Request for Proposal (RFP)

Information Systems Engineering Support Services

Issue Date: July 6, 2022

1. Introduction

US Ignite, Inc. ("US Ignite") is seeking vendor(s) to provide information systems engineering (ISE) support services to US Ignite under an Indefinite Delivery Indefinite Quantity (IDIQ) Contract. The minimum value of this IDIQ solicitation is $600,000. Vendors are permitted to submit joint proposals.

The US Ignite objective for this IDIQ is to source an anchor technology vendor(s) (ISE Support Services Vendor(s)) capable of supporting the execution of multiple technology development and evaluation projects across our portfolio of smart communities. This will include multiple cloud-native AI and IoT-driven software development and evaluation projects, ranging across both our Smart Bases and Smart Cities portfolios.

US Ignite is seeking support for some of the most important and impactful projects in installation and municipal governance. The use cases under this portfolio include transportation safety, intelligent surveillance and threat deterrence, emergency response, energy resilience and efficiency, digital and economic equity, and more. US Ignite is partnering with military and municipal research agencies, academic partners, commercial solution providers, and now information system engineers to develop and evaluate new solutions to these use cases with host installations and cities. If proven successful, the new or existing technologies we pilot have the potential to be scaled to countless communities across the DoD and the nation. An example of one of these projects can be found in Appendix A: Artificial Intelligence for Traffic and Weather (Sample Project).

The estimated Period of Performance is from August 1, 2022, through July 31, 2025. US Ignite will issue an Indefinite Delivery Indefinite Quantity (IDIQ) contract, with the payment type of Time and Materials (T&M) for the successful bidder(s).

1.1 US Ignite Overview

US Ignite is a national nonprofit, a 501(c)(3), that is accelerating the smart city movement – and creating value for an entire ecosystem – by guiding communities into the connected future, creating a path for private sector growth, and advancing technology research that's at the heart of smart city development. Why is this important? Because local governments need to improve the quality of life and ensure economic development in their communities, particularly during a time of rapid technological change. Businesses recognize the importance of the emerging market around smart communities and need to find commercial strategies that are repeatable, scalable, and sustainable. And foundations and federal agencies need to channel their institutional aims into efforts ranging from cutting-edge research to practical economic development initiatives that deliver measurable benefits. As a trusted partner, we bring this entire smart city ecosystem together, successfully pairing financial investment with technical and organizational expertise. Through the public-private partnership programs we run, US Ignite is a catalyst for communications network advancement, and for innovation in smart city services that are powered by a new generation of technologies. Read more about US Ignite programs on our website.

2. Scope of Work

2.1 Summary of Scope of Work

US Ignite is seeking support from an ISE Support Services Vendor(s) for the execution of multiple technology development and evaluation projects across our portfolio of smart communities. This will include multiple cloud-native AI and IoT-driven software development and evaluation projects, ranging across both our Smart Bases and Smart Cities portfolios.

Across these projects US Ignite serves as the neutral translator between community needs, and the commercial technology sector capable of meeting those needs. Prior to implementation work the ISE Support Services Vendor(s) will support, US Ignite engages closely with community end users to define the use cases that provide the best opportunity of both supporting them and being scalable across other smart communities. US Ignite then sources commercial solutions to these use cases, and pilots or evaluates them in partnership with the host community. During this piloting US Ignite is often responsible for customizing existing solutions or developing new ones if they don't previously exist, and for integrating those solutions into host information environments. This new development, customization, and system integration is the scope of work that US Ignite is seeking support from ISE Support Services Vendor(s).

Due to the range of projects under this IDIQ spans multiple use case domains and multiple technologies, the scope of work is intentionally broad. Brief descriptions of the different types of work to be performed under this IDIQ are described below. As the prime system integrator US Ignite will lead each of the levels of effort described below, with the support of subject matter expertise and effort provided by the ISE Support Services Vendor(s).

