



**A SURVEY OF FEDERAL AGENCY
RECORDS MANAGEMENT APPLICATIONS
2007**

A Records Management Study Prepared by:

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1.0 Executive Summary

In 2007, a National Archives and Records Administration (NARA) team surveyed five Federal agencies who are implementing Records Management Application (RMA) software products to manage their electronic records. The survey team interviewed Records Officers from each of the agencies and had them complete a questionnaire on the progress they are making with their RMA implementations. NARA provided feedback about its own RMA as did the following agencies:

Nuclear Regulatory Commission

U.S. Department of Defense, U.S. Navy, Naval Criminal Investigative Service

U.S. Department of Energy, Bonneville Power Administration

U.S. Government Accountability Office

The following report summarizes the survey responses agency-by-agency, covering the relative successes or (mixed-successes) of the software products against agency-defined expectations. Much of the information was derived from the questionnaire which focused on impact of the RMA implementations in terms of the records management programs, IT operations, and agency employees who administer and use the software. The final section draws some conclusions from these responses.

The survey results do not yield any major surprises. Generally, each of the agencies is satisfied with their software product and how it operates in program and administrative offices. With one exception, the RMAs are performing up to expectations in capturing, categorizing, and storing electronic records and employees are making use of their RMAs to file their electronic documents including “record” email messages.

Most of the agencies surveyed have the following characteristics:

- Senior management support for the RMA implementation;
- Employee population of 3,200 or less;
- Committed headquarters records officers, records management staff, and liaisons who have been well educated in the functions and operations of the RMA;
- Users who are more comfortable in operating the RMA for records management because the agency already is using document management, collaboration, portal, or other technology from the same or other vendors;

- Agency culture that emphasizes the value of documenting work processes;
- Predominantly case file-based records series;
- Track record of piloting document or records management software prior to acquiring their current RMA product;
- Sound records management programs and policies already in place;
- Adequate level of user tolerance for performing daily electronic filing.

The survey results lead us to conclude that:

- Properly employing an RMA can take years of effort and resources for planning, testing, and implementing the system;
- Conducting a pilot and using a phased-in approach to implementation works better than rolling out the RMA software to all users at the same time;
- The product must be easy to use and as transparent as possible;
- The right level of promotion and training during the RMA implementation can help successfully win over those who will use the software for recordkeeping;
- Close attention paid to individual users in the learning phase is critical;
- Creative strategies such as the use of flexible scheduling and reducing the number of users who have to file record email messages can help facilitate the RMA implementation;
- The RMA technology must integrate with other applications and the operating system, especially with the email system;
- Implementing an RMA seems to be less about the functionality of the software product itself and more about other factors such as agency culture, the quality of the records management system in place, user buy-in, etc.
- Further study should be made of Federal RMA implementations, and beyond that, of technologies that are being used to manage email.

This survey does not imply that the techniques and strategies used by these few Federal agencies will automatically translate to success for all other offices and departments of the Federal Government. There are no vendor product ratings or comparisons included. Agencies are free to analyze the responses provided by the entities who cooperated in this study to help determine if an RMA is a good fit for their situation, and if not, consider other alternatives.

2.0 Purpose

The intent of the survey was to obtain information about how selected Federal RMA implementations are proceeding, and what outcomes and strategies are being used by the subjects of this survey that may be useful to others who plan to acquire an RMA product. Because email is so prevalent in Federal offices, particular attention was paid to how messages are being managed by the agencies using their RMA products. The report provides the first step in doing a more comprehensive examination of agencies who are exploring various technologies to perform electronic recordkeeping.

In answering questions posed by the NARA team, survey respondents frequently used the terms “success” and “failure”. These terms should be considered as subjective and are based on how well or how poorly the particular RMA worked in an agency versus pre-defined agency expectations. Listed below are examples of some of these pre-defined success factors:

Access and Retrieval. The software provides expeditious fulfillment of E-FOIA and legal discovery requests, and everyday requests for records stored in the RMA repository.
Accuracy. The system performs highly accurate classification of records (using agency-defined measures).
Economy. The product helps reduce the volume of paper records.
Software Integration. The system integrates well with existing enterprise architecture, especially with the current email system.
Transparency/ Level of user intervention. Most of the RMA functions occur “behind the scenes”. The product facilitates the capture of e-records by users with a minimal number of keystrokes (threshold established by the agency) to declare records, complete metadata profiles, file records, etc.
User Satisfaction. Departments are satisfied with timely access and retrieval of organizational records. Positive feedback is received from most users.

For the majority of the agencies in this survey, their RMA software product met or exceeded most of their criteria, so they tend to see their own RMA implementation as being “successful.”

3.0 Methodology

The agencies who participated in this survey were chosen based on contacts with agency records officers by NARA staff in the course of scheduling and appraisal or other technical assistance activities. The survey was conducted through the use of questionnaires, product demonstrations, on-site interviews, and telephone calls with points of contact from each agency. The survey questionnaire (**Appendix A**) was designed to elicit factual information about the agency and the RMA, assessments of the overall performance of the product, profiles of the content found in the RMA (especially email), technical impacts, and pre-implementation planning activities. The questionnaire was sent to each of the participants ahead of the site visits and follow-up phone calls were made in order to validate the data collected from the questionnaires and interviews.

In addition to interviewing the five above-mentioned agencies the NARA team obtained additional information from four other sources.

The team examined the final written report from an RMA pilot conducted by an office of the National Park Service (NPS). The RMA product that was tested failed to achieve NPS expectations. With the permission of NPS, key elements from the final report are found in **Appendix B**. These results may provide useful lessons for other agencies who are contemplating RMAs.

In response to concerns expressed by the Federal Records Council about how Federal email messages are being managed (or not managed) the NARA team also spoke with representatives from the Department of Justice, the Department of Interior, and the Department of Defense, about their current and future uses of “email archiving” software to capture messages as records in lieu of (or in addition to) RMA software. **Appendix C** covers the strategies the three agencies are using or plan to use in implementing this alternative technology.

4.0 Records Management Applications

Electronic recordkeeping is the development of automated techniques to facilitate the management of electronic records. These automated processes support not only the preservation of an electronic record's content, but also its context and structure over time. Most organizations, including governments, create their records on desktop computers using word processing, email, and various other types of software. The reasons why organizations have adopted personal computers as essential tools to complete work processes are obvious – computers allow documents to be saved, modified, duplicated, stored, and transmitted electronically. Essentially, the convenience of the personal computer has accelerated the pace at which organizations communicate and produce results.

The benefits of using technology to create records have also resulted in complications for many organizations trying to maintain and manage evidence of their business functions. The ease with which documents are saved and duplicated by individual employees on their desktops means that, potentially, many versions of non-essential and essential records are retained and held for periods longer than required. It also increases the likelihood that the records are being maintained according to individuals' preferences and conventions instead of records management principles. The volume of records and the haphazardness with which they are managed produce more work for people trying to locate specific records for accountability purposes, which can have huge legal ramifications. Retaining an overabundance of records in electronic format also raises concerns over the reliability, authenticity, and longevity of records because electronic versions are easily changed, accessible by many employees within an organization, and software platforms can rapidly become obsolete.

In July of 2003, the Government Accountability Office (GAO) produced a report describing management and preservation challenges posed by electronic records. GAO concluded the following: (1) massive volumes of electronic data require automated solutions, and (2) electronic records are dependent on evolving software and hardware.

One of the tools available to agencies of the United States Federal Government to accomplish electronic recordkeeping is a "Records Management Application"

(RMA). An RMA is a software system that performs electronic records management according to an accepted Electronic Records Management System (ERMS) standard. The U.S. Department of Defense, DoD 5015.2, Electronic Records Management Application Design Criteria Standard, serves as the required standard for DoD agencies, and versions 1 and 2 of the standard have been recommended by NARA as a standard for other (non DoD) agencies. The latest version of the standard and a list of certified products are found at <http://jitc.fhu.disa.mil/recmgt/index.html>.

Following are examples where use of an RMA can facilitate electronic records management:

- Managing records from desktop applications where the electronic version of the record will be the recordkeeping copy;
- Maintaining electronic mail in an electronic format for recordkeeping purposes;
- Facilitating business process automation that necessitates the records to be collected, organized, and categorized to facilitate their retrieval, use, disposition, and preservation, including records generated in e-Government processes, if records management capabilities have not otherwise been built into the design of the system.

In June 2006, NARA published "Recommended Practice: Analysis of Lessons Learned for Enterprise-wide ERM Projects," which provided the experience of managers who have been involved in ERM projects, summarizing their accumulated knowledge of factors that can promote successful implementation and identifying the barriers that can impede the progress of enterprise-wide installation of technologies like RMAs. This issuance covered lessons learned in both the project planning and implementation phases. The results of this survey reinforce a number of the recommendations in the NARA publication:

- Secure management leadership, endorsement, and support for your enterprise-wide ERM initiative;
- Simplify and standardize your agency file plan/file structure, metadata specification, and naming conventions as part of your advance preparation;
- Design role-specific training for project team members;
- Test for user acceptance throughout the process;
- Consolidate the electronic filing function to reduce cost of software ownership, improve filing consistency, and reduce amount of training needed.

5.0 Survey Results

The following section is broken down by agency and summarizes the responses from the questionnaires and interviews; in effect, the “story” of each agency’s experience. The NARA team did not attempt to further validate the information that was provided other than observing demonstrations of the software products during the site visits.

It should be noted that, because some of the records officers were reluctant to have their responses attributed directly to their own agencies, the survey participants are hereafter referred to as “Agency A,” “Agency B,” “Agency C,” “Agency D,” and “Agency E.”

