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Electronic Records Archives (ERA)**

**System Design Review (SDR) Minutes
CDRL 004**

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Change History

Table 1 - Change History

Change Contact	Date	Summary of Change
N. Gilsinn	05/19/2005	Final Issue

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Preface

This document was prepared by Lockheed Martin Transportation and Security Solutions (LMTSS) for the National Archives and Records Administration (NARA) Electronic Records Archives Program Office per the Electronic Records Archives (ERA) Performance Work Statement (PWS) dated June 9, 2004.

Table 2 – PWS Compliance Matrix

Para No.	PWS Paragraph Title	Document Section
3300	System Design	Entire Document

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1. INTRODUCTION

1.1 Purpose

The System Design Review (SDR) is the formal review conducted with the ERA Program Management Office (PMO) to validate the ERA System Design as documented in the Lockheed Martin Team's System Architecture and Design Document (SADD) and Interface Control Documents (ICDs). The objectives of the SDR are to establish a mutual understanding of:

- The architecture and design of the ERA system,
- The Lockheed Martin Team's approach to realizing these objectives, and
- The readiness to proceed to the Product Design phase of ERA.

Successful completion of the SDR results in the establishment of the operational/system architecture and design.

SDR exit criteria are:

1. Completion of all planned presentations,
2. Disposition of all SDR comments, and
3. Publishing of the SDR minutes.

This document provides the minutes from the Lockheed Martin Team's ERA SDR conducted on May 9th through May 12th, 2005.

1.2 Scope

Included within this document are:

- Daily minutes capturing the questions and associated answers, and commentary from each day's session,
- SDR Review Item Discrepancies (RIDs) written by NARA and by Lockheed Martin with resolutions, and
- SDR attendance list.

1.3 Document Organization

This document is structured as follows:

- Section 1: Introduction
- Section 2: Daily Minutes
- Section 3: Review Item Discrepancies
- Appendix A: SDR Attendance List
- Appendix B: Glossary of Terms
- Appendix C: SDR Presentation Package (separate volume)

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1.4 Intended Audience

This document is intended for the NARA PMO, other NARA SDR participants, and the Lockheed Martin ERA Team.

1.5 Referenced Documents

- ERA System Requirements Review Presentation Materials, NARA-2005-0002, dated January 24-27, 2005
- ERA System Requirements Specification (SyRS), CDRL 1, NARA-2004-0051, dated April 13, 2005
- ERA Interface Requirements Specification (IRS), CDRL L51, NARA-2005-0008, dated April 13, 2005
- ERA Systems Engineering Management Plan (SEMP), CDRL L45, NARA-2004-0014, dated May 13, 2005
- ERA System Architecture and Design Document (SADD), CDRL 3, NARA-2005-0058, dated April 11, 2005
- NARA ERA Interface Control Document Financial Systems Interface (ICD), CDRL L50, NARA-2005-0108
- NARA ERA Interface Control Document Help Desk System Interface (ICD), CDRL L50, NARA-2005-0107
- NARA ERA Interface Control Document Non-Electronic Records Interface (ICD), CDRL L50, NARA-2005-0109
- NARA ERA Interface Control Document Transferring Entities Interface (ICD), CDRL L50, NARA-2005-0111

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2. DAILY MINUTES

The following subsections provide a summary of the discussion by presentation topic for each day's session. Questions were typically posed by the NARA Team and responses were provided by the Lockheed Martin Team. Slide numbers refer to the slides in the originally delivered package that was used at the SDR meeting, 5/09/2005 through 5/12/2005.

2.1 Monday, May 9, 2005

Introduction

No comments.

Archivist's Perspective

No comments.

Deferred SRR RIDs

No comments.

System Design Methodology

1. **Question: Slide #41** - It is not clear of the use of the term, "object-oriented". Is the data view in the data model coupled with the services and methods?

Response: The data is loosely coupled with the services and methods. As LM went through creation of the services, the required data was determined. The design approach was chosen to ensure the services are stateless (didn't internally persist data) and are independent of the data objects. The services act (perform functions) on the data and can see the inputs/outputs. A service will be implemented with public interfaces with documented and established inputs/outputs. Object-oriented concepts, such as inheritance and aggregation, are also used when designing and determining which services to create.

2. **Question: Slide #41** - How can these services be independent and stateless as well as loosely coupled?

Response: The services are stateless and independent as well as loosely coupled. Object Oriented data modeling was used.

System Architecture and Design Overview

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1. **Question: Slide #46** - For the ERA WAN (Wide Area Network), is there any topology implied here? Is it conceptual?

Response: The WAN, as depicted on Slide #46, is conceptual and more detail will be provided in the afternoon presentation. This conceptual drawing does not imply any topology. The Network Topology chart, Slide #87, further defines the related COTS products, connectivity, and you will see the unclassified, secret, and SCI networks as well as their redundancy.

2. **Question: Slide #46** – Explain the Local Area Network (LAN) within the contractor site?

Response: This LAN is a separate LAN composed of domain isolated Virtual LANs. Remote NARA users would also be able to connect into the ERA facility and network by the associated NARANET connections.

3. **Question: Slide #46** – Does the development site have the same level of redundancy that exists in the main site such as Archives II?

Response: The development site (environment) has four labs: 1) a software development lab, 2) a COTS integration lab, 3) a software and system integration lab (SWIT), and 4) the customer acceptance lab (CAT). Redundancy is in place to ensure there is no loss of data. However, various failover scenarios such as server failover and network failover are tested within the lab on various pieces of equipment. The labs have sufficient hardware to handle failover testing, but not a complete failover. There is sufficient hardware at the development environment to test for redundancy. There is insufficient hardware to test for single point of failure for the development lab.

4. **Question: Slide #46** – Will the government network be discussed in a later presentation?

Response: The government network provides the ability to connect to SIPRNET and connect to the Internet 2 (i2). The architecture and design allows the capability to connect to JWICS, SIPRNET, or i2 but the details of the connection will be provided in Increment 1.

5. **Question: Slide #46** - Are there as many network connections as Transferring Entities connecting to the network? Is there a central place for them to connect versus a suite of small number of networks?

Response: Transferring Entities will have the ability to connect to ERA via the Internet to transfer unclassified records or other Government provided networks. From a classified perspective, LM proposes that the records be physically ingested versus electronically transferred. The Transferring Entities will provide the physical media to NARA/ERA that will be ingested in the physical SCIF as the associated facility. As we go forward, LM will identify the

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ability for Transferring Entities to connect to classified networks to facilitate the transfer of the classified records electronically versus on physical media. LM will identify which government agencies are high volume contributors which would warrant dedicated connections to their Agency to facilitate the transfers.

6. **Question: Slide #46** – Is LM planning to use “Sneaker Net” for ingesting classified records until FOC?

Response: The design and architecture supports the extensibility to add a classified network in the classified sites to support the transfer and ingest of classified records. LM is currently proposing the option of putting these classified networks in the design. There are no design constraints to preclude the electronic transfer of classified records from the Transferring Entity. LM proposes the “Sneaker Net” approach to ingesting classified records through physical media. This is consistent with the ERA PMO provided pricing instructions.

7. **Question: Slide #48** – Is LM going to discuss the concepts of frameworks later on today?

Response: LM will discuss frameworks in the LS&C presentation and in the search presentation scheduled for tomorrow (Tuesday).

8. **Question: Slide #50** - Is there some overarching approach to how service neutrality is being implemented in the system through workflow, rules engine, or services? How is policy neutrality achieved? Is it through workflow or a rules engine?

Response: Services provide finite business functionality. If the business functionality becomes too large, it will become business policy. Business policy is implemented through workflow and workflow is in itself, policy neutral and can be changed by NARA.

Three (3) examples of how services are invoked include:

- Services are invoked in a predefined, yet configurable, order within orchestrations,
- Larger services may invoke smaller services (i.e. nested service calls).
- Procedural programs may invoke services.

This approach ensures maximum flexibility in the design.

9. **Question: Slide #51** - What is the philosophy behind clustered servers?

Response: Presentational operational infrastructure, core services, and business component services are deployed across multiple servers to ensure high availability. The details are COTS product specific.



Web Servers: Multiple web server Instances are hosted on each of two or more servers. The load-balancing switch distributes user sessions across the web server Instances. The user's current session remains on the same web server Instance for the duration of the session.

Application Servers: Application server COTS infrastructure includes session management and failover. Current session variables (beans) are replicated to a failover application server Instance. In the event that the primary application server Instance for the current session fails, the connection from the web server is then re-directed to the designated failover application server Instance.

Database Server: Database servers are tightly clustered, and share common storage. Clustering is included at the operating system, connections to the database, and at the database level.

10. Question: Slide #55 – Describe the use of the term, “form”, in the first business objective.

Response: ERA will support the handling and processing of non-electronic records. ERA will support non-electronic records by providing the ability to search the descriptive information, though ERA will not know the actual physical location of the non-electronic records. This will be accomplished via an external system, though ERA will help facilitate the transfer of non-electronic records to the National Archives. The term, “form”, refers to the file format for electronic records as well as the ability to accept non-electronic records.

11. Question: Slide #57 – Clarify why LS&C is only associated with the processing function?

Response: The primary purpose of the LS&C system-level package is to manage and implement the business processes (i.e. underlying infrastructure of the ERA System).

12. Question: Slide # 57 – Will sample sets of data be ingested from an appraisal perspective? On the slide it does not indicate that this is hooked to Ingest from an appraisal standpoint.

Response: Yes. Services that support ingest of sample records will be available in the Ingest system-level package. When appraising records, services will be invoked from various system-level packages. (A collection of services can be invoked by orchestrations.) These “Sample Records” will also have an attribute associated with them to identify the records as being “Sample Records” such that they can be removed from the ERA System at a later date if required.

13. Question: Slide #57 – For the business function “access”, a customer may want a different format than is currently available as the persistent object format. Does the “assess function” invoke a preservation plan to perform this translation request?





Response: Services for preservation will be invoked to perform digital adaptation to the request file format. There are also a finite number of digital adaptation processors (i.e. file formats) that the customer can select.

14. Question: Slide #57 – Where does Help Desk fall within the system-level packages?

Response: Services for the Help Desk functionality are in the ERA Management system-level package.

15. Question: Slide #57 – Why is “Acquisition of Donated Historical Material” mapped to all five (5) system-level packages?

Response: When determining allocation, the ERA system looked at the descriptions of the EA activities and looked at the functionality of the system level packages. Based on this analysis and evaluation, this particular activity covers a broad set of activities and was allocated to all of the system-level packages.

16. Question: Slide #58 – There seems to be some inconsistency in the diagrams for redacted records in terms of re-ingestion and storage in ERA.

Response: Conceptually, a record is accessed from storage (i.e. a copy is made), redacted, and the redacted copy is put back into storage. LM will elaborate on the reason why the redacted record is re-ingested before putting it into storage in tomorrow’s (Tuesday’s) presentation.

17. Question: Slide #60 – From a maintenance perspective, the first line of attack will be done in degraded modes of performance. Is there any loss of functionality?

Response: Degraded modes cover the “what-if” scenarios such as the loss of a SOC. LM does not envision any loss of performance or functionality during system maintenance activities. It should also be noted that preventative maintenance activities will be performed during times to minimize any performance impacts. Impacts to performance and functionality may, at times, occur, but these will be minimized.

18. Question: Slide #60 - In the Operations and Support Plan, there is no delineation that the system maintenance window occurs during off-peak time. This document may need to be revised.

Response: LM has always envisioned scheduling software development and maintenance activities during the off-peak hours. The Operations and Support Plan will be updated to clarify this concept. The Software development upgrades and maintenance activities will be performed during the nighttime (off-peak) hours. Hardware maintenance activities will be scheduled during the peak hours, assuming that loss of functionality does not occur, but LM will implement a “break-fix” approach for key components. Help Desk hours for the primary SOC are from 9:00AM to 9:00PM Eastern Time and personnel will also be on-call outside of those hours.

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19. Question: Slide #60 – Are the working hours of the archivists in Hawaii and Alaska accounted for in the 9:00AM to 9:00PM time window?

Response: Yes, all time zones have been taken into account when determining the Help Desk support hours.

20. Question: Slide #62 – Is the workbench configuration limited by user role versus multiple functions such as appraisal and preservation processing?

Response: If it makes sense to organize functions for a user role, then the design can support that concept. For example, services for Records Processing and Appraisals can be combined on the same workbench if that is the defined role of a particular user. If NARA wants to customize these functions for each type of user role, the design can support the specific requirement and feature. There is nothing related to the workbench configuration that is dictated to NARA and the design doesn't preclude either decision.

21. Question: Slide #62 – Does the LM design support Internet Explorer or other browsers as well? Will the client be able to use functionality that is browser independent?

Response: Yes, the design is browser independent. We know we need to support a wide variety of government agencies and may need to customize browsers depending on the need. For those functions (i.e. redaction) that require a client-side tool, LM will work with NARA and government agencies to allow component downloads (i.e. client-side applications) to the government agency's system. The appropriate plug-ins for the most popular browsers and downloadable applications that are browser independent will be provided to the user. For java scripts, LM will provide appropriate versions of these scripts for the various browsers.

22. Question: Slide #62 - Will all Internet browsers be supported?

Response: Yes, however, given the variety of web browsers available there may be some functionality that is not supported. This may require the need for a downloaded package for client use.

23. Question: Slide #62 - Is it correct to assume that no plug-ins are used?

Response: Yes, however, there are a few features or functions that will require client side tools to be downloaded in order to function properly. The LM design uses a portal that is browser independent. Some functions may require client-side applications in order to perform certain functions.

24. Question: Slide #62 - Are the downloadable functions browser dependent?



Response: No, the downloadable functions are not browser dependent and support most of the popular browsers. These exhibit downloadable independence.

25. Question: Slide #62 – Is LM using Java script?

Response: Yes. Java script is browser-dependent.

26. Question: Slide #62 – For those components that need to be downloaded, can LM provide examples?

Response: Downloadable components will be provided to the user for redaction related functions. For example, a specific downloadable component would be available to redact text, image, GIS, or structure data files.

27. Question: Slide #62 – Does the ERA terminal services use Citrix as they apply to the downloadable features?

Response: Non-browser functions will be discussed tomorrow (Tuesday).

28. Question: Slide #62 – Can the components of the workbench be configured dynamically or through a staged process when adding features/functions?

Response: It depends on the situation. For example, if a user asks for additional functionality that they are authorized to obtain and/or access, the user can make this request and this functionality will be added to the workbench automatically. For requested functionality that needs to be approved by another Agency or an Administrator (i.e. higher data classification requests), a user fills out a request form, and sends the request to the appropriate agency approver. The agency approver reviews the submitted application and approves/disapproves the request. If approved, the user would then have permission to add that tool to the workbench. The user does not specifically need to work with the System Administrator to get additional functionality added to their workbench. The security design ensures that the user is authorized to submit the request before it is reviewed by the agency approver.

29. Question: Slide #66 - Explain “service adapters”.

Response: Service calls to COTS products may require different services. As an example, search products may change therefore the service may change. Often for interfaces there is a call to canonical interface and write to each but this is one interface.

30. Question: Slide #66 - The SOA has linked wrappings. Client-side approach may have state COTS services. How does ERA handle this?



Response: ERA will attempt to avoid this. Orchestrations will be stateless (in theory) without imposing COTS states.

31. Question: Slide #66 - Is it philosophical that state not be maintained?

Response: Yes.

32. Question: Slide #66 - In the SADD, how do service adaptors fit here? What are the guidelines for adaptors within customized components?

Response: For search, LM will bring in additional service adaptors as needed. ERA will write to the canonical interface and then write to the various products underneath it. For client-side applications, found in redaction, the specifics will be provided in tomorrow's (Tuesday's) presentations. Overall, the guideline is to have stateless services. LM can provide a wrapper around the redaction tool and then provide a web service interface. Client-side applications will themselves not maintain a state. Encapsulating client-side applications within an adaptor will not violate the SOA approach.

33. Question: Slide #66 - According to a previous question, if one is using web services can they directly interface within ERA? Is there a direct interface between two services or is the interface through the mediation layer?

Response: Yes, all services must go through the mediation layer. Changes are implemented within the mediation layer.

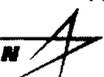
34. Question: Slide #68 - If a user submits a search for a record, the user may not know what data type it is. Is the service dynamic or static? Where does it reside and how is it rendered?

Response: Data type information resides in the Record Life Cycle (RLC) metadata. The ERA system will know what format it is or what the Persistent Object Format (POF) is in XML. The ERA system will know what to view it in and therefore, knows what needs to be invoked. ERA has registries for data types and adaptors. ERA looks up the data type based upon the input parameter. The service doesn't need to know the data type nor does it have to be hard-coded. The system will use the identifier to correlate the data type with the record.

35. Question: Slide #73 - Does LM have an idea of the performance overhead for the design? (User interaction calling services calling service via mediation layer.) What is LM's experience related to the overhead? What is the typical time for using SOAP payload?

Response: The performance overhead is a concern; LM will assess and optimize this in Increment 1. All services are on the same network though, minimizing data transmission latencies. Exception handling is done on each step to ensure short wait times/timeout. Services are also located in the same data center, again minimizing data latencies. LM needs to balance

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between flexibility and performance versus cost. The design can achieve great design flexibility when using the mediation layer. Services could talk to each other without SOAP serialization, but there is a tradeoff between performance and design flexibility. In the next increment, LM will work with NARA to determine the appropriate approach.

36. Question: Slide #73 – Will the LM design track versions with the service definitions?

Response: Version information is tracked in the service registry. If two services have different interfaces and there is a version change for one of the services, the controls for the older version will have to be changed. When invoking a service, it goes through the service registry, but the registry information will be cached for future use minimizing performance latencies.

37. Question: Slide #74 - If one service is updated on an Instance, where is the intelligence to manage separate software configurations for multiple Instances?

Response: Each implementation of a service has a unique identifier, and a version. A requesting control can be tied to a specific version of a service. Thus, the requests would be directed to the correct (identified) version of the service. As different controls use a different version of a service, system operability is ensured through the persisted data.

38. Question: Slide #74 - As a changed or new version of a service is incrementally deployed, how is it managed for incremental build up?

Response: Each Instance of a service has its own location and is load balanced over several Instances. It has its own unique identifier, including version. Changes to services are backwards compatible, except when the behavior of a method changes. The deployment process is as follows:

- Stop taking load on a subset of the service Instances
- Wait until all (most) sessions of that service are complete
- Deploy the new version of the service, and start taking load
- Repeat with the remaining Instances of the service

For services that include interface or behavior changes, the inclusion of the service version ensures that the requesting control communicates with the correct version of the service. In that case, the “old” version of the service would not be immediately stopped, but would be left running until all calling controls are updated to the new version.

39. Question: Slide #77 - What is the difference between a complex object and simple object?

Response: A simple object is the next breakdown (decomposition) from the subject areas in the conceptual data model. A complex object is a component of the logical data model.





40. Question: Slide #79 – How does the global unique identifier fit within the data model?

Response: This will be provided in tomorrow's (Tuesday's) presentation on LS&C and further discussed in Archival Storage (Wednesday).

41. Question: Slide #81 - Explain the rationale and reasons behind the third contractor site versus government owned and operated site. What is the best value for the government?

Response: There could be three government sites. The design does not preclude the idea that the third site could be government owned and operated versus contractor owned and operated. "Best Value" to the government is related to speed in bringing up the facility (existing data center availability), collocation of maintenance, support, and administration personnel (sharing of resources). The LM design proposes a contractor site because the existing infrastructure, both physical and personnel, would support a rapid facility startup.

42. Question: Slide #83 – What is the reason for selecting three sites?

Response: LM looked at multiple options such as 1, 2, 3, 4, 5, or 6 sites and above. The facility assessment involved looking at cost, ownership, deployment of hardware, software, ensuring no single point of failure, performance models, RMA, and labor costs. There is a tradeoff when balancing cost associated with labor with hardware and software licenses, etc. Experience played a role in determining the optimal number of sites. LM wanted to ensure data is under government control all of the time. Three (3) sites were selected because of sizing, bandwidth, flexibility, optimized resources, maintenance, staffing, square footage, and grow/shrink dependencies on space utilized. LM wanted flexibility in the lease arrangement as opposed to locking into a lease agreement. A contractor facility was selected because we looked at places with existing infrastructure such as telecommunications, power, data center, and people. EDS and LM can leverage existing contractor sites in terms of people and infrastructure resources for different levels of data classification. EDS and LM have extensive experience with management of large data centers.

43. Question: Slide #83 – Is LM implying that ERA records would be processed on community or pooled resources?

Response: No, the electronic archival storage (records and data) as well as the processing (servers) will be segregated. The Data Center may be partitioned but storage and the processing of records are segregated based on data classification.