2.2 System Architecting

The ISE Support Services Vendor(s) will support architecting and design of new solutions, in partnership with project stakeholders and based on existing architecture and subsystem development. This will require a top-down architecting approach comprehensive of the subsystems described below, as well as a bottom-up design of each of these subsystems.

The development and test environment available to the ISE Support Services Vendor(s) for DOD projects will be a Microsoft Azure Commercial Cloud instance, and the deployed environment will be a Microsoft Azure Government Cloud. To make migration from the development to the deployed environment as seamless as possible, the project team and ISE Support Services Vendor will want to establish parity between services available within the GovCloud and the Commercial Cloud wherever possible. For community projects, this will include various private cloud instances provided by US ignite or their host communities.

2.3 Data Acquisition

The ISE Support Services Vendor(s) will support the design, local development, functional test, and deployment of various data ingestion pipelines. Data sources for which pipelines will be developed include third-party sources which are accessible through existing API's, cloud-based data lakes, and IoT edge devices. For DOD projects the destination of most of these pipelines will be databases residing in a Microsoft Azure Government Cloud ("GovCloud"), although different destinations may be required for non-DOD projects. The ISE Support Services Vendor(s) may be required to support development of new APIs for existing data sources as well.

Customer-Furnished Support: US Ignite will identify the pertinent data sources for which pipelines are to be developed, and will contribute to and approve of the design, local development, testing, and deployment of said pipelines. US Ignite will provide the IoT devices and post-processed edge metadata to the ISE Support Services Vendor(s) through subcontracts with separate vendors. US Ignite will pay for all data being accessed through API's or other means.

As administrator to the GovCloud, USACE ERDC-ITL will provide guidance on the requirements for these pipelines to be deployed within the GovCloud, and they will develop CI/CD pipelines and associated security scanners to support their deployment. Comparable support will be provided for private cloud instances leveraged for community projects.

2.4 Databases

The ISE Support Services Vendor(s) will support designing and deploying the appropriate data storage (Azure SQL Database, PostGRESQL, Table Store, Databricks or similar) for data received from the data pipelines described above within the GovCloud or private clouds. The ISE Support Services Vendor will also support designing and deploying the appropriate data storage for post-processed results coming from analytical workflows using these primary data sources.

Customer-Furnished Support: During the period of performance, US Ignite will lead the development, testing and deploying these databases. USACE ERDC-ITL will provide guidance on the requirements and available resources for these databases within the GovCloud. Stakeholders responsible for analytical workflows will be responsible for providing guidance on the design of data stores necessary to store their data. Comparable support will be provided for private cloud instances leveraged for community projects.

2.5 Infrastructure

The ISE Support Services Vendor(s) will support designing and deploying the appropriate virtual machines, application service plans, and network and security groups necessary to host each of the subsystems necessary within the GovCloud or private clouds. The ISE Support Services Vendor may also support the deployment of locally installed/operated edge sensing, storage, and processing devices related to IoT deployments.

Customer-Furnished Support: US Ignite will lead the design and development of this infrastructure. USACE ERDC-ITL will provide guidance on the requirements and available resources for these hosting services within the GovCloud. Either US Ignite or USACE ERDC-ITL will be responsible for purchasing the infrastructure. Comparable support will be provided for private cloud instances leveraged for community projects.

2.6 Predictive Modeling

The ISE Support Services Vendor(s) will support the development, training and deployment of spatial data science, computer vision, and other AI/ML models within the GovCloud or private clouds.

Customer-Furnished Support: US Ignite will lead all necessary identification, modification, local development, and testing of the models described above. USACE ERDC-ITL will provide guidance on the requirements for these models to be deployed within the GovCloud, and they will develop CI/CD pipelines and associated security scanners to support their deployment. Comparable support will be provided for private cloud instances leveraged for community projects.

2.7 Front-end

The ISE Support Services Vendor(s) will support the deployment of partner-developed front-end resources within the GovCloud or private clouds.

