

Stations & Hardware

7 articles · Complete website edition

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Stations and hardware

AVOPSIM runs on three hardware configurations. Every tier runs the same digital twin, vehicles and missions; fidelity and cost scale with the hardware. Choose the configuration that matches the space, the budget and the fidelity each program needs. Mix configurations across one airport and add stations at any time.

All of it is off-the-shelf hardware, specified and supplied turn-key by the AVOPSIM team.

Tier	Configuration	Typical use
1	Desk station	Route familiarization, theory support, repetition between instructor sessions
2	Driving station	Initial and recurrent driver training, ARFF, winter and GSE programs
3	Full vehicle cabin	Specialist programs and dedicated training facilities



Tier 2 driving station at Edmonton International Airport.

One software, every tier

The same software runs on every configuration, so a program can start on a laptop and move to a full cabin without changing anything but the station. Missions authored in the Mission Editor run unchanged on any tier, and every station reports to the same Examiner Console.

In this manual

- **Station requirements:** minimum and recommended PC specification.
- **Software and licensing:** Windows, MSFS 2024 and the AVOPSIM license.
- **Controls and audio:** wheels, pedals, controllers and headsets.

Desk station (Tier 1)

Portable familiarization for classrooms, briefing rooms and self-study. The full software on a laptop with a game controller.



Component	Specification
Computer	Gaming-class laptop or desktop with a dedicated GPU
Controls	Xbox-style game controller
Display	Laptop screen or one monitor
Audio	Headset with microphone for the radio program
Use	Route familiarization, theory support, repetition between instructor sessions

When to use a desk station

- **Self-paced practice.** Trainees repeat routes between instructor-led sessions.
- **Classroom and briefing rooms.** The same missions are shown on a laptop during theory lessons.
- **Programs that do not need a wheel.** Boarding bridge training runs on any tier, and ground handling and driver training are supported on desk stations.

Note

A desk station runs the same digital twin, vehicles and missions as a driving station. Results report to the

same Examiner Console.

Driving station (Tier 2)

The standard AVOP training station and the configuration installed at Edmonton. A dedicated PC, a force-feedback wheel, pedals and shifter on a rigid frame, with one to three screens or VR.



The Edmonton driving station: three curved screens, wheel, pedals, shifter, racing seat and headset.

Component	Specification
Computer	Dedicated PC. Ryzen 7 9700X3D and RTX 4080 recommended, 64 GB RAM, SSD
Controls	Logitech G920 wheel and pedals, or Thrustmaster T128 with shifter
Display	One large screen minimum, three curved screens recommended, VR supported
Seat and frame	Rigid cockpit frame with racing seat
Audio	Headset with push-to-talk for the radio program
Use	Initial and recurrent driver training, ARFF, winter and GSE programs

Why three screens

Three curved screens give trainees peripheral vision of crossing traffic, hold point signs and aircraft on either side of the vehicle. This is the recommended layout for situational awareness. A single large screen is the minimum; VR is also supported.

See [Station requirements](#) for the full PC specification.

Full vehicle cabin (Tier 3)

A cabin mock-up or a real cab fitted with the controls of the vehicle being trained, driven by the same software. Built to the vehicle and the program.



Component	Specification
Computer	Dedicated PC as Tier 2, or one per screen for wraparound displays
Controls	Vehicle-specific: plow levers, turret joysticks, boom and basket console, bridge console
Display	Wraparound screens or projection matched to the cab windows
Cabin	Mock-up or decommissioned cab, instrumented
Use	Specialist programs and dedicated training facilities

Programs that benefit from a full cabin

- **ARFF and rescue:** a cab mock-up with the real turret joysticks.
- **Snow removal:** the levers and consoles of your winter equipment.
- **Deicing operations:** boom and basket controls.
- **Passenger boarding bridge:** a replica bridge console.

Full cabins are scoped per vehicle and program. Write to support@avopsim.com to discuss a Tier 3 installation.

Station requirements

Minimums and recommendations for a Tier 2 driving station. The AVOPSIM team confirms the final specification for your setup during scoping.

Item	Requirement
Processor	AMD Ryzen 7 2700X or Intel i7-10700K minimum. Ryzen 7 9700X3D recommended.
Graphics	NVIDIA RTX 2080 with 8 GB minimum. RTX 4080 with 12 GB or more recommended.
Memory and storage	32 GB RAM minimum, 64 GB recommended. SSD with 100 GB available.
Displays	One large high-resolution screen. Three screens recommended for situational awareness. VR supported.
Controls	Logitech G920 wheel and pedals, Thrustmaster T128 with shifter, or a game controller for desk stations.
Network	Internet connection of 50 Mbps minimum, 100 Mbps recommended, for world streaming.
Software	Windows 10 or 11. Microsoft Flight Simulator 2024 Standard Edition, licensed separately. AVOPSIM license.

Internet connection

Caution

The simulator needs an internet connection. MSFS 2024 streams world data, so each station needs 50 Mbps or more. Connectivity, storage and current platform requirements are checked when the installation is planned.

If several stations share one connection, size the link for the total: for example, three stations need 150 Mbps at the minimum rate and 300 Mbps at the recommended rate.

Storage

Keep at least 100 GB free on an SSD for MSFS 2024, the airport digital twin, the vehicles and mission data. Installing on a mechanical hard drive causes long loading times and scenery pop-in.

Software and licensing

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Each AVOPSIM station runs three pieces of software:

1. **Windows 10 or 11.**
2. **Microsoft Flight Simulator 2024 Standard Edition.** Licensed separately at store pricing. The AVOPSIM team walks you through procurement through the Microsoft Store.
3. **AVOPSIM.** The airport digital twin, the vehicles, the missions and the instructor tools, installed on top of MSFS 2024.

Is Microsoft Flight Simulator included?

No. MSFS 2024 Standard Edition is licensed separately. AVOPSIM adds the airport, the vehicles, the missions and the instructor tools on top of it. On a turn-key delivery, MSFS procurement is handled as part of installation.

Updates

Microsoft and Asobo maintain and update the simulation engine. AVOPSIM updates the digital twin when the airport layout changes and delivers updates to vehicles and missions as part of support.

Note

One year of professional support is included with every integration. See [Deployment process](#).

Installing and updating AVOPSIM

Planned content: step-by-step installation of the AVOPSIM package on a station, license activation, and the update procedure.

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Controls and audio

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AVOPSIM supports off-the-shelf driving controls. Vehicle-specific controls are fitted on full vehicle cabins.

Station	Supported controls
Desk station	Xbox-style game controller
Driving station	Logitech G920 wheel and pedals, or Thrustmaster T128 with shifter
Full vehicle cabin	Vehicle-specific: plow levers, turret joysticks, boom and basket console, bridge console

Headset and push-to-talk

A headset with a microphone is required for the **AI radio communication** program. The trainee keys a push-to-talk to make each call. Any station tier supports the radio program; only the headset with push-to-talk is required.

Displays and VR

One large high-resolution screen is the minimum for a driving station. Three screens are recommended for situational awareness. VR is supported on driving stations.

Control assignments

Planned content: default wheel, pedal, shifter and controller assignments per vehicle type, and how to recalibrate controls.

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