44. Question: Slide #83 – The LM approach seems asymmetrical in terms of ingest and dissemination of classified data. What drove the decision? If more sites are added, what is the distribution of Secret/Top Secret data?





Response: The asymmetric approach was achieved by putting the classified data in the government facility and taking into account the volume of the data. For ease of accreditation of the SCIF and ingest of classified data into a facility similar to Archives II, a government facility was chosen. The LM design doesn't preclude adding additional classified facilities with SCIFs.

Based on the monitoring of the volume of the data, performance metrics may drive the need for additional classified sites. The decision to add additional sites will depend on the type of connection to the network or to the other SCIFs. The 40/70% options provided reflect the balance of performance measures and cost. LM was able to put in values in the performance models provided by Tessella, which provided valuable information when evaluating the quantity as well as the equipment that was required for the sites. For example, for the requirement to create a 40/70% volume solution, the performance models were extremely useful in determining the design of this new solution. It is also envisioned that these models will be used in the Enterprise Monitoring and Management functions to plan technology infusion and evolution of the facilities.

45. Question: Slide #84 - Does ERA Management span federations?

Response: ERA Management for unclassified data is contained within two (2) SOC: one (1) primary and one (1) backup. This provides centralized monitoring and management. For Secret and Top Secret data, there is one (1) primary and one (1) backup with appropriate firewalls for both to ensure segregation between the data classification, which we believe is creditable. For SCI data, there is one (1) ERA Management for all SCI instances.

46. Question: Slide #86 - How is the contractor site a cost effective site since 85% of U/SBU data will be ingested there? What is the rationale for the unbalanced approach?

Response: It is envisioned that there is a need to have a large U/SBU site. LM will have ingest and dissemination heavy (high performance) equipment. Therefore, we wanted to have a large U/SBU site. The site was sized appropriately based on hardware. A contractor site was chosen because personnel, existing facility and space, and experience could be leveraged from existing EDS and LM data centers.

47. Question: Slide #86 - Aggregation of unclassified data may change security classification. How does LM address this?

Response: LM will work with NARA to address this issue. Aggregation has been identified as a problem and LM needs to identify NARA business rules/policy in the next phase when handling aggregation issues.

48. Question: Slide #87 - If a NARA user works on classified data, what network will they use?

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Response: The user would be physically in the SCIF accessing the Secret/Top Secret/SCI data on the locally segregated user VLAN.

49. Question: Slide #89 – The term, ERA WAN, is a little confusing in how it is being used here as opposed to on slide 87.

Response: The ERA WAN connects all facilities, Instances, sites and federations with appropriate sub-networks within the WAN for SCI, TS, and Secret data. LM will delineate the differences when referencing the WAN depending on the classification in all future documentation.

50. Question: Slide #89 - What is the connection between the SOC and the Instance?

Response: If the SOC is physically located at the facility with an Instance, it is a LAN with the appropriate security measures (i.e. on a segregated VLAN). If there is connectivity to a remote facility it would use the ERA WAN, depending on the security classification, to connect to the remote site.

51. Question: Slide #89 - What are the sizes of the telecommunication pipes?

Response: Performance data indicates that the pipes are OC48 for the U/SBU. After FOC (2012), OC192s are needed. LM will ensure the telecommunication infrastructure and equipment will support OC192 data rates to minimize the upfront capital expenditures.

52. Question: Slide #90 - Would the folks working at the Clinton or Bush Presidential Library have to do their work at Archives II or St Louis?

Response: The Archivists would have to work at Archives II and send their work to the Presidential Library. Depending on the security classification, information can be sent by courier to the Presidential Libraries. For unclassified data, the Archivists can access information on the unclassified network.

53. Question: Slide #90 - Does this mean that the only work that the Presidential Library folks at the Presidential Library can do relates to redaction?

Response: All work must be done in the SCIF at Archives II or St. Louis.

54. Comment: Slide #90 - The Presidential Library folks should not be cut off from the work they need to do.

Response: LM didn't take into account the equipment needed or network needed at the Presidential Libraries. LM, through the ERA PMO provided pricing instructions, was directed not to take into account the cost associated when implementing a secured network nor providing

Source Selection Information - See FAR 2.101 and 3.10





the equipment to be deployed at the Presidential Libraries. The LM design does not preclude the capability to include a classified network or deploying the associated equipment or Instances (partial or full) to the Presidential Libraries.

55. Question: Slide #90 - What is LM's thinking about the C&A of that type of architecture? (Secure network to Presidential Library) Which is the easiest way to get certified (i.e. Leased line or Government Network, SIPRNET or JWICS)?

Response: LM has to put in communications equipment to connect to JWICS. LM needs to evaluate the volume and put in appropriate links back to Archives II. It is believed that the cheapest and easiest solution is to use leased lines and can be achieved by putting encryptors at each end of the leased line.

56. Question: Slide #92 - In the performance model, has LM considered what it would take to re-instantiate a destroyed site. (DR perspective)

Response: LM has not modeled the time needed to re-instantiate a destroyed site. However, data would not be lost because data could be reloaded data from tapes. Disaster Recovery assessments would be performed during Increment 1.

57. Question: Slide #92 – What is the connotation of the term, 'cache'?

Response: For example, if NARA determines census data needs to be released, the data would be cached (on disk) for ease of accessibility. Cache is used here to allow for quick access to frequently requested data (disk versus tape). The most frequently accessed data would reside in the cache and less frequently accessed data would be stored on tape. There is a tradeoff of cost versus volume of records being accessed.

58. Question: Slide #92 – Who/what controls the direction of the records being stored on tape vs. disk?

Response: Deferred to later presentation.

Transition Plan and Increment Allocation

1. Question: Slide #101 – Should we have parallel operations further to the left on the timeline?

Response: Legacy data will not be migrated into ERA until after IOC. Parallel operations will not start until after IOC.

Operations, Support, and Training

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- 1. **Question: Slide #106** - For each SOC, there is a primary and a backup SOC. From a DR perspective, how do you get the backup SOC up? Is there specialized hardware at the SOC that makes it easier to bring it up from a remote location? Are alternate SOC's manned?

Response: The primary SOC is manned and the secondary SOC is unmanned. For a Disaster Recovery situation, the capability exists to bring up the SOC in a secured area and man the secondary SOC. There may be a difference in the actual monitor size at the SOC but there is nothing specialized about the hardware with respect to the primary and the backup SOC.

- 2. **Question: Slide #106** - Does this section of the presentation include intrusion detection and Configuration Management?

Response: The ERA Management system-level package is the application that does the intrusion detection. Wednesday's presentation includes design details for the intrusion detection functionality.

- 3. **Question: Slide #108** – The NARA Help Desk is considered an external interface. Are you going to have another Instance of Remedy or are we going to use the Remedy application used at the NARA Help Desk?

Response: LM is proposing another Instance of Remedy. There will be an interface between the ERA Help Desk and the NARA Help Desk.

- 4. **Question: Slide #109** - Is the trouble ticket considered closed if the call is placed to the ERA Help Desk but should have been submitted to the NARA Help Desk.

Response: The ticket will not be closed until the user is satisfied. The ERA Help Desk will require a response from the NARA Help Desk when closing trouble tickets.

The ERA System is operational 24 hours a day, 7 days a week, 365 days a year (24x7x365). However, to balance the NARA expense against the value gained for a particular function operating continuously around the clock, Table 3 provides the hours of operation by function. The Lockheed Martin team provides support for those functions that are not required to operate 24x7x365.

Table 3 – Hours of Operation

Function	Hours of Operation (Eastern Times)
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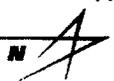
Source Selection Information - See FAR 2.101 and 3.10



Function	Hours of Operation (Eastern Times)
Operation of Unclassified and SBU ERA System Federation and corresponding SOC	24 hours a day x 7 days a week x 365 days per year
Scheduled maintenance - U/SBU	To be determined by Product Acceptance Test (PAT) in Increment 1
Operation of Confidential/Secret, Top Secret, and Top Secret/Sensitive Compartmented Information ERA System Federations and corresponding SOCs	24 hours a day x 7 days a week x 365 days per year
Scheduled maintenance – classified	To be determined by PAT in Increment 1
User access to ERA facilities	8:45 AM – 5 PM Monday, Wednesday 8:45 AM – 9 PM Tuesday, Thursday, Friday 8:45 AM – 4:45 PM Saturday
Help Desk	9 AM – 9PM Off Hours: ERA Users to be routed to ERA Help Desk On-Call beeper support. NARA Archivist and Classified users to be routed to Tier 2 SOC

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Function	Hours of Operation (Eastern Times)
Maintenance Support	8 AM – 8 PM Off Hours: On-Call beeper to Hardware Engineer, OEM supplier, and application development team
Armed guards, ERA processing facility onsite and response force security	24 hours a day x 7 days a week x 365 days per year

5. **Question: Slide #110** – On slide 89, ERA Management is shown as a separate VLAN. Is it on the same physical infrastructure?

Response: There is some degree of sharing infrastructure but the SOC is co-located with the rest of the Instance. The ERA SOC and ERA Management uses the same switches, firewalls, and IDS's in the same facility as the SOC if the SOC is co-located with the Instance, but the ERA Management VLANs are separated from the rest of the Instance VLANs.

6. **Question: Slide #110** – If a Federation comes down; does the user lose access to the data?

Response: Losing a Federation does not exist in this context, but a user can lose access to an Instance. If a user loses access to the system at Archives II, they can still access data at the St. Louis center.

7. **Question: Slide #110** - Address the previous question for SCI information.

Response: According to the design, there is no communication between St. Louis and Archives II, there has to be a catastrophic failure at Archives II with multiple failures before a user is prevented from being able to access records. Records are “safe-stored” via a courier and records will not be lost.

8. **Question: Slide #110** – Does the LM design have redundancy at the SCI level from an Instance perspective?

Response: No, there is no redundancy from an Instance perspective. “Safe-Store” takes the data on tapes to an offsite location. LM has gone through various failure modes and availability

Source Selection Information - See FAR 2.101 and 3.10



models to ensure the Reliability, Maintainability, and Availability and no single point of failure requirements are satisfied.

- 9. Question: Slide #111** – Does LM have an inventory of all the software and servers and where is the inventory kept?

Response: Yes, there is an inventory and it is kept in an Inventory Management CM tool within a database. It is maintained for each site.

- 10. Question: Slide #111** - Is this an Inventory Management or Asset Management tool?

Response: This is an Asset Management tool.

- 11. Question: Slide #111** – There is no reference to software within documentation for the Asset Management tool.

Response: The Asset Management tool will track both hardware and software information.

- 12. Question: Slide #115** – The LM design has based system monitoring on a web interface. Is LM comfortable on the approach of monitoring a web interface?

Response: Yes. LM has identified specific equipment and software for monitoring hardware, network traffic and storage utilization.

- 13. Question: Slide #115** – Can LM provide an overview or methodology of how problem resolution, service level management, and release management are handled?

Response: Yes, it will be presented on Wednesday.

- 14. Question: Slide #115** – Do we have cleared people available for travel to the remote SOC? Are they appropriately trained?

Response: Yes, cleared people will be available remotely and on-site. They will be appropriately trained. All SOC personnel will be trained regardless of their role to help support SOC issues.

Demonstration and User Interface Design

- 1. Question: Slide #124** – Is LM using NARA people for the usability testing?

Response: NARA personnel are participating in the usability testing.

- 2. Question: Slide #123** – Will the code the LM team is writing for the prototype eventually be used in the NARA ERA production system?



Response: No. This code was developed via rapid prototyping methods for the ERA prototype. The code has not been appropriately tested and will not be deployed as Increment 1 software.

3. Question: Slide #125 – Can LM elaborate on the unknown design challenges?

Response: From a demo perspective, challenges include demonstrating records that are “safe-stored”, creating a preservation plan, and demonstrating how a record is preserved. From a design perspective, the team can pick a candidate list of products. However, integration of COTS products can be very challenging. The experience LM has gained from configuring and integrating the products as well as deployment has provided invaluable knowledge, which will be leveraged in Increment 1. This experience will help in reducing technical risks.

4. Question: Slide #125 - Have you had any challenges with the data model in the demo?

Response: LM encountered challenges within the asset catalog. The asset catalog provides a unique and powerful way of deriving arrangements. LM has also noted that the current version of BEA does not support all of the BPEL standards. LM has noted performance issues on WSDL development.

5. Question: Slide #125 - Comment on the sample data

Response: LM has ingested EPA schedules, Department of State schedules, and state of New Mexico data. LM is in the process of ingesting Department of Justice data. Using real data from schedules has proved to be a challenge. This experience has also helped with cost estimations.



2.2 Tuesday, May 10, 2005

Data Model:

1. **Question: Slide #83** - 40/70 option from Day 1 presentation - Where is the SCI tape “safe-store” located?

Response: The SCI tape “Safe-Store” copy will be located in an offsite SCIF, at least 100 miles away from Archives II (or the originating facility).

2. **Question: Slide #8** - According to the SADD and previous slides from yesterday’s presentation, LM mentioned the object-oriented database in the physical model. Is there a plan to include the object-oriented database in the physical model?

Response: Yes.

3. **Question: Slide #11** - Explain why the documentary materials subject area is not related to the management policies subject area other than through the tools subject area.

Response: The documentary material package contains templates. Template orchestrations are the physical embodiment of NARA policies. The management of the templates (create, view, edit, etc) is performed through the tools subject area. Tools are then used to update templates. NARA policy drives the business process orchestrations and the decision points of those orchestrations are contained in the tools subject area.

4. **Question: Slide #10** - There are two types of data that are not contained here: Where is subscription information and order-based information? How does the data connect back to the user? Given the person, where is the order? From the diagram, the relationship depicted seems incorrect.

Response: Subscription and order-based information is found in the Operational Data subject area. More information can be found in the SADD and will be provided later in the LS&C presentation. When the user is authenticated, the user’s identity information is used to determine access level for subscriptions. The relationship is stored within the tools subject area data. We can index on the attributes when the user logs in and find subscription information.

5. **Comment: Slide # 11** – There are some changes in the Enterprise Architecture which will be available in the September time frame that will impact the Data Model. We anticipate no problems when mapping to the Enterprise Architecture.

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Response: Noted. LM will evaluate these changes when available and incorporate the changes as appropriate.

- 6. Question: Slide # 11** – Does LM further decompose the subject areas in the presentation and identify the services that act on the data?

Response: Yes. The appropriate services and methods can be found within the system level package presentations.

- 7. Question: Slide #11** - If services and methods are not identified here, what is the methodology used for legitimate and illegitimate services?

Response: UML sequence diagrams have been created to show service interactions. Services do not create/edit data objects in the model. The inputs/outputs for services use the same name in the Domain Model and correlate back to the Domain Model.

- 8. Question: Slide #11** - How is the object persistence maintained in the relational database? Persistence is associated with the object. Without mapping, how is persistence managed in the model?

Response: This is a question for the LS&C presentation instead of the Data Model presentation. A persistence layer has been added in the architecture and the data services for this persistence layer is managed within the LS&C system-level package.

- 9. Question: Slide #14** – The record template provides a way for the system to define the essential characteristics, which should be invariant over time. What is the relationship between the record version and the template?

Response: The descriptions of the essential characteristics are found within the Descriptions themselves. The Data Architecture has a dependency on the templates. The version control within the records and templates contains metadata, which contains the relationships about the records, which are dependent on templates and their versions.

- 10. Question: Slide #14** - There seems to be some confusion about the term, “template”, since there is a record template and a disposition agreement template.

Response: The essential characteristics of the records are defined in the Preservation and Service Plan. The notional design provides for the Preservation and Service Plan having an aggregation of one or more record templates. LM expects the description of the essential characteristics that are required to be maintained for the record type to be maintained in these templates. The essential characteristics are a record type and not a data type.

- 11. Question: Slide #14** - Where does the Preservation and Service Plan appear in the model?

Source Selection Information - See FAR 2.101 and 3.10



Response: They can be found in Documentary Materials subject area.

- 12. Question: Slide #15** – The composition between aggregate and documentary material implies that that an aggregate can exist without documentary material?

Response: Yes, it probably can but the data model doesn't preclude this. It really comes down to the physical implementation of the data model. LM needs to ensure the Design Team works closely with the ERA PMO to determine if any constraints need to be implemented in the physical data model. For example, if a series exists and if there are no files associated with the series, NARA typically creates a container or object even before any records are transferred to the archives. LM needs to ensure that NARA is not constrained in their business operations.

- 13. Question: Slide #15** - By manifestation, does LM mean physical manifestation of the bit stream?

Response: It refers to the physical set of files and not necessarily the association with the actual presentation (viewing) of the bit stream.

- 14. Question: Slide #15** - The diagram shows package dependencies. Is the depicted information for documentary materials the correct version?

Response: The correct version of the slide will be included in the SDR minutes.

- 15. Question: Slide #15** - Describe the process of moving from manifestation to physical files after the digital adaptation.

Response: Some digital adaptation processes may result in the packaging of the files, which is used for the output of the digital adaptation process. LM never uses a packaging device for the archival storage unless NARA wants to do it that way.

- 16. Question: Slide #15** – Is there an attempt to group files in a physical manifestation?

Response: Not sure since LM has never used a digital adaptation in this manner.

- 17. Question: Slide #15** - When data is written to physical media, how are they grouped or organized on media? Where does the relationship between the adapted record and record exist?

Response: The record that is stored in Archival Storage is in a self-describing format. LM uses ISO standards (i.e. ISO9660 or UDF) for data formats on the media. The relationship of the files that make up the record is stored in the asset catalog. Data services in LS&C contain the intelligence for maintaining this relationship and writing the object to storage.

- 18. Question: Slide #17** - Which element in the Data Model has the unique identifier?



Response: LM has not fully gone down that path. Entities shown here are unique. Any object that is not a composition will have a unique identifier.

19. Question: Slide #17– Does all of the manifestations of a record basically compose the record?

Response: Yes, a record consists of all of its manifestations.

20. Question: Slide #18 - If a manifestation is added in the future, is the record rewritten?

Response: No, adding the manifestation will add a row to the table and does not change the original record itself. There is a logical relationship between the original record and the manifestation. LM cannot work on this alone and NARA policy needs to be identified.

21. Question: Slide #19 - What is the data file?

Response: The data file is the record file. For example, when MS Word files are transformed to the next version or to a Persistent Object Format, each transformation unit has one post-transformation file set with multiple data files.

22. Question: Slide #21 - What does the note mean?

Response: The actual record is managed in archival storage where it is “safe-stored”. The note refers to the replication of operational data rather than the electronic records themselves that are contained in the electronic records archive.

23. Question: Slide #21 - If replication is from central control in order to find out information where is the information found?

Response: At each Instance this is done within the replicated Instance.

24. Question: Slide #21 - Is the link synchronized down to the local Instance and then cached?

Response: Yes.

25. Question: Slide # 22 – When a user logs on, where would the system find the security data?

Response: Security data is located in the master directory (ERA Management) and replicated in each Instance (LS&C). The logon process is facilitated through the local copy of the Directory Service located in the Instances LS&C.

26. Question: Slide # 22 - If the link is down from the master to the Instance then they may not have the most up to date information?



Response: Yes, but we have redundant network links between the master (ERA Management) and the local copies of the directory services (LS&C) to minimize the possibility that the Directory Services would be “out of sync”.

27. Question: Slide # 22 – The master has to be on the physical Instance. Does the security information in the master exist with the local copies?

Response: Yes. For performance reasons, changes are done in the master and replicated in the local copies.

28. Question: Slide #22 - How is replication handled for the highest classification data since there is no network. There is no SCIF for this Instance.

Response: At the SCIF, users are only at one site and therefore, there is no need for replication. LM would do data backups for this scenario. Operational data is backed up on tape and physically located at the “Safe-Store” site. Additionally, if and when an Instance is added to SCI and a classified network is implemented, then it would operationally work exactly like the unclassified sites.

29. Question: Slide #22 - Will the SCIF Instance require a collocated System Administrator?

Response: Yes. Since there is a SOC for the SCI there would be a System Administrator at the SCIF with the appropriate clearances and administrative privileges.

30. Question: Slide #22 - If there is a Workstation in a secure facility like the Presidential Library and a secure network was implemented, is there a need to have a System Administrator at the Presidential Library?

Response: No. In this scenario, the System Administrator at the SOC would be able to remotely administer the workstations at the Presidential Library. Also, since the electronic records themselves would not be physically stored at the Presidential Library, there would not be a need for a Local System Administrator.

31. Question: Slide #22 - In the case of “Safe-Store”, does the Data Model need to know both the primary and secondary location of the record?

Response: Yes.

Local Services and Control Design:

1. Question: Slide #32 – Business rules management appears to have one link to the data service. How does this relate to business process management?





Response: Business rules management allows business rule modification and creation. The business rules are stored in data service. Business process management retrieves the business rules from data service.

