May 9 - 12, 2005

System Design Review

Electronic Records Archives

Welcome
System Design Review
Electronic Records Archives
Records Administration
National Archives &
Lockheed Martin Transportation & Security Solutions

Other than Lockheed Martin Transportation & Security Solutions company, product, and service names that appear in this package may be trademarks or service marks of various companies.

Marking of Electronic Records Archive (ERA) Deliverable Information

May 9-12, 2005
7615 ORA Glen Drive, Greenbelt, MD 20770
Lockheed Martin Transportation & Security Solutions
May 9, 2005
Clyde Reilick

Opening Remarks

ERA SDR - DAY ONE
Detailed Review of ERA Architecture and Design to Include

System Performance Roadmap

Overview of ERA Architecture and Design to Include

Readiness to proceed to the Product Design Phase of ERA

Lockheed Martin Team's Approach to Realizing the Objectives of ERA

A System Design Review should establish understanding of the architecture and design of the ERA
Lockheed Martin Team for SDR
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**ERA Program Level 1 Schedule**
May 9, 2005
Betty Sorber

Orientation

ERA SDR – DAY ONE
Escalation Process
Comment Review Approach
Assumptions and Ground Rules
Daily Agendas
Presenters
SDR Meeting Roles & Responsibilities
Entry Criteria & Exit Criteria
Administration

SRR Introduction Agenda
Each is numberered, and must be treated

comments for SDR Consideration

Standardized PMO Form for submitting

Pre-populated for most attendees, with

By elevators, or stairs near lunchroom

(Other than main lobby or outside)

Typically impossible inside building (up one floor)

Follow signs to nearest exit

Fax number 301-837-0394

Phone no 301-837-1737

PMO Secretary: Helen Love (Room 1510)

Archives II, Confi, Rooms D & E

Tracking of SDR Slide Packages

(RID) Review Item Discrepancy Form

Lunchroom / Vending Location

Message Delivery Location

Restrooms

Cell Phones

Safety/Emergency Evacuation

Administration
Prior to the Review

Receipt of initial set of ERA PMO comments on SADD and ICDS 4 calendar days

- CCB approval of SADD and ICDS
- CCB approval of updated SysRs and IRS Baselines in place

Agreement on Review Item Disposition (RID) forms to be used for SDR comments

Planned presentations provided on first day of SDR Review
- Human Factors Specification (CDRL 46)
- System Evolution Plan (CDRL 40)
- Security Risk Assessment (CDRL 136)
- ERA Master Test Plan (CDRL 131)
- Revised Life Cycle Cost (CDRL 27)
- Continuity of Operations Plan (CDRL 13)
- Certification and Accreditation Plan (CDRL 12)
- Operations and Support Plan (CDRL 7)
- Facilities Plan (CDRL 5)

Documents delivered no later than 15 calendar days prior to SDR
- Than 30 calendar days prior to SDR

Delivery of review documentation
- SADD, ICDS, updated SysRs, updated Concepts, updated IRS CRs delivered no later
- Approval of SRR

SDR Entry Criteria
Design Reviews

- 13. Trade Study Summary
- 12. Integration and Test
- 11. Availability Modelling and Analysis
- 10. Performance Modelling
- 9. Security Design
- 8. System-Level Package Architecture
- 7. Domain Model Design
- 6. Demonstration and User Interface
- 5. Operations, Support, and Training
- 4. Transition Plan and Increment
- 3. Methodology Overview
- 2. System Architecture and Design
- 1. SRR Deferred RIDs

Presentations

Completion of all planned presentations

Exit Criteria

Disposition of all SADD (and ICD)

Minutes Published accepted
existing RID and is therefore not considered to be unnecessary.
Appropriate government personnel is responsible for accepting the
RID, The contractor has responded as described by Target Resolution date.
Deferred - Must be addressed and considered complete
Closed before the SDR activity is complete - Must be addressed and
dispositioned before the RID before
Draft - Initial state of the RID before

