

| Past Performance | | | |
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| Contract Title | Electronic Records Repository Administration (ERRA) | | |
| Client | Federal Aviation Administration (FAA) | | |
| Period of Performance | 09/15/22 to 06/30/24 | Contract Type | T&M and LH |
| Worked as a | Prime | | |
| Contract Number | 692M1522C00012 | Award Date | 15 September 2022 |
| Contract Value | \$1,396,142.75 | CPARS | N/A |
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| Contract Description | | | |

Project Background

To implement a robust records management strategy, FAA Records Management Office has contracted Ark to implement the Electronic Records Repository Administration (ERRA) application using the combination of SharePoint and PowerApps Model Driven app model and PowerBI-based reporting dashboards. This application integrated the user management system and other FAA systems, websites, and applications to provide metadata necessary for properly retaining, disposing, and transferring FAA records to NARA according to their specific electronic file plans and schedules. ERRA is the primary component of a cross-agency solution for “in-place” records retention, disposal, and archiving necessary to meet current and future NARA requirements and deadlines. This project utilized SharePoint, PowerApps Model Driven app model, and Power BI-based reporting dashboards to create a centralized platform for records metadata management.

Project Scope

The Federal Aviation Administration (FAA) engaged Ark to develop and implement the Electronic Records Repository Administration (ERRA) application, a comprehensive solution designed to enhance the FAA’s records management capabilities. The project scope encompassed several critical areas, including records metadata management, workflow automation, compliance, and advanced analytics.

The ERRA project aimed to implement a robust records management strategy that integrates various FAA systems to ensure proper retention, disposal, and transfer of records to the National Archives and Records Administration (NARA). The application leverages SharePoint, PowerApps Model Driven app model, and PowerBI-based reporting dashboards to create a centralized platform for records metadata management.

Records Metadata Management: ERRA is developed as the primary tool for all of FAA to centralize the capture of metadata related to records management; some of the major features implemented in the system include:

- GRS and FAA Schedule Management:** Any Records Management application needs to ensure the NARA General Records Schedule (GRS) and agency-specific records schedules are accurate in the system for the Records Managers (RM), Records Liaison Officers (RLO), Record Custodians (RC) and File Custodians (FC) to capture the file plan metadata accurately. ERRA application has a feature to capture NARA GRS and FAA schedule information, including schedule numbers, item level details, and disposition authority numbers. The system can capture the schedule lifecycle while they are drafted and undergo the review process at NARA.

- **File Plan and Record Collections:** The user will be able to create and manage new file plans and record collections, including collecting and capturing all metadata related to the record. Multiple storage-related metadata can be captured for each record collection.
- **Line of Business and Access Management:** Ark has developed the application with customizable granular security control to ensure RM, RLO, RC, and FC can create and access file plans and record collections only within their assigned division, branch, or office. This ensures the confidentiality of the content and metadata.
- **GRS and FAA Schedule Data:** Ark deeply understands NARA's GRS and agency-specific records schedules and how they can be integrated into a custom-developed application. Since all GRS schedule information is unavailable as part of the NARA electronic CSV transmittal file, our team extracted the data from the PDF files. It loaded them into the ERRA application database. In addition to the GRS data, FAA agency-specific schedule data was converted into electronic format and imported into the system database.
- **Legacy File plan migration:** FAA had hundreds of legacy-file plans capturing thousands of record collection metadata over the years. Our team provided supported and developed scripts, automated business processes, and workflow to clean, normalize and download to the newly developed ERRA application.

Project Management

Content 1:

Applying the SCRUM methodology adhering to the Agile project management values and principles, our team developed software products in multiple increments delivering a tangible product at the end of each cycle. The incremental products are used or improved in the next development cycle.

Ark deployed a multifaceted approach to project management, requirements gathering, process engineering, quality assurance, and data management, all of which were instrumental in delivering high-quality solutions that advanced the FAA's capabilities in records management and analytics.

Project Management and Methodologies:

1. **Agile Project Management:** We utilized Agile methodologies to manage the project, enabling flexibility, rapid iteration, and continuous delivery. This approach facilitated regular stakeholder engagement and timely incorporation of feedback, ensuring that the final deliverables closely aligned with the FAA's evolving needs.
2. **Sprint Planning and Reviews:** Regular sprint planning sessions and sprint reviews were conducted to prioritize tasks and evaluate progress against the project goals. This ensured that all team members were aligned and that any pivots in project direction could be managed effectively.

Business Requirements Gathering:

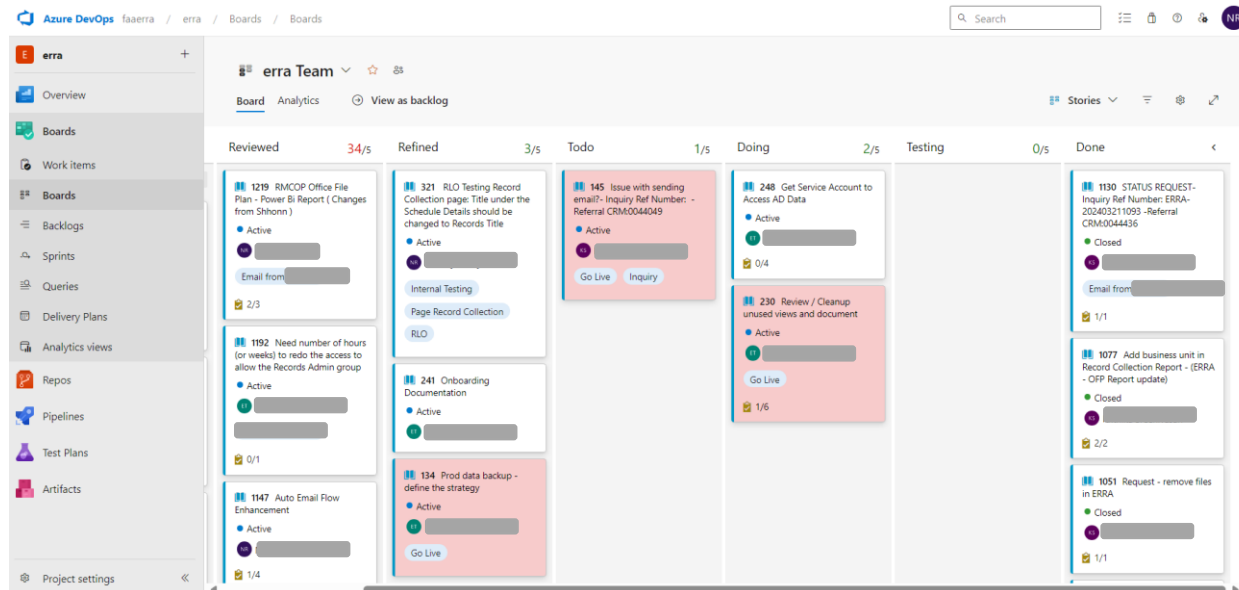
1. **Stakeholder Interviews and Workshops:** We conducted detailed interviews and interactive workshops with key FAA stakeholders to gather comprehensive business requirements. This collaborative approach ensured that the developed solution addressed all functional needs and compliance requirements.
2. **Use Case Development:** From the requirements gathered, we developed specific use cases to guide the design and development of the ERRA application. These use cases helped in understanding and documenting the end-to-end processes that the application needed to support.

Content 2:

Ark possesses extensive experience catering to clients with similar needs, providing comprehensive IT services to various federal and state government agencies, including FAA, HHS, and NIH, as well as various commercial and state clients.

Effective work tracking is essential for successful project management in today's dynamic business environment. Ark has leveraged Azure DevOps, a powerful tool offering comprehensive work tracking, collaboration, and continuous delivery features. By utilizing Azure DevOps, we aim to streamline your development processes, enhance team productivity, and ensure transparent communication throughout the project lifecycle.

