

UNCLASSIFIED

| RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)           |                   |                     |                     |                     |  |                     |                     |                     | DATE<br><b>February 2003</b> |            |
|---|-------------------|---------------------|---------------------|---------------------|--|---------------------|---------------------|---------------------|------------------------------|------------|
| BUDGET ACTIVITY<br><b>07 - Operational System Development</b> |                   |                     |                     |                     | PE NUMBER AND TITLE<br><b>0207581F JOINT STARS</b> |                     |                     |                     |                              |            |
| COST (\$ in Thousands)  | FY 2002<br>Actual | FY 2003<br>Estimate | FY 2004<br>Estimate | FY 2005<br>Estimate | FY 2006<br>Estimate                                | FY 2007<br>Estimate | FY 2008<br>Estimate | FY 2009<br>Estimate | Cost to<br>Complete          | Total Cost |
| Total Program Element (PE) Cost                               | 147,682           | 60,317              | 58,431              | 89,481              | 128,765  | 79,524              | 71,874              | 59,290              | Continuing                   | TBD        |
| 0003 JSTARS   | 74,512            | 60,317              | 58,431              | 89,481              | 128,765  | 79,524              | 71,874              | 59,290              | Continuing                   | TBD        |
| 4995 Multi-Platform RTIP                                      | 73,170            | 0                   | 0                   | 0                   | 0  | 0                   | 0                   | 0                   | Continuing                   | TBD        |
| Quantity of RDT&E Articles                                    | 0                 | 0                   | 0                   | 0                   | 0  | 0                   | 0                   | 0                   | 0                            | 0          |

(U) **A. Mission Description**  
This program element funds the Joint Surveillance Target Attack Radar System (Joint STARS).

The Joint STARS program produces the world's premier airborne ground surveillance platform, to meet both Air Force and Army requirements. The 707-based E-8C Joint STARS aircraft provides near-real-time surveillance and targeting information on moving and stationary targets, slowly moving rotary- and fixed-wing aircraft, and rotating antennae. Joint STARS provides target information for pairing direct attack aircraft and standoff weapons against selected targets. The system is capable of being cued by other reconnaissance, surveillance, and target acquisition systems and is able to respond rapidly to worldwide contingencies. This capability enables commanders to effectively make and execute battle decisions.

Until FY03, this program element also funded the Multi-Platform Radar Technology Insertion Program (MP-RTIP). Beginning in FY03, MP-RTIP funding is identified under PE 27449F.

(U) **B. Budget Activity Justification**  
This program is in Budget Activity 7, Operational Systems Development, due to efforts supporting a fielded, post MS III operational weapon system. These funds are required to meet the requirements, capabilities and efforts further defined in the 'Mission Description' section of the following R-2A.

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## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207581F JOINT STARS**(U) **C. Program Change Summary (\$ in Thousands)**

|   | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>Total Cost</u> |
|---|----------------|----------------|----------------|-------------------|
| (U) Previous President's Budget                   | 152,728        | 55,515         | 112,207        | TBD               |
| (U) Appropriated Value                            | 155,359        | 55,515         |                |                   |
| (U) Adjustments to Appropriated Value             |                |                |                |                   |
| a. Congressional/General Reductions               | -2,631         | -561           |                |                   |
| b. Small Business Innovative Research             | -4,244         |                |                |                   |
| c. Omnibus or Other Above Threshold Reprogram     |                | -548           |                |                   |
| d. Below Threshold Reprogram                      | -79            |                |                |                   |
| e. Rescissions                                    | -723           | -89            |                |                   |
| (U) Adjustments to Budget Years Since FY 2003 PBR |                | 6,000          | -53,776        | TBD               |
| (U) Current Budget Submit/FY 2004 PBR             | 147,682        | 60,317         | 58,431         | TBD               |

(U) **Significant Program Changes:**

FY04: GATM and Attack Support Upgrade (ASU) shifted one year to the right to support higher AF priorities. Also, the majority of ASU funding was transferred to the centrally controlled Tactical Datalink program element (#0207448F).

