**CLASSIFICATION:**

| EXHIBIT R-2, RDT&E Budget Item Justification | | | | | | | | DATE: **February 2002** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY<br>**RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7** | | | | | | R-1 ITEM NOMENCLATURE<br>0305206N Airborne Reconnaissance Advanced Development (ARAD) | | | | | |
| COST ($ in Millions) | Prior Year Cost | | FY 2001 | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | Cost to Complete | Total Program |
| Total PE Cost | | | **25.964** | **17.381** | **5.469** | **13.713** | **21.602** | **18.985** | **19.351** | **Continuing** | **Continuing** |
| H2694 Advanced Digital Sensors | | | *** 12.274** | ***** 8.163** | **2.582** | **13.713** | **21.602** | **18.985** | **19.351** | **Continuing** | **Continuing** |
| R2476 Framing Reconnaissance Camera | **29.124** | | **** 13.690** | ****** 9.218** | **2.887** | | | | | | **54.919** |
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| Quantity of RDT&E Articles | | | | | | | | | | | |

* The FY 2001 budget reflects Congressional adds for Upgrade Story Finder ($3.0 million) and Weight Reduction Study ($4.0 million offset by $.037 million for Congressional Reductions) which will be executed under H2990 and H2991 respectively. **The FY 2001 budget reflects Congressional adds for Advanced Focal Plane Shutter ($3.0 million), Hyperspectral Modular Upgrades ($4.0 million), and Sensor Upgrade ($5.0 million) which will be executed under R2676, R2807, and R2992 respectively. *** The FY2002 budget reflects Congressional adds for Mission System Weight Development ($2.5M). ****The FY2002 includes Congressional adds reflecting Hyperspectral Modular Upgrades ($2.6 million) which will be executed under R2746 and Electro-Optical (EO) Framing Technologies ($6.6 million) which will be executed under R2676.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Provides funds for the development of sensor systems to improve present airborne reconnaissance capabilities. The developments are driven by evolving collection requirements and modern technology advances. The developments allow for the necessary changes required to meet an integrated, objective airborne reconnaissance architecture as defined in the Integrated Airborne Reconnaissance Strategy (IARS) and amplified in the Airborne Reconnaissance Information Technical Architecture (ARITA). The Advanced Sensors Development Program implements successful proof-of-concept efforts accomplished in the Advanced Technology Program, other Service/Agency developments, and Congressionally-funded initiatives leading to producible sensor systems for airborne platforms. Upon successful sensor prototype demonstration, technology sensor developments are turned over to the Services for procurement and platform integration. This effort focuses on developments, which support sensor system interoperability and standardization of multi-Service and multi-platform applications. The advanced sensor developments will provide the technology transition modules for operational use necessary for the overall migration of the airborne fleet (manned and unmanned) to a Joint Airborne SIGINT Architecture (JASA) (i.e., sensors, ground systems, data links, and platforms), and provide the mechanism required for timely dissemination of intelligence information to operational forces. The development and modification of the lead integration aircraft (EP-3E) for the initial JASA modules will provide a mechanism to begin development and operational assessment of the Joint SIGINT Avionics Family (JSAF) components. Coordinated and complementary airborne sensor development across the military Services and the Defense and Intelligence Agencies are being established for inclusion into the JASA. The two primary objectives for Advanced Technology funding is to evaluate the utility and maturity of technology for airborne reconnaissance applications and to reduce the risk of employing emerging technologies in system upgrades, new system acquisitions, or Advanced Concept Technology Demonstrations (ACTDs), by integrating and exercising them in developmental and operational tests. These technologies help satisfy the requirements of the objective architecture set forth in the Integrated Airborne Reconnaissance Strategy (IARS). These technology investments are also identified in the Airborne Reconnaissance Technology Program Plan (ARTPP), published in November 1994. Transition of sensors to AF TARS, and Navy TARPS-CD and SHARP programs have been successful.

