

FLIGHT SIMULATION SOLUTIONS

for defense



exail

PRECISION AVIATION SYSTEMS & ENHANCED FLIGHT REALISM

Exail provides turnkey flight simulation solutions that prioritize technical accuracy and operational reliability. From procedural trainers to advanced Mixed Reality (MR), our systems ensure a seamless transition to live flight operations.



PHYSICS-BASED FLIGHT & SYSTEMS MODELING

Aerodynamic fidelity

Realistic flight physics across all regimes, including edge-of-envelope behavior and ground effects.

Systems integration

Full replication of mission-critical avionics, hydraulic, and electrical buses.

Data integrity

Integration of OEM Data Packages or custom data collection by Exail flight test experts to ensure authentic pilot reflexes.



HARDWARE & TACTILE REALISM

Active force feedback

High-fidelity flight controls designed for authentic tactile response and control loading.

Industrial-grade engineering

Rugged physical panels, switches, and I/O electronics optimized for intensive use and ease of maintenance.

Hybrid cockpits

Integration of physical controls with high-resolution virtual displays for cockpit configuration flexibility.



ADVANCED MISSION PREPARATION & PERFORMANCE ANALYSIS

A comprehensive ecosystem delivering immersive mixed-reality environments with spatial orientation and natural interaction, alongside an instructor station for real-time control and analytics, and an integrated LMS/TMS enabling data-driven training evaluation and optimized resource management.

IMMERSIVE MIXED-REALITY ENVIRONNEMENTS

Spatial orientation

360° high-definition visual immersion for navigation and procedural training.

Natural interaction

Pilots see their own hands and interact with physical controls while immersed in a virtual tactical world.

CENTRALIZED COMMAND INTERFACE

Dynamic control

Real-time environment management, weather modification, and system failure injection.

Diagnostics & analytics

Synchronized replay, eye-tracking analytics, and automated data export for objective performance evaluation.

INTEGRATED LEARNING & TRAINING SUITE (LMS/TMS)

Performance tracking

Automated capture of trainee metrics for longitudinal progress analysis.

Resource optimization

Streamlined scheduling for simulators, instructors, and maintenance cycles.



WHY CHOOSE EXAIL?

4

Next-generation simulation technologies

We master the future of operational training by integrating advanced simulation capabilities, including Mixed Reality (MR), Artificial Intelligence (AI), and psychophysiological sensors. This expertise allows us to deliver highly realistic, adaptive missions while tracking pilot stress, cognitive workload, and performance in real-time.

3

Rapid adaptation to new fleets

Reduce the strain on aircraft life-cycles and operational budget.

Reduced flight hours

Transition high-risk or repetitive maneuvers to simulation to preserve airframe life and eliminate fuel/ammunition costs.

Small infrastructure footprint

High-fidelity MR solutions reduce the need for massive facility overhead compared to traditional dome simulators.

1

Doctrinal sovereignty

Maintain full control over your training tactics. Our Mission Scenario Editor (MSE) allows instructors to design, modify, and deploy classified mission profiles—including Computer Generated Forces (CGF)—entirely in-house. Ensure data confidentiality.

2

Cyber-hardened architecture

Engineered for the defense sector, our systems adhere to rigorous security standards.

Defense-grade protection

Secure data handling and compliance with military cybersecurity requirements.

High availability

Built for long-term maintainability and mission-critical reliability.