PRODUCT MANUAL

Mission Hub

59 articles · Complete website edition

Includes all article text, tables and available illustrations. Videos and interactive resources are linked. Printed page numbers restart with each article. Use the clickable contents or PDF bookmarks to navigate.

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Miltech Mission Hub

Welcome to the Mission Hub

Overview

Miltech Mission Hub lets you create and play custom missions in Microsoft Flight Simulator. Mission Hub adds meaningful structure and activities to your flight experience. To create missions, no coding is required!

Guides

From quick start guides to detailed explanation, get step by step guides here:

Quick Start: Playing Missions

Gives a quick overview of the UI and process for playing missions.

Quick Start: Creating Missions

Gives a quick overview of the UI and basic process for creating missions.

Mission Logic Basics: Events, Actions, and Connections

Learn how to make your missions interactive and dynamic by linking events and actions between map objects. This guide explains the fundamentals of mission logic, helping you create missions that react to what the player does.

Building Detailed Missions: Objectives, Triggers, and Activities

Guide players through detailed missions by using objectives, triggers, and activities. Learn to structure your mission flow, control what happens when, and organize everything for a great player experience.

Adding a route to your mission

Learn how to add and edit a flight route for your mission that is displayed to the players on both the map and aircraft systems.

Sharing and Installing Missions

For PC users; how to access your saved missions and paste shared missions.

Detailed Documentation

Want to learn about specifics? Look here:

Mission Settings

Info about what all the different mission settings do.

Map Objects

Info about all the objects you can add with the mission editor.

Miltech Mission Hub

Introduction

Thank you for purchasing Miltech Simulations' Mission Hub.

Around the same time as the successful release of Supercarrier Pro and the subsequent launch of the CH-47, we recognized the **need for a flexible, expandable, universal, and aircraft-agnostic Mission/Campaign Editor** within Microsoft Flight Simulator. The CH47 served as our initial attempt at implementing a basic mission system - one that relied on predefined, hardcoded missions developed specifically for that aircraft alone.

With the announcement of *Microsoft Flight Simulator 2024* and its new built-in “Career” mode, we initially believed that a custom mission system might no longer be necessary or viable. However, after reviewing the features and limitations, it became clear that - while undeniably fun - it lacks the flexibility and depth needed to support the wide range of mission types and gameplay modes we envision. As a result, we’ve revisited our original concept, aiming to build a system that will remain **fully independent from FS24 Career Mode**, modular, and adaptable across aircraft types and mission profiles.

Drawing inspiration from other campaign-oriented games such as *DCS* and *Arma 3*, we’ve developed a mission system built around a flexible event-action framework. This system allows users to define **Events -** such as area entry, time elapsed, speed thresholds, or altitude levels - and link them to specific A**ctions** like displaying a marker, playing a voice line or message, advancing mission stages, or ending the mission altogether. Miltech Mission Hub enables both developers and users to create and share missions and campaigns for MSFS20 and 24, both on PC and Xbox.

Miltech Simulations

Miltech Mission Hub

Activating the Product

Caution
An active internet connection is required on initial activation of the aircraft.
After this, the aircraft can be used offline for a period of time. Our system will automatically check your license sporadically.
If you require assistance or have a setup that prevents this from functioning correctly, please contact us at contact@miltechsimulations.com

Miltech Simulations' Mission Hub uses a lightweight activation and version control system to ensure your product license is valid and always up to date.

Depending on where you purchased the product, activation may differ:

- **MiltechSimulations.com / Contrail App**\ A serial key is generated and automatically entered into the product. Under normal circumstances, activation happens silently and without user input.
- **iniBuilds** \ A serial key is provided at the time of purchase. You must copy and paste this key into the toolbar activation popup.
- **MS Marketplace**\ No activation key is required. The product activates automatically through the simulator platform.

Common Activation Issues

If the product fails to activate correctly, it may present in one or more of the following ways:

- **Mission Hub Toolbar displays as fully black screen or nonresponsive**
- **Error messages appear on the activation screen of Mission Hub**
- **Activation prompt fails to accept a valid key or does not respond**

If you experience any of these issues, please contact our support team with your purchase information and a brief description of the problem. We're here to help.

contact@miltechsimulations.com

Miltech Mission Hub

Disclaimers and Credits

Warning
3RD PARTY CREATORS: PLEASE READ THE END USER LICENSE AGREEMENT

Caution
This product was exclusively developed and distributed for entertainment and educational purposes. Any commercial, training, professional, or military use of this product is strictly prohibited and not endorsed by Miltech Simulations, or any other company or individual related to this project.

Caution
This product has been independently developed using open-source information. This product includes artistic impressions of aircraft, vehicles and ships, protected under the 1st Amendment, and does not accurately represent (nor intends to represent) the performance, systems, design and/or features of any real-life aircraft, ship or vehicle. The depiction of any weapon, ship or vehicle in the simulator does not indicate affiliation, sponsorship, or endorsement by any weapon or vehicle manufacturer.

Credits

Miltech Simulations:

- Liam T: Mission Integration and Creation, UI Design, WASM, WorldScripts. Project Conceptualization. Mission Lord.
- Gabriel V: Quality Assurance, Project Management, Marketing, Community Engagement. 3D Art Preparation, Conceptualization. Mission Creation.
- Brayan L: 3D Assets - modeling and texturing.
- John H: Quality Assurance, Subject Matter Expert.
- Nace420: Mission Creation.
- Max E: 3D/2D Asset Design. Mission Creation.

External Help:

- Distribution: Vantech North America LLC, IniBuilds LTD, Microsoft, Contrail Services Limited.
- Video and Promotion Materials: IniBuilds LTD, CaptainKenobi, Contrail Services Limited.

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hello@vantech.dev

Miltech Mission Hub

Product Support

All support for this product will be handled initially by Miltech Simulations. Support is available via our support forum: https://miltechsimulations.talkyard.net/latest

Our support is also offered via email in a 1-to-1 manner, through our Email Address: contact@miltechsimulations.com

For company/business inquiries, please contact hello@vantech.dev

Miltech Mission Hub

Product Roadmap

> Note
> Miltech Mission Hub is a long-term iterative project. Features and functions will be added over time, and will often be tied to aircraft type releases.

The following roadmap outlines planned features, improvements, and major updates for Miltech Mission Hub project. This timeline and features described here are **tentative** and may shift based on testing, feedback, or MSFS platform limitations.

Completed on Initial Release

*

In Progress

*

Planned / R\&D

*

Miltech Mission Hub

FAQs and Common Problems

I can't drag the map while editing my mission

Sometimes when switching programs, the dragging functionality can break. Simply alt-tab again, until the dragging works again.

❄ When using Mission Hub, my simulator freezes

This behavior is intentional and by design. Mission Hub pauses the simulator to prevent your aircraft from crashing while you're editing your mission. You can disable this behavior in the Mission Hub settings.

• My screen goes black after using Mission Hub for a few minutes

Don’t panic! What you’re seeing is the result of the aircraft overstressing while the simulator was paused - your pilot has “fainted.”

There are a few ways to prevent this from happening:

- Make sure your Throttle is at IDLE while working on Mission Hub
- Detach the Mission Hub window into a separate pop-out (click the button next to the [X] close icon).
- Turn off your engine.
- Go into the MSFS menu (ESC Key) for a few seconds.

This generally only happens on Helicopters.

Will there be more Predefined Missions?

Absolutely! We’ll be adding new missions and features with each update - and you can expect those updates to come in regularly!

I'm on Xbox - how can I share missions?

Unfortunately missions are currently not shareable on Xbox due to lack of access to the file system. However, we are actively working on a solution to send missions over-the-cloud for the Xbox crowd.

We care about you all.

I'm on PC - how do I share and/or install missions?

Refer to our guide here: Sharing and Installing Missions

Miltech Mission Hub

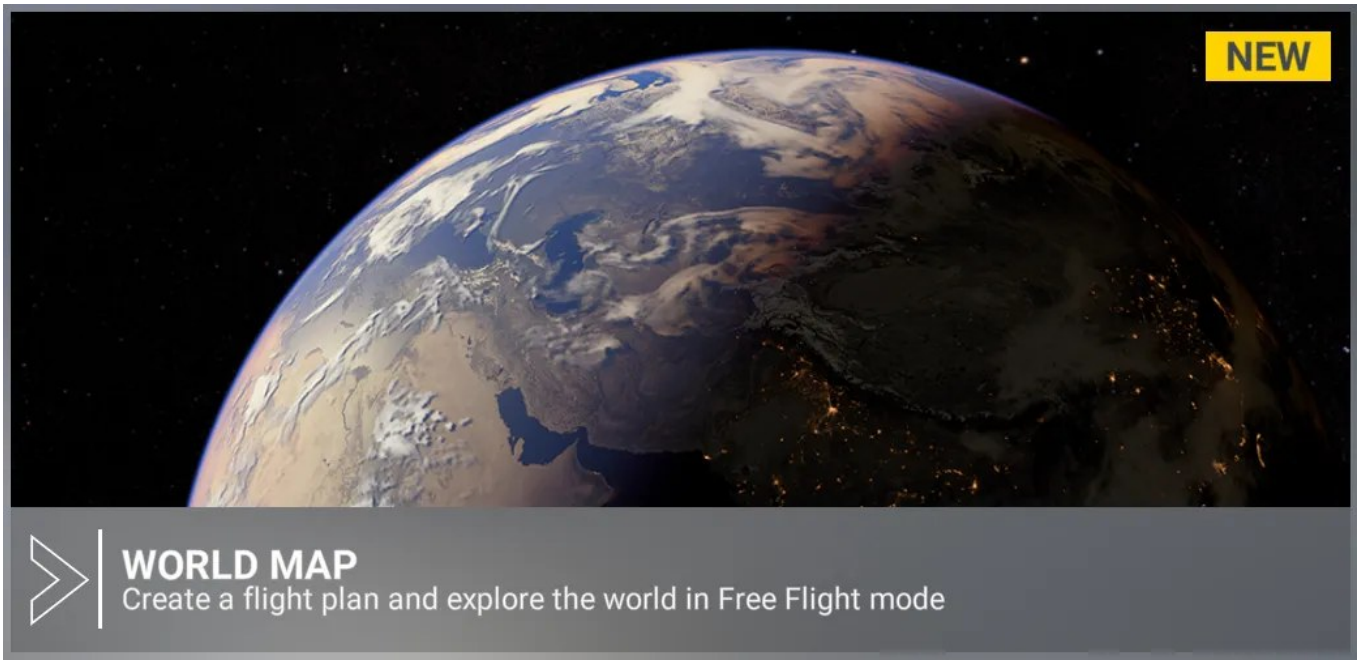
Quick Start: Playing Missions

Gives a quick overview of the UI and process for playing missions.

Ready to jump into action? Follow these steps to select and play missions in Miltech Mission Hub.

Playing Missions

Start a flight with the desired aircraft

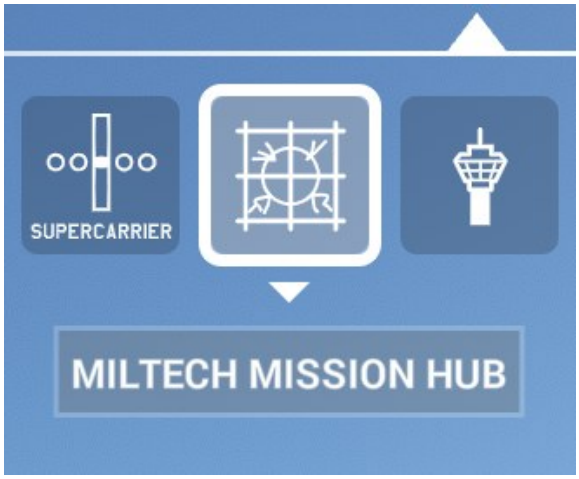


Begin in Freeflight:\ All missions launch from a standard freeflight session.

Choose Your Aircraft and Location:\ Select your desired aircraft. If you want to start the mission from a particular spot, spawn there now.

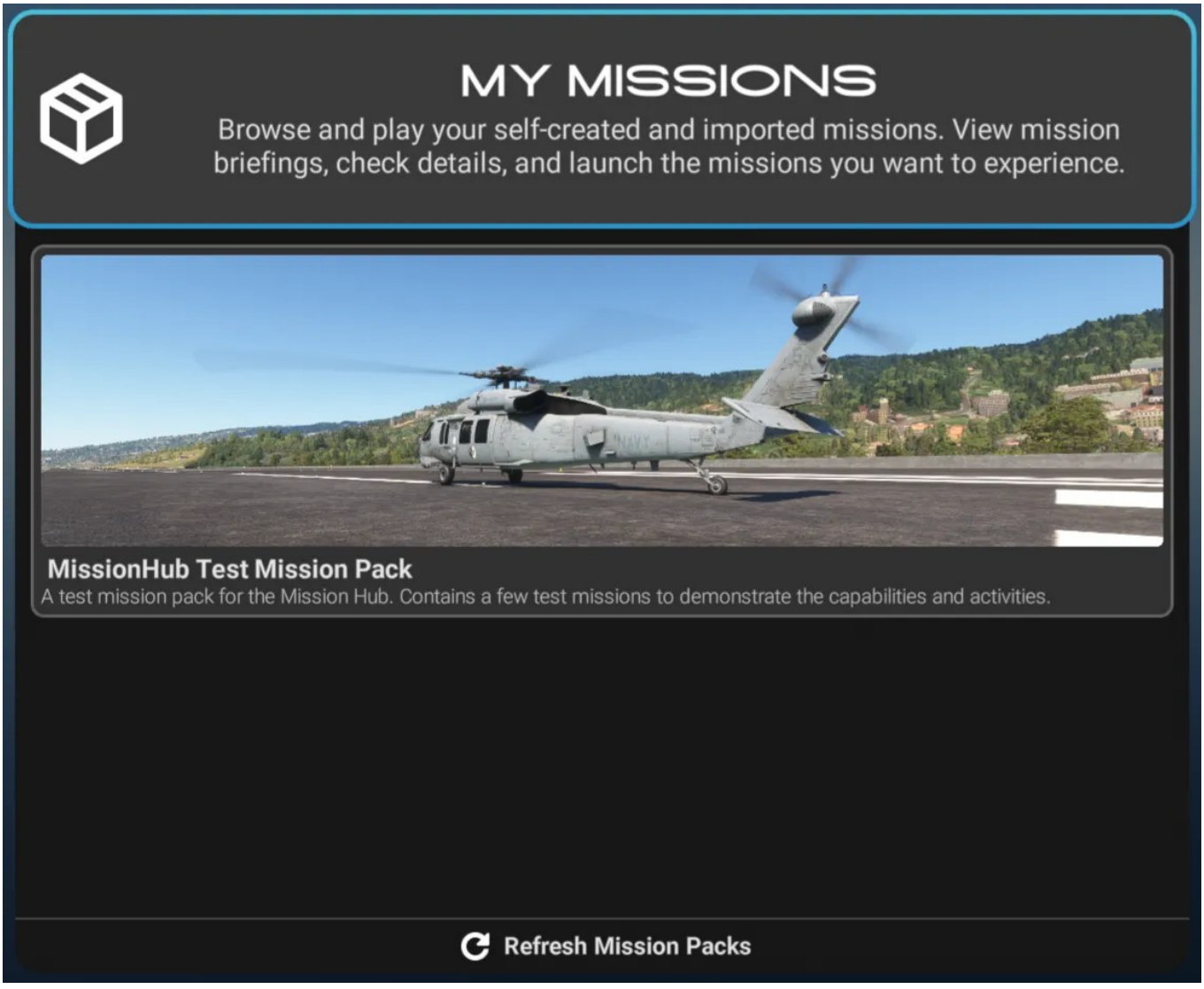
Note
Tip: Spawning over the ocean gives the quickest loading time.

Open the Miltech Mission Hub



Open the **Miltech Mission Hub** from your toolbar in the simulator.

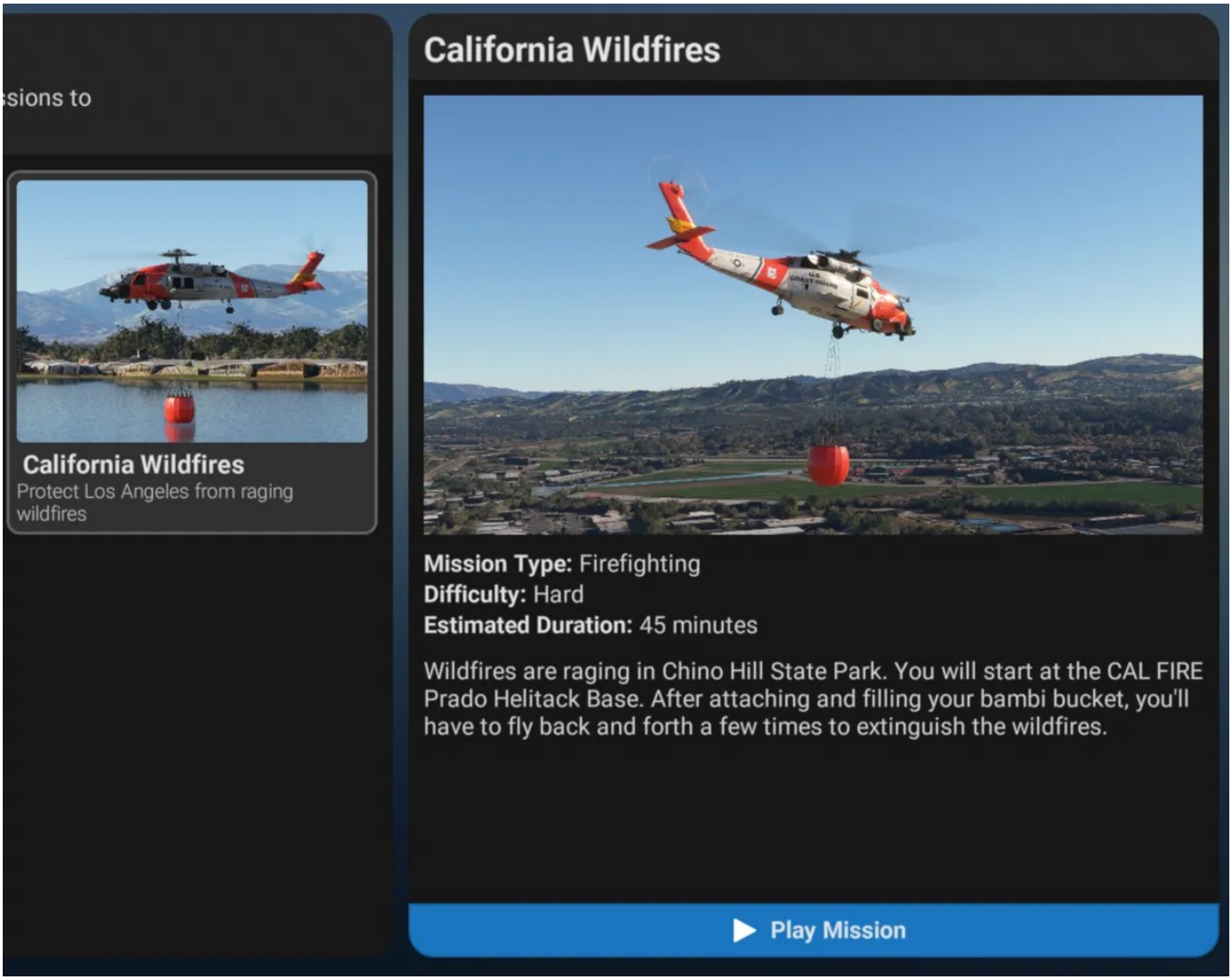
Browse and Select Missions



My Mission\ Click the ▣ **My Missions** button to view your own missions and any you've imported.

Mission Packs\ Click a mission pack to see the missions it contains.

Select a mission and view the briefing



- Click on the mission you want to play.
- On the right side of the screen, you can read the mission details and briefing.
- Click the ▣ **Play Mission** button to start the mission.

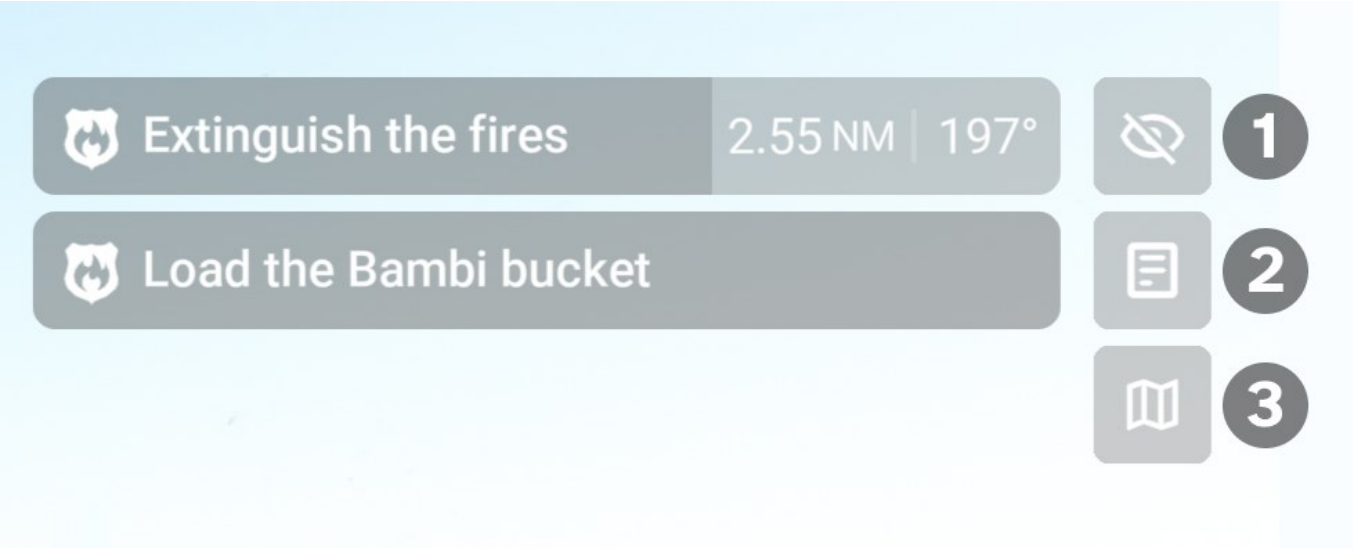
Warning
MSFS2024: When the mission is loading, don't go back or cancel the loading. That will break the loading process, requiring a sim restart.

Get Ready to fly



Once the mission loads, click **Ready to Fly** to begin.

Using the mission HUD



During your mission, you'll see a HUD on the top-right of your screen:

- **Active Objectives & Timers:**\ Track your current goals and remaining time.
- **Mission Status:**\ The HUD will notify you when you complete or fail the mission.

HUD Controls:

1. ▣ **Visibility Button:**\ Hide or show the HUD as needed. To show it again, hover over the HUD area and click the button.
2. ▣ **Briefing Button:**\ Review the mission briefing and details at any time.
3. ▣ **Map Button:**\ Open the in-game map to view your planned route.

> Note
> In MSFS 2024, the map button opens the EFB tablet. Click the ▣ **Flight Planner** button to access the map.

Next Steps

You now know how to choose and play missions!

Want to learn more about the different mission activities you can experience? See the Mission Hub Activities for more details.

