

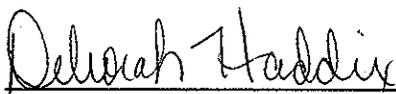


Office of Legacy Management Enterprise Management Plan

May 2009

Legacy Management Enterprise Management Plan

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Acronyms

AA	Application Architecture
BRM	Business Reference Model
C&A	Certification & Accreditation
CIO	Chief Information Office
CIR	Committed Information Rate
CRB	Configuration Review Board
CPIC	Capital Planning and Investment Control
DOE	U.S. Department of Energy
EA	Enterprise Architecture
EARB	Enterprise Architecture Review Board
EAWG	Enterprise Architecture Working Group
EBA	Enterprise Business Architecture
EBM	Enterprise Business Model
ECCB	Enterprise Change Control Board
E-Gov	Electronic Government
EIA	Enterprise Information Architecture
EM	DOE Office of Environmental Management
ENS	Enterprise Need Statement
ERD	Entity-Relationship Diagram
ESA	Enterprise Solution Architecture
ETA	Enterprise Technical Architecture
FE	DOE Office of Fossil Energy
FEA	Federal Enterprise Architecture
FEA BRM	FEA Business Reference Model
FEA DRM	FEA Data Reference Model
FEMG	Federal Enterprise Management Group
FOIA	Freedom of Information Act
GAO	Government Accounting Office
GSS	General Support System
HQ	Headquarters
IT	Information Technology
LM	DOE Office of Legacy Management
LTS&M	Long-term surveillance and maintenance
MA	Major Application
MR	Management Reserve
NIST	National Institute of Standards and Technology
OCIO	Office of Chief Information Officer
OMB	Office of Management and Budget
PKI	Public Key Infrastructure
PIA	Privacy Impact Assessment
PII	Personally Identifiable Information
QA	Quality Assurance
ROM	Rough Order of Magnitude
TA	Technical Architecture
TOM	Task Order Manager
TRM	Technical Reference Model
WAN	Wide Area Network

Definitions

Architecture—The structure of components, their interrelationships, and the principles and guidelines governing their design and evolution over time.

Baseline Architecture—The set of products that portray the existing enterprise, the current business practices and technical infrastructure. Commonly referred to as the “As-Is” architecture.

Enterprise—An organization (or cross-organizational entity) supporting a defined business scope and mission. An enterprise includes interdependent resources (people, organizations, and technology) that must coordinate their functions and share information in support of a common mission (or set of related missions).

Enterprise Architecture Products—The graphics, models, and narrative that depicts the enterprise environment and design.

Enterprise System—A collection of information technology elements (e.g., hardware, software, services) brought together with the intent to facilitate an organization's business processes (administrative or project).

Sequencing Plan—A document that defines the strategy for changing the enterprise from the current baseline to the target architecture. It schedules multiple, concurrent, interdependent activities, and incremental builds that will evolve the enterprise.

Target Architecture—The set of products that portray the future or end-state enterprise, generally captured in the organization’s strategic thinking and plans. Commonly referred to as the “To-Be” architecture.

Note: Version 4.0 of the EA Glossary is available on the OCIO portal.

1.0 Introduction

This U.S. Department of Energy (DOE) Office of Legacy Management (LM) Enterprise Management Plan describes an approach for creating an information technology (IT) enterprise architecture that is developed, implemented, and maintained to explain and guide how LM's IT elements work together to efficiently accomplish the LM mission.

The LM IT Enterprise Architecture addresses and examines business activities and processes, data and information flows, applications and software, and technology. A proper architecture is not limited to hardware and software issues. It is also not built quickly without the support of the entire organization. The LM IT Enterprise Architecture is a long-term plan that addresses how the organization will migrate to new and enhanced application systems and information technologies, while streamlining business processes over time.

Government oversight bodies, including the Office of Management and Budget (OMB) and the General Accounting Office (GAO), expect agencies to be developing and implementing enterprise architectures. LM, as a High Performing Organization, is committed to supporting DOE's effort to establish an overarching enterprise architecture. OMB Circular A-130 concerns the management of Federal information resources that requires organizations to utilize a framework that is enterprise-wide, thus shifting focus from IT to enterprise-wide architecture. Failure to develop and implement IT enterprise architecture can adversely affect DOE and LM's chances of securing funding for new IT projects or improvements. Failure also could hinder the ability to meet customer needs efficiently (e.g., continued migration to electronic commerce).

Architectures are tools used in system requirements, design implementation, operation, and related decision making. Architectures enable exploration, common understanding, unity of effort, disciplined control of expectations, and saving money over the lifecycle of projects. LM expects to benefit from participation in DOE's Enterprise Architecture through increased opportunities to share and efficiently process information, the ability to respond faster to changes in technology and top-down business drivers, and reductions in life cycle costs because of economies of scale and resource sharing across DOE and the Federal government.

2.0 Enterprise Vision

LM's vision is to provide an enterprise approach to effectively and efficiently carry out its mission to provide stewardship for our nation's atomic legacy. The LM mission is to manage DOE's post-closure responsibilities and ensure future protection of human health and the environment. LM has control and custody for legacy land, structures, facilities, and records and is responsible for maintaining them at levels suitable for their long-term use.

The vision needs to provide the foundation, objectives, principles, and standards that define the enterprise environment framework within which IT will be enabled and deployed. It is not intended to create obstacles or burden the organization with bureaucracy, but rather to improve communications within a framework that allows effective infrastructure management and efficient planning. The vision for architectural design will facilitate answers to the following questions:

- Requirements: What capabilities (projects) must be accomplished, where, when, and by whom?
- Environment: What are the elements (external constraints) to which the architecture must adapt and over which the architect has no control?
- Design Options: What are the options for performing these functions and what are the associated costs?
- Design Guidance: What are the underlying domain principles and constraining factors that should be considered in selecting from a set of options?

2.1 Enterprise Conceptual Principles

The following conceptual principles were developed to guide LM as the Enterprise Management Plan is implemented.

12 Conceptual Principles

- 1) *The architecture will be designed to meet the needs of the total enterprise. The business case for projects that support the mission of LM or benefit the most stakeholders will drive the project priorities.*
- 2) *A goal of the enterprise strategy and architecture is to provide a highly available, high performing and scalable environment for mission critical and eBusiness applications.*
- 3) *A goal of the enterprise strategy and architecture will be to delivery reduce integration complexity to allow development of Business Solutions faster and at lower cost.*
- 4) *LM will use a total cost of ownership (TCO) driven lifecycle plan for both acquiring and retiring technology components.*

5) *To support rapid change and business product delivery, the enterprise strategy and architecture will pursue component based, loosely coupled, and n-tiered architectures.*

Our approach will push us toward web based independent processes.

6) *Technology component delivery will be driven by accepted industry standard practices and methods, with priority given to open system architecture characteristics.*

Our practice will be to avoid dependencies on propriety or uncommon systems.

7) *Where there is potential for the business to gain significant efficiency, LM may be an early adopter of new technologies.*

8) *To support rapid business change, adaptability will be a primary design or selection criteria for technology components.*

9) *The preferred method of conducting business is through digital media.*

10) *Access to information technology services will support personalization and will not be constrained by geographic location.*

For example our approach will be to develop web based systems on a portal that are customizable by users.

11) *Information is a strategic asset of the corporation and must be managed in a manner which ensures its confidentiality, integrity, and availability.*

12) *Corporate data, transactions and networks will be secure and will conform to State and Federal regulatory compliance guidelines.*

Appendix A includes detailed Enterprise Management Conceptual Principles. These are statements of preferred direction and practice on how the organization or process will use IT. These principles help to provide a context for specific architectural decisions made later in the process and also help to make those decisions consistent. Some of these principles may seem obvious, but documenting the principles and keeping them as a visible part of the process will avoid them being overlooked.

2.2 Enterprise IT Architecture Foundation

IT architecture is a blueprint that is developed, implemented, maintained, and used to explain and guide how LM's IT and information management elements work together to efficiently accomplish the mission of the organization. The objective of enterprise IT architecture is to provide systems and data that improve the products and services accessible to the public, stakeholders, and LM staff. The goal is not to produce IT architecture for architecture's sake.

During the enterprise architecture implementation, LM focuses on the business activities (work) performed, including performance measures, how they are organized, and where they take place; the data sets and information flows needed to perform the activities; the applications and software needed to capture and manipulate the information sets; and the technology (hardware, network, communications) needed to run the applications. The following sections present a seven-step process (see Figure 2-1) for dealing with these elements.

THE SEVEN STEP PROCESS *One approach to doing IT architectures.*

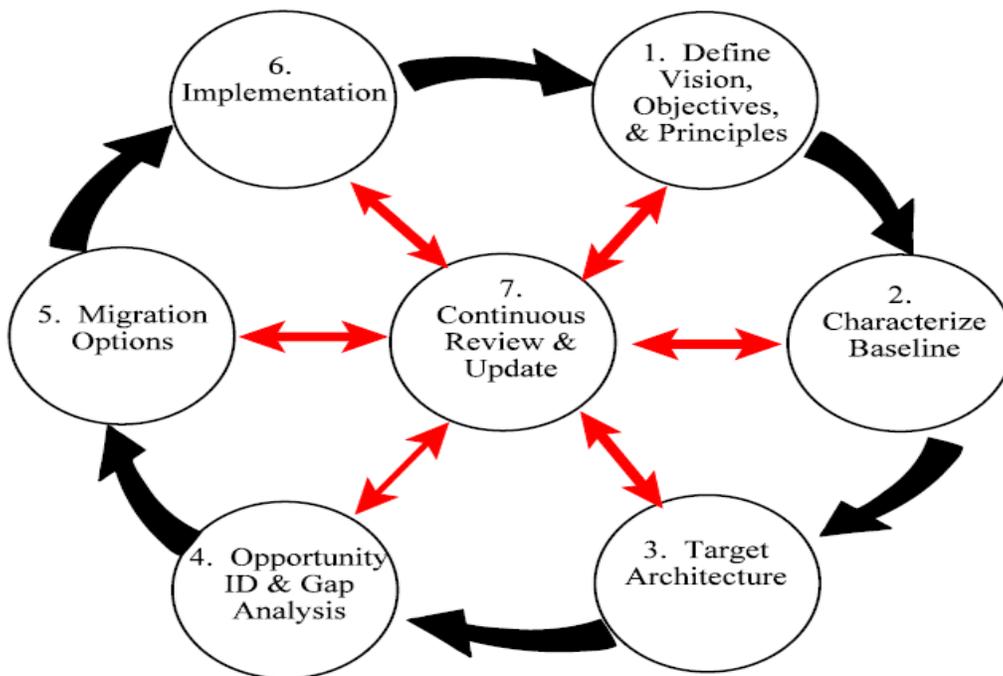


Figure 2-1.

2.2.1 Define Vision, Objectives, and Principles

Who and what are LM's IT architectural efforts to cover? What general IT principles guide LM's efforts?

LM ensures that its IT architecture vision, objectives, and principles remain consistent with the goals of DOE Strategic Plan and Strategic IT Plan and with the Departmental goal of achieving an electronic government (E-Gov).

The vision for LM's IT architecture is to provide the baseline against which the target architecture can describe LM's IT environment and capabilities during the next three to five years. The LM enterprise management approach examines operations within the organization or a business operation that involves multiple organizations, as part of the business architecture described in Section 3.2.

The objective is to improve the products and services provided to the organization and public, not produce IT architecture for architecture's sake. The enterprise management approach is expected to improve the business process and provide lifecycle cost savings.