2. **Question: Slide # 32** – How does the Public user register for personal attributes?

Response: The Public user comes through the portal via the LDAP interface. It can read the LS&C directory and would proxy to master directory in ERA Management.

3. **Question: Slide #32** - Is the user account created locally?

Response: No. Accounts are created on the master ERA Management Directory Services. Initially, account creation does not have any extra access unless they have been authorized by system. They have the capability to configure their portal displays so that the next time they log in, the settings are saved. The user can also save search requests.

4. **Question: Slide #33** - Elaborate on the messaging service.

Response: It contains services for management of message queues and has the capability to provide SMTP capability for sending email to various mail servers.

5. **Question: Slide #38** - Can approved users modify a workflow within a content management review and approval cycle?

Response: Yes, a fairly simple GUI is provided.

6. **Question: Slide # 38** – How is that functionality tested? (Applies to previous question)

Response: This will be discussed at length tomorrow. Basically though, this is tested and configuration managed in the test environment prior to being deployed to the operational environment.

7. **Question: Slide # 39** – Does part of the file system needs to be seen by business processes?

Response: ERA has three (3) file systems. One (1) is in the Instance data service. In Enterprise Content Management, if you create a new group it will create a file in data service. This ensures that the file knows where it is going.

8. **Question: Slide #32** - Explain the concept of Clustered servers.

Response: This was provided in Day One (1) minutes.

9. **Question: Slide #32** - What manages documentation within the system?

Source Selection Information - See FAR 2.101 and 3.10





Response: Records Management contains services that manage documentation such as Disposition Agreements. These services invoke Enterprise Content Management, Data Service, and Business Process Management.

10. Question: Slide #32 – Are the current working variables of a workflow persisted somehow or persisted to another Instance?

Response: The workflow contains transactions boundaries. This provides the controls for the workflow and persists the data at that transaction boundary. The workflow can be selected within the Instance.

11. Question: Slide #40 - If the user has modified the workflow, is the workflow replicated to other Instances?

Response: When workflow has been modified, tested, and put under Configuration Management, it will be replicated to all other Instances.

12. Question: Slide #40 - If a line manager wants to change the workflow, what does it take to modify the orchestration?

Response: There needs to be an easier way to change the workflow. This is contained within the business rules management service. This allows for changes to the workflow via the portal and not within the development environment, which then needs to be redeployed once tested and placed under Configuration Management.

13. Question: Slide #40 - Are there 2 layer or 3 layers for workflows?

Response: There are two (2) layers – orchestrations go to business rules engine. Services invoked by business rules can have their own layer of workflow. For example, Enterprise Content Management has its own workflow.

14. Question: Slide #40 – If a user is working on a business process on a laptop. If you save the business process, how does the data get persisted if you go home and logon the next day?

Response: Data is persisted on the server side. When data is saved, the data is persisted. There is currently no functionality that allows a user to work “off line”. One needs to be logged into the ERA System through the Portal to perform their role.

15. Question: Slide #42 – What do you do if two files have the same hash?

Response: There is a low probability that two files will have the same hash ID, but if it happens, the two files will have different metadata. It is more likely that they are the same file. If they are





not the same file, we will have exception handling. The two files will be stored with different versions in archival storage.

16. Question: Slide #42 – What role do the GUIDs play in aggregation in storage?

Response: The GUID is treated like any other file. The file itself would exist twice. (RID 133 – GUID plays no role as to where the physical location occurs on tape; that is determined by the root directory)

17. Question: Slide #42 – What role do the GUIDs play on tape?

Response: GUIDs do not play a role on physical tape.

18. Question: Slide #45 – Will everything be in its own physical server or partitioned?

Response: Everything is on its own logical server and the SADD contains mapping details. Many servers were partitioned for performance and cost tradeoffs and benefits.

19. Question: Slide #49 – Do you envision any heterogeneous mix of firewalls and IDS's or the same firewall everywhere?

Response: Cisco PIX firewalls and other approved firewalls will be used. Analysis of the firewall will be addressed in next phase. LM has considered the tradeoff of more equipment (IDS and firewalls). LM is using NSA approved firewalls, which will be discussed in the security presentation. LM and EDS use this equipment in their own corporate infrastructure. Cisco equipment was selected since their hardware contains plug in PIX firewall and IDS cards. This is a more cost effective and reliable approach rather than deploying individual servers and their associated software to perform the same functionality.

20. Question: Slide #49 – Who is an external user?

Response: System Administrators.

21. Question: Slide #49 - How is the storage file structure determined?

Response: The decision to put the files in a directory should be policy driven. The files are placed in a performance buffer for quicker accessibility. A predetermined directory and file structure will initially be deployed and then NARA Policy will drive the changes to this initial directory structure.

22. Question: Slide #49 - How are GUIDs self-describing?

Response: LM can show the relationship of the files through the file name. For example, the file name could be, "Original file GUID. Redacted version name". It is not 100 % self-describing, but

Source Selection Information - See FAR 2.101 and 3.10



can be re-created through the SHA256 hash algorithm. The persistent identifier strategy includes encapsulated GUID with identifying metadata thus being more self-describing.

Ingest Design:

1. **Question: Slide #58** – Does the transfer via physical media break the Ingest model?

Response: No. There is no difference between an electronic transfer and a physical transfer. Physical media readers are available for the physical ingest of the electronic records.

2. **Question: Slide #58** – How are viruses handled when detected in an attachment within a record? When the transfer is screened, it is partially accepted.

Response: It will be policy driven as to how the failed portion of the virus screened transfer is handled. LM will have exception handling for each transfer as defined in the Transfer Agreement.

3. **Question: Slide # 58** - Are GUIDs created in LS&C prior to Ingest?

Response: No. When records are placed in the archival storage, LS&C creates GUIDs.

4. **Question: Slide #58** - Conceptually, a user could do Preservation processing within the Ingest package. What is the rationale for not doing preservation in this process?

Response: LM wanted the ingest process to be as quick as possible. LM wants to ensure the records have gone through screening and validation to minimize contamination before any archival work is done on the records. NARA has the option of defining orchestrations that do preservation prior to placing records in Archival storage.

5. **Question: Slide #58** – How are auditing services invoked during the ingest process?

Response: The user is authorized before executing services. Every service will have auditable events. All of the events will not be captured because of degradation of system performance. The Audit Manager can be configured according to NARA policy for various audit activities.

6. **Question: Slide #58** - Discuss the software functionality that is envisioned to perform automated screening.

Response: The requirements cover “dirty word” searches. LM looks for obvious markings. Part of the transfer request and transfer agreement cover record classification. For example, ERA will segregate Title 13 records as they come in. If an agency submits records with mixed classification, the system can direct them to ingest into another segregated area where they can be manually screened.

Source Selection Information - See FAR 2.101 and 3.10



1. The system can trust the Transferring Entity but the transfer would be verified
2. The classification level of record can be kept as unverified until an access review is conducted.
This may not be practical for NARA.

7. **Question: Slide #58** - Does LM expect to be able to catch when someone sends the wrong type of file based on the information provided in templates?

Response: Yes, services exist in Ingest that verify the data file type and where we expect it to be. The Validate Transfer service validates what was received against what was reported in the documentation.

8. **Question: Slide #58** – When anomalies are detected in screen and validate transfer, how are they documented in the Ingest process?

Response: Anomalies and warnings/errors that are within acceptable tolerances according to policies will automatically be transferred to Archival Storage. Those records are transferred to storage with noted discrepancies and corrections can take place in Archival storage. Those records that are not within acceptable tolerances will be acted upon in accordance with the Transfer Agreement.

9. **Question: Slide #58** – If a failure is found during validation, can the records be sent back to the Transferring Entity?

Response: Yes, NARA is informed of the failures and the records are sent back for correction, where applicable and in accordance with the Transfer Agreement.

10. **Question: Slide #58** – If a transfer is very large and anomalies occur, is the transfer sent back to the Transferring Entity?

Response: LM needs to work with NARA to establish policy to handle this. There is a need to have a messaging process, which will be established by NARA policy.

11. **Question: Slide # 58** – The Transfer Agreement comes from Records Management, where does it come into Records Management?

Response: In the Records Management presentation, LM will discuss how the system level package manages Transfer Agreements.

12. **Question: Slide #59** – Does Ingest use or provide the three items in red?

Response: Ingest provides these three things and uses other services as well (i.e. LS&C infrastructure and Security services).



13. Question: Slide # 59 – Describe the functionality for the workbench and do you envision Transferring Entities using these workbenches?

Response: The workbench configuration is managed by the LS&C data service. The core infrastructure is implemented in LS&C. Yes, it is envisioned that the Transferring Entity will use these “workbenches” to assist in the packaging of the records to be transferred to NARA and into ERA.

14. Question: Slide #59 – An aspect of the transfer is IT related and archival related. How does the Transferring Entity package their files for a transfer? How is the functionality supported?

Response: Functionality for those activities fall within Transferring Entity workbench. If we need to customize workbenches, this will be addressed in Increment 1. Services support what is needed to satisfy those requirements.

The IT portion is really related to binding the transfer package. We looked at several ways to do this: One example would be to use client-side java tools, “-tar” the files, and then upload the files using secure software (i.e. Secure Copy) to the Ingest server. This process can be used for moderate sized transfers. Details have not been worked out in this phase. There will be a way for a secure copy of the records to be sent to the ERA file system. It should also be noted that this is purely a data transfer and the actual record structure (i.e. Archival aggregation) is not relevant in this phase of the data transfer. The arrangement, record aggregation, formats, etc, will be validated in the Ingest processing, not the data transfer process.

15. Question: Slide #61 – If an unknown bit stream is ingested, how is descriptive data generated?

Response: In order to avoid the situation, the system requires life cycle documentation before ingesting records. There are facilities in Preservation to discover data types within ingest processing that cannot be stopped. The record would be flagged and the ingest process would continue. Those decisions would be documented in the business process layer. Services are provided to allow NARA to define business process.

For example, an agency may send digital images with no descriptive data. LM has spoken to vendors regarding COTS products that contain algorithms that help generate content information about the image. The information may be used for the search functionality. This is an example of where LM would leverage the concept of a framework. LM can register processors for descriptive data for different record and data types.

16. Question: Slide #61 – Can generation of descriptive data occur during Ingest or defer after Ingest?

Response: It is included in the model. It can be done in Ingest but the time variables relating to Ingest have not been determined.

Source Selection Information - See FAR 2.101 and 3.10



17. Question: Slide #61 – In an earlier presentation, it was mentioned that validating data types would be expensive. What is the cost associated with this type of validation?

Response: Expensive means it takes processor time and does not pertain to actual dollar costs. It is envisioned that the models can be extended for use with the users in determining which Preservation and Service plans should be used to preserve the electronic records.

18. Question: Slide #61 - Is the functionality associated with data type validation already built into the COTS product, Stellent.

Response: Yes.

19. Question: Slide #61 – Will the models be available to the user when the Preservation and Service Plan is generated because the decisions made may affect storage and performance.

Response: This is discussed in the demonstration and design notes CDRL. All of the models will be available. As the Archivists pick the format, they will have available models that provide resource information and storage information associated with them. This will assist the Archivist in selecting the best Preservation and Service plan to associate with the records.

20. Question: Slide #61 - Assume a 10MB transfer is received, scanned for dirty words and the records are placed in archival storage. If the dirty word list is updated, can the user reverse what was sent to storage?

Response: If something was discovered that violates security, it will be cleared out/deleted/or moved to a new classification. This will be dictated by policy. The media will be “cleaned” to prevent scavenging. To avoid viruses exploding in archival storage, records can be re-scanned for dissemination. The records life cycle data will keep track of the activity against the record. A user can look at the records life cycle data and determine which version of the dirty word search affects the record. Note: Retrieved files are virus scanned. The design does not preclude the idea of conducting a dirty word search before dissemination.

Transferring Entities provides a list of dirty words to NARA. The Transferring Entities may update the dirty word list 2 months later (i.e. or any time in the future). LM will provide additional details for how this situation will be handled in Increment 1.

21. Question: Slide #61 – If the process of validating the transfer is accelerated, then problems may arise in the future.

Response: The kinds of validations that are performed on records are driven by requirements and make use of templates. NARA will have to decide the types of validations that can take place and are required to take place before committing the records to Archival Storage.



22. Question: Slide #61 - There is no method for handling sample records and where is that defined.

Response: Records will have an attribute to indicate that they are sample or test data. These attributes will be documented in the data model.

23. Question: Slide #62 – What is the exact content of the records life cycle data (documentation) and how would it be used?

Response: The system has to satisfy requirements but requirements do not spell out business processes. LM envisions answers for these questions to be answered in collaborative meetings with NARA.

24. Question: Slide #63 – Are the rules based on average peak or annual averages? Are broader descriptions of peak load utilized?

Response: It is based on average peak. The performance models were done with average loads because we assumed peak loads would occur occasionally. The peaks can be handled by extra days and extra shifts during the week. It is typically not the best practice to design for peak loads for non-mission critical application. This is a cost versus performance versus business need analysis that needs to be performed. Nothing in the design precludes LM from adding additional peripheral devices to handle larger physical ingest and dissemination loads.

25. Question: Slide #56, Day 1 - Is there an assumption that the Transferring Entity system is DOD 5015.2 compliant?

Response: LM assumes the Transferring Entity system conforms to the Transferring Entity interface as defined in the IRD and corresponding ICDs, which specifically does not call out 5015.2 as a specific requirement.

Records Management Design:

1. Question: Slide #74 - In the proposal, there is a concept of Uniform Resource Identifier (URI). Has that concept disappeared since it is not in the SADD?

Response: GUID is part of it. URI concepts will be found in Namespace design. It is not explicit in the SADD but LM is still considering the concept.

2. Question: Slide #74 – What is implied when the services are on the same physical server? If they weren't the invoking mechanisms, would they change?

Response: No. The point that they are on the same VLAN is to reinforce the concept that they call a process via the same service through the same mediation layer. The same VLAN was used to balance between performance and load balancing. There is no difference.



3. **Question: Slide # 75** – Does Implement Disposition Instructions relate to transferring records to NARA.

Response: No, the design allows for Disposition Instructions to work on records already in archival storage.

4. **Question: Slide # 74** – On a previous slide, templates and disposition agreements are shown coming into ingest.

Response: This comes from the result of the abstraction of diagram. Fig 17 pg 65 of the SADD contains the details.

5. **Question: Slide #75** –Elaborate on the functionality for Implement Disposition Instruction system level package?

Response: It allows the user to specify the capability to specify when records should be destroyed. It includes the capability for creation, modification and monitoring deterministic disposition instructions. Creation of Disposition Instructions has to go through an approval process and involves Transferring Entities. LM has also included the concept of an event database that would capture archival events.

6. **Question: Slide #75** - What does “Records Management” mean on the boundary of the diagram?

Response: This is the package boundary.

7. **Question: Slide #76** - Refer to Question 16 - Day 1

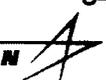
Response: Redacted records are routed for re-ingest because new descriptive data can be discovered; redacted records have to be re-screened (virus checked and dirty word searched). Redacted records are placed in a new transfer package for ingest.

8. **Question: Slide #77** - What COTS product(s) have been selected for FOIA and PA? Will custom code be developed?

Response: Largely workflow processes but specialized functions discovered during requirements decomposition may require development items. Some functionality can be covered by COTS but some customized code is required. REDAX is the COTS product that has been selected for redaction. Other COTS products and custom developed applications are envisioned to be required and would plug into the Redaction framework engine to allow for the redaction of other files types not currently supported.

9. **Question: Slide # 81** - Given the opaqueness of RMA systems, to what extent does LM see automation for the interface with the Transferring Entity system and Ingest.

Source Selection Information - See FAR 2.101 and 3.10





Response: NARA PMO has established requirements for the external interface to the Transferring Entity systems. In Increment 1, LM will flesh out the format for this interchange. They will be compliant with open standards and for 5015.2 compliant systems. Where the standards are not available, adaptors will be developed which is not part of our requirements baseline but we can consider it later. LM expects NARA to help define/design templates to enforce information needed for a transfer.

The template design as well as adaptor design may drive LM to revisit RMA technologies in Increment 1. (Note: LM needs to add more detail/thought related to automation about interfacing with the top RMA applications with respect to Transferring Entities ICDs.)

10. Question: Slide #83 – When developing J2EE applications, will LM recommend existing commercially available, open-source code such as struts?

Response: Yes. For example, LM will use BEA application framework. This conforms to NARA's Enterprise Architecture.

11. Comment: Slide #83 - Given that the Archivist will be doing things that don't normally fall within normal Records Management activities, can the package be renamed?

Response: LM has considered the idea of renaming the package. The end user will never view the name, 'Records Management', but LM will consider renaming the package.

12. Question: RID125 Redaction Framework – The paradigm seems to cover four (4) corner documents (i.e. paper documents) whereas NARA considers redaction as masking fields such as in a data base.

Response: Yes, the redaction framework concept contains different redaction engines that would handle four (4) corner documents (i.e. word or PDF based files) as well as structured data (i.e. databases) for redaction.

13. Question: RID125 - Can redaction cover other ways than visually masking data?

Response: Yes, the data can be electronically masked.

14. Question: RID125 - Are redaction versions available to the public?

Response: Yes, LM can provide new electronic versions of a redaction record to the public. This will be based on access controls and authorizations.

15. Question: RID125- Instead of replacing SSN with gibberish, could it be replaced with some calculated value to support longitudinal studies?

Response: Yes.

Source Selection Information - See FAR 2.101 and 3.10



16. Question: RID125- Why isn't XML a redactable data type given XML doc are easy to redact.

Response: Answer to the RID reflects the answer to this question. LM will add XML as a supported data type that can be redacted. No COTs product currently will support all types of redaction that are required.

17. Question: RID 125 comment – Is there functionality that provides the capability to support redaction via templates.

Response: Yes, to make it work, LM will build a redaction engine that would plug into the framework and would call the appropriate template. Note: RID 125 will be updated to include XML as a data type that can be redacted utilizing the template editor, which is XML-based.

18. Question: RID 128 - What are the security considerations for redaction for Secret/Top Secret classifications.

Response: The approach is to have the Archivist doing the redaction in the same SCIF as the data. There is segregation by VLAN but they are in the same SCIF. For the TS Federation, the Archivist is still working in the same SCIF as the electronic records. The redacted record may be at a lower security classification and if policy is defined, the record may be ingested at a lower class level.

19. Question: RID 128 – Records may be large that need to be redacted. Is there a limitation in storage based on the solution? What about large documents?

Response: LM can size the workstation appropriately to support MB and GB files in terms of processing power and storage power. LM assumes there is no need to redact TB files.

20. Question: RID 128 - A user may need to manually validate the redacted record such as an access review or cross check a large database.

Response: Search and view can be performed to “spot-check” the redaction that was performed to ensure that redaction was performed property.

21. Question: RID 128 - If a record is redacted, will the persistent identifier be used as part of the transfer process of a redacted record.

Response: Yes, since it is a hash then it can be validated against the record.

22. Question: RID 128 - Is there any way the identifier could be corrupted?

Response: There is always the possibility that an identifier could become corrupted. The GUID could be recreated by running the record through the SHA256 algorithm to validate the hash against the record content.

Source Selection Information - See FAR 2.101 and 3.10



23. Question: RID 128 - If a record is sent to an equity holder for redaction and they use an external tool for redaction, how does the system relate the redacted record to the original version?

Response: This concept is not in the SADD. The transfer request would require the original identifier. A new identifier can be assigned when the redacted record has been received.

24. [Redacted]

[Redacted]

25. Comment: RID 128 - If there is no functionality for executing disposition instructions, this may require manual verification of the transfer. This will slow the ingest process. How are Disposition Instructions used to decide whether a transfer is authorized since this function is available in Records Management and not in Ingest.

Response: A user can leverage the Disposition Instruction functionality to support the ingest functions. Services are allocated to Records Management but Ingest will call those services to support ingest functions

26. Question: NARA takes in OPMFs (Office of Personnel Management) in periodic transfers. How does the design support this?

Response: Currently LM has not considered this in the design but it doesn't preclude doing automated pulls with the agreed upon location to pull from. A mechanism needs to report if the transfer is missed.

27. Question: RID128 - Does the design include the capability to implement disposition instruction for non-electronic records via the non-electronic records interface?

Response: Yes.



2.3 Wednesday, May 11, 2005

Preservation Design:

1. **Question: Slide #6** – What is a Preservation Template and how is it used?

Response: Preservation templates are used for Preservation and Service Plans and Preservation Assessments.

2. **Question: Slide #6** - Explain the data type registry?

Response: It contains the list of all known data types within the system. It is used in various stages in the Preservation process. Data type information is pulled from the registry and it is used to determine the data type in the record.

