



National Archives and Records
Administration
Records Management Service Component
Program (RMSC)

RMSC Requirements Development Project
Workshop Report – Session 5

Industry and Academia

March 3, 2005





National Archives and Records Administration
Records Management Service Component Program (RMSC)

**RMSC Requirements Development Project
Workshop Report – Session 5**

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Executive Summary

The Records Management Service Component (RMSC) Program RMSC Requirements Development Project continued on March 3, 2005, with the fifth of six collaborative sessions. This intent of this session was to interface with selected industry and academic experts and to gain their perspective and recommendations on the RMSC work accomplished thus far. The RMSC Requirements Development Project supports the National Archives and Records Administration, E-Government Electronic Records Management (ERM) initiative #24.

The published objectives of the Industry- Academia Review were to:

- Review and provide recommendations for RM component activities and definitions
- Review and provide recommendations for RM component functional requirements
- Provide comments on implementation issues

All objectives were met.

The following were some of the themes that were provided by the participants during the workshop:

Project Framework

- All activities should be supported by a table of definitions
- Need to address the RMSC Working Group (WG) efforts in the context of the records lifecycle
- Define a Concept of Operations for a component (OV-1 model)
- Clarify the relationship of RM to the Federal Enterprise Architecture
- Clarify the relationship of RM components defined in the Service Reference Model with the candidate components identified by the RMSC WG

RM Activities

- Notion that when an object is declared a record it is categorized and authenticated
- As part of the process of declaration, the record is assigned disposition and schedule
- Disassociate authenticity and integrity
- The Maintain Record component does not make sense as written
- Manage Access component is out of scope

The next workshop, scheduled for March 8-10, 2005, will include all 18 federal agency representatives who will review all the recommendations provided by the Industry and Academia representatives. In addition, they will also assess the NARA Subject Matter Expert recommendations to develop a final list of RMSC components with their associated functional requirements.



Table of Contents

| | |
|---|-----|
| RMSC Requirements Development Project Workshop Overview | 1 |
| Appendix A – Workshop Agenda..... | A-1 |
| Appendix B – Workshop Participants..... | B-1 |
| Appendix C – Workshop Expectations/Groundrules..... | C-1 |
| Appendix D – Overview Briefing..... | D-1 |
| Appendix E – RMSC Source Data Activity Definition Comments..... | E-1 |
| Appendix F – RMSC Source Data Activity Name Comments..... | F-1 |
| Appendix G – RMSC Source Data Functional Requirements Comments | G-1 |
| Appendix H – RMSC Source Data for Additional Components Comments..... | H-1 |
| Appendix I – RMSC Source Data for Implementation Issues | I-1 |
| Appendix J – Workshop Evaluation | J-1 |
| Appendix K – Acronyms | K-1 |



RMSC Requirements Development Project Workshop Overview

The Records Management Service Component (RMSC) Requirements Development Project, a part of the RMSC Program, continued with the fifth of six collaborative sessions with representatives from industry and academia.

The RMSC Requirements Development Project supports the National Archives and Records Administration, E-Government Electronic Records Management (ERM) initiative #24.

The published objectives of this workshop were for industry and academia representatives to:

- Review and provide recommendations for RM component activities and definitions
- Review and provide recommendations for RM component functional requirements
- Provide comments on implementation issues

All objectives were met.

The workshop was conducted March 3, 2005 at the Dynamics Research Corporation Decision Support Center (DSC) in Vienna, Virginia. Representatives from both industry and academia attended. They included:

John C. Butler
Chief Architect
Unisys Corp

Dr. Sushil Jajodia
Professor
George Mason University

Larry L. Johnson
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TethersEnd Consulting

Manfred Koethe
President & CTO
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Unisys

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Chief Technical Officer
OSDL

Participants who could not attend, but provided input via electronic means were:

Michael Abbott
Chief Technology Officer
Composite Software

Dr. Louiqa Raschid
Professor
University of Maryland

Duane McCollum
Information Architect
Boeing

Mr. Edmund Feige, the workshop facilitator, welcomed the participants and thanked them on behalf of the National Archives Chief Information Officer and Assistant Archivist, Office of Human Resources and Information Services, Mr. L. Reynolds Cahoon, and the RMSC Program Director, Mr. Daryll Prescott, for volunteering their time and expertise to assist the RMSC working group in reviewing the components and functional requirements developed to date.

He then provided a brief overview of the DSC facility to include the administrative and security requirements. Thereafter, the participants signed-in using the groupware tool. (See [Appendix B](#) for session participant sign-in information).

Following participant introductions, the facilitator presented the groundrules and asked for the workshop members to state their expectations. The results can be found at [Appendix C](#).

The facilitator then presented an overview briefing to provide the background and framework for the participants to review the ongoing RMSC body of work (See [Appendix D](#)). Among the topics presented were:

- RMSC project goals and objectives
- Project schedule and workshops conducted to date
- Project scope
- Guidance provided to the workgroup on how to write a functional requirement

The next series of exercises were for the participants to use the groupware capability to provide their recommendations for improving the understanding and completeness of the RMSC work developed thus far. This included:

- The RM component activity definition (See [Appendix E](#))
- The RM component activity name (See [Appendix F](#))
- The RM component associated functional requirements (See [Appendix G](#))

Their un-edited comments can be found at the Appendices noted above. The table below provides a summary of their recommendations and salient comments.

| Combined Federal Government Agency Workshop | Industry/Academia Comments |
|--|---|
| <p style="text-align: center;"><u>Initiate Record</u></p> <p><i>Capturing information declared as a record with associated attributes into an electronic system capable of managing records.</i></p> <p>1.1 The Initiate Record Component shall provide the capability to assign Record Descriptor Attributes in a consistent format to the incoming record creating an Initially Described Record.</p> | <p>Capture Record (5); Declare Record; Create Record; Accept Record; Log Record; Timestamp Record; Annotate Record</p> <p><i>Discussion issue concerning if it is a record when it arrives at this component, then it should already have been categorized, and scheduled.</i></p> <p>The Capture Record Component shall assign at least the time stamp attribute to the incoming record creating the Captured Record.</p> <p>The Capture Records Component shall enforce the assignment of values to all required metadata attributes associated with a captured record by the metadata framework under use.</p> <p>The Initiate Record Component shall provide the capability to assign</p> |

| Combined Federal Government Agency Workshop | Industry/Academia Comments |
|---|---|
| | <p>Record Attributes to an incoming document in a consistent format creating a Managed Record.</p> <p>The Capture Record Component shall ensure that a valid categorization is assigned to a captured record, as determined by the categorization framework in use.</p> <p>The Capture Record Component shall ensure that a valid disposition schedule is assigned to a captured record, as determined by the approved record schedule in use.</p> |
| <p><u>Schedule Record</u></p> <p><i>Using an established disposition authority, assign the disposition schedule, item number, and disposition instructions to the record.</i></p> | <p>Reschedule Record; Plan Disposition; Specify Record Lifecycle</p> <p><i>The record MUST be categorized as part of the declaration/initiation.</i></p> <p><i>Need to include a provision for a legal hold -- i.e. assign a disposition status, including optional legal hold/suspension.</i></p> |
| <p>2.1 The Schedule Record Component shall provide the capability to accept a categorized record and, using an approved record schedule, populate schedule attributes (e.g. schedule number, schedule item number, disposition act, disposition date, review date, name of scheduler, date of scheduling) for the record, producing a scheduled record.</p> | <p>The Schedule Record Disposition Component shall provide the capability to reschedule the disposition of a managed record, according to the approved record schedule.</p> <p>The Schedule Record Component shall provide the capability to accept a managed record and, using an approved and validated record schedule, populate schedule attributes for the record (e.g. name of scheduler, date of scheduling, expiration date, change of status and time of change of status) creating a scheduled record.</p> <p>Scheduling the disposition of a record shall mean populating all the schedule attributes for the disposition of the record.</p> <p>A "Scheduled Record" is another way of saying a "categorized record", in that the acts of categorization archives, via assignment of the category, the official retention rule from the retention schedule. Therefore, this function is redundant.</p> <p>A schedule editing capability needs to be provided</p> <p>The ability to provide decision matrix/tree/rules... whatever needs to be provided that will match the record with its disposition schedule.</p> <p>Inferencing engines must detect when multiple categorization frameworks are used that result in conflicting life-cycles. Editing tools must be able to select the appropriate life-cycle in such situations. Where a new categorization framework is added to the record... notification of any schedule conflict must be flagged, but the original life-cycle of the record is followed until the record is transferred to a new one.</p> |

| Combined Federal Government Agency Workshop | Industry/Academia Comments |
|--|---|
| <p><u>Categorize Record</u></p> <p><i>Matching the descriptive criteria of the records against a separately defined list of descriptive criteria defining a category.</i></p> | <p>Recategorize Record (2); Categorize Record</p> <p><i>Need to add capability to modify the classification or categorization scheme if for no other reason than to add categories.</i></p> <p><i>How are new categories to be created when an incoming document does not fit into any existing category?</i></p> <p><i>Is multiple categorization allowed?</i></p> <p><i>Need to add capability to modify the classification or categorization scheme if for no other reason than to add categories</i></p> <p><i>In regard to previous comment on cross-group searches... we (again) need categorization in multiple categorization frameworks, which will require a semantic mapping of concepts among the frameworks.</i></p> |
| <p>3.1 The Categorize Record Component shall provide the capability to allow authorized users (individuals, organizations, or applications) to categorize or re-categorize a selected record to provide a categorized or re-categorized record.</p> | <p>The Categorize Record Component shall provide the capability to for re-categorizing a managed record, according to the categorization framework in use.</p> <p>The Categorize Record Component shall provide the capability to categorize or re-categorize a selected record to create a categorized or re-categorized record.</p> |
| <p>3.2 The Categorize Record Component shall provide the capability to apply the authorized categorization schema to an uncategorized record to produce a categorized or re-categorized record with added categorization attributes (to include category, name of categorizer, and categorization date).</p> | <p>The Categorize Record Component shall record the user and timestamp of each record categorization action. [I am not sure what else "added categorization attributes" means...]</p> <p>If re-categorization produces other than simply added attributes, then the old categorization framework must remain and the record *additionally* categorized under the new framework</p> |
| <p>3.3 The Categorize Record Component shall provide the capability to apply the related business rules to an uncategorized record to produce a categorized or re-categorized record with added categorization attributes (to include category, name of categorizer, and categorization date).</p> | <p>Confusing with the prior 2 requirements of Categorization. What is a "business rule? If it means a disposition rule (e.g. Keep 2 years and destroy), then call it a disposition rule. Business rule = too general.</p> <p>Categorization will determine what the business rules for the record are... not vice versa.</p> |
| | <p>Notes:</p> <p>Provide the ability to globally re-categorize records. (Initial error or change of category)</p> <p>There should be a separate component for creating and editing categorization frameworks (e.g., the "meta-model" for categorization).</p> |

