

December 22, 2020

ADDENDUM NO. 1

Re: Solicitation No. 8005399 Digital Infrastructure Platform

Please be advised of the following changes to the above referenced Solicitation.

CHANGES:

1. Remove Specifications/Scope of Work and replace with the attached Revised Specifications/Scope of Work.

NOTE: A copy of this addendum shall be acknowledged by appropriate signature and attached to the submitted proposal.

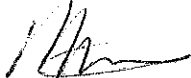
Company Name

Signed

Date

If you have any questions regarding this matter, contact during normal working hours (8:00 AM to 4:30 PM, Monday through Friday) at 972-973-5631 (p), or at the email address of mseymour@dfwairport.com.

Sincerely,



Miriam Seymour
Procurement and Materials Management Department

REVISED SPECIFICATIONS / SCOPE OF WORK

8005339-Digital Infrastructure Platform

1 INTRODUCTION AND OVERVIEW

- 1.1 Dallas Fort Worth International Airport (“DFW Airport”) is requesting services for externally hosted Digital Infrastructure Platform (The Platform) in order to establish a Digital Infrastructure (“Smart Campus”) of DFW Airport that is available 24/7, up-to-date and integrated to a variety of Engineering Technology (ET), Information Technology (IT) and Operation Technology (OT) systems, primarily for use in planning, construction, operations and maintenance of both facilities and civil infrastructure.
- 1.2 In addition to the Platform, the Contractor shall update and collaborate with DFW on a digital strategy and governance plan for future construction projects using the digital twin Platform.
- 1.3 Contractor shall create and maintain Digital Twin models from files provided by DFW Airport on an as-needed on-going basis. Work to be performed by delivery orders issued within the Contract by DFW Airport.
- 1.4 This platform shall provide DFW Airport with the following:
 - 1.4.1 Advanced sustainability through efficiency and resiliency by creating digitized infrastructure with Internet of Things (IOT), allowing the assessment and visualization of the operational health of the infrastructure.
 - 1.4.2 Improved communication, awareness and coordination through immersive visualization with federated access to large amounts of otherwise siloed data.
 - 1.4.3 Improved decision making through analytics and simulations.
 - 1.4.4 Real-time and predictive alerts where various conditions of assets are tracked, and responsible parties are notified before or as soon as maintenance or emergency situations arise.
- 1.5 The anticipated starting date to provision and implement the Digital Twin Platform is prior to May2021.
- 1.6 The Platform shall comply with the following DFW Airport Board policies.
 - 1.6.1 DFW Airport User and Administrative Access
 - 1.6.2 DFW Airport ITS Systems and Disaster Recovery
 - 1.6.3 DFW Airport Data Classification Policy
- 1.7 DFW Airport requires that the contractor articulate any features above and beyond the basic requirements within this scope. Additional capabilities offered may be used as differentiators to select a solution that can meet the long-term requirements of the Airport.

2 SPECIFICATIONS/SCOPE OF WORK

2.1 QUALIFICATIONS OF CONTRACTOR

- 2.1.1 Contractor shall have deployed the proposed platform for a time period of at least 3 consecutive years.
- 2.1.2 Contractor shall propose an implementation team that shall be comprised of a team of professionals, with a minimum of 5 years of experience in Digital Platform development, Building Information Modeling (BIM), Software Engineering, Software Development, and/or Architectural/Engineering Design.
- 2.1.3 Experience with Texas governmental agencies is preferred but not required.
- 2.1.4 Existing implementations at Airports or Cities is required.
- 2.1.5 Provide your roadmap for future development and support of the product.

2.2 REQUIREMENTS ON DIGITAL INFRASTRUCTURE PLATFORM

- 2.2.1 DFW Users, Role, Hierarchy, and Workflow – we anticipate a core user base of 50 – 100 end users, with up to three (3) System Administrators. We anticipate the Platform will support various user roles, hierarchies and workflows for dashboards, reports, notifications and approvals.

