

UNCLASSIFIED

PE NUMBER: 0604731F

PE TITLE: Joint Unmanned Combat Air System (J-UCAS)

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| Exhibit R-2, RDT&E Budget Item Justification | DATE February 2004 |
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| BUDGET ACTIVITY 05 System Development and Demonstration (SDD) | PE NUMBER AND TITLE 0604731F Joint Unmanned Combat Air System (J-UCAS) |
|--|---|

| Cost (\$ in Millions) | FY 2003 Actual | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | Cost to Complete | Total |
|---|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------|
| Total Program Element (PE) Cost | 37.541 | 174.449 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | TBD |
| 5058 Unmanned Combat Air Vehicle (UCAV) | 37.541 | 174.449 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | TBD |

Note: FY04 program guidance established the Joint Unmanned Combat Air Systems (J-UCAS) Program Office and funding for both Air Force and Navy programs. Efforts previously conducted under the DARPA/Air Force Unmanned Combat Air Vehicle (UCAV) program and the DARPA/Navy Naval UCAV (UCAV-N) program have been combined into the J-UCAS program. FY05 program guidance directed FY05 and outyear funding for DARPA and both Services be transferred into a Defense-wide Program Element. A technical adjustment is currently being processed and will move BA05 funding into BA04 in FY04.

(U) A. Mission Description and Budget Item Justification

The Joint Unmanned Combat Air Systems (J-UCAS) program is a joint DARPA, Air Force, and Navy effort to develop and demonstrate unmanned combat capabilities for high-threat Suppression of Enemy of Air Defense (SEAD); Intelligence, Surveillance, and Reconnaissance (ISR); Electronic Attack (EA); and related strike missions within the emerging global command and control architecture.

The J-UCAS program combines the efforts that were previously conducted under the DARPA/Air Force Unmanned Combat Air Vehicle (UCAV) program and the DARPA/Navy Naval UCAV (UCAV-N) program. Although these efforts were targeted towards service-specific needs, the Department recognized the potential for significant synergy by combining the programs. The accomplishments and ongoing efforts of the X-45A technology demonstrator, as well as the development of the X-47A demonstrator, will reduce the risk of the system being developed for the operational assessment. The J-UCAS concept incorporates the Boeing X-45C/CN and Northrop Grumman X-47B air vehicles, together with a common architecture and subsystems (e.g. sensors, communications, and command & control software). These common system elements will maximize system flexibility and operational versatility, while reducing overall costs and maintaining schedule toward an Early Operational Assessment planned for the FY07-09 timeframe.

The J-UCAS Office integrates DARPA, Air Force, and Navy personnel, operating in close coordination with Service users and other components. The program is focused on achieving an Early Operational Assessment that supports both Services and enables an operational system development decision by the end of the decade.

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2004

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604731F Joint Unmanned Combat Air System (J-UCAS)

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

| | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> |
|--------------------------------------|----------------|----------------|----------------|
| (U) Previous President's Budget | 39.127 | 175.944 | 423.447 |
| (U) Current PBR/President's Budget | 37.541 | 174.449 | 0.000 |
| (U) Total Adjustments | -1.586 | -1.495 | |
| (U) Congressional Program Reductions | | | |
| Congressional Rescissions | -1.586 | -1.495 | |
| Congressional Increases | | | |
| Reprogrammings | | | |
| SBIR/STTR Transfer | | | |

(U) **Significant Program Changes:**

Note: FY04 program guidance established the Joint Unmanned Combat Air Systems (J-UCAS) Program Office and funding for both Air Force and Navy programs. Efforts previously conducted under the DARPA/Air Force Unmanned Combat Air Vehicle (UCAV) program and the DARPA/Navy Naval UCAV (UCAV-N) program have been combined into the J-UCAS program. FY05 program guidance directed FY05 and outyear funding for DARPA and both Services be transferred into a Defense-wide Program Element. The Program is being restructured and future spirals are being defined.

