

ORDER FOR SUPPLIES OR SERVICES

1. CONTRACT/PURCH. ORDER/ AGREEMENT NO. DASG60-02-D-0009		2. DELIVERY ORDER/ CALL NO. 006311		3. DATE OF ORDER/CALL 2002 Jul 17		4. REQ./ PURCH. REQUEST NO. 4T2SJC014T-00		5. PRIORITY DX-A2	
6. ISSUED BY US ARMY SPACE & MISSILE DEFENSE COMMAND PO BOX 1500 HUNTSVILLE AL 35807-3801			CODE W9113M		7. ADMINISTERED BY DCMA HUNTSVILLE BUILDING 4505, SUITE 301 MARTIN ROAD REDSTONE ARSENAL AL 35898-0001			CODE S0107A	
9. CONTRACTOR BAE SYSTEMS ANALYTICAL SOLUTIONS INC 1525 PERIMETER PKW, STE 500 HUNTSVILLE AL 35806				CODE OJLS6		FACILITY		10. DELIVER TO FOB POINT BY (Date) SEE SCHEDULE	
						12. DISCOUNT TERMS		11. MARK IF BUSINESS IS <input type="checkbox"/> SMALL <input type="checkbox"/> SMALL DISADVANTAGED <input type="checkbox"/> WOMEN-OWNED	
						13. MAIL INVOICES TO THE ADDRESS IN BLOCK See Item 15			
14. SHIP TO SEE SCHEDULE			CODE		15. PAYMENT WILL BE MADE BY DFAS-COLUMBUS CENTER DFAS-CO/SOUTH ENTITLEMENT OPERATION P.O. BOX 182264 COLUMBUS OH 43218-2264			CODE HQ0338	
MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.									
16. TYPE OF ORDER	DELIVERY/ CALL	<input checked="" type="checkbox"/>	This delivery order/call is issued on another Govt. agency or in accordance with and subject to terms and conditions of above numbered contract.						
OF PURCHASE			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 See Schedule									
18. ITEM NO.	19. SCHEDULE OF SUPPLIES/ SERVICES				20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT	
	SEE SCHEDULE								
* 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		\$1,708,500.00
							29. DIFFERENCES		
26. QUANTITY IN COLUMN 20 HAS BEEN <input type="checkbox"/> INSPECTED <input type="checkbox"/> RECEIVED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED					27. SHIP NO.		28. DO VOUCHER NO.		30. INITIALS
DATE _____ SIGNATURE OF AUTHORIZED GOVT. REP. _____					<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. DATE _____ SIGNATURE AND TITLE OF CERTIFYING OFFICER _____					31. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL				34. CHECK NUMBER
									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	1	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: 4T2SJC014T-00				
				MAX COST	\$1,473,590.00

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0003	Consultants COST	1	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. This CLIN is valid during the three-year base period as well as any/all award term extensions earned by the contractor.				
	PURCHASE REQUEST NUMBER: 4T2SJC014T-00				
				MAX COST	\$0.00

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0004	Materials and STE COST	1	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. This CLIN is valid during the three-year base period as well as any/all award term extensions earned by the contractor. PURCHASE REQUEST NUMBER: 4T2SJC014T-00					
MAX COST					\$0.00

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0005	Travel COST	1	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. This CLIN is valid during the three-year base period as well as any/all award term extensions earned by the contractor. PURCHASE REQUEST NUMBER: 4T2SJC014T-00					
MAX COST					\$234,910.00

FOB: Destination

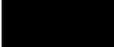
BLOCK 17/BLOCK 18 CONTINUED

TASK ORDER FUNDS REQUIRED	\$ 1,708,500
TASK ORDER FUNDS AVAILABLE	\$ 1,708,500
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	 DPPHs	\$ 1,473,590
*CONSULTANT TOTAL	 DPPHs	\$ 0
T/O TOTAL LABOR	 DPPHs	\$ 1,473,590
MATERIAL	NTE	\$ 0
TRAVEL	NTE	\$ 234,910
T/O TOTAL		\$ 1,708,500

