

# Simplifying and Transforming Enterprise IT Applications



U.S. Citizenship  
and Immigration  
Services

## How EmmergeTek Helped the U.S. Citizen and Immigration Services Modernize ELIS

The U.S. Citizen and Immigration Services (USCIS) is an agency of the U.S. Department of Homeland Security (DHS) that administers the country's naturalization and immigration system. USCIS is responsible for maintaining immigration case backlogs and improving efficiency. USCIS cannot operate without the Electronic Immigration System (ELIS), a proprietary enterprise resource that annually processes millions of immigration applications. From work authorization and visas to naturalization, asylum, and citizenship – ELIS is the agency's first-ever online immigration system created to modernize the filing and adjudication of immigration benefits.

*ELIS is deployed in more than 223 locations worldwide with 19,000 users*

Prior, USCIS ELIS was a paper-based system requiring multiple forms and direct mail handling – resulting in long waiting periods for applications to reach USCIS offices and little visibility into application statuses – declining adjudication to some applicants. The agency was overwhelmed by monolithic applications and systems, from mainframes and databases to unstructured data, all needing continuous updates. To keep up with the growing demand for timely and efficient application accessibility for immigration, USCIS ELIS had to continuously improve, elevate, streamline, and revise its processes.

EmmergeTek has partnered with DHS to honor its mission of safeguarding the American people – supporting USCIS ELIS across three Outcome-Based Delivery and Development Operations Services (ODOS) contracts: ODOS, ODOS II, and ODOS III. We combine leading-edge business acumen, modern technologies and applications, and a Continuous Integration / Continuous Delivery (CI/CD) pipeline that optimizes Agile DevSecOps workflows.

## CHALLENGE: OPTIMIZE PERFORMANCE FOR END-USERS WHILE FUTURE-PROOFING ELIS

USCIS seeks to secure America’s promise as a nation of immigrants by providing accurate and useful information to its customers, granting immigration and citizenship benefits, promoting awareness and understanding of citizenship, and ensuring the integrity of ELIS. With so many mission-critical processes on the line, USCIS knew that moving to the cloud was the best way to keep up with the continual need for modernizing and enhancing ELIS – capabilities they could only find in the AWS Cloud. However, they also knew that to streamline workflows and improve user experiences (UX) without disturbing agency operations, they would need help.

The agency faced extraordinarily complex and changing laws and regulations in an evolving context of global immigration patterns and events. These complexities have presented a seemingly insurmountable IT challenge for USCIS for more than 20 years – several large system integrators worked to develop comprehensive solutions that were never successfully implemented.

Fortunately, there was a way to remain current with a more reliable solution to reduce the amount of time spent by adjudicators on each case and decrease lead times (wait) experienced by applicants. Although the move to AWS Cloud improved the availability and scalability of services, USCIS ELIS decided to modernize its immigration application to:



**Increase accurate information is available to adjudicators,**



**Digitize several paper-based benefit types onto a common platform, and**



**Reduce expensive system downtimes through autonomous microservices.**

However, to reap those benefits, USCIS first had to switch strategies and adopt an Agile approach reliant on a multi-vendor environment to enhance ELIS incrementally. The agency held a coding challenge and selected EmergeTek as a partner following our exceptional performance, engineering talent, and expertise in Agile DevSecOps environments.

USCIS held and several other vendors accountable to gain complementary skills and increase its chances of success – assigning more work to the vendors that perform well and succeed and phasing out those that did not. To mitigate risk, EmergeTek helped USCIS by coordinating scrum-of-scrums across Agile teams to identify gaps, overlaps, and potential conflicts early, set clear plans and responsibilities for resolution, and evaluate what worked during retrospectives.

## SOLUTION: MINDFUL MODERNIZATION STREAMLINED IMMIGRATION APPLICATION PROCESSING AND USER EXPERIENCES

EmergeTek's Agile, DevSecOps, and UX experts are passionate about solving complex challenges. We delivered value and flexibility through containerized and microservices-based architectures, breaking down a single application into loosely coupled and independently deployable smaller components or services. Enabling USCIS ELIS to innovate faster by creating a CI/CD software development pipeline using leading-edge technologies, tools, and knowledge.