Disposition of all SADD and ICD

<table>
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<tr>
<th>Role</th>
<th>Responsibilities</th>
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<tr>
<td>Chair</td>
<td>Provide daily direction for meeting participants</td>
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<tr>
<td>SDR Chair</td>
<td>Introduce the meeting and participants</td>
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<tr>
<td>SDR Board</td>
<td>Determine point of ascension as required</td>
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<tr>
<td>Program Management</td>
<td>Maintain control of meeting</td>
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<tr>
<td>Observers</td>
<td>Review RAC Forms in designated and walk-up format if required</td>
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<tr>
<td>Attendees</td>
<td>Reconvene summary, coordinate and schedule the next meeting</td>
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<tr>
<td>Presenters</td>
<td>Present approved and agreed-upon information</td>
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<td>Board Members</td>
<td>Possess insight concerning all items for information purposes and determination of next steps</td>
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<tr>
<td>Invited Internal/External Participants</td>
<td>Provide input and guidance to the next meeting</td>
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<tr>
<td>Direct Contributors of Performance</td>
<td>Prepare the agenda for the next meeting</td>
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<tr>
<td>Communication (VYNAV) Team Members</td>
<td>Review, prepare and distribute the minutes of the meeting</td>
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**SRM Meeting Roles & Responsibilities**
Presenters - Day One
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<tr>
<th>Time</th>
<th>Description</th>
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<tbody>
<tr>
<td>9:00AM</td>
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<td>Architecture and Design Overview</td>
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<td>Architecture and Design Overview</td>
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<td>Break</td>
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Note: The schedule is tentative and subject to change.

SDR Schedule
Assumptions

- Review of the Draft SADD was accomplished
- NARA RID Form comments for SADD provided to LM in advance

Day One provides an overview of the architecture and design, followed by three days of detailed presentations.

Presentations will be interactive.

- All changes to the SADD will be based on SDR Board approved actions documented on RID Forms
- All accepted RID Forms will be addressed and dispositioned as Closed, Rejected, or Deferred of SDR.
be achieved by day’s end

- Parking log items may be addressed by “break-out” sessions
- Progress
  - Items may be placed in the “Parking Log” to facilitate meeting
  - Presentation schedule

Meeting: Co-Chairs and Moderator will assure compliance to the

discussions, approvals, baseline change, and audit trail for the SDR

Ground Rules

- NARA Provided RfD Form will be used to document and facilitate

Assumptions and Ground Rules
Reorder recaps at end of each topic
Co-chairs keep discussion on track, and pace discussion
necessary
Reader/Presenter (author) reads the comment, explains as

Roles similar to an Inspection:
baselines
the SDR as well as the basis for changing the SADD / ICD
Provides audit trail of SDR agreements; becomes the minutes of
they are approved for each section
Reorder holds master copy to be initialed by Chairperson(s) as
RIF Form captures agreements, workshops, results of escalation
Comments are filtered by the SDR Board
(RID) Form

All comments prepared using agreed-to Review Item Discrepancy/ICDS
Discuss Comments one at a time, section by section, in the SADD
Escalation Process

- Result of escalation is documented on the RID Form
- Each side discusses position
- SDR Board (or their designate) presents escalated RID as in review
escalation (action item) session each day

As necessary, bring comments for escalation to appointed level

First level is Chairperson level; if that fails, then to the Program

Avoid escalation if possible
May 9, 2005

Certified Records Manager
Certified Archivist
Gregory S. Hunter, Ph.D.

