“Putting Records First”
Addressing the Life Cycle Management and Preservation of Electronic Records

Records Management Service Components Program
Electronic Records Archives Program
National Archives and Records Administration

Model Driven Architecture in the U.S. Government
Object Management Group
November 15, 2005
Purpose of Today’s Session

• Examine several converging concepts and strategies:
  – increasing volume and complexity of electronic records
  – the U.S. Government’s approach to designing its information and computing infrastructure
  – the lifecycle of records and their management
  – the provision of services through software components
  – records preservation through software and hardware independence

• Overview the Electronic Records Archives Program and the Records Management Service Components (RMSC) at the National Archives and Records Administration
“The National Archives … is a public trust on which our democracy depends. It enables people to inspect for themselves the record of what government has done. It enables officials and agencies to review their actions and help citizens to hold them accountable. It ensures continuing access to essential evidence that documents:

– the rights of American citizens
– the actions of Federal officials
– the national experience”
What is a Federal Record?

• Empirically: an instrument or byproduct of an activity, retained because of relevance to continued activity.

• Formally: Recorded information made or received during the course of agency business or under law
  – Regardless of medium or physical characteristics
  – Kept because it
    • Provides evidence of organization, functions, policies, decisions, procedures, operations, or other activities of their creators, or
    • Contains valuable information
      • Derived from 44 U.S.C. 3301
A record in digital form, requiring the use of a computer for access
Dimensions of an Electronic Record

- Record
  - Provenance
    - Relationship to Creator
    - Relationship to Creating Activity
  - Relationship to Other Records
    - Arrangement
    - Archival Bond

- Document
  - Content
  - Structure
  - Presentation

- Digital Object
  - Representation or encoding of data in binary form
  - Logical Structure of encoded data
  - Physical Inscription of the encoding on a medium of storage or transmission
Electronic Records
NARA’s Challenges

- **Scope**: The Entire Federal Government
- **Variety**: Different Types of Records
- **Complexity**: Records in Different Formats
- **Volume**: Enormous Amounts of Records
- **Obsolescence**: Constantly Changing Technology
## Anticipated Incoming Permanent Electronic Records within the next 15 years

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The ERA Vision

ERA will be a comprehensive, systematic, and dynamic means of preserving and providing continuing access to any type of electronic record free from dependence on any specific hardware or software, created anywhere in the Federal Government.
Finding Solutions: Research Partnerships

...and many other Federal Agencies and their Records Officers
ERA Functional Overview

**Identify**
- Validate Transfers
- Extract Metadata
- Manage Dispositions • Scheduling • Agency Relationship • Appraisal

**Preserve**
- Perform Archival Processing
  - Persistent Archives
  - Preservation Planning
  - Describe Records
- Perform Preservation Processing
- Archival Storage
- Destroy/Expunge

**Make Available**
- Perform Access Review and Redaction
- Manage Access
  - Research and Dissemination

**Common Services**
- OAIS Functions
  - 1 - Ingest
  - 2 - Archival Storage
  - 3 - Data Management
  - 4 - Access
  - 5 - Preservation
  - 6 - Common Services

**ERA System-Level Packages**
- Ingest
- Archival Storage
- Records Management
- Dissemination
- Preservation
- Local Services & Control ERA Management

**Service Oriented Architecture**
- Business Application Services
  - Services
  - Business Processes
  - Persistent Archives
- Common Infrastructure Services
The ERA Program: Where we are now

- **12/03** Release of the RFP
- **8/3/04** Awarded Two Design Contracts
- **9/8/05** **NARA Selects a Single Developer**

2005 - 2011 Five Increments (Inc) w/ Multiple Releases:
- **FY07** Initial Operating Capability
- **2011** Full Operating Capability
Federal Enterprise Architecture (FEA)

- A design framework and decision-making criteria for Federal information technology (IT) investment
- Describes the relationship between business functions and the technologies and information that supports them
- Funding preference is given to IT investments that promote re-use, save time and money, and improve quality
- Comprised of five (5) reference models
Federal Enterprise Architecture Reference Models

Performance Reference Model (PRM)
- Government-wide Performance Measures and Outcomes
- Line of Business-specific Performance Measures & Outcomes

Business Reference Model (BRM)
- Lines of Business
- Agencies, Customers, Partners

Service Component Reference Model (SRM)
- Service Layers, Service Types
- Components, Access, and Delivery Channels

Technical Reference Model (TRM)
- Service Component Interfaces, Interoperability
- Technologies, Recommendations

Data Reference Model (DRM)
- Business-focused Data Standardization
- Cross-agency Information Exchange

Business-Driven Approach (Citizen-Centered Focus)

Component-Based Architectures
• Design of enterprise-wide IT solutions to business requirements through the use of modular service components.

• Services independent of applications and computing platforms

• Enables “swapping out” service layers and components, reuse of existing components, reduced duplication of effort
Service Component:
- a piece of software that provides a **service** or function within a computing environment, and is defined by the interfaces it has with entities around it.
- focus can be enterprise, project, or object level.
- inherently modular and portable
- designed to be usable by many applications requiring similar services
Component-based Services

- Basic Operating System service components:
  - System clock and date
  - Cursor movement and functions
  - Display
  - Clipboard
  - Print
  - Keyboard

- Common requirements met through central services at point of creation
The Records Lifecycle
Federal Agency Viewpoint

Records Lifecycle
Creation...... Use.... Disposition....
The Records Lifecycle

NARA Viewpoint

- schedule disposition
- transfer physical custody
- transfer legal custody
Where Records Management (usually) comes in

Records Lifecycle

Creation...... Use.... Disposition....