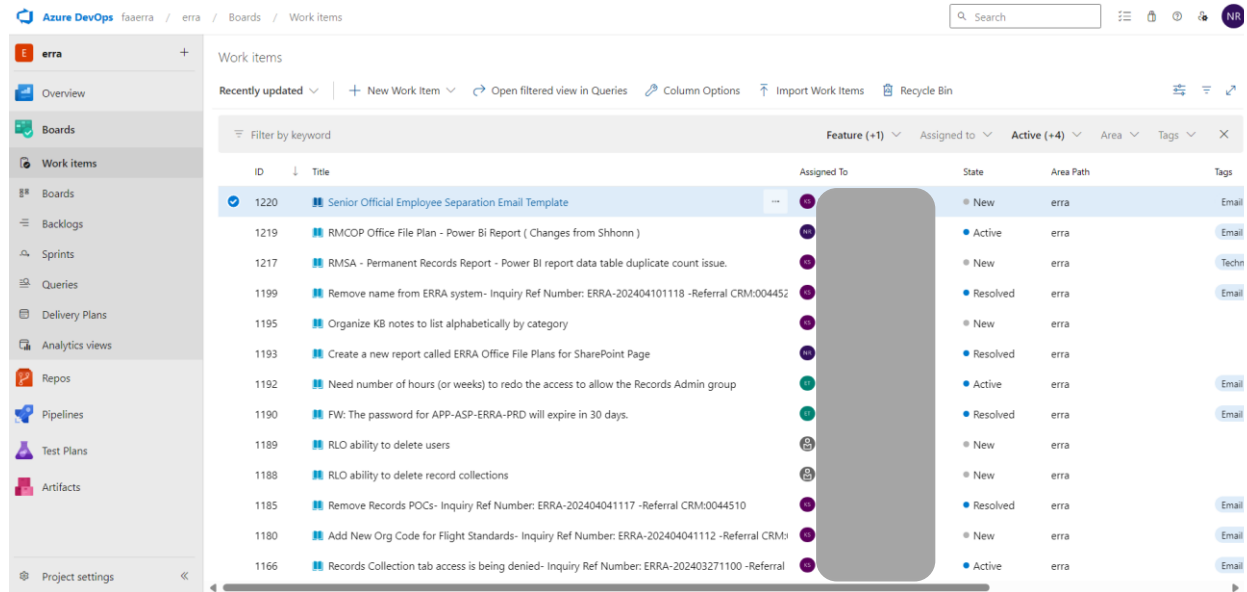
Project Management and Work Item Tracking: Azure DevOps provides robust support for agile methodologies, allowing teams to plan, track, and prioritize work efficiently. With features such as backlogs, sprint planning, and Kanban boards, we can customize workflows to suit your project requirements and adapt to changing priorities seamlessly. Azure DevOps integrates seamlessly with popular development tools such as Visual Studio, GitHub, and Jenkins, enabling seamless collaboration and automation across the development pipeline. By leveraging these integrations, we can streamline code management, automate builds and deployments, and ensure consistency in software delivery. Our team efficiently manages a diverse set of tasks ranging from bug tracking to feature development and user story refinement. Through Azure DevOps, we ensure a clear and structured workflow that is visible on our boards where work items are categorized by stages: 'To Do,' 'Doing,' and 'Closed.'



Real-Time Analytics and Reporting: Azure DevOps offers robust reporting and analytics capabilities, allowing stakeholders to gain insights into team performance, progress metrics, and project health. By leveraging these analytics, we can identify bottlenecks, track key metrics, and make data-driven decisions to optimize project delivery and resource allocation. Our DevOps dashboard is equipped with analytics views that offer real-time insights into work item progress,

helping us track average work item age, lead time, and cycle time. This data enables us to optimize our workflows continuously and ensure timely delivery.

Backlog Management: Utilizing Azure DevOps, we can create and manage work items such as user stories, bugs, and tasks, providing full visibility into the progress of each deliverable. Team members can easily update statuses, assign tasks, and collaborate in real time, promoting accountability and transparency across the development cycle. We maintain a prioritized backlog within Azure DevOps, ensuring that all items are reviewed, estimated, and queued for implementation in a systematic manner. This backlog is crucial for our sprint planning and helps in balancing the workload across iterations.



Collaboration and Transparency: Our usage of Azure DevOps promotes transparency and collaboration. The tool allows every team member to have visibility into what others are working on, which helps in reducing bottlenecks and facilitates proactive problem-solving.

Custom Dashboards and Wiki for Knowledge Sharing: We utilize custom dashboards and the integrated Wiki within Azure DevOps to disseminate knowledge and maintain essential project documentation, which supports our team's efficiency and project continuity.

Continuous Improvement through Feedback: Our process incorporates feedback loops through the use of the 'User Story' work item type, which facilitates the collection of user feedback and ensures that our product evolves according to user needs and expectations.

Adherence to Agile Methodology: The Azure DevOps environment supports our Agile methodology, providing the toolsets necessary to manage our Sprints effectively. It aids in aligning our daily activities with the overall project goals, ensuring an iterative and incremental approach to software delivery.

Azure DevOps has been instrumental in the successful management and execution of the FAA Electronic Records Repository Administration (ERRA) project. Our proficiency in leveraging its full spectrum of work-tracking features has not only bolstered our productivity but has also reinforced our commitment to delivering high-quality software within the stipulated timeframes.

Application Development for the Electronic Records Repository Administration (ERRA)

Application Web Interface Design: Our team worked with FAA Microsoft 365 and SharePoint hosting team to obtain the appropriate permission to set up the site, required pages, and user permissions. We created design documents documenting the application design, workflows, and custom software development requirements. We designed the initial wireframe showing the toolkit interface design, including the home page design, application screens, and navigation. Ark designed wireframes and concept diagrams for implementing PowerBI-based dashboards. Setup links and permission-based navigation for different parts of the application.

The development of the ERRA application was a critical component in modernizing the FAA's records management system. Utilizing the PowerApps Model Driven app model, along with Power Automate and other components of the Power Platform, our team created a comprehensive, user-friendly platform designed to streamline records management processes, enhance compliance, and improve data accuracy and accessibility. Below are key aspects of our application development work:

1. Comprehensive Records Metadata Management

- **Record Collections:** The application allows users to create and manage detailed record collections. Each collection captures essential metadata, including titles, routing codes, business units, and disposition authority numbers. This structured approach ensures all records are properly categorized and retained according to FAA and NARA schedules.
- **Record Storage:** The system supports various formats for record storage, including electronic and data system formats. Users can specify storage details like volume units and location information, ensuring precise tracking and management of records.

2. Enhanced Security and Access Control

- **Granular Security Control:** The ERRA application incorporates customizable security settings that restrict access based on user roles and organizational divisions. This ensures that only authorized personnel can access or modify sensitive records, maintaining confidentiality and integrity.
- **User Provisioning:** The system tracks user provisioning activities, including user creation, certification, approval, and role assignment. This feature enhances security by ensuring all user actions are documented and traceable.

3. Streamlined Workflow and Process Management with Power Automate

- **Automated Workflows:** Leveraging Power Automate, we implemented automated workflows to handle routine processes such as records submission, approval, and archiving. These workflows

reduce manual effort, minimize errors, and ensure consistency across the records management lifecycle.

- **Approval Processes:** Power Automate facilitates multi-stage approval processes, ensuring that records move through the necessary reviews and authorizations efficiently. Notifications and reminders are automatically sent to relevant stakeholders to keep the process on track.

4. Power Platform Business Process Integration

- **Business Process Flows:** We utilized Power Platform's business process flows to guide users through complex records management tasks. These flows ensure that all necessary steps are followed, improving compliance and reducing the likelihood of errors.
- **Integration with Other Systems:** The ERRA application integrates seamlessly with other FAA systems, such as Active Directory for user management and Exchange for email notifications. This integration ensures that data is consistent and up-to-date across all platforms.

5. Advanced Analytics and Reporting with Power BI

- **Metrics and Statistics:** The ERRA application includes comprehensive dashboards and reports, powered by Power BI, that provide real-time insights into records management activities. These analytics tools help managers monitor compliance, track performance, and identify areas for improvement.
- **Data Integration and Normalization:** Our team implemented AI/ML techniques for data cleaning and normalization, integrating legacy data into the new system seamlessly. This ensures high data quality and consistency, which is crucial for accurate records management.

6. User-Friendly Interface and Training

- **Intuitive Design:** The application's interface is designed to be user-friendly, with clear navigation and well-organized sections. This makes it easy for users of varying technical skills to manage records efficiently.
- **Comprehensive Training:** We provided extensive training sessions and documentation to ensure FAA staff were well-versed in using the new system. This included interactive workshops, hands-on sessions, and continuous support to address any issues or questions.

Technical Implementation Details

Power Apps Development

- **Model Driven App:** The core of the ERRA application is built using PowerApps Model Driven app model. This allowed us to create a data-centric application with rich business logic and a responsive interface. The model-driven approach ensures consistency in how data is handled and presented.
- **Custom Entities and Views:** We designed custom entities to represent various records management components, such as record collections, schedules, and routing codes. Custom views and forms were created to enhance the user experience and ensure data is easily accessible and manageable.

Power Automate Integration

- **Automated Notifications:** Using Power Automate, we set up automated email notifications for key events such as new record submissions, approval requests, and schedule updates. This ensures that all stakeholders are promptly informed of important actions.
- **Task Automation:** Routine tasks such as data validation, record updates, and status changes were automated to reduce manual workload and increase efficiency. For example, when a record reaches its retention period, Power Automate triggers the necessary actions for its disposition.

Power Platform Business Process Flows

- **Guided Processes:** Business process flows were used to create guided processes for records management activities. These flows ensure users complete all required steps in the correct order, enhancing compliance and accuracy.
- **Dynamic Branching:** The business process flows include dynamic branching based on conditions such as record type and status, ensuring that the correct procedures are followed for each scenario.

Project Outcome

The development and implementation of the ERRA application significantly enhanced the FAA's records management capabilities. By leveraging advanced technologies and adhering to best practices in application development, we delivered a robust solution that met and exceeded the FAA's requirements for records retention, compliance, and data management.

