NARA's Electronic Records Archives Program

Briefing for Joint Staff and Combatant Commands

November 19, 2003

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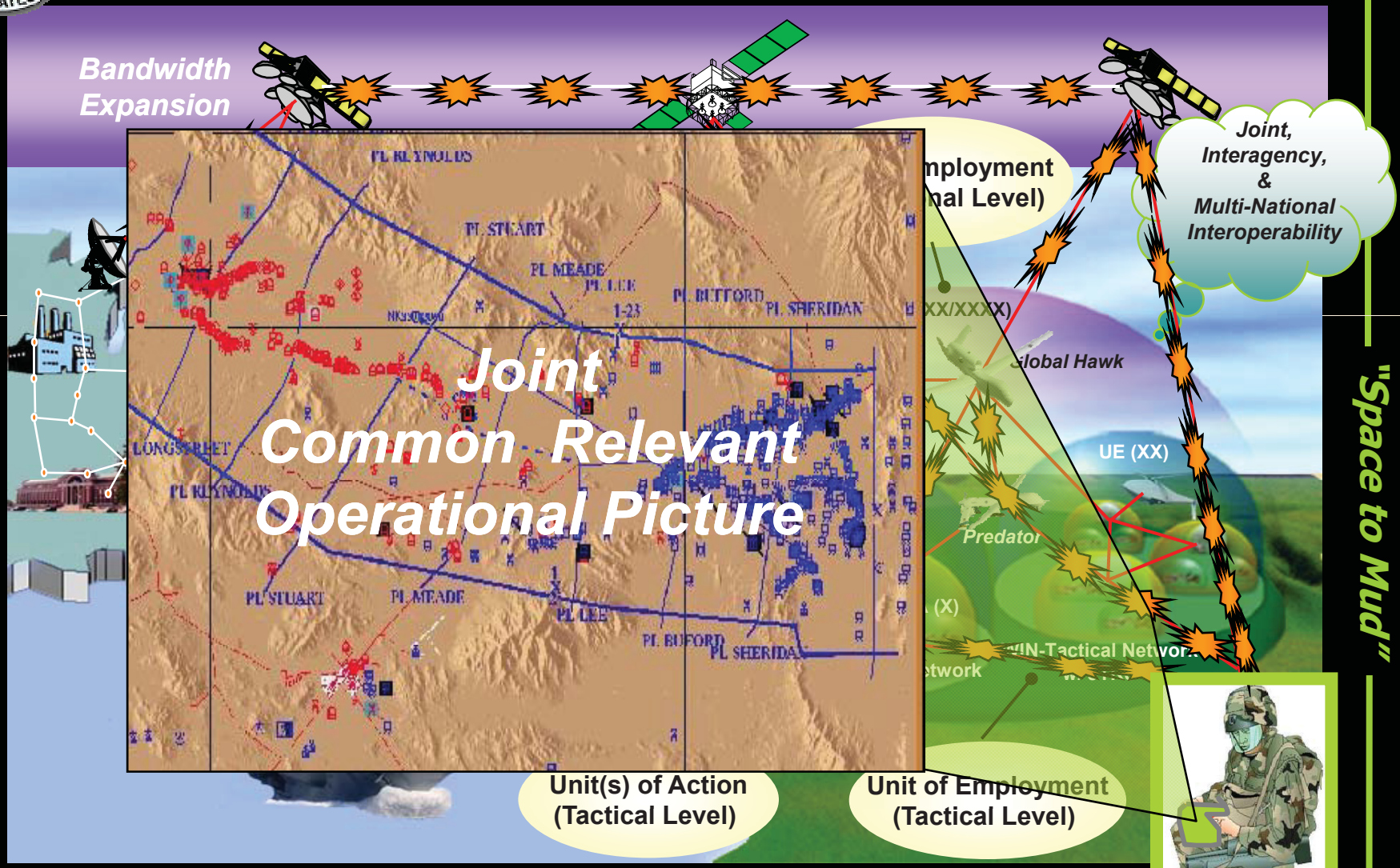
Director
ERA Program Management Office

NARA's Electronic Records Challenge

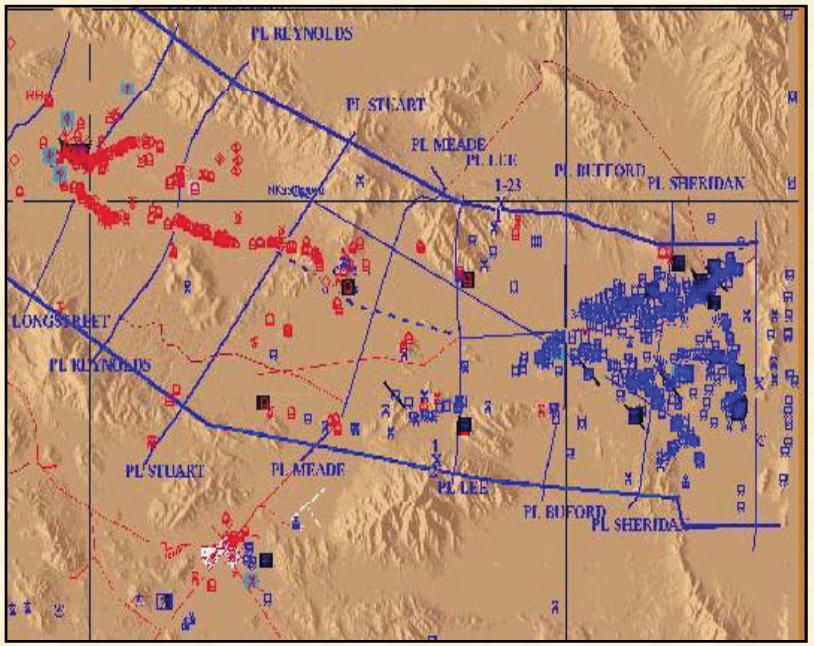
- **Take any type of record,**
- **Created using any type of application,**
- **On any computing platform,**
- **From any entity in the Federal Government and any donor.**
- **Provide discovery and delivery to anyone with an interest and legal right of access,**
- **Now and for the life of the republic**
- ***Guide and assist other agencies in managing their records***
  - ***For successful transition to e-government***

Exploiting the Enterprise



A (Federal) Record?

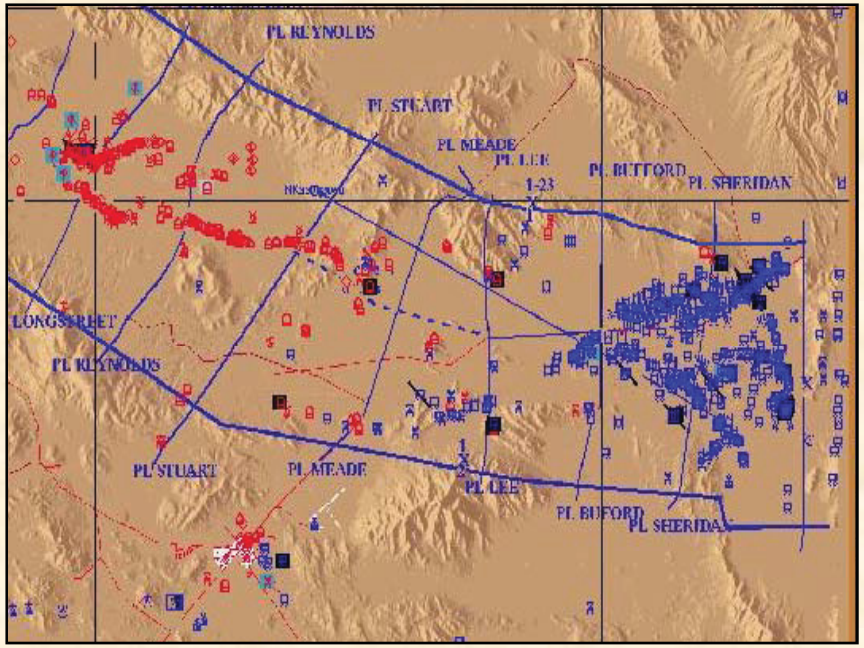
- ✓ Information made or received in the course of business
- ✓ Kept, or should be kept
  - ◆ As evidence of functions, organization, policies, decisions, actions, etc.
  - ◆ Because it contains valuable information



- ❖ Regardless of form or characteristics
  - ➢ An electronic record is a record in a form suitable for processing by a computer

Does an Electronic Record Have to be Kept in Electronic Form?

- If there is no other way to keep it
- If there is a business need to do so
  - E.g., in order to continue to use it in the system in which it was created
- If the evidential or informational value would be diminished by converting it to another form.



