

Project Planning Guidance PMA Part I 2259/Israeli Co-Operative Projects

1.0 BMDO Point of Contact

Program Integrator	Address	Telephone
Ms. Kayleen Martin 1673/4	Pentagon, Room 1E167	(703) 693-
Task Integrators		
Tasks 02-06 Ms. Kayleen Martin 1673/4	Pentagon, Room 1E167	(703) 693-
Tasks 08-09 Ms. Kayleen Martin 1673/4	Pentagon, Room 1E167	(703) 693-
Task 10 Maj Mike Fisher 1568	Pentagon, Room 1E178	(703)693-

1.1 Project Overview

This project integrates and fosters the U.S./Israeli Cooperative Efforts; the Arrow Continuation Experiments (ACES), the Arrow Deployability Project (ADP), the Israeli Test Bed (ITB), the Israeli System Architecture and Integration (ISA&I), the Israeli Boost Phase Intercept Study (IBIS) Follow-on, and the Israeli Co-operative Research and Development project. This is a cooperative development program. The U.S. has no plans of acquiring these systems from Israel. By completing the Arrow Deployability Project, U.S. TMD programs will be afforded state-of-the-art technical data for program risk reduction and the Government of Israel (GOI) will have developed information to make a sound Arrow Weapon System deployment decision. The planned ISA&I and ITB experiments will continue to refine the operational tactics and techniques of the fielded near-term TMD system.

1.2 Project Task Summary

TASK 02 - ACES

Provide U.S. Government technical support to assist the GOI execution of the ACES, follow-on to the Arrow Experiments project. The first phase of ACES, completed in the third quarter FY 94, featured critical lethality tests using the Arrow I interceptor with the Arrow II warhead. The second phase of ACES consists of the design, development and test of the Arrow II interceptor. Successful demonstration of the Arrow II will support U.S. technology base requirements for new advanced ABM technologies that could be incorporated into the U.S. theater missile defense (TMD) systems.

TASK 03 - ACES Support

ACES Support provides for U.S. Government oversight of the ACES contract and technical tasks to propose solutions to Arrow II issues. The government team facilitates the transfer of ACES data to U.S. TMD systems.

TASK 04 - ADP

The U.S.-GOI established ADP to use Arrow system elements to address system integration, battle management, interoperability, lethality, kill assessment, and producibility for the purpose of achieving readiness for operational deployment of the Arrow-centered Israel Missile Defense.

UNCLASSIFIED

TASK 05 - ADP Support

ADP Support provides for U.S. Government oversight of the ADP Contract and technical tasks to propose solutions to Arrow Weapon System issues. The Government team facilitates the transfer of ADP data to U.S. TMD systems.

TASK 06 - Israeli Cooperative R & D Project

Provide Israeli Cooperative R & D Project support to advance emerging TMD technologies to the technology demonstration phase to provide for the defense of the State of Israel, support U.S. technology base needs for these technologies, and pursue interoperability with U.S. TMD systems. Candidate technologies, today, are the continuation of the electro-thermal gun experiments and advancement of the Israeli BPI concept. Efforts in this area will begin in FY 1997. This timing provides for maturation of U.S. requirements for these areas of TMD technologies.

TASK 08 - Israeli Test Bed

Support the analysis of a structured set of joint U.S./Israeli experiments conducted to evaluate the role of missile defenses in both mature and contingency Middle East theater operations. Provide support for a portion of the operation and maintenance of the ITB and planned enhancements.

TASK 09 - Israeli SA&I

Provide on-going analysis and assessment of the baseline, evolutionary, and responsive threats, and for the definition and evaluation of an initial Israeli Reference Missile Architecture (IRMA). Evolutionary Growth paths to enhance the IRMA robustness against future threats will be identified. Critical TMD system architecture issues and technologies will be analyzed, and the conformance of various Israeli anti-tactical ballistic missile (ATBM) programs, including the Arrow missile development activity, the Arrow Deployability Program (ADP), and the Israeli Test Bed to established requirements will be conducted. Finally, previously developed simulations and models will be used selectively to address significant TMD issues. Collectively, the tasks conducted under this cooperatively sponsored Israeli System Architecture & Integration Program will provide critical insights and technical data to both the U.S. and Israeli governments for improving near-term and evolutionary defenses against ballistic missile threats.

TASK - 10 Israeli Boost Phase Intercept Study

A study will be conducted that explores joint BPI missile defense against Theater Missiles in the Middle East using simulations, wargaming and personal interchanges, here and abroad, among appropriate government and military counterparts.