| Combined Federal Government Agency Workshop | Industry/Academia Comments |
|---|---|
| <p align="center"><u>Search Record</u></p> <p><i>Query all or selected system repositories of records (transitory, temporary, and permanent) across the enterprise for content and/or attributes, in order to determine the existence and location of matching records and produce a descriptive list.</i></p> | <p>Query System; Query Repository</p> <p><i>...cross-group searches... we (again) need categorization in multiple categorization frameworks, which will require a semantic mapping of concepts among the frameworks.</i></p> |
| <p>4.1 The Search Record Component shall provide the capability to accept a user query, apply the query criteria to the universe of available records, producing a list of matching records.</p> | <p>The Search Records Component shall provide the capability to apply a query to the set of managed records, identifying those records that match.</p> <p>The Query System Component shall provide the capability to accept a user query, apply the query to the available records and attributes, produce a list of matching records or the count of hits as requested</p> |
| | <p>Notes: The Search for Records Component shall provide the capability to apply a query to only the results of an earlier query, identifying the subset of records that match the refined query.</p> |
| <p align="center"><u>Retrieve Record</u></p> <p><i>Using the descriptive list produced by the Search Record component, allow for the selective display of the full record and/or associated attributes for the purpose of review, printing or permissible editing.</i></p> | <p>This is really Retrieve ENTIRE Record (to differentiate from Search Record); Whole Record Retrieve; Found Record</p> <p><i>This should be combined with Manage Access component into one component.</i></p> <p><i>Is a record accessible or non-accessible in toto? Does accessibility to a record imply accessibility to its metadata (attributes)? All the metadata?</i></p> <p><i>Extend definition to include more of the things commonly needed to result lists (charge out/borrow), download a copy, send to, etc. Also, need to specify that all actions taken on found items must be recorded in an audit trail.</i></p> |
| <p>5.1 The Retrieve Record Component shall provide the capability to use the results of the Search Record Component and make selected record(s) and their associated attributes available for viewing, printing, or saving a copy.</p> | <p>It sounds more like Search. I would have expected this to read "...retrieving an entire record for viewing, etc...."</p> <p>"Retrieve" should be generalized to include all possible actions that can be taken on a record, once found. Retrieve is too specific. For instance, perhaps rename to "Found Records Actions". View/Print/Save has been mentioned, but what about "Send to", annotate, or any other possible action?</p> <p>The Retrieve Record Component shall provide the capability to retrieve the entire content of an identified record (such as records identified in</p> |

| Combined Federal Government Agency Workshop | Industry/Academia Comments |
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| | <p>the results of a Search for Records Component query).</p> <p>The Retrieve Record Component shall allow a retrieved record to be viewed, printed or saved as a copy.</p> |
| <p><u>Ensure Integrity</u></p> <p><i>To ensure the authenticity and completeness of a record and associated attributes upon its creation and throughout its lifecycle.</i></p> | <p>Validate Record; Preserve Record; Authenticate Record; Assign Authenticity Code</p> <p><i>It is not clear to me how this can be done as a separate component. Isn't this part of the requirements for individual functions acting on the record throughout its lifecycle?</i></p> <p><i>Integrity and Authenticity are not synonymous. Therefore, an Integrity attribute does NOT produce and Authenticity Indicator.</i></p> <p><i>How does the system define "complete"? Is this just a function of the actor providing the record and the system assuming a trust relationship?</i></p> <p><i>How to ensure completeness of a document of non-electronic origin (scanned document)</i></p> <p><i>It is not clear what "integrity" means in this context. I don't think that it means "data integrity" in a database sense. (If it does mean data integrity, then it certainly is not synonymous with authenticity.)</i></p> <p><i>Integrity is just a technical criterion of correctness; it does NOT prove the authenticity. Integrity and Authenticity are orthogonal terms.</i></p> |
| <p>6.1 The Ensure Integrity Component shall assign an Integrity Attribute to a Record to produce an Authenticity Indicator.</p> | <p>The Ensure Integrity Component shall assign an integrity attribute to allow integrity verification of the record</p> <p>Integrity may well need more than "an" attribute.</p> <p>The Check Integrity Component shall check storage integrity of a record (such as checksum).</p> <p>Authenticity Component shall provide protection from invasion and investigate for possible changes in the records.</p> |
| <p>6.2 The Ensure Integrity Component shall provide the capability to match a Current Authenticity Indicator to a Previous Authenticity Indicator producing a Verified Authenticity Indicator.</p> | <p>If this is a mapping from previous authenticity to current authenticity, what does it have to do with integrity? Isn't this about authenticity maintenance (what the expert systems community would call truth maintenance)?</p> |
| | <p>Other Requirements:</p> <p>The Authenticity Component shall add an Authenticity Attribute to support authenticity verification. This shall occur once at the initial population of the record. The authenticity attribute shall be immutable</p> |

| Combined Federal Government Agency Workshop | Industry/Academia Comments |
|---|--|
| | <p>The Validate Record Component shall apply defined integrity rules against a managed record after any action affecting that record. [How are such rules defined and managed?]</p> <p>The Validate Record Component shall provide the capability to authenticate a managed record.</p> <p>Missing is distributed and replicated record systems: The integrity component shall maintain record integrity across distributed and replicated environments.</p> <p><u>Notes:</u> Disassociate Authenticity from Integrity. I suspect you mean something totally different for one or both of those terms. Authenticity says something about the source; Integrity says something about the maintenance of the information itself.</p> <p>In what way does integrity permit determination of authenticity?</p> <p>Integrity will need to be managed as part of the life-cycle. Depending on the type of media the data are recorded on, the life-cycle needs to include refreshing the media.</p> <p>There need to be separate requirements for integrity and authenticity.</p> <p>I was surprised not to see in here anything about integrity -- it all seems to be about authenticity. I would have expected something about verifying *integrity* (i.e., CRC, some other internal-consistency measure) not authenticity (which is a measure of source).</p> <p>Any action that would cause a record to fail validation shall be rejected, having no effect.</p> |
| <p><u>Maintain Record</u></p> <p><i>Storage regardless of format that ensures authenticity, availability, retrievability and storage locations to related records.</i></p> | <p>Preserve Record (2); Create New Format; Copy Into New Format; Reformat Record</p> <p><i>This component seems almost meaningless to me in and of itself. Isn't maintaining the record what the whole record system is about? Isn't physical storage a different issue than functional requirements?</i></p> <p><i>Seems as though this is just a result of the other functional areas. Unless otherwise stated by some other function, the records are stored. These could be captured as non-functional requirements</i></p> <p><i>This name can also be interpreted to be the capability to update a record or the perhaps more specifically the meta-data about a record in</i></p> |

| Combined Federal Government Agency Workshop | Industry/Academia Comments |
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| | <p><i>order to correct a problem, for instance. If this is really talking about the ongoing preservation issue, then we need to deal with the update issue somewhere else.</i></p> |
| <p>7.1 The Maintain Record Component shall provide the capability to associate an existing record used in creating a new record producing a populated Record Association Attribute associating the existing record used to the new record.</p> | <p>Not clear what it is saying!</p> <p>As I read this, it says only that if a record is duplicated in a new format there shall be a pointer in the attributes of the record pointing to the new record. It should also say that the attributes of the initial file should also be duplicated for the new record and there should be pointer to the original file.</p> <p>I think I understand what is wanted, but it could certainly be said more clearly! Perhaps "Maintain traceability relationships between physical versions of records"?</p> <p>The Maintain Record Component shall be able to create a new instance of a given record to become part of a new record set, which succeeds the given record set. The source and target record shall be content-wise identical. This operation shall preserve the record Authenticity.</p> |
| | <p><u>Other Requirements:</u> Ensure that the readability of the record is preserved over its lifecycle, to the final disposition date. Includes preservation of format and media where practicable</p> <p>Shall provide the capability to duplicate the semantic meaning of a record into a new media format record. Attributes are copied and pointer attributes are added from new to old and from old to new records.</p> <p><u>Notes:</u> Actually seems to refer to preserving and record and as such should really be a non-functional requirement.</p> <p>Maintain Record is OK if it is changed to included requirements for actually managing the records and their interrelationships</p> <p>I would have expected this component to be responsible for maintaining many of the nonfunctional requirements (reliability, security, privacy, performance) at times when the record is accessed, displayed, used, transferred, etc</p> <p>Seems as though this is just a result of the other functional areas. Unless otherwise stated by some other function, the records are stored. These could be captured as non-functional requirements.</p> |