This project not only met but exceeded the FAA's expectations by delivering a robust solution that streamlined processes, ensured compliance, and leveraged cutting-edge technology to enhance data management capabilities. Ark's proactive approach and commitment to innovation were instrumental in transforming the FAA's records management system, demonstrating our capability to deliver superior results in complex federal environments.

Business Process Automation

Our team designed, architects, and developed the ERRA Application, including a design plan and project plan with a detailed work breakdown structure (WBS). We developed the application to host an FAA-wide centralized records disposition schedule with the ability to track the schedules at division, branch, and office levels. Creates the necessary scripts to load the disposition schedules in the centralized records disposition database. Develops APIs and code to integrate with FAA active directory and other systems to read user profile information for appropriately tagging records per the person's designation. Developed tools for managing the ERRA application's disposition schedules, file plans, and configuration. Gathered requirements and created workflows that will automatically create and provide metadata that can be consumed by Microsoft Exchange to properly update or modify retention labels and policies for the identified records using the pre-configured business rules.

Process Engineering and Quality Assurance:

1. **Process Mapping and Optimization:** We mapped existing records management processes and identified opportunities for optimization through automation and workflow enhancements. This not only improved efficiency but also ensured adherence to NARA guidelines.
2. **Quality Assurance Testing:** Rigorous QA testing was conducted throughout the development lifecycle. This included unit testing, integration testing, and user acceptance testing to ensure that the application met all technical and functional requirements without defects.

Development of FAA Records Management Office SharePoint Online Intranet Site

As part of our engagement with the FAA Records Management Office, we developed a comprehensive SharePoint Online intranet site designed to enhance internal communication, streamline access to records management resources, and facilitate training and certification for staff. This site serves as a centralized hub for all records management activities within the FAA, providing a user-friendly interface and robust functionality to support the agency's needs.

Key Features and Functionalities

1. Home Page and Navigation

- **User-Friendly Interface:** The intranet site features a welcoming home page with intuitive navigation, making it easy for users to find relevant information and resources. The layout is designed to ensure quick access to critical areas, such as records office administration, LOB/SO RM administration, senior official review, and AGC RM guidance.
- **Customizable Navigation:** The left-hand menu allows users to easily navigate through various sections of the site, ensuring they can access the information they need efficiently.

2. Records Management Community of Practice (RM COP)

- **Community Engagement:** The RM COP section fosters a sense of community among records management professionals within the FAA. It includes features like FAA Schedule Management, RM COP LOB/SO Points of Contact, and RM COP Training and Certifications.
- **Resource Sharing:** This section serves as a platform for sharing best practices, updates, and important announcements related to records management.

3. Training and Certification Site

- **Comprehensive Training Modules:** The training site offers a range of recommended trainings and certifications for Records Liaison Officers (RLO), Records Coordinators (RC), File Custodians (FC), and Senior Officials. Each training module is designed to equip staff with the necessary skills and knowledge to manage records effectively.
- **Interactive Learning:** The site provides detailed descriptions and access to various training materials, including "Records Management 101," essential for all federal employees engaged in records management.

4. Inquiry and Communication

- **FAA RM Program Inquiry Form:** This feature allows users to submit inquiries related to records management, ensuring their questions and concerns are addressed promptly. The form is designed to streamline communication and provide a structured approach to managing inquiries.

5. Schedule Management

- **FAA Schedule Management:** The intranet site includes a dedicated section for managing records schedules. This feature helps ensure that all records are maintained in compliance with NARA guidelines and FAA-specific requirements.

- **Milestone Tracking:** Users can track the progress of records schedules through various stages, from initial request to final approval, ensuring transparency and accountability.

6. Metrics and Analytics

- **Performance Dashboards:** The site integrates with Power BI to provide real-time analytics and performance metrics. These dashboards offer insights into key aspects of records management, helping managers make informed decisions based on data-driven analysis.
- **Compliance Monitoring:** The metrics and statistics section includes tools for monitoring compliance with records management policies and procedures.

The development of the FAA Records Management Office SharePoint Online intranet site significantly improved internal communication, streamlined access to essential records management resources, and enhanced the overall efficiency of the FAA's records management program. By providing a centralized, user-friendly platform, we enabled FAA staff to manage records more effectively, stay informed about best practices, and continuously develop their skills through targeted training and certification programs.

This project not only met but exceeded the FAA's expectations by delivering a robust solution that supports the agency's mission to maintain accurate, compliant, and accessible records. The successful implementation of this intranet site underscores our commitment to providing innovative, high-quality solutions that drive organizational excellence and compliance.

Business Intelligence and Data Analytics Support

Ark embarked on a comprehensive initiative to transform the FAA's records management system by integrating and cleansing vast amounts of legacy fileplan data from disparate Excel files into a unified database. This meticulous process involved extensive data cleansing to correct any discrepancies, ensure data integrity, and standardize data formats according to NARA's compliance requirements. By leveraging machine learning algorithms, Ark automated the cleaning and normalization processes, streamlining the data structure for enhanced usability and compliance adherence.

Dashboard and Report Development: Following the data integration, Ark developed a specialized compliance tracking dashboard that enabled FAA managers to monitor and ensure adherence to NARA's records management schedules. This dashboard provided real-time visibility into key metrics such as the status disposition of records, lifecycle stages of records, and timelines for records retention. Alongside the dashboard, detailed operational reports were generated to offer deeper insights into the operational aspects of records management. These reports helped identify bottlenecks, analyze records flow, and maintain audit trails for changes to the records, thus bolstering governance and operational efficiency.

Advanced Analytics Features: To further enhance the functionality of the dashboards, Ark incorporated predictive analytics features that forecasted potential compliance issues based on current data trends. This proactive approach allowed FAA staff to address issues before they escalated into non-compliance, ensuring that the agency remained ahead of potential pitfalls. Additionally, the system was equipped with real-time data processing capabilities to immediately reflect any changes in data and compliance status, enabling swift responses to discrepancies or updates in NARA mandates.

User Interface and Accessibility: Understanding the importance of accessibility and ease of use, Ark designed the dashboards with an intuitive user interface, allowing users of varying technical skills to navigate through complex data effortlessly. The system also implemented role-based access control to

ensure that only authorized personnel had access to sensitive data, thereby enhancing security and compliance with regulatory standards.

1. Data Management and Analytics Strategy:

- Developed GRS and FAA Schedule Management features within the ERRA application, ensuring accurate capture and management of NARA GRS and FAA schedule information.
- Automated the migration of hundreds of legacy file plans, significantly enhancing the FAA's efficiency in records management.

2. Data Analytics Development:

- Implemented comprehensive data analytics solutions, including advanced data visualizations and analytics models to support decision-making at the FAA.
- Utilized PowerApps, Dataverse, and Power BI to develop and support sophisticated data products such as data pipelines, data warehouses, and process automation scripts.

3. Security and Access Management:

- Developed customizable granular security controls, ensuring data access was restricted to authorized personnel within specific divisions or branches to maintain data confidentiality and integrity.

4. Application Development and Support:

- Employed Agile project management methodologies to incrementally deliver software products, ensuring alignment with the FAA's evolving needs.
- Designed and implemented an application web interface, optimizing user experience and accessibility.

5. Advanced Technology Integration:

- Applied AI/ML technologies to clean and normalize legacy data, significantly enhancing data quality and usability.
- Leveraged Microsoft Office365 and PowerApps technology to develop the application without incurring additional software license costs.

Records Management Schedule Data Analytics:

- Conducted a thorough analysis of the NARA GRS and FAA-specific schedules to understand data and metadata requirements, establishing a foundation for data governance and compliance.
- Undertook data cleaning and normalization of FAA schedule data to ensure consistency, accuracy, and compliance with NARA standards.
- Developed comprehensive reports on schedule data, providing insights into data integrity, usage patterns, and compliance with records management schedules.
- Implemented lifecycle reporting features to track the development and updates of records management schedules, enhancing transparency and accountability.

Application Performance Metrics and Statistics Support: Ark used its extensive experience in PowerBI to design and build a state-of-art Power BI-based dashboard that provided real-time information about the FAA agency records program. The Power BI Dashboard provides up-to-date information about the records management program to senior leadership, including records, schedule creation and processing timeline, Office file plan status, Capstone official status, and performance and statistical analysis for internal control purposes.

Data Engineering, Data Modeling, and Data Architecture:

- 1. Data Architecture Design:** We designed a robust data architecture to support the ERRA application, ensuring it could handle large volumes of data efficiently and securely. The architecture was designed to be scalable to accommodate future growth in data volume and complexity.

2. **Data Modeling:** Advanced data modeling techniques were employed to structure the data effectively for analysis and reporting. This included the development of relational and dimensional data models that facilitated complex data queries and analytics.
3. **Data Integration and Migration:** We managed the integration of data from disparate sources into a unified data model. This included the migration of legacy data into the new system, ensuring data consistency and integrity.