(U) JUSTIFICATION OF BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

| EXHIBIT R-2a, RDT&E Project Justification | | | | | | | | DATE: February 2002 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY<br>**RDT&E, N / BA-7** | PROGRAM ELEMENT NUMBER AND NAME<br>0305206N Airborne Reconnaissance Advanced Development (ARAD) | | | | | PROJECT NUMBER AND NAME<br>H2694 Advanced Digital Sensors | | | | | |
| COST ($ in Millions) | Prior Year Cost | | FY 2001 | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | Cost to Complete | Total Program |
| Project Cost | | | * **12.274** | ** **8.163** | **2.582** | **13.713** | **21.602** | **18.985** | **19.351** | **Continuing** | **Continuing** |
| RDT&E Articles Qty | | | | | | | | | | | |

* The FY 2001 budget reflects Congressional adds for Upgrade Story Finder ($3.0 million) and Weight Reduction Study ($4.0 million offset by $.037 million for Congressional Reductions) which will be executed under H2990 and H2991 respectively. ** The FY2002 budget reflects a Congressional add for Mission System Weight Development ($2.5M).

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Provides funds for the development of sensor systems to improve present airborne reconnaissance capabilities. The developments are driven by evolving collection requirements and modern technology advances. The developments allow for the necessary changes required to meet an integrated, objective airborne reconnaissance architecture as defined in the Integrated Airborne Reconnaissance Strategy (IARS) and amplified in the Airborne Reconnaissance Information Technical Architecture (ARITA). The advanced sensor program includes technical analyses, systems engineering assessments, planning, and development for advanced airborne sensor systems. This effort focuses on developments which support sensor system interoperability and standardization of multi-Service and multi-platform applications. The EP-3E will undergo a series of block modification via an evolutionary acquisition process beginning in FY 2001. These block modifications have collectively been designated as the Joint SIGINT Avionics Family (JSAF) Modification Program (JMOD). The advanced sensor developments described herein will provide the technology transition modules necessary for the overall migration of the airborne fleet to a Joint Airborne SIGINT Architecture (JASA) (i.e., sensors, ground systems, data links, and platforms), and provide the mechanism required for timely dissemination of intelligence information to operational forces.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:
   - (U) ($ . 570) Initiated Story Maker fusion software development for JMOD 2.
   - (U) ($1.074) Continued Story FinderJSAF MOD 1 aircraft Integration.
   - (U) ($ .320) Continued Story Book Phase I-III (including CPC) JSAF MOD 1 aircraft Integration into SIL.
   - (U) ($ .334) Initiated Story Finder DT/Operational Test (OT) planning on EP-3E JSAF MOD 1 aircraft.
   - (U) ($ .300) Conducted Story Book CPC Phase I-III DT/OT planning on EP-3E JSAF MOD1 aircraft.
   - (U) ($ .326) Continued joint Story Book Phase IV (including CPC) development.
   - (U) ($2.414) Continued JMOD1 prototype installation
   - (U) ($2.973) Upgraded Story Finder
   - (U) ($3.963) Conducted Weight Reduction Study.

**CLASSIFICATION:**

| EXHIBIT R-2a, RDT&E Project Justification | | DATE: **February 2002** |
|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY | PROGRAM ELEMENT NUMBER AND NAME | PROJECT NUMBER AND NAME |
| **RDT&E, N / BA-7** | 0305206N Airborne Reconnaissance Advanced Development (ARAD) | H2694 Advanced Digital Sensors |

(U) PROGRAM ACCOMPLISHMENTS

2. FY 2002 PLANS:

(U) ($1.306) Continue Story Maker development, integration and demonstration for JMOD 2.
(U) ($2.468) Initiate Story Finder and continue software development, integration and demonstration for JMOD 2.
(U) ($ .300) Complete Story Book upgrade (Including CPC).
(U) ($ .200) Conduct Story Book/Story Finder upgrades aircraft DT/OT (including OPAL/ONYX).
(U) ($ .192) Conduct Story Classic (Special Collections) ALD-9 replacement engineering study.
(U) ($ .250) Initiate JMOD Imagery engineering investigations.
(U) ($ .520) Initiate development of hardware and software interface for Story Teller upgrades into JMOD 2, including CDL.
(U) ($ .500) Conduct JMOD 2 PDR.
(U) ($2.427) Continue mission system weight development.