2.2.2 Characterize Your IT Baseline

How does your office conduct its business, what IT is used, and, how is it used?

LM has begun documenting and characterizing the IT architecture current baseline status. This information is captured in the business, data, applications and technical architectures described in Section 3 and captured in the appendices of this plan. A characterization, while not unabridged, provides sufficient data to describe the current situation, providing a baseline against which decisions can be made regarding LM's target architecture. The appendices provide information regarding the type of data maintained as part of the IT baseline architecture.

It is essential to remember that IT architecture isn't just deciding on a computing platform or an operating system. LM knows the organization exists to provide its core products and services in support of its mission. IT is a tool to help accomplish the organization's program goals. LM evaluates whether business processes should be re-engineered to better align with those goals. The result is derived initiatives that evolve into the IT architecture target baseline.

LM's approach includes regular interviews with key functional staff, end-users, and managers. LM understands that these are the people who know the most about what actually takes place, where problems may exist, and where opportunities for improvements may exist. LM will organize the information collected into the IT target architecture baseline.

2.2.3 Create a Target Architecture

What do you want the IT architecture to look like in the future?

LM will develop a model of the IT structure based on understanding the forces (external and internal) that are driving the need for change. These “drivers” will be addressed in the business and technology areas of responsibilities as follows:

- **Business drivers** are ones telling LM that LM need to conduct business differently. Customers, stakeholders, and users may demand better or new services. Organizations that LM works with may want to change how to exchange data. The methods now used to do business may not be cost efficient in the future. Or the drivers may be instructions from higher-level organizations or from laws. All agencies need to consider the impact of the Paperwork Elimination Act on their future IT architecture. This law says the public must be able to transact business with the government by electronic means, and that means that agencies need to have digital signature procedures in place. This is part of the larger push toward electronic commerce. Within DOE, the goals in OCIO Information Resource Strategic Plan are drivers which will be taken into account.
- **Technology drivers** are ones that tell LM that technology is giving or will give LM options for doing things differently (and hopefully better). What other technologies are out there that may provide LM with similar future opportunities?

LM’s IT security is a particularly strong driver that will be addressed when developing all parts of the architecture based on the personnel sensitive nature of personal identifiable information (PII) LM is entrusted with.

LM will analyze these drivers and the current baseline. LM will start to define the future business and technology models to determine how the future business process is working, the general technological tools needed to make that process effective, and how those tools need to interrelate. LM will then decompose these models into more specific models dealing with specific areas (e.g., data models, system models and infrastructure models), depending upon the complexity of the organization or process involved. In the final analysis, LM will identify specific initiatives and approaches the organization should take in the future.

LM target architecture is the heart of the process. The four components (business activities including performance measures, data sets and information flows, applications and software, and technology) of the IT architecture will be modeled separately. Security and privacy considerations will be addressed throughout. LM’s process consists of defining each set of architectural components and its key attributes. The desired capabilities of and relationships between components are then defined. The result is an organized set of definitions and models from which drawings will be made to reflect the different views of the architecture. Again, the relative complexity of the situation will determine how detailed and extensive this effort and documentation needs to be. The four components are then synthesized into a comprehensive target architecture.

The LM target architecture will be looking five years ahead. Because it is a model that does not designate specific products, it can look this far into the future. New technology could lead to changes to specific standards for architecture every two or three years, but these changes would not normally affect the model of how the technology elements support the business.

LM will incorporate an incremental approach supporting the “evolvable” IT architecture. Technology changes almost daily and LM will have a structure that can accommodate these changes as easily as possible. The evolvable IT architecture will apply across the broader enterprise architectures: keep things modular, have well-defined boundaries between systems and components (crisp interfaces), use industry-standard interfaces, use open-systems standards, and use common mechanisms whenever possible. LM planning for modular systems with clear boundaries will allow LM to change portions of the IT architecture without having to revise everything in the architecture, and also helps LM see how changes in one part of the architecture may affect other elements.

2.2.4 Determine the Gaps Between Current and Target Architectures

What are the differences between your baseline and the architecture you want to achieve?

Once LM knows where the current and target baseline architecture segments are and where LM wants these segments to be at some point in the future. LM will evaluate how long that road is and how far is the organization from the target?

As a result of the overall model analysis process, the gaps will be identified for each component of the IT architecture and assessed based on the following:

- Where are the gaps?
- How difficult will it be to bridge those gaps?
- How much time, money, resistance from users, etc., may be involved?

The nature of LM organization plays a great role in this analysis. Knowledge of all this is necessary in developing a plan for migrating to the target architecture.

2.2.5 Develop a Migration Plan

How do you bridge the gaps between the baseline and the target architecture?

LM will develop an IT Migration Plan that will document the target architecture, the gaps between the two, the issues involved in bridging those gaps and the technical approach on when and how LM will actually do that bridging. It is anticipated that this will not so much be a single migration, but rather a series of migrations over time driven either by business needs or new technology insertion that provides efficiencies or cost savings.

Many factors are involved, including those that were the results of the gap analysis. LM’s initial approach will be implementing the “quick wins” or “low hanging fruit” where the organization can realize benefits right away and for a

minimal cost and effort. The mid or long term approach will address real problems that need immediate concentration on more major and long-term tasks, as well as determining other actions to be effective. At a minimum, LM will perform an informal cost-benefit analysis.

LM uses the Federal Technical Reference Model (TRM). A TRM generically identifies the software, hardware, and interface services needed for the organization or business operation. The TRM helps LM see how everything fits together, guides the acquisition of IT products and services, and helps provide a base for future architectural changes. The TRM also serves as the basis for developing a Standards Profile, which identifies acceptable options within the IT architecture for filling the needs of the TRM's services. These options are specific types of equipment, software products, protocols, etc. There may be a single standard for some elements and a range of acceptable options for others. This Standards Profile guides acquisition and development activities.

LM's IT Migration Plan identifies the processes to be used for implementation. The plan describes the "governance" process that will answer how we will:

- Ensure that people planning and developing IT systems do so in a way consistent with the target IT architecture.
- Ensure that IT procurements are consistent with the target IT architecture (all procurements, not just major system procurements).
- Determine if exceptions or changes to the IT architecture are needed for a specific system or procurement.
- Track the implementation of the IT architecture migration plan and the benefits/flaws of the IT architecture.
- Keep the IT architecture up-to-date, reflecting changes to the business, development in technology, etc.

2.2.6 Implement the Migration Plan and Architecture

Start implementing the plan to bridge the IT architectural gaps.

Obviously the steps leading up to this one will be of limited value if implementation never takes place. But what does "implementation" mean? It does not necessarily mean that the LM organization must immediately convert its IT and information systems to the target architecture. If the IT architecture is guiding the procurement and development of technology and systems, then it is being implemented, even if it may take a number of years before the target architecture's goals are fully realized. LM's migration plan will identify priorities where the application of the organization's available resources and time can produce the greatest benefits.

For implementation to take place the architecture must be understood by all key personnel in the organization. To be fully effective the architecture cannot be a tool used only by technical personnel. Top agency management and program

personnel need to be aware and supportive of the architecture. There needs to be integration with the program planning and the budget processes. For instance, LM should not propose projects for funding in the budget if they are inconsistent with the architecture and the migration plan.

The technical opportunities that may be identified in the Architectural efforts can point out ways to change the business process, to use technology to do things in a radically different way (rather than just upgrading equipment that once automated old methods of doing business without affecting the way the essential business was conducted).

Conversely, other types of changes in business needs should lead to changes in the architecture. Business (program) and architecture feedback is crucial to full and effective implementation.

2.2.7 Review and Update Regularly

An IT architecture is a process, not a document.

Technology is changing very quickly these days, and that trend doesn't appear likely to slow down or stop. Business needs and processes also change over time. So a target architecture, whether fully implemented or not, that addresses how IT and information will serve business needs must be periodically reviewed and updated to reflect those changes.

The review can affect any of the other six steps identified – important technology or business changes may require a new vision and new basic objectives. New technology may provide opportunities for a revised target architecture, and LM may need to re-evaluate the baseline to allow LM to identify the gaps that need to be spanned to reach that new target. If architectural documents remained unchanged the chances are increasingly high over time that the organization isn't maximizing the possible value of new technology and is restricting creativity.

LM will perform annual updates to reflect changes in strategic plans and budget status. Since a good IT architecture deals with interfaces with other organizations, LM will stay aware of technological changes in those organizations and make sure that LM will be aware of changes that external organization may be planning to make.

3.0 LM Enterprise Architecture

The LM enterprise approach captures the current, or baseline, architecture by documenting and maintaining key information about the systems and infrastructure that make up the current production environment. The architecture drivers that move the current baseline architecture toward the target architecture will be the business drivers derived from LM’s core mission, as well as design drivers that may be derived from new technology or industry trends. The vision and guiding principles described in Section 2, together with the architecture drivers, provide the strategic direction for IT.

The LM Enterprise Architecture is captured in the traditional segments of business, data (information), applications (systems), and technology (infrastructure) architectures. The baseline architecture for each segment is described in the following sections. As Figure 3–1 indicates, the enterprise management process is driving LM toward its target architecture by helping LM personnel understanding how the architecture drivers impact each segment.

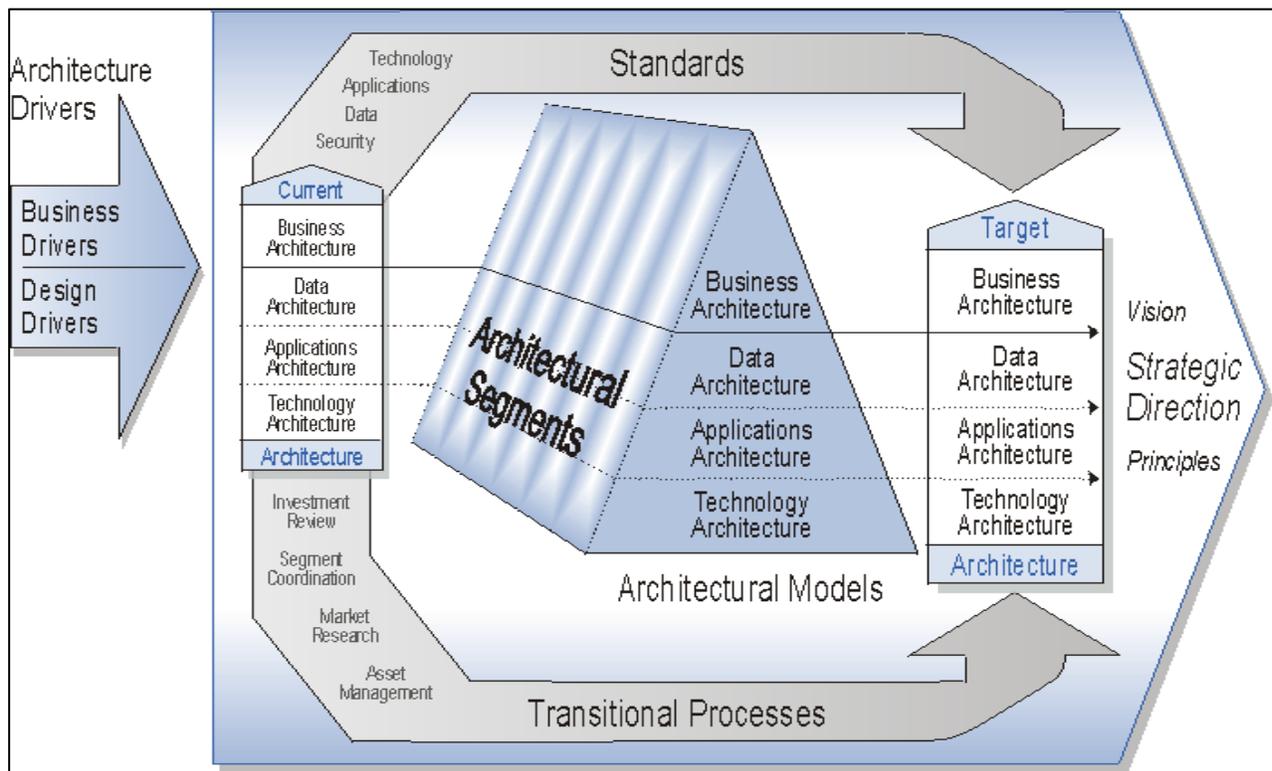


Figure 3–1. Drivers from Current to Target Architecture

The process of moving from the current (baseline) architecture to the target architecture includes the application of industry standards for cyber security, protection of data, development of applications, and ongoing modernization. The transitional processes document how we move from the current to the target architecture.

