



Volume I - Technical (Factors 1 & 2)

Stealth Solutions, Inc.
Response
to
U.S. Fish and Wildlife Service (USFWS)
Drupal Development

REQUEST NO: 140F1S24Q0055

July 10, 2024



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Factor 1 - Technical

1.1 Cover Letter

Stealth Solutions, Inc. (Stealth) is pleased to introduce our team for this FWS.gov Apps Modernization and MFA Compliance RFP response. Team Stealth is led by Stealth Solutions, an awardee of the GSA MAS and 8a STARS III contract vehicles. Stealth is an Acquia partner, the company that developed and provides all Drupal capabilities. Stealth's overall corporate capabilities are Website Development (Drupal) & Support Services, Cloud Implementation & Support, Technical Project Management, and Grants Management Systems Implementation. Our core experience is assisting Federal, State, and local government agencies to achieve performance and operational efficiencies.

Our contributing subcontractor/teammate, Bravent Systems (Bravent), is a premiere Web Development and Support Services provider for enterprise-level implementations. Bravent's core expertise is Drupal, open-source technology, Microsoft solutions, and DevSecOps.

Team Stealth has provided Drupal development support at the GSA, NIH, DCMA, and Department of Commerce, where we have supported more than 20 websites using Drupal and SharePoint with the Department of Commerce Office of Chief Information Officer (OCIO), Economic Development Authority (EDA), Minority Business Development Authority (MBDA), and National Telecommunications and Information Administration (NTIA).

Notable Drupal Implementations by Team Stealth

URL	Project
https://www.commerce.gov	The main website of the Department of Commerce (DOC)
https://ntia.gov/	NTIA main website
https://www.Mbda.gov	Minority Business Development Agency's website
https://ocio.commerce.gov	Office of the Chief Information Officer, DOC
https://ogc.commerce.gov	Office of the General Counsel, Dept of Commerce website
https://socmed.commerce.gov	Social Media Tracker
https://staff.commerce.gov	Staff Directory website
https://www.gsa.gov/	Central GSA site with access to all of the GSA's resources.
https://www.usa.gov/	Large and popular Drupal implementation which is an online guide to government information and services.
https://www.acquisition.gov/	Federal government's only resource for everything acquisition.
https://www.section508.gov/	Federal government's central website containing accessibility guidelines
https://www.eda.gov/	US Economic Development Administration website

Team Stealth has an appreciation and understanding of U.S Fish and Wildlife Service (USFWS) objectives and the desired state for the FWS.gov Apps Modernization and MFA Compliance RFQ/SOW. Team Stealth has invested in developing and delivering our services to continually enhance Drupal



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implementations, inclusive of User-centered design (UCD), simplification of content creation and maintenance by business users, content governance, best practices-driven development with minimal customization, and strict adherence to compliance, such as Section 508. Our innovations and track record with Drupal development and migrations have made us the trusted partner to deliver solutions across federal and commercial sectors.

Team Stealth has provided our technical plan, Sprint plan and roadmap, project management and oversight, capabilities, past performances, key personnel resumes, resourcing schedule with assignments and our proposed multi-application architecture approach for single Drupal instances. We totally understand the USFWS requirements as stated in the SOW and the Q&A document and are confident Team Stealth demonstrates this understanding and compliance to performing the contract requirements in this Volume 1 – Technical. Volume 2 – Price is the Team Stealth price proposal for all labor categories listed in the RFQ pricing template.

This proposal is valid for 60 days from the date of the proposal submission.

If you have any questions, please feel free to contact Raj Shekhar at raj.shekhar@stealth-us.com or (206) 495-7898.

1.2 Drupal - Acquia Environment Support Experience Capabilities by Team Stealth

Team Stealth has established itself as a leader in Drupal development on the Acquia Cloud platform. Our extensive experience with clients such as the National Telecommunications and Information Administration (NTIA) and the Department of Commerce (DOC) demonstrates our ability to deliver robust, scalable, and secure web applications. This section elaborates on our strengths in Acquia Cloud and how our expertise is directly applicable to the FWS project, highlighting our capabilities across various components of Acquia Cloud.

Acquia Cloud Platform: Team Stealth's deep understanding of Acquia's managed cloud hosting service has enabled us to optimize the infrastructure for numerous clients. For NTIA, we deployed a scalable solution that could handle high traffic volumes, ensuring their site remained performant during peak usage periods. Our approach involved leveraging Acquia's automated workflows to streamline deployments, which is directly relevant to FWS's need for efficient and reliable hosting solutions.

Acquia Cloud Site Factory: Our work with the DOC involved managing multiple sites from a single dashboard, using Acquia Cloud Site Factory. This capability allowed us to standardize configurations, apply updates consistently, and ensure uniform security practices across all sites. For FWS, this means we can efficiently manage their diverse set of applications under a unified platform, providing both scalability and ease of maintenance.

Acquia Cloud CD (Continuous Delivery): Team Stealth's expertise in setting up continuous delivery pipelines has been a game-changer for our clients. For example, at NTIA, we implemented a CI/CD pipeline using Acquia Cloud CD, which automated testing and deployment processes. This significantly reduced the time needed to release new features and updates. Applying this to FWS, we can ensure that their applications are continuously tested and deployed with minimal manual intervention, enhancing reliability and reducing downtime.



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Acquia Cloud Shield: Security is a paramount concern for Team Stealth, and our experience with Acquia Cloud Shield has been instrumental in protecting sensitive client data. For DOC, we provided a private, dedicated cloud environment that met stringent compliance requirements. For FWS, utilizing Acquia Cloud Shield will ensure that their applications adhere to federal security standards, providing an additional layer of protection for sensitive information.

Development and Deployment: Our development and deployment practices are anchored in Git-based version control, separate environments for development, staging, and production, and the use of Acquia's Cloud IDE. For NTIA, we established a robust workflow that allowed developers to write, debug, and test code efficiently. This setup is crucial for FWS, ensuring that development can proceed smoothly, and any issues can be identified and resolved early in the process.

Scalability and Performance Optimization: At Team Stealth, we prioritize performance optimization and scalability. For the high-traffic DOC application, we implemented Varnish caching, used a global content delivery network (CDN), and optimized database replication. These measures significantly improved load times and ensured the site could handle traffic spikes. For FWS, similar techniques will ensure that their applications remain fast and responsive, even under heavy load.

High Availability and Redundancy: Ensuring high availability and redundancy has been a cornerstone of our projects. For NTIA, we built systems with built-in redundancy and failover mechanisms, ensuring that applications remained available even during unexpected failures. This experience is directly applicable to FWS, guaranteeing that their critical applications will have maximum uptime and reliability.

Automatic Backups and Database Management: Team Stealth has extensive experience with Acquia's automated backup and database management tools. For DOC, we set up daily automated backups and implemented database performance tuning measures, ensuring data safety and optimal performance. Applying these practices to FWS will provide peace of mind that their data is secure and their databases are running efficiently.

Security and Compliance: Our work with Acquia Cloud's security features has been extensive. For NTIA, we implemented continuous security monitoring, DDoS protection, and ensured compliance with standards such as GDPR and HIPAA. For FWS, our focus on Multi-Factor Authentication (MFA), regular security updates, and compliance with federal security standards will safeguard the applications against threats.

Application Performance Monitoring (APM): Monitoring application performance in real-time is critical, and our use of APM tools on Acquia Cloud has been pivotal. For DOC, we used these tools to detect performance issues and optimize the application in real-time, ensuring a smooth user experience. For FWS, employing APM will allow us to maintain high performance and quickly address any potential issues.

Acquia Insight and Personalization: Our ability to leverage Acquia Insight for monitoring application health and performance has been invaluable. For NTIA, we used Insight to gain actionable recommendations, which we applied to improve site performance and security. Additionally, our use of Acquia Lift for personalization helped tailor content to user behavior, enhancing engagement. These capabilities will be critical for FWS, ensuring their applications are both high-performing and user-friendly.



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Content Hub and Search Integration: Team Stealth's experience with Acquia Content Hub and integrated search capabilities like Apache Solr has streamlined content syndication and improved search functionalities for clients like DOC. By implementing similar solutions for FWS, we can ensure content is efficiently distributed and easily searchable, enhancing the overall user experience.

Team Stealth's comprehensive experience with Acquia Cloud components and our proven track record with clients such as NTIA and DOC make us well-suited to handle the FWS.gov project. Our expertise in development and deployment, performance optimization, security and compliance, and application modernization ensures we can deliver high-quality, scalable, and secure Drupal applications. By applying our knowledge and practices to the FWS.gov project, we can help modernize the web applications, providing long-term value and efficiency.

2 Team Stealth Technical Plan

2.1 Team Stealth Approach to Meet FWS.gov Apps Modernization Requirements

The U.S. Fish and Wildlife Service (FWS) has outlined a comprehensive project aimed at modernizing several public web applications using Drupal 10 on the Acquia platform. The primary goals are to improve efficiency, reduce costs, enhance user experience, and comply with rigorous security requirements such as Multi-Factor Authentication (MFA) and Zero Trust (ZT). The technical analysis will delve into the key components of the project, highlighting our experience and how it aligns with the project requirements. The below areas have an introduction of Team Stealth's experience, recommendation, and approach to each.

1. **Audit of Drupal Configuration on Acquia:** During the onboarding phase, Team Stealth will conduct an audit of the current Drupal configuration on Acquia to ensure the setup is optimized for efficiency, usability, accessibility, and cost-effectiveness, with minimal disruption to the main modernization efforts. The objective of this audit is to ensure the current Drupal setup is both efficient and cost-effective. The tasks involved include evaluating the existing configuration, identifying misconfigurations, and providing recommendations for optimization. The expected outcomes are improved efficiency, potential cost recovery, and an enhanced end-user digital experience. Our team's extensive experience in similar audits includes a recent project with the Department of Commerce, which resulted in a 20% improvement in system performance and significant cost savings.
2. **Search Approach Comparison:** Configuring and comparing Search.gov with the current Acquia-SOLR search engine is another key task. Our experience in optimizing search engines for federal agencies such as GSA, DOC, and NIH, using combinations of Elastic Search, SOLR, Drupal Search, and Search.gov, has resulted in faster search results and improved user satisfaction. The objective is to compare and configure Search.gov with Acquia-SOLR. We will conduct A/B testing of search results, focusing on documents from the Federal Register, Worldcat, ServCat, and ECOSphere. This evaluation will include indexing relevant documents and reporting on disk space utilization, aiming for enhanced search capabilities and cost-effective solutions.



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3. **Reusable Application Framework (RAF):** Creating a Reusable Application Framework (RAF) that standardizes functionalities and allows for easy addition of new applications is essential for scalability and future development. Our extensive experience in this area includes a recent project for the GSA, where we developed a framework that significantly reduced development time and costs by facilitating the rapid deployment of new applications.

This project will establish a common Drupal and Drupal Module framework to standardize data entry, editing, workflow processes, and reporting formats, including charts, maps, and tabular/text reports. This framework will enable data exposure via API (JSON, SOAP/XML, .csv) and incorporate shared functionalities such as accounts, people/contacts, organizations, species/taxonomy tracking, and case/task tracking. All applications will align with FWS.gov branding, comply with 508 accessibility standards, and integrate the Login.gov module for authentication.

To support future integrations and development efforts, the RAF will standardize functionalities and ensure easy addition of new applications and integrations. This will ensure scalability and reusability, streamline development processes, and improve data security

4. **Environment Setup:** A Drupal 10 development environment will be set up to match the production environment, configured for reusability, potentially using Docker. A separate Drupal instance will be established for production applications, with clearly defined content and application promotion processes.
5. **Application Modernization:** Modernizing public applications is a key component of the FWS project, focusing on enhancing functionality, security, and user experience. The project involves upgrading several key applications, and each application will be rebuilt in Drupal 10, incorporating the latest features and security measures, including integration with Login.gov for consolidated user authentication. The process will convert outdated technologies and formats, such as fillable PDFs, into modern web-based forms, automate workflows, and ensure compliance with Section 508 for accessibility.

Our extensive experience in modernizing legacy systems and expertise in Drupal development uniquely position us to transform these applications effectively. For instance, we recently overhauled a set of legacy applications for a state government, transitioning them to a modern platform while enhancing security and usability. This experience ensures we can deliver a seamless transition for FWS applications, providing a consistent, secure, and user-friendly interface that aligns with FWS.gov design standards.

Team Stealth Tasks and Objectives:

1. **Harvest Survey:** Rebuild in Drupal 10, secure data handling, and integrate reporting.
2. **Resident Canadian Goose Application:** Update aesthetics, implement Login.gov, and enable basic reporting.
3. **Eastern Population Sandhill Crane Monitoring:** Upgrade from Drupal 8 to 10 and integrate Login.gov.
4. **Falconry Ownership Transfers and Reporting:** Convert PDF forms to web forms, secure data, and automate workflows.
5. **Aerial Observer (Waterfowl):** Transcribe content to Drupal 10, enhance training, and ensure Section 508 compliance.
6. **Captive Manatee Modernization:** Ensure MFA compliance, utilize Login.gov, and migrate to Drupal 10.

7. **Contact Us Modernization:** Enhance response routing, embed forms on subpages, and modernize bot protection.
8. **Optional Task: CarpDAT Invasive Carp Data Monitoring:** A proposal will be developed for a centralized data cataloging system for invasive carp, built on the RAF and species data models.