Advanced Analytics and Data Science Framework:

1. **Analytics and Reporting:** We implemented advanced analytics capabilities within the ERRA application, utilizing Power BI for dynamic reporting and dashboarding. This enabled FAA managers to gain real-time insights into records management processes.
2. **Machine Learning for Data Cleansing:** AI and ML technologies were used to cleanse and normalize legacy data, improving data quality significantly. This was crucial for ensuring the accuracy and usability of data within the application.
3. **Predictive Analytics:** We incorporated predictive analytics features to forecast future trends in records management, aiding the FAA in proactive decision-making.

Emerging Technology (AI/ML)

Ark was tasked with developing a solution to clean, normalize, and integrate large volumes of legacy fileplan data into a modern PowerApps-based system for the FAA. This data, essential for records management, suffered from numerous quality issues, including inconsistency in data formats, absence of standard naming conventions, and incomplete data entries, which hindered effective data management and regulatory compliance.

The problem faced by the agency was that the legacy records management file plan data was difficult to manage and use effectively due to several problems. These included a lack of referential integrity, a master list of routing codes or disposition authorities, and inconsistencies in data collection and file structure. This led to inaccuracies, redundancies, and non-compliance with regulatory requirements. Additionally, manual efforts were required to correct the data, leading to difficulties coordinating across the agency. To solve these issues, the agency needed a comprehensive data management plan that included standard data entry conventions, validation checks, regular audits, and a data management system supporting validation and normalization. By doing so, the agency could improve the quality and usability of its legacy records management file plan data and comply with regulatory requirements.

The agency's legacy records management file plan data had specific issues, including the lack of data validation, data redundancy, data inconsistencies, incomplete data, and data security concerns. These issues could lead to errors, inaccuracies, non-compliance, and security breaches. Addressing these issues was essential to ensure the agency could rely on accurate, consistent, and secure data and comply with regulatory requirements.

The agency attempted to use a conventional/mechanical data cleanup approach to address the inconsistencies and inaccuracies in their legacy records management file plan data. Although the approach helped to clean the data to some extent, the disposition authority (DA) numbers and routing codes still had spaces and incorrect formats that did not match with the General Records Schedule (GRS) and Federal Aviation Administration (FAA) schedule data when compared mechanically. As a

result, the agency needed to explore other options to address the remaining data issues, such as hiring additional staff or implementing an automated data management system.

Ark successfully used AI/ML techniques to clean and normalize the agency's legacy records management file plan data, which proved an effective solution, significantly reducing the workload on SMEs and RLO staff. Using natural language processing techniques and the Cosine proximity technique, the AI/ML system accurately predicted the correct Disposition Authority (DA) numbers for each record collection with a high degree of confidence, improving the accuracy and integrity of the data and ensuring compliance with regulatory requirements. Python was used in this AI/ML work because of its robust ecosystem of data science libraries, visualization tools, and strong community support. AI/ML transformed the agency's record-keeping processes, making it easier to search and retrieve information as needed and freeing up valuable time and resources for other important projects and initiatives.

- 1. AI/ML-Driven Data Cleaning and Normalization:** Ark deployed advanced AI and ML algorithms to address the significant challenges posed by the FAA's legacy data. Our solution involved:
 - Automated Data Cleaning: Utilizing AI to detect and rectify errors and inconsistencies across thousands of Excel files.
 - Data Normalization: Standardizing data formats and values to ensure uniformity and integrity, crucial for accurate analysis and reporting.
 - Referential Integrity: Establishing clear relationships between different data components, enhancing the reliability of the data architecture.
- 2. Integration into PowerApps System:** Following the cleaning and normalization processes, we seamlessly integrated the refined data into a bespoke PowerApps-based system. This integration facilitated enhanced data accessibility and usability across the FAA, supporting dynamic data interaction and real-time analytics.
- 3. Development of Data-Driven Reports and Dashboards:** Leveraging PowerBI, Ark developed intuitive and informative dashboards that provide FAA management with real-time insights into data status, progress, and compliance. These tools aid in strategic decision-making and operational efficiencies.

Technological Advancements and Compliance

Our approach not only aligns with but also advances the regulatory compliance framework by ensuring data meets NARA's General Records Schedule (GRS) and FAA's specific requirements. The precision and efficiency brought by our AI/ML solutions substantially reduce the need for manual data correction, thus minimizing human error and resource expenditure.

Data Security and Compliance

Through customizable security controls and compliance tracking, Ark ensured robust data integrity and alignment with NARA standards, enhancing data confidentiality.

Ark's proven capability in employing AI/ML for data management challenges, demonstrated in our project with the FAA, provides a solid foundation for our approach to Task Area 2. We are excited about the opportunity to apply our innovative techniques and robust technology solutions to support the State of Ohio in enhancing its data analytics capabilities. Our commitment to excellence and innovation ensures that we deliver scalable, efficient, and effective solutions that meet and exceed the expectations of Data Analytics Development and Analytics Support Services.

Training and Support

To maximize the effectiveness of the new tools, Ark provided comprehensive training sessions to FAA staff, ensuring they were well-versed in the functionality and features of the application to capture and manage records management metadata and use dashboards and reports. Ark also established an ongoing support and maintenance plan to address any issues with the dashboards promptly and ensure continuous compliance with NARA requirements.

This ongoing support is critical in adapting to any new regulations and maintaining the integrity and effectiveness of the FAA's records management system.

Training and Support

Ark provided targeted training and ongoing support, ensuring FAA staff were well-equipped to utilize new systems effectively for optimal compliance and

Training Strategy and Implementation:

- 1. Comprehensive Documentation:** We created extensive documentation that included user manuals, process guides, and best practices tailored to the specific functionalities of the ERRA application and its integrations. This documentation served as a vital resource for FAA staff to reference, ensuring they could understand and navigate the new systems with confidence.
- 2. Interactive Training Sessions:** We conducted multiple interactive training sessions that covered various aspects of the new system, including data entry, system navigation, data analysis, and report generation. These sessions were designed to cater to different user groups within the FAA, from technical teams to end-users, ensuring that all personnel were equally proficient in utilizing the new tools.
- 3. Hands-On Workshops:** Ark facilitated hands-on workshops that allowed FAA staff to engage directly with the new systems in a controlled environment. These workshops provided opportunities for users to practice the skills they learned in training sessions, with real-time feedback from our training experts.
- 4. Role-Based Access Training:** Given the sophisticated security and access management features of the ERRA application, specific training was provided on role-based access control. This training ensured that users understood their access rights and were aware of how to handle sensitive information securely.
- 5. Webinars and Continuous Learning Modules:** To support ongoing education and adaptation to the system updates, we offered webinars and continuous learning modules. These were available for FAA staff to join remotely, providing them with updates on new features, advanced techniques, and additional tips for efficiency.

6. **Feedback and Customization Sessions:** Post-training, we held feedback sessions to gather insights on any challenges the users faced. This feedback was instrumental in customizing further training sessions and making adjustments to the ERRA application to better meet user needs.
7. **Ongoing Support and Refresher Courses:** Ark established a schedule for periodic refresher courses to help FAA staff stay updated with any changes or upgrades to the system. Additionally, ongoing support was provided to address any immediate questions or issues users encountered, ensuring seamless operation and minimal disruption.
8. **Training Effectiveness Assessment:** We implemented evaluation mechanisms to assess the effectiveness of the training provided. These assessments helped us understand knowledge gaps and training impact, allowing for continuous improvement of the training process.

Through these strategies, Ark ensured that the knowledge transfer was thorough and effective, leading to successful adoption and proficient use of the new systems by FAA staff. This comprehensive approach not only facilitated immediate operational needs but also equipped the FAA with the knowledge to sustain and evolve the system independently over time.

Staff Assignment and Effort

Ark's staff assigned to the FAA ERRA application project, the following details provide a comprehensive view of the expertise and credentials that our team brought to the project. These qualifications ensured that our team was exceptionally well-prepared to meet the project's demands in project management, process engineering, data engineering, data analytics, data science, and data modeling.

The total number of hours of work effort for the FAA ERRA application project is approximately 14,720 hours, spanning a project duration of about 95.7 weeks. Here's the breakdown of the total hours by each labor category:

- **Project Manager:** 1,900 hours
- **Solution Architect:** 1,900 hours
- **Senior Data Analyst:** 1,900 hours
- **Senior Power Apps Developer:** 3,800 hours
- **Power BI Engineer:** 3,800 hours
- **Microsoft Office365 Engineer:** 1,420 hours

This comprehensive effort reflects the dedicated work from our diverse team of experts across multiple disciplines to deliver the project successfully.

Project Manager:

- **Qualifications:** Bachelor's degree in Business
- **Certifications:** Certified Project Management Professional (PMP) from the Project Management Institute (PMI).
- **Experience:** Over 12 years of experience in project management, specializing in IT and data-centric projects, with a strong focus on compliance and regulatory frameworks.