ARCHIVISTS PERSPECTIVE ON ERA

ERA SDR - DAY ONE
solution to the problem – now we’re finally at the point of seeing a design for a comprehensive
offered no solutions

of knowledge in the Electronic Age, talked about problems but
For example, the 1997 film, Into the Future: On the Preservation
digital records and communicating the issues to a wider audience
– As a profession, we’ve spent years identifying the problems with

SDR is an exciting step for archivists

General Thoughts on the Process
Instatiating archives
- A persistence approach that finally achieves the dream of a "self-
  extracted with traditional archival descriptive practices
- A description approach that combines preliminary automated data
  challenges
- An authenticity approach that will serve as a foundation for automation
  strategies
- A template approach that will serve as a foundation for automation
  arrangement
- An asset catalog with virtually unlimited extendibility for hierarchic
  in areas of theoretical interest to archivists

The design process already has led to some significant advances
"Interests. We need to make records as popular as E-Day."

new look and feel, "Records are a resource to meet my

new look and feel, "Records are a resource to meet my
to package and sell records to the public in a new way, with a
don't equate archives and recordkeeping with benefits. We need

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with red tape, and the government being on my back, "People

with red tape, and the government being on my back, "People

"Recordkeeping has a negative connotation, "People associate it

"Recordkeeping has a negative connotation, "People associate it

thereby increasing the relevance of NARA to the general public.

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ERA can play a key role in NARA's educational initiatives.

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Content Management Systems, which are patched together

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comprehensive way. The only competition is from Enterprise

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ERA is the first system that will manage electronic records in a

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This project is an opportunity to define the future, not just to be

This project is an opportunity to define the future, not just to be
"LM should emphasize education (understanding principles and processes) rather than training. Education deals with the why behind the what. People need to know why they're pushing buttons. This is job transformation not training for a system.

The system will allow you to use what you already know—to do your job better and easier. NARA will war the theme might be: The system will allow you to use what you need to be transformed. A better workforce doesn't think they need to be transformed. Since most LM may want to downplay 'transformation', since most workforce transformation tends to be negative. This project will have to keep them in balance: "Technology tends to be optimistic. Workforce transformation new needs." can't perform without good quality people educated for NARA's transition of NARA staff cannot be overemphasized."

Workforce Insights from COE
detected the 'trustworthiness' of the transfer process.

"L.M. should consider hiring an independent third party to try to
standard for NARA."

The threshold to another level and may set a new performance
process used to obtain the evidence is flawed. This raises the
histories. Plaintiffs counsel will be trying to prove that the
We also need to take into account a new audience beyond
ERA challenge.

"The evolving customer will be a NARA challenge as well as an
Web was in its infancy."

Ten years ago, for example, there was no Google and the
interactions with customers. What will the environment be in
the ability for adaptation and evolution is key, especially in
Design Insights from COE
within our grasp.

The more I'm involved in this process with this team, the more I'm convinced that a successful Electronic Record Archives is post-World War II experience with paper records.

NARA is facing a challenge of historical proportions similar to its

Conclusion
May 9, 2005
Bill Harris

Deferred SRR Rides

ERA SDR - Day One
Received notification from PMO on May 03, 2005 that all SRs generated RIDS are closed.

April 22, 2005

LM submitted updated responses to the PMO for these RIDS on

- LM-RID-00303 „Data Segregation on Ingest (e.g. Title 13)‟
- LM-RID-00300 „Contents of a Transfer Agreement‟
- LM-RID-00001 „Designation of Verification Method‟

3 RIDS (out of 111) submitted at SRR were deferred.
Bill Harris
May 9, 2005

System Analysis and Design
Methodology
Developing the ERA system

- The collection of hardware, software components, their interfaces
- The conceptual, organizational structure of the ERA System from an architectural perspective
- Functional, physical, operational and security perspective
- Design
Functional view with the more voluminous and concrete object approach balances the benefits of a compact and abstract system threads and the ERA conceptual and logical data models.

- **Object-Oriented Methodology**:
  - Ensures complete conceptualization at the system-level.
  - Provides a high-level functional decomposition of the ERA.
  - Used to develop the system architecture.

