

Discover More



Smart UxV **Operations**

*One platform.
Infinite possibilities.*



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Never Better.



The Problem

The integration of new forms of air mobility (UAM, UAV, eVTOL) requires advanced digital tools to design, plan and validate infrastructure, missions and vehicles in complex and yet-to-exist scenarios.

Current solutions are fragmented, offline or focused on individual aspects (design, training, simulation), making it difficult to make quick effective and data-driven scenarios.

The Solution

ICARUS, developed by TXT, is an integrated digital twin suite for the design, development, and deployment of next generation air mobility systems.

ICARUS is a modular, cloud-based, multi-functional platform streamlining the design, planning, execution and analysis of simulation-based scenarios for emerging air mobility systems (UAM, UAV, eVTOL, vertiports, etc.)

MODULES

Design

Design and customize your aircraft from structure to performance

- Full customization of geometry, propulsion, and avionics
- Define aerodynamics, weight and powerplant models
- Plug in sensor payloads and mission equipment
- Tailor performance profiles for any mission
- From early concept to digital twin in one tool

Plan

Configure your fleet and plan missions with precision speed control

- Build and manage multi-aircraft fleets
- Assign roles, payloads and flight profiles
- Define waypoints, timings and co-ordination rules
- Simulate complex multi-vehicle scenarios
- Optimize logistics, autonomy and scheduling

Sim

Real-time physics-based simulation

- Accurate aerodynamics and energy modeling
- Real-time response to environment (wind, terrain, traffic)
- True-to-life vehicle and payload behavior
- Stress testing under operational constraints
- Validating design, mission and risk in seconds

Insights

Review, compare and choose backed by real data, not guesswork

- Replay missions with full telemetry and visuals
- Analyze KPIs: efficiency, coverage, energy and risk
- Compare multiple drones and configurations
- Identify best performers for your objectives
- Support data-driven design and procurement

USE CASES

IRS Mission Validation in contested environments

- A military force must validate the effectiveness of a medium-range ISR (Intelligence, Surveillance, Reconnaissance) mission in a low-intensity setting with electronic and logistical threats.

Drone design for OEMs

- Design and customize drone frame, aerodynamics, engines and payload
- Simulate and compare in real-time different kinds of aircraft and test the most suitable for a given mission profile

Training for Pilots and Payload Operators

- First person pilot or operator training, or fleet management training in real-time
- Debriefing and review of critical actions

Fleet and Mission Planning for Pilots, Engineers and Mission Strategists

- Mission planning for drone fleets or drone-aircraft teaming
- Evaluate and study the mission profile, the cooperation between drones when backed (or not) by radio carrier