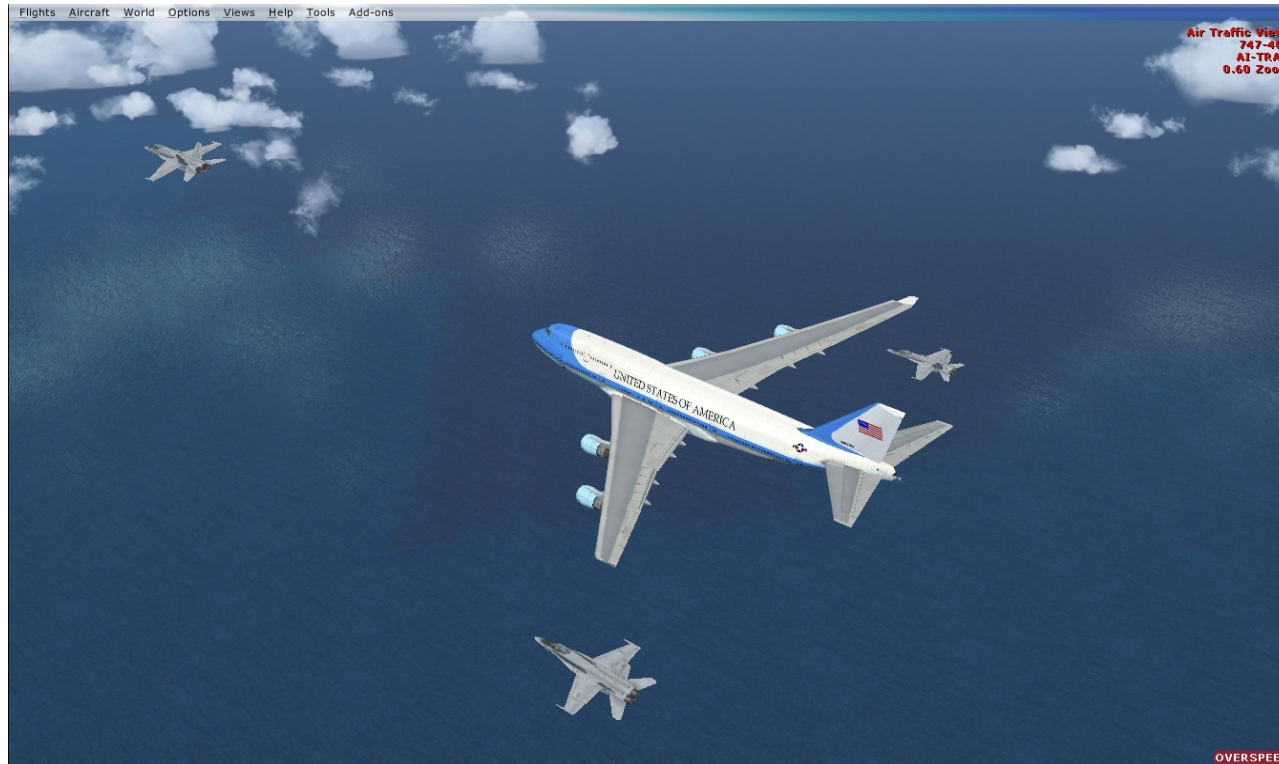


AI Tracker X Documentation



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1. Overview

The AiTracker X (AITX for short) was designed to be the ultimate “plane spotter's” app. It offers many different options to handle and watch AI aircraft in your simulator.

Feature list:

- Follow AI aircraft during their complete flight from departure to destination in different viewing modes.
- Sit back and relax in your virtual cockpit while an AI “drives” you through the sky.
- Position yourself on the ground and let a stationary camera follow AI around you automatically.
- Record your own flights in two different variants and play them back using any AI aircraft.
- Generate AI following your own flight plans.
- Team up with AI in formation flights.
- Make AI follow either your own aircraft or another AI.
- Track AI flights on a custom AI radar gauge.
- Share your AI formations live over the network with your friends

Multiplayer:

- Cross – platform, participants can use different simulator versions (FSX, FSX SE, P3D V2.5, 3, 4, 5)
- Share your AI traffic with all players
- Share your cockpit with other players

2. Installation

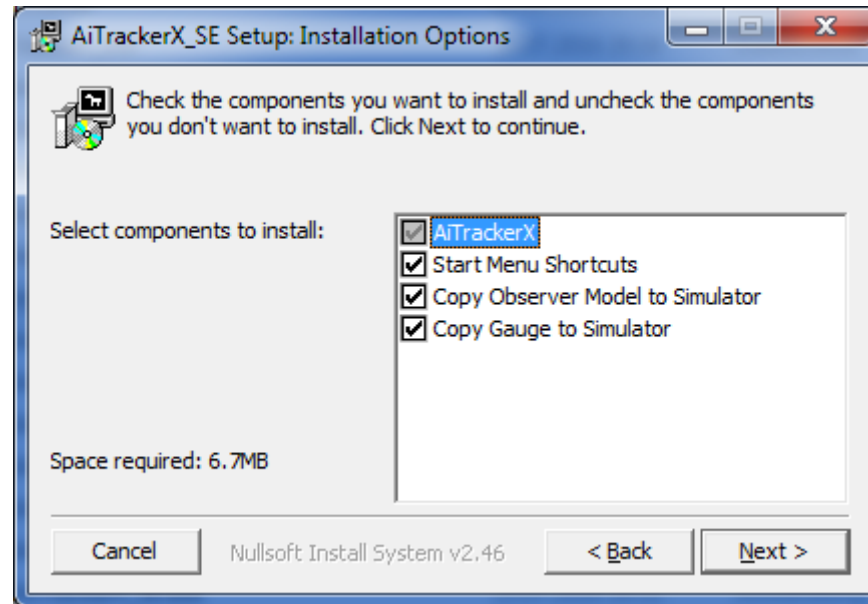
2.1 Distribution

AiTracker X is distributed as self-extracting installer packages.

2.2 Installation

- Please use the installer intended for your sim:
 - FSX Acceleration boxed or dual install with SE: *AiTrackerX_Install.exe*
 - FSX SE stand alone: *AiTrackerX_SE_Install.exe*
 - Prepar3D V2.5: *AiTrackerX_P3D_Install.exe*
 - Prepar3D V3.x: *AiTrackerX_P3D_V3_Install.exe*
 - Prepar3D V4.x: *AiTrackerX_P3D_V4_Install.exe*
 - Prepar3D V5.x: *AiTrackerX_P3D_V5_Install.exe*

Running the installer:

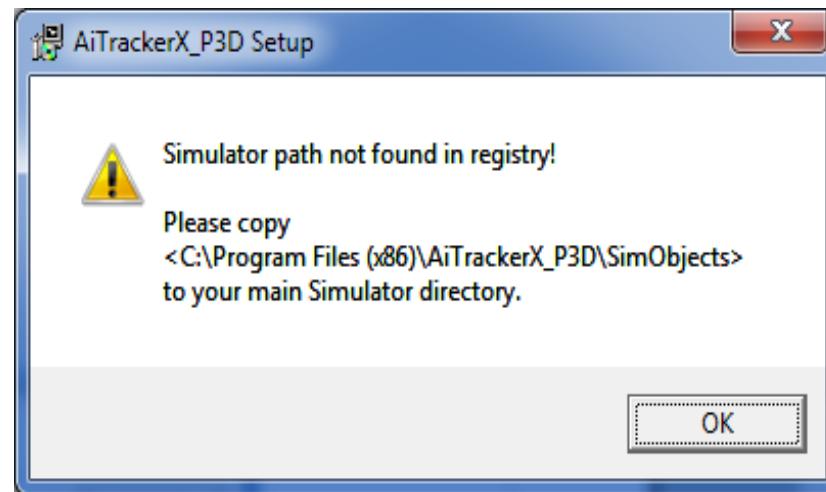


On the first page you may select optional installation targets:

- “Copy Observer Model to Simulator” (not for P3D V4, V5!): The installer will read the default path to your simulator from the Windows Registry and copy the camera pod directly into it.
- “Copy Gauge to Simulator” (not for P3D V4, V5!): The installer will read the default path to your simulator from the Windows Registry and copy the AI radar gauge directly into it.
- “Start Menu Shortcuts”: AiTrackerX will be added to your Start Menu (advised)
- Selecting “Install” will begin the installation

Troubleshooting:

- If your simulator can not be detected in the registry, the installer will show an error message.



In this case, you will have to copy the necessary files to your main sim directory yourself.

2.3 SimConnect

AiTrackerX relies on SimConnect being installed correctly on your computer. SimConnect is a part of FSX/P3D and it is set up automatically when you first install the simulator. To save you the trouble of installing the SDK, the necessary SimConnect DLL for each sim is shipped inside AiTrackerX and gets deployed in your Temp folder when AiTrackerX is run.

FSX only: In case SimConnect is not installed, and AiTrackerX does not start up, giving you an error message instead, you will have to install SimConnect manually:

- FSX boxed users can find the “SimConnect.msi” installation file either online or in the FSX SDK folder “..\Microsoft Flight Simulator X SDK\SDK\Core Utilities Kit\SimConnect SDK\lib”
- FSX SE users find it here: “..\Steam\steamapps\common\FSX\SDK\Core Utilities Kit\SimConnect SDK\LegacyInterfaces\FSX-SP1\SimConnect.msi “

SimConnect networked: it is possible to run AiTrackerX on another computer, but considering the huge amount of data that it needs to exchange with the sim, it is not advisable to use a configuration like that, especially in the “follow-me” modes.

2.4 .Net framework 4.8

AiTracker X requires that you have the .Net framework version 4.8 installed on your computer.

<https://support.microsoft.com/en-us/help/4503548/microsoft-net-framework-4-8-offline-installer-for-windows>

2.5 Network

To use the multi-user features of AITX, two or more computers have to be connected over a network. The version or make of simulators used are of no consequence, as AITX uses its own protocol for multi user operation. You can connect any number of FSX boxed, SE or Prepar3D in the same multi user session through AITX.

AITX does not have a dedicated “server” program, instead every AITX installation can be used both as a server or as a client connecting to that server. There can be only one server at a time.

The depiction of the other player's airplanes by AITX can be turned off too, so as an alternative you can additionally use the multiplayer features built right into the simulator or any external multiplayer application (for example like FSHost).

Network parameters:

Port (6076):

AITX wants to communicate over a single UDP port (initially 6076), so you need to allow passage through this port in your firewall and/or router.

IP-Address:

For the clients to connect to the game “master”, the connections to the relevant IP addresses have to be allowed too in firewall and router.

If your computer is located behind a router, you will have to add a port forwarding rule to your router for this to work. This mostly is not needed if all the computers running the simulators are connected to the same local network (LAN). But port forwarding is always needed, if you are connected to the internet by a local router and want to use multiplayer features over the internet.

Please refer to the documentation or online resources about

- How to allow a specific UDP port in your Windows firewall
- How to allow access for specific IP-addresses in your Windows firewall
- How to add a port forwarding rule to your router

Aircraft models in multiplayer

In order for AITX to show the correct airplane models in a multi-user environment, these models need to be installed into your simulator first. Please refer to the documentation coming with these models for the correct procedure.

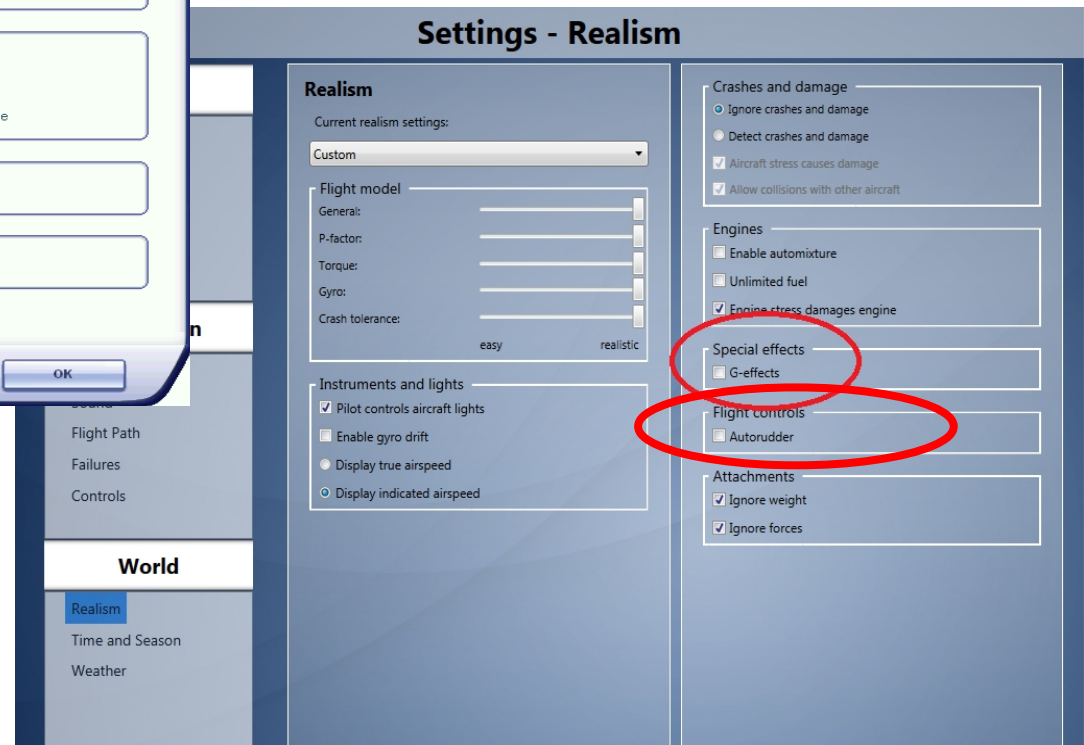
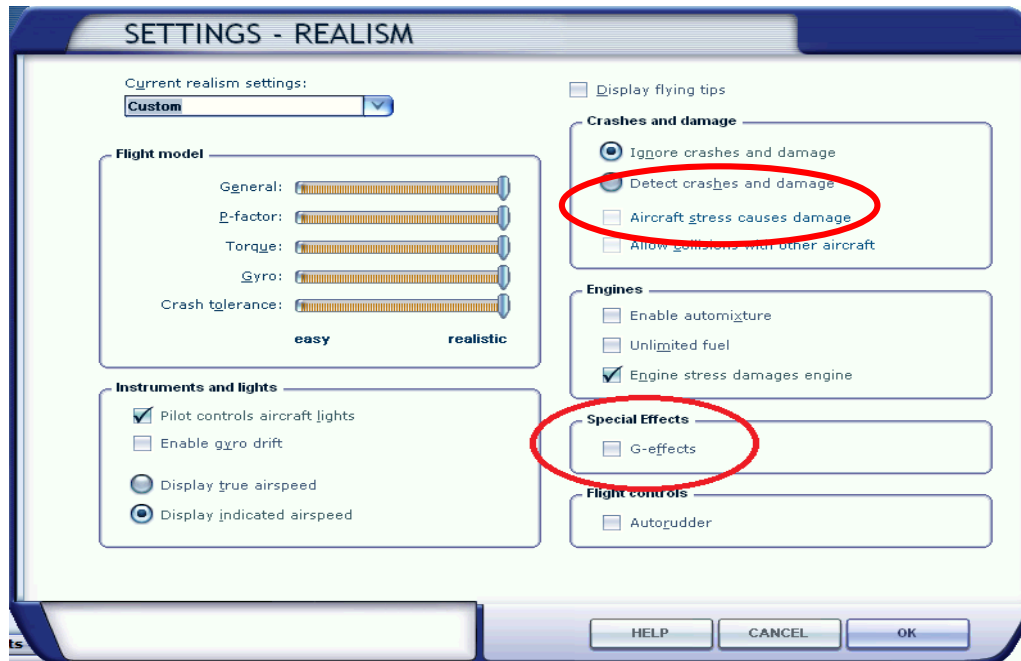
The default plane for multi user initially is the Dash 8-100 of the stock AI aircraft, as that one is present in every version of the ESP based sims.

AITX will automatically try to find the other player's airplane in your sim. If it cannot find it, it will use the default airplane model.

To add new aircraft models for player aircraft to the AITX, please use the “Aircraft Finder” dialog.

2.6 Crash detection and G-Effects

In some viewing modes when following AI, your own vehicle is very close to the AI and it is moved quite forcibly. It is advisable to disable the Crash detection and the “G-effects” in the realism menu of your simulator, otherwise your aircraft will constantly crash or the screen may turn completely black due to excessive G.