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| RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)   |                   |                     |                     |                     |  |                     |                            |                     | DATE<br><b>February 2003</b> |                        |  |
|--|-------------------|---------------------|---------------------|---------------------|--|---------------------|----------------------------|---------------------|------------------------------|------------------------|--|
| BUDGET ACTIVITY<br><b>07 - Operational System Development</b>  |                   |                     |                     |                     | PE NUMBER AND TITLE<br><b>0207581F JOINT STARS</b> |                     |                            |                     |                              | PROJECT<br><b>0003</b> |  |
| COST (\$ in Thousands)   | FY 2002<br>Actual | FY 2003<br>Estimate | FY 2004<br>Estimate | FY 2005<br>Estimate | FY 2006<br>Estimate                                | FY 2007<br>Estimate | FY 2008<br>Estimate        | FY 2009<br>Estimate | Cost to<br>Complete          | Total Cost             |  |
| 0003     JSTARS  | 74,512            | 60,317              | 58,431              | 89,481              | 128,765  | 79,524              | 71,874                     | 59,290              | Continuing                   | TBD                    |  |
| <p>In FY2003 the Air Force established a program element for the Multi-Platform Radar Technology Insertion Program (MP-RTIP). Effective with FY03 funding, MP-RTIP efforts was transferred to PE 27449F, Multi-Sensor Command &amp; Control Constellation, from PE 27581F Joint STARS, BPAC 674995.</p> <p>(U) <b><u>A. Mission Description</u></b></p> <p>The Joint Surveillance Target Attack Radar System (Joint STARS) program produces the world's premier airborne ground surveillance platform, to meet both Air Force and Army requirements. The 707-based E-8C Joint STARS aircraft provides near-real-time surveillance and targeting information on moving and stationary ground targets, slowly moving rotary and fixed wing aircraft, and rotating antennae. Joint STARS provides target information for pairing direct attack aircraft and standoff weapons against selected targets. The system is capable of being cued by other reconnaissance, surveillance, and target acquisition systems and is able to respond rapidly to worldwide contingencies. This capability enables commanders to effectively make and execute battle decisions.</p> <p>The program enhances the warfighter's capability to achieve the Global Strike Task Force vision. It develops advanced battle management aids and information fusion to enable rapid decisions in tracking and killing time critical targets and achieving a predictive battlespace awareness environment. Concept exploration, program definition/risk reduction efforts, and various studies support continuous improvements in C2ISR capabilities. These efforts include, but are not limited to, manned and unmanned platforms, space data links and advanced BMC3 concepts. They also include ISR Constellation, Air Moving Target Indicator (AMTI), Ground Moving Target Indicator (GMTI) and other large airborne platform integration efforts, which will provide greater mission capability, higher mission reliability, and maximum aircraft availability.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$14,446     Continue Training &amp; Support Systems Development (Support &amp; Training System [STS] Phase I)</p> <p>(U) \$20,795     Continue SATCOM, Connectivity, Attack Support Upgrade (ASU) efforts, etc.</p> <p>(U) \$27,053     Continue test efforts (for example: Joint Test Force (JTF), JSTARS Extended Test Support (JETS) contract, range support, support of T-3 test aircraft, and test labs)</p> <p>(U) \$5,599     Reduced Vertical Separation Minimum (RVSM)</p> <p>(U) \$3,742     Indirect SPO Operations support</p> <p>(U) \$2,877     Kill Chain/Spiral Development (for example: Air Tasking Order (ATO) Parser, Protection Level 2 (PL2), Network-Centric Collaborative Targeting (NCCT), Advanced Development activities, etc.)</p> <p>(U) \$74,512     Total</p> |                   |                     |                     |                     |  |                     |                            |                     |                              |                        |  |
| Project 0003   |                   |                     | Page 3 of 13 Pages  |                     |  |                     | Exhibit R-2A (PE 0207581F) |                     |                              |                        |  |

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## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

**07 - Operational System Development****0207581F JOINT STARS****0003**(U) **A. Mission Description Continued**(U) **FY 2003 (\$ in Thousands)**

(U) \$15,881 Complete SATCOM EMD effort, Continue ASU support, connectivity efforts, etc.

(U) \$28,067 Continue test effort (for example: JTF, JETS, range support, support of T-3 and test labs)

(U) \$1,209 Kill Chain Enhancements/Spiral Development (for example: PL2, NCCT, special studies, advanced development activities, etc.).

(U) \$5,640 Airborne Battlefield Command & Control Center (ABCCC) migration to Joint STARS

(U) \$3,520 Indirect SPO Operations support

(U) \$3,500 Joint Services Work Station (JSWS) (Congressional add)

(U) \$2,500 Global Air Traffic Management (GATM) (Congressional add)

(U) \$60,317 Total

(U) **FY 2004 (\$ in Thousands)**

(U) \$7,900 Continue Training & Support Systems development (STS Phase II)

(U) \$50 Continue ASU support, connectivity efforts, etc. (completion will defer until ASU Phase II in FY05)

(U) \$37,180 Continue test effort (for example: JTF, JETS, range support, support of T-3, test labs, and T-3 Wing Structure Improvement Program)

(U) \$3,136 Indirect SPO Operations support

(U) \$766 GATM contract preparation efforts

(U) \$8,100 Continue ABCCC migration to Joint STARS

(U) \$1,299 Continue Kill Chain/Spiral Development (for example: PL2, NCCT, special studies, advanced development activities, Advanced Radar Modes, Automatic Target Recognition, Improved Tracking Tools, etc.).

(U) \$58,431 Total

(U) **B. Project Change Summary**

This program is in Budget Activity 7 - Operational System Development. Initial operational capability was achieved in Dec 97. Developmental work continues on advanced planning activities and systems upgrades, as well as systems integration and interoperability efforts.

