

OTONO-X™ WILDLIFE

UNMANNED AUTONOMOUS MISSION MANAGEMENT SYSTEM SEARCH AND RESCUE



AVANDRA 

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OTONO X is a software-based product designed to autonomously manage a swarm of UAVs for mission-critical operations. It enables coordinated control of aerial assets in search and rescue scenarios, enhancing coverage and reducing response time. The system continuously monitors for wildfire activity, using onboard sensors and real-time data analysis to detect threats early. Its adaptive algorithms allow UAVs to dynamically reassign tasks based on environmental changes and mission priorities. OTONO X supports scalable deployment, from small teams to large fleets, with minimal human oversight.

SYSTEM OVERVIEW

OTONO™-X is a field-tested, AI-powered framework for autonomous systems operation that enables the planning, operation and management of heterogeneous robotic platforms and payloads, in multiple domains. The open and robust software stack enables autonomous UGV and UAS operation management capabilities, from single platform to swarm missions.

The management system recommends the optimal platforms and payloads and plots the route for each unmanned autonomous mission. The approved mission plan can be modified manually by the operator as needed. The system enables multi-asset collaboration, featuring a range of services and functionalities and diverse payloads.





ONE-TO-MANY

One central control system for management, planning and execution of single or multiple platforms and missions.



CONFIGURABLE AND CUSTOMIZABLE

The system enables users to easily create diverse operational plans.



OPEN ARCHITECTURE

OTONO-X features a multi-layered and scalable modular open architecture. The system supports multiple standards, including ROS/ROS2 (open robotics standardization), DDS, JAUS (ground robotics standardization), MAVLink etc.



INTEGRATED DECISION MANAGEMENT CAPABILITIES

The modular and scalable AI-based decision management system (DMS) for dynamic collaborative planning enables teamwork within distributed systems. The DMS facilitates complex task planning and allocation for effective synchronized mission execution and enables communication among team members.



AUTONOMOUS MANAGEMENT SYSTEM

Enables the operator to plan and execute critical autonomous missions performed by unmanned robotic platforms and heterogeneous swarms. The system plans missions based on user inputs, including mission type (e.g., Search and Rescue, Fire detection, mapping, patrol), resources of platforms with payloads, time and duration (automatic overwatch, hot-swap planning) and location (mission area, takeoff and landing). Advanced Edge AI and Edge DMS allow robotic platforms (UGV/UAV) to perform autonomous missions and collaborate with other swarm members.



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KEY BENEFITS

- Filed-proven: In operational use worldwide
- One-to-Many: Complete solution for single/swarm platforms
- Modular framework: Multi-layered and scalable
- Customizable: User-defined missions and operational use cases
- Standard protocols: ROS/ROS2, JAUS
- Platform agnostic- can be deployed on a commercial of the shelf platforms

OPERATIONAL USE CASES

- Autonomous UAS/UGV missions
- Seek and rescue swarming
- Large Event's security
- Public safety monitoring
- Fire detection
- Wild life Rapid Response

KEY FEATURES

- Open architecture
- Configurable: Low code interface
- DMS: AI-based dynamic, collaborative mission planning
- Multiple heterogeneous tasks under one mission
- Autonomous and remote airfield management
- Obstacle avoidance algorithms based on EO and LiDAR
- Precise and safe landing algorithms
- Flight path planning and control