

<p>Financial Transaction (FT) Between DHS Science and Technology Directorate (S&T) and the Immigration and Customs Enforcement Mod 1 Under the Economy Act Statement of Work (SOW)</p>

I. Introduction

1. Purpose

This Statement of Work (SOW) provides specific information regarding the requirements of the Department of Homeland Security, Science and Technology Directorate, Requesting Agency, hereinafter referred to as DHS S&T, sufficient to enable the Immigration and Customs Enforcement, Enforcement and Removal Office hereinafter referred to as ICE ERO to perform services under a financial transaction.

2. Authority

DHS's authority to enter this IA is: Economy Act, cite 31 U.S.C. 1535-1536 as implemented in subpart 17.5 of the Federal Acquisition Regulations (FAR).

3. General Terms & Conditions

Activities undertaken pursuant to this document are subject to the General Terms and Conditions hereby attached between the DHS S&T and ICE ERO.

4. Project Title

Modernization of Scenario Planning and Targeting and Enforcement, to develop a for Discrete Event Simulation (DES) Model for Immigration and Customs Enforcement, Enforcement and Removal Office.

5. Description of Products or Services / Bona Fide Need

To provide expertise in the areas of modeling and simulation, software engineering, data architecture/analysis, and experience integrating complex systems in the ICE environment. This expertise will as strengthen the technical breadth of the team

II. Background

The Department of Homeland Security (DHS) Science and Technology (S&T) Directorate is committed to using cutting-edge technologies and scientific talent in its quest to make America safer. The DHS Science and Technology Directorate (S&T) is tasked with researching and organizing the scientific, engineering, and technological resources of the United States and leveraging these existing resources into technological tools to help protect the homeland.

The purpose of this action is to add funding under Task 3 to an existing IRWA for tasking as described in this Statement of Work (SOW). The total cost of this IRWA is estimated to be \$2,500,000. This action will obligate funding in the amount of \$910,00.00. Increasing the funding from \$1,405,000.00 to \$2,315,000.00. The additional funds will be attached to ICE ERO Contract No. 70CDCR20FR0000070.

III. Scope

The Immigration and Customs Enforcement (ICE) Enforcement and Removal Operations (ERO) provide deployment support for ICE IT initiatives, operations research and strategic analytics, and business process analysis and transformation project support. DHS S&T is supporting the development of a discrete event simulation modeling tool to support integrating complex systems in the ICE ERO immigration enforcement lifecycle. This project focuses on efforts designed to generate improvements in the immigration enforcement lifecycle.

Task 1 Program Management: The contractor shall support, develop, coordinate, plan, and execution of all work pertaining to the scope of work contained herein.

1.1 Kick-Off Meeting/Project Management Plan: The Servicing Agency shall conduct a comprehensive kick-off meeting within two (2) weeks of contract award. The Servicing Agency shall provide a draft project schedule during the kick-off. The Servicing Agency shall provide a project management plan within four (4) weeks of contract award. The Project Management Plan shall outline how the Servicing Agency will manage the execution of all tasks to include program planning, scheduling, monitoring program progress, risk management and cost management. A master schedule, risk management plan and risk register will be included.

1.2 Risk Mitigation and Planning (RMP): The Servicing Agency shall document an appropriate assessment/analysis of the operational risks associated with the effort. DHS S&T will ensure all necessary engineering and design data is produced and maintained to adequately document the risk decisions made. The RMP should be submitted to the PM NLT the (8) weeks after contract award.

1.3 Monthly Status Report (MSR): The Servicing Agency shall submit a monthly report compiling the previous month's activities, risks and mitigations, problems encountered, recovery plans (when necessary), and preparation for upcoming scheduled activities. The MSR will include metrics pertaining to financial, schedule, and performance information, risk information, a summary of expected deliverables and milestones for the effort, and an assessment of performance of all work performed. Numbering convention: 1.3.x where "x" represents the incremental deliverable consistent with deliverable timeline. The MSR shall be submitted to the PM NLT the 10th of the following month.

1.4 Quarterly Status Review: The Servicing Agency shall conduct Quarterly Status Reviews (QSR) at the end of every quarter. The QSR will discuss activities in the preceding quarter to include progress, risks, mitigation plans, and planned activities in the next quarter. Numbering convention: 1.4.x where "x" represents the incremental deliverable consistent with

deliverable timeline. The QSR shall be submitted to the PM NLT 15 business days following the end of the quarter.

