## Application, Service, and Cloud Architecture Support (SOW Task 3 – Section 3.3)

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| **Name of Project: Immigration and Customs Enforcement (ICE) Enforcement and Removal Operations (ERO) Operations and Maintenance (O&M) Support Services** | | | |
| **Contract Number:** W52P1J18DA062/ 70CTD021FR0000226 | | | |
| **Period of Performance:** 2/1/2022 - 1/31/2027 | | **Dollar Value:** $76,862,778,20 | |
| **Project Type:** Federal | **Team Member/ Relationship:** Harmonia / Offeror | | **Role:** Prime Contractor / Lead |
| **Brief Description of Project Highlighting Similarity in Scope and Complexity:** As the Prime, Harmonia leads the program and project management tasks and coordinates all overall functions. Harmonia supports 7,900+ law enforcement officers and ERO employee users across 200 domestic and 25 overseas locations by delivering secure, scalable, and efficient enterprise applications. Our cloud solutions adhere to Zero Trust Architecture principles, ensuring least privilege access, continuous verification, and proactive breach mitigation. This includes modernizing 5 infrastructure Continuous Integration/Continuous Deployment (CI/CD) pipelines, 6 major IT systems, and 40+ named applications and maintaining critical databases and RESTful Application Programming Interfaces (APIs) that enable real-time information sharing across DHS, federal agencies, and local law enforcement. Project complexity arises from the need to coordinate multiple simultaneous planned releases, with code stored in more than 50 repositories requiring synchronized, complex branch management, as well as maintaining coordination across five teams working on independent but cross-dependent feature requests.  **Clear Description of Current Project State:** We have completed just over three years of a possible five-year contract, having recently extended the contract for the option period from 2/1/2025 to 1/31/2026. During this time, we have deployed modernized web-based versions of the major suite of applications, such as the Enforcement Integrated Database (EID) and Arrest Graphical User Interface (GUI) for Law Enforcement (EAGLE). We have modernized 5+ infrastructure CI/CD pipelines, 40 essential applications, and 6 major IT systems, strengthened cybersecurity, reduced security incident resolution times by 30%, and decreased unauthorized access attempts by 50%, while maintaining system uptime of 99.9%.  **Enterprise Application and Service Architecture.** We led efforts to define, evaluate, and implement enterprise applications and service architectures supporting DHS’s mission. By leveraging leading-edge technologies like serverless design and industry standards like CycloneDX for supply chain security, we have ensured secure, scalable, and compliant solutions that integrate seamlessly across DHS’s enterprise systems. Our experience modernizing ICE ERO’s applications and services has provided reusable architecture frameworks that enhance performance, security, and interoperability. We actively assess and implement emerging technologies, ensuring alignment with DHS 4300A, FedRAMP, and FISMA requirements while modernizing systems to meet evolving mission needs. By integrating FedRAMP-certified cloud solutions and multi-cloud architecture, we have enhanced operational resilience, improved system interoperability, and reduced infrastructure costs as well.  We have applied data-driven decision-making and predictive analytics to refine enterprise architectures, ensuring flexible and scalable IT solutions. By integrating real-time monitoring dashboards, we have improved operational oversight and risk management, enhancing ICE ERO’s ability to make informed decisions regarding application lifecycle management. Our APIs and microservices architecture standardization have increased system interoperability, reduced technical debt, and simplified IT maintenance cycles.  **Cloud Architecture Development and Security.** Our enterprise cloud architecture strategy integrates scalability, security, and operational efficiency, aligning with DHS 4300A while supporting mission-critical applications. We have designed hybrid cloud target and reference architectures that optimize performance, enforce access control, and enhance application security. To strengthen security, we have implemented a comprehensive log management and artifact repository for full traceability and auditability. Automated vulnerability scanning and secrets management proactively detect risks, reducing security incident resolution times by 30%. With Lightweight Directory Access Protocol (LDAP) integration, Identity and Access Management (IAM) enforce role-based controls, cutting unauthorized access attempts by 50%. Intrusion detection, Artificial Intelligence (AI)-driven behavioral analytics, and secure proxy solutions further bolster system security and resilience.  Our automation and configuration management tools, including Ansible, Terraform, and Amazon Web Services (AWS) CloudFormation, streamline deployments and improve efficiency by 45%. Container orchestration solutions like Amazon Elastic Container Service (ECS) accelerate application deployment by 60% and ensure scalability. Our data protection, mobility tracking, and secure segregation methodologies enable compliant law enforcement data sharing.  