1.0 TOPIC TITLE:

Platform as a Service (PaaS) for Space Situational Awareness (SSA) applications

2.0 SUMMARY:

Our research requires a PaaS that allows the storage, messaging and processing of data to support SSA through data analytics.

3.0 BACKGROUND:

The United States depends on space capabilities for many critical civilian and military functions. The changing timelines and nature of threats faced by the US in space has driven a need to modernize aspects of SSA information flows and tools to better enable decision support. With the development of new data analytics and processing a PaaS is required where new algorithms and processing architectures can be deployed, tested and rapidly evaluated.

The ideal PaaS should allow the abstraction of data storage, message distribution, service deployment, and user interface development. It should allow the abstraction of data types so a wide diversity of commercial and government data can be stored and accessed in the PaaS without large amounts of custom software development on the part of the data providers or consumers. It should provide a messaging layer that provides configurable levels of delivery and timeliness guarantees. It should provide a suite of tools to allow easy integration of data analytic and machine learning algorithms. It should enable easy development and prototyping of data visualizations and analytics. It should be a robust PaaS to allow scaling of increased processing or user needs, scale to the incoming data rates or computational complexity. It should enable rapid deployment of data analytics, machine learning and artificial intelligence applications. Finally, it should enforce the confidentiality, integrity and availability required of operational applications.

To address this challenge, a PaaS software stack and associated services for PaaS prototyping using SSA representative data, data analytics services and users is being sought. The successful contract awardee will provide software and technical experts who will work with federally funded research and development (FFRDC) engineers, as well as engineers provided by the government to design and build a system using a PaaS to ingest data, deploy data analytics processing, and display decision support information to users. The awardee will provide all required training and technical support required by FFRDC personnel and government engineers to build this system.

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