1.5 Final Technical Report: The Servicing Agency shall provide a final technical report to the DHS Contracting Officer's Representative (COR) outlining program accomplishments. The Report will contain, but is not limited to, final performance parameters, a description of test activities and test results

Task 2 Analysis of Alternatives: The Servicing Agency shall conduct an internal data/systems gap analysis to understand gaps in existing tools, policies, and partnerships to develop the optimal simulation.

2.1 Analysis Mapping: The Servicing Agency will coordinate with S&T and stakeholders across the ICE ecosystem to determine the recommended data to capture in the Discrete Event Simulation tool (DES). This will include a comprehensive analysis of facility reports and existing simulations to identify the priority ranking of data inputs that will lead to a fully realized base composition of detention facilities and alternative scenarios that test modifications at the current state to include changes at the detention facility level for ICE ERO. The dedicated team will analyze migration and detention policies while collaborating with ICE ecosystem partners to ensure they are aligned with processes and procedures across the apprehension lifecycle. Based on the analysis, the Servicing Agency will develop the most advantageous DES to address the identified gaps and produce the optimal tool.

Task 3 Operational Model & Decision Support Tool: The Servicing Agency shall develop a DES tool, with on-demand forecasting capability using Python programming language. The DES tool will advance ICE's data and analytics capabilities to accurately understand, inform, and predict the effects of policy changes and other external factors to inform how ERO leadership and field offices allocate resources and make decisions. The DES model will ingest data from various sources from the entire immigration lifecycle (arrests, detainees, removals, facility contracts, etc.) and then simulate outcomes based on varying scenarios. The Servicing Agency shall meet the following criteria unless a deviation is mutually agreed upon:

- The DES model will be built and run using Python programming language
- The DES model will be continually updated as processes and processing times change to provide accurate outputs to be integrated and optimized for the ICE/LESA Predictive Analytics (PAM) workstream.
- The DES model will be able to accommodate at least 10K encounters a day and the simulation will run within 8 hours
- The DES must support time series data, necessary for the effectiveness of the simulation.

- S&T will rely on ICE ERO for support/buy-in to collect necessary data (i.e., survey, tracker, field visit, review of standard operating procedures of established processes, etc.) to ensure accuracy of the DES modeling effort.
- The DES must be able to meet vigorous testing standards and be validated for effectiveness and accuracy based on historical data and events.
- The DES tool must be integrated and optimized for ICE's operations and maintenance capacity. Operation of the tool will be optimized for the expertise and size of the ICE team operating it.
- Train ICE operators on the DES Model operation.

Lever Development for Discrete Event Simulation:

- Scenario Development:
 - Develop a range of scenarios to reflect potential modifications in the operational landscape.
 - Collaborate on ideation sessions to identify relevant and impactful scenarios, ensuring that these scenarios are aligned with realistic operational trade-offs.
- Facility Analysis:
 - Investigate the effects of increasing or decreasing specific types of facilities in various locations.
 - Evaluate the consequential impact on throughput to inform strategic decision-making.
- Length of Stay Analysis:
 - Examine the implications of adjusting patient or item Lengths of Stay.
 - Quantify the consequent effects on throughput to support operational modifications.
- Capacity Limitation Scenarios:
 - Design scenarios that take into consideration various constraints such as:
 - Capacity limits of facilities or equipment.
 - Transportation restrictions or bottlenecks.
 - Goal: Understand the cascading effects of these constraints on overall operations and throughput.
- ICE ERO Deliverables as of 15 February 2024:

1	Alternatives To Detention (ATD): Integration of ATD DES.
2	Nationality Forecasting: Expand nationality to forecast the 15 countries tracked by OHSS, expanding upon the current method of simulating Recal/Non-Recal country.
3	Fear Claim Facilities: Utilize larger sample size for 9 SWB fear claims to further refine the fear claim processes in the appropriate AOR.

