SINGULAR
AIRCRAFT

SINGULAR OS

MISSION MANAGEMENT & CONTROL SYSTEM

01 EXECUTIVE SUMMARY

Singular Aircraft presents **SINGULAR OS**, its mission management and control system: the software layer that plans, conducts and audits unmanned operations from a single console. **SINGULAR OS** is not the aircraft or the ground station — it integrates with them — but the mission brain that unifies the operation of Singular Aircraft's entire platform family under one interface, designed from the outset in line with military (NATO/STANAG) and civil standards.

Unlike the fragmentation typically faced by defense operators — a different tool for every platform and every mission —, **SINGULAR OS** offers a single multi-platform, multi-mission console. One operator, with one set of training, can fly the different models in the family and chain together tasks as diverse as persistent ISR, maritime patrol, search and rescue, firefighting with retardant-curtain drops or cargo delivery in beyond-line-of-sight (BLOS) scenarios, without changing work environment.

Highlights

- **Multi-platform and multi-mission**: one console flies the entire aircraft family and every mission.
- **NATO interoperability**: aligned with STANAG 4586, 4609 (KLV/MISB), 7085 and 4660.
- **Autonomous safety**: contingency management with active geofencing (return, hold, land or terminate) without relying on human reaction.
- **Governed, auditable command**: role-based access control and a tamper-proof, exportable mission log.
- **Data sovereignty**: on-premise or European sovereign-cloud deployment, local operation with sync, designed for ENS accreditation.

STANDARDS & COMPLIANCE

STANAG 4586 UAV INTERFACE & LOI	**STANAG 4609** VIDEO + KLV (MISB)	**STANAG 7085/4660** DATA LINK
STANAG 4671 AIRWORTHINESS	**EASA / SORA** CIVIL OPERATION	**ENS** DATA SOVEREIGNTY

02 INTEROPERABILITY & MISSION PLANNING

Interoperability at the Core of the Design

SINGULAR OS aligns with **STANAG 4586** for standardized unmanned-vehicle control interfaces — including interoperability levels (LOI) and human-machine interface requirements —, adopts a data link aligned with **STANAG 7085 and 4660**, and treats collected intelligence as an exploitable, shareable product: the EO/IR sensor delivers precise georeferencing and **STANAG 4609**-compliant video with embedded KLV (MISB) metadata, ready for integration into allied command chains. The multilingual interface also facilitates operation in coalition environments.

Guided Planning, In-Flight Conduct

Planning is guided step by step, with mapping always present and tactical patterns — line, perimeter, coverage — that translate command intent into an executable mission. In flight, the operator has precision-guided approach and landing, tactical orbits over a point of interest, and route re-engagement by flying — never through instantaneous position jumps —, on an operational-grade HMI designed in line with STANAG 4586 and human-factors principles to maintain situational awareness at all times.

Figure 1. Flyox I on maritime patrol — one of the missions flown from SINGULAR OS.

Supported Standards

STANDARD	SCOPE
STANAG 4586	**UAV interface, LOI levels, HMI**
STANAG 4609	**Video + KLV (MISB) metadata**
STANAG 7085 / 4660	**Interoperable data link**
STANAG 4671	**Airworthiness (NATO design)**
EASA / SORA	**Civil operation framework**
Languages	**Multilingual interface (coalition)**

03 SECURITY, GOVERNANCE & DATA SOVEREIGNTY

The operational robustness of **SINGULAR OS** rests on three pillars.

AUTONOMOUS SAFETY

An active-geofencing contingency engine can autonomously order the mission's return, hold, landing or termination without relying on a human reaction.

GOVERNED & AUDITABLE COMMAND

Role-based access control enables commands according to each operator's responsibility, and every action is recorded in a tamper-proof, exportable mission audit log, suitable for later review and accountability.

DATA SOVEREIGNTY

SINGULAR OS supports on-premise or European sovereign-cloud deployment, with local operation and later synchronization — an architecture designed for ENS accreditation and for the airworthiness and operation frameworks (STANAG 4671, EASA/SORA) required by both military and civil customers.

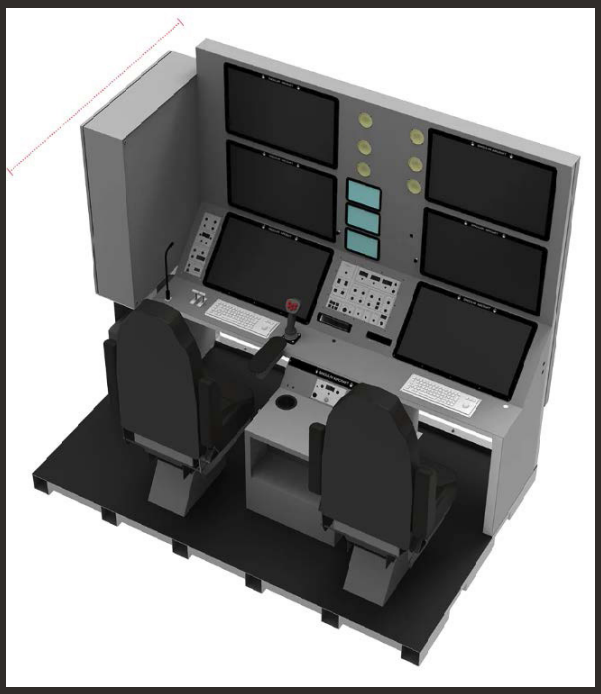

Figure 2. Ground Control Station — the console from which SINGULAR OS operates.

ONE CONSOLE, THE WHOLE FLEET

Singular Aircraft's entire aircraft family — present and future — is flown from SINGULAR OS under one interface, with the same training and the same operational-traceability standard, reducing the training curve and the cost of maintaining multiple parallel software ecosystems.