**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

A - SOW

ARROW SYSTEM IMPROVEMENT PROGRAM (ASIP) FLIGHT VEHICLE SYSTEM ANALYSIS

1.0 GENERAL

The joint U.S.-Israel Arrow Program was initiated in 1988 with the objective of providing Israel with an indigenously developed defense capability against ballistic missiles (BMs). The first two phases of this effort, the Arrow Experiments Program and the Arrow Continuation Experiments Program (ACES) focused on the development and testing of the Arrow I and Arrow II interceptor missiles, respectively. The third phase, the Arrow Deployability Program was initiated in March 1996 with the primary objective of integrating the Arrow II interceptor with the other elements of the Arrow Weapon System (AWS) and conducting a number of integrated system tests. An additional objective of the ADP program was the development of an interoperability capability between the Arrow Weapon System and U.S. Ballistic Missile Defense (BMD) forces. Additionally, the next phase of the program, Arrow System Improvement Program (ASIP), will continue to improve upon prior efforts. The ASIP will leverage work done under prior Arrow programs with the intent being to further improve system performance against newly emerging long range threats. Tasks to be performed under the ASIP include:

- 1) Feasibility studies to determine which candidate technologies will be most effective for meeting system performance, interoperability and production objectives
- 2) Design, development and integration of the candidate technologies into the AWS
- 3) Conduct of a series of tests at U.S. and Israeli test ranges to verify system performance against threat representative targets.

2.0 OBJECTIVE

The ASIP Flight Vehicle System Analysis contractor shall assist the Arrow Program Office (APO) in conducting weapon system analyses independent of the Government of Israel (GOI) and its contractors, and shall develop models and simulations in order to support such analyses. The role of the ASIP Flight Vehicle System Analysis contractor is to assist the APO in identifying, addressing, and analyzing key issues associated with the system, subsystem, and component development and test efforts. The contractor shall interface with other APO support contractors, GOI representatives, Israeli contractors, and other US government agencies as requested by the APO.

3.0 REQUIREMENTS

The APO will furnish to the contractor available information and data describing the elements under design or test. Data requirements for the completion of the effort described in the SOW are to be coordinated with the APO. The information shall be used by the contractor as the basis for the analysis defined in this SOW.

3.1 MODELING AND SIMULATION

3.1.1 The contractor shall develop and maintain high fidelity simulations (6 degree-of-freedom (DOF)) of the Arrow-II interceptor, ASIP interceptor, and the Black Sparrow target, as requested by the APO. The simulations shall include detailed sub-system models that are verified and validated against missile hardware-in-the-loop (HWIL) ground test data and missile flight test data, as required. The contractor shall provide source code listing of all missile system and subsystem computer models, including aerodynamic coefficient extraction codes and linear analysis tools.

3.1.2 The contractor shall support the integration of the Arrow-II and ASIP interceptor models into the Arrow system model provided by the APO.

3.1.3 The contractor shall update the Arrow interceptor models as required to correlate with the Block 3 and ASIP versions of the Arrow Weapon System.

3.2 MISSILE SYSTEM ANALYSIS

3.2.1 The contractor shall perform detailed independent guidance and control (G&C), navigation and flight logic algorithm evaluation of the Arrow-II and ASIP interceptor as required by the APO.

3.2.2 The contractor shall perform feasibility studies on potential interceptor design enhancements and engagement strategies as required by the APO.

3.2.3 The contractor shall perform, as requested, lethality analysis of the Arrow-II and ASIP interceptors against targets specified by the APO.

3.2.4 The contractor shall perform structural analysis of the Arrow-II and ASIP interceptor vehicles as required by the APO.

3.3 TEST SUPPORT

3.3.1 Flight Test Support:

The contractor shall provide missile system simulation and modeling support to the APO for all flight test functions and activities. The top-level activities associated with flight test support shall include:

- Simulation preparation and data review
- Pre-flight prediction and parametric analysis
- Observation, review, and verification of Hardware-in-the-loop (HWIL) pre-flight predictions
- Participation in flight readiness review
- Flight test participation and on-site technical advisement
- Post flight analysis and simulation validation

Test specific data and algorithms shall be integrated into the representative Arrow simulation (ASIP, Arrow-II, Arrow-I Target or Black Sparrow) for preflight predictions. The contractor shall report, as requested by the APO, the prediction results. The contractor shall provide documentation regarding modifications to test data and algorithms required for the missile system to meet or enhance the probability of successfully accomplishing flight-test objectives. The contractor shall report, as requested by the APO, results of the post-flight test analysis. The contractor shall provide data, results or analysis information to other Arrow support contractors at the request of the APO.