Options - Realism

General

Application

Information

Sound

Traffic

Realism

Graphics

Display

World

Lighting

Weather

Controls

Key Assignments

Axis Assignments

Calibration

Other

Realism

Current Settings: Custom

FLIGHT MODEL

General	100 %
P-factor	100 %
Torque	100 %
Gyro	100 %
Crash tolerance	100 %
Easy	Realistic

INSTRUMENTS AND LIGHTS

- ☒ Pilot controls aircraft lights
- ☐ Enable gyro drift
- ☐ Display true airspeed
- ☒ Display indicated airspeed

CRASHES AND DAMAGE

- ☒ Ignore crashes and damage
- ☐ Detect crashes and damage
 - ☒ Vehicle stress causes damage
 - ☒ Allow collisions with other vehicles
- ☒ Ignore avatar collision

ENGINES

- ☐ Enable automixture
- ☐ Unlimited fuel
- ☒ Engine stress damages engine

SPECIAL EFFECTS

- ☐ Visualize G-effects

FLIGHT CONTROLS

- ☐ Use Autorudder

ATTACHMENTS

- ☒ Ignore weight
- ☒ Ignore forces

Cancel

OK

2.7 Limited compatibility to Ultimate Traffic 2 / Ultimate Traffic Live

Some of the AI following features of the AiTracker X are not compatible to the traffic generation addons of the “Ultimate Traffic” series by Flight 1 (UTx for short). The reason is, that UTx detects and reacts to rapid changes in the user's own position. In AITX, when you select an AI for following in one of the “Track AI” modes, you will be moved instantly to the position of the AI, then the “follow-it” process will take over. This instant movement is picked up by UTx, and when the jump has been too far, then all traffic is deleted and generated again for that position – so the aircraft that you intended to follow is lost, and you are returned to your initial position.

- Use **only** the “Floating movement” checkbox option. This way you will no longer be transported instantly to the AI, but you will be slewed to that position, allowing UTx to retain its AI traffic.
- All viewing modes are working normally. But check out the limitations below; when following an AI, you must first approach it in “Chase” mode.

Limitations of the UTx compatibility mode:

- You must approach the AI in “Chase” mode. Selecting “Pilot” or “FlyBy” directly will fail in most cases. After the “follow-AI” mode has engaged close to the aircraft, you can switch to one of the other modes.
- The slewing to the AI can fail, if there are mountains or other obstacles between you and the AI.
- UTx may still decide to regenerate all AI traffic, sending you back to your initial position.

These limitation apply to UT2, UTL or similar external traffic programs based on SimConnect. All BGL based traffic addons, like MyTraffic or WOAI generally don't have any compatibility limitation.

2.8 EZDOK and other external camera addons

The AiTracker X camera positioning makes extensive use of the simulator's own camera system. This will on occasion interfere massively with external camera positioning addons like EZDOK.

All camera features of AITX generally worked with EZDOK in our tests. But there may be setups where they don't play well together, and EZDOK fights or even blocks the AITX camera movement. In that case you will have to decide between either using the AITX camera system or EZDOK, but not both at the same time. (EZDOK can be disabled temporarily by selecting “Global disable” from the EZDOK menu in the simulator.)

All other functions of AITX are unaffected by this.

Please note: This is a new feature of AITX version 1.01, where the compatibility especially with EZDOK has been improved. AITX versions before that will not work properly with EZDOK.

2.9 Joysticks assigned to slew mode

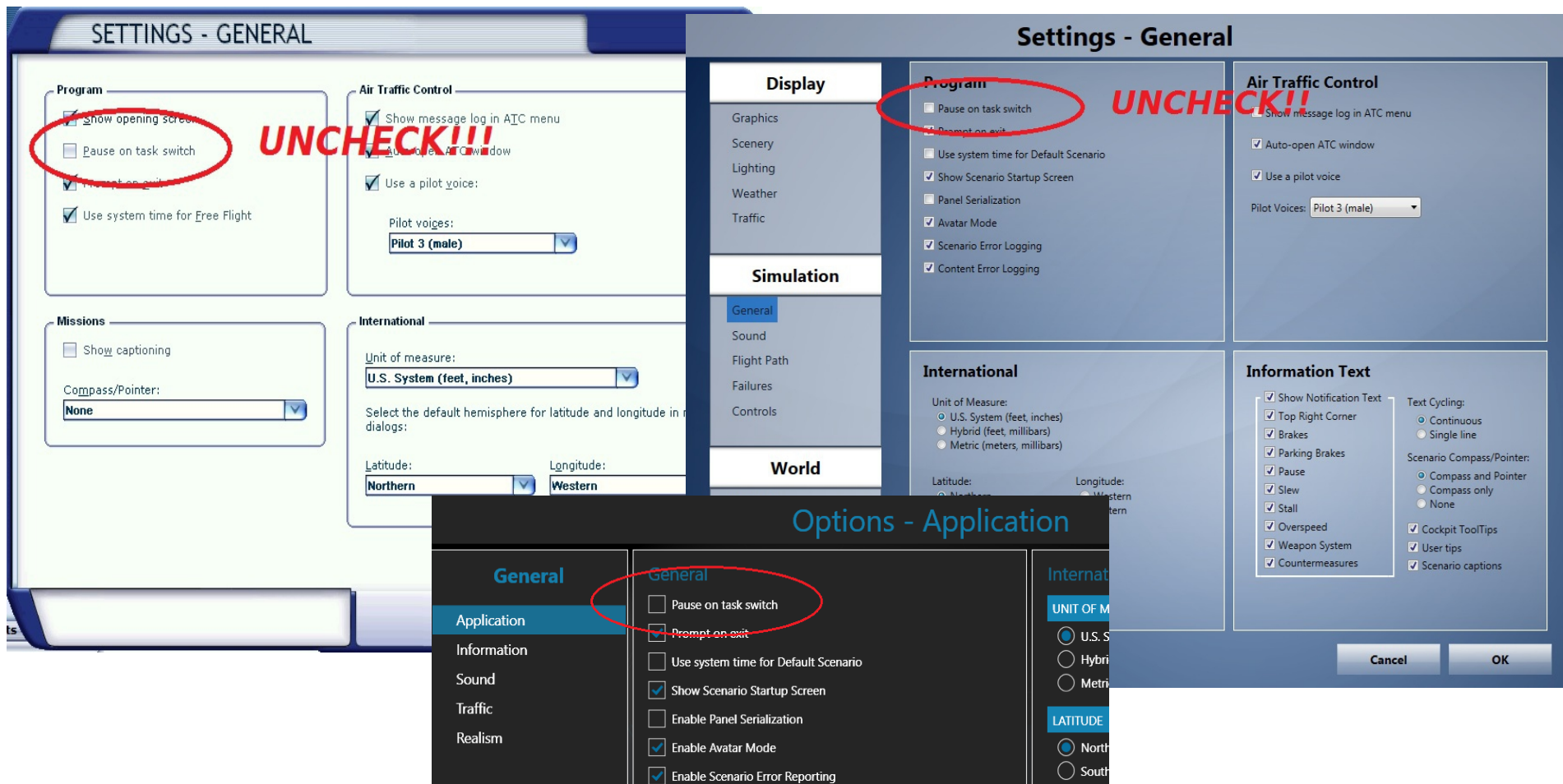
If you have your joystick set up to control the movement in slew mode, please make sure that there is no erratic movement or axis “creep”. This will throw off the positioning system of AITX, and for example in chase mode the camera pod will not be able to maintain position.

It is advisable to uncouple the joystick axis from slew movement while using the AiTracker X.

2.10 Pause on task switch

AiTracker X is a separate application, a task independent from your simulator.

It is therefore extremely important, that you switch the “Pause On Task Switch” option OFF in your simulator.

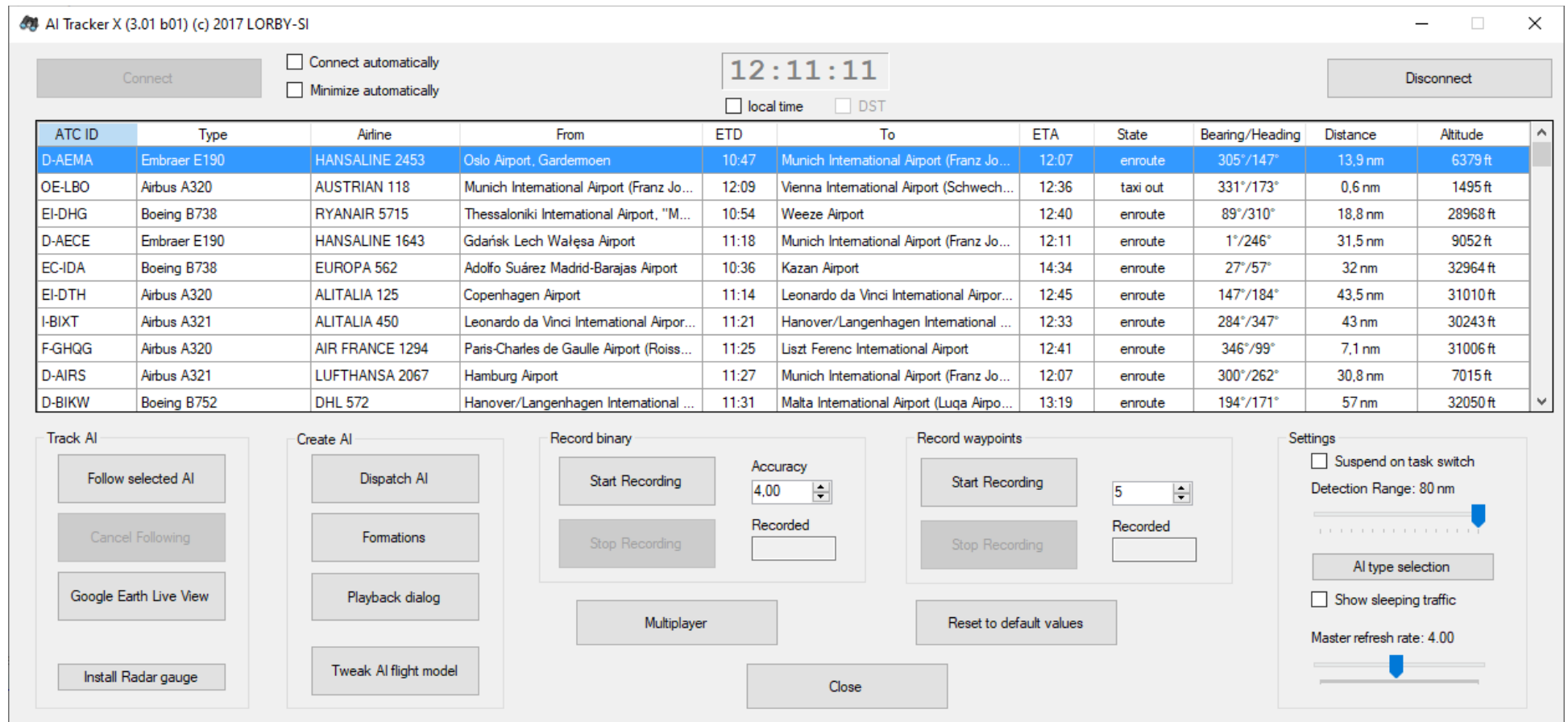


3. Performance considerations

Some features of the AITX are very demanding and will push your simulator to its limits. When using certain camera views, you will notice jittering AI aircraft or even a fair amount of stuttering.

- Limit your FPS. In all testing scenarios, limiting the FPS internally resulted in fairly smooth AI movement. But the value that is working best depends on the computer in use and the simulator setup, you will have to try and retry until you find the “sweet spot”. **Leaving the FPS unlimited will result in stuttering!**
- *There are two exceptions to this rule though: running AITX as the server for a networked session and playing back binary recordings in “Direct mode” will both require all the FPS that your computer can support – in these cases, even “unlimited” is a valid option.*
- Avoid setting FPS to 15, 30, 60. This can cause an interference pattern, that will make the AI aircraft and the camera pod jump up and down. In our tests values like 24, 28, 33 worked very well.
- In conjunction with the FPS limit, use the “Master refresh rate” slider of AITX, changing it in small amounts if your AI are constantly jumping or jittering.
- Don't put too much strain on your simulator. Especially in all “follow-me” modes, where an AI or your own aircraft has to be moved continually, even a small FPS loss will result in stutters.
- Don't use too many complex models as AI. Using complex aircraft models that were designed to be flown by the user will impact your simulator even further.
- Minimize the AITX window whenever possible.
- Alternatively use the “Suspend on task switch” option – this will disable the constant polling for AI data. But be aware that some functions will not work in this mode.
- Switch through different camera views. Some camera options in the simulator are less prone to stuttering than others. For example, using the built-in external AI view usually yields better results than using the VC camera in “Chase mode”

4. Main Window



Elements of the Main Window explained:

- **Buttons “Connect” and “Disconnect”**: with these you control the connection to your simulator.

- **Clock:** This digital readout is displaying the current simulator time. With the two checkboxes below it you can switch to local time and daylight savings time
- **Main List:** The main list displays all AI traffic inside the “reality bubble” that your sim assigns to you. This list can be sorted by clicking on the column headers. The airport columns can be switched to ICAO only or airport name by right-clicking on a row and selecting the appropriate option from the context menu.
- **Section “Track AI”:** this group of functions is used to track AI aircraft. More about the different modes will be explained in the “Operations “ section.
- **Button “Install gauge”:** Opens the gauge installer dialog
- **Section “Create AI”:** use this function to create AI aircraft yourself in many different modes.
- **Section “Record binary”:** This is used to record an accurate representation of your own flight movements and save it to disk. This recording can be played back with the “Dispatch AI” dialog too.
- **Section “Record waypoints”:** This is used to record a list of waypoints from your own flight, and save it to disk. This recording can be played back with the “Dispatch AI” dialog.
- **Slider “Detection Range: xx”:** influences what is shown on the list, the slider controls the maximum distance of the AI from your own position to be included in the list.
- **Checkbox “Suspend refresh on task switch”:** this freezes the refreshing of the main list if you switch to another window, for example your simulator. This reduces regular stutters in your sim.

- **Button “AI Type selection”**: Choose the type of vehicles that you want to see in the list
- **Checkbox “Show sleeping traffic”**: by default, the AITX ignores all traffic in the “sleep” traffic state. Activate this checkbox if you want to see these aircraft too.
- **Slider “Master refresh rate: x.xx”**: This slider adjusts the internal refresh rate of AITX. If you experience jumping AI aircraft in follow-me mode or massive stuttering, try lowering this slider very slowly. (see also the chapter about performance)
- **Button “Multiplayer”**: opens the dialog for network operations.
- **Button “Reset simulator”**: will reset your simulator to the initially loaded scenario.
- **Button “Reset to default values”**: will reset all AITX parameters to their default values.
- **Button “Close”**: will shut down AITX, with the option to reset your simulator to the initial situation.

5. Operations

5.1 Starting the application

Choosing the correct aircraft:

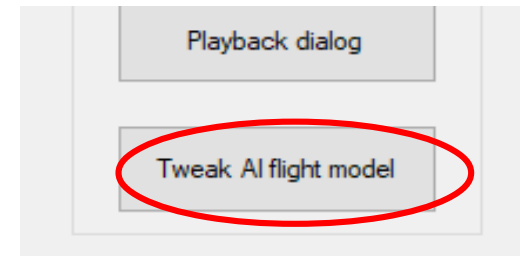
- If you want to only use the AI following modes “Chase”, “FlyBy” and “Stationary”, please select the “LORBY-SI Camera Pod” which was installed in your simulator. This is an invisible small aircraft and can be steered around with the normal aircraft controls.
- If you want to use “Pilot view” or “Detached” mode, make recordings or just fly with the AI yourself, it is recommended to switch to an aircraft of your choice after the camera pod has finished loading (see also the next chapter: the reason for this is, that otherwise the simulator reloads the aircraft twice, which can take a while if you are using complex aircraft).

You can start the application by clicking on the “Connect” button - the main list will fill up with the AI aircraft currently around you.

5.2 Tweaking the AITX flight model

The AiTracker X uses its own internal flight model to

- move your camera pod in relation to the AI that you are following
- make AI follow you
- make AI follow each other
- playback your recorded flights in “binary” mode.
- Depict the aircraft of the networked players

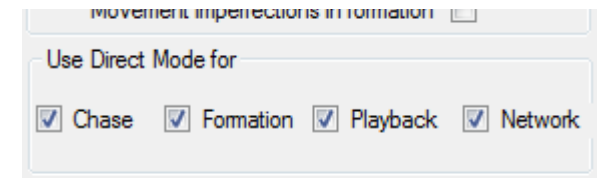


AITX can move aircraft in two different modes: **Buffered** and **Direct**

- **Buffered mode** is the option with the smoothest movement. But the aircraft being moved in that mode are put into “slew” mode. That means that animations will stop for the most part (like control surfaces, propellers or rotors) and that there is no sound (for example when you are following an AI with your pod, this will be silent)
- **Direct mode** keeps all aircraft animations and systems intact and you will be able to hear all sounds. But it is more prone to stutters and very sensitive to what is happening in your simulator, especially creation and deletion of objects, like simulator controlled AI.