Customer-Furnished Support: A US Ignite-contracted web developer is responsible for developing and testing all resources related to the front-end. USACE ERDC-ITL will provide guidance on the requirements for these resources to be deployed within the GovCloud, and they will develop CI/CD pipelines and associated security scanners to support their deployment. Comparable support will be provided for private cloud instances leveraged for community projects.

2.8 Alerting

The ISE Support Services Vendor(s) will be responsible for developing cloud-based trigger functions (either through Azure Trigger Functions, Azure SQL, or other means as appropriate) and an associated messaging service capable of alerting users via email/SMS when situations arise that require their attention. These messages will direct users to a human-machine interface (HMI) for their review and intervention for various use cases. These alerts will generally be generated when the results of the predictive modeling workflows are outside US Ignite-defined standard operating parameters.

Customer-Furnished Support: US Ignite and other analytical stakeholders are responsible for developing the modeling framework and decision rules governing when triggers should present recommendations to users. USACE ERDC-ITL will provide guidance on the requirements for these resources to be deployed within the GovCloud, and they will develop CI/CD pipelines and associated security scanners to support their deployment. Comparable support will be provided for private cloud instances leveraged for community projects.

2.9 Identity Access Management

The ISE Support Services Vendor(s) will support the design and development of the Identity Access Management (IAM) infrastructure necessary to maintain information security and accessibility over potentially sensitive sources of information. In the case of DOD projects leveraging an Azure GovCloud, this will likely require configuration and provisioning of privileges using an Azure B2C or Azure Government Active Directory.

Customer-Furnished Support: A US Ignite web developer will develop the credential forms and session management elements of the front-end necessary to collect user credentials and manage the information presented to various classes of users. USACE ERDC-ITL will provide guidance on the requirements and available resources for these authorization services within the GovCloud. Comparable support will be provided for private cloud instances leveraged for community projects.

2.10 System Integration/Test

The ISE Support Services Vendor(s) will support all subsystem integration and test activities once individual subsystems are developed in the cloud, including the following integrations:

- **Models/infrastructure** - ensure models are meeting non-functional availability and performance requirements while hosted on GovCloud

- **Data acquisition pipelines/databases** - ensure data is processed and stored successfully following ingestion from available data sources
- **Databases/models** - ensure models are able to query data appropriately from storage
- **Models/alerting** - ensure alerts are generated as expected given model results
- **Front-end/databases/authorization** - ensure user credentials are received from the front-end and properly validated against the register of approved users
- **Front-end/databases/alerting** - ensure the front-end is appropriately updated after alerts are generated from model outputs
- **Overall commission test** - following completion of all service-to-service integrations, ensure entire user experience operates as expected given product requirements

Customer-Furnished Support: US Ignite will contribute to and approve the service integration and test activities described above. The US Ignite web developer will contribute to the service integration and test activities described above, as they relate to the front-end. USACE ERDC-ITL will provide guidance on the test resources available within the GovCloud, and USACE ERDC-ISER will provide support on system integration and test as it relates to weather data. Comparable support will be provided for private cloud instances leveraged for community projects.

2.11 Documentation

The ISE Support Services Vendor(s) will support the development of documentation necessary to design, develop and test the software and each of the subsystems. The ISE Support Services Vendor will also support security architecture documentation necessary to be granted permission to deploy within the Azure GovCloud. This may include requirements documentation for each of subsystems, interface/API contracts, in-line code, and architecture diagrams as deemed necessary for the project. Commercial best practices are expected to be maintained when writing effective documentation. The ISE Support Services Vendor(s) will also support the identification of applicable standards and document the approach for adhering to them within the system. The ISE Support Services Vendor(s) will also support documentation of the effort and cost required to scale applications to new installations or cities.

Customer-Furnished Support: During the period of performance, each of the project stakeholders will provide documentation to the sections to which they contributed.