| Combined Federal Government Agency Workshop | Industry/Academia Comments |
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| <p align="center"><u>Manage Access</u></p> <p><i>Control and maintain history of access to specific record attributes, such as records or file series based on security classification, functional roles, organizational position, delegated permissions or other restrictions.</i></p> | <p>No mention of privacy, and isn't this where nonfunctional requirements (reliability, access management) would be covered?</p> <p>Is this out of scope?</p> <p>Seems as though we're talking about logging combined with some non-functional's (reliability, access, etc.).</p> |
| <p>8.1 The Manage Access Component shall provide the capability to use the Manage Access Tool to determine the Approval, Disapproval or Partial Approval of the request to access a record(s).</p> | <p>What is "Partial Approval" to access a record? This would seem to be a Boolean state.</p> <p>The Manage Access Component shall determine, for each attempted action, whether the user is authorized for that action.</p> <p>For an authorized search or retrieval action, the Manage Access Component shall determine whether the user has approval for access to all or only part of the accessed records.</p> |
| | <p><u>Notes:</u> Eliminate this component – out of scope</p> <p>If security (and privacy for that matter) are not out of scope, and they shouldn't be, then you need to add requirements such as managing those who can use the system, managing the specific rights to functions and records, managing how information is transmitted, etc.</p> |
| <p align="center"><u>Execute Disposition</u></p> <p><i>Implement destruction, transfer, or continued retention of a record in accordance with the established retention. After validation that the disposition is proper, remove record from the other controls, execute the activity, and record the transaction.</i></p> | <p>Execute Disposition Schedule (2); Process disposition</p> <p><i>Need to extend this definition with the concept of REVIEW. The REVIEW stage of disposition is critical. Suggest "Implement review, destruction, transfer, or continued retention....."</i></p> |
| <p>9.1 The Execute Disposition Component shall provide the capability to take the Record from a designated location and owner to another owner and location that produces the exact Released Record.</p> | <p>.... to move the record from its current location to a different specified location, while preserving and updating the metadata as required to reflect the new location and/or owner.</p> <p>Should be careful to describe transfer of e-records as copy to another location and then delete off initial location if disposition permits or if override of disposition is being authorized.</p> |
| <p>9.2 The Execute Disposition Component will populate the Suspend Disposition Attribute when a Suspend Disposition Intervention occurs.</p> | <p>This is not appropriate here. The Disposition process (execution) merely checks to see if a hold is in place. A (new) separate requirement LEGAL HOLD needs to be used to apply, maintain, and revoke holds, as holds are completely independent of disposition. Disposition simply</p> |

| Combined Federal Government Agency Workshop | Industry/Academia Comments |
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| | respects a hold, at the time of execution. |
| 9.3 The Execute Disposition Component will provide the capability to return a scheduled record when the Suspend Disposition Attribute is not populated. | Ignore final disposition if a legal hold is found to be present at time of disposition, and record why the disposition was ignored When suspend disposition attribute is not populated then the record should not have been deleted in the first place. |
| 9.4 The Execute Disposition Component will take a scheduled record approved for destruction and destroy the record. | Destroy a record approved for destruction, such that it cannot be recovered, as long as no legal hold is in force at the time of disposition. |
| 9.5 The Execute Disposition Component will take a scheduled record approved for transfer and transfers the record. | Transfer a record approved for transfer at the time of disposition. Transfer will remove the record and its metadata from the originating system/source; move it and its associated metadata to a new, specified location, then destroy the original in a non-recoverable fashion. The original record/metadata is not to be destroyed until the successful completion of the move has been confirmed. An audit trail will record the particulars of the transfer. Transfer must include assurance of successful ingest into foreign location Isn't this redundant with the first disposition requirement? |
| 9.6 The Execute Disposition Component shall provide the capability to make a Categorized Record available for destruction by ensuring the identified destroyed record is no longer available in the system and that information (date) about the destruction is made available as evidence of the destruction in a Agency Record Destruction Tool a record of destruction was produced. | Attributes of record should not ever be destroyed |

The participants were then asked to provide other records management component activities that should be considered. That brainstorming list included (See [Appendix H](#)):

- Edit Record Metadata
- Edit Category Framework
- Declare Record
- Suspend Record
- Global Update
- Preserve Authenticity

The workshop participants were then asked to provide their insights in answering four questions:



1. Which components are currently available in the marketplace?
2. What should the government strategy be to stimulate industry interest in records management service component development?
3. Do RMSC's have utility outside of the federal marketplace? Where?
4. Issues that the government should be aware of to ensure a successful industry development and deployment of RMSC's
5. What additional thoughts do you want to convey to the RMSC working group?

Their detailed comments can be found at [Appendix I](#).

The final activity then asked of the participants was to provide a workshop evaluation. (See [Appendix J](#))



Appendix A – Workshop Agenda

Workshop Objectives:

- Review and provide recommendations for RM component activities and definitions
- Review and provide recommendations for RM component functional requirements
- Provide comments on implementation issues

Thursday, March 3, 2005

- 9:00 Arrival
- 9:30 AM Introduction
- Administrative
 - Session Objectives
 - Participant sign-in/introductions
 - Groundrules/Expectations
- 10:00 Introductory Briefing
- 10:30 Review RMSC Activities and Definitions
- 11:30 PM Lunch
- 12:30 Review RMSC Functional Requirements
- 2:00 Provide Industry/Academia Analysis of Implementation Issues
- 3:50 Session Wrap up
- 4:00 Session Adjourns



Appendix B – Workshop Participants

[\[return to page 3\]](#)

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Expertise: Databases, metadata, development environments



Timothy D. Witham

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Expertise: Open Source/Linux - large computer systems

Participants who could not attend, but provided inputs via electronic means were:

Michael Abbott

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Composite Software

Dr. Louiqa Raschid

Professor

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Duane McCollum

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Appendix C – Workshop Expectations/Groundrules

[\[return to page 3\]](#)

Expectations

- To help out the best I can.
- Understand the problem and contribute as best as I can
- Learn more about NARA project plans and IT requirements
- A clear understanding of NARA's requirements and a belief that the resulting requirements will result in government systems acquisitions that have positive impact and major benefit.
- Round out the RMSC Component summary to "minimum viability" state.
- Further understand the real-life context and short-term goals of RMSC
- Educate RMSC stakeholders on real-world e-records issues
- Overview understanding of the problem - and general idea of initial direction of the solution
- Work in the group setting to refine the requirements of NARA, to learn about their requirements for future reference.
- We should understand the requirements and use cases of the system
- We should have a general idea of how the end-to-end system will work.
- Weak spots and dangerous components should be identified for special care.
- I'd like to understand where NARA is in the process of establishing an ERM system, the standards deemed important to their organization, and the status of other agencies in ERM initiatives.
- Learn more about the problems at NARA. Learn how to help NARA
- Share ideas for solutions

Groundrules

- Focus on the agenda
- Facilitator will recognize speaker
- One person speak at a time
- Address the full group
- Minimize side conversations
- Treat all ideas with respect
- 10 minute time limit per issue and 80-20 rule
- Non-consensus areas listed as unresolved issues
- Electronic environment (Capture data; anonymity)
- Cell phones/BlackBerrys on mute

Appendix D – Overview Briefing

[\[return to page 3\]](#)

The slide features a grid of 24 agency logos on the left, including the Department of Defense, NASA, and GSA. The main content area is dark blue with a yellow box containing the title 'RMSC Project Overview' and the presenter's name 'Presented by Ed Feige'. The RMS C logo is in the top right corner.

The slide has a yellow header with the RMS C logo and the word 'Guidance'. The main content is on a white background with a blue border, containing a bulleted list of instructions from the OMB to CIO Council, Architecture and Infrastructure Committee. A small number '1' is in the bottom right corner.

► OMB to CIO Council, Architecture and Infrastructure Committee:
Develop a records management profile patterned after and consistent with the Security and Privacy Profile.

- Promote early identification of records management issues.
- Assist agencies in identifying their records management requirements and link them to their implementing technologies and business processes.
- Translate records management requirements into all aspects of agency business through technical controls at the system level.
- Insert records management requirements into the Capital Planning, Business Process Design and System Life-cycle management processes.

RMSC Global views across the FEA

Records Management issues relevant to each FEA model

2

RMSC Goals and Objectives

- ▶ Define RM Profile in the context of the FEA in order to demonstrate its importance
- ▶ Help agencies identify components that can “plug and play” into new and existing business processes and supporting IT systems
- ▶ Develop policy and guidance recommendations regarding the implementation of the RM Profile across reference models
- ▶ Define the suite of RM components and services needed to facilitate RM functions and activities within and across organizational boundaries
- ▶ Identify (and eventually incorporate) new and reusable components and services early in agency processes and activities – justify that RM should not be an afterthought
- ▶ Make component specifications and services available in government registries / repositories such as Core.Gov, Solutions Exchange, and ET.Gov

3

RMSC Project Program Activities

- ▶ **RMSC requirements collection project**
 - Collect requirements from federal agencies
 - Feedback from NARA SME's
 - Feedback from industry and academia
 - Document agency agreement on final set of RM activities for component acquisition
- ▶ **Get the word out to industry and academia**
- ▶ **Continue coordination with federal agencies**
- ▶ **Stand by for potential initiation of acquisition**

4

Project Schedule

| January 2005 | | | | | | |
|--------------|-----|-----|-----|------|-----|-----|
| Sun | Mon | Tue | Wed | Thur | Fri | Sat |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | |

February 2005

| February 2005 | | | | | | |
|---------------|-----|-----|-----|------|-----|-----|
| Sun | Mon | Tue | Wed | Thur | Fri | Sat |
| | | 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | | | | | |

March 2005

| March 2005 | | | | | | |
|------------|-----|-----|-----|------|-----|-----|
| Sun | Mon | Tue | Wed | Thur | Fri | Sat |
| | | 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | 31 | | |

5

Records Management Service Components Program
"Putting Records First"

D-3



RMSC Working Group Framework

- ▶ **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

6



Framework (cont.)