- Attack Support Upgrade will enable JSTARS to datalink targeting data directly to attack fighters via Link 16
- STS Phase I developed and delivered a new training simulator in the new Block 20 configuration
- STS Phase II will develop a Block 20 upgrade for the original training simulator
- WSIP accounts for FY04 increase in test cost. It is a one-time wing structure upgrade of the dedicated test aircraft. The whole fleet will receive the same mod.
- ABCCC refers to the retirement of the EC-130E ABCCC fleet and the transfer of 10 ABCCC functions to JSTARS--the required modifications are mission management software and an additional satcom radio

Project 0003

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## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

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BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207581F JOINT STARS**

PROJECT

**0003****(U) C. Other Program Funding Summary (\$ in Thousands)**

|  | <u>FY 2002</u> | <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</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>Estimate</u> | <u>Complete</u> |                   |
| (U) Aircraft Procurement, AF, BP10 (PE 27581F) | 295,237        | 268,578         | 0               | 0               | 0               | 0               | 0               | 0               |                 | TBD               |
| (U) Modifications, BP11 (PE 27581F)            | 69,194         | 18,598          | 29,043          | 45,608          | 16,254          | 23,463          | 55,356          | 32,634          |                 | TBD               |
| (U) Spares, BP16 (PE 27581F)                   | 26,364         | 1,810           | 15,699          | 2,804           | 582             | 1,099           | 1,262           | 1,354           |                 | TBD               |
| (U) Quantity, Joint STARS E-8C Aircraft Proc.  | 1              | 1               |                 |                 |                 |                 |                 |                 |                 |                   |

**(U) D. Acquisition Strategy**

Joint STARS Low Rate Initial Production (LRIP) was approved by the Defense Acquisition Board (DAB) in FY93. Acquisition began with the procurement of 2 E-8Cs in FY93, and continued at 2 E-8Cs per year through FY97. Procurement funding continued with 1 E-8C in FY98, 2 E-8Cs in FY99, 1 E-8C in FY00, 1 E-8C in FY01 and 1 E-8C in FY02, and 1 E-8C in FY03.

**(U) E. Schedule Profile**

|  | <u>FY 2002</u> |   |   | <u>FY 2003</u> |   |   | <u>FY 2004</u> |   |   |   |   |   |
|--|----------------|---|---|----------------|---|---|----------------|---|---|---|---|---|
|  | 1              | 2 | 3 | 4              | 1 | 2 | 3              | 4 | 1 | 2 | 3 | 4 |
| (U) RVSM Contract Award  |                |   | * |                |   |   |                |   |   |   |   |   |
| (U) Support & Training Sys. (STS) Phase I Complete--install Blk 20 trainer |                |   |   |                | * |   |                |   |   |   |   |   |
| (U) SATCOM Development Complete  |                |   |   |                |   |   |                |   |   |   |   |   |
| (U) Flight Crew Training System (FCTS) Delivered                           |                |   |   |                |   |   |                |   |   |   |   |   |
| (U) STS Phase II Contract Award--develop Block 20 trainer                  |                |   |   |                |   |   |                |   |   |   | X |   |
| (U) ABCCC Contract Award   |                |   |   |                |   |   |                |   |   |   |   |   |
| (U) ASU Contract Award   |                |   |   |                |   |   |                |   |   |   |   |   |
| * Denotes completed event  |                |   |   |                |   |   |                |   |   |   |   |   |
| X Denotes planned event  |                |   |   |                |   |   |                |   |   |   |   |   |