3.1 Baseline Architecture – Current Method of Operations (As-Is)

Figure 3–2 depicts LM’s current operational environment. The current architecture has evolved from its Grand Junction centric beginnings to include geographically diverse locations by developing web-based applications. The existing architecture presents several varying risks in reference to DOE OCIO cyber security requirements. The risks (network, workstation, and data) are currently being mitigated through architectures that are described in the next subsections.

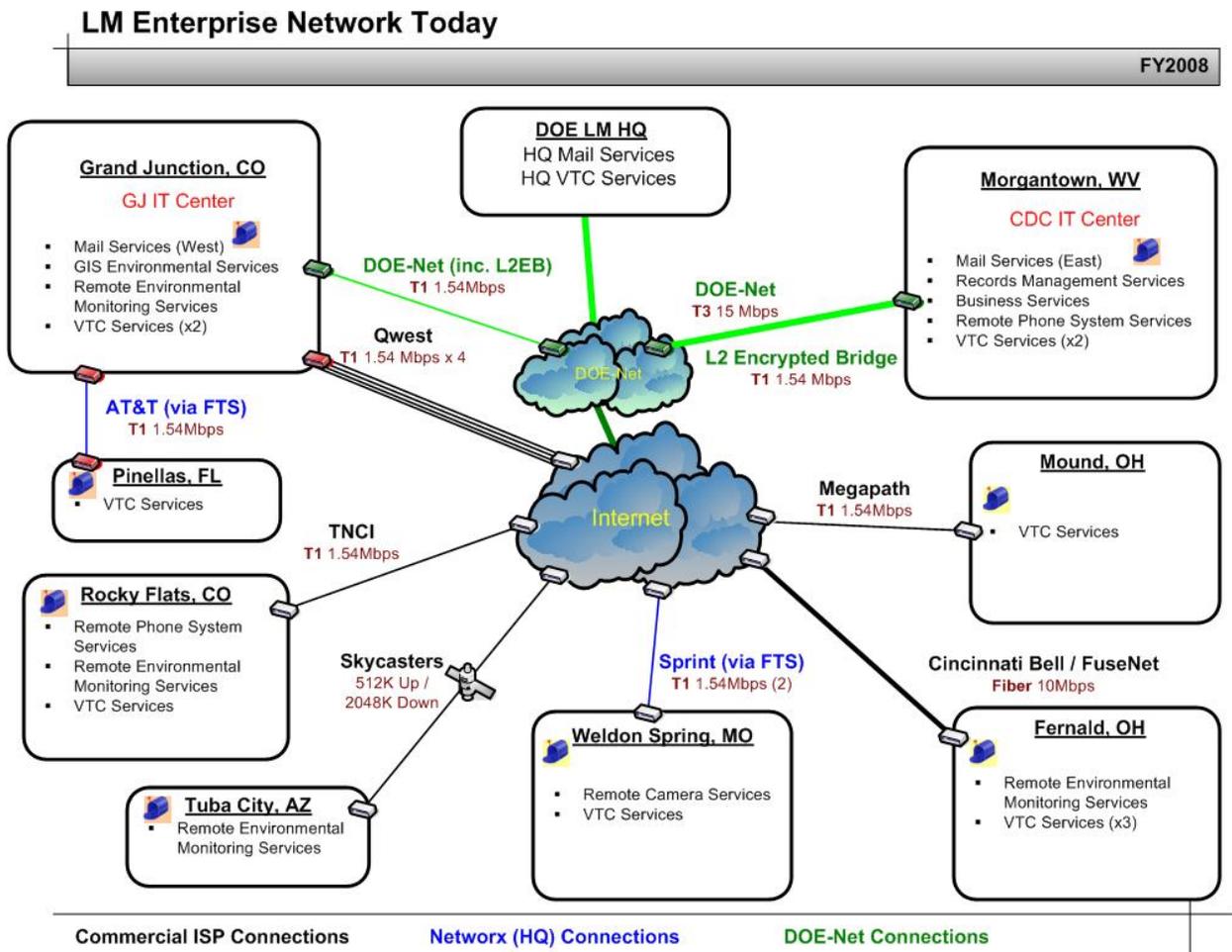


Figure 3–2. LM Baseline Architecture (As-Is)

The Government-wide certification and accreditation (C&A) process can address general support systems (GSS), major applications and minor applications. Currently Legacy Management reports two Federal Information Security Management Act (FISMA) system C&A packages: the General Support System (LMGSS01) and the Records Handling System (LMRHS01). The Records Handling System is categorized as a Major Application (MA).

3.1.1 LM Offices

LM administrative and transition sites are dispersed throughout the United States. Many sites have been brought into the LM operating environment. Headquarters, however, relies on the OCIO’s DOE COE information technology services. This

prevents LM's ability to provide its users with a standard desktop environment and standard expectations for IT capabilities. This scenario also presents a number of challenges with LM personnel operating on shared network resources between DOE offices (i.e., LM, HQ). Ensuring the security of the LM enterprise is especially challenging with multiple IT vendors, site-specific cyber security policies and procedures, and varying access controls.

3.1.2 Closure and LTS&M Sites

Closure site activities encompass the understanding of the site transition plan, organizational goals, functions, and the data/system that support those functions. The transition activities include proof of concept, followed by data migration or system transfer.

Once transitioned, some LM Long Term Stewardship & Maintenance (LTS&M) sites provide surveillance and monitoring activities of dynamic data that are collected to respond to environmental regulatory or federal law requirements. Many of these sites are not populated with a regular user base, but they may include use of telemetry data for remote monitoring.

3.1.3 LM Operating Environment

The LM Information System Operating Environment provides support to the entire LM community (i.e., Federal agencies, contractors, principles, and stakeholders) via the General Support System, also called the LMGSS01. The LMGSS01 is the general infrastructure support for information systems under the management of LM. It includes all hardware, software, information, and applications used to store and process information used in fulfilling the LM mission.

The records management system is also part of the production environment, but is documented via a separate C&A. Office of Legacy Management Records Handling System (LMRHS01) is a Department of Energy (DOE) application/system that has been categorized as a Major Application (MA). LMRHS01 currently resides on Dell Servers running on the Windows 2003 platform with Microsoft Internet Information Server (IIS) version 6.0 and Microsoft SQL Server 2003. LMRHS01 had its C&A completed during the second quarter of 2008. LMRHS01 contains records documenting LM business. It also holds records needed to respond to Freedom of Information Act/Privacy Act (FOIA/PA) requests and Energy Employee Occupational Illness Compensation Program Act (EEOICPA) requests. As part of this function, the LMRHS01 maintains past employees' records from DOE closure sites. As FOIA/PA and EEOICPA requests are received from DOE, Department of Labor (DOL), and other Government sources, the LMRHS01 is collectively used as a search tool to retrieve the requested documents.

3.2 Business Architecture

One aspect of business architecture focuses on LM's unique business processes and maps them within the organization to ensure each process is owned by those responsible for carrying out the goals. The business architecture baseline identifies the systems, information and resources associated with each core business process.

The business architecture provides a line of sight from LM's mission to their investments and demonstrates a prudent approach to cost planning, implementation and control of their major investments. An intended additional benefit of documenting the core business processes is to provide a tool to communicate to those within and outside of LM what functions are being performed to achieve the goals and accomplish the mission of the organization.

Using Federal Enterprise Architecture (FEA) standard Business Reference Model (BRM) notation, Appendix E depicts each of LM's major business components, key applications, and technologies aligned to the specific organizational goal that it supports. The effort to capture and model the key business process for LM will focus on those business processes that are unique to LM's mission. For completeness, a list of all business processes identified will be captured in a separate document titled "LM Enterprise Business Process Model Report" that inventories all the key business processes utilized by LM to carry out its mission. For each business process captured, the key inputs and outputs of the process will be identified, as well as the business owner of the process and where it fits within the LM organization.

Another aspect of business architecture centers on the need to maintain compliance with the Capital Planning and Investment Control (CPIC) initiative, the Office of Management and Budget's (OMB) Circular A-11, sections 53 and 300, mandates reporting requirements for Federal IT investments and establishes the processes to be used in completing these requirements. According to section 53, entitled "Information Technology and E-Government", federal agencies are required to submit an annual IT Investment Portfolio report (the Exhibit 53 report). Section 300, entitled "Planning, Budgeting, Acquisition, and Management of Capital Assets" (Exhibit 300) describes the business case that agencies must complete in order to justify each major IT investment. Because IT activities significantly impact the Department of Energy's (DOE) ability to accomplish its missions and business functions, it is important to identify and coordinate IT activities being planned by all elements of the Department, including Program Offices, Staff Offices, Field Offices, Laboratories, and Contractors. The Exhibit 53 IT Investment Portfolio report and Exhibit 300 Business Cases as annual reporting requirements are an important part of DOE's process of IT management and oversight. In addition to government-wide requirements documented in the OMB Circular A-11, DOE has established agency-specific requirements, such as a threshold for major investments of \$5 million or more over three years (Prior Year, Current Year, Budget Year), as well as additional specific requirements.

Currently LM does not have any Exhibit 300 investments. However, it does have several Exhibit 53 investments as listed in Appendix C. These cover all IT activities that support LM, including several matrixed IT resources that fully support a functional area. Appendix C lists each of the Exhibit 53 investments organized by the five core goals of LM.

The Investment List in Appendix C identifies the following parameters:

- Investment Name
- Investment Template

- Exhibit 53 Part
- Line of Business
- Sub Function
- Type of Funding

Goal 1 is defined as those activities executed to protect human health and the environment through effective and efficient long-term surveillance and maintenance. LM has three IT investments defined that fall under this goal. These are the investments for the development and support of the environmental systems, the migration activities involved with closure site transitions, and a placeholder for possible development of an enterprise level telemetry system.

Goal 2 is defined as those activities executed to Preserve, protect, and make accessible legacy records and information. LM has eleven IT investments defined that fall under this goal. Two of these investments are for the maintenance of the current electronic record keeping system (ERKS) and the development of its replacement. Another three define discreet scopes of work for cyber security, enterprise architecture, and application development. The remaining six investments make up the IT infrastructure.

Goal 3 is defined as those activities executed to support an effective and efficient work force structured to accomplish Departmental missions. LM has one IT investment defined that fall under this goal. This investment is for the legacy benefit system.

Goal 4 is defined as those activities executed to manage legacy land and assets, emphasizing protective real and personal property reuse and disposition. LM has one IT investment defined that fall under this goal. This investment is for the property management system.