4	Book-Ins and Arrests Scenario: Expand available scenarios for book-in rates and arrests, beyond the Low-Baseline-High options.
5	Length of Stay Intervals: Widen Length of Stay intervals to account for policy changes.
6	Fear Claim Approval: Fear Claim approval rate scenarios (e.g., impact of policy shift to increase fear claim denials).
7	Book-In Detail: Add additional detail to book-ins, differentiating between new book-ins and transfers.
8	Additional Facility Functionality: Build functionality for simulating pilot or previously inactive facilities.
9	Guaranteed Minimum (GM) Capacity: Incorporate GM/Non-GM bedspace capacity.
10	Medical Data: Gather available medical data. If there is predictive value, incorporate into model.

- 3.1 Use of approved programming language:** The Servicing Agency will acquire the mandatory licenses for Python programming language and any supplemental tools required to develop the DES model. Additionally, any requirements for such software to operate on the DHS IT systems and network shall be coordinated with DHS OCIO, S&T OCIO, or ICE OCIO to ensure authorities are obtained prior to installation and utilization. Stand-alone IT equipment may be utilized in development while DHS IT systems and network authorities are obtained.
- 3.2 Development and Production:** The Servicing Agency shall use Agile best practices for the development of the DES model. A *development* “sandbox” model will be utilized for interim development until such point a stable *production* “released” model that has been tested, verified, and validated can be delivered to ICE ERO with appropriate documentation, training, and operational support. Continuous development will be conducted only in the sandbox environment until the next tested, verified, and validated production release. S&T will determine an appropriate versioning system to ensure configuration control of all development and released versions. S&T will establish a configuration control board (CCB) consisting of ICE ERO and S&T technical staff to formalize the release-of and changes-to production versions of the DES model.
- 3.3 Model Delivery:** The Servicing Agency shall deliver development and production releases of the DES model. Any outputs from sample runs will be delivered as Comma Separate Values (CSV) files, with data characterization and descriptions provide in Microsoft Excel and PowerPoint for presentation purposes. Input data for developing the DES model provided by ICE ERO may be in varying formats depending on the process or sub-process being modeled, and data formats may be mutually agreed upon by ICE ERO subject matter experts and DHS S&T technical SMEs as development continues.
- 3.4 Independent Verification, Validation, and Accreditation:**

Verification: The Servicing Agency shall utilize industry standard software development practices for any code developed as part of this activity and will ensure the use of Python programming language and any other tools utilized are appropriate for their intended application. Verification may require the assistance of the CCB to ensure that the tool/model meets the standards of comprehensive review, analysis, and testing performed by an objective third party to confirm (i.e., verify) that the requirements are correctly defined.

Validation: The CCB will assist the Servicing Agency with the verification of model performance i.e., the developed models perform with sufficient fidelity to their real-world counterpart processes. This may require validation against real process performance data, site visits to ensure that the model output is consistent with ICE ERO processes at various points, along with modeling any sub-processes needed to ensure DES model accuracy. While 100% model accuracy may not be achieved, DHS S&T will target an “80%” solution that provides sufficient fidelity in the DES model of the processes and sub-processes being modeled. Furthermore, validation may require the assistance of ICE ERO to ensure that the requirements are correctly defined. and to confirm (i.e., validate) that the system correctly implements the required functionality and security requirements.

Accreditation: DHS does not have a formal process for accrediting models, therefore best practices from US Department of Defense established modeling and simulation guidelines for accreditation will be utilized and documented for the DES model. For purposes of this SOW user acceptance and use of the DES model by ICE ERO in an operational context will constitute accreditation of the DES model.

Task 4 Training and Knowledge: Within performance of execution the Servicing Agency shall incorporate a Subject Matter Expert (SME) to provide technical expertise, advice, and train the ICE ERO team. In addition, the Servicing Agency shall develop a training guide that will be transitioned once finalized. At the end of performance, ICE ERO will be responsible for obtaining a SME support to maintain training and knowledge of DES tool.

Data Management

The DES model will utilize synthetic data regarding the immigration lifecycle (arrests, detainers, removals, facility contracts, etc.) and not CUI in the development. The ICE ERO LESA team will only have access to the tool once finalized. ICE ERO will not be sharing any data and will be retained within ICE’s system(s). Furthermore, no foreign end products or services will be used under this contract. Lastly, S&T will not possess nor provide any data to ICE ERO.