3.3.2 Ground Test Support:

If requested, the contractor shall provide simulation and modeling support to the APO for Arrow program ground test activities. Ground testing can include wind tunnel testing, static motor firing, seeker testing and RF sensor testing. Simulation analysis and modeling support for ground test shall include:

- Pre-test configuration and setup evaluation and recommendations
- Preparation of test plans and procedures,
- Post-test data reduction and analysis
- Simulation model verification and validation.

3.4 PROGRAM SUPPORT

The contractor shall distribute Arrow briefings and technical documents to other contractors and government agencies, as required by the APO. The contractor shall maintain a data base of relevant technical and programmatic data, as directed by the APO.

B - POP

17 JUL 02 – 23 APR 05

C - KEY PERSONNEL

TBD

D - DELIVERABLES

Item/Title	CDRL#	# Copies	Delivery Date
Task Order Management Plan	A001	1 *	Per CDRL
FMER	A003	1 *	Per CDRL
Tech Rpt (Special)	A004	1 *	As Required
Final Technical Report	A005	1 *	23 APR 05
Conference Minutes	A006	1 *	Per CDRL
Data Accession List	A007	1 *	Per CDRL

* Plus Electronic Version.

E - TRAVEL

Except for the locations listed below, the contractor has no authority to incur travel costs without explicit prior 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: \$ 234,910

Tel Aviv, Israel
 Washington, DC
 Vandenberg, California

F - 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

G - 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, which is anticipated to be performed in FY02-FY05 as 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.

No Government Furnished Property or Test Facilities are available for use in performance of this Task Order.

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.

The following contract clauses are applicable to this task order: FAR 52.228-3, Worker's Compensation Insurance (Defense Base Act); FAR 52.228-4, Workers Compensation and War Hazard Insurance Overseas; DFARS 252.228-7000, Reimbursement for War Hazard Losses; DFARS 252.228-7003 – Capture and Detention; DFARS 252.225-7043, Antiterrorism/Force Protection Policy for Defense Contractors Outside the United States; DFARS 252.209-7001, Disclosure of Ownership or Control by the Government of a Terrorist Country; and Section H clauses entitled "Contingency/War Clause" and "Services Furnished by the Government".

H - DISTRIBUTION

TASK ORDER MONITOR: [REDACTED]

MAILING ADDRESS: [REDACTED]

PROGRAM MANAGEMENT POC: [REDACTED]

MAILING ADDRESS: [REDACTED]

PROGRAM MANAGEMENT POC (ALTERNATE): [REDACTED]

MAILING ADDRESS: [REDACTED]

Section G - Contract Administration Data

ACCOUNTING AND APPROPRIATION DATA

AA: 9720400.2501 5Q 5Q12 P406038.81C00.2017 2514 4T2SJC014T S01021 24TICP/4T2SJC014T/4T0000
COST 000000000000
CODE:
AMOUNT: \$447,500.00

AB: 9730400.2501 5Q 5Q12 P406038.81C00.2017 2514 4T3SJC034T S01021 34TASP/4T3SJC034T/4T0000
AMOUNT: \$575,000.00

AC: 97 4 0400.2501 5Q 5Q12 P406038.81C00.0401 2514 4T4JS0024T S01021 44TAWS/4T4JS0024T/4T0000
AMOUNT: \$350,000.00

AD: 97 4 0400.2501 5Q 5Q12 P406038.81C00.0401 2514 4T4NT0034T S01021 44TAWS/4T4NT0034T/4T0000
AMOUNT: \$300,000.00

AE: 97 5 0400.2501 5Q 5Q12 P406038.81C00.0401 2514 4T5JS1024T S01021 54TARS/4T5JS1024T/4T0000
AMOUNT: \$36,000.00