- ▶ **Session Ontology**
 - Record Category = Record Classification
 - Security Classification = Annotation to the record designating a level of protection and restriction to access.
 - Annotation = A marking on the record (e.g. current or past level of security classification, privacy act restrictions).
 - Create
 - Acknowledge that the document is whole and represents the evidence of the business transaction
 - Not who, why, and how it came into being, but “**WHAT**” are you going to do with it now that it is being managed as a record

7

Guidance on Writing a Functional Requirement

▶ **Function of a System**

- Want or desire the system to do
- Activities desired of the system to perform
- Usually indicates human interaction (when the print screen button is pressed) or no human interaction needed “automatically”

▶ **Functional Requirement:**

- Provides identifiable and testable objects and activities
- Input
- Activity
- Output
- Can identify “tools”, “tables”, “entities”, and “attributes” necessary to carry out the functional requirement
- Easily extractable from entity relationship notation

```

graph LR
    Info[Information] -- "Available Document" --> Assign[Assign Record Category]
    Assign -- "Categorized Record" --> Record[Record]
    style Info fill:#ffff00,stroke:#333,stroke-width:1px
    style Assign fill:#ccccff,stroke:#333,stroke-width:1px
    style Record fill:#008000,color:#fff,stroke:#333,stroke-width:1px
    
```

8

Examples of Functional Requirements

▶ The Declare Record Component shall provide the capability to make information evidencing a business transaction available to the Categorize Record Component for categorization as a **Uncategorized Record**

▶ The Categorized Records Component shall provide the capability to assign a records category to the **Uncategorized Record** producing a **Categorized Record**

▶ The Validate Security Classification Component shall provide the capability to compare the security classification marking of the **Categorized Record** and populate the **Validated Security Classification attribute**

```

graph LR
    Input[Input] --> Activity[Activity]
    Activity --> Output[Output]
    style Input fill:#ffff00,stroke:#333,stroke-width:1px
    style Activity fill:#ccccff,stroke:#333,stroke-width:1px
    style Output fill:#008000,color:#fff,stroke:#333,stroke-width:1px
    
```

9

Some Functional Requirement Rules

- ▶ **If you have an ‘and’ or ‘or’ = two separate requirements**
 - Write the requirement then break it out at the conjunction
 - EXCEPTION – An output such ‘making available for printing, saving, or viewing’
- ▶ **Singular versus plural**
 - ‘Bank of America’ example
 - ‘Process one check correctly and then repeat it a million times’
- ▶ **Report(s) = Make data available**
 - Component shall make the data available from X attribute for the purpose of...
- ▶ **What not How**
 - Do not stipulate a current or future technology solution

10

RMSC Program Activities

Questions??

11

Appendix E – RMSC Source Data Activity Definition Comments

[\[return to page 3\]](#)

1. Initiate Record – *Definition: Capturing information declared as a record with associated attributes into an electronic system capable of managing records.*

- If one is creating a record, then the incoming thing must not be a record
- Seems circular - record defined as record
- Should be "Create Record" which would include initiation, perhaps multi-state maturation, and completion as a created record.
- Boundary between document and record doesn't seem clearly defined. I have my understanding of this boundary, but who knows if I'm right?
- Needs to include a "value assessment". Is this proposed record a record (or not?)
- Should also include the following: Once declared as a record, the disposition process has the EXCLUSIVE ability to delete.
- The record MUST be categorized as part of the declaration/initiation.
- This would be better called "Capture Record". "Initiate" has too much of the connotation of including "create" or "declare", which is not intended.
- Perhaps there should be a separate "Declare Record" component, which may or may not be considered "out of scope" at this time. (After all, "Manage Access" is included in the list, even though that is considered out of scope.)
- This needs to be combined or at least related with schedule record and categorize record
- The Capture Record Component shall assign at least the time stamp attribute to the incoming record creating the Captured Record.
- Definition is not clear. Not sure the verb "Capturing" is desirable nor adequately descriptive. Use "accept" or "Assemble"? e.g., accept and assemble information declared as a record and its declared attributes into a digital system capable of managing such records.
- The definition seems clear, but the name seems a bit ambiguous. How about 'Establish Record' or 'Instantiate Record'?

2. Schedule Record - *Definition: Using an established disposition authority, assign the disposition schedule, item number, and disposition instructions to the record.*

- What is difference between schedule number and schedule item number?
- Needs definition of disposition
- Needs to include a "value assessment". Is this proposed record a record (or not?)
- Should also include the following: Once declared as a record, the disposition process has the EXCLUSIVE ability to delete. The record MUST be categorized as part of the declaration/initiation.
- Need to include a provision for a legal hold -- i.e. assign a disposition status, including optional legal hold/suspension.

- A brief definition of "disposition" would be useful. We can preserve what appears to be the "one sentence rule" with the creative application of semi-colons.
- The concept of "disposition" underlies both this and "Execute Disposition". The idea seems to be that the record is scheduled for some action by this function, and then that action is executed on schedule by the Execute Disposition function.
- Perhaps this should be called "Reschedule Record", assuming that some initial schedule must be established on initial record capture.
- Definition is not clear and not sure about the name.
- I am not sure what the purpose of the, or a, schedule is. Not sure what I need to know about an "item number" or what that means. Do we mean, here, the record's unique identifier from the source management system? What is the purpose of the schedule? What would disposition mean at this level of requirement statements?
- The definition seems inconsistent with the definition.

3. Categorize Record – *Definition: Matching the descriptive criteria of the records against a separately defined list of descriptive criteria defining a category.*

- Are multiple categorizations allowed?
- How are the categories themselves defined? Are there functions/components for managing the category metadata?
- Need to add capability to modify the classification or categorization scheme if for no other reason than to add categories.
- How are new categories to be created when an incoming document does not fit into any existing category?
- Is the defined list of descriptive criteria a record?
- Why "a" list of descriptive criteria? Shouldn't a record be classifiable in more than one classification framework?
- If there is not a meaningful and commonly agreed standard for the categories, then categories become meaningless
- Add "via user participation or process only" (methods of achieving categorization).
- Also need to add "and denote if the assigned categorization is correct (validated) or not.
- Category definitions cannot change after being published
- How is the "master of the categories"? They need to be managed to keep them concise and meaningful
- How is correctness of categorization verified?
- Perhaps this should be better called "Recategorize Record", assuming that some categorization must take place on initial capture.
- In regard to previous comment on cross-group searches... we (again) need categorization in multiple categorization frameworks, which will require a semantic mapping of concepts among the frameworks.
- These multiple frameworks should be controlled.

- This by far the most important aspect of the RMSC. It is critical that all declared records are CORRECTLY categorized, or the recordkeeping methods are worthless.
- Definition is not clear; name is appropriate.
- Note the title of the component is singular and the definition contains a plural. “Categorize Record” is defined in terms of “records”.
- Change to read: “Match descriptive criteria of a record to one or more categories defined by an acceptable authority.” (An *acceptable authority* in my sense here would be such as the Library of Congress or the OCLC’s Dewey system).
- The name and definition of the activity are clear.

4. Search Record – *Definition: Query all or selected system repositories of records (transitory, temporary, and permanent) across the enterprise for content and/or attributes, in order to determine the existence and location of matching records and produce a descriptive list.*

- Categorization must be used to determine the life cycle of the record including capture, availability under authorization rules, and eventual destruction). Is there a time dimension to storage requirements? Does age of record effect retrieval time?
- In regard to previous comment on cross-group searches... we (again) need categorization in multiple categorization frameworks, which will require a semantic mapping of concepts among the frameworks.
- Searching must provide for the existence of physical (non-electronic) records as well. In order to find "all records" on a specified topic, we need to query the topic, and reveal all records, both electronic and non-electronic.
- We should also specify that we must deliver certain required actions against those items on the result list (perhaps a separate component?)
- Integrity may naturally be done on a different schedule from authenticity and refer to different things. So these should be different components.
- Definition is not clear; name is appropriate.
- I am not sure about what a “descriptive list” means or whether it aids in clarification of the meaning of the activity/component, “Search Record”.
- Recommend changing to read: Query all or selected system repositories of records (transitory, temporary, and permanent) across the enterprise based upon specific search criteria (by record category and/or record attributes) in order to return a list of record location attributes of records which match the search criteria.
- The name and definition of the activity are clear.

5. Retrieve Record – *Definition: Using the descriptive list produced by the Search Repository component, allow for the selective display of the full record and/or associated attributes for the purpose of review, printing or permissible editing.*

- Show this really is a separate component from Search?
- This should be combined with Manage Access component into one component.

- How does distribution affect this functionality? Could potentially result in sending very large amounts of data across small wires.
- Is a record accessible or non-accessible in toto? Does accessibility to a record imply accessibility to its metadata (attributes)? All the metadata?
- Extend definition to include more of the things commonly needed to result lists (charge out/borrow), download a copy, send to, etc.
- Also, need to specify that all actions taken on found items must be recorded in an audit trail.
- If a record is edited, doesn't it become a new record?? Records are supposed to be unchangeable.
- I know security is outside the scope but shouldn't be mentioned here? One should not be able access records directly, bypassing the record management system.
- Definition is not clear (due to my change offered in the Search Record component above); name is appropriate.
- Change to read: Using record location attributes from Search Repository component, provide optional selective display of a specified record and/or its associated attributes for the purpose of reviewing, printing, or role-based editing.
- The name and definition of the activity are clear.

6. Ensure Integrity – *Definition: To ensure the authenticity and completeness of a record and associated attributes upon its creation and throughout its lifecycle.*

- It is not clear to me how this can be done as a separate component. Isn't this part of the requirements for individual functions acting on the record throughout its lifecycle?
- Agree - this is an overall job-zero type of function. Can't be separated out.
- Integrity and Authenticity are not synonymous. Therefore, an Integrity attribute does NOT produce and Authenticity Indicator.
- How does the system define "complete"? Is this just a function of the actor providing the record and the system assuming a trust relationship?
- How to ensure completeness of a document of non-electronic origin (scanned document).
- It is not clear what "integrity" means in this context. I don't think that it means "data integrity" in a database sense. (If it does mean data integrity, then it certainly is not synonymous with authenticity.)
- Integrity is just a technical criterion of correctness, it does NOT prove the authenticity. Integrity and Authenticity are orthogonal terms.
- Definition is clear; name is appropriate.
- The name and definition of the activity are clear.

