

**TENTH AMENDMENT TO THE AGREEMENT BETWEEN
THE DEPARTMENT OF DEFENSE OF THE UNITED STATES OF AMERICA
AND THE MINISTRY OF DEFENSE OF THE STATE OF ISRAEL AND FOR THE
ARROW SYSTEM IMPROVEMENT PROGRAM (ASIP)**

PREAMBLE

The Department of Defense of the United States of America (DoD), as represented by the Missile Defense Agency (MDA), AND the Ministry of Defense of the State of Israel (IMOD), hereinafter referred to as the "Parties":

Having entered into the ASIP Agreement on March 13, 2001, including Annex A, Israeli Arrow Liaison Officer, and Annex B, Phase I, System Performance Specification Development, to enhance the operational capabilities of the Arrow Weapon System (AWS) to meet the emerging longer-range ballistic missile threat in the Middle East;

Having agreed on July 29, 2002, in the First Amendment to the ASIP Agreement, to add Annex C, Phase IIA, System Design and Preliminary Development;

Having agreed on December 19, 2002, in the Second Amendment to the ASIP Agreement, to add Annex D, Arrow Enhanced Component Production Process (AECPP), to establish the capability to co-produce Arrow missile components in the United States and Israel to meet Israel's defense requirements and further advance the U.S. industrial and technology base;

Having agreed on August 28, 2003, in the Third Amendment to the ASIP Agreement, to add Annex E, Phase IIB, System Development, and Phase III, Verification Testing;

Having agreed on August 28, 2003, in the Fourth Amendment to the ASIP Agreement, to add Annex F, Arrow Missile Production Program, to produce cooperatively, contingent upon annual funding, Arrow missiles to meet Israel's defense requirements;

Having agreed on June 25, 2004, in the Fifth Amendment to the ASIP Agreement, to amend Annex E, Phase IIB, System Development, and Phase III, Verification Testing, by establishing new base lines and extending the ASIP Agreement one year, and amend Annex F, Arrow Missile Production Program, by providing additional funds to that Program;

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Having agreed on December 5, 2005, in the Sixth Amendment to the ASIP Agreement, to amend the ASIP agreement by adding definitions and language regarding contractor use of export controlled information and to amend Annex F, Arrow Missile Production Program, by providing additional funds to that Program;

Having agreed on March 12, 2007, in the Seventh Amendment to the ASIP Agreement, to amend the ASIP agreement by revising definitions and language regarding contractor use of export controlled information, to amend Annex F, Arrow Missile Production Program, by providing additional funds to that Program; and to add Annex G, Short Range Ballistic Missile Defense (SRBMD) Initiative;

Having agreed on December 14, 2007, in the Eighth Amendment to the ASIP Agreement, to amend Annex E, Phase IIB, System Development and Phase III, Verification Testing, by providing funds for that program through FY09, and to amend Annex F, Arrow Missile Production Program, by providing funds for that program through FY10;

Having agreed on November 20, 2008, in the Ninth Amendment to the ASIP Agreement, to amend Annex F, Arrow Missile Production Program, by providing funds for that program;

Recognizing the benefits to be obtained from continuing the cooperative ASIP effort;

Have agreed to amend the ASIP Agreement as reflected below:

1. CHANGE THE FRAMEWORK ASIP AGREEMENT AS FOLLOWS:

1.1. PREAMBLE

1.1.1. Revise the first line in the first paragraph as indicated in bold throughout the agreement and annexes:

"The Department of Defense of the United States of America ~~(DoD)~~ (DoD), as represented by....."

1.2. ARTICLE I, DEFINITIONS

1.2.1. After the definition of "Kill Assessment", add the following new definition:

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"Knowledge Point (KP) A preplanned project event or events having single or multiple element relevance that generate critical information or gained knowledge (confidence) about critical risks. KPs assist in making key decisions for successful management of a project."