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| RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)   |                    |                   |                   |                |                             |                | DATE<br>February 2003 |                           |                  |                |
|--|--------------------|-------------------|-------------------|----------------|-----------------------------|----------------|-----------------------|---------------------------|------------------|----------------|
| BUDGET ACTIVITY  |                    |                   |                   |                | PE NUMBER AND TITLE         |                |                       | PROJECT                   |                  |                |
| <b>07 - Operational System Development</b>   |                    |                   |                   |                | <b>0207581F JOINT STARS</b> |                |                       | <b>0003</b>               |                  |                |
| (U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>                              |                    |                   |                   |                |                             |                |                       |                           |                  |                |
|  |                    |                   |                   |                |                             | <u>FY 2002</u> | <u>FY 2003</u>        | <u>FY 2004</u>            |                  |                |
| (U) JSWS   |                    |                   |                   |                |                             | 0              | 3,500                 | 0                         |                  |                |
| (U) Training & Support Systems   |                    |                   |                   |                |                             | 14,446         | 0                     | 7,900                     |                  |                |
| (U) SATCOM, ASU, Connectivity, etc.  |                    |                   |                   |                |                             | 20,795         | 15,881                | 50                        |                  |                |
| (U) Test Efforts   |                    |                   |                   |                |                             | 27,053         | 28,067                | 37,180                    |                  |                |
| (U) GATM   |                    |                   |                   |                |                             | 0              | 2,500                 | 766                       |                  |                |
| (U) Indirect SPO Support   |                    |                   |                   |                |                             | 3,742          | 3,520                 | 3,136                     |                  |                |
| (U) Kill Chain Enhancements/Spiral Development   |                    |                   |                   |                |                             | 2,877          | 1,209                 | 1,299                     |                  |                |
| (U) Reduced Vertical Separation Minimum (RVSM)   |                    |                   |                   |                |                             | 5,599          | 0                     | 0                         |                  |                |
| (U) ABCCC Migration  |                    |                   |                   |                |                             | 0              | 5,640                 | 8,100                     |                  |                |
| (U) Total  |                    |                   |                   |                |                             | 74,512         | 60,317                | 58,431                    |                  |                |
| (U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b> |                    |                   |                   |                |                             |                |                       |                           |                  |                |
| (U) <b><u>Performing Organizations:</u></b>  |                    |                   |                   |                |                             |                |                       |                           |                  |                |
| <u>Contractor or</u>   | <u>Contract</u>    |                   |                   |                |                             |                |                       |                           |                  |                |
| <u>Government</u>  | <u>Method/Type</u> | <u>Award or</u>   | <u>Performing</u> | <u>Project</u> |                             |                |                       |                           |                  |                |
| <u>Performing</u>  | <u>or Funding</u>  | <u>Obligation</u> | <u>Activity</u>   | <u>Office</u>  | <u>Total Prior</u>          | <u>Budget</u>  | <u>Budget</u>         | <u>Budget</u>             | <u>Budget to</u> | <u>Total</u>   |
| <u>Activity</u>  | <u>Vehicle</u>     | <u>Date</u>       | <u>EAC</u>        | <u>EAC</u>     | <u>to FY 2002</u>           | <u>FY 2002</u> | <u>FY 2003</u>        | <u>FY 2004</u>            | <u>Complete</u>  | <u>Program</u> |
| <u>Product Development Organizations</u>   |                    |                   |                   |                |                             |                |                       |                           |                  |                |
| NG -STS Phase I/II   | FFP                | Dec 00            | N/A               | N/A            | 0                           | 14,446         | 0                     | 7,900                     | Continuing       | TBD            |
| NG - SATCOM EMD  | CPFF               | May 97            | 36,574            | 36,574         | 8,370                       | 20,795         | 7,409                 | 0                         | 0                | 36,574         |
| NG - ASU   | TBD                | Dec 02            | N/A               | N/A            | 0                           | 0              | 8,472                 | 50                        | Continuing       | TBD            |
| NG - GATM  | T&M/CPFF           | Mar 01            | 134,421           | 4,847          | 0                           | 0              | 2,500                 | 766                       | Continuing       | TBD            |
| NG - Kill Chain/Spiral   | Various            | Various           | N/A               | N/A            | 0                           | 2,877          | 1,209                 | 1,299                     | Continuing       | TBD            |
| NG - Multi-Platform Radar  | CPFF               | May 97            | 22,372            | 22,372         | 22,372                      | 0              | 0                     | 0                         | 0                | 22,372         |
| Tech. Insertion Prog.  |                    |                   |                   |                |                             |                |                       |                           |                  |                |
| NG - Other Dev. Efforts  | Various            | Various           | N/A               | N/A            | 2,339,634                   | 0              | 3,500                 | 0                         | 0                | 2,343,134      |
| NLX Corp - Flight Crew   | FFP                | Sep 00            | N/A               | N/A            | 0                           | 0              | 0                     | 0                         | 0                | 0              |
| Training Sys   |                    |                   |                   |                |                             |                |                       |                           |                  |                |
| Project 0003   |                    |                   |                   |                | Page 6 of 13 Pages          |                |                       | Exhibit R-3 (PE 0207581F) |                  |                |