5.1 Agency A: Survey Results

Category	Agency A Response
Product	MS SharePoint Portal 2.0
RMA only or Hybrid	Full featured collaboration with search, content management, RM, and business intelligence features
No. Employees	Approximately 3,000
No. Users	1,000
When Implemented	November 2004
Deployment	All offices
DoD 5015.2 Compliance	Certified under DoD 5015.2 STD, rev.1 dated November 1997 and the departmental standard.

Background. The agency’s Chief Information Officer tasked a cross-agency team with researching and recommending an Electronic Records Management System (ERMS) for the entire agency. A 24-member team of technical and administrative staff representing the three business units was formed in November 2003; General Counsel, Audit, and IT were active participants. Ninety-minute meetings were held bi-weekly until May 2004. The team developed a Corporate Project Charter and Project Plan and members became familiar with the requirements for an Electronic Records Management System (ERMS). It addressed business line requirements and developed a score card for ranking and rating a software product. It was decided early on that if an in-house

system met 80% of the requirements based on DoD 5015.2 Standard and the Departmental ERM standard, that the software would be recommended.

One of the agency's major lines of business was already using Microsoft SharePoint 1.0 to manage its files and documents, so it made sense to review the in-house system currently being used. In the meantime, SharePoint 2.0 was released with increased functionality. IT staff assessed it and found it would meet the criteria of an ERMS with minimal customization. SharePoint 2.0 was demonstrated, then the team used the score card (sample below) to rate the system. SharePoint 2.0 met over 96% of the requirements.

Req ID	USER SCORE CARD	Mandatory (M)	3-(M, NMMH) Fully Met
		Non-Mandatory Must Have (NMMH)	1-(NM) Met
		Non-Mandatory (N)	0-Not Met
PART ONE - IDENTIFYING AND FILING RECORDS			
3.1	IMPORT RECORD- RMAs shall provide users with the capability to select and assign a file code to a record.	M	
3.2	RMAs shall assign a unique computer-generated record identifier to each record they manage regardless of where the record is stored.	M	
3.5	RMAs shall (for all records) capture or provide the user with the capability to assign, as appropriate, the following minimum profile data (metadata) when the record is filed: Subject. Date Filed. Addressee(s). Media Type. Format. Location of Record. Document Creation Date. Author or Originator. Originating Organization. Vital Record Indicator.	M	
3.6	EDITING METADATA - RMAs shall provide the user with the capability to edit the metadata listed above prior to filing the record except for data captured electronically from e-mail, default data supplied by the RMA (such as Office of Record), or other automated systems.	M	
5.1	RMAs shall provide or interface to a repository for storing electronic records and prevent unauthorized access to the repository.	M	
3.18	VIEW METADATA - RMAs shall automatically date a document when it is saved as a record, and preserve the date of receipt on records received. This date shall remain constant, without being changed when accessed, read, copied, or transferred. RMAs shall not permit this data to be edited.	M	
5.3	RMAs shall automatically date a document when it is saved as a record and preserve the date of receipt on records received. This date shall remain constant, without being changed when accessed, read, copied, or transferred. RMAs shall not permit this data to be edited.	M	

The team prepared a report and recommended to the CIO that SharePoint 2.0 be adopted for managing electronic records and documents across the three business units of the agency. The CIO approved the recommendation to proceed with implementing the RMA in June of 2004.

The agency's Implementation Team was formed in July of 2004 and was comprised of three parts: Functional, Hardware Infrastructure, and Software Infrastructure. Another project charter and project plan for this phase, with milestones and deliverables, was prepared by the team. The team was tasked

with the following: communicate and advertise the ERMS across the agency; develop policies and procedures; plan and deliver Records Management and Technical training; work with liaisons on their organization file outlines and ERMS setups.

The Hardware/Software Infrastructure teams worked for six months to develop server configurations, develop a common look and feel, purchase and install servers, install operating system, perform load and stress testing, install service packs, implement backup, and finally, to deploy the system.

Training was divided into two parts: general “Records Management” training (about 75 minutes long) and ERMS training (about 90 minutes long). The two-part, three-hour training session was mandatory before a user could gain access to ERMS. Another requirement was that the business unit/organization must have had a current and approved organization file outline that identified all their official records. The appointed liaison was required to work with the manager and workgroup of the particular business unit to identify who in the workgroup was going to use ERMS, what file codes/record libraries would be needed and what security settings would be applied. This information was captured on “Set Up” form (see example below).

ERMS SETUP FOR ORGANIZATIONS				
For Records Mgmt Staff Input only.		Approve by Records Management		
<i>Instructions:</i>				
1. Please complete this form by identifying the file codes you want "set-up" for your workgroup by either: Highlighting the file codes on your organization file outline \nfile\enternd\records_support or list the file codes you want "set-up" in the Notes section, block 11 of this form.				
2. If you are requesting access for Contributor/Reader of time and leave documents into the FI-10 and FI-10-11 libraries in the Official workspace area of the ERMS, please attach the completed 1400_23e.dot				
3. Email this form along with your organization file outline to both SharePoint Admin and Records Management				
1. Date of Request	2. Name of Requester/Manager	3. ORG Code	4. Telephone Number	5. Liaison
8. ERMS Contributors: (Name, ORG Code and BUD LOGON ID)				
8A. Employee/Contractor Name	8B. ORG Code	8C. BUD Logon ID		
7. List any additional properties that you would like to have added to your <u>Official Record Profile</u> :				
8. Identify required security needed for your <u>Official Files</u> :				
9. List properties you would like to have added to your <u>Work Docs</u> :				
10. Identify required security needed for your <u>Work Docs</u> :				

Feedback. Agency A rated its RMA implementation as a “10” (on a scale of 1-10, with 10 being outstanding) for the following reasons:

Success Factor/Indicator	Description
Experience with similar tool	Some of the SharePoint suite was already in use at the agency (for collaboration, document management, and as the Intranet interface). Therefore, minimal additional support was needed for the SharePoint records management module (just two staff from Records Management and three IT Specialists).
Positioning of the Records Management program	Under Information Technology (under the Chief Information Officer) was beneficial in maintaining support throughout the project.
Project Support	11 coordinators and 70 liaisons across the agency.
Software Tool	The RMA is an easy-to-use, web-based application that builds upon the SharePoint Portal Server technology utilizing ASP.NET and SQL Server. It is a robust system with integrated single sign-on security and it has built-in redundancy with three front end web servers and two back end SQL databases.
Positive user feedback	RMA as it has a “look and feel” that is familiar to them; “Work Docs” component (document management) of the SharePoint Portal is very popular, especially in managing projects.
Office level coordinators	Appointment of office level coordinators, liaisons, and RMA contributors, all of whom help ensure that records are filed in the SharePoint repository for each business unit.
Senior management support	More than the expected number of managers at the corporate level were early users of the RMA which underscored the support received for the software from upper level s.
Resources provided	Capital funding to implement SharePoint portal in a way where it would meet the agency’s strategic needs; a competent, knowledgeable project manager from IT and good technical staff; an exceptional Records Management staff; well thought-out records management processes; an up-to-date agency records manual. Senior management support was in place from the beginning; from the Chief Operations Officer to the Chief Information Officer and many managers in between.
Motivators	Large number of case-filed records series, regulatory compliance responsibilities, and frequent involvement in litigation.
Sound RM program in place	The program included NARA-approved records retention schedules for all of the records in 24 major program offices across the agency. Twenty-two chapters in the records manual, that represent the functions across the agency. A total of 1265 file codes, all of which are approved, with a handful pending NARA approval.

Pilots	Pilots were conducted with willing participants before the implementation. Each pilot focused on some of the major missions of the agency.
Communications strategy	An internal communications group which kept all staff informed of developments of the ERMS and the SharePoint worksites through the in-house Intranet.
Training	A robust training program which helped to mitigate reluctance and apprehension of the system users. No one was allowed to be a "contributor" until they completed the training.

Information about RMA content:

RMA Content	Agency A
Volume	Not determined – 60 GB worth of documents filed to date.
Formats	Word, PDF, email, TIFF images, CAD drawings.
Metadata	Follows official records manual classification. Other metadata includes "line item" for contract number, customer name, and invoice number. The profiles can be customized. Folders set up in the RMA repository follow the official records manual file code hierarchy.
Email Management Process	Messages are saved as .msg files first, then each message has to be filed individually by the user and the metadata applied. This typically takes 30 seconds or less. (About 3-5 clicks of the mouse). Attachments are filed with the messages. For the next software upgrade, a combination of Exchange 2007 manager folders and SharePoint 2007 will be used to create "smart folders" to automatically capture email with "Official Use Only."
Actual Use of RMA for Email Management	Most users are being selective, based on content. Those who are not using the RMA for email print and file messages.
Email Export Formats	.msg, .pdf, .tiff, .xls, doc, .ppt, .xlst.

Technical considerations. The SharePoint product is configured for nearly full functionality. The current RMA is web-based, but the next version will manage multiple repositories (federated) in different geographic locations. Agency A had to do some customization of SharePoint 2.0 in order to make it perform according to the full DoD 5015.2 (v.2) standard. All legacy data that was in SharePoint 1.0 was migrated to SharePoint 2.0. When the agency moves up to SharePoint 3.0 (late 2007) all the content will be migrated over to the new version, which should have out-of-the-box functionality and will require little or no customization.

Staffing. Technical support for SharePoint is provided by in-house staff, both Federal and contractor. The Records Officer and Records Specialist and one IT Specialist all manage the RMA.

