

**U. S. DEPARTMENT OF ENERGY  
CORPORATE MANAGEMENT INFORMATION PROGRAM  
ANNUAL STATUS REPORT**

**October 1, 2000 – September 30, 2001**

In Fiscal Year (FY) 2001, the Department of Energy's (DOE) Departmental Administration Appropriation included funding for the Corporate Management Information Program (CMIP), a modernization investment initiative designed to identify and replace outdated major DOE corporate systems. This annual status report is a follow-on to the request in House Report 106-253, Conference Report on the FY 2000 Energy and Water Development Appropriations Bill. The report includes detailed information on the on-going activities of CMIP corporate system projects and documents the Department's need to accelerate the modernization effort to achieve more immediate operating efficiencies and cost savings.

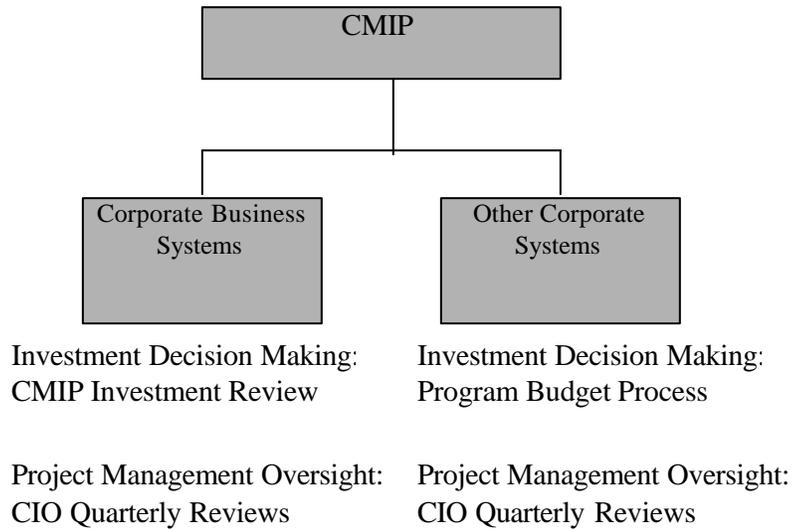
The Department's corporate systems are those automated systems that: (1) support business functions that exist in all or a great majority of the Department's organizations; (2) are required by law, regulation, or generally recognized sound management practice; (3) are considered vitally important by the Department's top management and support accomplishment of the business functions for which they are responsible; and (4) are highly institutionalized and operate continually and routinely. Such systems perform and/or support day-to-day business functions so vital that without them the Department would no longer be legally viable or could not effectively accomplish its assigned mission.

**A. PURPOSE AND OBJECTIVES**

In FY 1998, the Department established CMIP to support the reform of common and cross-cutting business processes and the modernization of their associated support systems. The Program strengthens linkages of corporate information technology (IT) investments to business objectives to increase returns and reduce risk; consolidates systems that support the same business functions; improves data quality and integrity by eliminating redundancy of information across multiple systems; and refreshes obsolete systems and technologies to improve operating efficiencies and ensure Department-wide interoperability.

Over time the program has evolved and management oversight of initiatives has been established for two groups of modernization efforts. Corporate Business Systems, such as financial and human resource systems, are funded directly through CMIP and are subject to investment decision making by the CMIP Investment Review Board as depicted in Figure 1 on the next page. In addition, other systems that are corporate in nature, but primarily support program missions and functions, also come under the oversight of the Department's Chief Information Officer (CIO) via the CIO Quarterly Review process. The extension of CIO oversight and review processes beyond those initiatives funded by the CMIP program ensures that all corporate systems are subject to similar requirements for business case development and investment review.

Figure 1. CMIP Composition



**B. PROGRAM ACCOMPLISHMENTS**

The Department has made considerable progress through CMIP. The accomplishments described below will further strengthen the Program’s technical and managerial foundation.

**1. Established a Corporate Systems Information Architecture to Define CMIP Initiatives**

During Phase I of the Departmental Information Architecture Project a Corporate Systems Information Architecture (CSIA) was established. The CSIA is a "blueprint" or "roadmap" that systematically and comprehensively defines the current "as is" state of operations; the target or "to be" operating environment for the corporate systems; and the plans to transition from the current to the target state of operations. During FY 2000, representatives from across the Department defined the flow of information needed to support common and cross-cutting business functions, and the underlying components of the IT infrastructure necessary to manage and maintain information across Department locations. During FY 2001, plans were developed to complete the Technology Architecture Layer of CSIA and the Department initiated Strategic Information Management (SIM) studies that were prioritized in that body of work.

**Benefit to the Department.** A complete and prioritized CSIA will significantly reduce the risk of building and buying systems that are duplicative, incompatible, and costly to maintain. It will also enhance mission performance and capabilities by leveraging IT investments to directly facilitate

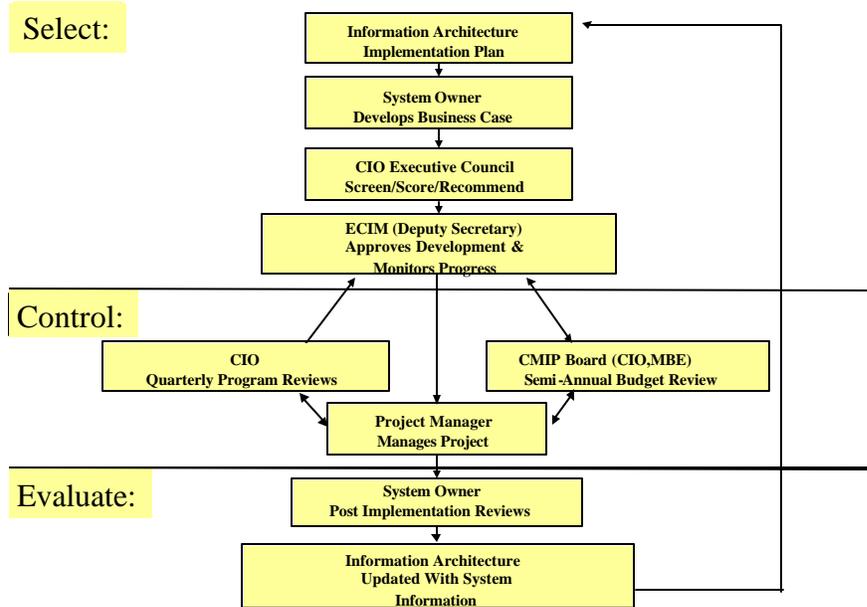
mission activities. The architecture will provide a sound managerial and technical basis for Strategic Information Management (SIM) studies and projects. In addition, the CSIA will improve the timeliness and efficiency of information shared across the Department and with stakeholders by enhancing interoperability of systems and data; minimize the stoppage or interruption of operations and mission activities by establishing a Department-wide cybersecurity framework; and enhance the protection of secure and sensitive information while minimizing the impact to the sharing of information.

**2. Fine-Tuned the Department's IT Governance Process to Support CMIP**

The Department commenced work on and completed several actions to fine-tune its IT governance process. These actions include the development of an IT investment management policy to establish Department-wide requirements for the selection, control, and evaluation of Departmental IT resources; designation of full time Chief Information Officers (CIOs) in the Department's Lead Program Secretarial Offices to focus on corporate and programmatic information and business systems; and creation of a CIO Executive Council to coordinate Department-wide IT management and advise the Department's Senior Executive Review Board/Executive Committee for Information Management (ECIM) matters relating to the management of program-specific use of IT. The governance process is applicable to all corporate IT, not just the business administrative systems currently funded through CMIP. During FY 2001, the Department initiated a project to update its IT Capital Planning process to incorporate Office of Management and Budget Circular A-130 IT capital planning and investment control (CPIC) requirements.

**Benefit to the Department.** These actions are consistent with the Clinger-Cohen Act, Office of Management and Budget (OMB) direction, and General Accounting Office (GAO) guidance. They will ensure efficient and effective implementation, management, enforcement, and maintenance of CMIP and the CSIA; and enable the Department to better leverage its significant IT investment at the Department and program levels. The IT governance process is presented in Figure 2 below.

**Figure 2. IT Governance Process**



**3. Continued Execution of the Strategic Information Management (SIM) Process**

In 1995, the Department adopted the SIM process, a GAO-sanctioned methodology that is a cooperative effort led by a broad spectrum of organizations to review and improve the Department's current business processes. The Department's SIM process uses a combination of analytical and collaborative methods to collect information that is used as a foundation or starting point for the requirements definition activities that follow a recommendation to modernize a corporate system. This ensures clear linkage between systems and mission requirements. The SIM process is available to establish a sound business case for a corporate system regardless of whether it will be funded through CMIP or other program budgets. FY 2001 SIM accomplishments include development of a draft business case for Procurement Modernization and initiation efforts to conduct a Corporate Systems Information Architecture (CSIA) Implementation SIM.

**4. Established Control Points for all CMIP Initiatives**

The Department has identified improved management control points for all CMIP initiatives, which include CMIP funded and other program funded corporate systems. More in-depth discussions of these control points, as well as the accomplishments and outlook for each initiative, are presented in the individual project status sections beginning on page 16 of this report.

**Benefit to the Department.** The improved management control points will ensure that the CMIP initiatives are adequately defined and managed in accordance with planned cost, schedule, and technical baselines; increase confidence that they will achieve intended performance objectives; ensure that they are consistent and compatible with the Department's Corporate Systems Information Architecture; and improve the identification, mitigation, and management of project risk.

### **C. CMIP INITIATIVES - EXPECTED OUTCOMES**

Through CMIP and its SIM processes, the Department has defined several business process reform and system modernization initiatives, which will significantly improve business operations and control and reduce cost and risk. Each of these initiatives are described below.

#### **Corporate Business Systems:**

##### **1. Corporate Systems Information Architecture (CSIA).**

Implementation of the CSIA will enhance mission performance and capabilities by leveraging IT investments to facilitate mission activities directly; improve the timeliness and efficiency of information shared across the Department and with stakeholders by enhancing interoperability of systems and data; free-up resources to apply to mission activities by eliminating redundant and duplicative systems and data; minimize interruption of operations and mission activities establishing a Department-wide cyber-security framework; and enhance the protection of secure and sensitive information while minimizing the impact to the sharing of information.

**2. Business Management Information System – Phoenix (formerly BMIS -Financial Management (BMIS-FM)).** BMIS Phoenix will significantly improve response time for management and external customer financial data queries; reduce man hours required by elimination of multiple data entry processes; improve financial data integrity through reduction of data entry errors and elimination of multiple, inconsistent data bases; support the Department's ability to achieve "clean" audit opinions on its financial statements; and reduce costs through the elimination of redundant financial systems.

**3. Corporate Human Resource Information System (CHRIS).** CHRIS will reduce the amount of paperwork required for human resource processes; provide more accurate, timely information to make sound human resource decisions; replace redundant, outdated legacy systems such as the PERS portion of PAY/PERS (Payroll and Personnel System) and Departmental Training Information System (DTIS); and improve services and employee productivity through desktop human resources transaction processing.

**4. On Line Learning Center (OLLC).** The OLLC will reduce the Department's overall cost of training (including development, delivery, and associated travel); address GAO concerns over lack of training administration/management control; improve consistency of training across the Department; and improve the quality of learning opportunities for Departmental employees through reductions in learning time (30 to 40 percent less than classroom instruction), the provision of on-demand learning, better quality control and greater flexibility, and faster updates to training materials.

**5. Department of Energy Network (DOENet).** The DOENet will improve the security profile of the Department by securing the corporate network behind an appropriate firewall; improve the quality of network services by incorporating planned redundancy (extra hubs and connections) to ensure connectivity; reduce Department-wide costs through a single supplier contract for telecommunications services; and improve the Department's abilities to more effectively capitalize on technological advances (such as providing excess bandwidth to leave room for new services).

**6. Procurement Modernization.** While the current systems, EC-Web and the Industry Interactive Procurement System (IIPS), support e-Government directives to improve and increase electronic service delivery by the Government, address Government Paperwork Elimination Act (GPEA; P.L. 105-277) requirements by creating a "paperless" procurement processes, and increase the efficiency and effectiveness of the Department's procurement processes, these systems do not address the total life-cycle of the procurement and financial assistance instruments. In partnership with the Office of the Chief Information Officer, the Office of Procurement and Assistance Management initiated a Strategic Information Management (SIM) project during FY2001 to establish a business case and strategic plan for the next generation of electronic procurement systems.

**7. Foreign Travel Management System (FTMS).** The FTMS will improve the Department's security profile by providing accurate data on foreign travel by employees and contractors; reduce inefficient paper based processing of foreign travel requests; and improve the Department's ability to respond to Congressional and other queries about foreign travel by Department personnel.

#### **Other Corporate Systems:**

**1. Corporate Research and Development (R&D) Portfolio Management Environment.** In August 1999, the Under Secretary of Energy launched a SIM study to determine how best to modernize and streamline R&D management processes and move toward a corporate R&D portfolio management environment. The estimated Department-wide costs for performing and supporting current R&D management processes total more

than \$200M, of which about 17 percent (more than \$30M) represents process inefficiencies. The current process is disjointed, labor intensive, and complex. It requires multiple proposal and plan submissions, duplicative reporting of the same information in varying formats, repetitive data collection and entry, and manual data integration, all of which increase opportunities for error. In addition, the current R&D process is incapable of tracking a research project electronically from its inception to completion or providing information on the composition of the Department's R&D portfolio.

The Corporate R&D Portfolio Management Environment will provide the Department with a single, rational and comprehensive approach to manage and maintain its R&D portfolio. This corporate approach will improve planning and management of research projects (life cycle tracking of proposals/funding); enhance the ability of scientists to communicate and share results and lessons learned with colleagues Department-wide; reduce administrative costs for R&D programs and scientific organizations as the need for multiple proposal submissions are eliminated; reduce budget formulation cost through the integration of automated systems with existing site project management systems; support better reporting to Congress, OMB, and the White House's Office of Science and Technology Policy; and allow the Department to respond to requirements set forth in the Federal Financial Assistance Management Improvement Act of 1999 (P.L. 106-107) to automate the grants process. The cost of this important CMIP initiative is approximately \$17M, and it is expected to yield \$39M in annualized productivity gains.

**2. Corporate Nuclear Materials Information System.** The Nuclear Materials Stewardship Initiative (NMSI) SIM project was chartered to develop a coherent and integrated corporate strategy to improve the management of a vast array of national security, research, and excess nuclear materials and their supporting systems. There is an estimated \$200M currently being spent annually by the Department to manage, use, track, and report information on the nation's nuclear materials inventory. Careful review of the underlying systems architecture that supports the management and maintenance of the nuclear materials inventory found that currently nuclear materials are managed in a non-integrated and uncoordinated manner, and inconsistent business practices are used in accountability and information management activities. Multiple, non-connected databases that must be manually reconciled to each other have resulted in inconsistent data and information being provided to other organizations, agencies, and the public. This has put the Department at risk of being erroneously perceived as not maintaining effective controls over the nation's nuclear materials. In addition, many of the systems supporting nuclear materials management have not been upgraded to take advantage of the latest technologies and integration opportunities.

The recommended business case strategy has the potential to avoid as much as \$66M annually in future years after it is fully implemented. The proposed

activities, to be implemented over a 5-year time frame, will reduce the potential for erroneous data, as well as reduce the various inefficiencies related to maintaining multiple disparate systems. The activities will also establish common business practices and an integrated systems architecture to support the nuclear materials stewardship business functions.

#### **D. CURRENT SITUATION**

CMIP, the CSIA, Cyber Security Architecture, and the improved IT governance process have emerged as integral components of the Department's efforts to improve its CPIC process; increase cyber security protections; and capitalize on opportunities to improve business operations, increase service delivery and reduce paperwork through e-Government. The following Departmental Plans apply to CMIP initiatives:

- 1. Information Technology Capital Plan.** The DOE IT Capital Plan, dated September 2001, presents the steps the Department is taking to improve its CPIC process and serves as the basis for a DOE Order that will establish as policy explicit requirements for IT management within the Department. The IT Capital Plan is in accordance with the Office of Management and Budget (OMB) Circular A-11, and OMB Circular A-130 and accompanies the Departmental budget submission. The plan includes the DOE Cyber Security Action Plan II, a description of the IT governance process and end products, such as the DOE IT Portfolio (OMB Circular A-11 Exhibit 53) and IT Capital Asset Plans (OMB Circular A-11 Exhibit 300). The DOE IT Portfolio and Capital Asset Plans link the IT Capital Plan to the DOE budget submission process.
- 2. Cyber Security Plan.** In January 2001, the Office of Cyber Security issued Cyber Security Action Plan II – Achieving Success Through Risk Management. This Plan describes ongoing and future activities under the DOE Cyber Security Program. It is a living document that the CIO will refine and update on a regular basis. As part of these activities, the Office developed and promulgated a Cyber Security Architecture (DOE G 205.1-1) in March 2001 to provide a coherent framework and to identify architectural principles that should be considered when developing site-specific cyber security architectures. Over the past year, the Office of Cyber Security has applied the framework established in the Architecture Guidelines to fund field cyber security project requests by determining how well these requests comply with the Guidelines. These security costs are reported in the Office of Cyber Security Capital Asset Plan (OMB Circular A-11 Exhibit 300) as part of the DOE budget submission process.