Goal 5 is defined as those activities executed to improve program effectiveness through sound management. LM has two IT investments defined that fall under this goal. These are the investments for the budget formulation tool and the accounting system.

3.3 Data (Information) Architecture

The baseline data architecture will identify and maintain the key information interrelationships by mapping them across the functional areas and depict the information flow through key systems and databases.

LM will develop and maintain relational database diagrams using the ERwin data modeler for all key systems. A data steward will be identified for all key pieces of information. The high level information flow diagrams will be maintained on the LM Portal to keep them current and available as reference to the LM user community.

The baseline data/information architecture focuses on the process of modeling the information that is needed to support the business processes and functions of business units, and more strategically, of communities of interest. Where applicable, it spans

traditional business lines and organizational boundaries to address interoperability, integration, consolidation, and sharing of resources by correlating business processes to common LM services through the identification and definition of data/information relationships and dependencies.

- Data/information architecture outcomes are expressed in the form of data models (ERwin) entity relationship diagram (ERD), entities, data attribute definitions, information flows, and analysis of inputs/outputs and decision-making criteria for the activities of LM and DOE HQ.
- Data modeling produces an accurate model, or graphical representation, of the key LM business line's information needs and business processes. The data model is a framework for business re-engineering and the development of new or enhanced applications to fulfill business requirements and processes. Data modeling describes the types of interactions and information exchanges that occur within and between business lines and their various stakeholders.
- The combination of the LM repository of all system ERD's together with their associated process flow diagrams will be used to document the as-is environment and will be a tool to drive the to-be environment.

This data layer of the enterprise architecture will ensure the organization understands how its key information is created, stored, and used. It helps organize information and its flow so a stakeholder can acquire knowledge easily and efficiently.

3.4 Applications Architecture

The baseline application architecture (AA) will focus on the organization's systems inventory of software applications and computer based tools that allow the organization to carry out its mission. The AA will define how applications are designed and constructed, how they communicate and cooperate, and where they reside. A subset of this architecture provides the relationships between lines of business; it defines how real-world LM business interact, and defines the expected behaviors of each system. These defined production systems will be maintained in configuration control using defined attributes defined below:

The Key System Inventory in Appendix B identifies the following parameters:

- System Name
- System Description
- LM Goal
- Functional Area
- Origin

To provide principles for making IT decisions LM will document guidelines and standards used for implementing systems. These standards will provide the enterprise requirements for making decisions about technology and product standards.

The technology and product standards need to be evaluated based on the strategic, transitional, Obsolescence, and emerging technologies.

- **Strategic**—These are the standards and products selected or for development or acquisition, and for replacement of obsolete or transitional standards or products.
- **Transitional**—These are standards or products requiring substantial investment or deployment.
- **Obsolescence**—It is highly likely that these standards or products, while still in use, will not be supported by the vendor (industry, manufacturer, etc.) in the future. Some products and standards have already reached the non-supported state.

Other factors that will be considered as part of our technology and product standards are:

- **Best Practices**—Another guideline for implementing IT in understanding of best practices. These recommendations are practical advice based on the experience and research of similar domains or DOE agencies that have implemented related IT solutions that are compliant EA.
- **Gaps**—As EA captures the key business lines apparent gaps will be identified and prioritized. These identified gaps will provide the road map for follow-up activities and technical direction.

3.5 Technical Architecture

The technical architecture (TA) layer addresses the infrastructure operation and maintenance of the distributed networking systems that includes network infrastructure (routers/switches, firewalls, etc.), domain administration, e-mail administration, remote access administrations, server operations and administration, configuration management, hardware management and systems documentation. It also includes the operation and maintenance of telecommunications system which includes telephone and voice mail, internet connectivity (data, voice, VTC), teleconference services, videoconference services, radios and frequency management, and central call station. End user support and maintenance is also part of the infrastructure which includes help desk, client system hardware and software, peripheral device support (printers, fax, etc.), user documentation and training.

A key discipline related to the TA layer is the Cyber Security program. This program adheres to the Under Secretary of Energy (USE) PCSP. The USE PCSP strives to implement requirements from OCIO Orders, Official Manuals, and Guidance documents. LM cyber security personnel also protect PII and sensitive information, develop and implement cyber security policy and procedures, conduct C&A audits, and monitor and protect the infrastructure.

Monitoring and protecting the infrastructure includes intrusion detection, firewall blocking, web browsing audits, server and workstation logs, and e-mail virus, and junk mail protection.

The baseline TA will identify and maintain the key components of the infrastructure to include the network servers and operating systems, routers/switches, backup devices, and communications.

The technical architecture will focus on mitigating the risks associated with operating, maintaining and enhancing the infrastructure. The TA approach will address multi-site disaster recovery and continuity of operations capabilities. Technology infusion road maps will be developed to provide structured plans to incorporate and plan for technology driven changes to move the infrastructure toward the target architecture in a low risk evolutionary fashion.

3.6 Target Architecture—Future Method of Operations (To-Be)

The target architecture will establish LM boundaries, consolidate WAN connectivity, and plan for the major changes expected such as the new LM Business Center and major site transitions. The establishment of the target architecture will provide LM with the necessary infrastructure to support a virtual office concept. This approach addresses the integration challenges that will occur within LM as new closure sites are transitioned into LM from across the United States. For LM the ideal method of operation is to develop a virtual enterprise that has no geographic restriction and is transparent to the user community.

3.6.1 Operating Environment

LM Operational Environment will provide the necessary tools for collaboration, collection, access, and reporting of environmental applications, record applications, and standard desktop applications utilized to meet the user's work requirements. The target architecture for the operational environment will be collaboration tools (Portal, Document Management, Workflow), desktop applications, web systems, business (i.e., Jamis, Primavera) and environmental (i.e., SEEPro, Field Data Collection System) tools. This operating environment can be accessed through one of the LM WAN Technologies as depicted in Figure 3-3.

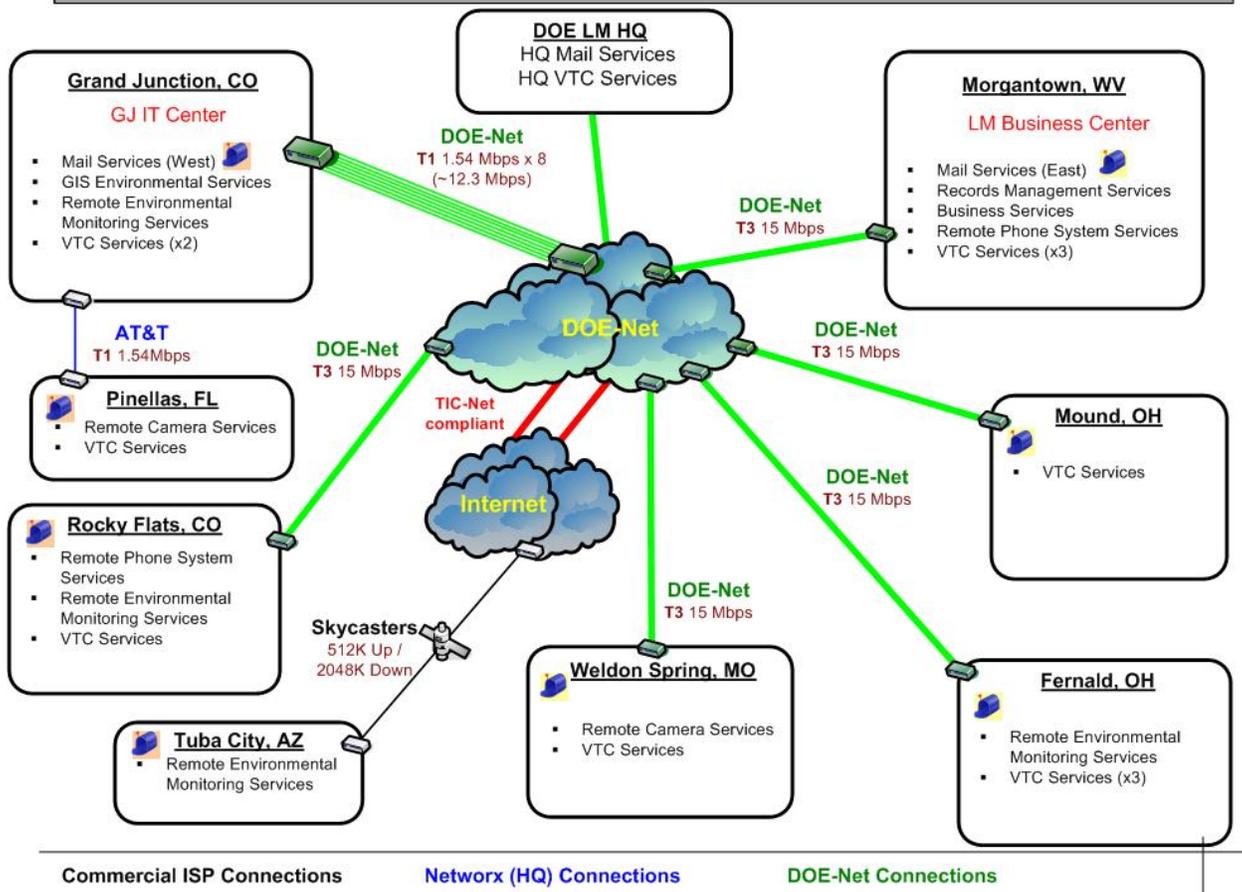


Figure 3–3. LM Tactical Target Architecture (To-Be)

The LM Production Environment will provide the capabilities to respond and serve the public and environmental stakeholders. The target architecture for the production environment will support the key systems such as Hummingbird, GEMS, LM Website, and transition site website. The production environment will focus on user-centric functions and capabilities that can be accessed via the LAN, WAN, and where appropriate the Internet.

LM Test and Development Environments will provide the capabilities to design, develop, assess, evaluate, and test prior to deploying architectural components into the enterprise. It will allow the opportunity to develop new applications, gain user acceptance and ensure the security of the enterprise by providing an opportunity to test in a secure and controlled environment.

3.6.2 Business Drivers

The enterprise approach to capturing information technology needs uses the process described later. That process ensures that all changes to the baseline architecture will be justified based on a business driver, prioritized based on the highest level needs of LM, funded knowing full life cycle cost estimates, and designed within the constraints of the target architecture.

The site transition schedule allows a transition plan for each site well in advance of the actual transition event so that the systems and data at each site can be assessed in the context of the target architecture.

3.6.3 Cyber Security Drivers

As the LM community moves away from closed proprietary systems, they will expose themselves to more security risks. Therefore it is reasonable to assume there will be a decline in the use of existing information security measures over the next few years as newer, decentralized measures evolve. The future world of computing will increasingly see fast, worldwide connectivity. In this world, wireless and more portable computing will be widespread and seamlessly integrated. Computers, acting primarily as networked communication devices, will be embedded throughout the infrastructure. This environment will create many targets of opportunity for hackers to attempt to compromise government resources.

Firewalls, anti-virus software, and network-based intrusion detection systems are not the only required items needed to defend the increasingly less defined network perimeter. With the possibility of wireless networks, encryption and VPNs, the security has to be at the host. To facilitate this, LM will need to incorporate more host-based security methods and trend away from open uncontrolled end-points. More enforcement and authentication will need to occur for network access, whether physical or remote, stricter policies will be written to dissuade misuse of LM resources, and most importantly, training will need to be developed to educate the user community.