Outcomes:

- Enhanced user experience
- Compliance with modern security standards
- A unified application look and feel consistent with FWS.gov

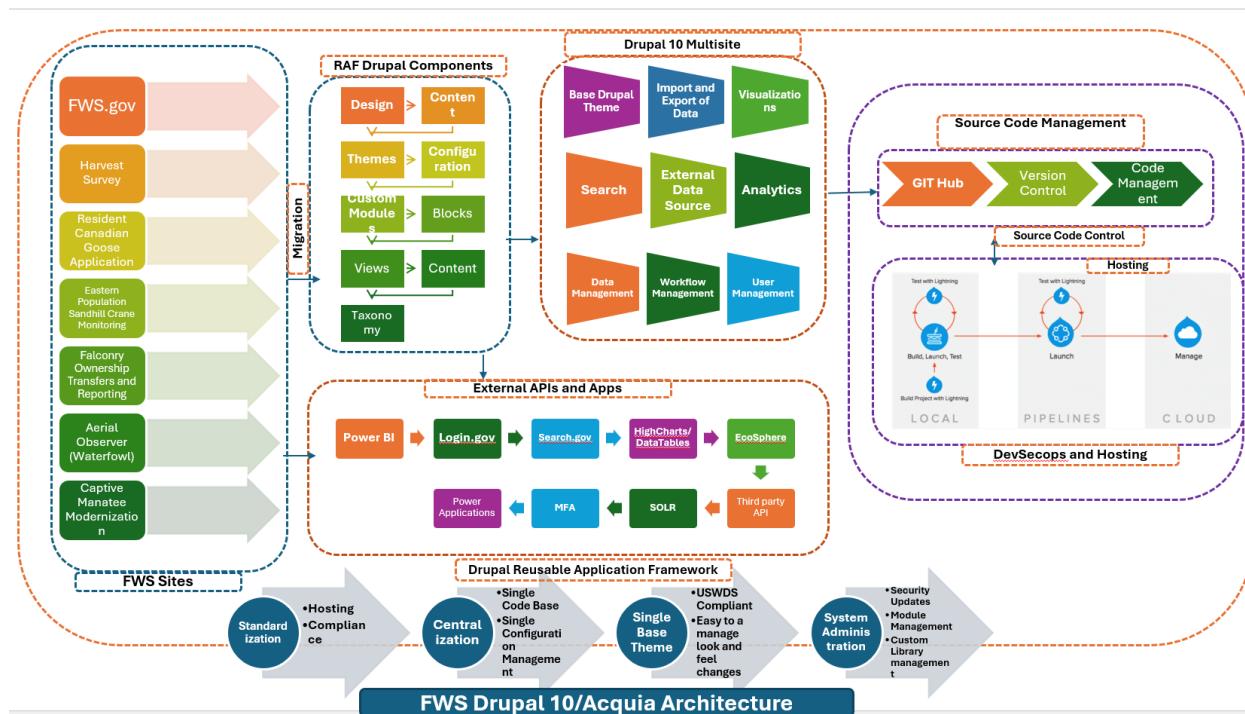
In summary, the project aims to achieve long-term cost efficiency and usability improvements, enhance understanding of the FWS ecosystem, optimize resource utilization through expert collaboration, and ensure strict adherence to FWS IT security, records management, and privacy policies.

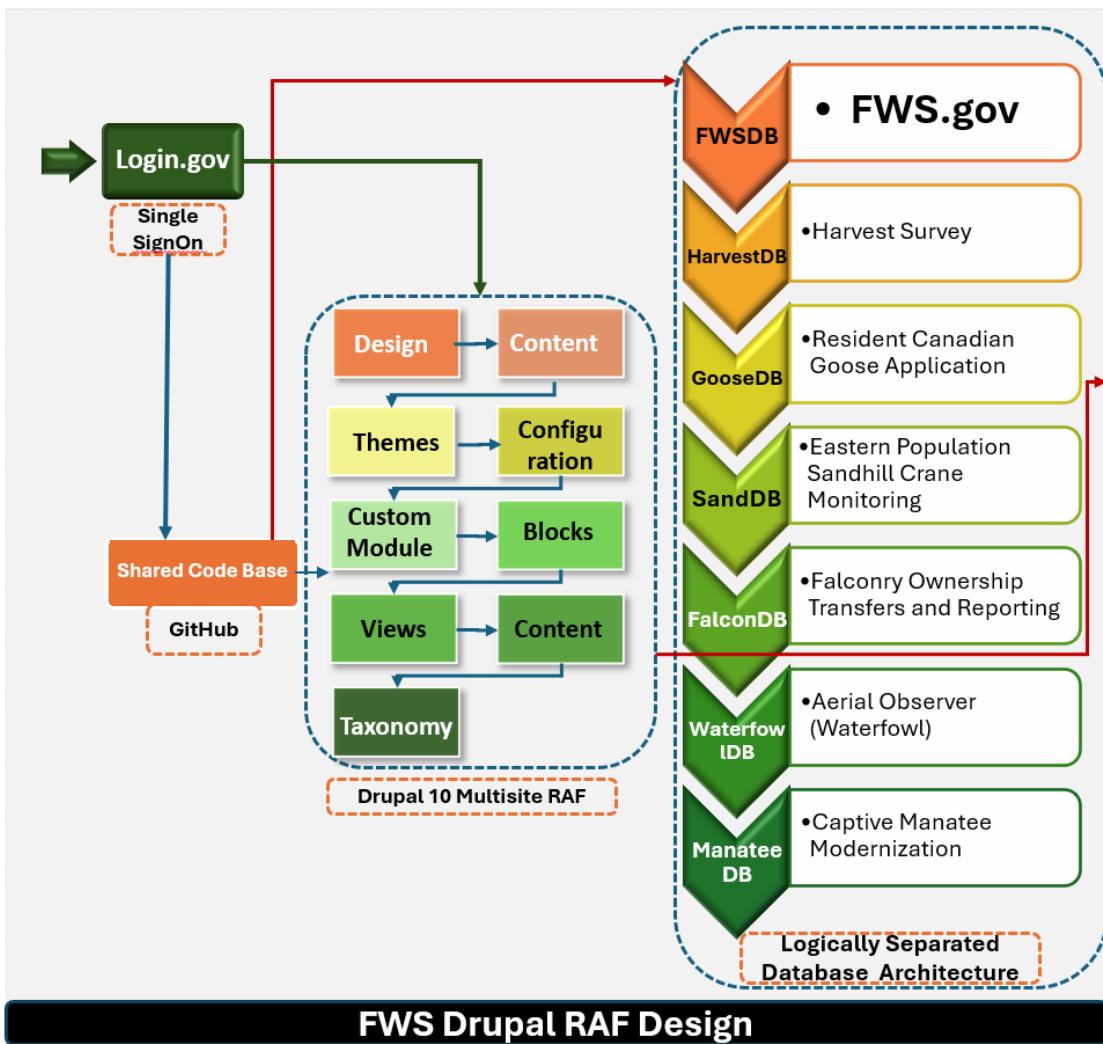
[2.2 Team Stealth's Drupal Multi-Application Approach](#)

Team Stealth's multi-application approach is first introduced with the below diagrams architectural overview of the FWS Drupal-based web ecosystem hosted on Acquia Cloud. FWS.gov serves as the foundation for a Drupal multisite setup, allowing multiple applications to share a single codebase while maintaining separate databases. This approach ensures streamlined maintenance and consistent updates across all applications.

Acquia Cloud Platform Setup for FWS

Below are the architecture diagrams proposed by Team Stealth, outlining the FWS Architecture for Drupal 10 and the proposed FWS RAF design.





The architecture includes a Drupal Reusable Application Framework (RAF) that simplifies migration and standardization. Key RAF components cover design, content management, configurations, themes, custom modules, blocks, views, content types, and taxonomy, ensuring a consistent look and feel while adhering to USWDS standards and providing flexibility in content management.

Centralized authentication through Login.gov offers a secure single sign-on experience for all applications. The multisite setup integrates with various external APIs and applications, such as Power BI for data visualization, Search.gov and SOLR for enhanced search capabilities, HighCharts/DataTables for interactive charts and tables, Power Applications for custom app development, EcoSphere for ecological data, and Multi-Factor Authentication (MFA) for added security.

Source code management via GitHub ensures version control and quality code management. The development workflow incorporates DevSecOps practices, local development environments, automated pipelines for building, testing, deploying applications, and managed cloud hosting on Acquia Cloud, ensuring scalability, reliability, and efficient system management.

System administration is streamlined with regular security updates, efficient module management, and handling of custom libraries. The architecture ensures compliance with security mandates like FISMA Moderate classification and provides roles and permissions management to control access to various application functionalities.

In summary, this architecture offers a unified, secure, and scalable solution for FWS's application modernization efforts. Leveraging a shared codebase, centralized authentication, and extensive integration with external APIs and services, the system ensures a consistent user experience, streamlined management, and enhanced security. Our expertise with similar projects guarantees effective implementation, delivering long-term value and efficiency for FWS.

Team Stealth Drupal 10/Acquia Platform Migration Approach

Moving from diverse non-Drupal systems and older Drupal versions to the latest Drupal 10 demands meticulous planning, exhaustive analysis, and exact execution. Below we elaborate on our established process, outlining the crucial considerations inherent in such a migration endeavor to ensure the integrity, security, and functionality of content across all FWS applications. The processes outline the phases and the steps within each phase, specifying which steps need to occur in sequence and which can happen in parallel.

1. Planning Phase – The following planning phase steps occur in sequence.

1.1. Requirements Gathering

- Conduct a comprehensive inventory of current applications.
- Engage stakeholders to understand desired outcomes and any desired enhancements.
- Evaluate functionality, content types, user roles, modules, and themes in existing systems.
- Document custom code, third-party integrations, and unique features or workflows.
- Develop a detailed migration plan outlining processes, timelines, required resources, and tools.

1.2. Migration Planning:

- Develop a detailed migration plan outlining processes, timelines, required resources, and tools.
- Select a migration approach (big bang or incremental) based on complexity and business needs.
- This step is done in sequence to ensure all team members have a clear and unified understanding of the project scope.

1.3. Define Architecture and Module Structure

- Design high-level architecture.
- Outline the directory structure for custom modules.
- Identify dependencies and configurations.

This foundational planning phase needs to be completed before actual development begins to provide a clear roadmap.

2. Development Phase – The following development phase steps occur in parallel.

2.1. Module Setup and Environment Configuration

- Set up development, staging, and production environments.
- Configure version control (e.g., Git) and continuous integration/continuous deployment (CI/CD) pipelines.

- Multiple team members can work on setting up different environments in parallel.

2.2. Base Module Development

- Develop base modules that provide foundational services and configurations.
- Define services, plugins, and custom entities.
- Base modules often provide utilities and services that other modules will rely on, so they can be developed in parallel with environment setup.

2.3. Feature Module Development

- Implement specific features and functionalities.
- Different teams or developers can work on different feature modules simultaneously, as long as they have clear dependencies and interfaces defined.

2.4. Utility Module Development

- Create reusable utilities and helper functions.
- These modules can be developed in parallel with feature modules as long as there is communication about shared utilities.

2.5. Theming and Frontend Development

- Design and implement the theme for the Drupal site.
- Develop Twig templates, CSS, and JavaScript.
- Theming can proceed in parallel with backend development since it primarily deals with presentation rather than business logic.

2.6. Content Migration:

- Utilize Drupal's Migrate API for content migration.
- Develop custom migration paths for non-Drupal applications using migration modules or scripts.
- Pilot Migration: Conduct a pilot migration for a subset of content to validate the migration process and address any issues.
- Full-scale Migration: Execute the migration for all content, prioritizing content based on complexity and dependency.

3. Testing and Deployment Phase – The following testing and deployment phase steps occur in sequence.

3.1. Integration and Testing (After Parallel Development)

- Once base, feature, and utility modules are developed, integrate them to ensure they work together seamlessly.
- Conduct unit testing for individual components.
- Perform integration testing to verify module interactions.
- Sequence is crucial here to identify and resolve conflicts or bugs introduced by parallel development activities.

3.2. User Acceptance Testing (UAT)

- After integration testing, conduct UAT with stakeholders to ensure the application meets requirements.
- UAT is done sequentially after internal testing to catch any issues before the production release.

3.3. Deployment

- Deploy the application to the staging environment for a final round of tests.
- Move to production once staging tests are successful.
- Deployment is the final sequential step to ensure a controlled and verified release process.

3.4. Continuous Improvement:

- Solicit feedback from users and stakeholders.
- Plan ongoing updates and enhancements.

Rationale for Parallel and Sequential Steps.

Parallel Development:

- **Efficiency:** Multiple tasks are completed simultaneously, speeding up the development process.
- **Specialization:** Different teams or developers can focus on specific areas (e.g., backend, frontend, utilities), improving productivity and quality.
- **Modularity:** Independent modules can be developed and tested in isolation before integration, reducing the complexity of the development process.

Sequential Development:

- **Dependency Management:** Some tasks must follow others to ensure that foundational elements (e.g., services, base modules) are in place before dependent features are built.
- **Integration and Testing:** Sequential integration and testing ensure that independently developed modules work together correctly, maintaining the integrity of the application.
- **Quality Assurance:** A structured approach to testing and deployment ensures that all components are thoroughly vetted before reaching production, minimizing the risk of issues.

2.2.1 Audit Drupal Configuration on Acquia

We aim to conduct a comprehensive audit of the current Drupal configuration for FWS.gov. The audit will focus on enhancing the efficiency, usability, accessibility, and cost-effectiveness of the system. This process will be executed in a single iteration, ensuring minimal disruption to the ongoing Public Application Modernization efforts as outlined in Section 2.4. To achieve this, the audit will be strategically front-loaded in the project schedule and will be carried out during the onboarding and logistical startup phase. Our team will collaborate closely with FWS internal subject matter experts to ensure a seamless and effective evaluation.

Below described are the different methodologies we shall adopt for the audit.

1. Preparation and Initial Review

- Permissions and Access: Secure necessary permissions for accessing the admin panel, server, and database to ensure a smooth and uninterrupted audit process.
- Backup: Perform a complete backup of the website, including all files and the database, to prevent data loss during the audit.
- Tool Installation: Set up essential audit tools such as Drush and Drupal Console to facilitate an in-depth review of the Drupal configuration.

2. Core and Module Review

- Core Updates: Review and update the Drupal core to integrate the latest security patches and features.
- Module Verification: Ensure all contributed modules are up to date with the latest versions to benefit from security and performance improvements.
- Custom Module Audit: Evaluate custom modules against Drupal coding standards, performance benchmarks, and security practices. Identify any potential issues and recommend improvements.

- Module Optimization: Identify and remove unused or redundant modules to enhance performance and reduce system complexity.

3. Theme and Front-End Review

- Theme Updates: Verify that the current theme is up to date and incorporates the latest design improvements and bug fixes.
- Asset Optimization: Minimize and aggregate CSS and JavaScript files to improve load times and performance.
- Responsive Design Testing: Test the site on various devices and screen sizes to ensure a consistent and responsive user experience.

4. Performance Audit

- Caching Mechanisms: Ensure that all caching mechanisms, such as Drupal's built-in caching, Varnish, and CDN integration, are active and properly configured.
- Database Optimization: Review the database for potential optimizations, such as indexing, query performance tuning, and cleanup of obsolete data.
- Load Testing: Conduct performance tests under load conditions using tools like Apache JMeter or LoadStorm to identify and address performance bottlenecks.
- Page Load Analysis: Analyze page load times and provide recommendations for improving performance based on industry best practices.