Miltech Mission Hub

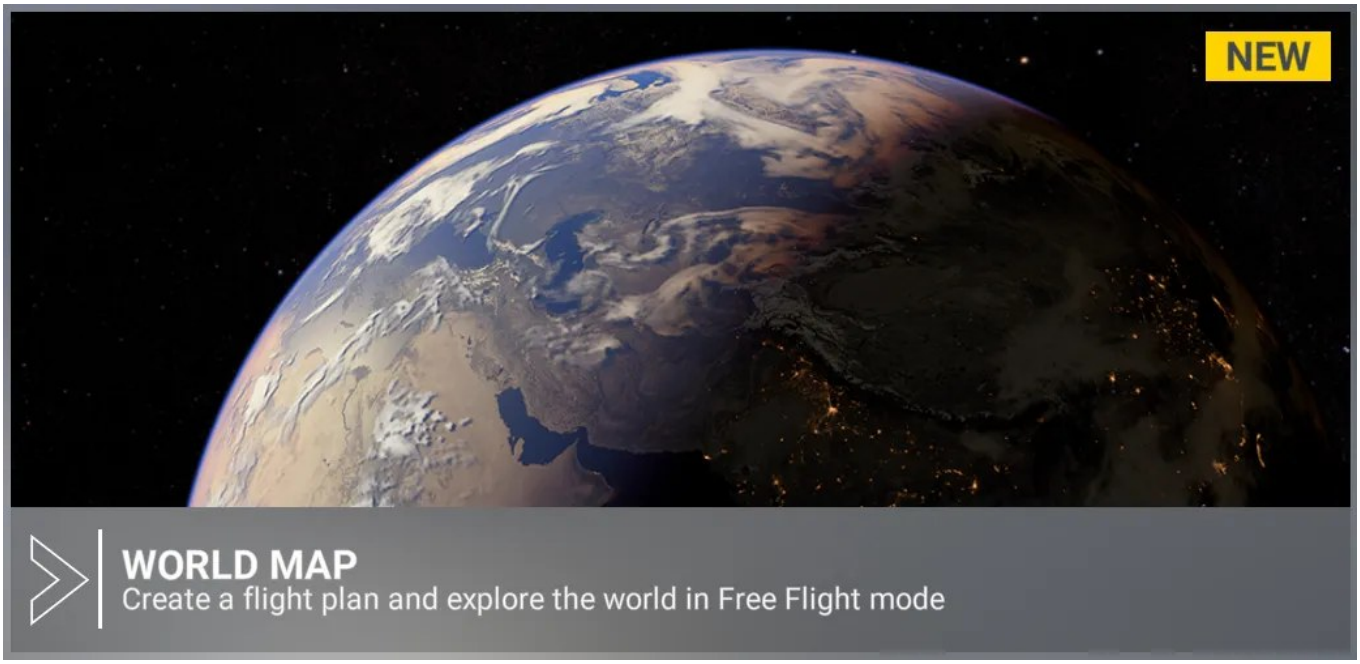
Quick Start: Creating Missions

Gives a quick overview of the UI and basic process for creating missions.

Welcome to your first steps in mission creation! This guide will walk you through building a simple mission: setting a spawn point, adding activities, and placing world objects. Once you're comfortable here, the next article will show you how to unlock more advanced features using connections.

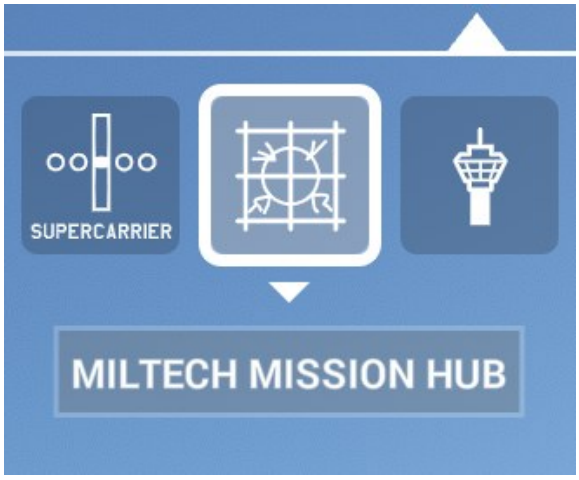
Creating Missions

Start a flight with the desired aircraft and at the desired location



First, start a flight with your chosen aircraft, at the location where you want your mission to begin.

Open the Miltech Mission Hub toolbar panel



Open the Mission Editor

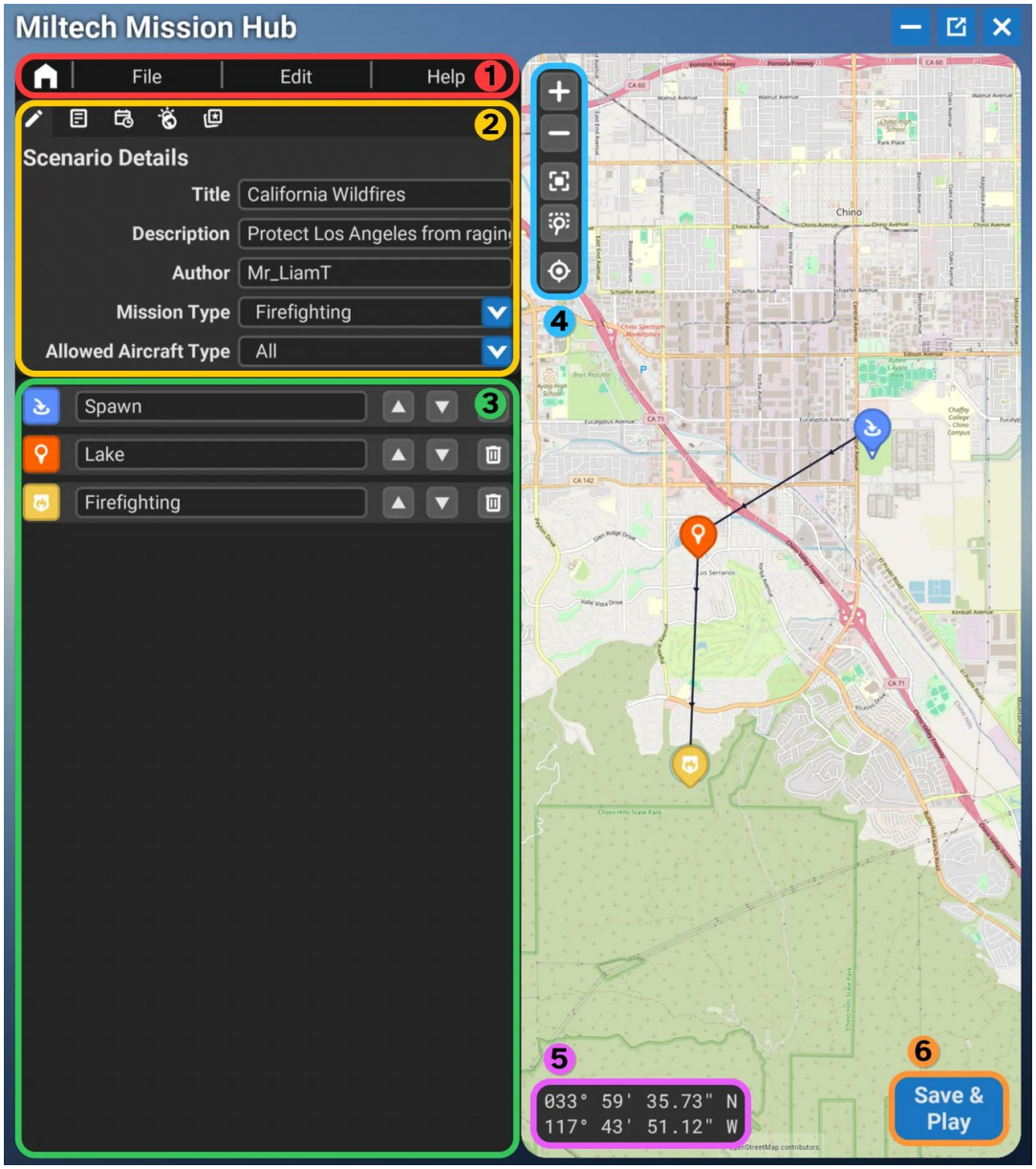


Click **Create Mission** to launch the mission editor with a blank mission.

Recently opened missions are listed below the button for quick access. You can open them in the editor, or play them directly.

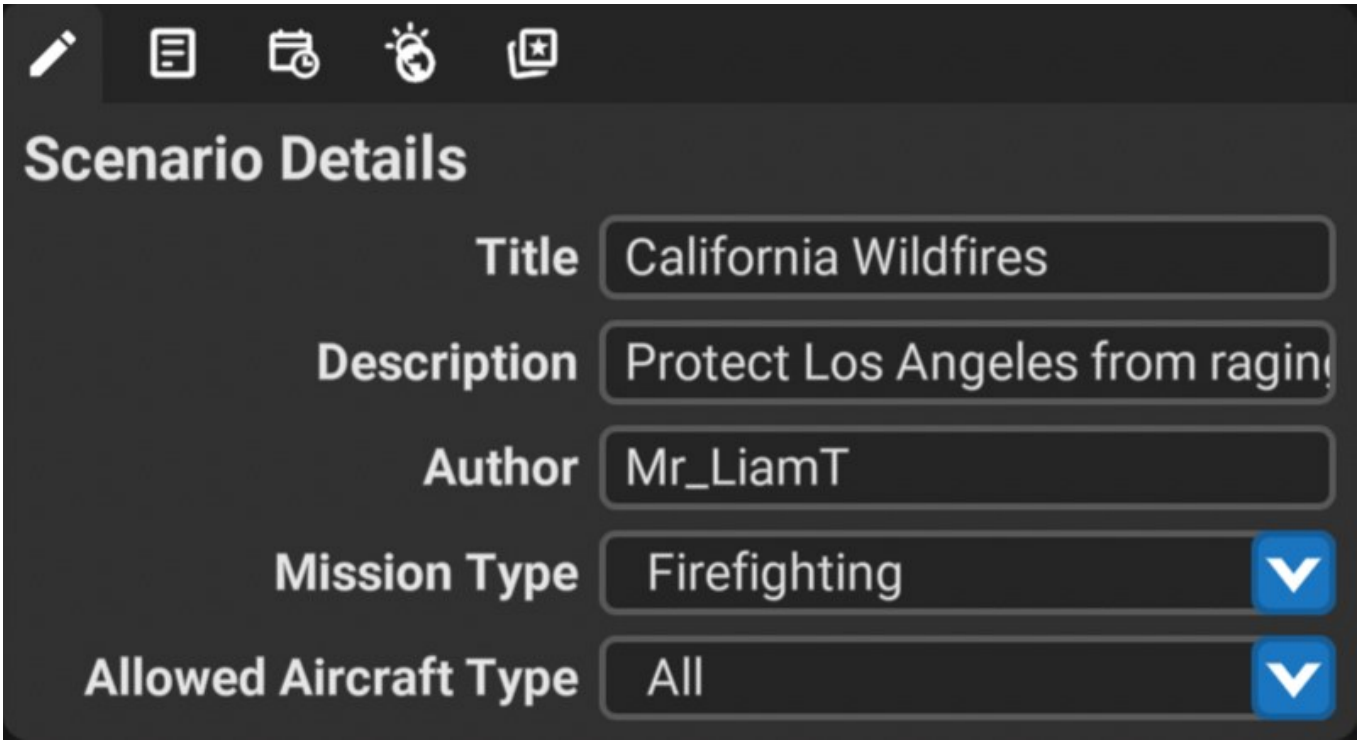
Use the ▣ **Open file manager** button at the bottom to view or delete your missions.

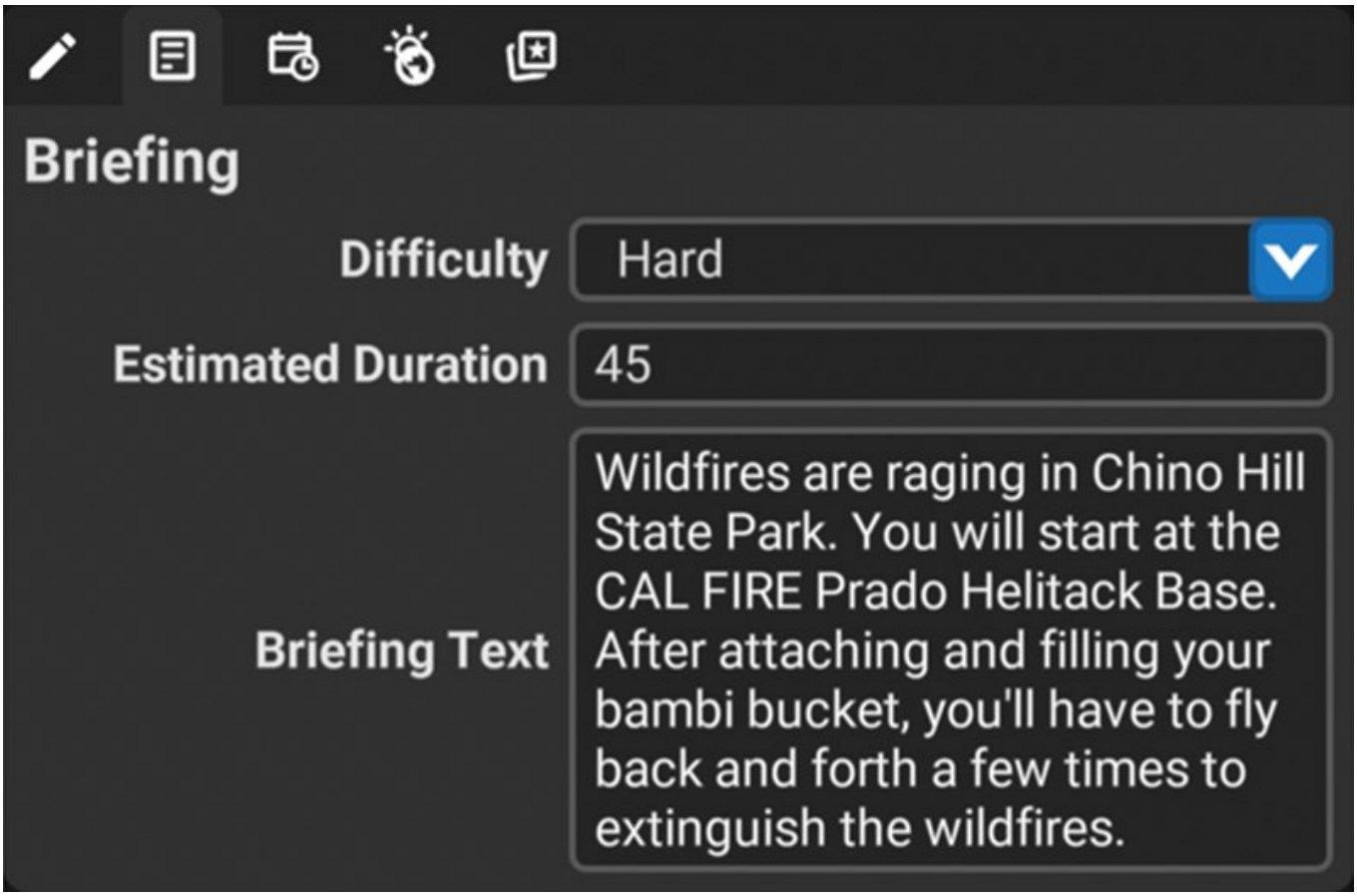
Get to know the Mission Editor UI



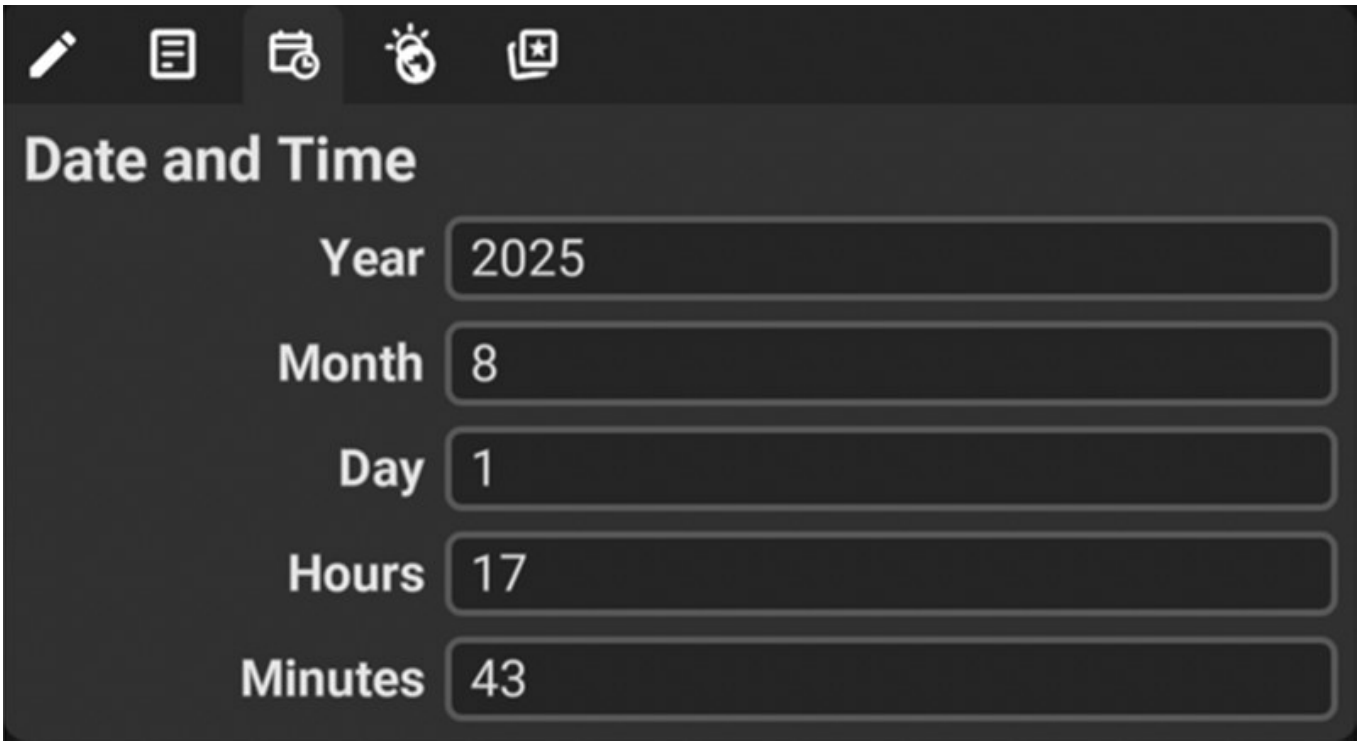
1. **Top Bar** * Go home * Open/Save mission files (including autosaves) * Edit your preferences * Help (Docs, Discord, Support)
2. **Mission Settings** * Define scenario details * Define briefing * Set date and time * Set weather and traffic
3. Object List * Overview of all map objects in your mission.
4. Map Controls * Zoom in * Zoom out * Zoom to show the whole mission * Zoom to a selection * Center on your aircraft
5. Coordinate Viewer * Displays the coordinates of your cursor, or of the map object you have selected.
6. Save & Play Button * Play or test your mission. The mission will be saved before playing, so you don't lose your progress.

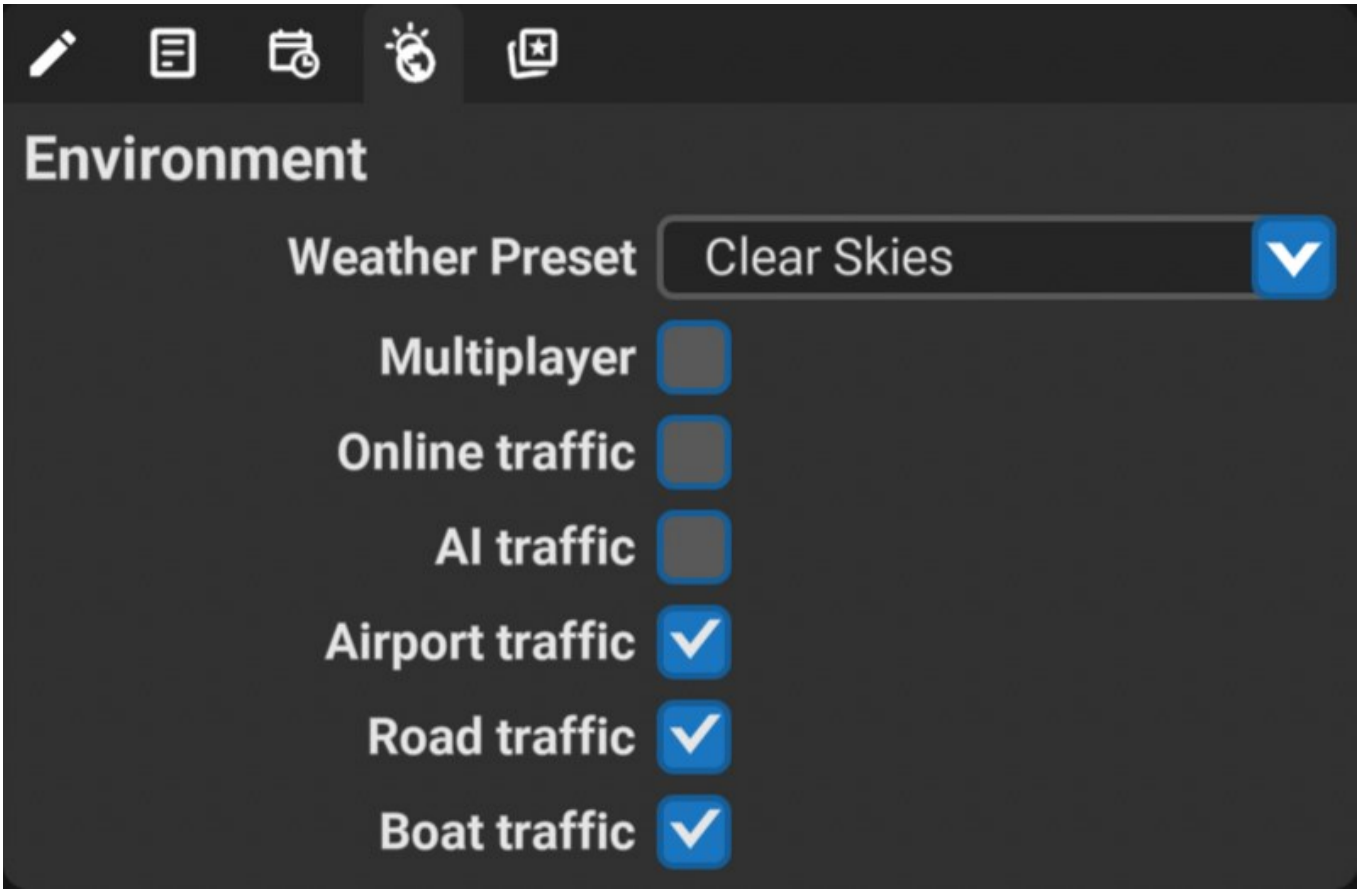
Setup Mission Settings





The **Scenario Detail** and **Briefing** sections need to be filled in to display in the 'My Missions' page, and during the mission.

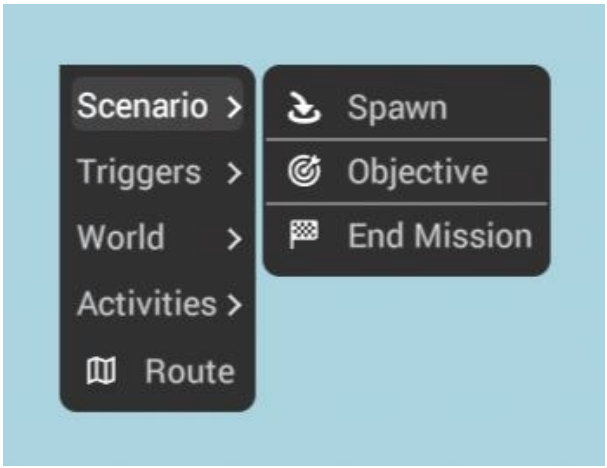




The **Date and Time** and **Environment** sections can be edited to set the state of the world during the start of the mission. They can also use the default settings.

Note
See Mission Settingsfor a more detailed explanation about what all the different mission settings do.