We established a Cloud Center of Excellence (CCoE) to drive innovation, standardize best practices, enhance automation, and optimize costs. Our cloud governance strategy aligns with Zero Trust security principles, enforcing continuous compliance monitoring and proactive risk mitigation. Our efforts on ICE ERO have involved the standardization of SecDevOps Pipelines to implement the best practices across the projects we deliver, and we have developed shared architecture components in Terraform for use across multiple projects. These cross-application features raise the level of security and reduce costs through better architecture and consistency.  **Agile Development and Enterprise Service Modernization.** Harmonia is a key enabler of ICE ERO’s digital modernization, leveraging Agile methodologies, CI/CD pipelines, and SecDevOps automation to enhance performance, security, and operational reliability. Our automated deployment pipelines and release management strategies have reduced deployment failure rates by 35%, ensuring faster and more reliable application rollouts.  We implemented advanced GitOps practices, including branching and tagging, to improve code traceability across environments, simplifying deploying different code versions within an environment. Advanced monitoring tools, including DataDog, AppDynamics, Prometheus, and AWS CloudWatch, improve incident response times by 45%, proactively identifying and resolving issues before they impact operations. During the first three years of contract performance, our modernization efforts have ensured that 721 software releases were delivered, 59,700 Jira tickets were resolved, and 81,890 story points were enhanced, improving enterprise application performance and resilience by maintaining a 99.9% system uptime.  We streamlined law enforcement application interoperability using DHS-defined and industry-recognized integration standards, reducing API complexities and enhancing real-time data exchange. Our microservices architecture, event-driven processing, and scalable data pipelines provide ICE ERO agents with faster and more reliable access to operational data. We ensure ICE ERO’s applications remain secure, resilient, and adaptive to evolving mission needs by embedding security within Agile workflows and implementing and optimizing enterprise IT modernization.  **Application Lifecycle and Data Governance.** We provide full lifecycle support, covering design, development, testing, staging, and production environments to optimize DHS’s IT service delivery. Our automated patch management framework has reduced vulnerabilities by 60% annually, ensuring system security. Additionally, we manage biometric integrations with the Integrated Automated Fingerprint Identification System (IAFIS), Automated Biometric Identification Systems (ABIS), National Crime Information Center (NCIC), and National Law Enforcement Telecommunications System (NLETS), providing secure law enforcement data interoperability. Our work in data governance ensures that 1,000+ validated data artifacts are processed annually in alignment with DHS Enterprise Data Management Policy Directive 103-01. By automating compliance monitoring, we have streamlined audit processes and security governance to maintain strict regulatory compliance.  Additionally, we implemented advanced encryption and access control mechanisms to protect sensitive law enforcement data, ensuring secure data exchanges between ICE, the Department of Justice (DOJ), the International Criminal Police Organization (INTERPOL), and the European Union Agency for Law Enforcement Cooperation (EUROPOL). Our role-based access models have improved compliance adherence by 100%, ensuring that only authorized personnel can access restricted datasets.  **Seamless Transition and Operational Resilience.** Beyond modernization, our team has demonstrated operational agility through seamless transition support and maintaining a 96% staffing rate. Our team executed critical IT operations, ensuring continuous mission support for ICE ERO’s law enforcement and administrative functions. We have implemented real-time system health dashboards that promote proactive engagement issue resolution and reduce incident resolution times by 40%. | | | |
| **Level and Type of Services Performed Under the Contract:** Services include performing Agile Software Development to deliver functionality for systems supporting ICE ERO’s mission, encompassing solution integration, requirements analysis, code development, testing, configuration, deployment, administration, monitoring, and maintenance for each business segment of Enforcement Systems. Additionally, our work involves integrated program management support, O&M support, system enhancements, case management, logistics, and data management. We have led efforts to define, evaluate, and implement enterprise applications and service architectures supporting DHS’s mission. | | | |
| **Rationale Supporting the Assertion of Relevance:** Our recent contract support activities at ICE ERO align directly with the scope of Task 3: Application, Service, and Cloud Architecture Support by providing secure, scalable, and mission-critical IT solutions tailored to DHS OCIO requirements. Our expertise in cloud security automation, enterprise architecture, and SecDevOps integration has accelerated application delivery by 50% while maintaining 100% FedRAMP and FISMA compliance. Our focus on interoperability between federal, state, and local law enforcement systems ensures seamless data sharing and operational efficiency. By leveraging our relevant experience in ICE ERO modernization, we remain a trusted partner in enhancing DHS’s cloud strategy, enterprise applications, and security posture to meet evolving mission objectives. We improved data governance adherence, ensuring mission-critical applications remain secure, scalable, and compliant with DHS’s evolving cybersecurity standards. | | | |