

UNCLASSIFIED

PE NUMBER: 0207451F

PE TITLE: Single Integrated Air Picture (SIAP)

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| Exhibit R-2, RDT&E Budget Item Justification | DATE February 2007 |
|---|-------------------------------------|

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| BUDGET ACTIVITY 05 System Development and Demonstration (SDD) | PE NUMBER AND TITLE 0207451F Single Integrated Air Picture (SIAP) |
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| Cost (\$ in Millions) | FY 2006 Actual | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | FY 2010 Estimate | FY 2011 Estimate | FY 2012 Estimate | FY 2013 Estimate | Cost to Complete | Total |
|---|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------|
| Total Program Element (PE) Cost | 0.000 | 39.973 | 4.976 | 5.067 | 5.076 | 5.068 | 5.056 | 5.048 | 0.000 | 0.000 |
| 5232 Single Integrated Air Picture (SIAP) | 0.000 | 39.973 | 4.976 | 5.067 | 5.076 | 5.068 | 5.056 | 5.048 | 0.000 | 0.000 |

In FY07, this is a new PE. All Single Integrated Air Picture (SIAP) funds from PE 0207443F Project 5187 and PE 0207434F Project 5050 were transferred to consolidate Air Force SIAP funds.

(U) A. Mission Description and Budget Item Justification

The Single Integrated Air Picture (SIAP), consists of common, continual and unambiguous tracks of airborne objects of interest in the surveillance area. SIAP is derived from real-time and near real-time data and consists of correlated air object tracks and associated information. SIAP systems integration efforts include, but are not limited to: defining the SIAP Platform Independent Model (PIM) functionality, the required SIAP architecture, and the integration methodology for AF Command and Control weapons systems.

SIAP consists of the development and implementation of a software Model Driven Architecture (MDA) known as the Integrated Architecture Behavioral Model (IABM). The MDA approach will provide enhanced interoperability by implementing Joint Battle Management Command and Control (JBMC2) functionality in weapon systems, thus enabling more accurate situational awareness and reduced fratricide. Beginning in FY08, the SIAP funding in PE 0207451F will only be able to provide subject matter experts to assist and advise SIAP Joint Program Office.

The Air Force is applying expertise in the various AF weapon System Program Offices (SPOs) to assist with defining the SIAP Platform Independent Model (PIM) and the SIAP Platform Specific Model (PSM) functionality, the required SIAP architecture, and the integration methodology for AF weapon systems. This effort funds AF-specific, SIAP-related engineering efforts. Also, the Air Force has staff that works directly with the Joint SIAP Program Office to help define and develop the functional content of the SIAP PIM.

These activities are in Budget Activity 5 (System Development and Demonstration) because they support development, integration solutions, fielding, operational support activities, and special projects.

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0207451F Single Integrated Air Picture (SIAP)

(U) **B. Program Change Summary (\$ in Millions)**

| | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
|--------------------------------------|----------------|----------------|----------------|----------------|
| (U) Previous President's Budget | 0.000 | 40.124 | 13.162 | 0.102 |
| (U) Current PBR/President's Budget | 0.000 | 39.973 | 4.976 | 5.067 |
| (U) Total Adjustments | 0.000 | | | |
| (U) Congressional Program Reductions | 0.000 | | | |
| Congressional Rescissions | 0.000 | -0.151 | | |
| Congressional Increases | 0.000 | | | |
| Reprogrammings | 0.000 | | | |
| SBIR/STTR Transfer | 0.000 | | | |

(U) **Significant Program Changes:**

In FY07, this is a new PE. All Single Integrated Air Picture (SIAP) funds from PE 0207443F Project 5187 and PE 0207434F Project 5050 were transferred to consolidate Air Force SIAP funds. The FY07 funding supports the work necessary to support the development and test of the joint product. Beginning in FY08 funding will be used to support the Joint SIAP Program Office to reduce risk until the Air Force AWACS and BCS-F programs are ready to integrate the PSM functionality. FY08-FY13 funding levels were adjusted to synchronize with the needs of the AWACS and BCS-F programs.

Exhibit R-2a, RDT&E Project Justification

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| BUDGET ACTIVITY 05 System Development and Demonstration (SDD) | | | | PE NUMBER AND TITLE 0207451F Single Integrated Air Picture (SIAP) | | | PROJECT NUMBER AND TITLE 5232 Single Integrated Air Picture (SIAP) | | | |
| Cost (\$ in Millions) | FY 2006 Actual | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | FY 2010 Estimate | FY 2011 Estimate | FY 2012 Estimate | FY 2013 Estimate | Cost to Complete | Total |
| 5232 Single Integrated Air Picture (SIAP) | 0.000 | 39.973 | 4.976 | 5.067 | 5.076 | 5.068 | 5.056 | 5.048 | 0.000 | 0.000 |
| Quantity of RDT&E Articles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

In FY07 this is a new PE. All Single Integrated Air Picture (funds) from PE 0207443F Project 5187 and PE 0207434F Project 5050 were transferred to consolidate Air Force SIAP funds.