Lessons learned (quotes from agency records officer):

1. "You must have buy-in and support from upper management."
2. "Get advice from the experts! NARA's Targeted Assistance Program is a fabulous resource."
3. "You don't have to know everything. You just have to understand the questions and know where to get the answers."
4. "Involve those who will be using the system from the onset."
5. "Be prepared to train IT staff in Records Management processes."
6. "Be flexible. Remember things move slower when more people are involved. Be realistic with time frames and due dates."
7. "Don't let team members mess with your goals or deadlines."
8. "Plan ahead for dissenters. Take them aside, work with them to find out their issues and concerns. In the long run, it will be time well spent."
9. "Get your Records Management house in order before embarking on an ERMS. Approved file series and retention schedules are a must."
10. "Don't be afraid of being placed with IT or in the CIO's office."
11. "Before taking the hands-on training, it's essential that users have basic browser skills."
12. "Have user documentation available prior to implementation."
13. "Ensure that you have the resources needed after implementation."
14. "Take baby steps. Pilots are a great way to start, then build from there."
15. "Be open to learning IT terminology."
16. "Records managers have to get used to reading more, networking more, attending conferences and seminars to soak in IT business practices."

5.2 Agency B: Survey Results

Category	Agency B
Product	Hummingbird RM 5.1
RMA only or Hybrid	Integrated with Hummingbird DM 5.1.05 Document Management System
No. Employees	Approximately 3,100
No. Users	*4,200. (*This includes contractor staff.)
When Implemented	RMA – January 2007 (DM – starting in 1992)
Deployment	All offices
DoD 5015.2 Compliance	DOD 5015.2, version 2.

Background

In seeking to implement a records management application to all its offices, Agency B had a number of goals. It wanted to leverage institutional knowledge within and across agency functions, provide a foundation of knowledge management, and manage and dispose of the electronic records produced by its electronic business processes. The agency creates some 1,200 case files per year resulting in electronic documentation that constitutes the "record copy" of evidentiary files. It is also involved in litigation on a regular basis and it had particular business needs that it wished to address:

Better service to clientele.
Reduction of administrative tasks and time spent by analysts and support staff who manage records.
Ready access to and retrieval by authorized users to all agency records.
Minimized end-user responsibilities for managing electronic records.
Embedded records retention in electronic processes.
Storage of documentation or pointers to documentation (e.g., voluminous paper, data sets, copyrighted material) in the recordkeeping system.
Capture of records at creation or receipt.
Improved workflow with electronic records in one repository.
Preprogrammed disposition dates to move records from active, to near-line, to off-line and archival storage.
Enhanced potential for knowledge sharing among teams and support for matrixed business unit teams (geographically and cross-team).
Reduction of records management costs: off-site storage of paper records, secure destruction services, courier delivery, and staff time used in locating and accessing records.

Agency B's records management program was put into order before the RMA initiative. It benchmarked its RM program against other RM programs nationally in 2006 using criteria established by the Association of Records Managers and Administrators (ARMA), International. The benchmarking criteria included analyzing organizational structure, the breadth of program activities, staffing, budget, volume of work processed, best practices, electronic records management, reporting structure, financial support, stakeholders, policies, training, staff development, and use of technology tools/automation. All ARMA criteria were successfully met.

The agency made significant changes to its records management program by adopting simplified records retention schedules, which revolve around the "big bucket" (flexible scheduling) concept. Agency B collapsed the number of retention categories in its old retention schedule to just three records retention categories that reflect its three primary functions: mission projects, policy and special collections, and administrative (housekeeping). It modified the normal method for declaring records by implementing a new policy that regards everything as a record at creation/receipt with non-records being removed from the record files at files close-out. Records management functions are now performed at the front and backend of the processes by the records management staff.

Feedback. Agency B rated its implementation as an "8" for the following reasons:

Success Factor/Indicator	Description
Software tool	The system is easy to use and almost transparent to the user.
Policies	Policies and management support were already in place to smooth the transition to the RMA (such as the requirement to automatically capture records at receipt or creation).
Stakeholder Contributions	Analysts, attorneys, and various existing task forces, were invited to contribute to the prototype, pilot, communications, training and implementation strategies, phased roll-out, and community of practice for the RMA project.
Integration of RMA product	The IT unit resolved issues that arose in linking the Records Management component to the Document Management component.
Management Support	Implementation of the RMA had the full support of the agency head, the Executive Committee, and the agency's IT investment committee; the entire effort was led by the Managing Director for Knowledge Services and the Chief Information Officer.
Pilots conducted	Prior to the RMA going operational the agency conducted 20

	pilots in every major business function so that all business units had a vested interest in the initiative. Each Managing Director chose one project for participation in a pilot and each administrative office was invited to choose a business function to participate in the pilots.
Metadata Development	A set of agency-unique metadata elements were developed with input from the Office of General Counsel and the agency's analysts, accountants, and investigators.
Communications	The agency assembled an RMA communications team consisting of representatives of Knowledge Services (records), Information Systems and Technology Services (technology), and Quality and Continuous Improvement (audit policy and quality assurance) prior to implementation.
Oversight	It set up an on-going steering committee headed by the Managing Director of Knowledge Services and the Chief Information Officer with representatives from Knowledge Services, Information Services and Technology Systems, and Quality and Continuous Improvement.
Training	Significant efforts were made to provide training and communications for the initiative: team briefings, mandatory on-line just-in-time training, a DM/ERMS Information Center Intranet site that included "Frequently Asked Questions" and "Tips & Tricks", help desk assistance, training labs, "Lunch and Learn" sessions, and "Community of Practice" standing meetings.

Information about RMA content:

RMA Content	Agency B
Volume	600,000 documents in the repository.
Formats	All Microsoft Office application-generated documents (Word, Excel, etc.). 27% of the total number of records in the system originated from email applications.
Metadata	Document name, number, source, date, type, and author; application; job code; sensitivity; description; access restrictions; case file designator. The system also contains metadata for physical records maintained outside the RMA.
Email Management Process	Users select those records to be placed in the ERMS by clicking on an activity button "Save to DM" within the email message tool bar. This then prompts the user to choose a records profile--from three major retention "bucket" categories. By completing the profile, the user has placed the email message into the recordkeeping system. The RMA can not "bulk save" email messages. The messages must be saved individually, each with its own profile, or as a threaded discussion with an umbrella profile to describe the group; it takes 15 seconds to file an email message and as little as four steps (clicks of the mouse, depending upon the options selected). Users complete profiles to accomplish the task of saving email records. Users are taught to

	create an electronic folder for each project, task, or committee they work on. This electronic folder has its own profile. When saving an object to that folder, the user simply clicks on the folder, the system auto-generates profile data, and the user names the document or message. Attachments may be saved with the message, or as separate objects, or both.
Actual Use of RMA for Email Management	Sixty-six percent of RMA users are saving record email messages. Staff are selectively filing email to the RMA and staff are instructed to save substantive email which provides evidence of the agency's functions, decisions, activities, etc.
Email Export Formats	MS Word and PDF. Attachments are maintained in their native format.

Technical impacts. The impact of the RMA project to the agency's existing IT infrastructure was minimal. Because the Hummingbird RMA was an add-on module to its existing document management system, no additional hardware was required. The software was installed on existing equipment already in the production network as an additional module, which minimized the impact. The RMA implementation created additional levels of work for the Application Support staff (Help Desk) such as maintenance and repair, providing technical and "how to" support to system administrators and users, automated and manual file plan administration, and additional report requirements. For the "Quality Assurance (QA) Team" the impact was felt in the area of document management system testing, which changed because of the integration of the RMA module. In addition, each time the document management system (and any applications that include integration with the document management system) are upgraded or developed, additional testing must be planned for to include testing of the RMA module.

Based on agency approved RMA standards, the document management system was customized to change the document profile array to include profiles for administrative, mission, and policy areas. Users select the appropriate profile for the document being saved. The IT group introduced transparency in the filing of documents through two custom dynamic-link libraries (DLLs). No network customization was necessary to implement records management functionality into the agency environment. The document management system had been in place for 15 years and was already fully integrated with the standard Microsoft Office applications: Word, Excel, and PowerPoint. The DM had also been fully integrated with the agency's email system (GroupWise) without any significant problems, and with the Adobe application. The agency has been able to retain the existing functionality and repositories, and simply add records management functionality (record status and retention) as a module to the DM system. The

system was rolled out in phases, beginning with the existing pilot users and the two units sponsoring the system. Eventually, the RMA was implemented enterprise-wide (all headquarters and regional offices) over a twenty-three week period.

The RMA software had too much functionality for agency needs, so unnecessary functions were turned off and/or removed from the system with the vendor's assistance. For example, the "Declaring Record Function" and the complicated "File Structures" features were removed. The agency's DM system is configured with thirteen libraries, located at headquarters and the in the field offices. Agency staff are able (as authorized) to access/manage records in all libraries.

An imaging strategy was also put into place since outside Federal agencies and entities who transact with Agency B do not always provide their documentation electronically. It was decided that electronic capture (whenever reasonable) was a business need that must be met, so the agency established a centralized scanning service center, where contract staff scan and process images using an optical character recognition program (OCR), upload the material into the electronic recordkeeping system, and then return the paper materials to the staff for quality control of the images and OCR-produced text. The agency has also provided multi-function machines throughout its headquarters and field offices so that staff may do their own scanning (generally small or limited numbers of documents). In addition, it has procured a limited number of hand-held scanners which can be linked to agency-issued lap tops and used by staff that travel or work from another agency's facility.

Staffing. The vendor provided technical support to integrate the DM and RM modules and adapt the product to the agency's business processes. The vendor was available through a service level agreement to provide on-going support and Agency B has the option to negotiate future work as needed. There are system administrators for the DM component and system administrators for the RM component; they collaborate but have different functions and areas of responsibility. Systems administration is done by both Federal and contractor staff.

