

Exhibit 300 (BY2009)

| PART ONE | |
|--|---|
| OVERVIEW | |
| 1. Date of Submission: | 2007-09-07 |
| 2. Agency: | 026 |
| 3. Bureau: | 00 |
| 4. Name of this Capital Asset: | ESMD - Integrated Collaborative Environment |
| 5. Unique Project Identifier: | 026-00-01-02-01-2411-00 |
| 6. What kind of investment will this be in FY2009? | |
| Mixed Life Cycle | |
| 7. What was the first budget year this investment was submitted to OMB? | |
| FY2007 | |
| 8. Provide a brief summary and justification for this investment, including a brief description of how this closes in part or in whole an identified agency performance gap. | |
| <p>The Integrated Collaborative Environment (ICE) Program provides a common repository of the authoritative data for Exploration System Mission Directorate (ESMD). ICE is a web-centric environment which will be used by industry, academia and government for sharing, collaborating, integrating, accessing and controlling management information and product data definition for all ESMD products. The scope of ICE includes all program and product information, including: all requirement, schedule, risk and configuration management information to all engineering design, analysis and test. The objectives of the ICE Program are to: 1. Provide the laboratories, Centers, Directorates, academic institutions, prime contractors and subcontractors a single web portal through which they can store, manage and find all directorate program and mission related data, information and products. 2. Link all such related program and product data together, so the relationships between them can be quickly navigated both by end users and other systems. 3. Provide a common implementation approach, including documentation, engagement and design models from which products are configured and delivered to the Customer. 4. To automate ESMD processes; particularly around the data produced and used in ESMD processes. 5. Implement ICE as an integration of existing COTS applications; in order to reduce risks and total lifecycle costs. Provide value throughout the ESMD Program, implementing each project solution as series of production systems in short (60-90 day) intervals. 6. Base solution delivery on business needs and opportunities and business-driven prioritization. 7. Accessibility from anywhere in the world including the International Space Station (ISS) and the Space Shuttle Orbiter Performance gaps ICE closes: Improved Mission Assurance and Mission Safety achieved by availability of all data related to ESMD products during ESMD operations. Reduced ESMD Program/Project Performance Risk by providing better program visibility, control and decisions throughout the program life cycle. Compresses ESMD Program/Project Delivery Schedules by providing a single collaboration environment enabling the compression of numerous critical process life cycles. Reduces ESMD Program/Project Cost by improving communication amongst the various systems and sub systems along for faster incorporation of designs and completion of tasks.</p> | |
| 9. Did the Agency's Executive/Investment Committee approve this request? | |
| yes | |
| 9.a. If "yes," what was the date of this approval? | |
| 2007-06-21 | |
| 10. Did the Project Manager review this Exhibit? | |
| yes | |
| 11. Project Manager Name: | |
| Jena Hughey | |
| Project Manager Phone: | |
| 256-544-1660 | |
| Project Manager Email: | |
| jena.hughey@nasa.gov | |
| 11.a. What is the current FAC-P/PM certification level of the project/program manager? | |
| Senior/Expert-level | |
| 12. Has the agency developed and/or promoted cost effective, energy-efficient and environmentally sustainable techniques or practices for this project. | |

| |
|--|
| yes |
| 12.a. Will this investment include electronic assets (including computers)? |
| yes |
| 12.b. Is this investment for new construction or major retrofit of a Federal building or facility? (answer applicable to non-IT assets only) |
| no |
| 13. Does this investment directly support one of the PMA initiatives? |
| yes |
| If yes, select the initiatives that apply: |
| Budget Performance Integration |
| 13.a. Briefly and specifically describe for each selected how this asset directly supports the identified initiative(s)? (e.g. If E-Gov is selected, is it an approved shared service provider or the managing partner?) |
| Budget Performance Integration - ICE enables linkage of budget resources to program results, and enables program performance information to make better budget and management decisions within ESMD. |
| 14. Does this investment support a program assessed using the Program Assessment Rating Tool (PART)? |
| yes |
| 14.a. If yes, does this investment address a weakness found during the PART review? |
| yes |
| 14.b. If yes, what is the name of the PARTed program? |
| Space and Flight Support |
| 14.c. If yes, what rating did the PART receive? |
| Adequate |
| 15. Is this investment for information technology? |
| yes |
| 16. What is the level of the IT Project (per CIO Council's PM Guidance)? |
| Level 1 |
| 17. What project management qualifications does the Project Manager have? (per CIO Council's PM Guidance) |
| (1) Project manager has been validated as qualified for this investment |
| 18. Is this investment identified as high risk on the Q4 - FY 2007 agency high risk report (per OMB memorandum M-05-23)? |
| no |
| 19. Is this a financial management system? |
| no |
| 19.a.1. If yes, which compliance area: |
| Not Applicable |
| 20. What is the percentage breakout for the total FY2008 funding request for the following? (This should total 100%) |
| Hardware 2 |
| Software 3 |
| Services 79 |
| Other 16 |
| 21. If this project produces information dissemination products for the public, are these products published to the Internet in conformance with OMB Memorandum 05-04 and included in your agency inventory, schedules and priorities? |
| n/a |
| 22. Contact information of individual responsible for privacy related questions. |
| Name |
| Bessie Whitaker |
| Phone Number |
| 256-544-4812 |
| Title |
| MSFC Privacy Act Officer |