3. **Question: Slide #6** – Does the registry contain descriptors for individual file types or does it group them together?

Response: It defines a description for individual file types

4. **Question: Slide #6** - Explain how LM manages the digital adaptation registry?

Response: The Registry and Preservation processing identifies the availability of digital adaptation processes and contains various attributes to support digital adaptation processing for that particular data type. Services are provided to create, update, etc. the registry entries.

5. **Question: Slide #6** - Does this hold registries for digital adaptation descriptors and data type descriptors?

Response: Yes

6. **Question: Slide #6** - Is the algorithm that performs the adaptation universal?

Response: No. Each digital adaptation processor will have its own algorithm and it will be discussed in detail in a later slide.

7. **Question: Slide #8** - Is there a one-to-one or one-to-many relationship between the data type and the digital adaptation processor?

Response: It is a one-to-many relationship. An example will be provided later on in the presentation.

Source Selection Information - See FAR 2.101 and 3.10

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8. **Question: Slide #9-** Describe the interaction between the extract file type attributes services when dealing with a hybrid file type?

Response: The file type is determined from Ingest. LM envisions providing functionality that would deal with embedded file types. For example, ERA can recognize attachments within a file. The prototype demonstration will show how to deal with a record with compound file types. At a certain level, ERA needs to deal with one file at a time but the system will iteratively, as a nested process, call these functions to deal with compound records.

9. **Question: Slide #9 -** Once the system has iteratively adapted a nested record, how does ERA assemble the information?

Response: ERA preserves records not files. Assembling, or re-assembling, occurs within the actual preservation processing.

10. **Question: Slide #9 -** How does preservation processing assemble the nested records?

Response: Assembling is done through record manifestations for file sets which are found within the data model. The assembling process may create fewer files or more files.

11. **Question: Slide #9 -** Will the definition of digital adaptation rely on templates and will the users need to know how to define templates?

Response: ERA has templates for records and the Preservation and Service Plan. The catalog defines the association of files to records and the association will be known by the preservation service. Therefore, there is no dependency on templates.

12. **Question: Slide #9 -** Is the association of files to records coming from the record template or record catalog? What is in the record template?

Response: The association comes from the record catalog. The essential characteristics that need to be preserved will be in the record template.

13. **Question: Slide #9 -** Is the relationship of the record to the files that is associated with it part of the template?

Response: No. The association of files and records is held in the record catalog.

14. **Question: Slide #9 -** In the SADD, ERA ingests records and there are no preservation processes that deal with it initially. Does the design enable a user to revisit records that were ingested a long time ago?



Response: Yes. A user can make a request for preservation processing anytime during the record's life cycle. The Preservation and Service Plan may need to be updated to cover revisiting records.

- 15. Question: Slide #9** – If a user has a file with multiple formats and converts it to PDF, is the digital adaptation a reversible process? Can a user undo the processing for the original format?

Response: The framework for digital processing allows reversible capability. For example, the ERA system may have a digital adaptation process that goes from file type A to file type B. The ERA system may also have a digital adaptation processor that goes from file type B to file type A. However, for compound file types the ERA system may not be able to reverse it. The ERA system will always keep the original bit stream and never remove it from the system. Hence, the user can always go back to the original record to perform additional digital adaptation if required. NARA policy can dictate how many adaptation revisions are kept, provided storage is available. Initially, LM has determined 2-3 digital adaptation versions can be kept for storage purposes.

- 16. Question: Slide #6** - It seems like the digital adaptations deals with file types and not the record.

Response: Yes

- 17. Question: Slide #6** – The design seems to support one file type to one file type. How do the ERA system deal with multiple file types with multiple file types?

Response: The digital adaptation process can handle complex file types (i.e. website). The process may invoke other sub-digital adaptation processors.

- 18. Question: Slide #9** – Has LM considered the tradeoff of keeping multiple digital adaptations or keeping the original bit stream and its associated adaptors and subsequently recreating them?

Response: LM has considered all of the above as they relate to storage costs. Also, the Archivist will have to exercise judgment when determining authenticity of a record. In essence, depending on how the record is determined to be “authentic” may dictate how many versions of the digital adaptation are required to be maintained.

- 19. Question: Slide #9** – Is the relationship to Digital Adaptation one-to-many or many-to-many?

Response: The relationship is many-to-many.

- 20. Question: Slide #9** – The ERA system ends up with many data types. Has LM considered management of domain data types?





Response: ERA will provide a centralized location for maintaining those data types. LM recommends establishing a global registry of data types. LM envisions collaboration with NARA to ensure a complete registry.

21. Question: Slide # 9 – Clarify the relationship between document template, record type template, higher-level templates, and aggregates?

Response: NARA may decide to submit a RID to address this question.

22. Question: Slide #9 – The mapping of essential characteristics for a record to data types that constitute that record is not clear. How does a user drill down from the essential characteristics of a record to the data type?

Response: The subsequent slides will elaborate on this concept.

23. Question: Slide #13 – Can a record be associated to multiple record types?

Response: A Preservation Plan can be associated to a record or multiple record types.

24. Question: Slide #16 – Maintaining authenticity of court records includes pagination. Does the essential characteristics design provide the capability to specify explicit directions for pagination?

Response: Yes. Archivists will have to decide the taxonomy of essential characteristics. The list provided here is a thumbnail example. The Preservation and Service Plan will not contain detailed information such as record type. For example, digital adaptation processors convert a MS Word document to PDF. The rating would be high in its ability to preserve pagination.

25. Question: Slide #15 - Is the degree of fidelity sufficient?

Response: It depends on how the fidelity and relative importance is decided and the capability assessment of the digital adaptation processor.

26. Question: Slide #16 - Is there a situation where multiple digital adaptation processors will work on a particular data type?

Response: Yes. The approach is to determine which processor to use based on the essential data type. Slide 17 provides an example. For example, a user has HTML for an email message and decides to convert it to PDF or ASCII. It is possible that the user will be making preservation assessments before digital adaptation processors can support preservation of the record. The preservation process allows the Archivist to capture preservation planning and then, later on, revisit the record when technology provides an appropriate digital adaptation processor.

27. Question: Slide #17 – Why would NARA want a service that is location dependent?

Source Selection Information - See FAR 2.101 and 3.10



Response: There might be a restriction on location. For example, a Presidential Library can access a particular record.

28. Ken Thibodeau Comment for Slide 17: Ken stated that the slide seemed to focus on exceptions. NARA's purpose with ERA is to make any information available to anyone, anywhere. The LM approach should focus on this rather than the exception (machine-dependent, etc.)

29. Question: RID 119 – Do all essential characteristics in the Preservation and Service Plan come from the record template?

Response: Yes, if the decision is made to maintain them there.

Storage Design:

1. Question: Slide #28 – Explain the interface between Portal and Storage Services.

Response: Portal configuration data is saved as operational data. The arrow from Portal services should point to data services instead of storage services. The SADD diagram will be updated.

2. Question: Slide #29 – Based on the discussion yesterday, please confirm that the GUID is a file and not a record?

Response: GUID is the identifier for a file. They are associated with the record.

3. Question: Slide #33 – The GUID is derived from the hash content of the file. If it has the same GUID, how does this apply to the “Safe-Store”?

Response: The GUID location is stored in a relational database in both locations so it can be located when required and associated with the original GUID at the primary storage location.

4. Question: Slide #33 - When directory structures are established, will it have the same level of service for that directory?

Response: Yes.

5. Question: Slide #33 – Does StorHouse have 100 directories for each Instance?

Response: Yes. Each Instance of StorHouse can have a maximum of 100 directories. Sub-directories within a directory are unlimited and there is an unlimited amount of StorHouse Instances that could be deployed.

6. Question: Slide #33 - Does a single Instance of StorHouse require a single, physical server?

Source Selection Information - See FAR 2.101 and 3.10





Response: Yes

7. **Question: Slide #33** - If there are multiple GUIDs, then uniqueness may be lost. If the system tries to combine multiple files, how would that work after a transformation? How does the ERA system confirm uniqueness for the record GUID?

Response: LM is using SHA 256 hash for the GUID. The ERA system will verify uniqueness. In the exception handling of multiple GUIDs, the ERA system can identify the duplicate and append a version identifier.

8. **Question: Slide #33** - If a user does digital adaptation on a file and on the container for the file, what happens to the GUID?

Response: The ERA system will keep the relationship between the old GUID and new GUID.

9. **Ken Thibodeau Comment: Slide #31** - If we bundle these into a single file, is this a design decision or policy decision?

Response: This is a design decision. Current technology includes compression for file containerization. There is a requirement for no software compression. As long as the record/file contents within the same "Storage Object" are kept, the ERA system can ensure the files within a record are always stored together on the same media volume and the records does not span media volumes.

10. **Question: Slide #31** - The notion of a logical identifier is not clear. This has been captured in a RID. Can LM provide a response now?

Response: We will provide a formal response in RID 146.

11. **Question: Slide #31** - Which functional portion of the architecture contain the defined attributes? Which function within the architecture is used to specify an attribute for the directory? Does the user need to figure out the attribute at the time of appraisal or the time of ingest?

Response: The attributes are found in the central data management service level. The decisions are made outside of storage services within the Business Rules Engine in LS&C as to the initial directory structure. A baseline set of rules and directory structures will be provided at CDR and can be modified during customer acceptance test. They can be changed as policy changes. The decision can be made at the time of physical transfer of the records, which occurs later than the appraisal of the records in the Archival process.

12. **Question: Slide #31** - Is the algorithm for aggregation configurable by size or configurable on the directory level? What are the types of configuration?

Source Selection Information - See FAR 2.101 and 3.10

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Response: Configuration includes how long an object exists, storage object size, how long it stays at an incomplete level, and storage space.

13. Question: Slide #31 - What drives putting a particular storage object into a particular directory?

Response: GUIDs determine the directory location based on upstream services that know the properties of the record. These root directory structures are predefined, but can be modified as the system evolves and as policy changes and gets refined.

14. Question: Slide #31 - What drives a particular set of files (GUIDs) into a directory?

Response: Configurable business rules will be created based on the following examples: originating agency, file origin, archival interest, size, performance buffer for quick retrieval, primary storage site, and "Safe-Store" storage site.

15. Question: Slide #31 - LM has chosen the ISO-9660 standard. Does LM see any limitations in that standard in terms of size or format?

Response: The ISO-9660 standard applies to files with maximum size of 1 GB. LM is working on a new format, UDF, which is extensible to larger (unlimited) file sizes.

16. Question: Slide #31 - Is there a logical aggregation that occurs at the service level and a physical aggregation at the physical level?

Response: Yes.

17. Question: Slide #31 - How does LM assure the records stay together when they come out of storage?

Response: The association in the record catalog will request which GUIDs are required. Storage will retrieve the requested GUIDs and provide the records associated with the GUIDs to the business applications.

18. Question: Slide #31 - Can LM assure that it is on the same physical storage device? GUIDs could be placed on different physical media.

Response: Anything that goes through the directory on the Virtual File System will be on the same device. Yes.

19. Question: Slide #31 - How do you deal with fragmentation in that case?

Response: Storage objects up to 4GB will not be split apart. Modifications to the COTS products are underway to ensure that the Storage Object and the associated Records will not span media volumes.

Source Selection Information - See FAR 2.101 and 3.10



20. Question: Slide #31 - Is media chain associated to a device? Is there a possibility that records could span media?

Response: Yes and yes.

21. Question: Slide # 31- Is the direction to performance cache and to archival media configurable and how can it be changed? Is this an aspect of StorHouse?

Response: Yes it is configurable and yes it is a function of StorHouse. The directory structure is handled outside of StorHouse and Storage Services, which can also direct the records to performance disk cache as well. StorHouse handles the “most frequently used” aspects of the records.

22. Question: Slide #33 - Is the longevity of performance cache set by policy.

Response: Yes.

23. Question: Slide #33 – For storage balancing, can a user retrieve data from archival storage and put into cache.

Response: Yes. Data can be accessed from storage.

24. Question: Slide #33 - How does the system handle failure on one site while it is copying to another site

Response: The ERA system would write to the second site but try to continue to write to the first site.

25. Question: Slide #33 - Would the system create a backlog if it there was an extensive failure?

Response: Yes

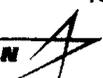
26. Question: Slide #33 – Does media groups without a container GUIDs go to the same directory but not the same physical media?

Response: Yes

27. Question: Slide #35 - Is the definition of a virtual file system different from the definition of UNIX virtual file system?

Response: Yes

28. Question: Slide #35 – Does the ERA system expose mount points through NFS?





Response: Yes

29. Question: Slide #35 - How does LM deal with the problem of an object that spans media?

Response: Objects are created to a local file system and then written to storage manager. LM will get framing information from the storage manager. Storage Manager allocates data as it comes in and the largest chunk is 4 GB. With the framing information, the file is built in storage manager. The COTS product will be modified to ensure that this Storage Object will not span media volumes.

30. Question: Slide #35 - When is that feature available from FileTek?

Response: Early 2006 (May/June). It is documented in RID 149.

31. Question: Slide #35 - There is a limitation of a 100 databases per server. Is that predicated on the storage manager limitation?

Response: The storage manager has 100 embedded databases.

32. Question: Slide #35 - What is the relationship between 100 directories and 40 directories?

Response: The ERA system can have 100 directories per storage manager with a limit of 25 billion entries per directory. The 40 directories correlate to the maximum number of directories required to meet the 10 Tera-Object requirement, further illustrating the scalability of LM's storage solution at the Object level.

33. Question: Slide #35 - Does the term, "Directory", refer to the root directory?

Response: Yes, it refers to the root directory with its properties

34. Question: Slide #35 - What are the 100 directories per storage manager?

Response: This is driven by the limit of 100 databases in the storage manager per Instance of StorHouse.

35. Question: Slide #35 - Is there a datastore or database in the system that stores the properties of the directories, which assist the user when searching the directories?

Response: Yes

36. Question: Slide #35 - Is the database a generic database?

Response: It is a proprietary database that is ANSI SQL-compliant. It can also support Oracle and has a published API.

Source Selection Information - See FAR 2.101 and 3.10



Response: Yes

- 38. Question: Slide #35** - When a storage management application writes to a tape device, there is a preferred chunk/block of data that the device prefers. Does this product offer switchable blocking factors?

Response: No. FileTek has looked into whether they can offer a switchable blocking factor and the results were inconclusive. It is currently set to a 32KB block size.

39.



- 40. Question: Slide #26** - In terms of evolvability, does LM see any issues with the Data Aggregation service if it is migrated to a new storage module product?

Response: The upstream services use the file system. A new gateway has to be written to access data. Other than that, the storage manager (i.e. StorHouse) is completely replaceable.

- 41. Question: Slide #26** - Could LM write a custom aggregation module?

Response: LM has abstracted storage functionality. LM could replace it with Tivoli, for example, as long as the ERA system uses the GUIDs as well as write to root directory structures. There is nothing unique in the storage management design that would preclude LM from exchanging storage management COTS products.

- 42. Question: Slide #26** - Can LM provide a qualitative/quantitative assessment of the functionality provided out of the box? Can LM provide a requirement vs. functionality gap for the functionality that is provided in the product?

Response: Data spanning media volumes use UDF instead of ISO9660 file formats for “self describing media” formats. This is documented in RID 149.

- 43. Question: New RID** - Given those enhancements, is LM 100% compliant with the requirements?

Response: Yes, and this is provided in the response to RID 149.

Dissemination Design:

- 1. Question: Slide #47** – Explain why the arrow is bi-directional between the Access and Preservation system-level packages.



1. **Question: Slide #47** – Explain why the arrow is bi-directional between the Access and Preservation system-level packages.

Response: A request for an asset may be presented and may need to be sent for preservation purposes. The arrow should not be bi-directional since a returned asset is shown with another arrow.

2. **Question: Slide #47** – There seems to be a missing link between Dissemination and the non-electronic record tracking system to retrieve non-electronic records.

Response: The interface to the non-electronic record tracking system is in the Records Management system-level package. The location information is stored in the records catalog and is persisted. Additional information can be retrieved from within Records Management.

3. **Question: Slide #47** – Explain the Dissemination relationship to non-electronic record archives?

Response: The Ingest functional diagram shows the interface to the non-electronic records interface persisted in Records Management. It is held in the records catalog as part of the life cycle data.

4. **Question: Slide #47** - Are the indices replicated per Instance?

Response: Depends on the index we are referring to. For example, search indices for descriptions are replicated across Instances but content-based indices are not replicated across Instances due to their large storage requirements.

5. **Question: Slide #47** - When the ERA system deals with the access permissions for a record, is that held in Access? If it is held in Access, an arrow is needed to show where the information is stored.

Response: LM checks the access permission for that user on the record. The ERA system will not display the record unless the user is authorized.

6. **Comment: Slide #47** - There are situations where the user can view the description of a record but may not be able to access the record.

7. **Question: Slide #47** – In the SADD, LM mentions a questionable asset. What is a questionable asset?

Response: The term “questionable asset” appears on the Search and Browse sequence diagram on page 46 of the SADD Appendix K. The use of the term is misleading and the intent was to check for a user’s authorization of access to assets. The statement will be reworded in the next update of the document.

Source Selection Information - See FAR 2.101 and 3.10



8. **Question: Slide #47** – Does LM assume the security services exist in the diagram?

Response: The architecture diagrams do not depict the security layer behind the services. It is implied that these services are applicable to all of the services in the ERA system. Tomorrow's (Thursday's) security presentation will elaborate this concept.

9. **Question: Slide #47** - There is some confusion about the Tracking Order service because there is one method identified for creating an order.

Response: Tracking the order happens in the Financial system (external to ERA), but ERA receives the status from the Financial system. LM provides services for creating the order which occurs within Dissemination.

10. **Question: Slide #49** - The concept of browsing is when a user has identified something of interest. Can LM elaborate by what is meant by search?

Response: The subsequent slides elaborate the various search capabilities.

11. **Question: Slide #49** - Within Access, would the user be able to track the mediated search request?

Response: The ERA provides functionality that tracks the status of mediated search requests. Additional detail can be found on page 247 of the SADD.

12. **Question: Slide #51** – What kind of algorithm is used in the search framework to match the service selector?

Response: The algorithm is based on the search criteria submitted by the user.

13. **Question: Slide #51** – There is only one active search engine for each type of search criteria.

Response: The ERA system has the flexibility to provide any number of search engines to support many different types or categories of search. It is not necessarily a one-to-one relationship. LM may use more than one search engine to return the requested results that the consumer is searching.

14. **Question: Slide # 51** - Suppose a user enters search criteria and went down to the resulting assets but decides to look at the next asset. From the user interface, that is not considered a new search but within the framework, that is considered an additional search.

Response: For that second stage of search, the ERA system will use another search engine. The framework will marry the results of the searches and present them as a unified result to the consumer.

Source Selection Information - See FAR 2.101 and 3.10



15. Question: Slide #51 - If a user starts the search in one manner, can the user switch their search technique?

Response: Yes.

16. Question: Slide #52 – Suppose a genealogist wants to look at a database in its natural sense. How can the framework be extended to deal with providing that functionality?

Response: The framework is extensible to support that functionality

17. Question: Slide #52 - Does LM provide functionality within LS&C to meter large searches?

Response: There are services within LS&C that provide metering capabilities. LM will provide the capability to allow certain user roles to access additional system resources to support their search request. For example, a public user may be allotted 10sec of CPU time as opposed to the Archivist of the US, which may want to search the entire archives. We can also provide a fee for service where a user can purchase additional resources that allow certain searches.

18. Question: Slide #52 - If a user wants to perform a large search, does LM prevent the user from conducting the search?

Response: LM can provide incremental search results as opposed to refusing the search request entirely.

19. Question: Slide #52 - Can a user queue a search?

Response: This is a detailed design issue but nothing precludes that functionality. LM can provide additional search options to the user.

20. Question: Slide #55 - In terms of the framework concept, explain the level of abstraction of the interface from the framework itself.

Response: LM needs to balance between the flexibility for handling multiple COTS products and being explicit on how to handle the specific COTS product's functionality. LM looks at multiple products before defining the actual interface. No matter how well LM balances general versus specific, the interface will have to evolve over time to accommodate additional technology. It is envisioned that this interface would be similar in context to the external interface class interfaces.

21. Question: Slide #55 – What is the proper protocol to make it work. The user needs to know the interface.

Response: The ERA system needs a generic interface within COTS products. The ERA system needs to be specific enough to take into account all the features of the COTS products. If there

Source Selection Information - See FAR 2.101 and 3.10



are products using an open standard, LM will try to include them in the design. LM will never make a common user interface based on one product. LM would look at multiple products.

22. Question: Slide #55 – Has LM included the overhead of the framework in the modeling approach?

Response: Yes. LM has dealt with the overhead in high-level terms such as requirements. Further detailed modeling and analysis needs to be performed to ensure that this overhead is accounted for and minimized.