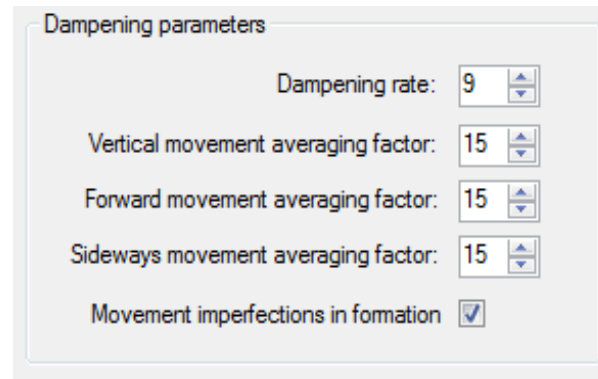
You can turn Direct mode on or off separately for every aspect of the application:

- Chase: means the movement of your camera pod when following AI
- Formation: is the movement of aircraft following you or each other
- Playback: means the movement of aircraft when playing back your binary recordings
- Network: is the movement of the network players.



Additional settings for smoother movement:

Depending on your simulator configuration and computing power you may notice constant tiny (and not so tiny) movements of the AI, to and fro, up and down. These are caused by internal hold-ups of the simulator and, as a consequence, of AITX.



- The “Dampening rate” controls how much of the smaller movements will be suppressed. This creates a smoother movement at the expense of accuracy.
- Averaging factors:
 - The most averaging (=dampening) will happen at a value of “30”
 - The lower you set the value, the less effective the averaging will be. So your “partner” aircraft will fly more accurately – but it will “stutter” more as well.
- To enable the tiny movement imperfections of aircraft flying in formation, activate the “Movement imperfections” checkbox.

5.3 AI camera setup

For AiTracker X to be able to switch to the AI view, the AI traffic viewing system of your simulator will be adjusted:

1. **Only at the very first time you press “Connect”** the AiTrackerX will check the “cameras.cfg” definition file of the simulator that you are connecting to. If necessary, the app will alter the “AI traffic” camera definition in the file, so it can work correctly with the AiTrackerX. A message window will advise you that this was done.

A simulator restart is required after this is completed!

Troubleshooting: If the AiTrackerX cannot determine the location of the “cameras.cfg”, an explorer window will open, and you will have to navigate to it's location manually.

2. Every time that you press “Connect”, AiTracker X will reload your current aircraft in the sim to determine the correct camera setup. Please bear this in mind, when using complex aircraft that take a little while to load. If you switch to an aircraft while AiTrackerX is already running, the app will get the necessary information instantly, and no reload will occur.

The best solution is to always start the AiTracker X with the camera pod, and switch to your desired aircraft after it has finished loading. That way you avoid having to wait twice as long until you can fly.

Please do not change the AI view in the simulator itself, this will throw the application out of sync! To recover from this, you will have to use the right-click menu in the simulator and select the same AI in the “AI Traffic” list for depiction that you have selected in the main list of AiTracker X. Another way is restarting both the simulator and the app.

5.4 Camera control

In slew mode, the normal eyepoint and zoom controls do not work in the simulator.

To give you a certain measure of control over the camera, the AITX includes the option to adjust the provided camera views by using the following keyboard commands. The exception are camera views that are automatically following the target, for example the standard AI traffic camera of the simulator.

Note: These controls work on the AITX window and in the simulator. In the sim they will override all functions associated with these keys!

<ul style="list-style-type: none">– Ctrl & NumPad 4 = pan left– Ctrl & NumPad 6 = pan right– Ctrl & NumPad 8 = pan down– Ctrl & NumPad 2 = pan up– Ctrl & NumPad 9 = tilt left– Ctrl & NumPad 3 = tilt right	<ul style="list-style-type: none">– Shift & Ctrl & NumPad 4 = move left– Shift & Ctrl & NumPad 6 = move right– Shift & Ctrl & NumPad 8 = move forward– Shift & Ctrl & NumPad 2 = move back– Shift & Ctrl & NumPad 9 = move up– Shift & Ctrl & NumPad 3 = move down
<ul style="list-style-type: none">– Ctrl & “+” = zoom in– Ctrl & “-” = zoom out	<ul style="list-style-type: none">– Ctrl & Enter = reset view

To adjust the speed of the movement, use the “Chase View” parameters dialog (Button “C”)

5.5 Stationary and chase type cameras

In the AiTracker X you can assign and recall cameras at geographical locations (in stationary mode) or relative to your own aircraft/the camera pod (in chase mode).

The associated functions are described in the chapters about “Chase” and “Stationary” modes below.

If the checkbox “Floating movement” is enabled, the transition between these positions will be made with a floating effect. Otherwise the switch is instantaneous.

5.6 Follow AI

Following AI is simple: select an AI aircraft from the main list by clicking once on the pertaining row, then click on “**Follow selected AI**”, or just doubleclick on the row of the AI that you want to follow.

The aircraft that you have chosen will be marked with an “(F)” in the list, and the application will switch your view depending on the selected mode.

A new dialog opens containing the options for following aircraft. Do not close it, or the app will stop following the AI.

In all modes except “Detached” and “Stationary” the AITX always keeps you close to the AI. That way it will never be deleted, except if the simulator decides that it got stuck (which occasionally happens, especially when waiting for take off on large airfields).

Following

OE-LBO Airbus A320 AUSTRIAN 118
EDDM - LOWW

Track AI

Params

☒ Chase C ☐ FlyBy F ☐ Pilot view P ☐ Stationary S ☐ Detached ☐ Native AI view

Toggle camera pod

☒ Lock camera to AI
☐ Floating movement
☒ Track AI radio

Cancel following

You can switch between the different modes any time, it is not necessary to “**Cancel Following**” for the switch.

Activating the checkbox “**Lock camera to AI**” will keep the AI at the center of your view in all modes except “Pilot view”. Controlling the camera individually is not possible when the view is locked.

Activating the checkbox “**Floating movement**” will float either the camera or your own position instead of jumping to the target position. This is useful when using Ultimate Traffic 2, because this addon deletes all traffic if you “jump” over too large a distance.

Activating the checkbox “**Track AI radio**” will tune your COM 1 radio to the same frequency as the AI that you are following. Please note that this will only work if the AI is using ATC, so basically with all aircraft that are following a flight plan.

Prepar3D only: with the button “**Toggle camera pod**” you can switch instantly between your initial aircraft and the invisible AiTracker X camera pod – and vice versa. This is useful for example when jumping between “Chase”, where you want an unobstructed view, and “Pilot view”, where you need a virtual cockpit.

Note that when you are using buffered mode, “Floating movements” of your own aircraft will be **silent – buffered mode uses “slew”, and sadly the simulator switches off sound in this mode.**

Note: if “Floating movement” is activated, then if you switch between aircraft that are quite far away from each other, the camera will be floated to the new position. Please make sure that you approach the new aircraft in Chase mode first, before you switch to AI view, Pilot mode or FlyBy mode. Otherwise your camera pod will be slewed to the new position in the background, and you won't have sound, probably without noticing that the slew is happening.

5.6.1. Chase mode

This mode is best used with the LORBY-SI camera pod. You will be positioned on the tail of the selected AI, and the pod will follow it through all its flight.

Note: When in buffered mode this feature uses “slew” and there is no sound from the simulator!

You can manage individual camera positions in this mode:

- Click on the small button “C” to the right of the “Chase” radio button
- The camera dialog opens

Camera sets

Camera positions are grouped in “sets”, which should be organized by aircraft that you are watching. This is because the camera position is “rigid” in relation to your own aircraft/ the camera pod. A camera that is 10 meters ahead of you will always be in that spot – no matter if you are following a Dash-8 or a 747.

Note: the distance that the camera pod keeps to the AI is not always the same. Due to the dynamics in the simulator, the faster the AI goes, the farther the camera pod will “hang back”. This means that you may need different camera positions for different speeds, so that the cameras are not offset too much.

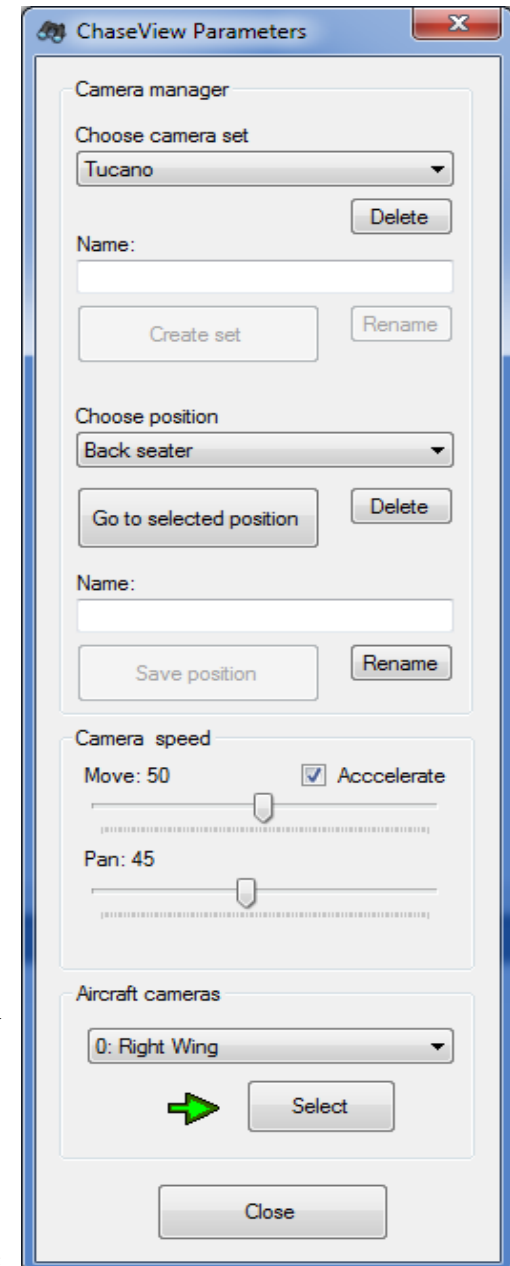
Camera positioning

A camera position is controlled by the keys described in chapter 5.3

Dialog elements:

- The dropdown box “Choose camera set” is your main entry point. Use it to select the camera set that you want to work with.
- The “Delete” button right under it deletes the currently chosen set
- Use the “Name” field to input the name of a set
- The button “Create set” creates a new camera set with that name
- The button “Rename” changes the name of the currently chosen set to what you entered in “Name”.
- Use the “Choose position” dropdown to select a specific camera.
- Press “Go to selected position” to move the camera pod in the sim to that location and adjust the camera
- The “Delete” button right under it deletes the currently chosen camera
- Use the “Name” field to input the name of a camera position
- The button “Save position” creates a new camera position with that name
- The button “Rename” changes the name of the currently chosen camera to what you entered in “Name”.
- “Camera speed” controls the speed of the camera movement when you are using the keyboard controls. When “Accelerate” is checked, then this speed increases as long as you hold down the keys
- The “Aircraft cameras” control lets you select one of the camera positions that are defined for your own aircraft model.

Note for FSX: If you select a different camera in the sim, then this list will be out of sync, and you have to manually switch to the desired camera once.



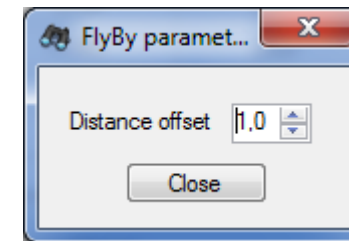
5.6.2. Flyby mode

This mode is best used with the LORBY-SI camera pod.

You will be positioned on the flight path of the AI, watching it fly past. As the AI moves away from you, the pod will be repositioned to repeat the flyby further down the flight path.

You can change the “jump distance” of the flyby position:

- Click on the small button “F” to the right of the “FlyBy” radio button
- The parameters dialog opens
- Change the distance offset to your liking (the value is in nm)
- This is the distance that the AI must have reached from you until your position is relocated forward again.



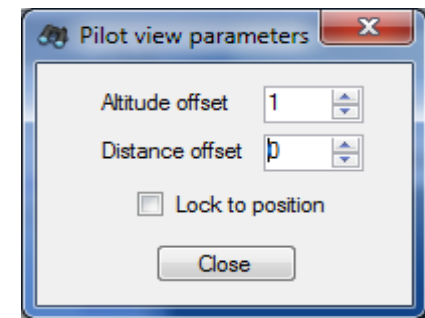
5.6.3. Pilot view mode

For this mode you can use the camera pod too. But it may be more enjoyable to use an aircraft's virtual cockpit instead.

You will be positioned directly ahead of the AI, so your view represents close to what the pilot of the AI would see. The faster the AI goes, the greater the distance will be between you and the AI.

You can change your position relative to the AI:

- Click on the small button “P” to the right of the “Pilot view” radio button
- The parameter dialog opens
- Change the distance offsets to your liking (the values are in feet)
- “Lock to position”: if this is not activated, your own aircraft will pull away from the one being followed, so the 3D models won't intersect. Turn this on when you want to run a “hitchhiker” scenario as described in chapter 6.
- **Important: If the AI gets stuck on the ground and doesn't want to move, use the “Altitude offset” control to move your own aircraft a little higher into the air, so it no longer touches the ground.**
- **Note: In this mode the Dynamic Head Movement built into the simulator may shake the view. We suggest using a camera definition where the “MomentumEffect” is set to “No” or “False”.**
The main view of the AITX Observer camera pod is configured in this manner.
- **Note: using a complex aircraft's VC in Pilot view mode may also lead to stutters or shaking. The workload to manage the pilot view is already very high, so complex gauges in those cockpits may cause an additional strain on the simulator – resulting in stutters or shaking.**



Special example for Pilot view: fully automated flight.

1. Start your flight in an aircraft that has a cockpit that is similar to the aircraft that you want to watch. For example choose the default B738 if you want to follow an AI 738.
2. Select or dispatch an AI of roughly the same type that you yourself are flying.
3. Select “Pilot view” and “Follow selected AI”

Now you can sit back in your virtual cockpit and let the AI do all the work. You can dispatch an AI with a flight plan, so you can enjoy this view all the way from taxi out, through the whole flight, until taxiing back in and parking. The AI will control your throttles, gear and flaps, and it will transmit airspeed and vertical speed. You can use and click on all other controls in the virtual cockpit, but you cannot influence the flight.

Note: using aircraft with complex models and/or virtual cockpits can have a drastic impact on performance and fluidity. You may experience stutters or general “shaking” of the aircraft. In that case, try to use simpler cockpit models for the automated flight, and most importantly, as AI use an aircraft that was designed to be used as AI. While not as complex as “flyable” aircraft, AI suffer from ill suited flight modelling too.

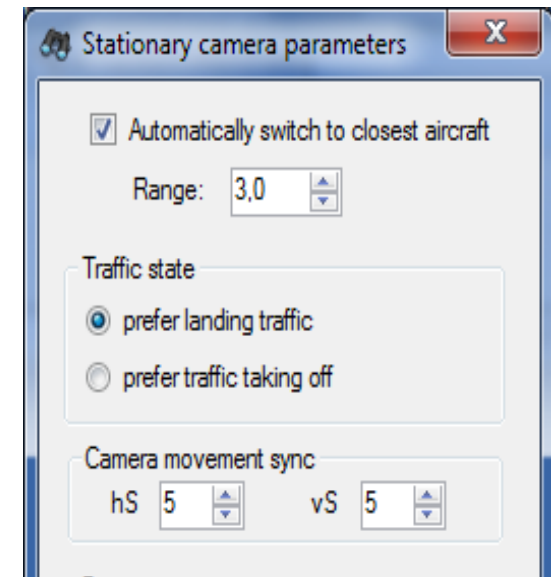
5.6.4. Stationary mode

This mode is best used with the LORBY-SI camera pod or a ground vehicle.

When this mode is activated, your current position will be frozen. Your camera view will be directed towards your selected AI.

You can change the tracking parameters of this camera position:

- Click on the small button “S” to the right of the “Stationary” radio button
- The parameter dialog opens
- Activating the checkbox “Automatically switch to closest aircraft” will always switch to the AI that is closest to your position and in range.
- The radiobuttons are used to set which type of traffic you prefer AITX to track automatically.
- The “Camera movement sync” parameters control how fast the camera will pan to follow the targeted AI. The higher the value, the slower is the panning movement.



Note: the “Automatically switch to closest aircraft” mode can only work, if you either stay on the AITX window or if you uncheck “Suspend refresh on task switch”. Otherwise the AITX will not get the information which AI is closest to you.

Stationary camera positions

The AiTracker X has the ability to save multiple stationary camera positions.