UNCLASSIFIED

1.3 Project Task Baselines

FUNDING (Updated via issuance by POF of revised Current Program Summary (CPS))

Task Number	Program Element	FY9 5	FY9 6	FY9 7	FY9 8	FY9 9	FY0 0	FY01
2259.02	0603872	22.15	23.33					
2259.03	0603872	7.157	3.981					
2259.04	0603872	13.50	19.79	32.0	32.00	32.00	32.00	32.000
2259.05	0603872	1.476	5.672	2.00	2.000	2.000	2.000	2.000
2259.06	0603872			2.50	2.500	2.500	2.500	2.500
2259.08	0603872	2.236	1.891	2.00	2.000	2.000	2.000	2.000
2259.09	0603872	0.837	1.891	1.50	1.500	1.500	1.500	1.500
2259.10	0603173	3.000						
Total Project Funding		50.356	56.558	40.000	40.000	40.000	40.000	40.000

Note: This document does not constitute authority to commit or obligate funds.

SCHEDULE REQUIREMENTS

Key Events	Baseline Plan
Task 10-Complete IBIS Follow-On Study	1Q/96
Task 02-Complete Four Arrow II Flight Tests	4Q/96
Task 02-Complete Interceptor Development	4Q/96
Task 02-Complete Analysis Of Arrow II Flight Test Data	4Q/96
Task 08-Complete ITB Adaptive BMC Enhancement	4Q/96
Task 05-Initiate Arrow Weapons System Integrated Flight Tests	1Q/98
Task 06-Complete design of cooperative R&D Technology Demonstrator	1Q/97
Task 08-Complete ITB Enhancements	2Q/97

SUPPORTING TECHNOLOGY/PROGRAM REQUIREMENTS

Task Number	Deliverable	Need Date
N/A	None.	N/A

1.4 Compliance Requirements

Executing Agents performing work in support of this project must comply with BMDO Directives and the requirements contained in the BMDO Director's memorandum dated _____ 1995, Subject: Compliance Requirements for Projects Funded by BMDO for Fiscal Year 1996.

UNCLASSIFIED

2.0 Executing Agent Breakout

2259A - U.S. Army Program Executive Office, Missile Defense
2259S - BMDO/Deputy for Acquisition/Theater Missile Defense
2259S - BMDO/Deputy for Technology Readiness

2.1 Executing Agent/Project/Task Managers - U.S. Army

<u>Name</u>	<u>Address</u>	<u>Telephone</u>
Dr. Michael Holtcamp	SFAE-MD-ARW P.O. Box 1500 Huntsville, AL 35807-3801	(205) 955-4798
Ms. Leigh Brumley	U.S. Army Space and Strategic Defense Command ATTN: CSSD-ES-P P.O. Box 1500 Huntsville, AL 35807-3801	(205) 955-1683

2.1.1 Scope of Requirements

TASK 02 - Arrow Continuation Experiments (ACES)

ACES is a U.S.-Government of Israel (GOI) initiative to assist the GOI develop an anti-tactical ballistic missile (ATBM) interceptor and to provide the basis for an informed engineering and manufacturing decision for an ATBM defense capability and to provide the U.S. with technology information and data. ACES is a follow-on to the Arrow Experiments project that developed the preprototype Arrow I interceptor. The first phase of ACES, completed in the third quarter FY 94, featured critical lethality tests using the Arrow I interceptor with the Arrow II warhead. The second phase of ACES consists of the design, development and test of the Arrow II interceptor. If successful, the Arrow II will satisfy the Israeli requirement for an interceptor for defense of military assets and population centers and will support U.S. technology base requirements for new advanced ABM technologies that could be incorporated into the U.S. theater missile defense (TMD) systems.

TASK 03 - ACES Support

ACES support provides for U.S. Government oversight of the ACES contract and technical tasks to propose solutions to Arrow II issues. The government team facilitates the transfer of ACES data to U.S. TMD systems.

TASK 04 - Arrow Deployability Project (ADP)

There are five tasks within the Arrow Deployability Project; System Test & Evaluation (ST&E), interoperability, lethality, kill assessment, and producibility. The ST&E task will demonstrate the real-time effectiveness of element interfaces for engagement scenarios. The decision timeline is very short because sensors detect approaching threat TBMs, fire control solutions are calculated, launch orders are issued automatically, and target hand-off to the interceptor's on-board sensors occurs appropriately for end-game guidance to an intercept. The interoperability task will identify and study performance enhancements and degradation due to Arrow system operations in the same or adjacent areas with other TMD systems, including U.S. systems. The lethality and kill assessment tasks will evaluate data from the performance of the Arrow interceptor and fire control radar for purposes of improving system effectiveness. The producibility task will help plan for cost-effective, low cost, low rate manufacturing to support the Israeli decision on Arrow deployment.