The Office of Cyber Security is developing and implementing an IT CPIC process for its cyber security IT investments that will integrate with the Department's budgeting process. The objectives of this initiative are to ensure that cyber security IT investments are carefully selected and well-managed, improve the Department's cyber security performance, and reduce its cyber

security costs. Beginning in FY 2002, the Office will use the criteria listed in the Architecture Guidelines to measure conformance with CPIC objectives.

The Department has made great strides toward modernization of its Corporate Business Systems. However, successful efforts to position modernization projects for future progress must be supported by adequate funding levels or the risk of project failure increases.

**1. Corporate Human Resource Information System (CHRIS)**

To date, the CHRIS project has successfully implemented a human resource processing module, an employee self service module, and a training administration module. The human resource processing module has been successfully linked to the payroll processing system and the training administration module will be integrated with the On Line Learning Center project to achieve process efficiencies. Plans are in progress to review and potentially implement several other human resource support modules in the future. All of these accomplishments have been made with total projected project funding level of less than \$17M.

A recently released GAO report on the modernization of human resource systems cites projected costs of more than \$70M for projects similar to CHRIS. Historically, the risk of failure for large human resource system modernization efforts is high. The success achieved by this project is evidence of the strict project management planning, control, and oversight of CMIP initiatives.

**2. Business Management Information System – Phoenix (formerly BMIS - Financial Management (BMIS-FM)).**

The Department is modernizing its core financial systems with the BMIS Phoenix initiative. In March 1999, a business case was completed outlining, from a cost/benefit standpoint, the necessity to modernize the Department's legacy financial systems. The senior Department officials concurred with the business case recommendation to proceed with a commercial-off-the-shelf (COTS) modernization project and an integrated project team was established. There are significant acquisition and operational risks inherent in a systems development project of this size and complexity. To mitigate the acquisition risks, the project team established a complete solution oriented acquisition strategy that combined selection of a systems integrator with the selection of the software and a structured formal decision process that was approved by the Chief Financial Officer (CFO) and Chief Information Officer (CIO) for vendor selection. Other formal risk identification and mitigation strategies have been implemented as part of a structured risk management process as part of the overall project management.

This acquisition risk minimization process included the following elements: use of a modular acquisition strategy, competitive vendor selection off the

GSA Schedule 70; selection of only vendors with a proven track record of successful COTS integration and implementation; use of technical, functional experts for vendor evaluation; recommendation by the project Steering Committee; and final recommendation to procurement by the CFO and CIO jointly as the Department's Recommending Officials. The BMIS Phoenix contract was successfully awarded to IBM Global Services using the JFMIP certified Oracle Federal Financials software in September 2000. An informal briefing was provided to losing vendors as a professional courtesy even though it was not required. There were no protests of the award.

An action taken by the Project Team to mitigate implementation risks was the development of a formal project communications plan as part of an overall change management strategy. The plan addresses the actions that will be taken by the Project Team to inform stakeholders, users, and customers of BMIS Phoenix of system changes and project status, and allow feedback from affected communities. Other representative actions to mitigate risks include, but are not limited to, early problem detection and resolution through integration meetings and software tests, use of a proven, well-documented system development methodology, phased deployment, training, strong project sponsors and champions, independent reviews, development of contingency plans, pilots on high risk technical areas, collaboration through user groups, and a series of change management interventions.

These and other project activities have positioned the BMIS Phoenix initiative to move rapidly forward in modernizing this critical business support system.

### **3. Phase II (Implementation) of the CSIA**

During Phase II of the CSIA project, the Department will execute its plans to transition to the target operating environment for corporate systems. Applications and repositories identified as priorities by the "to be" architecture will undergo a SIM process to develop business cases for further management consideration. As selected by the ECIM, development projects will be initiated for specific CSIA applications and/or repositories to move the Department toward a soundly managed and efficient corporate systems environment.

The purpose of establishing a corporate systems architecture was to identify a coherent framework upon which future IT investments for corporate systems could be based. However, now that the framework is available, there is no identified funding for Phase II CSIA activities including the development of new required corporate business systems within the current CMIP funding profile. Funding for Phase II CSIA activities has been identified in FY 2002.

## **E. PROGRAM OUTLOOK**

Access to a reliable, adequate funding source for business process reengineering and corporate system modernization initiatives is critical to ensure that sufficient funding is available for both modernization efforts and the maintenance of operating systems. Indeed, adequate funding for the Department's modernization efforts will have significant long-term benefits.

First, the Department will be able to retire and replace redundant, outdated, and obsolete systems, and eliminate the need for funding associated with their costly outyear operation and maintenance. Second, timely modernization efforts will enable the optimization of business processes and performance. Finally, modernization efforts will ensure the Department's ability to capitalize on efficiency gains made possible by today's advances in technology. With an increase in the investment of systems modernization, the benefits to be gained from the adoption of new and improved technology will be realized. The Department's systems architecture will achieve its promise of improved efficiency and interoperability at reduced costs allowing the Department to get out of the continual game of catch up.

In light of the progress achieved to date across ongoing CMIP initiatives and the establishment of a sound IT management and governance process, the Department seeks to accelerate the modernization of its corporate systems. More immediate implementation of CMIP and its initiatives will:

- Significantly strengthen Department-wide IT capital planning and investment control processes by providing a firm business and technical basis for IT decision making and spending on corporate systems;
- Facilitate the earlier retirement of outdated, obsolete, and redundant legacy systems and components of the supporting IT infrastructure, which will eliminate or reduce costly operation and maintenance charges; and,
- Increase business performance and operational efficiencies from improved business processes and greater IT interoperability across Department locations.

## **F. PROGRAM FUNDING PROFILE**

For Corporate Business Systems, CMIP serves as a funding mechanism for development activities, as well as a management program. When a CMIP initiative is developed and in production other funding mechanisms are used to support operations and maintenance activities, such as the Working Capital Fund. A summary of the CMIP funding profile is presented on the following pages in three tables:

Table 1 - reflects decisions by the CMIP Review Board and a meeting with the Office of Management, Budget and Evaluation on November 13, 2001 to adjust funding allocations for CMIP initiatives from FY 1998 through FY 2002 by providing adequate funds for identified needs of initiative projects.

Table 2 - presents the CMIP proposed preliminary estimated funding allocation for initiative projects and is not a budget request. This table displays part of the estimated funding for CSIA implementation and other necessary funding to achieve program milestones discussed above.

Table 3 - describes other corporate systems funding projections. The Department is considering numerous funding options, such as direct requests from the benefiting organizations, for these systems. This table displays part of the estimated funding for CSIA implementation and planning estimates for the Corporate R&D Portfolio Management Environment and Corporate Nuclear Materials Information System.

**Table 1**  
**ALLOCATION OF CMP APPROPRIATION THROUGH FY 2002**  
**(In Millions)**

Initiatives	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	Total
<b>1. Business Management Information System (BMIS)</b>						
A. PHOENIX (Financial)	1.100	2.300	3.970	8.000	10.000	25.370
B. CHRIS (HR)	2.000	1.850	2.930	2.600	1.800	11.180
C. Technology Supported Learning	0.000	0.000	0.300	0.000	0.000	0.300
D. Procurement (Acquisition)	0.000	0.000	0.400	0.000	0.500	0.900
E. Foreign Travel Management System	0.000	0.000	0.500	0.000	0.000	0.500
<b>2. Architecture and Planning (CPIC)</b>						
A. Information Architecture (Enterprise)	0.460	0.900	0.340	0.800	0.800	3.300
B. Capital Planning and IT Investment	0.300	0.400	0.400	0.374	0.400	1.874
C. Strategic Information Management (Business Case)	0.240	0.500	0.260	0.200	0.750	1.950
<b>3. Infrastructure</b>						
A. DOE Wide Area Network	1.900	2.050	2.900	0.000	0.000	6.850
B. Network Switching Infrastructure Upgrade (CSIA)	0.000	0.000	0.000	0.000	0.400	0.400
<b>4. Corporate Modernization Initiatives</b>						
A. Departmental Element Information Repository (CSIA)	0.000	0.000	0.000	0.000	0.350	0.350
<b>Total</b>	<b>6.000</b>	<b>8.000</b>	<b>12.000</b>	<b>11.974</b>	<b>15.000</b>	<b>52.974</b>

**Table 2**  
**PROPOSED CMIP ALLOCATION (In Millions)**

<b>Initiatives</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
<b>1. Business Management Information System (BMIS)</b>						
<b>A. PHOENIX (Financial)</b>	<b>10.400</b>	<b>2.000</b>	<b>1.000</b>	<b>0.000</b>	<b>0.000</b>	<b>13.400</b>
<b>B. CHRIS (HR)</b>	<b>1.800</b>	<b>1.800</b>	<b>1.800</b>	<b>0.000</b>	<b>0.000</b>	<b>5.400</b>
<b>D. Procurement * (Acquisition)</b>	<b>1.850</b>	<b>2.100</b>	<b>2.100</b>	<b>0.000</b>	<b>0.000</b>	<b>6.050</b>
<b>2. Architecture and Planning (CPIC)</b>						
<b>A. Information Architecture (Enterprise)</b>	<b>1.000</b>	<b>3.000</b>	<b>2.000</b>	<b>2.000</b>	<b>2.000</b>	<b>10.000</b>
<b>B. Capital Planning and IT Investment</b>	<b>0.520</b>	<b>1.480</b>	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	<b>5.000</b>
<b>C. Strategic Information Management (Business Case)</b>	<b>1.500</b>	<b>2.510</b>	<b>2.330</b>	<b>2.330</b>	<b>2.330</b>	<b>11.000</b>
<b>3. Infrastructure</b>						
<b>B. Modernization to Support Corporate Systems Information Architecture (CSIA) *</b>	<b>1.580</b>	<b>3.920</b>	<b>6.700</b>	<b>9.700</b>	<b>10.700</b>	<b>32.600</b>
<b>4. Corporate Modernization Initiatives To Be Started</b>						
<b>A. Corporate Systems Information Architecture Applications (CSIA) *</b>	<b>1.770</b>	<b>3.980</b>	<b>6.100</b>	<b>10.300</b>	<b>11.300</b>	<b>33.450</b>
<b>Total</b>	<b>20.420</b>	<b>20.790</b>	<b>23.030</b>	<b>25.330</b>	<b>27.330</b>	<b>116.900</b>

**\*Note:** Pending Strategic Information Management Business Case approval.

**Table 3**  
**OTHER CORPORATE SYSTEMS PROJECTIONS (In Millions)**

<b>Initiatives</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>Total</b>
<b>3. Infrastructure</b>								
<b>B. Modernization to Support Corporate Systems Information Architecture (CSIA) *</b>	<b>0.000</b>	<b>0.000</b>	<b>10.000</b>	<b>8.000</b>	<b>5.000</b>	<b>4.000</b>	<b>0.000</b>	<b>27.000</b>
<b>4. Corporate Modernization Initiatives To Be Started</b>								
<b>A. Corporate Systems Information Architecture Applications (CSIA) *</b>	<b>0.000</b>	<b>0.000</b>	<b>14.000</b>	<b>7.000</b>	<b>7.000</b>	<b>7.000</b>	<b>0.000</b>	<b>35.000</b>
<b>B. Corporate R&amp;D Portfolio Management Environment (PME) **</b>	<b>4.000</b>	<b>5.500</b>	<b>5.900</b>	<b>1.300</b>	<b>1.300</b>	<b>1.300</b>	<b>1.300</b>	<b>20.600</b>
<b>C. Corporate Nuclear Materials Information System (NMSI) *</b>	<b>0.000</b>	<b>0.000</b>	<b>7.000</b>	<b>16.380</b>	<b>7.090</b>	<b>5.780</b>	<b>3.690</b>	<b>39.940</b>

\* Pending Strategic Information Management Business Case approval. The Department is considering numerous funding options, such as direct requests from the benefiting organizations, for these modernization projects.

\*\* Office of Science is funding the Corporate R&D Portfolio Management Environment development with no planned transition of funding to CMIP. This decision was made in a meeting with the Office of Management, Budget and Evaluation on November 21, 2001.

### **G. CMIP PROJECTS**

A report on the current status for each CMIP initiative project, under the oversight of the CIO via CMIP review processes, begins on the following page.

## **Initiative: 1. Business Management Information System (BMIS)**

### **A. Financial**

**Project Manager: Michael Fraser**

**Project: Business Management Information System Phoenix (formerly BMIS-Financial Management (BMIS-FM))**

#### **1.0 Background**

To support accountability and improved decision-making, it is critical that the Department's business managers receive comprehensive, timely and reliable financial information in a user-friendly format. The existing financial management systems have been used by DOE for almost 20 years and are not capable of responding rapidly to new demands for financial information from both internal and external customers. Because of the use of older technology and modifications over the years, these systems are difficult and expensive to maintain. In addition, many DOE Program Offices and field sites have developed their own auxiliary financial information systems to support their individual needs. This has resulted in the creation of duplicate systems, inconsistent information, and lack of interoperability.

The need for a major change in DOE financial management practices is also driven by legislation and policy actions external to the Department, such as the Chief Financial Officers Act of 1990, Government Performance and Results Act of 1993, Federal Financial Management Improvement Act of 1996, Clinger-Cohen Act of 1996, OMB Circular A-127, and the Joint Financial Management Improvement Program core financial system requirements.

#### **2.0 Project Milestones, Progress, and Accomplishments (since last report)**

BMIS Phoenix has historically included three projects: the Corporate Executive Information System (EIS), the Financial Data Warehouse (FDW), and the Core Financial System (CFS) in various stages of design and implementation. Both the EIS and FDW were developed as interim solutions while the BMIS Phoenix solution was being planned and designed.

The Corporate EIS is aimed at meeting the business information needs of executives and Departmental managers by providing immediate access to information to support analysis for business decisions. This project was removed from the CMIP Program at the end of FY 2000 and has continued to evolve to meet requirements of the Department. Future plans for the EIS will be coordinated with the BMIS Phoenix Project Office through the Office of Corporate Financial Systems in the Office of Management, Budget and Evaluation.

The FDW is primarily directed at meeting the business information needs of program and project managers and their staffs. During FY 2001, major accomplishments included

design and implementation of the trial balance universe, enhanced budget execution universe, and monthly EIS Interface files. FY 2001 was the last year of CMIP funding for the FDW. Planning for the FDW will continue to be coordinated with the BMIS Phoenix Project Office through the Office of Corporate Financial Systems in the Office of Management, Budget and Evaluation.

The CFS will replace the main legacy financial systems in the Department. During FY 2001, the major accomplishments for the BMIS Phoenix Core Financial System project included installation of system hardware and software, training of the project teams, completion of a change readiness baseline assessment, expansion of the communications efforts through newsletters and a project website, completion of the select (choose software and system integrator), prepare (planning), and focus (gap analysis) phases of the IBM system development methodology, completion of two successful conference room pilots to test preliminary design decisions, and creation of a database instance for team members to experiment with the software. In addition, the analyses of business structure changes, including the Standard General Ledger (SGL), were completed in preparation for the transition to BMIS Phoenix.

### **3.0 Performance Measures**

#### **3.1 Description of Performance-Based System:**

The reporting threshold for cost and schedule variances is 10 percent for this project.

##### **3.1.1 Previous baseline goals:**

Performance goals are unchanged for this project.

##### **3.1.2 Current performance goals estimates:**

Current estimates of the performance goals of this project are identified in 3.2.

##### **3.1.3 Variance from baseline goals:**

There are no current variances from baseline goals.

##### **3.1.4 Corrective actions:**

No corrective actions are required.

##### **3.1.5 Proposed revisions to baseline goals:**

There are no proposed revisions to the baseline goals.

### 3.2 Performance Goals:

#### **3.2.1 Adopt standardized, efficient, and effective financial management practices to support internal and external customers.**

**Measure:** Continuous implementation of reengineered business processes and other process improvements to support the new BMIS Phoenix System.

Comment: Additional processes requiring reengineering may be identified as part of the project's design or testing phases.

#### **3.2.2 Design a comprehensive and integrated BMIS Phoenix System to be closely integrated/interfaced with the Department's Human Resources and Procurement systems.**

**Measure :** Requirements documents for the BMIS Phoenix Project adequately address internal and external customer needs and integration/implementation with other corporate systems by January 2000.

Comment: Final functional requirements were completed and included in the acquisition process and incorporated into the contract with IBM Global Services. The interfaces with the Human Resources and Procurement systems are among the high priority planned interfaces and were included in the census by the BMIS Phoenix Development Team.

#### **3.2.3 Acquire and implement the BMIS Phoenix System.**

**Measure:** Implement a phased acquisition and implementation schedule for BMIS Phoenix System. A summary version follows:

FY 1998	Implement Corporate Executive Information System. (Completed)
FY 1999	Pilot Financial Data Warehouse module. (Completed)
FY 2000	Select CFS System Integrator (Completed)
FY 2001	Install hardware and software, and execute conference room pilots (Completed)
FY 2002	Complete design and initial implementation of the CFS
FY 2003	Complete implementation of CFS nation-wide
FY 2004	Implement Budget Formulation

Note: The new project baseline is being developed with the Department's BMIS Phoenix system integrator as a deliverable work product in the design phase of the project. The current schedule has been adjusted to reflect actual and planned funding and staffing.

#### **4.0 Issues or Concerns**

The level of long-term funding and staffing for BMIS Phoenix remains a concern. No other Congressional level issues or concerns have been identified for this initiative.