Camera sets

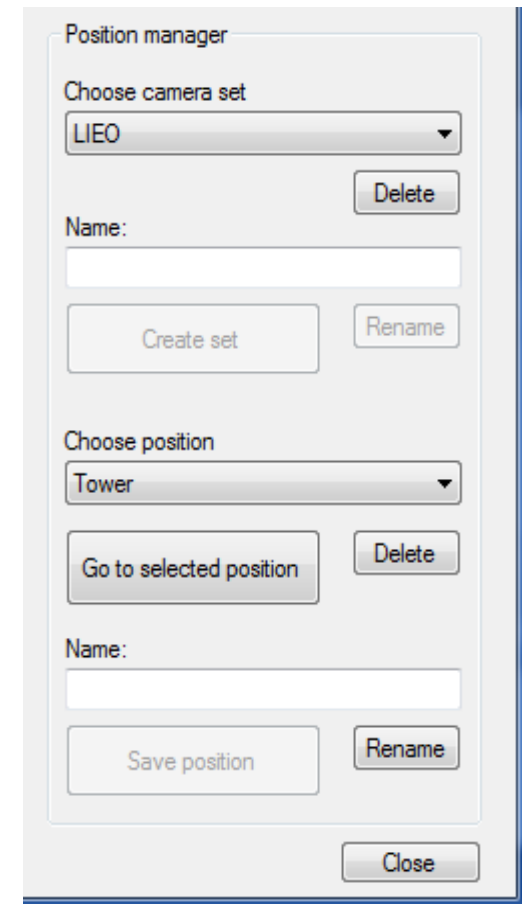
Camera positions are grouped in “sets”, which should be organized by geographical position – ideally like the airport where you are using it. Example: if you are defining camera positions at Frankfurt/Main airport, input “EDDF” into the “Name” field and press “Create set”.

Note: when you connect AITX to the sim, or if you use the standard “Go to airport” function of the sim, then AITX automatically loads the camera set that is closest to you.

Camera positions

A camera position is the location where you are at in the simulator, plus the individual camera setting.

Example: to set up a view from the control tower, drive to the tower building in the simulator with the camera pod, align the pod so that the standard look is towards the runway. Then use the AITX internal camera controls to move the camera upwards to the level where the air traffic controllers sit (or a little above that). Now save the camera position to the camera set, by giving it a unique name and pressing “Save position”.



The screenshot shows the 'Position manager' window. It has two main sections. The top section is for managing camera sets. It features a dropdown menu labeled 'Choose camera set' with 'LIEO' selected. To the right of this dropdown is a 'Delete' button. Below the dropdown is a 'Name:' label followed by an empty text input field. At the bottom of this section are two buttons: 'Create set' and 'Rename'. The bottom section is for managing individual positions. It features a dropdown menu labeled 'Choose position' with 'Tower' selected. To the right of this dropdown is a 'Delete' button. Below the dropdown is a 'Name:' label followed by an empty text input field. At the bottom of this section are two buttons: 'Save position' and 'Rename'. A 'Close' button is located at the very bottom right of the window.

Dialog elements:

- The dropdown box “Choose camera set” is your main entry point. Use it to select the camera set that you want to work with.
 - The “Delete” button right under it deletes the currently chosen set
 - Use the “Name” field to input the name of a set
 - The button “Create set” creates a new camera set with that name
 - The button “Rename” changes the name of the currently chosen set to what you entered in “Name”.
-
- Camera positions work in the same fashion:
 - Use the “Choose position” dropdown to select a specific camera.
 - Press “Go to selected position” to move the camera pod in the sim to that location and adjust the camera
 - The “Delete” button right under it deletes the currently chosen camera
 - Use the “Name” field to input the name of a camera position
 - The button “Save position” creates a new camera position with that name
 - The button “Rename” changes the name of the currently chosen camera to what you entered in “Name”.

The screenshot shows a 'Position manager' dialog box with a light gray background and a blue border. It is divided into two main sections. The top section, titled 'Choose camera set', contains a dropdown menu with 'LIEO' selected, a 'Delete' button to its right, a 'Name:' label followed by a text input field, a 'Create set' button, and a 'Rename' button. The bottom section, titled 'Choose position', contains a dropdown menu with 'Tower' selected, a 'Go to selected position' button to its left, a 'Delete' button to its right, a 'Name:' label followed by a text input field, a 'Save position' button, and a 'Rename' button. A 'Close' button is located at the bottom right of the dialog.

5.6.5. Detached mode

This mode is used when you want to fly your aircraft yourself, but still want a specific AI to be tracked. This is useful if you want to build formations out of AI aircraft following each other, while you fly among them yourself.

First select an AI that you follow yourself – in Detached mode nothing will happen visually. Now you can dispatch additional AI to fly formation with the one that you have selected.

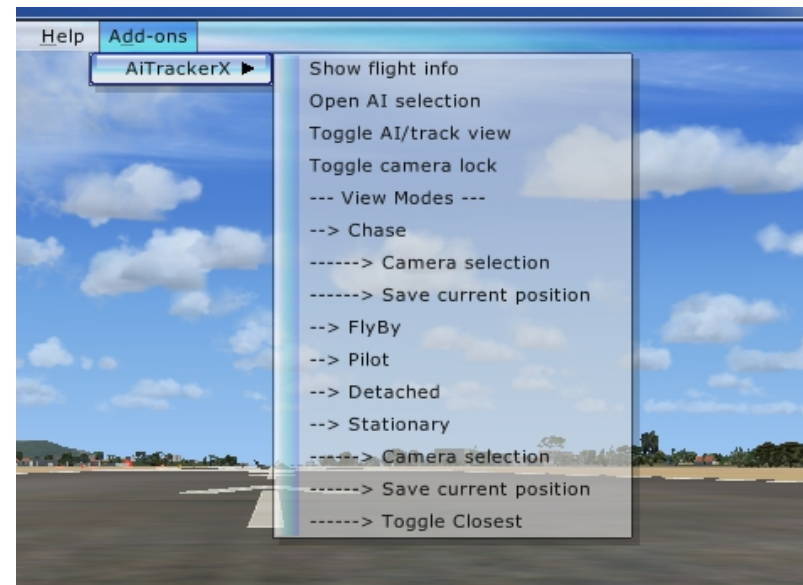
5.7 Menu options in the simulator

When connected, the AiTracker X establishes a few menus in your simulator, so you can select AI and switch the views without having to leave the sim.

Note: if the “Add-ons” menu does not show in your simulator right away, although AITX is connected, please open the standard map view once and close it again – the top menu should then be reloaded and now contain the “Add-ons” submenu.

5.7.1. Main menu: “Add-ons → AiTrackerX”

- *Show flight info*: displays the info bar for the selected AI
- *Open AI selection*: opens a menu to select another AI to be followed
- *Toggle AI/track view*: switches between the AITX “track views” above and the native simulator “AI view”.
- *Toggle camera lock*: switches the locking of the camera view to an AI on or off
- *View Modes*: switches to the designated view mode
- *Stationary/Chase*:
 - Camera selection* opens the camera selection menu
 - Save current position* saves your current location in the currently chosen set as a camera named “Pos #”
 - Toggle closet*: activates or deactivates automatic switch to the closest AI aircraft



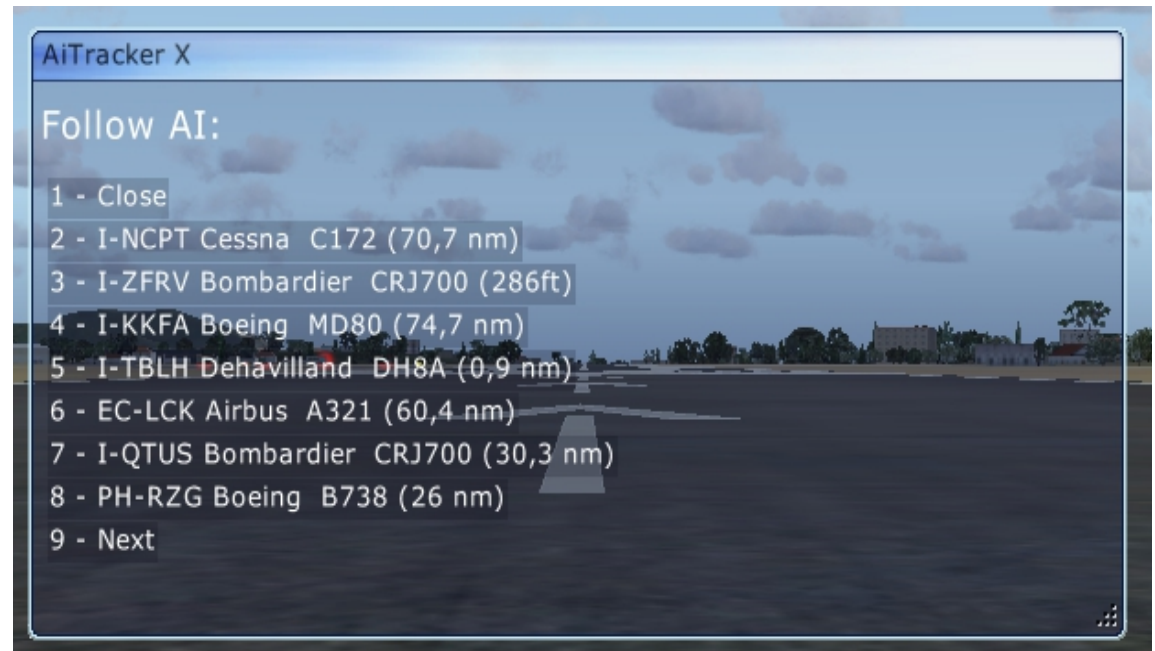
5.7.2. AI selection menu

This menu shows AI traffic in the same order, as it is depicted on the main list of the AiTracker X program window.

To select an aircraft that you want to follow, click on a menu item or use the number key.

“1 – Close” closes the menu without change

“9 – next page” displays then next 7 aircraft from the main list of the AiTrackerX.



Note for P3D V3 users: in P3D V3 the text menu function does not work like it should (per SDK):

- The menu will only open when you are in virtual cockpit mode or on the main view of the AITX. For example in the “Air Traffic” camera view the is active, but the user can't see it - switching back to track mode will display the menu.
- The menu window is massively oversized and it doesn't react very well to mouse clicks – use the number keys instead.

5.7.3. Camera selection menus

This menu shows the camera positions that have been saved in the currently chosen camera set.

To select a camera position, click on a menu item or use the number key.

“1 – Close” closes the menu without change



Note for P3D V3 users: in P3D V3 the text menu function does not work like it should (per SDK):

- The menu will only open when you are in virtual cockpit mode or on the main view of the AITX. For example in the “Air Traffic” camera view the is active, but the user can't see it - switching back to track mode will display the menu.
- The menu window is massively oversized and it doesn't react very well to mouse clicks – use the number keys instead.

5.8 Keyboard control in the simulator

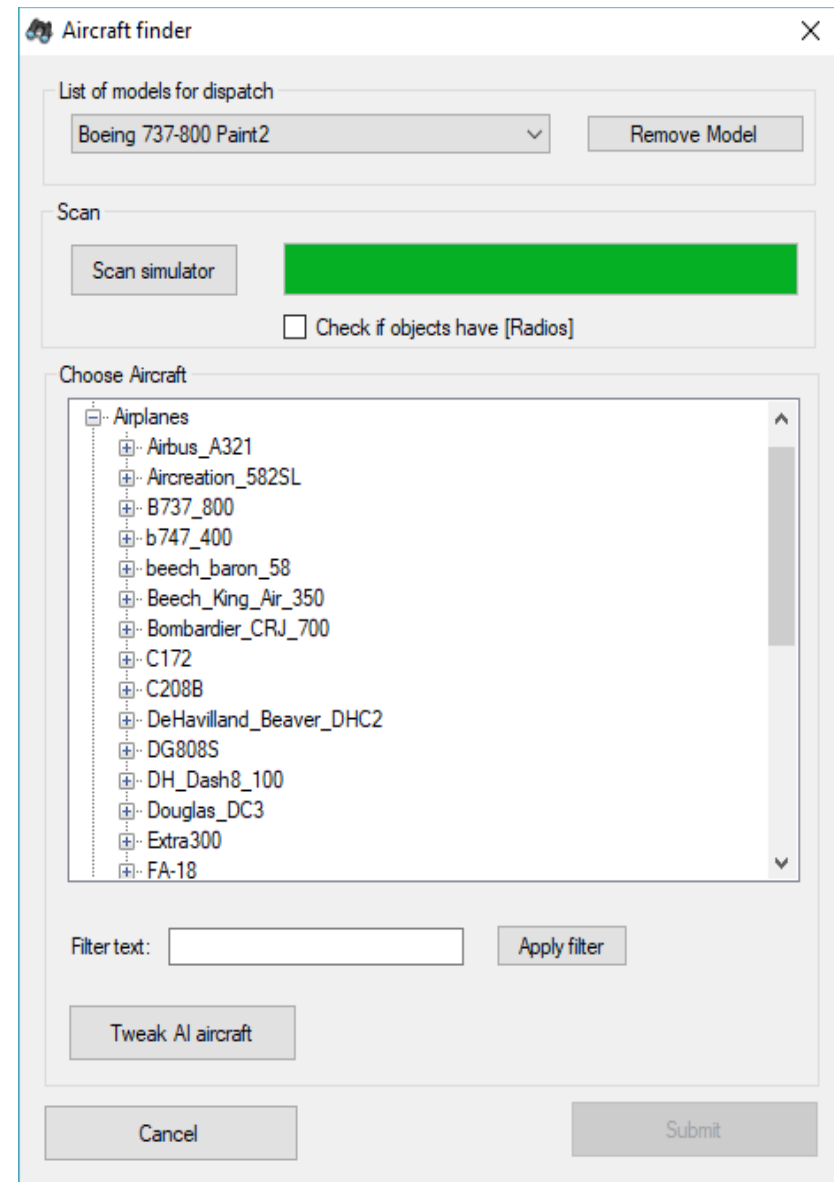
Some important functions are accessible with key presses in the simulator:

<ul style="list-style-type: none">- Shift & C & + = next chase camera- Shift & C & - = previous chase camera- Shift & N & + = next stationary camera- Shift & N & - = previous stationary camera	<ul style="list-style-type: none">- Shift & T & + = Enable tracking view- Shift & T & - = Enable AI view- Shift & L & + = View lock to AI on- Shift & L & - = View lock to AI off
<ul style="list-style-type: none">- Shift & m & + = Open AI selection menu	

5.9 Aircraft finder

To add new models to the drop down list for dispatch, use the Aircraft finder. It is accessible offline from the dispatcher's window.

- To remove the model from the list, press the button “Remove Model”
- To find all simobjects visible to the simulator, press the button “Scan simulator”
“Check if objects have [Radios]”: This option will check the aircraft.cfg of each object and will show you if it contains a “[Radios]” section (check “Tweak AI aircraft” below for specifics)
- After scanning is complete, the treeview “Choose Aircraft” will be populated
- Select an aircraft model from the treelist, and press “Submit” to transfer it to the list of models usable for dispatch.
(Doubleclicking on the model will work too)



“Tweak AI aircraft”: this special feature on the aircraft finder can be used to

- add AI sound to a normal aircraft
- copy external sounds as AI sounds to the model
- set a few aircraft parameters relevant for AI.

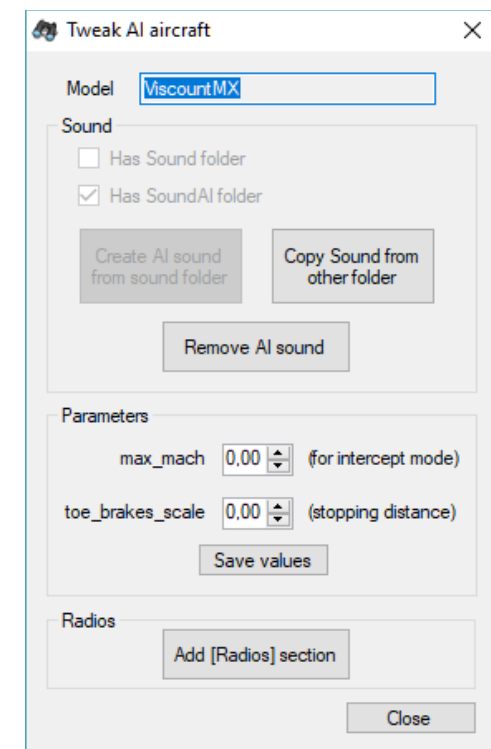
First select an aircraft in the “Choose Aircraft” tree display, then click on the button “Tweak AI aircraft”. The following dialog will open:

Sound: The default aircraft in the simulator most already have AI sounds assigned to them, but other addon aircraft more often than not don't have this. The aircraft folder has been scanned for standard and AI sounds, and the buttons below will be activated accordingly:

- “Create AI sound from sound folder”: this will duplicate the standard sound folder of the aircraft to be suitable as AI sounds.
- “Copy sound from other folder”: this allows you to import sounds from a completely different aircraft or replacement sound folder. Whatever the source of the sounds, make sure that they form a valid sound folder (.wav files with either a sound.cfg or soundai.cfg file between them).