Add Map Objects



Click anywhere on the map to place a **Map Object**. You'll see categories to choose from:

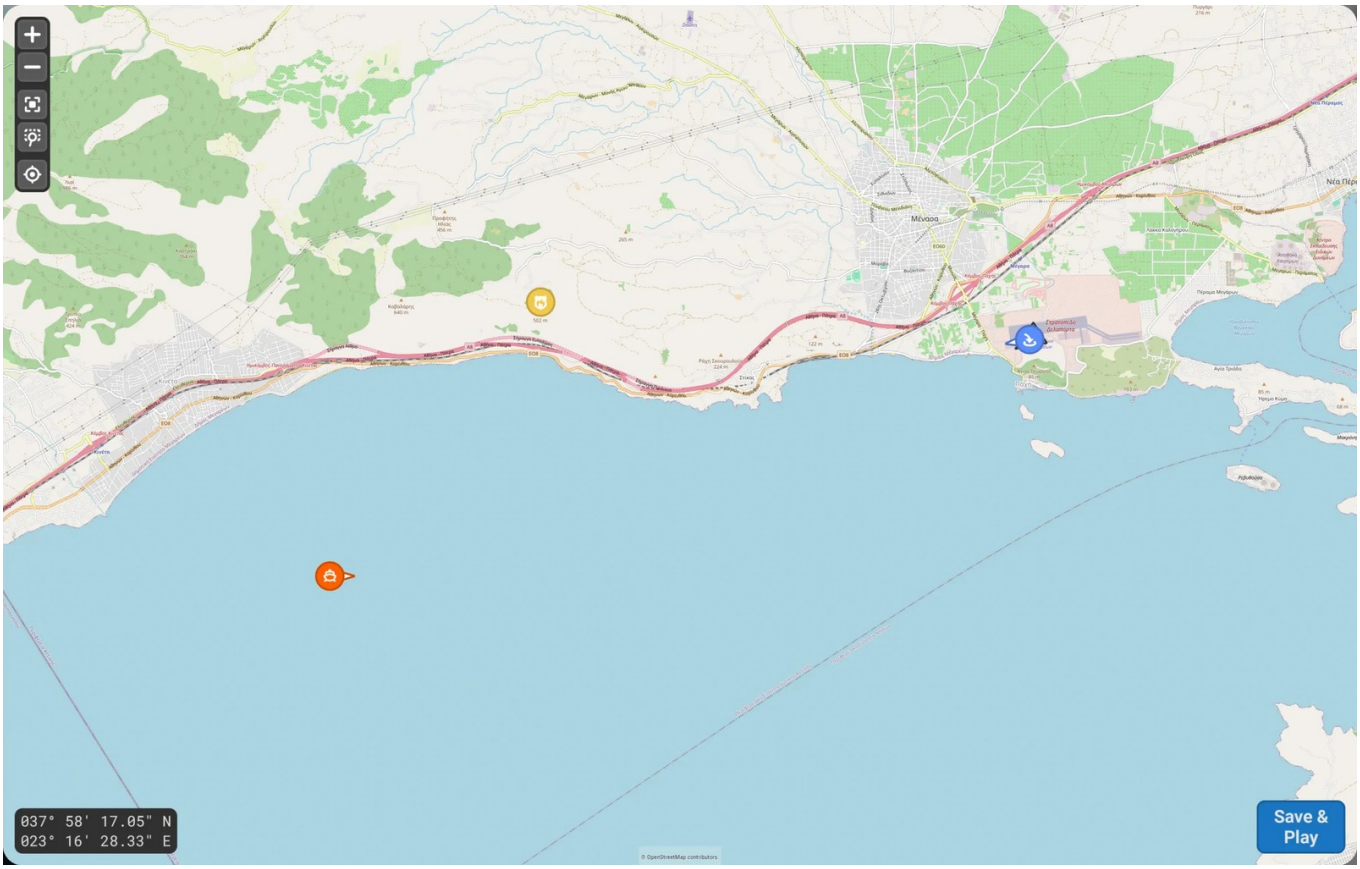
- **Scenario**\ Core elements like where the player spawns, mission objectives, and the mission end point.
- **Triggers**\ Elements that wait for specific events, such as landing or entering an area, and need to be connected to other objects.
- **World**\ Objects visible in the 3D world, such as Points of Interest markers, ships, or custom simobjects.
- **Activities**\ Special activities, like firefighting, search and rescue, submarine missions, or sling load operations.\ *For simple missions, it's recommended to add just one Activity.*
- **Route**\ The flight plan for the mission. See: Adding a route to your mission

Note
You can add as many World objects as you like (e.g. ships, markers, or custom simobjects) along with your activity and spawn point.

Note
See Map Objects for more info on the different types of Map Objects.

Example: Simple Firefighting Mission

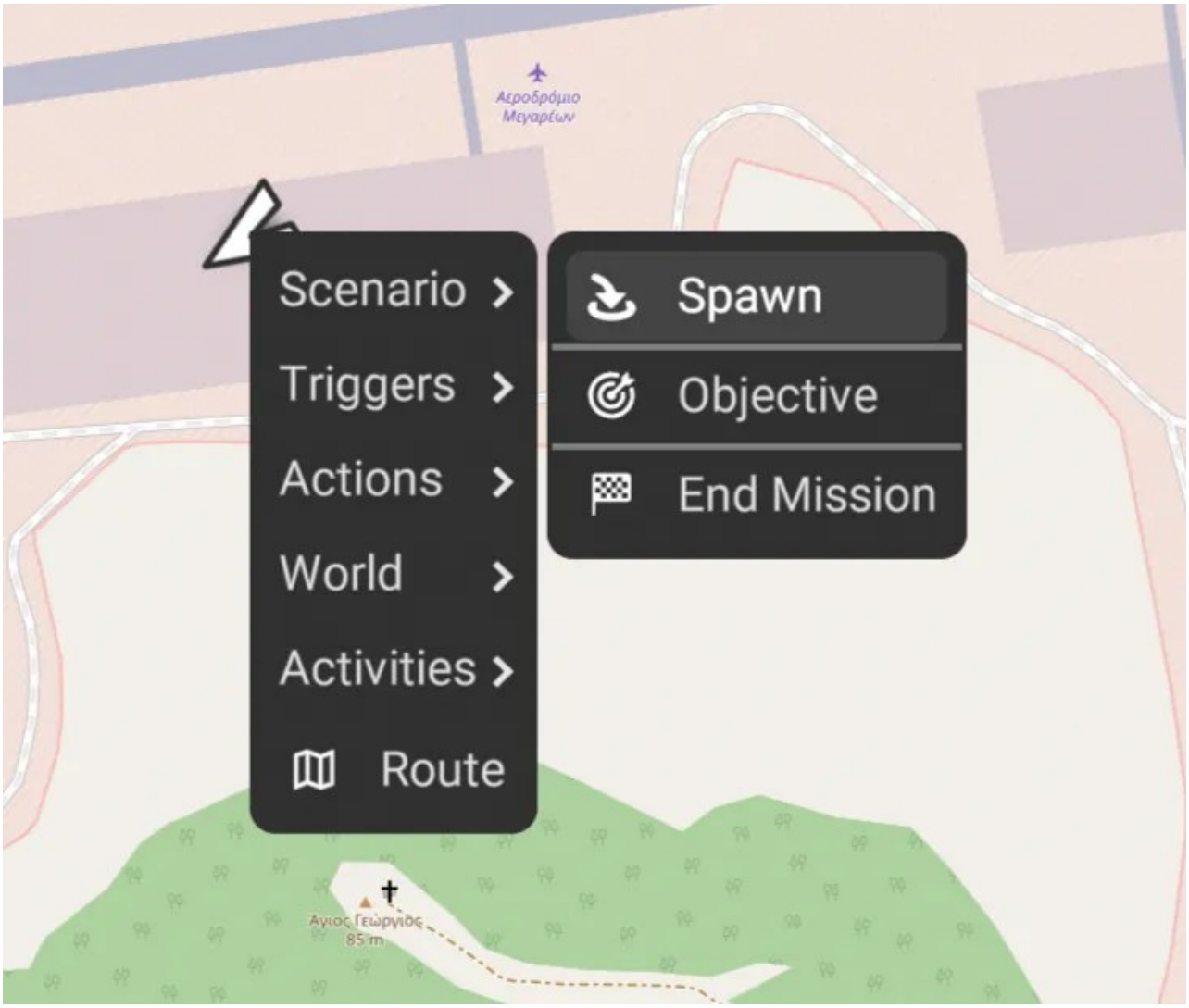
We'll first make a simple mission involving just 3 objects: a **Spawn**, a **Firefighting** activity, and a **Ship**.



The completed mission

For a simple firefighting mission, we'll place our aircraft in a location that is prone to wildfires. In this example, parked on a military base 80km west of Athens, Greece.

Add a spawn point



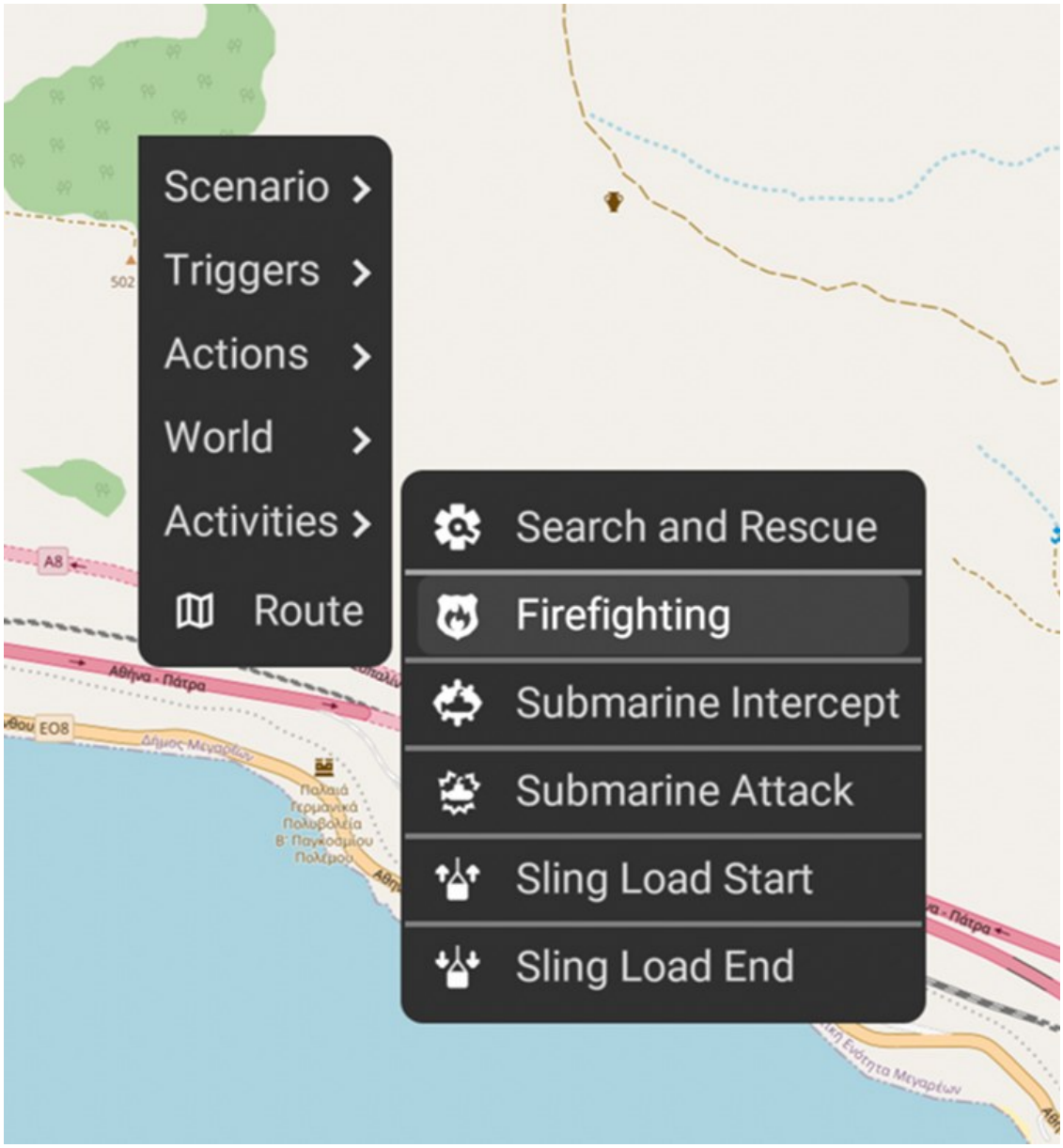
With the aircraft positioned on a parking spot, we'll zoom in to our location. Click on the aircraft location and add a Spawn object.

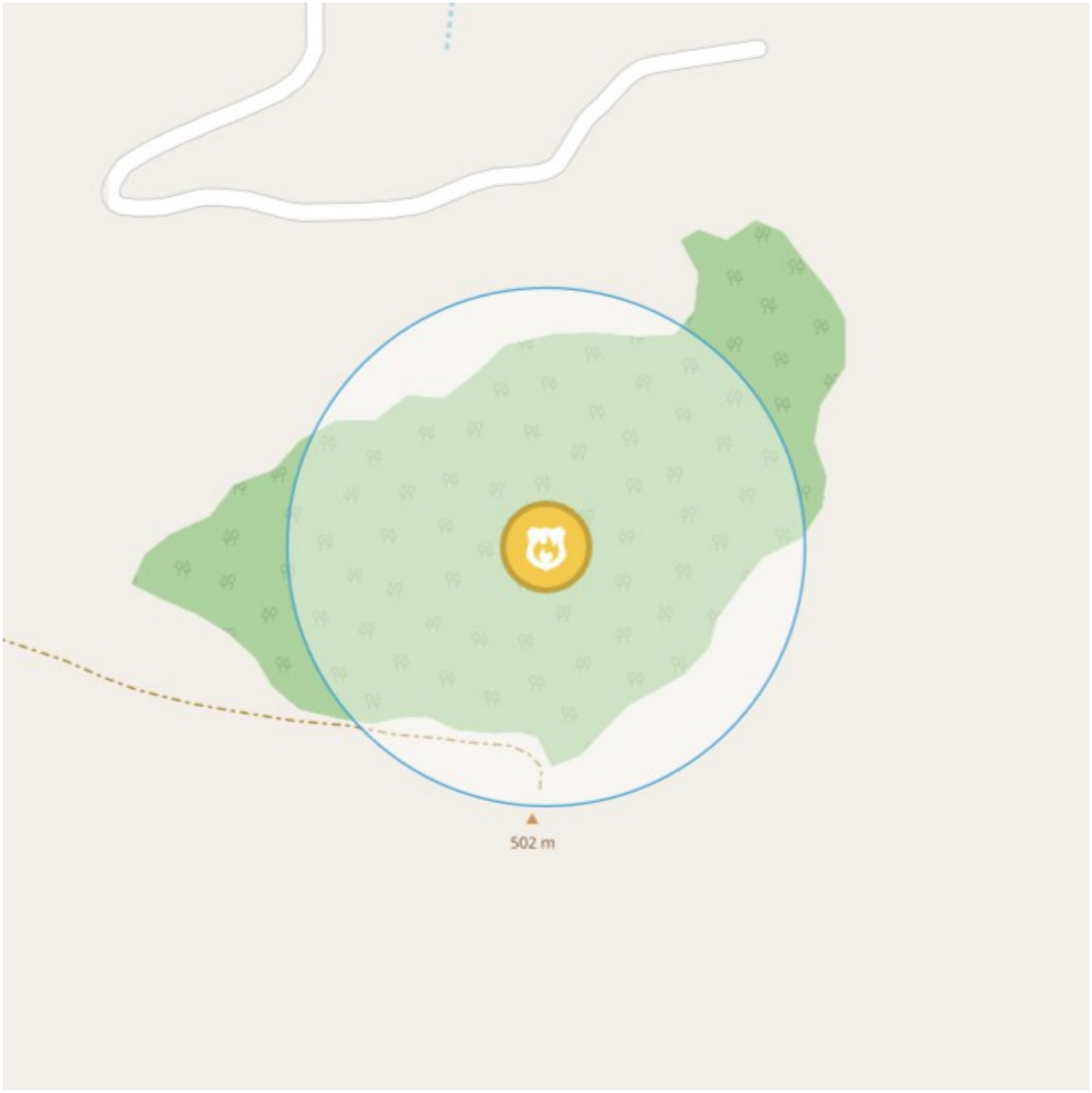


You'll see the Spawn object on the map. It has an arrow that points to the orientation that the aircraft will have on spawn.

Note
You may also use a **Ship** as a spawn point

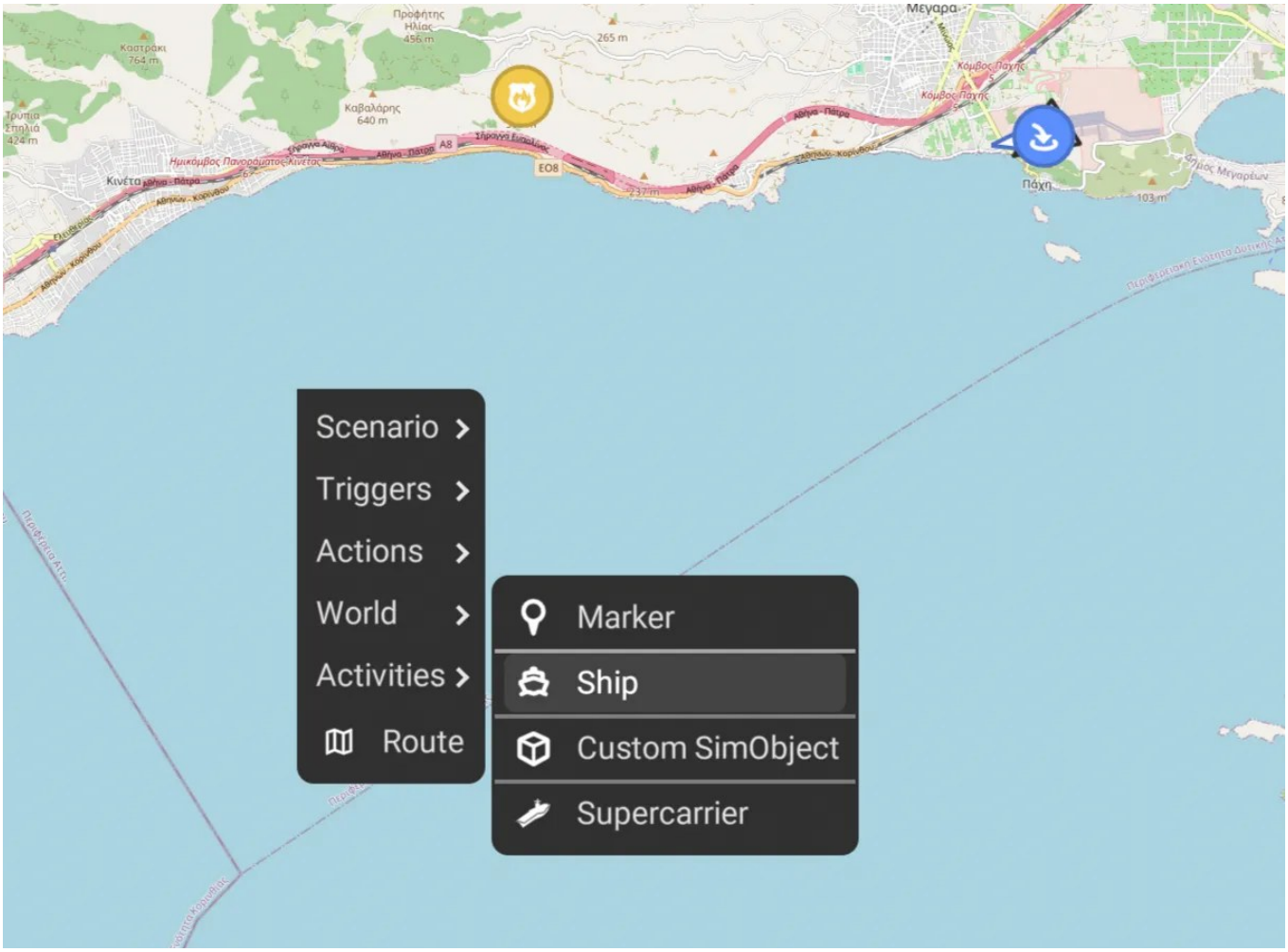
Add an activity





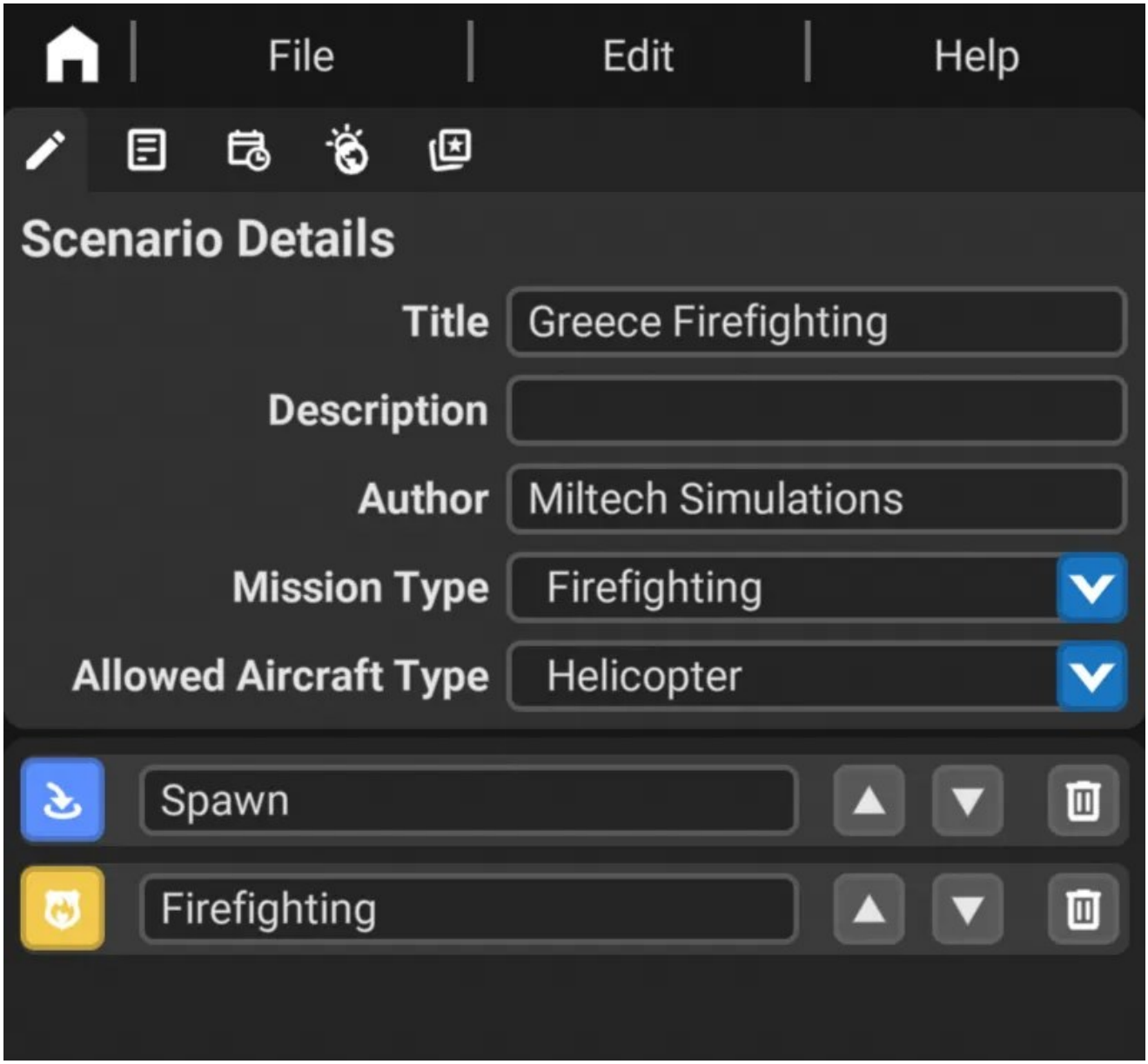
Next, we'll add a Firefighting activity in a forested area.

(Optional) Add World Objects



Just for fun, we'll place a ship near the mission to serve as part of the environment.