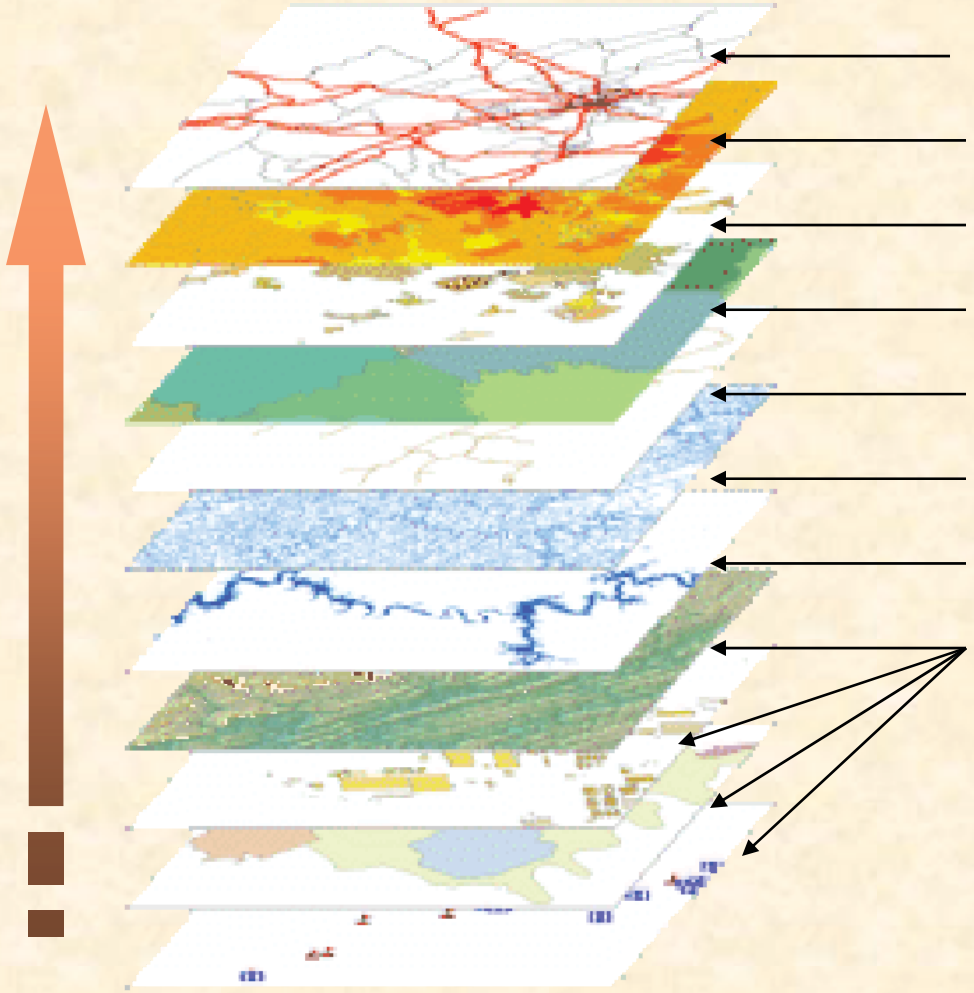
Keep a Record In Electronic Form

if it has essential properties which cannot exist in any other form.

Properties	All Records	Electronic Records
Context	✓	✓
Structure	✓	✓
Content	✓	✓
Behavior	✓	✓

Properties	All Records	Electronic Records
Context	**Provenance** **Activity**	**=**
Structure	**Filing system** **Document structure**	**Conceptual & logical data models** **Hyperlinks**
Content	✓	**Process records** **Virtual Reality**
Behavior	**Static, physical inscription** **Physical position**	**Active reproduction** **Interaction** **Selective, variable presentation**

A Record in the Form of a Geographic Information System (GIS) Application



Data Layers

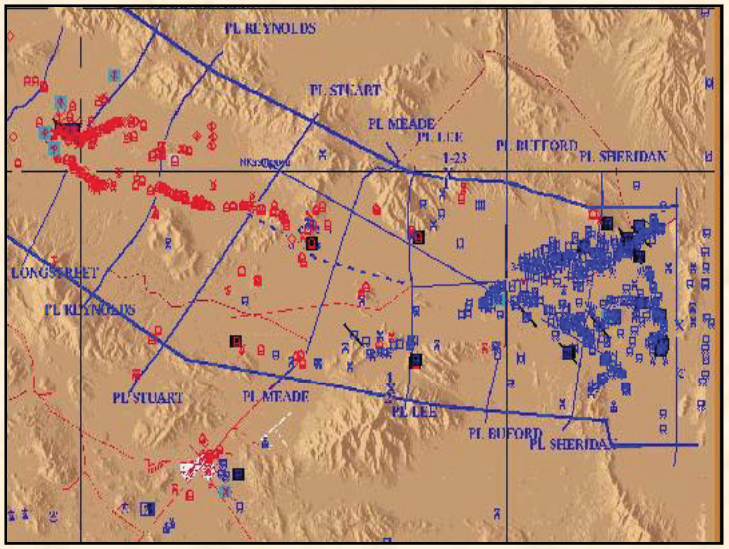
- Roads
- Land Use
- Population Density
- Administrative Boundaries
- Evacuation Routes
- Remote Sensing Imagery
- Rivers
- Geography, Geology et al.

Behaviors

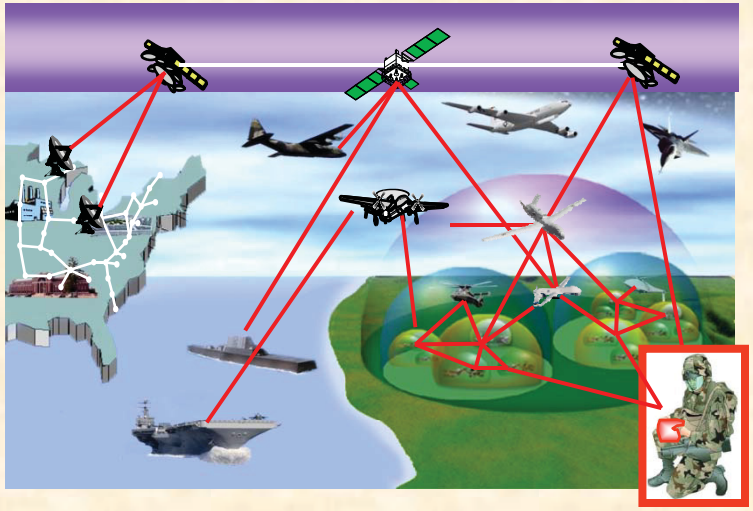
- Cartographic Display
- Overlaying of Data Layers
- Feature Selection

Enduring Values

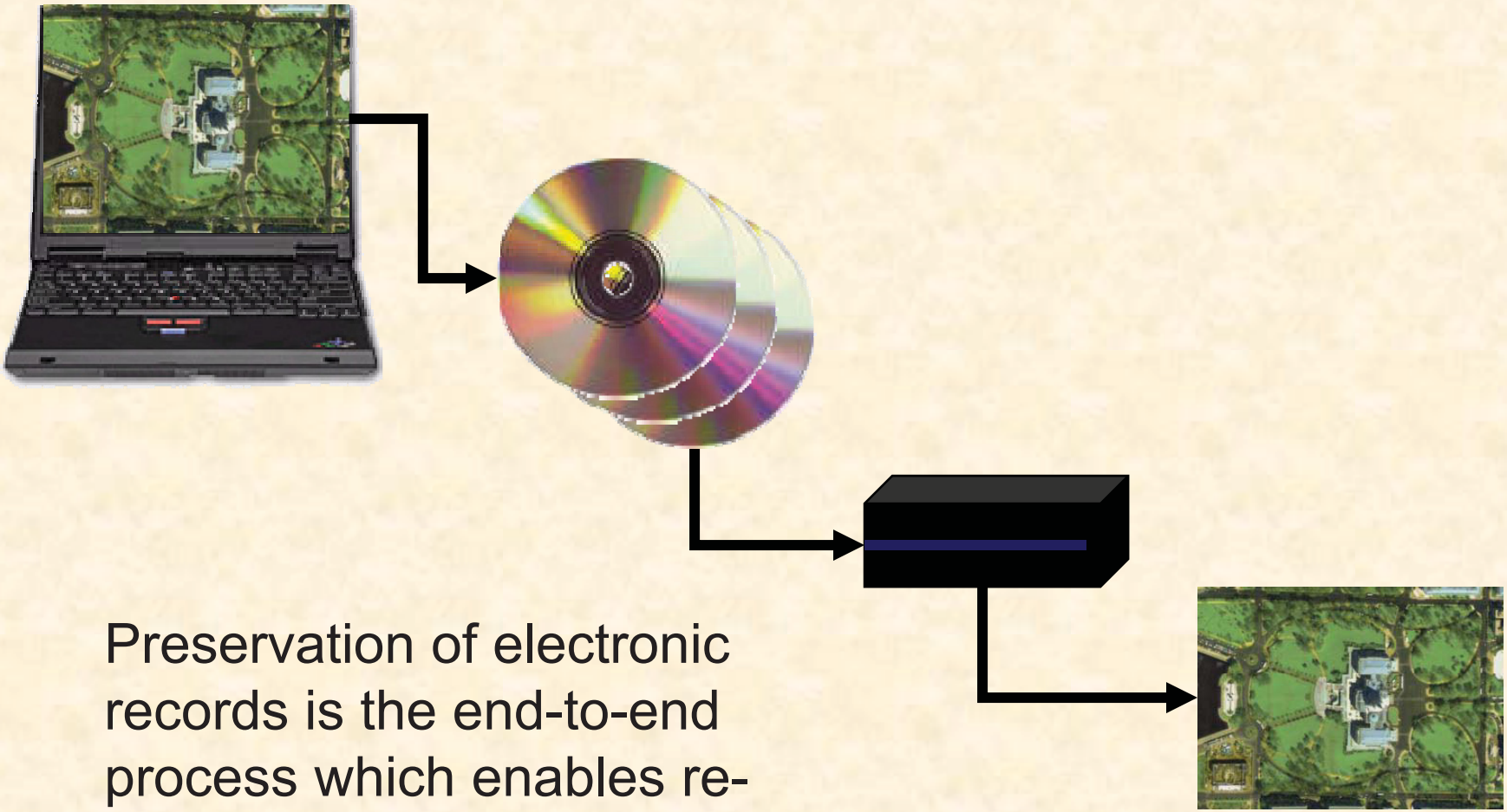
- Evidence
  - Emphasis on Authenticity
  - Enhanced by proximity to event, ‘originality,’ quality



- Information
  - Emphasis on richness, completeness, etc.
  - Enriched by linkage with other information
  - Enhanced by authenticity



Preserving an Electronic Record



Preservation of electronic records is the end-to-end process which enables re-production of an authentic copy of the record