Records Management
Where we want Records Management to come in…
Making the Transition to Tomorrow

- **Records Management Service Components (RMSC)**
  - **What is an RMSC?**
    A records management service component is a piece of software that provides services that support the creation, management, transfer, and destruction of electronic records within a computing environment.
Making the Transition to Tomorrow

- **Records Management Service Components (RMSC)**
  - Front end of the business process
  - FEA and ERA compatible
  - Works with front end RMAs at agencies
  - Captures context of creation and relationship to other records at the point of creation
  - Information about the record is carried forward through the lifecycle
  - Establishes a baseline against which authenticity can be validated over time
**RMSC**

**Requirements Development Project**

- **Collaboration**
  - 18 cabinet agencies, two universities, nine IT vendors
  - 11 NARA subject matter experts representing four offices
  - Use state-of-the-art collaborative technology
  - Offsite meetings led by experienced facilitators

- **Objectives**
  - Collect, prioritize, and document functional requirements for core records management activities that can be supported by software service components
  - Identify related attributes, metadata definitions, and constraints
  - Document the workshops output in session reports
  - Make the results available to wider audience
• 18 agencies attended four sessions this spring
RMSC
Participating Experts

• Over 30 experts in records management, enterprise architecture, e-Government, Privacy Act, FOIA
  – Departmental Records Officers
  – Deputy Chief Information Officers
  – Senior E-Government Architect
  – Chief, FOIA – Privacy Branch
  – Director, Policy and Planning
  – Division Chief, Directives & Records
  – Electronic Records Management Lead
  – Chief, Life Cycle Management Branch
  – Senior Records Analysts
RMSC
Scope and Constraints

• **View Point**
  – Records Management Activities

• **Return on Investment Constraint**
  – RM activities used the most often
  – RM activities used by government employees/business processes

• **In Scope**
  – *From:* Receipt, Identification, Declaration of a record
  – *To:* Disposition of a record

• **Out of Scope**
  – Document creation (what makes up a document/record and how, who, and why it was created)
  – Security, privacy, etc.
  – Systems maintenance
  – How it is stored and what it is stored on – storage media
  – Format e.g. .doc, PDF, TIFF
  – System management backup and recovery
RMSC - Results -

- Identified & defined eight RMSC components
- 21 functional requirements
- 33 RMSC attributes
- Prioritized RMSCs for acquisition
Making the Transition to Tomorrow
Use Case Development

- May – June 2005
- Widely accepted technical engineering notation
- Bridge from business to developer communities
- Documents purpose, conditions, flows, attributes, and functional requirements
- Normalizes granularity of components
RMSC
- Results-

Functional Requirements and Attributes for Records Management in a Component-Based Architecture
Technical Report
July 20, 2005

- 7 RMSCs
- 22 Use Case
- 101 Functional Requirements
Seven components across the record life cycle

- Record Capture
- Provenance
- Archival Bond
- Authenticity

- Case File
- Disposition
- Reference

DoD 5015.2 Standard
- Application
- Not a service
- Security class/declass

Reliability 🕰️
RM Services and the Record Life Cycle

Unscheduled Records

Temporary/Permanent Records

Record Capture
Provenance
Archival Bond
Reliability
Case File

Reference

Disposition
Making the Transition to Tomorrow
RMSC Next Steps

* NARA Leadership Guidance Team
the Big Picture

Unscheduled Records

Temporary/Permanent Records

FEA Environment

RMSC

RMA

ERA

Non RMSC, RMA and Non RM Profile Records
Why is this important to you?

- All records are documents – not all documents are records – *Knowing the difference makes all the difference*
- Your “Stuff” can be scheduled and destroyed or transferred legally and legitimately
- Reduced electronic holdings;
  - Increases system efficiencies
  - Reduces system & disaster recovery time
  - Reduces media requirements (aerial density factor loss)
  - Supports regulatory and litigation activities
Why is this important to you?

- Today, we are all records managers
- Applying RM provides efficiencies
- MDA can support the identification of RM
  - Identifies business transaction “evidence”
  - Identifies points of records creation
  - Identifies where, when and how RM can be applied within the architecture
  - Allows RM to be included in the solution
Questions?

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• http://www.archives.gov/era/
• http://www.archives.gov/era/rmsc/
Definitions


**Archival Bond** – The interrelationships between a record and other records resulting from the same business activity, usually accomplished by associating the records to each other through a record category. The interrelationships between a record and other records resulting from the same activity. SSA Terminology

**Reliability** – A concept in archival theory whereby a person - or - a system at a predetermined point in the business process determines the evidence of the activities making up the transaction are complete and should be maintained and managed as a record. SSA Terminology. INTERPares, “Findings on the Preservation of Authentic Electronic records, “pp. 14-19; ISO 15489-2, 4.3.2.

**Authenticity** – [1] A condition that proves that a record is genuine based on its mode (i.e., method by which a record is communicated over space or time), form (i.e., format or media that a record has upon receipt), state of transmission (i.e., the primitiveness, completeness, and effectiveness of a record when it is initially set aside after being made or received), and manner of preservation and custody. Authenticated Record. DoD 5051.2 STD. [2] The quality of being genuine, not a counterfeit, and free from tampering, and is typically inferred from internal and external evidence, including its physical characteristics, structure, content, and context. SSA Terminology