Earth Science Data and Information System Project

Earth Observing System Data and Information System (EOSDIS) Evolution and Development 2 (EED2) Statement of Work for NASA-Compliant General Application Platform (NGAP)

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Section 1. Introduction

1.1 Project Overview

The Earth Science Data and Information System (ESDIS) Project manages the science systems of the Earth Observing System Data and Information System (EOSDIS). EOSDIS provides science data to a wide community of users for NASA's Science Mission Directorate.

As part of its objective of continuously improving the level of service, evolving our capabilities, and improving efficiency the ESDIS project has built a production level commercial cloud platform to support mission needs of the EOSDIS. In order to realize the benefits of cloud computing, a stable and scalable infrastructure that facilitates application provisioning and adheres to NASA security requirements is required. This production level infrastructure is the

NASA-Compliant General Application Platform (NGAP) effort also known as the Earthdata Cloud (EDC) Platform.

1.2 Applicable and Reference Documents

1.2.1 Applicable Documents

Applicable documents are those specification, standards, criteria, etc. used to define the requirements of this Statement of Work (SOW). In the event of a conflict between an applicable document and this SOW this SOW takes precedence. Should a conflict occur among applicable documents, the contractor shall request resolution from the Contracting Officer.

423-CDRD-EED2 Contract Data Requirements Document for EED2

NPR 2210.1, External Release of NASA Software

NPD 2820.1, NASA Software Policies

NPR 2810.1A Security of Information Technology

NPR 7150.2 NASA Software Engineering Requirements

NASA-STD-8719.13B, NASA Software Safety Standard

NASA-STD-8739.8, Software Assurance Standard

IEEE Standard 730, Software Quality Assurance Plans

Section 508 Standards – see http://www.section508.gov/index.cfm?FuseAction=Content&ID=12, particularly Subpart B – Technical Standards 1194.22 Web-based intranet and internet information and applications.

1.2.2 Reference Documents

Reference documents are those documents included for information purposes; they provide insight into the operation, characteristics, and interfaces, as well as relevant background information. The contractor is bound by these documents to the extent specified in this specification or in its applicable documents.

1.2.2.1 General Reference Documents

NPR 7120.5D, NASA Space Flight Program and Project Management Requirements

1.3 Period of Performance

The period of performance of this task is 10/01/2019 through 08/31/2020.

1.4 Place of Performance

The place of performance is the GSFC, Greenbelt, MD and the contractor's facility in Riverdale Maryland.

Section 2. Work to be Performed

2.1 Earthdata Cloud (EDC) Platform Operations & Maintenance

The Contractor shall provide Operations & Maintenance (O&M) support for development and operational components of Earthdata Cloud Platform. This includes, but is not limited to:

1. All technical and business level support needed to operate the EDC Platform
2. O&M requirements will come from existing operational EDC Platform, ESIDS directly, or through the existing ESDIS/EOSDIS Scaled Agile Framework (SAFe) development lifecycle
3. Coordination across large number of stakeholder groups within EOSDIS to plan, design and implement O&M technical and business enterprise solutions.
4. Reach-back support from Amazon Web Serves to consult on technical and design issues.
5. Staffed resources that understand the cloud environment and can develop operating procedures, processes for the EDC platform. This resource shall also be responsible for defining a roadmap to operate and maintain fully operational EDC Platform and related on-prem system needs and applications.

2.1.1 EDC Platform System Operations & Maintenance

The Contractor shall be responsible for Operations & Maintenance of the EDC Platform system. This includes, but is not limited to:

<u>Technical:</u>

1. Operate, maintain, and enhance EDC platform metrics monitoring capabilities, including cost/billing, performance, and fault monitoring.
2. Operate, maintain, and enhance the scalability, recovery, backup, monitoring and any other relevant capabilities and procedures that are required to operate in a production environment.
3. Maintain and continually update the Earthdata Cloud Platform system Operations Manual and Standard Operating Procedures (SOP)
4. Operate and maintain a quarterly 25 new account or 100 new cloud accounts per year onboarding capability.
5. Further “automate” and harden numerous operational capabilities.
6. Operate and maintain a centralized operational rules, technical policies, and management policies required to operate the EDC Platform.