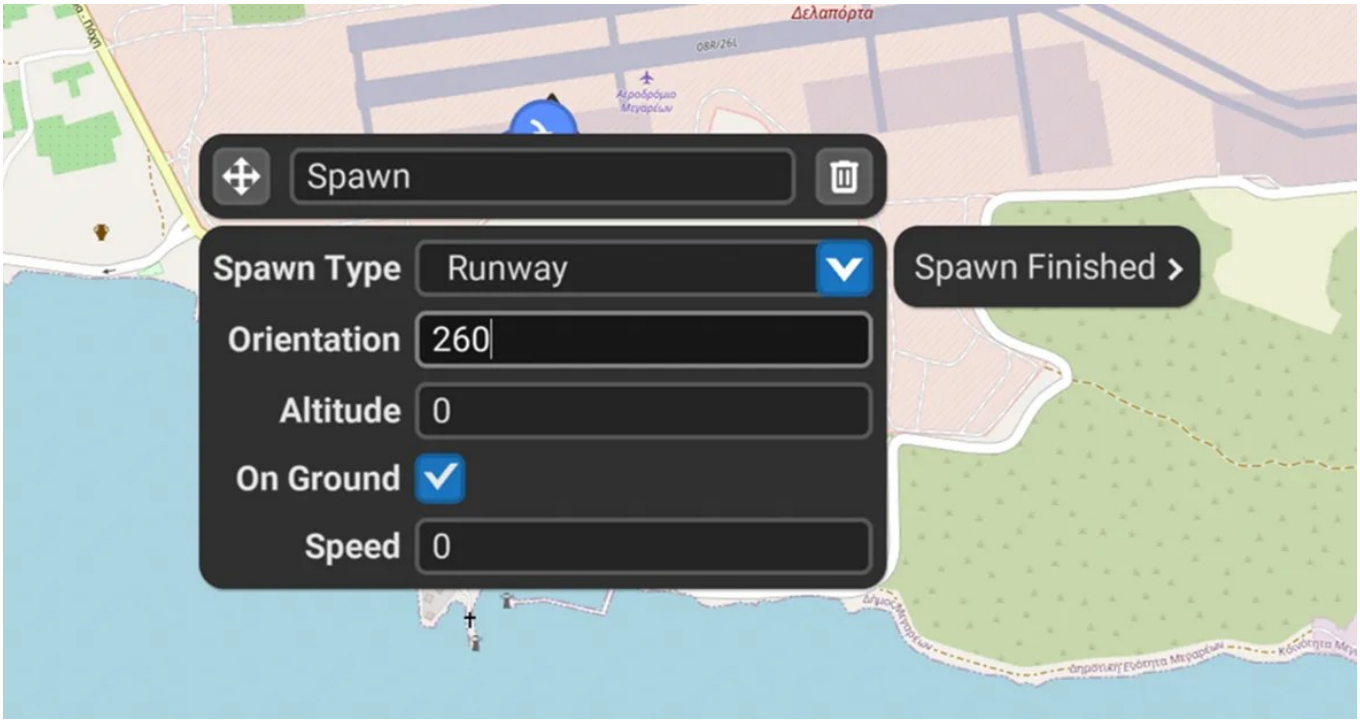
Object list

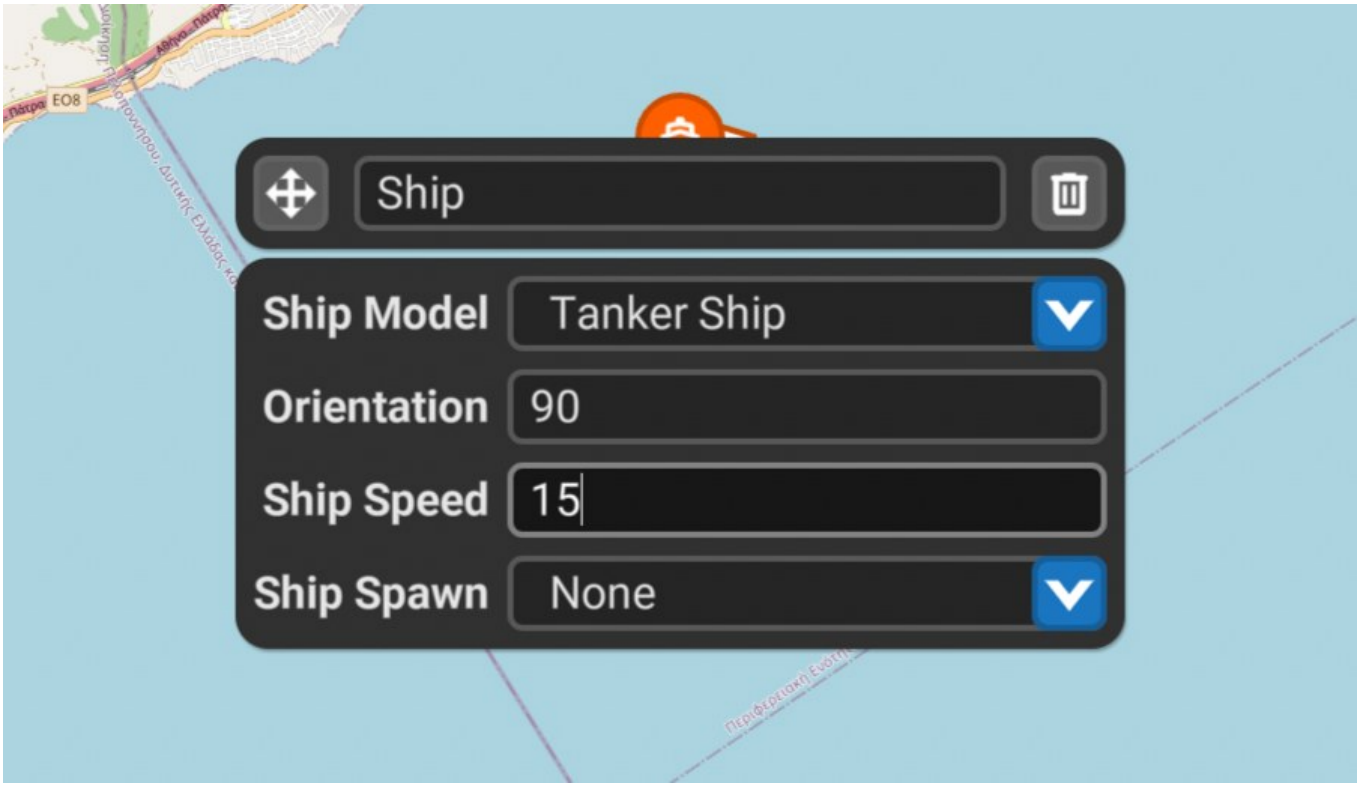


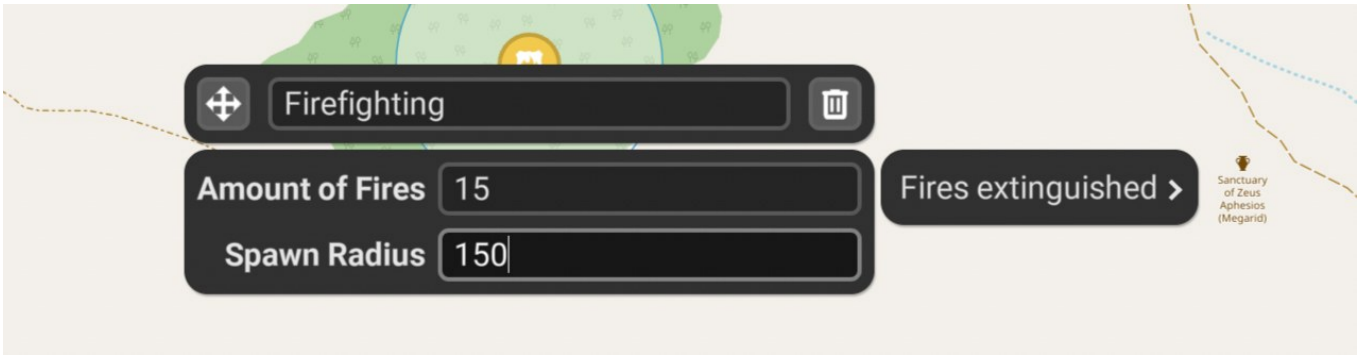
On the left, you'll see the **Object List**. It gives you an overview of all the map objects. You can:

- Click the object icon to show the object on the map.
- Change the name of the object. This name is only used in the editor, and not shown to the player.
- Change the order in the **Object List**. This way you can order them in a logical way.
- Delete the Map Object.

Detail Editor







With the **Detail Editor**, you can change attributes of Map Objects. You can:

- Click an object to open its detail editor.
- Change its name, move or delete it, and adjust attributes (e.g., spawn orientation, number of fires, or ship speed).
- *Connections to triggers and actions are covered in the next article.*

Saving and Playing the mission



Once you've set mission settings and added your objects, click **Save & Play** in the bottom right.

- Name your mission clearly and save it.
- Your mission will load and start immediately. Congratulations on creating your first mission!

Next Steps

You've learned to place spawn points, activities, and world objects. To create more engaging missions with objectives, triggers, and actions, check out the next guide! It covers how to connect *events* and *actions*, unlocking even more creative possibilities.

Note
See Map Objects for more info on the different types of Map Objects.

Miltech Mission Hub

Mission Logic Basics: Events, Actions, and Connections

Building a compelling mission is about more than just placing objects on a map. To create an engaging experience, you need to design a sequence of objectives, decide how the player progresses, and use connections between objects to control the mission flow. This guide will show you how to move beyond the basics and start shaping dynamic, interactive missions.

Understanding Connections

What are connections?

Connections are the links between the events and actions of your map objects. They define how the mission flows from one stage to the next, making your scenario interactive and responsive to the player.

- **Events** are signals an object sends when something specific happens (e.g., entering an area, timer expires, fire is extinguished).
- **Actions** are responses performed by objects when triggered (e.g., playing dialog, activating an objective, ending the mission).

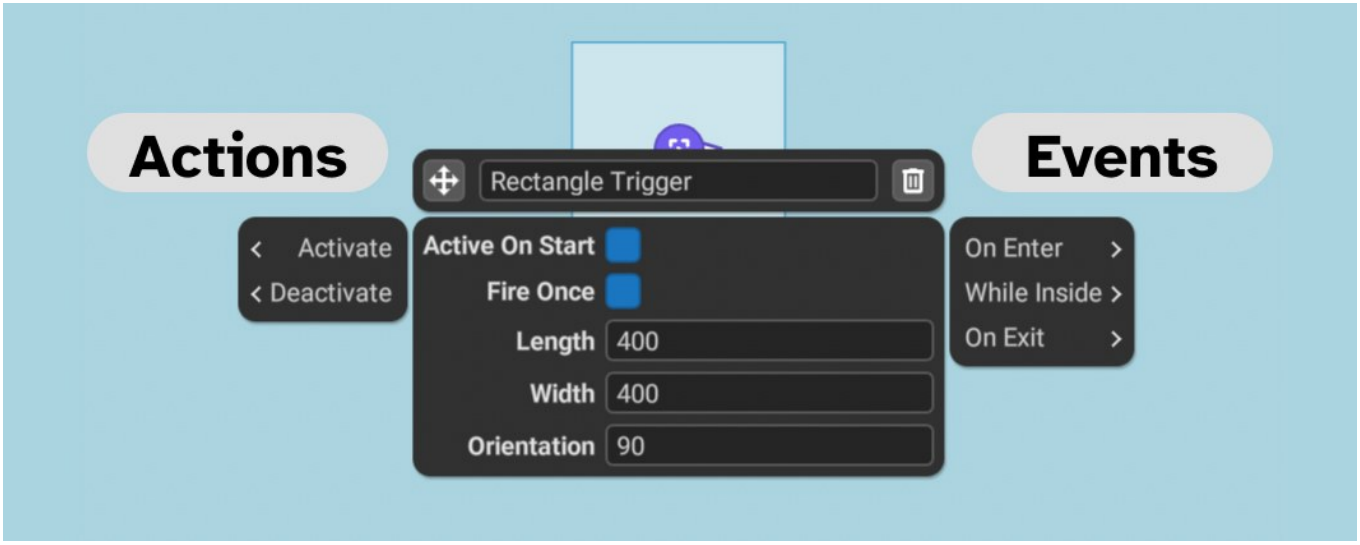
Why use connections?

Connections let you design missions that react to the player's actions, create branching or sequential tasks, and control when objectives or triggers become active.

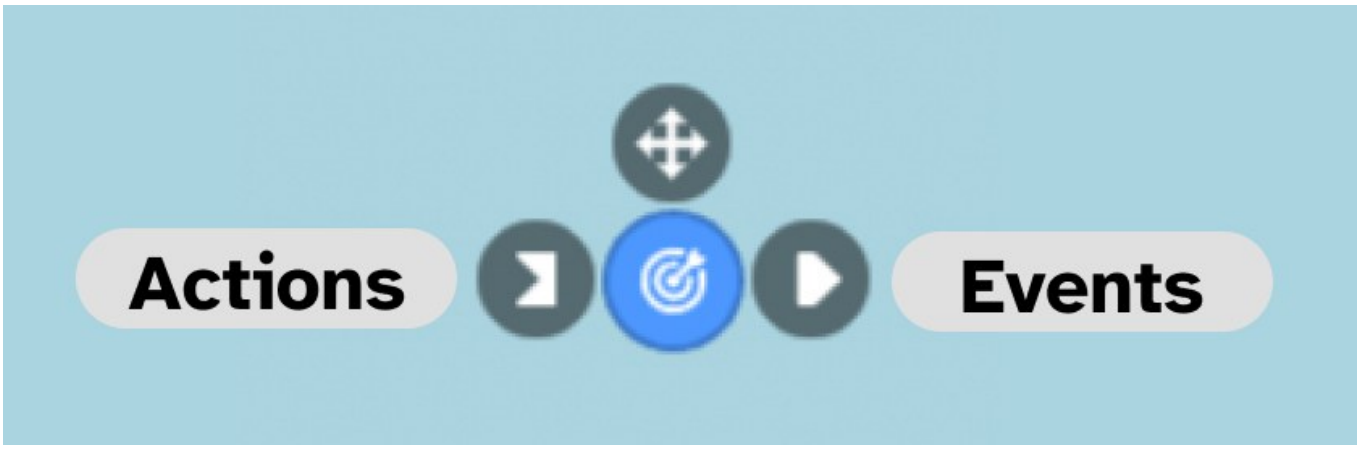
How to use connections

Open the connections popup

Click on an object to open its detail editor. This will display actions on the left and events on the right:

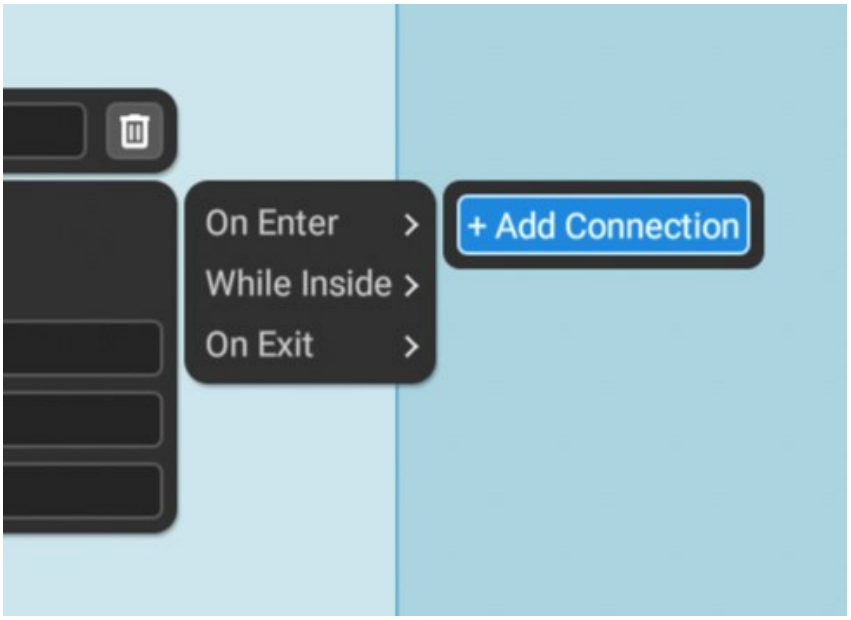


You can also use the quick buttons that appear when you hover over the map object:

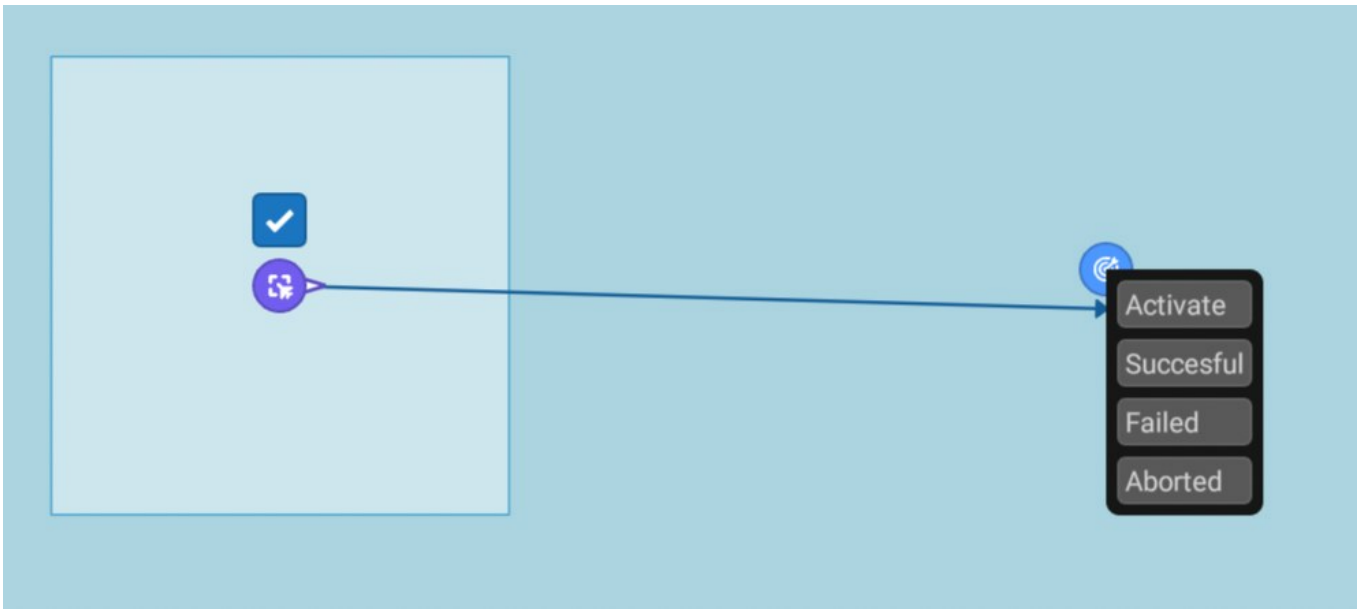


Create a connection

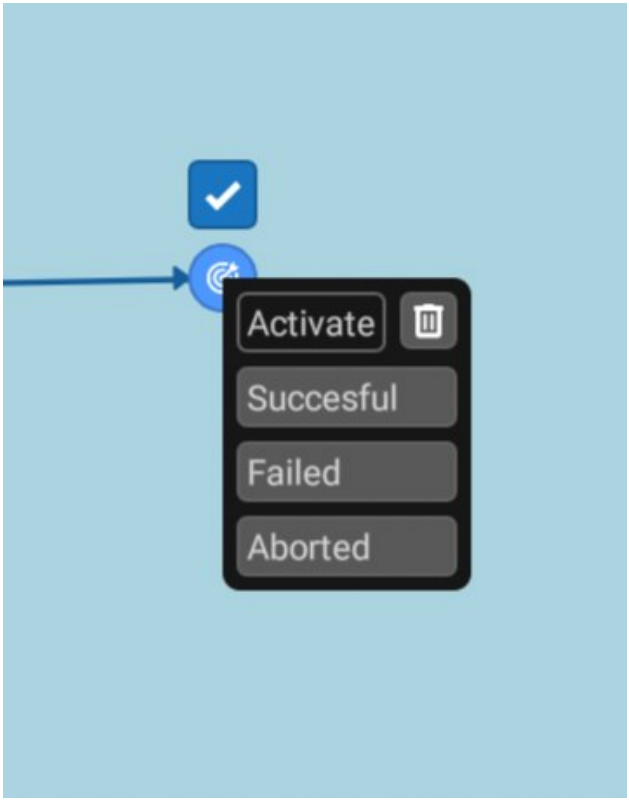
Hover over an event or action and click the add connection button:



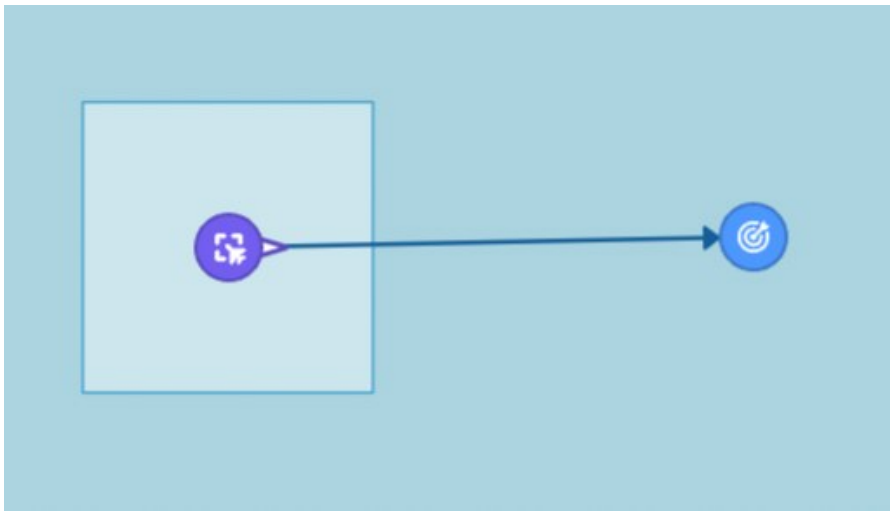
Hover over another object to see its available actions or events:



Select the one you want to connect to, then confirm with the checkmark button:

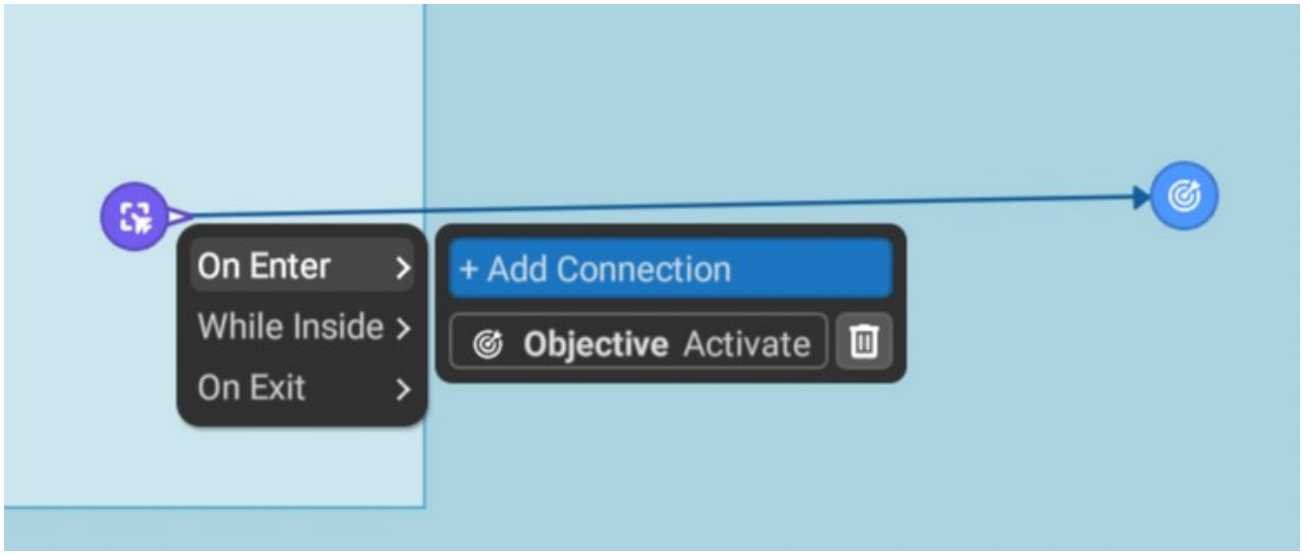


Arrows on the map will display the connection, always pointing from the event (sender) to the action (receiver):



View and edit connections

Open the Detail Editor or click the quick hover button. Hover over an event or action to see its current connections:



You can delete connections from this view as well.