Solution Architect:

- **Qualifications:** Master's degree in Information Technology
- **Certifications:** Certified Solutions Architect from a recognized tech entity (e.g., AWS, Microsoft).
- **Experience:** Extensive experience in designing robust and scalable solutions for data management and analytics, including integration with existing enterprise systems and cloud platforms.

Senior Data Analyst:

- **Qualifications:** Bachelor's degree in Data Science and Statistics.

- **Experience:** Profound expertise in data analysis, predictive modeling, and statistical analysis, with demonstrated ability in handling large datasets and delivering actionable insights.

Senior Power Apps Developer:

- **Qualifications:** Bachelor's degree in Software Engineering.
- **Certifications:** Microsoft Certified: Power Apps + Dynamics 365 Developer Associate.
- **Experience:** Skilled in developing applications using Microsoft Power Apps, with a deep understanding of Microsoft ecosystems and API integrations for enhanced app functionality.

Power BI Engineer:

- **Qualifications:** Bachelor's degree in Computer Science.
- **Certifications:** Microsoft Certified: Data Analyst Associate.
- **Experience:** Specialized in building and deploying Power BI solutions; adept at data visualization and business intelligence reporting that supports decision-making processes.

Microsoft Office365 Engineer:

- **Qualifications:** Bachelor's degree in Computer Science.
- **Certifications:** Microsoft Certified: Enterprise Administrator Expert.
- **Experience:** Comprehensive knowledge of Microsoft Office365 administration, with a focus on configuring, managing, and optimizing Office365 applications, including SharePoint, Teams, and OneDrive.

Each member of the Ark team assigned to the FAA project was selected for their specialized skills and proven track record in their respective fields. Their combined qualifications and certifications equipped them to effectively address the complex requirements of the FAA project, ensuring meticulous adherence to data governance standards and the successful deployment of advanced data solutions. This blend of expertise and credentials underscores our commitment to providing high-quality services that meet and exceed our clients' expectations.

Project Outcome

Our engagement with the Federal Aviation Administration (FAA) to implement the Electronic Records Repository Administration (ERRA) application, Ark exceeded customer expectations through innovative solutions and exceptional service delivery. This project was designed to address complex challenges in records management, data analytics, and regulatory compliance, significantly advancing the FAA's capabilities.

Project Outcomes Exceeding Expectations:

1. Comprehensive Data Management and Analytics Strategy:

- **Enhanced Efficiency and Accuracy:** Ark developed and managed critical components within the ERRA application, including the General Records Schedule (GRS) and FAA Schedule Management features. This initiative automated the migration of hundreds of legacy file plans, which not only enhanced the FAA's ability to manage records more efficiently but also ensured accurate capture and adherence to NARA guidelines, far exceeding the typical expectations for manual processes.

2. Advanced Data Analytics and Development:

- **Decision-Making Support:** The implementation of comprehensive analytics solutions, including sophisticated data visualizations and models using PowerApps, Dataverse, and Power BI, transformed the FAA's decision-making processes. These tools enabled dynamic interaction with data and real-time analytics, providing insights that were previously unattainable.

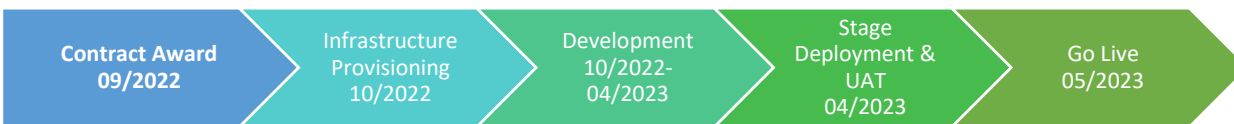
3. AI/ML Integration for Data Normalization:

- **Data Quality Improvement:** We employed advanced AI/ML technologies to clean and normalize vast amounts of legacy data, significantly improving data quality and usability. This process was crucial for ensuring data consistency and compliance with NARA standards and reduced the need for manual data correction, minimizing errors and resource expenditure.
- 4. Security and Accessibility Enhancements:**
- **Customizable Security Controls:** The development of granular security controls ensured that data access was restricted to authorized personnel, enhancing data confidentiality and integrity. Additionally, the application web interface was designed to optimize user experience and accessibility, enabling efficient navigation and usage by FAA staff with varying levels of technical expertise.
- 5. Lifecycle Reporting and Compliance Tracking:**
- **Enhanced Transparency and Accountability:** Ark’s implementation of lifecycle reporting features allowed FAA managers to monitor the progress of schedule updates meticulously. The specialized compliance tracking dashboard and detailed operational reports developed thereafter provided real-time visibility into key metrics, facilitating governance and enhancing operational efficiency.

These outcomes not only met but exceeded the FAA’s expectations by delivering a robust solution that streamlined processes, ensured compliance, and leveraged cutting-edge technology to enhance data management capabilities. Ark's proactive approach and commitment to innovation were instrumental in transforming the FAA’s records management system, demonstrating our capability to deliver superior results in complex federal environments.

ERRA Application Development Timeline

Ark is a small business with an agile mindset capable of delivering robust solutions fast. FAA awarded the contract to build the ERRA application in September 2022, and we took the initial version of the application to production by May 2023. Our team is highly experienced and trained in the Agile application development process. We used two-week sprints, resulting in deliverables within 30 days of the project. Below is a high-level timeline for delivering the ERRA application for the FAA.



Technology Stack

Ark implemented the ERRA application using the state-of-the-art Microsoft Office365 PowerApps technology. Using the Dataverse Model Driven app model, we developed the application with no additional software license cost for the agency. We developed the entire application using PowerApps, Dataverse, Power BI, Open Source Angular, and Node.js.

Conclusion

Ark proposes DHS/ICE to leverage the current ERRA application framework and customize it to the needs and unique requirements of the agency. We strongly believe this approach will guarantee the deliverables and will provide significant cost savings to the agency.

The ERRA application, as implemented by Ark for the FAA, stands as a robust solution that can be seamlessly adapted to meet the DHS/ICE's specific Records Management requirements. By choosing the ERRA application, DHS/ICE will benefit in several significant ways:

- 1. **Comprehensive Requirement Coverage:** ERRA already meets the majority of the DHS/ICE requirements, as evidenced by its successful deployment within the FAA. This established capability demonstrates the application's effectiveness in adhering to rigorous federal standards and its readiness to satisfy the detailed needs outlined in the DHS/ICE RFI document.*
- 2. **Cost-Effectiveness:** ERRA offers a cost-efficient approach to fulfilling DHS/ICE requirements. Its implementation leverages economies of scale and existing capabilities developed for the FAA, which can reduce costs associated with development, deployment, and maintenance. This cost-effective solution ensures that resources are optimized while compliance is maintained.*
- 3. **Rapid Customization:** The application's flexible architecture allows for quick customization to address specific needs or changes. This agility is crucial for adapting to the evolving requirements of DHS/ICE and ensures that the solution remains effective as new mandates emerge or existing regulations are revised.*

By utilizing the ERRA application, DHS/ICE will not only leverage a proven, compliant solution but will also capitalize on efficiencies that reduce costs and enhance adaptability. This strategic choice promises to streamline their records management processes, ensuring they meet federal requirements with high efficiency and reliability.

Power Apps | ERRR Application

Academy Training Atmosphere - Saved
Record Collections - Information

Record Information | Record Storage

| | | | |
|--------------------------|--------------------------------|--------------------------------|--|
| Record Collections Title | Academy Training Atmosphere | File Code | --- |
| Routing Code | AFN-001 Lookup | Legacy Classification Code | --- |
| Business Unit | --- | Record Collections Description | CSAM ID = 1347 Sub Organization = AFN - FFO Acronym = ATA System Category = Moderate System Operational Status = Operational |
| Protection | --- | Cut Off | --- |
| Essential Record | No | Ending Date | 4/24/2023 |
| Beginning Date | 4/24/2020 | Comments | --- |
| Disposition Authority | DAA-GRS-2013-0005-0004 | | |

Schedule Details

| | | | |
|------------------|--|-------------------------|---|
| Schedule | GRS 3.1 General Technology Management Records | Records Description | Information Technology Operations and Maintenance records relate to the activities associated with the operations and maintenance of the basic systems and services used to supply the agency and its staff with access to computers and data telecommunications. Includes the activities associated with IT equipment, IT systems, and storage media, IT system performance testing, asset and configuration management, change management, and maintenance on network infrastructure. |
| Item Code | 20 | Disposition Instruction | Destroy 3 years after agreement, control measures, procedures, project, activity, or transaction is obsolete, completed, terminated or superseded, but longer retention is authorized if required for business use. |
| Title | Information technology operations and maintenance records. | | |
| Disposition Type | Temporary | | |

Storage Details [+ New Record Storage](#) [Add Existing Record St...](#) [Refresh](#)