2.12 Ongoing Solution Monitoring and Maintenance

The ISE Support Services Vendor(s) will support designing and deploying the appropriate solution logging, monitoring and maintenance services within the GovCloud or other environments to ensure that any faults in solution functionality, availability/stability, or security are identified and addressed. Following initial deployment of the solution, the ISE Support Services Vendor will also be responsible for providing and managing a system for change request, maintenance and bug ticket handling, to be serviced by the various stakeholders as applicable to their scope.

Customer Furnished Support: US Ignite and website developer will provide logging capabilities for events and interactions taking place on the front-end application. USACE-ERDC ITL will provide guidance on the logging and monitoring services available within the GovCloud. Comparable support will be provided for private cloud instances leveraged for community projects.

2.13 Project Meetings

The ISE Support Services Vendor will be required to participate in bi-weekly program meetings, bi-weekly technical meetings, and ad-hoc meetings regarding particular work packages for each of the projects they support. The ISE Support Services Vendor might be required to participate in site visits to client locations during the release of each of the use case applications or during requirements development. Under such circumstances, US Ignite shall cover for the travel costs and hours worked on the project.

2.14 Non-performance Related Requirements

For DOD-related projects, there **must be at least one staff member with a valid DoD Common Access Card (CAC card)** capable of supporting each of the subsystems described above, to ensure that each of these systems may be deployed within the CAC-requiring Microsoft Azure Government Cloud.

2.15 Other Efforts

Other efforts that would be beneficial for the delivery, maintenance, or scalability of AI/ML-driven software products that have not been captured here may also be proposed.

3. Administrative Information

3.1 Solicitation Timeline

Table 1. Solicitation Timeline	
Date	Deadline
7/6/22	RFP Release
7/13/22	Questions Due
7/20/22	US Ignite Responses to Questions Due
8/5/22	Proposals Due
8/30/22	Contract Execution (Beginning of Period of Performance)

3.2 Questions and Answers

All clarification questions must be submitted **by July 13, 2022, no later than 8:00 PM Eastern Daylight Time (EDT).** Questions should be submitted in the following format:

1. Section Number
2. Paragraph Number
3. Page Number
4. Text of passage being questioned

5. Question

All requests, questions, or other communications about this RFP shall be made in writing to sayed.elhamz@us-ignite.org. Communications made to other US Ignite personnel or attempts to ask questions by phone or in person will not be allowed or recognized as valid and may disqualify the supplier. Suppliers should only rely on written statements issued by the RFP coordinator.

US Ignite will endeavor to respond to all parties no later than July 20, 2022, 8:00 PM EDT.

3.3 Proposals

All proposals must be submitted **by August 05, 2022, no later than 8:00 PM EDT.**

Proposals (and questions) should be submitted via email to sayed.elhamz@us-ignite.org

Proposals must include:

3.3.1 **Cover Page**: Provide primary contact information, including name, title, phone number, email, and organization name, address, and DUNS number.

3.3.2 **Organizational Overview**: Provide an overview of your organization and experience performing relevant projects. Subcontractors must also provide a letter of commitment referencing this specific project. Please indicate staff's ability to obtain or current possession of a CAC cards to develop within the GovCloud environment. No more than 5 pages.

3.3.4 **Labor Cost Proposal:** Please summarize staff labor categories and qualifications using the tables below, subject to the following considerations. No page limit.

Labor Cost Proposal Considerations

1. Rates should be provided for off-site or remote work to be performed at the vendor's facilities.

2. Teams working on DOD projects must have at least one staff member with a valid CAC card associated with each project effort. Staff with previous experience working with federal agencies and with Azure Govcloud are preferred.

3. Provide rates separately for DOD projects and non-DOD projects.

4. Vendors may differentiate labor categories based on their level of experience, education, and responsibilities (ex. Software Engineer Level I, Software Engineer Level II, and Software Engineer Level III).