#### **5.0 Cost Schedule (in millions)**

<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$1.100	\$2.300	\$3.970	\$8.000	\$10.000	\$10.400	\$2.000	\$1.000	\$0	\$0	\$38.770

#### **5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

- Funding for FY 2001 through FY 2005 has been changed to reflect estimated costs to implement the CFS. No CMIP expenditures are planned beyond FY 2005. The requirement for FY 2006 should be operational and maintenance costs which should be funded by non-CMIP funds. If additional software modules are ordered as options under the contract, then additional design and development funds will be required from CMIP.
- The CMIP funding for EIS terminated in FY 2000 and FDW terminated at the end of FY 2001. Those projects will be funded by other sources.
- No operating funds are included for EIS, FDW, and CFS in the cost schedule.

#### **6.0 Implementation Schedule**

This section no longer includes information about the EIS. It does include the FDW milestones as a one year transition entry but will not be included in next year's report. The focus will be on the CFS milestones.

#### **6.1 Corporate Data Warehouse FY 2002 - Planned**

- 10/01 Deploy Facilities Information Management System (FIMS) prototype
- 11/01 Deploy Budget Execution universes
- 12/01 Develop SGL universe using trial balance design
- 4/02 Develop Procurement universe
- 7-12/02 Develop Phoenix Interface universes (AR, AP etc.)

#### **6.2 BMIS Phoenix FY 2002 – Planned**

- 10/01 Complete Design phase with gap closing strategy recommendations
- 11/01 Go/No Go Decision
- 12/01 Complete Budget Formulation requirements – Phase I

- 5/01 Complete reports, conversion programs and interfaces for the Capital Accounting Center Cluster
- 8/02 Complete independent verification and validation (IV&V) testing
- 9/02 Complete end-user training
- 9/02 Implement CFS at the Capital Accounting Center Cluster

## **Initiative: 1. Business Management Information System (BMIS)**

### **B. Human Resources**

**Project Manager: George Hofman**

**Project: Corporate Human Resource Information System (CHRIS)**

#### **1.0 Background**

The Corporate Human Resource Information (CHRIS) Project encompasses the vast majority of systems that support human resource and payroll processing and information for Department of Energy (DOE) Federal employees. Initiated in Fiscal Year (FY) 1997 to ensure that a state-of-the-art system would be in place for human resource processing and information access prior to the Year 2000 rollover, the project has been expanded over the years to include an integrated systems modernization approach to meet human resource, training administration, payroll, timekeeping, and labor distribution processing and information requirements.

With the modernization effort underway for the Department's financial management and budget execution systems, CHRIS implementation will provide interoperability and integration with this new corporate system. Modernization of the systems under the CHRIS umbrella is critical to the Secretary's business line goal for Corporate Management, "organizational excellence in corporate management systems and approaches." It will provide an integrated, state-of-the-art solution to the human resources, benefits, payroll, and time and labor best business practices and business information needs of the Department's five business lines -- Energy Resources, National Security, Environmental Quality, Science and Technology, and Corporate Management. Expected benefits include a more informed decision-making business environment; efficiencies in operations; reduction in paperwork; elimination of redundant information systems and non-value added and duplicative work; and the accessibility to information needed by management to make sound, reasoned decisions.

A project management structure for the CHRIS project provides corporate oversight of the implementation process, makes decisions concerning how CHRIS is used throughout the Department, coordinates implementation at all sites, improves business practices to take maximum advantage of automated capabilities, and tracks project costs, savings, and tasks. The Project Manager is accountable to the Chief Information Officer and the Director of the Office of Management, Budget and Evaluation (formerly the Offices of the Chief Financial Officer and Management and Administration) for the project's success. The Project Manager, supported by three team leaders -- human resource/benefits, payroll/time and labor, and systems/technical -- is responsible for project leadership, advocacy, communication, oversight, collaboration, evaluation, and coordination of the overall project, plan, budget, resource needs, and internal and external relationships.

Systems activities under the CHRIS umbrella include interface with the legacy payroll

system PAYS and modernization efforts for payroll, timekeeping, and labor distribution; development and implementation of PeopleSoft (PS) Federal commercial-off-the-shelf software to support personnel and training processing and information; provision of Employee Self Service (ESS) which provides web-based access at the employee desktop to personnel and payroll information and to update certain personal information; and interface with DOEInfo, the Department's data repository for human resource and payroll information.

Through FY 2000, the PS and ESS development costs have been funded through CMIP. In Fiscal Year 2001, the PS and ESS operations and maintenance costs were paid by the Office of Management, Budget and Evaluation and will transition to the Department's Working Capital Fund in FY 2002. Development of new functionality or service delivery mechanisms in both of these systems continued to be funded in FY 2001 under CMIP. Current costs for payroll processing and PAYS and DOEInfo operations and maintenance, in addition to costs for payroll, time, and labor systems modernization, are funded by the Department's Working Capital Fund.

Updated information on the modernization efforts for payroll, timekeeping and labor distribution follows:

The Department of Energy's (DOE's) Capital Accounting Center (CAC) provides payroll and related services for approximately 12,000 Federal employees. These functions are supported by three aging information systems: the Payroll System (PAYS), Energy Time and Attendance (ETA) System, and Labor Distribution System (LDS). These systems are maintained by internal Federal and contractor staff, have not kept pace with new technology, and are not integrated with the Corporate Human Resources Information System (CHRIS).

DOE has conducted many studies and requirements analyses pertaining to the payroll systems dating as far back as 1994. In these previous studies, recommendations have been made to outsource the payroll function to an external cross-service payroll provider or to implement an in-house PeopleSoft payroll solution that, with the CHRIS, would provide the Department with a fully integrated personnel/payroll solution.

Immature functional capabilities, costs, and provider schedule delays have prevented the Department from moving forward with either of these alternatives in the past. Technical and functional aspects of the payroll function have reached the critical point where a decision and strategic direction needs to be made.

In order to make a concrete decision and plan of action for the future of DOE payroll and related services, Booz-Allen and Hamilton, Inc. was tasked to conduct a business case analysis that independently assessed viable alternatives for the DOE to pursue in replacing its aging PAYS, T&A, and LDS systems. Based on DOE's specific needs, Booz-Allen recommended that DOE outsource its payroll operations to the General Services Administration (GSA). In order to reduce risks associated with this solution, Booz-Allen further recommended that DOE perform a detailed requirements and gap analysis against

GSA systems functionality and service offerings.

Following approval from the Working Capital Fund (WCF) Working Group and WCF Board to initiate an Interagency Agreement with the GSA to perform a gap analysis, the WCF Chair recommended that DOE obtain the services of a contractor to facilitate such a gap-fit analysis. Booz-Allen was tasked to assist DOE in conducting a successful gap-fit analysis with the GSA for its payroll and related services by:

- (1) assisting in the identification and documentation of disparities and proposed solutions associated with payroll functionality, processes, interfaces, reports, organizational changes, operational and policy issues, architecture/infrastructure, and security;
- (2) refining their previous cost-benefit analysis to consider gaps, gap solutions, and other factors unavailable at the time of the initial analysis;
- (3) identifying potential areas of organizational impact related to outsourcing payroll to GSA, and methods of mitigating risks associated with this activity; and,
- (4) proposing a work plan that facilitates the outsourcing of DOE payroll services to GSA.

The expected completion date of the gap-fit analysis is December 31, 2001. At this time, a go/no go decision to outsource payroll to GSA will be made.

## **2.0 Project Milestones, Progress, and Accomplishments (since last report)**

- |       |   |
|-------|---|
| 10/00 | Beginning in FY 2001, costs to support CHRIS personnel action processing, including infrastructure and technical support, were no longer paid for by the Corporate Management Information Program but supported by the Office of Management, Budget and Evaluation. |
| 10/00 | Setup system and procedures for automated recruitment process.  |
| 10/00 | Disaster/Recovery testing: mini test after upgrade of DEC Alpha 8200 is in production.  |
| 11/00 | Began pilot for automated recruitment system.   |
| 12/00 | Implemented new ESS update function for Thrift Savings Plan.  |
| 12/00 | Implemented HR and training enhancements to improve efficiency and streamline processes.  |
| 3/01  | Implemented infrastructure recommendations: Tuxedo encryption on the application server, remote access server (connectivity contingency), and password enforcement software.  |

- 4/01 Completed business case analysis to support payroll, time and attendance, and labor distribution. Recommendation was to proceed with GSA service offering.
- 4/01 Completed Oracle 8 upgrade for CHRIS 2<sup>nd</sup> quarter FY 2001.
- 4/01 Conducted full disaster/recovery test.
- 4/01 Implemented HR and training enhancements to improve efficiency and streamline processes.
- 6/01 Expanded use of the automated recruitment system to other field offices.
- 6/01 Programmed, tested and implemented web-based Individual Development Plan function in Employee Self Service; trained users
- 6/01 Implemented Life Care Events capability in Employee Self Service
- 7/01 Completed basic upgrade from PeopleSoft 7.5 to PeopleSoft 8.0.
- 7/01 Signed interagency agreement with GSA for joint development of requirements document.
- 7/01 Began functional fit analysis for obtaining payroll and related services. Booz·Allen, and Hamilton to facilitate effort.
- 8/01 Terminated PeopleSoft Payroll maintenance agreement.
- 8/01 Completed design document for HR and training workflow.
- 8/01 Developed training course on DOEInfo for HR and Training users. Completed testing of detailed CHRIS information for Managers under Executive Information System.
- 9/01 Deploy detailed CHRIS information for Managers under Executive Information System.

### **3.0 Performance Measures**

#### **3.1 Description of Performance-Based System:**

The reporting threshold for cost and schedule variances is 10 percent for this project.

##### **3.1.1 Previous baseline goals:**

Previous baseline goals for FY 2000 were met.

##### **3.1.2 Current estimate:**

Current estimates of the performance goals of this project are identified in 3.2.

##### **3.1.3 Variance from baseline goals:**

Some of the goals and measures in the previous report have been refined to make them more customer oriented and measurable; no previous goals were eliminated.

##### **3.1.4 Corrective actions:**

No corrective action was required.

##### **3.1.5 Proposed revisions to baseline goals:** None.

#### **3.2 Performance Goals:**

**Overarching Project Goals.** The functionality of CHRIS continues to expand with new modules, increased web-based technologies, and enhanced features that will enable the HR and payroll communities to respond more effectively and efficiently to the needs of DOE managers and employees. CHRIS will also continue to replace redundant and/or outdated HR information systems throughout DOE.

##### **3.2.1 Goal:**

Reduce paperwork and eliminate non-value added work by providing DOE employees and managers web-based access from the desktop to view appropriate personnel and payroll information. Continue to enhance initial view capabilities to include the ability of employees and managers to update appropriate personnel and/or payroll information.

##### **Measures:**

- (a) By September 30, 1999, provide employees with the ability to update home address, education, emergency contact information, and licenses and certifications and to view individual training

summary of courses documented in CHRIS and to review DOE sponsored training courses.

**Previous Status:** Met with capabilities provided to user community by 9/30/99 with 28 percent of employees voluntarily using ESS to view personnel and payroll information.

**Current Status:** As of 9/00, more than 65% of employees are voluntarily using ESS to view and update personnel and payroll information.

(b) By September 30, 2000:

- Provide employees with the ability to update office phone and fax numbers, e-mail address, Federal tax, State tax, direct deposit, allotment, and Thrift Savings Plan information.
- Implement voluntary program to eliminate mailing of bi-weekly Earnings, Leave, and Benefits Statement.
- 50 percent of employees using ESS to view personnel and payroll information.
- 15 percent of targeted human resource information/documents processed or transferred by employees and managers electronically.

**Current Status:** Accomplished, with one exception. The Thrift Savings Plan (TSP) updates in ESS are deferred until December 2000 due to delays by the TSP Board in implementing its new investment features.

ESS has been extremely successful. Over 68% of DOE employees have signed up for ESS. Nearly 800 employees have voluntarily discontinued the mailing of their biweekly earnings statement. The number of documents processed in ESS compared with those previously done manually represented an average of 40%. In just one year, there have been nearly 10,000 transactions completed in ESS.

(c) By September 30, 2001:

- Provide employees and managers with the ability to view or update additional personnel and payroll information, such as updates to disability status Thrift Saving Plan.
- Implement mandatory program to eliminate mailing of bi-weekly Earnings, Leave, and Benefits Statement (with clear criteria established for exceptions to paperless process).

- 75 percent of employees utilizing ESS to view personnel and payroll information.
- 30 percent of targeted human resource information/ documents processed or transferred by employees and managers electronically.

**Current Status:** On target. Work is in progress to program additional update capabilities in ESS and usage of the system continues to increase with the new features rolled out: 81% percent of employees are accessing ESS. Employees are voluntarily discontinuing earnings statement. Thirty percent target of documents processed electronically has been met.

(d) By September 30, 2002

- Provide update capability for savings bonds.
- Expand self service capabilities for employees to make life event changes.
- Provide ability to update Health Benefits and send electronic data to OPM and the carriers.

**Current Status:** Pending FY 2002 start.

**3.2.2 Goal:** Mitigate risks to accurate Federal employee pay during the Year 2000 rollover.

**Measures:**

- (a) Monitor CHRIS and PAYS for potential Y2K issues and maintain readiness of staff to address Y2K functional and/or technical issues should they arise on or after century change date.

**Current Status:** Completed. CHRIS and PAYS successful roll over to the year 2000 without incident.

**3.2.3 Goal:** Maintain integrity of personnel action processing data in CHRIS as the official personnel system of record.

**Measures:**

- (a) Maintain data integrity at a level that results in no less than a 95 percent Office of Personnel Management (OPM) report approval rate.

**Current Status:** During most of FY 2000, report submissions met the

OPM acceptance level. Temporary fluctuations in the level were experienced during the PS 7.51 upgrade period. Issues creating the deviations are being resolved. OPM error information and rates for monthly dynamic and quarterly status submissions will continue to be monitored and serve as a benchmark against which decisions to modify the system to improve data integrity will be made.

- (b) Maintain focus of development for personnel action processing on statutory/regulatory compliance, data integrity, and user identified needs.

**Current Status:** Implemented new OPM requirements for awards processing. Testing new automated features (for awards and within-grade increases) designed to eliminate data entry for users processing actions. Implemented new edits to improve data integrity. Special query course developed for users to facilitate knowledge for developing informational reports.

- 3.2.4 Goal:** Maintain CHRIS as a state-of-the-art system by appropriately planning for and implementing PS Federal release upgrades to assure that the Department takes advantage of planned technology and functional improvements in the commercial-off-the-shelf product.

**Measures:**

- (a) Accomplish upgrade to PS Federal Release 7.51 and provide to users within six months of upgrade start date, including issuance of HR and training users manuals.

**Current Status:** Upgrade completed in May 2000 after one month delay due to additional programming needed.

- (b) Assess capabilities of PS Release 8.0 within six months of release date and determine upgrade schedule.

Current Status: Pending PS release of product (expected at end of the fourth quarter of FY 2000).

- 3.2.5 Goal:** Implement at least one re-engineered human resource business process each fiscal year utilizing CHRIS or the CHRIS web-site.

**Measures:**

- (a) Re-engineer training administration business processes and implement CHRIS as the official system of record for Federal employee training administration across the Department with initial functionality provided to users in FY 2000.

**Current Status:** Completed October 1999. Legacy training system shut down.

- (b) Re-engineer retention register business process in FY 2000 in line with changes in regulatory requirements and provide automated capability to support reduction-in-force across the DOE complex.

**Current Status:** Provided capability to create data extract file that allows data to be used with the DoD AutoRIF program. This alternative provides a cost effective method and capitalizes on the programming efforts of another Federal agency.

- (c) Assess Departmentwide user requirements for the paperless flow of personnel processing documentation, complete prototyping and fit/gap analysis of workflow functions in PeopleSoft, and determine feasibility of implementing functions in CHRIS based on current and/or planned technical infrastructure and the ability of the Department to establish common business processes.

**Current Status:** In Progress. Preliminary assessment done of DOE environment (e.g., infrastructure, security, e-mail systems, etc.) and PS capabilities and potential implementation challenges. Programming to be completed by December 31, 2000.

- (d) Complete evaluation of PeopleSoft functionalities (Health/Safety, Plan Careers, Succession Planning) and conduct fit/gap analysis in FY 2001 to determine implementation schedule.

**Current Status:** Based on the updated CHRIS Project Plan, evaluation and fit/gap of Health/Safety has been moved to 2003 and initial evaluation of Plan Careers/Succession Planning to 2002.

- (e) Begin prototype to re-engineer the recruitment function in FY 2001 including redefining and streamlining the application process.

**Current Status:** Pilot project began in 11/00 with seven sites and expansion to 4 additional sites in the last quarter of FY 2001.

- (f) Expand usage of automated recruitment process by 30%.

**3.2.6 Goal:** Reduce the number of legacy and local HR systems.

**Measures:**

- (a) Retire the Departmental Training Information System (DTIS) in FY 2000.

**Current Status:** Completed. DTIS retired in December 1999.

- (a) Survey Program Offices in FY 2000 on the status of local HR systems identified for retirement as part of the CHRIS business case and identify any new local HR systems that have been developed and/or enhanced since the Fall of 1996. Analyze survey results and make recommendations as appropriate to the CHRIS Board of Directors based on impact of findings related to the CHRIS projected return on investment.

**Current Status:** Survey completed and input provided by Headquarters Program and Field offices. Draft report prepared and under review with before issuing to the Board. Initial results of the survey indicate that although some offices have made progress in decreasing or avoiding the costs of duplicate systems, duplication still exists.