The Department has determined that contractor and/or subcontractor employee access to CUI or government facilities needs to be limited to U.S. citizens and lawful permanent residents.

IV. Key Milestones and Deliverables

Table 1

Task/Subtask Number and Name (F) Funded (P) Partially funded (U) Unfunded	Milestones/Deliverables	Completion Date
1.1 Kick-Off Meeting/PM Plan	Meeting, PM Plan	Kickoff within 2 weeks of award, PMP within 4 weeks of award
1.2 Risk Mitigation Plan	Report	Within 8 weeks of award
1.3 Monthly Status Report	Report, email acceptable	At the end of the month after award, and subsequently NLT then the 10 th day of the following month
1.4 Quarterly Status Review	Report, Servicing Agency format (DOC, PDF) acceptable	At the end of 3 months after award, and subsequently NLT then the 15 th day of the following month
1.5 Final Technical Report	Report, Servicing Agency format (DOC, PDF) acceptable	At end of POP
2. Analysis of Alternatives	Report, Servicing Agency format (DOC, PPT, or PDF) acceptable	Due by 6/26/2023
2.1 Analysis Mapping	Report, Servicing Agency format (DOC, PPT, or PDF) acceptable	Due by 9/22/02023

Task/Subtask Number and Name (F) Funded (P) Partially funded (U) Unfunded	Milestones/Deliverables	Completion Date
2.1.1 Facility Prioritization	Report, Servicing Agency format (DOC, PPT, or PDF) acceptable	Due by 8/04/2023
2.1.2 Business Rules	Report, Servicing Agency format (DOC, PPT, or PDF) acceptable	Due by 6/08/2023
2.1.3 Process Schema	Report, Servicing Agency format (DOC, PPT, or PDF) acceptable	Due by 6/28/2023
3.1 Development Models	Model Files in Python Programming language	Minimum delivery at the end of each week, or more frequently if appropriate
3.1.1 Model Documentation	Documentation associated with Development Models	Minimum delivery at the end of each week, or more frequently if appropriate
3.2 Production Models	Model Files in Python Programming language	Minimum delivery every 3-months, or more frequently if appropriate
3.2.1 Model Documentation	Documentation associated with Production Models	Minimum delivery every 3-months, or more frequently if appropriate
4. Training and Knowledge	Development of DES Guide	Minimum delivery every 3-months, or more frequently if appropriate. Delivery of final

Task/Subtask Number and Name (F) Funded (P) Partially funded (U) Unfunded	Milestones/Deliverables	Completion Date
		guide due at end of POP

V. Project Timeline

Below is a summary of the tasking timeline for this effort:

Table 2

	Indicate Month Deliverable is due after FT Award or Services are to be completed											
<i>Phase/Year/or other designation if appropriate</i>	1	2	3	4	5	6	7	8	9	10	11	12
1.0 Program Management	x	x	x	x	x	x	x	x	x	x	x	x
1.1 Kick-Off Meeting/PM Plan	x	x										
1.2 Risk Mitigation Plan	x	x										
1.3 Monthly Status Report	x	x	x	x	x	x	x	x	x	x	x	x
1.4 Quarterly Status Review			x			x			x			x
1.5 Final Technical Report												
2.0 Analysis of Alternatives									x			
2.1 Analysis Mapping						x						
2.1.1 Facility Prioritization			x									
2.1.2 Business Rules					x							
2.1.3 Process Schema						x						

	Indicate Month Deliverable is due after FT Award or Services are to be completed											
3.1 Development Models	x	x	x	x	x	x	x	x	x	x	x	x
3.1.1 Model Documentation	x	x	x	x	x	x	x	x	x	x	x	x
3.2 Production Models			x			x			x			x
3.2.1 Model Documentation			x			x			x			x
4. Training and Knowledge			x			x			x			x
	Indicate Month Deliverable is due after FT Award or Services are to be completed											
<i>Phase/Year/or other designation if appropriate</i>	13	14	15	16	17	18						
1.0 Program Management	x	x	x	x	x	x						
1.1 Kick-Off Meeting/PM Plan												
1.2 Risk Mitigation Plan												
1.3 Monthly Status Report	x	x	x	x	x	x						
1.4 Quarterly Status Review			x			x						
1.5 Final Technical Report						x						
2.0 Analysis of Alternatives												
2.1 Analysis Mapping												
2.1.1 Facility Prioritization												
2.1.2 Business Rules												
2.1.3 Process Schema												
3.1 Development Models	x	x	x	x	x	x						
3.1.1 Model Documentation	x	x	x	x	x	x						
3.2 Production Models			x			x						
3.2.1 Model Documentation			x			x						

	Indicate Month Deliverable is due after FT Award or Services are to be completed											
4. Training and Knowledge			x			x						

VI. Other IA Details

A. Period of Performance. The period of performance (POP) for this SOW is from the effective date of the FT through December 21, 2024.

