GRUPA WB

EyeQ Air

AI system for detection, classification and identification of military objects

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EyeQ Air

Speeding up and supporting operational decisions

The EyeQ Air system is an AI system for aerial detection, classification and identification of military objects. It allows to perform automatic analysis of video recorded on unmanned aerial vehicles (UAVs).

A unique feature of EyeQ Air is its extensive library of military objects as well as their hierarchical categorization. Classification and recognition of objects occurs at various levels of detail..

Installing the system on an EyeQ MA-M device,

onboard a UAV, enables real-time reconnaissance without the need to transmit imagery to an operator. This allows for extending the radio link range and conducting reconnaissance at longer distances from ground stations.

By using EyeQ Air, it is possible to reduce error rates by UAV operators, as well as automatically prioritize recognized targets.

Advantages	Description
Real-Time Capabilities	Detection, identification, and classification of military objects in real-time.
Prioritization	Classification of detected objects and assigning priorities for potential combat operations.
Resilience	Ability to function in case of loss of communication with the operator.
Decision Support	Assistance for the operator and commander in making operational decisions.
Interoperability	Capability to integrate with advanced battlefield management systems, such as TOPAZ.
Precision	Reduction in the level of errors in unmanned operations.
Versatility	Compatibility with various types of cameras, including thermal cameras.
Extensive Library	Rich library of military object types.

Optimization of Image Analysis in UAS (Unmanned Aerial Systems)

EyeQ Air is an artificial intelligence solution designed for real-time detection and classification of military objects across a wide range of categories. The system utilizes an extensive integrated library of military vehicles, equipment, and other assets to enable multi-level classification with varying degrees of specificity. This allows the AI to identify objects from general classes down to precise variants and configurations.

Multi-streaming Capability

The system is compatible with both single and multiple video sources, providing versatility in

data analysis.

Innovative Autonomy

Installing EyeQ Air on the EyeQ MA-M onboard device enables reconnaissance operations in the face of limited or disrupted connectivity. It eliminates the need to transmit a full image to the operator, enabling operations across extensive areas far from ground stations.

Communication Efficiency

EyeQ Air offers advanced solutions in both communication and data

Computing modules

Types of embedded devices on which the system can be implemented

Name	Dimensions [mm]	Weight [g]	Purpose	Notes
EyeQ MA-M	110 x 106 x 36	280	For installation in UAV	• Allows EyeQ to function even if communication with the operator is lost • Low power consumption • Sealed, vibration-resistant housing
EyeQ Vx-M	210 x 296 x 92	4750	For installation in ground vehicles	• Environmental standards: MIL-STD-1275/704, MIL-STD-810, MIL-STD-461 • Low power consumption • Seaaled housing: IP67