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| RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3) |                    |                   |                 |                      |                    |                |                |                           | DATE             |                |
|--|--------------------|-------------------|-----------------|----------------------|--------------------|----------------|----------------|---------------------------|------------------|----------------|
|  |                    |                   |                 |                      |                    |                |                |                           | February 2003    |                |
| BUDGET ACTIVITY                                    |                    |                   |                 | PE NUMBER AND TITLE  |                    |                |                |                           | PROJECT          |                |
| 07 - Operational System Development                |                    |                   |                 | 0207581F JOINT STARS |                    |                |                |                           | 0003             |                |
| (U) <u>Performing Organizations Continued:</u>     |                    |                   |                 |                      |                    |                |                |                           |                  |                |
| <u>Product Development Organizations</u>           |                    |                   |                 |                      |                    |                |                |                           |                  |                |
| NG - RVSM  | CPFF               | Sep 02            | 5,599           | 5,599                | 0                  | 5,599          | 0              |                           | 0                | 5,599          |
| ABCCC Migration                                    | Various            | Various           | N/A             | N/A                  | 0                  | 0              | 5,640          | 8,100                     | 0                | 13,740         |
| ** Northrop Grumman                                |                    |                   |                 |                      |                    |                |                |                           |                  |                |
| <u>Support and Management Organizations</u>        |                    |                   |                 |                      |                    |                |                |                           |                  |                |
| Indirect SPO Ops Support                           |                    | N/A               | N/A             | N/A                  | 0                  | 3,742          | 3,520          | 3,136                     | Continuing       | TBD            |
| <u>Test and Evaluation Organizations</u>           |                    |                   |                 |                      |                    |                |                |                           |                  |                |
| NG - E-8C JSTARS Ext. Test SS/FFP/CPFF Spt (JETS)  |                    | Aug 96            | N/A             | N/A                  | 37,364             | 20,026         | 20,647         | 27,341                    | Continuing       | TBD            |
| Horizons Tech., Inc.                               | T&M                | Various           | N/A             | N/A                  | 36,136             | 4,909          | 4,821          | 5,500                     | Continuing       | TBD            |
| JTF Range/Support                                  | SubAllotment       | N/A               | N/A             | N/A                  | 52,559             | 2,118          | 2,599          | 4,339                     | Continuing       | TBD            |
| (U) <u>Government Furnished Property:</u>          |                    |                   |                 |                      |                    |                |                |                           |                  |                |
|  | <u>Contract</u>    |                   |                 |                      |                    |                |                |                           |                  |                |
|  | <u>Method/Type</u> | <u>Award or</u>   |                 |                      |                    |                |                |                           |                  |                |
| <u>Item</u>  | <u>or Funding</u>  | <u>Obligation</u> | <u>Delivery</u> |                      | <u>Total Prior</u> | <u>Budget</u>  | <u>Budget</u>  | <u>Budget</u>             | <u>Budget to</u> | <u>Total</u>   |
| <u>Description</u>                                 | <u>Vehicle</u>     | <u>Date</u>       | <u>Date</u>     |                      | <u>to FY 2002</u>  | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u>            | <u>Complete</u>  | <u>Program</u> |
| <u>Product Development Property</u>                |                    |                   |                 |                      |                    |                |                |                           |                  |                |
| N/A  |                    |                   |                 |                      |                    |                |                |                           |                  |                |
| <u>Support and Management Property</u>             |                    |                   |                 |                      |                    |                |                |                           |                  |                |
| N/A  |                    |                   |                 |                      |                    |                |                |                           |                  |                |
| <u>Test and Evaluation Property</u>                |                    |                   |                 |                      |                    |                |                |                           |                  |                |
| N/A  |                    |                   |                 |                      |                    |                |                |                           |                  |                |
|  |                    |                   |                 |                      | <u>Total Prior</u> | <u>Budget</u>  | <u>Budget</u>  | <u>Budget</u>             | <u>Budget to</u> | <u>Total</u>   |
| <u>Subtotals</u>                                   |                    |                   |                 |                      | <u>to FY 2002</u>  | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u>            | <u>Complete</u>  | <u>Program</u> |
| Subtotal Product Development                       |                    |                   |                 |                      | 2,370,376          | 43,717         | 28,730         | 18,115                    | TBD              | TBD            |
| Subtotal Support and Management                    |                    |                   |                 |                      | 0                  | 3,742          | 3,520          | 3,136                     | TBD              | TBD            |
| Subtotal Test and Evaluation                       |                    |                   |                 |                      | 126,059            | 27,053         | 28,067         | 37,180                    | TBD              | TBD            |
| Total Project                                      |                    |                   |                 |                      | 2,496,435          | 74,512         | 60,317         | 58,431                    | TBD              | TBD            |
| Project 0003                                       |                    |                   |                 | Page 7 of 13 Pages   |                    |                |                | Exhibit R-3 (PE 0207581F) |                  |                |

Project 0003

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Exhibit R-3 (PE 0207581F)

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## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0207581F JOINT STARS

PROJECT

4995

| COST (\$ in Thousands)   | FY 2002<br>Actual | FY 2003<br>Estimate | FY 2004<br>Estimate | FY 2005<br>Estimate | FY 2006<br>Estimate | FY 2007<br>Estimate | FY 2008<br>Estimate | FY 2009<br>Estimate | Cost to<br>Complete | Total Cost |
|--------------------------|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|
| 4995 Multi-Platform RTIP | 73,170            | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | Continuing          | TBD        |

1. In FY 2002, Project Number 674995, Multi-Platform RTIP was established within PE 0207581F, Joint STARS, using existing RTIP funds from PE 0207581F, Joint STARS, Project Number 670003, JSTARS, to better track program funding. Commencing in FY 2003, funding for this continuing project transferred to PE 0207449F Multi-sensor Command and Control Constellation (MC2C), Project 675065 Sensors, reflecting decision to host MP-RTIP radar on 767-400ER platform.

(U) **A. Mission Description**

The Multi-Platform Radar Technology Insertion Program (MP-RTIP) program is the result of a restructuring of the Joint STARS Radar Technology Insertion Program (RTIP), formerly a Pre-Planned Product Improvement to Joint STARS. MP-RTIP will deliver enhanced Wide Area Surveillance (WAS) system capabilities to the warfighter which include an advanced Ground Moving Target Indicator (GMTI) capability and a focused Air Moving Target Indicator (AMTI) for a Cruise Missile Defense (CMD) capability. MP-RTIP also provides for a robust Global Hawk reconnaissance capability, and enables the NATO Alliance Ground Surveillance (AGS) program. This WAS system capability will allow commanders to conduct wide area surveillance to detect, locate, classify, track, and monitor moving targets and provide target information to assigned direct aerospace and ground weapons systems. Wide-Area surveillance is required to monitor the movement and disposition of enemy forces and for use in resource prioritization, force allocation and Intelligence Preparation of the Battlefield at Army, Navy and Air Force Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) elements. To that end, MP-RTIP will include design of a modular, scalable two-dimensional active electronically scanned array (2D-AESA) radar, and development, fabrication, and test of MP-RTIP radars suitable for future integration on various airborne platforms. Specifically, this modular, scalable radar, when integrated on a 767-400ER, must deliver mission capability as reflected in the validated RTIP Operational Requirements Document (ORD) by 2012. Although the users' need date for an RTIP capability remains 2010; the user has accepted the 2012 delivery date. The radar, when integrated on an unmanned air vehicle, will provide enhanced Global Hawk (GH) capability. The MP-RTIP program plan no longer includes the fabrication of a radar for the NATO Alliance Ground Surveillance (AGS) (formerly known as the NATAR radar) due to a lack of a NATO AGS platform decision. The MP-RTIP program continues to support the NATO AGS radar definition effort and early decision analysis activities. The MP-RTIP program includes concept exploration, technology development, system development/demonstration, and spiral development efforts supporting continuous improvements and implementation of Command & Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities to enable a joint global strike task force. These efforts include but are not limited to manned and unmanned platforms, space, data links, combat identification, and advanced battle management command, control, and communications (BMC3) concepts.