Due to personnel needs to help operate the RMA, the agency added two Records Managers (contractors) for system design, implementation, fine-tuning, and system administration. Those individuals continue to support the agency by doing RMA system administration, facilitating policy and process issues, and providing help desk support to RMA users. Recently, two federal staff were

hired and added to the records management team to provide training, communication, and help desk support to users.

Lessons Learned:

1. Clarify records management policies when guidance is established for users in order to ensure the completeness of the official record in the RMA;
2. Survey the variety of recordkeeping practices being used in program offices; they may be different in each office;
3. Determine the level of competency of potential RMA users. Agency B found that some of its users were not competent in using either the document management system or even standard office applications (word processing, spreadsheets, presentations, or the email system);
4. “Translate” paper-based records policies to electronic processes (such as collaboration and electronic supervisory review);
5. Modify existing written policies on document drafts and versioning;
6. Institute “change management” to mitigate potential user resistance to change, especially if the organizational culture has been heavily reliant on traditional paper processes. Fortunately for Agency B its document management system had been in use since the 1990s and this lessened user apprehension about going to electronic recordkeeping;
7. Do not try to implement the system in the same year where the mission work will be subjected to international peer review;
8. Include more “reluctant” users in the pilot projects;
9. Engage the policy staff earlier in the process when reviewing the differences between electronic and traditional program documentation;
10. Look to in-house information resources to support the initiative: end-users, Document Management Applications Support staff, and the vendor’s software engineers (who helped enable Agency B to integrate the DM and RM modules and adapt the product to agency business practices).

5.3 Agency C: Survey Results

Category	Agency C
Product	Provenance's "Foremost" product (2000)
RMA only or Hybrid	Integrated with FileNet Document Management System
No. Employees	Approximately 3,000
No. Users	20 (RMA); 3,000 (Document Management System)
When Implemented	RMA – mid-2001 (DM – April 2000)
Deployment	Headquarters only
DoD 5015.2 Compliance	Software was certified against DOD 5015.2 – Rev. 1 but strategies used to pass certification testing in many cases were not implemented at the agency.

Background. Agency C was a pioneer in implementing an RMA in the Federal government beginning only about three years after the first RMA products were certified under the original DoD 5015.2 standard. The product is now seven years old, has changed hands more than once from its original vendor, and it is therefore no longer supported. The agency is seeking to acquire a newer state-of-the-art product to handle its current records environment.

When it was introduced, the combined hybrid system – the FileNet Document Management application (DMA) and the Foremost Records Management application – was supposed to require the records-creating staff member to file his or her own records (including entering most metadata into the document profile). But soon after, staff complained about how long it took to file their own records and the policy was scrapped. From then on individual employees were only asked to enter three or four data elements into the document profile in the DMA component of the system. The remainder of the data elements were then entered into the profile by the document management staff, consisting of some 30 staff members. This is still the process used and it normally takes about eight work-hours after document creation for this additional metadata to get entered. There are about 11,000 documents in the queue waiting to have the full metadata entered into the DMA application.

There are about 45 data elements in the document profile, however only about 12 to 15 of them are routinely used. There is a separate staff (of about six people) that files the records in the RMA component. This filing activity is the equivalent of “declaring a record”. When a document is in the DMA, it will usually be revised and new drafts (versions) created, which become separate documents.

Usually it is the final version of the document that is filed (declared a record) in the RMA, but sometimes one of the intermediate drafts is also filed in the RMA.

The Foremost version now in use in Agency C cannot assign more than one disposition code to a single document. (Often the same document needs to be filed in more than one location because it is used by different offices for different purposes.) To resolve this problem, Foremost allows multiple copies of such a document to be stored (“filed”), so that each copy can be given a different disposition code as needed. There is also a problem with document “packages”. The problem is that related documents (comprising a “package”) cannot be marked as “linked”, using Foremost. The combined DMA/RMA handles this problem by allowing the documents to be linked into a package by the FileNet DMA. Down the road, the lack of linkage of such documents in the RMA may create a problem with transfers of permanent documents to the National Archives. The agency pointed out that, when it acquired Foremost, DoD 5015.2-STD did not require a mechanism for transfer of records to the National Archives; such a requirement was added to DoD 5015.2-STD later.

The system has an Official Records Processor function that is activated when a record is declared. It converts native application files (Corel or Microsoft office application-generated documents) into a standard portable document format (PDF) text and graphics file in order to “freeze” the document from further changes. The native application file is not removed but is stored as the previous version of the PDF file and can still be accessed in the repository.

Feedback. Agency C rates its RMA as an “8” at its inception, but the rating has fallen to “a 2 or a 3” due to the problems described previously. Even so, the agency has realized some achievements:

- The Information Management group (which includes Records Management and Document Management), and the Information Technology group, work together more than before;
- The agency records management program, which was strong to begin with, has made greater strides in the direction of implementing both document management and records management software, than have other agencies who continue to rely on print-and-file or shared network drive folder/document management strategies;
- The RMA implementation has resulted in the agency making needed changes to schedules, policies, and procedures, in order to accommodate management of electronic records in general, and to establish specific disposition authorities for electronic records;

- The implementation was successful in reducing volume of paper records being generated by the agency and reducing the need to store non-electronic records.

Information about RMA content:

RMA Content	Agency C
Volume	120,000 documents
Formats	PDF formats, spreadsheets, BIN files and other.
Metadata	Metadata comes from that which is captured in the Document Management system, and it meets most of the DoD 5015.2 standard.
Processes for Management of content (including email)	Implementation of the document management system is enterprise-wide, but the RMA is only found in headquarters. The vast majority of agency users do not actually use the RMA; they interact only with the document management system. <u>A centralized processing staff of contractors (rather than individual users) files electronic records, including email messages, into appropriate case files.</u> There are two ways to enter email into the full system. (1) Copy the email to a Word Perfect document and save that document in the full system. However, this is time consuming, so isn't often done. (2) Print the email message and send to a centralized scanning office to produce a scanned (paper) copy in PDF format. This method is used more often.
Actual Use of RMA for Email Management	Because of the above "work around" strategy, the RMA has only a limited amount of messages in its repository and it is not mandatory that messages be filed in the electronic repository. To help remedy this situation Agency C is looking forward to moving to a new email system - MS Outlook. MS Outlook will allow for the capture of email and attachments electronically in the document management system, and from there messages can be selected as records if appropriate. During the roll out of MS Outlook, Agency C is also providing job aids to help users decide what messages are records. The job aids consist of posters and small brochures which walk them through the decision making process.
Email Export Formats	All email that is declared a record is captured via the Official Record Process which means that it first gets converted to .pdf format then added to the repository.

Technical impacts. Electronic records that are captured in the document management system are managed in a single repository. However, in many instances electronic records accepted from outside of the agency are so complex in nature that they are unable to be captured. An electronic place holder is added to the document management system that points to the physical location of the record. This electronic record is then managed by the RMA but only the part that part that can be converted into a PDF. The agency plans to address this issue and cover all repositories, regardless of media or format, in the next system.

Staffing. Currently none of the records management staff are involved in actually running the RMA. However, there are certain controlled value lists for some of the metadata elements that are captured by the document management system that are managed by agency document management staff. There are current plans for the library staff to work on agency taxonomies. Agency records management staff is striving to have a much bigger part in this effort as it believes that the organization of records (compliance and business related) versus reference materials (non records) should be addressed.

User training was provided to agency staff and system administrators upon roll-out of software in 2001. Since that time, all system administrators have left the agency and new users have relied on training from current users. No documentation or formal training materials are currently available.

The impact on records management staff has been substantial. With contractors being used for processing of records into the RMA the value of the agency records center staff has been minimized. There is a transition that is still being felt at every level from technicians not knowing how to handle their changing roles to higher level management not recognizing this change. Records management desires more technical expertise and will need higher level management support to attract, train, and support staff that has records expertise across the board.

Lessons learned:

1. Avoid customization if possible. One of the biggest challenges to Agency C was in trying to integrate the original Foremost product to work in conjunction with the FileNet document management product. This required customization which the agency now says should be avoided in its future implementations. If it were to start over, the agency says it would purchase a product suite that had an integrated RMA included so that it would not have to do customization and so that it could address the managing of documents and records, regardless of media or format, across the agency.
2. Have a plan and get support for periodically upgrading the RMA software. The increasing obsolescence of the RMA software as well as its limited capabilities (as compared to modern RMA products) resulted in agency risk to its e-records. For example, the agency has been unable to implement disposition of materials under the control of the RMA or transfer any permanent materials to the Archives because the product is incapable of doing these things. The inability of the RMA to manage

- “document packages” as an entity has resulted in numerous hurdles regarding management of the materials.
3. Carefully consider electronic records management policies and how they will be affected by the RMA implementation. Agency C made a decision that only those records that were converted to PDF format would be placed in the RMA. According to the agency this policy has led some staff to think that only PDF documents are official agency records, with the result that many materials do not get placed in the repository but are left in the document management system with no retention applied.
 4. Piloting the software and waiting for mature products can help avoid pitfalls in implementing this type of software. A formal implementation strategy was not developed because at the time it purchased the Foremost product, Agency C was on the leading edge in acquiring this technology and had no guidance or best practices available to emulate. No pilot was done, nor was any change management or communication team formed.