5. Vendors are to provide more detailed descriptions of the labor categories specific to their firm in table 6, based on the brief descriptions provided.

6. Vendors are not required to provide labor rates or summaries for all categories described below if they do not offer those labor categories, and vendors are permitted to provide categories not described below if deemed beneficial.

7. If required by a project, US Ignite will cover the cost of providing specialized software development resources (e.g., Visio).

8. US Ignite will reimburse travel costs and other direct costs separately in accordance with Federal and US Ignite policies.

Please provide Labor Category pricing proposal using the tables below:

Table 2. Labor Cost Proposal, DOD Projects				
No.	Labor Category	Hourly Rate - DOD Projects (In $)		
		Year 1 09/01/2022 - 08/31/2023	Year 2 09/01/2023 - 08/31/2024	Year 3 09/01/2024 - 08/31/2025
1	Technical Project Manager			
2	Software Engineer			
3	Data Engineer			
4	Database Administrator			
5	DevOps Engineer			
6	Test Engineer			
7	Data Scientist			
8	Data Analyst			
9	Cybersecurity engineer			
10	Network Engineer			
11	Business Analyst			
12	Systems Analyst			
13	Other (Describe)			

Table 3. Labor Cost Proposal, Non-DOD Projects				
No.	Labor Category	Hourly Rate - Non-DOD Projects (In $)		
		Year 1 09/01/2022 - 08/31/2023	Year 2 09/01/2023 - 08/31/2024	Year 3 09/01/2024 - 08/31/2025
1	Technical Project Manager			
2	Software Engineer			
3	Data Engineer			
4	Database Administrator			
5	DevOps Engineer			
6	Test Engineer			
7	Data Scientist			
8	Data Analyst			
9	Cybersecurity engineer			
10	Network Engineer			
11	Business Analyst			
12	Systems Analyst			
13	Other (Describe)			

Table 4. Labor Category Descriptions			
No.	Job Role	US Ignite Description	Vendor Description
1	Technical Project Manager	Technical project managers serve as the primary point of contact for the organization to the client. They	

Table 4. Labor Category Descriptions			
No.	Job Role	US Ignite Description	Vendor Description
		plan, manage, and control their team's performance and translate requirements and work performed between the client and their team.	
2	Software Engineer	Software engineers develop front-end and back-end applications. They typically develop back-end in Python, C#, or .NET, and they typically develop front-end applications using frameworks like node.js, ember.js, Angular or React.	
3	Data Engineer	Data engineers develop data ingestion mechanisms, data models, and ETL pipelines.	
4	Database Administrator	Database administrators design, develop and administer databases.	
5	DevOps Engineer	DevOps engineers are responsible for maintaining version control and configuration management best practices, infrastructure-as-code, and automated testing and/or deployment. They typically use tools like Kubernetes, Docker containers, GitLab, Azure DevOps, Jenkins, and others.	
6	Test Engineer	Test engineers are responsible for developing test plans based on performance and functionality criteria established with other project stakeholders, and for executing those plans. They are generally responsible for quality assurance and quality control.	
7	Data Scientist	Data scientists are responsible for developing and training AI/ML models and computer vision algorithms.	

Table 4. Labor Category Descriptions			
No.	Job Role	US Ignite Description	Vendor Description
8	Data Analyst	Data analysts are responsible for performing data cleaning, exploratory data analysis, and model development.	
9	Cybersecurity engineer	Cybersecurity engineers are responsible for performing vulnerability assessments on information systems, and for establishing and documenting policies and controls for adhering to relevant cybersecurity frameworks.	
10	Network Engineer	Network engineers are responsible for designing, deploying, and administrating computer networks.	
11	Business Analyst	Business analysts are responsible for engaging with stakeholders to identify and document business requirements of information systems.	
12	Systems Analyst	Systems analysts are responsible for engaging with stakeholders to identify and document business requirements of information systems. They are also responsible for translating business requirements to functional and non-functional requirements necessary for software developers to begin development.	
13	Cloud Engineer	Cloud engineers are responsible for designing, deploying, and administrating cloud services necessary to support cloud-native applications. This primarily involves Microsoft Azure services but can also involve AWS and other private cloud instances.	