- **Structured Methodologies**

Overview of System Architect Methodologies.
Definition of Operational View
Creation of Conceptual Data Model Diagrams
Creation of Functional and Physical Architecture Block Diagrams
Identification of Connectivity and Data Flow between Components
Allocation of Functionality and Data to Components
Partitioning of the ER model into Conceptual Components

Artifacts
Represented using UML (Unified Modeling Language) notation
Describes the conceptual data model from a business perspective
Data Architecture derived from the NASA data architecture

Potential Implementations (i.e., Physical, Functional, Operational, Data)
Yields multiple conceptual views of the system, allowing for multiple
Consists of a number of tasks, each with a number of steps

Using structured analysis methodology
Software and Physical Architecture developed iteratively and in parallel

Architectural relationships describe the conceptual integrity of system components

System Architecture Methodology:
Structure Design and Object-Oriented Approach

Leverage the best practices and methodologies from both a
details
architectural abstraction, while providing traceability into design

The LM Team's approach ensures the appropriate level of

Hardware Design follows Structured Decomposition methodology

Software Design and Data Modeling follow Object-Oriented Design

System Architecture follows Structured Analysis Methodology

Conclusions

System A&D Methodology:
BREAK
Design Overview
System Architecture and
ERA SDR - DAY ONE

May 9, 2005
Bill Harris &
System Modeling Roadmap

- Facility Layout and Locations
- Network Topology

Physical View
- Persistent Data Stores
- Data Architecture

Data View
- High Level Functional Architecture
- Service Oriented Architecture

Service View
- Business View
- Performance View

Integration into Enterprise Architecture

Design Considerations

Introduction
Delivered system will:

- Specified in the IRS Interface with external systems via the ERA System Interface
- Summarize functionality of specified NARA legacy systems
- Be an integrated system of COTS products where appropriate

Delivered system will:

- Be dynamic and sound, ensuring that electronic records delivered to future generations are as authentic decades in the future as they were when first created
- Support selected archival management tasks for non electronic interest and legal right
- Provide electronic record discovery and delivery to anyone with an interest of The Republic
- Autentically preserve any kind of electronic record free from dependence on any specific hardware or software now and for the future

ERA is intended to:

Introduction

System Architecture and Design:
NARANET, Government networks and the public Internet
ERA is accessible with appropriate access controls, to users on

Introduction
System Architecture and Design:
Balance availability with cost

- No single point of failure and maximized "up time", but need to

Availability

Major modification

- Easily modified to add additional features in the future without

Extensibility

Scale

- Scale up or down, with volume and usage

Scalability

Allow ERA to change over time, Policy Neutral

Evolvability

Principal Design Considerations

System Architecture and Design:
Map COTS interfaces to canonical schema

Build the system to canonical schema frameworks

Isolation from the rest of the system

Replace underlying technology for a business component in

Encapsulate and abstract interface definitions

– Service Interfaces

Rule Engine

Workflow

through

Evolvability

Design Considerations
System Architecture and Design
Enterprise Wide Monitoring and Management

- Scale the Enterprise by adding additional facilities
- Retain centralized management
  - Can add more instances to any federation
- Scale by adding additional instances within a facility
  - Network Bandwidth – Adding additional network capacity
  - Servers – Expanded horizontally and vertically to match user load
  - Storage – Additional capacity can be added when required
- Scale the equipment within an instance

Scalability accomplished in Three Tiers

Design Considerations

System Architecture and Design
Design Considerations

System Architecture and Design:

- Extensibility

- Service-Oriented Architecture

- Add new business functionality

- Incorporate new functionality into orchestrations

- Frameworks

- Plugins to be "plugged in" with no change to governing protocols

- Search engines and indices, redaction, digital adaptations, entity extractors

- Principals Standards

- Extensible Markup Language (XML)

- Business Process Execution Language (BPEL)

- Open Archival Information System (OAI)

- Metadata Encoding and Transmission Standard (METS).
- Redundant Telecommunications
- Clustered Servers
- Safe-Store of the Records
- Redundancy of geographically dispersed System Operation Centers
- Load balanced facilities
- Redundancy of geographically dispersed facilities
- No "Single Point of Failure"