Goddard Space Flight Center
Scientific Visualization Studio
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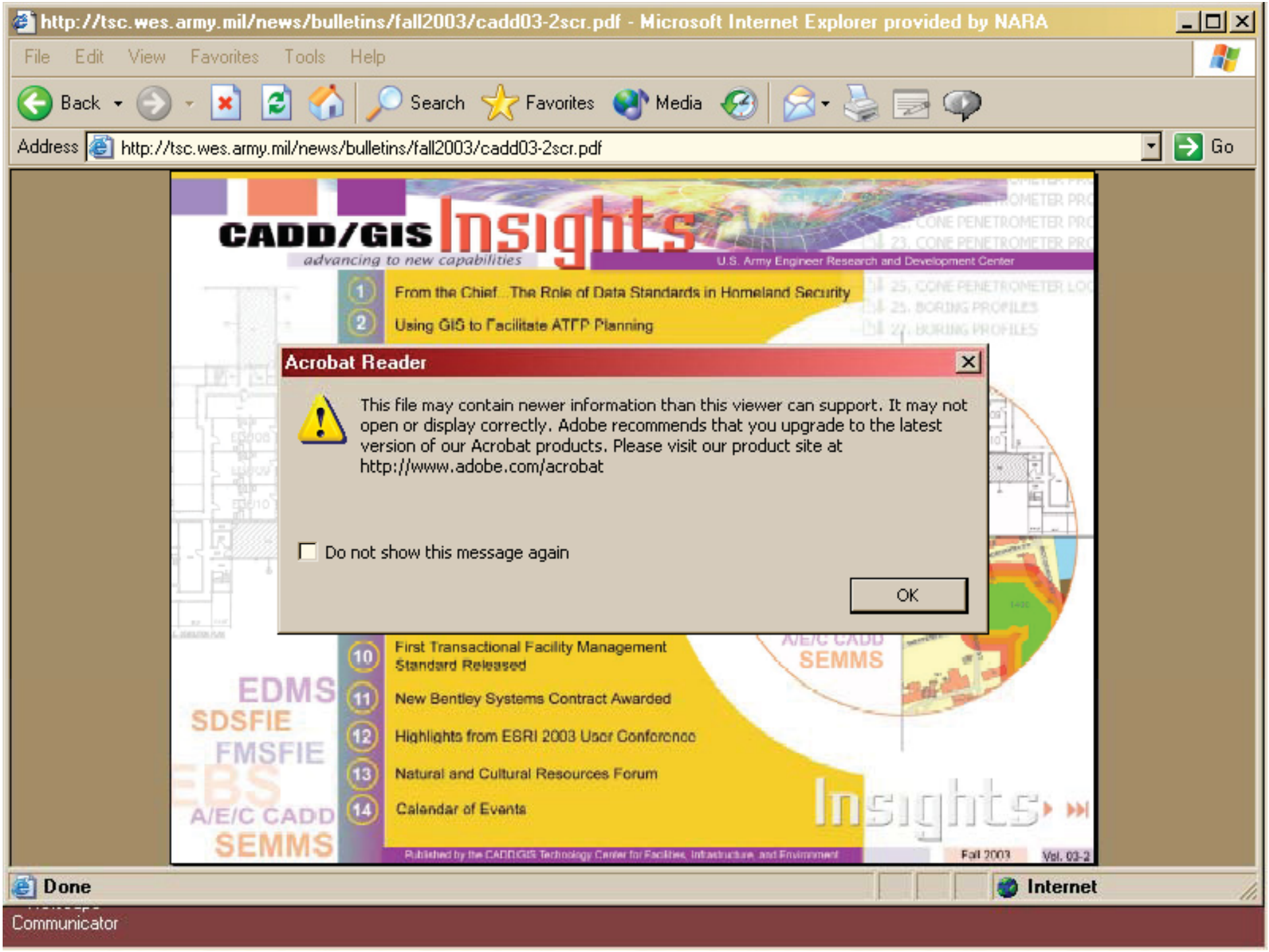
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Go
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U.S. Army Engineer Research and Development Center
1 From the Chief...The Role of Data Standards in Homeland Security
2 Using GIS to Facilitate ATFP Planning
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OK
10 First Transactional Facility Management Standard Released
11 New Bentley Systems Contract Awarded
12 Highlights from ESRI 2003 User Conference
13 Natural and Cultural Resources Forum
14 Calendar of Events
EDMS
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EBS
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SEMMS
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Published by the CADD/GIS Technology Center for Facilities, Infrastructure, and Environment
Fall 2003
Vol. 03-2
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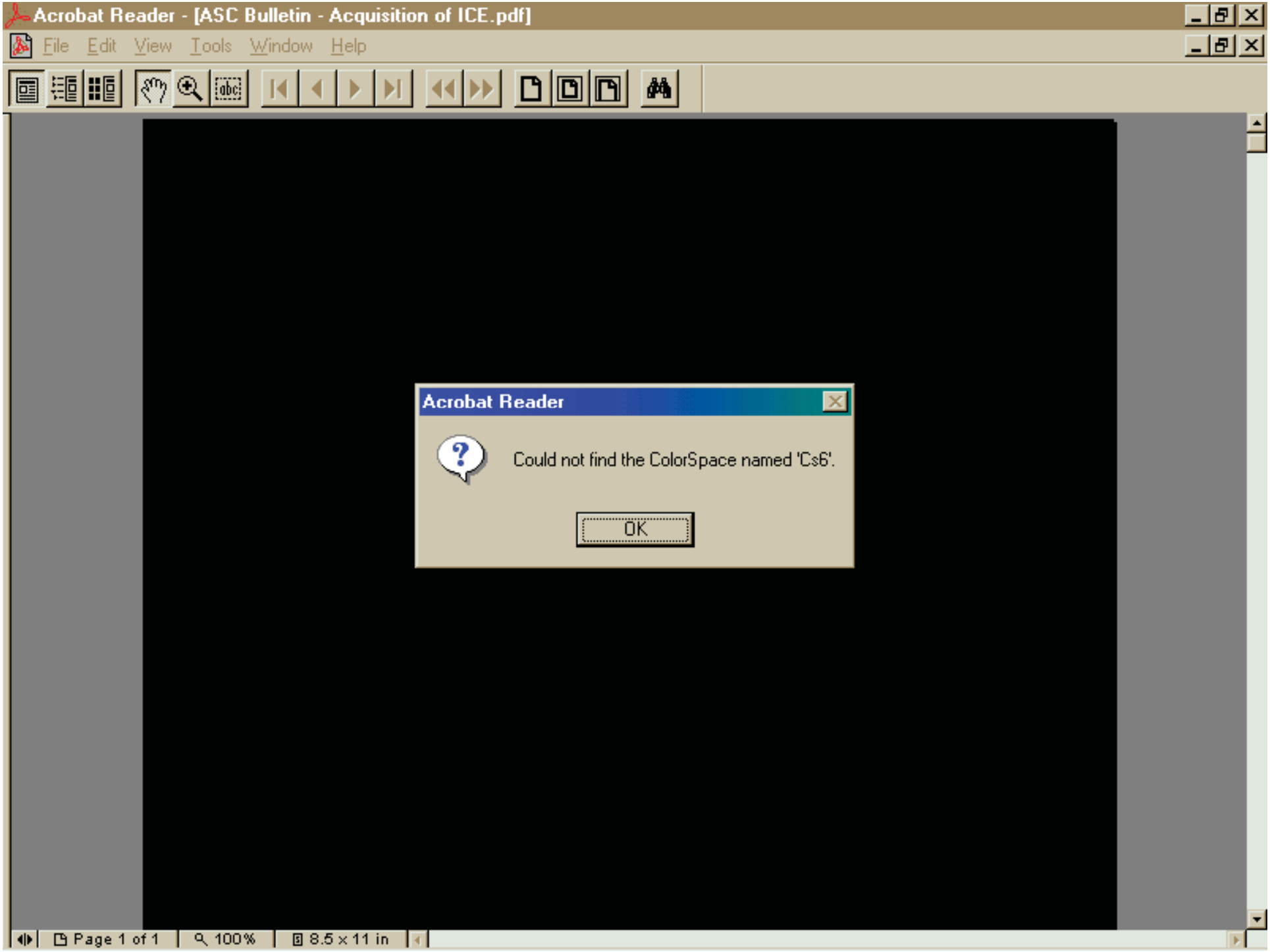
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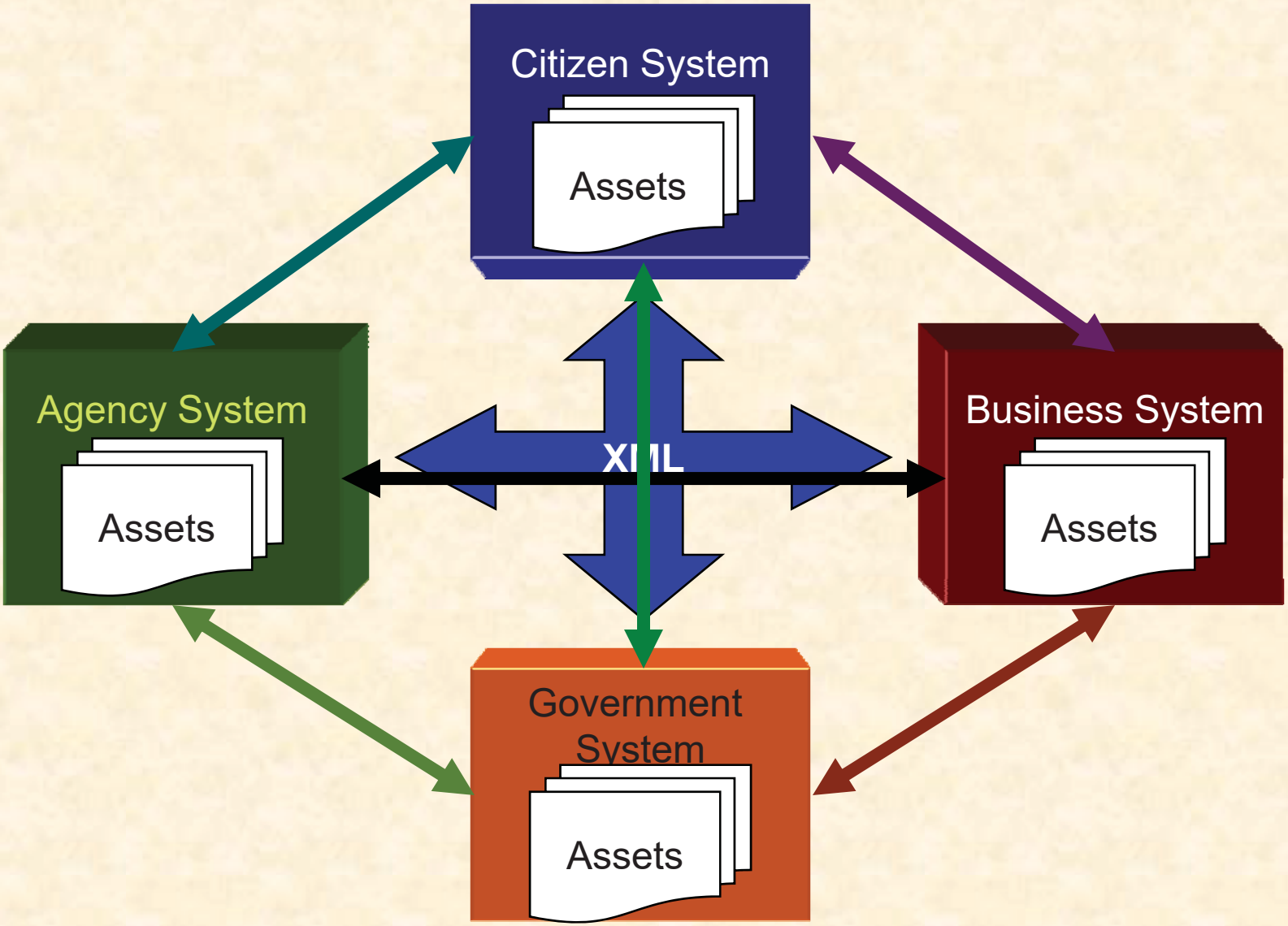
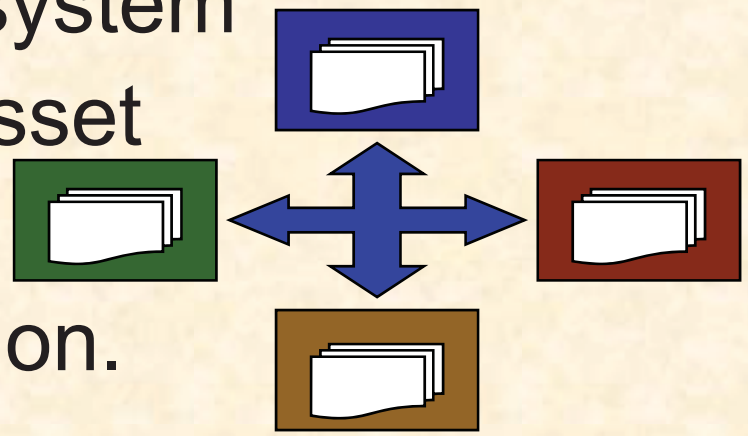
E-transactions