(U) A. Mission Description and Budget Item Justification

The Single Integrated Air Picture (SIAP), consists of common, continual and unambiguous tracks of airborne objects of interest in the surveillance area. SIAP is derived from real-time and near real-time data and consists of correlated air object tracks and associated information. SIAP systems integration efforts include, but are not limited to: defining the SIAP Platform Independent Model (PIM) functionality, the required SIAP architecture, and the integration methodology for AF Command and Control weapons systems.

SIAP consists of the development and implementation of a software Model Driven Architecture (MDA) known as the Integrated Architecture Behavioral Model (IABM). The MDA approach will provide enhanced interoperability by implementing Joint Battle Management Command and Control (JBMC2) functionality in weapon systems, thus enabling more accurate situational awareness and reduced fratricide. Beginning in FY08, the SIAP funding in PE 0207451F will only be able to provide subject matter experts to assist and advise SIAP Joint Program Office.

The Air Force is applying expertise in the various AF weapon System Program Offices (SPOs) to assist with defining the SIAP Platform Independent Model (PIM) and the SIAP Platform Specific Model (PSM) functionality, the required SIAP architecture, and the integration methodology for AF weapon systems. This effort funds AF-specific, SIAP-related engineering efforts. Also, the Air Force has staff that works directly with the Joint SIAP Program Office to help define and develop the functional content of the SIAP PIM.

These activities are in Budget Activity 5 (System Development and Demonstration) because they support development, integration solutions, fielding, operational support activities, and special projects.

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|---|----------------|----------------|----------------|----------------|
| (U) B. Accomplishments/Planned Program (\$ in Millions) | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
| (U) MDA PSM Development (AWACS 40/45) | | 6.000 | | |
| (U) MDA Integration and Implementation (BCS-F) | | 14.378 | | |
| (U) MDA Demonstration | | 4.000 | | |
| (U) Integration Resource Center (IABM Dev & Risk Reduction/MDA Tools Development) | | 4.500 | 1.461 | 1.500 |
| (U) MDA Verification and Validation (IABM Development Risk Reduction) | | 4.012 | | |
| (U) Engineering Support | | 7.083 | 3.515 | 3.567 |
| (U) Total Cost | 0.000 | 39.973 | 4.976 | 5.067 |

Exhibit R-2a, RDT&E Project Justification

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(U) **C. Other Program Funding Summary (\$ in Millions)**

| | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>Cost to</u> | <u>Total Cost</u> |
|------------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| | <u>Actual</u> | <u>Estimate</u> | <u>Complete</u> | |
| (U) RDT&E 27434F | 39.600 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | | Continuing | TBD |

(U) **D. Acquisition Strategy**

The Air Force SIAP System Program Office (SPO) provides for common development and integration across multiple Air Force platforms via existing contract mechanisms.

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Exhibit R-3, RDT&E Project Cost Analysis

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| (U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions) | <u>Contract Method & Type</u> | <u>Performing Activity & Location</u> | <u>Total Prior to FY 2006 Cost</u> | <u>FY 2006</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2008</u> | <u>FY 2009</u> | <u>FY 2009</u> | <u>Cost to Complete</u> | <u>Total Cost</u> | <u>Target Value of Contract</u> |
|--|-----------------------------------|---|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|---------------------------------|
| | | | | <u>Cost</u> | <u>Award</u> | <u>Cost</u> | <u>Award</u> | <u>Cost</u> | <u>Award</u> | <u>Cost</u> | <u>Award</u> | | | |
| (U) <u>Product Development</u> | | | | | | | | | | | | | | |
| Integration Resource Center (IABM Dev & Risk Reduction/MDA Tools Development) | CPFF | BAE Systems Inc, Arlington VA | | | | 4.500 | Dec-06 | 1.461 | Nov-07 | 1.500 | Nov-08 | Continuing | TBD | TBD |
| MDA PSM Development (AWACS 40/45) | CPIF | Boeing Co., Seattle WA | | | | 6.000 | Dec-06 | | | | | Continuing | TBD | TBD |
| MDA Integration and Implementation (BCS-F) | CPIF | Thales-Raytheon Systems, Fullerton CA | | | | 14.378 | Dec-06 | | | | | Continuing | TBD | TBD |
| Subtotal Product Development | | | 0.000 | 0.000 | | 24.878 | | 1.461 | | 1.500 | | Continuing | TBD | TBD |
| Remarks: | | | | | | | | | | | | | | |
| (U) <u>Support</u> | | | | | | | | | | | | | | |
| ESC Engineering Support | CP/FFFP | Titan Corp, Odyssey Consulting Group, BTAS Inc, MITRE | | | | 7.083 | Oct-06 | 3.515 | Oct-07 | 3.567 | Oct-08 | Continuing | TBD | TBD |
| Subtotal Support | | | 0.000 | 0.000 | | 7.083 | | 3.515 | | 3.567 | | Continuing | TBD | TBD |
| Remarks: | | | | | | | | | | | | | | |
| (U) <u>Test & Evaluation</u> | | | | | | | | | | | | | | |
| MDA Demonstration | TBD | TBD | | | | 4.000 | Jan-07 | | | | | Continuing | TBD | TBD |
| MDA Verification and Validation (IABM Development and Risk Reduction) | TBD | TBD | | | | 4.012 | Jan-07 | | | | | Continuing | TBD | TBD |
| Subtotal Test & Evaluation | | | 0.000 | 0.000 | | 8.012 | | 0.000 | | 0.000 | | Continuing | TBD | TBD |
| Remarks: | | | | | | | | | | | | | | |
| (U) <u>Management</u> | | | | | | | | | | | | | | |
| Subtotal Management | | | 0.000 | 0.000 | | 0.000 | | 0.000 | | 0.000 | | 0.000 | 0.000 | 0.000 |
| Remarks: | | | | | | | | | | | | | | |
| (U) Total Cost | | | 0.000 | 0.000 | | 39.973 | | 4.976 | | 5.067 | | Continuing | TBD | TBD |