When you click on the button, a standard Windows explorer window will open, asking you to navigate to the sound.cfg or soundai.cfg of the source aircraft or folder.

Upon selecting the file and clicking “Open” on the explorer window, the AITX will copy the whole folder



into the target aircraft as “soundai” and rename the config file appropriately. If there already is a soundai folder, it will be backed up in the aircraft folder with the current timestamp in it's name.

- “Remove AI sound”: deletes the “soundai” folder of this aircraft.

Parameters:

DO NOT CHANGE THESE PARAMETERS ON AIRCRAFT THAT YOU FLY YOURSELF!!

Max mach: This setting is important if you plan to use this aircraft for the AITX “intercept mode”. After takeoff, the AI will try to catch up to it's target at a speed corresponding this value. Some aircraft models do not have this parameter, the value will be 0.0 then.

Toe brakes scale: This parameter controls, how long the aircraft takes to come to a stop after touchdown. A value lower than 1.0 makes braking less effective, so an AI will take longer to come to a stop.

Save values: Clicking on this button will save the two parameters to the aircraft.cfg of the chosen model. The original aircraft.cfg/sim.cfg file will be backed up in the aircraft folder with the current timestamp in it's name.

Radios:

If an AI aircraft does not have radios, it may not follow a flight plan, especially in Prepar3D. With the button “Add [Radios] section” you can add radios to those aircraft that don't have them. If the aircraft already has radios, the button will be disabled.

It may be necessary to restart your simulator for this to have an effect.

5.10 Dispatching AI

You can dispatch your own AI by bringing up the dispatch dialog with the button “Dispatch AI”

- Select the desired model from the drop down list at the top
- To add airplanes to the List, use the “Aircraft finder”
- Provide flight information as you desire
- Choose a dispatching mode:
 - Planned (immediately or timer based)
 - AI with flight plan
 - Play back a recorded waypoint list
 - Play back a binary recording

A total of 20 AI aircraft can be dispatched in this mode.

You can use every aircraft model in your hangar, no matter if it is intended for AI use or not.

Example: if your computer can handle it, you could use the PMDG 777 as AI too.

The screenshot shows the 'AI Dispatch' dialog box with the following sections:

- Select model:** A dropdown menu showing 'AIGAIM_Air Dolomiti Embraer EMB-195 - Hellas Verona' and a 'Remove Model' button.
- Aircraft finder:** A button to add new aircraft to the list.
- Flight information:** Fields for 'ATC ID' (AI-TRAC), 'Airline' (AiTrackerX), and 'Flight number' (0001).
- Planned flights:**
 - ☐ 'Create AI at' with a time selector (12 : 24 : 00) and a 'View AI schedule' button.
 - ☐ 'Create AI with saved flight plan' with a 'Load flight plan file' button.
 - ☐ 'Release AI to simulator control'.
- Create AI with recorded waypoint list:**
 - A dropdown menu and a 'Delete' button.
 - ☐ 'Override recorded model with selected model' with an 'Airport ICAO' field and a 'Check Apts' button.
 - 'Take off now' and 'Start parked' buttons.
 - 'Edit recording' and 'Import flightplan' buttons.
- Create AI with binary recording:**
 - A dropdown menu and a 'Delete' button.
 - ☐ 'Override recorded model with selected model'.
 - A 'Start playback' button.
- Close:** A button at the bottom right.

5.10.1. Dispatch planned AI

You can change the time that this AI will be created with the numeric controls. The AI timer will be added to an internal list (see the following chapter) and the AI will be dispatched either immediately or when the selected time is reached on the simulator clock.

5.10.2. Viewing the timer list

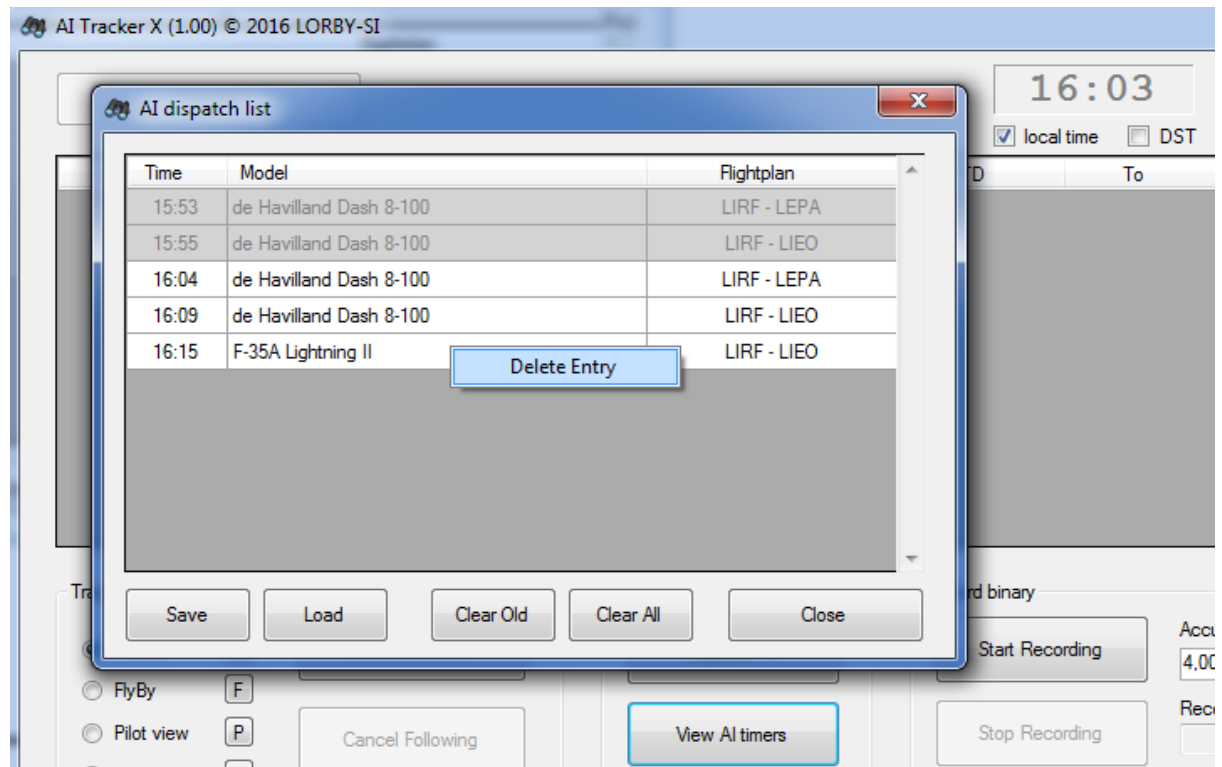
AI that were dispatched with the “flightplan” function above are added to an internal list. By using the button “View AI schedule”, you can view and edit this list.

- AI that are waiting to be created are displayed in black and white
- AI where the time is already passed are displayed in grey

- You can save the list to a file with the button “Save”
- You can load a list from a file with the button “Load”
Note: this will overwrite the list that is currently displayed.

- The button “Clear Old” removes all grey entries from the list.
- The button “Clear All” removes all entries from the list.

- To remove a single entry, right-click on it in the list and select “Delete Entry”



5.10.3. Dispatching AI with a flight plan

If you press the button “**Load flight plan file**” a standard Windows explorer window will open. Please choose a flight plan file in the correct format for your simulator. The app will then automatically generate an AI at the departure airport or enroute, depending on the situation and the flight plan:

- Departure closer than 30nm: AI will be created parked at the departure airport
- Destination closer than 30nm: AI will be created on the approach path
- All other instances: AI will be created enroute at the waypoint that is closest to you.

Note: If any of the three points is too far away (more than 80 nm) no AI will be created

Flight plans can be generated with every flight planner that you wish. For example, you could use the built-in flight planner of your sim, choosing departure and destination, VFR or IFR mode, “Find Route”, adjusting cruise altitude or the flight path, and finally saving the flight plan to disk.

Checkbox “Release AI to simulator control”: if you activate this, then the AiTracker X will not perform custom actions on the AI. It will be controlled only by the simulator. This is useful if you just want to create standard AI traffic, without the need for special actions (for example like the automatic closing of doors the the AITX would normally perform).

5.10.4. Creating AI with recorded waypoint list

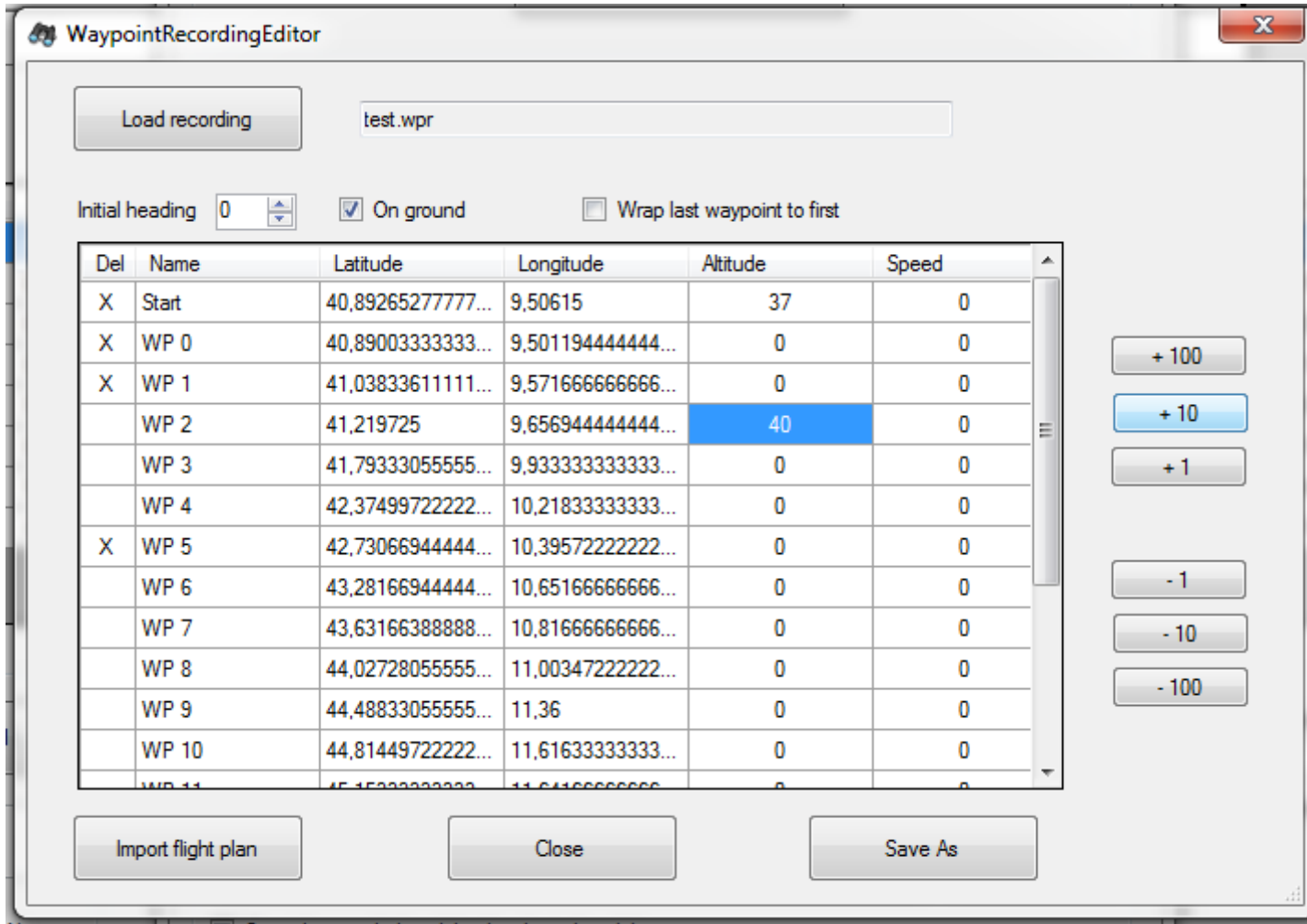
If you have recorded a waypoint list previously, the file will be selectable in the drop down control. (If the box is empty, you have to record a flight first). You can override the model that the recording was made with with the selected AI from above by activating the checkbox.

You have to options to dispatch an AI with a waypoint list:

- Choosing “Take off now” will create the AI right in front of your own aircraft, and it will immediately begin to follow the waypoint list
- Providing an “Airport ICAO” will enable the button “Start parked”. Pressing this button will create the AI on a parking position of the airport with that ID, and it will taxi out and take off before following the waypoint list. Take special care that the airport is close to you, otherwise AITX cannot create the AI there. “Check Apts” will open a list of airport ICAOs near you (but which may still be out of range for AI creation).

5.10.5. Editing waypoint lists and converting flight plans to waypoint lists

When you click on the button “Edit recording”, a simple list editor will open:



The WaypointRecordingEditor window displays a table of waypoints. The table has six columns: Del, Name, Latitude, Longitude, Altitude, and Speed. The Altitude column for WP 2 is highlighted in blue. To the right of the table are buttons for adjusting altitude: +100, +10, +1, -1, -10, and -100. At the bottom are buttons for Import flight plan, Close, and Save As.

Del	Name	Latitude	Longitude	Altitude	Speed
X	Start	40,89265277777...	9,50615	37	0
X	WP 0	40,89003333333...	9,501194444444...	0	0
X	WP 1	41,03833611111...	9,571666666666...	0	0
	WP 2	41,219725	9,656944444444...	40	0
	WP 3	41,79333055555...	9,933333333333...	0	0
	WP 4	42,37499722222...	10,21833333333...	0	0
X	WP 5	42,73066944444...	10,39572222222...	0	0
	WP 6	43,28166944444...	10,65166666666...	0	0
	WP 7	43,63166388888...	10,81666666666...	0	0
	WP 8	44,02728055555...	11,00347222222...	0	0
	WP 9	44,48833055555...	11,36	0	0
	WP 10	44,81449722222...	11,61633333333...	0	0
	WP 11	45,15222222222...	11,64166666666...	0	0

Elements of the dialog explained:

- *Button “Load recording”*: opens a standard Windows explorer where you can select a recording for editing. By default, the recording in the dropdown list on the dispatch window is pre-loaded.
- *Parameters “Initial heading”, “On Ground”*: these parameters decide in which direction the aircraft will face when it is created at the first waypoint, and if it is on the ground (so the sim would extend the gear).
- *Parameter “Wrap last waypoint to first”*: turns the waypoint list into a closed pattern. The aircraft dispatched on it will continuously fly through this waypoint list, always flying back to the first waypoint after it has past the last one. Note that the AI will really fly back to the beginning on its own terms, it is not slewed. Take care that the altitudes of these points factor in any mountains etc. between them, otherwise the AI may crash.
- **Main List**:
 - *Column “Del”*: by clicking into this column you can set an “X” mark – this means, that when saving the list, this waypoint will **not** be included.
 - *Columns “Latitude/Longitude”*: position of the waypoint. Note that these cannot be edited
 - *Columns “Altitude, Speed”*: These columns can be edited, by highlighting the desired cell of the grid by clicking on it, and then using the 1-10-100 adjustment buttons to the right. Cells can be edited in place too – take care to only enter integer numbers **without** decimal or “thousands” delimiter.
- *Button “Save As”*: after you have finished editing, save the result by using this button. **Changes will not have any effect if you don't save them!**

Using the button “**Import flight plan**” on the dispatch dialog: this will open a standard Windows explorer window that you can use to navigate to and select a flight plan file (PLN). After selecting a flight plan, the AITX will convert the flight plan into a waypoint list and open the editor dialog.

5.10.6. Creating AI with a binary recording

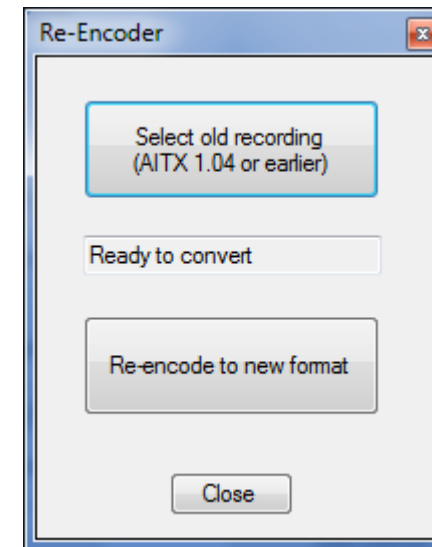
If you have made binary recordings, these files will be selectable in the drop down control. You can override the model that the recording was made with with the selected AI from above by activating the checkbox.