3. FY 2003 PLANS:

(U) ($ .462) Continue Story Finder integration and demonstration for JMOD 2
(U) ($ .450) Continue Story Maker development for JMOD 2.
(U) ($ .494) Initiate Story Classic Imagery development.
(U) ($ .490) Incorporate Story Finder MPEG integration into JMOD 2 SIL.
(U) ($ .300) Continue Story Teller CDL integration into JMOD 2.
(U) ($ .386) Conduct JMOD 2 CDR

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

| EXHIBIT R-2a, RDT&E Project Justification | | DATE: **February 2002** |
|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY | PROGRAM ELEMENT NUMBER AND NAME | PROJECT NUMBER AND NAME |
| **RDT&E, N / BA-7** | 0305206N Airborne Reconnaissance Advanced Developm | H2694 Advanced Digital Sensors |

(U) B. PROGRAM CHANGE SUMMARY:

| | FY2001 | FY2002 | FY2003 |
|---|---|---|---|
| (U) FY2002 President's Budget: | 12.302 | 5.735 | |
| (U) Adjustments from the President's Budget: | -0.028 | 2.428 | |
| (U) FY2003 President's Budget Submit: | 12.274 | 8.163 | 2.582 |

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY2001 decrease of $.028 million is for a reprioritization of requirements within the Navy. The FY 2002 net increase of $2.428 million consists of a Congressional Add for EP3 Mission System weight reduction initiative ($2.5M) offset by a decrease for an undistributed congressional reduction ($.072M).

(U) Schedule: Program Milestones - FY01 LRIP for JSAF MOD 1 moved to 1Q/02 to reflect the rebaseline of the EP-3E JSAF Block Mod 1 program due to OPNAV directed integration of additional capabilities. The FY02 JSAF MOD 1 FRP milestone was moved to 2Q/03 to reflect the rebaseline of the EP-3E JSAF Block Mod 1 program. Engineering Milestones - The JSAF Mod 2 PDR moved from FY03 to 3Q/02 to reflect the rebaseline of the EP-3E JSAF Block Mod 2 program. The JSAF MOD 2 CDR moved from FY04 to 1Q/03 to reflect the rebaseline of the EP-3E JSAF Block Mod 2 program. T&E Milestones - The FY 01 JSAF MOD 1 Acft DT/OT milestone moved to 3Q/02 to reflect the rebaseline of the EP-3E JSAF Block Mod 1 program. Contract Milestones - The 1Q/02 JSAF MOD 2 TKI R&D contract award was added to reflect the baseline for EP-3E JSAF Block Mod 2 program.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

| Line Item No. & Name | FY 2001 | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|
| APN-5 EP-3E OSIP 11-01 | 4.559 | 36.352 | 26.061 | 32.772 | 17.632 | 35.212 | 30.917 | 476.768 | 660.273 |

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

| EXHIBIT R-2a, RDT&E Project Justification | | | DATE: **February 2002** |
|---|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY | PROGRAM ELEMENT NUMBER AND NAME | PROJECT NUMBER AND NAME | |
| **RDT&E, N / BA-7** | 0305206N Airborne Reconnaissance Advanced Development (ARAD) | H2694 Advanced Digital Sensors | |

(U) D. ACQUISITION STRATEGY: Leverages/complements Air Force, Naval Research Laboratory, Office of Naval Research RDT&E efforts for technology insertions into EP-3E/VPU productions programs.

(U) E. SCHEDULE PROFILE:

| | FY 2001 | FY 2002 | FY 2003 | TO COMPLETE |
|---|---|---|---|---|
| (U) Program Milestones | | 1Q/02 LRIP for JSAF MOD 1 (Story Book and Story Finder) | 2Q/03 JSAF MOD 1 FRP (MS III) (Story Book and Story Finder) | 2Q/06 JSAF MOD 2 FRP<br>2Q/04 Initiate JASA Compliance for VPU SRR |
| (U) Engineering Milestones | | 3Q/02 JSAF MOD 2 PDR | 1Q/03 JSAF MOD 2 CDR | |
| (U) T&E Milestones | | 3Q/02 JSAF MOD 1 Acft DT/OT | | 3Q/05 JSAF MOD 2 Acft DT/OT (Story Maker) |
| (U) Contract Milestones | | 1Q/02 JSAF MOD 2 R&D Development Contract Award | | |

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2002**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT: 0305206N Airborne Reconnaissance Advanced Developm