The DOE trusted management system PKI will become an integral part in verifying the identity of individuals. LM will use PKI to protect sensitive information, authenticate LM resources, protect internal web content, sign documents, protect mobile computers, and ensure complete deletion of data from systems. It will also verify the integrity of data through developed inter-site trust agreements with other DOE and federal agencies.

Systems containing PII will provide safeguards to ensure protection of PII and include restrictions on users with a need to know. All systems containing PII will comply with all regulations to protect PII without exception.

3.6.4 Technology Drivers

LM currently has DOEnet connectivity at the CDC and Grand Junction sites. LM in conjunction with DOEnet's TICNet (Trusted Internet Connection Network) initiative may expand the use of DOEnet to all its offices (where economically feasible) and increase the Committed Information Rate (CIR) to locations with heavy Internet traffic when warranted. The CIR in a Frame relay network is the average bandwidth for a virtual circuit guaranteed by an ISP to work under normal conditions. At any given time the bandwidth should not fall below this committed figure. It is usually expressed in kilobits per second (kbit/s). LM views DOEnet as a key data transport component for the LM WAN. Where

DOEnet is not economically justified, commercial T-1 lines will be installed to allow for Internet access for the remote site.

At each site where LM has control of the entire network infrastructure, IPSEC VPN-capable firewall devices will be installed and a static VPN connection will be established back to the LM GSS. In situations where LM is operating on a shared network, LM personnel will utilize appropriate remote access (Juniper SSL, Citrix, etc.) connection to allow for secure communications into the GSS.

Migration of IT services from the Grand Junction site to the CDC has resulted in a reduction in the number of physical servers required to provide IT services. This consolidation means a substantial reduction of environmental impact factors and savings in power, cooling, software licensing and maintenance.

Virtualization technology, which can be used to further consolidate multiple physical servers to a single device, has been implemented and has proven to be an effective and efficient use of technology in the LM production environment.

A critical consideration for the infrastructure is the responsiveness and overall productivity of the system. In addition to the WAN infrastructure improvements mentioned previously, we have implemented new measurement tools which provide real-time analysis of system performance along with an ongoing historic log.

4.0 Information Technology Governance

Effective enterprise management is the process of making and implementing IT decisions. IT governance is a structure of relationships and processes that control those decisions. IT governance is essentially managing change and implementing new methods within the organization's IT enterprise. The goal is to simultaneously add value, balance risk, and examine costs.

IT governance, including quality change control processes, specifies a decision rights and accountability framework to manage change within the organization's IT enterprise. Governance determines who makes IT investment decisions and provides those decision makers with parameters within which to work. Good governance clearly spells out who makes those decisions.

Management designs IT decision rights and accountabilities to drive the enterprise's behaviors. Management then determines the amount of IT-related resources available and the areas in which those resources will be focused.

LM has developed a method of governance (illustrated in Figure 4–1) to manage its IT investments and to coordinate new requests for development of technological enhancements. LM uses a formal IT change proposal process. This process is driven by business needs with key decisions concerning limited resources (human and financial assets) being determined by two governing bodies: the Change Review Board (CRB) and the Federal Enterprise Management Group (FEMG). A third body, the LM Enterprise Architecture Working Group (EAWG), tracks ongoing IT efforts and captures new business needs for possible consideration by the CRB or FEMG.

4.1 Change Review Board

The CRB is comprised of Federal IT management personnel assigned by the leader of the Archives and Information Management (AIM) team. The CRB meets weekly to review new proposals, technical details of existing proposals, and the status of previously approved proposals that are now active IT projects.

The CRB's authority covers work within the planned fiscal year scope, work planned for out-year execution, or projects initiated by external factors. The CRB can approve proposals up to \$100,000. Projects can be funded from LM's Technical Architecture Management Reserve (MR).

Enterprise Management Group (EMG) Change Proposal Process

Last Updated: 3/13/2007

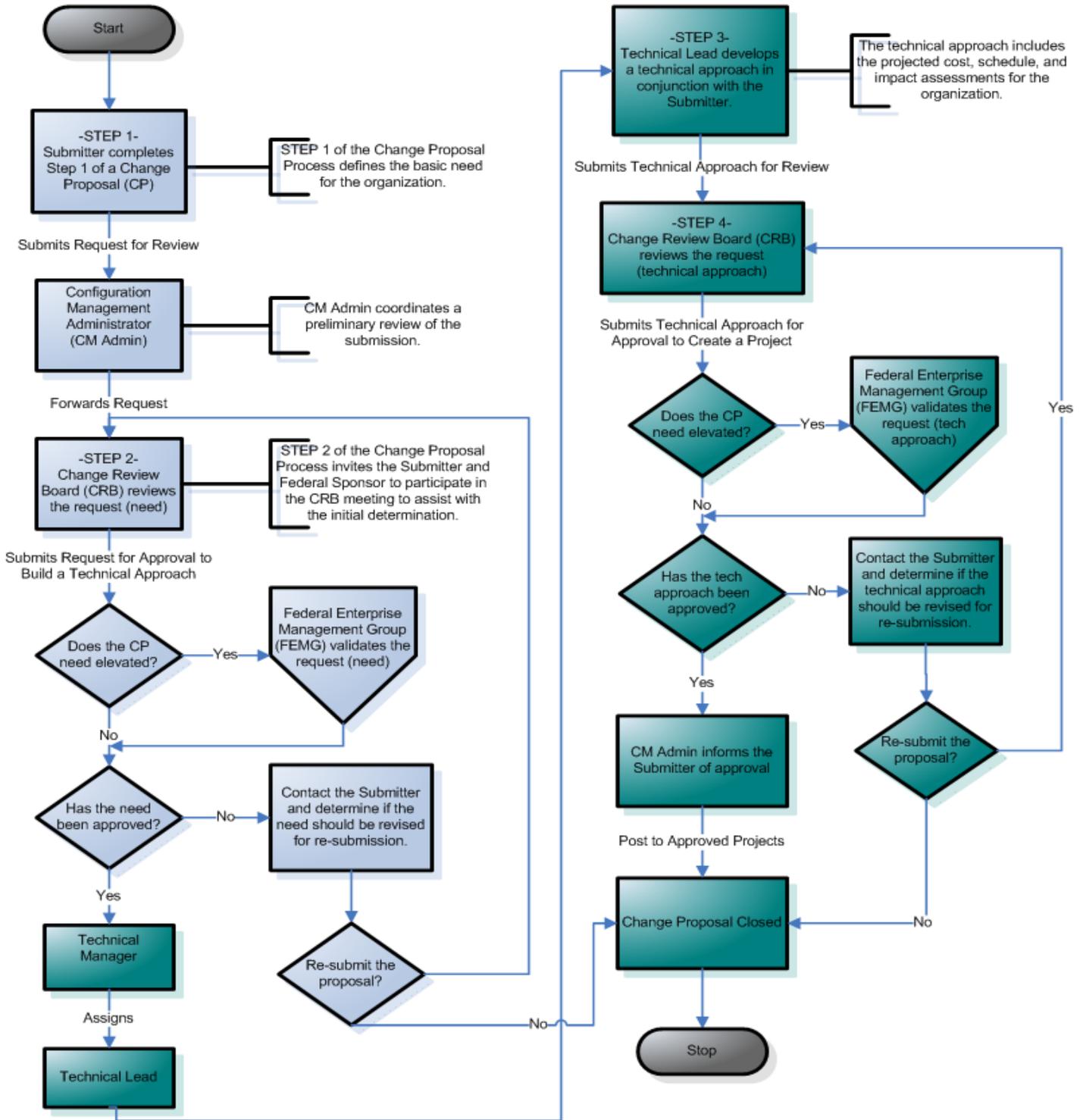


Figure 4–1. Change Proposal Process Flow Diagram

4.2 Federal Enterprise Management Group

The Federal Enterprise Management Group (FEMG) is comprised of LM's senior managers and is hosted by an AIM team representative. The FEMG meets quarterly, with participants determined by change control proposals under consideration and the associated change control authorities necessary to process the requests.

The FEMG Level 1 group is comprised of LM's Senior Management. It evaluates proposals that impact any of LM's General Management Functions or that are crosscutting in nature such that they affect the entire organization. The Level 1 group evaluates proposals exceeding \$100,000 that can be funded by LM's Management Reserve (MR).

The FEMG has two levels of authority. FEMG Level 2 is made up of LM's Strategic Goal Sponsors and deals with the proposals that impact any of LM's Strategic Goals and are estimated at less than \$100,000 (see Table 4-1).

Table 4-1. Change Control Authorities and Thresholds

Change Control Authorities & Thresholds	Change Proposal Scope Impact	Change Proposal Cost Impact
FEMG Level 1 (Full LM Senior Staff participation)	Impacts any of LM's General Management Functions or is cross-cutting in nature and affects the entire organization	> \$100,000 and can be funded from LM's Management Reserve (MR)
FEMG Level 2 (LM Strategic Goal Sponsors)	Impacts any of LM's Strategic Goals (primary business lines)	<\$100,000 and can be funded from the sponsor's MR
Federal IT CRB (Federal AIM Team EMG)	Falls within planned fiscal year work scope, planned for out-year execution, or caused by external factors. (These changes are proposed for LM's existing technical architecture.)	<\$100,000 and can be funded by any available source

4.3 LM Enterprise Architecture Working Group Process

The LM EAWG meets quarterly to capture new business needs and to provide updates for change proposals and active projects. The LM EAWG is comprised of contractor personnel drawn from each LM functional business group.

There are four primary steps involved in the change proposal process. Each step guides a new change proposal along the course of decision, starting with a determination of the request's basic business need to, ultimately, an approved technical approach defining a detailed solution.

Step 1

A submitter (any member of the LM organization) completes the basic information on the IT Change Proposal Request form (LMF 200.2) required to determine the suggested business need of the request to the organization. To initiate a new change proposal, the submitter e-mails a completed form to the Configuration Management Administrator (CM Admin) at cmadmin@lm.doe.gov.

The CM Admin coordinates a preliminary review of the submission to ensure adequate, relevant information has been documented. If necessary, the CM Admin and a technical member of the IT group contact the submitter to document any additional required information.

Step 1: New Change Proposal			
Change Proposal Number:	000042		
Submitter:	Derek Mikesell		
Title of Change Proposal:	Network Access for Trailer 16 at Mound		
Description of Change Proposal:	The need exists to provide network access to the technicians currently working out of Trailer 16 at Mound. The Sampling and RAD/Safety technicians working in Trailer 16 are traveling to Building 126 roughly 2-3 times per day (15 - 30 minutes per trip) to access the network for systems such as email, the timecard system, and shared files. Construction will be starting in January that will potentially increase their current travel times. The technicians are slated to continue work out of Trailer 16 for two more years.		
Order of Magnitude Estimates:	Approximately \$5,000.		
Requested Urgency:	High	Requested Completion Date:	3/15/2007

Figure 4–2. Step 1 of the IT Change Proposal Process

Step 2

The new change proposal is formally introduced to the CRB to determine the basic business need of the request. An approval is required at this stage before an IT resource can be assigned to build a technical approach.

For the initial proposal review, the submitter and the associated Federal sponsor are invited to attend the CRB to discuss the business need and answer any questions. (Typically, the LM manager who has budget authority for the business group making the request serves as the Federal sponsor.) During this discussion, the relative scope and complexity of the proposed project is examined and a rough order of magnitude (ROM) cost estimate is determined. If the request might significantly affect more than one LM business group or if the cost estimate (personnel and financial assets) exceeds \$100,000, the request is elevated to the FEMG for guidance. This is referred to as threshold escalation.

