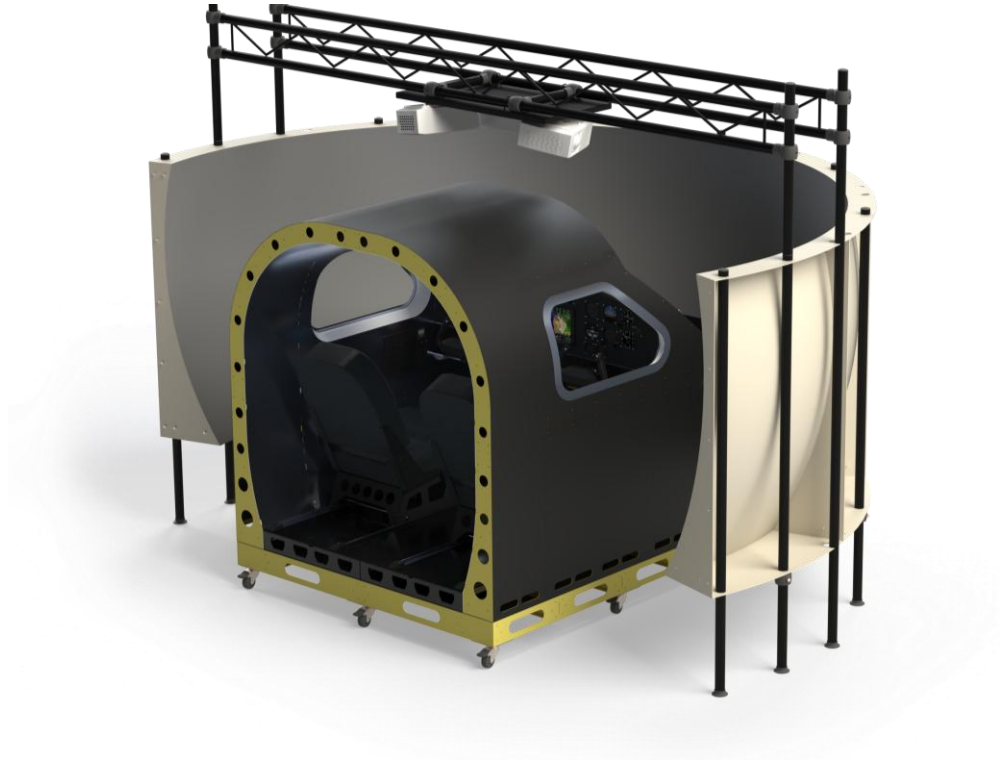




FlightPod Pro

General aviation procedural training platform



ONE PLATFORM, MULTIPLE MISSIONS

FlightPod Pro is a full-cabin, two-seat simulator platform developed for general aviation procedural training. It places pilots in an enclosed cockpit with linked flight controls, configurable avionics and a visual system selected for the training task. The platform bridges the gap between desktop trainers and higher-cost dedicated devices, giving flight schools, universities and training organisations a practical environment for repetition, familiarisation, instrument procedures and instructor-led scenarios.

Rather than being tied to one aircraft replica, FlightPod Pro uses a common mechanical architecture that can be configured for single-engine, multi-engine and turboprop operations. Instrument panels, controls, systems and visuals can be adapted as requirements evolve, protecting the initial investment and supporting more than one training mission on the same platform.

Key capabilities

- Fully enclosed cockpit with two adjustable seats and dual-linked controls
- Configurable for single-engine, twin-engine and turboprop procedures
- Modular avionics architecture supporting glass, hybrid and analogue layouts
- Display-independent visual system for flat panels, projection, domes or LED walls
- Instructor-led scenarios, session playback and optional in-cockpit control
- Designed for maintainability, remote support and future upgrades

Configuration shown is representative. Final equipment, software licensing and performance are defined in the project quotation and Statement of Work.



Standard FlightPod Pro configuration

The following baseline reflects a representative G1000 and three-channel FlightPod Pro configuration.

System area	Representative standard configuration
Cockpit	Full aluminium cockpit enclosure on a wheeled base, with generic window sections, internal floor and two adjustable seats
Instrument panel	Three simulated Garmin G1000 displays, audio and communications controls, three standby instruments and a wet compass. Transport Delay / Latency (End-to-End Response) ≤ 150 milliseconds
Primary controls	Dual-linked yokes; dual-linked rudder pedals; dual toe brakes with emulated master-cylinder feel; parking brake
Engine controls	Configurable throttle, propeller and mixture controls for single- or twin-engine operation
Aircraft systems	Functional landing gear, flaps and trim; labelled controls for electrical power, starting, lighting, de-ice and fuel management
Visual system	Three-channel projection system using laser-phosphor short-throw projectors; WUXGA/4K rendered output in the representative baseline; ≤ 6 foot-lamberts
Audio and communications	2.1 cockpit sound system, four-channel mixer/audio interface, wired headsets with microphones and software-emulated filtering and squelch
Haptics	Independent seat-mounted tactile transducers with digital amplification, controlled through SimHaptic by rkApps
Simulation software	X-Plane 12 Pro, configured aircraft and avionics software; commercial licences supplied according to the final system specification.
Remote support	Remote desktop access for diagnostics, configuration and software support
Network	Ethernet for local master/slave synchronisation; internet connection for remote support