PROJECT NUMBER AND NAME: H2694 Advanced Digital Sensors

| Cost Categories | Contract Method & Type | Performing Activity & Location | Total PY s Cost | FY 01 Cost | FY 01 Award Date | FY 02 Cost | FY 02 Award Date | FY 03 Cost | FY 03 Award Date | Cost to Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Story Finder | SS/CPFF | BTG, Vienna, VA | 0.898 | | | | | | | | 0.898 | 0.898 |
| Story Finder | SS/CPFF | Raytheon Systems | 0.772 | 1.400 | 01/01 | 2.115 | 02/02 | | | 9.699 | 13.986 | 13.986 |
| Story Finder | SS/CPFF | Lockheed Martin | 0.106 | 0.207 | 01/01 | 0.664 | 02/02 | 0.386 | 12/02 | 2.096 | 3.459 | 3.459 |
| Fusion Software Development | SS/CPFF | GTE, Sunnyvale, CA | 1.046 | | | 0.760 | 02/02 | 0.550 | 12/02 | 4.561 | 6.917 | 6.917 |
| Story Teller CDL Integration | SS/CPFF | Raytheon Systems | | | | | | 0.100 | 12/02 | | 0.100 | 0.100 |
| Story Book MPEG Integration | SS/CPFF | Raytheon Systems | | | | | | 0.400 | 12/02 | | 0.400 | 0.400 |
| CPC Development | SS/CPFF | Raytheon Systems | 1.447 | | | | | | | | 1.447 | 1.447 |
| JMOD1 Prototype Installation | SS/CPFF | Raytheon Systems | | 2.414 | 01/01 | | | | | | 2.414 | 2.414 |
| ESM System Modification | SS/CPFF | Raytheon Systems | | 2.868 | 01/01 | | | | | | 2.868 | 2.868 |
| Lightweight Equipment & Racks Devel. | SS/CPFF | Raytheon Systems | | 1.801 | 01/01 | 2.427 | 04/02 | | | | 4.228 | 4.228 |
| CPC Upgrade | SS/CPFF | Raytheon Systems | | | | | | | | 13.100 | 13.100 | 13.100 |
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| Subtotal Product Development | | | 4.269 | 8.690 | | 5.966 | | 1.436 | | 29.456 | 49.817 | |

Remarks:

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2002**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT: 0305206N Airborne Reconnaissance Advanced Developm

PROJECT NUMBER AND NAME: H2694 Advanced Digital Sensors

| Cost Categories | Contract Method & Type | Performing Activity & Location | Total PY s Cost | FY 01 Cost | FY 01 Award Date | FY 02 Cost | FY 02 Award Date | FY 03 Cost | FY 03 Award Date | Cost to Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Systems Engineering | C/CPFF | GRCI, Vienna, VA | 0.800 | 0.671 | 12/00 | 0.523 | 03/02 | 0.262 | 12/02 | 2.788 | 5.044 | 5.044 |
| Systems Engineering | WX | NAWC,WD, China Lake, CA | 0.253 | 2.290 | 12/00 | 0.968 | 02/02 | 0.534 | 12/02 | Continuing | Continuing | |
| Systems Engineering | WX | NSWC, Dahlgren, VA | | 0.414 | 12/00 | 0.175 | 02/02 | | | Continuing | Continuing | |
| Subtotal Support | | | 1.053 | 3.375 | | 1.666 | | 0.796 | | Continuing | Continuing | |

Remarks:

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2) | DATE: **February 2002**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7** | PROGRAM ELEMENT: 0305206N Airborne Reconnaissance Advanced Developm | PROJECT NUMBER AND NAME: H2694 Advanced Digital Sensors

| Cost Categories | Contract Method & Type | Performing Activity & Location | Total PY s Cost | FY 01 Cost | FY 01 Award Date | FY 02 Cost | FY 02 Award Date | FY 03 Cost | FY 03 Award Date | Cost to Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Developmental Test & Evaluation | WX | NAWC,AD Pax River, MD | 0.050 | | | 0.200 | 02/02 | | | | 0.250 | |
| Story Finder | WX | NRL, MD | 0.100 | | | | | | | Continuing | Continuing | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Subtotal T&E | | | 0.150 | | | 0.200 | | | | Continuing | Continuing | |

Remarks:

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Technical Support | WX | NAWC,AD Pax River, MD | 0.462 | 0.209 | 12/00 | 0.331 | 02/02 | 0.350 | 12/02 | Continuing | Continuing | |
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| | | | | | | | | | | | | |
| Subtotal Management | | | 0.462 | 0.209 | | 0.331 | | 0.350 | | Continuing | Continuing | |

Remarks:

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Cost | | | 5.934 | 12.274 | | 8.163 | | 2.582 | | Continuing | Continuing | |

Remarks:

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

| EXHIBIT R-2a, RDT&E Project Justification | | | | | | | | DATE: February 2002 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY<br>**RDT&E, N / BA-7** | PROGRAM ELEMENT NUMBER AND NAME<br>0305206N Airborne Reconnaissance Advanced Development | | | | | PROJECT NUMBER AND NAME<br>R2476 Framing Reconnaissance Camera | | | | | |
| COST ($ in Millions) | Prior Year Cost | | FY 2001 | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | Cost to Complete | Total Program |
| Project Cost | **29.124** | | **13.690*** | **9.218**** | **2.887** | | | | | | **54.919** |
| RDT&E Articles Qty | | | | | | | | | | | |

*The FY 2001 budget reflects Congressional adds for Advanced Focal Plane Shutter ($3.0 million), Hyperspectral Modular Upgrades ($4.0 million), and Sensor Upgrade ($5.0 million). **The FY2002 includes Congressional adds reflecting Hyperspectral Modular Upgrades ($2.6 million) which will be executed under R2746 and Electro-Optical (EO) Framing Technologies ($6.6 million) which will be executed under R2676.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Provides funds for the development of sensor systems to improve present airborne reconnaissance capabilities. The developments are driven by evolving collection requirements and modern technology advances. The developments allow for the necessary changes required to meet an integrated, objective airborne reconnaissance architecture as defined in the Integrated Airborne Reconnaissance Strategy (IARS) and amplified in the Airborne Reconnaissance Information Technical Architecture (ARITA). The Advanced Sensors Development Program implements successful proof of-concept efforts accomplished in the Advanced Technology Program, other Service/Agency developments, and Congressionally-funded initiatives leading to producible sensor systems for airborne platforms. Upon successful sensor prototype demonstration, technology sensor developments are turned over to the Services for procurement and platform integration. This effort focuses on developments, which support sensor system interoperability and standardization of multi-Service and multi-platform applications. The advanced sensor developments will provide the technology transition modules for operational use necessary for the overall migration of the airborne fleet (manned and unmanned) to a Joint Airborne SIGINT Architecture (JASA) (i.e., sensors, ground systems, data links, and platforms), and provide the mechanism required for timely dissemination of intelligence information to operational forces. The development and modification of the lead integration aircraft (EP-3E) for the initial JASA modules will provide a mechanism to begin development and operational assessment of the Joint SIGINT Avionics Family (JSAF) components. Coordinated and complementary airborne sensor development across the military Services and the Defense and Intelligence Agencies are being established for inclusion into the JASA.

There are two primary objectives for the Advanced Technology funding: (1) to evaluate the utility and maturity of technology for airborne reconnaissance applications and (2) to reduce the risk of employing emerging technologies in system upgrades, new system acquisitions, or Advanced Concept Technology Demonstrations (ACTDs), by integrating and exercising them in developmental and operational tests. These technologies help satisfy the requirements of the objective architecture set forth in the Integrated Airborne Reconnaissance Strategy (IARS). These technology investments are also identified in the Airborne Reconnaissance Technology Program Plan (ARTPP), published in November 1994. Transition of sensors to AF TARS, and Navy TARPS-CD and SHARP programs has been successful. Congress added funds in FY 2001 to (1) develop and Advanced Focal Plane Array for smaller electro-optical framing size, (2) develop and upgrade the Sensor to and 18 inch lens and integrate an existing dual banned sensor into the TARP pod, and (3) to upgrade the Airborne Reconnaissance System Hyperspectral Module.

**CLASSIFICATION:**

| EXHIBIT R-2a, RDT&E Project Justification | | DATE: **February 2002** |
|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY | PROGRAM ELEMENT NUMBER AND NAME | PROJECT NUMBER AND NAME |
| **RDT&E, N / BA-7** | 0305206N Airborne Reconnaissance Advanced Development (ARAD) | R2476 Framing Reconnaissance Camera |

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:
   (U) ($1.000) Completed flight test program of dual band camera.
   (U) ($ .234) Completed evaluation of dual band camera test results.
   (U) ($ .647) Performed flight demonstration of precision strike capable reconnaissance camera.
   (U) ($4.000) Began development of Hyperspectral Modular upgrades.
   (U) ($4.980) Began development of sensor upgrades.
   (U) ($2.829) Began design of advanced focal plane shutter.