Exhibit R-2a, RDT&E Project Justification

DATE
February 2004

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|---|----------------|------------------|------------------|--|------------------|------------------|--|------------------|-------|
| BUDGET ACTIVITY 05 System Development and Demonstration (SDD) | | | | PE NUMBER AND TITLE 0604731F Joint Unmanned Combat Air System (J-UCAS) | | | PROJECT NUMBER AND TITLE 5058 Unmanned Combat Air Vehicle (UCAV) | | |
| Cost (\$ in Millions) | FY 2003 Actual | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | Cost to Complete | Total |
| 5058 Unmanned Combat Air Vehicle (UCAV) | 37.541 | 174.449 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | TBD |
| Quantity of RDT&E Articles | 0 | 0 | 0 | 1 | 0 | 0 | 0 | | |

Note: FY04 program guidance established the Joint Unmanned Combat Air Systems (J-UCAS) Program Office and funding for both Air Force and Navy programs. Efforts previously conducted under the DARPA/Air Force Unmanned Combat Air Vehicle (UCAV) program and the DARPA/Navy Naval UCAV (UCAV-N) program have been combined into the J-UCAS program. FY05 program guidance directed FY05 and outyear funding for DARPA and both Services be transferred into a Defense-wide Program Element. A technical adjustment is currently being processed and will move BA05 funding into BA04 in FY04.

(U) A. Mission Description and Budget Item Justification

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The J-UCAS program combines the efforts that were previously conducted under the DARPA/Air Force Unmanned Combat Air Vehicle (UCAV) program and the DARPA/Navy Naval UCAV (UCAV-N) program. Although these efforts were targeted towards service-specific needs, the Department recognized the potential for significant synergy by combining the programs. The accomplishments and ongoing efforts of the X-45A technology demonstrator, as well as the development of the X-47A demonstrator, will reduce the risk of the system being developed for the operational assessment. The J-UCAS concept incorporates the Boeing X-45C/CN and Northrop Grumman X-47B air vehicles, together with a common architecture and subsystems (e.g. sensors, communications, and command & control software). These common system elements will maximize system flexibility and operational versatility, while reducing overall costs and maintaining schedule toward an Early Operational Assessment planned for the FY07-09 timeframe.

The J-UCAS Office integrates DARPA, Air Force, and Navy personnel, operating in close coordination with Service users and other components. The program is focused on achieving an Early Operational Assessment that supports both Services and enables an operational system development decision by the end of the decade.

(U) B. Accomplishments/Planned Program (\$ in Millions)

| | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> |
|--|----------------|----------------|----------------|
| (U) Accomplishments/Planned Program | 0.000 | 0.000 | |
| (U) Continuation of Spiral 0 and Spiral 1 of the Unmanned Combat Air Vehicle (UCAV) System Demonstration Program | 33.495 | | |
| - Design and initial component fabrication of the UCAV demonstrator air vehicle and mission control system | | | |
| - Development/integration of the UCAV demonstrator's advanced avionics and communications | | | |
| - Requirements definition and development of advanced system software | | | |
| (U) Other Government Cost | 4.046 | | |
| - Mission Support of the SPO; travel, computer costs, misc contracts, etc. | | | |

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| Exhibit R-2a, RDT&E Project Justification | DATE February 2004 |
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| BUDGET ACTIVITY 05 System Development and Demonstration (SDD) | PE NUMBER AND TITLE 0604731F Joint Unmanned Combat Air System (J-UCAS) | PROJECT NUMBER AND TITLE 5058 Unmanned Combat Air Vehicle (UCAV) |
|--|---|---|

| | | | |
|---|---------|---------|-------|
| (U) Continuation of Joint Unmanned Combat Air System (J-UCAS) Demonstration Program | 155.072 | | |
| - Continue design and component fabrication of the J-UCAS demonstrator air vehicle and mission control system | | | |
| - Continue development/integration of the J-UCAS demonstrator's advanced avionics and communications | | | |
| - Continue development of advanced system software | | | |
| (U) Early Operational Assessment System planning and design (formerly referred to as Spiral 2) | 13.380 | | |
| (U) Other Government Cost | 5.997 | | |
| - Mission Support of the SPO, travel, computer costs, misc contracts, test, etc. | | | |
| (U) Total Cost | 37.541 | 174.449 | 0.000 |

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

| | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | <u>Cost to Complete</u> | <u>Total Cost</u> |
|---------------------------------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------------|-------------------|
| | <u>Actual</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | | |
| (U) AF S&T (PE0603333F) | 17.608 | | | | | | | | |
| (U) DARPA (PE0603765E) | 0.000 | | | | | | | | |
| (U) DARPA (PE0603285E) | 59.492 | 38.385 | 0.000 | | | | | | |
| (U) AF (PE0207256F) | 0.000 | 2.372 | 2.911 | 2.865 | 2.860 | 0.000 | 0.396 | | TBD |
| (U) Navy RDT&E (PE0603114N) | 0.000 | 117.865 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | TBD |
| (U) Navy RDT&E (PE0604731N) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | TBD |
| (U) Navy RDT&E (PE0603111N) | 0.000 | 2.350 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | TBD |
| (U) Aircraft Procurement (PE0207255F) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.377 | 1.537 | | TBD |
| (U) Defense-wide RDT&E (PE0603400D8Z) | 0.000 | 0.000 | 285.000 | 77.900 | 0.000 | 0.000 | 0.000 | | TBD |
| (U) Defense-wide RDT&E (PE0604400D8Z) | 0.000 | 0.000 | 423.447 | 668.356 | 380.800 | 1044.000 | 985.000 | Continuing | TBD |

Note: FY04 Navy funding in PE's 0604730N and 0604731N has been transferred into PE 0603114N.