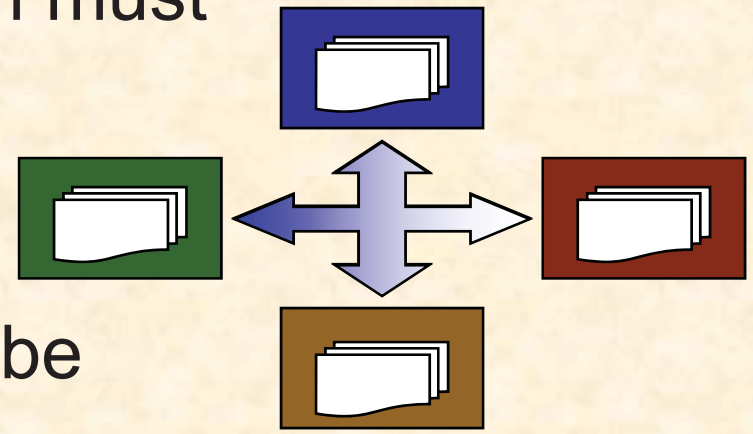
E-transactions: Basic Assumptions

- *Different* systems interact in e-transactions.
- The only thing one system needs to know about another is that it can use the same intermediary.
- Anything which must be true about an information asset in one system must be true about that asset in another system involved in the e-transaction.



Electronic Records Archives: Basic Assumptions

- The ERA system must be able to interact with ***different*** systems.
- At any time, the only thing the ERA system needs to know about another is that it can use the same intermediary.
- Over time, the ERA system cannot know what mediators other systems will use.
- Any record in the ERA system must be an authentic copy of that record.
- Any record delivered from ERA to another system must be an authentic copy.



NARA's Strategy

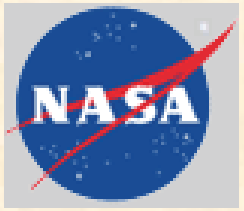
- Attack the critical preservation problem
  - Make information assets independent of information technology infrastructure
- Define the requirements in terms of the lifecycle management of records
- Find solutions in mainstream technologies being developed to support e-commerce and e-government
- Align with overall direction of IT in the U.S. Government

NARA's Response: The ERA Program

- System acquisition
  - The ERA system will
    - Support NARA's end-to-end lifecycle management of all records
    - Preserve and provide access to electronic records
- Organizational change management
  - Ensure NARA can successfully implement the system
- Research and Exploratory Development
  - Address new challenges posed by continuing change in IT and its use in government
  - Capitalize on opportunities offered by technological progress

