



FLYOX I

HEAVY RPAS PLATFORM

Confidential — For Potential Investors & Technology Partners

01 EXECUTIVE SUMMARY

Singular Aircraft is a Spanish aerospace company that has designed, built, and flight-proven the **FLYOX I** — a heavy-class Remotely Piloted Aircraft System (RPAS) with over 250 hours of accumulated flight time. Originally conceived for unmanned firefighting operations, the **FLYOX I** has evolved into a versatile multi-mission platform capable of cargo delivery, maritime surveillance (ISR), anti-submarine warfare (ASW) support, and environmental monitoring. Singular Aircraft SL operates under ISO 9001 and AS/EN 9100 quality standards, with the platform designed to STANAG 4671 / CS-23 airworthiness criteria.

Why FLYOX I Stands Out

- **4,000 kg MTOW** with up to 1,500 kg payload compartment capacity — heavy RPAS category at a fraction of the cost of comparable systems.
- **Dual V8 engines**, 570 CV each (700 CV combined on propeller shaft) — proven automotive-derived powerplant with worldwide parts availability.
- **24+ hours endurance** and 3,600+ km range in surveillance configuration — persistent, wide-area coverage.
- **1,500-litre water tank.**
- **Operating cost below €500/flight hour** — dramatically lower than manned alternatives and competing heavy RPAS.
- **BLOS via SATCOM** (200 km LOS) with fully autonomous takeoff & landing, 105+ flight parameters recorded at 150ms intervals.

KEY FIGURES AT A GLANCE

4,000 kg

MTOW

+24 h

ENDURANCE

3,600 km

RANGE

200 km

LOS

250+

FLIGHT HOURS

< 500 €/h

OPERATING COST

5

COUNTRIES DEPLOYED

This document is a condensed technical and commercial overview of the **FLYOX I**, prepared for potential investors and technology partners interested in IP acquisition, bulk purchase, or royalty-based licensing arrangements.

02 TECHNICAL SPECIFICATIONS



Figure 1. Flyox I in flight — side profile showing high-wing cantilever design and retractable landing gear.

General Airframe Data

PARAMETER	SPECIFICATION
MTOW	4,000 kg
Max Landing Weight	3,800 kg
Basic Empty Weight	2,500 kg
Max Payload Compartment	1,500 kg
Wingspan	17 m
Length	11.7 m
Height	3.6 m
Service Ceiling	18,000 ft AMSL
Operating Temperature	-5°C to +45°C
Landing Gear	Retractable / Fixed

Performance & Propulsion

PARAMETER	SPECIFICATION
Avg Cruise Speed	80–125 kts
Max Structural Speed	140 KIAS
Endurance	Up to 24 h
Range	3,600 km
Fuel Capacity	2,040 L (2×1,020L)
Takeoff / Landing Distance	1,100 m / 650 m
Climb Rate	700 ft/min
Engine	2× V8, 570 CV each
Remote Crew	2 (pilot + payload op.)
Mission Suite	Firefighting·ISR·ASW·Cargo

03 MISSION CAPABILITIES & SENSORS

The **FLYOX I** is designed to serve multiple operational roles through modular payload reconfiguration, leveraging the platform's core strengths: long endurance and heavy-lift capacity.

Cargo Delivery

Configurable fuel-tank / cargo-bay trade-off tailored to customer needs. Operating cost slightly below €500/flight hour. Typical uses: humanitarian aid drops and military logistics resupply under SAIL I/II, without heavy certification overhead.

Maritime Surveillance & ISR

24+ hours endurance at 85+ kts, covering ~3,600 km per day mission. Military-grade EO/IR gimbal and maritime radar (200+ NM detection) for persistent maritime patrol, border surveillance, and environmental monitoring.

Anti-Submarine Warfare (ASW)

Up to 24 sonobuoys with real-time acoustic monitoring and processing.

Firefighting

Dual-compartment 1,500L water tank (750L/side); 400 L/s combined full discharge; 5-second automatic safety retract on both hatches.

Additional Mission Profiles

Border & coastal patrol · tactical connectivity relay · disaster response · environmental & marine-pollution monitoring · military training support · agricultural applications.



Figure 2. Flyox I on maritime patrol over the Atlantic — camera pod visible on centreline.

EO/IR Gimbal

<9 kg, 4-axis gyro-stabilised (<20µrad), cooled MWIR camera, laser range finder to 20 km, IP66.