- (a) Work with offices to reduce reliance of standalone systems.

**Current Status:** In FY 2001, use of standalone systems for training administration and tracking technical qualifications was eliminated at 7 sites/offices. As new features of CHRIS continue to be deployed and enhanced functionalities are programmed, offices have indicated their continued support to use the corporate system in lieu of standalone systems. On-site meetings have been conducted with administrative HR and TR staff in Headquarters and the field staff to evaluate the use of standalone systems and to discuss current and upcoming CHRIS features which can replace the standalone systems being used.

**4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

**5.0 Cost Schedule (in millions)**

<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$2.000	\$1.850	\$2.930	\$2.600	\$1.800	\$1.800	\$1.800	\$1.800	\$0	\$0	\$16.58

**5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

CMIP support for development will continue through FY 2005 to assure the project will be in a position to address user concerns timely and effectively and to implement added human resource functions as the PS product continues to mature its Federal releases. Operations and maintenance of CHRIS will be funded under the Working Capital Fund in FY 2002.

## **6.0 Implementation Schedule**

### Near Term

- 10/01 Beginning in FY 2002, costs to support CHRIS personnel action processing, including infrastructure and technical support, will no longer be paid for by the Office of Management, Budget and Evaluation but covered under the Working Capital Fund.
- 10/01 Implement updates from On Line Learning Center to CHRIS
- 10/01 Conduct public key infrastructure (PKI) (smart card) pilot for CHRIS and related applications and develop schedule for expansion to all CHRIS users.
- 11/01 Complete installation of web servers and related hardware to support PeopleSoft 8.0
- 12/01 Conduct full System Integration Test of PS 8.0 and workflow for training
- 12/01 Complete fit/gap analysis documentation and outsourcing plan for Payroll.
- 12/01 Implement enhanced standard reports in DOEInfo
- 1/02 Deliver user training for PS 8.0 and workflow for training
- 2/02 Implement upgrade to PS 8, a fully web based application
- 2/02 Implement workflow to permit employees to automatically submit training requests.
- 3/02 Implement PKI for CHRIS and the CHRIS web-site.
- 4/02 Implement workflow for managers to electronically submit personnel action requests.
- 4/02 Implement automated SF-52 tracking system in CHRIS.
- 5/02 Conduct fit/gap for PS Plan Careers module and integration with ESS training needs assessment (IDP) and evaluate Succession Planning module.
- 6/02 Expand use of PeopleSoft Competency module to other positions and/or programs
- 7/02 Establish protocol for archiving CHRIS records
- 8/02 Expand ESS capabilities for health benefits, new employee forms, and savings bonds.

## **Long Term**

Due to the robust nature of the PeopleSoft Federal product, a number of HR functions remain for implementation consideration: work in progress service delivery; web-based service delivery for managers; performance management; employee/labor relations; succession planning; and workers compensation. Annually, the HR community will identify one or two of these functions as implementation priorities based on Department-wide needs and the degree of Federalization of the software at the time of their decision. One year to six months is required to complete a fit/gap analysis of the function as delivered in the software and the Department's business processes. During any one year, CMIP funds may support one or more fit/gap analyses, as well as design, development, testing, and implementation of a function that may have undergone review in a previous year.

Below are major known activities anticipated for FY 2003:

- Conduct a fit/gap on PS Health & Safety module and implement
- Conduct a fit/gap on PS Employee/Labor Relations module and implement
- Expand ESS capabilities (e.g., CFC)
- Evaluate knowledge based software for benefits information

## **Initiative: 1. Business Management Information System (BMIS)**

### **C. Technology-Supported Learning**

**Project Manager: Tanya Lockett**

**Project: Energy Online Learning Center**

#### **1.0 Background**

The Energy Online Learning Center (OLC) project makes training accessible to more Department of Energy employees (Federal and contractor) at a lower cost and is consistent with Executive Order 13111, "Using Technology to Improve Training Opportunities for Federal Government Employees." By implementing advanced training technologies corporate-wide, individuals and groups can participate in individual and group-based learning through presentations, tutorials, tests and simulations at the employee's desktop or specially equipped classrooms and learning centers. This type of learning-anytime, anywhere, by anyone requires a combination of multimedia computers, high-bandwidth networks, and advanced telecommunications equipment. New information systems or ties to existing ones must be developed so employees and their managers can identify existing learning resources, schedule those resources, link to the resources, and post results of their learning experiences.

Implementing a robust corporate-wide Technology-Supported Learning (TSL) system like the OLC will result in significant cost savings. The need for individual sites to develop and deliver similar training courses and reduce student travel to other sites or other buildings within the same complex will be eliminated. Staff and managers will increasingly be able to take training in their office when their schedule accommodates versus when and where a class is scheduled. Appropriately used, web-based training has been shown to reduce learning time and improve knowledge retention and skill acquisition over the traditional classroom experience. This system will also be ideal for the delivery of critical safety training courses where the consequences of unsafe actions can be simulated at low cost, without risk or harm to the learners or training facilities. The OLC will provide high quality, standardized, cost-effective learning opportunities on a much more timely basis to the employees than is possible through traditional means alone.

The investment this year in a commercially available off the shelf (COTS) web-based training system is a first step in establishing a DOE-wide TSL program. The system will be available to all DOE Federal employees. Employees will have access via the Internet to learning, knowledge, and career development opportunities 24 hours a day.

## **2.0 Cost Schedule (in millions)**

<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$0	\$0	\$0.300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0.300

### **2.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

In the CMIP Review Board meeting held on March 7, 2000, \$0.3M was reallocated to fund the Technology Supported Learning DOE Online Learning Center in FY 2000. FY 2001 and previously identified out year estimates have been removed as currently no other training technologies have been identified for Technology Supported Learning implementation. The cost schedule will be updated if advanced training technologies are identified and approved in the future.

## **Initiative: 1. Business Management Information System (BMIS)**

### **D. Procurement**

**Project Manager: David Hoexter/Douglas Baptist**

**Project: Procurement Modernization**

#### **1.0 Background**

Implementation of DOE procurement modernization is necessary to achieve cost savings and to better utilize decreasing DOE procurement staff by carrying out all acquisition, financial assistance, and payment processes electronically. Prior to the initiation of the SIM, the office's strategy was to develop modular components to support the natural phases of the acquisition process and to use COTS software wherever feasible. The office strategy also called for making maximum use of the Internet and information technology connectivity by web-enabling all modules, and linking those modules and components only after successful piloting and/or operational testing. This strategy will be updated as a result of the recommendations contained in the Business Case to be delivered at the conclusion of the Procurement Modernization SIM.

With no CMIP funding and a limited Departmental Administration budget in FY 1998, 1999 and 2001, the office focused its implementation strategy on developing and testing an electronic simplified acquisition system called EC Web. Funds in the amount of \$400,000 were provided by CMIP in FY2000.

After testing four commercial systems in 1996, and finding each unsatisfactory, DOE initiated the development of a system using existing Web technology. After a field/Headquarters task force defined the requirements in early 1997, an end-to-end paperless simplified acquisition system, aimed at purchases of goods below \$100,000 in value, was built, tested, and is now being implemented throughout the Department. The office focused on simplified acquisition, as this was the original direction under the prior administration, as implemented through guidance and leadership of the Administrator of the Office of Federal Procurement Policy. Further, simplified acquisitions are the highest cost, most labor intensive, lowest pay back type of procurement, and streamlining such acquisitions will have the greatest impact on efficiency in procurement operations.

Significant EC Web implementation accomplishments to date include:

- |       |   |
|-------|---|
| 4/98  | EC Web Development and Testing Complete |
| 8/98  | Gateway/Hub established in Germantown   |
| 12/98 | Initial Roll Out of EC Web System       |
| 5/99  | Headquarters Procurement and CFO        |

Second half FY1999

Oak Ridge Operations Office  
Chicago Operations Office

FY 2000

National Energy Technology Laboratory  
Albuquerque Operations Office  
Savannah River Operations Office  
Assistant Secretary, Defense Programs  
Office of Nonproliferation and National Security

By October 1, 2000

Office of Security & Emergency Operations  
Assistant Secretary, Fossil Energy  
Assistant Secretary, Environmental Management  
Energy Information Administration  
Offices within the Office of Management & Administration

The Office of Procurement and Assistance Management has continued to develop and implement modular systems according to the availability of funds and human resources, both Federal and Contractor (see "Other Activities" below). Within the Office of Management, Budget and Evaluation, efforts had been made to develop a business case independent of the CIO's SIM process. This business case was to address this modular approach and compare it to a cradle to grave, integrated system. However, the original business case was not completed, and in light of the current Procurement Modernization SIM, the information developed therein is being incorporated into the business case being developed under the current Procurement Modernization SIM. This process and subsequent efforts will fully involve DOE field and Headquarters customers and users and would result in a comprehensive schedule of planned procurement systems modernization in the out years.

### **Other Activities**

During FY 1999, the Office of Procurement and Assistance Management undertook a pilot program at Headquarters concerning an electronic system for acquisitions over \$100,000 and for financial assistance. The system provides for issuing solicitations, receiving electronic proposals/bids/applications, conducting negotiations if required and awarding instruments. This system, which is being implemented throughout the DOE, involves using a system developed by the Department of the Army. That system was modified to fit DOE's needs. The application has been named the Industry Interactive Procurement System (IIPS). The deployment of IIPS occurred throughout FY 2000 and FY 2001. For FY 2002 IIPS will be utilized throughout the Department to provide information to FedBizOpps as mandated by the interim Federal Acquisition Regulation rule. In addition, the Albuquerque Operations Office (AL) has been

piloting a commercial-off-the-shelf electronic contracting module (IPRO) that provides cradle-to-grave support for government procurement. HQ and Field staff have concluded testing the AL system and determined that it is not yet ready for use throughout the Department.

## **2.0 Project Milestones, Progress, and Accomplishments**

Initial CMIP funding of \$400,000 was made available for development of this project on October 1, 1999. No CMIP funding is planned in FY 2001, as project activities in FY 2001 are operational in nature. In FY 2002, an additional \$250,000 of CMIP funding will be utilized for planning, review, and coordination of further Procurement Modernization development initiatives by the Office of Management, Budget and Evaluation and DOE programs.

During FY 2000, IIPS has been deployed to eight field offices in addition to its use at the Office of Headquarters Procurement Services. These field offices included the Albuquerque, Nevada, Oakland, Oak Ridge, Savannah River, Ohio, Idaho, and Golden Operations offices. During FY 2000 the value of transactions that were awarded using IIPS exceeded \$200M. An additional eight field offices were targeted for implementation during FY 2001. IIPS was deployed to eight field offices including the Chicago, Richland, NETL, Strategic Petroleum Reserve, Western Area Power Administration, Southwestern Power Administration Operations Offices and the Office of River Protection in Richland.

Pending the outcome of the Procurement Modernization SIM, these two systems will continue to be implemented and utilized by the Department to conduct electronic procurement and financial assistance actions.

## **3.0 Performance Measures**

### **3.1 Description of Performance-Based System:**

The first measure for electronic purchasing is number of orders placed electronically as a percentage of simplified acquisitions made by the Department purchasing offices and enhanced customers' satisfaction. A second measure for electronic procurement is the percent of solicitation issued electronically. For FY 2002 a measure will be developed to measure the success of posting synopses and solicitations to FedBizOpps as required by the recent change in the FAR.

### **3.2 Performance Goals:**

The goal for FY 2001 is for 10 percent of simplified acquisitions to be made electronically.

The goal for FY 2002 is for 20 percent of simplified acquisitions to be made electronically.

The goal for FY 2003 is for 40 to 50 percent of simplified acquisitions to be made

electronically.

The goal for each of FY 2001, 2002 and 2003 is for 100 percent of the Requests for Proposal (RFPs) to be issued electronically.

Enhanced customer satisfaction will be measured via means such as user surveys, feedback from the Office of the Chief Financial Officer, procurement field personnel, and vendors using the new electronic tools.

Goals beyond FY 2003 are likely to be obviated or altered by the implementation of the Procurement Modernization SIM's recommended solution.

#### **4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

#### **5.0 Cost Schedule (\$ in millions)**

<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$0	\$0.400	\$0	\$0.500	\$1.850	\$2.100	\$2.100	\$0	\$0	\$6.950

#### **5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

The FY 2001 and FY 2002 amounts have been modified on the cost schedule based on funding allocation decisions. Similar or reduced funding allocations will be required for the Procurement Modernization SIM's recommended solution.

#### **6.0 Implementation Schedule**

Previously proposed roll out of the EC Web System was:

Balance of HQ Offices - - FY 2001

Field Offices having substantial small purchase activity - - FY 2002

In February 2001, the decision was made to suspend implementation of more offices until major enhancements could be made to the system. Several offices cited a lack of a Modification capability as an obstacle to using the system. This enhancement was implemented June 30, 2001. The second enhancement, Purchase Card Reconciliation, is scheduled to be implemented in the first quarter of FY 2002. Once this is completed, further offices will be implemented.

IIPS will be rolled out to the balance of the Department in FY 2001.

## **Initiative: 1. Business Management Information System**

### **E. Foreign Travel Management System**

**Project Manager: Jo Buxton**

**Project: Development of Foreign Travel Management System**

#### **1.0 Background**

Many Department of Energy (DOE) contractors and federal employees travel abroad in the conduct of official DOE business. In response to various General Accounting Office and Inspector General reviews, the Department identified the need to improve its ability to collect and report information on foreign travel. To address this issue, the Department issued DOE Order 551.1A to establish policies and procedures for conducting international trips.

Additionally, the Department will transition to a new web-based system for approving and tracking foreign travel. The new system is needed because the legacy FTMS system cannot be modified to handle many provisions of the new Order. The software upon which the legacy system rests is outmoded. Critical components are no longer supported even by their own vendors. A determination was therefore made that an entirely new system, incorporating new requirements and using commercial off-the-shelf components, was the most efficient method to implement the provisions of the new Order. The new system will replace the paper method practices currently in use allowing travelers to input their own requests. When Public Key Infrastructure (PKI) is available at DOE, the new system will take advantage of electronic signature innovations to simplify the routing and approval process for approving personnel. PKI will provide another layer of security; security requirements for the new system are considerably more stringent than those in place for the legacy system.

The new FTMS will meet the following functional requirements:

- Provide an official and accurate source of information about foreign travel by DOE employees and contractors;
- Support the trip approval process;
- Maintain records of estimated and actual trip cost;
- Manage international conference information related to foreign travel;
- Provide traveler information for State Department country clearances; and,
- Permit ad hoc reporting by the system manager in response to queries from outside agencies, primarily Congress.

#### **2.0 Project Milestones, Progress, and Accomplishments**

The following significant milestones have been completed.

January 2000: A business model was formulated by an independent contractor retained for that purpose.

- June 2000: System requirements were defined by contractors at Los Alamos National Laboratory.
- November 2000: A market survey was conducted to identify candidate small businesses on the GSA schedule to build the application; after competition, an awardee was determined.
- January 2001: A contract was let to develop the application using a prototyping, rapid Application Development methodology.
- April 2001: The database design was completed.
- June 2001: A Beta version was released to multiple remote sites for review and user feedback.
- August 2001: System testing was initiated and implementation planning finalized.

### **3.0 Performance Measures**

#### **3.1 Description of Performance-Based System:**

The reporting threshold for cost and schedule variances is 10 percent for this project.

##### **3.1.1 Previous baseline goals:**

Baseline goals were on-time delivery of contract deliverables, within cost.

##### **3.1.2 Current performance goals estimates:**

Current status and estimates of performance goals for this project are identified in 3.2.

##### **3.1.3 Variance from baseline goals:**

The original implementation schedule called for implementation to begin in August. DOE decided that additional testing on the final software product was required and rescheduled implementation to begin in October 2001.

##### **3.1.4 Corrective actions:**

No corrective actions have had to be taken.

##### **3.1.5 Proposed revisions to baseline goals:**

The implementation was rescheduled to begin in October. The original implementation duration was estimated to be six weeks; the revised duration is nine weeks.

**3.2 Performance Goals:**

**3.2.1** Performance goals constitute an accurate and complete mapping of system requirements to system functionality.

**Measure:** Performance measures for this project constitute on-schedule delivery of scheduled deliverables, as listed in the Statement of Work.

The development contract specified 23 deliverables during the 8 month development phase. These included all the traditional items in addition to prototyped software -- such as project and configuration plans, design documents, user training materials and documentation manuals, test plans and scenarios, and a cyber security project plan (CSPP). All were delivered on time and within budget with the exception of system testing and the initiation of implementation, described in 3.1.5.

**4.0 Issues or Concerns**

Although no Congressional level issues or concerns have been identified for this initiative a source of funding for development of FTMS needed to be identified as no CMIP funding was included in FY 2001/FY 2002 allocations.

This concern was met in FY 2001 by three DOE program offices that are heavy users of FTMS. Adding to funds provided by the Office of Chief Financial Officer, a total of \$500,000 of non-CMIP dollars was collected. For FY 2002, the application will move to the Office of Foreign Visits and Assignments (SO-24) where non-CMIP funds are available for the outyears.

**5.0 Cost Schedule (in millions)**

<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$0.500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0.500

**5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

Funding was made available through a reallocation decision by the CMIP Review Board in March 2000. Costs in FY 2000 represent initial stages of software development work. Additional funding (\$0.500M) was requested for FY 2001, to be used to complete development of FTMS; however, the CMIP Review Board did not approve the request.