Fileplan Record Collection Management

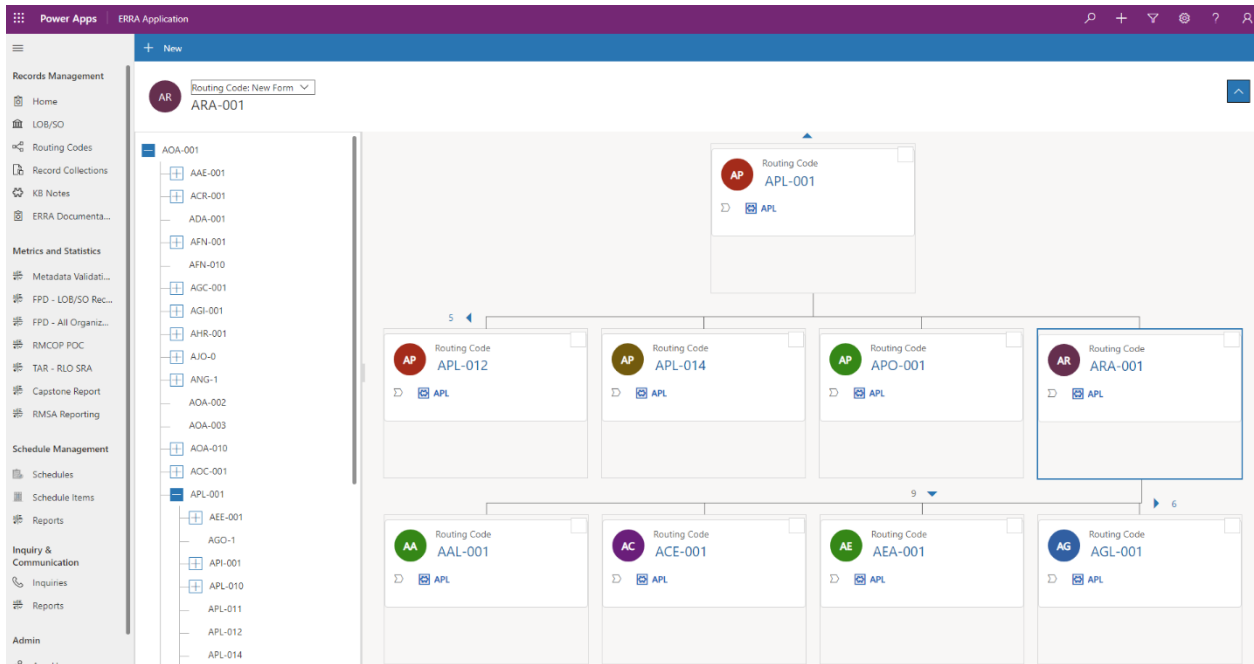
Power Apps | ERRR Application

New Record Storage - Saved
Record Storage

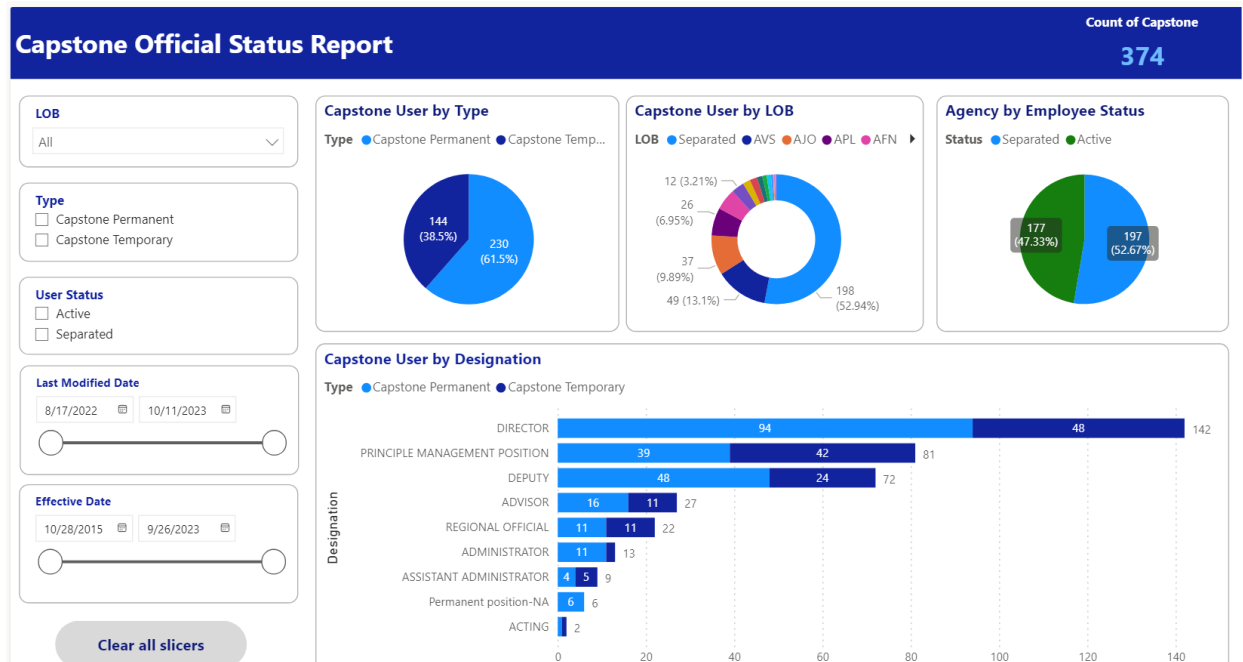
General

| | | | |
|-------------------------|-----------------------------|----------------------------------|------------|
| Record Collection Title | Academy Training Atmosphere | Location Name | --- |
| Format | Electronic | Location POC | --- |
| Format Types | Data System | Legacy Location POC | Todd Poole |
| Volume | --- | Storage Facility | FAA |
| Volume Unit | GB | Path | --- |
| | | URL | --- |
| | | Essential Record Backup Location | --- |
| | | Address | --- |
| | | Room Number | --- |
| | | Cabinet or Drawer Identifier | --- |

File plan Record Storage Information



FAA Organization and Line of Business Visualization



Capstone Official Status Report Dashboard

Power Apps | ERRA Application

ERRA-202404091417
Inquiry Reference Number

Inquiry Process: Active for 54 hours

Workflow: New → Under Review (6 Hrs) → ARO Review Required → Close

General Inquiry

Inquiry Types: RA Request for Disposal

Requested By: [Redacted]

By External User: ...

Subject: FW: destruction requests

Hello,

Attached is all our records destruction requests.

We have been sending these since 9 Feb with little to no communication back.

Kind Regards,

[Redacted]

Timeline

Search timeline

Enter a note...

Recent

- Modified on: 10:24 AM
Email from: [Redacted] Closed
ERRA-202404091417-has been assigned to you CRM:0044533
Please use the link below to respond or update the status of the inquiry below. ...
View more
- Modified on: 10:24 AM
Email from: [Redacted] Closed
ERRA-202404091417-has been assigned to you CRM:0044533
Please use the link below to respond or update the status of the inquiry below. ...
View more
- Modified on: 4/9/2024 11:00 AM
Email from: [Redacted] Closed
ERRA-202404091417-has been assigned to you CRM:0044514
Please use the link below to respond or update the status of the inquiry below. ...
View more
- Modified on: 4/9/2024 10:17 AM
Note modified by [Redacted] # APP-ASP-ERRA-PRD (FAA)
New Attachment from Jessica.A.Smith@faa.gov
FAA FORM 1350-24-Destruction 3.27-4.10.pdf
View more

Metadata

Inquiry Status: Under Review

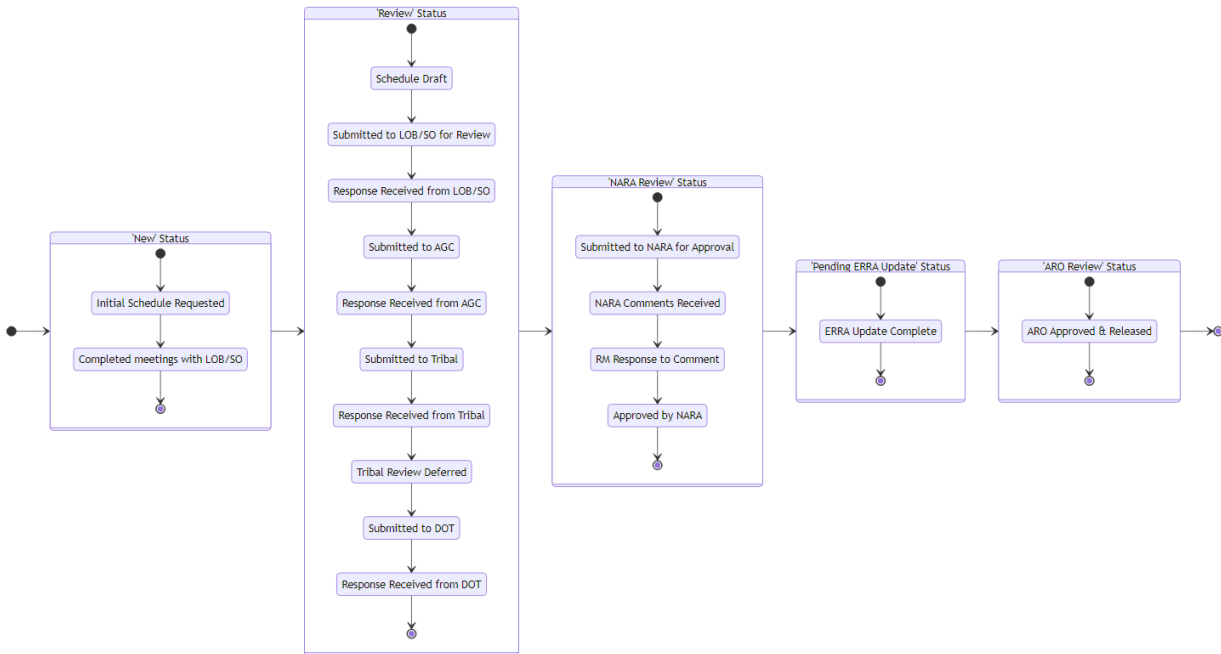
ARO Review Completed: No

Assigned To: [Redacted]