5.4 Agency D: Survey Results

Category	Agency D
Product	Tower TRIM 6.2
RMA only or Hybrid	RMA only
No. Employees	Approximately 2,200
No. Users	600
When Implemented	January 2007
Deployment	Headquarters; full roll out to 13 sites worldwide will occur in late 2007
DoD 5015.2 Compliance	Certified under version 2 of the DoD standard

Background. The RMA that Agency D uses was selected at the headquarters Department level, so Agency D had no choice in the selection of the product. But it did develop its own unique requirements for the system, some of which are highlighted below:

Functionality	Requirement
Imaging case file folder	Capability to incorporate scanning. In a single operation be able to scan text files, color and black and white pictures, dual sided page scanning, and automatic orientation of pages horizontally or vertically as required.
Text Capture (OCR)	Capability to capture textual information (typed, printed, and handwritten) at a minimum of 80–90% accuracy per character.
Capture of Photographs	Ability to scan case files that will capture photographs that are black and white and color using the same scanner.
Input Case	Capability to insert cases not part of a batch. This is needed to enable the systems team to image “expedite” cases as required to facilitate where the need exists to view a case very quickly.
Playback	Ability to play back information in the following media: video, audio, electronic, digital photography, polygraphs,
Insert Material	Capability to update a case file by inserting a page or pages, video or electronic media into a case file or one or more of its associated subfolders.
Notification	When a file subfolder exists that is response to the reference request but the requester does not have access rights, a message is displayed which says “There may be additional material responsive to your request to which you do not have access rights. If file is desired, please select “request” option or submit request to Liaison Section.”
Transfer case files from classified to unclassified system	Ability to move a closed case file from the classified RM system to the unclassified RM system in instances where the file becomes declassified

Feedback. Agency D rated its implementation as a “10” for the following reasons:

Success Factor/Indicator	Description
Case file-based records system in place	The majority of its records are structured case files; and the TRIM product is a good fit for managing the over 300,000 cases files maintained by the agency.
Experience with similar technology	Because a number of agency employees were already experienced with records imaging applications, getting used to using the RMA was not as stressful.
Software tool	The agency records officer says that the product is simple to use and it does whatever it is asked to do. The agency has encountered very few technical problems with the RMA and very few complaints from users.
User satisfaction	Staff members enjoy the electronic search capabilities which are performed faster with fewer steps and filing errors can be corrected immediately. The system is being heavily used.
Centralized records control	There is greater document control; the records management staff have a much better idea of what documents are being saved into electronic case files. Before the RMA, people who retrieved a case in hard copy could remove or add items to a case but they can't do that now.
Integration with imaging technology	By combining its imaging system with the RMA, the agency is able to capture scanned images of program records which are needed in litigation.

Information on RMA content:

RMA Content	Agency D
Volume	Not determined
Formats	Video, .pst files, electronic exhibits and attachments to case files, audio (911 calls), spreadsheets, fingerprint cards, and polygraphs.
Metadata	No data provided.
Email Export Formats	The RMA was not being used for email management at the time of the survey.

Technical impacts. There was some impact of the RMA implementation on IT infrastructure. The agency had to isolate a server that had become a bottleneck. It had to install a special router for scanning machines. The RMA encountered a lot of traffic so the agency upgraded the connection to one gigabyte; this was also necessary to make system work properly in field offices (some of which are located in world-wide sites). The RMA was rolled out in phases: headquarters first then incrementally to other offices and the field. Functionalities of the RMA were also rolled out over time instead of all at once. For example, the disposition feature was only recently added.

Staffing. Agency D has a contractor running the system five days a week and the contractor contacts the vendor if needed. The contractor is responsible for everything except for problems implementing the file code identification. The headquarters records manager is the project manager for the RMA and his staff manages the system content including disposition actions.

Lessons learned:

1. Carefully plan migration of legacy data. The agency had some problems with migration; some proprietary electronic media items in the old system couldn't be converted to the new system because of proprietary software.
2. Monitor user compliance with new policies and procedures that are put into place for the RMA. The agency developed RMA data business rules, and has issued guidance on indexing and preparation of files for imaging, and how to select retention categories (metadata). However, it reported problems with people not following naming conventions, and with the bar coding of documents scanned into the system.
3. Be sure the existing architecture will account for more rapid communication needs. The agency encountered slower operating speeds in remote offices (one location had to wait 10 minutes for a 16-page case file to be retrieved).
4. Plan for funding legacy records projects and future maintenance of the system. Acquiring funding for backfile conversion of legacy documents into the RMA was the biggest challenge for Agency D. The agency wants to be "paperless" by the time its headquarters moves to a new location in 2011. The previous system is no longer supported and there is no money in the budget for on-going needs of a sustainable RMA system.

5.5 Agency E: Survey Results

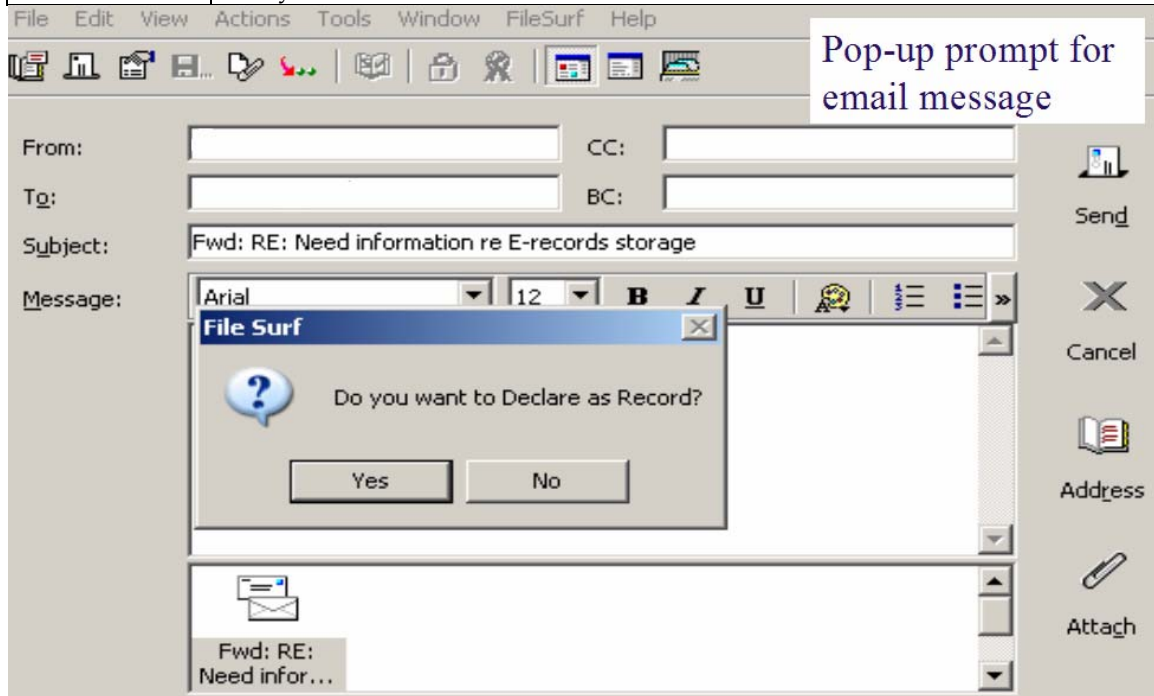
Category	Agency E
Product	CA-FileSurf 7.5, ver. 4.0
RMA only or Hybrid	RMA only
No. Employees	Approximately 3,000
No. Users	60
When Implemented	Fall 2003
Deployment	Selected headquarters offices and one regional site.
DoD 5015.2 Compliance	Version 2.

Feedback. Agency E rated its RMA implementation as a “9” for the following reasons:

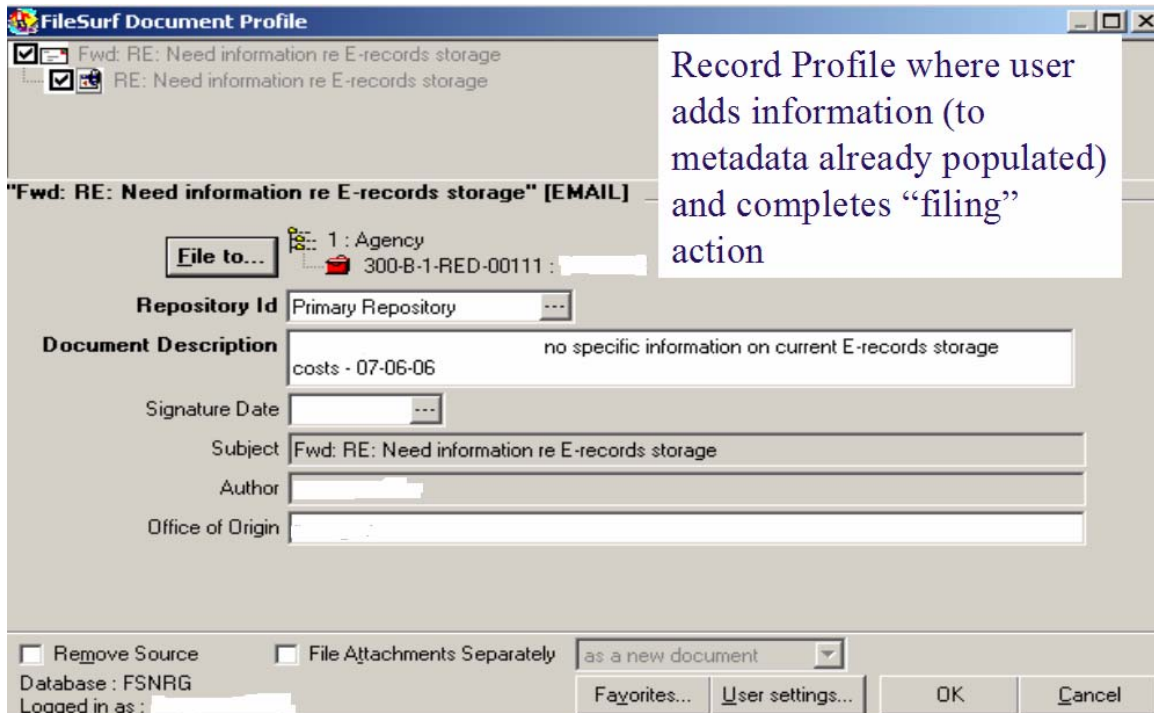
Success Factor/Indicator	Description
User feedback	The agency records officer said that the RMA has met pre-defined expectations and has generated good “word-of-mouth” feedback from users.
Training program	Training was provided by the contractor who also developed user guides showing how to capture and file messages and office application files, how to set up folders, and how to do searches. Updated procedures were provided on a regular basis and help desk staff also trained people one-on-one as needed.
Development of big bucket schedules.	The agency had a good records management program in place prior to the RMA implementation, including one program schedule that was revised as a big bucket schedule. This meant fewer items and disposition periods for users to choose from in performing filing actions. Paper filing (in the offices using FileSurf) has been significantly reduced or eliminated. High-volume scanners were purchased to help convert paper documents to electronic formats so that all records of a particular project or transaction can be maintained electronically in FileSurf.
Software tool	The software has a feature called “Favorites” which allows users to tag particular folders that are used on a frequent basis for filing, which reduces the number of mouse clicks.
User strategies	Some offices have established rules for who has responsibility for the filing messages and other electronic documents for particular case files; if a person is in charge of the particular project or assignment then they file all related messages and documents. This has cut down on confusion and duplication.