The total cost of the development effort, plus two outyears, was estimated to be about

\$1.3 million dollars over a three year period. The first year was expected to be the major development phase; the two outyears being primarily operational support but with unspecified significant enhancements that would emerge after initial user by the DOE community. Cost estimates were not formally developed beyond this three-year period; but the application was expected to settle down to an annual maintenance cost of about \$300,000 – barring major developments.

The project has remained within cost schedules since inception; no funding issues are currently foreseen.

## **6.0 Implementation Schedule**

A detailed Implementation Plan, updated as necessary, is a contractor deliverable. The plan addresses issues that result from the wide geographical dispersion of the customer base: there are 500 full-time users scattered among 90 sites across the United States. A period of parallel operations with the legacy FTMS is planned for several months, followed by a shutdown of that system as the new system is brought up and legacy data is archived to the new platform.

Training the dispersed customer base was planned as part of the implementation. That plan depended upon travel both by students and trainers. However, events of September 11, 2001 have caused project leadership to re-evaluate the training delivery mechanism so as to avoid the need for air travel by anyone who wishes to do so. The revised implementation schedule has been extended partly to allow for more time to conduct training.

## **Initiative: 2. Architecture and Planning**

### **A. Information Architecture**

**Project Manager: Robin Varette**

**Project: DOE Information Architecture Implementation**

#### **1.0 Background**

On June 15, 2000, the Executive Committee for Information Management approved the Department of Energy (DOE) Corporate Systems Information Architecture (CSIA). This decision was formalized by an August 8, 2000, memorandum from the Deputy Secretary to the heads of all Departmental elements that established the CSIA as the framework for making information technology investment decisions. The CSIA was developed by a team of business representatives of many of DOE's organizations in facilitated group sessions. Much of the FY 2000 funding for this project was used to provide the leadership, methodology and facilitation expertise, training, documentation, and logistical support for this CSIA design effort. As a result of this effort, DOE has, for the first time:

- Documented a model of DOE's corporate business activities and information needs;
- Established a vision for sharing information across the Department;
- Outlined a new approach for defining corporate information systems, as well as for prioritization of information systems modernization;
- Strengthened the process of justifying information technology budget proposals; and,
- Defined a path forward to implement this new paradigm.

The CSIA was developed in response to the Clinger-Cohen Act of 1996 and implementing guidance from the Office of Management and Budget.

This architecture effort documented DOE's corporate business activities, information needs, applications requirements, and provided an overall framework for defining corporate applications and data, as well as prioritization of systems modernization.

The approved CSIA establishes the mechanism and context for ensuring that new systems and applications will align most closely with established information technology infrastructure development and modernization goals: to minimize replication of the functionality and data of corporate systems, and to maximize the use and sharing of established corporate data.

Utilization of the DOE CSIA as a decision support tool will help ensure that DOE achieves the cost efficiency, interoperability, and functionality promised by improved and emerging information technology.

Efforts in FY 2002 and beyond will build on the CSIA design by

- Examining and planning for the impacts of the direction by the Deputy Secretary that the Office of the Chief Information Officer (OCIO) will consolidate and centralize common information technology (IT) services across the Department of Energy Headquarters within one year.
- Establishing policies and strategies for implementing the CSIA, including expansion to include HQ, programmatic and field site architectures;
- Establishing a mechanism to assure that existing and future IT projects are aligned with the CSIA (alignment assessment program) and can communicate effectively with one another (interoperability measurement program);
- Designing a corporate data management program to help ensure the accuracy, usability, and accessibility of corporate online information; and,
- Defining the technology requirements for a shared corporate systems infrastructure.

## **2.0 Project Milestones, Progress, and Accomplishments (since last report)**

Major accomplishments during FY 2001 include the following:

- Established the agency Information Architects Forum
- Revision of Information Architecture web pages to meet 508 guidance
- Oversight/liaison of the agency Web Council
- Distribute information and facilitated communication on MS licensing
- Continued development of the desktop standards profile and associated guidance
- Initiation of the Interoperability Measurement Project and,
- Pilot of the Architectural Alignment Assessment Process.

Milestones include:

2/01 Interoperability Requirements documented, crucial for:

- Developing the Interoperability Standards
- Planning for greater interoperability
- Assessing Architectural Alignment with respect to Interoperability
- Resolving problems.

3/01 Developed assessment instruments for business alignment

4/01 Began partnership with operational division to plan for development of Technology Architecture Layer of CSIA

4/01–7/01 Conducted Business Alignment Assessments on CHRIS, BMIS, PME and Procurement Modernization.

- 6/01 Developed survey materials for gathering information to form the Technology Architecture Layer
- 6/01 Updated the DOE Information Architecture web site at [http://www.so.cio.gov/organization\\_f.htm](http://www.so.cio.gov/organization_f.htm) to meet OCIO and 508 guidance.
- 7/01 Co-hosted the first agency Information Architects Forum (video-conference) with the Chicago Operations Office. This forum encourages communication and information sharing among information architect professionals at the DOE.
- 8/01 Hosted successful 2-day Desktop Software Guidance working group.
- 9/01 Hosted the second Information Architects Forum (tele-conference). Turnout and participation increased; future plans for more forums were made.

### **3.0 Performance Measures**

#### **3.1 Description of Performance-Based System:**

The reporting threshold for cost and schedule variances is 10 percent for this project.

##### **3.1.1 Previous baseline goals:**

Previous baseline goals for FY 2000 have been met.

##### **3.1.2 Current performance goals estimates:**

Current estimates of the performance goals of this project are identified in 3.2.

##### **3.1.3 Variance from baseline goals:**

No significant variances were reported.

##### **3.1.4 Corrective actions:**

None.

##### **3.1.5 Proposed revisions to baseline goals:**

At the direction of the Deputy Secretary, the Office of the Chief Information Officer (OCIO) will consolidate and centralize common information technology (IT) services across the Department of Energy Headquarters within one year ("Information Technology Centralized Services Proposal for DOE Headquarters, DRAFTv3", dated September 4, 2001). The purpose of consolidating common IT services is to provide economies of scale, simplify support and maintenance of

IT systems, control and tracking of IT expenditures, improve cyber security, increase efficiency, improve service levels and provide for asset and configuration management.

This direction also applies to the DOE Information Architecture Implementation. Impacts to planned activities, as well as new activities that must be taken on to fulfill this consolidation and centralization plan, are currently being studied. This necessitates the following changes:

1. At the direction of the Deputy Secretary, the Office of the Chief Information Officer (OCIO) will consolidate and centralize common information technology (IT) services across the Department of Energy Headquarters. Completion of Enterprise-wide (Federal) Architectures by FY 2003.

**Change: Add “HQ” in deference to the consolidation/centralization initiative.**

2. Establish policy and strategy for completion of DOE program (and related field site) architectures by September 2001.

**Change: Revise date to September 2002.**

3. Implement architecture assessment program and interoperability measurement program by September 2001.

**Change: Revise date to April 2002.**

4. Define Corporate data design management function across corporate applications by August 2001.

**Change: Revise date to April 2002.**

5. Define the hardware and software requirements for a shared corporate systems infrastructure and the design/development tools and environment required by July 2001.

**Change: Revise date to July 2002.**

6. CSIA updated to reflect organizational, technological and industry changes by June 2002.

**Change: Revise activity to read, “Develop an approach to update CSIA to reflect organizational, technological and industry changes by June 2002.**

Revise selected dates for baseline goals, depending on the availability of finding and iterative planning.

### **3.2 Performance Goals:**

#### **3.2.1 Completion of DOE HQ, Program and DOE field site (Federal) Architectures by March 2003.**

**Measure:** Program and Federal field site architectures (data, systems and technology) in conformance with DOE Information Architecture guidance and standards.

#### **3.2.2 Establish policy and strategy for completion of DOE program (and related field site) architectures by September 2002.**

**Measure:** Approved policy and strategic plan for expanded DOE Information Architecture.

#### **3.2.3 Implement architecture assessment program and interoperability measurement program by April 2002.**

**Measure:** Began assessments for CMIP-funded projects. Approved assessment procedures. Completed and tested (via pilot) interoperability criteria and reporting function.

#### **3.2.4 Define Corporate data design management function across corporate applications by August 2002.**

**Measure:** Approved concept paper. Approved strategic plan for corporate data design management.

#### **3.2.5 Define the hardware and software requirements for a shared corporate systems infrastructure and the design/development tools and environment required by July 2002.**

**Measure:** Approved technology architecture for corporate applications infrastructure and development environment.

#### **3.2.6 Develop an approach to update CSIA to reflect organizational, technological and industry changes by June 2002.**

**Measure:** Processes, resources, and tools in place to maintain the architectures in an effective manner. Corporate repository of key architecture components (e.g. data models, IRC, technologies)

supports IT planning across DOE.

**4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

**5.0 Cost Schedule (in millions)**

<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$0.460	\$0.900	\$0.340	\$0.800	\$0.800	\$1.000	\$3.000	\$2.000	\$2.000	\$2.000	\$13.300

**5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

Funding for FY 2002 has been decreased to \$1.000M and funding for FY 2003 is decreased to \$0.932M based on CMIP Budget Requests. FY 2004 through FY 2006 has been increased to accomplish planned IA projects. The FY 2007 plan year information is provided for the first time in this report.

**6.0 Implementation Schedule**

- 10/01 Start development of comprehensive CSIA Implementation Plan.
- 10/01 Begin preliminary exploration of Technology Architecture requirements and forum.
- 10/01 Explore implications of CSIA regarding data, applications, and data communications design management.
- 11/01 Establish Technology Architecture completion plan.
- 11/01 Define approach for coordination with ongoing technology projects.
- 11/01 Start Business Alignment Assessment Pilot.
- 12/01 End exploratory phase of Interoperability Measurement Project.
- 1/02 Initiate completion of CSIA Technology Architecture.
- 2/02 Begin Interoperability Measurement Project Pilot.
- 2/02 Complete Business Alignment Assessment Pilot.
- 2/02 Complete preliminary strategy and forum for developing CSIA policy.
- 3/02 Decision on CSIA policy approach.

- 3/02 Initiate design of data, applications, and data communications design management.
- 4/02 Complete development of CSIA Implementation Policy/Plan.
- 4/02 Complete Business Alignment Assessment Evaluation.
- 5/02 Start first CMIP Business Alignment Assessment.
- 6/02 Complete issuance of CSIA Implementation Policy.
- 7/02 Complete Interoperability Measurement Project Pilot .
- 8/02 Begin Technical Alignment Assessment Pilot.
- 8/02 Complete draft design of data applications, and data communications design management. Results will be used for corporate application development and technology architecture activities.
- 9/02 Complete Interoperability Measurement Pilot evaluation.
- 11/02 Start Phase I of Interoperability Measurement Project implementation.
- 12/02 Complete the Business Alignment Assessments for all CMIP projects.
- 6/03 Finish Phase I Interoperability Measurement Project implementation.
- 8/03 Complete evaluation of Phase I Interoperability Measurement Project.
- 8/03 Complete Business Alignment Assessments for all new CMIP projects.
- 10/03 Begin Phase II implementation of Interoperability Measurement Project.
- 3/04 Complete update of CSIA based on results of LPSO architectural analyses.
- 9/05 Complete definition, acquisition and installation of IA implementation processes and resources.
- 3/06 Initiate corporate IA update process, to be undertaken annually hereafter.

## **Initiative: 2. Architecture and Planning**

### **B. Capital Planning and Information Technology Investment**

**Project Manager: Joe Martin**

**Project: DOE Information Technology Capital Planning and Investment Process**

#### **1.0 Background**

The Clinger-Cohen Act of 1996 directs Federal Agencies to use a comprehensive capital planning process for selecting, managing, and assessing IT investments. To this end, DOE established the DOE IT Capital Planning and Investment Process in 1998, representing significant progress toward enhanced decision-making. The evolving process provides an analytical framework for linking IT investment decisions to strategic objectives, mission achievement, and business plans. The Departmental process applies primarily to crosscutting corporate administrative, high priority mission, and infrastructure IT initiatives; Program and Field Offices are responsible for similar processes to link their IT investments to mission priorities.

The Department has established a two-path (i.e., corporate and programmatic) approach for IT investment planning. Under this approach, the Chief Information Officer with input from Technical Working Groups and Committees recommends corporate systems modernization initiative projects to the CMIP Review Board. Board recommendations are sent to the Executive Committee for Information Management for final approval. Major programmatic IT projects undergo rigorous program peer reviews to assess the merits of their IT projects to include scientific and/or technical benefits. Together, corporate IT and major programmatic projects constitute the Departmental IT portfolio.

The Chief Information Officer conducts quarterly structured technical reviews of CMIP projects and other corporate initiatives to assess adequacy of planning, performance metrics, and that schedules are being met. If not, corrective action guidance is provided and discussed at subsequent reviews. Other guidance or direction, as appropriate, is provided to help ensure likelihood of each project's successful development and ultimate full deployment. The CMIP Review Board conducts semiannual reviews and provides direction.

#### **2.0 Project Milestones, Progress, and Accomplishments (since last report)**

Began project to implement DOE's Information Technology Capital Planning Investment Control process in accordance with OMB Circular A-130.

CMIP CIO Quarterly Reviews were conducted.

ECIM meetings held during FY 2001 resulted in the following decisions:

- Approved a business case development process for Procurement Modernization.
- Approved the Strategic Information Management business case for Corporate R&D Portfolio Management Environment (PME).

### **3.0 Performance Measures**

#### **3.1 Description of Performance-Based System:**

The reporting threshold for cost and schedule variances is 10 percent for this project.

##### **3.1.1 Previous baseline goals:**

Previous baseline goals for FY 2001 have been met to date.

##### **3.1.2 Current performance goals estimates:**

Current status and estimates of the performance goals for this project are identified in 3.2.

##### **3.1.3 Variance from baseline goals:**

There are no current variances from baseline goals.

##### **3.1.4 Corrective actions:**

No corrective actions have had to be taken.

##### **3.1.5 Proposed revisions to baseline goals:**

No revisions to baseline goals.

#### **3.2 Performance Goals:** Performance Goals changed since last report:

- 3.2.2 (a) has been modified by replacing IMSC with CIO Executive Council.
- 3.2.3 (d) has been eliminated as indicated in the previous report that additional project management training is not necessary.

##### **3.2.1** DOE Program Offices apply capital planning principles to their IT investments.

**Measure:** DOE Program Offices apply the principles of the DOE Guide to IT Capital Planning and Investment to their IT investment processes.

**Current Status:** A revised DOE IT Capital Planning Guide was published in September 1999. This guidance was made available to Programs in implementing and maturing program processes. The Guide will be updated in FY 2002 to incorporate IT Capital Planning Investment Control improvements and enhanced usage of the Information Technology Investment Portfolio System (I-TIPS).

**3.2.2** Corporate IT Investment Board makes Capital Planning decisions throughout year.

**Measures:**

(a) CIO Executive Council investment meetings result in decisions being made on current and future corporate IT initiatives.

**Current Status:** CIO Executive Council meetings are held as required. IT Capital Planning Investment Control improvements will impact the governance process associated with the decision process of the CIO Executive Council.

(b) Executive Committee for Information Management decision-making meetings held as required.

**Current Status:** ECIM meetings are held and decisions in Section 2.0 of this report were made. IT Capital Planning Investment Control improvements will impact the governance process associated with the decision process of the ECIM.

**3.2.3** Improve Corporate Management Information Program (CMIP) through use of enhanced Corporate IT Management Process.

**Measures:**

(a) DOE corporate system project managers apply effective project management to the development, implementation and deployment of systems. Customer satisfaction surveys, interviews and random sampling techniques show increasing satisfaction with DOE corporate systems.

**Current Status:** System owners express increased satisfaction with the process for development of corporate systems and preference for use of those systems. There are more users of corporate systems. IT Capital Planning Investment Control process improvements being developed will impact project management.

(b) Semiannual, or more often as necessary, CMIP Review Board program reviews conducted.

**Current Status:** CMIP Review Board was held on November 15, 2000 resulting in funding adjustments among the approved initiatives.

(c) New corporate development or enhancements are systematically funded by CMIP in successive out years.

**Current Status:** CMIP funding has been sufficient to maintain activity on current projects and fund SIM processes for business case development. Out year projects are being screened.

#### **4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

#### **5.0 Cost Schedule (in millions)**

<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$0.300	\$0.400	\$0.400	\$0.374	\$0.400	\$0.520	\$1.480	\$1.000	\$1.000	\$1.000	\$6.874

#### **5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

FY 2001 through FY 2003 planned costs have been decreased to reflect budget requests and funding allocation decisions. The FY 2007 plan year information is provided for the first time in this report.

#### **6.0 Implementation Schedule**

- 9/01 Produce Draft revised DOE IT Capital Planning Guide.
- 10/01 Initiate project to use Information Technology Investment Portfolio System (I-TIPS) to implement DOE's Information Technology Capital Planning Investment Control process.
- 12/01 Issue Draft Department IT Management Policy on IT Capital Planning and Investment Control.
- 12/01 Complete project to implement DOE's Information Technology Capital Planning Investment Control process in accordance with OMB Circular A-130.
- 9/02 Issue revised DOE IT Capital Planning Guide.
- 12/02 Complete project to use I-TIPS to implement DOE's Information Technology Capital Planning Investment Control process.

## **6.1 Ongoing Schedule**

1. CMIP Review Board semiannual reviews continue.
2. CIO Quarterly Reviews of CMIP projects continue.
3. ECIM meets regularly.