Availability

Design Considerations
System Architecture and Design:
- Technologies
  - Monitoring academia and industry research efforts for evolving
- Monitoring the "emerging standards" to incorporate when applicable
  - XML archiving standards are being embraced in the public domain
  - Emphasize extensible Markup Language (XML) and other
  - Technology Independent (W3C, METS)
  - Non proprietary (BPEL, METS)
- Embrace Standards Implementation & Integration
  - Optimize Development Activities
  - Address NARA’s Business Process Re-Engineering activities
  - Architectural Constraints
  - Architectural Principles
  - Based upon NARA’s Enterprise Architecture definitions

Integration into the EA
System Architecture and Design
System Architecture Based On

EA Context

System Architecture and Design:

- NARA Enterprise Architecture
- Federal Enterprise Architecture Network
Criteria
measurable and controllable
against a defined set of
delivering level-of-service
development.

LM Team responsible for
measurement specification
Team's ERA Performance
NARA PCS flowdown to LM

Performance View
System Architecture and Design:
## Mapping of Business Functions to ERAS System-Level Packages

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Users can register and request additional ERA capabilities and privileges

- Presented with their configurable workbench

- Users log into the ERA system via Web-based portal

Services required to complete operational tasks

- Includes user interface components, workflow components, and other

- Provides access to business processes

- Tailored for a particular user role

- Its primary user interface

- ERA system employs a Web-based configurable "workbench" concept for

- Operational in degraded levels (i.e., search)

- Maintenance performed on scheduled downtimes

- Training available in the Customer Acceptance Test lab

- ERA has one operational mode

- Operational Concept

Operational View

Business View

System Architecture and Design
This is a candidate list of Workbenches that the LM Team and NARA will refine during Increment 1.

Examples of Role-Based Workbenches:

**Business View**

System Architecture and Design:
Key Features

- Web portal delivered as a incremental added feature to be a new allows new specific roles tailored for

Example Workbench

Business View

System Architecture and Design:
Design Review (continued)
System Architecture and
Architectural Architecture

Implementation ERA using a Service Oriented Architecture

Architectural Decision:
Interactions between services identify user roles, key methods and parameters.

- Service compatibility is based on policy
- Services share schema and contract
- Services are autonomous
- Boundaries are explicit

Four basic tenants of service orientation

Functionality
Services provide components of business

Service View
System Architecture and Design
**Service View - SOA**

System Architecture and Design:
Orchestrate Invokes Services and Controls to Codify a Business Process

Service View

System Architecture and Design:
Many COTS products include pre-built portlets

- Search
- User tasks
- Collaboration
- Enterprise Content Management

- Multi-dimensional Taxonomies
- Consistent and context sensitive Navigation

Systematically organizes the large volume of information

- Decentralization of administration of content, users, and privileges
- Records Centers and Presidential Libraries
- Specialized "branding" for NASA stakeholders such as Federal
- Specialized and Personalized Web portal access

Provides a configurable user workbench capability

standards (WSRP, JSR 168)

- User interface needs of SOA are driving Portals
- Loose coupling but high integration of components
- Portals and SOA

Service View - Portals

System Architecture and Design:
Security - Security imbedded inside each message
Message layer for message-passing interfaces

Authentication and authorization as part of the
Communications layer for a request/response type interface,

Security services can be invoked at two layers:
- Security services, and messages
- Require authentication and authorization to access services, as sets,

Orchestrate security-aware

- Single sign-on across the portals, back-end applications, services
- Portals inherit security from the container
- Portal framework provides a security container
- Implements and enforces NARA’s security policies

Service View - Security
System Architecture and Design
Mapping of the architecture to OAS model