7. Maintain Record – *Definition: Storage regardless of format that ensures authenticity, availability, retrievability and storage locations to related records.*

- This component seems almost meaningless to me in and of itself. Isn't maintaining the record what the whole record system is about? Isn't physical storage a different issue than functional requirements?
- I realize reliability (a nonfunctional requirement) is considered out of scope, but it shouldn't be, and it would be mentioned here.
- Any time dimension to maintenance requirements?
- Is the definition a sentence?
- The record storage must be able to survive destructive events. This must be designed in to be scalable.
- More involved than simply "storage". make global editing changes to reflect re-organizations, etc.
- Seems as though this is just a result of the other functional areas. Unless otherwise stated by some other function, the records are stored. These could be captured as non-functional requirements.
- This should be called "Preserve Record"
- This name can also be interpreted to be the capability to update a record or the perhaps more specifically the meta-data about a record in order to correct a problem, for instance. If this is really talking about the ongoing preservation issue, then we need to deal with the update issue somewhere else.
- One must assure that software that understands and can interpret and present the information encoded in a format persists as long as the last record to use it.
- We must assure that media that contain the records are refreshed periodically. All media have a degradation time and the information has to be "refreshed" to fresh media and verified that the record has been preserved across the transfer.
- As I read this, it says only that if a record is duplicated in a new format there shall be a pointer in the attributes of the record pointing to the new record. It should also say that the attributes of the initial file should also be duplicated for the new record and there should be pointer to the original file. This should not be called Maintain Record but Reformat Component.
- Definition is not clear; name is not complete
- I am not sure "Maintain Record" is descriptive enough. I have no good suggestions at this time to make to correct it, however. Perhaps we're after "Record Life-Cycle and Relationship Management"?
- I think we should use irrespective and not regardless? Not sure.
- Add "integrity" and "non-repudiation" to what this activity will ensure. It might be important to define each term separately Definitions of authenticity, availability, retrievability, integrity, and non-repudiation.
- The name and definition of the activity are clear.

8. Manage Access – *Definition: Control and maintain history of access to specific record attributes, such as records or file series based on security classification, functional roles, organizational position, delegated permissions or other restrictions.*

- No mention of privacy, and isn't this where nonfunctional requirements (reliability, access management) would be covered? I would expect privacy to be a top-level issue.
- Is this out of scope?
- Must be integrated into retrieve record component.
- I voted that this was clear... I emphatically rescind that vote.
- This is a specialization of Manage Record. Need to be seen/handled in combination.
- File series seems wrong - record series? Record groups? - But then again I might have the terminology wrong.
- Seems as though we're talking about logging combined with some non-functional's (reliability, access, etc.).
- Definition is not clear; name is not complete
- Not sure what the intent of the component is. Is it to manage access to records or maintain a history of access or both?
- Change to read: Maintain and manage history of record life cycle, changes specific record attributes based upon specified role-based access rules.
- And/or: Maintain and manage access to records throughout record life cycle based upon specified role-based access rules.
- The name and definition of the activity are clear.

9. Execute Disposition – *Definition: Implement destruction, transfer, or continued retention of a record in accordance with the established retention. After validation that the disposition is proper, remove record from the other controls, execute the activity, and record the transaction.*

- This is the only place that actions like "transfer" and "remove" are mentioned. Are these separate activities, or are they really just actions within the context of "executing disposition"?
- What about the back up systems - is there a requirement that record in question be deleted from back up system as well.
- Any requirement to ever "undo" a disposition?
- It seems to me that there is something common underlying both this component and Schedule Record -- that is, the "disposition actions" that can be scheduled and executed. Should the Execute and Disposition components be considered together?
- Need to extend this definition with the concept of REVIEW. The REVIEW stage of disposition = critical. Suggest "Implement review, destruction, transfer, or continued retention....."
- This definition as written is a process definition, not an attribute what should happen with the record.
- The name and definition of the activity are clear.



- Should be careful to describe transfer of e-records as copy to another location and then delete off initial location if disposition permits or if override of disposition is being authorized.
- When suspend disposition attribute is not populated then the record should not have been deleted in the first place.
- Transfer must include assurance of successful ingest into foreign location.
- Attributes of record should not ever be destroyed.
- Who is authorized to execute the disposition? What about recoverability?
- Seems like this should be more clearly named as "Execute Disposition Schedule".
- Definition is clear; name is appropriate

Appendix F – RMSC Source Data Activity Name Comments

[\[return to page 3\]](#)

1. Initiate Record

- Declare Record
- Capture Record
- Perhaps Accept Record?
- Capture Record
- Capture Record
- Create Record
- Capture Record [consider link this with Categorization too...]
- Capture Record or Timestamp Record or Log Record
- How do we deal with the fact the "Initiate Record", "Schedule Record", and "Categorize Record" all seem to be part of a single "create record transaction"?
- Annotate record
- Categorize record

2. Schedule Record

- Reschedule record (or reschedule disposition)
- Plan Disposition
- Specify Record Lifecycle

3. Categorize Record

- Recategorize Record
- Recategorize Record
- I think that categorization includes re-categorization... just mention it in the description
- Categorize Record

4. Search Record

- Query System because you are doing a query on the system not searching inside of the record.
- Query [should include metadata queries also]

5. Retrieve Record

- This is really Retrieve ENTIRE Record (to differentiate from Search Record)
- Whole Record Retrieve
-

6. Ensure Integrity

- Preserve Record(s)
- Authenticate Record (if there is any proactive function here at all -- otherwise eliminate it as a component)
- Eliminate and add as a non-functional requirement
- Eliminate. This is an "infrastructural" function that has to be performed by all functions.
- Two components: Integrity Component and Authenticity Component
- Validate Integrity, or Validate Record, is what is really meant here! (This was mass consensus!)

7. Maintain Record

- Actually seems to refer to preserving and record and as such should really be a non-functional requirement.
- Preserve Record
- Preserve Record (perhaps, if there are actually any proactive requirements -- otherwise it should be eliminated as a functional component)
- Maintain Record is OK if it is changed to included requirements for actually managing the records and their interrelationships
- Create New Format
- Copy Into New Format

8. Manage Access

- Eliminate this... it is interwoven among all other functions.
- Eliminate this.
- Out of scope... get rid of this.

9. Execute Disposition

- Execute Disposition Schedule
- I second "Execute Disposition Schedule"

Appendix G – RMSC Source Data Functional Requirements Comments

[\[return to page 3\]](#)

1. Initiate Record

1.1 *The Initiate Records Component shall provide the capability to assign Record Descriptor Attributes in a consistent format to the incoming record creating an Initially Described Record.*

- This is exactly what you *don't* want. The attributes need to be related to the Record, but not part of it. You want to maintain the record as it was delivered while enabling the classification framework, attribute formats, etc. to evolve over time with technology.
- What is a "described record"? This is not defined anywhere.
- The Capture Records component shall enforce the assignment of values to all required metadata attributes associated with a captured record by the metadata framework under use.
- The Initiate Record Component shall provide the capability to assign Record Attributes to an incoming document in a consistent format creating a Managed Record.
- Should Initiate Record also be responsible for the initial scheduling of disposition of the record (even though it might change later) based on the information contained and any policies pertaining? There are also a passel of nonfunctional requirements which are relevant here and throughout -- security, privacy, performance, etc.
- Functional requirement is clear and complete, no additional functional requirements necessary.
- Make sure that definitions are provided for concepts such as "Initially Described Record"
- This functional requirement is clear and complete. What is an exception to the initiate record process? The FR may be critical to evaluate.

1.2 Other Requirements

- The Capture Record Component shall ensure that a valid categorization is assigned to a captured record, as determined by the categorization framework in use.
- A timestamp attribute shall be assigned at the time of initiation.
- The Capture Record Component shall ensure that a valid disposition schedule is assigned to a captured record, as determined by the approved record schedule in use.
- A broad category shall be assigned at initiation such as e-mail, legal document, satellite data, etc.
- In capturing a record there will be an initial identification that the record needs to exist and there can be stages in loading the record. In capturing the record there needs to be a life-cycle that marks the events of loading, validation, verification, completion, etc. This life-cycle will likely be agency specific... perhaps a single state for some agencies, while complex for others. Also... different categories of data

- record may require different life-cycles, implying that the early in the life-cycle of a record, a subset of it's classification may need to be completed.
- An attribute of the system initializing the record shall be assigned.
 - I'm still troubled that "Initiate", "Schedule", and "Categorize" are all part of a single "Create" transaction.
 - Initiate a record should be renamed to Declare a Record. Consisting of the following five steps, all of which must occur to "make" or "designate" a document to be a record:
 - Valuation. Is this is record, or not?
 - Change State. Make the record such that it can be deleted exclusively by the disposition process.
 - Classify it. See (1) Classification above.
 - Authenticate it. Assign appropriate security levels to it (Ch 5 as an option).
 - Index it. Complete metadata as required, according to the originating departments needs.

2. Schedule Record

2.1 The Schedule Record Component shall provide the capability to accept a categorized record and, using an approved record schedule, populate schedule attributes (e.g. schedule number, schedule item number, disposition act, disposition date, review date, name of scheduler, date of scheduling) for the record, producing a scheduled record.

- The Schedule Record Component shall provide the capability to accept a managed record and, using an approved and validated record schedule, populate schedule attributes for the record (e.g. name of scheduler, date of scheduling, expiration date, change of status and time of change of status) creating a scheduled record.
- Schedule Item Number?
- Scheduling is further specification of the life cycle.
- The Schedule Record Disposition Component shall provide the capability to reschedule the disposition of a managed record, according to the approved record schedule.
- Scheduling the disposition of a record shall mean populating all the schedule attributes for the disposition of the record.
- A "scheduled Record" is another way of saying a "categorized record", in that the act of categorization archives, via assignment of the category, the official retention rules from the retention schedule. Therefore, this function is redundant.
- Functional requirement is *mostly* clear and complete
- Consider striking the word “capability” as it implies a user or a dependent system. “The Schedule Record Component *shall accept a categorized record....*” and not imply or leave open to interpretation of providing a capability to anything or anyone.
- This functional requirement is clear and complete.

