



CASE STUDY

Astute Systems Delivers MediaX-Powered Software and Firmware for a Major UK MoD Land Vehicle Program

UK MoD

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UK defence vehicle upgrades include Boxer MIV, AJAX and Challenger 3



Astute Systems, an Australian defence technology company with more than seven decades of combined in-house experience in land systems, was selected by a key supplier to the UK MoD to support a major land vehicle program. The customer sought a partner with deep domain expertise, proven reliability, and the ability to deliver modern digital-vehicle capabilities aligned with the Generic Vehicle Architecture (GVA) standard.

Astute Systems' MediaX libraries its advanced streaming-video, data-handling, and embedded-firmware toolkit became the foundation for a suite of software and firmware solutions delivered directly into the vehicle program.

Challenge

The UK MoD requires a robust, low-latency, GVA-compliant video-streaming and data-processing capability for integration into a next-generation land platform. The solution needed to be:

- Highly reliable in contested environments
- Fully aligned with GVA standards
- Capable of running on constrained embedded hardware
- Supported by tooling that accelerated integration and testing

The customer also needed a partner who understood the realities of land-vehicle operations ruggedisation, interoperability, lifecycle support, and the pressures of defence acquisition.

Why Astute Systems Was Chosen

The customer approached Astute Systems after recognising the company as domain experts in land vehicles, with a long history of working inside and alongside defence organisations. The team's 70+ years of combined experience in military vehicle electronics, software, and systems engineering was a decisive factor in securing the opportunity.

Astute Systems' MediaX technology stack had already demonstrated maturity and performance in demanding environments, making it a natural fit for the MoD's requirements.

Solution

Astute Systems deployed its MediaX streaming-video libraries, along with custom firmware and integration tooling, to meet the MoD's technical and operational needs. The solution included:

- MediaX low-latency video streaming integrated into the vehicle's mission-system architecture
- Custom firmware modules optimised for embedded processors used in the platform
- Developer and integrator tooling enabling rapid testing, configuration, and validation
- GVA-aligned interfaces ensuring seamless interoperability with other subsystems

MediaX: A DEF STAN 00-082 Compliant Streaming Solution

MediaX was purpose-built to implement the UK MoD's DEF STAN 00-082 (Land Open Systems Architecture – LOSA) video streaming requirements. LOSA defines the technical standards for interoperable, modular vehicle electronics across UK land platforms, with DEF STAN 00-082 specifically addressing real-time video distribution.

Key DEF STAN 00-082 capabilities delivered by MediaX:

- **Session Announcement Protocol (SAP)** – Automatic stream discovery enabling displays and recorders to locate available video sources without manual configuration
- **Real-time Transport Protocol (RTP)** – Low-latency video delivery with support for H.264, H.265, Motion JPEG, and uncompressed formats as mandated by the standard
- **Multicast distribution** – Efficient one-to-many streaming reducing network bandwidth and enabling multiple consumers to receive the same video feed simultaneously
- **VIVOE.mib SNMP management** – Full implementation of DEF STAN 23-009 management interface for remote control of camera parameters including brightness, contrast, saturation, and stream selection

Integration with Land Open Systems Architecture:

LOSA promotes a modular, open-standards approach that allows equipment from multiple vendors to interoperate on a common network backbone. MediaX enables this vision by providing:

- Vendor-agnostic video streaming that works with any LOSA-compliant camera or display
- Deterministic latency profiles suitable for driver vision systems and situational awareness applications
- Built-in diagnostics and health monitoring aligned with GVA Infrastructure requirements
- Support for both IPv4 multicast (legacy platforms) and IPv6 (next-generation systems)

System Architecture

The diagram below illustrates the GVA HMI integration with multiple camera sources using MediaX streaming technology:

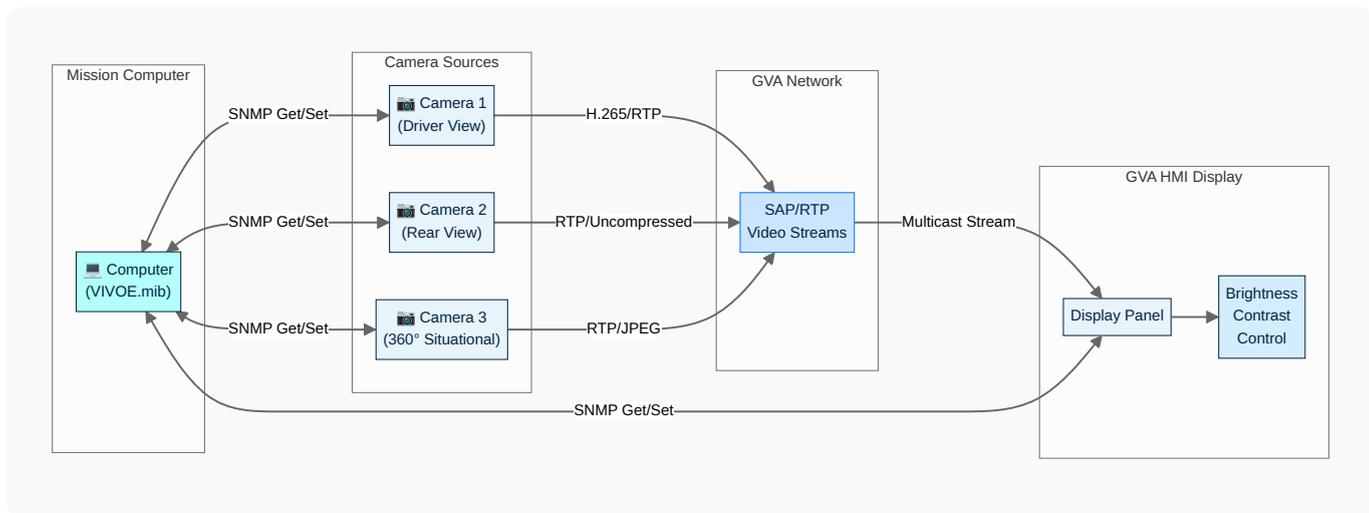


Figure 1: GVA video streaming architecture per DEF-STAN 00-082 with DEF-STAN 23-009 device control

The architecture leverages SAP (Session Announcement Protocol) for stream discovery and RTP for low-latency video delivery per DEF-STAN 00-082. The VIVOE.mib, defined in DEF-STAN 23-009 (Generic Vehicle Architecture), provides the SNMP management interface for controlling audio and video enabled devices. This enables the Mission Computer to configure camera parameters including brightness, contrast, and display settings in real-time across all connected devices. Despite being based in Australia, Astute Systems worked as an extension of the UK engineering team. The time-zone difference became an advantage: issues raised at the end of the UK workday were often resolved overnight, with solutions ready for testing the next morning.

Outcome

The successful delivery of MediaX-based software, firmware, and tooling provided the customer and the UK MoD with a validated, high-performance video-streaming capability for its land vehicle program. It also reinforced Astute Systems' position as a global leader in GVA-compliant digital-vehicle technologies.

Ross Newman, CEO of Astute Systems, reflected on the impact of the project: "Delivering our MediaX streaming video solution, firmware and tooling back into the UK MoD gave us the validation we needed to build a complete GVA v10 solution for the open market."

The project not only strengthened Astute Systems' place in the supply chain but also accelerated the company's roadmap for a full commercial GVA v10 product suite.

Key Benefits Delivered

Validated GVA DEF-STAN 00-082 and compliance against VIVOE.mib for video streaming as used directly by the UK MoD

- Accelerated development cycles enabled by time-zone-leveraged remote collaboration
- Reduced integration risk through mature MediaX libraries and tooling
- Strengthened market position for Astute Systems in global defence vehicle programs



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