<u>Business:</u>

1. Support, maintain, and procure necessary Cloud Management Platform (CMP)

software/hardware needed to operate the EDC platform as required.

2. Operate and maintain cloud account governance software that organizes multiple cloud accounts under a top payer account that also controls individual account spending budget caps as protection against violating the Federal Antideficiency Act (ADA). (EG CloudTamer or other).
3. Support and maintain egress controls that protect against violating the Federal Antideficiency Act (ADA).
4. Support enhancements to the Cloud Resource & Cost Model (CRCM) used by all projects in the EDC to estimate multi-year funding needs as required by the NASA Planning, Programming, Budgeting, and Execution (PPBE) process.
5. Support post processing and analysis of provided cloud account or project level CRCM forms as input into the Cloud Computing Basis of Estimate (BOE), part of NASAs PPBE process.
6. Business system analysis functions require access to Government financial data and so a secured physical location shall be provided to limit access to that data to only persons authorized to have access to the data.

2.1.2 EDC Platform IT Security Compliance and Operations

The Contractor shall provide support for IT Security Assessment/Compliance and Operations for the Earthdata Cloud Platform, EOSDIS applications, and EOSDIS organization Operational Security Agreements (OSAs). This includes, but is not limited to:

1. Ensure EDC Platform, enterprise solutions, applications, and individual cloud accounts comply with NASA IT security requirements, process, procedures, and protocols.
2. Support System Security Plan (SSP) development/updates, Assessment & Authorization (A&A) activities, and any other NASA required IT Security compliance needs.
3. Support developing, implementing, and deploying tools and services to support tactical IT Security operations on the EDC in close coordination with ESDIS EISOC and IT Security management teams.
4. Perform EDC Platform specific configuration and automating of AWS security services infrastructure.
5. Perform EDC Platform specific configuration and automating of SaaS security services infrastructure.
6. Perform EDC Platform specific configuration and automating of Continuous Diagnostics and Monitoring (CDM) infrastructure.
7. Recommend security specific solutions related to cloud vendors in which the EDC operates.
8. Document design details using drawing tools and other ESDIS document repositories.
9. Recommend network technology solutions as related to cloud vendors the EDC operates under.

2.1.3 EDC Platform User Support Services

The Contractor shall provide user support services for EOSDIS personnel operating in the EDC. This includes, but is not limited to:

1. Directly support onboarding new EOSDIS applications/services into the EDC as prioritized by ESDIS directly or through the SAFe development lifecycle.
2. Provide continuous support for existing EOSDIS organizations, projects, applications, and personnel currently operating in the EDC.
3. Develop and maintain an EDC Platform User Guide for EOSDIS personnel/users operating in the cloud.
4. Operate and maintain user support services ticketing & tracking system to manage user support service actions.

2.1.4 EDC Platform Auditing and Optimization

The Contractor shall provide support for cloud computing business systems and analysis functions which should include, but are not limited to:

1. Working with ESDIS project office develop and implement an EDC auditing and optimization plan to ensure optimized cost & performance of all EDC accounts and operating services.
2. Monitor visibility and controls to reduce cloud computing cost and apply cost optimization across an enterprise AWS based cloud computing platform

2.2 EDC Platform Evolution

The Contractor shall evolve the EDC Platform architecture, features, functionality, and services to meet EOSDIS evolving mission, IT security, application/service, and business needs. Evolution requirements will be managed through the existing ESDIS/EOSDIS SAFe development lifecycle. This includes, but is not limited to:

1. Coordination across large number of stakeholder groups within EOSDIS to plan, design, and implement evolutionary technical and business enterprise solutions.
2. Maintain reach-back support from Amazon Web Serves to consult on technical and design issues.
3. Provide and routinely update a roadmap that represents key development/operational milestones and schedule of planned evolutionary EDC Platform activates.

Section 3. Task Deliverables

3.1 Task Deliverable Table

1. Working with ESDIS project office develop an EDC auditing and optimization plan – Due NLT April 3, 2020

2. Provided EDC Platform (NGAP) baseline requirements document update for JAMA submission - Due NLT Feb 1, 2020

3. Deliver updated EDC Platform “system” Operations Manual and Standard Operating Procedures (SOP) – Due end of POP

4. Deliver updated EDC Platform “User Guide” – Due end of POP