## **Initiative: 2. Architecture and Planning**

### **C. Strategic Information Management**

**Project Manager: John Manouelian**

**Project: DOE Strategic Information Management Program**

#### **1.0 Background**

The Strategic Information Management (SIM) program ensures strategic alignment of major IT investments with DOE business goals and objectives to maximize improvements in mission performance. SIM techniques identify organizational business needs that can be met effectively and efficiently through IT investments, justifying each dollar against business objectives and processes. The SIM process is used to study cross-functional segments of an organization, identifying relationships between business processes and their alignment with IT investments. By achieving strategic alignment among key process elements, significant cost savings and business improvement opportunities are realized.

Although SIM is not business process reengineering, it highlights business processes that need modification. Through review of current practices and research of best business practices, staff can make recommendations for meeting function/mission requirements and applying appropriate IT tools. Analysis of benefits and costs are performed, and return on investments are documented. This information is used to develop a business case supporting the expenditure of IT funds to improve business processes and ensure alignment with mission goals and objectives.

SIM has a structured process to evaluate business requirements, determine systems needed and identify existing system shortfalls. The SIM process produces business case analyses leading to recommendations for new or enhanced corporate information technology investments.

#### **2.0 Project Milestones, Progress, and Accomplishments (since last report)**

8/01 Completed the following studies to improve the SIM process:

- SIM Framework for Process Analysis and Modeling
- SIM Framework for Performance Measures

9/01 Completed draft SIM Business Case for Procurement Modernization

#### **3.0 Performance Measures**

##### **3.1 Description of performance-based system:**

The reporting threshold for cost and schedule variances is 10 percent for this project.

### **3.1.1 Previous baseline goals:**

Previous baseline goals for FY 1998, 1999, and 2000 have been met to date. Some goals for FY 2001 were delayed as described in 3.1.3, below.

### **3.1.2 Current performance goals estimates:**

Current estimates of the performance goals of this project are identified in 3.2.

### **3.1.3 Variance from baseline goals:**

During FY 2001, less SIM activity was accomplished than planned due to a change in the SIM contractor support staff requiring orientation and training for an entirely new staff. In addition, there was a delay in initiating the Procurement Modernization SIM due to the Office of Procurement's desire to perform up front draft business case development work products prior to commitment to work with the Office of the CIO for formal collaborative business case development. Additionally, there was a delay in getting started on the Corporate Systems Information Architecture (CSIA) Implementation SIM due to other priorities and shortage of Federal staff and funding.

### **3.1.4 Corrective actions:**

No corrective actions have had to be taken.

### **3.1.5 Proposed revisions to baseline goals:**

FY 2002 and FY 2003 CMIP funding decisions have delayed some of the SIM initiatives for the Corporate Systems Information Architecture (CSIA) applications.

## **3.2 Performance Goals:**

### **3.2.1 Complete SIM Business Case for Procurement Modernization.**

#### **Measure:**

(a) Approved SIM Business Case.

### **3.2.2 Complete SIM Business Cases for the first 5 CSIA applications. Additional goals will be identified upon completion/approval of the final SIM Business Cases.**

**Measure:**

- (a) Approved SIM Business Cases for the 5 CSIA applications.

**4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

**5.0 Cost Schedule (in millions)**

<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$0.240	\$0.500	\$0.260	\$0.200	\$0.750	\$1.500	\$2.510	\$2.330	\$2.330	\$2.330	\$12.950

**5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

FY 2002 has been decreased by \$1.900M and FY 2003 by \$2.202M while FY 2004 through FY 2006 have been increased to accomplish conducting more SIMs in these out years commensurate with accelerated corporate development initiatives for planned Corporate Systems Information Architecture applications and other projects. FY 2007 plan year information is provided for the first time in this report.

**6.0 Implementation Schedule for FY 2002**

11/01 Complete study (Post Implementation Performance Measures Validation) to improve the SIM process.

12/01 Final/approved SIM Business Case for Procurement Modernization.

10/01 - 09/02 Conduct new SIMs. The following are potential candidates:

Corporate Systems Information Architecture (CSIA) Implementation SIM

Departmental Element Information Repository SIM

Information Structure Repository SIM

Employee Information Repository SIM

Employee and Job Management Information System SIM

Organization Information Repository SIM

Document Management System SIM

Authority Management System SIM

Mandate Issuing System SIM

SIM(s) for corporate IT initiatives requested by new administration.

### **6.1 Implementation Schedule Plans for Out Years**

FY 2003 Evaluate/Initiate up to four SIMs for Corporate Systems Information Architecture repositories and systems.

FY 2004 Evaluate/Initiate up to five SIMs for Corporate Systems Information Architecture repositories and systems.

FY 2005 Conduct up to five SIMs.

FY 2006 Conduct up to five SIMs.

FY 2007 Conduct up to five SIMs.

## **Initiative: 3. Infrastructure**

### **A. Infrastructure and Telecommunications Improvements to Support Corporate Systems**

**Project Manager: Gordon Errington**

**Project: Modernization of DOE's Wide Area Network (DOENet)**

#### **1.0 Background**

Modern corporate information systems are driving the need for a corporate telecommunications network that connects Department of Energy (DOE) facilities with adequate data handling capacity. In 1997, the Department identified a DOE Corporate Network as a top priority to achieve the following objectives: provide high-speed access to corporate data and applications; serve as the Departmental Intranet; increase protection for sensitive personnel and proprietary data; and facilitate the deployment of client/server and browser-based applications.

In 1998, migration began from the existing DOE Business Network (DOEBN), sponsored by the Office of Environmental Management (EM), to a network that would support all of the corporate business systems of the Department. DOEBN provided connectivity to 38 sites. The frame-relay network protocol it used supported bandwidth up to 1.544 Mbps. However, many sites had identified bandwidth needs in excess of the 1.544 Mbps and the cost savings to be obtained from consolidating many "dedicated circuits" could not be achieved without upgrading the network.

Additional aspects of the infrastructure improvements involved the DOE network at Headquarters. It consisted of individual segments attached to a high-speed communications channel backbone. Each segment was developed by and supports a single Program Office. This strategy resulted in numerous, disparate security policies and approaches with their attendant vulnerabilities, as documented in the 1997 Computer Incident Advisory Capability (CIAC) "white hat" information security assessment. Accordingly, a centralized firewall implementation strategy was endorsed and activated on September 1, 1998. Sensitive information resources were relocated inside the firewall while resources that require public availability remain accessible outside the firewall.

During FY 2000, the process of evaluating requirements for corporate network convergence upgrades were evaluated for multiple data networks and long-haul circuits. Upgrades to each site provided corporate network connectivity at a minimum of 1.544 Mbps asynchronous transfer mode (ATM) service and replaced field site data-only routers with routers capable of supporting simultaneous voice, video, and data services. All work on the corporate network will strengthen the security of this critical component supporting corporate systems.

All CMIP development activities were completed in FY 2000. Plans have been developed addressing requirements for advanced security hardware and applications

software to significantly improve the ability of DOE to maintain a high level of cyber security throughout the DOE HQ networking environment.

**2.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

**3.0 Cost Schedule (in millions)**

<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$1.900	\$2.050	\$2.900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6.850

**4.0 Implementation Schedule**

No CMIP funded development activities have been planned beyond FY 2000. A new implementation schedule will be developed to support approved Corporate Modernization Initiative SIM business cases when funds are made available. Maintenance and operating costs for DOENet are funded through the Working Capital Fund.

## **Initiative: 3. Infrastructure**

### **B. Infrastructure to Support Corporate Systems Information Architecture Applications and Repository Development**

**Project Manager: Robin Varette**

**Project: Define Infrastructure Modernization Required to Support Corporate Systems Information Architecture Applications and Repository Development**

#### **1.0 Background**

Defining the infrastructure modernization effort to support the initial applications identified in Applications Architecture is a next step in implementing the Department of Energy Corporate Systems Information Architecture (CSIA). The Executive Committee for Information Management (ECIM) approved the CSIA as the roadmap for making corporate information technology (IT) investment decisions as required by the Clinger-Cohen Act. The initial applications scheduled for development comprise the Migration Plan for evolving from DOE's aging corporate applications portfolio and diverse technology base into a cohesive, business-driven IT environment. The vision is that common reliable information will be available for sharing Department-wide and redundant duplicative systems will be minimized.

A sub-group of the DOE information architecture project (DOE-IAP) comprised of business representatives from 14 program areas (BARs) developed a limited scope Technology Architecture. It represented a research and analysis effort to understand the current baseline of technologies in use at DOE, and defined actions needed to develop the infrastructure to meet future needs. DOE-IAP BARs reviewed the Technology Architecture to determine if the process was clear and made sense, and to determine whether they could endorse the recommendations and guidelines. The BARs were in a position to judge the technical recommendations. They recommended that the products of the DOE-IAP Technology Architecture serve as strawman products for a future, more comprehensive effort involving a broader Federal and technical expert representation.

#### **1.1 CSIA Infrastructure Modernization Implementation Prioritization**

Eight initial CSIA Infrastructure Modernization projects have been identified with plans to begin development in FY 2002 and FY 2003:

- Network Switching Infrastructure Upgrade;
- HQ Server Operating System Migration;
- Comprehensive Data Backup;
- HQ Microsoft Exchange Infrastructure Upgrade;
- Voice Telecommunications System Upgrade;
- Centralized Locator Repository Enhancement;
- Defense Message System Pilot; and,

- Corporate Repository Data Exchange.

## **2.0 Project Milestones, Progress, and Accomplishments (since last report)**

Infrastructure Modernization initiative project milestones will be developed to support the CSIA business cases.

## **3.0 Performance Measures**

### **3.1 Description of performance-based system:**

The reporting threshold for cost and schedule variances is 10 percent for this initiative's projects. Performance goals for individual Infrastructure Modernization initiative projects are identified as part of this report.

#### **3.1.1 Previous baseline goals:**

This is a new CMIP initiative.

#### **3.1.2 Current performance goals estimates:**

Current estimates of the performance goals of this project are identified in 3.2.

#### **3.1.3 Variance from baseline goals:**

There are no current variances from baseline goals.

#### **3.1.4 Corrective actions:**

No corrective actions have had to be taken.

#### **3.1.5 Proposed revisions to baseline goals:**

There are no proposed revisions to baseline goals.

### **3.2 Performance Goal:**

**3.2.1** Performance goals will be developed to support the CSIA business cases.

#### **Measure:**

(a) Measures will be identified once goals are formulated.

## **4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

## **5.0 Cost Schedule (in millions)**

<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$0.400	\$1.580	\$13.920	\$14.700	\$14.700	\$14.700	\$60.000

### **5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

The total estimate of \$60 million is unchanged from the last report. FY 2002 and FY 2003 Infrastructure Modernization CMIP funding decisions are shown. A slower project start is reflected in a new FY 2004 estimate and an increase of one year to the overall development schedule from five to six years. The FY 2007 plan year information is provided for the first time in this report.

## **6.0 Implementation Schedule**

Implementation schedules will be developed to support the CSIA Applications business cases when funds are made available. The Infrastructure Modernization initiative project report follows:

### **1. Project: Network Switching Infrastructure Upgrade and IT Systems Dispersed Client Server Management Framework (Tivoli)**

**Project Manager: Rickey Hall/Rich Otis**

#### **1.0 Background**

The DOE Headquarters network switching infrastructure requires upgrade in several organizational areas for achieving greater grade of service in distribution of information and data to the desktop and enhancing the use of multi-media services in the coordination and collaboration of energy science. Several segments of the current DOE Headquarters backbone network switching and system control mechanisms require modernization for effectively managing the availability of IT services to the users, to include the enabling of multi-media services. The current architectural framework and associated tools, processes and procedures are needed for ensuring 99%+ availability of IT network services to the end users through proactive management.

The current network switching architecture needs to be enhanced through the provisioning of active performance monitoring and systems management tools for managing the current heterogeneous network switching infrastructure environment consisting of a myriad of legacy to state of art switching infrastructure platforms. The enhancements will allow the IT service technicians to better manage the availability of the switching infrastructure in support of DOE Headquarters IT media services while providing the tools for managing the availability of the network IT switching infrastructure systems.

This part of this project will modernize several legacy segments of the current IT switching infrastructure and provide modernized tools for proactive performance monitoring and system analysis of system, capacity and resource allocation problems. This upgrade will allow DOE IT network management personnel to analyze any data from many different perspectives, compare current activities to historical records, spot trends for capacity planning and resource forecasting, isolate trouble areas, evaluate resource allocations and project future requirements and associated fiscal assets.

In addition, the DOE Headquarters requires virtual IT system management tools for maintaining the operation, integrity and efficiency in the availability of IT services to the user in a highly, dispersed client server IT environment. The architectural framework and associated tools, processes and procedures will need to allow IT system administrators and network technicians to monitor, administer and restore services to the users from any location in the world. This tool will provide IT system administrators and network technicians with the means for effectively managing all IT infrastructure components in a timely manner and ensure the 99%+ availability of IT services to the end users from virtually anywhere at anytime.

The architectural framework employed should accommodate the performance monitoring and systems management of a heterogeneous IT environment consisting of a myriad of infrastructure platforms and associated operating systems. DOE is implementing the Tivoli Management Framework 10 standard for ensuring systems integrating among the heterogeneous platforms and operating systems. This tool will provide system and network administrators with the proper tools for managing the IT enterprise while assisting them in maintaining quality of life in performance of their jobs. The system will allow the users to better manage their IT assets, software licenses, and performance of their IT media services while providing electronic reports and system status on the availability of their IT systems.

This part of this project will expand the employment of Tivoli system management agents throughout DOE Headquarters and provide resources for installation, setup, configuration and sustaining the Tivoli system. In addition, it will provide the resources for development, configuring and testing the system management reports required for near-real time monitoring the status of the IT services. This function will allow DOE IT systems management personnel to analyze any data from many different perspectives, compare current activities to historical records, spot trends for capacity planning and resource forecasting, isolate trouble areas, evaluate resource allocations and project future requirements and associated fiscal assets.

## **2.0 Project Milestones, Progress, and Accomplishments (initial report)**

This is a new Infrastructure to Support Corporate Systems Information Architecture Applications and Repository Development project

### **3.0 Performance Measures**

This project will allow for upgrade and continued modernization of the DOE Headquarters enterprise network-switching infrastructure, and the distributed monitoring on the availability of IT services in support of the users in a near-real time fashion. This project will allow for faster service response to problems that are encountered on IT infrastructure platforms and application packages, and problems within the switching infrastructure and its systems management electronic health network monitoring application packages before the user reports it. Specific performance metrics for the project are:

- Report on electronic health of the DOE HQ network-switching infrastructure
- Measure service performance of switching platforms for capacity planning and performance management
- Predict performance and scalability of enabling corporate and business applications operating over the switching infrastructure
- Provide for capacity planning on the network-switching infrastructure
- Plan for future upgrades and system improvements based on capacity planning and resource forecasting
- Provide for the virtual restoration of IT services to users from anywhere at anytime of day by appropriate network administrators and service technicians
- Automatic inventory of software and hardware on the desktop
- Assist Help Desk personnel in restoring service to the user faster via virtual service restoration without making a desk side visit
- Report on electronic health of the applications and infrastructure platforms
- Measure service performance
- Predict performance and scalability of applications and infrastructure platforms
- Plan for future upgrades and system improvements based on capacity planning and resource forecasting
- Virtual restoration of IT services to the users from anywhere at anytime of day by appropriate system administrators and service technicians
- Provide for quality of life of IT system and network administrators and service technicians.

#### **3.1 Description of performance-based system:**

The reporting threshold or cost and schedule variance is 10 percent for this project.

##### **3.1.1 Previous baseline goals:**

This is new CMIP project

##### **3.1.2 Current performance goals estimates:**

Current estimates of the performance goals of this project are identified in 3.2.

**3.1.3 Variance from baseline goals:**

There are no current variances from baseline goals.

**3.1.4 Corrective actions:**

No corrective actions have to be taken.

**3.1.5 Proposed revisions to baseline goals:**

This is the initial appearance of this project.

**3.2 Performance Goals:**

**3.2.1** Faster conditioning information on the health of the switching infrastructure platforms

**Measure:** Obtain conditioning information within minutes

**3.2.2** Improve resolution of performance, capacity planning and resource forecasting for improvements in availability and scalability

**Measure:** Availability and scalability resolution within 24 hours

**3.2.3** Improve availability of reports for electronic health monitoring and reporting on condition of infrastructure, application and switching platforms

**Measure:** Reports available daily, weekly and monthly

**3.2.4** Improve problem notification, fault identification and service restoration via automatic notification and escalation system

**Measure:** Times based on severity of the events based on established operational procedures and configuration of the escalation software

**3.2.5** Improve distributed systems monitoring capability for management of real time health on reachability by corporate application services to the DOE Headquarters network switching infrastructure

**Measure:** Program offices monitor performance of their local enabling IT switching infrastructure platforms

**3.2.6** Improve time required for automatic inventory of software and hardware platforms

**Measure:** Inventory of software and hardware platforms available within 24 hours

- 3.2.7** Improve time required for automatic software distribution after successful testing of application

**Measure:** 24 hours to several days depending on workstation availability

- 3.2.8** Improve availability of reports on electronic health monitoring and condition infrastructure, application and network platforms

**Measure:** Reports made available daily, weekly and monthly

- 3.2.9** Improve problem notification, fault identification and service restoration via automatic notification and escalation system

**Measure:** Times based on severity of the events and established operational procedures and configuration are met

- 3.2.10** Provide single IT system sign-on capability to the enterprise allowing seamless access to corporate applications while maintaining integrity of DOE challenge and authentication security architecture

**Measure:** Users are able to access multiple applications and the infrastructure with a single IT system sign-on

- 3.2.11** Improve distributed systems monitoring capability for management of real time access to corporate data and IT services

**Measure:** Program offices monitor performance of their corporate applications and enabling IT infrastructure platforms

#### **4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

#### **5.0 Estimated Infrastructure to Support Corporate Systems Information Architecture Applications and Repository Development Project Cost (in millions)**

The Network Switching Infrastructure Upgrade and IT Systems Dispersed Client Server Management Framework (Tivoli) project is the first in a series of projects within the Infrastructure to Support Corporate Systems Information Architecture Applications and Repository Development initiative.