After planning activities in FY 94, the Arrow Deployability Project (ADP) in FY 95 will

UNCLASSIFIED

start to pursue the research and development of technologies associated with the deployment of the Arrow Weapon System and to permit the Government of Israel to make a decision on its own initiative regarding deployment of this system without financial participation by the U.S. beyond the R&D stage. This effort will include three system-level flight tests of the U.S.-Israeli cooperatively developed Arrow II interceptor and launcher supported by the Israeli-developed fire control radar, launch control center, and battle management control center, and studies to define interfaces required for Arrow Weapon System interoperability with U.S. TMD systems, lethality, kill assessment and producibility. Prior to obligation of funds to execute ADP R&D efforts, the President must certify to the Congress that a Memorandum of Agreement (MOA) exists with Israel for these projects, that each project provides benefits to the U.S., that the Arrow missile has completed a successful intercept, and that the GOI continues to adhere to export controls pursuant to the Missile Technology Control Regime (MTCR).

TASK 05 - ADP Support

ADP support provides for U.S. Government oversight of the ADP Contract and technical tasks to propose solutions to Arrow Weapon System issues. The Government team facilitates the transfer of ADP data to U.S. TMD systems.

TASK 08 - Israeli Test Bed

The ITB Program is a cooperative effort between the U.S. and the GOI. The ITB is a medium-to-high fidelity theater missile defense simulation that provides the capability to evaluate potential Israeli missile defenses, aids the Israeli Ministry Of Defense (IMOD) in the decision of which defense systems to field, and trains personnel to function in a TMD environment. A structured set of joint U.S./Israeli experiments is being executed to evaluate the role of missile defenses in both mature and contingency Middle East theater operations. This funding also provides for a portion of the operation and maintenance of the ITB and planned enhancements. Completed experiments identified additional enhancements needed to improve the ITB as an analysis tool. The enhancements incorporated in the ITB to date include an adaptive radar model an adaptive weapons model and a Boost Phase Intercept (BPI) simulation. The BPI enhancement benefits the Israeli BPI study. The study addresses the technical feasibility of the BPI concept and the hardware and weapons necessary to implement the concept. The planned Adaptive BMC enhancement will benefit the U.S. by enabling the ITB to simulate a wide variety of command and control and interoperability issues.

UNCLASSIFIED

2.1.2 EA Funding

(Updated via issuance by POF of revised Current Program Summary (CPS))

Task Number	Program Element	FY9 5	FY9 6	FY9 7	FY9 8	FY9 9	FY0 0	FY01
2259.02A	0603872	22.15	23.33					
2259.03A	0603872	7.157	3.981					
2259.04A	0603872	13.50	19.79	32.0	32.00	32.00	32.00	32.000
2259.05A	0603872	1.476	5.672	2.00	2.000	2.000	2.000	2.000
2259.08A	0603872	2.236	1.891	2.00	2.000	2.000	2.000	2.000
Total EA Funding		46.519	54.667	36.000	36.000	36.000	36.000	36.000

Note: This document does not constitute authority to commit or obligate funds.

2.1.3 EA Schedule and Supporting Program Requirements

SCHEDULE REQUIREMENTS

Key Events	Baseline Plan
2259.02A-Complete Arrow II Flight Tests	4Q/96
2259.02A-Complete Analysis Of Arrow II Flight Test Data	4Q/96
225902A-Complete Interceptor Development	4Q/96
2259.08A-Complete ITB Adaptive BMC Enhancement	2Q/97
2259/04A-Initiate Arrow Weapons System Integrated Flight Tests	1Q/98
2259.06A-Complete Design Of Cooperative R&D Technology Demonstrator	1Q/98
2259.04A-Arrow System Test Completion	1Q/00

SUPPORTING TECHNOLOGY/PROGRAM REQUIREMENTS

Task Number	Deliverable	Need Date
N/A	None.	N/A

2.1.4 Products/Delivery

Task Number	Product/Delivery	Technical Parameter	Schedule Threshold/Goal	Verification Method	Success Criteria
2259.03A	Arrow II System Performance Assessment		4Q/FY96		
2259.02A	Arrow II Lethality Analysis		4Q/FY96		
2259.03A	Arrow II Flight Test Analysis		4Q/FY96		
2259.05A	Arrow Weapon System Test Evaluation		4Q/FY99		
2259.05A	Interoperability/Lethality/Kill Assessment/Producibility Study		4Q/FY00		
2259.08A	ITB Interoperability Analysis		4Q/FY97		

UNCLASSIFIED

2.2 Executing Agent/Project/Task Managers - BMDO

<u>Name</u>	<u>Address</u>	<u>Telephone</u>
Tasks 06, 09 Kayleen Martin	Pentagon, Room 1E167	(703) 693-1673/4
Task 10 Maj Fisher	Pentagon, Room 1E178	(703) 693-1578

2.2.1 Scope of Requirements

TASK 06 - Israeli Cooperative R & D Project

The Israeli Cooperative R & D Project will advance emerging TMD technologies for technology demonstration phase to provide for the defense of the State of Israel, support U.S. technology base needs for these technologies, and pursue interoperability with U.S. TMD systems. Candidate technologies today are the continuation of the electro-thermal gun experiments and advancement of the Israeli BPI concept. Efforts in this area will begin in FY1997. This timing provides for maturation of U.S. requirements for these areas of TMD technologies.