The CRB rejects, approves or escalates it for FEMG consideration, or assigns a “pending” status for consideration at a future meeting. When proposals are rejected, the CRB informs the submitter, providing an opportunity for revision and resubmission.

Step 2: Change Proposal Review			
Approver:	Bob Walker	Approval:	Yes
LM Goal and Federal Management Sponsor:	(None)	FEMG Approval:	(None)
Elevate to FEMG:	(None)	Technical Approach Due Date:	
Priority Level:	(None)	Task Order Number:	ST07-220
Requires Technical Approach:	(None)	Stoller Task Order Manager:	Griffiths
Federal Sponsor:	Kleinrath		
Technical Manager:	David Westhead		

Figure 4–3. Step 2 of the IT Change Proposal Process

When proposals are approved, a technical manager is assigned and (where appropriate) a technical lead is identified. When appropriate, a Technical Approach Due Date is assigned.

Step 3

The assigned IT resource, working with the submitter, creates a technical approach for the proposed project. Depending on the project’s complexity, a formal requirements document and initial system design may need to be completed. The technical approach contains the technical solution along with the detailed costs, a milestone schedule, and any anticipated organizational impacts. Complex projects may require multiple proposed solutions. Once the technical approach is prepared, the proposal is returned to the CRB for review.

Step 3: Technical Approach	
Technical Approach:	<p>Trailer 16 at the Mound site should have a small network setup in the trailer itself. This would allow desktops or laptop computers to be setup to access a single Broadband Cellular connection. A Sprint provided Linksys router is with a 4-port switch as part of the router will be used as the network connection to the desktops, laptops, and network printers in the trailer. The Sprint provided router is currently capable of wireless (802.11b/g). This feature will be turned off, and only the wired part of the network will be used. The estimated costs for this network are:</p> <p>Sprint supplied Linksys router: \$299 Broadband Cellular Card : \$50 Additional cabling for network in trailer (assume 4 drops): \$800 Network printer \$1000 Total \$2200</p>

Figure 4–4. Step 3 of the IT Change Proposal Process

Step 4

The CRB reviews the technical approach to determine if the solution is valid and within budget. The submitter and Federal sponsor are invited to review the proposed solution. If multiple solutions are presented, the CRB, submitter, and Federal sponsor determine which solution best satisfies the business need in proportion to cost and schedule requirements. Additional factors such as organizational impacts and security requirements are examined as well.

If the approach is approved, the submitter and Federal sponsor are informed and the project is prioritized and entered into the IT active project queue. The submitter is encouraged to monitor the weekly CRB reports posted to the LM Portal to follow the project’s progress. These reports are available on the Portal by clicking on the IT button in the navigation bar and choosing the Change Review Board link.

Step 4: Technical Approach Review	
Technical Approach Approver:	Bob Walker
Technical Approach Approval:	Yes Target Completion Date:
Task Order Modification Required:	(None)

Figure 4–5. Step 4 of the IT Change Proposal Process

If the technical approach is rejected, the submitter is notified and given the opportunity to revise the change proposal for re-submission. It also possible that the technical approach could identify the need to escalate the proposal for FEMG consideration.

4.4 Evaluation Criteria and Rating Scale

When new projects are proposed, the FEMG conducts a general discussion to determine the priority of the project based on feedback from the group. However, if a mutually

agreed upon solution is not reached then the following Evaluation Criteria and Rating Scale can be used.

The FEMG assigns a point value to proposals it reviews. Each FEMG member assigns a rating score of zero to 20 for each project criterion. The combination of the scores from each member determines project priority.

Criteria 1–5:

POINTS	CRITERION
No points (0 points)	Criterion not addressed or not met. Benefit is minor.
20% of available points (4 points)	Criterion is marginally met. Benefit is moderate.
50% of available points (10 points)	Criterion appears to be met. Benefit is significant, but limited in breadth.
70% of available points (14 points)	Criterion is fully met. Benefit is significant and broad or superior, but limited in breadth.
100% of available points (20 points)	Criterion is fully met and benefit is superior.

Criterion 1: Mission Impact (20 Points)

Mission impact measures to what extent the proposal supports organizational goals, fundamental site operations, and stakeholder needs.

- Organizational goals are clearly and beneficially impacted.
- Site operations safety, effectiveness, and capability are beneficially impacted.
- Needs/demands of stakeholders are satisfied or better served.

Criterion 2: Organizational Impact (20 Points)

Organizational impact measures the proposal’s benefit to organizational capability, such as breadth of impact on personnel and organizational units.

- Many staff or broad staff capability are beneficially impacted.
- Many organizational units benefit.

Criterion 3: Specific Benefits (20 Points)

Specific benefits measure tangible or intangible merits of the proposal.

- Cost reduction, productivity increase, or service and capability enhancements are significant.
- Processes like decision-making and communication, data accuracy and security, and knowledge awareness and retrieval are greatly improved.

Criterion 4: Overall Benefit to Difficulty (20 Points)

This criterion comparatively measures the overall benefit of the proposal versus the difficulty and uncertainty of its successful implementation.

Criterion 5: Overall Benefit to Cost (20 Points)

This criterion comparatively measures the overall benefit of the proposal versus implementation cost. ROM cost estimates will be provided.

5.0 References

Contract Section C, Paragraph 5.2 Information Technology (requirements)

Title 44, *United States Code*, 2904, 3102, and 3301

Title 36, *Code of Federal Regulations*, Chapter XII, Subchapter B, Part 1220, “Federal Records; General”

Presidential Management Agenda Memo, July 10, 2002

Public Law 107-347 (Title 3), Federal Information Security Management Act

Public Law 100-235, Computer Security Act of 1987

Public Law 93-579, Privacy Act of 1974

Homeland Security Presidential Directive, Number 7

OMB Circular 11-A

OMB Guidance for Agencies on the Federal Enterprise Architecture

DOE Guidance for the Development of Program Office Enterprise Architecture

FIPS 200, Minimum Security Controls for Federal Information Systems

FIPS 199, Security

DOE Order 200.1, *Information Management Program*

DOE Guide 200.1-1, *Software Engineering Methodology*

DOE Policy 205.1, *Departmental Cyber Security Management Policy*

DOE Order 205.1, *Unclassified Computer Security Program*

DOE Guide 205.1-1, *Cyber Security Architecture Guidelines*

DOE Order 241.1A, *Scientific and Technical Information Management*

DOE Guide 241.1-1, *Guide to the Management of Scientific and Technical Information*

DOE Order 413.3-1, *Project Management for the Acquisition of Capitol Assets*

DOE Manual 471.2-1B, *Classified Matter Protection and Control Manual*

DOE Order 1340.1B, *Management of Public Communications, Publications and Scientific, Technical, and Engineering Publications*

OMB Circular A-130, Appendix III, *Security of Federal Automated Information*

NIST SP 800-53

NIST SP 800-70, “Security Controls”

ISO 17799, “Code of Practice for Information Management”

LM Information and Records Management Transition Plan

LM Enterprise Configuration Management Plan

LM Program Cyber Security Plan

LM Cyber Security Management Plan

LM RM/IT Policies and Procedures

LM Enterprise Business Process Model Report

IBM Rational Unified Process

OMG Model Driven Architecture

MetaGroup Enterprise Planning and Architecture Strategies

Zachman Institute for Framework Advancement

Zachman Framework

A Practical Guide to Federal Enterprise Architecture Definitions, Drivers, and Principles