5. Security Audit

- Security Updates: Verify that all security updates for the Drupal core, contributed modules, and themes are applied.
- Role and Permission Review: Assess user roles and permissions to ensure they follow the principle of least privilege.
- Security Modules: Implement and configure security modules such as Security Review, Paranoia, and Login Security to enhance system security.

6. Content and SEO Review

- Content Quality: Review content for quality and consistency, ensuring it aligns with FWS standards.
- Broken Links: Identify and fix any broken links to improve user experience and SEO.
- SEO Settings: Audit and optimize SEO settings to enhance search engine visibility and ranking.

7. Accessibility Audit

- Accessibility Standards: Ensure the site complies with accessibility standards such as WCAG 2.1
- Accessibility Tools: Use tools like Axe, WAVE, and Lighthouse to identify and fix accessibility issues, ensuring the site is usable for all visitors.

8. UX Audit

- Navigation Structure: Review the site's navigation structure to ensure it is intuitive and user-friendly.
- Design Consistency: Test for design consistency across different sections of the site.
- User Testing: Conduct user testing sessions to gather feedback and identify areas for improvement.

9. Code Quality Review

- Coding Standards: Ensure all custom code follows Drupal coding standards.
- Documentation: Check for adequate documentation in custom modules and themes to facilitate maintenance and updates.
- Version Control: Manage the site's codebase with a version control system, ensuring all changes are tracked and easily reversible.

10. Audit Reporting

- Documentation: Document all findings from the audit, providing detailed recommendations and prioritizing issues based on their impact.
- Recommendations: Provide clear, actionable recommendations for improving the efficiency, usability, accessibility, and cost-effectiveness of the Drupal configuration.

11. Implementation Plan

- Detailed Plan: Develop a detailed plan for implementing the recommended changes, including specific actions, responsible parties, and timelines.
- Timeline: Create a timeline for addressing issues, ensuring that critical improvements are prioritized and completed promptly.
- Ongoing Monitoring: Set up ongoing monitoring to ensure continuous improvement in site security, performance, and user experience.

Collaboration with FWS Internal Experts

To facilitate a smooth and effective audit, our team will work closely with FWS internal subject matter experts. Their knowledge and expertise will be invaluable in providing insights and access to critical systems and data. This collaboration will ensure that the audit is comprehensive and accurately reflects the current state of the Drupal configuration.

By conducting a thorough audit of the current Drupal configuration for FWS.gov, we aim to provide detailed recommendations for improving efficiency, usability, accessibility, and cost-effectiveness. Our structured approach, combined with close collaboration with FWS internal experts, will ensure a successful audit that sets the stage for ongoing improvements and supports the broader goals of the Public Application Modernization initiative.

2.2.2 Search Engine Evaluation

The aim of this task is to configure Search.gov for FWS.gov and conduct a comprehensive A/B testing comparison with the existing Acquia-SOLR search engine. This evaluation will be thorough, focusing on search result relevance, disk space utilization, and potential cost savings. Importantly, this task must not interfere with the Public Application Modernization efforts (Section 2.4) and will be executed in a single iteration. The effort will be front-loaded in the project schedule to align with the onboarding and logistical startup phase.

1. Configuration of Search.gov

Integration Setup: To begin, our team will collaborate with FWS IT staff and Search.gov support to configure the Search.gov service for FWS.gov. This configuration will ensure that Search.gov can index all necessary content effectively.

Federal Register Documents: One of the critical aspects of this setup is ensuring that Federal Register documents, hosted on a different site, are indexed correctly without duplication. This will involve setting up specific indexing rules and filters within Search.gov.

Document Inclusion: In addition to Federal Register documents, it is essential to include relevant documents from Worldcat, ServCat, and ECOSphere. These documents will be indexed comprehensively to provide users with a complete and relevant search experience.

Image Search: Search.gov will also be configured to search for and return representative images that are relevant to user queries. This will involve tagging and categorizing images appropriately to ensure relevance and accuracy.

2. A/B Testing with Acquia-SOLR

Test Setup: An A/B testing framework will be established to compare search results from Search.gov and the existing Acquia-SOLR search engine. The search traffic will be split between the two engines to gather comparative data on performance and relevance.

Relevance and Analysis: Relevance testing and subjective analysis will be conducted to evaluate the value of the search results from both engines. This will include gathering qualitative feedback from users and stakeholders to assess perceived value and effectiveness.

Program Coordination: The testing and comparison efforts will be coordinated with key programs within FWS.gov, including:

- Refuges
- Endangered Species
- Federal Register
- Office of Communications: This office has general authority over all content on FWS.gov, ensuring alignment with content standards and operational requirements.

3. Disk Space Utilization and Cost Analysis

Disk Space Reporting: We will analyze and report on the disk space utilization for both Search.gov and Acquia-SOLR. This analysis will help identify any potential reductions in storage requirements and optimize disk space usage.

Cost Savings Analysis: An evaluation of potential cost savings or avoidance will be conducted. This analysis will consider the operational, maintenance, and licensing costs associated with each search engine and highlight potential financial benefits of switching to Search.gov.

Configuration and Integration of Search.gov

1. Initial Setup:

- Work closely with FWS IT staff and Search.gov support to configure the Search.gov service for FWS.gov.
- Define and implement indexing rules to ensure comprehensive coverage of relevant content, including Federal Register documents, Worldcat, ServCat, and ECOSphere documents.

2. Indexing and Duplication Check:

- Implement mechanisms to avoid duplication of indexed documents in both Search.gov and Acquia-SOLR.
- Conduct initial indexing runs and validate the results to ensure all relevant documents are captured correctly.

3. Image Search Configuration:

- Configure Search.gov to include representative images in search results.
- Ensure image relevance by tagging and categorizing images appropriately.

A/B Testing and Comparative Analysis

1. A/B Test Setup:

- Utilize an A/B testing framework to split search traffic between Search.gov and Acquia-SOLR.
- Collect data on search queries, results, and user interactions from both engines.

2. Relevance Testing:

- Conduct user surveys and gather qualitative feedback on the relevance of search results.
- Perform a subjective analysis to assess the perceived value of the search results.

3. Program Coordination:

- Engage with key programs (Refuges, Endangered Species, Federal Register) and the Office of Communications to gather input and feedback on the search results.
- Ensure that the search engine configuration aligns with the content and operational requirements of these programs.

Disk Space and Cost Savings Analysis

1. Disk Space Utilization:

- Measure and compare the disk space utilization of Search.gov and Acquia-SOLR.
- Identify potential reductions in storage requirements by optimizing the indexing process.

2. Cost Analysis:

- Calculate the operational, maintenance, and licensing costs associated with both search engines.
- Identify potential cost savings or avoidance opportunities by transitioning to Search.gov.

Reporting and Recommendations

1. Documentation of Findings:

- Compile a comprehensive report detailing the findings of the search engine evaluation.
- Include metrics on search relevance, disk space utilization, and cost analysis.

2. Recommendations:

- Provide clear, actionable recommendations for improving the search functionality on FWS.gov.
- Highlight any potential benefits of switching to Search.gov, including improved search relevance, reduced disk space utilization, and cost savings.

3. Presentation to Stakeholders:

- Present the findings and recommendations to FWS stakeholders, including key program representatives and the Office of Communications.
- Ensure that the recommendations align with the broader goals of the Public Application Modernization initiative.

Implementation Experience

We have a proven track record of implementing and optimizing search solutions for high-profile clients. Our experience includes:

- data.commerce.gov: Implemented a robust search functionality using Elasticsearch, optimizing for both speed and relevance.
- commerce.gov: Configured Acquia-SOLR to enhance search capabilities, providing fast and accurate search results.
- gsa.gov: Integrated Search.gov, ensuring comprehensive indexing and improved search relevance.
- usa.gov: Conducted a comparative analysis of Search.gov and Elasticsearch, resulting in significant improvements in search performance and user satisfaction.
- digitaldashboard.gov: Implemented A/B testing frameworks to compare different search engines, optimizing for the best user experience.
- acquisition.gov: Configured and optimized Acquia-SOLR, ensuring efficient search result delivery and high relevance.

By conducting a thorough evaluation of Search.gov and comparing it with the existing Acquia-SOLR search engine, We aim to enhance the search functionality on FWS.gov. Our approach ensures minimal disruption to ongoing modernization efforts and provides valuable insights into improving search relevance, efficiency, and cost-effectiveness. Through careful coordination with FWS internal experts and a structured evaluation process, we will deliver a detailed report with actionable recommendations to optimize the search capabilities for FWS.gov. Our extensive experience with similar projects ensures that we can provide a robust and effective solution tailored to FWS's needs.

2.2.3 Reusable Application Framework

To achieve the objectives of the FWS initiative, we propose the development of a Reusable Application Framework (RAF) tailored to building small to medium-sized applications. This framework will be designed to share user management, account management, content types, blocks, workflows, modules, and administrative functionalities across multiple applications. Our extensive experience with similar RAF implementations for clients such as GSA.gov (10 websites), USA.gov (5 sites), and Commerce.gov (17 sites) positions us to deliver a robust and flexible RAF solution for FWS.

The following strategies will be adopted in building the RAF framework in Drupal for FWS.

1. Common Drupal & Drupal Module Framework

Form-based Data Collection: We will define and document a framework that supports form-based data entry, editing, and workflow management. This will include the use of modules such as Webform for form creation and management, and Workflow for defining and controlling business processes.

Business Workflows: To support simple and complex approval/tracking workflows, we will leverage Drupal's core workflow capabilities and extend them with custom modules as necessary. This will allow for detailed tracking of approvals, submissions, and other business processes.

Data Exposure to Public and Private Systems: We will create a framework for exposing data via APIs, supporting JSON, SOAP/XML, and CSV formats. This will facilitate data integration with trusted internal systems like FWS Power Platform and Power BI, using both push and pull techniques.



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Database Design and Implementation: Our framework will include best practices for designing and implementing databases in Acquia MySQL. This will ensure efficient data storage, retrieval, and management.

Reusable Content Types: We will define and document reusable content types that are preconfigured on each application instance. This will include detailed instructions on their use and guidelines for creating new content types.

2. Shared Data Model and Information Architecture

Accounts and Roles: We will extend Drupal's core account functionality to include various types, roles, and permissions. This will enable fine-grained access control and user management across applications.

People/Contacts: A comprehensive data model will be established to manage people and contacts. This will include associations with organizations, roles, types of work, and specialties. Standard contact information capabilities will be provided, along with the ability to group contacts for specific applications (e.g., "Harvest Survey" contact lists).

Organizations: We will create a reusable data model for managing organizations, including government agencies and partner entities. This model will support parent-child relationships and allow for hierarchical management of organizational data.

Species/Taxonomy: A standardized taxonomy will be developed to track various species and subspecies. This will facilitate consistent data entry and reporting across different applications that manage wildlife information.

Case/Task Management: Our framework will include a system for tracking submissions and data through defined workflows. This will enable efficient case and task management, ensuring all data is processed and tracked systematically.

3. Common Application Aesthetic

Branding and Compliance: We will enforce FWS.gov branding and footer requirements, ensuring all applications adhere to a consistent visual identity. Compliance with Section 508 accessibility standards will be strictly enforced.

Subordinate Branding: The framework will support the addition of partner logos and subordinate branding, allowing for flexibility in presenting different partner collaborations.

Style Sheets and Templates: We will provide reusable style sheets and Drupal templates to ensure design consistency across all applications. These templates will include required footer links and common navigation elements.

Tabular Reports and Views: Data tables will be configured to support column sorting, filtering, and searching capabilities. This will enhance the usability and functionality of data reports.

4. Integration with Login.gov



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Login.gov Module Configuration: We will configure the Drupal module for integrating with Login.gov, ensuring secure user authentication for all applications. Detailed instructions for implementation and ID validation will be provided.

Implementation Instructions: Comprehensive documentation will be developed to guide FWS developers and future contractors in utilizing the Login.gov module. This will ensure a smooth and secure user authentication process.

5. Developer Instructions and Documentation

Detailed Guidance: We will create detailed instructions for FWS developers, outlining best practices for building and designing new applications using the RAF. This documentation will cover module configurations, content type creation, workflow management, and API integration.

Futureproofing the Framework: The RAF will be designed to be flexible and adaptable, allowing for continuous improvement and evolution over time. This will ensure that the framework remains relevant and effective as new requirements and technologies emerge.

Implementation Experience

GSA.gov: For GSA.gov, we implemented a RAF that supports 10 websites, enabling shared user management, workflows, and content types. This framework has streamlined the development and maintenance of multiple applications, enhancing efficiency and consistency.

USA.gov: Our RAF for USA.gov encompasses 5 sites, providing standardized data entry forms, business workflows, and API integrations. This framework has facilitated seamless data sharing and reporting across different platforms.

Commerce.gov: At Commerce.gov, we developed a RAF that supports 17 websites, including complex workflows and custom modules for data management. This experience has equipped us with the expertise to handle large-scale implementations with diverse requirements.

By leveraging our extensive experience in implementing RAFs for high-profile clients, we are well-positioned to deliver a robust and flexible Reusable Application Framework for FWS. Our proposed solution will provide a solid foundation for building and managing small to medium-sized applications, ensuring efficient user and content management, standardized workflows, and comprehensive reporting capabilities. With detailed documentation and continuous support, we will ensure that the RAF evolves to meet FWS's future needs.

Public Application Modernization

2.2.4 Task: Development Environment set-up and Configuration

Development Environment: Create a local environment mirroring the production environment using tools like DDEV, Lando, or Docker.

Staging/QA Environment: Use a staging environment for testing new features and bug fixes before they go live.

Production Environment: Choose a reliable hosting provider that supports Drupal 10 requirements.

Server Configuration: Optimize server configuration for Drupal, including PHP settings, caching mechanisms, and security practices.

Version Control: Use Git for version control and create a repository to manage your codebase. Implement a branching strategy such as Git Flow or GitHub Flow.

Configuration Management:

- Use the Configuration Split module to manage environment-specific configurations.
- Regularly export and import configuration using Drupal's configuration management system (Config Sync).

Database Management:

- Sync the production database to development and staging environments regularly.
- Ensure sensitive data is sanitized when syncing the database to non-production environments.

File Management:

- Sync the public files directory from production to development and staging environments.
- Ensure private files are handled securely and not exposed in non-production environments.

Automated Deployments: Use CI/CD pipelines for code validation, automated tests, building the code, and deployment to staging for testing.