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| RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)  |  | DATE<br><b>February 2003</b> |
|---|--|------------------------------|
| BUDGET ACTIVITY<br><b>07 - Operational System Development</b>   | PE NUMBER AND TITLE<br><b>0207581F JOINT STARS</b> | PROJECT<br><b>4995</b>       |
| <p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$69,644 Continue Multi-Platform RTIP radar design and development for Wide Area Surveillance (WAS), Global Hawk target platforms, and NATO Alliance Ground Surveillance (AGS).</p> <p>(U) \$1,760 Continue Test Efforts (includes Operator-In-The-Loop [OITL]; Joint Test Force Support; AFOTEC Support)</p> <p>(U) \$1,166 Continue SPO Operations</p> <p>(U) \$600 Continue Future Studies/Spiral Development--includes concept exploration, program definition/risk reduction, and spiral development efforts supporting continuous improvements and implementation of Command &amp; Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities to enable a joint global strike task force. These efforts include but are not limited to manned and unmanned platforms, space, data links, combat identification, and advanced battle management command, control, and communications (BMC3) concepts.</p> <p>(U) \$73,170 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$0 Continuing activity transferred to PE 0207449F, Multi-sensor Command and Control Constellation (MC2C), Project 675065 Sensors, reflecting decision to host MP-RTIP on a 767-400ER.</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$0 Continuing activity transferred to PE 0207449F, Multi-sensor Command and Control Constellation (MC2C), Project 675065 Sensors, reflecting decision to host MP-RTIP on a 767-400ER.</p> <p>(U) \$0 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>This program is in Budget Activity (BA) 7, Operational System Development. In an Acquisition Decision Memorandum dated 11 Dec 00, the Multi-Platform Radar Technology Insertion Program (MP-RTIP) was created from the Radar Technology Insertion Program (RTIP) to leverage the RTIP Wide Area Surveillance radar design for application to the Global Hawk and NATO AGS platforms. The MP-RTIP program is a result of a restructuring of the Joint STARS RTIP program, formerly a Pre-Planned Product Improvement to Joint STARS.</p> |  |                              |
| Project 4995  | Page 9 of 13 Pages                                 | Exhibit R-2A (PE 0207581F)   |

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BUDGET ACTIVITY

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(U) **B. Project Change Summary Continued**

Specific Changes:

FY 2002: Decrease of \$4.326M reflects reallocation of prior year poor execution reduction to this Project (original reduction was not split between projects), Small Business Innovative Research reductions, and BTRs.

FY 2003: Continuing activity in FY 2003 for this project transferred to PE 0207449F Multi-sensor Command and Control Constellation (MC2C), Project 675065 Sensors, reflecting decision to host MP-RTIP radar on 767-400ER platform. Transferred funding increased by \$10,325 for additional risk reduction testing during radar design.

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

|                              | <u>FY 2002</u> | <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</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>Estimate</u> | <u>Complete</u> |                   |
| (U) AF RDT&E                 |                |                 |                 |                 |                 |                 |                 |                 |                 |                   |
| (U) PE 0305206F/Project 4819 | 9,000          | 10,000          | 7,000           | 2,000           | 0               | 0               | 0               | 0               | 0               | 28,000            |
| (U) PE 0305205F/Project 4799 | 0              | 17,000          | 40,000          | 13,000          | 1,000           | 0               | 0               | 0               | 0               | 71,000            |
| (U) Other APPN               |                |                 |                 |                 |                 |                 |                 |                 |                 |                   |

(U) **D. Acquisition Strategy**

The MP-RTIP program is currently planning for five (one test and four operational) manned WAS aircraft\*\*, as well as a number of Global Hawk air vehicles, to receive the 2D-AESA radars. Low Rate Initial Production (LRIP) quantity is one sensor kit for the WAS aircraft, and seven sensors for Global Hawk. Exit criteria will be established at MS B that must be satisfied prior to proceeding with LRIP. All other procurement activities for all platforms will be formally updated at MS B.

\*\*Note: WAS aircraft numbers based on decision to host MP-RTIP sensor on a 767-400ER. In FY2003 activity transfers to Program Element 0207449F, Multi-sensor Command and Control Constellation (MC2C).