More details:

- **There is no limit** to the number of connections.
- **Any objects** with available events or actions can be connected.
- If you delete an object, its connections are also removed automatically.
- **Tip:** Give every object a meaningful name to make it clear which object is connected.

Next steps

Building Detailed Missions: Objectives, Triggers, and Activities

Adding a route to your mission

Miltech Mission Hub

Building Detailed Missions: Objectives, Triggers, and Activities

A great mission guides the player through clear, meaningful steps. This guide helps you build a structured mission using objectives and triggers, and shows best practices for organizing your mission.

Controlling when objects are active

Before you start building your mission, it’s important to understand how activation works for mission objects. Knowing when objects are active or inactive helps you control the player’s experience and keeps your mission logic clear.

Activated means the object is “live” in your mission:

- **Objectives, markers, simobjects:** Visible to the player.
- **Triggers:** Actively checking their condition (e.g., area, timer, speed).

Deactivated means the object is completely dormant:

- Not visible and do nothing until activated. Triggers don’t check conditions or send events.

How to set the activated state

- Each object has an **Active On Start** setting (default: true)
- To activate or deactivate something during the mission, connect another object to its 'Activate' or 'Deactivate' action using connections.

Why Deactivate Objectives and Triggers at the Start?

- **Objectives:**\ Deactivating most objectives at the start, and then activating them one by one in sequence, ensures the player follows the intended mission flow and doesn't see or complete objectives out of order.
- **Triggers:**\ Deactivating triggers you don’t need right away prevents them from firing at unintended times (for example, a landing trigger before the player has completed a firefighting task).
- **Best Practice:**\ Activate objectives and triggers only when the player has reached the relevant stage. This approach makes your mission more robust and easier to manage as it grows in complexity.

How to create a structured mission

Plan your mission flow

Start by sketching a rough outline of your mission. What story do you want to tell? What are the main stages or challenges? Think about:

- **Scenario**: What’s the overall goal or setting?
- **World State**: Set up scenario settings such as time, weather, and traffic.
- **Spawn Point**: Where does the player begin?
- **Key Objectives**: What must the player accomplish? What are the steps they have to go through?

- **Triggers**: What should happen as the player progresses?

This “blueprint” helps you stay focused and ensures your mission is logical and rewarding.

Use objectives for mission structure

Objectives are the backbone of your mission flow. Each objective represents a step or milestone the player needs to complete, such as “Pick up water bucket,” “Fly to fire,” or “Land at base.”

Objectives show up as messages on the screen when active, and can point to a specific location on the map.

How to Use Objectives:

- **Place objectives on the map** in the order you want the player to complete them.
- **Deactivate objectives at the start** (except the first one). Activate each one in sequence as the previous is completed.
- **Connect objectives** so that when one is completed, the next is activated.
- **Define outcomes** for each objective:
- **Success**: What completes the objective (e.g., entering an area).
- **Failure**: What causes failure (e.g., timer runs out).
- **Abort**: What cancels the objective (optional).

Example Objective Flow:

1. "Taxi to runway" (completed by area trigger at runway start)
2. "Take off" (activated by previous success, completed by takeoff trigger)
3. "Fly to destination" (activated after takeoff, completed by reaching area or altitude)
4. "Land at base" (activated after destination, completed by landing trigger)
5. "Debrief" (activated at end)

Add and connect Triggers

A trigger is a map object that checks if something happens, and can activate or deactivate other objects. They are essential for advancing your mission.

Types of Triggers:

- **Circle & Rectangle Trigger:** Fires when the player enters/exits an area.
- **Timer Trigger:** Fires after a set amount of time.
- **Property Trigger:** Fires when something like speed or altitude is reached.
- **Takeoff & Landing Trigger:** Fires when the user leaves the ground or lands.
- **Parking Trigger:** Fires when the aircraft is stationary and on the ground. Optionally, it can wait for the aircraft to be shut down (engines off).

Best Practices:

- Deactivate triggers at the start if you don’t need them immediately.
- Activate them only when needed (e.g., activate the landing trigger after firefighting is done).
- Use triggers to complete, fail, or abort objectives (connect the trigger’s event to the objective’s action).

Example:

- Area trigger completes “Taxi to runway” objective.
- Takeoff trigger completes “Take off” objective.
- Timer trigger fails an objective if time runs out.

Keep your missions organized

- **Name objects clearly**: Use names that describe their purpose or location (e.g., "Lake Area Trigger", "Start Area Objective"). These names help you in the editor; players don’t see them.
- **Organize visually**: Group related objects together on the map for clarity.

Example: Firefighting Mission

Here’s an example mission flow using objectives and triggers:

1. **Briefing**
2. Objective: Hover above the bucket to pick it up (area trigger)
3. Objective: Fly to the lake and collect water (area trigger)
4. Objective: Fly to the fire and drop water (area trigger)
5. Objective: Return to the lake if more water is needed (area trigger)
6. Objective: With all fires out, fly back and park at base (parking trigger)
7. **Debrief and End Mission**

Final Tips

- Start simple: Focus on objectives and triggers first.
- Build in sequence: Activate each objective as the previous one completes.
- Name everything for easy editing.
- Group related objects together on the map.

By following these steps, you’ll be able to create clear, engaging missions that guide players through every stage of your scenario.

Next steps

This guide covers the core concepts of mission flow: objectives, connections, triggers, and routes. Once you’re comfortable, you can explore advanced topics like loops to create even more dynamic missions.

Miltech Mission Hub

Adding a route to your mission

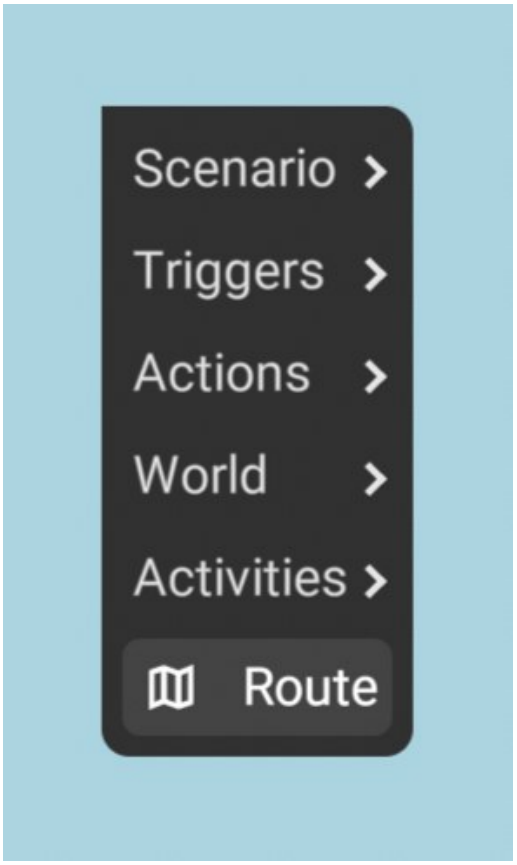
Learn how to add and edit a flight route for your mission that is displayed to the players on both the map and aircraft systems.

A route is a flight plan that can guide the player through the mission, displayed both on the in-game map and onboard aircraft systems.

Adding a Route

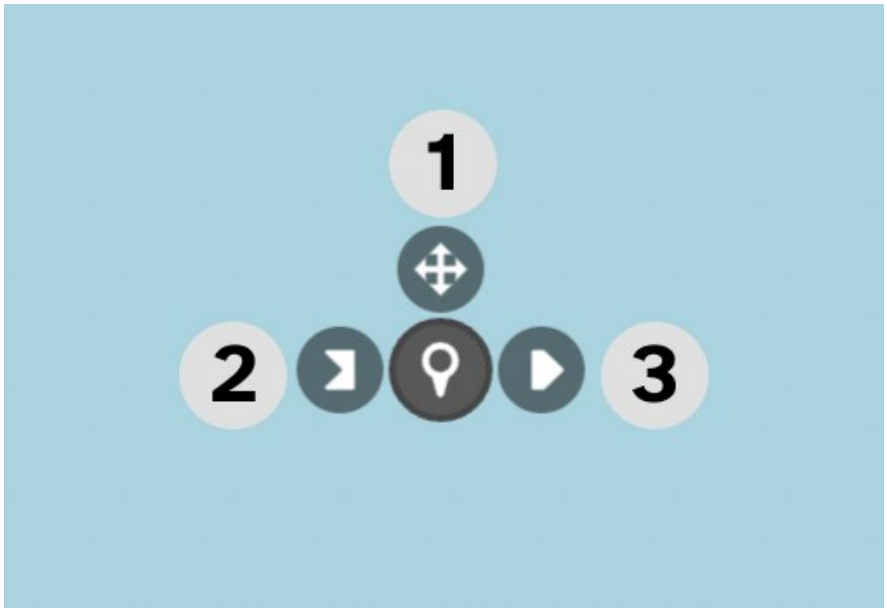
Routes guide the player through the mission, providing waypoints on the in-game map and aircraft systems.

Add the first waypoint



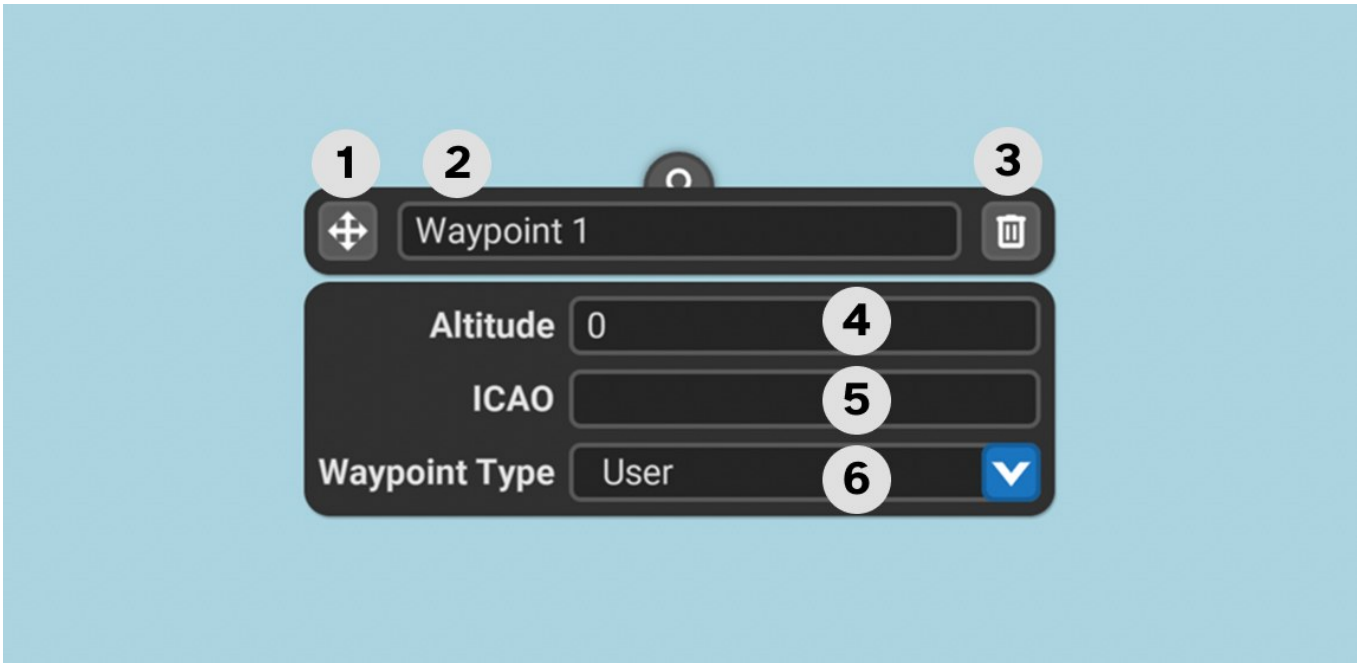
Click the map and select Route from the object popup

Use the route editing mode to add, move or delete waypoints



With the quick buttons next to the waypoint, you can:

1. Move the waypoint
2. Add a waypoint before
3. Add a waypoint after

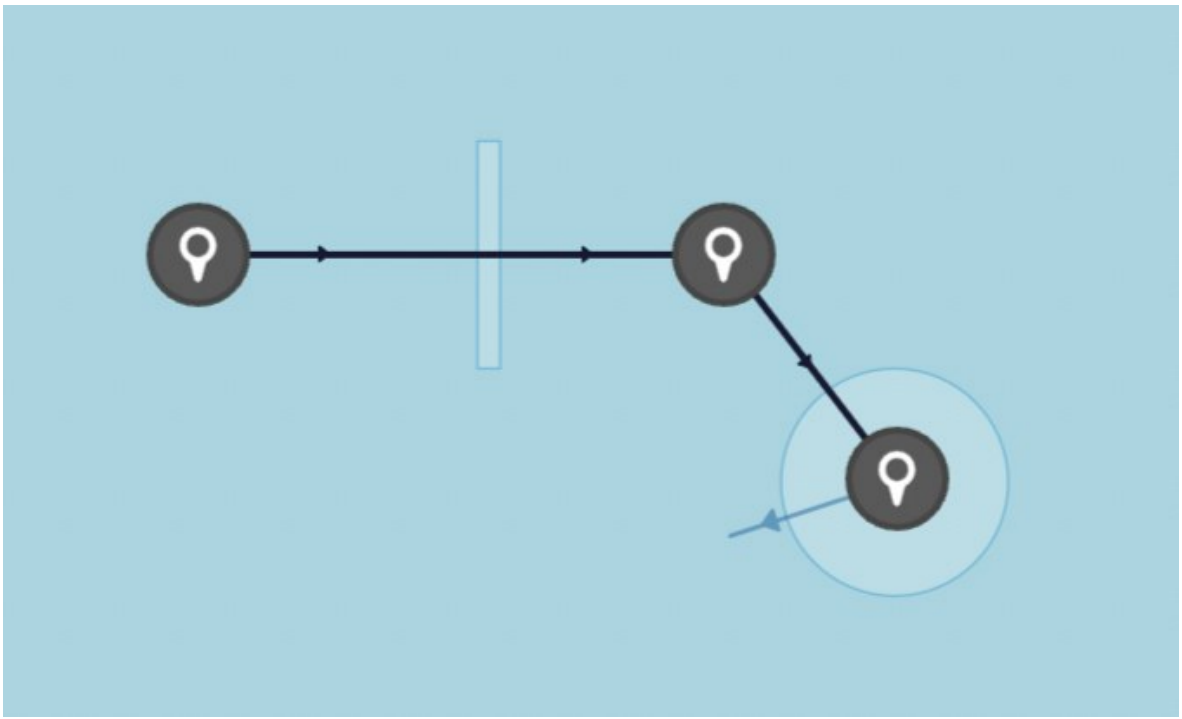


To open the waypoint details, click on the waypoint. Here you can:

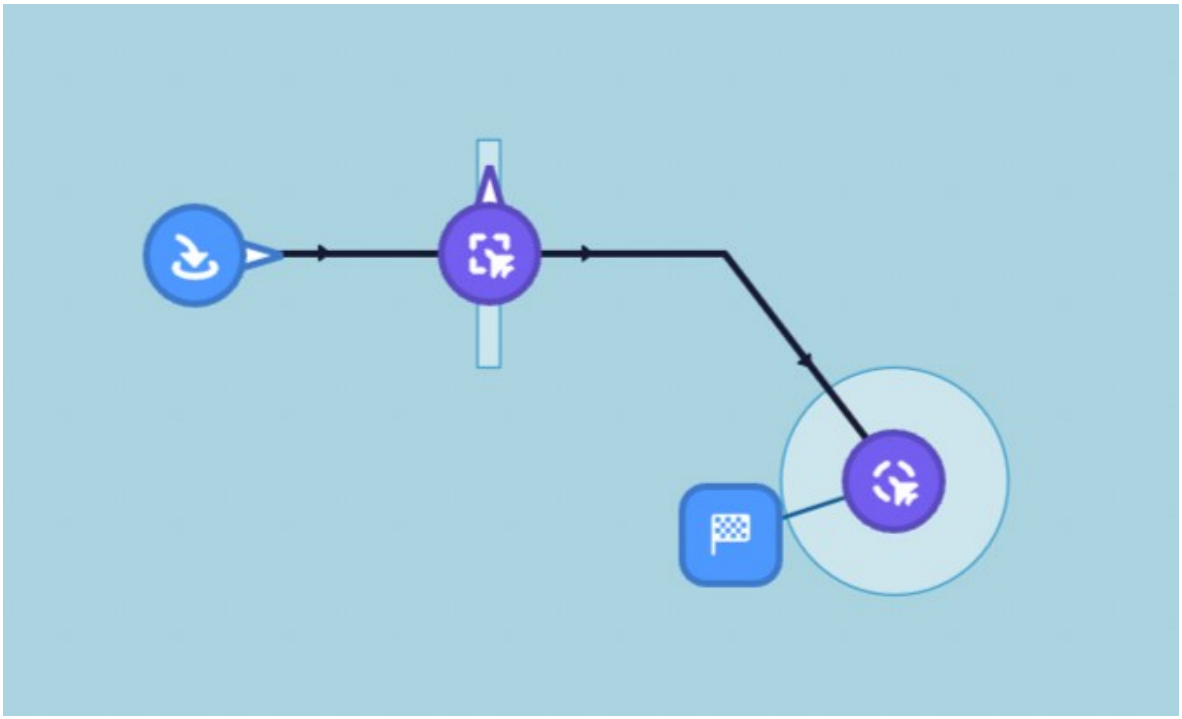
1. Move the waypoint
2. Name the waypoint. In contrast to the names of Map Objects, this name will be displayed to the player during the mission.
3. Delete the waypoint

4. Set the altitude (optional)
5. Set the ICAO (optional). If the waypoint is an airport.
6. Set the waypoint type: * User: Any custom waypoint * Airport: If the waypoint is a specific airport. Also set the ICAO in this case.

Finish route editing



Route editing mode



Regular route display

To finish, click anywhere outside the route. Re-enter editing mode by clicking the route again.

When editing the route, the other map objects are hidden. When you exit route editing, the map objects will appear again, on top of the route.

Note
Only one route can be active and it is static (set at mission start and cannot change during the mission).

Miltech Mission Hub

Sharing and Installing Missions

For PC users; how to access your saved missions and paste shared missions.

> Caution
> Sharing Missions is only possible on PC.
> Unfortunately missions are currently not shareable on Xbox due to lack of access to the file system. However, we are actively working on a solution to send missions over-the-cloud for the Xbox crowd.

We know many of you are excited to **share and install mission packs** with friends or the community.\ And it’s super simple. Just copy and share a single file.

Missions are saved as .json files, which contain everything needed for the scenario.

PC Instructions

Choose the right folder for you sim, and navigate to it using Windows File Explorer:

MSFS2020 Steam

```
%appdata%\Microsoft Flight Simulator\Packages\miltechsimulations-missionhub\work\SavedScenarioFiles
```

MSFS2020 Microsoft Store

```
%localappdata%\Packages\Microsoft.FlightSimulator_8wekyb3d8bbwe\LocalState\packages\miltechsimulations-missionhub\work\SavedScenarioFiles
```

MSFS2024 Steam

```
%appdata%\Microsoft Flight Simulator 2024\WASM\MSFS2024\miltechsimulations-missionhub\work\SavedScenarioFiles
```

MSFS2024 Store

```
%localappdata%\Packages\Microsoft.Limitless_8wekyb3d8bbwe\LocalState\WASM\MSFS2024\miltechsimulations-missionhub\work\SavedScenarioFiles
```

In this folder you can copy and paste mission files.

Playing the new mission

In the Mission Hub, click the 'my missions' button. Your new mission will show up there. See:Quick Start: Playing Missions

Miltech Mission Hub

Mission Hub Activities

> Note
> For information on how to build using activities, see Map Objects

Miltech Mission Hub

Mission Settings

✏ Scenario Details

Setting	Description
Title	Title of the mission as displayed to other users.
Description	Short description of the mission.
Author	Your user name / company name.
Mission Type	Used to filter different mission types: • Training • Search and Rescue • Firefighting • Cargo • Passenger • Airdrop • Patrol • Campaign
Allowed Aircraft Type	Used to tell the player if the mission is compatible with their current aircraft: • All • Airplane • Helicopter

Briefing

Setting	Description
Difficulty	Used to show the player how difficult the mission will be: • Easy • Normal • Hard
Estimated Duration	Estimated duration of the mission in minutes.
Briefing Text	(Detailed) text to explain the mission objectives to the player.

Date and Time

Setting	Description
Live Date and Time	Set live date and time in the mission.
Year	
Month	
Day	
Hours	
Minutes	

Environment

Setting	Description
Weather Preset	Can be: • Live Weather • Clear Skies • Few Clouds • Scattered Clouds • Broken Clouds • High Level Clouds • Overcast • Rain • Storm • Snow
Multiplayer	Enable multiplayer in the mission.
Online traffic	Enable online air traffic in the mission.
AI traffic	Enable automatically generated air traffic in the mission.
Airport traffic	Enable airport vehicles (e.g. fuel trucks, fire trucks).
Road traffic	Enable road traffic.
Boat traffic	Enable boat traffic.

Advanced

Note

For advanced mission settings, see Advanced Mission Settings

Miltech Mission Hub

Map Objects

Note
For advanced mission editor objects, see Advanced Map Objects

Scenario Objects

Spawn

When you add a **Spawn** object, it tells the mission where to start, and how to set up the flight.

Objective

Objectives are messages that show on the HUD. They tell the player what to do. But they're also a way to structure your mission (see Building Detailed Missions: Objectives, Triggers, and Activities).

End Mission

If you fire one of the end mission actions, a message is displayed on the HUD, and all mission execution is stopped. The objects placed in the world remain.

Triggers

Rectangle Trigger

A trigger based on a rectangular area in the world. You can set it to trigger when the player enters, is inside, or exits the area.

Circle Trigger

A trigger based on a circular area in the world. You can set it to trigger when the player enters, is inside, or exits the area.

Property Trigger

A trigger based on a variable such as speed or altitude. You use a trigger value to determine when it fires.

Timer Trigger

A trigger based on a countdown. Can also be displayed in the HUD.

Counter Trigger

A trigger based on a counter.

Landing Trigger

Triggers when the aircraft goes from flying to *wheels on ground* (or ship).

Takeoff Trigger

Triggers when the aircraft wheels leave the ground.

Parking Trigger

Triggers when the aircraft is stationary on the ground (or ship). It's also possible to wait for the engines to be shut down as well.

World

Marker

You can place a POI marker in the world.

Ship

You can place landable moving ships in the world. You can choose the heading and speed. You can also use the ship as spawn point.

Supercarrier

If you have the Supercarrier Pro addon, you can place the carriers in the world. You can also use the carrier as spawn point.

UK Carrier

If you have the Broken mention addon, you can place the carriers in the world. You can also use the carrier as spawn point.

Activities

Search and Rescue

You can add a rescue scene in the world, complete with objectives and rescue logic.

Firefighting

You can add fires that can be extinguished. The player will get objectives and be prompted to (re)fill their water bucket.

Submarine Intercept

You can spawn a submarine in the world that the player will have to find and intercept.

Submarine Attack

You can spawn a submarine in the world that the player will have to find, intercept, and disable.

Sling Load Start

You can place cargo in the world that can be picked up as a sling load. You need to connect this to a Sling Load End.

Sling Load End

Specifies an area where the sling load has to be delivered. You need to connect this to the Sling Load Start.

Route

Adding a route to your mission

Miltech Mission Hub

Spawn

When you add a **Spawn** object, it tells the mission where to start, and how to set up the flight.