**Appendix A – Enterprise Management
Conceptual Principles**

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 1 of 12
Architecture: Technical Architecture (TA)		
<i>Principle No. 001</i>	<i>“The architecture will be designed to meet the needs of the total enterprise.”</i>	
<i>Justification:</i>	Technology architectures must be constructed and managed to support the extended enterprise view, taking into consideration the needs of customers and potential customers, as well as providers, suppliers, and business partners.	
<i>Implications:</i>	<ul style="list-style-type: none"> • LM will work in collaboration with its customer constituencies, partners and stakeholders to provide end-to-end business capability. • A portfolio of strategic tools will be used to facilitate learning and communication at all touch points. • LM will not optimize at the business unit level at the expense of the total enterprise. • Proposed projects and initiatives will be subject to review outside the department or division to assure consistency within the overall corporation. • Close coordination and communications with the business is required to ensure enterprise “buy-in”. 	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 2 of 12
Architecture: Technical Architecture (TA)		
<i>Principle No. 002</i>	<i>“A goal of the enterprise strategy & architecture is to provide a highly available, high performing, scalable, and extensible environment for mission critical and eBusiness applications.”</i>	
<i>Justification:</i>	<p>To provide the business with the level of service necessary to compete, LM must select components and technologies that deliver mission critical and eBusiness IT capabilities that meet availability requirements of the customer.”</p> <p>This includes:</p> <ul style="list-style-type: none"> ⇒ An assessment of continuous business operations requirements and high availability is mandatory when acquiring, developing, and enhancing or outsourcing architecture components. Based on that assessment, appropriate disaster recovery and availability planning, design and testing will take place. 	
<i>Implications:</i>	<ul style="list-style-type: none"> • Sub-optimization of cost, functionality or efficiency may be necessary to support high availability and continuous business operations. • It will require a “configuration discipline” from a development and implementation perspective as well as an operations viewpoint supported with a governance process. • Initiatives and projects may be optimized across the company not just within the Business Sector, or individual functional area. • Must staff operations (environment) in a manner consistent with the philosophy of high availability. 	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 3 of 12
Architecture: Technical Architecture (TA)		
<i>Principle No. 003</i>	<i>“A goal of the enterprise strategy & architecture will be to reduce integration complexity to allow development of business solutions faster and at lower cost.”</i>	
<i>Justification:</i>	<p>To simplify integration of components, manage risk, and reduce the total cost of ownership, LM must select components from a <i>limited set of vendors</i> and from those vendors that have broad product offerings and stability.</p> <p>This includes: Reduced reliance on vendor proprietary products through the use of an open standards environment.</p> <p>Limiting the vast array of choices available, so as to not dilute the knowledge pool of supported products, or increase cost associated with help desk support and training.</p>	
<i>Implications:</i>	<ul style="list-style-type: none"> • Products and technologies used by LM will be proven, therefore minimizing technological and support risk. • The products and technologies that LM selects for its infrastructure and application base must meet architecture requirements and be consistent and integrated with other LM components. • Will need to resist pressures to adopt new technologies unless there is an opportunity for business competitive advantage. • Decreased number of vendors, products, and configurations in the environment. • Must maintain configuration discipline. • May sacrifice performance, functionality, and cost savings in some instances. <p>NOTE: there will be times when sub-optimization will be required to reduce operational complexity.</p>	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 4 of 12
Architecture: Technical Architecture (TA)		
Principle No. 004	<i>“LM will use a total cost of ownership (TCO) driven life cycle plan for both acquiring and retiring technology components.”</i>	
Justification:	<p>To manage architecture within LM it is necessary to employ TCO metrics. This will help recognize the costs associated with architecture components throughout their life cycle, from acquisition through retirement which:</p> <ul style="list-style-type: none"> ⇒ Lowers TCO for Architecture ⇒ Simplifies the IT environment ⇒ Focuses IT skills required for support ⇒ Leads to higher quality, timely solutions ⇒ Enables improved planning and budget decision making 	
Implications:	<p>The TCO for applications and technologies must balance implementation, operations and retirement costs along with the costs of flexibility, scalability, ease of use/support and reduction of integration complexity. To accomplish this LM will:</p> <ul style="list-style-type: none"> • Need to define a process for monitoring and evaluation of TCO. • Need to ensure coordinated retirements (<i>don't cut users off</i>). • Need to know all interfaces. • Require designers and developers to take a systemic view. • May need to selectively sub-optimize individual solutions, to reduce enterprise TCO. • Need a way to identify and measure all TCO metrics. • Require increased need for information sharing related to TCO of projects. 	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 5 of 12
Architecture: Technical Architecture (TA)		
Principle No. 005	<i>“To support rapid change and business product delivery, the enterprise strategy & architecture will pursue ‘component based’, ‘loosely coupled’, and ‘n-tiered’ architectures.”</i>	
Justification:	<p>To enable rapid response to changes in business strategy and processes, LM requires a technical architecture that is both easily integrated with new technology (extensible); and easily handles additional workload (scaleable).</p> <p>When new business requirements emerge, the applications and infrastructure must be able to deal with changing demands. The environment must allow the implementation of new technologies with minimal disruption.</p>	
Implications:	<ul style="list-style-type: none"> • Integration of data and processes across the enterprise will be a goal whenever an architecture component is designed, acquired, developed, or enhanced. • LM should seek to maximize the reuse of architecture components to reduce TCO. • The logical design of technical systems will be partitioned into discrete service layers. • Since many existing applications and infrastructure components are neither portable nor scaleable, complying with this principle may require significant initial investment. • The IT skills required to support these technologies must be developed or acquired. • Portability and scalability depend on future events or changed conditions, which are sometimes difficult to anticipate. • Culturally, it may be difficult to understand and support future capability design activities. 	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 6 of 12
Architecture: Technical Architecture (TA)		
Principle No. 006	<i>“Technology component delivery will be driven by accepted industry standard practices and methods, with priority given to open systems architecture characteristics.”</i>	
Justification:	<p>The need to enable architecture component development with repeatability and consistency mandates that LM employ documented practices and methods based on corporate standards.</p> <p>This will provide:</p> <ul style="list-style-type: none"> ⇒ Predictable results for architecture projects ⇒ Less risk, and better control of costs ⇒ Improved identification of training requirements ⇒ Improved project tracking ability 	
Implications:	<ul style="list-style-type: none"> • Reduces reliance on subject matter experts, project management and staff for success. • Decreases the number of vendors, products, and configurations in the environment resulting in lower support costs, and improved maintenance and development support. • Enables improved quality assurance, lowers project risks. • Need to agree on practices and methodologies. • Requires a process definition function, practice and method training, as well as monitoring for compliance. 	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 7 of 12
Architecture: Technical Architecture (TA)		
Principle No. 007	<i>“Where there is potential for the business to gain significant competitive advantage, LM may be an early adopter of new technologies.”</i>	
Justification:	<p>The ability to deliver technical solutions for business purposes that will gain LM a competitive advantage may be linked to the ability to use the most current technologies available.</p> <p>Organizations are likely to receive competitive advantage from fast-change processes, and the use of new technology.</p> <p>The rapid increase in technological innovations is leading to shorter product life cycles in some cases.</p>	
Implications:	<ul style="list-style-type: none"> • Need to fund and manage internal IT R&D capability to evaluate emerging technologies necessary to obtain competitive advantage. • New technologies may cause some unplanned budget impacts, necessary to accomplish architecture integration. • Need to enhance the investment in IT skills and staffing, to be able to implement and use new technologies. • Fast-change processes demand support from internal IT resources, and should not have long-term dependency on consultants. • Must identify the business-driven areas with potential for providing significant competitive advantage. • Adopting new technologies may add to systems complexity, if not adhering to open systems designs. 	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 8 of 12
Architecture: Technical Architecture (TA)		
<i>Principle No. 008</i>	<i>“To support rapid business change, adaptability will be a primary design or selection criteria for technology components.”</i>	
<i>Justification:</i>	<p>The single greatest cost in both time and resources in the IT environment is changing systems to accommodate business process change, including those driven by regulatory change.</p> <p>Consequently, designing for change is not optional. Performance, storage and cost of delivery are important, but secondary.</p>	
<i>Implications:</i>	<ul style="list-style-type: none"> • I/T must be positioned to anticipate change and respond appropriately. • Design consideration must include approaches that enable rapid change, e.g., reusable, component based, highly granular, loosely coupled, industry standard, and event-driven concepts. • Organizationally, I/T must apply these design considerations to its own processes. 	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 9 of 12
Architecture: Technical Architecture (TA)		
Principle No. 009	<i>“The preferred method of conducting business is through digital media.”</i>	
Justification:	<p>The expectations of our customers, our potential customers, our providers, and our business partners demand that we provide direct interactions at a scale and in a time frame that cannot be effectively supported with human intervention.</p> <p>The value of electronic commerce has been well documented to provide this interface with both the consumers of our product and services and our business partners.</p>	
Implications:	<ul style="list-style-type: none"> • The LM technology infrastructure and capabilities must be developed to provide sustainable, quality access across the entire value chain. • Security, integrity, and availability of information must be optimized to ensure customer and business partner confidence and confidentiality. • Consumer interfaces must be intuitive, efficient and standardized where possible across our product line. 	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 10 of 12
Architecture: Technical Architecture (TA)		
<i>Principle No. 010</i>	<i>“Access to information technology services will support personalization and will not be constrained by geographic location.”</i>	
<i>Justification:</i>	<p>If LM is to gain and maintain a competitive advantage in the industry, timely access to information and the tools and applications required to personalize and manipulate that information must be available to our staff, our customers and potential customers, our providers, and our business partners.</p> <p>Knowledge workers have an increasing need for access to information across the enterprise. This access must be seamless to reduce decision-making cycle times. This vision must be expanded by reaching out to consumers, customers, and suppliers, wherever they reside.</p>	
<i>Implications:</i>	<ul style="list-style-type: none"> • Access must be supported with adequate bandwidth. • Corporate data must be connected to the end user through common access routines. • A consistent and intuitive interface to the user community must be documented and delivered. • This may require the use of database mining and push technologies. • There may be increased dependence upon the Internet as a communications channel. • Pull technologies and portals may be used. 	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 11 of 12
Architecture: Technical Architecture (TA)		
<i>Principle</i> <i>No. 011</i>	<i>“Information is a strategic asset of the corporation and must be managed in a manner which ensures its integrity and quality.”</i>	
<i>Justification:</i>	<p>Information is a valuable enterprise asset, which if leveraged across the information value chain can enhance competitive advantage and accelerate decision-making. However, the value of information is not always recognized if it is maintained in isolation.</p> <p>Information must be shared to maximize the effectiveness of business decision making both internally and throughout the value chain. The <i>information value chain</i> must be identified and exploited.</p> <p>Accelerating the velocity of information through sharing only strengthens the organization. The integrity and quality of the data must be guaranteed.</p>	
<i>Implications:</i>	<ul style="list-style-type: none"> • Data and information need to be structured for easy access and management. • Data and information need corporate governance. • The information value chain must be identified and exploited. • Data standardization, including a common vocabulary and data definition will be critical. • Authoritative sources must have a trustee accountable for data quality. • Use only authoritative data for business decisions. • A policy for information sharing needs to be developed. 	

Date proposed: DATE	LM Enterprise Strategy Conceptual Architecture Principles	Number of Pages: 12 of 12
Architecture: Technical Architecture (TA)		
Principle No. 012	<i>“Corporate data, transactions and networks will be secure and will conform to regulatory compliance guidelines. “</i>	
Justification:	<p>Information security must be ensured and increased, commensurate with the increased access to information. Appropriate security monitoring and planning, including an analysis of risks and contingencies and the implementation of appropriate contingency plans must be completed to prevent unauthorized access to information.</p> <p style="text-align: center;">⇒ Helps safeguard client information</p> <p style="text-align: center;">⇒ Enhances public trust</p> <p style="text-align: center;">⇒ Protects LM assets</p> <p style="text-align: center;">⇒ Applies security practices and methods based on an overall risk assessment</p> <p style="text-align: center;">⇒ Ensures compliance with federal and state requirements</p>	
Implications:	<ul style="list-style-type: none"> ● Security requirements must be addressed in the initial design process. ● Security requirements will be based on business requirements. ● Security requirements may impact user interface friendliness. ● Need to identify, publish and maintain the applicable policies. ● Need to monitor compliance. ● The security, confidentiality and privacy requirements must be clear to designers, developers and users. ● Need to perform a risk assessment to appropriately apply the most effective security practices and methods. 	

**Appendix B – Applications Architecture
Key Systems Inventory**

System Name	System Description	LM Goal	Functional Area	Origin
Adobe Breeze Training	Provides a mechanism to create, manage, deploy, and track online training for LM organization. This tool provides web delivery needed for LM due to its geographically distributed environment.	5	Training	COTS
CERCLA/AR Document Search and Display Public Website	The CERCLA/AR Document Website is used to present documents as mandated. Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) contains provisions for addressing and documenting changes to an alternative that occur between the time the alternative is proposed as the preferred cleanup approach for a site and the final selection of a remedy in a Records of Decision (ROD).	2	Records Management	In-House
CERCLA Tracking System	Access Database Management System used to track CERCLA documents.	2	Records Management	In-House
Citrix Presentation Server	The industry-standard for application virtualization using a centralized and secure architecture. Presentation Server enables IT to centrally deploy and manage line of business applications while providing secure, on-demand access to these resources for users anywhere, on any device and any network. Running on Microsoft Windows Server, Presentation Server supports virtually any custom or commercially packaged Windows, UNIX, Java, and Web application, no matter the infrastructure diversity. Presentation Server delivers improved productivity for users, and enhanced administrative efficiency, system control, and security for IT. User productivity is increased through reliable remote and mobile access. Applications and information can be securely accessed in real-time by remote offices and home workers, as well as mobile workers while traveling or working in the field over wireless networks, improving data accuracy and business processing. Users can roam between devices, locations and networks, and continue working without interruption.	2	Information Technology	COTS
Considered Sites DB CSD	The U.S. Department of Energy (DOE) developed the Considered Sites Database to provide information to the public about sites that were formerly used in the nation's nuclear weapons and early atomic energy programs and that had the potential for residual radioactive contamination.	1	Environmental Management	In-House
Energy Employees Occupational Illness Compensation Program Act	The custom Employees Occupational Illness Compensation Program Act (EEOICPA) System is a web-based application for tracking the number, type, and status of EEOICPA claims received by DOE.	2	Records Management	In-House
Fernald Historical Record System	The Fernald Historical Record System provides access to the Fernald Litigation database and its associated scanned TIFF files.	2	Records Management	In-House

