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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

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| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603444F: <i>MAUI SPACE SURVEILLANCE SYSTEM</i> |
|--|--|

| COST (\$ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
|---|-------------------|---------------------|-----------------------------|----------------------------|------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------|
| Total Program Element | 36.093 | 36.661 | 5.899 | 0.000 | 5.899 | 5.563 | 5.522 | 5.613 | 5.702 | Continuing | Continuing |
| 634868: <i>Maui Space Surveillance System</i> | 36.093 | 36.661 | 5.899 | 0.000 | 5.899 | 5.563 | 5.522 | 5.613 | 5.702 | Continuing | Continuing |

A. Mission Description and Budget Item Justification

This program funds space situational awareness (SSA) technology development and demonstration at the Maui Space Surveillance System (MSSS) in Hawaii, as well as the operation and upgrade of the facility. This program is in Budget Activity 3, Advanced Technology Development, since it enables and demonstrates technologies for existing system upgrades and/or new system developments that have military utility and address warfighter needs.

B. Program Change Summary (\$ in Millions)

| | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011 Base</u> | <u>FY 2011 OCO</u> | <u>FY 2011 Total</u> |
|-------------------------------------|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 36.339 | 5.813 | 0.000 | 0.000 | 0.000 |
| Current President's Budget | 36.093 | 36.661 | 5.899 | 0.000 | 5.899 |
| Total Adjustments | -0.246 | 30.848 | 5.899 | 0.000 | 5.899 |
| • Congressional General Reductions | | 0.000 | | | |
| • Congressional Directed Reductions | | 0.000 | | | |
| • Congressional Rescissions | 0.000 | -0.152 | | | |
| • Congressional Adds | | 31.000 | | | |
| • Congressional Directed Transfers | | 0.000 | | | |
| • Reprogrammings | 0.000 | 0.000 | | | |
| • SBIR/STTR Transfer | 0.000 | 0.000 | | | |
| • Other Adjustments | -0.246 | 0.000 | 5.899 | 0.000 | 5.899 |

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 634868: *Maui Space Surveillance System*

Congressional Add: *Panoramic Survey Telescope And Rapid Response System (Pan-STARRS).*

Congressional Add: *Flash Hyper-Dimensional Imaging System for Space Situational Awareness and Ballistic Missile Defense.*

| FY 2009 | FY 2010 |
|---------|---------|
| 7.978 | 9.461 |
| 1.596 | 1.992 |

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| <u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u> | FY 2009 | FY 2010 |
|---|----------------|----------------|
| Congressional Add Subtotals for Project: 634868 | 9.574 | 11.453 |
| Congressional Add Totals for all Projects | 9.574 | 11.453 |

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. A detailed explanation of changes between the two budget positions is not provided because it cannot be made in a relevant manner.

Note: In FY 2010, Congress added \$2.0 million for FLASH Hyper-Dimensional Imaging for Near Space Surveillance and Ballistic Missile Defense, \$19.5 million for Maui Space Surveillance System Operations and Research, and \$9.5 million for PanSTARRS.

C. Performance Metrics
Under Development.

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| | | | | | | | | | | | |
|--|-----------------------|-------------------------|------------------------------|--|-------------------------------|-------------------------|-------------------------|---|-------------------------|-------------------------|-------------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force | | | | | | | | DATE: February 2010 | | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | | | R-1 ITEM NOMENCLATURE PE 0603444F: <i>MAUI SPACE SURVEILLANCE SYSTEM</i> | | | | PROJECT 634868: <i>Maui Space Surveillance System</i> | | | |
| COST (\$ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
| 634868: <i>Maui Space Surveillance System</i> | 36.093 | 36.661 | 5.899 | 0.000 | 5.899 | 5.563 | 5.522 | 5.613 | 5.702 | Continuing | Continuing |

A. Mission Description and Budget Item Justification

This program funds space situational awareness (SSA) technology development and demonstration at the Maui Space Surveillance System (MSSS) in Hawaii, as well as the operation and upgrade of the facility. This program is in Budget Activity 3, Advanced Technology Development, since it enables and demonstrates technologies for existing system upgrades and/or new system developments that have military utility and address warfighter needs.