Email

Bessie.H.Whitaker@nasa.gov

23. Are the records produced by this investment appropriately scheduled with the National Archives and Records Administration's approval?

yes

24. Does this investment directly support one of the GAO High Risk Areas?

no

SUMMARY OF SPEND

1. Provide the total estimated life-cycle cost for this investment by completing the following table. All amounts represent budget authority in millions, and are rounded to three decimal places. Federal personnel costs should be included only in the row designated Government FTE Cost, and should be excluded from the amounts shown for Planning, Full Acquisition, and Operation/Maintenance. The total estimated annual cost of the investment is the sum of costs for Planning, Full Acquisition, and Operation/Maintenance. For Federal buildings and facilities, life-cycle costs should include long term energy, environmental, decommissioning, and/or restoration costs. The costs associated with the entire life-cycle of the investment should be included in this report.

All amounts represent Budget Authority

| | PY 2007 | CY 2008 | BY 2009 |
|--|---------|---------|---------|
| Planning Budgetary Resources | 3.801 | 3.629 | 3.562 |
| Acquisition Budgetary Resources | 6.314 | 10.811 | 12.288 |
| Maintenance Budgetary Resources | 5.946 | 5.224 | 6.284 |
| Government FTE Cost | 0.800 | 0.800 | 0.800 |
| # of FTEs | 4 | 4 | 4 |

Note: For the cross-agency investments, this table should include all funding (both managing partner and partner agencies).

Government FTE Costs should not be included as part of the TOTAL represented.

2. Will this project require the agency to hire additional FTE's?

no

PERFORMANCE

In order to successfully address this area of the exhibit 300, performance goals must be provided for the agency and be linked to the annual performance plan. The investment must discuss the agency's mission and strategic goals, and performance measures (indicators) must be provided. These goals need to map to the gap in the agency's strategic goals and objectives this investment is designed to fill. They are the internal and external performance benefits this investment is expected to deliver to the agency (e.g., improve efficiency by 60 percent, increase citizen participation by 300 percent a year to achieve an overall citizen participation rate of 75 percent by FY 2xxx, etc.). The goals must be clearly measurable investment outcomes, and if applicable, investment outputs. They do not include the completion date of the module, milestones, or investment, or general goals, such as, significant, better, improved that do not have a quantitative measure.

Agencies must use the following table to report performance goals and measures for the major investment and use the Federal Enterprise Architecture (FEA) Performance Reference Model (PRM). Map all Measurement Indicators to the corresponding Measurement Area and Measurement Grouping identified in the PRM. There should be at least one Measurement Indicator for each of the four different Measurement Areas (for each fiscal year). The PRM is available at www.egov.gov. The table can be extended to include performance measures for years beyond FY 2009.

| | Fiscal Year | Strategic Goal Supported | Measurement Area | Measurement Grouping | Measurement Indicator | Baseline | Planned Improvement to the Baseline | Actual Results |
|---|-------------|---|------------------------------|------------------------|---------------------------------|---|-------------------------------------|----------------|
| 1 | 2007 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Mission and Business Results | Information Management | Percentage of Data Availability | Percentage of ESMD data available through ICE | Maintain 70% | 70% |