23. Question: Slide #51 – Is the framework service selector smart enough to handle public users with little archival knowledge?

Response: The framework service selector's decision is based on submitted search criterion. The specific type of user dictates which taxonomy is presented to the user. There will be multiple types of taxonomies since there are multiple classes of end users ranging from experienced Archivists through un-experienced general public users.

24. Question: Slide #55 - Do you believe the framework selector will narrow the search results to the user?

Response: Yes.

25. Question: Slide #55 - Explain how topic maps are being used?

Response: COTS products can generate topic maps based upon related entities. There are many ways a topic map can be browsed. There are many routes to the same data.

26. Question: Slide #55 - If a user submits a search for something where there are multiple spellings, how is that handled within the framework?

Response: The identified COTS products provide the capability to handle multiple spellings for a name. LM will also use authority sources to normalize secondary terms to the authority term.

27. Question: Slide #55 – Is LM using Soundex in conjunction with the authority sources to aid searches?

Response: Yes, but LM may want to bubble it up into the framework service selector.

28. Question: Slide #55 - Will communication associated with mediated searches be handled in the Collaboration system-level package?

Response: Yes.



ERA Management Design:

1. **Question: Slide #68** – Does the Accountable inventory include software licenses?

Response: Yes, it includes software, hardware, and managing licenses.

2. **Question: Slide #67** - Explain the tools that are available for the operating system and application monitoring logs?

Response: LM will use Report Writer to generate reports based on the content of the logs.

3. **Question: Slide # 69** – The SOC is at the federation level. Does that apply to the system management services?

Response: Yes

4. **Question: Slide #69** - Do all of the asset inventory management services exist at the federation level?

Response: It exists at both levels – local copy at each Instance, which rolls up to the global (Enterprise level) copy.

5. **Question: Slide #69** - Are the people working in the S/TS site cleared for TS?

Response: They have to be cleared system high – TS in this case.

6. **Question: Slide #69** - If a user modified an orchestration, how does it work when deployed?. If they are running, how does a user deal with them?

Response: If the orchestration is bound to the process, then the orchestration continues with that process. If the orchestration is not bound to the process, then at the next step, it would continue with the new process. This is configurable for each orchestration.

7. **Question: Slide #69** - In the case where operational data such as logs are determined as records, how are these records managed? What or who is doing the management?

Response: It will be managed like any other record. It will be handled by Records Management and Archival storage, etc. and not through the core services.

8. **Question: Slide #69** -Explain the function of test management and how it relates to the test environments. How is test data marked?

Response: Test management contains test tools. When a new service is deployed, test management contains the functionality to test the new service. The test data is marked with a

Source Selection Information - See FAR 2.101 and 3.10



9. **Question: Slide #69** - How does LM setup ERA Management for detailed service logs at the service level and general logs for the ERA Management level?

Response: This functionality is inherent in the COTS product. A System Administrator can select what is rolled up within the logging functionality.

10. **Question: Slide #69** - Does the System Administrator have to log in to each BEA Instance?

Response: No, the System Administrator can do it from the central console.

11. [REDACTED]

12. **Question: Slide # 69** - For perimeter devices, what is captured and how is the audit log rolled up for central monitoring?

Response: The perimeter devices (routers, switches, firewalls, IDS) are all Cisco devices. CiscoWorks will capture the logs and perform the roll up to CA Unicenter.

13. **Question: Slide #69** - Is that a passive read or could you manage from Unicenter?

Response: "Routine" management can be done from within CA Unicenter. For more detailed configurations, CiscoWorks can be pulled in as a portlet in the Unicenter Portal. The System administrator has the capability to manage it from one place, even if two (2) tools are being used.

14. **Question: Slide #69** - For out of band networks, does LM refer to ERA Management on a separate VLAN or does LM imply a separate network for monitoring and management?

Response: The ERA system will have dual NIC (network interface card) in each server. There is a completely separate LAN for monitoring and management and it will not interfere with the operational data and environment.

15. **Question: Slide #71** – For service management of prioritization of services and queues, is that handled here?

Response: Service Management is distributed to LS&C and requiring all service invocations to call back to a central controller would create a performance bottleneck. The LM design monitors centrally, manages global and local configuration settings centrally, and distributes the runtime. Global configuration data consists of, for example, security configuration settings for the operating system and for service and asset authorization. Local configuration data includes items such as IP addresses of server and application clusters. CM will control the global data.



16. Question: Slide #69 – Explain what is meant by leveraging processes and configuration from existing datacenters?

Response: LM will leverage previous experience with data centers and with the products to get a jumpstart.

17. Question: Slide #69 - Did LM mean existing NARA data centers?

Response: No, data centers refer to the proposed contractor data center/facility.

18. Question: Slide #69 - NARA has interfaces external to ERA but considered internal to NARA. Is LM going to monitor them?

Response: Currently, the LM design does not have interfaces to monitor the status of those systems but the functionality could be provided in the future.

19. [REDACTED]

20. Question: Slide #71 - Does CA Unicenter manage the server it is working from?

Response: Yes.

21. Question: Slide #71 - Will the functionality pushing software, like OpsWare, be monitored by CS Unicenter?

Response: Yes.

22. Question: Slide #74 - Explain which services are on different partitions but on the same physical server.

Response: Page 74 of the presentation lists the services.

23. Question: Slide # 78 – Why is LM using SAN for network management storage? For archival storage, LM is using NAS (network attached storage), RAID, and LTO.

Response: The decision was driven by cost and performance trade-off. Mission oriented and operational data is stored on high performance fiber-channel SANs versus the Archival Storage that is on NAS devices.



Response: The decision was driven by cost and performance trade-off. Mission oriented and operational data is stored on high performance fiber-channel SANs versus the Archival Storage that is on NAS devices.

24. Question: Slide #78 - What does LM assume for ingest storage? NAS or SAN?

Response: SAN. The decisions for ingest, search engines, and operations data were based on higher performance disk arrays. For archival storage, LM assumes NARA does not need high-performance disk storage. LM considered a cost and performance tradeoff for record retrieval.

25. Question: Slide #78 - Is there an assumption for ERA users to call NARA Help Desk first? This requires two separate phone numbers.

Response: The design supports the capability for the user to call either Help Desk. LM will have an interface to the NARA Help Desk and support hand-offs to each of the Help Desks (NARA and ERA).

26. Question: Slide #78 - How is LM going to manage Service Level Agreements and report on whether the ERA system has met the Service Level Agreement?

Response: The ERA system will roll up status data (availability, loads, response time) in standard reports.

27. Question: Slide #78 - Discuss the problem resolution after it has been identified and where does it fit within the Help Desk methodology?

Response: Problems are documented and tracked as PTRs (Problem Tracking Reports).

Either the ERA Help Desk or the SOC Team can initiate this process. The process does not provide all of the details for the development cycle for emergency release. Development and test processes are documented in the Software Development Plan (CDRL L54) and the Master Test Plan (CDRL L31).

Once a software issue is discovered, the trouble ticket is initiated in the Help Desk system. The SOC team receives the trouble tickets that require application development or COTS configuration changes. The SOC team analyzes the trouble ticket and appropriate trouble tickets are escalated to the development team.

The development team opens a problem tracking report and creates software fix plan with estimated time to resolve the issue. The Chief Engineer determines if the incident will be handled as an emergency fix or be scheduled in a routine release. The Chief Engineer collaborates on the decision with the ERA PMO.





If an emergency release is required, the emergency response team communicates with the SOC manager. The trouble ticket is updated with new status and communicated to all affected users. The issue is brought to the Change Control Board (CCB) and determined when the emergency fix will be released to production. The development and test team follow the Software Development Plan and Master Test Plan to develop and test the emergency release. Once emergency release has completed the testing cycle, the software distribution process is followed to deploy the software. The trouble ticket is updated and closed. The affected users are informed of the updates.

If an emergency release is not required, the emergency response team communicates with the SOC manager. The trouble ticket is updated with new status and closed. The affected users are informed of the status. The CCB schedules change for the appropriate software release.

External Interface Design:

1. **Question: Slide #83** – Has LM considered the security for XML/SOAP web services?

Response: This will be addressed later in the presentation.

2. **Question: Slide #86** – For a non-electronic record tracking system (MLR), one would expect a message or notification describing where a record is expected in the send as well as receive.

Response: A RID has been written on this request. It requires a change to the IRD, IRS, and the associated ICD. This will be addressed in Increment 1.

3. **Question: Slide # 86** - Does LM know the generic location of the record or the row, stack, and other specific location information?

Response: LM knows the generic location based on the external interface to MLR and the original Transfer Agreement. A RID has been written on this request. It requires a change to the IRD, IRS, and the associated ICD. This will be addressed in Increment 1.

4. **Question: Slide #88** – Is LM going to use this interface for receiving records?

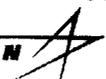
Response: Yes.

5. **Question: Slide #88** – Does LM plan to use SOAP/XML interface for transferring records?

Response: LM will provide a service to enable large record transfers. The users will be able to use Secure Copy.

6. **Question: Slide #89** – Is the header encrypted by LM or the protocol?

Source Selection Information - See FAR 2.101 and 3.10





Response: The SSL protocol encrypts the header as well as the payload.

7. **Comment: Slide #89** – The interface version number should be the first item in the header. Note: This requires an ICD change.
8. **Question: Slide #89** – Does the ERA system use any encryption with the messages and can the user expect two levels of encryption?

Response: LM will likely use SSL to encrypt the transport pipe. Optionally, LM could use WS-Security, which only encrypts the payload. This is at the U/SBU data classification. At the classified data level, in-line NSA approved Encryptors will be used.

9. **Question: Slide #89** - Will LM encrypt the SOAP payload and send it over http?

Response: LM will likely use SSL to encrypt the transport pipe.

10. **Question: Slide # 90** - What security levels are identified here?

Response: This will be addressed in the security presentation. There is an IRD requirement, which requires LM to provide the security level.

11. **Question: Slide #90** - Is there a particular framework for auditing transactions associated with these messages.

Response: Everything can be audited but this will cause performance problems. For special circumstances, the user has the option of auditing certain processes.

12. **Question: Slide #90** - Does LM expect NARA to write Audit policy?

Response: In some areas, yes but collaboration with the LM team will be necessary.





2.4 Thursday, May 12, 2005

Security Design:

1. **Question: Slide # 9** – If there are declassified FOIA files, how does the ERA system move the files from a classified to unclassified Instance?

Response: The LM design does not allow data transmission between the classified and unclassified Instance. It requires a manual process to move record catalog entries to another data classification.

2. **Question: Slide # 9** – Does encrypted data communicate with Oracle?

Response: No, it is independent of Oracle.

3. **Comment: Slide #9 Comment** – In the future, LM needs to consider HSPD12 (Homeland Security Presidential Directive) which pertains to physical access control and I&A. Is LM going to factor HSPD12 in the design? This is an approved directive and implementation plan is due in June. (Refer to: <http://www.whitehouse.gov/news/releases/2004/08/20040827-8.html>)

4. **Question: Slide # 9** – There is a concern that there are outside decisions (directives) that affect security requirements. How does LM keep up with the hierarchy of the security requirements and directives from a compliance point of view?

Response: It requires a collaborative effort with NARA; part of the C&A effort is to show LM is compliant. LM will work together with NARA for those issues.

5. **Question: Slide # 9** – Given the connection in the ERA Management Instance, would a user need a TS clearance to access Secret information? How does LM ensure there is no data flow between them?

Response: For ERA Management, a user needs a TS (system high) clearance. Users who need access to the secret network can access it through the ERA Management Instance. LM ensures there is no data through firewalls between data classifications.

6. **Question: Slide # 9** – How is LM going to verify access authority for the classified levels? Explain the registration process.

Response: The first level of defense is the registration process which verifies the clearance of the user. Additional details regarding the registration process will be discussed later.

Source Selection Information - See FAR 2.101 and 3.10

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7. **Question: Slide # 13** - How does LM separate system administrator roles from where they administer different systems?

Response: It will be discussed later in the presentation

8. **Comment: Slide #15** - HSPD12 is synonymous to the SecureID token. Note: LM will have to revisit the security approach in light of the HSPD12 requirements.

9. **Question: Slide # 16** – How is LM you going to apply access restrictions to services and data? Does it apply to both?

Response: Yes, it applies to both.

10. **Question: Slide # 16** – Is the same mechanism used for data and services?

Response: Same mechanism is used, but the user restrictions come from elsewhere.

Clarification of last bullet on Slide # 16 – Comment that the Archivist runs with their processing permissions but with the consumer data access permission

11. [REDACTED]

[REDACTED]

12. [REDACTED]

[REDACTED]

13. **Question: Slide # 17-** Will the ERA system register services?

Response: Yes, the ERA system’s service registry is a UDDI registry. The access rules are held in the access policy tool.

14. **Question: Slide #17** - Does the Service Registry have to cover external systems?

Response: The current scope doesn’t cover external systems, but it is extensible to do that.



15. Question: Slide #17 - What standard is LM going to use for implementing the service registry?

Response: UDDI is the most popular current technology. LM has baselined UDDI but may decide on another standard since the technology is rapidly evolving.

16.

[REDACTED]

[REDACTED]

17. Question: Slide # 19 – What aspects of the design minimize the impact to the equipment for the Ingest pipeline?

Response: The ERA system may have to do several overwrites. Ingest is not just one block of storage. There are several racks and LM can route racks to minimize the impact. There is no single point of failure when redundancy requirements are met.

18. Question: Slide # 19 - How does the ERA system handle a misclassified record whose very existence should not be known and should be expunged from the existing federation?

Response: The user would have to manually generate the security violation report at the higher security federation.

19. Question: Slide #19 - How does the user declassify records?

Response: The user can declassify records by manual verification. It is first processed by the service, dumped to media, and then re-ingested into the new Instance.

20. Question: Slide 19 – Last bullet in last column: Is manual intervention needed when examining assets?

Response: The user would only need to manually inspect if integrity seal is not intact.

21. Question: Slide #19 - Do re-ingested records get a new GUID?

Response: Yes.

22. Question: Slide #19 - How does a new GUID get assigned to re-ingested records when the GUID is assigned to the content?



Response: The logical identifier would be unchanged but the physical location would be different.

23. Question: Slide #22-23 - When a record is redacted and moved from a classified Instance to a non-classified Instance, by definition, the data resides with the record. When a record is re-ingested in the new classification level, does the metadata get re-ingested with the record?

Response: This question will be addressed in later slides in the security presentation.

24. Question: Slide # 21 – Are there classification labels attached to the record in the same way that the GUID is attached to the record?

Response: Yes. Information is found in metadata associated with asset. This is not shared across federation levels.

25. Question: Slide # 21 - What parameters can be associated with quarantined records?

Response: Whatever is provided in the Transfer Agreement can be associated with quarantined records.

26. Question: Slide # 20 – When the ERA system takes legal custody of the permanent record, is quarantine the only option for the infected permanent record?

Response: Yes.

27. Question: Slide # 22 – When a public researcher submits a search for classified data, would the researcher receive a notification indicating the record is classified and exists, but not the content? There is a need for the public user to know the existence of the classified record.

Response: For the classified record, there would be an unclassified record catalog entry and a classified entry in archival storage. The ERA system imports the record catalog description into the unclassified record catalog. When the user searches for the description associated with the unclassified record catalog entry, the classification is made known to the user. The unclassified description could be a place card.

28. Question: Slide #22 - Can unclassified catalog entries be created at any level of record aggregation?

Response: Yes

29. Question: Slide #22 - If a user has a record at SCI and the record is declassified to secret, the record could be redacted at each level. How does ERA keep track of declassified redacted records? Is there a unified view for all of the declassifications?





Response: No. There is no unified view across the federations, but the system is easily extensible to add this feature.

30. Question: Slide #22 - What is available in the record catalog before the record is ready for the public for longer duration archival process such as FOIA request?

Response: NARA can designate if the records life cycle data would contain an attribute for the long duration archival process.

31. Question: Slide #26 - If a record is undergoing archival processing, and is not yet available to the public, how is this indicated? How are searches performed?

Response: The record will be flagged as “in-progress”. Search results will use what information is included in the record catalog.

32. Question: Slide #26 - What does demarc mean?

Response: It indicates where the Telecommunication comes into facility.

33. Question: Slide #26 - Is there any filtering done at the demarc or in the SCIF?

Response: It depends on the facility and details will be determined in the next phase.

34. Question: Slide #26 - Do people in the classified area have no access to Help Desk since it is in the unclassified area?

Response: No. The Help Desk is available in each classification.

35. Question: Slide #26: Is there a Help Desk for each classification?

Response: There is a Help Desk for every ERA Management/SOC Instance.

36. Question: Slide #32 - Elaborate on the phases of certification.

Response: It is defined in the DCID 6/3 standard. Every time there is a major change to the system, it has to be reaccredited, and every three years even if no changes.

37. Question: Slide #32 – Does LM anticipate a requirements review during the first few months of the initiation phase.

Response: Yes, LM has started this effort.

38. Question: Slide #38 – How does LM assign privilege levels to services in a Service Oriented Architecture? In each case, is there a userid associated with the service?

Source Selection Information - See FAR 2.101 and 3.10



Response: It will be built into the design and code reviews of the service. Yes.

39. Question: RID123 - When would LM be able to elaborate on the security design for the Portal?

Response: Design details will be provided in Increment 1.

40. Comment: RID123 – For a paper record, a certified copy includes the wax seal. Could LM use digital signatures to certify a record? Note: Watermark and digital signature are considered an annotation so any of them can be implemented.

Response: Yes.

41. Question: RID141 - How does LM structure the audit so that it pertains to a hierarchy?

Response: The RID answer will be augmented to answer this question.

42. Question: RID141- Given that LM is using Cisco PIX firewall as a card in the router why isn't that considered a single point of failure?

Response: LM is using duplex routers. At each entrance point, there is redundancy.

43. Question: RID141- How does single sign-on apply to the internet?

Response: A user logs into the portal with the right level of authentication. It is used by SUN Solaris directory service.

44. Question: RID141- Is it SAML based?

Response: Yes

Performance Modeling and TPMs:

1. Question: Slide #44 – Has LM had an opportunity to plug in the manufacturing numbers for benchmarking? If so, can LM comment on the differences? If not, when does LM plan to conduct benchmarking?

Response: No, currently, the model is in too crude of a form. Slide 48 will address this issue.

2. Question: Slide #45 – How far has LM gone in the model to address the performance budget?

Response: LM has not gone very far but the design is flexible and extensible to meet requirements.



3. **Question: Slide #46** - Based on what had been done so far, what are the most influential items within the model?

Response: The model strategy covers the architecture and design.

Key drivers include the effect of file size on dissemination which affects search functionality and the search index. The Persistent Object Format size and how many versions are kept affects Storage as the record goes from one transformation to the next.

4. **Question: Slide #48** – Why don't we see any external interface models.

Response: No stated performance requirements for external interfaces. The interface has not been fully designed.

Availability Modeling and Analysis:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Integration and Test:

1. **Question: Slide # 67** – Does LM plan on allowing NARA to access the external interface emulator tool?

Response: Yes

2. **Question: Slide #67** - Is the external interface emulator tool designed only for functional testing or can it be extended to performance or stress testing.

[REDACTED]

3. **Question: Slide #67** – If there are stateless services, does the external interface emulator tool keep track of the state?

Response: The tool will have some notion of state as necessary to support sending and receiving the appropriate messages at the appropriate time.

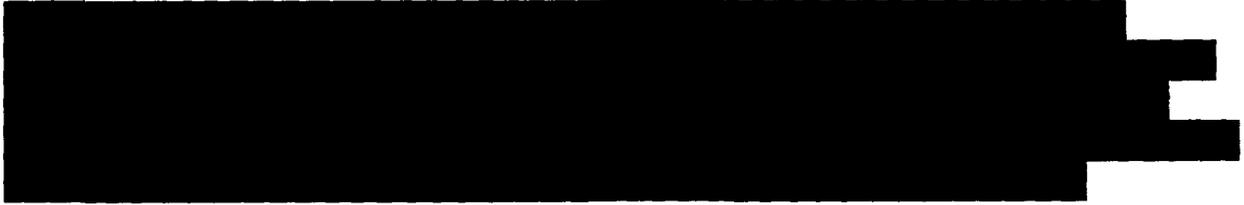
4. **Question: Slide #67** - If the performance hooks are disabled, what is LM’s philosophy when leaving the performance hooks in the deployed code?

Response: Performance hooks will be implemented using external, “non-invasive” tools or conditional statements that would not be included in the deployed system as much as possible. If there are cases where performance hooks are needed that cannot be implemented in those ways, the hooks will be disabled and remain in the code.