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

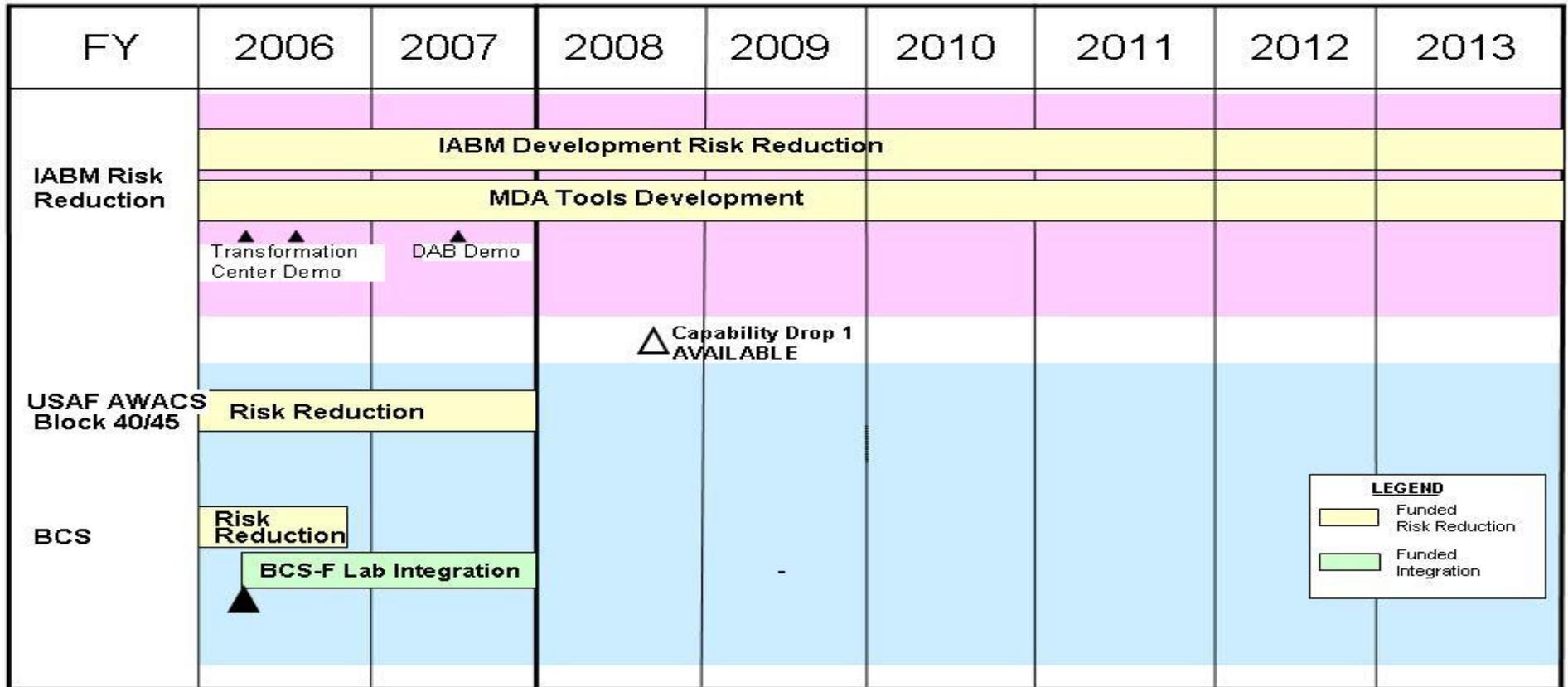
05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

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PROJECT NUMBER AND TITLE

5232 Single Integrated Air Picture (SIAP)



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| Exhibit R-4a, RDT&E Schedule Detail | DATE February 2007 |
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| (U) <u>Schedule Profile</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
|--|----------------|----------------|----------------|----------------|
| (U) MDA Tools Development (Software Integration Tools) | 1-4Q | 1-4Q | 1-4Q | 1-4Q |
| (U) Demonstration | 2-3Q | 3Q | | |
| (U) AWACS Risk Reduction | 1-4Q | 1-4Q | | |
| (U) BCS Risk Reduction | 1-3Q | | | |
| (U) BCS IABM Integration | 2-4Q | 1-4Q | | |