN-OWNED			
					12. DISCOUNT TERMS		13. MAIL INVOICES TO THE ADDRESS IN BLOCK <b>See Item 15</b>			
14. SHIP TO <b>SEE SCHEDULE</b>			15. PAYMENT WILL BE MADE BY DFAS-COLUMBUS CENTER DFAS-COSOUTH ENTITLEMENT OPERATION P.O. BOX 182264 COLUMBUS OH 43218-2264			MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.				
16. DELIVERY/ CALL <input checked="" type="checkbox"/> This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract. Reference your quote dated Furnish the following on terms specified herein: REF										
ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.										
NAME OF CONTRACTOR		SIGNATURE			TYPED NAME AND TITLE			DATE SIGNED (YYYYMMDD)		
<input type="checkbox"/> If this box is marked, supplier must sign Acceptance and return the following number of copies:										
17. ACCOUNTING AND APPROPRIATION DATA / LOCAL USE <b>See Schedule</b>										
18. ITEM NO.	19. SCHEDULE OF SUPPLIES/ SERVICES				20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT		
<b>SEE SCHEDULE</b>										
* If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.							24. UNITED STATES OF AMERICA	25. TOTAL	\$100,000.00	
27a. QUANTITY IN COLUMN 20 HAS BEEN							CONTRACTING / ORDERING OFFICER	26.	DIFFERENCES	
<input type="checkbox"/> INSPECTED <input type="checkbox"/> RECEIVED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED										
b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE				c. DATE (YYYYMMDD)		d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE				
e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE				28. SHIP NO.	29. DO VOUCHER NO.	30. INITIALS				
f. TELEPHONE NUMBER		g. E-MAIL ADDRESS			<input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	32. PAID BY	33. AMOUNT VERIFIED CORRECT FOR			
36. I certify this account is correct and proper for payment.				31. PAYMENT	<input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	34. CHECK NUMBER				
a. DATE (YYYYMMDD)	b. SIGNATURE AND TITLE OF CERTIFYING OFFICER					35. BILL OF LADING NO.				
37. RECEIVED AT		38. RECEIVED BY	39. DATE RECEIVED (YYYYMMDD)	40. TOTAL CONTAINERS	41. S/R ACCOUNT NO.	42. S/R VOUCHER NO.				

## Section B - Supplies or Services and Prices

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0001	SETAC - FP Labor COST	■	Lot	UNDEFINED	UNDEFINED
	Provide services outlined in the scope of work (SOW), as defined in a given task order (T/O), at the fixed prices/government labor category specified in Section B paragraph entitled, "GOVERNMENT LABOR CATEGORIES AND ASSOCIATED FIXED PRICES PER DPPH"				
	PURCHASE REQUEST NUMBER: 4R4PEA359A				
				MAX COST	\$100,000.00

FOB: Origin

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0003	Consultants COST	■	Lot	UNDEFINED	UNDEFINED
	Provide services outlined in the scope of work (SOW) at the cost reimbursable amounts as approved on a task-order-by-task-order basis. Total Fee, including prime and subcontractor/consultant, shall not exceed 3% of the estimated costs.				
	PURCHASE REQUEST NUMBER: 4R4PEA359A				
				MAX COST	\$0.00

FOB: Origin

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0004	Materials and STE COST	█	Lot	UNDEFINED	UNDEFINED
Provide materials, special test equipment (STE), and associated services outlined in the individual task orders at the cost reimbursable amounts as approved by the T/OM and the Contracting Officer. NO FEE ON THIS CLIN. PURCHASE REQUEST NUMBER: 4R4PEA359A					
MAX COST					\$0.00

FOB: Origin

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0005	Travel COST	█	Lot	UNDEFINED	UNDEFINED
Travel as directed in the individual task orders. Travel must be completed within the cost reimbursable amounts allowed per the Joint Travel Regulations and the DCAA-approved Company-Implemented Policy and Procedures. NO FEE ON THIS CLIN. PURCHASE REQUEST NUMBER: 4R4PEA359A					
MAX COST					\$0.00