Partnerships

National Science Foundation



Global Grid Forum

San Diego Supercomputer Center

National Computational Science Alliance

Army Research Laboratory

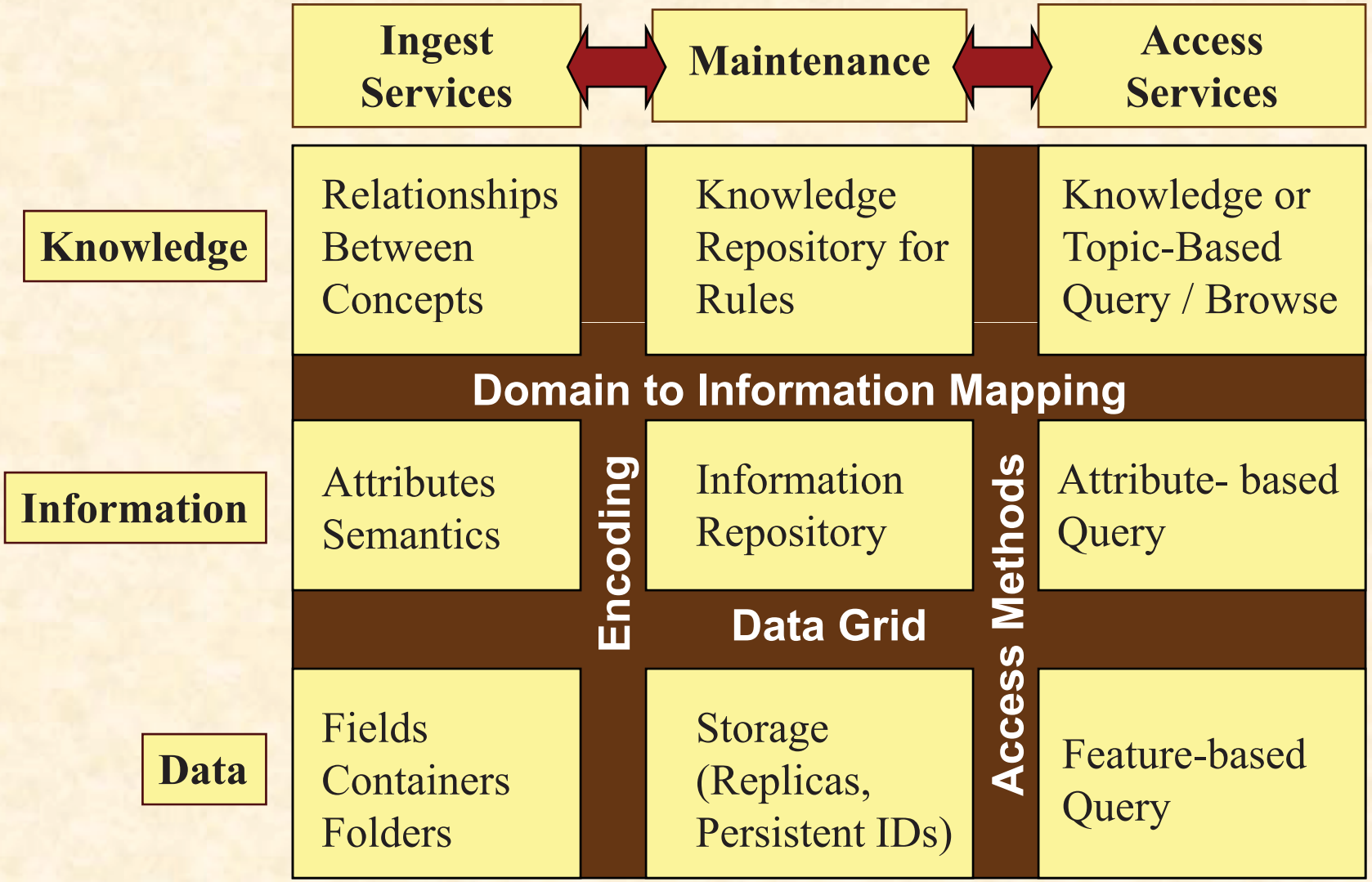
The Library of Congress

DIGITAL LIBRARY FEDERATION

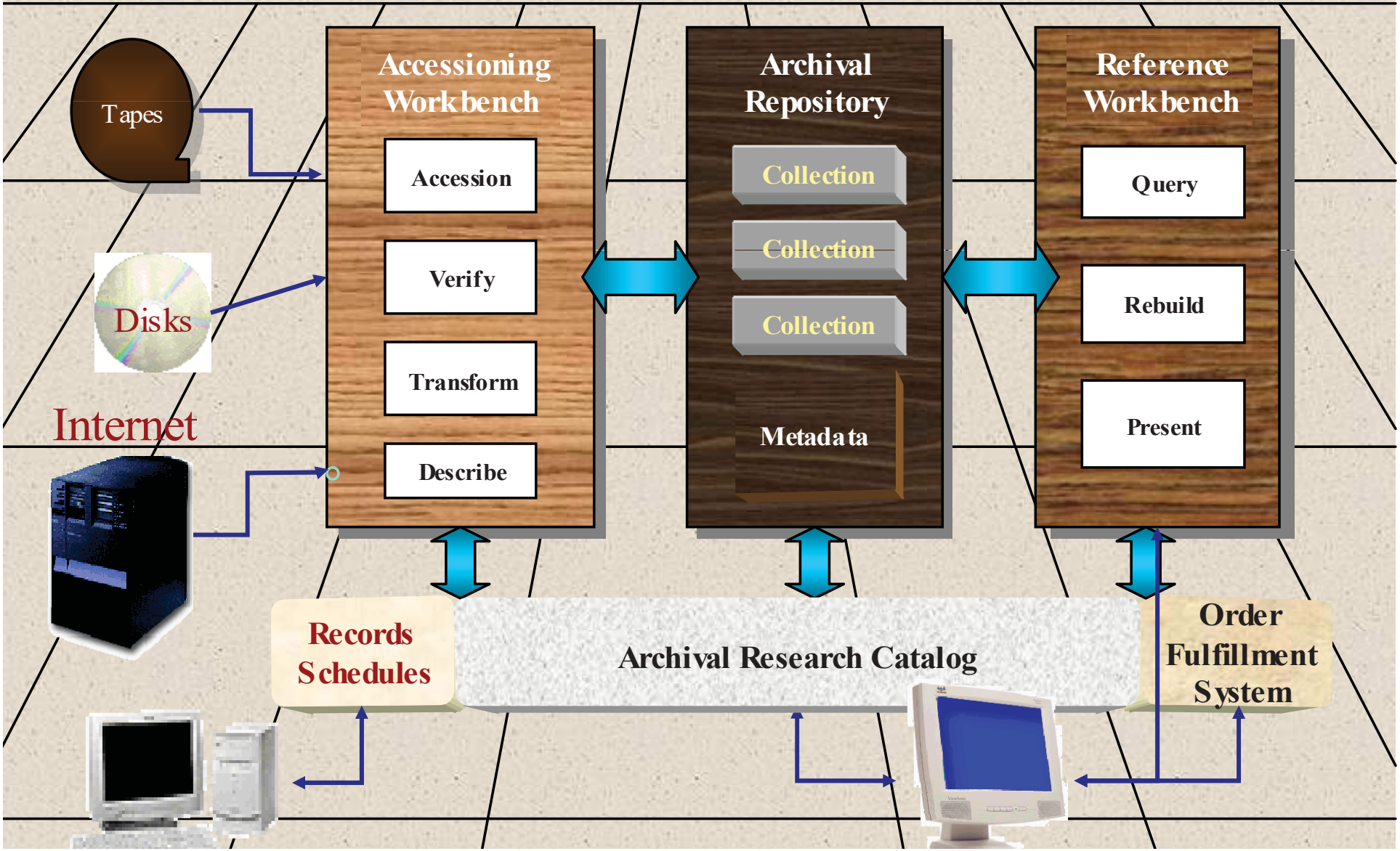
National Partnership for Advanced Computational Infrastructure

"Strategies to assure long-term preservation of digital records constitute another particularly pressing issue for research...."

Knowledge-Based Persistent Archives



Electronic Records Archives: Virtual Workspaces



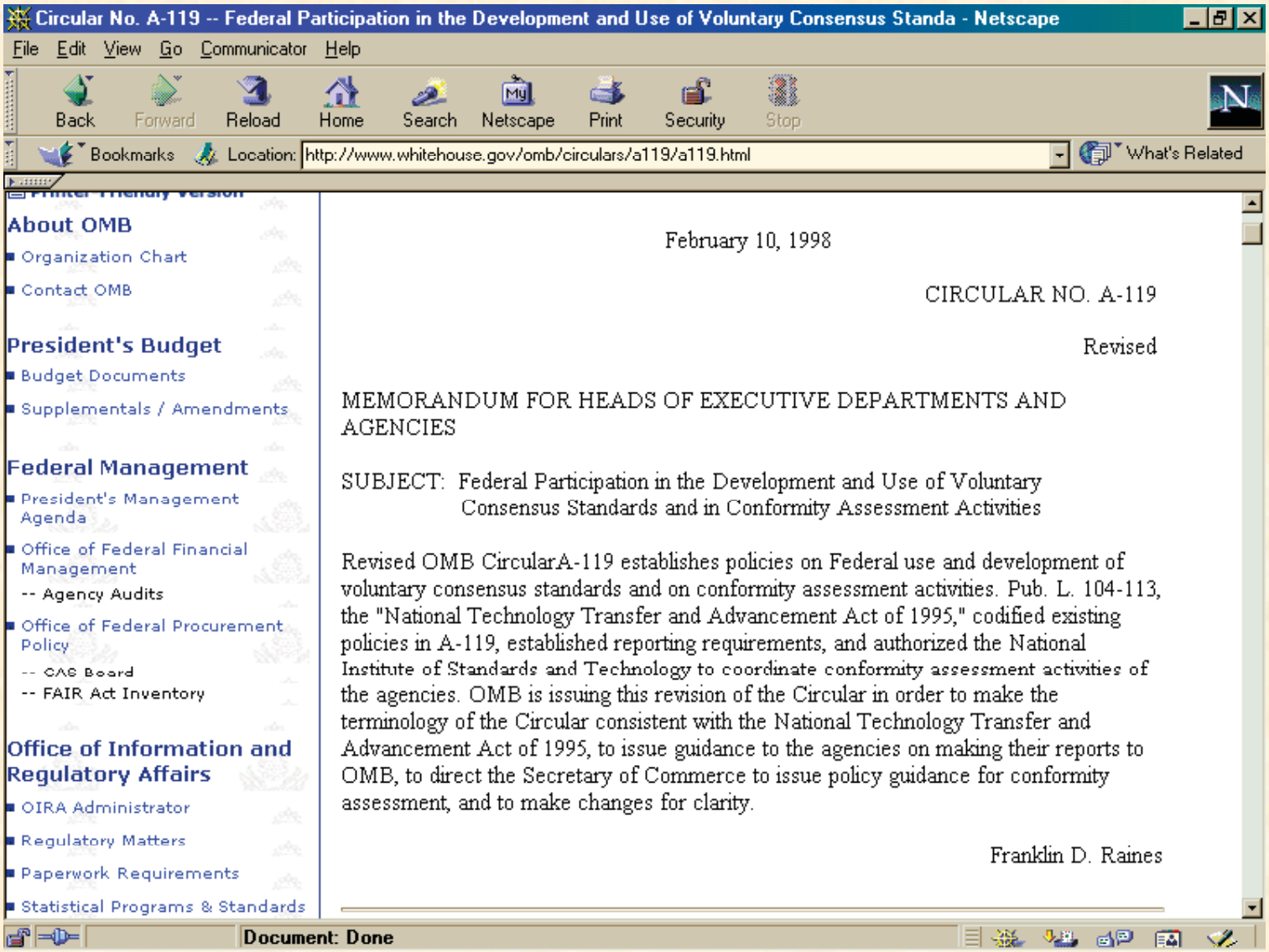
Acquisition of the ERA System

- Release RFP: Current Quarter
  - Contract for Competing Designs:
  - Q 3 FY 2004
    - Select single developer
    - Q3 FY 2005
      - Initial Operating Capability:
      - FY 2007
        - Full Operating Capability
        - FY 2011

To Manage Electronic Records Efficiently and Effectively

- Automate processing
- Incorporate laws, regulations, policies, and sound archival and records management principles in the system.
- Make electronic records *self-describing* and *self-validating* to facilitate processing and management

Self-presenting documents



Plain text view of self presenting Document

Source of: wysiwyg://62/http://www.whitehouse.gov/omb/circulars/a119/a119.html - Netscape

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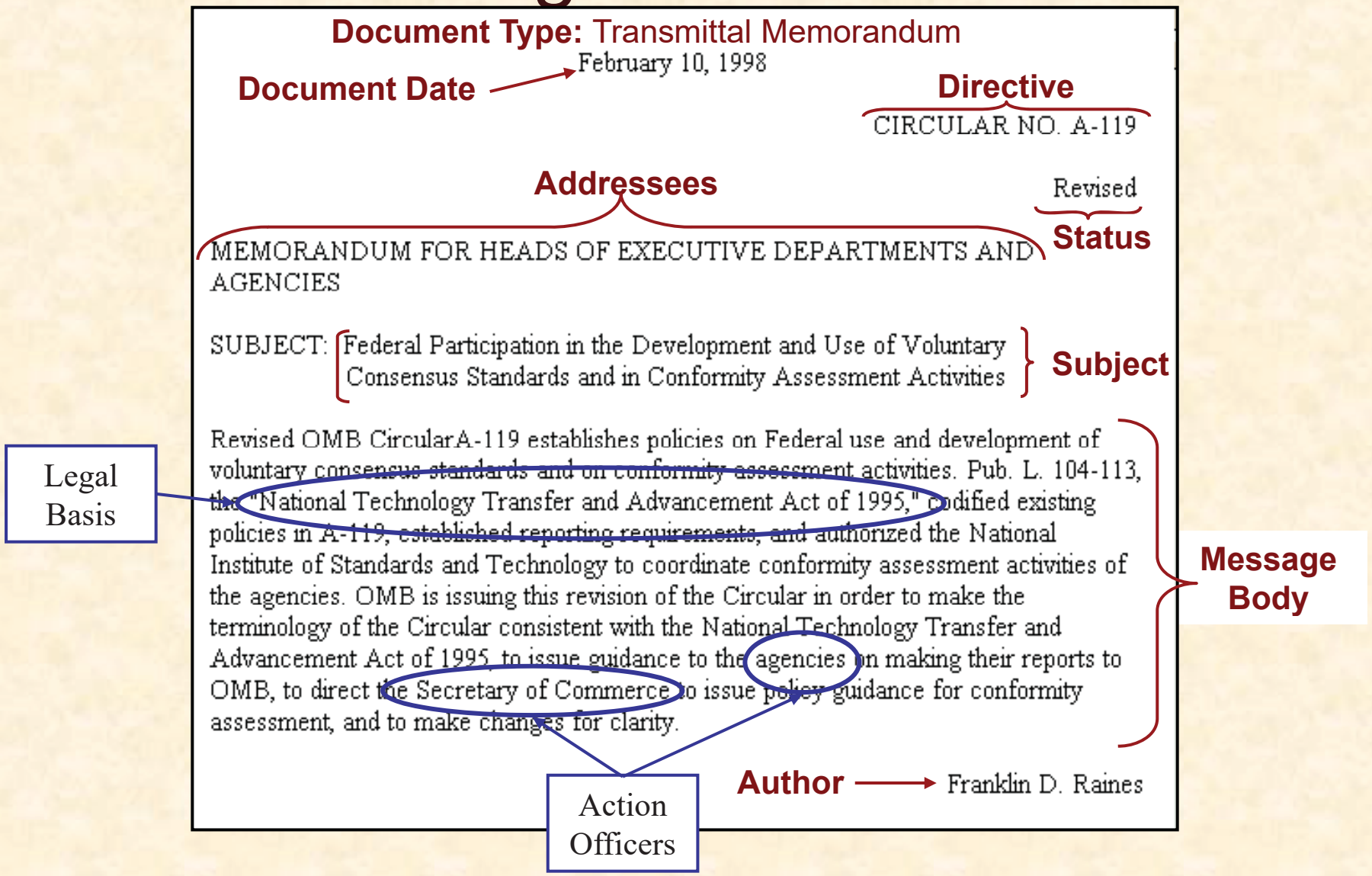
Self-describing Electronic Records