<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$ 0.400	\$ 0.960	\$ 1.424	\$ 1.080	\$ 1.131	\$1.200	\$6.195

### **5.1 Cost Schedule Budgetary Baseline**

This is a new Infrastructure to Support Corporate Systems Information Architecture Applications and Repository Development project, which is scheduled to begin development in FY 2002.

### **6.0 Implementation Schedule**

Implementation schedules will be developed for the following activities upon completion of IT network assessment in several organization departments and program offices when CMIP resources are made available:

- Deployment and configuration of Tivoli enterprise console TEC into ISC
- Acquisition of the following equipment:
  - notification and escalation system software & hardware
  - backup hardware for Global Single Sign-On
  - additional Concord polling licenses
  - additional gateway hardware and software (for other offices)
  - additional switching hardware and software (for legacy environments)
  - additional network systems management HW & SW(HP OpenView, Cisco LAN Manager, Routed WAN Manager)
  - additional cabinets, conduits and cabling
  - additional IT system management platforms
  - building premise & installation material.
- Installation and configuration of the following:
  - Additional end point gateways (to other major offices)
  - Tivoli end points to corporate servers
  - IT Services Decision Support System
  - Cisco system management platforms
  - Concord network health platforms
  - Cisco network management platforms
  - DOE network reporting Web site
  - Notification and escalation system
  - Tivoli end points to desktops
  - Cisco switches (for those areas requiring upgrade).

## **Initiative: 4. Corporate Modernization Initiatives To Be Started**

### **A. Corporate Systems Information Architecture (CSIA) Applications**

**Project Manager: Robin Varette**

**Project: Development of Initial CSIA Applications**

#### **1.0 Background**

Developing the initial applications identified in Applications Architecture is a next step in implementing the Department of Energy Corporate Systems Information Architecture (CSIA). The Executive Committee for Information Management (ECIM) approved the CSIA as the roadmap for making corporate information technology (IT) investment decisions as required by the Clinger-Cohen Act. The initial applications scheduled for development comprise the Migration Plan for evolving from DOE's aging corporate applications portfolio and diverse technology base into a cohesive, business-driven IT environment. The vision is that common reliable information will be available for sharing Department-wide and redundant duplicative systems will be minimized.

As part of the information architecture project, business representatives from 14 program areas defined the principles, business model, and information (or data) requirements to support the business functions. Then they identified the automated capabilities or applications to provide the information needed by the business functions. The prioritized list of business-aligned applications is shown below.

Some of the early applications are already ongoing and appear elsewhere in this report. Other proposed projects align with applications farther down in the implementation plan. The funding requested for this project (beginning in FY 2002) is to begin with implementing the first five applications not already in progress (See table: DEIR, ISR, EIR, OIR, AIR) and continue through the list until the entire CSIA is implemented. The implementation plan is in a "least cost build" sequence, determined by scheduling applications that create data before applications that use the data. The first applications in the plan are those that provide basic information that is used by most of the other applications. Establishing these information repositories will forestall each application creating its own table or file of this basic information, thereby reducing duplication and redundancy of data and improving the accuracy and reliability of this online information. Implementing the CSIA applications in general assures that:

- All applications are business-aligned;
- No unnecessary duplication and redundancy of data exists;
- All stakeholders are identified through the business model and are included in the application development process, ensuring that groups do not each develop their own (duplicate) applications; and,
- Applications are data-centric. Applications that create data are separated from those that use it; therefore, data is not imbedded in a particular application but available to all who need it.

### **1.1 CSIA Application Implementation Prioritization**

<b>Rank</b>	<b>Application Name</b>	<b>Acronym</b>	<b>Purpose</b>
1	Departmental Element Information Repository	DEIR	To maintain a uniform and current file of basic data on all of DOE's headquarters and field organizations and subunits to support other automated systems across the enterprise and to assist in communication both within DOE and with its customers.
2	Information Structure Repository	ISR	To provide a comprehensive, official and current file of the name and code identification of important categories of information such as B&R codes, contractor identification, and employee categories.
3	Employee Information Repository	EIR	To provide a uniform, complete, and current source of basic information about all DOE employees that can be readily accessed and is properly protected from the release of sensitive material.
4	Employee and Job Management Information System	EMJIS	To provide an automated process to assist in the processing and tracking of information related to the filling of DOE vacancies; and the compensation, evaluation, and training of DOE employees.
5	Organization Information Repository	OIR	To provide an easily accessible, accurate, complete and current source of basic information about non-governmental organizations with whom DOE does business such as contractors, grantees, public interest groups and suppliers.
6	Agency Information Repository	AIR	To provide one source of basic information about governmental bodies that DOE does business with.
7	Funds Management System	FMS	To provide comprehensive, uniform, accurate, and complete system to track and account for the allocation, obligation, and expenditure of funds available to DOE; available at all program levels to allow consistent management of financial resources with ease of use.

8	Document Management System	DMS	To maintain a current and comprehensive electronic library of the full range of documents generated by, or of interest to, the Department and to facilitate their identification and access.
9	Mandate Issuing System	MIS	To provide a system to track and record the development and issuance of DOE guidance, policies, directives, orders and other forms of internal mandates.
10	Mandate Information Repository	MIR	To develop an automated and categorized system of information concerning various nature, content and applicability of laws, regulations, guidance, directions, and orders affecting DOE programs and operations whether imposed by outside bodies or promulgated internally.
11	Authority Management System	AMS	To support the granting and withdrawing of the full range of authorities of DOE employees and others with whom DOE does business
12	Program Information Repository	PMIR	To establish an official comprehensive and current file of basic information about DOE programs to be readily available within the Department and to outsiders.
13	Project Information Repository	PJIR	To establish a comprehensive, consistent and current source of basic information about the Department's projects that is readily accessible both within and outside the Department.
14	Planning and Budget Support System	PBSS	To provide a comprehensive system, capable of being used at all Departmental levels, to facilitate tracking and recording of information about the analysis, development, decision making, and establishment of plans and budgets.
15	Progress and Cost Assessment System	PCAS	To provide a DOE-wide comprehensive system to help evaluate and record actual work progress and costs compared to establish goals, schedules, and projections.

16	Executive Information System	EIS	To provide high level DOE officials with current and accurate summary information on important Departmental policies, programs, operations, issues and initiatives.
17	Agreements Information Repository	AGIR	To provide a uniform file of basic data on all of DOE's contractual and other agreements to enable efficient aggregation and availability of important information.
18	Procurement and Financial Assistance System	PFAS	To provide a department-wide system to facilitate the processing of contracts and grants and to provide uniform data for aggregation and analysis.
19	Information System Investment System	ISIS	To provide a comprehensive, current and widely available source of information about information management systems under consideration, in development, and already implemented.
20	Information Technology Architecture Repository	ITAR	To provide the official, comprehensive inventory of a variety of data related to DOE's information architectures.
21	Incident Reporting System	INRS	To provide a uniform, DOE-wide system to assure the timely, complete and accurate reporting and storing of information on operating incidents at DOE and contractor facilities.
22	Exposure and Medical Monitoring System	EMSS	To provide a comprehensive and uniform system to track and help analyze health related information about DOE employees, contractor personnel and the public; provides reliable and up-to-date record of medical related data.
23	Departmental Position Repository	DPR	To provide a reliable and complete source of official stands taken by DOE officials to help assure consistent views and understandings on important public and operational matters.
24	Departmental Position Support System	DPSS	To provide a comprehensive mechanism to develop and track the formulation of DOE official views and to provide an historical record of how those views were reached.

25	Person Information Repository	PIR	To provide a readily accessible and reliable source of basic information about non-employees who are of interest to DOE because of their positions, interest, authority, or roles such as advisory committee members, researchers, members of Congress, Administration officials and contractor personnel.
26	Inquiry Response System	IRS	To provide an automated system to track the receipt, processing, approval and transmission of responses to inquiries received by the Department.
27	Dispute Tracking System	DTS	To provide a system to facilitate the processing of dispute actions and provide the ability to track such actions and collect basic data about them.
28	Travel Arrangement System	TRAS	To provide a system to facilitate the arrangement of official travel by DOE employees.
29	Internal Audit/Assessment Management Support System	IIAMSS	To provide the automated capability to assist in the preparation of audits and assessments; and to access audit/assessment status information and historical data.
30	Physical Property (Resources) System	PPRS	To provide a comprehensive and complete DOE-wide repository of information about government-owned property that is readily accessible, can be aggregated, and is available for a wide variety of analyses such as condition, assessment, age, value, and maintenance requirements.
31	Facility services Information System	FSIS	To provide a mechanism to access fundamental data about utility, maintenance, and other support services at DOE facilities to assist in analyzing trends, identifying opportunities to reduce costs, improving operations and responding to questions from outside DOE.
32	Task Approval System	TAS	To provide a flexible, automated system to record the assignment of tasks to DOE employees and contractor personnel and track the progress in accomplishing those tasks.

33	Intellectual Property Index System	IPIS	To provide source of DOE-wide, current information on a wide range of intellectual properties such as patents and copyrights that will permit DOE-wide access and aggregation of data.
34	Investment Tracking System	ITS	To provide an automated system to record data about the investment of funds in various financial institutions as required by law; provides access to complete, accurate, and up-to-date information.
35	Award Support System	AWSS	To provide an automated system to facilitate the processing of the full range of awards that DOE bestows on individuals and organizations and to have a complete record of such honors.

## **2.0 Project Milestones, Progress, and Accomplishments (initial report)**

Project milestones will be developed upon completion/approval of CSIA Application SIM business cases.

## **3.0 Performance Measures**

Performance measures will be developed upon completion/approval of CSIA Application SIM business cases.

### **3.1 Description of performance-based system:**

The reporting threshold or cost and schedule variances is 10 percent for this project.

#### **3.1.1 Previous baseline goals:**

This is a new CMIP project.

#### **3.1.2 Current performance goals estimates:**

Current estimates of the performance goals of this project are identified in 3.2.

#### **3.1.3 Variance from baseline goals:**

There are no current variances from baseline goals.

#### **3.1.4 Corrective actions:**

No corrective actions have to be taken.

**3.1.5 Proposed revisions to baseline goals:**

This is the initial appearance of this project.

**3.2 Performance Goals:**

**3.2.1** Draft business cases for the first 5 applications by September 2002. Additional goals will be identified upon completion/approval of the final business cases.

**Measures:**

- (a) Approve Business Cases for the 5 applications.
- (b) Measures will be identified once goals are formulated.

**4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

**5.0 Cost Schedule (in millions)**

<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$0.350	\$1.770	\$17.980	\$13.100	\$17.300	\$18.300	\$68.800

**5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

The total estimate of \$68.8 million is unchanged from the last report. FY 2002 and FY 2003 CSIA Applications Development project CMIP funding decisions are shown. A slower project start is reflected in a new FY 2004 estimate and an increase of one year to the overall development schedule from five to six years. The FY 2007 plan year information is provided for the first time in this report.

**6.0 Implementation Schedule**

Implementation schedules will be developed to support the CSIA Applications business cases when funds are made available. The CSIA Applications Development initiative project report follows:

**1. Project: Departmental Element Information Repository**

**Project Manager: Robin Varette**

## **1.0 Background**

The Departmental Element Information Repository will allow the Department to maintain a uniform and current file of basic data to support other automated systems, DOE-wide, to facilitate communication both within the Department and externally.

## **2.0 Project Milestones, Progress, and Accomplishments (initial report)**

This is a new CMIP project.

## **3.0 Performance Measures**

Performance measures will be established as part of the Strategic Information Management process.

## **4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

## **5.0 Estimated CSIA Applications Project Cost (in millions)**

The Departmental Element Information Repository project is the first in a series of projects within the CSIA Applications Development initiative.

<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$ 0.350	\$ 0.650	\$0	\$0	\$0	\$0	\$1.000

## **5.1 Cost Schedule Budgetary Baseline**

This is a new CSIA Applications Development initiative project, which is scheduled to begin development in FY 2002 based on SIM Business Case approval.

## **6.0 Implementation Schedule**

Implementation schedules will be developed when SIM Business Case is approved and CMIP resources are made available.

## **Initiative: 4. Corporate Modernization Initiatives To Be Started**

### **B. Corporate R&D Portfolio Management Environment**

**Project Manager: Kimberly Rasar**

#### **Project: Corporate R&D Portfolio Management Environment Implementation**

### **1.0 Background**

The Department of Energy funds a vast amount of energy-related research in a very broad range of areas. Each laboratory performing the work follows independent research management processes tailored to their expertise and methods of operation. The information collected and stored to support these management processes is often in different formats and at different levels of granularity. This makes the overall management of DOE-funded research a difficult challenge.

In August 1999, then Under Secretary of Energy, Dr. Ernest Moniz, launched a Strategic Information Management (SIM) study to streamline and modernize the Department's R&D management and reporting processes. This study was co-sponsored by the Offices of the CFO, CIO, and Science. The focus is on the life-cycle (cradle-to-grave) management and tracking of R&D programmatic operations and equipment projects that are defined in OMB Circular A-11 and performed for DOE. The ultimate purpose of the study is to make recommendations, in the form of a business case, on how best to accomplish a Corporate R&D Management Portfolio solution for the Department that achieves streamlining and modernization.

The SIM study was launched after a pilot project, the Collaborative Management Environment (CME), demonstrated the promise of using leading-edge technologies in information and computer science to automate proposal submission and define a data model that enables information integration of key data elements, from a multitude of sources, generated from the R&D management and reporting processes. Development efforts will begin in accordance with approved SIM business case recommendations.

### **2.0 Project Milestones, Progress, and Accomplishments (initial report)**

- 1/00      CME SIM Workshop 1 completed.
- 3/00      CME SIM Workshop 2 completed.
- 5/00      CME SIM Workshop 3 completed.
- 8/00      CME final business case completed.

### **3.0 Performance Measures**

#### **3.1 Description of performance-based system:**

The reporting threshold or cost and schedule variances is 10 percent for this project.

##### **3.1.1 Previous baseline goals:**

This is a new CMIP project. Based on a November 21, 2001 meeting with the Office of Management, Budget and Evaluation this project will be entirely funded by the Office of Science.

##### **3.1.2 Current performance goals estimates:**

Current estimates of the performance goals of this project are identified in 3.2.

##### **3.1.3 Variance from baseline goals:**

There are no current variances from baseline goals.

##### **3.1.4 Corrective actions:**

No corrective actions have had to be taken.

##### **Proposed revisions to baseline goals:**

Goal has been refined in this report.

#### **3.2 Performance Goals:**

##### **3.2.1 Streamline processes used to manage R&D across DOE.**

###### **Measures:**

- (a) Reduce time between funding decision and availability of funds to researchers.
- (b) Reduce annual Unicall preparation cost at Management & Operating contractor sites.
- (c) Reduce time taken by program offices to respond to queries.
- (d) Reduce number of FTE-hours required to update research portfolio.
- (e) Increase number of programs able to accept and review proposals electronically.

(f) Reduce number of times that financial, work authorization statement (WAS), and guidance information require manual reconciliation.

**3.2.2** Improve information availability and utility with respect to DOE R&D projects.

**Measures:**

(a) Increase number of public queries on repository.

(b) Reduce number of times that response to questions requires additional data from researchers.

**3.2.3** Implement required information systems.

**Measures:**

(a) Implementation of the Corporate R&D Portfolio Management Environment system components in accordance with the approved schedule.

**Proposed Performance Measures**

When the Corporate R&D Portfolio Management Environment alternative receives funds for development, based on the recommendations of the CME SIM Project Team, the next phase will be to identify specific functional requirements for the information systems in order to support the business process performance measures. At that time, performance measures may be further refined or revised.

**4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

**5.0 Cost Schedule (in millions)**

<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>Total</b>
\$4.000	\$5.500	\$5.900	\$1.300	\$1.300	\$1.300	\$1.300	\$20.600

**5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

This project is funded by the Office of Science. FY 2002 through FY 2004 estimates have been changed from last years report to better reflect the project implementation estimated costs. FY 2007 and FY 2008 have also been added.

## **6.0 Implementation Schedule**

For the purposes of the cost estimate, a detailed project implementation time-line was prepared. The system time-line assumes a project start date of October 1, 2001. Given that start date, project managers could reasonably expect to achieve the three major milestones as follows:

Phase I - Proposal submission modules delivered - February 18, 2003.