Information on RMA content:

RMA Content	Agency E
Volume	Not determined
Formats	MS Office application documents (Word, Excel, etc.). Also PDF, email messages, and MS Project files.
Metadata	RMA file category, original document ID number, system assigned number, description, signature date, subject, author, office of origin, fiscal year date, media type, version, and normal metadata for email messages. 80% (at least) are email messages.
Email Management Process	When users are about to send Email messages, a pop-up prompt appears on the screen asking "Do You Want To Declare As A Record?" If the answer is "yes," a metadata profile screen will appear prompting the user to complete necessary information and select a place in FileSurf to file the message as a record. 3-4 clicks average, plus entering optional document descriptions in the profile. Users typically file attachments with the corresponding messages, but attachments can be filed separately as well. Messages can also be filed later on (rather than at the time they are sent) using a toolbar selection in the GroupWise email system and following the same steps. Bulk filing of messages can also be accomplished through FileSurf.
Actual Use of RMA for Email Management	It does appear that the users in the business units that have FileSurf are using it to file "record" messages. Users seem to be selective in what they file once they get used to the system and especially if they have predefined rules for selecting record from non-record messages.
Email Export Formats	Just the native formats in which records are captured. Agency E is not yet ready to transfer records offline from FileSurf.



(FileSurf message capture)



(FileSurf Metadata profile)

Technical impacts. Implementation of the RMA caused no major impact on IT, other than the need to have dedicated FileSurf servers - one for application software and one for data. The RMA sits on the wide area network but it is not supported by the WAN administrator. The existing WAN infrastructure is used for communication, so users can connect to FileSurf. Customization was avoided to a great extent. There was no re-writing of any programming code because “breaking the code” on one version of the software means having to do the same for all later versions. Some features haven’t been “turned on” or used yet. For example, no record destructions have taken place. Offices are just now beginning to make file and document cutoffs.

Staffing. An outside contractor was hired to manage FileSurf for Agency E. Still, the headquarters records management staff have a lot of added administrative duties as a result of the RMA implementation. In addition to their normal duties, they provide contract oversight, oversight of the use of the system, data assessment, procurement control, and promotion of the RMA, all without an increase in staff to handle the extra workload.

Lessons learned.

1. Granular paper-based file plans are not appropriate for use in an RMA. Big bucket retention categories work best because they present fewer

- choices for users to select from. Agency E created a big bucket schedule for its regional program to help facilitate the use of the RMA;
2. Manage user expectations as much as possible ahead of the implementation. There were some unmet expectations from certain users who weren't prepared for the amount of time it takes to file records into the repository;
 3. Prepare to ask for additional funding each year for continuing operations and maintenance of the RMA;
 4. Business process analysis/business process reengineering should be performed ahead of the implementation. Had it been able to do these things it would have enabled offices to use rule-based filing for the reengineered processes instead of users selecting records on their own.
 5. Have the Chief Information Officer (CIO) office test and use software so they have an appreciation of how it works and can make more informed decisions on providing future support;
 6. Required metadata supplied by users should be kept to a minimum;
 7. RMAs must be compatible with the current desktop baseline;
 8. Do not implement a system without conducting a pilot. Test the system in a separate test environment before going live, including Certification and Accreditation Testing, and be sure and test all new patches and new releases;
 9. Top management support is essential; having it yields enough of a change and makes a big difference in the RMA project.

6.0 Conclusions

An analysis of the survey data leads us to conclude the following:

1. *The RMA tool, while important, is not the only consideration in an implementation project.* The study results show that other factors are equally important, if not more important, than the software itself. These factors include having firm and continuous management support, funding and personnel resources to acquire, operate, maintain, and upgrade the system over time, having the full cooperation of the IT function, and gaining commitment for electronic recordkeeping from the users.
2. *Conducting a pilot will allow for early learning and avoidance of pitfalls.* While not every agency conducted a pilot, those that did were afforded the opportunity to step through their plan to ensure nothing was missed. A pilot also allows the agency to test their implementation plan and the RMA tool to ensure it works the way they believe it will work. Quirks in a system can avoid becoming issues if they are identified before the software goes operational.
3. *Plan for the future.* One of the five agencies in the survey who use an RMA has been "left behind" with an old product that is not up to the current electronic recordkeeping environment in the agency. Agencies need to plan for future upgrades of the RMA product to which they have invested so many resources or consider changing to an up-to-date product from the same or other vendor, instead of standing pat.
4. *It is important that a good records management program be in place to drive the implementation.* Part of the necessary groundwork that needs to be performed before an RMA is acquired is seeing that the current records management program is in good working order and follows industry standards. Buying an RMA will not solve problems inherent in the current RM program; it will only serve to cement those problems in a computer system.
5. *Having less granular retention schedules and file plans is an advantage when implementing an RMA.* Several of the agencies involved in the survey took steps to revise their retention schedules in such a way as to reduce the

number of retention periods in anticipation of its RMA implementation so that users would not face so many choices when they file e-records.

6. *Training is a critical success factor.* Several of the agencies we interviewed provided extensive user training to agency staff and system administrators upon roll-out of its software. Training can be classroom as well as hands-on, and should definitely include one-on-one sessions with users so that the users will begin to feel more competent (and less apprehensive) in using the RMA.
7. *RMA tools may not be suitable solutions for Federal agencies that are not willing or able to commit to the time and effort that goes into implementing this type of software.* As detailed in this survey, RMAs can be beneficial to Federal agencies and help them become compliant with NARA and other regulations and requirements. However, they also require a great amount of investment in planning, monetary resources, IT tools, personnel, and long-term commitment from management. The right conditions need to exist for success, such as those found in some of the agencies profiled in this report. Also, according to a University of Maryland survey on Federal recordkeeping policy and practices, agency or office size affects the implementation of Electronic Record Keeping Systems (ERKS); the larger the agency, the more complex the problems associated with effective implementation.
8. *A make-or-break point in any implementation is the level of transparency of the RMA product.* All but one of the agencies that we contacted for the survey have been successful (to some degree) in getting their employees to interact with their RMA products to electronically file records on a regular basis. Some of these agencies are employing tactics and strategies to lessen the intrusiveness of the system; in some cases the "filing" is left to dedicated records liaisons or records management units. If the product requires too much effort of busy employees and managers, they will not use it or will find ways around it and this will defeat the intended purpose of the system.
9. *For some agencies, the volume of email messages they create and receive may be too overwhelming to be managed at the desktop with an RMA product (alone) by thousands of employees across many sites.* It is apparent that email messages can constitute the most voluminous type of record that gets filed into RMAs. All but one of the agencies we surveyed uses their RMA tool for

filing "record" messages, but not without some additional effort. Two of the agencies save messages in non-native formats resulting in records that are captured with diminished content and structure. As illustrated in Appendix C some agencies are investigating the use of email archiving software as an alternative to trying to stand up an RMA product.

10. *It is recommended that a more in-depth survey take place in FY 2008, not only of RMA implementations, but more importantly, what Federal agencies are doing with their record email messages.* The broader survey should encompass larger agencies at the Department level and look at implementations across a wide variety of agencies. Such a survey would be beneficial to outline the best RMA tools available and explain which tools are best in which situations. The survey could reveal "best practices" that would be of interest to those agencies that have not selected an RMA tool, and for agencies that need to extend their RMA programs to cover all of their electronic records.

APPENDIX A – Questionnaire

Records Management Application Survey – FY 2007

Interview Questions for RMA Survey

A. NARA Interviewer

name(s): _____

B. Date(s) of

Interview: _____

C. Agency Information:

1. Name of Agency: _____
2. Location: _____
3. Point of Contact Name and Title: _____
4. Point of Contact Phone#/Email address: _____
5. May we see a demonstration of the RMA and observe its use in everyday agency operations?
6. May we call you with follow up questions?
7. Can we refer to your name and/or your agency's name in our final report?