| | Fiscal Year | Strategic Goal Supported | Measurement Area | Measurement Grouping | Measurement Indicator | Baseline | Planned Improvement to the Baseline | Actual Results |
|----------|--------------------|---|------------------------------|-----------------------------|--|--|--|-----------------------|
| 2 | 2007 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Customer Results | Customer Training | Attendance Percentage | Percentage of registered users against users who have attended ICE user training | Raise to 40% | 25% |
| 3 | 2007 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Processes and Activities | Participation | Participation-Percentage of Exploration workers actively using the ICE environment | Participation-Percentage of Exploration workers actively using the ICE environment | Improve to 75% | 70% |
| 4 | 2007 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Technology | Accessibility | Percentage of registered users accessing the system per hour | Percentage of registered users accessing the system per hour | Raise to 45% | 45% |
| 5 | 2008 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Mission and Business Results | Information Management | Percentage of Data Availability | Percentage of ESMD data available through ICE | Maintain 70% | TBD |
| 6 | 2008 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Customer Results | Customer Training | Attendance Percentage | Percentage of registered users against users who have attended ICE user training | Raise to 45% | TBD |

| | Fiscal Year | Strategic Goal Supported | Measurement Area | Measurement Grouping | Measurement Indicator | Baseline | Planned Improvement to the Baseline | Actual Results |
|-----------|--------------------|---|------------------------------|-----------------------------|--|--|--|-----------------------|
| 7 | 2008 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Processes and Activities | Participation | Participation-Percentage of Exploration workers actively using the ICE environment | Participation-Percentage of Exploration workers actively using the ICE environment | Maintain 75% | TBD |
| 8 | 2008 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Technology | Accessibility | Percentage of registered users accessing the system per hour | Percentage of registered users accessing the system per hour | Raise to 50% | TBD |
| 9 | 2009 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Mission and Business Results | Information Management | Percentage of Data Availability | Percentage of ESMD data available through ICE | Maintain 70% | TBD |
| 10 | 2009 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Customer Results | Customer Training | Attendance Percentage | Percentage of registered users against users who have attended ICE user training | Raise to 50% | TBD |
| 11 | 2009 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Processes and Activities | Participation | Participation-Percentage of Exploration workers actively using the ICE environment | Participation-Percentage of Exploration workers actively using the ICE environment | Improve to 80% | TBD |

| | Fiscal Year | Strategic Goal Supported | Measurement Area | Measurement Grouping | Measurement Indicator | Baseline | Planned Improvement to the Baseline | Actual Results |
|-----------|--------------------|---|------------------------------|-----------------------------|--|--|--|-----------------------|
| 12 | 2009 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Technology | Accessibility | Percentage of registered users accessing the system per hour | Percentage of registered users accessing the system per hour | Raise to 55% | TBD |
| 13 | 2010 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Mission and Business Results | Information Management | Percentage of Data Availability | Percentage of ESMD data available through ICE | Maintain 70% | TBD |
| 14 | 2010 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Customer Results | Customer Training | Attendance Percentage | Percentage of registered users against users who have attended ICE user training | Raise to 55% | TBD |
| 15 | 2010 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Processes and Activities | Participation | Participation-Percentage of Exploration workers actively using the ICE environment | Participation-Percentage of Exploration workers actively using the ICE environment | Improve to 85% | TBD |
| 16 | 2010 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Technology | Accessibility | Percentage of registered users accessing the system per hour | Percentage of registered users accessing the system per hour | Raise to 55% | TBD |

| | Fiscal Year | Strategic Goal Supported | Measurement Area | Measurement Grouping | Measurement Indicator | Baseline | Planned Improvement to the Baseline | Actual Results |
|-----------|--------------------|---|------------------------------|-----------------------------|--|--|--|-----------------------|
| 17 | 2011 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Mission and Business Results | Information Management | Percentage of Data Availability | Percentage of ESMD data available through ICE | Maintain 70% | TBD |
| 18 | 2011 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Customer Results | Customer Training | Attendance Percentage | Percentage of registered users against users who have attended ICE user training | Raise to 60% | TBD |
| 19 | 2011 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Processes and Activities | Participation | Participation-Percentage of Exploration workers actively using the ICE environment | Participation-Percentage of Exploration workers actively using the ICE environment | Maintain 85% | TBD |
| 20 | 2011 | Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement. | Technology | Accessibility | Percentage of registered users accessing the system per hour | Percentage of registered users accessing the system per hour | Maintain 55% | TBD |

EA

In order to successfully address this area of the business case and capital asset plan you must ensure the investment is included in the agency's EA and Capital Planning and Investment Control (CPIC) process, and is mapped to and supports the FEA. You must also ensure the business case demonstrates the relationship between the investment and the business, performance, data, services, application, and technology layers of the agency's EA.