Manual Deployments: Establish a clear deployment process including backups, staging, database updates, and clearing caches.

Testing and Quality Assurance:

- Implement automated tests to catch issues early in the development process.
- Conduct manual testing in the staging environment to validate new features and bug fixes.
- Regularly test the performance of your site using tools like JMeter or ApacheBench.

Monitoring and Logging:

- Use monitoring tools to keep track of site performance and uptime.
- Aggregate and monitor logs using tools like ELK Stack or Graylog.

Security Practices:

- Regularly update Drupal core, contributed modules, and themes to the latest versions.
- Conduct periodic security audits and use security modules like Security Review to identify and fix vulnerabilities.

Documentation and Communication: Maintain detailed documentation for the setup, configuration, and deployment processes.

2.2.5 Task: Setup a separate Drupal/Acquia Production System for Applications

2.2.5.1 Standard Migration Approach

Here are few of our strategies we will be adopting for each of the applications to be migrated to Drupal 10.



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Pre-Migration Assessment

Current State Analysis: We will begin with a thorough assessment of the current application to understand its architecture, functionalities, and dependencies. This includes reviewing the existing codebase, database schema, user interfaces, and integrations. We will engage with stakeholders to gather detailed requirements and expectations for the migrated application.

Requirement Gathering: Engage with stakeholders to gather detailed requirements and expectations for the migrated application. This ensures that all essential features are retained, and any new enhancements are identified.

Infrastructure Setup

Drupal 10 Environment: We will set up a Drupal 10 environment that mirrors the production setup. This environment will be configured with all necessary modules, themes, and custom configurations required for the application.

Development Environment: Establish a robust development environment using Docker-based configurations. This setup will ensure that all developers have a consistent and isolated environment for development and testing.

Data Migration

Database Schema Mapping: We will map the existing database schema to the new Drupal 10 schema, identifying corresponding content types, fields, and relationships in Drupal.

Data Migration Scripts: Develop and execute data migration scripts to transfer data from the existing database to the new Drupal 10 database. This includes migrating user registrations, activity reports, and other relevant data.

Data Validation: Perform thorough data validation to ensure that all data has been accurately migrated, checking for data integrity, completeness, and correctness.

Module and Feature Implementation

Core and Contributed Modules: Identify and install Drupal 10 core and contributed modules that match the functionalities of the current application. This includes modules for content management, user authentication, surveys, and reporting.

Custom Module Development: Develop custom modules to replicate any unique functionalities of the application not covered by existing Drupal modules. This includes custom registration logic, reporting features, and integrations.

Theme and UI Development: Migrate the existing user interface to a Drupal 10 theme, ensuring that the look and feel of the application are preserved. Apply responsive design principles to ensure the application works seamlessly across different devices and screen sizes.

Integration and Testing

System Integrations: Ensure that the migrated application integrates smoothly with other FWS systems and third-party applications. This includes setting up APIs and ensuring data flows between systems as required.

Functional Testing: Conduct comprehensive functional testing to verify that all features of the work as expected in the Drupal 10 environment. This includes testing forms, workflows, data entry, and reporting features.

Performance Testing: Perform performance testing to ensure that the migrated application meets performance benchmarks. This involves load testing, stress testing, and optimizing the application for better performance.

Security Testing: Carry out security testing to ensure that the application is secure and complies with FWS security standards. This includes checking for vulnerabilities, implementing security best practices, and ensuring compliance with regulations.



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User Training and Documentation

Training Sessions: Conduct training sessions for administrators and users to familiarize them with the new Drupal 10 application. This includes training on new features, workflows, and administrative tasks.

Documentation: Provide comprehensive documentation covering the setup, configuration, and usage of the application on Drupal 10. This will serve as a reference for developers, administrators, and users.

Deployment and Post-Migration Support

Deployment Plan: Develop a detailed deployment plan to transition the application to production. This includes steps for final data migration, configuration, and go-live activities.

Post-Migration Support: Offer post-migration support to address any issues that arise after deployment. This includes monitoring the application, providing bug fixes, and making necessary adjustments based on user feedback.

2.2.5.2 Harvest Survey

Technical Solution for Migrating the Harvest Survey Application to Drupal 10

For this application we will follow the standard migration approach as described in the section “Standard Migration Approach”.

Key Functionalities and Requirements

Survey Code Generation: We will ensure that each survey code is unique and resistant to modification, using encryption to securely send the codes to hunters, preventing third-party or middle-man attacks.

Data Entry and Anonymity: The migrated application will support anonymous surveys (by invitation code only) and authenticated surveys. Hunters can choose to have an account to maintain their history and data or use the invitation code to report anonymously.

Login.gov Integration: For partner, state wildlife, and hunter/external-party access to reports, we will integrate Login.gov, providing permission granularity to limit data access based on roles, ensuring, for example, that a state agent can only see data from their state.

SASE/PIV Integration: The existing SASE/PIV integration for DOI personnel will remain unchanged, ensuring seamless access for internal users.

Reports on Collected Data: We will expose relevant data via API to Power BI for reporting purposes. If this is not feasible, reports will be generated on the Drupal platform, ensuring they are filterable by locality, state, region, national, species, hunting season, and selected date ranges. Reports will include bar and pie charts, tabular/text displays, map displays, and comparison functionality.

Implementation Experience

Stealth has extensive experience in migrating applications and implementing Reusable Application Frameworks (RAFs) for high-profile clients. For GSA.gov, we successfully migrated and managed 10 websites, for USA.gov, we handled 5 sites, and for Commerce.gov, we managed 17 sites. Our expertise in these large-scale migrations ensures a smooth transition for the Harvest Survey application, maintaining its functionality and enhancing its capabilities on Drupal 10.



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Migrating the Harvest Survey application to Drupal 10 will provide FWS with a modern, scalable, and maintainable platform. Bravent's comprehensive approach ensures that all functionalities are preserved and enhanced, providing a seamless transition to the new environment. With our extensive experience in similar migrations and our expertise in Drupal development, we are well-equipped to deliver a successful migration for the Harvest Survey application.

Stealth IT has extensive experience in creating user-centric input forms using various options like Forms built using custom modules and Webforms which provide the functionality to validate and store data based on each scenario. We can extend both options to allow users to provide information without authentication. We have also worked on applications that require PIV access and will provide them where necessary. Security is a task that is taken very seriously by our team, and it will be configured and extended to all the applications that are using fws.org. We provide various processes like Input validation and sanitation for cleaning the input provided by the user and CSRF protection by validating FORM ID and session management. We ensure all the applications are configured with SSL/TLS and HTTPS to make sure the connection is encrypted for all the web applications. We also provide storage encryption where it is needed with accurate tools.

We have extensive knowledge of integrating POWER BI into Drupal in both directions. We have worked on enterprise-level applications that require data to be sent to Power BI and retrieved for data display purposes and rendering of POWER BI Reports and Charts inside Drupal Page containers providing AJAX-based filters reconstructing the URL for the AJAX Callbacks.

2.2.5.3 Resident Canadian Goose Application

For this application we will follow the standard migration approach as described in the section “Standard Migration Approach”.

Login.gov Integration: Implement Login.gov for authentication to allow external volunteers to securely access the application. This ensures secure and streamlined user authentication for external parties.

FWS.gov Aesthetic and Branding: Apply the common FWS.gov application aesthetic to ensure consistency in branding and user experience. This includes using standardized themes, styles, and layouts.

Reporting and Map Bubbles: Enable basic reports on utilization and activity localities/regions using map bubbles. These reports will be filterable by various criteria, such as locality, state, region, and species. Reports will include visualizations like bar and pie charts, tabular/text displays, and map displays.

Email Notifications: Configure the application to use email for sending notification and confirmation messages to public registrants. This ensures that users are kept informed about their registrations and activities.

User Registration and Activity Reporting: Allow U.S. citizens to register their premises or renew existing registrations from January to June. After June, users will only be able to report their activities. Each registrant will be allowed one registration number, and they can apply as an individual or as a business. We can extend the registration system to allow users to register during the period which can be configured through the site admins dashboard and can provide all the workflow rules that are needed for this application. Emails will be configured from the master site to have all the emails going through either AMAZON SES or SMTP provided by the agency.

2.2.5.4 Eastern Population Sandhill Crane Monitoring/Reporting

The goal of upgrading the Eastern Population Sandhill Crane Monitoring/Reporting application from Drupal 8 to Drupal 10, migrating it to the FWS.gov Acquia environment, and transitioning authentication to Login.gov is to enhance the application's performance, security, and maintainability while aligning it with FWS's digital strategy. This process involves updating all custom and contributed modules for compatibility with Drupal 10, re-implementing the existing theme to adhere to FWS.gov's branding guidelines, and ensuring data integrity through robust migration tools and scripts.

Migrating the application to the FWS.gov Acquia environment requires careful planning to minimize downtime and disruption. The environment setup will mirror the current configuration, including server settings, database configurations, and caching mechanisms, to provide stability. Performance optimization will leverage Acquia's infrastructure, incorporating Varnish caching, CDN for static assets, and optimized database queries. Security enhancements will include firewall protections, DDoS mitigation, and regular security patches.

Transitioning to Login.gov for authentication will improve security and user management. This involves integrating the Login.gov module into Drupal 10, configuring OAuth credentials, and ensuring secure communication. Existing user roles and permissions will be mapped to the new system, with custom roles audited and reconfigured as needed. Users will be notified about the new authentication process and provided with detailed login instructions and support.

Enhancing reporting and monitoring functionalities is crucial for the application's utility and user satisfaction. Leveraging Drupal 10's improved data handling, we will create interactive reports using charts, graphs, and maps, with advanced filtering options and export capabilities in various formats. Real-time monitoring tools will be implemented to track key metrics and user activities, providing insights through dashboards. Ensuring compliance with Section 508 accessibility standards and federal privacy regulations, the application will be audited and updated for usability and data protection, incorporating robust security measures and regular audits. Stealth IT's experience with similar migrations ensures a smooth transition using Drupal's Migration API, addressing any unsupported modules or themes with new functionality or client-approved approaches.

2.2.5.5 Falconry Ownership, Transfers, and Reporting

The objective of this task is to modernize the current falconry ownership, transfers, and reporting system by transitioning it to Drupal 10, integrating Login.gov for authentication, replacing fillable PDFs with web forms, and ensuring secure data transmission. This solution will enhance data security, streamline workflows, and improve user experience while maintaining compliance with federal requirements.

Key Functionalities and Requirements

1. Login.gov Integration and Falconer Self-Registration

Login.gov Integration: We will integrate Login.gov to handle authentication, ensuring secure access for falconers, state officials, and federal agents. This integration will include ID verification to enhance security and trust in the system.

Falconer Self-Registration: Falconers will self-register using Login.gov, providing identity information from form 3-186A and their state permit number. This process will ensure that only verified individuals can access and utilize the system.



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2. Web Forms to Replace 3-186A Fillable PDFs

Web Form Implementation: We will replace the existing fillable PDFs with web forms that use the same OMB-approved form fields. These forms will utilize lookups and data tables to auto-populate information from the bird's record and falconer's address book, streamlining data entry and reducing errors.

Enhanced Data Entry: Forms will include automated workflows for transfers and exchanges, allowing sender/recipient autofill from falconer profiles and bird selection from the falconer's list of birds. Permissions for data use during exchanges will be managed, including granting and revoking access to information, with all events logged for audit purposes.

3. Automated Workflows and E-signature Capabilities

Automated Workflows: We will implement automated workflows for key processes, such as bird transfers, disposition events (e.g., death, escape), and banding/re-banding. These workflows will auto-populate relevant fields and ensure data consistency and accuracy.

E-signature and Printing: The system will support e-signatures for form 3-186A, allowing users to sign documents digitally. Additionally, users will have the capability to print signed forms, ensuring compliance with legal and regulatory requirements.

4. Enhanced Reporting and Data Access

Reports: We will develop comprehensive reporting capabilities, including falcon/raptor ownership reports, exchange/transfer reports, and geographic visualizations of falconers and birds by locality, state, or region. Reports will be filterable and exportable in various formats.

State and Federal Access: State agents and DOI USFWS special agents will have role-based access to data and reports. State agents will be limited to their own scope, while federal agents will have access based on their regional or national role, ensuring proper data governance and security.

5. Falconer and Media Management

Falconer Management: The system will support adding, editing, and managing falconers. Administrators can search for activities by falconer, manage relationships (e.g., sales, transfers), and handle permissions for data access and selection lists.

Media Management: Falconers can submit images and videos, with a total limit of 10 MB. Media releasability will be controlled by the owner, with all media available to DOI and state agents within their scope. This ensures proper handling of media content while maintaining privacy and control for falconers.

6. Administration and Data Migration

Administrative Roles: State, tribal, territorial, and federal administrators will have roles for user management, direct data editing, media management, content-type management, and module management. This will enable efficient system administration and customization.

Data Migration: We will migrate all records from the older system to the new Drupal 10 system, ensuring data integrity and continuity. Training will be provided for state, tribal, and territory falconry administrators and their permitted falconers to ensure smooth transition and adoption of the new system.

Strategies for Migrating a New Site to an Existing Drupal 10 Instance

Environment Synchronization: Ensure development, staging, and production environments are synchronized with the existing FWS.gov Drupal 10 setup. This includes matching configurations, modules, and themes to maintain consistency and compatibility.

Content Types and Taxonomies: Align new content types and taxonomies with those of the existing Drupal 10 site to ensure seamless integration and data management. This will facilitate a unified content structure across the entire FWS.gov platform.

User Permissions and Roles: Standardize user permissions and roles to integrate the new site's user management system with the existing one. This ensures a cohesive access control framework and simplifies user administration.

Testing and Validation: Conduct thorough testing to validate the functionality, performance, and security of the new site within the existing Drupal 10 environment. This includes functional testing of workflows, performance testing under load conditions, and security testing to identify and mitigate potential vulnerabilities.

By focusing on these strategies and key functionalities, we will ensure a successful migration of the Falconry Ownership, Transfers, and Reporting system to FWS.gov's Drupal 10 instance, enhancing the system's capabilities and aligning it with modern digital standards.

2.2.5.6 Aerial Observer (Waterfowl)

For this application we will follow the standard migration approach as described in the section “Standard Migration Approach”.