10.7 km

HUMAN – DETECT

2.0 km

HUMAN – IDENTIFY

15.5 km

VEHICLE – DETECT

4.1 km

VEHICLE – IDENTIFY

Maritime Surveillance Radar

360° coverage, HRR + ISAR target classification, GMTI and pollution-SAR modes, ASTERIX/NMEA 0183 output, no export restrictions. Max detection range up to 200 NM.

04 SYSTEMS, AUTONOMY & GROUND CONTROL

The **FLYOX I** is built around a CAN-bus networked systems architecture with dual-battery electrical power, hydraulic actuation (130 bar) for control surfaces and retractable oleo-pneumatic landing gear, and a distributed, redundant flight-control system.

Data Link & Communications

PARAMETER	SPECIFICATION
C2 Data Link	2.3GHz MIMO, 25 Mbps
LOS Range	200 km
Video Link	200–800MHz, H.264
SATCOM (BLOS)	Unlimited — L & Ku band
Encryption	128-bit AES (256 optional)
Telemetry	105+ params @ 150ms

Flight Control & Autonomy Suite

Distributed FCS (Boxes A–F + Propeller Control Unit, 500Kbps CAN bus). OEM autopilot core — 40g, MTBF 49,915 hrs, 100% non-ITAR, deployed with 1,500+ clients globally. Autonomous takeoff and landing as standard. **Singular OS** mission-management software is autopilot- and drone-agnostic, with a quarterly release roadmap running through 2026 (V0.0 MVP → V1.0 full mission execution).

Ground Control Station (GCS)

Three operator positions (pilot, payload operator, spectator); 115/230V AC power with 8-hour UPS backup.

PILOT INTERFACE

Force-feedback joystick with PTT, differential-braking rudder pedals, dual-axis throttle, 5-position flap selector, manual/auto landing gear, fine propeller RPM adjustment.

DISPLAYS & RECORDING

3-monitor situational-awareness suite (PFD, video/HUD, navigation & engine display) with traffic and terrain alerting (GPWS at 500ft AGL). Three onboard computers record 105+ parameters at 150ms, 50GB each — over 2,600 flight-hours of capacity.

GCS-SIM

Full mission simulation environment for crew training, mission rehearsal, and regression testing.



Figure 4. Ground Control Station — 3D render (isometric view).

05 CERTIFICATIONS, PLATFORM FAMILY & COMMERCIAL MODELS

Certifications & Flight Permits

Flight permits obtained in **Iceland, Norway, Spain, the Dominican Republic, and São Tomé and Príncipe** (5+ more in process). **ISO 9001** and **AS/EN 9100** certified; designed under STANAG 4671 / CS-23 / FAR-23. Certification strategy combines a civil pathway (SORA 2.5, SAIL II→III) with a military pathway (STANAG 4671).

Operational Deployments

Over **250 flight hours across 5 countries and 3 continents**: sub-Arctic validation in Iceland, equatorial validation in São Tomé, extended-range testing in Norway and the Dominican Republic, and Spain as the primary development and firefighting-demonstration base.

Broader Platform Family

PLATFORM	MTOW	ROLE	STATUS
FLYOX I	4,000 kg	Heavy multi-mission	Flight-proven
SA-750 Ranger	750 kg	Tactical ISR	In development
SA-1500 Argos	1,500 kg	Maritime patrol	Year 3 target
SA-300 Shade	300 kg	Attributable/GPS-denied	Partnership

Commercial Models

IP ACQUISITION (FULL TRANSFER)

Outright purchase of the complete FLYOX I package — platform design, autonomy suite, GCS, and operational documentation — for sovereign RPAS programmes.

BULK PURCHASE

Direct acquisition of manufactured units, standard or customised, including training, GCS delivery, and initial operational support.

ROYALTY-BASED LICENSING

Partners manufacture FLYOX I (or derivatives) under licence, paying royalties per unit or flight hour; Singular provides the technical data package and manufacturing support.

TECHNOLOGY COMPONENT LICENSING

Individual licensing of components — autopilot, MMS, GCS software, drone-conversion kits — for integration into partners’ own platforms.

MISSION-AS-A-SERVICE

Singular operates the Flyox fleet directly, providing ISR, cargo, or surveillance on a per-mission or contracted-hours basis.



Figure 3. Singular Aircraft manufacturing facility — Flyox I under assembly.