Table 4. Labor Category Descriptions			
No.	Job Role	US Ignite Description	Vendor Description
14	Other (Describe)		

3.4 Proposal Evaluation Criteria

US Ignite will select the successful bidder through a formal evaluation process. All proposals will be initially reviewed to ensure compliance with the RFP. If proposals are late or are not administratively compliant, they will be excluded from further consideration.

Proposals that meet the proposal instructions and requirements will be given a thorough and objective review. Administratively compliant proposals will be scored against the evaluation criteria listed below by a panel of evaluators, and the composite scores of those panelists will be used to rank proposers. Should evaluators have questions about a proposal that may affect a proposal score to one or more of the criteria, US Ignite has may conduct an informational interview with a proposing organization.

US Ignite will evaluate proposal using the factors as described below:

Table 5. Evaluation Criteria		
No.	Criteria Description	Weight
1.	**Location of Work** - preference will be granted for organizations based in the Washington, D.C. metro area capable of in-person meetings as necessary	5%
2.	**Organizational Experience** - scores for organizational experience will be evaluated based on the relevance and depth of experience provided (particularly with Azure), and on the availability of staff with Common Access Cards (CACs)	50%
3.	**Cost** - Labor rates for staff of various job functions will be compared to assess the best value for a given job function.	45%

3.5 Solicitation Administration Terms

1. Master Services Agreement and Task Order: If US Ignite elects to make an award(s) to a Proposer(s), then US Ignite will prepare and send a Master Services Agreement (MSA) and Task Order(s) to the successful Proposer(s). No award will be finalized without a fully executed MSA. US Ignite shall require resumes and commitments for assigned staff prior to executing each Task Order.

2. No Offer by US Ignite: This RFP does not constitute an offer by US Ignite to enter into an agreement. This RFP is simply an invitation for offers from interested Proposers. No offer shall bind US Ignite.

3. Accept and Rejection of Proposals: US Ignite may reject any or all proposals in whole or in part, waive a technicality, make awards in a manner deemed in the best interest of US Ignite and unless otherwise specified by the organization, accept any item in the proposal.

4. Multiple Awards: US Ignite reserves, at its sole discretion, the option to make awards to multiple Proposers. Multiple awards may be made on the total Scope of Services or components of the Scope of Services.

5. Ownership of Proposals: Each Proposal submitted to US Ignite will become the property of US Ignite, without compensation to a Proposer, for US Ignite use. US Ignite will not share proposals with any individuals or entities outside of the US Ignite review team and its key project stakeholders, given the consent of proposers prior to being shared. Proposers should mark any proprietary information within the proposal.

6. Limit of Insurance Coverage shall be at least:

   i. Commercial General Liability (CGL):
      - Products and completed operations, property damage, bodily injury, and personal & advertising injury with limits no less than $1,000,000 per occurrence, and a general aggregate with limit no less than $2,000,000.

   ii. Automobile Liability:
      - Insurance Services with limit no less than $1,000,000 per accident for bodily injury and property damage.

   iii. Workers' Compensation insurance: Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease.

   iv. Cyber Liability Insurance, with limits not less than $2,000,000 per occurrence or claim, $2,000,000 aggregate. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by Vendor in the agreement and shall include, but not be limited to, claims involving infringement of intellectual property, including but not limited to infringement of copyright, trademark, trade dress, invasion of privacy violations, information theft, damage to or destruction of electronic information, release of private information, alteration of electronic information, extortion and network security. The policy shall provide coverage for breach response costs as well as regulatory fines and penalties as well as credit monitoring expenses with limits sufficient to respond to these obligations.