FOB: Origin

BLOCK 17 CONTINUED:

TASK ORDER FUNDS REQUIRED	\$ 100,000
TASK ORDER FUNDS AVAILABLE	\$ 100,000
UNFUNDED BALANCE	\$ 0

BLOCK 18 (DD1155) CONTINUED: In the performance of this Task Order (T/O), the contractor shall provide the total Direct Productive Person Hours (DPPHs), plus or minus 10 percent, as stated for fixed-price labor categories stated in Section B of the contract listed in Block 1 of the DD Form 1155. These DPPHs shall be billed at the fixed price stated in Exhibit V of the contract. The contractor shall not exceed the DPPHs, nor the total dollars, stated for consultant below. The contractor is allowed to provide up to 10 percent less than the DPPHs stated for consultant and still expend the total dollars as stated in the T/O. Furthermore, under no circumstance shall the contractor exceed the dollars stated for Materials, Travel, or Total T/O.

LABOR CATEGORIES: Labor categories are as listed in the contract, Section B, paragraph entitled "GOVERNMENT LABOR CATEGORIES AND ASSOCIATED FIXED PRICES PER DPPH"

	DPPHs ORDERED	NTE AMOUNT
FIXED-PRICE LABOR TOTAL	██████████	██████████
*CONSULTANT TOTAL	0	\$ 0
T/O TOTAL LABOR	██████████	██████████
MATERIAL	NTE	\$ 0
TRAVEL	NTE	\$ 0
T/O TOTAL		\$ 100,000

\*Consultant requirements must have prior written approval of the Administrative Contracting Officer (ACO) (via subcontract consent package) before any costs are incurred under the consultant CLIN.

## Section C - Descriptions and Specifications

### SOW

#### “Tactical Ballistic Missile Trackers: Basic and Advanced” Statement of Work

1.0 BACKGROUND: The Composite Tracker and Classifier (CTC) is a multi-sensor, multi-site tracker that generates a Single Integrated Air Picture (SIAP). The CTC has been successfully demonstrated at both All Service Combat Identification Evaluation Team (ASCIET) 1999 and 2000 exercises, the Joint Combat Identification Evaluation Team (JCIET) 2002, and Roving Sands 2005 with good results. The evolution of this program is to develop a Tactical Ballistic Missile (TBM) capability to complement the current air breathing targets. In order to accomplish this task, the composite tracker needs an additional tracking filter for TBMs in order to maximize performance.

2.0 OBJECTIVE: The objective of this task is to extend the Composite Tracker and Classifier (CTC) target set to Tactical Ballistic Missiles (TBM). Track filters shall be designed and tested\* using simulated and (where available) real data to ensure that the best performance is achieved against credible TBM threats.

**\* The contractor shall only develop software or code that is incidental to the modeling or simulation of this task order. All other software/code development is prohibited.**

3.0 The contractor shall provide support to AMRDEC’s Applied Sensors, Guidance, and Electronics Directorate as follows:

- 3.1. Model of radar sensor characteristics shall be updated and upgraded.
- 3.2. Credible TBM threats and their operational trajectory and RCS characteristics shall be identified/specified.
- 3.3. Simulation environment shall be specified including atmosphere, wind, earth rotation, gravity and other parameters.
- 3.4. Dynamical models shall be built for TBM threats including aerodynamic, and maneuver characteristics.
- 3.5. Baseline EKF tracker solutions shall be implemented and tested in simulations and against real data, where available
- 3.6. Advanced techniques including bandwidth adaptivity, particle filters and IMM’s shall be implemented and tested to provide improved performance over baseline design
- 3.7. Benefits of disturbance estimation for tracking and impact point prediction shall be implemented and assessed.
- 3.8. Provide the following items:
  - 3.8.1. Matlab codes for selected tracker implementations formatted as function calls with clearly defined inputs, outputs, tuning parameters, and corresponding units
  - 3.8.2. Documentation of tracker equations showing significant derivations and theoretical supporting material
  - 3.8.3. Documentation of test analysis cases; accuracy, consistency and sensitivity performance results
  - 3.8.4. Briefing and briefing chart supplies or Services and Prices
- 3.9 All products resulting from this work will have no restrictions on further use and dissemination once provided to the Government. This will include source code and executable code for any computer software that may be developed under this effort. The documentation of all products will be included in the deliverables to the