(U) **E. Schedule Profile**

|                               | <u>FY 2002</u> |   |   |   | <u>FY 2003</u> |   |   |   | <u>FY 2004</u> |   |   |   |
|-------------------------------|----------------|---|---|---|----------------|---|---|---|----------------|---|---|---|
|                               | 1              | 2 | 3 | 4 | 1              | 2 | 3 | 4 | 1              | 2 | 3 | 4 |
| (U) RADAR REQUIREMENTS REVIEW | *              |   |   |   |                |   |   |   |                |   |   |   |
| (U) RADAR FUNCTIONAL REVIEW   |                | * |   |   |                |   |   |   |                |   |   |   |
| (U) MP-RTIP PLATFORM DECISION | *              |   |   |   |                |   |   |   |                |   |   |   |

\* Denotes completed event  
X Denotes planned event

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Exhibit R-2A (PE 0207581F)

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## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0207581F JOINT STARS

PROJECT

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(U) E. Schedule Profile Continued

| <u>FY 2002</u> |   |   |   | <u>FY 2003</u> |   |   |   | <u>FY 2004</u> |   |   |   |
|----------------|---|---|---|----------------|---|---|---|----------------|---|---|---|
| 1              | 2 | 3 | 4 | 1              | 2 | 3 | 4 | 1              | 2 | 3 | 4 |
|                |   |   |   |                |   |   |   |                |   |   |   |

\*\* Note: FY 2003 activity transfers to PE 0207449F, Multi-sensor Command and Control Constellation (MC2C); Project 675065 Sensors, reflecting decision to host MP-RTIP on a 767-400ER platform.

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| RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)  |                                   |                    |  |                   |                      |                   |                | DATE<br>February 2003 |                |                    |  |
|---|-----------------------------------|--------------------|--|-------------------|----------------------|-------------------|----------------|-----------------------|----------------|--------------------|--|
| BUDGET ACTIVITY   |                                   |                    |  |                   | PE NUMBER AND TITLE  |                   |                |                       | PROJECT        |                    |  |
| 07 - Operational System Development   |                                   |                    |  |                   | 0207581F JOINT STARS |                   |                |                       | 4995           |                    |  |
| (U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>  |                                   |                    |  |                   |                      |                   |                |                       |                |                    |  |
|   |                                   |                    |  |                   | <u>FY 2002</u>       |                   | <u>FY 2003</u> |                       | <u>FY 2004</u> |                    |  |
| (U)   | MP-RTIP                           |                    |  |                   | 69,644               |                   | 0              |                       | 0              |                    |  |
| (U)   | Test Efforts (OITL, JTF, AFOTEC)  |                    |  |                   | 1,760                |                   | 0              |                       | 0              |                    |  |
| (U)   | SPO Operations                    |                    |  |                   | 1,166                |                   | 0              |                       | 0              |                    |  |
| (U)   | Future Studies/Spiral Development |                    |  |                   | 600                  |                   | 0              |                       | 0              |                    |  |
| (U)   | Total                             |                    |  |                   | 73,170               |                   | 0              |                       | 0              |                    |  |
| MP-RTIP's funding was a part of Joint Stars PE 0207581F, Project 670003 until FY02. For FY 2002, MP-RTIP funding is reported in the Joint Stars PE 0207581F, Project 674995. NATO AGS within the restructured MP-RTIP program continues effort previously begun under JSTARS RTIP program. NATO AGS is not a New Start. Commencing in FY 2003 this continuing activity will transfer to PE 0207449F, Multi-sensor Command and Control Constellation (MC2C); Project 675065, Sensors, reflecting decision to host MP-RTIP on a 767-400ER platform. |                                   |                    |  |                   |                      |                   |                |                       |                |                    |  |
| (U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>   |                                   |                    |  |                   |                      |                   |                |                       |                |                    |  |
| (U) <u>Performing Organizations:</u>  |                                   |                    |  |                   |                      |                   |                |                       |                |                    |  |
| <u>Contractor or</u>  |                                   | <u>Contract</u>    |  |                   |                      |                   |                |                       |                |                    |  |
| <u>Government</u>   |                                   | <u>Method/Type</u> |  | <u>Award or</u>   |                      | <u>Performing</u> |                | <u>Project</u>        |                |                    |  |
| <u>Performing</u>   |                                   | <u>or Funding</u>  |  | <u>Obligation</u> |                      | <u>Activity</u>   |                | <u>Office</u>         |                | <u>Total Prior</u> |  |
| <u>Activity</u>   |                                   | <u>Vehicle</u>     |  | <u>Date</u>       |                      | <u>EAC</u>        |                | <u>EAC</u>            |                | <u>to FY 2002</u>  |  |
| <u>Budget</u>   |                                   | <u>Budget</u>      |  | <u>Budget</u>     |                      | <u>Budget</u>     |                | <u>Budget</u>         |                | <u>Total</u>       |  |
| <u>FY 2002</u>  |                                   | <u>FY 2003</u>     |  | <u>FY 2004</u>    |                      | <u>Complete</u>   |                | <u>Program</u>        |                |                    |  |
| <u>Product Development Organizations</u>  |                                   |                    |  |                   |                      |                   |                |                       |                |                    |  |
| Northrop Grumman-Multi  |                                   | CPAF               |  | DEC 00            |                      | N/A               |                | N/A                   |                | 136,325            |  |
| Platform-Radar Technology   |                                   |                    |  |                   |                      |                   |                |                       |                | 69,644             |  |
| Insertion Program (RTIP   |                                   |                    |  |                   |                      |                   |                |                       |                | 0                  |  |
| funding prior to FY02   |                                   |                    |  |                   |                      |                   |                |                       |                | 0                  |  |
| reported in Project 670003,   |                                   |                    |  |                   |                      |                   |                |                       |                | Continuing         |  |
| same PE)  |                                   |                    |  |                   |                      |                   |                |                       |                | TBD                |  |
| MIT/Lincoln Labs  |                                   | Various            |  | Various           |                      | N/A               |                | N/A                   |                | 0                  |  |
| Support and Management Organizations  |                                   |                    |  |                   |                      |                   |                |                       |                | 600                |  |
| Program Office Support  |                                   | N/A                |  | N/A               |                      | N/A               |                | N/A                   |                | 0                  |  |
|   |                                   |                    |  |                   |                      |                   |                |                       |                | 1,166              |  |
|   |                                   |                    |  |                   |                      |                   |                |                       |                | 0                  |  |
|   |                                   |                    |  |                   |                      |                   |                |                       |                | 0                  |  |
|   |                                   |                    |  |                   |                      |                   |                |                       |                | Continuing         |  |
|   |                                   |                    |  |                   |                      |                   |                |                       |                | TBD                |  |