Attributes

Attribute	Description
Spawn Type	State that the aircraft spawns in. Can be: • Shutdown • Runway (ready to fly) • Cruise • Final
Orientation	Heading of the aircraft in true degrees north (not equal to magnetic north)
Altitude	Altitude above sea level in feet
On Ground	Ignore the altitude and spawn on ground
Speed	Aircraft speed when spawned
Aircraft Title 2020 (Advanced Mode Only)	Select a specific 2020-native aircraft for the mission. Mission will load with the currently-selected aircraft if empty. The aircraft name must match the name found on the Aircraft Selection Tool, under Dev Mode/Tools.
Aircraft Title 2024 (Advanced Mode Only)	Select a specific 2024-native aircraft for the mission. Mission will load with the currently-selected aircraft if empty. The aircraft name must match the name found on the Aircraft Selection Tool, under Dev Mode/Tools.
Aircraft Livery 2024 (Advanced Mode Only)	Select a specific livery for the mission. Mission will load with the currently-selected livery if empty. The livery name must match the name found on the Aircraft Selection Tool, under Dev Mode/Tools.

Actions

Spawn doesn't have any actions. It gets executed automatically at the start of the mission.

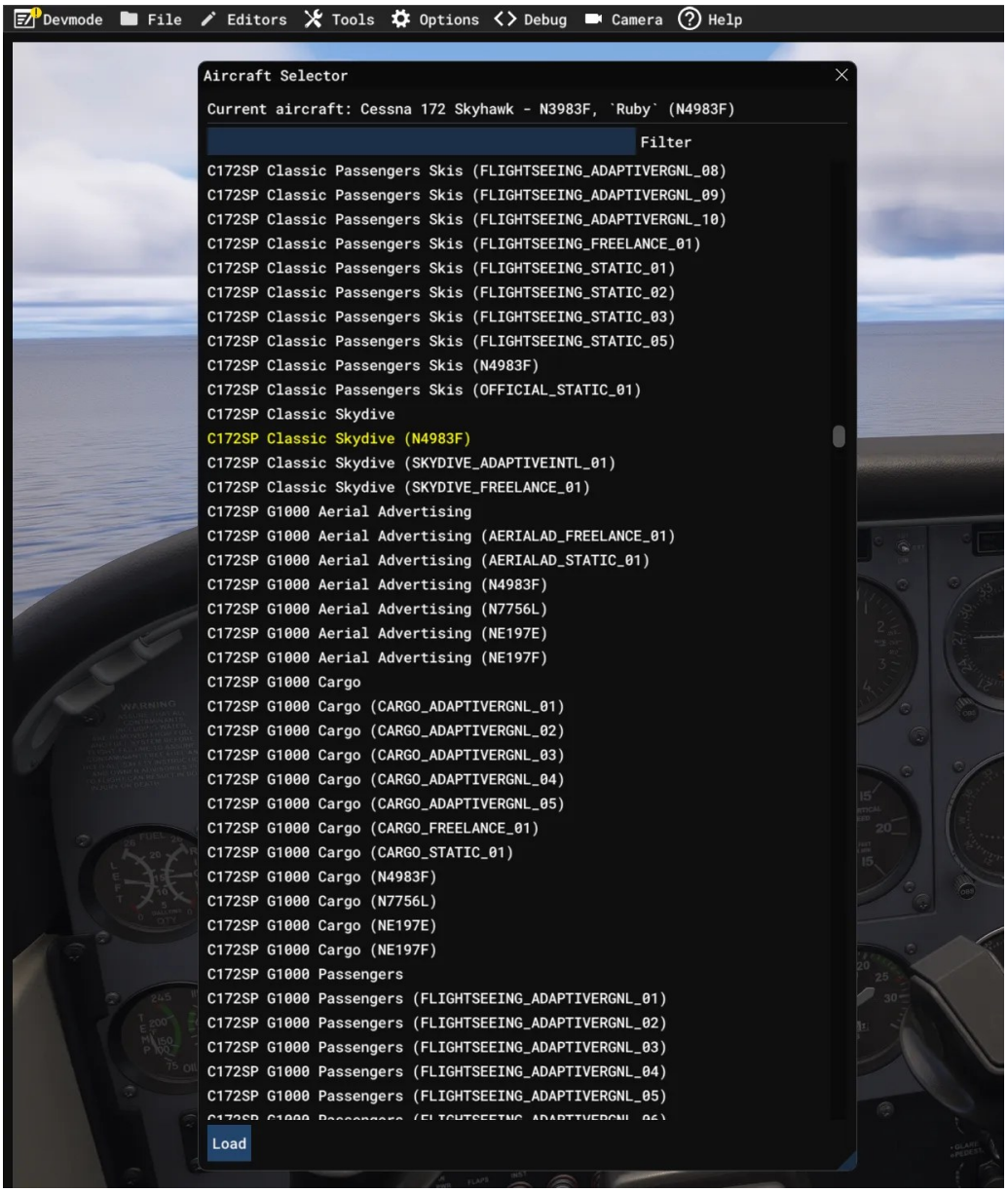
Events

Event	Description
Spawn Finished	Fired when the spawn is done, and the user has clicked the 'ready to fly' button

Aircraft/Livery Selection (Advanced Mode Only)

Use DevMode’s Aircraft Selector tool to identify the Aircraft Name and Livery Name. The aircraft name is shown in the list e.g., **C172SP CLASSIC SKYDIVE**, with the livery name displayed in parentheses (**N4983F**).

Copy these under the corresponding inputs on Mission Hub.



See also

You can also spawn on ships:\ Ship

Miltech Mission Hub

Objective

Objectives are messages that show on the HUD. They tell the player what to do. But they're also a way to structure your mission (see Building Detailed Missions: Objectives, Triggers, and Activities).

Attributes

Attribute	Description
Active On Start	**Enabled:** the objective will show when the mission starts. **Disabled:** you need to activate this objective during the misssion.
Objective Title	Text that is displayed to the player on the mission HUD
Objective Icon	You can choose different icons for the message on the mission HUD
Show Direction	Show the player the direction to this objective (where it's placed on the map)

Actions

Action	Description
Activate	The objective will show on the HUD. Also fires the *Activated* event.
Successful	Will turn green on the HUD and disappear. Also fires the *Successful* event.
Failed	Will turn red on the HUD and disappear. Also fires the *Failed* event.
Aborted	Will disappear from the HUD. Also fires the *Aborted* event.

Events

Event	Description
Activated	Fired when the objective is activated. *Example usage: turn on a trigger that will later complete this objective.*
Successful	Fired when the objective's *Successful* action is executed. *Example usage: turn on the next objective.*
Failed	Fired when the objective's *Failed* action is executed. *Example usage: fail the mission.*
Aborted	Fired when the objective's *Aborted* action is executed. *Example usage: turn on an alternative objective.*

See also

Building Detailed Missions: Objectives, Triggers, and Activities

End Mission

Marker

Miltech Mission Hub

End Mission

If you fire one of the end mission actions, a message is displayed on the HUD, and all mission execution is stopped. The objects placed in the world remain.

Attributes

Attribute	Description
End Mission Message	You can define a custom message. Otherwise the message will be: **Successful:** *Congratulations! You have successfully completed the mission.* **Failed:** *Mission failed. Better luck next time.*

Actions

Action	Description
Mission Successful	Will show the end mission message in green on the HUD. Stops the mission execution.
Mission Failed	Will show the end mission message in red on the HUD. Stops the mission execution.

Events

End Mission doesn't have any events.

See also

Objective

Miltech Mission Hub

Rectangle Trigger

A trigger based on a rectangular area in the world. You can set it to trigger when the player enters, is inside, or exits the area.

Attributes

Attribute	Description
Active On Start	**Enabled:** the trigger will start evaluating the trigger conditions as soon as the missions starts **Disabled:** you need to activate this trigger during the mission
Fire Once	**Enabled:** the trigger will deactivate (stop evaluating) when it fires a connection for the first time **Disabled:** the trigger will keep firing the connected events until it is deactivated
Length	Length of the area in meters
Width	Width of the area in meters
Orientation	Heading of the area in true degrees north (not equal to magnetic north)

Actions

Action	Description
Activate	The trigger start evaluating the trigger conditions
Deactivate	The trigger will stop evaluating the trigger conditions

Events

The events are only fired when the trigger is active

Event	Description
On Enter	Fires when the player goes from outside to inside the area
While Inside	Fires when the player is inside the area (also if the player is already inside when the trigger is activated)
On Exit	Fires when the player goes from inside to outside the area

See also

Circle Trigger

Miltech Mission Hub

Circle Trigger

A trigger based on a circular area in the world. You can set it to trigger when the player enters, is inside, or exits the area.

Attributes

Attribute	Description
Active On Start	**Enabled:** the trigger will start evaluating the trigger conditions as soon as the missions starts **Disabled:** you need to activate this trigger during the mission
Fire Once	**Enabled:** the trigger will deactivate (stop evaluating) when it fires a connection for the first time **Disabled:** the trigger will keep firing the connected events until it is deactivated
Radius	Radius of the circle in meters

Actions

Action	Description
Activate	The trigger start evaluating the trigger conditions
Deactivate	The trigger will stop evaluating the trigger conditions

Events

The events are only fired when the trigger is active

Event	Description
On Enter	Fires when the player goes from outside to inside the area
While Inside	Fires when the player is inside the area (also if the player is already inside when the trigger is activated)
On Exit	Fires when the player goes from inside to outside the area

See also

Rectangle Trigger

Miltech Mission Hub

Property Trigger

A trigger based on a variable such as speed or altitude. You use a trigger value to determine when it fires.

Attributes

Attribute	Description
Active On Start	**Enabled:** the trigger will start evaluating the trigger conditions as soon as the missions starts **Disabled:** you need to activate this trigger during the mission
Fire Once	**Enabled:** the trigger will deactivate (stop evaluating) when it fires a connection for the first time **Disabled:** the trigger will keep firing the connected events until it is deactivated
Property Type	You can select which property / variable to monitor: • Altitude (Altitude above sea level, feet) • Altitude Above Ground (feet) • Speed (Indicated airspeed, knots) • Ground Speed (Surface relative ground speed, knots) • Vertical Speed (knots) • Heading (True heading, degrees) • Pitch (degrees, pitch nose down is positive) • Bank (degrees, bank left is positive) • Latitude (decimal degrees) • Longitude (decimal degrees)
Trigger Value	Value to base the trigger on. By choosing the *Higher, Equals, or Lower* action, you set the trigger.
Minimum Duration	Optional: Minimum time (seconds) that the trigger must be active before it can fire
Duration Must Be Continuous	**Enabled:** the minimum duration must be reached in one continuous period. **Disabled:** separate periods are added together until the total duration is met.

Actions

Action	Description
Activate	The trigger start evaluating the trigger conditions
Deactivate	The trigger will stop evaluating the trigger conditions

Events

The events are only fired when the trigger is active

Event	Description
Higher	Fires when the property value is higher than the *trigger value*
Equals	Fires when the property value equals the *trigger value*. Also fires when the value crosses the *trigger value* (for example, if the value goes from 98 to 103, it will also 'equal' 100)
Lower	Fires when the property value is lower than the *trigger value*

See also

- For more advanced logic, use a Custom Code object.

1. If stationary on a moving ship, the surface relative speed is 0 ↩

Miltech Mission Hub

Timer Trigger

A trigger based on a countdown. Can also be displayed in the HUD.

Attributes

Attribute	Description
Active On Start	**Enabled:** the trigger will start counting as soon as the missions starts **Disabled:** you need to activate this trigger during the mission
Trigger Time	Time (seconds) after which the trigger is fired
Show On Screen	Show the timer on the HUD
Timer Title	Title of the timer that is shown on the HUD (if *Show On Screen* is true)

Actions

Action	Description
Activate	The timer starts
Deactivate	The timer stops and resets
Reset time	Reset the timer

Events

The events are only fired when the trigger is active

Event	Description
Time elapsed	Fires when the timer has reached the *Trigger Time*

Miltech Mission Hub

Counter Trigger

A trigger based on a counter.

Attributes

Attribute	Description
Active On Start	**Enabled:** the trigger will start counting as soon as the missions starts **Disabled:** you need to activate this trigger during the mission
Trigger Count	Value of the count at which the trigger is fired

Actions

Action	Description
Activate	The timer starts
Deactivate	The timer stops and resets
Reset Count	Reset the current count to 0
Increase Count	Increase the current count by 1. Only works when the trigger is active.
Decrease Count	Decrease the current count by 1. Only works when the trigger is active.

Events

The events are only fired when the trigger is active

Event	Description
Count reached	Fires when the current count has reached or exceeded the *Trigger Count*

Miltech Mission Hub

Landing Trigger

Triggers when the aircraft goes from flying to *wheels on ground* (or ship).

Attributes

Attribute	Description
Active On Start	**Enabled:** the trigger will start listening for landings as soon as the missions starts **Disabled:** you need to activate this trigger during the mission
Fire Once	**Enabled:** the trigger will deactivate after the first landing it sees **Disabled:** the trigger will keep firing for each landing, until it is deactivated
Radius	Radius (meters) of the area in which the landing trigger is active

Actions

Action	Description
Activate	The trigger start listening for landings
Deactivate	The trigger will stop listening for landings

Events

The events are only fired when the trigger is active

Event	Description
Landing	Fires when the aircraft goes from flying to wheels on ground (or ship) and is inside the trigger area.

See also

Parking Trigger

Takeoff Trigger

Miltech Mission Hub

Takeoff Trigger

Triggers when the aircraft wheels leave the ground.

Attributes

Attribute	Description
Active On Start	**Enabled:** the trigger will start listening for takeoffs as soon as the missions starts **Disabled:** you need to activate this trigger during the mission
Fire Once	**Enabled:** the trigger will deactivate after the first takeoff it sees **Disabled:** the trigger will keep firing for each takeoff, until it is deactivated
Radius	Radius (meters) of the area in which the takeoff trigger is active

Actions

Action	Description
Activate	The trigger start listening for takeoffs
Deactivate	The trigger will stop listening for takeoffs

Events

The events are only fired when the trigger is active

Event	Description
Takeoff	Fires when the aircraft goes from wheels on ground (or ship) to flying and is inside the trigger area.

See also

Landing Trigger

Parking Trigger

Miltech Mission Hub

Parking Trigger

Triggers when the aircraft is stationary on the ground (or ship). It's also possible to wait for the engines to be shut down as well.

Attributes

Attribute	Description
Active On Start	**Enabled:** the trigger will start listening for a parking as soon as the missions starts **Disabled:** you need to activate this trigger during the mission
Fire Once	**Enabled:** the trigger will deactivate after the first time the aircraft is parked **Disabled:** the trigger will keep firing for each time the aircraft is parked, until it is deactivated
Radius	Radius (meters) of the area in which the parking trigger is active
Full Shutdown	Does the trigger require the plane to be shut down? (Engines off)

Actions

Action	Description
Activate	The trigger start listening for the aircraft being parked
Deactivate	The trigger will stop listening

Events

The events are only fired when the trigger is active

Event	Description
Parking	Fires when the aircraft is stationary, on the ground (or ship) and is inside the trigger area. (And if *Full Shutdown* is true, the engines also need be shut down)

See also

Landing Trigger

Takeoff Trigger

End Mission

Miltech Mission Hub

Marker

You can place a POI marker in the world.

Attributes

Attribute	Description
Active On Start	**Enabled:** the marker will be visible as soon as the missions starts **Disabled:** you need to activate the marker during the mission
Altitude	Altitude above sea level in feet
On Ground	Ignore the altitude and spawn on ground

Actions

Action	Description
Activate	Make the marker visible
Deactivate	Hide the marker

Events

Marker doesn't have any events.

See also

Objective

Circle Trigger

Rectangle Trigger

Miltech Mission Hub

Ship

You can place landable moving ships in the world. You can choose the heading and speed. You can also use the ship as spawn point.

Caution
You can place a maximum of 64 ships in one mission

Attributes

Attribute	Description
Ship Model	Ship model to spawn. Can be: • USCG Cutter • LHD Juan Carlos I • HMAS Adelaide • HDMS Triton • Arleigh Burke Destroyer • Independence LCS • Ticonderoga Cruiser • Cruise Ship • Hospital Ship • Tanker Ship • Type 45 Destroyer • Type 23 Frigate
Orientation	Heading of the ship in true degrees north (not equal to magnetic north)
Ship Speed	Speed of the ship in knots (max. 40kts)
Ship Spawn	You can use the ship as spawn point. You can only set 1 spawn point in a mission. You can choose a 'Ready to go' or 'Shutdown' spawn.

Actions

Ship doesn't have any actions.

Events

Ship doesn't have any events.

See also

Supercarrier

Spawn

Miltech Mission Hub

Supercarrier

If you have the Supercarrier Pro addon, you can place the carriers in the world. You can also use the carrier as spawn point.

Caution
You can only have **one** carrier in a mission. This includes carriers that are already placed in the world. If you have multiple carriers, they will interfere.

Attributes

Attribute	Description
Carrier Type	Carrier to spawn. Can be: • CVN-69 Moving • CVN-69 Static • CVN-76 Moving • CVN-76 Static • CVN-78 Moving • CVN-78 Static • FrenchCDG Moving • FrenchCDG Static
Orientation	Heading of the carrier in true degrees north (not equal to magnetic north)
Spawn on Carrier	You can use the carrier as spawn point. You can only set 1 spawn point in a mission. The aircraft will spawn 'Ready to go'.

Actions

Supercarrier doesn't have any actions.

Events

Supercarrier doesn't have any events.

See also

Supercarrier Pro documentation: Supercarrier Pro

UK Carrier

Ship

Spawn

Miltech Mission Hub

UK Carrier

If you have the Broken mention addon, you can place the carriers in the world. You can also use the carrier as spawn point.

Caution
You can only have **one** carrier in a mission. This includes carriers that are already placed in the world. If you have multiple carriers, they will interfere.

Attributes

Attribute	Description
UK Carrier Type	Carrier to spawn. Can be: • HMS Prince of Wales Moving • HMS Prince of Wales Static • HMS Queen Elizabeth Moving • HMS Queen Elizabeth Static
Orientation	Heading of the carrier in true degrees north (not equal to magnetic north)
Spawn on Carrier	You can use the carrier as spawn point. You can only set 1 spawn point in a mission. The aircraft will spawn 'Ready to go'.

Actions

UK Carrier doesn't have any actions.

Events

UK Carrier doesn't have any events.

See also

UK Carrier Strike Group documentation: Broken mention

Supercarrier

Ship

Spawn

Miltech Mission Hub

Search and Rescue

You can add a rescue scene in the world, complete with objectives and rescue logic.

Attributes

Attribute	Description
Active On Start	**Enabled:** as soon as the missions starts, the rescue scene will be spawned and the related objectives will be shown. **Disabled:** you need to activate this activity during the mission.
Rescue Scene	Can be: • Sinking Sail Boat • Sinking Fishing Ship • Skier Rescue • Roadside Accident
Spawn Radius	Radius (meters) in which the SAR target is randomly spawned. (0 = exact location)
Show Direction	In the HUD, show the the exact direction to the SAR target.
Show Flare	Show a flare at the rescue scene.

Actions

Action	Description
Activate	If it wasn't active yet, the rescue scene will be spawned and the objectives will be shown.
Deactivate	The rescue scene will be removed from the world, and the objectives will be deactivated.

Events

Event	Description
Hoist completed	Fires when the target has been hoisted up into the aircraft.

See also

- You could start the mission on a Ship.
- After the hoist is complete, you may want to add an Objective to a nearby hospital.

Miltech Mission Hub

Firefighting

You can add fires that can be extinguished. The player will get objectives and be prompted to (re)fill their water bucket / reservoir.

Attributes

Attribute	Description
Active On Start	**Enabled:** as soon as the missions starts, the fires will be spawned and the related objectives will be shown. **Disabled:** you need to activate this activity during the mission.
Amount of Fires	Number of fires to create.
Spawn Radius	Radius (meters) in which the fires are randomly spawned.

Actions

Action	Description
Activate	If it wasn't active yet, the fires will be spawned and the objectives will be shown.
Deactivate	The fires will be removed from the world, and the objectives will be deactivated.

Events

Event	Description
Fires extinguished	This event is sent when all the fires have been extinguished.

See also

- You can End Mission when the fires are extinguished.

Miltech Mission Hub

Submarine Intercept

You can spawn a submarine in the world that the player will have to find and intercept.

Attributes

Attribute	Description
Active On Start	**Enabled:** as soon as the missions starts, the activity will be spawned and the related objectives will be shown. **Disabled:** you need to activate this activity during the mission.
Submarine Model	Can be: • American Sub • Russian Sub • Illegal Sub
Spawn Radius	Radius (meters) in which the submarine is randomly spawned (0 = exact location).
Orientation	Direction in which the submarine is traveling (true north degrees).
Speed	Speed of the sub in knots.
Show Direction	In the HUD, show the the exact direction to the submarine.

Actions

Action	Description
Activate	If it wasn't active yet, the submarine will be spawned and the objectives will be shown.
Deactivate	The submarine will be removed from the world, and the objectives will be deactivated.

Events

Event	Description
Submarine Intercepted	Fires when the player is within 300 meters of the submarine.

See also

- If you also want the player to disable the submarine, use Submarine Attack

- You could start the mission on a Ship.

Miltech Mission Hub

Submarine Attack

You can spawn a submarine in the world that the player will have to find, intercept, and disable.

Attributes

Attribute	Description
Active On Start	**Enabled:** as soon as the missions starts, the submarine will be spawned and the related objectives will be shown. **Disabled:** you need to activate this activity during the mission
Submarine Model	Can be: • American Sub • Russian Sub • Illegal Sub
Spawn Radius	Radius (meters) in which the submarine is randomly spawned (0 = exact location).
Orientation	Direction in which the submarine is traveling (true north degrees).
Speed	Speed of the sub in knots.
Show Direction	In the HUD, show the the exact direction to the submarine.

Actions

Action	Description
Activate	If it wasn't active yet, the submarine will be spawned and the objectives will be shown.
Deactivate	The submarine will be removed from the world, and the objectives will be deactivated.

Events

Event	Description
Attack Completed	Fires when the player intercepted the submarine and fired a missile or torpedo at the submarine.
Attack Failed	Fires when the player intercepted the submarine and fired a missile or torpedo, **but missed the submarine.**

See also

- For only intercept missions, use Submarine Intercept.
- You could start the mission on a Ship.

Miltech Mission Hub

Sling Load Start

You can place cargo in the world that can be picked up as a sling load. You need to connect this to a Sling Load End.

Attributes

Attribute	Description
Active On Start	**Enabled:** as soon as the missions starts, the sling load will be spawned and the related objectives will be shown. **Disabled:** you need to activate this activity during the mission.
Sling Load Type	Can be: • Single Pallet • Double Pallet

Actions

Action	Description
Activate	If it wasn't active yet, the sling load will be spawned and the objectives will be shown.
Deactivate	The sling load will be removed from the world, and the objectives will be deactivated.

Events

Event	Description
Picked Up	Connect this to the corresponding Sling Load End to link them together.

See also

- You also need to place and connect a Sling Load End.

Miltech Mission Hub

Sling Load End

Specifies an area where the sling load has to be delivered. You need to connect this to the Sling Load Start.

Attributes

Attribute	Description
Drop Area Radius	Radius (meters) of the drop area for the sling load. If dropped outside of this area, the **Wrong Delivery** event will fire.
Show Direction	In the HUD, show the the exact direction to the sling load end.

Actions

Action	Description
Picked Up	Make sure the corresponding Sling Load Start is connected here.

Events

Event	Description
Dropped Off	Fires when the sling load is dropped **inside** the *Drop Area Radius*.
Wrong Delivery	Fires when the sling load is dropped **outside** the *Drop Area Radius*.

See also

- You need to place and connect a Sling Load Start as well.

