

AstroLife™

White Paper

Sovereign Artificial Intelligence Infrastructure for Critical Systems in Europe

Executive Summary

Sovereign artificial intelligence system designed for critical environments, providing full traceability, integrated governance and agentic execution capabilities.

Context

Critical systems require auditable, resilient decision-making capabilities under institutional control. Current architectures present limitations in traceability, sovereignty and regulatory compliance.

Problem

The adoption of artificial intelligence without structured governance introduces systemic risks: opacity, technological dependency and lack of control over automated decisions.

AstroLife™ Approach

AstroLife™ integrates artificial intelligence, agent orchestration and governance within a unified architecture designed for critical environments.

Architecture

Data → Models → Synthia → Agents → Execution → Logs → Audit. Decoupled architecture enabling scalability and full operational control.

Synthia™ Core

Synthia acts as the operational core, coordinating agents, evaluating events and ensuring complete traceability for every decision.

Governance

Model aligned with EU AI Act, GDPR and GAIA-X, integrating human oversight, auditability and regulatory compliance.

Operational Metrics

Metric	Value
Latency	Optimized (35–70 ms)
Availability	99.98%
Traceability	100%
MTTR	5 seconds
Resilience	Multi-layer (SAT/EDGE/CORE)

Deployment Model

Compatible with on-premise environments, edge computing and federated architectures under European sovereignty principles.

Use Cases

Applicable to defense, energy, telecommunications and public sector environments, where operational continuity is critical.

Technology Readiness Level (TRL)

Architecture targeting TRL 6–9, enabling validation in real environments and progressive deployment.

Conclusion

AstroLife™ defines a new paradigm of operational artificial intelligence, where traceability, governance and resilience are core elements of the system.