D. Records Management Application (RMA) Information:

1. What is the name of RMA product that you have implemented? (Vendor name[s], product name[s], and version.)
2. Is the product you are implementing a pure "RMA" or is it a hybrid EDMS/ERMS product, or part of a full Content Management package?
3. Date implemented: _____
4. Scope of implementation:
 - Enterprise-wide
 - More than one site but not all sites
 - Single site only (e.g. headquarters)
 - Specific business units only

Other
(describe): _____

5. How many users? _____
6. How many licenses versus users? _____
7. How many full client users versus concurrent users? _____

E. Agency Feedback on RMA

1. On a scale of 1-10, how would you rate the outcome of your RMA implementation? (1-"poor" to 10-"outstanding"): _____
2. Can you explain why you think your agency has achieved a successful outcome from implementing your RMA? Please answer in terms of (a) People, (b) Processes, and (c) Tools/Technologies.
3. Which of your pre-defined "success factors" have you satisfied so far? (If possible, please provide a copy of your "success factors" documentation.)
4. Did you find success in other areas you didn't originally consider? Please describe.
5. What did you learn from the implementation? (From not meeting some success factors.)
6. Did you meet the pre-defined business needs (identified at the start of the project)?
7. Generally discuss the positive outcomes of the RMA implementation.
8. Generally discuss any negative outcomes of the RMA implementation.
9. What was the biggest challenge you had to deal with regarding this implementation?
10. What would you do differently now, based on what you learned from this implementation?
11. What were the top three most useful information resources used to make your RMA implementation a success?

F. RMA Content related:

1. What percentage of documents created in your desktop application software (i.e.,

Microsoft Office Suite) are saved/ filed in your RMA annually?

2. What other types of records are saved or stored in your RMA (i.e., databases, CAD, scanned images)?
3. What metadata is applied to all records saved to the RMA?
4. What metadata is unique to your Agency?
5. Do your end-users apply a security classification to the record as part of their business process before it is filed to the RMA?

G. Email specific:

1. Does the system you implemented also manage Email? If your answer is NO, skip the next 10 questions.
2. Of all office automation-generated electronic records created by your agency, what percentage of the records are email messages? (E.g. "80% of the records we file into the RMA are Email messages.")
3. Describe how the RMA handles Email messages. How does filing, categorizing, etc. take place? Can the RMA bulk-file Email messages? Is the source Email message deleted once the message is filed into the RMA? On average, how long does it take to file a message, and how many clicks of the mouse does it take to file it? How are attachments handled? Filed with the message, filed separately, not filed at all (rely on version already in the RMA as part of a case file)?
4. Is use of the RMA mandatory for filing record email messages? Is there a feature that asks the message creator if they wish to declare a message a record just before the message is sent?
5. Are users actually using the RMA to file "record" Email messages? Some users? Most users?
6. For those who are using the RMA to file messages, have you determined if they are filing all messages, or are they being selective?
7. Have you been able to determine why some are not using the RMA for filing messages? If they are not using the RMA, what are they doing with "record" messages?

8. Have you worked out any strategies and shortcuts that make it easier for people to file Email messages in the RMA? If so, what are they?
9. Were there any problems integrating the RMA product with the existing (Microsoft, Lotus, Novell, etc.) Email application?
10. Are you planning to switch to a different Email system in the future and will that system integrate with your present RMA?
11. Which export formats (and versions) does the RMA support for email messages?

H. Technical:

1. What impact did the RMA implementation have on your IT infrastructure?
2. What impact did the RMA implementation have on your IT staff?
3. What level of customization was required for the RMA?
4. How were legacy systems (if any) accounted for when planning for the RMA system?
5. Were other parallel IT projects taking place within the agency? (For example, a data cleansing project to identify current versions, eliminate duplication, provide missing metadata; identification of IT systems within the agency; a project to integrate records and website management metadata, etc.)
6. What level of technical support did the RMA vendor provide? Future vendor support?
7. Do you plan to upgrade this software as new versions become available?
8. Who manages the system currently? (i.e., System administrator, records manager, IT specialist, other positions.) Do different staff positions manage the system software application versus the system content? Are they government employees or contracted support?

9. Was the RMA system rolled out in phases or all at once? If the system was first rolled out to a pilot group, how was their feedback incorporated into the final system?
10. Have you used the full functionality of the system from the beginning or were system functionalities rolled out incrementally? (E.g., file & search first, then file cutoffs later, etc.) Are certain RMA system features not "turned on"? If so – why?
11. -Does the system manage records in multiple repositories?
12. Does the system employ auto-categorization technology based on 'rule engine' software?
13. Is the RMA certified against the DOD 5015.2 standard? If so, which version of the standard?
6. Were records policies and management practices changed to accommodate the RMA? If so, how?
7. How did you determine what your metadata requirements would be: what stakeholders were involved?
8. How did you determine what skill sets would be needed to implement the RMA? What skill sets did you end up using to implement the RMA?
9. Did you consider any alternatives to acquiring an RMA to resolve electronic recordkeeping needs? For example, developing an in-house solution, obtaining a less-robust/less expensive COTS product, incorporating Records Management Service Components into your systems, etc.
10. Did you develop a strategy and implementation plan for the RMA project that included the following approach in concept?
 - · Phase I - Baseline Current Process
 - · Phase II - Develop New Concept of Operations
 - · Phase III - Conduct Gap Analysis
 - · Phase IV - Prepare Recommendations
 - · Phase V - Develop Enterprise RMA Strategy and Implementation Plan

I. Front-end activities (pre-RMA):

1. What level of senior management support did you receive?
2. What were the motivating factors for implementing the RMA software?
 - a. Do you create a large number of case files?
 - b. Were you influenced by compliance issues?
 - c. Are you involved in litigation on a routine basis?
 - d. Do you receive a high volume of FOIA requests?
 - e. Particular business needs?
 - f. Other.
 - g. Comments -

3. Did you have a sound RM program already in place? Describe.
4. Did you pilot the RMA software before it was fully implemented?
5. How were priorities determined within the agency as to who (business unit or units) would be included in the pilot project?

11. Did you develop a strategy and implementation plan for scanning records (which included a cost-benefit analysis) into the RMA?
12. Were you responsible for overseeing the early identification of project risks, including mitigation strategies for those risks? If not then who was?
13. Did you support the communications activities of a change management and communications team?
14. Did you plan for the scaling of appropriate assets to support ongoing operations of the RMA and scanning, with enough lead-time to procure the assets needed including monitoring the costs of the project, resource levels and upcoming expected capacity?
15. Did you manage the project with a centralized management team to assure consistent results and use of standards?
16. Did you participate in setting goals and objectives, measuring effectiveness,

- assigning roles and responsibilities, automating the RMA data QA/QC, and formalizing training and maintain the course? Additionally has your organization continued its efforts to define roles and responsibilities, develop RMA data business rules, publish processes, procedures, and handbooks, and assign RMA data stewardship roles and responsibilities?
17. Have you implemented a centralized IT governance board for the RMA environment to assure the emerging internet technology and standards (internet and Federal) are used? If so, is this function implemented through a committee or team? Does the governance board have the authority for final decisions on the organizational issues that should be made based on overall organizational efficiency, cost-benefits analysis, required span of control, and/or critical success factors (managerial judgment)?
18. Who within your organization administers, develops, coordinates and maintains enterprise taxonomies and metadata for records, naming

conventions, controlled vocabularies and an unambiguous and comprehensive set of data definitions/controlled vocabulary?

NOTE: If you have any sample documentation that you feel illustrates a sound practice (developed for your RMA implementation), can you provide it for the Survey report?

J. Implementation and Post-Implementation:

1. What are you future plans for extending the software to other offices (if applicable) or obtaining a new version of the software?
2. What type of training was provided to the end users and the system administrators?
3. What impact has the RMA implementation had on your RM staff?
4. Did you keep track of and document the number of hours invested in the RMA implementation by staff position?

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APPENDIX B – NPS Case Study

To get a different perspective on implementations of RMAs, the survey team looked at a pilot implementation that fell short of expectations. In 2003 an office within the National Park Service identified the need for an upgrade to its database of over 100,000 index records describing over one million agency drawings and maps, and thousands of its documents, aerial photographs and other technical data. In March 2004, the agency conducted an e-records pilot and installed a COTS system at the center. At the end of the pilot the agency concluded that it would not recommend continuing with the product it was testing for a variety of reasons. It commented that when the vendor was approached with a list of items to be improved upon, the vendor was not responsive to the agency's requirements. Some of the **issues** that influenced the final decision to discontinue the RMA pilot were:

1. Agency expectations from the contract were not met. For example, integration of the email system and hardware integration with agency systems were not accomplished.
2. The desktop interface was very unfriendly to use and it did not follow industry Windows interface standards.
3. Reworking of certain features was not possible or too costly or too timely, even though this was a supposedly "easily customizable" COTS product.
4. Problems were encountered with the back-end design of the application – for example, documents were stored in a flat table structure and were not relational.
5. Oracle client deployment was not practical to install with each and every vendor thick client (computer in client-server architecture networks which typically provides rich functionality independently of the central server).
6. The web client did not have the same level of functionality as the thick client, so the desired web deployment was not an option.
7. Poor product testing by the vendor led to excessive agency troubleshooting, downtime, and user frustration.
8. The vendor did not keep current with industry developments regarding web searching and access.
9. Milestones were missed by the vendor.
10. Deliverables such as ADA compliance features, the final functional design document, final application security checklist information, archiving plan for sending records to NARA, and others, were not provided as stated in the contract.

The agency produced a final report with **lessons learned** from its pilot. The report provided the following conclusions:

1. A dedicated, integrated project team with a project management approach is critical to the success of any project, and contributed greatly to this pilot.
2. Add specific performance requirements to Functional Requirements, i.e., user must be able to declare a record from the email application in xx seconds or less and a maximum of xx clicks and xx keystrokes.
3. Understanding business processes, reengineering those processes for an electronic environment, and determining document and information workflows are keys to success.
4. Project schedule was too short (approximately 7 months) for a project of this scope and size. Requirements gathering and planning, done correctly, require a significant investment of time.
5. The vendor product had outdated search functionality. Questions asked during technical selection should be specific, require demonstrated knowledge and application of search technology.
6. A very important requirement for this agency is that the product must be able to be automatically installed, i.e. no manual installation of the desktop client. User support personnel cannot visit each workstation in a pilot or implementation in order to deploy the vendor product or other software.
7. In forms processing, manual data entry is the most expensive part of form processing. Need fill-able forms options rather than having to print and fill-in forms.
8. Implement electronic signatures to optimize use of and reliance on electronic documents. Having to maintain two systems (print and electronic) is not user friendly or reliable.
9. System architecture should allow for easy product modifications. Certain areas of the product are not customizable in an efficient manner.
10. Metadata and database schema: consider using Dublin Core standard for metadata field names in order to optimize integration with other systems and databases.

