

Deployment & Integration

7 articles · Complete website edition

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Deployment and integration

Every AVOPSIM integration is scoped from your airport's real layout, fleet list and procedures, and delivered turn-key: hardware, software, installation, instructor training and one year of support.



In this manual

- **Deployment process:** the five stages from scoping to support.
- **The airport digital twin:** what is modeled and how it is kept current.
- **Vehicle modeling:** how your fleet is reproduced.
- **Choosing a training approach:** AVOPSIM compared with proprietary simulators and in-vehicle training.
- Case studies: **Edmonton International (CYEG)** and **Winnipeg Richardson International (CYWG)**.

Time to first station

Weeks after scoping. Stations can be added at any time, and tiers can be mixed across one airport.

Request a quotation

Send your airfield layout, fleet list and station count to support@avopsim.com and the AVOPSIM team returns a fixed quotation.

Deployment process

An AVOPSIM integration moves through five stages.

- 1. **Scoping.** We review your airfield layout, fleet list, training syllabus and station count, and return a fixed quotation.
- 2. **Airport and vehicle modeling.** The digital twin and your vehicles are built from operational drawings, survey data and reference photography.
- 3. **Mission integration.** Your routes, hold points and constraints become scored missions, delivered in blocks of 20 scenarios.
- 4. **Installation.** Turn-key delivery of hardware and software on site, including MSFS procurement through the Microsoft Store.
- 5. **Instructor training and support.** Instructors are trained on the Mission Editor and Examiner Console. One year of professional support is included.

What to prepare for scoping

Item	Why it is needed
Airfield layout	Operational drawings and survey data for the digital twin
Fleet list	The vehicles to model, with reference photography and livery
Training syllabus	The routes, procedures and constraints that become missions
Station count and tiers	Hardware specification and installation planning
Site information	Room, network connectivity and storage for each station

Note

Connectivity, storage and current platform requirements are checked when the installation is planned. See [Station requirements](#).

The airport digital twin

Your airfield is reproduced 1:1 from operational drawings and survey data and loaded into the engine as scenery: runways, taxiways, aprons, service roads, buildings and terrain, with signage, markings and lighting placed as on the live airfield.



Taxiway signage on the digital twin.

What is modeled

Area	Details
Airfield	Runways, taxiways, aprons, service roads, hold points and hotspots on the current layout
Terminal area	Terminal, gates, boarding bridges and apron markings for ground handling missions
Fire station	Animated bay doors and response routes for the ARFF program
Signage and lighting	Signs, markings, centerline and edge lights, stop bars, guard lights and apron floods for night missions
Buildings and landmarks	Terminal, hangars, fire station and landmarks
Weather and season	Winter missions with snow, reduced visibility and contaminated surfaces

Outside the airport boundary, trainees see the photorealistic world provided by Microsoft Flight Simulator 2024.



Keeping the twin current

The digital twin is updated when the airport layout changes. A new taxiway, a relocated stand or a construction closure is added so drivers learn the new routing before it goes live.

Vehicle modeling

Drivable vehicles are matched to the airport fleet in its own livery: dimensions, acceleration, braking, steering and traction, a modeled cabin with working instrumentation, and the specialist functions each unit performs.



Vehicle types

Category	Examples	Specialist functions
Operations	Operations pickup	Cabin instrumentation and lighting
ARFF	Heavy 6×6 ARFF vehicle	Roof turret and boom, modeled cabin with joysticks and displays
Winter	Plow and broom units, blowers, large tractors	Blade, broom and blower
Deicing	Deicing and anti-icing trucks	Boom and basket, fluid application
Ground support	Belt loader, pushback, tug and carts, fuel truck, catering truck	Belts, booms and hitches
Terminal	Passenger boarding bridge	Height, extension, slew, canopy



Adding vehicles

Any vehicle can be added to the fleet. Units are modeled per type with working functions and cabin controls, from operational references and photography supplied during scoping.

Choosing a training approach

Airports have two conventional options: train in the vehicle, or buy a proprietary-engine simulator with a vendor-specific cabin. AVOPSIM is a third option: the same digital twin, the same instructor tooling, on hardware you can buy anywhere.