1.3. ARTICLE II, OBJECTIVES

1.3.1. Revise paragraph 2.2.1.1. as indicated in the classified supplement to this amendment distributed separately.

1.3.2. Revise paragraph 2.2.1.3. as indicated in bold:

"2.2.1.3 (FOUO) **Maintain the defended area footprint of the AWS based on the current and developing ~~against the projected~~ long-range ballistic missile (LRBM) threat. ~~comparable to that of the Baseline System against the current baseline threat.~~**"

1.3.3. Add new paragraph 2.2.7. as follows:

"2.2.7. (FOUO) **System Enhancement. Enlarge and enhance the battlespace of the AWS based on the current and developing LRBM threat.**"

1.4. ARTICLE III, SCOPE OF WORK

1.4.1. Revise paragraph 3.1.2. as indicated in bold:

"....Preliminary testing of the enhanced AWS will be conducted in Israel. **Phase II will also include enlarging and enhancing the battlespace of the AWS based on the current LRBM threat and the full flyout capabilities of the Arrow II, enhancing the system's counter-countermeasures and discrimination capabilities, applying lessons learned from Caravan 2 tests and Juniper Cobra combined missile defense exercises, enhancing interoperability, and creating an AWS warfighter training capability. AWS interoperability enhancements will be developed and implemented and**"

1.4.2. Revise paragraph 3.1.3. as indicated in bold:

"3.1.3. (FOUO) **Phase III of the Improvement Program will consist of verification testing of the enhanced AWS ~~conducted~~ in Israel and in the United States, as well as any residual tasks from Phase II.**"

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1.4.3. Add new paragraph 3.6. as follows:

"3.6 The ASIP will conduct Preliminary Design and Risk Mitigation activities for an Upper Tier Arrow 3 interceptor and will conduct a joint Analysis of Alternatives (AoA).

3.6.1. The AoA will evaluate possible cost effective upper tier interceptor, sensor, and enhanced target alternatives.

3.6.2. Ground, flight, and interoperability test planning requirements will also be evaluated."

1.5. ARTICLE XIX, AMENDMENT, TERMINATION, ENTRY INTO FORCE, AND DURATION

1.5.1. Revise paragraph 19.6. as indicated in bold:

"19.6. (FOUO) This Agreement, which consists of 19 Articles, **and Annexes A and B** through H, and a classified supplement to the Tenth Amendment shall enter into force upon signature by both Parties and shall remain in force for fifteen years, unless extended by an amendment to this Agreement."

2. CHANGE ANNEX E, PHASE IIB, SYSTEM DEVELOPMENT, AND PHASE III, VERIFICATION TESTING, AS FOLLOWS:

2.1. SECTION 2, OBJECTIVES

2.1.1. Revise paragraph 2.1.1. as indicated in bold:

"2.1.1. Complete the development of the Senior Representative (SR)-approved product improvements identified in Phase I, **and Phase IIA, and Phase IIB and further enhance the improvements** to enable the Arrow Weapon System (AWS) to:"

2.1.2. Revise paragraph 2.1.1.1. as indicated in the classified supplement to this amendment distributed separately.

2.1.3. Revise paragraph 2.1.1.3. as indicated in bold:

"2.1.1.3. Maintain the defended area footprint of the AWS **against the projected** based on the current and developing long-range ballistic missile (LRBM) threats. ~~comparable to that of the baseline system against the current baseline threat.~~"

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2.1.4. Revise paragraph 2.1.2. as indicated in bold:

"2.1.2. Test the ~~current~~ AWS in a series..."

2.2. SECTION 3, SCOPE OF WORK

2.2.1. Revise paragraph 3.2.3.3. as indicated in bold:

"3.2.3.3. Joint Interoperability Test Command (JITC) Link-16 implementation evaluation of the baseline system and **continuation of the joint interoperability development and testing program. ~~improved AWS Interoperability capability.~~**"

2.2.2. After paragraph 3.2.3.5., add paragraph 3.2.4. as follows:

"3.2.4. System Enhancement. Tasks will include enlarging and enhancing the battlespace of the AWS based on the current and developing LRBM threat and the full flyout capabilities of the Arrow II, enhancing the system's counter-countermeasures and discrimination capabilities, applying lessons learned from Caravan 2 tests and Juniper Cobra combined missile defense exercises, enhancing interoperability, and creating an AWS warfighter training capability."