Sample Self-Describing Document

<Document type: transmittal memorandum**>**

<Document Date:> February 10, 1998**</>**

<Directive Transmitted:> Circular A-119**</>**

<Addressees:>Heads Of Executive Departments And Agencies**</>**

<Subject:>Federal Participation in the Development and Use of Voluntary Consensus Standards and Conformity Activities **</> <**

Message Body:>Revised OMB Circular A-119 establishes policies on federal use

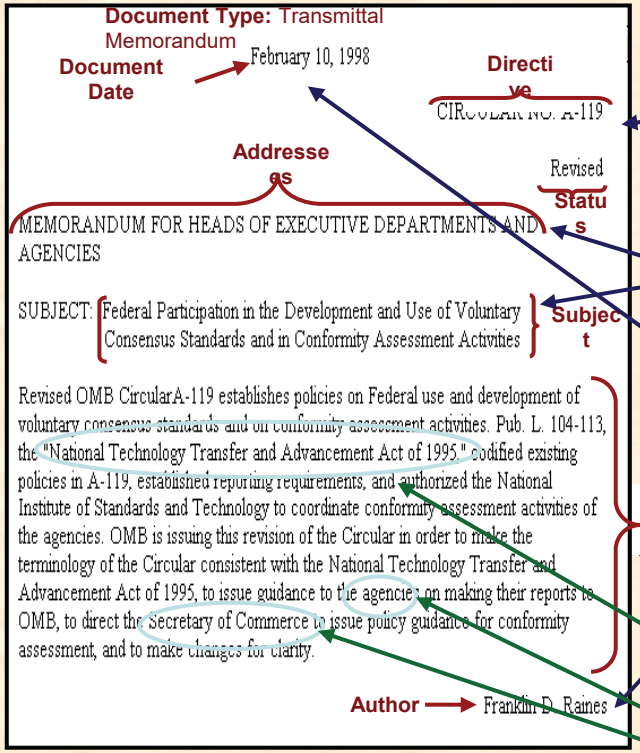
Automated Controls: “Template”

- An abstraction or articulation of the properties of a record, set of records, or a transaction involving records, which must be controlled.
  - The template for all records requires that the provenance, date, and archival bond be specified.
  - The template for State Dept. diplomatic messages requires that all content be plain text.
  - The template for all transfers of records to the National Archives is the S.F. 258

Self-validating Electronic Records

- A **self-describing document** has meaningful indicators of what the document is and/or contains
  - Ideally, the indicators ("tags") are simple and clear enough to be correctly interpreted by any computer or by a person
- When the tags can be used to compare a self-describing document to a model ("template") of what it should be, it can be a **self-validating document**

Template Example

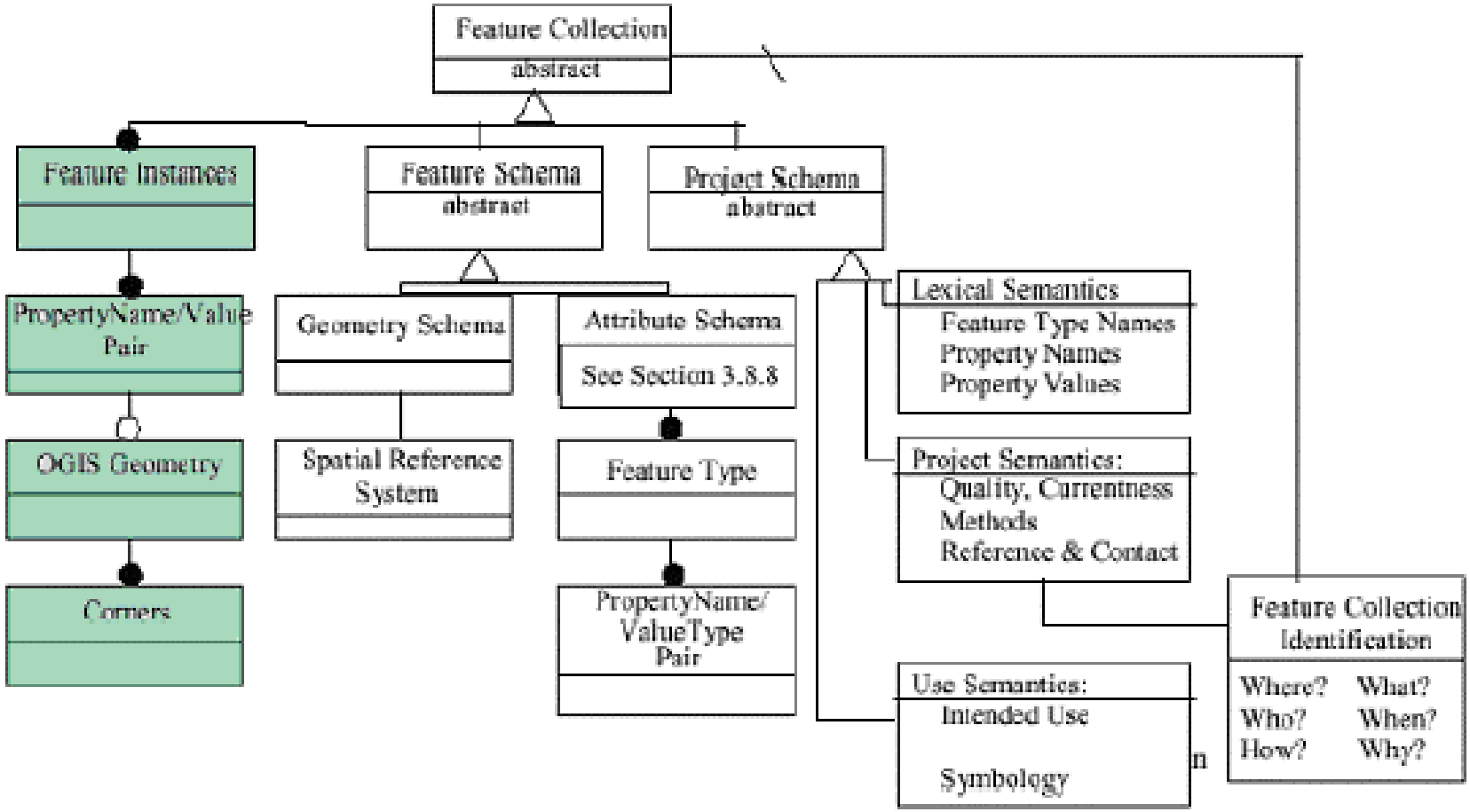


- A "Transmittal Memorandum" must contain
  - Reference to the directive which it transmits
  - A subject header
  - Indication of addressees
  - Identity of the transmitting official
  - Date transmitted by the official
  - A message body
- The message body may identify the legal basis and one or more action officers

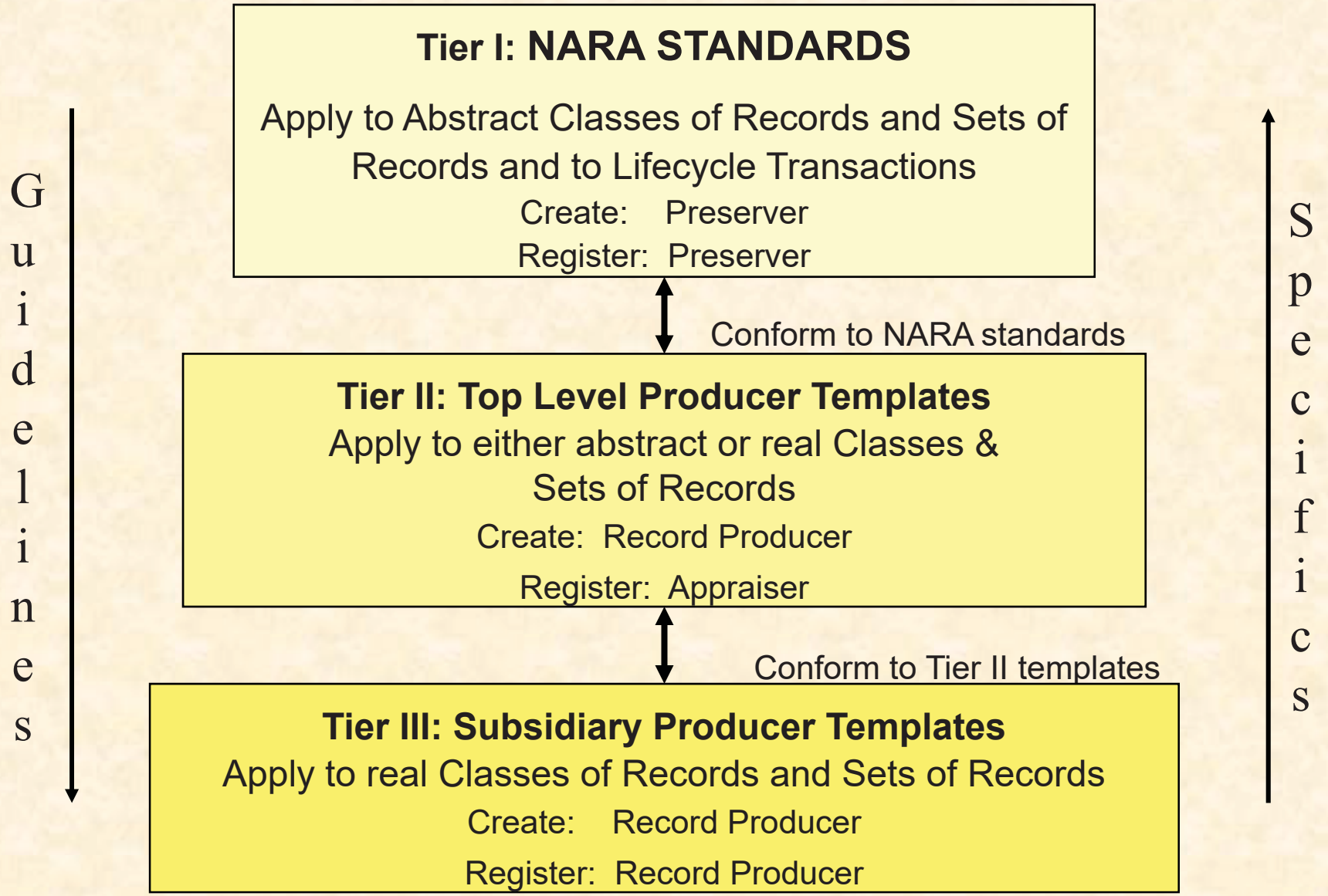
If the template is in executable form, the computer can determine automatically if a record is what it should be.