“Start playback” will start playing back the previous recording.

5.10.7. Converting recordings made with previous versions of AiTracker X

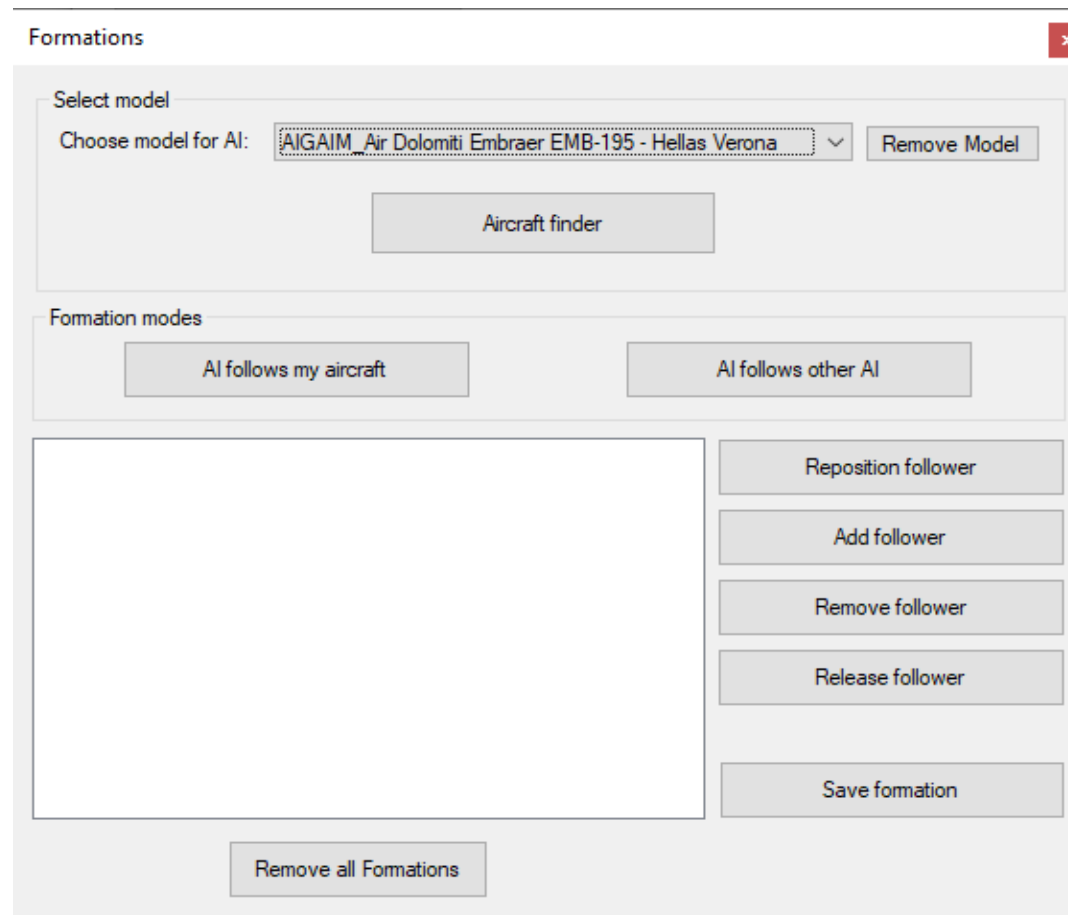
If you have binary or waypoint recordings that were made with a version of AiTracker X before 2.0, you can convert them to the new format with the button “Re-Encoder for recordings before AITX 2.0”.

- Select an old recording with the button on top
- Press “Re-Encode to new format”
- The file will be saved in the new format with its old name
- The original will be duplicated, and saved with the file ending “.old”



5.11 Formations

Pressing the “Formations” button opens the formations management dialog. **You must keep this dialog open, or formation flights will be terminated.**



The screenshot shows a software dialog titled "Formations" with a red close button in the top right corner. The dialog is organized into several sections:

- Select model:** A section containing a label "Choose model for AI:" followed by a dropdown menu showing "AIGAIM Air Dolomiti Embraer EMB-195 - Hellas Verona" and a "Remove Model" button.
- Aircraft finder:** A single button located below the model selection section.
- Formation modes:** A section with two buttons: "AI follows my aircraft" and "AI follows other AI".
- Formation list:** A large, empty rectangular box on the left side of the lower half of the dialog.
- Management buttons:** A vertical stack of five buttons on the right side of the lower half: "Reposition follower", "Add follower", "Remove follower", "Release follower", and "Save formation".
- Remove all Formations:** A button centered at the bottom of the dialog.

5.11.1. Follow-Me modes

You can dispatch the selected aircraft to either follow your own plane or to team up with another AI.

You can place the AI in relation to the aircraft that should be followed with the following dialog, which will open when you press either “AI follows my aircraft” or “AI follows other AI”:

Just select a position with the radio buttons, choose a distance and possible altitude offset and press “Submit”.

To load a previously save formation file from your disk, press “Load Formation from disk”

The AI will be created close to your own plane (or the followed AI) and catch up to it's intended position.

From now on the AI will mimic all movements of the leader aircraft, trying to hold it's relative position.

Note that **in buffered mode** the AI are moved in slew mode, so they can't react to changes on the systems of the lead plane.

They will raise and lower the gear, switch lights and afterburner on and off, but that' is all that they can do on their own. You can use the AI systems dialog and try to influence the systems manually.

Place the AI

Lead plane
User | Robinson R22 Paint1

Position relative to master

Distance (feet) 200

Altitude Offset 0

Intercept mode

☒ Follow immediately

☐ Intercept from here

☐ Intercept from ICAO:

Check Apts

Load formation from disk

Cancel Submit

Intercept modes:

You can send out AI aircraft to intercept an airborne target in two modes:

- Intercept from here: will create the chaser aircraft right in front of you
- Intercept from ICAO: the chaser plane will start as parked AI on the submitted airfield ICAO. “Check Apts” will open a list of airport ICAOs near you (but which may still be out of range for AI creation).

Notes about interceptors:

- Make sure that the interceptor can catch the intended target in time. For example, if you send an F-86 Sabre after a jet airliner in full cruise, the difference in speed is small, and it will take a very long time if the F-86 has to catch up with the airliner.
- The AITX will recognize aircraft with a “max_mach” setting and it will move them at this speed until they intercept their target. Make sure that the model you intend to use has the “max_mach” setting high enough in its aircraft.cfg (you can change this parameter by using the Aircraft finder's “Tweak Ai aircraft” function).
- Take care that interceptor and target do not leave your range – it is best to follow one of them. Otherwise the simulator will delete them both when it thinks that they are too far away from you.

Movement imperfections:

On the “Tweak AI flight model” dialog (see chapter 3.1) you will find a checkbox to enable or disable the tiny random movement deviations that occur in formation flight.

When a formation has been established, it shows up on the treelist. By selecting a row in the treelist you can effect various actions with the buttons to the right.

Formations

Select model

Choose model for AI: Sikorsky CH-53E - USMC

Remove Model

Aircraft finder

Formation modes

AI follows my aircraft

AI follows other AI

578 | D-AIRS | A321 MyPaint01

- 1156 | WING | Sikorsky CH-53E - USMC

Reposition follower

Add follower

Remove follower

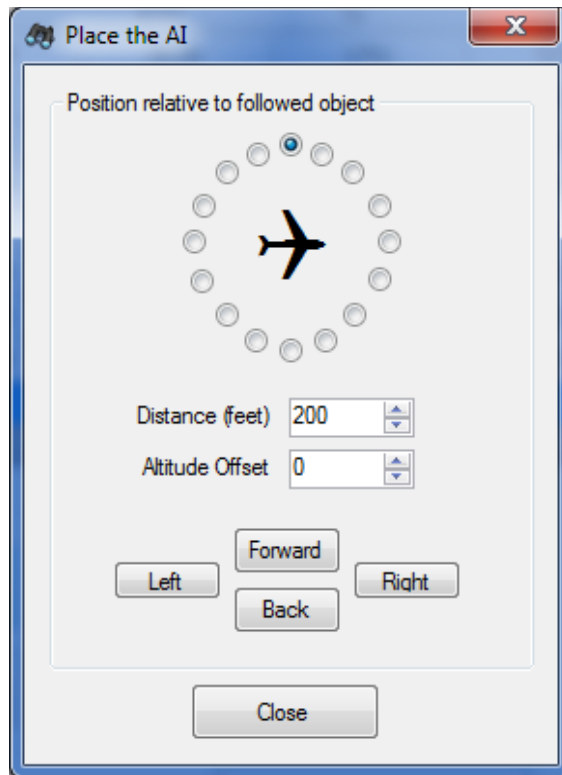
Release follower

Save formation

Remove all Formations

5.11.2. Repositioning AI in “Follow-Me” mode

You can reposition an AI in “Follow-Me” mode any time. Select the leading AI and press the “Reposition Follower” button. The repositioning dialog will open:



The AI will react instantly when you change the settings or press the Forward/Back/Left/Right buttons on this dialog.

5.11.3. Saving a formation to disk

You can save a formation to your disk with the “Save Formation” button:

This will save the positions of the aircraft following the leader to a simple XML file.

You can reload these formations with the Aircraft positioning dialog when dispatching an AI to follow you or another AI.

5.11.4. Releasing and Removing AI from the “Follow-Me” modes

Button “Remove Follower”: this will remove the aircraft from the simulator instantly.

Button “Release Follower”: released AI will not be deleted from the sim, they enter a circular pattern. There are two options to release an AI from following you or each other. Note: If an AI is following another AI, it will be released into the pattern **automatically** when the primary AI is landing.

When an AI is following you, triggering the event “toggle launch bar” (Shift+U by default) in the sim will release it.

5.12 AI systems

Right-clicking on an AI in the main list will open the AI context menu:

	Boeing MD80	Soar # 1470
	Boeing MD80	Soar # 1470
	Boeing B738	Soar # 1470
	Boeing MD80	Soar # 1470
	Airbus A321	World Travel # 9342

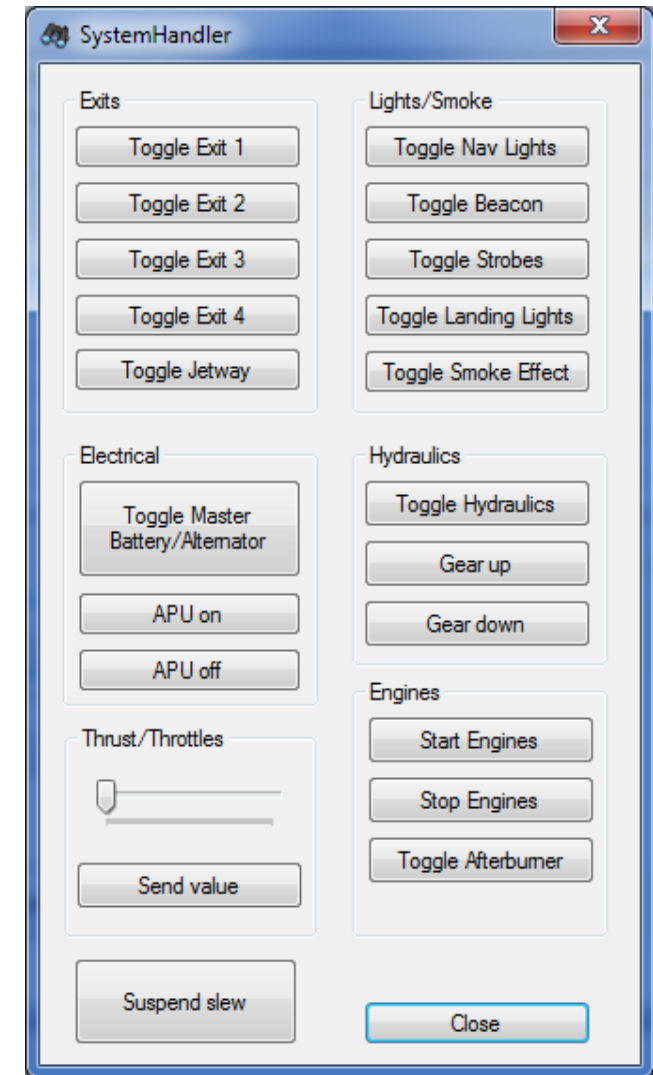
AI View

Systems

Choosing “Systems” in this menu brings up the AI systems dialog:

Note that not all system activations are possible on AI. Some models do not offer all systems or animations, and the simulator will interfere as well.

Activating most systems on aircraft in buffered mode is not possible, so you have the option to temporarily “Suspend slew”, for example to start a propeller depiction (“Start Engines”).



5.13 Notes about AI aircraft

The AI system in the Microsoft ESP based simulators is very powerful. But it has its quirks, and sometimes AI aircraft will behave erratic or do strange, even stupid things.

Here are a few of the issues that you will come across, sooner or later.

- You are not limited to aircraft! The AITX will try to create every simulator object that you choose from your library. If it does not qualify as an aircraft in the simulator's view, then AITX will create it as a normal sim object. Sim objects will behave differently from AI objects – they can follow waypoint lists, be used as AI playback or even be used in the follow-me modes. But they usually will not be able to follow flight plans, and their systems (engines etc.) will be disabled in most cases too.

Example: It is not possible to dispatch helicopters as AI controlled aircraft. This is a restriction that has been hard coded into the simulator itself since before FSX, probably to avoid simulating the complex flight manoeuvres that helicopters can pull off. It is possible though, to create a helicopter model in AITX following a binary recording or flying a formation (these models are created as simple objects, and technically are not AI).

- Some aircraft models, especially the complex ones, have some animations hard coded into their 3D model, which often cannot be overcome when they are dispatched as AI.

Examples:

-> If you create the Aerosoft Airbus as AI, you will notice that the control surfaces droop and the rudder is locked fully left. This is part of the base model and the animations are only activated if you use this aircraft

as your own plane, but not as AI. So the control surfaces will remain stuck in AI mode.

-> Some aircraft open their doors when created on a parking stand as AI. The AITX will close them on pushback, still there may be the odd hatch or ladder jammed open.

- **In buffered mode**, formation flight and binary playback are implemented using “slew” for the AI. Unfortunately it is not possible to influence the aircraft systems in slew mode, so things like propellers, gear, lights and flaps are basically non-functional. You can use the systems dialog in AITX to temporarily take the AI out of slew mode and manipulate the systems then. Put it back into slew mode when you are done with the systems.
- AI have no survival instinct whatsoever. If you send them on a flight plan or waypoint recording that can potentially intersect with mountains, they will just crash into them. This can even happen even on final approach, for example in default LICR. Most of the time they will survive these collisions, but not always. Another example is a LOWI RW08 departure to the north, where the AI will turn left as soon as possible towards KPT, crashing into the mountain (the solution here is to include the Rattenberg NDB in the flight plan)
- AI can descend like a stone. Sometimes AI will decide that they can still hit a runway, when you as a pilot would declare a go-around.
- AI can and will miss runways or land too early.
- The simulator always has the final word about AI. Although special care has been taken in AITX that followed AI are not deleted by the simulator, it will still happen (mostly when the AI that you are following is stuck on an airport, waiting to take off)

5.14 The “reality bubble”

The simulator is not managing all objects all the time. What you can see and what is kept in memory is restricted to a certain radius around your position, the “reality bubble”.

- You cannot create AI on airports that are not in this bubble. Unfortunately that logic is a bit obscure, as the airport can be in your cache already, but the simulator still refuses to create an AI on it. On the other hand, an airport may be seemingly at the border of the bubble, but you still can spawn AI there.
Example: When you are located at LIEO, you cannot dispatch AI on LIEA, which is only 40 miles away. But you can dispatch them from LFKJ, which is almost 80 miles away. The reason why the simulator is managing things this way is unknown.
- AI and other objects are removed automatically by the simulator itself if they get farther away than the reality bubble (about 80 nm)

The ICAO list that is generated by AITX on the dispatch dialogs is limited to a range of 40 miles. Inside that range spawning AI usually works, but there is no guarantee.

6. Recording and playback

6.1. Recording waypoint lists

A waypoint list is basically a simple list of latitude/longitude/altitude/speed points, which an AI can use to fly along them.

You can use your own aircraft to record certain routes or flights, by starting the waypoint recording feature on the main dialog with the button “Start recording” in the “Record waypoints” section.

“Stop Recording” ends the recording.

An AI flies through a waypoint list as best as it can, limited by the specific aircraft performance and capabilities. For example, it is unable to follow a route that contains aerobatic manoeuvres.

The best strategy is to start recording after you have taken off yourself, to avoid ground waypoint cluttering. If a waypoint list starts a little way off the runway, then the “Start parked” option will work best too. Waypoints should not be too close together, so you can adjust the “clock” (=the timer *when* a waypoint is to be recorded) while flying. Otherwise the AI may miss tight turns and start circling forever.