2.2 Other Requirements

- Expanding on life-cycle concept from Capture Record (your Initiate Record). The disposition schedule should simply be part of the life-cycle. Starting with the categorization of an item, the disposition should be scheduled. In many cases this should be able to be done automatically
- A Schedule editing capability needs to be provided
- The ability to provide a decision matrix/tree/rules... whatever needs to be provided that will match the record with its disposition schedule.
- The schedule record component shall not schedule dates in the past.
- Inferencing engines must detect when multiple categorization frameworks are used that result in conflicting life-cycles. Editing tools must be able to select the appropriate life-cycle in such situations. Where a new categorization framework is added to the record... notification of any schedule conflict must be flagged, but the original life-cycle of the record is followed until the record is transferred to a new one.

3. Categorize Record

3.1 The Categorize Record Component shall provide the capability to allow authorized users (individuals, organizations, or applications) to categorize or re-categorize a selected record to provide a categorized or re-categorized record.

- The Categorize Record Component shall provide the capability to for re-categorizing a managed record, according to the categorization framework in use.
- The Categorize Record Component shall only allow properly authorized users to re-categorize records. [Isn't this really covered by the Manage Access Component?]
- When re-categorizing a record, should the original categorization also continue to be maintained to preserve backward compatibility with users (persons or applications) relying on the original categorization?
- The Categorize Record Component shall provide the capability to categorize or re-categorize a selected record to create a categorized or re-categorized record.
- Here I leave out the issues of allowing authorized users from this capability because that is something in the business rules that are separate functionality.
- Functional requirement is *mostly* clear.
- Consider rewording: The Categorize Record Component shall allow role based access to a record for the purpose of categorizing that record. Records may be categorized multiple times.
- These and the following functional requirements are clear and complete. Is there a specific FR in regards to when an exception condition exists that prevents record categorization?

3.2 The Categorize Record Component shall provide the capability to apply the authorized categorization schema to an uncategorized record to produce a categorized or re-

categorized record with added categorization attributes (to include category, name of categorizer, and categorization date).

- The Categorize Record Component shall record the user and timestamp of each record categorization action.
- [I am not sure what else "added categorization attributes" means...]
- If re-categorization produces other than simply added attributes, then the old categorization framework must remain and the record *additionally* categorized under the new framework
- Functional requirement is *not* clear. I am not sure what we're trying to do here. So, I'll fall back on what I know: Is it *scheme* or *schema* that we're after? A *schema* is a conceptual structure for our categories, such as a hierarchical structure with some rules (our rules might be something trivial such as no multiple inheritances, only nouns allowed, and our hierarchies only go three levels deep). A *scheme*, on the other hand, is a collection of allowable values in that structure. It sounds as if this requirement is referring to *schemes*, that is, the domain or allowable values to be used in a classification *schema*. A classification schema (or a categorization schema) would be something like the Dublin Core (Core) Element Set. A *scheme* would be the allowable set of values to any one of those elements (each element potentially could have a scheme).

3.3 The Categorize Record Component shall provide the capability to apply the related business rules to an uncategorized record to produce a categorized or re-categorized record with added categorization attributes (to include category, name of categorizer, and categorization date).

- Confusing with the prior 2 requirements of Categorization. What is a "business rule? If it means a disposition rule (e.g. Keep 2 years and destroy), then call it a disposition rule. Business rule = too general.
- The Categorize Record Component shall provide the capability for the definition of rules to be automatically applied to categorize managed records. (This is the most sense I could make of this requirement. However, the definition of such rules should, perhaps, be part of the categorization framework.)
- Categorization will determine what the business rules for the record are... not vice versa.
- Categorize Record Component shall have the capability of handling sets of parameter-value pairs (keyword="abc", document Type="e-mail", class="def", etc).
- "Business Rules" must be made more precise... Need metadata for the business rules in a standardized and globally agreed form to make sense in later usage of that record.
- Sorry. Once again, functional requirement is *not* clear (to me). I am not sure what we're trying to do here.

3.4 Other Requirements

- What about modification of categories, either because it was mis-categorized or categories were added/deleted?
- Provide the ability to globally re-categorize records. (Initial error or change of category)
- There is no consideration for how categorization is to be achieved. This is pivotal in the success of RM. RM has no value or utility if documents (records) are not categorized correctly. The RMSC therefore must call for the functionality necessary to achieve successful categorization There are two general approaches to categorization:
 - Author Participation. In the event there are opportunities to have the author participate in the process. Manually categorize, or other user-assisted categorization methodology. With this approach, we stand a very good chance of achieving successful categorization, because the author understands the record subject matter. . Note that this approach assumes categorization is achieved at the time a record is declared.
 - Process-Initiated. In this approach, the user is not available to participate in the categorization process. For example, if a software process is declaring/categorizing an existing record, rather than a document being declared by the author, the user is not available to participate in the categorization process. In this case, there are only two ways to categorize the document:
 - ▶ 3rd-party manual categorization. Not considered viable or practical, as it would require an unattainable deployment of skilled dedicated resources.
 - ▶ Automatic (software) categorization. Some software process categorizes, based on metadata (metadata-based auto-categorization) or content (content-based automatic categorization), or both.
- In addition to the lack of discussion of how categorization is achieved, there appears to be no mention of how the categories THEMSELVES are arrived at (i.e., how can you define, redefine, and semantically link and transform categorization frameworks themselves).
- Categorization should occur early in the process to determine the life-cycle of the record (Including its disposition schedule). Re-categorization must flag the fact if a new schedule would conflict with the old one and provide tools to select the appropriate schedule.
- There should be a separate component for creating and editing categorization frameworks (e.g., the "meta-model" for categorization).
- Categorization must be used to determine the life cycle of the record including capture, availability under authorization rules, and eventual destruction)

4. Search Record

4.1 The Search Record Component shall provide the capability to accept a user query, apply the query criteria to the universe of available records, producing a list of matching records.

- At the level this requirement is stated, it's difficult to argue with it. However, there are MANY problems and opportunities lurking in here that ought to be elaborated a bit.
- The Search for Records Component shall provide the capability to apply a query to the set of managed records, identifying those records that match.
- Allowed search criteria shall include...
- The Query System Component shall provide the capability to accept a user query, apply the query to the available records and attributes, and produce a list of matching records or the count of hits as requested.
- Could alternatively call this Query Repository.
- Functional requirement is *mostly* clear. Consider defining success and failure for Search Record or at least reword “attempt to produce/return a list of matching records” such as: The Search Record Component shall accept a query, apply query criteria to a universe of available records, and attempt to return a list of records matching query criteria.
- This functional requirement is clear and partially complete. Do the list of matching records include the explicit query terms (i.e. is this an information retrieval task)?

4.2 Other Requirements

- Secrecy and privacy should be added here. A user query may violate secrecy or privacy requirements.
- Ability to do external queries needs to be added.
- A number of factors need to be included:
 - Inclusion of physical (typically paper) records, i.e. boxes, etc. A single search of say "everything we have on oil revenue" should/must span electronic and paper records.
 - Security. Must be able to reject results depending on the RM-assigned security.
 - DoD Chapter 5. Significant additional treatment (additional metadata management) required to handle classified documents.
 - Result list handling (what to do with the found records):
 - ▶ Charge-Out (borrow) physical records
 - ▶ View/Retrieve/Print electronic records
- For sensitive data there needs to be an audit trail of who searched for the records
- The Search for Records Component shall provide the capability to apply a query to only the results of an earlier query, identifying the subset of records that match the refined query.
- Capability to accept a remote user query.

- Under Search and Retrieve you mention transient / temporary and permanent copies of documents. It is not clear - when these documents are returned - if this status needs to be indicated?

5. Retrieve Record

5.1 The Retrieve Record Component shall provide the capability to use the results of the Search Record Component and make selected record(s) and their associated attributes available for viewing, printing, or saving a copy.

- As I understood the difference between Search and Retrieval, this requirement doesn't seem to make sense. It sounds more like Search. I would have expected this to read "...retrieving an entire record for viewing, etc...."
- "Retrieve" should be generalized to include all possible actions that can be taken on a record, once found. Retrieve is too specific. For instance, perhaps rename to "Found Records Actions". View/Print/Save has been mentioned, but what about "Send to", annotate, or any other possible action?
- The Retrieve Record Component shall provide the capability to retrieve the entire content of an identified record (such as records identified in the results of a Search for Records Component query).
- The Retrieve Record Component shall allow a retrieved record to be viewed, printed or saved as a copy.
- As the record is subject to authorization for viewing, the attributes will have separate authorization, some being available or not depending on the assessor's authorization.
- Functional requirement is *mostly* clear
- This functional requirement is clear and complete.

5.2 Other Requirements

- Again, secrecy and privacy should be mentioned here. A user query may violate secrecy or privacy requirements.
- Security needs to be added here. Just because somebody can find a record does not mean that they can access it.
- Allow retriever to specify required retrieval format (assuming document can be converted to that format). What does a retriever do when software required to view a retrieved document is not available?
- Need to be able to retrieve parts of the record, particularly if it is broken down into volumes and/or documents.
- A refusal for access during a retrieval shall return reason for denial of service.

6. Ensure Integrity

6.1 The Ensure Integrity Component shall assign an Integrity Attribute to a Record to produce an Authenticity Indicator.

- How in the world can you compute Authenticity from Integrity? I suspect you mean something totally different for one or both of those terms. Authenticity says something about the source; Integrity says something about the maintenance of the information itself. This makes no sense.
- This should be rephrased as: The Ensure Integrity Component shall assign an Integrity Attribute to allow integrity verification of the record
- Perhaps rename to "Assign Authenticity Code" or similar, as that is all that this function achieves.
- In what way does integrity permit determination of authenticity?
- Integrity may well need more than "an" attribute.
- Integrity will need to be managed as part of the life-cycle. Depending on the type of media the data are recorded on, the life-cycle needs to include refreshing the media.
- (IA) The Check Integrity Component shall check storage integrity of a record (such as checksum).
- Authenticity Component shall provide protection from invasion and investigate for possible changes in the records.
- Functional requirement is clear

6.2 The Ensure Integrity Component shall provide the capability to match a Current Authenticity Indicator to a Previous Authenticity Indicator producing a Verified Authenticity Indicator.