Source Selection Information - See FAR 2.101 and 3.10



5. **Question: Slide # 68** – In an environment where there are services and COTS products (SOA), how will system integration testing differ from the typical system integration test?



6. **Question: Slide #68** - Is there a place within the levels of testing that contains the software installation process itself?

Response: Yes, it will be done in the System Integration phase.

7. **Question: Slide #70** - Can LM test with two Instances or only within a single Instance?

Response: Through the ERA WAN simulator, the System Integration Test Environment and the Customer Acceptance Test Environment may be connected for tests requiring two Instances. See Slide #71. Examples of such tests include federated searches and load balancing.

8. **Comment: Slide #71** - LM needs to make sure there is enough dedicated test equipment to support testing activities, particularly for handling test data.

9. **Question: Slide #71** - Is this the configuration LM would use for Disaster Recovery testing for a site?

Response: Yes. With two Instances connected through the ERA WAN simulator, LM can take one Instance down and test that load balancing properly routes processing to the available Instance.

10. **Question: Slide #71** - Does LM see any changes in the lab environment in Increment 2, for example to handle classified environments?

Response: LM does not anticipate any equipment changes needed in Increment 2 to handle the testing of requirements unique to classified Instances. LM can test requirements related to classified environments using unclassified test data.

11. **Question: Slide #72** – It is surprising to see that LM and NARA are not working together as a team for SWIT.

Response: The organizational structure will be Integrated Product Teams (IPTs). The IPTs will include test personnel and LM expects NARA to be part of each IPT and to participate in SWIT and other activities. The slide is meant to reflect that the LM Team has responsibility for SWIT.

Source Selection Information - See FAR 2.101 and 3.10



12. Question: Slide #76 - Does LM plan on having some kind of test automation machine?

Response: Yes, automation scripts and tools will be utilized.

13. Question: Slide #76 - What COTS does LM plan to use for automation?

[Redacted]

Trade Studies Summary:

[Redacted]



[REDACTED]

Increment/Release Requirements and Design Reviews:

Source Selection Information - See FAR 2.101 and 3.10

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1. **Question: Slide # 97** – The SyRS requirements are at a very high level. How far down is the decomposition for SRR, PDR, and CDR?

Response: There will be no change for SyRS at SRR. LM anticipates exploded decomposition by a factor 4 to 5x for PDR and CDR.

2. **Question: Slide # 99** – How will LM collect, create, and define the requirements for the SwDS?

Response: There will be a series of IPTs with permanent, assigned members of PMO and SMEs, where applicable.

3. **Question: Slide # 99** – Would the Policy Document name the policies or contain the detail of the policies?

Response: It would contain the details of the policies. The Policy Document is slated to be provided at CDR. The document would serve as a baseline and NARA can opt to update the policy details.

4. **Question: Slide #100** - When is the latest time does LM needs to know the physical addresses?

Response: Within 90 days of down select in order to make IOC.

5. **Question: Slide #102** - During the normal development cycle, as the program progresses into CDR and PDR and new requirements are created, how is that measured?

Response: As we go down to SwDS, LM anticipates requirements changes but they usually are within defined performance measures (within 5%).

Eventually, the Government takes control of the SyRS baseline. A board structure will be established with the intent to make it painful for the subcontractor to make changes to the requirements baseline. An analyzed, costed change will be presented to the board structure.

6. **Question: Slide #105** - Can LM provide ballpark numbers for facility sizes?

Response: For the 100% option, space estimates are in the table below, in units of ft². Note that the total includes not only the listed datacenter spaces, but also spaces with other uses, such as receiving, user work spaces, SOCs, environmentals, etc.

Site	U SBU datacenter	Classified datacenter	Total
Archives II	6,690	5,565	13,665
Contractor Facility	7,624	N/A	8,893
St Louis	4,569	1,916	7,641

Source Selection Information - See FAR 2.101 and 3.10



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For the 40% option, space estimates are in the table below:

Site	USBI datacenter	Classified datacenter	Total
Archives II	4,709	5,565	11,684
St Louis	4,078	1,763	6,996

Source Selection Information - See FAR 2.101 and 3.10

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3. REVIEW ITEM DISCREPANCIES

Formal SDR comments are documented via a Review Item Discrepancy (RID) form. Each RID is assigned a unique tracking number and assigned one of the following statuses:

- 1) *Draft* – Initial state of RID before being dispositioned
- 2) *Accepted* – RID must be addressed before the SDR is considered complete
- 3) *Deferred* – RID must be addressed and closed by SDR
- 4) *Closed* – The contractor has responded to the RID sufficiently and the government has formally accepted the response
- 5) *Rejected* – The RID, after review by the appropriate government personnel, is considered to be unnecessary, inappropriate, or a duplicate of an existing RID and is therefore not accepted

All agreed upon SADD, SyRS or IRS changes resulting from the SDR are documented in RIDs; changes to the LM SADD and IRS baselines resulting from these RIDs will be implemented via a Change Request (CR) consistent with LM configuration management processes.

The final disposition of RIDs is as follows:

Status	# of RIDs
1) Draft	
2) Accepted*	
3) Deferred	1
4) Closed	36
5) Rejected	2

* RIDs requiring SyRS or IRS changes are currently dispositioned as *Accepted* with final closure pending the implementation of changes within the LM baseline. All RIDs in this state have LM responses that have been agreed to by NARA.

The following subsections include each RID; the first subsection includes the RIDs addressing the SADD and the second subsection includes the RIDs addressing the IRS. This disposition of each RID is noted on the bottom of the form.



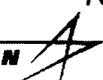


3.1 System Requirements Specification

3.1.1 LM-RID-00115 Missing LMC Requirements in the SADD

Contractor: Lockheed Martin		1. RID ID: RID-LMC00115 (Vendor Assigned ID:)		2. Date: 2005-04-27 10:36:34															
3. Document Identification:																			
4. Document Title: System Architecture and Design Document (SADD)																			
5. Page , Sect. , Para. General Document Comment																			
6. Title of RID: Missing LMC Requirements in the SADD				7. Originator: PMO															
8. Problem Description: The following LMC SyRS requirements were not found in the trace in the LMC SADD:																			
<ol style="list-style-type: none"> 1. LMC SyRS requirement LM13.7.3 2. LMC SyRS requirement LM14.9.4 																			
9. Suggested Solution:																			
10. Response:																			
Appendix E. Requirements to Configuration Items Traceability, will be updated at the next publication to include the following mappings:																			
<table border="1"> <thead> <tr> <th>LM Tag</th> <th>LM Requirement</th> <th>Inc</th> <th>Configuration Items</th> </tr> </thead> <tbody> <tr> <td>LM13.7.3</td> <td>The system shall provide the capability to segregate electronic records based upon access restrictions</td> <td>1</td> <td>SV_ERA_Strg_Storage Manager HW_SBU_Archival Storage_Archive HW_Class_Archival Storage_Archive_</td> </tr> <tr> <td>LM14.9.4</td> <td>The system shall provide the capability for the backup of dynamically persisted system data required to rebuild ERA</td> <td>1</td> <td>SV_ERA_ERAMgt_Backup and Restore HW_SBU_ERA Management_SysManager HW_Class_ERA Management_SysManager</td> </tr> </tbody> </table>						LM Tag	LM Requirement	Inc	Configuration Items	LM13.7.3	The system shall provide the capability to segregate electronic records based upon access restrictions	1	SV_ERA_Strg_Storage Manager HW_SBU_Archival Storage_Archive HW_Class_Archival Storage_Archive_	LM14.9.4	The system shall provide the capability for the backup of dynamically persisted system data required to rebuild ERA	1	SV_ERA_ERAMgt_Backup and Restore HW_SBU_ERA Management_SysManager HW_Class_ERA Management_SysManager		
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Configuration Item	Requirements																		
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HW_SBU_Archival Storage_Archive	LM13.7.3																		
HW_Class_Archival Storage_Archive	LM13.7.3																		
SV_ERA_ERAMgt_Backup and Restore	LM14.9.4																		
HW_SBU_ERA Management_SysManager	LM14.9.4																		
HW_Class_ERA Management_SysManager	LM14.9.4																		

Source Selection Information - See FAR 2.101 and 3.10





Contract Number: NAMA-04-C-0007

SRR Disposition: <u> Draft </u> Disposition ID (1-5)	Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn	Final Disposition: <u> 4 </u> Disposition ID (1-5)
NARA Appr <u> / </u> Initials		NARA Appr <u> DL </u> / <u> 5/13/05 </u> Initials
Date		Date
Contractor Appr <u> / </u> Initials		Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> Initials
Date		Date

Source Selection Information - See FAR 2.101 and 3.10

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3.1.3 [Redacted]

[Redacted]	[Redacted]	[Redacted]

Source Selection Information - See FAR 2.101 and 3.10

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Source Selection Information - See FAR 2.101 and 3.10

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Contract Number: NAMA-04-C-0007

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Source Selection Information - See FAR 2.101 and 3.10

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3.1.4 LM-RID-00118 Preservation Functional Architecture

Contractor: Lockheed Martin	1. RID ID: RID-LMC00118 (Vendor Assigned ID:)	2. Date: 2005-04-27 10:43:01
3. Document Identification:		
4. Document Title: System Architecture and Design Document (SADD)		
5. Page , Sect. , Para. General Document Comment		
6. Title of RID: Preservation Functional Architecture		7. Originator: PMO
8. Problem Description: SADD V1, section 2.8.4.2 Figure 18, p. 74) It appears that the Digital Adaptation receives an electronic record for adaptation only from Archival Storage (via Preservation Processing) while the initial description in 2.8.4 states preservation functions can be requested at any point in the record’s life cycle. (p. 72). If that were true, shouldn’t it be possible to send an electronic record from Ingest to Preservation Processing? Moreover, there is no path leading from Digital Adaptation to send a Transformed Electronic Record back to Archival Storage whereas the description of the Preservation Processing sub-package in Table 23 (p. 77) says the adapted record are “optionally transferred to Archival Storage.” Can LMC clarify these inconsistencies?		
9. Suggested Solution:		



3.1.5 LM-RID-00119 Preservation

Contractor: Lockheed Martin		1. RID ID: RID-LMC00119 (Vendor Assigned ID:)		2. Date: 2005-04-27 10:44:24	
3. Document Identification:					
4. Document Title: System Architecture and Design Document (SADD)					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: Preservation				7. Originator: PMO	
8. Problem Description: SADD V1, section 4.2.3.1, Table 86, p. 214 - What is the rationale for associating "essential characteristics" with Preservation and Service Plans? How do these things in a PSP relate to the templates for the same records? How do templates relate to preservation?					
9. Suggested Solution:					
10. Response:					
<p>The LM Team's design considers the essential characteristics portion of the Preservation and Service Plan as one aspect of a record type template. All Aspects of the Preservation and Service Plan are included in the record template. The rationale for making essential characteristics available to Preservation and Service Plans is so that preservation processing can heuristically determine the preservation processes which produce the highest degree of fidelity.</p> <p>The LM Team's architecture supports moving essential characteristics to a record type template, and then establishing a relationship between the Preservation and Service Plan and the record type template. Whether these essential characteristics are related to or aggregated within a Preservation and Service Plan is a decision that the LM Team will revisit during the planned update to the logical data model, and the design of the physical data model.</p>					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Initials Date				NARA Appr <u> DL </u> / <u> 5/13/05 </u> _____ Initials Date	
Contractor Appr _____ / _____ Initials Date				Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> _____ Initials Date	

Source Selection Information - See FAR 2.101 and 3.10



3.1.6 LM-RID-00120 Taxonomy of Essential Characteristics

Contractor: Lockheed Martin	1. RID ID: RID-LMC00120 (Vendor Assigned ID:)	2. Date: 2005-04-27 10:45:22
3. Document Identification:		
4. Document Title: System Architecture and Design Document (SADD)		
5. Page , Sect. , Para. General Document Comment		
6. Title of RID: Taxonomy of Essential Characteristics		7. Originator: PMO
8. Problem Description: The Preservation Objective Model obviously inherits the Taxonomy of Essential Characteristics (table 86) and therefore fails to address record characteristics. The accompanying text suggests that there will be a POM for each "record type." Please define how this would work. Why, for example, would the required fidelity for the perceptual characteristics of a letter be typically different than those of a report?		
9. Suggested Solution:		
10. Response: The SADD notes that Table 86 is an example of a taxonomy that is used for only illustrative purposes. The LM Team's design provides the capability for NARA to define its own taxonomies of essential characteristics according to NARA's policies and archival intellectual judgment. The design also provides the capability to apply these NARA-specified essential characteristics to individual records, aggregations of records, record types, or aggregations of record types according to NARA's policies and archival and intellectual judgment. For example, if NARA decides the required fidelity for perceptual characteristics for letters and reports are typically the same, then the design provides the capability for archivists to specify this. The key and important feature is that the LM Team's architecture and design provides the capability for archivists to specify, capture, and implement these important archival decisions.		

Source Selection Information - See FAR 2.101 and 3.10

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Contract Number: NAMA-04-C-0007

<p>SRR Disposition: <u> Draft </u> Disposition ID (1-5)</p> <p>NARA Appr _____ / _____ Initials Date</p> <p>Contractor Appr _____ / _____ Initials Date</p>	<p>Disposition IDs:</p> <p>1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn</p>	<p>Final Disposition: <u> 4 </u> Disposition ID (1-5)</p> <p>NARA Appr <u> DL </u> / <u> 5/13/05 </u> Initials Date</p> <p>Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> Initials Date</p>
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Source Selection Information - See FAR 2.101 and 3.10

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3.1.7 LM-RID-00121 Search Capabilities

Contractor: Lockheed Martin		1. RID ID: RID-LMC00121 (Vendor Assigned ID:)		2. Date: 2005-04-27 10:46:31	
3. Document Identification:					
4. Document Title: System Architecture and Design Document (SADD)					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: Search Capabilities				7. Originator: PMO	
8. Problem Description: The SADD provides an impressive set of search capabilities. Is this just a list of potential capabilities and if so, how and when will decisions be made as to which capabilities will be incorporated? If not, which capabilities will be included in ERA?					
9. Suggested Solution:					
10. Response: The discussion of search capabilities in the SADD (p237 to 243) can be categorized into two distinct areas; basic search services, and content search services. It is envisioned that all of the basic search services will be implemented; search by hierarchy, search description and a search of record life cycle data. Content based searching poses a larger problem specifically related to cost versus performance versus functionality. There is large storage/performance costs associated with creating and managing a full content based index for all assets. Our baseline proposal includes full content searching for a prioritized subset of assets. The SADD discusses a number of approaches to provide content search capabilities that balance cost, depth, breadth, and performance. The LM search framework design does not exclude any of the approaches discussed in the SADD. The LM Team and ERA PMO will collaborate during the performance phase to prioritize and balance the additional search capabilities against cost and schedule.					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Initials Date				NARA Appr <u> DL </u> / <u> 5/13/05 </u> Initials Date	
Contractor Appr _____ / _____ Initials Date				Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> Initials Date	

Source Selection Information - See FAR 2.101 and 3.10

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3.1.8 LM-RID-00122 Mediated Searches

Contractor: Lockheed Martin		1. RID ID: RID-LMC00122 (Vendor Assigned ID:)		2. Date: 2005-04-27 10:47:28	
3. Document Identification:					
4. Document Title: System Architecture and Design Document (SADD)					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: Mediated Searches				7. Originator: PMO	
8. Problem Description: How will mediated searches be handled in the LMC design? LMC specifies methods specifically dealing with mediated searches in their search service. Could LMC discuss the how a mediated search differs from a normal search, as far as the system is concerned?					
9. Suggested Solution:					
10. Response: Methods for assisting with a mediated search are included within the search service since the LM Team views and treats mediated searches, from an architecture and design perspective, as a special kind of search. The methods provide a mechanism for creating and tracking a mediated search request within a workflow orchestration. A member of NARA staff will respond to a request and conduct a search in the normal manner, except that the mediated search will be conducted with the access privileges of the requestor. The NARA staff member will use the capabilities to save search results, and these saved results will be made available to the consumer.					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Intials Date				NARA Appr <u> DL </u> / <u> 5/13/05 </u> Intials Date	
Contractor Appr _____ / _____ Intials Date				Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> Intials Date	

Source Selection Information - See FAR 2.101 and 3.10

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3.1.9 LM-RID-00123 Certified Copies of Records

Contractor: Lockheed Martin	1. RID ID: RID-LMC00123 (Vendor Assigned ID:)	2. Date: 2005-04-27 10:48:17
3. Document Identification:		
4. Document Title: System Architecture and Design Document (SADD)		
5. Page , Sect. , Para. General Document Comment		
6. Title of RID: Certified Copies of Records		7. Originator: PMO
8. Problem Description: How does LMC intend to certify copies of records?		
9. Suggested Solution:		
10. Response:		
<p>There are a number of approaches that can be used in certifying electronic records, including:</p> <ul style="list-style-type: none"> i) Application of a fixity (checksum/hash) to the record: MD5/SHA256 hash or similar technique ii) Application of a digital signature: Digitally sign the record using FIPS complaint algorithms. iii) Application of an electronic watermark to the record: primarily used for multimedia data, embeds unnoticeable and undetectable information into the data, allowing the tracing of ownership, verifying integrity, etc. iv) Inclusion of an accompanying statement: a letter that attesting that the material supplied to the researcher is an authentic copy of the source material. <p>The first three items are techniques for assuring that the record has not changed since NARA acquired it. For technique ii, the Archivist would provide the digital signature. For the watermark approach, the watermark itself is considered an annotation to the record. The LM design can use any of the above three approaches. While our initial assessment was to use a protected checksum to detect any modifications to the record, selection of the specific approach will occur during Increment 1 design.</p> <p>The last item serves as a legal "chain of custody" device to assure the recipient of the material that NARA stands behind it.</p> <p>The LM Team's design does not preclude any combination of the above approaches.</p>		

Source Selection Information - See FAR 2.101 and 3.10

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3.1.11 LM-RID-00125 Disposition Agreements and Records Destruction

Contractor: Lockheed Martin		1. RID ID: RID-LMC00125 (Vendor Assigned ID:)		2. Date: 2005-04-27 10:49:55	
3. Document Identification:					
4. Document Title: System Architecture and Design Document (SADD)					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: Redaction of Data Types				7. Originator: PMO	
8. Problem Description: On Page 192, in the SADD, in the discussion on redaction, first paragraph, the statement is made that "Each data type needs to be redactable as-is or converted to a redactable data type." Please identify the redactable data types. Will the conversion be done centrally in the system or on the user's workstation.					
9. Suggested Solution:					
10. Response: The system will have the capability to redact a discrete set of data file formats. A "redactable data type" is a data file format for which the system has a redaction capability. The redactable data types with broad COTS support today are PDF, TIFF and XML. The LM Team envisions at least these three types will be included in the baseline, although the LM Team will revisit this between now and Increment 3 (when redaction capability is brought online). The number of redactable data types will grow with time as the LM Team adds new redaction tools to the redaction framework. Any required format conversion will occur centrally on the server, prior to invoking the client-side redaction tool.					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Initials Date				NARA Appr <u> DL </u> / <u> 5/13/05 </u> _____ Initials Date	
Contractor Appr _____ / _____ Initials Date				Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> _____ Initials Date	

Source Selection Information - See FAR 2.101 and 3.10

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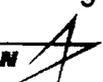


3.1.12 LM-RID-00126 Order Data in the IRD

Contractor: Lockheed Martin		1. RID ID: RID-LMC00126 (Vendor Assigned ID:)		2. Date: 2005-04-27 10:50:49	
3. Document Identification:					
4. Document Title: System Architecture and Design Document (SADD)					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: Order Data in the IRD				7. Originator: PMO	
8. Problem Description: Table 28, in the SADD, states that Order Data is different than what is called for in the IRD. Please explain LMC's current thinking on this topic.					
9. Suggested Solution:					
10. Response: The Interface Requirements Specification (IRS) is the controlling document for the Financial Systems Interface requirements. The IRS was derived from the Interface Requirements Document (IRD). The row for Order Data in Table 28 in the System Architecture and Design Document (SADD) will be updated in the next publication to read "Order information, which can contain billing information, product order information, and service order information."					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Initials Date				NARA Appr <u> DL </u> / <u> 5/13/05 </u> _____ Initials Date	
Contractor Appr _____ / _____ Initials Date				Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> _____ Initials Date	

Source Selection Information - See FAR 2.101 and 3.10

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3.1.13 LM-RID-00127 COTS Products for Search and Access

Contractor: Lockheed Martin	1. RID ID: RID-LMC00127 (Vendor Assigned ID:)	2. Date: 2005-04-27 10:51:35
3. Document Identification:		
4. Document Title: System Architecture and Design Document (SADD)		
5. Page , Sect. , Para. General Document Comment		
6. Title of RID: COTS Products for Search and Access		7. Originator: PMO
8. Problem Description: Did LMC perform trade study analysis on available search COTS products for Search and Access? If yes, what conclusions were drawn from the analysis, e.g., will the search solution be a mix of custom code and COTS or strictly a COTS solution? If an analysis was performed is it available for review?		
9. Suggested Solution:		
10. Response: The LM Team performed a market survey and initial trade study on Search and Access. The market research, followed by vendor visits with market and technology leading vendors, led us to the conclusion that no one product provides a complete solution (e.g., support is needed for additional data types). This led the design of a framework into which to “plug in” various components, which will be a combination of COTS based software products and custom developed software. In this design, each search (or access) tool is deployed as a service. New or additional tools can be added to this framework to provide different types of search (e.g., records life cycle metadata, content text searches, content concept searches), or to support additional data types (e.g., textual, database, GIS, audio). The architecture and design do not stipulate as to whether the search or access services are COTS or custom code. In surveying the current search market, significant capabilities can be found in market-leading COTS products, especially for office automation types (textual, viewgraphs, etc) and for database types. However, it is highly unlikely that all any specific COTS product will meet all future NARA search and access requirements for all data types. A summary of the market survey and initial trade study on search and access is included in the SADD and the SDR. Since the COTS market is continually evolving, the trade study to select the initial deployment product set will be revisited during Increment 1. LM intends to collaborate on product trade studies with NARA ERA PMO during Increment 1, in the timeframe leading up to PDR.		