	AVOPSIM	Proprietary-engine simulators	In-vehicle training
Simulation engine	Microsoft Flight Simulator 2024. World, weather, lighting and physics maintained and updated by Microsoft and Asobo.	Vendor-built engine. Updates and fixes are tied to the vendor's roadmap and support contract.	None.
Airport environment	1:1 digital twin of your airfield, signage, lighting and buildings, inside a photorealistic model of the whole surrounding world.	3D replica of your airport built by the vendor. Surroundings are typically limited to the airport boundary.	The real airfield, when traffic and weather allow it.
Vehicles	Your fleet, modeled per unit with cabin instrumentation and specialist functions.	Vendor library with custom units on request.	An operational vehicle taken out of service.
Hardware	Off-the-shelf PC, wheel and pedals. Scales from a desk station to a full vehicle cabin.	Vendor-specific cabin and visual system.	Vehicle, fuel and an instructor in the passenger seat.
Instructor tools	Mission Editor and Examiner Console included. One instructor monitors several stations.	Instructor station, typically included with the system.	One instructor per trainee.
Radio communication	AI radio communication with a virtual controller, speech recognition and scoring. Beta.	Varies by vendor.	Live frequency. Limited practice, real consequences.
Weather, time and season	Full day and night cycle, live or preset weather, every season, set per mission.	Configurable lighting and weather presets.	Whatever the day provides.
Time to first station	Weeks after scoping. Add stations at any time.	Months, tied to cabin manufacturing and installation.	Immediate, subject to vehicle and instructor availability.

Note

The comparison describes typical characteristics of each approach, not the offer of any specific vendor.

Edmonton International Airport (CYEG)



Edmonton is the reference AVOPSIM integration. The digital twin covers the runways, taxiways, aprons, service roads and terminal area of CYEG, including recent changes to the airport layout and markings, with signage, lighting and operational buildings reproduced from operational drawings and survey data. The fleet was modeled to the airport's own vehicles in its livery, and missions were built around Edmonton's routes, hold points and hotspots.

Airport	CYEG, Edmonton International Airport, Alberta
Digital twin	Airfield, terminal area, fire station, recent layout changes
Fleet	Operations pickup, 6×6 ARFF vehicle, plow and broom, belt loader, pushback, tug and carts, large tractor, fuel and catering trucks
Programs	Driver training, ARFF and rescue, snow removal, ground handling
Stations	Driving station: three curved screens, wheel, pedals, shifter, racing seat
Missions	20 scored scenarios plus instructor-authored missions

What was modeled

- **Airfield.** Runways, taxiways, aprons, service roads, hold points and hotspots on the current layout.
- **Terminal area.** Terminal, gates, boarding bridges and apron markings for ground handling missions.
- **Fire station.** Animated bay doors and response routes for the ARFF program.
- **Signage and lighting.** Signs, markings, centerline and edge lights, stop bars and apron lighting for night missions.
- **Fleet in livery.** Vehicles modeled per unit with cabin instrumentation and specialist functions.
- **Weather and season.** Winter missions with snow, reduced visibility and contaminated surfaces.

The station on site



The Edmonton driving station: a dedicated PC, three curved screens, a force-feedback wheel, pedals and shifter on a rigid frame with a racing seat and headset for the radio program. The same configuration is the Tier 2 station offered to every airport.

From the YEG digital twin



Operations pickup holding short.



ARFF vehicle leaving the fire station.



Winter units at the apron.

Winnipeg Richardson International Airport (CYWG)



WINNIPEG
RICHARDSON
INTERNATIONAL AIRPORT

Winnipeg operates around the clock as a freighter hub, with cargo aprons and service roads that see heavy vehicle traffic at night and through the winter. The Winnipeg program focuses on AVOP pre-certification for airside drivers and cargo operators: route familiarization on the cargo and terminal aprons, aircraft right of way around active stands, and night and winter driving on the airport's own layout.

Airport	CYWG, Winnipeg Richardson International Airport, Manitoba
Digital twin	Airfield, cargo aprons, terminal aprons and service roads
Fleet	Operations and cargo ground vehicles, modeled to the airport fleet
Programs	Driver training, ground handling
Stations	Driving station
Missions	AVOP pre-certification scenarios, day, night and winter

What was modeled

- **Cargo aprons.** Freighter stands, service roads and equipment staging areas.
- **Terminal aprons.** Passenger stands, boarding bridges and apron markings.
- **Night operations.** Lighting, signage and hold points for overnight freighter traffic.
- **Winter conditions.** Snow, reduced visibility and contaminated surfaces on the same routes.
- **Aircraft interaction.** Right of way and conflict recognition around active stands.
- **Assessment.** Scored missions ahead of the practical AVOP examination.

From the YWG digital twin



Terminal gates and boarding bridges.



Cargo apron at night.



Cargo hangars.