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3:30 pm - 3:50 pm

edgeCore A Digital Twin solution built on a Proven Data Mesh to Ensure Decision Dominance in a Dynamic Battlespace

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Abstract:

In the INDOPACOM AOR, our forces face significant mission and logistical challenges due to vast distances and a sophisticated threat environment. Adversaries target supply chains and logistics networks with advanced kinetic and digital tactics. To counter these threats, the U.S. must achieve decision dominance by integrating real-time situational awareness across all mission and logistics functions—such as weapon systems, mission planning, fuel, supplies, equipment, and power. A major challenge is providing decision-makers with timely, actionable information amid an overload of data often stored in redundant, siloed data warehouses and data lakes across various agencies and coalition partners. This fragmentation makes it difficult for warfighting communities ranging from special ops, C2, ISR and even combat support functions such as logistics planning to access critical, actionable information swiftly, hampering their ability to respond to rapidly evolving threats.

In order to solve this issue, data must be democratized, discoverable, and made securely available to the people that need it at the moment it is needed. Past attempts at large data warehouses and data lakes have resulted in incomplete solutions and over budget projects. Moving forward, the Department needs to develop a comprehensive Data Mesh that will allow decision makers to access the data in its authoritative system.

With a comprehensive Data Mesh in place, decision makers will be able to construct mission-specific Digital Twins of their mission environment, crossing departmental and application boundaries, in order to get a complete Common Operating Picture (COP) of the mission at hand. With the Data Mesh in place, these COP's can typically be constructed and operational in days.

In this presentation, a domain expert will discuss the practical application of the first commercially proven Data Mesh platform, edgeCore, including past performance examples within DOD and some of the largest global enterprises.

Recognized as an innovator in the Digital Twins marketplace by Gartner and an ABMS contract holder in support of the Air Force's contribution to JADC2, Edge Technologies' (Edge) Data Mesh platform, edgeCore, has been ATO'ed on NIPRNet, SIPRNet, JWICS, and DREN, and used in all branches of DOD over the past two decades.

edgeCore's transformational approach to data integration and visualization integrates data within existing ATO'ed solutions in real-time, securely in agency datacenters or cloud environments, without creating a new persistent data store. The result – a mission-optimized Data Mesh that offers Data-as-a-Product to address the unique requirements of the mission.

edgeCore achieves this by utilizing a Built for Purpose platform that includes the following features:

- Role-based access control, fully authenticated Single Sign-On (SSO) access
- LDAP, AD, Kerberos, NTLM, 2FA, CAC, and more identity providers supported
- Highly secure and scalable multi-tenant architecture (enable/enforce)
- Flexible deployment configuration options for data protection across enclaves
- Web-layer integrations for existing application UIs
- Data-layer integrations, transforms, filters, merges, correlations, and visualizations
- Ability to trigger runbooks, workflows, RPA, and orchestrate third-party systems
- HTML5-based with adaptive layout and mobile device support.

Today's existential challenge is getting the right information, to the right people, at the right time, at the speed of relevance. There is no shortage of data, there is often too much data, in the form of redundant copies stored in countless data warehouses and data lakes. Traditional solutions require combining data in new data repositories to break down data silos and provide mission critical insights. Unfortunately, that method rarely results in a comprehensive solution and almost always takes much longer to implement than originally estimated. A secure Data Mesh is a better, faster, more secure and more cost-effective alternative.