2.3 REQUIREMENTS FOR DIGITAL TWIN FUNCTIONALITY

- 2.3.1 The Digital Twin Platform shall include the following:
 - 2.3.2 Ability to develop a digital twin that will consume Digital Infrastructure and Facilities models (most current DFW approved version of; Revit, Civil3D, Bentley, GIS, #D LiDar scan, ifc models) which includes but is not limited to the following:
 - 2.3.2.1 Facility energy analysis
 - 2.3.2.2 A multi pane 2D and 3D visualizations of all captured building features including but not limited to; infrastructure systems, site assets, earthworks, linear transportation assets, and facility assets.
 - 2.3.2.3 Compliance with the stated level of accuracy (LOA) between LOA 20 and LOA 30 as determined by DFW Airport.
 - 2.3.2.4 Tagging of existing assets
 - 2.3.3 Ability to integrate with various third-party applications used for the active building/terminal systems
 - 2.3.4 Integrate with DFW's work order management and support creating/updating an event, creating a work order, assigning a work order, checking a work order status, etc.
 - 2.3.5 Provide Safety and security features
 - 2.3.6 Ability to overlay real-time environmental and/ or sensor data from multiple sources and sensors, to include location specific weather data, in-building sensors or sensor suites (e.g., thermal, barometric, humidity, or other similar data), and occupancy sensors.
 - 2.3.7 Support an ability to demarcate, aggregate data from, and display building or facility 'zones' (e.g., HVAC zones or other ad-hoc geo-fencing) in accordance with DFW's Digital Facilities and Infrastructure Manual.
 - 2.3.8 Ability to collect building sensor data and make it available in a cloud platform and/or server environment. Data shall be available in real-time and scaled to meet storage requirements for timeframes from one hour, one day, one week, and one month. Data review, playback, and retrieval shall be real-time or as desired in the timeframes one hour, one day, one week, and one month.
 - 2.3.9 Provide machine learning and advanced analytics capability for improvement of the operation of the facility
 - 2.3.10 Support industry standard wired and wireless communication protocols including BACnet, Modbus, LonWorks, Wifi, Bluetooth, Zigbee.
 - 2.3.11 Provide Fault Detection and Diagnostics analytics through the use of Smart Sensors streaming live data.
 - 2.3.12 Identify static assets and live data for the operational and IOT devices
 - 2.3.13 Unify geospatial content data in a structured data environment in accordance with DFW's Digital Facilities and Infrastructure Manual.
 - 2.3.14 Be environment and ecosystem empowered
 - 2.3.15 Provide data interoperability that allows direct access, transformation, and export capabilities to enable users to integrate, use and distribute data in many formats. Data formats shall include, but not limited to, XML, CSV, AZURE_TABLE, BCF, DB2, GML, GOOGLESHEETS.
 - 2.3.16 Ability to integrate DFW Airport software platforms into the digital twin platforms, including but not limited to providing bi-directional intra-departmental software platforms. Integrations through standard APIs are preferred.
 - 2.3.16.1 ArcGIS
 - 2.3.16.2 Building Automation System (BAS)
 - 2.3.16.3 Enterprise Integration and Operation System (EIOS)
 - 2.3.16.4 Veoci
 - 2.3.16.5 Infor EAM
 - 2.3.16.6 Oracle Unifier
 - 2.3.16.7 Autodesk Suite
 - 2.3.16.8 PropWorks (Amadeus Airport Billing System)
 - 2.3.16.9 Bentley
 - 2.3.16.10 Oracle Primavera P6

- 2.3.16.11 Success Estimator
- 2.3.16.11.1 Opensource and commercially available coding platforms (Ex. Python, MATLAB etc.), for possible feature enhancements by a third party, through API
- 2.3.17 Ability to upload/download the building/terminal CMMS/EAM data to the digital twin asset register according to the Facility Management (FM) system guidelines
- 2.3.18 Ability to integrate with opensource and commercially available coding platforms (Ex. Python, MATLAB etc.), for possible feature enhancements by a third party, through API
- 2.3.19 Contractor shall update and collaborate with DFW on a digital strategy and governance for future construction projects digital twin execution by including but not limited to;
 - 2.3.19.1 BIM and CADD Standards Manual
 - 2.3.19.2 Project Execution Plan Template
 - 2.3.19.3 BIM Development Matrix
 - 2.3.19.4 BIM Interoperability model checking system
 - 2.3.19.5 BIM/Dynamo Model checking system
- 2.3.20 Contractor shall provide status updates to executive leadership as requested
- 2.3.21 The proposed system shall be mobile friendly on devices such as phones, iPads, tablets, etc.