2. FY 2002 PLANS:
   (U) ($1.000) Begin development of JPEG 2000 image decompression boards
   (U) ($0.700) Perform Hyperspectral Target Cueing Demonstration
   (U) ($4.941) Begin EO Framing Camera Upgrades for Precision Strike
   (U) ($2.577) Complete Hyperspectral Modular Upgrades

3. FY 2003 PLANS:
   (U) ($1.500) Complete develolpment of JPEG 2000 Image Decompression Boards
   (U) ($1.000) Perform end-to-end demonstration using JPEG 2000 Boards
   (U) ($0.387) Develp real time data fusion processor

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

| EXHIBIT R-2a, RDT&E Project Justification | | DATE: **February 2002** |
|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY | PROGRAM ELEMENT NUMBER AND NAME | PROJECT NUMBER AND NAME |
| **RDT&E, N / BA-7** | 0305206N Airborne Reconnaissance Advanced Developm | R2476 Framing Reconnaissance Camera |

(U) B. PROGRAM CHANGE SUMMARY:

| | FY2001 | FY2002 | FY2003 |
|---|---|---|---|
| (U) FY 2002 President's Budget: | 13.833 | 0.000 | |
| (U) Adjustments from the President's Budget: | -0.143 | 9.218 | |
| (U) FY2003 President's Budget Submit: | 13.690 | 9.218 | 2.887 |

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY2001 net decrease of $.143 million is due to congressional reductions. The FY2002 net increase of $9.218 million is due to congressional adds of $9.3 million offset by congressional reductions of $.082 million.

(U) Schedule: Changed to address Congressional adds.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

| Line Item No. & Name | FY 2001 | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|
| PE 0305207N, DARP, Special Project Aircraft | 27.443 | 29.335 | 10.649 | 10.939 | 11.41 | 11.589 | 11.764 | 11.764 | 197.157 |

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

| EXHIBIT R-2a, RDT&E Project Justification | | | DATE: **February 2002** |
|---|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY | PROGRAM ELEMENT NUMBER AND NAME | PROJECT NUMBER AND NAME | |
| **RDT&E, N / BA-7** | 0305206N Airborne Reconnaissance Advanced Development | R2476 Framing Reconnaissance Camera | |

(U) D. ACQUISITION STRATEGY: The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.

(U) E. SCHEDULE PROFILE:

| | FY 2001 | FY 2002 | FY2003 | TO COMPLETE |
|---|---|---|---|---|
| (U) Program Milestones | | | | |
| (U) Engineering Milestones | 2Q/01 Completed dual band flight tests<br>3Q/01 Began Precision Strike Flight Test<br>3Q/01 Began development of Hyperspectral Modular Upgrades<br>3Q/01 Began development of sensor upgrades<br>4Q/01 Began design of advanced focal plane shutter<br>4Q/01 Performed Flight demostration of Percision Strike capable of reconnaissance camera | 3Q/02 Begin EO Framing Camera Upgrades for Precision Strike<br>4Q/02 Complete Hyperspectral Modular Upgrades<br>2Q/02 Begin development of JPEG 2000 Image Decompression Boards<br>4Q/02 Perform Hyperspectral target cueing demo. | 3Q/03 Complete Development of JPEG 2000 Boards<br>4Q/03 Demonstrate Autonomous Hyperspectral cueing<br>4Q/03 Develop real-time fusion processor | |
| (U) T&E Milestones | | | | |
| (U) Contract Milestones | | | | |