TASK 09 - Israeli System Architecture & Integration (ISA&I)

The ISA&I tasks provide on-going analysis and assessment of the baseline, evolutionary, and responsive threats, and for the definition and evaluation of an initial Israeli Reference Missile Architecture (IRMA). The specific activities/tasks of this effort include: Threat Assessment, TMD System Architecture Analysis, Evaluation of Critical Technical Issues, TMD System Evolutionary Growth Paths, Conformance Assurances and Special Studies, and Simulation Activities and Studies. Collectively, the tasks conducted under this cooperatively sponsored Israeli System Architecture & Integration Program will provide critical insights and technical data to both the U.S. and Israeli governments for improving near-term and evolutionary defenses against ballistic missile threats.

TASK 10 - Israeli Boost Phase Intercept Study

The Study defines what the U.S. gets out of a U.S./Israeli joint/BPI development program and analyzes common technology requirements between U.S. Air Force and Israeli BPI concepts. It will explore selected improvements for Israeli BPI missile, aircraft, and BM/C3 and a report will be prepared.

UNCLASSIFIED

2.2.2 EA Funding

(Updated via issuance by POF of revised Current Program Summary (CPS))

Task Number	Program Element	FY9 5	FY9 6	FY9 7	FY9 8	FY9 9	FY0 0	FY01
2259.06S	0603872			2.50	2.500	2.500	2.500	2.500
2259.09S	0603872	0.837	1.891	1.50	1.500	1.500	1.500	1.500
2259.10S	0603173	3.000						
Total EA Funding		3.837	1.891	4.000	4.000	4.000	4.000	4.000

Note: This document does not constitute authority to commit or obligate funds.

2.2.3 EA Schedule and Supporting Program Requirements

SCHEDULE REQUIREMENTS

Key Events	Baseline Plan
2259.10S-Complete IBIS Follow-On	1Q/96
2259.06S-Complete design of R&D Technology Demonstrator	1Q/98

SUPPORTING TECHNOLOGY/PROGRAM REQUIREMENTS

Task Number	Deliverable	Need Date
N/A	None.	N/A

UNCLASSIFIED

2.2.4 Products/Delivery

Task Number	Product/Delivery	Technical Parameter	Schedule Threshold/Goal	Verification Method	Success Criteria
2259.06S	Memorandum of Agreement	N/A	4Q/FY96		
2259.10S	IBIS Follow-On Report		2Q/FY96		
2259.09S	IPR Conference Minutes		Qtrly		
2259.09S	ACES/ADP		Semi-annually		
2259.09S	ITB Conformance & Other Special Studies		4Q/FY96; 4QFY97		
2259.09S	TMD System Evaluation Study		4Q/FY96; 4QFY97		
2259.09S	Lethality/Kill Assessment Critical Technical Issues		4Q/FY96; 4QFY97		
2259.09S	Simulation Activities & Studies Progress		4Q/FY96; 4QFY97		
2259.09S	Analysis/Threat Update		Semi-annually		

UNCLASSIFIED

3.0 Management and Reporting Requirements

Executing Agents performing work in support of this project will prepare and submit a Monthly Program Performance Status Report to the BMDO Project Integrator, with a copy to BMDO/POC (Attention PMA Operations). This report will provide the Executing Agent's assessment of the status of achieving the objectives and significant task events or deliverables stated within the signed PMA Part II (Execution Plan). The initial report will be submitted after the first full month following the approval of the Execution Plan. This report will be due by the 20th of the following month and each additional month thereafter.

The monthly commitments, obligations and expenditures, as well as the quarterly "accrued expenditures" reporting currently reported in the Financial Execution Report (FER), will continue. Specific guidance regarding Financial Execution Reporting is contained in BMDO Memorandum dated _____, 1995, Subject: Implementation of the FY96 Program Management Agreement Process.

4.0 References and Related Documents (U)

- Congressional Descriptive Summary (R-2) - 2259
- Strategic Defense Initiative Memorandum of Understanding 6 May 86
- Development of Technology to Support U.S./Israeli TBMD Rqmts. MOA 26 Jun 88
- ACES Memorandum of Agreement 7 Jun 91
- ITB Memorandum of Agreement (5 year extension) 8 Mar 94
- ADP Memorandum of Agreement DRAFT