2.3. SECTION 5, FINANCIAL PROVISIONS

2.3.1. Revise SECTION 5, FINANCIAL PROVISIONS, as indicated in bold:

"5.1. The Parties agree that the performance of the obligations under this Annex shall not cost more than a **Financial Cost Ceiling** of \$543.6 million in then-year U.S. dollars.

5.2. Financial and Non-financial Costs of the Project, as identified in this Annex, shall be shared according to the following percentages:

| <u>Participant</u> | <u>Percentage Share</u> |
|----------------------------------|-------------------------|
| U.S. Department of Defense (MDA) | 53% |
| Israel Ministry of Defense | 47% |

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5.3. Estimated Financial and mutually agreed estimated value of Non-Financial contributions in support of Phase IIB and Phase III are:

(\$ in Millions)

| | |
|--------------------------------------|-----------------|
| U.S. DoD Financial Contribution: | \$365.5 |
| U.S. DoD Non-Financial Contribution: | \$ <u>0</u> |
| Total U.S. DoD Contribution | \$365.5 |
| | |
| IMOD Financial Contribution: | \$178.1 |
| IMOD Non-Financial Contribution: | \$ <u>140.0</u> |
| Total IMOD Contribution | \$318.1 |

5.4. Estimated Financial Contributions:

(\$ in Millions)

| | FY03 | FY04 | FY05 | FY06 | FY07 | FY08 | FY09 | TOTAL |
|---------------|------|------|------|------|------|-------------|------|--------------|
| U.S. DoD | 29 | 55 | 55 | 55 | 55 | 61.5 | 55 | 365.5 |
| IMOD | 25 | 25 | 25 | 25 | 25 | 28.1 | 25 | 178.1 |
| Project Total | 54 | 80 | 80 | 80 | 80 | 89.6 | 80 | 543.6 |

5.5. Estimated Non-Financial Contributions:

(\$ in Millions)

| | | |
|---------------|----------------|--------------|
| | <u>FY03-09</u> | <u>TOTAL</u> |
| U.S. DoD | 0 | 0 |
| IMOD | <u>140</u> | <u>140</u> |
| Project Total | 140 | 140" |

* * * * *

3. CHANGE ANNEX F, ARROW MISSILE PRODUCTION PROGRAM, AS INDICATED IN BOLD:

3.1. Revise SECTION 5, FINANCIAL PROVISIONS, as indicated in bold:

"5.1. (FOUO) The parties agree that the performance of the obligations shall not cost more than a Financial Cost Ceiling of \$588.067 million U.S. dollars.

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5.2. (FOUO) The full costs of the program shall be shared according to the following percentages:

| <u>Party</u> | <u>Percentage Share</u> |
|----------------------------------|-------------------------|
| U.S. Department of Defense (MDA) | 67% |
| Israel Ministry of Defense | 33% |

5.3. There are no Non-financial contributions. The financial schedule estimate required to support the Arrow Missile Production Program is as follows:

(FOUO) Total Estimated Financial Contributions by Fiscal Year

| | (\$ In millions) | | | | | | | | | |
|---------------|------------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|-------------|----------------|
| | <u>FY03</u> | <u>FY04</u> | <u>FY05</u> | <u>FY06</u> | <u>FY07</u> | <u>FY08</u> | <u>FY09</u> | <u>FY10</u> | <u>FY11</u> | <u>TOTAL</u> |
| United States | 52.00 | 74.88 | 89.52 | 52.67 | 46.09 | 34.967 | 10.13 | 15.00 | 15.00 | 390.257 |
| Israel | <u>7.00</u> | <u>16.00</u> | <u>35.00</u> | <u>40.90</u> | <u>33.30</u> | <u>21.010</u> | <u>23.00</u> | <u>11.02</u> | <u>7.50</u> | <u>194.730</u> |
| TOTAL | 59.00 | 90.88 | 124.52 | 93.57 | 79.39 | 55.977 | 33.13 | 26.02 | 22.50 | 584.987 |

* * * * *

5.4. (FOUO) For the costs of technical support, oversight of U.S. participation, transfer of U.S. benefits, and DoD PM obligations, \$1 million shall be withheld from the U.S. fund share each fiscal year for ~~FY03-FY07~~ ~~FY06~~, \$0.8M for FY07-FY08, and \$0.6M for FY09, ~~and~~ FY10, and FY11 in which the United States financially contributes to the Arrow Missile Production Program and shall be provided to the U.S.-Israel Cooperative Program Office (ICPO), Huntsville, Alabama."