- Federation of instances
- Components of an instance

Describe the high level functional architecture elements

Describe the software architecture and design

Functional Architecture Overview

System Architecture and Design

Service View
System Architecture and Design Elements

Service View

Physical View

Data View

Business View

Performance View
Financial Systems
Transfer Entity
Transfering Entity
Non-Electronic Records
External Interfaces:
Instance Data Storage
Electronic Archives
Ingest Working Storage
Primary Data Stores:
Control
Local Services and
Distribution
Archival Storage
Preservation
Records Management
Ingest
System Level Packages:
Instance
Top Level Functional Architecture:
Service View
System Architecture and Design:
External Help Desk

System Data Storage

ER4 Management

System Level Package

Evolveable

Extensible

Scalable

Features:

Federation of Instances

View

System Architecture and Design: Service
Service View - Mappign to OASIS
System Architecture and Design
The LM Team will collaborate with NARA in the definition of the logical data model.

Input from the NARA Domain model and design efforts - Physical Model - Implementation Perspective - Logical Model - System design perspective - Conceptual Model - Business perspective

Consists of a hierarchy of modeling steps

Modeling Approach

System Architecture and Design: Data View
- Identifies relationships between objects

- Complex objects have no operations (These are contained in services, which in turn are stateless)

- Complex objects contain key attributes

Logical Model

- Simple Object Model represented by UML classes

- Subject Areas represented by UML packages

- Data Categories represented by UML packages

Conceptual Model

Hierarchical level

- UML packages are stereotyped (classified) to identify their NAM constructs

- UML packages used to represent groups of objects and model

- UML suited to represent hierarchical nature of the data

UML Notation used throughout the data architecture and design

**Data View - Data Model Notation**

System Architecture and Design
- Contains system management data such as logs, inventory data, etc.

**System Data Store**

Archives - can be regenerated from self-describing persistent electronic backups (excluding the records themselves)
- Several orders of magnitude smaller than the electronic archives
- Records catalog, search indices, and instance operational data

**Instance Data Store**

- Classified records
- Prevents potential system contamination of viruses and misprocessing
- Contains electronic records transferring undergoing ingest

**Ingest Working Storage**

- Safe-Store repository for another instance
- Serves as the repository for an instance
- Contains electronic records and other assets

**Electronic Archives**

---

**Data Views - Data Stores**

System Architecture and Design:
Physical architecture of an instance

Logical representation of a facility

Network topology

Active Serve-Store

Data classifications

Concepts

100% option

Number and Locaiton of ERA facilities for a system view - overview

Physical view - overview

System Architecture and Design
Facility Locations for 100% Option

Physical View - 100% Option

System Architecture and Design:
Improve overall performance

Improve continuity of operations strategy

and add a third site over time

Would expect NARA to expand partial instances to full instances

Of days

Models demonstrated their flexibility, providing updates in a matter

designs to support proposal effort

Utilized system models to develop 40% and 70% data volume

Reducing sizing of processing and storage hardware elements

Utilizing partial storage-only instance

Utilizing a two facility approach

40% and 70% designs

Providing visibility into range of architectural scalability in LM
Physical View - Concepts
System Architecture and Design:

- Safe Store of Records
- Facilities & SOC
- Redundancy of
- Instance, Facility
- Scale Equipment,

Key Features

- SCIF
- SOC
- Facility

Operational Concepts

- ERA Management
- Federation
- Instance

Architectural Concepts
Physical View – Active Safe-Store
System Architecture and Design
Development Sites
System Operations Center
ERAM Management VLAN

- User VLAN
- System Business Applications VLAN
- Archival Storage VLAN
- WebServer VLAN
- Ingest VLAN

ERAM Instance consists of:

ERAM System Physical Components

ERAM System Physical Architecture

System Architecture and Design:
Key Features

Physical Architecture

System Architecture and Design
Physical View - Example Facility
System Architecture and Design:

Redundancy
Infrastructure
Multiple SOCS
(S/Ts Versus SCI)
Separate SCIFs
Scalable Facility

Key Features
- Finite size provides specific limits to verify during testing
- Establish the upper bound during increment 1