You can assign pre-recorded waypoint lists to AI that is flying under simulator control with the right-click context menu on the main dialog. When you do this, the AI will leave simulator control and follow the waypoint list instead – there is no way of getting it back into flight plan mode.

6.2. Recording binary data

You can use your own aircraft to record your own movements as closely as possible in binary format, by starting the binary recording feature on the main dialog with the button “Start recording” in the “Record binary” section.

“Stop Recording” ends the operation.

AI dispatched with binary data will replicate every movement that you own aircraft made during the recording, even if the AI model would normally be incapable of following that flightpath.

“Accuracy” setting: augmenting or reducing this parameters will influence how closely together the binary snapshots are taken. If you are flying extreme manoeuvres, choose a higher value, if you follow a normal flightpath, reduce it. You will notice the effect when playing back, if the snapshots are too close together, the AI may jump or jitter, or even turn around in circles.

6.3. Recording AI

To record other aircraft than your own please use the context menu on the main list:

ATC ID	Type	Airline	From
EI-COI	Boeing B734	HERON # 6348	LIRF
EI-COK	Boeing B734	HERON	L
EI-DBK	Boeing B772	ALITALI	F
I-DAWT	Mcdonnell douglas Mcdo...	ALITALI	F
I-BIXN	Airbus A321	ALITALI	F
OO-VEJ	Boeing B734	BEE-LIN	R
LZ-BOV	Boeing B733	BALKAN	F
N77012	Boeing B772	CONTIN	E

AI View

Systems

Delete

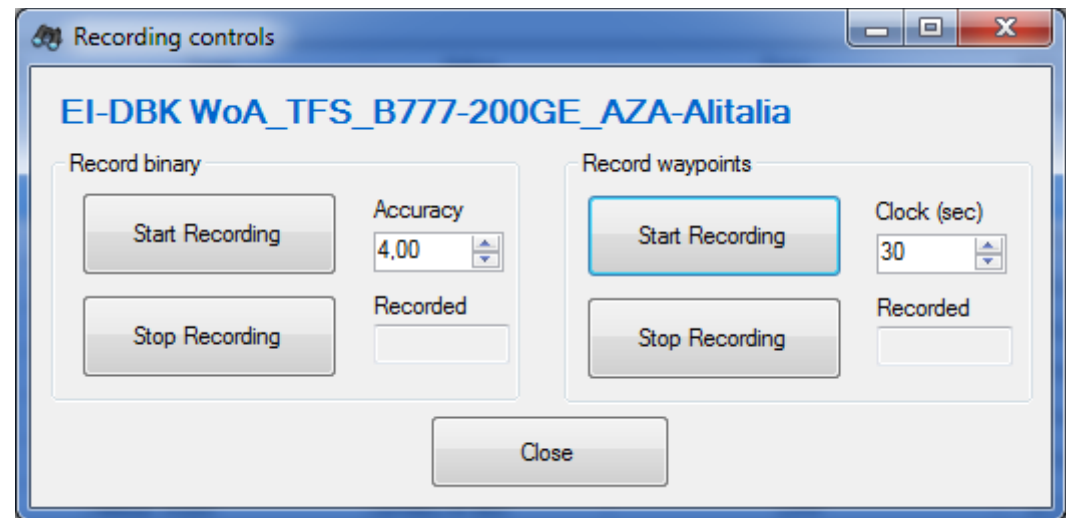
Recording controls

Show airport ICAO

Show airport names

Selecting the “Recording controls” option will open a recording panel for this aircraft:

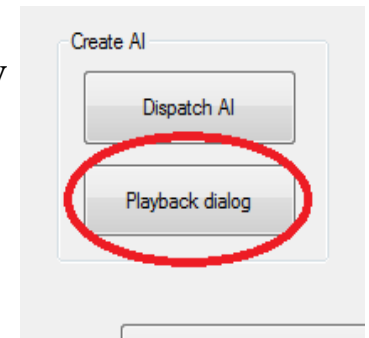
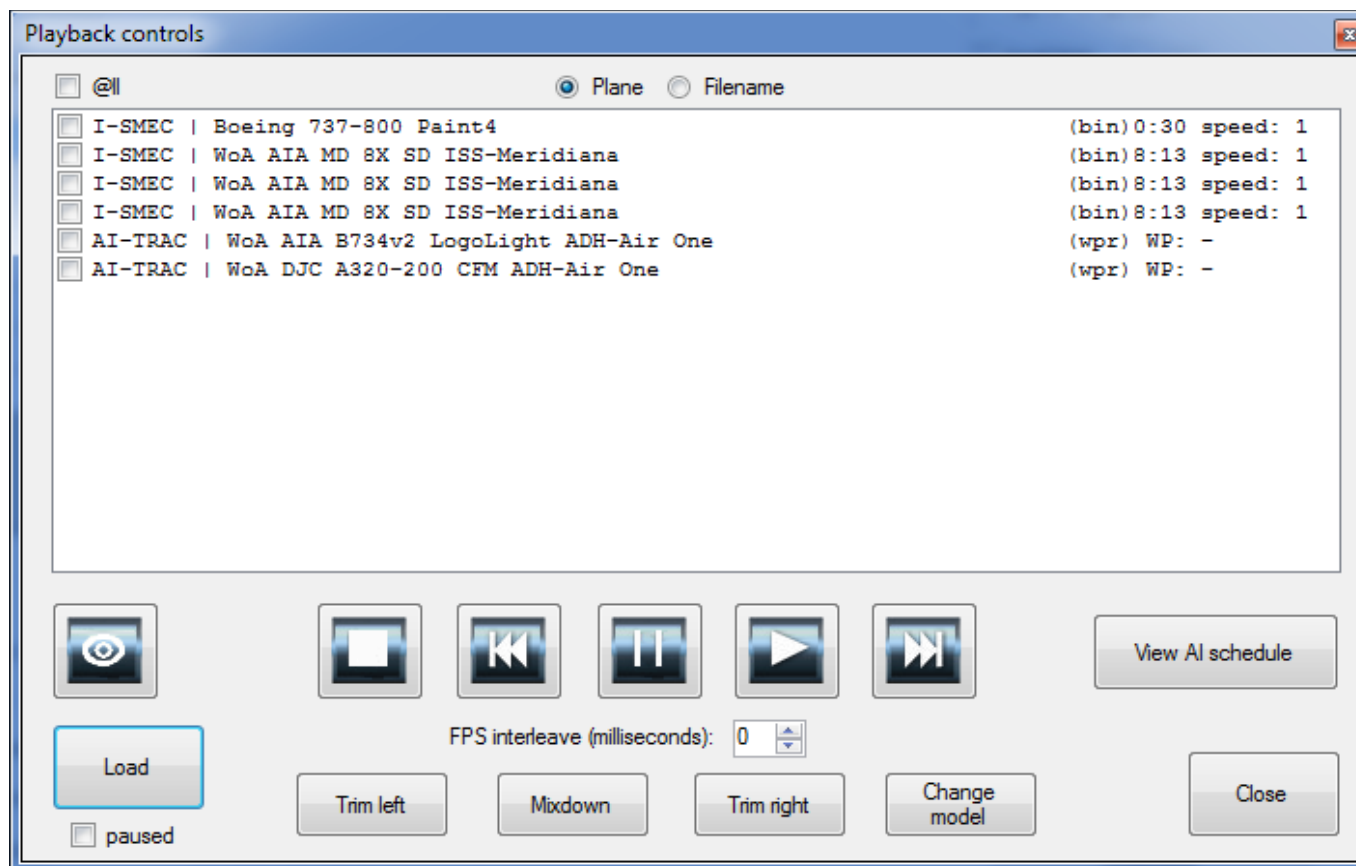
This dialog will work in the same way as described in chapters 6.1, 6.2



6.4. Playback dialog

Playing back a recording is initiated on the “Dispatch AI” dialog as described in chapter 5.10 or directly on the playback dialog window by loading recording files.

The playback dialog is opened with the corresponding button on the main window



The list at the top shows all playbacks currently in progress. An aircraft being part of a playback is marked with a “P” on the main AITX list-

You can load new recordings directly with the button “Load” on the bottom left. This will open a standard windows explorer window where you can choose one or more recordings.

By activating “paused” prior to loading, the recordings will be initially paused.

Once recordings have been loaded, you can select one or more items with the checkboxes in the left column. The subsequent action will be processed for every selected recording:



View: This button opens a separate window for each aircraft model.



Stop: Stops the playback and removes the aircraft



Pause: Freezes the playback. For waypoint recordings, the aircraft will be frozen at the next possible waypoint, binary recordings are paused instantly.



Play: Resumes normal playback. For binary recordings you can adjust the smoothness by changing the “FPS interleave” factor, introducing a pause between frames.



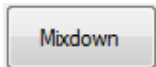
Rewind:

- For waypoint recordings, the aircraft will be moved to the waypoint before the current position.
- For binary recordings, the playback will slow down with each press, then run backwards.

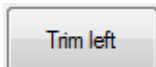


Fast Forward:

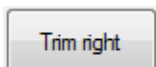
- For waypoint recordings, the aircraft will be moved to the waypoint after the current position.
- For binary recordings, the playback will speed up with each button press.



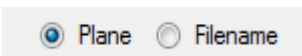
Mixdown: All selected recordings are combined into one file. This only works for recordings of the same type!



Trim left: all waypoints before the current position are deleted and the result is saved as a new recording file



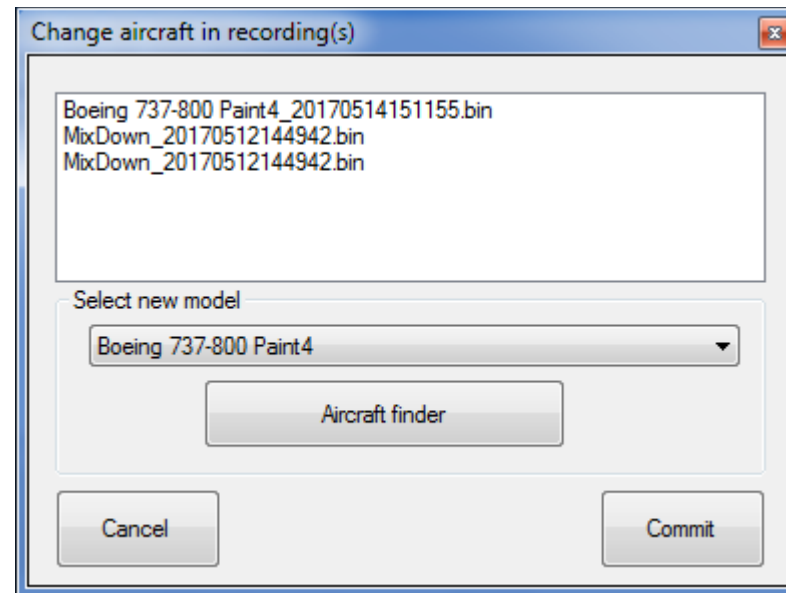
Trim right: all waypoints after the current position are deleted and the result is saved as a new recording file



Switch between the aircraft model name and the filename of the recording.

Change
model

Change model: changes the embedded aircraft model for all selected recordings and saves them as new files:



View AI schedule

View AI schedule: shows the current schedule for AI created with AITX

7. Multiplayer

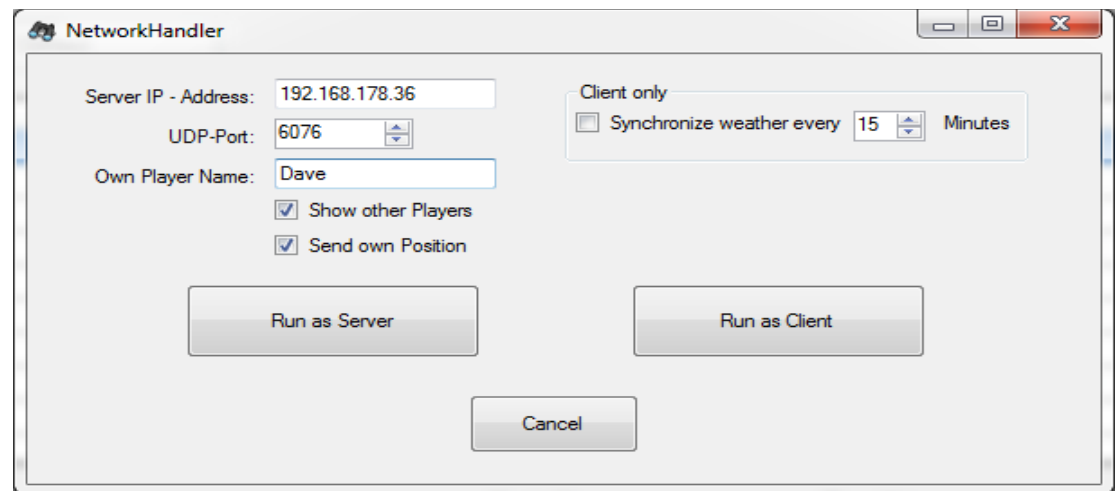
AITX is designed to work either as a server or as a client in a multi user setup, no additional software is needed. One player has to start his AITX as “server”, the other players can connect to it by using the “client” mode.

In case you already have a multiplayer product (like FSHost) or are using the multiplayer functions built into the sim, AiTracker X allows you to disable its own depiction modes for the other players aircraft. In that case, only the AI will be shared between the different installations.

In multiplayer mode the AiTracker X will share the positions of the players and the positions of the AI that have been created by AITX automatically. The default simulator AI traffic is not replicated onto the clients, as this would result in a massive load on the network. But you can share up to 100 Ai aircraft by right-clicking on them in the main list.

7.1. Network dialog

When you click on the button “Multiplayer” on the main page, the network handler dialog will open:



The screenshot shows the 'NetworkHandler' dialog box. It has a title bar with a small icon and the text 'NetworkHandler'. The dialog contains the following fields and controls:

- 'Server IP - Address:' text box with the value '192.168.178.36'.
- 'UDP-Port:' spin box with the value '6076'.
- 'Own Player Name:' text box with the value 'Dave'.
- Two checked checkboxes: 'Show other Players' and 'Send own Position'.
- A 'Client only' section with a checkbox 'Synchronize weather every' followed by a spin box with the value '15' and the text 'Minutes'.
- Three buttons at the bottom: 'Run as Server', 'Run as Client', and 'Cancel'.

7.2. Settings

Before you start, you have to implement the network prerequisites as described in chapter 2.

You then enter the settings as shown in the example below:

- *Server IP-Address*: IP address of the computer where AITX is running as server to connect to
- *UDP-Port*: port for connecting
- *Own Player name*: Your name as displayed in the sim
- *Show other players*: use this to switch the depiction of the other player's airplanes on or off. Useful if your computer is not fast enough to allow fluent gameplay when multiple complex objects are visible at the same time. **Uncheck this when using a 3rd party multiplayer solution.**
- *Send own Position*: uncheck this to make your plane disappear from the other player's sims. Again useful for slower computers or networks. **Uncheck this when using a 3rd party multiplayer solution.**

The “Show other Players” and “Send own Position” options only influence the depiction mode in the sim. The AI simulation will still continue, and all players will see the AI generated with AITX.

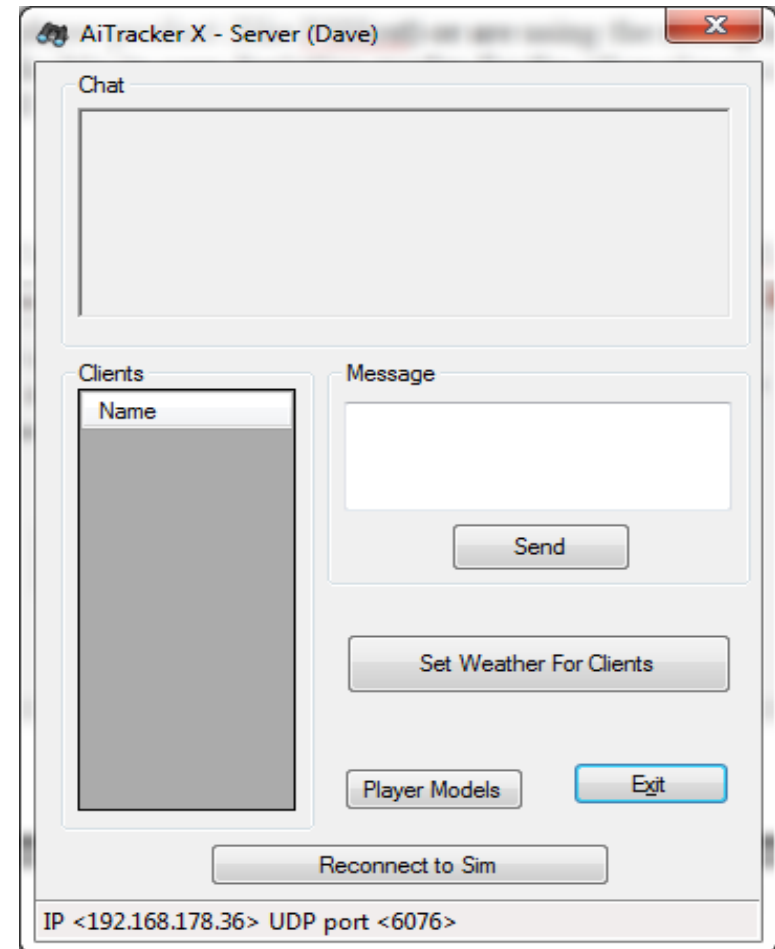
7.3. Flight model / smoothness

The “Master refresh rate” slider on the main dialog can be used again to improve smoothness – but at the expense of accuracy. Server and Client can set their refresh rate preferences independently.