- If this is a mapping from previous authenticity to current authenticity, what does it have to do with integrity? Isn't this about authenticity maintenance (what the expert systems community would call truth maintenance)?
- Functional requirement is clear
- This functional requirement is clear and complete

6.3 Other Requirements

- There need to be separate requirements for integrity and authenticity.
- I was surprised not to see in here anything about integrity -- it all seems to be about authenticity. I would have expected something about verifying *integrity* (i.e., CRC, some other internal-consistency measure) not authenticity (which is a measure of source).
- Seems like this should be a characteristic of all the other steps. Note discussion elsewhere about difference between authentication and integrity.
- (IA) The Authenticity Component shall add an Authenticity Attribute to support authenticity verification. This shall occur once at the initial population of the record. The authenticity attribute shall be immutable.
- Under the assumption that this should really be the "Validate Record Component". (IA) The Validate Record Component shall apply defined integrity rules against a managed record after any action affecting that record.

- How are such rules defined and managed?
- Any action that would cause a record to fail validation shall be rejected, having no effect. Is this the intent?
- The Validate Record Component shall provide the capability to authenticate a managed record.
- How are records "authenticated"? Is this a manually initiated or automated process?
- Missing: Distributed and replicated Record Systems: The integrity component shall maintain record integrity across distributed and replicated environments.

7. Maintain Record

7.1 The Maintain Record Component shall provide the capability to associate an existing record used in creating a new record producing a populated Record Association Attribute associating the existing record used to the new record.

- Some judicious use of the English language (rather than random stringing together of English language words) might be helpful here. Is this an attempt to define "Record Maintenance" as a component that associates records based on their relationship at creation time? I don't get it.
- Not clear what it is saying!
- Simplify to "Link Records". Link a record to one or more additional record(s).
- Agree - can't parse the statement
- I think I understand what is wanted, but it could certainly be said more clearly! Perhaps "Maintain traceability relationships between physical versions of records"? I'm sure you can do better than this with some effort.
- The Copy into New Format Component shall provide the capability to duplicate the semantic meaning of a record into a new media format record. Attributes are copied and pointer attributes are added from new to old and from old to new records.
- Functional requirement is *not* clear.
- This functional requirement is clear and complete

7.2 Other Requirements

- Perhaps I don't understand the use case. I would have expected this component to be responsible for maintaining many of the nonfunctional requirements (reliability, security, privacy, performance) at times when the record is accessed, displayed, used, transferred, etc.
- Need to add functionality for editing the records metadata (attributes)
- This should include maintaining (or somewhere it should be included) of the categories.
- Please Rephrase: The Maintain Record component shall be able to create a new instance of a given record to become part of a new record set, which succeeds the given record set. The source and target record shall be content-wise identical. This operation shall preserve the record Authenticity.

- Create new Function "PRESERVE Record". Ensure that the readability of the record is preserved over its lifecycle, to the final disposition date. Includes preservation of format and media where practicable.
- Modern records management practices requires that corporate re-organizations or other "global changes" must be accommodated. This translates to the need to make global changes to metadata, including the critical classification code (categorization), which assigns the retention rule.
- This functional requirement is clear and complete

8. Manage Access

8.1 The Manage Access Component shall provide the capability to use the Manage Access Tool to determine the Approval, Disapproval or Partial Approval of the request to access a record(s).

- Is this where the access control is performed?
- What is the Manage Access Tool? This is not defined anywhere.
- This seems to be a manual process as worded - perhaps it should be clarified.
- And add that all access attempts, successful and otherwise, form part of the permanent audit trail.
- What is "Partial Approval" to access a record? This would seem to be a Boolean state.
- The Manage Access Component shall determine, for each attempted action, whether the user is authorized for that action.
- Any action that is no authorized shall be rejected and have no effect.
- For an authorized search or retrieval action, the Manage Access Component shall determine whether the user has approval for access to all or only part of the accessed records.
- A user shall only be given access to that portion of a record for which approval has been granted.
- Functional requirement is mostly clear

8.2 Other Requirements

- This appears to be related to security which was said to be out of scope. If security (and privacy for that matter) is not out of scope, and they shouldn't be, then you need to add requirements such as managing those who can use the system, managing the specific rights to functions and records, managing how information is transmitted, etc.

9. Execute Disposition

9.1 The Execute Disposition Component shall provide the capability to take the Record from a designated location and owner to another owner and location that produces the exact Released Record.

- ... to move the record from its current location to a different specified location, while preserving and updating the metadata as required to reflect the new location and/or owner.

9.2 The Execute Disposition Component will populate the Suspend Disposition Attribute when a Suspend Disposition Intervention occurs.

- This is not appropriate here. The Disposition process (execution) merely checks to see if a hold is in place. A (new) separate function LEGAL HOLD needs to be used to apply, maintain, and revoke holds, as holds are completely independent of disposition. Disposition simply respects a hold, at the time of execution.
- Rename to PROCESS disposition, rather than EXECUTE.
- What is a "Suspend Disposition Intervention" anyway?

9.3 The Execute Disposition Component will provide the capability to return a scheduled record when the Suspend Disposition Attribute is not populated.

- Change to: ...Ignore final disposition if a legal hold is found to be present at time of disposition, and record why the disposition was ignored.

9.4 The Execute Disposition Component will take a scheduled record approved for destruction and destroy the record.

- ... will destroy a record approved for destruction, such that it cannot be recovered, as long as no legal hold is in force at the time of disposition.
- Destruction of a record shall obliterate the record from existence!

9.5 The Execute Disposition Component will take a scheduled record approved for transfer and transfers the record.

- Need to ensure that this is done in an ACID manner.
- ... Transfer a record approved for transfer at the time of disposition. Transfer will remove the record and its metadata from the originating system/source; move it and its associated metadata to a new, specified location, then destroy the original in a non-recoverable fashion. The original record/metadata is not to be destroyed until the successful completion of the move has been confirmed. An audit trail will record the particulars of the transfer.
- Isn't this redundant with the first disposition requirement?

9.6 The Execute Disposition Component shall provide the capability to make a Categorized Record available for destruction by ensuring the identified destroyed record is no longer available in the system and that information (date) about the destruction is made available as evidence of the destruction in a Agency Record Destruction Tool a record of destruction was produced.

- Shouldn't that be "...ensuring the identified record TO BE DESTROYED BECOMES no longer available..."? Do you really bring back the record from the dead and kill it again?

- ...ensure that the record to be destroyed is destroyed in a non-recoverable fashion, and that the details of the destruction are recorded in an audit trail. The Authorized user, at their discretion, can elect to maintain the metadata of the records destroyed.
- When properly stated, this seems redundant with the fourth disposition requirement.

9.7 Other Requirements

- Needs to be some way of indicating duplicate site information. For both performance and availability.
- Current approach does not reflect how disposition is actually achieved. First, disposition is not achieved on individual records - it is a process run against a collection of records. Consists of the following three steps:
 - Evaluation. Run the process against all or a specified subset of records. The result is a list of those records that are qualified for disposition.
 - Review. Review the qualification list with stakeholders, change as required.
 - Process. Execute the decisions against qualified records, i.e. destroy, or transfer to permanent archives.
- All of these need to be part of editing a life-cycle/schedule for a record.
- There is too much detail in comparison to the levels of abstraction covered in the other requirements.
- A missed scheduled action should be accomplished at the first opportunity.

Appendix H – RMSC Source Data for Additional Components Comments

[\[return to page 11\]](#)

1. Edit Record Metadata

- This capability refers to the ability to update or change the record attributes or metadata.
- Modify annotation
- Correct Attributes
- Error correction functions for all record attributes seem to be essential and thoroughly missing from the original component summary.
- Seems to be same as the first one.

2. Edit Category Framework

- ...which should do something about semantic mappings between category frameworks too.
- Create Category

3. Declare Record

- Declaring information as a record, prior to its capture in the RMS. (This may be considered out of scope of the RMS, but it still should be captured as a necessary business service, just like Manage Access.)

4. Suspend Record

- Apply a legal hold or Suspension to a record(s) or series of record. Separately applied within a lifecycle -- not linked in any way to disposition. Disposition takes holds into account, NOT the other way around.
- But isn't this really about privacy and/or security -- and therefore something to do with Maintain Record?

5. Global Update

- Modern Records management practices require that corporate re-organizations or other "global changes" must be accommodated. This translates to the need to make global changes to metadata, including the critical classification code (categorization), which assigns the retention rule.

6. Preserve Authenticity

- Add measures to records that can prove authenticity.... This is *not* integrity.

Appendix I – RMSC Source Data for Implementation Issues

[\[return to page 12\]](#)

1. Which components are currently available in the marketplace?

- Yes, but not as separately-available components. Is it the intent of the agencies to acquire the components separately (either up-front or in later replacement)? If so, this group feels that this componentization is not appropriate or correct. Is the goal interoperability across separately-acquired components? If so, this should be clearly defined.
- There are 40+ credible applications on the commercial market that meet and exceed NARA's functional requirements, however not delivered as re-usable components in the manner that the FEA implies. Is NARA's intent to specify HOW the functional requirements are to be delivered (as reusable components) instead of monolithic proprietary applications? If so, No vendors meet it. If componentization and reusability is NOT the goal, there are many products that meet it. In other words, is NARA trying to specify the HOW (delivered) with RMSC, as apposed to the WHAT (delivered)?
- The International Virtual Observatory and the UCSD National Supercomputer Center are developing file and database ingest, access and interoperability in much the same way that NARA seems to be headed. The storage areas with files and attributes of files are being handled by webdav-like systems. They are developing systems to enter metadata manually and metadata and publish files to the webdav sites. They are also dealing with proprietary rights to access of the data. The UCSD has developed an SRB to handle data collection, also very much like the webdav model.
- There are commercial ontology modeling tools available that can provide for the management of the schemas.