Geography Markup Language

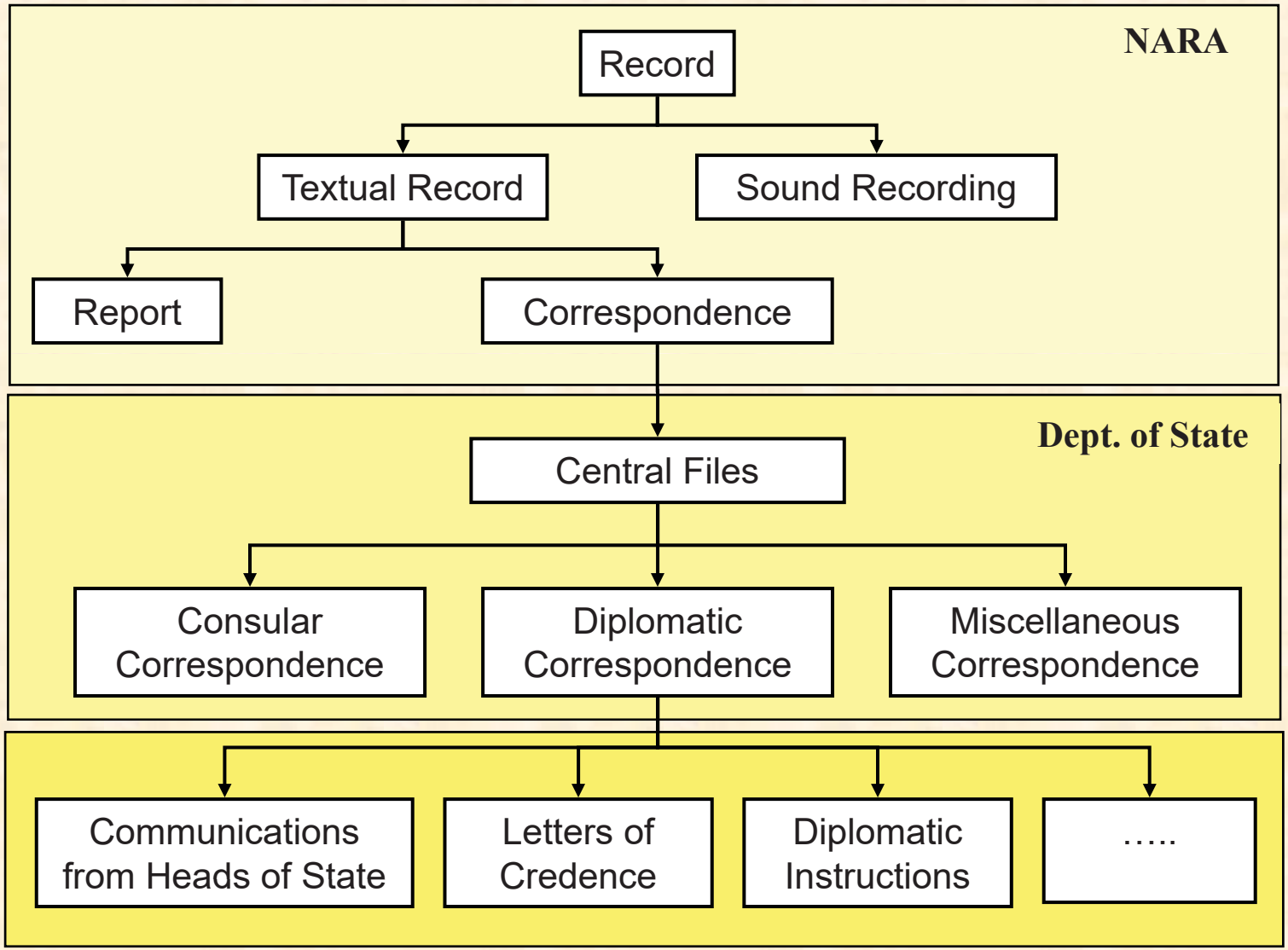
Figure 1.1: The abstract feature model



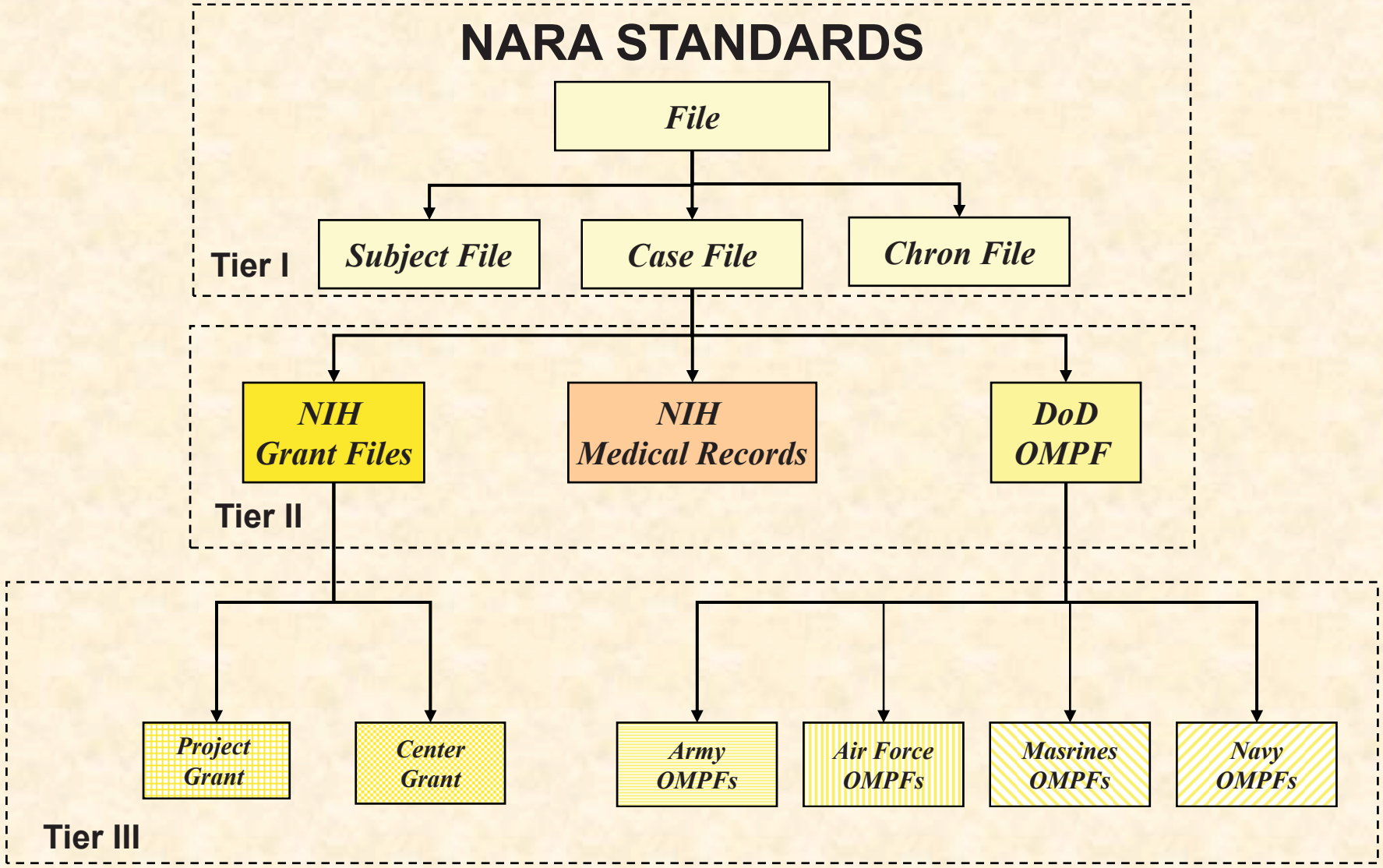
Hierarchy of Controls

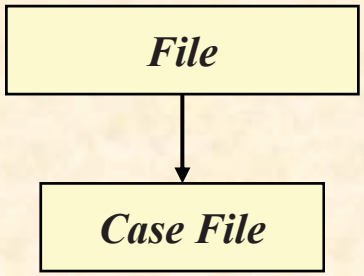


Records Template Hierarchy



Files Template Hierarchy





Case File Standard

- File
  - Identifier
  - Location
  - Coverage
  - Required Records
  - Dates
  - Disposition Authority
- Required Elements
  - Case Identifier
  - Subseries of
  - Nature of case
  - Case Opening Record
  - Case Closing Record
  - Case Start Date
  - Case End Date
  - Disposition Authority
  - ….
- Optional Elements
  - Producer Required Records
  - Producer Optional Records
  - Producer Prohibited Records
  - Cross Reference
  - Unspecified Records
  - ….