Training applications

- Cockpit familiarisation, checklist flows and standard operating procedures
- VFR and IFR procedures, navigation and instrument scan
- Single- and multi-engine handling procedures, including asymmetric-flight scenarios
- Abnormal and emergency procedure rehearsal
- Instructor-led scenario training, briefing and debriefing



Technical specification

Representative baseline - subject to final configuration

Cockpit and controls	Specification
Product name	FlightPod Pro
Platform type	Modular general aviation procedural training simulator
Cockpit	Full enclosure; precision laser-cut aluminium construction
Crew positions	2, with adjustable seating
Mobility	Wheeled base with locking castors
Aileron control	Dual-linked yokes with control loading and Hall-effect sensing
Rudder control	Dual-linked rudder pedals with control loading
Wheel brakes	Dual toe brakes with emulated master-cylinder feel
Parking brake	Push-pull, spring-latched mechanism
Power controls	Single- or twin-engine throttle, propeller and mixture configuration
Instrument panel	Configurable; representative baseline uses three G1000 hardware displays with audio/comms panel
Standby instruments	3, plus a wet compass in representative baseline
Switch interfaces	USB HID-compliant controls; advanced I/O available
Circuit breakers	Printed dummy breaker panels and functional essential breakers in representative baseline; additional breakers optional

Visual system	Specification
Image generators	3 in representative baseline for native independent WUXGA/4K channels
Display channels	3
Displays	Curved screen with laser-phosphor multi-projector system
Rendered resolution	WUXGA baseline with 4K pixel shifting; native 4K optional
Horizontal field of view	Approximately 210 degrees in representative configuration
Vertical field of view	Approximately 40 degrees in representative configuration
Alternative displays	Spherical dome or LED wall



Software, audio and support

Representative baseline - subject to final configuration

Software	Specification
Main simulation	X-Plane 12 Pro
Aircraft models	X-Plane aircraft or project-specific aircraft model
Performance configuration	Custom aircraft dynamics
Avionics	Hardware and software selected for the required panel configuration
Haptics software	SimHaptic by rkApps
Support access	TightVNC or equivalent remote desktop solution
Audio routing	Four-channel hardware mixer/audio interface with software routing as required

Audio, instructor and support	Specification
Cockpit audio	2.1 speaker and subwoofer system for engine and environmental sound
Communications audio	Four-channel mixer/audio interface for ATC, intercom and instructor routing
Headsets	2 wired aviation-style headsets with microphones and push-to-talk control
Tactile feedback	2 seat-mounted tactile transducers with digital amplification
Instructor functions	Server-based scenario loading, recording and assessment; scenario control and session playback through the simulation platform
Instructor hardware	External display and in-cockpit tablet available according to configuration
Support	Remote software diagnostics, operator training and project-specific spare-parts provision



Configuration options

FlightPod Pro can be supplied as a complete turnkey system or configured around customer-supplied equipment. Options are selected according to aircraft class, training objectives, available space and budget.

Option group	Available configurations
Avionics and panels	Reconfigurable instrument panel with up to three touch displays; G1000-class hardware; G500/600 and GTN 650/750 layouts; analogue or hybrid panels; radio and autopilot controls
Cockpit controls	Alternative yokes or control columns; sidestick or centre-stick integration; commercial force-feedback controls; customer-supplied Honeycomb, MOZA or Logitech controls
Aircraft systems	Overhead panel; side and centre consoles; additional switch panels; backlit legends; functional warning lights; simulated or selected functional circuit breakers
Visual systems	Native three-channel 4K image generation; OLED displays; ultra-short-throw projection; curved screens; spherical dome; LED wall
Interior	Aircraft-specific window frames; exterior skin panels; upholstered trim; PVC-coated interior panels; carpet; overhead lighting, ventilation and low-voltage fans
Instructor station	External instructor workstation; in-cockpit tablet; scenario control; session playback; CCTV monitoring and recording
Audio and haptics	Alternative headset interfaces; intercom routing; enhanced audio filtering; additional tactile transducers
Aircraft modelling	Project-specific flight dynamics, systems logic, panel configuration, liveries and training scenarios
Motion	Integration with a compatible motion platform, subject to engineering review, payload, centre-of-gravity analysis and project quotation
Delivery and support	Factory assembly; on-site installation; acceptance testing; operator and maintenance training; spare-parts package; service and support agreement

Qualification and intended use

FlightPod Pro is designed as a configurable procedural training platform. Device qualification or training credit is not implied by the product name or by a representative configuration. Where BITD, FNPT, AATD or other regulatory approval is required, the applicable configuration, evidence, quality system, evaluation process and customer training approval must be defined as a separate project.

For quotation

Please specify the intended aircraft class, avionics layout, visual system, software licensing, instructor facilities, installation location and required level of assembly. Sim-Mech will then define the final configuration, deliverables, lead time and commercial terms.