Attachments: [Choose File] No file chosen

No data available

0 - 0 of 0 | Page 1



FAA Air Traffic Evaluations and Investigation Staff - Saved

Schedule Milestone Flow: Submitted To NARA For Approval, NARA Comments Received, RM Response To Comment, Approved By NARA, ERRA Update Complete, ARO Approved & Released (6 D)

General | Schedule item | Milestone | Activity Timeline

Name: FAA Air Traffic Evaluations and Investigation Staff

Description: ---

Assigned To: [User]

Responsible RLO: [User]

Routing Code: ASP-100

SME POC: ---

Schedule status: ARO Review

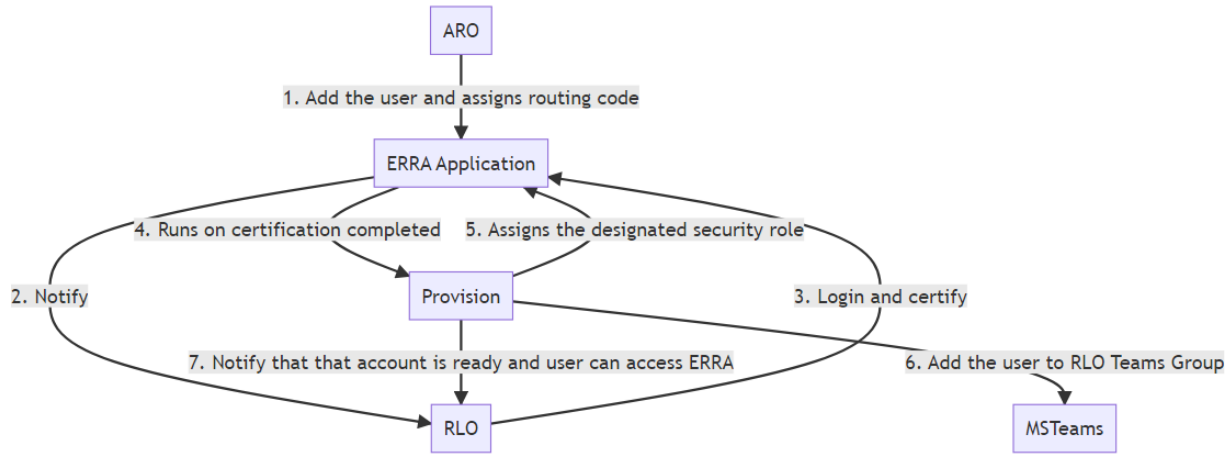
Timeline

Recent

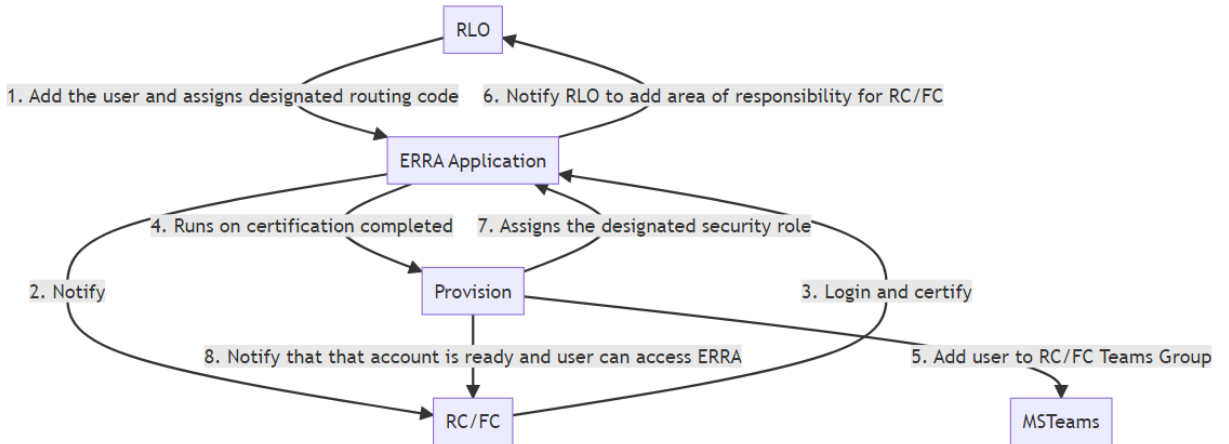
- Modified on: 4/9/2024 4:19 PM
ARO Approved & Released
Milestone Completion Date: 4/1/2024
Comments: First option
View more
- Modified on: 4/5/2024 12:43 PM
ERRA Update Complete
Milestone Completion Date: 4/2/2024
Comments: test
View more

Schedule Milestone Lifecycle Business Process & Workflow

RLO Onboarding



RC/FC Onboarding - New



RLO/RC/FC User Certification, Onboarding and Provisioning Process Flow

Application

← [Icons] Save Save & Close + New Delete Refresh Check Access Assign Flow Word Templates

Bethany Wagener - Saved
App User · Information ▾

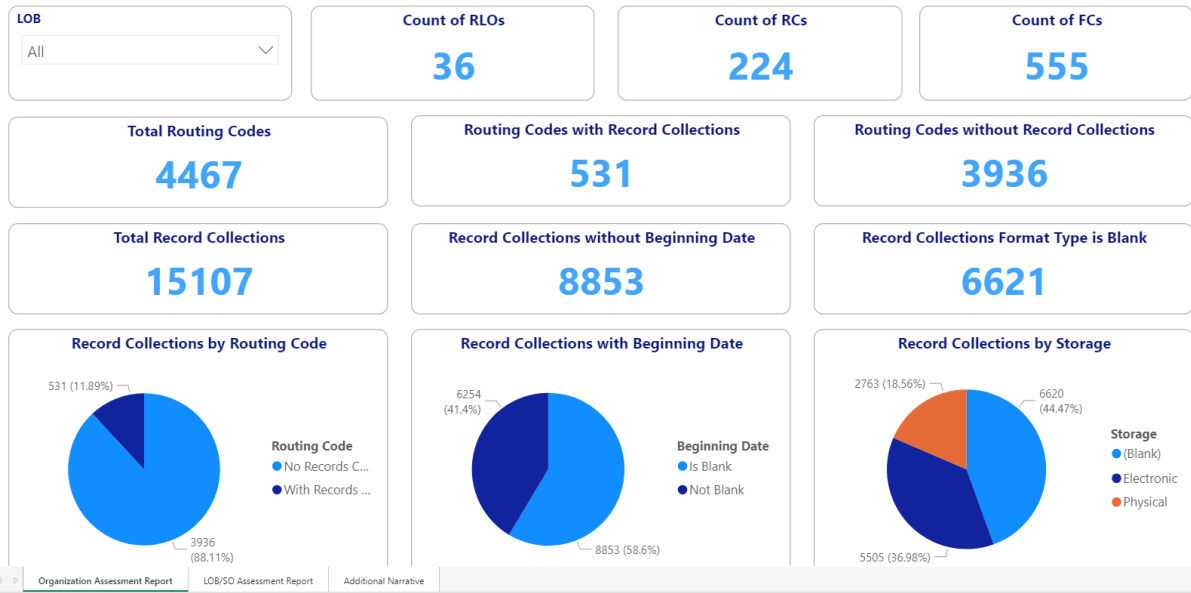
General User Provision Activity

| Date Name ▾ | Created On ↑ ▾ |
|------------------------|-------------------|
| User Created | 1/31/2024 8:28 AM |
| User Certified | 1/31/2024 9:20 AM |
| Approved | 1/31/2024 9:22 AM |
| Routing Codes Assigned | 1/31/2024 9:22 AM |
| Security Role Assigned | 1/31/2024 9:23 AM |
| User Provisioned | 1/31/2024 9:23 AM |