government. These products will be delivered under CRDL A004. The contractor agrees not to assert or authorize others to assert any rights or establish any claims to copyright in any copyrightable work first produced, created, generated, or modified under this task order.

#### PERIOD OF PERFORMANCE

27 JUNE 05 through 31 DEC 05

#### KEY PERSONNEL

TBD

#### DELIVERABLES

Item/Title	CDRL#	# Copies	Delivery Date
Task Order Management Plan	A001	1 *	Per CDRL
Status Report	A002	1	Monthly (Last day each month)
FMER	A003	1 *	Per CDRL
Interim Technical Report	A004	1*	As Required
Track Filter Software/Code	A004	1*	As Required
Final Technical Report	A005	2 *	31 DEC 05
Conference Minutes	A006	1	Per CDRL
Quarterly Transmittal Listing	A007	1	Per CDRL

\* Plus Electronic Version.

#### TRAVEL

Except for the locations listed below, the contractor has no authority to incur travel costs without explicit written approval (email acceptable) of the Task Order Monitor. The contractor is not authorized to travel outside the United States without the explicit written approval (email acceptable) of the Contracting Officer. Under no circumstance shall the contractor incur travel costs in excess of the NTE amount stated herein. NTE: \$0.00

#### MATERIAL

ESTIMATED COST FOR MATERIALS AND/OR SPECIAL TEST EQUIPMENT: The contractor has no authority to incur material costs without the explicit prior written approval of the contracting officer. Prior to forwarding requests to the contracting officer, the contractor shall obtain the Task Order Monitor's concurrence. Electronic Mail (email) shall be utilized for both steps in this process. Under no circumstance shall the contractor incur materials costs in excess of the NTE amount stated herein. NTE: \$0.00

SPECIAL INSTRUCTIONS

Cost data shall be segregated/reported/vouchered/paid at the ACRN level.

The "Limitation of Funds" is applicable at the ACRN level.

The effort described in the Task Order Statement of Work anticipated to be performed in FY05 – FY06, is subject to the Clause at FAR 52.232-18, Availability of Funds.

All of the terms and conditions of the contract listed in Block 1 above are applicable to this T/O.

All of the provisions and clauses of the contract listed in Block 1 above are applicable to this T/O.

The following Government Furnished Property or Test Facilities are available for use in performance of this Task Order:

JCATS Combat Simulation

It is incumbent upon the contractor and/or subcontractor to ensure that appropriate Technical Assistance Agreements (TAAs) and/or applicable export licenses are in place before conducting any activity under the SOW which requires such approval and documentation.

DISTRIBUTION

TASK ORDER MONITOR: [REDACTED]

Email: [REDACTED]

MAILING ADDRESS: PEO Missiles and Space, Attn: [REDACTED], P.O. Box 1500, Huntsville, AL 35807-3801

ALTERNATE TASK ORDER MONITOR: [REDACTED]

Email: [REDACTED]

MAILING ADDRESS: RDECOM, ATTN: [REDACTED], Bldg 6100, Redstone Arsenal, AL 35898

Section G - Contract Administration Data

ACCOUNTING AND APPROPRIATION DATA

AA: 214 2040.0000 5Q-5Q11 4060386901B 255X 4R4PEA359A S01021 4R4PEA359A/44REXE/4R

AMOUNT: \$100,000.00