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

| Exhibit R-3 Cost Analysis (page 1) | | | | | | | | | | | DATE: **February 2002** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY<br>**RDT&E, N / BA-7** | | | PROGRAM ELEMENT<br>0305206N Airborne Reconnaissance Advanced Develop | | | PROJECT NUMBER AND NAME<br>R2476 Framing Reconnaissance Camera | | | | | | | |
| Cost Categories | Contract Method & Type | Performing Activity & Location | Total PY s Cost | FY 01 Cost | FY 01 Award Date | FY 02 Cost | FY 02 Award Date | FY 03 Cost | FY 03 Award Date | Cost to Complete | Total Cost | Target Value of Contract | |
| IR Array | C/CPFF | Recon Opt., Barrington, IL | 1.661 | | | | | | | | 1.661 | 1.661 | |
| Dual Band Camera | C/CPFF | Recon Opt., Barrington, IL | 2.300 | | | | | | | | 2.300 | 2.300 | |
| Long Range Camera | C/CPFF | Recon Opt., Barrington, IL | 2.000 | | | | | | | | 2.000 | 2.000 | |
| Hyperspectral Module | C/CPFF | Recon Opt., Barrington, IL | 1.500 | | | | | | | | 1.500 | 1.500 | |
| Camera for Hyperspectral | C/CPFF | Recon Opt., Barrington, IL | 1.000 | | | | | | | | 1.000 | 1.000 | |
| Visible and SWIR Modules | C/CPFF | ITS, Honolulu, HI | 3.300 | | | | | | | | 3.300 | 3.300 | |
| Precision Strike System | C/CPFF | Recon Opt., Barrington, IL | 1.250 | | | | | | | | 1.250 | 1.250 | |
| Flight Tests | WR | NRL, Wash DC | 0.900 | | | | | | | | 0.900 | 0.900 | |
| Compression board development | C/CPFF | Space Dyn. Lab. Logan, UT | 3.400 | | | | | | | | 3.400 | 3.400 | |
| Precision Strike camera | C/CPFF | Recon Opt., Barrington, IL | 1.290 | | | | | | | | 1.290 | 1.290 | |
| Dual Band Camera | C/CPFF | Recon Opt., Barrington, IL | 4.038 | | | | | | | | 4.038 | 4.038 | |
| 100 Megapixel Camera Test | C/CPFF | Recon Opt., Barrington, IL | 4.513 | | | | | | | | 4.513 | 4.513 | |
| Hyperspectral Modular Upgrades | CPFF | Recon Opt., Barrington, IL | | 4.000 | | | | | | | 4.000 | 4.000 | |
| Development Upgrade Integrate Sensor | CPFF | Recon Opt., Barrington, IL | | 4.980 | | 2.577 | 02/02 | | | | 7.557 | 7.557 | |
| Develop advanced focal plane shutter | WR | MIT Lincoln Lab, Bedford MA | | 2.829 | | | | | | | 2.829 | 2.829 | |
| Hyperspectral Target Cueing Demo | CPFF | Recon Opt., Barrington, IL | | | | 0.700 | 02/02 | | | | 0.700 | 0.700 | |
| EO Framing Camera Upgrades | CPFF | Recon Opt., Barrington, IL | | | | 4.941 | 05/02 | | | | 4.941 | 4.941 | |
| Decompression Board Development | CPFF | Space Dyn. Lab. Logan, UT | | | | 1.000 | 02/02 | 1.500 | 10/02 | | 2.500 | 2.500 | |
| Real Time Data Fusion Processor | TBD | TBD | | | | | | 0.387 | 10/02 | | 0.387 | 0.387 | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Subtotal Product Development | | | 27.152 | 11.809 | | 9.218 | | 1.887 | | | 50.066 | 50.066 | |

Remarks:

R-1 SHOPPING LIST - Item No. 209

**CLASSIFICATION:**

| Exhibit R-3 Cost Analysis (page 2) | | | | | | | | DATE: **February 2002** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY<br>**RDT&E, N / BA-7** | | | PROGRAM ELEMENT<br>0305206N Airborne Reconnaissance Advanced Develop | | | PROJECT NUMBER AND NAME<br>R2476 Framing Reconnaissance Camera | | | | | | |
| Cost Categories | Contract Method & Type | Performing Activity & Location | Total PY s Cost | FY 01 Cost | FY 01 Award Date | FY 02 Cost | FY 02 Award Date | FY 03 Cost | FY 03 Award Date | Cost to Complete | Total Cost | Target Value of Contract |
| Camera test support | C/CPFF | Various | 0.172 | | | | | | | 2.904 | 3.076 | 3.076 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Subtotal T&E | | | 0.172 | | | | | | | 2.904 | 3.076 | |
| Remarks: | | | | | | | | | | | | |
| Contractor Engineering Support | C/CPFF | Various | 1.400 | 1.417 | 11/00 | | | 1.000 | 10/02 | | 3.817 | 3.817 |
| Systems Support | WR | NRL, Wash, DC | 0.400 | 0.464 | | | | | | | 0.864 | 0.864 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Subtotal Management | | | 1.800 | 1.881 | | | | 1.000 | | | 4.681 | |
| Remarks: | | | | | | | | | | | | |
| Total Cost | | | 29.124 | 13.690 | | 9.218 | | 2.887 | | | 54.919 | |
| Remarks: This program has no support costs. | | | | | | | | | | | | |

R-1 SHOPPING LIST - Item No. 209