



DRONE IN A BOX

AI-Powered Environmental & Infrastructure Monitoring

AUTONOMOUS

DRONE
OPERATIONS

AI POWERED

ANALYTICS

CENTRALIZED

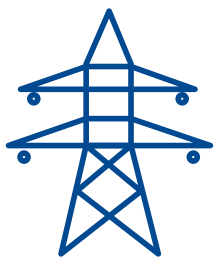
CONTROL
PLATFORM

REMOTE BVLOS

MONITORING

REDUCED

SITE VISITS & CO₂
EMISSIONS



TRANSMISSION GRIDS

Omexom's Drone in a Box solution combines autonomous drones, AI analytics, and centralized monitoring to enable continuous remote inspections, environmental monitoring, and digital documentation for energy infrastructure projects. Developed with FlyNex and U-ROB, it replaces repetitive site visits with automated data collection and analysis, improving visibility, compliance, and operational efficiency.



KEY BENEFITS

- Automated monitoring reduces operational workload and repetitive site travel
- AI-enabled image analysis identifies potential issues at an early stage
- Minimizes the risk of delays by enabling faster intervention and decision-making
- Supports sustainability goals by reducing travel and CO₂ emissions
- Scalable model for sustainable, nature-compliant grid expansion

THE SOLUTION:



Deploy



Monitor



Analyse



Act

AUTOMATED NEST MONITORING ALONG AN OVERHEAD TRANSMISSION LINE

Challenge: Legally required nest monitoring across 139 towers during breeding season. Manual inspections every two days were costly and risked construction delays if nests were detected late.

Solution: From March 2025, Omexom deployed five Drone in a Box units along the route between two substations. Automated BVLOS flights and AI image analysis replaced manual patrols, enabling early nest-site detection with all findings logged on a centralized, offline-capable platform.

Impact: Fully automated compliance monitoring across all 139 towers, fewer site trips and CO₂ emissions, and greater planning certainty, a scalable model for future grid projects.

Autonomous Drone Stations

Strategically positioned Drone-in-a-Box units carry out scheduled flights and capture site data.

Centralized Command Center

A remote operations center coordinates drone missions and supervises project areas using BVLOS (Beyond Visual Line of Sight) capabilities.

AI-Based Assessment

Collected imagery is automatically analyzed to identify bird nest formations, environmental impacts or emerging risks.

Digital Project Platform

Data, maps, reports, geolocation information, images and inspection records are managed through a centralized digital interface.

Informed Action

Project teams receive actionable insights that support compliance, operational continuity and better decision-making.

OMEXOM

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Download the digital one-pager by scanning the QR code.

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