Source Selection Information - See FAR 2.101 and 3.10

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Contract Number: NAMA-04-C-0007

<p>SRR Disposition: <u> Draft </u> Disposition ID (1-5)</p> <p>NARA Appr _____ / _____ Initials Date</p> <p>Contractor Appr _____ / _____ Initials Date</p>	<p>Disposition IDs:</p> <p>1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn</p>	<p>Final Disposition: <u> 4 </u> Disposition ID (1-5)</p> <p>NARA Appr <u> DL </u> / <u> 5/13/05 </u> Initials Date</p> <p>Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> Initials Date</p>
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Source Selection Information - See FAR 2.101 and 3.10

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[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

Source Selection Information - See FAR 2.101 and 3.10

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3.1.15 LM-RID-00129 Transfer Agreements

Contractor: Lockheed Martin	1. RID ID: RID-LMC00129 (Vendor Assigned ID:)	2. Date: 2005-04-27 10:53:30
3. Document Identification:		
4. Document Title: System Architecture and Design Document (SADD)		
5. Page , Sect. , Para. General Document Comment		
6. Title of RID: Transfer Agreements		7. Originator: PMO
8. Problem Description: At SDR, LMC should address their concept of what is contained within a transfer agreement and how it is related to other archival business objects such as disposition agreement, transfer request, and the transfer itself.		
9. Suggested Solution:		
10. Response: As described in Section 2.11.1 (“Data Architecture Methodology”) in the SADD, the logical model for system artifacts such as the Transfer Agreement will be more fully developed during Increment 1, through collaborative data modeling and business modeling efforts between NARA and the LM Team. At this time, the LM Team envisions the Transfer Agreement for electronic records being roughly analogous to the NARA SF-135 form. In addition, the electronic Transfer Agreement will also contain information pertinent to electronic records, such as the planned mode of transmission, handling instructions for misclassified records, and handling instructions for virus-infected records. A Transfer Agreement will also have a reference to a controlling Disposition Agreement. A Transfer Agreement establishes the general terms of a standing agreement under which transfers are made. When a Transferring Entity wishes to make a specific transfer, they issue a Transfer Request, which has a reference to a controlling Transfer Agreement. Transfers occur once the Transfer Request has been approved.		

Source Selection Information - See FAR 2.101 and 3.10

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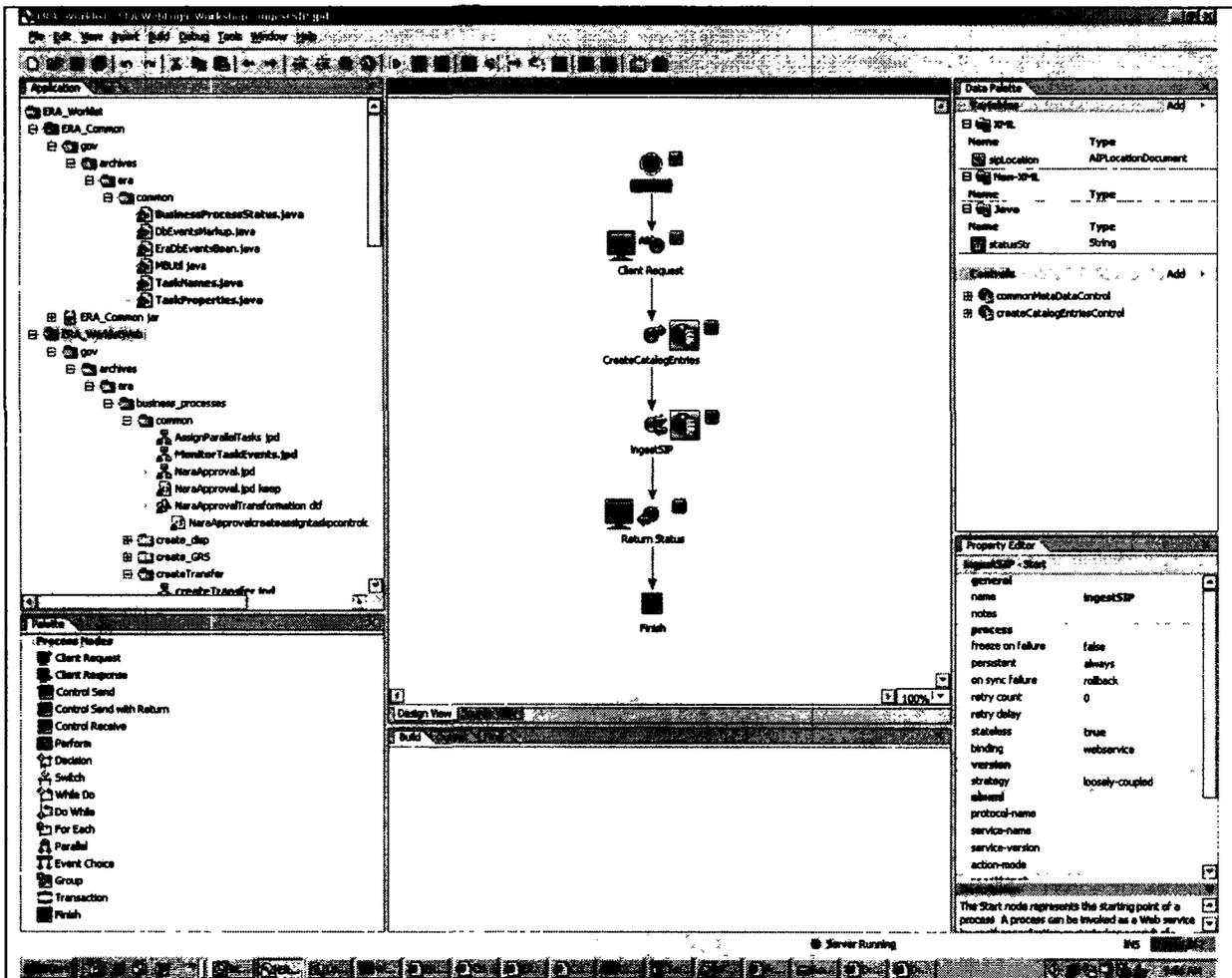


3.1.17 LM-RID-00131 Creation and Monitoring of Workflows

Contractor: Lockheed Martin	1. RID ID: RID-LMC00131 (Vendor Assigned ID:)	2. Date: 2005-04-27 10:55:06
3. Document Identification:		
4. Document Title: System Architecture and Design Document (SADD)		
5. Page , Sect. , Para. General Document Comment		
6. Title of RID: Creation and Monitoring of Workflows		7. Originator: PMO
8. Problem Description: At SDR, LMC should provide additional information about how new workflows will be created, including visualization or other tools, and how they will be made operational.		
9. Suggested Solution:		
10. Response: A discussion of developing, modifying, and business process orchestrations will be included in SDR in the section on the Local Services and Control design. Developing and modifying business process orchestrations is performed in a standards-compliant integrated development environment (IDE). This IDE resides on the developer's desktop, and is configured to interface with the software configuration management tool. Permissions as to who can create or modify a specific business process orchestration can be designated on an orchestration-by-orchestration basis. A screen shot of a sample tool is shown below.		

Source Selection Information - See FAR 2.101 and 3.10

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A discussion of generic software deployment, which includes business process orchestrations, will be included in SDR in the section on ERA Management design. After receiving CM approval to release the item, an authorized user connects to the automated software deployment service via a web browser (it will be presented as a portlet within the user's workbench), and schedules the software package for deployment to the Customer Acceptance Test environment, and then to the Production environment. The same deployment process is used for deploying a new version of a service and for deploying a new version of a business process orchestration. Any one of these software components can be deployed individually and independently – a typical deployment is not a complete “system” deployment.

Source Selection Information - See FAR 2.101 and 3.10

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[REDACTED]

Source Selection Information - See FAR 2.101 and 3.10

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5/19/05



Contract Number: NAMA-04-C-0007

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Source Selection Information - See FAR 2.101 and 3.10

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3.1.20 [REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]

Source Selection Information - See FAR 2.101 and 3.10

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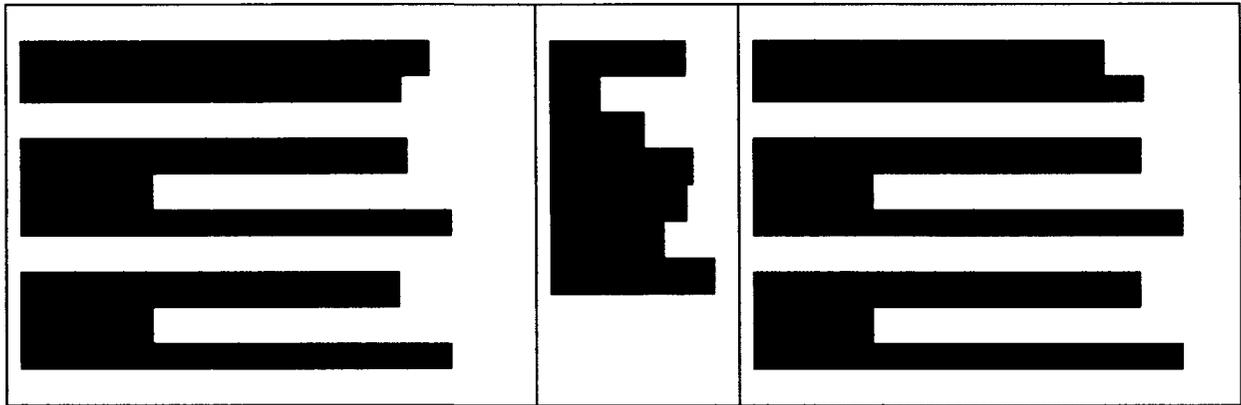
[REDACTED]

Source Selection Information - See FAR 2.101 and 3.10

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5/19/05



Contract Number: NAMA-04-C-0007



Source Selection Information - See FAR 2.101 and 3.10

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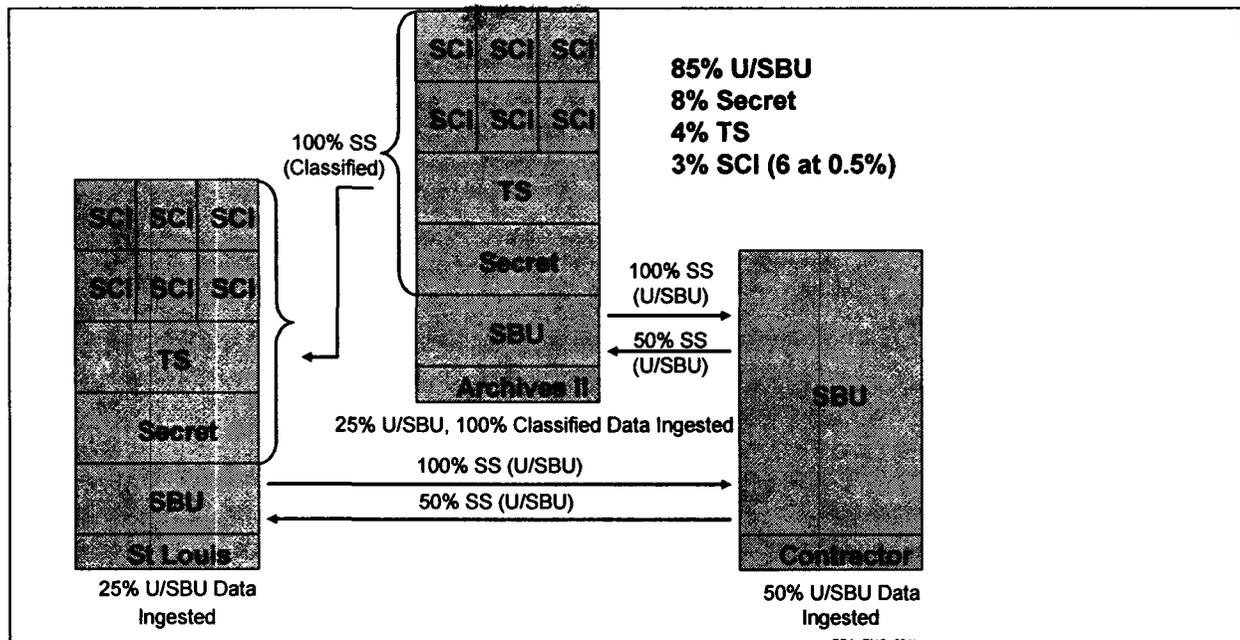


3.1.21 LM-RID-00135 Safe Store Load Balancing

Contractor: Lockheed Martin		1. RID ID: RID-LMC00135 (Vendor Assigned ID:)	2. Date: 2005-04-27 10:59:59
3. Document Identification:			
4. Document Title: System Architecture and Design Document (SADD)			
5. Page , Sect. , Para. General Document Comment			
6. Title of RID: Safe Store Load Balancing			7. Originator: PMO
8. Problem Description: On Page 106 of the SADD V1 LMC states that data is staged from the primary Instance that stores it. Does this mean that the contractor site (100% of SBU data) fields basically all SBU data requests? How is the load balanced at a system level? Why does there appear to be an asymmetry in the way the loads are distributed? What is its benefit?			
9. Suggested Solution:			
10. Response:			
<p>The current design, as proposed in the SADD and duplicated in the following figure, has three facilities that both Ingest and Disseminate records, as well as "Safe-Stores" records from another site. This figure is interpreted as follows:</p> <p>Archives II</p> <ul style="list-style-type: none"> • Ingests 25% of the U/SBU records or 21.25% of the total record volume • Ingests 100% of the classified records or 15% of the total record volume • Safe-Stores 50% of the U/SBU records that were Ingested at the Contractor site • Safe-Stores 50% of the U/SBU records that were Ingested at the St Louis site <p>St Louis</p> <ul style="list-style-type: none"> • Ingests 25% of the U/SBU records or 21.25% of the total record volume • Safe-Stores 100% of the classified records that were Ingested at Archives II • Safe-Stores 50% of the U/SBU records that were Ingested at the St Louis site <p>Contractor Site</p> <ul style="list-style-type: none"> • Ingests 50% of the U/SBU records or 42.50% of the total record volume • Safe-Stores 100% of the U/SBU records that were Ingested at Archives II • Safe-Stores 100% of the U/SBU records that were Ingested at the St Louis site 			

Source Selection Information - See FAR 2.101 and 3.10

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Does this mean that the contractor site (100% of SBU data) fields basically all SBU data requests?

In the LM global load balancing design, the contractor site has been provisioned as a “dissemination heavy” site, and will take most of the public user traffic. This site includes more server hardware for the web servers and the search engines, and appropriate network connectivity. Load balancing across sites will direct government users primarily to Sites 1 & 3, and direct general public users primarily to Site 2 (the dissemination heavy” contractor site). Note that all sites include all of the functionality, so system capability is not lost if one site is unavailable. If the user requests information that is not stored at the site where their session is held, the ERA System will perform a federated retrieve of the data from the site at which the information is stored. If that site is “unavailable”, then the data could optionally be retrieved from the site that contains the Safe-Store copy.



3.1.23 LM-RID-00137 General Document Comment

Contractor: Lockheed Martin		1. RID ID: RID-LMC00137 (Vendor Assigned ID:)	2. Date: 2005-04-27 11:01:44
3. Document Identification:			
4. Document Title: System Architecture and Design Document (SADD)			
5. Page , Sect. , Para. General Document Comment			
6. Title of RID: Location of Ops Personnel		7. Originator: PMO	
<p>8. Problem Description: In Section 2.9.1 of the SADD, Facility Locations, it is stated that “operations personnel do not necessarily have to be physically co-located with the infrastructure. The SOC can be a “virtual entity” with the appropriate network and security classification infrastructure to support this mode of operation. This theme is reiterated in Section 2.9.7, System Operations Center. Please address whether there are any special features of the equipment in the SOC, such as workstations, that would limit the functionality available to a remote user. How would a remote user perform operations activities involving physically dealing with equipment or items in inventory? Please address how remote users would be handled in the classified SOCs.</p>			
9. Suggested Solution:			
10. Response:			
<p>The system management capabilities of ERA Management provide identical functionality for remote SOC support through industry standard workstations. The only limitation to this remote support would be where physical intervention with hardware is required, such as power cycle, or hardware component replacement. In this situation, technicians located on-site at the Facility would perform the required task under the direction of the SOC systems administrator.</p> <p>The LM Team’s cost proposal does not include any remote access over classified networks, such as SIPRNET or JWICS. Thus, our baseline proposal does not include remote SOC capability for classified Federations. However, our design is extensible to include remote access over classified networks.</p>			
SRR Disposition: <u> Draft </u> Disposition ID (1-5)	Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn	Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / <small>Initials Date</small>		NARA Appr <u> DL </u> / <u> 5/13/05 </u> <small>Initials Date</small>	
Contractor Appr _____ / <small>Initials Date</small>		Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> <small>Initials Date</small>	

Source Selection Information - See FAR 2.101 and 3.10

CDRL Number: 004 – SDR Minutes
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3.1.24 LM-RID-00138 Automatic Generation of Descriptive Data

Contractor: Lockheed Martin		1. RID ID: RID-LMC00138 (Vendor Assigned ID:)	2. Date: 2005-04-27 11:02:33
3. Document Identification:			
4. Document Title: System Architecture and Design Document (SADD)			
5. Page , Sect. , Para. General Document Comment			
6. Title of RID: Automatic Generation of Descriptive Data			7. Originator: PMO
8. Problem Description: Would LMC please expand upon the concepts regarding Automatic Generation of Descriptive Data described on p. 193 and explain a) how this function will apply to non-electronic records, and b) how this function will apply to transfers which are accretions to existing aggregates?			
9. Suggested Solution:			
10. Response:			
<p>As described in Section 4.2.1.1 (“Ingest Design Considerations”) in the SADD, descriptive data is automatically generated from a number of sources, including life cycle documents such as Disposition Agreements, Transfer Agreements, and Transfer Requests, which are managed within ERA. Since these life cycle documents apply equally to electronic and non-electronic records, descriptive data can be automatically generated for both kinds of records. For electronic records, descriptive data is also generated from the electronic record content and Templates.</p> <p>For transfers that are accretions to existing aggregates, there may be little new source information from which to gather descriptive data other than the content of electronic records. The design allows gathering descriptive data from any life cycle document that has been updated for the aggregation, such as the Transfer Request.</p>			
SRR Disposition: <u> Draft </u> Disposition ID (1-5)	Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn	Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / <small>Initials Date</small>		NARA Appr <u> DL </u> / <u> 5/13/05 </u> <small>Initials Date</small>	
Contractor Appr _____ / <small>Initials Date</small>		Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> <small>Initials Date</small>	

Source Selection Information - See FAR 2.101 and 3.10

CDRL Number: 004 – SDR Minutes
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3.1.27 LM-RID-00141 Audit Trails at the Record Level