FOIA/PA Request Tracking System	The FOIA/PA Request Tracking System is a custom-built, web-based application for tracking the number, type, and status of FOIA/PA requests for record information received by LM. Requests for the record data are forwarded to the appropriate LM site to locate and provide records and/or data. This is primarily performed through searches of applicable "finding aid" information in the Hummingbird Records Management System. These searches locate relevant hard copy files or obtain special hypertext markup language (HTML) or PDF Source Reports of simulated source applications.	2	Records Management	In-House
Geospatial Environmental Management System	Geospatial Environmental Mapping System provides dynamic site mapping and environmental monitoring / data reporting for LM sites over the web. Stakeholders can use GEMS to view a site map, photographs, and water-quality and water-level data. Water-quality and water level data are available in table and graph formats. Data layers that can be displayed currently on GEMS, if available for a site, include existing wells, surface locations (planned for sampling or water-level measurements), fences, roads, site boundary, streams and ditches, water bodies, disposal cell boundary, well logs, site photographs, and U.S. Geological Survey 1:24000 quadrangle maps. The information and environmental data display tools developed for GEMS are based on input from stakeholders, including the U.S. Department of Energy (DOE), regulatory agencies, LM personnel, and members of the public.	1	Environmental Management	In-House
Hummingbird	An integrated document and records lifecycle management system that performs 'cradle-to-grave' document and records management for electronic documents and records as well as physical (paper) records. Components are Document Management, Records Management, and Workflow - use the same user interface, database/repository, search and retrieval tools, security model, group/user administration, and history/audit trail. Features are document profiling, version tracking, search, full text indexing, check-in/out, document history, forms design and selection, and application integration. Administration functions are file plan administration, retention and disposition schedules, automated disposition processing, file plan and functional security, file/box movement processing, bar-coding, census operations/inventory, history/audit trails, and report generation.	2	Records Management	COTS
JAMIS E-Xpense	JAMIS provides the functionality for government contractors to enter Travel Expense and Travel Authorizations approved (TA) via a secure Internet connection according to Federal Travel Regulations.	5	Project Controls and Finance	COTS
JAMIS Finance & Accounting System	JAMIS is a suite of fully integrated project cost and financial modules that captures details for the entire life of every contract, project, or activity. Job cost-based, versus general ledger-based, it automates accounting processes and is designed to reduce the time and effort required to produce timely project management information. The modules included are the Job Cost, Accounts Payable, Accounts Receivable, Project Billing, Purchasing, General Ledger, and Labor Distribution.	5	Project Controls and Finance	COTS

Jobs Opportunity Bulletin Board	JOBBS is an electronic bulletin board system sponsored by the Department of Energy (DOE) for use by DOE federal and contractor employees who may be at risk of losing their jobs. It provides a forum for communication that allows DOE federal and contractor employees to use JOBBS capabilities to search for new positions that are available through DOE contractor employers by accessing want ads.	2	Stakeholder Relations	In-House
LM Internet Public Website	This site is the primary repository for information available to the general public. It contains general information about the office of Legacy Management and all of the sites it covers.	2	Stakeholder Relations	In-House
LM Intranet Portal	ORALCE Bea Aqualogic Portal Version 6.1 is a web-based, user customizable Enterprise Information Portal that hosts the LM Intranet for both Federal and Contractors. The portal is a capable, configurable, and flexible system that enhances the Office of Legacy Management's ability to access and share information.	2	Information Technology	COTS
LTS1 LTS&M Records Search	LTS&M Record Search; A place where the public can view various documents related to the management of DOE/LM sites.	2	Records Management	In-House
Microsoft Email (Exchange 2003)	Microsoft Mail is a messaging and collaborative software widely used by enterprises using Microsoft infrastructure solutions. Supports electronic mail, calendaring/scheduling, contacts and task management, support for mobile and web-based access to information, and data storage. Furthermore, Microsoft Exchange Server software enables the Stoller Team to send and receive electronic mail and other forms of interactive communication through computer networks. It is designed to operate with a software client application such as Microsoft Outlook, Outlook Express, and other e-mail client applications. E-mail messages are sent and received through a client device such as a personal computer, workstation, or laptop or a mobile device such a mobile phone or Blackberry.	2	Information Technology	COTS
MicroFusion Millennium Cost Manager	MicroFusion Millennium Version 5.2.100 is a Project Controls cost and earned value management system used to produce reports that facilitate task order management.	5	Project Controls and Finance	COTS
Planning & Management Reporting System	Planning & Management Reporting System (PMRS) is an application that allows the entry, update, and reporting of planned fiscal year budget data versus actual budget execution data.	5	Project Controls and Finance	In-House
Primavera Project Planner	Primavera Project Planner is a project management software integrating scheduling, resource allocating and leveling, cost control, and presentation-quality graphics.	5	Project Controls and Finance	COTS
Secure Access SSL VPN (Juniper)	Juniper is a Secure Access over SSL (a communications protocol, predecessor to Transport Layer Security) Virtual Private Network (VPB), which is a computer network where some of the links between nodes are carried by open connections or virtual circuits over the Internet instead of by physical wires.	2	Information Technology	COTS

Serena TeamTrack	TeamTrack is a web-based change request and process management system used by the Enterprise Management Group to improve communication and development processes across the LM enterprise.	2	Enterprise Management	COTS
Numara Track IT	Track-IT provides a set of integrated modules and add-ons designed to assist the LM Help Desk centrally manage and control LM IT assets and work orders.	2	Help Desk	COTS
Site Environmental Evaluation for Projects	The Site Environmental Evaluation for Projects (SEEPPro) is Legacy Management's environmental monitoring data management system. The data in SEEPPro consists primarily of monitoring well and borehole information (location, construction, lithology, water level, analytical result, well access agreement, well permit), and surface sample location information (surface water, soil, and biota location and analytical result information). Other types of data include air monitoring, meteorological, radiation measurement, sampling planning, and basic site information. The core technical end-user module consists of a suite of parameter driven standard reports and graphs. This module also allows end-users to perform simple and complex adhoc queries. Other modules allow users to perform analytical data validation and verification, enter field parameter and water level information, manage access agreement and well permit information, enter radiological assessment data, and to create well and borehole logs.	1	Environmental Management	In-House
Sunflower Property System	Sunflower Assets is a lifecycle asset management system with a user-friendly graphical user interface (GUI) that LM personnel can use to interact with the database to keep asset information accurate and current.	4	Property	COTS
System Operation and Analysis at Remote Sites	System Operation and Analysis at Remote Sites (SOARS) allows real-time viewing of the ground water flow direction and estimated rate.	1	Environmental Management	COTS
Webmail	The Office of Legacy Management webmail. Exact web address for email is based on primary work location.	2	Information Technology	COTS
Work Force Information System	The Work Force Information System (WFIS) is DOE's "corporate" level mechanism for recording, storing and accessing compensation and benefits, equal employment opportunity, and other information about employees of contractors who operate the Department's production, environmental clean-up, research and other facilities.	3	Benefits Administration	In-House

Appendix C – Business Architecture
Exhibit 53 Investments

Investment Name	Template	Exhibit 53 Part	Line of Business	Sub Function	Type of Funding
Goal 1 - Protect human health and the environment through effective and efficient long-term surveillance and maintenance.					
1.1 Long-Term Surveillance and Maintenance.					
LM LTS&M SEEPro, GEMS, Field Data Collection System, & Environmental Systems Spt	BY2010	IT Investments by Mission Area	Environmental Management	Environmental Monitoring and Forecasting	57% DME, 43% SS
LM LTS&M Transition Activities for Closure Sites	BY2010	IT Investments by Mission Area	Environmental Management	Environmental Monitoring and Forecasting	100% DME
Goal 2 - Preserve, protect, and make accessible legacy records and information.					
2.1 Records Management.					
LM Record Management System (Hummingbird)	BY2010	IT Investments by Mission Area	Information and Technology Management	Record Retention	100% SS
LM Record Management System Replacement (Documentum and OmniRim)	BY2010	IT Investments by Mission Area	Information and Technology Management	Record Retention	100% DME
2.2 LM Telecommunication Networks.					
LM End User Systems and Support - HQ DOECOE & Contractor Support	BY2010	IT Investments for Infrastructure, Office Automation, and Telecommunications	Information and Technology Management	IT Infrastructure Maintenance	100% SS
LM Network Hardware Support	BY2010	IT Investments for Infrastructure, Office Automation, and Telecommunications	Information and Technology Management	IT Infrastructure Maintenance	100% SS

Investment Name	Template	Exhibit 53 Part	Line of Business	Sub Function	Type of Funding
LM Network Management	BY2010	IT Investments for Infrastructure, Office Automation, and Telecommunications	Information and Technology Management	IT Infrastructure Maintenance	100% SS
LM DOENet Connections	BY2010	IT Investments for Infrastructure, Office Automation, and Telecommunications	Information and Technology Management	IT Infrastructure Maintenance	100% SS
2.3 LM Application and Data Hosting/Housing.					
LM Application & Data Hosting/Housing Software Engineering	BY2010	IT Investments for Infrastructure, Office Automation, and Telecommunications	Information and Technology Management	System Development	30% DME, 70% SS
2.4 LM Office Automation.					
LM Office Automation Help Desk	BY2010	IT Investments for Infrastructure, Office Automation, and Telecommunications	Administrative Management	Help Desk Services	100% SS
2.5 LM Telephony Services.					

Investment Name	Template	Exhibit 53 Part	Line of Business	Sub Function	Type of Funding
LM Telephony Services	BY2010	IT Investments for Infrastructure, Office Automation, and Telecommunications	Information and Technology Management	IT Infrastructure Maintenance	100% SS
2.6 LM Enterprise Collaboration Services.					
None defined at this time.					
2.7 LM Cyber Security.					
LM Cyber Security	BY2010	IT Investments for Infrastructure, Office Automation, and Telecommunications	Information and Technology Management	Information Systems Security	100% SS
2.8 Enterprise Architecture and Planning.					
LM Strategic Planning for EA	BY2010	IT Investments for Enterprise Architecture and Planning	Planning and Budgeting	Enterprise Architecture	100% SS
Goal 3 - Support an effective and efficient work force structured to accomplish Departmental missions.					
3.1 Legacy Benefits Management.					
LM Work Force Information System (WFIS)	BY2010	IT Investments by Mission Area	Human Resource Management	Benefits Management	100% SS

Investment Name	Template	Exhibit 53 Part	Line of Business	Sub Function	Type of Funding
Goal 4 - Manage legacy land and assets, emphasizing protective real and personal property reuse and disposition.					
4.1 Property Management.					
LM Property Management System (Sunflower)	BY2010	IT Investments by Mission Area	Administrative Management	Facilities, Fleet, and Equipment Management	100% SS
Goal 5 - Improve program effectiveness through sound management.					
5.1 Financial Management					
LM Budget Formulation Tool	BY2010	IT Investments by Mission Area	Planning and Budgeting	Budget Formulation	42% DME, 58% SS
LM JAMIS Finance & Accounting System	BY2010	IT Investments by Mission Area	Financial Management	Accounting	67% DME, 33% SS

**Appendix D – Information Technology
Change Proposal Request Template**

Information Technology (IT) Change Proposal Request

Name	Date
Address	Phone

Title of Change Proposal (Provide a summary description of the item to be completed. Give a short, descriptive title for the proposal such as "Visitor Control System Upgrades" or "Feasibility Study for Learning Management System.")

Description of Change Proposal (Provide a detailed description of the exact need. Focus on the issue, problem, or need, and not on a specific solution. Example:

Correct: "A need exists for a database to track incoming visitors to the LM site for tracking and reporting purposes. DOE Headquarters now requires monthly reporting of visitors broken down by type of visit, country of origin of the visitor, and length of visit. The present tracking system is an Excel spreadsheet which cannot meet the reporting requirements."

Incorrect: "LM needs to purchase the Visitor Tracking System (VTS) manufactured by Company XYZ."

By focusing on the need, the CRB can better assess the priority of the need and determine whether an existing system can meet the need. Whoever submits a proposal may provide sources of solutions such as software or companies that have products that may meet the need. This information can be used by the CRB to investigate and evaluate potential solutions.)

Order of Magnitude Estimates (Provide all rough estimates either in dollar and/or labor costs.)

Requested Urgency: Extreme Urgency Moderate Urgency Non-critical

Requested Completion Date:

E-mail completed form to CMADMIN@LM.doe.gov.

Appendix E – Enterprise Architecture Cross Functional View

Enterprise Architecture (EA) Cross Functional View