The migration of the Aerial Observer (Waterfowl) application to FWS.gov's Drupal 10 instance involves modernizing content, enhancing the skills test application, improving site aesthetics, ensuring Section 508 compliance, and providing detailed reporting. We will transcribe existing PDF content into Drupal, maintaining attribution and linking to originals. The skills test application will be upgraded with randomized image and species capabilities, allowing users to identify waterfowl species through interactive questions. The site's design will be aligned with FWS.gov's standards, ensuring a consistent user experience, and responsive design will be implemented for accessibility across devices.

To integrate this new site seamlessly into the existing Drupal 10 environment, we will synchronize development environments, align content types and taxonomies, and standardize user permissions and roles. Comprehensive functional, performance, and security testing will be conducted to ensure the application meets all standards. Additionally, we will enhance the contact mechanism with context-aware embedding and automated response capabilities, leveraging FAQs, search results, and a keyword dictionary to provide relevant answers before submission. Advanced bot protection and modern Captcha technology will be implemented to secure the contact forms.

Our strategy leverages Bravent's extensive experience in migrating and modernizing applications for clients like GSA, DOC, and NTIA. By focusing on key functionalities and adopting effective migration strategies, we ensure a smooth transition, enhanced user experience, and robust security for the Aerial Observer application within the FWS.gov Drupal 10 ecosystem.

2.2.5.7 Captive Manatee Modernization

For this application we will follow the standard migration approach as described in the section “Standard Migration Approach”.

The objective of this task is to modernize the Captive Manatee Monitoring system by upgrading it to Drupal 10, implementing Login.gov authentication for partners, state, and tribal authorities, and ensuring compliance with MFA. The modernization will also involve improving the application’s usability and design, enabling flexible data structures that can be utilized by other species’ tracking systems while maintaining logical separation.

Key Functionalities and Requirements

1. Authentication and Security Enhancements

Login.gov Authentication: We will integrate Login.gov authentication to ensure secure access for partner organizations such as Sea World, state officials, and tribal authorities. This will involve configuring the Login.gov module within Drupal 10, setting up OAuth credentials, and ensuring secure communication between the application and Login.gov. The integration will provide a seamless and secure login experience for external users while adhering to federal security standards.

PIV/SASE Authentication for FWS Officials: For FWS officials, we will implement PIV/SASE authentication. This integration will ensure that internal users can securely access the application using their existing authentication mechanisms, maintaining consistency with other FWS systems.

2. Drupal/Acquia Application Modernization

Forklift and Modernization to Drupal 10: The existing application will be forklifted to Drupal 10, running on the Acquia platform. This migration will involve moving all application screens, forms, search capabilities, and functionalities to Drupal, ensuring that the application benefits from the latest features and security enhancements of Drupal 10.

Form Flow, Usability, and Design Improvement: We will improve the usability and design of the application forms and workflows. Utilizing modern design principles and tools like BPMN.iO and Event, Condition, Action (ECA) modules, we will streamline form flows, making them more intuitive and user-friendly. These improvements will enhance the overall user experience, making it easier for users to input and manage data.

Modernized Reports: The reporting capabilities of the application will be modernized to align with the Reusable Application Framework (RAF) species-generic and Manatee-specific models. Reports will be designed to provide clear, actionable insights, using various data visualization techniques such as charts, graphs, and tabular displays. These reports will be filterable by various criteria, including location, date, and specific data points relevant to manatee tracking.

Headless Drupal and PowerBI Integration: To facilitate advanced reporting and data analysis, we will expose the application data securely using headless Drupal. This approach will allow direct integration with DOI-Internal PowerBI, enabling real-time data pulls and sophisticated data visualizations. The integration will ensure that only authorized users can access the data, maintaining data security and integrity.

3. Database Migration and Integrated Data Model

Integrated Data Model for Multiple Species: We will propose and implement an integrated data model that can be reused by multiple species tracking applications. This model will allow for shared data structures while maintaining logical separation to ensure that each application only has access to its specific data. The data model will be designed to be extensible, allowing for the addition of unforeseen fields, lookups, and other data points in the future.

Extension of Animal Entity/Model from RAF: The data model for Captive Manatees will extend the Animal Entity/Model from the RAF. This extension will ensure consistency across different species tracking applications while allowing for species-specific customizations. The model will include all necessary fields and relationships to accurately track and monitor captive manatees.

Legacy Data Ingestion: We will develop and execute data migration scripts to ingest legacy data from the existing Captive Manatee application into the new Drupal 10 environment. This process will ensure that all historical data is preserved and accessible within the modernized application. Thorough data validation will be performed to ensure data integrity and completeness.

Implementation Experience

Bravent has extensive experience in migrating and modernizing applications for high-profile clients such as GSA, DOC, and NTIA. For GSA, we successfully migrated and managed 10 applications to Drupal 10, ensuring seamless transitions and enhanced functionalities. At DOC, we handled the migration and modernization of 17 websites, leveraging modern authentication mechanisms like Login.gov. Our work with NTIA involved upgrading multiple applications, demonstrating our capability to handle complex migrations and integrations effectively.

2.2.5.8 Contact Us Modernization

The objective of this task is to modernize FWS.gov's contact mechanism by incorporating intelligent response analysis, automated routing, and embedding contact forms on subpages without exposing direct employee email addresses. The proposed solution will enhance the user experience by providing relevant answers before submission, context-aware contact form embedding, and improved security measures against bots.

Key Functionalities and Requirements

1. Proposed Answer(s) Page Creation

Utilizing FAQs and Search Results: We will create a dynamic Proposed Answer(s) page that leverages the existing FAQs, search results, and a keyword/key-phrase dictionary. This page will suggest answers to the user before they submit their inquiry, reducing the number of direct inquiries and providing immediate assistance.

FAQs Integration: Integrate the current FAQ database to automatically pull relevant answers based on the user's query. This will involve setting up a search mechanism that matches user input with FAQ content.

Search Results: Utilize the site's search engine to provide additional relevant content from across the site, ensuring comprehensive answer suggestions.

Keyword/Key-Phrase Dictionary: Develop a keyword/key-phrase dictionary to enhance the accuracy of the proposed answers. This dictionary will be built and refined over time based on common inquiries and terminology used by visitors.

2. Enable "Contact Us" Embeds on Any Page/Section

Context-Aware Embedding: We will enable the embedding of contact forms on any page or section of the site, limiting the context to that specific section/page as selected by the page author. This context-aware embedding will ensure that proposed answers and routing are relevant to the section from which the inquiry originates.

Hidden Context Variables: Implement hidden variables that set a hashed value correlated to the referring section. This ensures that inquiries are tagged with the correct context without exposing any direct email addresses.

Routing and Suggested Answers: Use the context to route inquiries to the appropriate inbox and limit suggested answer responses to the relevant section/page. This will streamline the process for both users and FWS staff.

Seamless Footer Functionality: Ensure that these embedded forms do not interfere with the footer's "Contact FWS" functionality, maintaining a consistent user experience across the site.

3. Referring Page Context

Context Maintenance for Footer Clicks: We will enhance the "Contact FWS" functionality in the footer to maintain the context of the program, project, or refuge from which the user navigates.

Context Auto-Population: Implement a context variable/select-box that auto-populates based on the referring page. For example, a user clicking from the "Anahuac National Wildlife Refuge" page will see options like "Anahuac National Wildlife Refuge" (selected by default) and "General Fish and Wildlife Service Inquiry."

Hidden Variables for Routing: Use hidden variables to set hashed values correlated to the referring section, ensuring accurate routing of inquiries and context-specific suggested answers.

4. Modernize Bot Protection

Acquia Edge Bot Protection: We will implement Acquia Edge Bot Protection and monitoring to safeguard the contact forms from malicious bot activity. This solution will provide advanced security measures and real-time monitoring to detect and mitigate bot attacks.

Modern Captcha Technology: To further enhance security, we will implement the latest Captcha technology. This will help prevent spam and automated submissions while ensuring a smooth user experience.

Solution Implementation

Proposed Answer(s) Page Implementation: The Proposed Answer(s) page will be dynamically generated using a combination of FAQ content, search results, and keyword matching. We will develop an intelligent search algorithm that parses user queries and fetches relevant content. This page will be built to provide immediate feedback to users, reducing the need for direct inquiries.

Embedding Contact Forms: We will develop a module that allows for the embedding of contact forms on any page or section of the site. This module will include configuration options for page authors to set the context of the form, ensuring that inquiries are appropriately tagged and routed. The module will also handle the integration of hidden variables to maintain context and enhance routing accuracy.

Context Maintenance and Routing: For the footer “Contact FWS” functionality, we will enhance the existing form to include a context select-box that auto-populates based on the referring page. This will involve capturing the referring page’s context through hidden variables and using these values to customize the form options and routing logic.

Bot Protection and Captcha: Implementing Acquia Edge Bot Protection will involve configuring the service to monitor and protect contact forms from bot activity. Additionally, we will integrate a modern Captcha solution, such as Google reCAPTCHA, to prevent spam and automated submissions. This will ensure that only legitimate inquiries are submitted, maintaining the integrity of the contact mechanism.

2.2.5.9 Optional Task: CarpDAT Invasive Carp Data Monitoring and Reporting

For this application we will follow the standard migration approach as described in section “Standard Migration Approach” .

2.3 FWS Apps Modernization Roadmap

This is a high-level representation of the one-year roadmap for the modernization project plus the six-month option for CarpDAT project. The detailed roadmap is available and will be provided during the down select process.

FWS Apps Modernization Roadmap																					
Task	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25				
2.1: Audit Drupal Configuration on Acquia	Execute	Execute																			
2.2: Search Engine Evaluation		Execute																			
2.3: Reusable Application Framework (RAF)	Plan	Develop	Deploy																		
2.4 - a. Task: Development Environment set-up and Configuration	Plan	Develop/Deploy																			
2.4 - b. Task: Setup a separate Drupal/Acquia Production System for Applications	Plan	Plan	Develop	Develop	Deploy																
2.4 - c. Harvest Survey	Plan	Plan	Develop	Develop	Deploy																
2.4 - d. Resident Canadian Goose Application	Plan	Plan	Develop	Develop	Deploy																
2.4 - e. Eastern Population Sandhill Crane Monitoring/Reporting	Plan	Plan				Develop	Deploy														
2.4 - f. Falconry Ownership, Transfers, and Reporting	Plan	Plan				Develop	Deploy														
2.4 - g. Aerial Observer (Waterfowl)	Plan	Plan	Develop	Deploy																	
2.4 - h. Captive Manatee Modernization	Plan	Plan				Develop	Deploy														
2.4 - i. Contact Us Modernization	Plan					Develop	Deploy														
2.4 - j. Optional Task: CarpDAT Invasive Carp Data Monitoring and Reporting	Plan														Plan	Develop	Develop	Develop	Develop	Develop	Deploy

3 Project Management and Oversight

Team Stealth employs a Project Lifecycle methodology that encompasses best practices, ensuring consistency and repeatability. This methodology offers a standardized framework for planning, managing,



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and overseeing IT projects throughout their lifecycle. Our established processes are seamlessly integrated into our project management approach, rendering project successes more predictable with reduced risk and heightened quality.

Our high-level project management approach is underpinned by a robust quality focus. Employing an industry-standard methodology for planning, execution, monitoring, reporting, and close-out, safeguarding client's interests. This consistent and replicable method curbs budget and schedule risks through steadfast monitoring, while proactive communication and reporting preemptively address potential issues.

Work Planning: Upon award, we initiate a kickoff meeting with the COR and stakeholders, crafting a comprehensive PMP. This document defines the scope, schedule, activities, personnel, stakeholders, risks, deliverables, and expected quality. The development methodology (e.g., Agile, Iterative, Waterfall) is thoughtfully selected and customized. A granular project schedule encompasses milestones, deliverables, stage gates, and dependencies in harmony with policies, procedures, and tasks.

Execution: After planning approval, Delivery Teams execute the project scope. We identify, monitor, and mitigate risks per the Risk Management and Mitigation approach. Our seasoned experience in federal projects equips us to foresee and circumvent most potential obstacles. In the rare event of a challenge, we diligently track and resolve issues, ensuring work completion and delivery for COR assessment.

Monitoring and Reporting: Continuously, we evaluate and report project status, performance, risk, and quality in alignment with contract requirements. Weekly assessments measure progress against scope, budget, and schedule. Corrective actions are taken for deviations affecting budget, schedule, quality, or satisfaction. Routine quality reviews identify and address deviations from expected standards. Status and financial reports are generated for stakeholders.

Closeout: Post-project scope completion, a close-out meeting gathers pertinent stakeholders and the COR to assess project performance and conclude the endeavor. If an agreement is reached, project documentation is archived, and the project formally concludes.

A tailored draft PMP for FMCSA, aligned with the PWS, will be presented at the kickoff meeting. The final PMP will be ready within 10 days after the kickoff, covering project details, scope, schedule, methodology, risk, quality, stakeholders, communication, and subcontractor management.

Team Stealth's risk management methodology is founded on the premise that each project element carries inherent risks tied to timing, resources, stakeholders, and budget. Hence, our strategy revolves around preemptive risk identification, recording in a risk register, and ongoing resolution. In the project initiation and execution phases, we solicit insights from client participants and relevant stakeholders identified by client leadership. This collaborative effort entails risk assessment encompassing probability, impact analysis, and mutual agreement on risk mitigation strategies and contingency plans.

4 Resumes of Personnel and Resourcing Schedule

The table below represents an overall summary of our team's qualifications. Each proposed resource's detailed resume has also been included on the following pages. The resourcing schedule for each task is represented in the Volume 2 Pricing Tables.



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Resource Name	Title/Labor Category	RFQ Key Requirements	Key Skill/Highlights
Lalitha Janamanchi	Project Manager	N/A	10+ Years of Project and Program Management
Sirish Ayyagiri	Architect/Aquia SME	7+ Years MySQL on Acquia/Drupal	15+ Years of Active Development with 9+ Years in Drupal
Ayaskant Sahu	Architect	10+ Years of Active Development 7+ Years in Drupal/Drupal 9	16+ Years of Active Design, Architecting and Development
Pramod Adhikary	Business Analysis	N/A	12+ Years of Business Analysis as lead and member IT project
Uma Rani Muthyalu	Senior Developer	7+ Years of Active Development 5+ Years in Drupal/Drupal 9	9+ Years of Drupal and PHP experience
Maruthi Pentela	Senior Developer	7+ Years of Active Development 5+ Years in Drupal/Drupal 9	12+ Years Web development experience on federal government Web Sites alone
Jyothisna Mulinti	Senior Developer	7+ Years of Active Development 5+ Years in Drupal/Drupal 9	10+ Years of strong Drupal Module and Theme Development experience
Kalid Adem	Developer	3+ Years Active in Drupal	7+ Years of Active Development
Sureshkumar Ramakrishnan	Quality Assurance	N/A	15+ Years of Active QA Experience



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Lalitha Janamanchi: Project Manager

Background and Experience Summary:

Strategic senior operations leader and consultant with proven track record building and sustaining profitable business relationships. Prospects and conducts need analysis with executive leaders and senior decision makers, providing value-added business solutions to resolve organizational deficiencies. Diligent project manager offering a proven record of success leading all phases of diverse technology projects. Business strategist able to plan and manage multimillion-dollar projects aligning business goals with technology solutions to drive process improvements, competitive advantage, and bottom-line gains. Excellent communicator: leverages technical, business, and financial acumen to communicate effectively with clients and stakeholders.

