



AIRBUS DEFENCE AND SPACE &
FORECR CASE STUDY

Advancing Real-Time ISR Operations in Aerospace and Defense

INDUSTRY

Aerospace and Defense

APPLICATION

Advancing Real-Time ISR Operations
in Aerospace and Defense

PRODUCT USED

Forecr's Military Grade Rugged
Computer with NVIDIA Jetson
Processors



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PROJECT

PRIMARY USE CASE

Deploying airborne image processing capabilities for object detection and recognition in real-time video streams from fixed-wing unmanned aerial vehicles (UAVs) in Intelligence - Surveillance - Reconnaissance (ISR) missions.

CHALLENGE

The project required a system capable of delivering high computational performance while performing reliably in harsh airborne environments. These included extreme vibrations and rugged conditions, demanding a solution that was both robust and high-performing.



OBJECTIVE

KEY FEATURES

To address the unique demands of ISR operations, Airbus Defence and Space partnered with Forecr to integrate the MILBOX AGX, powered by NVIDIA Jetson AGX Orin System on Modules. This advanced setup provided:

- ◆ **Rugged and Reliable Design:** The MILBOX AGX system ensures stable performance under extreme conditions, including high vibrations, wide ambient temperature range and generally harsh environments.
- ◆ **High Computational Performance:** Capable of processing Full-HD and 4K video streams, the system provides the required performance for AI-driven algorithms to perform real-time object detection and recognition.
- ◆ **Seamless Integration:** Aligned perfectly with Airbus Defence and Space's existing NVIDIA tech stack, leveraging TensorRT, cuDNN, and CUDA frameworks to reduce development complexity.
- ◆ **Real-Time AI Processing:** Low-latency performance enabled on-the-spot decision support, empowering human operators with critical insights for ISR missions.

SOLUTION

HARDWARE INTEGRATION

Through the collaboration with Forecr and the integration of NVIDIA Jetson modules, Airbus Defence and Space successfully developed and deployed a high-performance image processing system for ISR applications. This partnership underscores the value of advanced, rugged hardware solutions in achieving operational excellence in demanding aerospace environments. The integration allowed Airbus Defence and Space to extract actionable intelligence from live UAV video feeds, meeting the accuracy and precision required for ISR operations.



MILBOX-AGX



- ◆ Powered by the AGX Orin System on Module technology
- ◆ Military-grade rugged computer
- ◆ Compatible with MIL-STD-1275/704, MIL-STD-810, MIL-STD-461, IP67
- ◆ AI Ready for deep neural networks (275 TOPS)

IMPACT

FORECR's products have demonstrated exceptional performance and reliability by consistently delivering high-quality image processing results in challenging and complex environments. The robust performance and dependability of FORECR's solutions were critical to the success of ISR applications.

Rugged Hardware Design

Forecr's MILBOX AGX system offered the stability and durability required for operations in harsh, vibration-prone environments.

Enhanced Real-Time Processing

The MILBOX AGX system enabled Airbus Defence and Space to implement high performance image processing and AI-driven object detection and recognition, crucial for ISR operations.

High GPU Performance

Forecr's solutions provided the computational power essential for real-time object detection and recognition and analytics in ISR missions.

Operational Efficiency

The integration of NVIDIA Jetson modules facilitated real-time analytics, reducing latency and improving mission success and AI-driven object detection and recognition, crucial for ISR operations.



Wondering about the full story of our use case with Airbus Defence & Space to advance Real-Time ISR Operations in Aerospace and Defense Industry?

Read the full case study to find out!