B. Travel. Travel *will* be required in the performance of the duties listed herein. If travel is required, it is anticipated that travel will be limited to *CONUS, but not limited to the following destination:*

- Washington, DC

C. DHS-Furnished Information and Property

DHS furnished property, if any, shall be provided in a numbered attachment to this SOW and listed in Section VII, Applicable Documents.

D. Place(s) of Performance. ICE ERO will perform the work under this SOW at in Washington DC. and other CONUS locations identified by ICE ERO.

E.

F. Program Status Report. ICE ERO will provide program status reports to the DHS consistent with direction provided in the SOW within ___ days of the end of each month. Reports should be provided to the DHS S&T Technical Representative, and contain metrics pertaining to financial, schedule, and performance information, risk information, a summary of expected deliverables and milestones for the effort, and an assessment of performance of all work performed under the FT.

G. Deliverables. ICE ERO will provide all deliverables identified in this SOW, in accordance with Section IV of this SOW, to the DHS S&T Technical Representative.

H. Invoices. ICE ERO will deliver a monthly invoice to ST.Invoicing@hq.dhs.gov by the 15th day of each month.

I. Security Requirements. All work performed under this SOW is unclassified unless otherwise noted below:

If provided DHS “sensitive” information (e.g., items marked with FOUO or other appropriate marking), the Servicing Agency agrees it shall safeguard such information by not providing access of this marked information to any non-federal personnel unless advance approval is obtained from the DHS/S&T Technical Representative. In turn, the DHS/S&T Technical Representative must ensure any applicable DHS security and/or suitability requirements are satisfied by its servicing DHS Security office and that a DHS NDA Form 11000-6s are signed by the non-federal personnel before access to DHS

“sensitive” information is given to them. The DHS/S&T Technical Representative must further obtain copies of the executed, signed DHS Form 11000-6s, to be provided to the DHS Contracting Officer (for inclusion in the official DHS/OPO inter-agency agreement file).

- J. Funding Requirements.** DHS will provide funding to ICE ERO, in accordance with DHS’s appropriations and available funds.

VII. Points of Contact

ICE ERO Points of Contact (POCs) are as follows:

Technical POC –

[REDACTED]
Management and Program Analyst, Strategy & Operations Analysis Unit
Law Enforcement Systems and Analysis
U.S. Immigration and Customs Enforcement
Enforcement and Removal Operations
Phone: [REDACTED]
1201 Maryland Ave, SW
Washington, DC 20024
Email: [REDACTED]

Financial POC –

[REDACTED]
Program Analysis & Reporting Budget Execution Unit
Operations Support
U.S. Immigration and Customs Enforcement
Enforcement and Removal Operations
Phone: [REDACTED]
E-mail: [REDACTED]

The DHS POCs are as follows:

DHS S&T Technical Representative:

[REDACTED]
DHS/S&T/MCS
245 Murray Ln SW
Washington, DC
Phone: [REDACTED]
Email: [REDACTED]

DHS S&T Contracting Officer Representative:

[REDACTED]
DHS/S&T/CAPS
245 Murray Ln SW
Washington, DC

[REDACTED]

DHS S&T Financial Analyst:
TBD

DHS S&T Invoicing:
U.S. DHS, ICE
Attn: S&T Invoice
Dallas Finance Payment Center
1605 LBJ HWY
Suite 300
Farmers Branch, TX 75234

[REDACTED]

VIII. Applicable Documents

The General Terms and Conditions of this FT are incorporated by reference into this Statement of Work.

IX. Changes to this SOW

Changes to this SOW shall be made in accordance with the section of the General Terms and Conditions of this FT entitled "Amendments".