# GAI IntelliPOD: Intelligent AI Based Portable Object Detection Edge Solution

## ADDRESSING KEY CHALLENGES

Computer vision-based video analytics solutions tackle several critical challenges faced by organizations. These challenges include manual video monitoring, manual forensic video search, reliance on human operators, inefficient incident response, and the inability to extract valuable insights from video footage. By leveraging advanced algorithms, computer vision solutions can automate video analysis, detect anomalies, track objects or individuals, perform facial recognition, and extract valuable metadata, empowering organizations with real-time intelligence, accelerated video search capabilities, and rich business intelligence data, enhancing overall security, safety, and operational efficiency.

## CHARACTERISTICS AND BENEFITS OF APPLICABLE SOLUTIONS

Effective computer vision-based video analytics solutions possess several key characteristics that make them invaluable to organizations. These include high accuracy in object detection, robust tracking capabilities, real-time alerting and notifications, scalability to handle large camera deployments, integration with existing VMS systems, open compatibility with various camera types and brands, forensic incident investigation capabilities, and the ability to mine large amounts of video data and/or hundreds, thousands, or tens of thousands of cameras for business intelligence data. By employing such solutions, agencies can achieve benefits such as improved security, reduced operational costs, enhanced situational awareness, proactive threat prevention, and optimized resource allocation.

## SOLUTION OVERVIEW

GAI IntelliPOD solution delivers next-generation artificial intelligence to monitor and analyze real-time and recorded video. Using this platform, customers can search, monitor, alert, and analyze video with twenty AI-enabled video analytics on a single platform. It detects and alerts on objects, vehicles, behaviors, and conditions with market-leading speed and accuracy. It adds layers of superhuman intelligence to existing camera and video infrastructure to deliver safety, security, and operational efficiencies. This solution delivers faster processing, faster alerting, and more analytics per stream using fewer resources than alternatives, lowering overall solution costs.

GAI IntelliPOD solution offers dozens of advanced AI video analytics functions to bring intelligence and accuracy to existing camera and video infrastructures. GAI's deep learning data models have been trained and deployed on HPE Edgeline 8000 converged edge appliance to provide automated object detection for dangerous weapons. As soon a weapon is taken out, the high-resolution camera auto detects the incident with a high degree of confidence based on the supervised learning models. It automatically sets off a workflow in real time with all the details such as the location, time, date, and URL. This alert automatically triggers an unattended bot which logs this incident and public safety personnel is automatically notified that there is an emergency that needs to be addressed immediately.