Case File: d-OMPF Example

	NARA Standard	DoD Template
File	Case File	Official Military Personnel File
	File Identifier	SSN
	….	….
	Closing Record	Certificate of Release or Discharge from Active Duty
Record	Document Class: Form	
	Form Number	DD 214
	Form Owner	DoD
	Form Version	nn
	Version Issue Date	198x
	Version End Date	199x
		Form specification
	Digital Component	
		Header label
	Component Name	ASCII
	Data type	Page image
		TIF IV

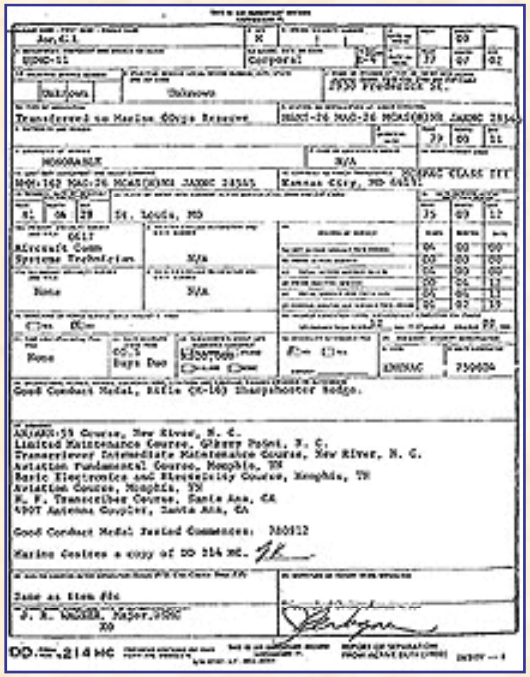
Instance

Header: SSN=xxx-xx-xxxx

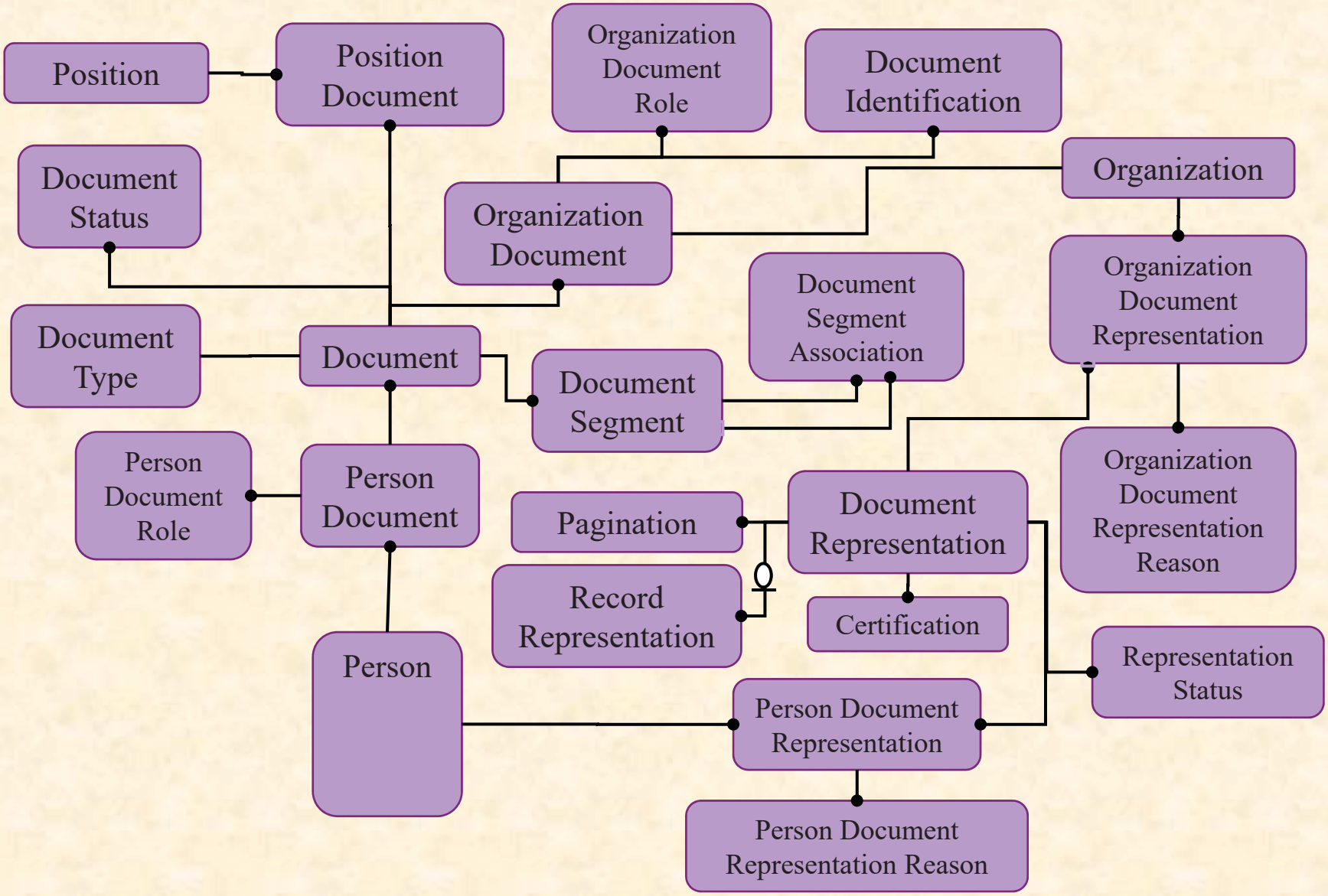
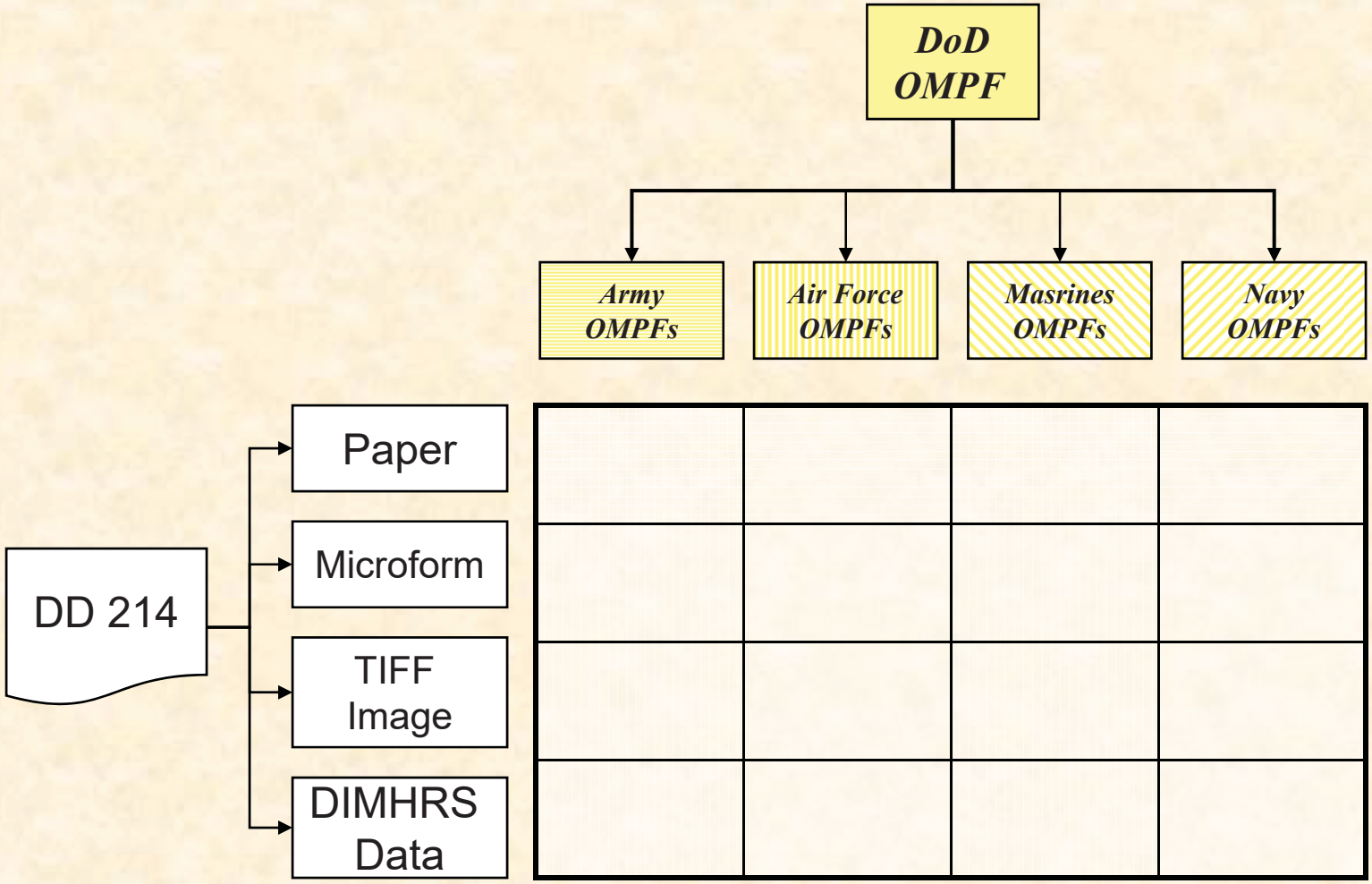
Doc Class=DD 214

Record Date=*dd/mm/yyyy*

….



Virtual DD 214 Database Logical Model



OMPF Template Hierarchy