Expert in agile project management methodology. Known for ability to produce high-quality deliverables that meet or exceed timeline and budgetary targets. Applies effective people skills as key company liaison to internal and external clients. Studies business and client needs and partners with internal stakeholders while resolving issues.

Professional Experience

REI Systems, Sterling, VA, Program Manager

05/22 - Present

- Program/Delivery Manager responsible for client delivery, people management, growth, and operations for Health Resources and Services Administration (HRSA). Assisting clients achieve their objectives and produce mission impactful results by bringing a deep understanding of HRSA's mission.
- Manage seven agile teams that complete 60+ projects and generating \$20M revenue. Establish project estimates and forecasts and exceed performance forecasts regularly.
- Ensured on-time delivery of 100% of program projects while meeting all contractual and deliverable commitments.
- Lead research efforts to make recommendations on products, tools, services, protocols, and standards in support of procurement and development effort.
- Manage deployment release train expectations by monitoring progress against the plan, and escalating any issues that impacts schedule.
- Manage \$15M+ annual budget adhering to Federal compliance utilizing CPIC and EVM reporting.

Patriot LLC, Columbia, MD, SR. DIRECTOR

11/2018 – 05/2022

Managed a Bureau-wide contract valued at \$27M with projects and 40+ FTEs that serves multiple programs at Department of Commerce. The scope of work covers a broad range of IT and advisory services that include system development; application development; maintenance; AI/ML; program management; data analytics; outreach; and advisory services.

eKuber Ventures Inc., Vienna, VA, DIRECTOR

05/2015 – 11/2018

Salesforce Project Manager at Department of Commerce, MBDA Project.

Project/Account Manager for MWAA and Performance.gov at GSA

Project Manager for GSA OCIO UPCS project managing enterprise-wide communications, new software/applications adoption and training.

Compubahn Inc., Bethesda, MD, DIRECTOR,

2014 – 2015

Education: Bachelor of Science

Certifications: PMP, PMI-ACP, CSM, ITIL



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Sirish C Ayyagari: Architect/Aquia SME

Background and Experience Summary:

Hands-on Information Technology Lead, known for innovative approach to solving problems. Team leader experienced in building and motivating professional, capable, and responsive organizations. Worked on full implementation end to end involving from **architecture** to full hands-on development. Integrated **SOLR** for search in Drupal customizing it using SEARCH API and other related plugins. Implemented custom Single Sign on (**SSO**) using **SAML** Authentication with Windows Active directory.

Work Experience:

Sector One Consulting, Architect/Sr Developer – Chantilly, VA **04/2021 – Present.**

Current/Recent Client: Sodexo – Project Ended 12/31/2023

Build/Architect Drupal 9/10 version of web applications from scratch including documentation and full infrastructure.

Create and maintain product roadmaps outlining feature releases, enhancements, and timelines. Prioritize features based on customer needs, business objectives, and resource constraints.

Deployed various applications on a wide variety of hosting platforms including **AWS, Acquia, Pantheon and Azure**.

Judge Group, Drupal SME/Architect – Manassas, VA **11/2018 – 04/07/2022**

Worked on APIGEE and ACQUIA Stacks with provisioning on ACQUIA Cloud

Written custom modules to integrate APIGEE and SWAGGER HUB functionality.

American bankruptcy institute, Lead Open-source Architect/Developer, 10/2013 - 11/2018

Involved in architecture, design and development of various Open-source technologies including LAMP Stack, **Drupal 6/7/8**, WordPress, **Python** and various other custom build applications. Core and custom functionality in Modules. Migrated multiple websites built on different versions of Drupal into Drupal 7 stack, integrating into a proprietary CRM software (IMIS).

Llc, Senior Drupal Architect, Mclean VA **11/2012 – 09/2013**

Zolontech Inc, Technical Open-Source Lead, Herndon Va **03/2010 – 11/2012**

Client: US Department of Transport

Worked in Research and Innovative Technology Administration (RITA) as Lead LAMP + Drupal Architect. Developed Drupal 7 modules to migrate large number of legacy applications into Drupal 7.

Client: REI Systems

Worked with **OMB (Office of Management & Budget)** and **SBA (Small Business Administration)** in Drupal migration efforts. Designed and developed various LAMP Stack applications for Veteran Affairs in Single sign-on authentication with DOD using SAML.

www.paymentaccuracy.gov , www.fedspace.gov, www.sbir.gov, m.ebenefits.va.gov.

Orpine Inc, Alpharetta, GA, Technical Lead, Period of Performance: Feb 2006 – Mar 2010

VishnuTechSoft, Bangalore, India, Software Engineer, Period of Performance: Sept 2000 - Oct 2002

Education: 2001 – Bachelors, Andhra University, 2005 – MS IT, UK College of Business & Computing

AyasKant Sahu: Architect

Background and Experience Summary:

Mr. Sahu possesses 16 years of experience in design and development of large-scale web-based application development for clients in the Financial, Publishing & Entertainment industries, and the Federal Government. Mr. Sahu has worked on all stages of a software development life cycle. He is a FULL STACK software developer. His primary area of work is on scripting languages such as PHP, Drupal, AngularJS, NodeJS, PERL, PYTHON, Ruby on Rails, Shell Script. He is proficient in Nginx, Apache, MongoDB, Mysql, PostGreSQL, Drupal, Apache SOLR, Ajax, CSS, and Linux. His core strengths are in the application of open-source tools and technologies. Proven ability to jump into new projects and learn new technologies quickly. In his recent role, he has worked as an Architect/Lead Developer on many large-scale federal government projects built with Drupal/Open-Source Stack such as www.performance.gov, www.acquisition.gov, goals.performance.gov, permits.performance.gov , GovDashboard Product Development, ITDASHBOARD.gov, DATA.gov, RECOVERY.gov, USASPENDING.gov, FEDSPACE

PRINCIPAL ENGINEER/TEAM LEADER, CLIENT : OFFICE OF MANAGEMENT AND BUDGET, GSA

REI SYSTEMS, 02/2008 – ONGOING

As the Principal Engineer and Technical Lead , Ayaskant has successfully lead planning, design, development of many large OMB and GSA web applications/websites mentioned below. His expertise is with developing site modules and components including complex data visualization, search, report generation, theming, creating Drupal modules, creating APIs, and configuring complex workflow mechanisms.

Software Architect, Bank of America, QCom, Bank of America, 03/2007- 02/2008

As the software architect Mr.Sahu lead a team of 15 people in US and India to design a social networking portal, consisting of tools like Wikis, Blogs, Forums, Google Earth, Google Maps and Google Search Appliance. The eventual plan was to store all of the information for the bank in this portal. Mr. Sahu was involved in the planning, designing application and database, development of key components of the application in PHP, Ruby on Rails and Shell Script.

Senior Software Developer, Agilent Technologies , Coverage Matrix/Quality Metrics, Agilent Technologies, 02/2005- 02/2007

As a Senior Developer Mr. Sahu was involved developing two tools called Coverage Matrix(to track product development and testing efforts) and Quality Metrics(A Defect Tracking and Management Tool) for the EESOF division of Agilent. At this time Mr.Sahu was working with a team of 30 people across the globe. Mr.Sahu was involved in planning, designing, presenting new ideas to product development teams and developing prototypes for these ideas.

Senior Software Developer, PubSub Inc, 09/2004- 02/2005

As a Senior Software Developer Mr.Sahu was involved developing new features and tools for PubSub search engine. PubSub was a startup and used to be the Google of blogs, newsgroup and rss feed searches.

Education

Masters in computer application, Berhampur University, Berhampur, Orissa, India, 1996-1999

Bachelor of Commerce, Statistics, Berhampur University, Berhampur, Orissa, India, 1993-1996

Certifications: PHP Brainbench Certified (2001), Security Clearance: GSA Security Clearance, 2009

Other Experience:

Senior Software Developer, PubSub , PubSub Inc, September 2004- February 2005

Software Developer, Quillis Inc. May 2001- September 2004

Co-Founder and CTO, Zixer Technologies, May 2001-December 2003

Pramod Adhikary: Business Analysis
Background and Experience Summary:

With over **12 plus years of professional experience**, I have demonstrated proficiency across multiple roles, including **Business Analyst, Financial Analyst, Scrum Master, Quality Analyst, and Project Manager**. I have a track record of delivering projects within tight deadlines across diverse industries, including Finance and Healthcare. My deep domain knowledge in these sectors has enabled me to consistently achieve successful outcomes, whether working onsite or offshore. I am a dynamic finance professional with extensive experience in spearheading financial analysis, forecasting, and strategic decision-making processes within the banking, healthcare and other industries.

Experience
First Premier Bank, Sioux Falls, SD
Jul. 2023 – Cont.
Sr. Financial Business Analyst

- Played a pivotal role in enhancing First Premier Bank's mortgage offerings, particularly the "Home, Sweet Home" plan, through innovative functionalities.
- Collaborated with underwriting and risk management teams to ensure compliance with regulatory requirements and industry best practices for the "Home, Sweet Home" mortgage plan.
- Managed project activities according to the SDLC, from initiation to current stage, including requirement gathering, analysis, and coordination with development, testing, and management teams.
- Oversaw essential financial activities such as revenue tracking, expense management, and profitability analysis to ensure Premier Bank's financial health and stability.

CITI Bank, Irving TX , Sr. Business Analyst
Aug. 2018 – May 2023

- Proficiency in project management, financial analysis, and stakeholder collaboration, leading cross-functional teams for concurrent regulatory and development projects.
- Developed and executed project plans, identifying project objectives, scope, deliverables, and resource requirements.
- Conducted comprehensive requirement gathering sessions, analyzed business needs, and translated them into actionable project requirements.

Transamerica Financial Advisors, Plano, TX , Lead Business Analyst
Nov. 2017 – Jul. 2018

- Established efficient operational frameworks and processes to ensure consistency, quality, compliance, and conducted comprehensive risk analysis for business strategies and transactions, enhancing workflow processes.
- Coordinated financial planning, month-end activities, and ad hoc cost analysis, leveraging variance analysis.

ClubCorp, Dallas, TX, Sr. Business Analyst / Scrum Master
May 2014 – Nov. 2017
Kaiser Permanente (KP), Denver, CO, Sr. Business Analyst
May 2013 – May 2
Blue Cross Blue Shield of TX, Abilene, TX, Sr. Business Analyst
Apr. 2011 – Apr 2013
Education: MBA (Finance) - June 2008 , USA | MBA (HRD)- Sept. 1997 – Nepal | B. Com - Apr. 1994,Nepal
Certification: SAFe 4.5, SAFe 5.0, PMP, Diploma in Quality Analysis

Uma Rani Muthyala: Senior Developer

Background and Experience Summary:

Worked on PHP/Drupal CMS Projects for over 9+ Years.

- Developed and maintained multiple **Drupal 7, 8, and 9 projects**, creating custom modules, themes, and integrations.
- Built reusable and user-friendly UI components using PHP, JavaScript, jQuery, Bootstrap, and Ajax. Participated in the full Software Development Life Cycle (SDLC), from design to deployment, using Agile Scrum Methodology.
- Worked extensively with Linux, Apache, MySQL, PHP, Docker, Azure DevOps, WAMP, and IIS environments.

Work Experience:

Miracle Systems LLC

10 /2014 – Present

Title: Drupal Developer, **Project:** (Guard-eFOTM, FMCSA, Dept. of Transportation)

- Utilized Azure DevOps dashboards, Azure Git version control, and project management to streamline Drupal development and collaboration. Developed and troubleshooted Drupal functionality, optimizing performance and resolving issues.
- Translated business requirements into technical specifications, ensuring effective communication between stakeholders. Conducted code reviews, provided constructive feedback, and ensured adherence to Drupal coding standards and best practices.
- Collaborated with the DevOps team to design and implement server optimization techniques, including caching (Varnish, Redis), enhancing Drupal site performance. Updated web user interfaces to meet requirements, ensuring a seamless user experience in Drupal.

Title: Application Engineer/Assistant IT Manager, Title: Drupal Developer

- Designed and developed multiple Drupal websites using Core PHP, XHTML, HTML5, Angular JS, JavaScript, jQuery, CSS3, Ajax, Bootstrap, and APIs. Developed backend functionality with PHP and MySQL, including light database design.
- Analyzed, designed, developed, and implemented web applications using PHP, Zend Framework, Oracle, and MySQL. Specialized in using PHP as an intermediary between MySQL databases and world-facing Drupal applications.
- Proficient in using GitLab and CI/CD pipelines for version control and automation.

Education:

Advanced Diploma in Information Technology , **Apr 2008 – Oct 2009**

Department of Computer Engineering, London School of Business and Computing London, UK

Bachelor of Technology in Computer Science Eng, **Sept 2002 – May 2006**

Jawaharlal Nehru Technology University (JNTU), Hyderabad, Telangana, India.

Certifications: AWS Certified Cloud Practitioner

Maruthi Pentela: Senior Developer

Background and Experience Summary:

More than 18 years progressive experience in design and development of multi-domain web applications. I have extensive experience in developing customized Web content with content management systems. Also has expertise in designing and developing cross-browser responsive web pages and in working with Web Content Accessibility (WCAG), such as SEC 508.

Project Experience

Sr Drupal Themer and front-end developer, Since Jan 2022

Working on Drupal migrations from Drupal7/8 to Drupal 9. Implementing the USWDS (with pattern lab/storybook) design standards for [eda.gov](#) web site. Theming the twig templates and layouts. Working on 508 audits and fixes.