APPENDIX C – Email Archiving Scenarios

In reaction to concerns expressed by the Federal Records Council about Federal email management, the Assistant Archivist for Records Services—Washington, DC, asked the NARA team to gather additional information about RMA email content and the use of other technologies by agencies. In addition to the five agencies with RMA products, the team also spoke with three other agencies: the Department of Justice (headquarters), the Department of Interior—Minerals Management Service, and the Department of Defense—TRICARE Management Activity. These three agencies were interviewed about their plans to employ what is called email archiving software (EAS) to manage voluminous amounts of email records. The responses below are not specifically attributed to any of three agencies because in each case their plans and strategies have not been fully developed.

EAS facilitates the transfer of messages from individual email boxes into the EAS archive/repository at pre-defined intervals (established by the agency). The EAS indexes messages according to their attributes, such as the sender, recipient, sent/received dates, subject lines, and even words and phrases in the message body, as well as contents of email attachments. “Archived” messages can be searched (either through the email system and/or through the email archiving software) for legal discovery or other purposes using search engines that come with the software. Some software vendors offer manual and/or automatic selection of messages for inclusion in the repository.

Scenario 1: The agency currently captures all its messages (record and non-record) in an EAS repository due to its involvement in a large class-action lawsuit. Capture of messages is transparent to users and the records are not categorized for retention. The electronic messages are maintained in the repository for easier searching through advanced search tools when needed for the litigation. For normal record-keeping the agency email policy remains as “print-and-file.” The same agency is currently piloting an RMA in one business unit.

Scenario 2: The agency has been using email archiving software for some time and it is currently is developing a strategy for capture of records and categorization using the EAS it has purchased. This particular agency, which currently has a “print-and-file” policy for its email, has over 110,000 employees

and 50,000 contractors, as well as multiple lines of business. It does not wish to spend several years trying to stand up an RMA, which it feels would be too expensive, but instead will try and use the email archiving software as much as possible for electronic recordkeeping. The agency feels this type of software is much easier to install and is much more transparent to users. This is a critical point because, according to the Departmental Records Officer, the front line employee is not going to bother trying to sort and file his or her messages, and secretarial positions (those who used to file documents for each business unit) are dwindling.

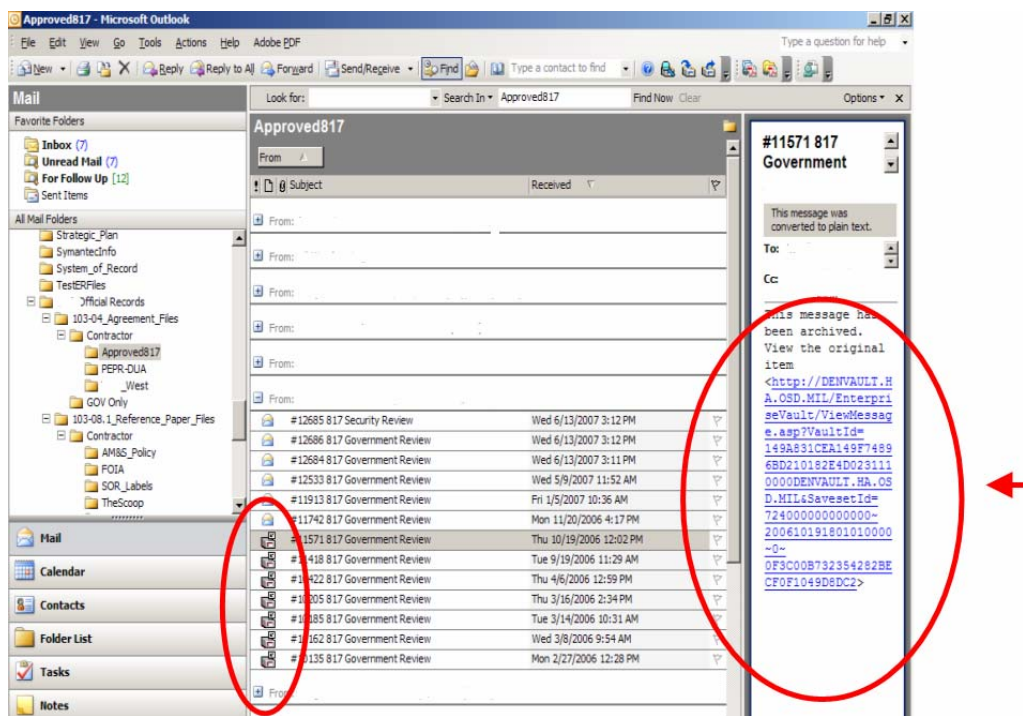
The next version of the agency's regular email system will have a tool bar template that can be customized to allow users to mark messages as either "record" or "non-record." Messages selected as "records" are still visible in the email system for up to 30 days but they actually reside in the Email Archiving repository. Non-record messages are eliminated from the repository after 180 days.

The agency will use a series of rules to establish retention for messages. There is a place in the EAS repository which uses a drop-down menu with standard titles that can be changed to agency record series titles. Senior managers' messages will automatically be designated as "permanent" and filed into the repository by default, since it is this group that generates policy and procedures for the agency. For other offices the "default" setting is "non-record"; users will change selected messages to "record" as necessary. The EAS allows for rules to be set up for case files, which is the primary record category created by this agency. For example, case categories can be set up to cover major program areas (e.g. "litigation," "investigation," "policy," etc.). The current case numbering scheme can be also be used with the software. The agency will also take advantage of EAS's capability to "de-duplicate" (eliminate exact versions of the same message), and use automatic settings to capture the last message in a message string. It will also exploit the software's search engines to locate record messages through the use of smart searches on keywords, relationships, and concepts, rather than browsing through a large set of electronic folders.

This strategy will be phased-in over five years, with the record/non-record selector being made available first. The agency will invest in training users on how to recognize e-records and will affix email record selection instructions at each workstation. In a later phase, the agency plans to exploit the software's features to categorize messages manually and/or automatically. The agency will revise its retention schedules to create larger retention buckets, and will seek to

capture policy decisions in other documentation (instead of in email messages). The agency is not sure what it will do with all the messages accumulated in the EAS repository at this point because it is improbable that anyone will take the time to sort the huge amount of messages; it is considering a mass deletion after three years once it uses the EAS to filter and save record messages in the repository. The agency plans to put together a working group from other Department-level agencies to share information on this use of this technology.

Scenario 3: This agency has been using an email archiving software product since 1996 and has saved all messages since that time, without regard to whether the messages are record or non-record, administrative or programmatic, temporary or permanent. The archiving system to this point is not considered to be the “recordkeeping system” and the agency continues to use a “print-and-file” policy. It too, needs to make a decision on what to do about the huge number of messages it has accumulated in the repository for 11 years.



Beginning this year, the agency has developed commonly accessible “public folders” within the email system where users can drag and drop sent messages considered to be “record” into the proper folder. From there, the email archiving software pulls copies of the messages into the repository while retaining the category/retention attributes from the public folders. The agency is still testing this approach and its use is optional at this time.

APPENDIX D – Glossary

Content Management	Techniques to set policies and supervise the creation, organization, access, and use of large quantities of information, especially in different formats and applications throughout an organization. Content management is often used to describe the management of websites, but in other instances refers to the management of all information across the whole of an enterprise.
Electronic Document Management System (EDMS)	Software that manages the creation, storage, and control of semi-structured documents. It consists of several technologies including, but not limited to document management, COLD (Computer Output to Laser Disk), imaging, and workflow.
Electronic Record	Any information that is recorded in a form that only a computer can process and that satisfies the definition of a record.
Electronic Records Management (ERM)	Using automated techniques to manage records regardless of format. Electronic records management is the broadest term that refers to electronically managing records on varied formats, be they electronic, paper, microform, etc.
Email Management	Covers the entire lifecycle from capture, storage, retrieval, indexing, and archival in an efficient framework.
Metadata	Describes or specifies characteristics that need to be known about data in order to build information resources such as electronic recordkeeping systems and support records creators and users.
Record	A unit of recorded information created, received, and maintained as evidence or information by an organization or person, in pursuance of legal obligations or in the transaction of business. Includes all books, papers, maps, photographs, machine readable materials, or other documentary materials, regardless of physical form or characteristics.
Records Management	The systematic and administrative control of records throughout their life cycle to ensure efficiency and economy in their creation, use, handling, control, maintenance, and disposition.
Records Management Application (RMA)	Records Management Application. The software used by an organization to manage its records. An RMA's primary management functions are categorizing and locating records

	and identifying records that are due for disposition. RMA software also stores, retrieves, and disposes of the electronic records that are stored in its repository. (DoD 5015.2)
Records Schedule	A type of disposition agreement developed by a Federal agency and approved by NARA that describes Federal records, establishes a period for their retention by the agency, and provides mandatory instructions for what to do with them when they are no longer needed for current Government business. The term refers to: (1) an SF 115, Request for Records Disposition Authority, that has been approved by NARA to authorize the disposition of Federal records; and (2) a General Records Schedule (GRS) issued by NARA.

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