1. Is this investment included in your agency's target enterprise architecture?

yes

2. Is this investment included in the agency's EA Transition Strategy?

yes

2.a. If yes, provide the investment name as identified in the Transition Strategy provided in the agency's most recent annual EA Assessment.

ESMD - Integrated Collaborative Environment

3. Is this investment identified in a completed (contains a target architecture) and approved segment architecture?

no

4. Identify the service components funded by this major IT investment (e.g., knowledge management, content management, customer relationship management, etc.). Provide this information in the format of the following table. For detailed guidance regarding components, please refer to <http://www.whitehouse.gov/omb/egov/>.

Component: Use existing SRM Components or identify as NEW. A NEW component is one not already identified as a service component in the FEA SRM.

Reused Name and UPI: A reused component is one being funded by another investment, but being used by this investment. Rather than answer yes or no, identify the reused service component funded by the other investment and identify the other investment using the Unique Project Identifier (UPI) code from the OMB Ex 300 or Ex 53 submission.

Internal or External Reuse?: Internal reuse is within an agency. For example, one agency within a department is reusing a service component provided by another agency within the same department. External reuse is one agency within a department reusing a service component provided by another agency in another department. A good example of this is an E-Gov initiative service being reused by multiple organizations across the federal government.

Funding Percentage: Please provide the percentage of the BY requested funding amount used for each service component listed in the table. If external, provide the funding level transferred to another agency to pay for the service.

| | Agency Component Name | Agency Component Description | Service Type | Component | Reused Component Name | Reused UPI | Internal or External Reuse? | Funding % |
|---|------------------------------------|---|-----------------------------|------------------------------------|-----------------------|------------|-----------------------------|-----------|
| 1 | Enterprise Application Integration | All of the Ice environment COTS tools are integrated through an Enterprise Service Bus using COTS software | Development and Integration | Enterprise Application Integration | | | No Reuse | 10 |
| 2 | Configuration Management | All Items are configuration managed within ICE at the object level. ICE tracks for versions and iteration of all objects located within it | Management of Processes | Configuration Management | | | No Reuse | 10 |
| 3 | Workflow | ICE has multiple workflow engines which are used to automate delivery of data from customers and partners and to automate internal processes within Exploration systems such as change management | Tracking and Workflow | Process Tracking | | | No Reuse | 10 |
| 4 | Threaded Discussions | The ICE program allows for knowledge capture via threaded discussions related to any object in the PLM repository. This could include items such as parts, products, documents, workflows, change artifacts, etc. | Collaboration | Threaded Discussions | | | No Reuse | 10 |

| Agency Component Name | Agency Component Description | Service Type | Component | Reused Component Name | Reused UPI | Internal or External Reuse? | Funding % |
|------------------------------|---|----------------------------------|------------------------------|-----------------------|------------|-----------------------------|-----------|
| 5 Change Management | ICE implements a fully CMII compliant change management process. This change management functionality is used to manage change within the exploration systems mission directorate | Management of Processes | Change Management | | | No Reuse | 10 |
| 6 B2G Integration | ICE provides both web services and standard B2G integration services with NASA IT's contractors and partners. | Customer Relationship Management | Product Management | | | No Reuse | 10 |
| 7 Requirements Management | The COTS requirements management tool Cradle manages all Exploration Systems requirements. | Management of Processes | Requirements Management | | | No Reuse | 10 |
| 8 Program/Project Management | ICE is using a COTS tool Primavera to help with it's Integrated Master Schedule and Integrated Master Plan. This tool is being implemented through an Enterprise Bus as an ICE tool. | Management of Processes | Program / Project Management | | | No Reuse | 20 |
| 9 Quality Management | All quality processes for Exploration Systems are managed through the ICE environment using its existing document and part management capability with the workflow engineer to implement the process. | Management of Processes | Quality Management | | | No Reuse | 10 |

5. To demonstrate how this major IT investment aligns with the FEA Technical Reference Model (TRM), please list the Service Areas, Categories, Standards, and Service Specifications supporting this IT investment.

FEA SRM Component: Service Components identified in the previous question should be entered in this column. Please enter multiple rows for FEA SRM Components supported by multiple TRM Service Specifications.