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

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| <p>MAJOR THRUST/CONGRESSIONAL ADD: Develop, demonstrate, and integrate space situational awareness technology at the Maui Space Surveillance System (MSSS), as well as operate and upgrade the facility.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continued MSSS infrastructure contributions in research, development, and operations that support various customers and experimenters. Continued refurbishing and upgrading MSSS to accommodate those missions and maintaining requirements for safety and security in accordance with Air Force regulations. Continued development and implementation of self-sufficiency plan. This effort includes Congressional Add of \$22.0 million in FY 2009.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue MSSS infrastructure contributions in research, development, and operations that support various customers and space situational awareness research and demonstrations. Continue refurbishing and upgrading MSSS to accommodate those missions and maintaining requirements for safety and security in accordance with Air Force regulations. Continue development</p> | 26.519 | 25.208 | 5.899 | 0.000 | 5.899 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force | | | | DATE: February 2010 | | | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | R-1 ITEM NOMENCLATURE PE 0603444F: <i>MAUI SPACE SURVEILLANCE SYSTEM</i> | | PROJECT 634868: <i>Maui Space Surveillance System</i> | | | | |
| B. Accomplishments/Planned Program (\$ in Millions) | | | | | | | | |
| | | | | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| and implementation of self-sufficiency plan. This effort includes Congressional Add of \$19.5 million in FY 2010. <i>FY 2011 Base Plans:</i> In FY 2011: Continue MSSS infrastructure contributions in research, development, and operations that support various customers and space situational awareness research and demonstrations. Continue refurbishing and upgrading MSSS to accommodate those missions and maintaining requirements for safety and security in accordance with Air Force regulations. Continue development and implementation of self-sufficiency plan. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A | | | | | | | | |
| Accomplishments/Planned Programs Subtotals | | | | 26.519 | 25.208 | 5.899 | 0.000 | 5.899 |
| | | | | FY 2009 | FY 2010 | | | |
| Congressional Add: Panoramic Survey Telescope And Rapid Response System (Pan-STARRS). <i>FY 2009 Accomplishments:</i> In FY 2009: Pan-STARRS Prototype on Maui began its three year mission of asteroid hunting and sky mapping. AF used its five percent allocation of telescope time for military utility determination. Procurement for the second telescope has begun. The Environmental Impact Statement for the four telescope system on Mauna Kea has begun. <i>FY 2010 Plans:</i> In FY 2010: Conduct Congressionally-directed effort for Pan-STARRS. | | | | 7.978 | 9.461 | | | |
| | | | | 1.596 | 1.992 | | | |

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|--|--|---|

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

| | FY 2009 | FY 2010 |
|---|---------|---------|
| Congressional Add: Flash Hyper-Dimensional Imaging System for Space Situational Awareness and Ballistic Missile Defense. <i>FY 2009 Accomplishments:</i> In FY 2009: Provided hyperspectral imaging for missile intercepts and SSA applications, determined temperatures on missile intercept fireballs, preformed debris tracking, and provided hyperspectral information to aid in identifying non-imaging space objects. <i>FY 2010 Plans:</i> In FY 2010: Conduct Congressionally-directed effort for Flash Hyper-Dimensional Imaging System for Space Situational Awareness and Ballistic Missile Defense. | | |
| Congressional Adds Subtotals | 9.574 | 11.453 |

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

| Line Item | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | FY 2012 | FY 2013 | FY 2014 | FY 2015 | Cost To Complete | Total Cost |
|--|---------|---------|-----------------|----------------|------------------|---------|---------|---------|---------|---------------------|------------|
| • PE 0602605F: <i>Directed Energy Technology.</i> | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| • PE 0603605F: <i>Advanced Weapons Technology.</i> | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| • PE 0601108F: <i>High Energy Laser Research Initiatives.</i> | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| • PE 0602890F: <i>High Energy Laser Research.</i> | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| • PE 0603924F: <i>High Energy Laser Advanced Technology Program.</i> | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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|--|--|---|

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

| <u>Line Item</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011</u> <u>Base</u> | <u>FY 2011</u> <u>OCO</u> | <u>FY 2011</u> <u>Total</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>Cost To</u> <u>Complete</u> | <u>Total Cost</u> |
|--|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| • PE 0603883C: <i>Ballistic Missile Defense Boost Phase Segment.</i> | | | | | | | | | | | |

D. Acquisition Strategy

Not Applicable.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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