2. What should the government strategy be to stimulate industry interest in records management service component development?

- The government can facilitate the process of converting industry's focus to a component orientation by participating openly and broadly in industry forums (conferences, press, etc) discussing the kinds of architecture they foresee a need for. Don't wait until issuance of an RFP to deliver these messages -- it's way too late.
- If the vision is for communication between functional pieces supplied by different vendors then an effort to create the initial port of the interface should be done and released under a license that allows vendors or developers to integrate into their products. (i.e. BSD license)
- Ensure that RMSC delivery method (interoperability and re-usability -- a new way to deliver) works equally well in commercial market as government. Little commercial appetite to develop separate technologies for each market.

- Include in the process not only the likely vendors and systems integrators for eventual RMSC products, but users of current records management products that might become customers of RMSC (componentized) products, and as early as possible.
- Perhaps the RMSC should come to OMG, instead of having (a small segment of) the OMG community come to them... [This is not Richard's comment!]
- NASA has developed several generations of large file archive storage and retrieval systems like what is required here (NSSDC is one).
- The VO which is an NSF sponsored research project and the European Space Agency (ESA) is in its 4th year and will be going into Federated service in a year or so if funding is sufficient.
- Perhaps ownership of the Intellectual Property or licensing agreements could be favorably slanted to the industry provider.
- Build an industry advisory council with a clear path to revenue opportunities.

3. Do RMSC's have utility outside of the federal marketplace? Where?

- As an interaction interface it could make sense.
- There are broad overlaps with some industry domains, such as financial record management. However, the details differ rather dramatically. It's not clear how much differences in details will inhibit technology transfer to the private sector.
- Assuming that RMSC really means "reusability, interoperability" of delivery, there is likely to be commercial value to this method of deliverability.
- My philosophy (Bruce Miller of IBM) is that Recordkeeping is evolving to be a capability, not a deliverable (not as a discreet application or function). Recordkeeping functionality needs to evolve as capabilities of systems. This is slowly happening. As it continues and accelerates, the interoperability/reusability approach supports this, leading me to believe that there is a future outside govt for RMSC delivery approach.
- Electronic libraries
- Yes, the pharmaceutical space may be able to leverage this work.

4. Issues that the government should be aware of to ensure a successful industry development and deployment of RMSC's ("words of wisdom")?

- The most important word of wisdom: is this is not going to be a government-only set of procurements, it MUST react to the EXISTING componentization of EXISTING products. There are products out there -- how can they be adapted to the NARA-specific (and other agency-specific) requirements, and componentized to match the FEA demands, at minimum cost? By ensuring that there is commercial demand for that componentization too -- which means including in the requirements generation process not only the vendors, but also other major records management USERS.

- RMSC will have no value unless categorization is successfully achieved. Consistently, and with minimal (if any) user participation. Much more emphasis needs to be placed on "How is categorization to be achieved". We all assume it will "just happen", and happen correctly, but this is not the reality.
- It is currently too poorly defined for vendors to react to.
- We are re-inventing the following three wheels ==> 5015.2, PRO, and MoREQ. The attempted consolidation of these three in this effort has resulted in inconsistent terminology, increased confusion, and poor definition. RMSC is about the HOW, not the WHAT. Don't waste time trying to re-invent the what (already done!), spend time clarifying and detailing the HOW (which is what I assume RMSC is all about).
- Careful development of attribute terms. This requires examining the typical queries into the system, but since the system must already exist to get a good representation of the typical queries it requires iterations. Therefore the categories must be somewhat dynamic.
- There has not yet been a focus on all needed services and how to make these reusable and interoperable.
- Need to take a look as to whether tags inside the record are allowed and how to handle them properly.
- Talk to reference librarians for more words of wisdom.
- My sense is that the Categorization component(s) and the Ensure Integrity components should have time to prove their fitness. The former is a complex topic and one that is given short shrift by many vendors and executives. The latter, dealing I think mostly in the information assurance domain, should be vetted thru DoD-like rigor, such as the SSAA process.
- Be sure to delineate academic approaches to this problem and pragmatic solutions.

5. What additional thoughts do you want to convey to the RMSC working group?

- Components are derived by starting with Use Cases, not vice versa.
- A consistent terminology is ABSOLUTELY NECESSARY to define requirements for this process; probably 75% of all of the discussion today has been on definition of terms, despite the reams of paper we saw beforehand. What's a record, a document, a business process, etc.? This needs to be defined.
- Components at this level have already been specified in the SRM. This breakdown is not sufficient for specifying software components. So what is the point of this breakdown?
- Over and over today, there has been discussion of the lifecycle, the business process, the business rules and the process description. That's because this service componentization appears to be attempting to ignore the business process - which makes the discussion awfully difficult. Choose the process -- yes its how not what, but it can't simply be implied -- and then this process will work better and acquired systems will actually interoperate.

- Security cannot be out of scope at this level. You cannot add a cup of security at the end of a project, it must be thought through from the very start.
- Dumping all of the nonfunctional requirements (especially security and privacy, but also performance and reliability) has contorted this process. Security can't be bolted on -- how can one define requirements and then later hope to bolt-on security through the measly "Manage Access" component? Privacy is even worse. I am personally worried that this process is compromised by the attempt to ignore potentially cataclysmic problems up front.
- We need to complement record management with business process management. This way a formal definition and execution of the record lifecycle can be ensured. And the lifecycle is not only disposition.... It is record creation, categorization, provision of authentication measures,, until final disposition. These process definitions shall be associated with the record metadata.
- Discussions of this nature need to be preceded with the distribution of term definitions at the least. Models of more complex concepts should be provided. We kept bumping into "special" meanings of generic English words... (which have been over-loaded by other technology communities)
- There are obvious (non-functional) capabilities (Access control, integrity verification, etc) that span, and are orthogonal to, all functions defined by NARA. These should be separated out rather than be included as members of a mixed-characteristic list..
- The whole effort lacks a definition of the underlying terminology. These requirements cannot be used for implementation if the terms are not defined
- It is unclear why this effort needs to restate requirements that are already captured in DOD 5015.2 and endorsed by NARA. If the intent is to create a component architecture linked to the SRM, then what is really needed is component architecture analysis that, as a starting point, maps 5015.2 requirements (plus, perhaps, some deltas) to separately procurable components. This takes 5015.2 as already giving the baseline for "what" is required for an RMA, and, instead, moves to an initial decomposition into "what" is needed -- to the level of components that can be separately procured and have interoperable interfaces.
- In OMG MDA (Model-Driven Architecture) terms, what is needed is a PIM (Platform Independent Model) of the component architecture and interfaces, not a CIM (Computation-Independent Model) of the business requirements. It would then be up to industry to produce PSMs (Platform Specific Models) for the components logically defined in the PIM, on various implementation platforms -- and the corresponding implemented products.
- Security, privacy, distribution, replication ... are all missing in the requirements set. There is no way to add this later... Has to be designed in from the very beginning.

- Workflow and use cases seem to be missing and essential to understanding characteristics of the overall problems. In a sense, the framework presented started from the viewpoint of a particular answer; it would be more helpful to start from a problem definition.
- A central authority to manage metadata, categorizations, authorization is not foreseen in the requirements. It appears to be crucial to have this kind of facility to ensure interoperability, consistency and durability.
- If you ask "are there any vendors who can do this", all vendors with an API (all of them!) will say YES. You need to further define exactly what RMSC really is, and what it is about (as I understand it -- a new way to deliver the required functionality, namely, interoperability and reusability). If I am right about what RMSC is really about, NO vendor meets the requirements.
- Need a dictionary of terms and class diagrams now! First.

Appendix J – Workshop Evaluation

[\[return to page 12\]](#)

1. What Went Well?

- Good facilitation, (Kudos to Ed)
- Good facilities
- Organization of material helped get the conversation started.
- Meeting timekeeper was spot on. Very good facilitation.
- It took a while, but I'm beginning to like the collaborative nature of the facility.
- The overall process is excellent, and the facilitation was just right (in fact, could have headed off a few rat holes). Well done Ed.

2. What Needs To Be Improved?

- There was some confusion on the basic goal that the customer was trying to achieve. I think that a mission statement of the gov. group would be helpful.
- Start with common definitions of terms and a clear problem statement, rather than the framework in which a proposed answer (the NARA RMSC Summary) is provided.
- Although the structure gave us a good start, we found ourselves commenting on a component partitioning that missed what we felt were the essential issues... those issues were noted at the very end, but we would have done well to pursue them rather than the pre-conceived material at certain points. However, there may be enough in the comments to distill this out.
- I second the issue on term definitions.
- Document availability earlier before the meeting would have made preparation MUCH easier.
- Terms and terminologies need to be better defined.

3. Other Comments

- None

4. How can this functional requirements review process (with Industry/Academia) be improved?

- Longer lead time

- Participation of users of records-management solutions from outside government.
- An overall process issue: I feel that lots of useful comments, especially from side discussions, and especially early in the day, were likely lost as no-one was taking discussion notes. Although it would be painful to post-categorize these comments, it is likely that that process could have been energized by the meeting participants themselves at the end of the day ("remember when somebody said lifecycle? how does that fit into the day's comments everybody?"). Instead we all scribbled notes on bits of paper, and I'm quite sure some of the ideas were lost.
- Lack of focus on a problem-oriented introduction caused the audience to jump to the generic answers before you could get your specific questions posed. This caused (me at least) to make pre-judgments about what the "right" answers are; this colored my reaction to specific questions introduced later on.
- More people who understand records management need to be involved in this process. Essential!



Appendix K – Acronyms

| | |
|------|--|
| DRC | Dynamics Research Corporation |
| DSC | Decision Support Center |
| ERM | Electronic Records Archives |
| ISO | International Organization for Standardization |
| NARA | National Archives and Records Administration |
| RM | Records Management |
| RMSC | Records Management Service Components |