(U) D. Acquisition Strategy

Near-term acquisition strategy is to continue the UCAV System Demonstration Program effort under the current DARPA/Air Force Other Transactions Authority (OTA) contract with Boeing Phantom Works, St. Louis, MO. The Spiral 1 option in the OTA was exercised by DARPA in August 2002 and will take the program through the 3rd quarter of FY07.

J-UCAS is a joint program that will demonstrate unmanned combat capabilities for high-threat Suppression of Enemy of Air Defense (SEAD); Intelligence, Surveillance, and Reconnaissance (ISR); Electronic Attack (EA); and related strike missions within the emerging global command and control architecture.

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| Exhibit R-3, RDT&E Project Cost Analysis | | | | | | | | | | DATE February 2004 | | |
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| BUDGET ACTIVITY 05 System Development and Demonstration (SDD) | | | | | PE NUMBER AND TITLE 0604731F Joint Unmanned Combat Air System (J-UCAS) | | | | PROJECT NUMBER AND TITLE 5058 Unmanned Combat Air Vehicle (UCAV) | | | |
| (U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions) | <u>Contract Method & Type</u> | <u>Performing Activity & Location</u> | <u>Total</u> <u>Prior to FY</u> <u>2003</u> <u>Cost</u> | <u>FY</u> <u>2003</u> <u>Cost</u> | <u>FY</u> <u>2003</u> <u>Award</u> <u>Date</u> | <u>FY</u> <u>2004</u> <u>Cost</u> | <u>FY</u> <u>2004</u> <u>Award</u> <u>Date</u> | <u>FY</u> <u>2005</u> <u>Cost</u> | <u>FY</u> <u>2005</u> <u>Award</u> <u>Date</u> | <u>Cost to Complete</u> | <u>Total</u> <u>Cost</u> | <u>Target</u> <u>Value of</u> <u>Contract</u> |
| (U) <u>Product Development</u> Boeing Phantom Works, St. Louis, MO. | Section 845, Other Transactions Authority (OTA) Agreement | Boeing Phantom Works, St. Louis, MO. | | 33.495 | Jan-03 | 168.452 | Dec-04 | | | Continuing | TBD | TBD |
| Subtotal Product Development Remarks: | | | 0.000 | 33.495 | | 168.452 | | 0.000 | | Continuing | TBD | TBD |
| (U) <u>Support</u> Various | | | | 4.046 | | 5.997 | | | | Continuing | TBD | |
| Subtotal Support Remarks: | | | 0.000 | 4.046 | | 5.997 | | 0.000 | | Continuing | TBD | 0.000 |
| (U) <u>Test & Evaluation</u> Subtotal Test & Evaluation Remarks: | | | 0.000 | 0.000 | | 0.000 | | 0.000 | | | 0.000 | 0.000 |
| (U) <u>Management</u> Subtotal Management Remarks: | | | 0.000 | 0.000 | | 0.000 | | 0.000 | | | 0.000 | 0.000 |
| (U) Total Cost | | | 0.000 | 37.541 | | 174.449 | | 0.000 | | Continuing | TBD | TBD |

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2004

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

**0604731F Joint Unmanned Combat
Air System (J-UCAS)**

PROJECT NUMBER AND TITLE

**5058 Unmanned Combat Air Vehicle
(UCAV)**

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| Exhibit R-4a, RDT&E Schedule Detail | | DATE February 2004 |
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| BUDGET ACTIVITY 05 System Development and Demonstration (SDD) | PE NUMBER AND TITLE 0604731F Joint Unmanned Combat Air System (J-UCAS) | PROJECT NUMBER AND TITLE 5058 Unmanned Combat Air Vehicle (UCAV) |
|---|--|--|

| (U) <u>Schedule Profile</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> |
|--------------------------------------|----------------|----------------|----------------|
| (U) Conduct Spiral 1 Mid-Term Review | | 1Q | |
| (U) Spiral 1 Final Design Review | | 3Q | |
| (U) X-45C Fabrication Start | | 3Q | |