Sr. Web Front-end Developer, Drupal Developer, Oct 2016 – Dec 2021

My experience contributed to [samhsa.gov](#), [samhsa data](#), [hhs.gov/opa](#), [datafiles.samhsa.gov](#), [acl.gov\(data\)](#), [demographics.militaryonesource.mil](#), [fatherhood.gov](#), [childwelfare.gov](#), [communitiestransforming.org](#), [od2a-tac.org](#), [healthymarriageandfamilies.org](#) and [avanir.com](#). Installed and configured Drupal themes & modules, customizing based on design specifications. Actively worked on Drupal 8 and 9 theme migrations. Implemented USWDS theme in multiple Drupal projects. Configured USWDS templates, grid, components, and utilities in the custom USWDS sub themes.

Sr. Web UI Developer, (DEAP), Veteran Affairs (VA), July – September 2016.

Have developed the technical volume for the DEAP project. I wrote UI/UX best practices to be adopted for the DEAP presentation layer also evaluated 508 rules based on wireframes. Lead Web UI and Drupal developer, 508 Expert, Multiple Federal Clients, 2009 – 2016.

My work experience was actively on [sbir.gov](#) [sbir.gov](#), [usaspending.gov](#), [itdashboard.gov](#), [paymentaccuracy.gov](#), [fedspace.gov](#), [lobbying.gov](#), [performance.gov](#), [green.sba.gov](#), [howto.gov](#), [data.gov](#), [ahrq.gov](#), [business.usa.gov](#), [geoplatform.gov](#), [drupal.reisys.com](#), [govdashboards](#), SBIR/STTR, [sbir.gsfc.nasa.gov](#), [appliedsciences.nasa.gov](#) and [sba.gov](#)

I am part of design and development of websites for numerous federal clients, including the Office of Management and Budget (OMB), General Services Administration (GSA), Small Business Administration (SBA), and the National Aeronautics and Space Administration (NASA). Specifically, developed Drupal content types and created Drupal themes. Developed bootstrap and Omega based custom themes.

Sr. Web Front-end developer, Marriott.com, April – October 2009.

I have created HTML/JSP/JSTL semantic layouts. Converted PSD's to JSP standard templates and transformed wire frame designs to web driven pages. I developed CSS/XSL styles on presentation layer pages for cross-browsers and versions.

Highlights of Qualifications

- 12 years' Web development experience on federal government Web Sites alone
- 18 years' experience in cross browser and responsive Web development
- 12 years' experience in developing 508 complain content Web development

Education

- MS, Computer Science, Bharathidasan University – 1996
- BS, Computer Science, Nagarjuna University – 1994

Certifications/Training

- Drupal Theme development
- WCAG 508 development

Technical Skills

- CMS (Drupal, Documentum, OpenText, WordPress)
- HTML (all versions), CSS (all versions)
- JavaScript (UI), jQuery, Adobe Suites
- 508 (Web Accessibility)
- JS Frame Works (JQ, Angular etc.,), CSS Frameworks (Bootstrap, semantic and CSS grids)

Jyothsna Mulinti: Senior Developer

Background and Experience Summary:

ACQUIA CERTIFIED DRUPAL DEVELOPER

I am Acquia Certified Drupal 9 Developer having around 10 years of strong Module and Theme Development experience. I also have strong experience in web technologies including Drupal, PHP, MySQL, Apache, Linux, and JavaScript libraries jQuery, React and design technologies CSS3, Bootstrap and USWDS. I have migration experience from Drupal 7/8 to 9 which enhanced usability for the over 200 internal system users and 5.4 M monthly public site users. I also have extensive experience in cloud technologies AWS and Azure and other tools Docker, Jenkins and Kubernetes. I have worked with clients at Department of Labor and Department of Transportation.

Project Experience

BRAVENT SYSTEMS – Drupal Developer 01/22–

PRESENT

Department of Commerce

- Developed migration scripts to import data from csv.
- Created custom entity type in Drupal to store and retrieve custom data.
- Supported Drupal 7 to 9 migration.
- Implemented the USWDS (with Pattern lab) design standards for eda.gov.
- Upgraded Drupal versions whenever needed with Composer and verified based on change log from drupal.org.

Department of Commerce – data.commerce.gov 04/22 – 05/22

- Created custom modules to generate helper services and methods for general purpose on data.commerce.gov.
- Developed theme overrides and worked with JSON data to render in twig template.
- Created a subtheme from USWDS and overridden base theme.

BOOZ ALLEN HAMILTON, INC. - Staff Engineer 01/20–01/22

Department of Labor – OPA,

- Lead a team to work on a project, which provides users to submit any labor issues they are facing from multiple countries.
- Migrated websites from Drupal version 8 to Drupal version 9. Trained and supported junior developer as needed.
- Created custom cron jobs which uploads data to a excel file which can be downloaded with a link.
- Deployed applications successfully to different environments (Jenkins, Kubernetes, AWS and Azure)
- Created a module to clear cache by entity in Drupal.

Department of Transportation

05/2021 – 07/2021

- Created custom content types and views to provide search and filter functionality for users.
- Migrated site from Drupal 8 to 9. Helped with sprint planning, testing and deployment.

American Bankruptcy Institute

01/2015– 01/2019

- Worked with PHP- Drupal (LAMP), XHTML, jQuery, CSS and JavaScript. Used Drupal logs for the error Resolutions.
- Developed custom modules by integrating Web Services REST and SOAP.

Certifications

- Acquia Certified Developer – Drupal 9 (2021)
- Acquia Certified Developer - Drupal 8 (2020)
- ICAgile Certified Professional (2020)

Education

- Masters in Information Technology, USA – 2016
- Bachelors in Information Technology, India - 2011

SKILLS

Programming Languages: PHP, Java Script, MySQL

CMS: Drupal (7/8/9)

Repositories: GitHub, GitLab, BitBucket

Cloud: AWS, Azure

CI/CD Tools: Jenkins, Docker, Kubernetes

Operating Systems: UNIX, Linux, Windows



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Kalid Adem: Developer

Background and Experience Summary:

Bravent/Patriot LLC | Department of Commerce,

Sept 2021- March 2023

Developed a chatbot for our client's website, using Microsoft Bot Framework, easing access for users to information such as financing contracts or FAQ's

Leveraged Azure to host, monitor and deploy chatbot application. Use Azure Devops Server to create a CI/CD pipeline for automating build and deployment

Optimized various components of our chatbot's AI search, which noticeably decreased the lag and latency of our responses

Implemented telemetry in Azure Monitor to enhance user experience and increase client insight of chatbot usage

Bravent/REI Systems | General Services Administration,

Nov 2019 - Jul 2024

Collaborated with a small team to migrate a large legacy codebase from Drupal 7 to Drupal 9

Utilized Drupal modules to develop and maintain API solutions for our client's websites following latest Drupal standards

Spearheaded a custom filter-based search functionality for our client's website using Elasticsearch

Built search engine using Elasticsearch API to sort, filter and paginate search results

Enhanced user experience by establishing a JavaScript based-solution using jQuery for the presentation of search results

Bravent/Kingfisher Systems Inc. | General Services Administration, Dec 2017 - Nov 2019

Worked in a scrum team as a software engineer in support of highly visible and publicly accessible federal websites

Coordinated closely with security team to proactively identify and mitigate possible security risks such as outdated libraries, expired certificates, SQL injections & Cross-Site Scripting attacks

Developed custom monitoring tools and dashboards that display metrics such as security preparedness, compliance, and mobile responsiveness of publicly accessible websites belonging to federal agencies

Created php modules to address client needs such as accessing, updating and tracking changes of federal documents

Identified cases for automation and implemented automated functional UI testing of our websites via selenium, which assisted QA members with testing efforts

Education:

Virginia Polytechnic Institute and State University | Blacksburg, VA

B.S. in Business Information Technology, Minor in Computer Science

Skills:

- Python , PHP, Java, Selenium, JavaScript
- jQuery ,React, Angular, SQL
- HTML 5, CSS
- Azure, Elasticsearch
- Docker ,Drupal 9
- Unix, Linux
- Jira, Git, GitHub, GitLab,MVC (Model View Controller), JSON



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Sureshkumar Ramakrishnan: Quality Assurance

Background and Experience Summary:

Having around 15+ years of experience in Software Quality Assurance and Software Testing in various industries, projects, and environments. Experience with automated testing in various business domains including Federal, Financial, Mortgage, IT Services and Solutions industries.

Highly skilled, motivated Software Engineer with 15+ years of experience in **Quality Assurance** field with **manual** and **automation** experience.

Firm knowledge of different phases of Software Testing and Software Development Life Cycle (**SDLC**) including **Agile (Kanban & Scrum) and Waterfall** Methodologies.

Experience in writing **Test Plans**, defining **Test Cases**, developing, and maintaining Test scripts, analyzing the results of scripts, interaction with developers in fixing the errors.

Involved in development of Test Process, prepared test scripts, running tests, and reported the status of the tests.

Maintaining and executing **smoke/functional/regression scripts** for the web-based application using **Selenium-IDE, Java, and JUnit**.

Education: **Bachelor of Engineering (Computer Science & Engineering)**.

Professional Experience

TSPi, Technology Solutions Provider Inc., Virginia

Feb '18 – Present

Responsibilities:

Working as a **Sr.QA Analyst** for **Small Business Administration (SBA)**, I'm responsible for Analysis, Design, Execution, and Maintenance of Functional, Integration, Regression and UAT Tests in an Agile Environment.

Participated in **Planning meetings, Cycle reviews, Cycle Retrospective** and Daily standup meetings as a part of an **Agile Team**.

Validate the **MS Azure Biztalk** Integration data mapping with external systems such as Experian, IRS, and FEMA.

Used Postman for Rest service testing.

Triage all the Prod Bugs with end users. Reproduce, retest after the fix, and coordinate with **Release Manager/Scrum Master** to deploy it in a timely manner.

CSS & Fannie Mae, Virginia

Jul '16 – Feb '18

Responsibilities:

As a **Sr. QA**, handled complete **E2E SIT and UAT** testing for the 2 big new initiatives developed in **Salesforce Cloud** platform with **BI (Data warehouse & Report)** environment.

Involved in Planning, Designing, Developing and Executing Test Scenarios for **Manual and Automated** Test cases.

Used **ALM** to organize and manage all phases of the software testing process, including planning tests, executing tests.

Performed **Regression testing** for new builds and every modification in the application using **Selenium WebDriver**.

Involved in executing all **Selenium test scripts on the different browsers** and checked for compatibility.
Experience Others:

Morgan Stanley, New York, NY, Sr. QA Analyst, 2/2011– 6/2016

BNY Mellon, New York, NY , QA Analyst , 2/2009– 1/2011

5 Factor 2 – Past Performance

Below are three Team Stealth Drupal based past performances that we feel are most applicable to the FWS.gov Apps Modernization project.

5.1.1 General Services Administration

Project Title: GSA Enterprise Content Application Service (ECAS) Environment Application and Website Portfolio. Contract Number – Task Order Number: GS35F0623N - 47HAA019F0333	
1. Contractor Name: Bravent LLC	Role on Project: Sub
2. Contractor Address: 25363 Justice Dr, Chantilly, VA, 20152	3. Contract Type: Firm Fixed Price
4. Procuring Agency/Company Name: GSA	5. Agency/Company POC: Kevin M. White, Directory of Contracts, REI Systems (Prime Contractor) Address: 45335 Vintage Park Plaza, Sterling, VA 20166 Phone :571-926-4781 kwhite@reisystems.com
6. Period of Performance: 09/30/2019-09/30/2024	7. Dollar Amount of Award: 18.5 million

8. Description of Scope:

This initiative involves the provision of products, services, and maintenance for GSA IT Management within a cloud-based DevOps and Agile application development and operations environment Platform as a Service (PaaS). The scope extends to the development, modernization, and enhancement (DME), as well as the operations and maintenance (O&M) for a portfolio of government websites and applications.

The GSA Office of Government-wide Policy (OGP) oversees this portfolio, supporting communication and coordination for agencies, departments, and occasionally industry partners across the Federal Government. These applications play a crucial role in aiding civil servants in various tasks such as streamlining acquisitions, advancing performance management practices, and ensuring universal accessibility. Notably, GSA's unique relationship with agencies, the White House, and OMB means that each application serves multiple stakeholders.

In addition to supporting government operations, GSA's mission includes demonstrating technology leadership by adhering to industry best practices. The following are examples of websites developed and maintained under this effort:

1. GSA.gov	2. USA.gov
3. Performance.gov	4. ITDashboard.gov

5. Acquisition.gov	6. Digitaldashboard.gov
7. Section508.gov	8. IDManagement.gov
9. Buyaccessible.gov (the Buy Accessible Wizard)	10. PIC.gov
11. SFTOOL.gov	12. FMI.gov

9. Relevancy of Work:

Our extensive engagement with GSA uniquely positions us to address the FWS Apps Modernization project requirements in modernizing some apps while transitioning other apps from legacy technology to the modern Acquia Cloud platform and Drupal. Drawing from our successful track record with GSA, we specialize in developing and executing comprehensive strategies that harness the power of cloud environments, delivering operational efficiencies and ensuring a robust return on investment (ROI).

In our collaboration with GSA, we provided a broad range of services for numerous government websites and applications, strategically focusing on development, modernization, enhancement, and ongoing maintenance. A key component of our approach involved the establishment of a cloud-based DevOps and Agile application development and operations environment, aligning seamlessly with industry standards and leveraging cutting-edge technological advancements.

Our expertise is demonstrated in the successful migration of multiple legacy systems, including proprietary CMS, to the latest Drupal versions, showcased in projects such as GSA.gov, USA.gov, and Acquisition.gov. The emphasis on a seamless transition with minimal downtime, preserving critical functionalities, and enhancing performance and security underscores our commitment to excellence. A critical aspect of our migration strategy was the deliberate move from on-premises setups to cloud-based platforms, leveraging leading solutions from Acquia and AWS. This transformation not only streamlined operations but also provided scalability and enhanced reliability, addressing the unique challenges posed by high-traffic government websites.

Central to our approach was the consolidation of various applications into a unified Drupal platform, yielding remarkable operational efficiencies. Our solutions effectively reduced redundancy, streamlined content management processes, and fostered more efficient collaboration across diverse departments and agencies. These modernization initiatives translated into tangible cost savings and an impressive ROI for GSA.

Aligned with GSA's mission of demonstrating technology leadership, our projects incorporated best industry practices. We meticulously ensured compliance with federal standards, including stringent security protocols and accessibility guidelines, solidifying GSA's role as a technological leader.