Miltech Mission Hub

Building block template

Short description

Attributes

Attribute	Description

Actions

Action	Description

Events

Event	Description

See also

*

Miltech Mission Hub

Introduction

Warning
PLEASE READ THE END USER LICENSE AGREEMENT OF THIS SDK.
The Miltech Mission Hub SDK allows for the creation and distribution of custom Missions and Mission Packs. These may be shared freely or offered commercially. However, all usage is strictly governed by the terms and conditions outlined in the EULA.
By using this SDK, you agree to comply fully with the license terms. Unauthorized use, redistribution outside the scope of the EULA, or violation of these conditions may result in enforcement actions, including legal remedies or revocation of usage rights.
We encourage creators to explore the full potential of the SDK while respecting the rights and guidelines established to protect both the community and the development framework.

For mission creators

You can lift your missions to the next level with:

- Advanced logic, dialog, images, and custom SimObjects: Advanced Map Objects
- Mission pack with thumbnails, briefing images, and custom content: Mission Package

For aircraft creators

You can make your aircraft compatible with Miltech Mission Hub activities: Activities Setup

You can also create a mission pack for your aircraft with tutorials, historical flights, or other exciting missions featuring your aircraft: Mission Package

Miltech Mission Hub

End User License Agreement - Terms of License

Warning
PLEASE READ THE END USER LICENSE AGREEMENT OF THIS SDK.
The Miltech Mission Hub SDK allows for the creation and distribution of custom Missions and Mission Packs. These may be shared freely or offered commercially. However, all usage is strictly governed by the terms and conditions outlined in the EULA.
By using this SDK, you agree to comply fully with the license terms. Unauthorized use, redistribution outside the scope of the EULA, or violation of these conditions may result in enforcement actions, including legal remedies or revocation of usage rights.
We encourage creators to explore the full potential of the SDK while respecting the rights and guidelines established to protect both the community and the development framework.

1. **No Distribution of Core Assets or Code:**\ The Mission Hub application, including all executable files, internal assets, and source code, may not be redistributed in any form.
2. **No Reverse Engineering:**\ Reverse engineering, decompilation, or disassembly of Mission Hub or any of its components is strictly prohibited.
3. **No Extraction or Reuse of Assets:**\ Mission Hub assets may not be extracted, modified, or reused outside the platform. They are to be referenced and used **only** within Mission Hub.
4. **Missions and Mission Packs - Free or Paid Distribution:**\ Missions and Mission Packs created with the SDK may be freely shared or sold, including via peer-to-peer sharing, online storefronts, or third-party marketplaces.
5. **Required Attribution and Disclaimer:**\ Any commercial, free, or public-facing listing of a Mission, or Mission Pack must include:
6. A **direct link** to the Miltech Simulations website (https://miltechsimulations.com)
7. The following disclaimer:\ *“This Mission Pack requires Mission Hub by Miltech Simulations.”*
8. **Notification and Optional Distribution by Miltech:**\ Miltech Simulations must be notified of any mission or mission package being sold. Miltech reserves the right to distribute the same package through its own website, under a fixed commission rate of **25%**.
9. Not liable for damages if a mission or mission pack cannot be played, or if 3rd party content is broken with an update.

Mission Packages can be bundled with other addons - aircraft, naval assets, simobjects, etc.

Miltech Mission Hub

Advanced Mission Settings

The advanced mission settings are hidden by default. In the general Mission Hub settings, you need to enable *Mission Editor Advanced Mode* by either clicking the gear icon on the Mission Hub home screen, or in the editor by clicking *Edit>Preferences*.

The advanced mission settings rely on advanced SDK knowledge, and some settings require you to create a Mission Package to distribute custom assets.

Additional Script File

Deprecated, use the Custom Script object instead.

Assistance Preset

You can select an assistance preset to force all players to have the same assistance settings.

Custom Weather Preset

See Mission Package

Miltech Mission Hub

Advanced Map Objects

The advanced map objects are hidden by default. In the Mission Hub settings, you need to enable *Mission Editor Advanced Mode* by either clicking the gear icon on the Mission Hub home screen, or in the editor by clicking *Edit>Preferences*.

The advanced map objects rely on advanced SDK knowledge, and some require you to create a Mission Package to distribute custom assets.

Custom Dialog

Add custom dialog and sounds. Needs a Mission Package to distribute custom assets.

Custom Code

Use RPN code for advanced logic (e.g. setting/reading Lvars, complicated trigger conditions)

Custom Image

Add an image as a popup during the mission. Needs a Mission Package to distribute custom assets.

Custom SimObject

Add custom SimObjects. Make sure the player also has access to the SimObjects.

Custom Script

Add an MSFS mission script for advanced mission logic. Needs a Mission Package to distribute custom assets.

Miltech Mission Hub

Custom Dialog

Text to speech

Place the dialog objects in the editor

Just place the *Custom Dialog* objects as you would any other mission hub object. For each *Custom Dialog* object input a *Dialog Text*. This text will be used for subtitles and text-to-speech)

With sound file

Add your sound files to the work folder

If you have sound files, add them to an audio folder next to your mission .json file. For example:

\Work\SavedScenarioFiles\MyMissionAudio\Intro.wav

\Work\MissionPacks\MyMissionPack\Audio\Intro.wav

Place the dialog objects in the editor

Just place the *Custom Dialog* objects as you would any other mission hub object. You can give each *Custom Dialog* object a:

- *Dialog Text* (used for subtitles)
- *Dialog Sound File* (path of the sound file relative to the work folder). For example:
- SavedScenarioFiles\MyMissionAudio\Intro
- MissionPacks\MyMissionPack\Audio\Intro

Miltech Mission Hub

Custom Code

For more complex logic than the Property Trigger, you can use custom RPN code. The **Custom Code** object can both execute RPN code and also use its result as a trigger.

Learn more about RPN code here: MSFS SDK Documentation - Reverse Polish Notation

Attributes

Attribute	Description
Active On Start	**Enabled:** the code will start executing as soon as the missions starts **Disabled:** you need to activate this object during the mission, or use the *Execute Once* action.
Fire Once	**Enabled:** the object will deactivate (stop executing the code) when it fires a connection for the first time **Disabled:** the object will keep firing the connected events until it is deactivated
RPN Code	Custom RPN code to execute

Actions

Action	Description
Activate	Start executing the code every frame
Deactivate	Stop executing the code
Execute Once	Execute the code once

Events

Event	Description
True	Fires when the result of executing the RPN code is true (larger than or equal to 1)

See also

- For simple logic, use Property Trigger

Miltech Mission Hub

Custom Image

You can display images as a popup during a mission. The simulation will pause when the image is on screen. To add an image to the simulator, you can use a Mission Package.

Attributes

Attribute	Description
Image Path	Path of the image. Can be: • Relative to the work folder (e.g. \work\SavedScenarioFiles\MyMissionImages\IntroPopup.jpg • From a URL • Relative to the html_ui folder (e.g. /Textures/Menu/rewardscreen/freeFlightReward.jpg)
Display Duration	Amount of seconds after which to hide the image. If set to 0, the image stays on screen until the player hides it.

Actions

Action	Description
Show Image	Show the image on screen. The simulation gets paused.
Hide Image	Hide the image. The simulation gets resumed

Events

Custom Image doesn't have any events.

Miltech Mission Hub

Custom SimObject

You can add any SimObject that you have installed to the world. You can give the SimObject a constant speed. Routes are not supported yet.

Caution
Other players may not have the same SimObjects installed as you. If you share the mission, the custom SimObjects may not show up for them.

Attributes

Attribute	Description
Active On Start	**Enabled:** the SimObject will be visible as soon as the missions starts **Disabled:** you need to activate the SimObject during the mission
SimObject Title	Title of the Sim Object. See How to find the SimObject title
Is Aircraft	Is the SimObject an aircraft?
Orientation	Heading of the SimObject in true degrees north (not equal to magnetic north)
Altitude	Altitude above sea level in feet
On Ground	Ignore the altitude and spawn on ground
Speed	Speed of the SimObject in knots
Simobject Spawn Radius	Radius (meters) in which the SimObject is randomly spawned. (0 = exact location)

Actions

Action	Description
Activate	Spawn the SimObject in the world
Deactivate	Remove the SimObject

Events

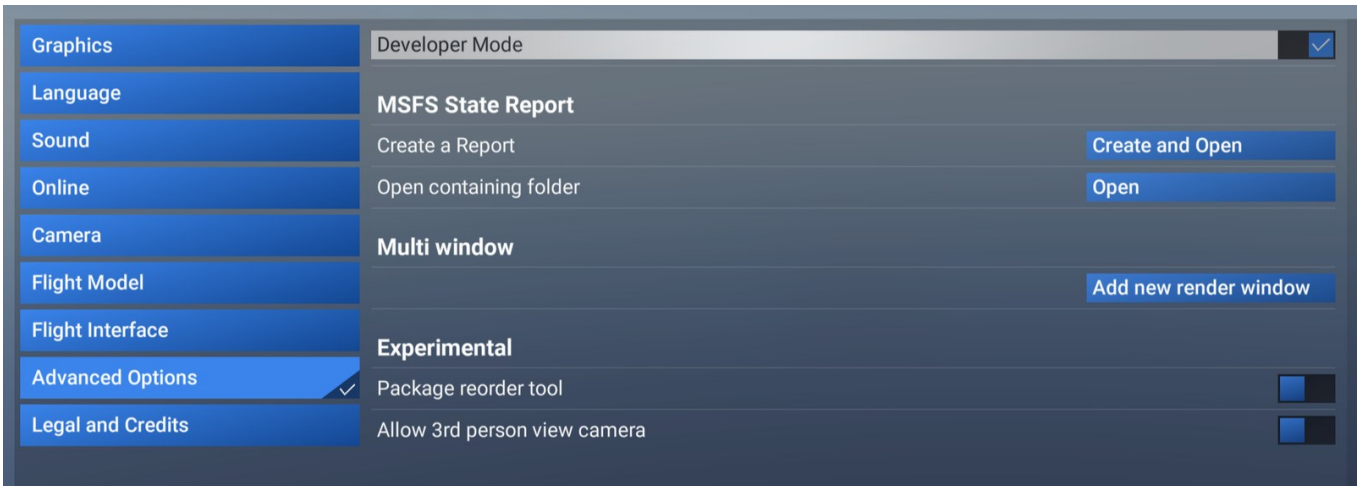
Custom SimObject doesn't have any events.

How to find the SimObject title

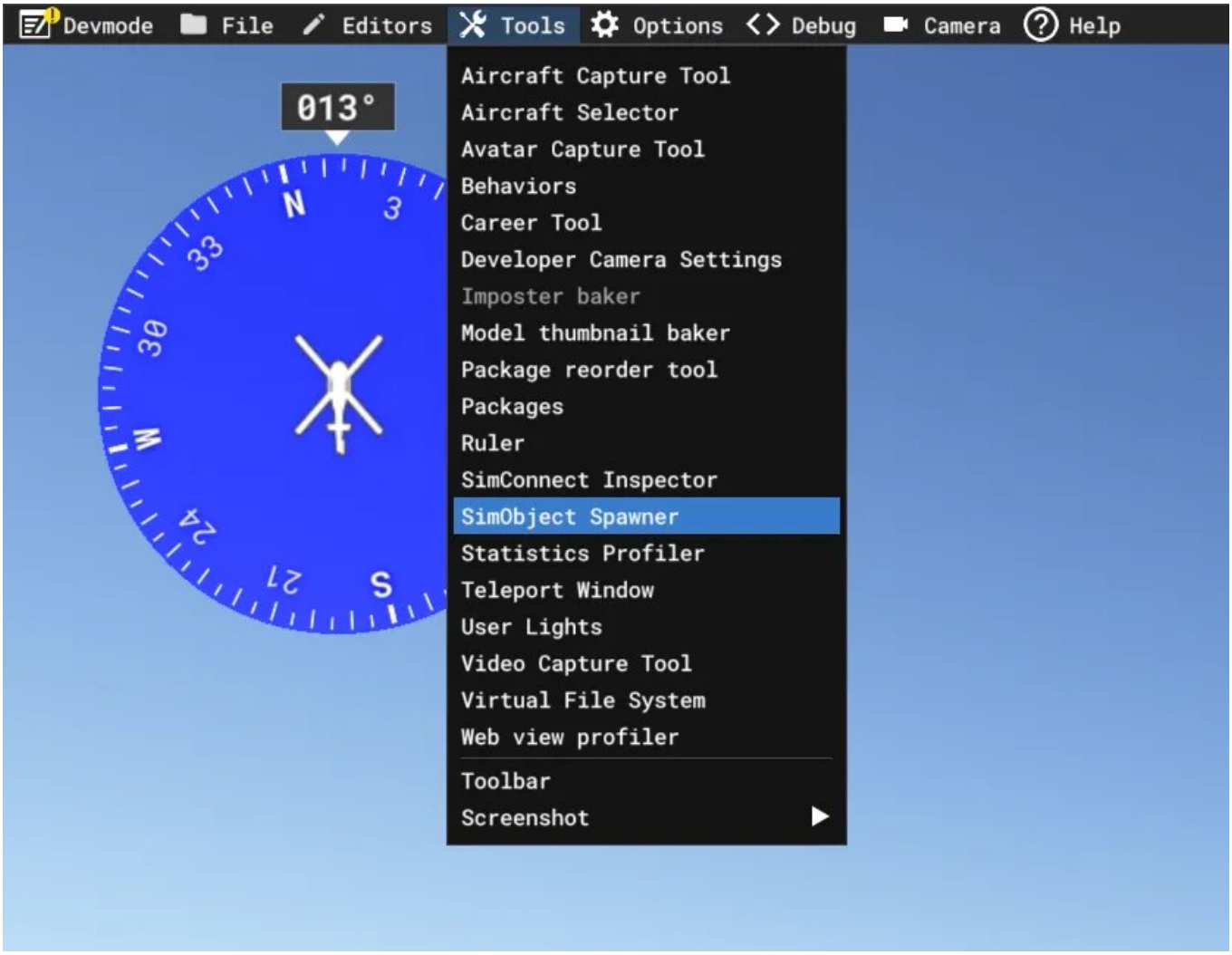
MSFS2024

1. Enable Devmode

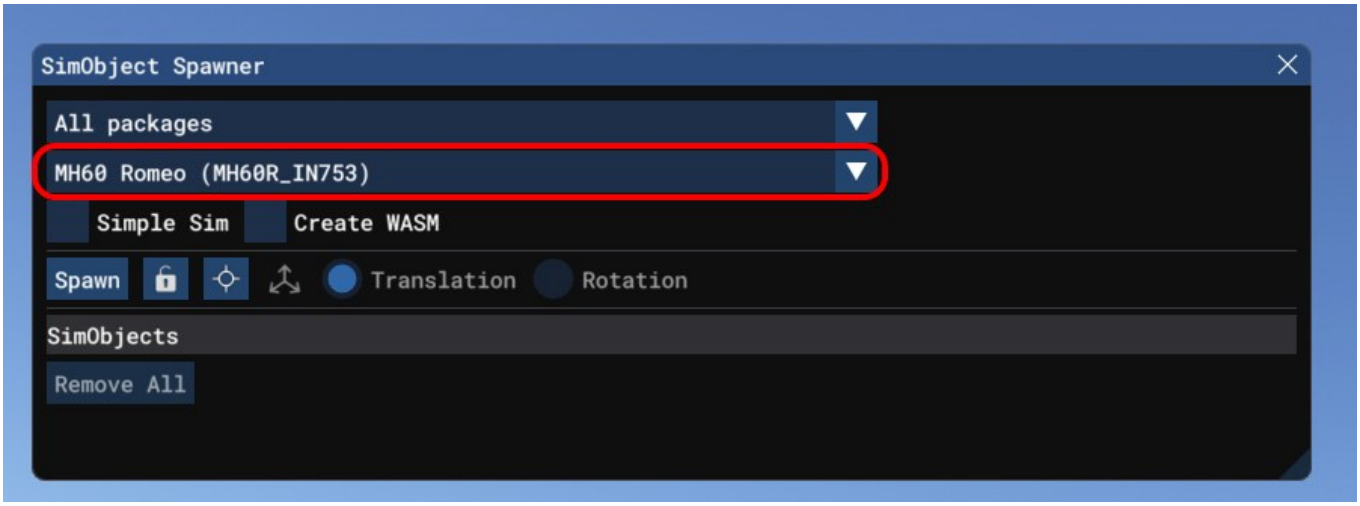
Under *General* settings, in the tab *Advanced Options*, enable *Developer Mode*.



2. Open the SimObject Spawner tool



You can search through all SimObjects, and filter per package.



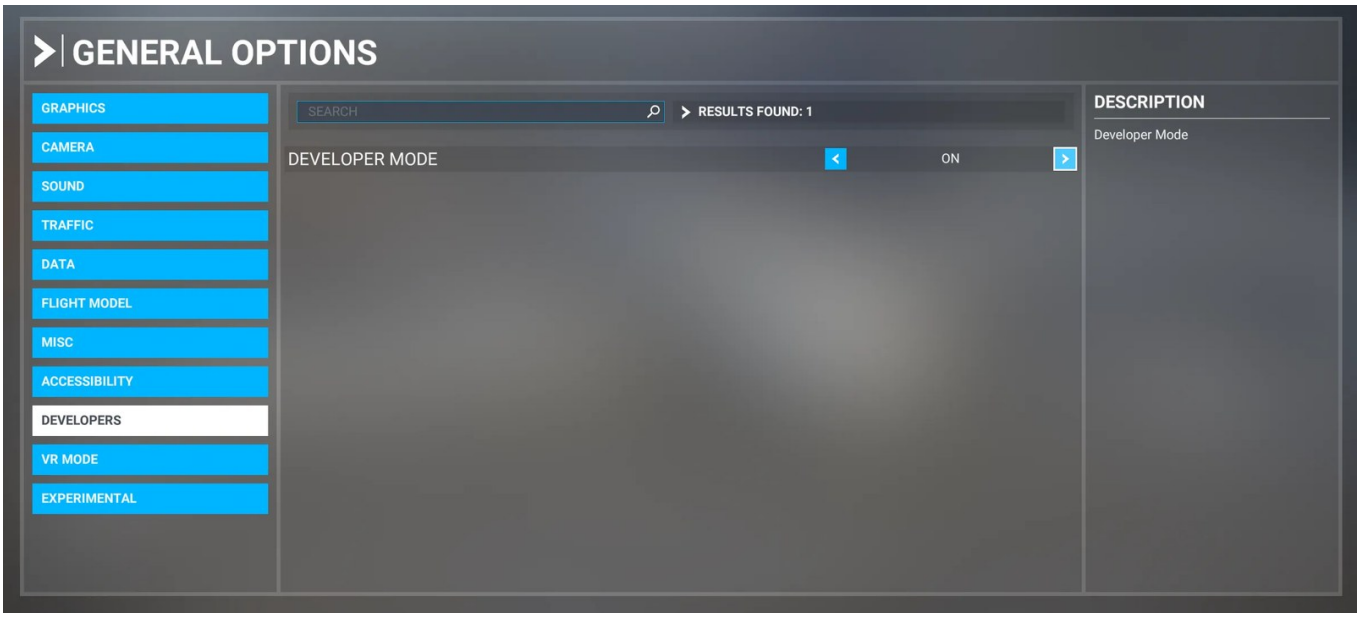
3. Copy the SimObject Title without brackets

The selection dropdown gives you the SimObject title you need to enter in the Mission Hub. You should not add the part inside the brackets, as that is the livery name and not part of the SimObject title.

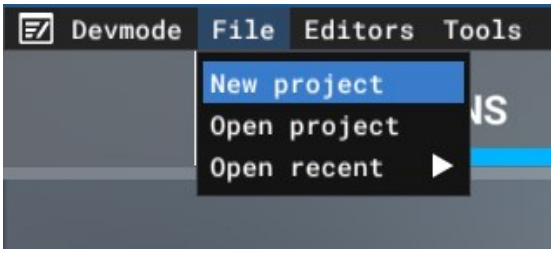
> Caution
> You need to type the title exactly, without the part between brackets, to have it successfully spawn in your mission.

MSFS2020

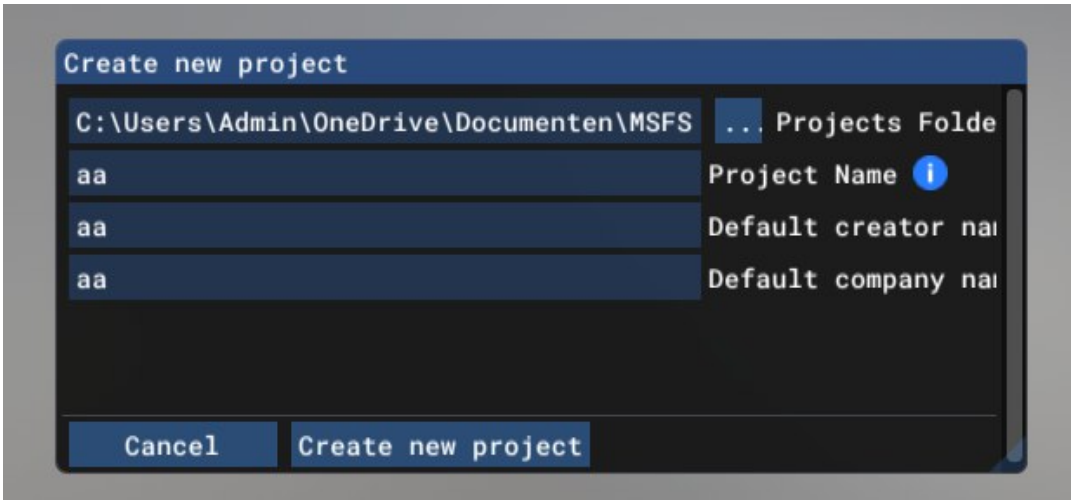
1. Enable Devmode



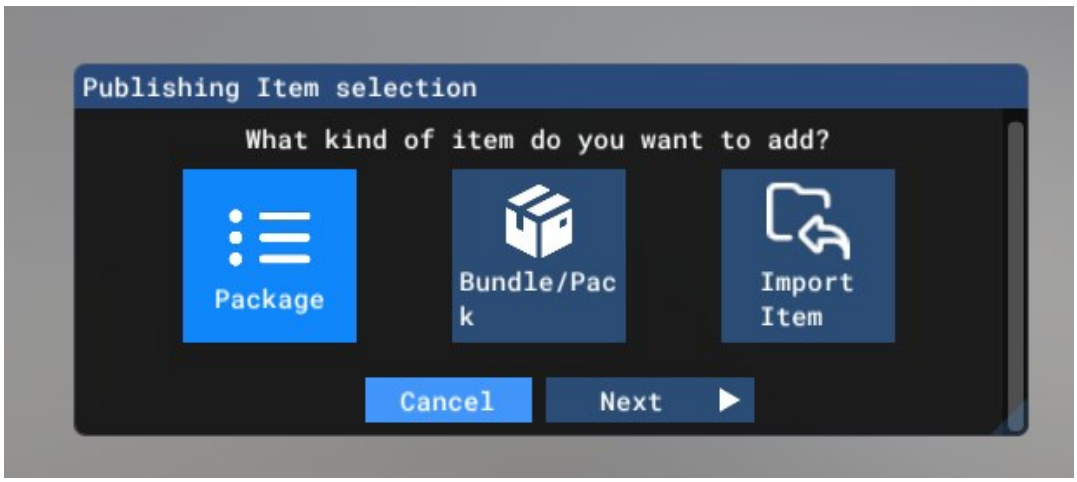
2. Create a new project



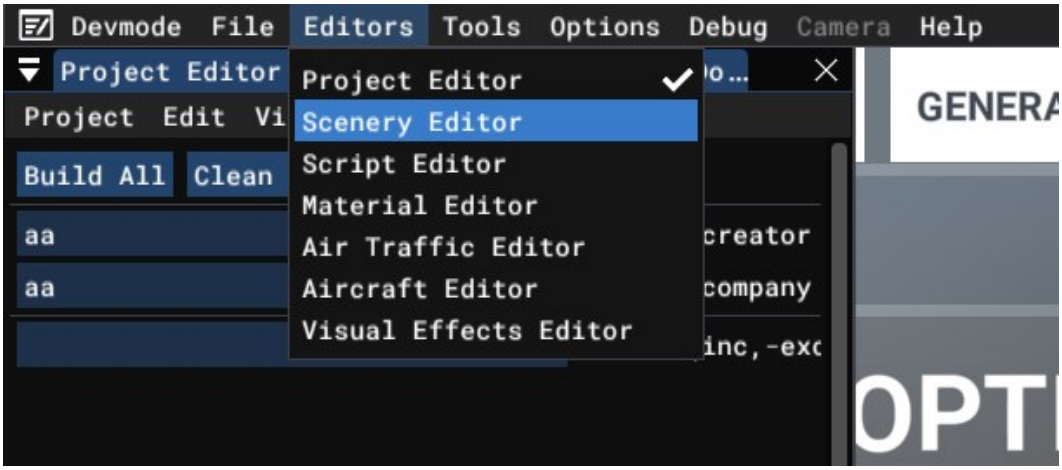
It doesn't matter what you fill in here. Click create new project.