This includes delivery of: an electronic proposal submission and review service (perhaps based on National Science Foundation's FastLane or the National Institute of Health Commons), DOE corporate data dictionaries for proposal submission, and an associated extended mark-up language (XML) document template definitions (DTD) to enable standard interfaces to external systems. In addition, the DOE-wide PIN service would be operational, and security interfaces using public/private key infrastructure (PKI) would be developed and deployed. The XML-based batch proposal submission services would also be available.

Phase II - Project tracking and program management modules delivered - October 21, 2003.

This includes the development of the DOE corporate data dictionary for project reporting, implementation of the project report database, and the query agents. It also includes XML DTDs to enable interfaces with systems at the R&D facilities, Office of Scientific and Technical Information, and external resources. Additional XML DTDs to be ready at this time would enable interfaces to DOE program-specific management systems, and the development of some query templates. Standard queries would allow program managers to take early advantage of the system. Security interfaces to control access to information will also be deployed at this time.

Phase III - Project Execution modules delivered - July 3, 2004.

This includes the data dictionary and associated XML DTDs that would enable the programmatic guidance, work authorization (WAS), and annual financial plan (AFP) process data to be integrated. The modules allowing program managers to enter funding instructions, as well as the workflow software and electronic signature software to enable a fully electronic execution process, will also be in place. In the case of universities, the execution process will be fully electronic to the contracting officer in the operations office.

## **Initiative: 4. Corporate Modernization Initiatives To Be Started**

### **C. Nuclear Materials Stewardship Initiative (NMSI)**

**Program Manager: Bill Newton**

**Project Leader: Lisa Dancy**

**Project: Corporate Nuclear Materials Information System**

#### **1.0 Background**

The end of the Cold War has presented the Department of Energy (DOE) with many new nuclear materials management challenges. Hundreds of tons of fissile nuclear material have become surplus to national security needs. Thousands of gallons of nuclear materials in solution remain in interim storage within aging facilities. Large quantities of stable nuclear materials could be attractive to terrorist organizations. Thousands of tons of spent nuclear fuel (SNF) and other radioactive wastes remain in interim storage awaiting the availability of a deep geologic repository. Large nuclear facilities containing residues of nuclear materials are being prepared for deactivation and decommissioning to reduce the footprint and mortgage costs of the DOE weapons complex. Stewardship challenges, inherent in the management of these materials and facilities, are being addressed by DOE and its contractors.

National security activities such as stockpile stewardship, pit manufacture, and supplying naval reactors for national defense require more disciplined nuclear materials inventory and disposition management. Non-proliferation and arms control activities in the international and domestic arenas have led to an increased need for knowledge of our own nuclear materials and inventories, and the requirement for tools to accommodate transparency requirements. Domestic fissile material disposition activities, such as the verifiable storage and irreversible disposition of weapons-usable plutonium and highly enriched uranium (HEU), demand efficient inventory accountability, and also form the basis of disposition assistance for foreign governments. Within the DOE Office of Environmental Management (EM) and Defense Programs (DP), the management and disposition of post-cold war legacy residues and wastes requires accurate, defensible inventories and disposition information on all surplus nuclear materials.

Other DOE Program Offices must also include accurate definition and characterization of the entire nuclear material inventory and recognize that the responsible management of these nuclear materials and facilities across their entire life-cycle is essential, through production processes, use, recovery and recycle, storage, transportation, and disposition. The Offices of Fissile Material Disposition (NN-60), Nonproliferation and National Security (NN), Science (SC), and Nuclear Energy (NE) maintain discrete material management and/or coordination responsibilities, and conduct numerous permanent and ad hoc initiatives for their successful accomplishment. These initiatives often result in databases containing useful information; however, these efforts have not been part of an integrated nuclear materials information system development strategy. The information needs of corporate DOE, as a result, are not being met. Key decisions regarding nuclear

materials and their safe, cost-effective disposition or re-use must be based upon validated and timely inventory and disposition information.

Nuclear materials present a compelling and enduring obligation that demands DOE leadership, vigilance, and best management practices. To meet the challenges posed by this responsibility, DOE must have a coherent corporate strategy that is integrated across programs and within the field complex. The strategy must be driven by a long-term vision that addresses infrastructure, personnel, transportation, and information management requirements.

A strategy for the systems that maintain and manage the Department's large and dynamic assortment of nuclear materials information was the focus of a Strategic Information Management (SIM) study initiated by the Under Secretary of Energy and the Department's Nuclear Materials Council. The SIM business case is intended to assist decision-makers in determining the future direction for processes and systems supporting nuclear materials stewardship and management in the Department.

The Department is currently conducting a Business Process Reengineering (BPR) effort for the Corporate Nuclear Materials Information Management Project (CNMIMP) to identify opportunities for process improvements at DOE Headquarters and DOE sites. A BPR Opportunities Identification Team (OIT) was formed to identify opportunities to standardize, streamline and improve the nuclear materials data and information management functions. The BPR-OIT achieved an initial understanding and documentation of the current processes including preliminary challenges, Opportunities for Improvement (OFIs), and best practices. The BPR-OIT will also begin to formally integrate the BPR effort with the NMSI SIM Business Case findings as well as the CNMIMP Standardization Task to ensure cohesion and linkage between these related efforts.

Development efforts will begin in accordance with above recommendations, when funding is made available.

## **2.0 Project Milestones, Progress, and Accomplishments (initial report)**

- 2/00 NMSI SIM Workshop 1 completed.
- 4/00 NMSI SIM Workshop 2 completed.
- 6/00 NMSI SIM Workshop 3 completed.
- 8/00 NMSI SIM business case completed.

## **3.0 Performance Measures**

Performance measures will be developed to support the NMSI SIM business case.

#### **4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

#### **5.0 Cost Schedule (in millions)**

<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>Total</b>
\$7.000	\$16.380	\$7.090	\$5.780	\$3.690	\$39.940

#### **5.1 Revisions to the September 30, 2000, Cost Schedule Budgetary Baseline**

This is a new CMIP project. It is not included in the CMIP FY 2002 or FY 2003 development funding allocations in order to allow the Department to complete a Business Process Reengineering effort for the Corporate Nuclear Materials Information Management Project to identify opportunities for process improvements at DOE Headquarters and DOE sites.

#### **6.0 Implementation Schedule**

Implementation schedules will be developed to support the NMSI SIM business case when funds are made available.

## **Initiative: 4. Corporate Modernization Initiatives To Be Started**

### **C. Nuclear Materials Stewardship Initiative (NMSI)**

**Project Manager: Susanne Furr**

**Project: Nuclear Materials Management and Safeguards System Upgrade Project**

#### **1.0 Background**

The Nuclear Materials Management and Safeguards System (NMMSS) is an ongoing project that may be subsumed within the NMSI project in the future. NMMSS requirements are part of the proposed Corporate Nuclear Materials Information System; therefore, the current NMMSS project is part of the CIO Program Review cycle. NMMSS receives no CMIP funding.

NMMSS serves national security and program management interests in the utilization of nuclear resources. NMMSS contains records of all nuclear material supplied and controlled under United States law and related international agreements including U.S. nuclear materials production programs and U.S. private nuclear industrial activities. In addition, the system also serves international interests in the programs for the peaceful application of nuclear energy and in the non-proliferation of nuclear weapons. The NMMSS provides quality nuclear data in a timely manner to support U.S. Government requirements.

NMMSS is jointly funded by the U. S. Department of Energy (DOE) and the U.S. Nuclear Regulatory Commission (NRC). DOE NMMSS program management responsibility transferred from the Office of Nonproliferation and National Security, the International Safeguards Division, in November 1999 to the Office of Security and Emergency Operations, the Office of Plutonium, Uranium, and Special Materials Inventory. Prior to the transfer, the former system owner had directed NAC International, Inc., the contractor who operates NMMSS for the U.S. Government, to undertake a benefits/cost analysis to study the feasibility of upgrading NMMSS. NMMSS had remained virtually unchanged since the framework for the data collection that was developed and implemented over thirty years ago.

When the last upgrade to NMMSS was made, the system was moved from a mainframe application to a client-server application using FoxPro for DOS. Although FoxPro for DOS was considered state-of-the-art when it was chosen, it is no longer supported by its developer and is very limited in system flexibility. The results of the benefits/cost analysis conducted on the proposal to upgrade NMMSS included the recommendation that the system be moved off FoxPro and be redesigned using modern state-of-the-art technology. Oracle 8 was selected as the database platform of choice and the former system owner authorized NAC International to begin the process to upgrade NMMSS in the summer of 1999.

The NMMSS Upgrade Project is being conducted under the auspices of the Chief Information Officer's Corporate Management Information Program (CMIP), with

regularly scheduled project/progress reviews. The Upgrade Project was developed using the recommended framework in the DOE Software Engineering Methodology that included very structured stages of software design and development. The NMMSS Upgrade Project is now in the System Development Stage.

## **2.0 Project Milestones, Progress, and Accomplishments (Since last report)**

07/00	Coordination Meeting with LANMAS Project Personnel.
11/00	Second CMIP Quarterly Review for the NMMSS Upgrade.
11/00	NMMSS Upgrade Update Meeting with NMMSS Users (DOE and NRC).
11/00	Exited Requirements Stage.
12/00	Began Design/Development Stage.
03/01	Third CMIP Quarterly Review for the NMMSS Upgrade.
05/01	Annual NMMSS Users Group Meeting Focusing on NMMSS Upgrade.

## **3.0 Performance Measures**

### **3.1 Description of Performance-Based System:**

Ensure that NMMSS project is on schedule and within scope and budget.

#### **3.1.2 Current performance goals estimates:**

Current status estimates of the performance goals for this project are identified in 3.2.

#### **3.1.3 Variance from baseline goals:**

There are no current variances from baseline goals.

#### **3.1.4 Corrective actions:**

No corrective action plans have had to be developed.

#### **3.1.5 Proposed revisions to baseline goals:**

This is a new project and there are no revisions to be reported.

### 3.2 Performance Goals:

3.2.1 Ensure that NMMSS Upgrade Project stays on schedule.

**Measure:** Project Schedule has published dates for completion of Project Stages.

**Current Status:** Project has experienced some schedule slippage in the Upgrade Design Stage of the project.

3.2.2 Ensure that NMMSS Upgrade Project is on budget.

**Measure:** NMMSS budget is clearly defined.

**Current Status:** NMMSS Upgrade Project is currently on budget.

3.2.3 Ensure that design requirements and new data elements are incorporated into the new System.

**Measure:** Design requirements for Upgrade are clearly delineated in the Upgrade Project Plan.

**Current Status:** Currently in the Development Stage.

### 1.0 Issues or Concerns

Funding issues identified in the FY 2000 CMIP report have been addressed and pose no further issue.

### 5.0 Cost Schedule (in millions)

<b>Funding</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>Total</b>
DOE Funding	\$0.500	\$1.400	\$1.400	\$3.300
NRC Funding	\$0.300	\$0.700	\$0.000	\$1.000
Total Funding	\$0.800	\$2.100	\$1.400	\$4.300

NMMSS is not funded by CMIP. DOE funding in the above table is provided by the Office of Security. Requirements currently addressed in NMMSS are included in the proposed Corporate Nuclear Materials Information System.

## **Initiative: 4. Corporate Modernization Initiatives To Be Started**

### **C. Nuclear Materials Stewardship Initiative (NMSI)**

**Project Manager: Carol Raeder**

**Project: Local Area Network Materials Accounting System (LANMAS)**

#### **1.0 Background**

The Local Area Network Materials Accounting System (LANMAS) is an ongoing project that may be subsumed within the NMSI project in the future. LANMAS requirements are part of the proposed Corporate Nuclear Materials Information System; therefore, the current LANMAS project is part of the CIO Program Review cycle. Although the Office of Plutonium, Uranium and Special Materials Inventory (SO-23) has formally requested CMIP funding, LANMAS receives no CMIP funding.

The Local Area Network Materials Accounting System (LANMAS) serves as the Department's standardized nuclear material accounting system. LANMAS has been endorsed by the Deputy Secretary to be considered as DOE sites replace their legacy accounting systems. LANMAS is one of the key elements of the Department's Nuclear Materials Stewardship Initiative Corporate Nuclear Material Information Management Project (NMSI CNMIMP) process to provide an integrated information management capability for nuclear materials management and inventory accountability. LANMAS directly addresses the Department's goal to "Ensure the Vitality of DOE's National Security Enterprise" as identified in the Department's FY 2001 Performance Agreement with the President of the United States. In addition, LANMAS supports the goals of the newly established Office of Plutonium, Uranium, and Special Materials Inventory. Significant cost savings to the Department have also been realized through standardization of nuclear materials accounting systems because one system has been developed rather than each site developing its own unique system. In addition, standardization has provided increased efficiency and greater reliability of inventory values. LANMAS is fully operational at nine DOE sites. Two Naval Reactor sites are currently in the process of site implementation and installation and another is conducting parallel operations. Current plans are to expand installations to 12 sites by mid FY 2002.

#### **2.0 Project Milestones, Progress, and Accomplishments (Since last report)**

1. LANMAS fully operational at two additional sites.
2. Released LANMAS V 2.7 to DOE sites currently reporting via LANMAS.
3. Conducted LANMAS Users Meetings.
4. Participated in quarterly CIO CMIP briefings.
5. Participated in quarterly LANMAS/NMMSS Coordination meetings.
6. Participated in the Department's Nuclear Materials Stewardship Initiative Strategic Information Management (NMSI SIM) process.
7. Participated with Microsoft, Inc. in a Cooperative Research and Development Agreement related to data warehousing.
8. Completed required performance plans documenting activities and milestone

schedules to complete LANMAS module in support of IAEA reporting requirements.

### **3.0 Performance Measures**

#### **3.1 Description of Performance-Based System:**

Ensure LANMAS project is on schedule and within scope and budget.

##### **3.1.1 Previous baseline goals:**

Same as above.

##### **3.1.2 Current performance goals estimates:**

Current status and estimates of the performance goals for this project are identified in 3.2.

##### **3.1.3 Variance from baseline goals:**

There are no current variances from baseline goals.

##### **3.1.4 Corrective actions:**

No corrective actions have had to be taken.

##### **3.1.5 Proposed revisions to baseline goals:**

No revisions to baseline goals are planned.

#### **3.2 Performance Goals:**

##### **3.2.1** Ensure a quality LANMAS product.

**Measure:** Minimize the defect rate associated with each LANMAS release.

**Current Status:** Current releases are thoroughly tested and evaluated. Continue to develop enhanced test plans to improve upon defect rates.

##### **3.2.2** Ensure effective integration/seamless data exchange capability for inventory information between facility and national database systems.

**Measures:** Error rate reporting to national database continues to decline. Fully understand any new reporting requirements for a Corporate Nuclear Material Accounting System.

**Current Status:** Monitor the monthly reporting to the Nuclear Materials

Management and Safeguards System (NMMSS) to determine if any problems exist with transferring data from the site system. Actively participate in SIM process to identify processes and procedures for a Corporate Nuclear Materials Information System.

**3.2.3** Standardize and improve nuclear material accounting throughout the DOE complex.

**Measure:** Maximize the percentage of nuclear materials currently being managed by LANMAS.

**Current Status:** Approximately 57% of the Department's plutonium and 22% of its highly enriched uranium (HEU) inventories are captured in LANMAS. Our goal is to capture greater than 90% of the Plutonium and 23% of the HEU inventories by the end of FY 2002.

**Measure:** Enhance functionality of LANMAS to support onsite measurement and International Atomic Energy Agency reporting requirements.

**Current Status:** Initiated formal performance documentation with several of the LANMAS sites to work together and identify requirements and build the non-destructive assay (NDA) measurement and IAEA reporting modules. Completion of the IAEAS module is scheduled for October 2001. Full scale development and distribution of the computer-based module for the collection and storage of NDA measurement data is targeted for FY 2004.

**3.2.4** Customer Satisfaction

**Measures:** Ensure customer satisfaction through effective monitoring of system content, system quality, service quality and cost effectiveness.

**Current Status:** Independent group assessed customer satisfaction of product and results were favorable. Contractor will continue to survey customers on a routine basis.

**4.0 Issues or Concerns**

No Congressional level issues or concerns have been identified for this initiative.

Office of Security funding shortfalls for this project have resulted in prolonging deliverables, thus increasing the total estimated cost of the project.

## **5.0 Cost Schedule (in millions)**

<b>FY 1998 and prior</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
\$2.700	\$1.000	\$0.900	\$1.000	\$1.538	\$1.500	\$1.000	\$1.000	\$1.000	\$1.500	\$13.138

Increasing demands, (CMIP Briefings, SIM participation, LANMAS/NMMSS coordination) and stagnant budgets have resulted in a prolonged implementation schedule at DOE sites. Funding level for FY 2001 and the out years reflects the requested amount and not actual funding.

LANMAS is funded by the Office of Security and receives no development funds from CMIP. Requirements currently addressed in LANMAS are included in the proposed Corporate Nuclear Materials Information System.

## **6.0 Implementation Schedule**

Complete installation of LANMAS at the following DOE sites by mid FY 2002:

Idaho Naval Reactors (Bettis);  
Knolls Atomic Power (KAPL); and,  
Bettis Atomic Lab.

Install LANMAS V2.8 at all existing DOE sites in early FY 2002.

### **6.1 Ongoing Schedule.**

1. Provide technical support to customers.
2. CIO Quarterly Reviews.
3. LANMAS/NMMSS coordination.
4. Participation in NMSI CNMIMP Process.
5. Continue development activities to complete LANMAS reporting modules for Non Destructive Assay Measurements and International Atomic Energy Agency Participation in SIM Process.