Our experience with the GSA ECAS project, which encompasses maintaining 25 external and internal Drupal sites, mirrors the scope of the FWS App Modernization project. The successful migration of Drupal 7 sites to Drupal 9/10, coupled with the development of a modern CI/CD platform, serves as a testament to our ability to deliver comprehensive solutions. Noteworthy websites like GSA.gov and Acquisition.gov have undergone seamless migrations. This process involved migrating millions of pages, images, and documents to Drupal 9/10 sites, all operating seamlessly from a single code base with multiple servers and a robust CDN infrastructure. This demonstrates our commitment to creating and executing strategic plans that leverage cloud-based technologies to optimize digital services effectively.

5.1.2 Department of Commerce

Project Title – Department of Commerce, Office of the Secretary, Office of Chief Information Officer – IT Operations and Maintenance. Contract Number – Task Order Number: HHSN316201200065W	
1. Contractor Name: Bravent LLC	Role on Project: Sub
2. Contractor Address: 25363 Justice Dr, Chantilly, VA, 20152	3 Contract Type: T&M
4. Procuring Agency/Company Name: Department of Commerce	5. Agency/Company POC: Munish Pathak, CTO, Patriot LLC 9520 Berger Road Suite #212 Columbia, MD 21046 Phone: 571-263-3777
6. Period of Performance: 06/07/2016- 03/30/2023	7. Dollar Amount of Award: \$8,272,215.61
8. Description of Scope: The Department of Commerce (DOC) Office of the Chief Information Officer (OCIO), specifically the Office of Enterprise Services and Solutions (OESS), is entrusted with delivering comprehensive IT solutions to the DOC. This project focuses on the seamless delivery and support of enterprise solutions, covering the entire spectrum from managing solution delivery projects, eliciting and analyzing requirements, to architecting, designing, developing, acquiring, configuring, integrating, testing, deploying, operating, maintaining solutions, and providing adept customer support.	
<u>Department Overview:</u> With a multitude of responsibilities spanning trade, economic development, technology, entrepreneurship, business development, environmental stewardship, statistical research and analysis, the DOC plays a vital role in advancing the nation's interests. The Office of the Secretary (OS), specifically the OCIO, spearheads information technology leadership to propel the DOC's mission.	
<u>Our Support to DOC OCIO:</u> We extended robust support to DOC OCIO, encompassing a diverse range of enterprise services provided through the Office of Enterprise Solutions and Services. This includes leveraging a portfolio of industry-leading technologies, methodologies, and practices that align with the strategic goal of adopting a cloud-based rapid application/Agile development platform to modernize existing systems. Our role involved meticulous planning, configuration, and implementation of commercial-off-the-shelf (COTS) software solutions, coupled with the agile migration of custom-coded applications and data to on-premises and cloud environments (SaaS, PaaS, and IaaS) and COTS applications.	
<u>Project Objectives:</u>	

- Ensure the continued operation and support of existing OESS-provided solutions.
- Enhance solutions to meet new requirements and improve sustainability and maintainability.
- Deliver new solutions to address emerging requirements.

Project Scope:

- Lifecycle Support of Websites
- Drupal and PHP Website Development
- Operation and Maintenance – System Administration and DevSecOps
- Salesforce Integration Services
- Project Management
- Assessment and Authorization (A&A) Support
- SharePoint Support

Team Stealth has supported following websites for DOC:

1. <https://www.commerce.gov> – The main website of Department of Commerce built with Drupal 9.
2. <https://www.Mbda.gov> – Minority Business Development Agency's website.
3. <https://ocio.commerce.gov> - Office of the Chief Information Officer, Dept of Commerce website
4. <https://ogc.commerce.gov> - Office of the General Counsel, Dept of Commerce website
5. <https://socmed.commerce.gov> – Social Media Tracker
6. <https://acetool.commerce.gov> - Assess Costs Everywhere (ACE) provides manufacturers with the top reasons for investing and sourcing in the United States. With its analytic framework, links to public and private resources, and case studies, ACE is now available to help businesses assess total costs more accurately and enable informed decision-making.
7. <https://citrb.commerce.gov> – Department of Commerce IT Review Board
8. <https://connection.commerce.gov> – Intranet site
9. <https://enterpriseservices.commerce.gov> – Enterprise Services , Dept of Commerce website
10. <https://medweek.mbda.gov>
11. <https://pass.commerce.gov> - Intranet site which provides a single sign mechanism for all Department of Commerce websites
12. <https://staff.commerce.gov> – Staff Directory website
13. EDA.gov –Primary website for US Economic Development Administration

Past Performance Highlights:

- Achieved 100% staffing at contract start with both technical and administrative qualifications meeting contract requirements.
- Demonstrated exceptional responsiveness, managing all contract activities, coordinating programmatic matters, and providing leadership support.
- Recruited and retained incumbent staff, ensuring a smooth transition, with effective recruiting efforts when required.
- Provided comprehensive services, including IT Operations and Maintenance, full life cycle systems development, modernization, and migration of legacy systems.
- Met all schedules for deliverables, meetings, and service schedules without delays.
- Established a disciplined PMI Project Life-Cycle process, consistently meeting or exceeding on-time project delivery.
- Promptly identified and addressed post-production issues in a satisfactory and timely manner.

- Demonstrated exceptional delegation of authority and responsiveness.
- Consistently exceeded service level agreements through excellent customer service.
- Executed work with thoughtful planning and professional execution.

Agile Approach and Methodologies:

- Operated and iterated the environment with 2- and 4-week sprints, delivering both functionality and O&M bugs and fixes.
- Implemented Lean Governance for Agile (Scrum) and a Common Governance Model for IT Delivery.
- Ensured qualities were built into program management tools and processes through ITIL, automation, and Agile frameworks.

9. Relevancy of Work:

Teams Stealth's strategic collaboration with the Department of Commerce positions us as a leading provider of comprehensive IT solutions, distinguished by our focus on creating strategic plans to leverage cloud computing resources for optimizing digital services. Our expertise spans the entire life cycle of system development, modernization and maintenance, uniquely qualifying us to offer the USFWS innovative and impactful services.

In response to FWS needs and requirements, our work with the DOC included the meticulous planning and execution of a strategic cloud migration roadmap. This involved the full life cycle support of websites using Drupal and PHP, aligning seamlessly with FWS' vision for modern, secure, and compliant platform by Acquia. Our approach ensures the continuity of operations while incorporating new features and security measures, illustrating our commitment to strategic cloud adoption.

In the domain of operation and maintenance services, we implemented robust DevSecOps practices during our engagement with the DOC, strategically aligning these efforts with DOC's operational requirements for high-security systems. Our strategic approach involves leveraging cloud-based solutions to enhance security measures, optimize deployment, and ensure efficient ongoing operations.

Our successful transition of DOC's custom-coded applications and data to cloud environments, embracing Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), and Infrastructure-as-a-Service (IaaS) solutions, highlights our strategic focus on migrating and managing systems securely in the cloud. Our expertise with platforms like AWS and the Acquia Cloud showcases our readiness to deploy similar strategic cloud solutions to benefit FWS.

Our Agile approach, executed in Agile sprints, is strategically designed to ensure full transparency, and promote collaboration. This strategic methodology guarantees that FWS apps are continuously improved with the latest regulatory and technology standards in mind, aligning with our commitment to strategic adaptability and responsiveness to evolving requirements.

The implementation of Lean Governance and adherence to ITIL best practices during the DOC project ensures that FWS will benefit from our streamlined processes that are not only efficient but also aligned with regulatory standards. Our approach involves continuous improvement through governance practices.

Our disciplined PMI Project Lifecycle process, highly effective in the DOC project, supports guarantees for on-time delivery of projects and services. Our project management approach ensures the Acquia cloud-based solution is delivered within stipulated timelines.

Our unwavering commitment to excellent customer service, and providing comprehensive support and training is aimed at ensuring FWS apps are not only technically sound but also strategically aligned with user-friendly and widely adopted practices.

The culmination of our engagement with the DOC has honed our skills and proven our capabilities in areas crucial to the FWS mission. Our migration to modern, cloud-based solutions, integration of enterprise services, and operational support serve as tangible evidence of our readiness to deliver similar results for the FWS.

5.1.3 National Telecommunications and Information Administration (NTIA)

Project Title – Web Development Support Services for NTIA. Contract Number – Task Order Number: 47QTCB21D0018 / NTIA0000-22-00231	
1. Contractor Name: Stealth Solutions, Inc	Role on Project: Prime
2. Contractor Address:	3. Contract Type: T&M
4. Procuring Agency/Company Name: Department of Commerce - Enterprise Services, 1401 Constitution Ave, NW, HCHB Suite 200 Washington, DC, 20230, US	5. Agency/Company POC: Soma Chary (COR) schary@ntia.gov 202-482-5965.
6. Period of Performance: 09/01/2022 – 08/31/2027	7. Dollar Amount of Award: \$3,420,896.55

8. Description of Scope:

The scope encompasses the development, maintenance, and administration of both web-based and desktop applications, as well as the provision of web services for NTIA customers. These applications include Employee Manager, Enterprise Business Applications, NTIA Document Tracking System, and various NTIA public websites. The websites supported by Team Stealth are as follows:

1. NTIA's primary public website (www.ntia.gov)
2. Broadband USA – a site that facilitates the BroadbandUSA program, promoting innovation and economic growth by expanding broadband access and meaningful use across the nation.
3. Broadband Technology Opportunities Program (BTOP) website (broadbandusa.ntia.doc.gov)
4. State Broadband Initiative public website (www2.ntia.doc.gov)
5. The Institute for Telecommunication Sciences (ITS) public website (<https://www.its.blrdoc.gov/>)
6. Federal Government Spectrum Compendium public website (spectrum.gov)

The objective is to aid NTIA in migrating its website portfolio from on-premises to a cloud platform. Throughout this project, Team Stealth is tasked with fulfilling the following requirements for NTIA:

1. Enhancing and refining the user experience for existing sites.
2. Ensuring that NTIA's digital presence is mobile-friendly.
3. Ensuring compliance with federal standards and regulations, including Section 508 compliance and adherence to USWDS (United States Web Design Standards).

9. Relevancy of Work:

Our engagement with the National Telecommunications and Information Administration (NTIA) exemplifies Team Stealth's depth of expertise in managing, upgrading, and optimizing the modernization of custom-built small public applications onto a common platform and framework for FWS. Our role in advancing NTIA's digital infrastructure through strategic development and content management mirrors the strategic App Modernization initiative that is critical for the FWS' mission in ensuring multi-factor-authentication (MFA) compliancy, built upon and within FWS.gov's Drupal/Acquia 10 platform, and leveraging a reusable and shared application development and deployment framework for future endeavors.

Comprehensive Management of Public Web Platforms:

- Strategic IT and Web Services: Our role within NTIA's Information Technology Division (ITD) and Business Application Management Branch (BAMB) involved strategic oversight and management of multiple high-impact public websites. This mirrors the FWS' need for strategic management of public-facing websites.
- Responsive Web Design and Compliance: We ensured that all NTIA websites were responsive and mobile-enabled, adhering to Section 508 compliance and conforming to the United States Web Design Standards (USWDS). This is particularly relevant to FWS' mandate to provide accessible and user-friendly digital resources to a diverse audience.

Expertise in Drupal Platforms:

- Advanced Drupal Solutions: For NTIA, we have been responsible for the development, Acquia migration, search.gov integration, and Drupal upgrades. This includes managing complex content and ensuring optimal website performance, directly aligning with FWS' need for robust and secure content management for regulatory information dissemination.
- Comprehensive Content Management: Our work in maintaining and updating critical content for NTIA showcases our ability to handle complex data, a crucial aspect for FWS' extensive data standards and policies.
- Drupal 7/8/9/10 Expertise: Our work with NTIA included enhancing and completing existing Drupal themes for deployment. Given FWS' requirement for a secure and modern web presence, our Drupal expertise ensures a seamless experience for users while maintaining high security and performance standards.
- UI/UX Design and Accessibility: We extended NTIA's style guides and developed new UI components, ensuring a user-centric design approach. This focus on usability and accessibility is critical for FWS websites that serve as a hub for agency information and services.

Broadband and Infrastructure Expertise:

- Internetforall and BroadbandUSA Initiatives: Our efforts in redesigning and developing platforms like Internetforall.gov and BroadbandUSA.ntia.doc.gov reflect our capability to support initiatives that require extensive outreach and information sharing, relevant to FWS' community development and expanding information access.
- 5G Challenge: Maintenance of the 5G Challenge website underscores our capacity to manage platforms central to national infrastructure projects.

Security and Compliance:

- C-SCRIP Program: Our work with the C-SCRIP program demonstrates our commitment to security and risk information sharing, aligning with FWS' focus on risk management for national systems.
- USPREPS for Public Safety: Maintaining the USPREPS.ntia.gov site for public safety broadband network planning showcases our expertise in handling websites that require coordination with state and federal entities, similar to FWS' coordination with various regulatory bodies.

Compliance with Standards and Best Practices:

- Section 508 and WCAG 2.0 AA Compliance: Our commitment to ensuring all NTIA websites met accessibility standards reflects our capability to help the FWS meet these essential requirements, ensuring that all users, regardless of ability, have equal access to services and information.
- Adherence to Federal IT Policies: The administration of web-based and desktop applications for NTIA demanded strict adherence to IT policies, procedures, and standards. This experience is directly applicable to FWS' requirement for compliance with federal IT regulations and policies.

Agile Methodologies and Efficient Project Management:

- Requirements Gathering and Team Coordination: For NTIA, we effectively gathered and coordinated requirements, schedules, and activities, contributing to high-performing team meetings. This aligns with FWS' need for meticulous project management and coordination among various stakeholders.
- Communication Excellence: Our demonstrated verbal and written communication skills, crucial for explaining complex IT tasks to non-technical stakeholders, will be invaluable in managing FWS' digital initiatives and ensuring all parties are aligned and informed.
- Responsive and Agile Operations: Our agile approach in maintaining NTIA's suite of websites ensures that we are responsive to new developments and user needs, reflecting our capacity to adapt to the dynamic ecosystem that FWS operates within.

Our successful partnership with NTIA stands as a testament to Team Stealth's ability to deliver sophisticated digital solutions that enhance accessibility, ensure security, and foster economic growth. We are poised to leverage this experience to meet FWS' strategic goals, providing a seamless, secure, and dynamic digital presence that supports your mission to ensure the stability of FWS based websites and applications modernization.