- Federated instances over geographically diverse facilities provides flexibility
- Meet the ever increasing storage and processing needs
- and Facilities over time for scalability
- Both the ERA System Architecture and Design supports the addition of instances
- Enterprise monitoring and management will be utilized to optimize
- Initial physical design includes three facilities based on an analysis of efficiency and size

Optimal size will eventually be met

- Increasing automation of administrative tools
- Increasing storage and processing densities
- Ever increasing storage and processing densities

Natural limit is technology and timeline dependent
- Logistical considerations
- Dis-economies of scale
- Beyond limit can encounter
- Dependent on many parameters

Natural limit to the size of a data center

**Instance / Facility Limits**

**System Architecture and Design**
Modeling supports the physical design and identities

System Modeling Roadmap

System Architecture and Design:

- Bandwidth Requirements
- Server Requirements
- Storage scalability issues
- Bottlenecks
System Design is:
- Flexible and policy neutral
- Driven by NARA's business processes
- Consistent with "best practice" design patterns
- Centered on Web Services and Web Portal technologies
- Based on a service-oriented framework
- ... Evolvable, Scalable, Extensible, and Available
- Compiling, Layering, and domain isolation
- Partitions the system to promote simplicity, cohesion, loose
  - systems
- Supports external interfaces to four defined classes of external
  - Federal Enterprise Architecture
- Designed within context of NARA Enterprise Architecture and
  - ...
ERA System Design Review - Day 1

Lockheed Martin Proprietary Information

May 9, 2005

ERA SDR - DAY ONE

Transition Plan and Increment Allocation
Transition - Legacy Systems

Phase I - Initiated during Increment 1
  - Transition legacy permanent data into the ERA System
  - Transition operations from legacy systems to ERA System

Phase II - Initiated during Increment 1
  - Develop transition metrics
  - Plan workforce transformation
  - Conduct due diligence on legacy system status and operations
  - Establish transition team

Phase 3 - Initiated during A&D Phase

Phases:
Support appropriate retirement plans for legacy systems

Provide equivalent ERA functionality

Ensure legacy system owners and users are informed of ERA

Provide uninterrupted service to legacy system users

Transition: Legacy Systems - Goals
<table>
<thead>
<tr>
<th>Legacy System</th>
<th>Map/ed</th>
<th>Incremental</th>
<th>Number of ERASYS Shells</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAR (Plan)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Target Release</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Integration</td>
<td></td>
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<td></td>
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<tr>
<td>Infrastructure</td>
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<td></td>
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<tr>
<td>Functions</td>
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</tr>
<tr>
<td>Related Features and Rollout of Strongly Plan (LTP) Transition</td>
<td></td>
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</tr>
</tbody>
</table>

**Transition Schedule**
- Retire Legacy System
- Transition of Legacy System Data
- Legacy system provides risk contiguency as fallback system
- After Increment IOC, initiate new work on ERA System
- Period of Concurrent Operations if needed
- No updates/changes to Legacy system after this point
- Freeze Point
- Both Legacy system and ERA System
- Period of Dual Updates/Changes

Define Transition Timeline within Increment Development Timeline

Transition Timeline
Support workforce transformation activities

Work with ERA PMO to communicate transition plans

Develop ERA System training materials

Assess legacy system users' training needs

System development timeline

Define transition timeline for each legacy system within ERA

Assess legacy data within context of ERA System data model

Transition - Forward Plan
collaboration with NARA during Increment 1 and beyond

Transition of legacy systems and data performed in close

and the LM Team's requirements analysis and design

Transition schedule is based on NARA's Legacy Transition Plan

A&D Phase

Transition and workforce transformation planning initiated during

Conclusions
Training
Operations, Support, and
ERA SDR – DAY ONE
Collect and assess metrics

- Perform system maintenance
- Ensure operational performance levels
- Provide a Help Desk to resolve problems
- Monitor real-time system health, performance, and component status

Operations and Support (OAS) provides facilities to:

**OAS Description**
processes and procedures in response to status alerts
System administrators/enginiers have pre-planned resolution

consolidated manner

ERA Management Services present performance status data in a

power supply

- Environmental characteristics such as air conditioning and electrical
- Network elements
- Application processes and databases
- Storage devices
- Computing device and operating systems

Monitored elements include:

system

Performed continuously to collect data and evaluate the state of the

OAS - Monitoring Status
trouble tickets

Interfaces to other NAFA Help Desks, providing a "warm-handoff" of

issue is resolved and the ticket is closed

Ticket status is monitored, updated, and reported to the user until the

maintenance actions
generates and manages "tickets" to track and report service and

resolution services

Provides the initial user entry point into maintenance and problems

higher level tickets have specialized – highly trained staff

– Problems are escalated to the appropriate tier

Design includes three help desk tiers

085 - Provide Help Desk
Degraded performance levels include:

- System are performing within system specifications
- Normal production level is a state wherein all components of the ERA operates in a normal production level or in various operational stages.
Given metric standard deviations above and below the expected value of a data is used to generate upper and lower control limits at three thresholds and tolerances. Apply quantitative process management techniques to establish preventive maintenance - preventive software defects - hardware failures - security incidents - system availability - system performance - help desk response

The following categories of metrics are captured and reported:

Weekly and monthly ERA System metrics are reported and assessed.
ErA System Design Review - Day 1.

Training Description

- Includes scenarios and annotated handouts
- Functions to restore training data state
- Mirrors the production environment; includes data check-pointing
- Shares an ErA instance from the development facility with testing
- Classroom Training
  - Management or to a NARa Training Coordinator
    - Includes email confirmation of completed CBt courses to employee
    - Simulation-based
      - Available to ErA users 24x7 via the Internet and NARAnet

Computer-Based Training

The ErA System Implementation

System acceptance by ErA users is a critical success factor for
Develop training material for end users and operations staff

Develop Service Level Agreements for Help Desk

Maintainance

Develop detailed processes and procedures for operations and

OAS - Forward Plan
Approach includes both computer-based training and classroom training.

NARA's Help Desk
Approach includes a 3-Tier Help Desk with "Warm Hand-offs" to

time system performance

Operations and Support is vital for monitoring and ensuring real-

Conclusions
Operations, Support, and Training
Interface Design
Demonstration and User

ERA SDR - Day One
Agenda

Demonstration and User Interface Design

Demonstration’s Impact on the SADD

User Interface Design Methodology

Software Design Methodology

Understanding the ERA Domain

Scope and Objectives
Workbench(es), and templates

- Illustration of key features, such as disposition agreements,
- Capabilities to integrate candidate COTS products in target environment
- Feasibility of candidate design concepts
- Understanding of ERA domain and key archival processes

Objectives for Demo:

- Search and access
- Preservation planning and processing
- Appraisal
- Ingest and transfer
- Collaboration
- Templates management (required)
- Records scheduling (required)

Demo's Scope Includes:
realistic
NARA staff ensures that our design reflects a "reasonable"
Continuing review of storyboards and user-interfaces with
Agency Records Managers
- captures knowledge gained through discussions with
  Design Team, and NARA Subject Matter Experts
- captures knowledge gained from LM Requirements and
  activity
  Reflects the NARA Business Process Reengineering (BPR)
  High degree of coverage of the Key NARA Processes

Understanding the ERA Domain
Key Features:
- Tailored for specific roles
- Allows new features to be incrementally added
- Delivered as a web portal
Reducing the engineering risk for Increment 1 products

Improving the LM Team's knowledge on integrating Key COTS

Demonstrating the viability of key design concepts

Uncovering previously unknown design challenges

Confirming key design decisions and considerations

Enhancing the LM Team's understanding of the ERA domain

Design by: The collaboration between Lockheed Martin's Demo Team and

Demonstrations impact on SADD
success in increment 1
issues in the demonstration positions us for implementation
experience gained from addressing the “tough” engineering
made both much stronger
collaboration between the design and the demonstration have

Demonstration – Conclusions