analysis contexts. The system ensures the optimized transmission of key information about identified objects. EyeQ Air allows for high-resolution image analysis to be carried out directly onboard unmanned aerial vehicles. The most critical information can be made available in text format or as compressed graphical files.
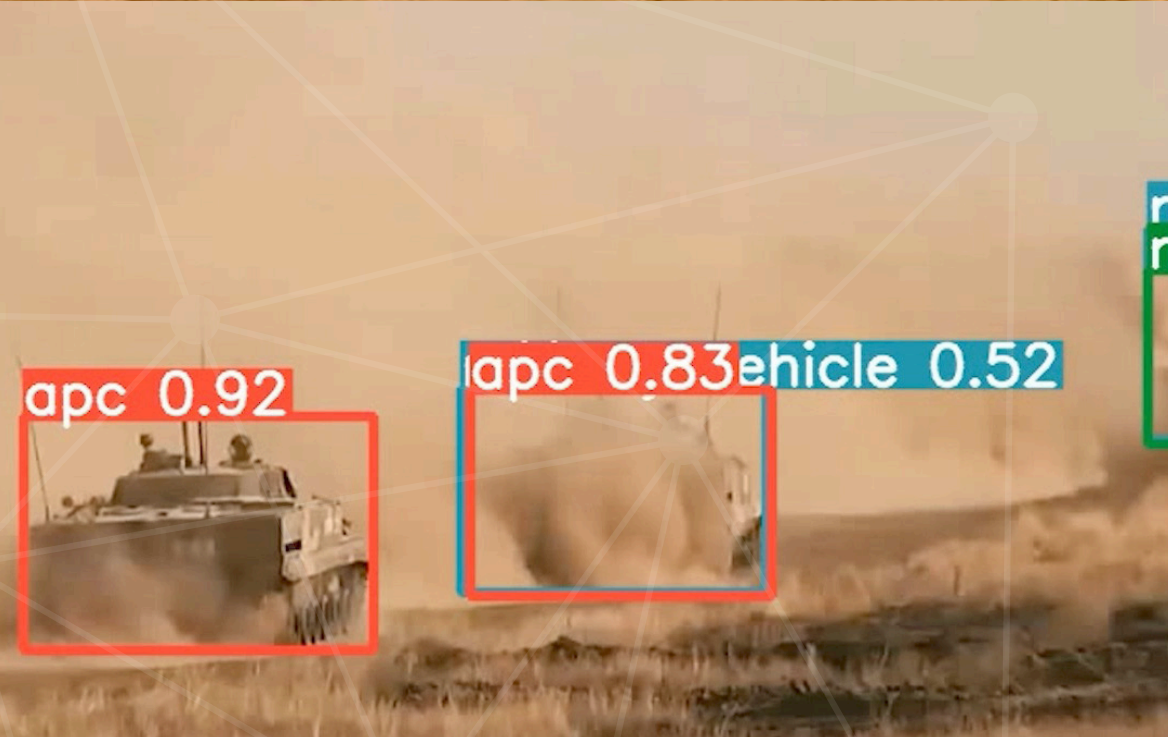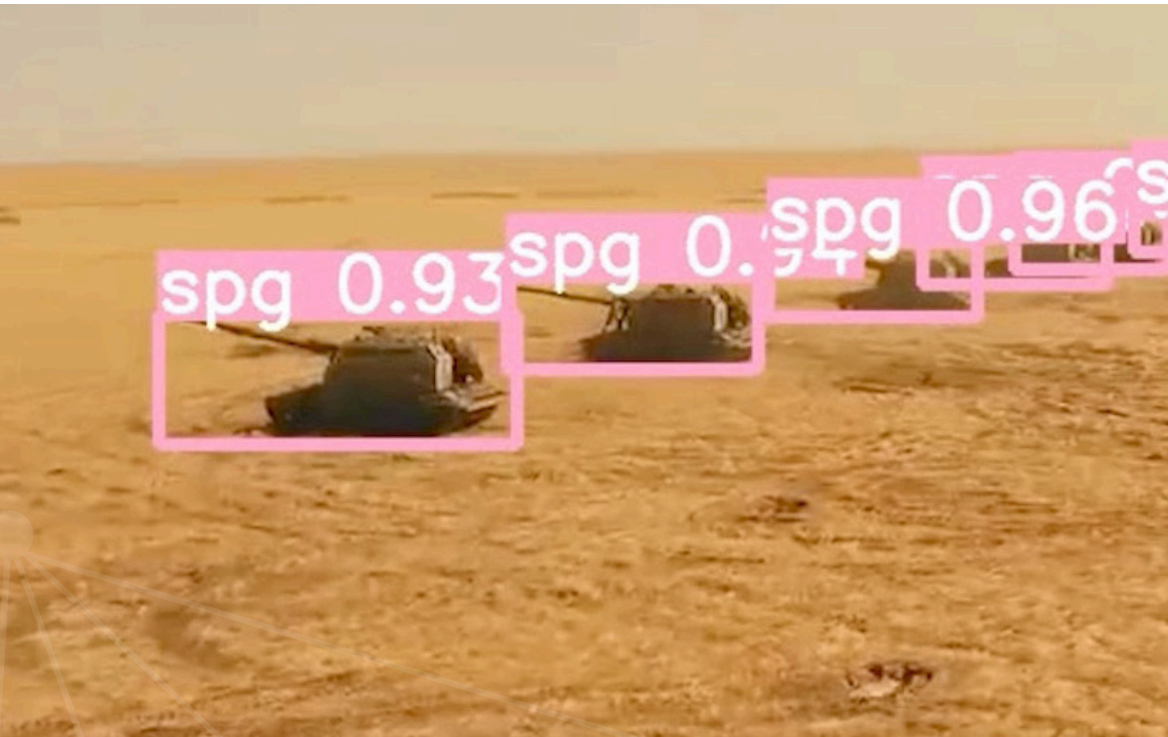
User-facing application

Complementing the EyeQ Land system is a user-facing application.

- Image Visualization: Displaying video streams with overlaid real-time detections.

- Multistreaming: The capability to display more than one video stream simultaneously.

- Map with detections: Automatic plotting of detections on the map view in accordance with NATO APP-6A standard.

- List of Objects: Register of identified objects with time of detection and location.

- Time Control: Scrolling through video streams and maps in real-time, with the option to rewind to a specific moment.

- Advanced Filtering: Browsing and sorting the list of detected objects by detection threshold, object class, type, or group.

- Detections Customization.

- Possible integration with the Fire Control System (FCS): Ability to send detected target data, including identification and location, to the FCS.

- Integration with battlefield management systems, e.g. TOPAZ. Ability to send data, including locations, to other systems.

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