On the next screen, click Cancel

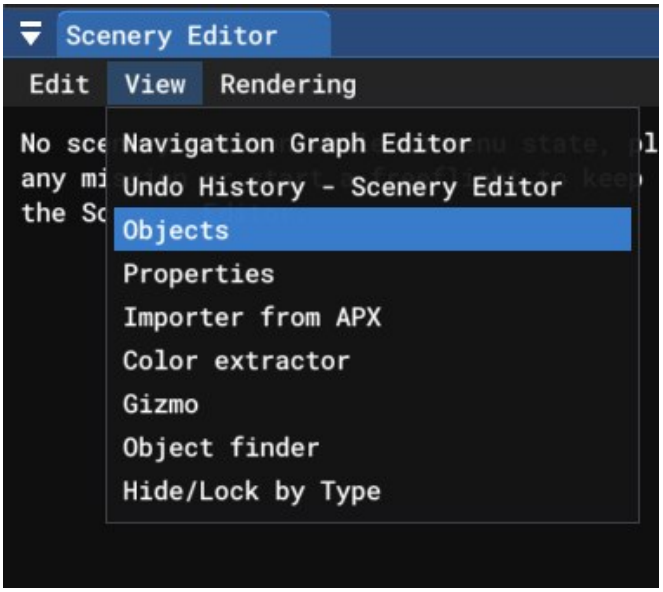


3. Open the scenery editor

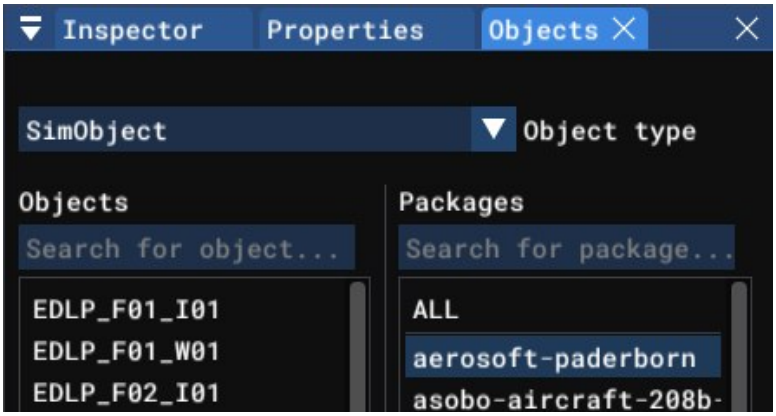


4. Use the Objects panel

In the scenery editor, click the View dropdown, and enable the Objects panel.



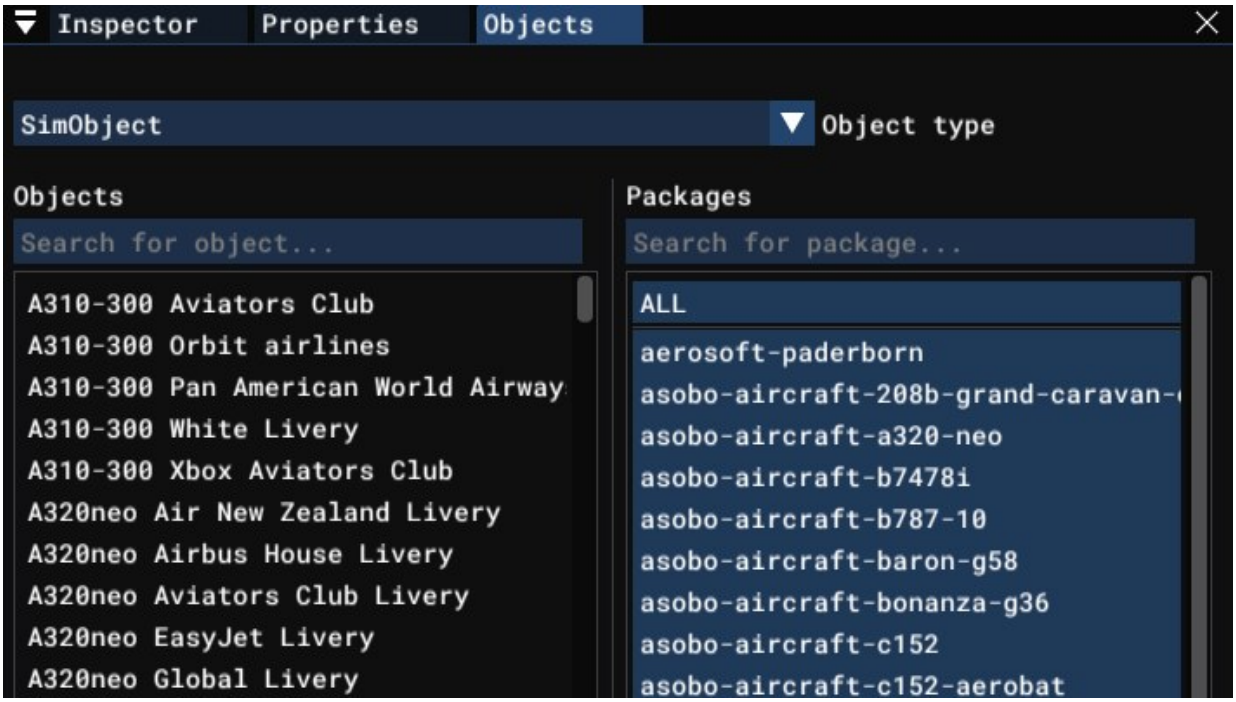
Now the *Objects* panel should be visible. In the *Object type* dropdown, select *SimObject*.



On the right side of the panel, you see the Packages.

You can select ALL, to see all installed SimObjects, or select the package that contains the SimObject you want to use.

On the left side of the panel, you see a list of all SimObject titles.



5. Copy the SimObject Title

From the left side of the Objects panel, choose the SimObject you want to use. You need to type that title exactly in the Mission Hub in order to have it successfully spawn in your mission.

See also

- Map Objects

Miltech Mission Hub

Custom Script

For very advanced mission logic, you can add a custom script to your mission. A custom script refers to an MSFS Mission script, which can be an .xml or a compiled to .spb.

You can place the mission script on a certain location in the world. And objects placed at 0,0 in the mission script will be moved to the specified location. The script will stay available throughout the entire mission.

Place the script file next to the mission .json file.

Attributes

Attribute	Description
Script Path	Path to the custom script file, without extension (e.g. SavedScenarioFiles\CustomScript)
Altitude	Altitude above sea level in feet
Orientation	Heading in true degrees north (not equal to magnetic north)

Actions

Custom Script doesn't have any actions or events, but you can use Custom Code to communicate using Lvars.

See also

- Simpler logic: Custom Code

Miltech Mission Hub

Mission Package

To distribute multiple missions together you can create a mission package.

Creating the mission package

Work folder (easy)

You need to create a folder for your mission package in \work\MissionPacks\ . Inside that folder, put all your mission .json files, thumbnails, briefing images, and other assets (Sounds, Scripts, Images, Weather).

In your mission package folder, create a new file called MissionPackDefinition.json and fill in the fields:

```
{
"GUID": "YOUR-GENERATED-GUID",
"Title": "Your Missionpack Title",
"Description": "Your Missionpack Description",
"Author": "YourName",
"Thumbnail": "YourMissionPack-thumbnail.jpg",
"Files": [
{
"FileName": "1MissionName.json",
"Thumbnail": "1MissionName_thumbnail.jpg",
"BriefingImage": "1MissionName_briefing.jpg"
},
{
"FileName": "2MissionName.json",
"Thumbnail": "2MissionName_thumbnail.jpg",
"BriefingImage": "2MissionName_briefing.jpg"
}
]
}
```

Caution
Generate a random GUID for your mission pack. You can use https://guidgenerator.com/

Community folder (harder)

You can distribute your mission package as package that can be placed in the community folder. The user then has to manually add the pack to the mission hub. The community folder method is also more complex. Therefore, it's recommended to use the work folder to distribute mission packages.

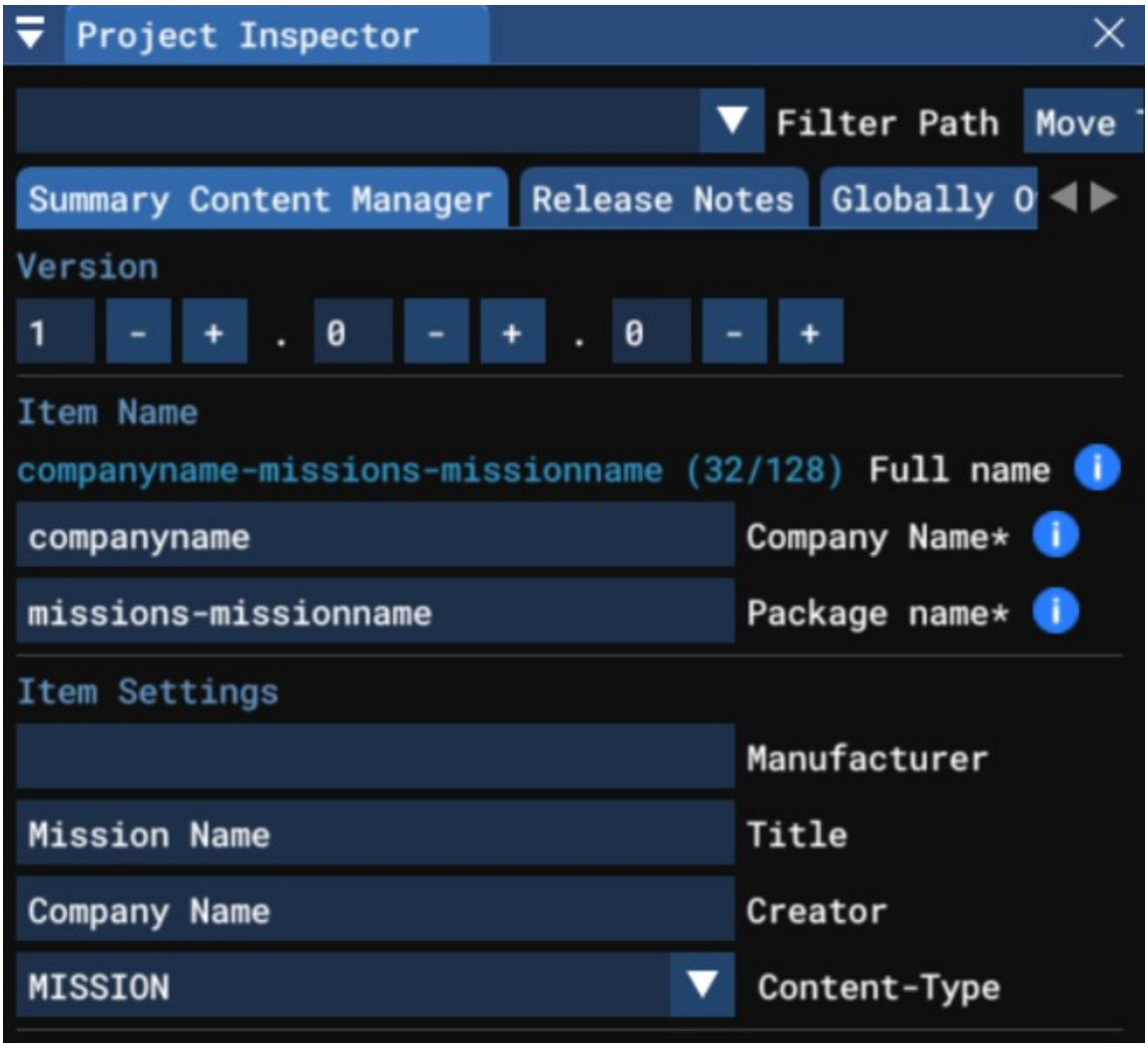
Template project

This zip contains an example Devmode project:

↓ Download attachment

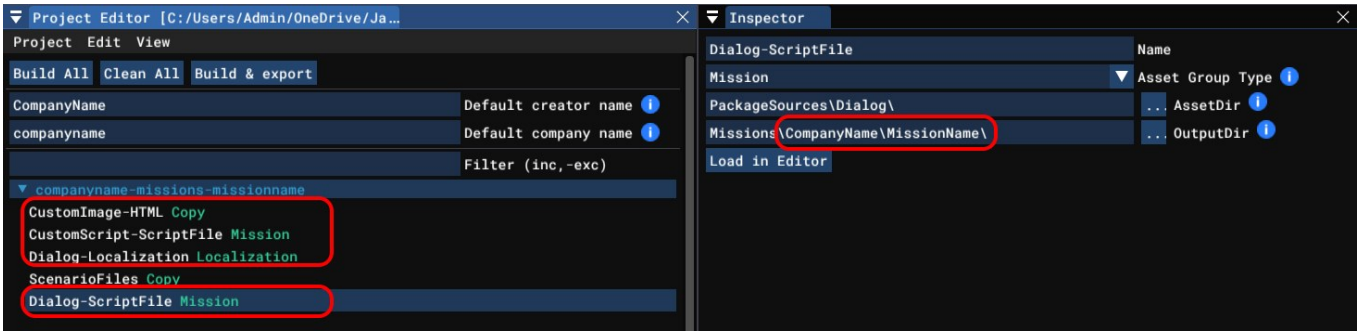
Download and extract the .zip file. Open the project in MSFS devmode.

Once opened, you need to change the *Package name* and other details in the project inspector.



And you need to change the *OutputDirs* for the all asset groups **except for the ScenarioFiles asset group**.

Replace CompanyName with your name and MissionName with the name of the mission.

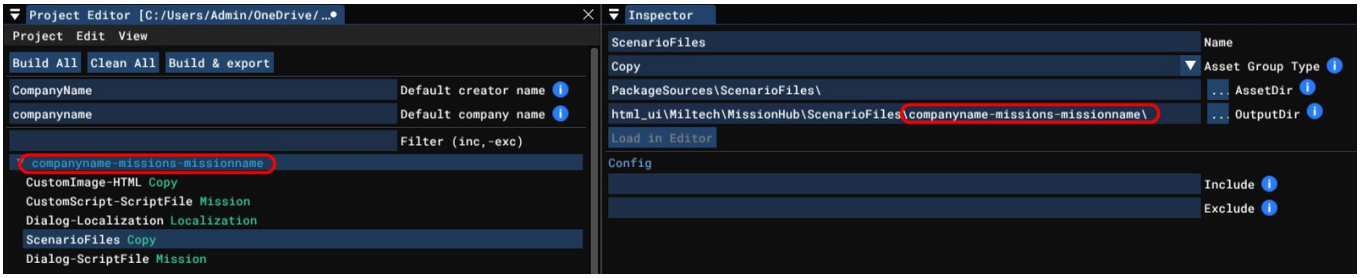


Caution
Be sure to change the package and folder names, to avoid conflicts with other missions.

Defining your mission pack details

Preparing ScenarioFiles asset group

In the MSFS project editor, edit the **OutputDir** of the *ScenarioFiles* asset group. The last part of the OutputDir should exactly match your package name:



Adding missions

Paste your mission files, thumbnail images, and briefing images in the PackageSources\ScenarioFiles\ folder (See: Sharing and Installing Missions).

In that folder, open the MissionPackDefinition.json file:

```
{
    "GUID": "6CFA8116-A9A6-41DF-A3A6-8E253A21E6E8",
    "Title": "Example Mission Pack",
    "Description": "This is an example Miltech Mission Hub mission pack. This pack includes a variety of missions, and custom content like dialog and images.",
    "Author": "YourName",
    "Thumbnail": "ExampleMissionPack-thumbnail.jpg",
    "Files": [
        {
            "FileName": "1MissionName.json",
            "Thumbnail": "1MissionName_thumbnail.jpg",
            "BriefingImage": "1MissionName_briefing.jpg"
        },
        {
            "FileName": "2MissionName.json",
            "Thumbnail": "2MissionName_thumbnail.jpg",
            "BriefingImage": "2MissionName_briefing.jpg"
        }
    ]
}
```

Edit all the fields with your own information. You can add more files if needed.

You can add multiple briefing images if you want, like this:

```
"BriefingImage": ["1MissionName_briefing1.jpg", "1MissionName_briefing2.jpg", "1MissionName_briefing3.jpg"]
```

> Caution
> Generate a random GUID for your mission pack. You can use https://guidgenerator.com/

Adding custom content

Custom Dialog

Follow the steps in Custom Dialog.

Custom Image

Add the custom image(s) to the PackageSources\CustomImage\ folder. In the Custom Image *Image Path*, you can specify the image like: CompanyName/MissionName/ImageName.jpg

Custom Script

Add the custom script(s) to the PackageSources\CustomScript\ folder. In the Custom Script *Script Path*, you can specify the script like: Missions\CompanyName\MissionName\CustomScriptName

Miltech Mission Hub

Activities Setup

You can set up your aircraft to be compatible with the Mission Hub activities:

Firefighting

Search and Rescue

Submarine Attack

Miltech Mission Hub

Firefighting

You can integrate your aircraft's own firefighting method with the Mission Hub. You will need to implement the 3D model and VFX yourself.

To interact with the mission system, Lvars are used. The specific implementation differs depending on which firefighting method your aircraft uses:

Helicopter Bucket

Lvars to set

LVar	Description
MMH_COMPATIBILITY_FIREFIGHTING	Always set to 1
MMH_BAMBI_READY	Set to 1 when the bucket is ready to be used (i.e. slung under the helicopter)
MMH_BAMBI_FULL	Set this to 100 when the bucket has been filled

Lvars to read

LVar	Description
MMH_BAMBI_FULL	Use this to show/hide water inside of the bucket. 0 = bucket empty 100 = bucket full
MMH_WATER_RELEASE	Use this to drive when your water drop vfx is active. 0 = No water being dropped 100 = Water being dropped

Helicopter Tanks

Lvars to set

LVar	Description
MMH_COMPATIBILITY_FIREFIGHTING	Always set to 1
MMH_FIREFIGHTING_WATER_TANK	Always set to 1
MMH_BAMBI_READY	Set to 1 when the bucket is ready to be used (i.e. slung under the helicopter)
MMH_BAMBI_FULL	Set this to 100 when the bucket has been filled

Lvars to read

LVar	Description
MMH_BAMBI_FULL	Use this to show/hide water inside of the bucket. 0 = bucket empty 100 = bucket full
MMH_WATER_RELEASE	Use this to drive when your water drop vfx is active. 0 = No water being dropped 100 = Water being dropped

Airplane Scoop (2024 only)

For MSFS2024, you can make aircraft compatible with the mission hub by setting up the native water drop system. We monitor the following simvars:

- LIQUID DROPPING SCOOP OPEN VALUE
- LIQUID DROPPING TANK TOTAL WEIGHT
- LIQUID DROPPING TANK TOTAL CAPACITY
- LIQUID DROPPING TOTAL DROPPED FLOW

See: https://docs.flightsimulator.com/msfs2024/html/5_Content_Configuration/Careers/Aerial_Firefighting.htm#simvars

Miltech Mission Hub

Search and Rescue

If you want to make your helicopter compatible with search and rescue, you need to create an animated hoist with a rescuee / victim model. The hoist should extend about 35 feet below the helicopter. To make it work, you need to monitor and set a number of local variables.

Lvars to set

LVar	Description
MMH_COMPATIBILITY_SAR	Always set to 1
MMH_HOIST_POSITION	0 = At top, not extended 100 = At bottom, fully extended
MMH_SAR_ACFT_RESCUEE	Set to 1 when the rescuee / victim is shown in the cockpit (i.e. rescue completed). You need to do this logic yourself, basically when hoist is at top and rescuee is picked, move the rescuee to the cockpit and set the lvar to signal mission success.

Lvars to read

LVar	Description
MMH_RESCUEE_PICKED	1 = Show rescuee / victim attached to the hoist
MMH_SAR_MISSION_ACTIVE	1 = SAR mission is active

Miltech Mission Hub

Submarine Attack

If you want to make your helicopter compatible with the submarine attack activity, you need to set up a weapons system and set the following local variables:

Lvars to set

LVar	Description
MMH_COMPATIBILITY_SUBMARINE_ATTACK	Always set to 1
MMH_MISSILES_SHOT	Set to 1 when a missile has been shot
MMH_TORPEDO_SHOT	Set to 1 when a torpedo has been shot

Miltech Mission Hub

Sling loads

Miltech Mission Hub

Custom SimObjects

- Static SimObjects (Landmarks)
- Moving SimObjects
- Boat SimObject
- Aircraft SimObjects
- SAR SimObjects

Miltech Mission Hub

Static SimObjects (Landmarks)

Miltech Mission Hub

Moving SimObjects

Miltech Mission Hub

Boat SimObject

Miltech Mission Hub

Aircraft SimObjects

Miltech Mission Hub

SAR SimObjects

Objects created for Search and Rescue Missions.

Model Setup

- Node MMH_RESCUEE
- Node MMH_SMOKE_FLARE

Model.xml

```
// Some code
```

SimObject Setup

{SIMOBJECTNAME}.xml

```
<?xml version="1.0" encoding="utf-8"?>
<ModelInfo guid="{SIMOBJECTGUID}" version="1.1">
<LODS>
<LOD minSize="0" ModelFile="{SIMOBJECTNAME}.gltf"/>
</LODS>

<Behaviors>
<Include ModelBehaviorFile="Asobo\Misc\GroundVehicles.xml"/>

<Include ModelBehaviorFile="Asobo\Generic\FX.xml"/>


<Component ID="MMH_SMOKE_FLARE_VFX">
<OverrideTemplateParameters>
<FX_GUID>{E9193091-7488-4A9B-BA47-C9A1FB209052}</FX_GUID>
<FX_CODE>1</FX_CODE>
</OverrideTemplateParameters>
<Component ID="MMH_SMOKE_FLARE_VFX" Node="MMH_SMOKE_FLARE">
<UseTemplate Name="ASOBO_GT_FX"/>
</Component>
</Component>

<Component ID="MMH_SMOKE_FLARE" Node="MMH_SMOKE_FLARE">
<Visibility>
<Parameter>
<Code>(L:MMH_SMOKE_FLARE) 1 ==</Code>
</Parameter>
</Visibility>
</Component>

<Component ID="MMH_RESCUEE" Node="MMH_RESCUEE">
<Visibility>
<Parameter>
<Code>(L:MMH_RESCUEE_PICKED) 0 ==</Code>
</Parameter>
</Visibility>
</Component>

</Behaviors>

</ModelInfo>
```

model.cfg

```
[models]
normal={SIMOBJECTNAME}.xml
```

sim.cfg

```
[fltsim.0]
title= {SIMOBJECTNAME}
model=
texture=

[General]
category=StaticObject
DistanceToNotAnimate=7500
```

PackageDefinitions

{PACKAGENAME}.xml

Add entry:

```
<AssetGroup Name="{SIMOBJECTNAME}">
<Type>SimObject</Type>
<Flags>
<FSXCompatibility>false</FSXCompatibility>
</Flags>
<AssetDir>{PATH}</AssetDir>
<OutputDir>{PATH}</OutputDir>
</AssetGroup>
```