2.4 **SYSTEM SECURITY REQUIREMENTS:**

2.4.1 **General**

- 2.4.1.1 Two Factor Authentication capable
- 2.4.1.2 Single Sign-on capable
- 2.4.1.3 Security Information and Event Management (SIEM) platform compatibility
- 2.4.1.4 Compatible with our chosen end point protection (EPP), end point detection and response (EDR) solutions
- 2.4.1.5 Contractor to disclose any Artificial Intelligence and Machine learning capabilities

2.4.2 **Cloud**

- 2.4.2.1 Data must be encrypted during transit and at rest
- 2.4.2.2 The system shall be scalable, highly available, secure and reliable.
- 2.4.2.3 Contractor to provide SOC 2 Report
- 2.4.2.4 Contractor to provide a Written Information Security Plan (WISP) or alternative comparable Contractor's organizational document
- 2.4.2.5 Contractor shall provide documentation of data security policies and procedures
- 2.4.2.6 Contractor to provide testing schedule.
- 2.4.2.7 Contractor to provide testing evidence and test status.
- 2.4.2.8 Contractor to provide a Risk Mitigation Plan
- 2.4.2.9 Contractor to provide its organization's Breach Response Plan
- 2.4.2.10 Contractor to provide a most recent testing schedule and provide testing evidence and test status

2.5 **DISASTER RECOVERY REQUIREMENTS**

- 2.5.1 Contractor shall provide a disaster recovery plan
- 2.5.2 Periodic Disaster Recovery Plan test reports shall be submitted to the Airport with at least annually.
- 2.5.2.1 .

2.6 **TESTING REQUIREMENTS**

2.6.1 **Test environment**

- 2.6.1.1 Contractor to provide access to testing environment

2.7 **TRAINING**

2.7.1 Contractor **shall provide:**

2.7.1.1 Training to key stakeholders and staff for operation and maintenance of the digital platform.

2.7.1.2 Initial hands-on training/instruction for Airport users at startup during the implementation phase

2.7.1.3 Incremental training to be conducted after each major system upgrade

2.8 **TECHNICAL SUPPORT**

2.8.1 Contractor to provide:

2.8.2 Technical support to maximum uptime in the industry or in accordance with the table below.

2.8.3 Technical support contact such as toll-free phone number shall be available to DFW Airport users and suppliers.

2.8.4 The ongoing support starts from project kickoff meeting

2.8.5 Technical support shall be offered to both DFW Airport users and suppliers

2.8.6 Resolve user access difficulties

2.8.7 Remedy any software problems

2.8.8 Advance Notice of system upgrades, patching, planned system maintenances shall be communicated to DFW Airport Procurement System support team at least 2 working days.

2.8.9 Support structure and Service Level Agreements (SLA) shall be discussed and agreed (refer to SLA's in table 2.8.12)

2.8.10 The following table shows the targets of response and resolution times for each priority level.

2.8.11 Time measurements in this table refer to clock hours (as opposed to business hours):

2.8.12

Trouble	Priority	Response Time (in hours)	Resolution Time (in hours)	Escalation Threshold (in hours)
Service not available (all users and functions unavailable).	1	Within 1/2 hour	ASAP - 1 Hour	1 hours
Significant degradation of service (large number of users or business critical functions affected)	2	Within 1/2 hour	ASAP - 1 Hour	1 hours
Limited degradation of service (limited number of users or functions affected, business process can continue).	3	Within 1 hours	ASAP - 4 hours	4 hours

Small service degradation (business process can continue, one user affected).	4	Within 1 hours	ASAP – 24 Hour	24 hours
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2.9 AIRPORT RESPONSIBILITIES

2.9.1 Airport shall provide the contractor with:

- 2.9.1.1 Airport branding
- 2.9.1.2 Airport usernames with defined roles and responsibilities
- 2.9.1.3 Standard documents, forms and templates to be incorporated as needed by the Airport
- 2.9.1.4 Any additional information required by the contractor for account setup

2.10 COMPANY PROFILE

2.10.1 Contractor shall provide an overview of the company’s structure, longevity, and relevant experience.

2.11 DOCUMENTS

Contractor shall provide copies of the following documents:

- 2.11.1 Any licensing or subscription agreement.
 - 2.11.1.1 Proposed maintenance and support agreement
 - 2.11.1.2 All manufacturer Warranties shall not supersede the Order of Precedence to the Dallas/Fort Worth International Airport Board Special Provisions, and Dallas/Fort Worth International Airport Board General Terms and Conditions. In the event of an inconsistency between the clauses; the inconsistency shall be resolved by giving precedence in the following order:
 - 2.11.1.3 OEM’s, or Software Manufacturer’s Terms and Conditions to include End User License Agreement and will be attached within this document.
 - 2.11.1.4 Warranties for all items under this contract shall be provided by OEM’s, or Software Manufacturer or authorized partner on behalf of OEM’s, or Software Manufacturer.
- 2.11.2 Security
 - 2.11.2.1 Contractor to disclose any investigation related to data privacy and/or information security lapses
 - 2.11.2.2 Contractor to provide its organization’s last cybersecurity audit