## COMPANY OVERVIEW

Government Acquisitions, Inc. (GAI), a HUBZone certified small business, brings over 30 years of dedication to Federal mission success, and a performance culture to power real innovation. Dedication is in our DNA, Mission is our Mindset.
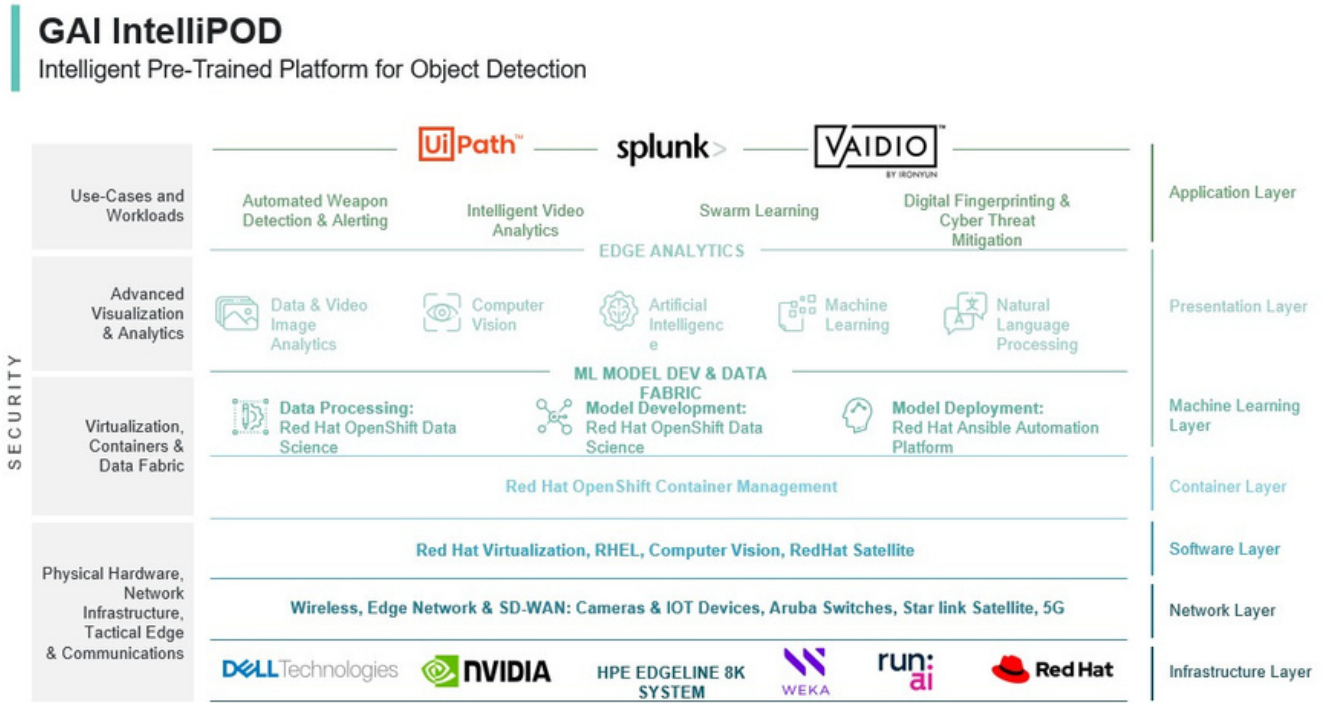
GAI IntelliPOD solution is built on HPE Edgeline EL8000 systems, which is purpose-built with an optimized size, weight, and power profile to deliver unprecedented levels of compute, storage, and networking performance at the edge. The EL8000 is a compact, toolbox-sized (17' deep, 5U, half-rack width) bladed system that supports up to four independent server blades clustered together using dual-redundant chassis integrated switches. The EL8000/EL8000t systems leverage the HPE Edgeline e920 family server blades, which use the same Intel Xeon Scalable processors as mainstream data centers. This enables fast local SSD storage along with support for Intel Arctic Sound-M ATS-M75 and ATS-M150 PCIe accelerators. HPE Edgeline Converged Edge Systems put enterprise-class compute, storage, networking, security, and systems management at the edge.  GAI IntelliPOD can also run on Dell Poweredge XR4000 Edge appliances. At the heart of the XR4000 compute sleds is the Intel Xeon D Scalable processor. This 'made-for-the-edge' CPU comes with up to 20 cores meaning a rackable chassis can be deployed with up to 80 total cores. The sleds also include 4x memory slots; 3200MT/s; up to 128GB and 4x M.2 storage capacity.

GAI IntelliPOD solution provides a full solution stack containing AI-based software and hardware for plug-and-play deployment. The platform includes Google-like video search, real-time Alerts, Intrusion Detection, Face Recognition, License Plate Recognition, People and Vehicle Counting, Weapon Detection for smart city applications.

This solution integrates seamlessly with I/O controllers to automate access control based on facial recognition. This technology can be used to speed up employee authorization into restricted areas, automate attendance, and prevent tailgating. When deployed on-premises or on edge, The software is pre-trained out of the box and preloaded on a rackmount server or edge device and is natively containerized, meaning that it runs in a docker container whether it is deployed on an appliance or in the cloud.

## GAI IntelliPOD
Intelligent Pre-Trained Platform for Object Detection

| SECURITY | | UiPath — splunk> — VAIDIO BY IRONYUN | | | | | |
|---|---|---|---|---|---|---|---|
| | Use-Cases and Workloads | Automated Weapon Detection & Alerting | Intelligent Video Analytics | Swarm Learning | Digital Fingerprinting & Cyber Threat Mitigation | | Application Layer |
| | | EDGE ANALYTICS | | | | | |
| | Advanced Visualization & Analytics | Data & Video Image Analytics | Computer Vision | Artificial Intelligence | Machine Learning | Natural Language Processing | Presentation Layer |
| | | ML MODEL DEV & DATA FABRIC | | | | | |
| | Virtualization, Containers & Data Fabric | Data Processing: Red Hat OpenShift Data Science | | Model Development: Red Hat OpenShift Data Science | Model Deployment: Red Hat Ansible Automation Platform | | Machine Learning Layer |
| | | Red Hat OpenShift Container Management | | | | | Container Layer |
| | Physical Hardware, Network Infrastructure, Tactical Edge & Communications | Red Hat Virtualization, RHEL, Computer Vision, RedHat Satellite | | | | | Software Layer |
| | | Wireless, Edge Network & SD-WAN: Cameras & IOT Devices, Aruba Switches, Star link Satellite, 5G | | | | | Network Layer |
| | | DELL Technologies · NVIDIA · HPE EDGELINE 8K SYSTEM · WEKA · run:ai · Red Hat | | | | | Infrastructure Layer |

*FROM THE DATA CENTER TO THE FAR EDGE*