4. Add Annex H, UPPER TIER PROJECT and the Classified Supplement to this Amendment.

* * * * *

All other Articles and paragraphs of the ASIP Agreement and all other sections and paragraphs of Annex E and Annex F remain unchanged.

This Tenth Amendment shall enter into force on the date of later signature and shall remain in force for the same period of time as the agreement that it amends.

IN WITNESS WHEREOF, the undersigned, being duly authorized by their governments, have signed this amendment.

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DONE, in duplicate in the English language.

FOR THE DEPARTMENT OF DEFENSE
OF THE UNITED STATES OF AMERICA

FOR THE MINISTRY OF DEFENSE OF
THE STATE OF ISRAEL

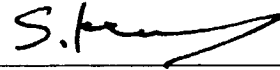

Signature

LIG Patrick J. O'Reilly
Name

Director, Missile Defense Agency
Title

September 10, 2009
Date

Washington, DC
Location



Signature

Brig. Gen. (Ret.) Shmuel Keren
Name
Director of DDRD

I.M.O.D
Title

4.8.09
Date

Tel-Aviv
Location



Signature

MINISTRY OF DEFENCE
DEPARTMENT OF FINANCE
SHAUL GOLDKING-GAL
ACTING COMPTROLLER

Title

19/8/09
Date

Date

Tel-Aviv
Location

Location

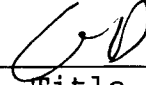
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Signature

BG (Ret) PINCHAS BUCHRIS

Name



Title

20/8/09

Date

Tel-Aviv

Location

Attachments:

Annex H, Upper Tier Project

Classified Supplement(S) (Distributed Separately)

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ANNEX H, UPPER TIER PROJECT,
TO THE
AGREEMENT BETWEEN THE DEPARTMENT OF DEFENSE
OF THE UNITED STATES OF AMERICA
AND
THE MINISTRY OF DEFENSE OF THE STATE OF ISRAEL
FOR THE
ARROW SYSTEM IMPROVEMENT PROGRAM (ASIP)

SECTION 1. PURPOSE

1.1. The purpose of this Annex is to establish the terms and conditions regarding the Upper Tier Project, as a supplement to the terms and conditions of the Arrow System Improvement Program (ASIP) Agreement, to which this Annex is a part.

SECTION 2. OBJECTIVE

2.1. The objectives of this Annex are to conduct Preliminary Design and Risk Mitigation activities for the Upper Tier component to the Israeli Missile Defense Architecture and to conduct a joint Analysis of Alternatives (AoA) that will evaluate possible cost effective upper tier interceptor, sensor, and target alternatives.

SECTION 3. SCOPE OF WORK

3.1. The overall work to be undertaken shall consist of:

3.1.1. Preliminary design and risk reduction activities for the Prototype Arrow 3 interceptor including a System Requirements Review (SRR) and Preliminary and Critical Design Reviews for a Arrow 3 flyout test.

3.1.2. Risk mitigation activities, including the design and preparation of an Arrow 3 airframe, risk mitigation for the Arrow 3 Electro Optical Seeker (EOS); Arrow 3 end game Guidance and Control (G&C) and lethality; and risk mitigation for the Arrow 3 to withstand post nuclear explosion phenomena effects.

3.1.3. An evaluation of:

3.1.3.1. Sensor alternatives with enhanced discrimination capabilities.

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3.1.3.2. Target alternatives adequate for Upper Tier intercept flight testing.

3.1.3.3. Ground, flight and interoperability test planning requirements.

3.2. In addition to the Israeli Arrow 3 Upper Tier interceptor proposed as the initial focus for preliminary design and risk mitigation in the Upper Tier Project, the MDA and IMDO shall conduct a joint AoA to explore the feasibility of possible cost effective upper tier interceptor alternatives. The study will include definition of alternative Upper Tier interceptors; cost analysis of development, integration, test, and production; and fielding timelines. The MDA/IMDO AOA Terms of Reference will describe the scope and timeline for the AoA.

