GSAW 2021 Tutorial K:

Adapting Critical Operations, Providing Federated Edge AI to the Ground System Operations

Overview:
How to utilize a common data cloud native platform, to include Kubernetes orchestrated containers, and a data fabric that implements a global namespace for data sharing and collaboration. We will discuss architectures that solve challenges such as:
- Operations in a D-DIL environment
- The ability to work autonomously and in a federated mode
- The ability to integrate with existing data sources

In addition to the software layer, we will dive into different hardware architectures to include workload and SWaP-optimized environments. These environment, whether they are architected for austere environments, a traditional data center, or an HPC environment, allow you to provide a full data pipeline to orchestrate the complete solution from edge to core.

Agenda:
- Problems that exist today
- Use Cases
- Reference Architectures
- The Container Platform
- The Data Fabric
- The Infrastructure
- What about Security and Secure Supply Chain
- Conclusion

Instructors: Jeff Winterich and Frank Mitchell, HPE DoD

Biographies:
Jeff Winterich is an Account Chief Technologist for the HPE Department of Defense Team. Jeff is responsible for providing strategic technology design and architecture expertise to HPE's Federal Government customers, partners and systems integrators – focused on the US Army, US Air Force and Combatant Commands. Mr. Winterich is also very active with Artificial Intelligence (AI) initiatives and serves as an AI Ambassador for the HPE Public Sector team and customers.

Frank MItchell is a Hewlett Packard Enterprise (HPE) Chief Data Engineer and Chief Technologist. He is an experienced, energetic and action oriented executive with national and international expertise in advanced and next generation technologies including data platform solutions, cloud computing, data science and engineering, mobile and sensor technologies. His roles at HPE include Dir. of Program Management, Subject Matter Expert and Systems Integration, enabling solution and product development and integration engineering and management of advanced and next generation technology solutions.

Description of Intended Students and Prerequisites:
- Architects

What can Attendees Expect to Learn:
Attendees can expect to learn the need for an increase in performance, lowering of latency and shortening the data collection to decision process are key requirements of Ground System Architectures. Come learn architectures and designs on how to extend capabilities from the core to the edge and providing AI Operations, in a D-DIL environment.