Service Specification: In the Service Specification field, Agencies should provide information on the specified technical standard or vendor product mapped to the FEA TRM Service Standard, including model or version numbers, as appropriate.

| | SRM Component | Service Area | Service Category | Service Standard | Service Specification (i.e., vendor and product name) |
|-----------|------------------------------------|-------------------------------------|-------------------------|-----------------------------------|--|
| 1 | Enterprise Application Integration | Service Access and Delivery | Service Requirements | Authentication / Single Sign-on | Syntegra Aphelion LDAP servers |
| 2 | Enterprise Application Integration | Service Platform and Infrastructure | Support Platforms | Platform Independent | Sun JAVA |
| 3 | Enterprise Application Integration | Service Platform and Infrastructure | Delivery Servers | Web Servers | Apache |
| 4 | Enterprise Application Integration | Service Platform and Infrastructure | Delivery Servers | Portal Servers | Velocity open source software |
| 5 | Enterprise Application Integration | Service Platform and Infrastructure | Database / Storage | Storage | Sun Server |
| 6 | Enterprise Application Integration | Service Platform and Infrastructure | Database / Storage | Database | Oracle's Oracle Database |
| 7 | Configuration Management | Service Platform and Infrastructure | Delivery Servers | Application Servers | Sun J2ee |
| 8 | Configuration Management | Service Platform and Infrastructure | Software Engineering | Software Configuration Management | Borland's Star Team |
| 9 | Configuration Management | Service Platform and Infrastructure | Database / Storage | Database | Oracle's Oracle Database |
| 10 | Process Tracking | Service Platform and Infrastructure | Delivery Servers | Application Servers | PTC Windchill |
| 11 | Threaded Discussions | Service Platform and Infrastructure | Delivery Servers | Application Servers | PTC Windchill |
| 12 | Change Management | Service Platform and Infrastructure | Delivery Servers | Application Servers | PTC Windchill |
| 13 | Requirements Management | Service Platform and Infrastructure | Delivery Servers | Application Servers | PTC Windchill |
| 14 | Program / Project Management | Service Platform and Infrastructure | Delivery Servers | Application Servers | Primavera Cost and Scheduling |

6. Will the application leverage existing components and/or applications across the Government (i.e., FirstGov, Pay.Gov, etc)?

yes

6.a. If yes, please describe.

While ICE isn't leveraging existing components across the government. There is significant reuse within NASA of existing contracts, software, and hardware. Also there is an effort in place to share lessons learned, strategies, source code and possibly resources with DOD's Future Combat Systems ACE project. There is also potential for this type of collaboration with DOE's Los Alamos facility which it considering implementing a similar system.

PART TWO

RISK

You should perform a risk assessment during the early planning and initial concept phase of the investment's life-cycle, develop a risk-adjusted life-cycle cost estimate and a plan to eliminate, mitigate or manage risk, and be actively managing risk throughout the investment's life-cycle.

Answer the following questions to describe how you are managing investment risks.

1. Does the investment have a Risk Management Plan?

yes

1.a. If yes, what is the date of the plan?

2007-05-01

1.b. Has the Risk Management Plan been significantly changed since last year's submission to OMB?

no

3. Briefly describe how investment risks are reflected in the life cycle cost estimate and investment schedule:

A small part of the ICE budget is allocated for development, modernization and enhancement during FY 2007-2009. The cost has been risk adjusted, and is included in the Risk Management Plan, which is now included under the umbrella of the IT Security Plan. New development is, naturally, of a higher risk, and is more closely scrutinized within the Directorate.

COST & SCHEDULE

1. Does the earned value management system meet the criteria in ANSI/EIA Standard 748?

yes

2. Is the CV% or SV% greater than $\pm 10\%$?

yes

2.a. If yes, was it the?

CV

2.b. If yes, explain the variance.

Cost and schedule variances are within thresholds.

2.c. If yes, what corrective actions are being taken?

While variances are low to date it is policy for Actual Cost to Planned Cost is reviewed monthly by the Program Director and Business Manager. A variance explanation is provided by each project. At this time, no corrective actions are needed. Should a contractor be responsible for the variance award fees will be withheld. If the contract doesn't have award fees separation form that contractor would be considered. Should the variance stem from poor estimates or policy. This would require a change in policy within the ICE program in order to correct. Should there be a change in exploration systems program direction that results in a change in milestones this would require a rebaseline of milestones the following FY in order to provide better management metric.

3. Has the investment re-baselined during the past fiscal year?

no

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