3.3. The Major Milestone under this Annex will conclude with the PMs' recommendation to the national Senior Representatives (SRs) as to the optimal upper tier interceptor, sensors, and targets; and whether the conceptual design of these elements, technology maturity, and risk are sufficiently favorable to justify entry into Full-Scale Development.

SECTION 4. MANAGEMENT

4.1. The ASIP Program Managers (PM) will also serve as the Upper Tier Project PMs.

4.2. The PMs shall establish Knowledge Points (KP) to determine progress toward meeting objectives defined in Section 2 (Objectives) of this Annex. The FY08 KP shall be to demonstrate by September 2008, through analysis, the ability of the Arrow 3 conceptual design to meet system requirements derived from the current and developing long-range ballistic missile threat.

4.3. The PMs will prepare jointly within two months after this Annex enters into force:

4.3.1. An ASIP Program Plan update, including a plan of action, milestones, and financial plan for this Annex. The updated ASIP Program Plan shall address cost, schedule, performance metrics, and KPs established in this Annex.

4.3.2. Revisions to the ASIP Security Instruction and Classification Guide, as necessary.

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4.4. The Project PMs shall conduct:

4.4.1. In-Progress Reviews every six months in accordance with the ASIP Program Plan, including financial/cost/KP reviews, and technical interchange meetings as needed to support reports required.

4.4.2. Monthly status reviews of cost, schedule and performance metrics to be defined in the program plan and KPs defined in this Annex. These reviews may be conducted electronically.

4.5. Within six months from initiating the Upper Tier Project, the PMs will present to their respective SRs an interim progress report on the Scope of Work described in Section 3 (Scope of Work).

4.6. Within twelve months of Program implementation, the PMs will present to their respective SRs their joint recommendation regarding Full Scale Development of the Upper Tier interceptor.

4.7. All activities of the Parties under this Annex will be carried out in accordance with their national laws and regulations, including their security and export control laws and regulations.

4.8. Report formats will be as mutually agreed by the PMs.

SECTION 5. FINANCIAL PROVISIONS

5.1. The Parties agree that the performance of the obligations under this Annex shall not cost more than a Financial Cost Ceiling of \$23.96 million U.S. dollars.

5.2. Financial Costs and Non-financial Costs of the Program as identified in this Annex shall be shared according to the following percentages:

| <u>Party</u> | <u>Percentage Share</u> |
|--------------|-------------------------|
| U.S. DoD | 50 |
| IMOD | 50 |

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5.3. Estimated Financial contributions and mutually agreed estimated value of Non-financial contributions of the Parties in support of the Program for FY08 are:

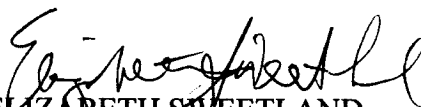
| | |
|--------------------------------------|-----------------|
| U.S. DoD Financial Contribution: | \$12.36M |
| U.S. DoD Non-Financial Contribution: | <u>\$ 0 M</u> |
| Total | \$12.36M |
| | |
| IMOD Financial Contribution: | \$11.60M |
| IMOD Non-Financial Contribution: | <u>\$ 0.76M</u> |
| Total | \$12.36M |

5.4. For the costs of technical support, oversight of U.S. participation, transfer of U.S. benefits, and DoD PM obligations in support of the Upper Tier Project, \$1 million shall be withheld from the U.S. FY08 fund share and provided by MDA to the U.S.-Israel Cooperative Program Office (ICPO), Huntsville, Alabama.

SECTION 6. SECURITY

6.1. The highest level of classified information that may be exchanged under this Annex is Secret.

I certify this Tenth Amendment to the Agreement between the Department of Defense of the United States of America, and the Ministry of Defense of the State of Israel and for the Arrow System Improvement Program (ASIP) is a true copy of the original document signed by Lieutenant General Patrick J. O'Reilly, Director, Missile Defense Agency.



ELIZABETH SWEETLAND
Lieutenant Colonel, U.S. Army
Associate General Counsel
Missile Defense Agency