1 - 6 of 6

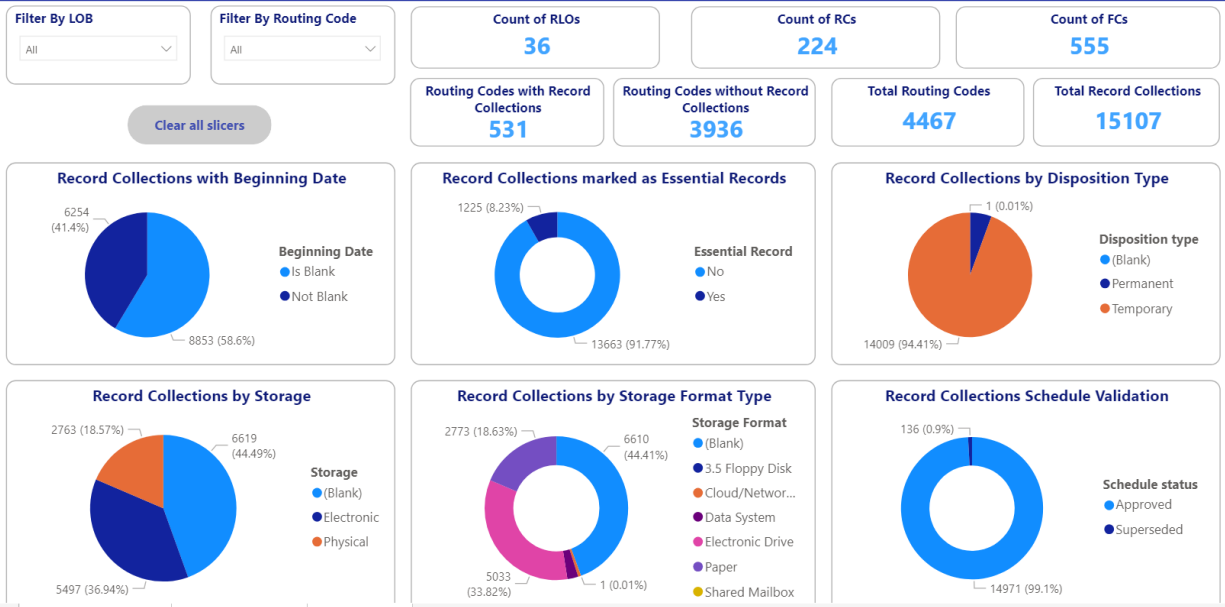
User Provisioning Activity Audit Trail

ERRA - Technical Assessment Report (TAR) - RLO Scope of Responsibility Assessment (SRA)



File Plan Data Report

ERRA - Technical Assessment Report (TAR) - RLO Scope of Responsibility Assessment (SRA)



File Plan Data Report

FAA RECORDS MANAGEMENT **RM Community of Practice Site** Not following Site access

Home New Discard changes Page details Analytics Draft saved 9/1/2023 Share Edit Republish

- Home
- Records Office Admin
- LOB/SO RM Admin
- RM Senior Official Review
- AGC RM Guidance
- Edit

FAA Records Management Community of Practice (RM COP)

FAA Schedule Management

RM COP Training and Certifications

RM COP LOB/SO Points of Contact

FAA RM Program Inquiry Form

Records Office Administration

LOB/SO RM Administration

Senior Official Review

Agency General Counsel

RM Office Intranet Home Page

FAA RECORDS MANAGEMENT **RM Community of Practice Site** Not following Site access

Home New Promote Page details Analytics Published 1/20/2024 Share Edit

- Home
- Records Office Admin
 - ASP-110 Internal
- LOB/SO RM Admin
 - FAA Schedule Manage...
 - Training & Certification**
 - FAA RM Inquiry Form
- RM Senior Official Review
- AGC RM Guidance
- Edit

Welcome to the FAA RM Training and Certifications site

About this page
 This site provides FAA RM Program recommended trainings and certifications for Records Liaison Officers, Records Coordinators, File Custodians and Senior Officials. While DOT provides general DOT/FAA employee records management training known as "Records Management 101," required for all federal employees, this site provides training and certification recommendations for FAA staff specifically engaged in the day-to-day records administration, oversight, and management activities within their organization.

RLO Training

- Metadata - Creation and Receipt
- Assigning Metadata Creation/Receipt Wrap-Up
- NARA Identifying Specific Metadata for Managing Electronic Records throughout their...
- Managing a Shared Drive - Organizing Existing Drives to Meet Key Requirements
- Maintaining an Essential Records Inventory
- Identify Privacy Concerns

FC Training

- Documenting Your Public Service
- What is the Records Lifecycle? (L1.001)
- What are permanent records?
- What are temporary records?
- Recognizing Records, Non-records and Personal Files
- Identifying Unscheduled Records

RC Training

- Understanding Records Management Policy
- Establishing Naming Conventions for Electronic Records
- Managing a Shared Drive - Organizing Existing Drives to Meet Key Requirements
- What is a file plan?
- Calculating Disposition Dates
- Metadata - Creation and Receipt

FAA RM Program Inquiry Form

RM Office Intranet Training Page

Azure DevOps faerra / erra / Boards / Boards

erra Team

Board Analytics View as backlog

Stories

Reviewed 34/5 Refined 3/5 Todo 1/5 Doing 2/5 Testing 0/5 Done

- 1219 RMCOP Office File Plan - Power BI Report (Changes from Shhonn)
 - Active
 - Natarajan, Raj
 - Email from Shhonn
 - 2/3
- 1102 Need number of hours (or weeks) to redo the access to allow the Records Admin group
 - Active
 - Esakkirajan Thirumalai
 - Email from Shhonn
 - 0/1
- 1147 Auto Email Flow Enhancement
 - Active
 - Natarajan, Raj
 - 1/4
- 321 RLO Testing Record Collection page: Title under the Schedule Details should be changed to Records Title
 - Active
 - Natarajan, Raj
 - Internal Testing
 - Page Record Collection
 - RLO
- 241 Onboarding Documentation
 - Active
 - Esakkirajan Thirumalai
- 134 Prod data backup - define the strategy
 - Active
 - Esakkirajan Thirumalai
 - Go Live
- 145 Issue with sending email:- Inquiry Ref Number: - Referral CRM:0044049
 - Active
 - Kriethika Sreenivasan
 - Go Live Inquiry
- 248 Get Service Account to Access AD Data
 - Active
 - Esakkirajan Thirumalai
 - 0/4
- 230 Review / Cleanup unused views and document
 - Active
 - Esakkirajan Thirumalai
 - Go Live
 - 1/6
- 1130 STATUS REQUEST- Inquiry Ref Number: ERRRA-202403211093 -Referral CRM:0044436
 - Closed
 - Kriethika Sreenivasan
 - Email from Shhonn
 - 1/1
- 1077 Add business unit in Record Collection Report - (ERRA - OFP Report update)
 - Closed
 - Kriethika Sreenivasan
 - 2/2
- 1051 Request - remove files in ERRA
 - Closed
 - Kriethika Sreenivasan
 - 1/1

Azure DevOps faerra / erra / Boards / Work Items

Work Items

Recently updated + New Work Item Open filtered view in Queries Column Options Import Work Items Recycle Bin

Filter by keyword Feature (+1) Assigned to Active (+4) Area Tags X

| ID | Title | Assigned To | State | Area Path | Tags |
|------|---|------------------------|----------|-----------|-------|
| 1220 | Senior Official Employee Separation Email Template | Kriethika Sreenivasan | New | erra | Email |
| 1219 | RMCOP Office File Plan - Power BI Report (Changes from Shhonn) | Natarajan, Raj | Active | erra | Email |
| 1217 | RMSA - Permanent Records Report - Power BI report data table duplicate count issue. | Kriethika Sreenivasan | New | erra | Techn |
| 1199 | Remove name from ERRA system- Inquiry Ref Number: ERRRA-202404101118 -Referral CRM:004452 | Kriethika Sreenivasan | Resolved | erra | Email |
| 1195 | Organize KB notes to list alphabetically by category | Kriethika Sreenivasan | New | erra | |
| 1193 | Create a new report called ERRA Office File Plans for SharePoint Page | Natarajan, Raj | Resolved | erra | |
| 1192 | Need number of hours (or weeks) to redo the access to allow the Records Admin group | Esakkirajan Thirumalai | Active | erra | Email |
| 1190 | PW: The password for APP-ASP-ERRA-PRD will expire in 30 days. | Esakkirajan Thirumalai | Resolved | erra | Email |
| 1189 | RLO ability to delete users | Unassigned | New | erra | |
| 1188 | RLO ability to delete record collections | Unassigned | New | erra | |
| 1185 | Remove Records POCs- Inquiry Ref Number: ERRRA-202404041117 -Referral CRM:0044510 | Kriethika Sreenivasan | Resolved | erra | Email |
| 1180 | Add New Org Code for Flight Standards- Inquiry Ref Number: ERRRA-202404041112 -Referral CRM: | Kriethika Sreenivasan | New | erra | Email |
| 1166 | Records Collection tab access is being denied- Inquiry Ref Number: ERRRA-202403271100 -Referral | Kriethika Sreenivasan | Active | erra | Email |