Contractor: Lockheed Martin		1. RID ID: RID-LMC00141 (Vendor Assigned ID:)		2. Date: 2005-04-27 11:05:09	
3. Document Identification:					
4. Document Title: System Architecture and Design Document (SADD)					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: Audit Trails at the Record Level				7. Originator: PMO	
8. Problem Description: What is the relationship between audit trails at the record and aggregate level, especially with respect to scalability, consistency, and archival processing?					
9. Suggested Solution:					
10. Response:					
<p>Two requirements (LM25.6.1 and LM13.11) discuss logging and security at the individual electronic record level, so ERA must support the capability to audit at an individual record level. The design for Accountability in Section 4.2.2 (“Design Description”) of the SADD draws a distinction between the terms “auditable” and “audited” events. “Auditable” events have the capability to be audited; “audited” events are actually logged in the audit trail at a particular Instance at a particular time.</p> <p>The Accountability service provides the capability to configure the auditing capability at an Instance to select which of the auditable events will be recorded in the audit log. These configuration decisions will reflect NARA policy, and may change over time and in response to specific security conditions. The Audit Reports service provides the capability to roll-up audit trails at various levels, including record aggregate levels.</p> <p>In the Product- and Software-Level Specifications developed in Increment 1, the LM Team will document its detailed design approach to ensuring scalability with audit logs. At this time, the LM Team envisions offloading audit trails to tape for cost effective and scaleable storage.</p>					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Initials Date				NARA Appr <u> DL </u> / 5/13/05 _____ Initials Date	
Contractor Appr _____ / _____ Initials Date				Contractor Appr <u> WRH </u> / 5/13/05 _____ Initials Date	

Source Selection Information - See FAR 2.101 and 3.10

CDRL Number: 004 – SDR Minutes
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3.1.29 LM-RID-00143 Potential Enterprise-Level Services

Contractor: Lockheed Martin		1. RID ID: RID-LMC00143 (Vendor Assigned ID:)		2. Date: 2005-05-09 17:05:39	
3. Document Identification:					
4. Document Title: System Architecture and Design Document (SADD)					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: Potential Enterprise-Level Services				7. Originator: PMO	
8. Problem Description: Please identify any specific services or classes of services that are accommodated in the LMC design that are candidates for ERA enterprise-level services (Example: Directory Services)					
9. Suggested Solution:					
10. Response:					
<p>The following ERA services are readily scalable and extensible to support the NARA Enterprise:</p> <ul style="list-style-type: none"> • Directory Service, providing unified Identity Management and Single Sign-On • Collaboration Services, including Enterprise Content Management (which includes document management, web content management, and forms management) • Portal, providing a single point of entry and a unified look-and-feel • Integration, including Mediation, Queues, and Business Process Management (orchestrations) • Service Registry • Unifying the Help Desks and Remedy solution 					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Initials Date				NARA Appr <u> DL </u> / <u> 5/13/05 </u> _____ Initials Date	
Contractor Appr _____ / _____ Initials Date				Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> _____ Initials Date	

Source Selection Information - See FAR 2.101 and 3.10

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Contract Number: NAMA-04-C-0007

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Source Selection Information - See FAR 2.101 and 3.10

CDRL Number: 004 – SDR Minutes
5/19/05



3.1.32 LM-RID-00146 Uniform Resource Identifier

Contractor: Lockheed Martin		1. RID ID: RID-LMC00146 (Vendor Assigned ID:)		2. Date: 2005-05-10 17:05:39	
3. Document Identification:					
4. Document Title: System Architecture and Design Document (SADD)					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: Uniform Resource Identifier				7. Originator: PMO	
8. Problem Description: Please describe how the concept of a Uniform Resource Identifier (which was mentioned in the proposal but did not appear in the SADD) relates to the GUID concept. How is this relationship maintained?					
9. Suggested Solution:					
10. Response:					
<p>The GUID is a physical identifier used in the interface between the business service applications and Archival Storage. The LM Team intends to maintain a logical identifier (such as a Uniform Resource Identifier - URI) for a record in the Records Catalog, in the record life cycle data. This logical identifier will be immutable and bound to the record. The Records Catalog will bind the logical record identifier (URI) to the physical GUIDs for each of the record's versions. The public interface (including the users and the external systems) will use the logical record identifier only, and not the physical GUID.</p>					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Initials Date				NARA Appr <u> DL </u> / <u> 5/13/05 </u> _____ Initials Date	
Contractor Appr _____ / _____ Initials Date				Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> _____ Initials Date	

Source Selection Information - See FAR 2.101 and 3.10

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3.1.33 LM-RID-00147 Unified Records Life Cycle Management

Contractor: Lockheed Martin	1. RID ID: RID-LMC00147 (Vendor Assigned ID:)	2. Date: 2005-05-11 17:05:39
3. Document Identification:		
4. Document Title: System Architecture and Design Document (SADD)		
5. Page , Sect. , Para. General Document Comment		
6. Title of RID: Unified Records Life Cycle Management		7. Originator: PMO
<p>8. Problem Description: The Implement Disposition Instructions function in Records Management was said to operate only on electronic records in the ERA System. The use of this function to dispose of temporary records or effect legal transfer of electronic records in records center custody; however, this constraint fails to address two important types of disposition instruction: (1) generating notices for destruction or legal transfer of hard copy records in NARA’s custody and (2) coordination and/or execution of the Transfer Disposition Instruction for either hard copy or electronic records. Automated support for transfer could streamline and improve planning and allocation of resources for both types of records. The coordination of a Transfer is an important function of the system, and encompasses various capabilities such as the projection over time of upcoming workloads, assignments and allocations of resources for upcoming Transfer work, the signaling of late or missing Transfers, and other functions. How does the LMC solution support unified records life cycle management across the Records Management and Ingest packages?</p>		
9. Suggested Solution:		
<p>10. Response:</p> <p>The LM Team envisions the Records Management package as providing centralized and unified records life cycle management. Most of the system elements required to implement the two types of disposition instruction mentions in the RID Problem Description already appear in Records Management, including Disposition Agreements, Transfer Agreements, Records Life Cycle Data, and the Non-Electronic Records Tracking Systems Interface. The one exception is Transfer Requests, which is currently allocated to Ingest. In the next version of the SADD, LM will move Manage Transfer Requests to Records Management, and will enumerate and specify the way various disposition instructions are implemented.</p>		

Source Selection Information - See FAR 2.101 and 3.10

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3.1.34 LM-RID-00148 Records Management across Security Levels

Contractor: Lockheed Martin	1. RID ID: RID-LMC00148 (Vendor Assigned ID:)	2. Date: 2005-05-10 17:05:39
3. Document Identification:		
4. Document Title: System Architecture and Design Document (SADD)		
5. Page , Sect. , Para. General Document Comment		
6. Title of RID: Records Management across Security Levels		7. Originator: PMO
<p>8. Problem Description: Many records management activities cross levels of national security. For example:</p> <ol style="list-style-type: none"> 1. An Appraiser may need to process an unclassified records schedule covering classified records. 2. Copies of unclassified schedules covering both classified and unclassified records may be needed in both SBU and classified federations. 3. NARA may need an unclassified approval document authorizing a disposition agreement, which is classified. 4. Unclassified redacted versions of classified records need to be exported to the SBU federation, but the classified federation needs to track versions of its holdings. <p>How does the LM solution address such needs?</p>		
9. Suggested Solution:		

Source Selection Information - See FAR 2.101 and 3.10

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3.1.35 LM-RID-00149 FileTek's StorHouse Modifications

Contractor: Lockheed Martin		1. RID ID: RID-LMC00149 (Vendor Assigned ID:)		2. Date: 2005-05-11 17:05:39	
3. Document Identification:					
4. Document Title: System Architecture and Design Document (SADD)					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: FileTek's StorHouse Modifications				7. Originator: PMO	
8. Problem Description: Please describe any augmentations or changes that will be required for the FileTek's StorHouse product to accommodate all the ERA requirements allocated to it. Please comment on the timeframe when these changes will be available.					
9. Suggested Solution:					
10. Response:					
<p>Currently, StorHouse allocates storage at defined segment size. A file that exceeds the size of a segment and happens to be located at the end of a piece of media is allowed to span to the next volume. FileTek will enhance this logic to force contiguous storage allocations for a file. In other words, a storage object that contains one or more records will not span media. This feature is scheduled to be generally available in May 2006.</p> <p>Currently, the format of the storage object that would contain the ERA records is based on the ISO-9660 format. By strict definition of the standard, files larger than one (1) GB are not compliant. To ensure ERA records are stored in a format that is based on a formal ISO definition, FileTek will update its storage object format to be based on the Universal Data Format (UDF). UDF is a format based on ISO-13346. UDF does not have file size limitations and adds the advantages of being an extensible format while providing a format definition for interoperability. This feature is scheduled to be generally available in May 2006.</p>					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Initials Date				NARA Appr <u> DL </u> / <u> 5/13/05 </u> _____ Initials Date	
Contractor Appr _____ / _____ Initials Date				Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> _____ Initials Date	

Source Selection Information - See FAR 2.101 and 3.10



3.1.36 LM-RID-00150 Elaborate on Agency Interface Design

Contractor: Lockheed Martin		1. RID ID: RID-LMC00150 (Vendor Assigned ID:)		2. Date: 2005-05-11 17:05:39	
3. Document Identification: System Architecture and Design Document (SADD)					
4. Document Title:					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: Elaborate on Agency Interface Design				7. Originator: PMO	
8. Problem Description: Please elaborate on your interface to agencies design. What tools do you envision being made available? How will you accommodate various agencies requirements?					
9. Suggested Solution:					
10. Response:					
<p>For small transfers, the transferring Record Manager's workbench includes a tool (Java applet) that allows the user to select files, bundle them, and initiate a Secure Copy (SCP) upload to ERA Ingest. This tool is designed for a non-technical user.</p> <p>For large transfers, it is expected that the transferring agency will have systems (databases, 5015 records systems, etc.) to create an export package. These packages can be directly uploaded to ERA Ingest via SCP. Note that the record life cycle metadata, and transfer metadata of these existing systems are not likely to match the ERA schema. The expected import schema will be documented, and the transferring agency can build their own transformation tools. As an option, the LM Team can build the transformation tools based upon the transferring agency's documentation.</p>					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Initials Date				NARA Appr <u> DL </u> / 5/13/05 _____ Initials Date	
Contractor Appr _____ / _____ Initials Date				Contractor Appr <u> WRH </u> / 5/13/05__ _____ Initials Date	

Source Selection Information - See FAR 2.101 and 3.10

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3.1.37 LM-RID-00151 Non-electronic Records Location Information Interface

Contractor: Lockheed Martin		1. RID ID: RID-LMC00151 (Vendor Assigned ID:)		2. Date: 2005-05-11 17:32:57	
3. Document Identification:					
4. Document Title: System Architecture and Design Document (SADD)					
5. Page , Sect. , Para. General Document Comment					
6. Title of RID: Non-electronic Records Location Information Interface				7. Originator: PMO	
8. Problem Description: Please add a method for location information transfer associated with non-electronic records [tracking systems interface]					
9. Suggested Solution:					
10. Response: Add the following requirements: IRS CDRL-L51, Section 4.2.2, Non-electronic Records Tracking Systems The system shall (IR3)(LM53.8*)(T) provide the capability to send a request for non-electronic record physical location information from non-electronic records tracking systems The system shall (IR3)(LM53.9*)(T) provide the capability to receive non-electronic record physical location information from non-electronic records tracking systems * Suggested requirements ID's only LM also recommends that the ERA PMO update the IRD to reflect this requested change as well.					
SRR Disposition: <u> Draft </u> Disposition ID (1-5)		Disposition IDs: 1) Draft 2) Accepted 3) Deferred 4) Closed 5) Withdrawn		Final Disposition: <u> 4 </u> Disposition ID (1-5)	
NARA Appr _____ / _____ Initials Date				NARA Appr <u> DL </u> / <u> 5/13/05 </u> Initials Date	
Contractor Appr _____ / _____ Initials Date				Contractor Appr <u> WRH </u> / <u> 5/13/05 </u> Initials Date	

Source Selection Information - See FAR 2.101 and 3.10

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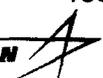
Contract Number: NAMA-04-C-0007

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Source Selection Information - See FAR 2.101 and 3.10

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LOCKHEED MARTIN



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APPENDIX A. SDR ATTENDANCE LIST

NAME	SRR ROLE	Org.	Tm	E-Mail (optional)	Phone	May 09	May 10	May 11	May 12
Ambacher, Bruce	Attendee	NARA-NHE	Gov.	bruce ambacher@nara.gov	301-837-1480	√	√	√	√
Bernard, Lynn	Attendee	POST	Gov.			√	√	√	√
Cacas, Rita	Attendee	POST	Gov.			√	√	√	
Cahoon, L. Reynolds (Ren)	VIP	NARA-NH	Gov.		301-837-1566	√	√	√	√
Campbell, Tom	Attendee	NARA-NA	Gov.			√	√		
Colon, Carmen		NARA	Gov.	carmen.colon@nara.gov	301-837-0445	√	√	√	√
Craig, William R. (Bill)	Observer	NARA-NR	Gov.		301-837-1629	√	√	√	
Dean, John	Attendee	POST	Gov.	mark.conrad@nara.gov	301-837-0924	√	√	√	√
Eaton, Fynnette	Attendee	NARA-NWML	Gov.		301-837-1683	√	√	√	
Fields, Dorothy	Attendee	NARA	Gov.			√	√	√	√
Filsinger, Jan	Attendee	NARA	Gov.			√	√	√	√
Giguere, Mark	Attendee	NARA-NWM	Gov.		301-837-1744	√	√	√	√
Ha, Penny	Attendee	NARA-NHES	Gov.	phuong.ha@nara.gov	301-837-0610	√	√	√	√
Harley, Ira	Attendee	NARA	Gov.	ira.harley@nara.gov	301-837-0429	√	√	√	√
Harold, David	Attendee	NARA	Gov.			√	√	√	√
Huber, Mark	Attendee	POST	Gov.	mark.huber@nara.gov	301-837-0420	√	√	√	√
Kepley, David R.	Attendee	NARA-NWA	Gov.		301-837-1878	√	√	√	√
Lake, Alla	Attendee	POST	Gov.	alla.lake@nara.gov	301-837-0399	√	√	√	√

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NAME	SRR ROLE	Org.	Tm	E-Mail (optional)	Phone	May 09	May 10	May 11	May 12
Lake, David	Attendee	NARA NHR	Gov.			√	√	√	√
Lazaro, Elizabeth		NARA	Gov.	elizabeth lazaro@nara.gov	301-837-0418				√
Le, Dyung	Chair	NARA-NHES	Gov.	dyung le@nara.gov	301-837-0622	√	√	√	√
Marcus, Richard	Attendee	NARA-NHR	Gov.		301-837-1942	√	√	√	√
McAndrew, Thomas	Board	NARA-NHES	Gov.	thomas mcandrew@nara.gov	301-837-1955	√		√	√
McClure, Sam	Attendee	NARA-NL	Gov.		301-837-1958	√	√	√	√
McKan, James	Attendee	NARA	Gov.	james mckan@nara.gov	301-837-0410	√	√	√	√
Morphy, Martha	Attendee	NARA-NHV	Gov.		301-837-1992	√		√	√
Myers, Shelly L.	Attendee	NARA-NH	Gov.		301-837-2006		√	√	√
Nagle, Bob	Scribe	POST	Gov.	bob.nagle@nara.gov	301-837-0401	√	√	√	√
Nguyen, Quyen	Board	NARA-NHE	Gov.		301-837-3635	√	√	√	√
Parr, Chris	Attendee	POST	Gov.	christopher.parr@nara.gov	301-837-0422	√	√	√	√
Rice, Bob	Attendee	POST	Gov.			√	√	√	√
Samuels, Frank	Attendee	POST	Gov.	frank.samuels@nara.gov	301-837-0423	√		√	√
Scanlon, Leo	Attendee	NARA-NWME	Gov.		301-837-0584	√	√	√	√
Spangler, Robert K. (Bob)	Attendee	NARA-NWME	Gov.		301-837-0976	√	√	√	
Sturdvant, Ron	Attendee	POST	Gov.				√	√	√
Theimer, Kate	Attendee	NARA-NPOL	Gov.		301-837-3045	√	√	√	√
Thibodeau, Kenneth (Ken)	Board	NARA-NHE	Gov.	ken.thibodeau@nara.gov	301-837-0861	√	√	√	√

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NAME	SRR ROLE	Org.	Tm	E-Mail (optional)	Phone	May 09	May 10	May 11	May 12
Thorton, Joyce	Attendee	NARA	Gov.		301-837-3055	√	√	√	√
Uddin, Haseen	Board	NARA-NHCTO	Gov.		301-837-3072	√	√	√	√
Valett, Jon	Attendee	POST	Gov.	jon.valett@nara.gov	301-837-0425	√	√	√	√
Veihmeyer, Harry	Attendee	POST	Gov.		301-837-3097	√	√	√	√
Weber, Lisa B.	Attendee	NARA-NHPD	Gov.		301-837-3112	√	√	√	√

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Hansen, Steve	Attendee	LMC	LMC	steve.hansen@lmco.com	301-623-4298	√	√	√	√
Harris, William (Bill)	Co-Chair	LMC	LMC	william.r.harris@lmco.com	301-623-4269	√	√	√	√
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

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Contract Number: NAMA-04-C-0007

NAME	SRR ROLE	Org.	Tm	E-Mail (optional)	Phone	May 09	May 10	May 11	May 12
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]				█
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	█			█
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	█	█	█	
Robinson, Fred	Attendee	LMC	LMC	fred.robinson@lmco.com	301-623-4280	√	√	√	√
Rogers, Rick	Presenter	Fenestra	LMC	roy.s.rogers.iv@lmco.com	301-623-4272	√	√	√	√
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		█	█	█
Sorber, Betty	Moderator	LMC	LMC	betty.sorber@lmco.com	301-623-4277	√	√	√	√
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		█	█	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		█	█	█

Source Selection Information - See FAR 2.101 and 3.10

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APPENDIX B. GLOSSARY OF TERMS

Term or Acronym	Definition or Acronym Expansion
ADRRES	Archives Document Review and Redaction System
AIP	Archive Information Package
ARC	Archival Research Catalog
CDRL	Contract Data Requirements List
CONOPS, ConOps	Concept of Operations
COTS	Commercial Off-The-Shelf
CM	Configuration Management
CR	Change Request
DID	Data Item Description
ERA	Electronic Records Archives
FOIA	Freedom of Information Act
FR	Federal Register
FRC	Federal Records Center
FTP	File Transfer Protocol
GB	Gigabytes
GFI	Government Furnished Information
HW	Hardware
IPT	Integrated Product Team
IRD	Interface Requirements Document
IRS	Interface Requirements Specification
IT	Information Technology
LAN	Local Area Network
LCC	Life cycle Cost
LM	Lockheed Martin
LMTSS	Lockheed Martin Transportation and Security Solutions
LS&C	Local Services and Controls
LTP	Legacy Transition Plan
NARA	National Archives and Records Administration
NV	Not Verifiable
PMO	Program Management Office
PMRS	Performance Measurement and Reporting System
PWS	Performance Work Statement
QF	Question Form
RD	Requirements Document
RFP	Request for Proposal
RID	Review Item Discrepancy
SADD	System Architecture and Design Document
Safe Store	Data backup approach to ensure that archival data can survive a range of failures from a simple hardware fault to the catastrophic failure of an entire site.

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Term or Acronym	Definition or Acronym Expansion
SBU	Sensitive But Unclassified
SEMP	System Engineering Management Plan
SIP	Submission Information Package
SME	Subject Matter Expert
SOA	Service Oriented Architecture
SOC	System Operation Center
SRR	System Requirements Review
SWIT	Software Integration Testing
SyRS	System Requirements Specification
TAR	Target Release Paper
URTS	Unclassified Redaction and Tracking System
WAN	Wide Area Network

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APPENDIX C. SDR PRESENTATION PACKAGE

The SDR presentation materials are packaged as a separate volume.

The following corrections noted in the daily minutes were made post-SDR to the presentation materials.

Presentation Section	Slide and Item #	Correction
Day 1 - System and Architecture Design	37, 49, 58	Editorial corrections
Day 1 - System and Architecture Design	83	Replace with correct diagram
Day 2 – Data Model	14	Correction to Diagram
Day 2 – Data Model	16, 20, 21	Inserted slides from presentation not included in original presentation package
Day 2 – Records Management	82	Inserted slides from presentation not included in original presentation package
Day 2 – Data Model	27	Changed “Verity” to “Veritas”
Day 3 - Preservation	13	Change “Preservation Plan” to “Preservation and Service Plan”
Day 3 - Preservation	45	Change “preservation” to “presentation”
Day 3 – Dissemination	47	Remove arrowhead on asset line into Access Service box
Day 3 – Dissemination	53	Remove last bullet, “data types”
Day 3 – ERA Management	76	Change “MS 2003 Workstation” to “MS Windows XP”
Day 4 – Performance Modeling	44	Inserted slides from presentation not included in original presentation package
Day 4 – Availability Modeling	54	Corrected typographical errors in availability numbers
Day 4 – Availability Modeling	58	Corrected typographical errors in availability numbers
Day 4 – Closing Remarks	104 -107	Inserted slides from presentation not included in original presentation package
Day 4 – Trade Studies	87	Spelling correction

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