We delivered system features through an iterative cycle, including platform engineering, user research, prototype design and development, usability, and beta testing. At the same time, we were improving the agency's ability to see data assets across all enterprise services through a single system that provided stronger quality assurance and adjudication consistency. Doing so created a consistent data model for benefits processed and an enterprise schema for data consumption and reporting.

Our proficiency with Agile Kanban, Application Modernization, and Case Management Systems helps us foresee obstacles. Harnessing the prowess of REI's Mindful Modernization® to ensure the long-term sustainability and success of USCIS ELIS, we made it our mission to provide critical technical support, fill knowledge gaps, and work collaboratively within a multi-vendor environment to overcome those challenges to get the job done fast.

Our solution foundation incorporate:



### CONTINUOUS INTEGRATION/CONTINUOUS DELIVERY

Streamline vendor innovation approaches and feedback from users into one collaborative solution to quickly test, deploy, and replace application coding before deployment



### CLOUD-NATIVE HOSTING

Accelerate developer productivity, simplify operations, and build security and compliance into software delivery processes



### MICROSERVICES

Compose a single application into many loosely coupled and independently deployable smaller services



### HUMAN-CENTERED DESIGN

Validate solution concepts and execution tactics with real-time insights from agency staff and users



### LOWER O&M COSTS

Increase system lifespans, lower risk of breakdowns, increase efficiency, and decrease unplanned downtime

## MISSION IMPACT: EXPANSION OF EMERGETEK'S CI/CD PIPELINE

When USCIS ELIS called EmergeTek, the agency struggled to build an Agile digital solution that would meet its need to decrease adjudication wait times for applicants, digitize paper-based benefit types, streamline staff workflows, and provide adjudication consistency.

USCIS ELIS asked EmergeTek to construct a secure, scalable, containerized and microservice-based architecture that integrated its new fee structure and minimized expensive system downtimes while improving speed-to-market. Not only was EmergeTek up to the challenge, but we added a bold promise: we would build and launch the new fee structure in six weeks.

EmergeTek's CI/CD pipeline decommissioned the Legacy Naturalization Application Casework System and the Legacy Electronic Filing System, along with 12 other systems, onto a containerized and microservices-based architecture. Reducing workload within immigrant, citizenship, and humanitarian lines of business; increasing staff productivity and application adjudications by 19%. Our fully digital technology reduced direct mail handling and delivered a 55% reduction in paper transactions, letting USCIS move work to locations where staff are available, optimizing workloads, and enabling specialization. Reliability (uptime) also rose significantly – to 99.9%.

**<6 weeks**

to build and launch  
the new fee structure

**19% more**

volume without increasing  
USCIS ELIS staff

**55% reduction**

in paper transactions  
used in legacy systems

**12 systems**

decommissioned onto  
a common platform

**200+ developers**

from multiple vendors use our  
CI/CD pipeline

**940,000**

citizenship applications  
processed in 2019

Our partnership with USCIS ELIS has become the gold standard for Agile software development and outcome-based delivery in the federal government. We're helping to integrate USCIS ELIS across 60+ IT systems at: U.S. Customs and Border Protection, Federal Bureau of Investigation, U.S. Immigration and Customs Enforcement, Department of Justice, Department of State, U.S. Social Security Administration, U.S. Department of Treasury, and the U.S. Postal Service. By standardizing UX with goals and digital tools and processes, USCIS ELIS has decreased wait time, increased transparency, reduced adjudication rejection, and simplified the application process via online engagement.

Today, USCIS ELIS has added capacity-based buying models (i.e., procuring Agile teams) to its strategy and EmergeTek is currently supporting its modernization using Agile engineering teams. Our proven track record of delivering value and capabilities fast resulted in expanding our CI/CD pipeline presence within DHS – growing EmergeTek's capacity investment from two to eight, further demonstrates our past successes and ability to deliver thoroughly tested rapid operational capabilities into DHS hands.

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