

IoT Edge Solutions for **Combat Vehicle Systems Integration**



Real-Time

Unified data exchange across sensors, telemetry, weapons controls, and cameras in high-stakes environments




Vendor-Neutral

Messaging architecture bridging Ethernet, serial, and CAN Bus protocols across disparate hardware components





Mission-Ready

Industrial-grade IoT edge platform meeting strict performance and security requirements for combat operations

SERVICES

-  Application Modernization
-  Platform Engineering
-  AI Solutions

TECHNOLOGY

-  IoT Edge Platform
-  OpenDDS Messaging
-  CAN Bus Integration
-  Real-Time Data Pipeline

IoT Edge Solutions for **Combat Vehicle Systems Integration**

THE CHALLENGE

A major U.S. defense contractor developing advanced combat vehicles faced a complex integration challenge. Modern vehicles rely on numerous onboard systems — sensors, alarms, telemetry equipment, and weapons controls — built using different programming languages, operating systems, and communication protocols, making real-time data exchange difficult and unreliable.

Object Computing designed and implemented an industrial-grade IoT edge solution capable of bridging these diverse systems, integrating sensors, cameras, antennas, and controllers through a vendor-neutral messaging architecture that enabled real-time communication across Ethernet, serial, and CAN Bus technologies.

The result is a unified communication layer — critical vehicle systems now operate as a coordinated network, enabling faster decisions in high-stakes environments.

THE SHIFT

BEFORE Fragmented vehicle systems on modern combat vehicles struggled to communicate across different languages and platforms in real time.

AFTER Seamless real-time data exchange across sensors, telemetry, and weapon systems, enhancing vehicle security and operational agility.

BRIDGE An industrial-grade IoT edge solution and vendor-neutral messaging architecture spanning Ethernet, serial, and CAN Bus protocols.

WHAT WE BUILT

FEATURES IoT edge solution utilizing Ethernet, serial, and CAN Bus technologies with OpenDDS vendor-neutral messaging.

ADVANTAGES Vendor-neutral architecture ensures high-speed, secure communication between disparate hardware components without lock-in.

BENEFITS Dramatically improves operational efficiency and decision-making agility in high-stakes defense environments.



Engineered to **evolve.**

Three decades of mission-critical systems, engineered for performance and agility.

Let's Talk - hello@objectcomputing.com