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Exhibit R-3 (PE 0207581F)

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| RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)  |                    |                   |                 |     |                      |                |                |                |                  | DATE           |
|---|--------------------|-------------------|-----------------|-----|----------------------|----------------|----------------|----------------|------------------|----------------|
|   |                    |                   |                 |     |                      |                |                |                |                  | February 2003  |
| BUDGET ACTIVITY   |                    |                   |                 |     | PE NUMBER AND TITLE  |                |                |                |                  | PROJECT        |
| 07 - Operational System Development   |                    |                   |                 |     | 0207581F JOINT STARS |                |                |                |                  | 4995           |
| (U) <b><u>Performing Organizations Continued:</u></b>   |                    |                   |                 |     |                      |                |                |                |                  |                |
| <u>Test and Evaluation Organizations</u>  |                    |                   |                 |     |                      |                |                |                |                  |                |
| OITL  | Allotment          | N/A               | N/A             | N/A | 0                    | 1,000          | 0              | 0              | Continuing       | TBD            |
| JTF Support   | Allotment          | N/A               | N/A             | N/A | 0                    | 60             | 0              | 0              | Continuing       | TBD            |
| AFOTEC Support  | Allotment          | N/A               | N/A             | N/A | 0                    | 700            | 0              | 0              | Continuing       | TBD            |
| ** Note: FY 2003 activity transfers to PE 0207449F, Multi-sensor Command and Control Constellation (MC2C); Project 675065 Sensors, reflecting decision to host MP-RTIP on a 767-400ER platform. |                    |                   |                 |     |                      |                |                |                |                  |                |
| (U) <b><u>Government Furnished Property:</u></b>  |                    |                   |                 |     |                      |                |                |                |                  |                |
|   | <u>Contract</u>    |                   |                 |     |                      |                |                |                |                  |                |
|   | <u>Method/Type</u> | <u>Award or</u>   |                 |     |                      |                |                |                |                  |                |
| <u>Item</u>   | <u>or Funding</u>  | <u>Obligation</u> | <u>Delivery</u> |     | <u>Total Prior</u>   | <u>Budget</u>  | <u>Budget</u>  | <u>Budget</u>  | <u>Budget to</u> | <u>Total</u>   |
| <u>Description</u>  | <u>Vehicle</u>     | <u>Date</u>       | <u>Date</u>     |     | <u>to FY 2002</u>    | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>Complete</u>  | <u>Program</u> |
| <u>Product Development Property</u>   |                    |                   |                 |     |                      |                |                |                |                  |                |
| N/A   | N/A                | N/A               | N/A             |     | 0                    | 0              | 0              | 0              | Continuing       | TBD            |
| <u>Support and Management Property</u>  |                    |                   |                 |     |                      |                |                |                |                  |                |
| N/A   | N/A                | N/A               | N/A             |     | 0                    | 0              | 0              | 0              | Continuing       | TBD            |
| <u>Test and Evaluation Property</u>   |                    |                   |                 |     |                      |                |                |                |                  |                |
| N/A   | N/A                | N/A               | N/A             |     | 0                    | 0              | 0              | 0              | Continuing       | TBD            |
|   |                    |                   |                 |     | <u>Total Prior</u>   | <u>Budget</u>  | <u>Budget</u>  | <u>Budget</u>  | <u>Budget to</u> | <u>Total</u>   |
| <u>Subtotals</u>  |                    |                   |                 |     | <u>to FY 2002</u>    | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>Complete</u>  | <u>Program</u> |
| Subtotal Product Development  |                    |                   |                 |     | 136,325              | 70,244         | 0              | 0              | TBD              | TBD            |
| Subtotal Support and Management   |                    |                   |                 |     | 0                    | 1,166          | 0              | 0              | TBD              | TBD            |
| Subtotal Test and Evaluation  |                    |                   |                 |     | 0                    | 1,760          | 0              | 0              | TBD              | TBD            |
| Total Project   |                    |                   |                 |     | 136,325              | 73,170         | 0              | 0              | TBD              | TBD            |

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Exhibit R-3 (PE 0207581F)