A Spanish company offers its expertise in UAV5G (unmanned aerial vehicle 5G) autonomous surveillance and infrastructure monitoring to participate in European Defense Fund projects (EDF)

Summary

Profile type	Company's country	POD reference
Technology offer	**Spain**	**TOES20250821009**
Profile status	Type of partnership	Targeted countries
PUBLISHED	**Research and development cooperation agreement** **Commercial agreement with technical assistance**	**• World**
Contact Person	Term of validity	Last update
Enrico FRANZIN	**21 Aug 2025** **21 Aug 2026**	**21 Aug 2025**

General Information

Short summary

A Spanish SME develops UAV5G, an autonomous drone-based system combining AI, secure 5G/satellite connectivity and drones-in-a-box. The technology enables real-time monitoring of airports, borders, critical infrastructures and surveillance posts. Main innovations are autonomous operation, AI-based anomaly detection and resilient communications.

The SME seeks R&D cooperation and industrial partners for EDF consortia.

Full description

An innovative SME from León, Spain, specialised in UAV systems, AI, and autonomous aerospace technologies. The company has extensive experience in drone operations, BVLOS (beyond visual line of sight) authorisations and international cooperation through ESA BIC (European Space Agency Business Incubation Centre), AENA (Spanish Airports and Air Navigation), and regional governments.

Current challenges in surveillance and infrastructure protection include high operational costs, dependence on human patrols, and limited situational awareness. State-of-the-art solutions often lack autonomy, resilience, or integration with secure communications.

UAV5G addresses this gap by integrating autonomous drone stations (drone-in-a-box), AI-based real-time image recognition, and 5G/satellite secure connectivity. The system performs automatic take-off, landing, charging, and mission planning, while AI algorithms detect anomalies such as Foreign Object Debris (FOD), unauthorised presence, or technical faults. Data is stored and analysed in secure cloud infrastructure with optional daily operations.

Applications include airport safety, border surveillance, energy plants, industrial sites, cultural heritage, and defence watch posts. The system has been successfully piloted with AENA and regional authorities, demonstrating scalability to dual-use and defence missions.

The company seeks R&D cooperation agreements to integrate UAV5G into broader EDF projects, and industrial partners to adapt and deploy the system at European scale. International collaboration is expected to focus on joint pilots, integration into defence/security platforms, and industrial exploitation.

- Expertise in secure 5G/satellite communication, cybersecurity and resilience.
- AI and computer vision for anomaly detection in complex environments.
- Drone-in-a-box hardware integration (weatherproofing, autonomous charging).
- Industrial partners with access to airports, borders, energy facilities or defence environments.
- Capability to support large-scale demonstrations and certification processes.

Advantages and innovations

- Autonomous operations reducing reliance on human patrols.
- AI-driven anomaly detection for FOD, intrusions, or structural issues.
- Secure connectivity via 5G/satellite ensuring resilience in critical missions.
- Proven in real pilots with AENA (airports) and government projects (heritage monitoring).
- Flexible deployment: airports, borders, ports, energy plants, watch posts.
- Dual-use potential for civil infrastructure and defence/security.
- Scalable SaaS business model with recurring revenue for long-term sustainability.

Technical specification or expertise sought

Stage of development

Available for demonstration

Sustainable Development goals

- **Goal 13: Climate Action**
- **Goal 11: Sustainable Cities and Communities**
- **Goal 17: Partnerships to achieve the Goal**
- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 8: Decent Work and Economic Growth**

IPR Status

Secret know-how

IPR Notes

Partner Sought

Expected role of the partner

Type of partner:
Defence and security companies, telecom providers, R&D institutions in AI and autonomy, public authorities and infrastructure operators (airports, border agencies, energy/industry).

Role of the partner:
Co-develop and adapt UAV5G to operational EDF use cases (border surveillance, critical infrastructure, watch posts). Provide testing environments and operational data. Support integration into larger defence/security platforms. Contribute to cybersecurity and compliance. Participate in exploitation through joint service models, SaaS or industrial deployment.

Type of partnership

Research and development cooperation agreement

Commercial agreement with technical assistance

Type and size of the partner

• **R&D Institution**

• **University**

• **SME 50 - 249**

• **Big company**

Dissemination

Technology keywords

- **01003016 - Simulation**
- **01003025 - Internet of Things**
- **01003008 - Data Processing / Data Interchange, Middleware**
- **01003003 - Artificial Intelligence (AI)**
- **01003018 - User Interfaces, Usability**

Targeted countries

- **World**

Market keywords

- **02007021 - Other Artificial intelligence related**
- **02007016 - Artificial intelligence related software**
- **02007008 - Business and office software**
- **02007022 - Software services**
- **01004008 - Other data communications**

Sector groups involved