7.4. Server

If you decide to run your AITX as a server, the following window will appear:

- *Chat*: view all messages from other players
 - *Player list*: displays all players present in the network session
 - *Message & Send*: type in a message and send it to all players
 - *Set Weather For Clients*: Forces the current time of day and weather on all connected clients.
 - *Player Models*: opens the aircraft assignment window, where you can change the model displayed for a player
 - *Exit*: shut down the server.
 - *Reconnect to <sim>*: on occasion it may happen that SimConnect stops working and does not tie into AiTracker X any more. The AiTracker X application will continue to run and the network protocol remains active, but all airplanes disappear from the simulator on the server. If this happens, you can reconnect the AiTracker X to the sim by using this button.
- All clients will be disconnected and have to join again.

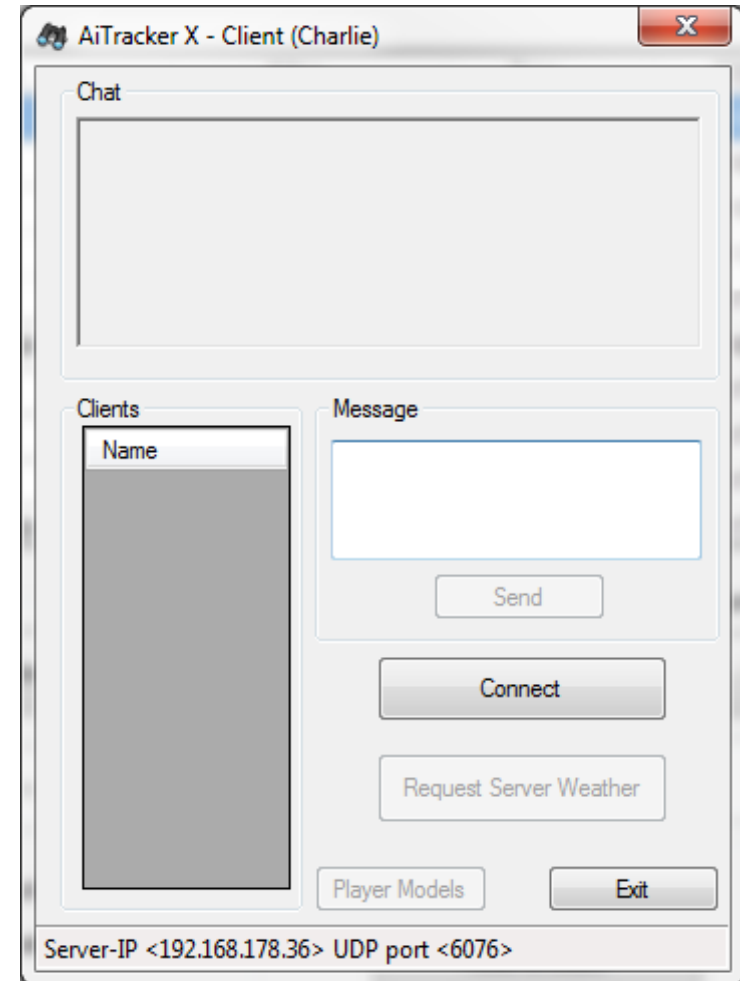


Note: when running as the Server you should consider using high or unlimited FPS.

7.5. Client

If you want to connect to a server, use the “Run as Client” button

- Button “*Connect*”: tries to connect you to the server address and port you specified in the Settings/Network window.
- *Chat*: view all messages from other players
- *Message & Post*: Type and send out a message to all players
- *Request Server Weather*: sets the global weather and time of day to the same settings as the Server
- *Player Models*: opens the aircraft assignment window, where you can change the model displayed for a player
- *Exit*: shut down the client.



7.6. Weather on the server

Please note that the AiTracker X reads the current weather report only once every minute. If you change your weather in your “server” simulator, please wait for one minute before sending it to the clients.

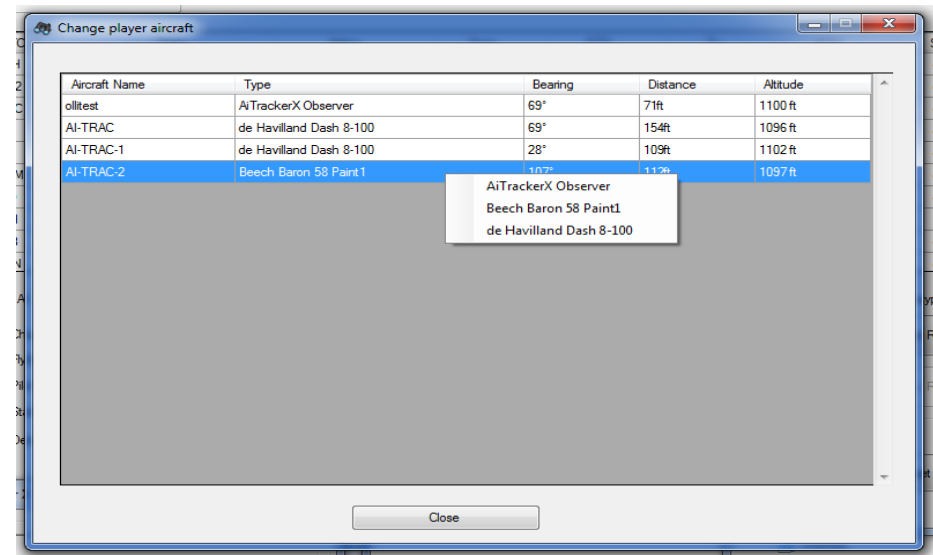
7.7 Player Aircraft assignment window

When you connect two AITX installations via network, they will try to display the aircraft model that the other player is using.

The best course of action is to exchange the aircraft models you plan to use beforehand, so both simulators have the same aircraft installed. If this is not possible or not really working (like old FS aircraft in P3D) you can assign the same aircraft to the other player that you use for AI operations.

Right click on the plane that you want to change and choose a model from the drop down list, and it will change in the sim.

If you want to hide a model from view, use the first entry - “Hide this model”. This will replace the aircraft with the invincible AiTrackerX Observer. This is useful if you want to run a scenario where you don't want the other model displayed, for example a shared passenger cabin or a “hitchhiker”.



7.8 Sharing individual AI flights

The server can share native simulator AI flights. Use the context menu on the main page for this:

OO-CSF	Airbus A321	Pacifica # 5000
XT-BRV	Mooney M20T	GA # 658
EI-DLX	Boeing B738	RYANAIR # 9268
EI-IXB	Airbus A321	1578
PK-EST	Cessna C206	
A9-HMH	Boeing B74SP	16
EI-DCF	Boeing B738	RYANAIR # 3885

Take care that the client has the same aircraft model installed, or it will be flooded with error messages!

You can end the sharing any time with the same menu:

I-1608	General dynamics General dy...	Italian Airforce # 690
G-EUPG (N)	Airbus A319	SPEEDBIRD # 2645
I-BIMB	Airbus A319	
SE-FTP	Airbus A321	807
I-YRBV	Bombardier CRJ700	
I-BIMO	Airbus A319	ALITALIA # 1584
HB-IPT	Airbus A319	SWISS # 2387

7.9 Sharing all AI flights

The server can automatically share all native simulator AI flights. Use the context menu on the main page for this:

OO-RNF	Bombardier CRJ700	Orbit # 3084
I-NCPT	Cessna C172	# 6113
I-GKRD	Dehavilland DH8A	it # 7043
EC-JVL	Bombardier CRJ700	sifica # 4892
EC-YNF	Airbus A321	it # 8045
5A-ESX	Boeing MD80	Boeing # 7012

Take care that the client has the same aircraft models installed, or it will be flooded with error messages!

Once activated, the server will automatically share AI aircraft when they are created in the simulator and end sharing when a model is removed.

When running a mixed FSX/P3D shared cockpit, it is recommended to share all AI only *after* all clients have been connected to the server. Otherwise the synchronization may fail.

You can end the automatic sharing manually any time with the same menu:

I-NCPT (N)	Cessna C172	GA # 6113	DTTA
I-GKRD (N)	Dehavilland DH8A	GA # 7043	LICD
EC-JVL (N)	Bombardier CRJ700		LEBL
EC-YNF (N)	Airbus A321		LEBL
5A-ESX (N)	Boeing MD80	Boeing # 7012	HLLT
CN.7YK (N)	Boeing B738	World Travel # 4838	GMME

7.10 Shared aircraft and shared cockpit

AiTracker X provides a “shared cockpit” functionality. As you would expect, you can fly an aircraft cooperatively with one or more players. The network protocol does not cover each and every simulator event, so it is not suitable to fly complex airliner models together. But the most important controls and systems are there and can be used by all players.

Alternatively you can stream views of your aircraft to other computers. Imagine running the virtual cockpit on one computer and having a second one showing for example the passenger cabin, the copilot perspective or an external view. The views on the second computer are fully dynamic, you can choose any camera position that you want and look anywhere you like.

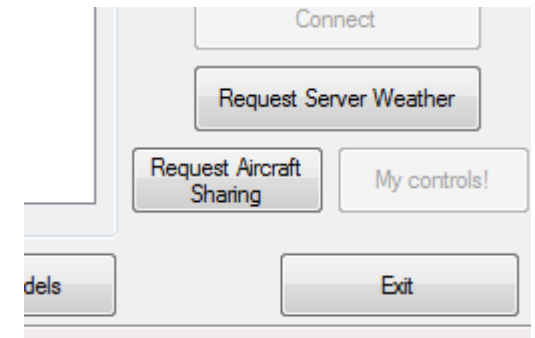
Prerequisites:

- It is required that you have a simulator installation on each computer. These don't have to be the same make and model, as AITX can network different flavors of simulators (FSX, FSX SE, P3D 2.5 and 3.x).
- The aircraft that you fly do not have to be identical on all computers, but the synchronization is better if they are
- The network setup has to be complete as described in this manual.

Instructions:

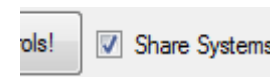
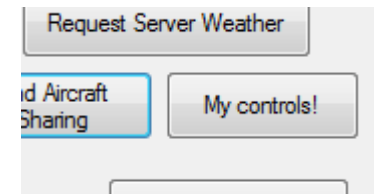
- Start the simulators on both computers and select the same aircraft in both
- Turn off AI traffic on the Client computer

- On one computer start AITX in Server mode
- On the Server set the “Master refresh rate” slider to 4.00 and FPS as high as they will go (maybe even “unlimited”)
- On the second computer start AITX in Client mode
- Connect both AITX sessions as described in the chapters above
- On the Client window click on “Request Aircraft Sharing”
If you experience stutters as client, turning the “Master refresh rate” slider down on that Client helps to reduce them
- Once the server processes the sharing request, both aircraft will be coupled through the network protocol
- The other players' vehicle will be hidden automatically by replacing it with the invisible camera pod



Shared cockpit controls:

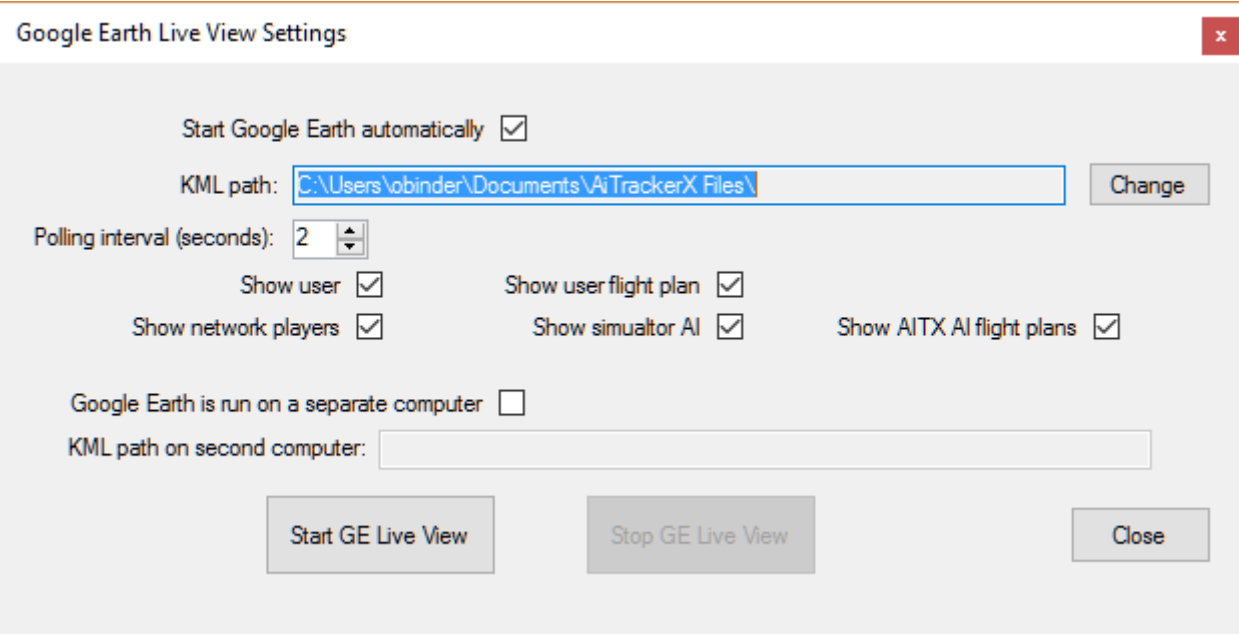
- By clicking on “My controls”, both the server and the client can use the primary flight controls (elevator, aileron, rudder) to steer the aircraft.
Note: “My controls” is also bound to the “TOGGLE_WATER_BALLAST_VALVE” simulator event
- At all times both the Server and the Client can influence the basic systems of the aircraft, and they can operate brakes, throttles, propeller pitch and mixture.
- System that are shared: trims, flaps, gear, spoilers, lights, engines (prop and jet), fuel tanks and pumps, COM, NAV and ADF radios and DME, transponder, autopilot, electrical systems, fuel tank selectors, anti ice and a few standard simulator events, like engine autostart or pushback.
- Systems sharing can be turned off on the Server if it is not required or not working, for example with a complex addon aircraft.



8. Google Earth Live View

With the button “Google Earth Live View” you can start a Google Earth based live view of various elements in the sim:

- Your own position
- The AI around you
- The players connected to your AITX server
- Your own flightplan
- Flightplans of AI that you have dispatched with AITX using a flightplan



The screenshot shows a window titled "Google Earth Live View Settings" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains the following settings:

- Start Google Earth automatically:** A checkbox that is checked.
- KML path:** A text field containing the path "C:\Users\obinder\Documents\AiTrackerX Files\". To the right of the field is a "Change" button.
- Polling interval (seconds):** A spinner box set to the value "2".
- Show user:** A checked checkbox.
- Show user flight plan:** A checked checkbox.
- Show network players:** A checked checkbox.
- Show simulator AI:** A checked checkbox.
- Show AITX AI flight plans:** A checked checkbox.
- Google Earth is run on a separate computer:** An unchecked checkbox.
- KML path on second computer:** An empty text field.

At the bottom of the window are three buttons: "Start GE Live View", "Stop GE Live View", and "Close".

- Checkbox “Start Google Earth automatically”: will start the Google Earth application
- KML Path: is the path where you want AITX to place the transfer files to Google Earth
- Polling interval: is the refresh rate of the live view

Running GoogleEarth on a separate computer

It is possible to stream the Live View files to a second computer running Google Earth.

- Create a folder on your secondary computer that shall contain the KML files
Example: **“C:\Users\<yourname>\Documents\GoogleEarth”**
- Share this folder on your secondary computer. Make sure that your primary computer has full access privileges
- Map the folder as a network drive on your primary computer, for example as **“Y:”**
- Now set the **“KML path”** to read **“Y:\”**
- **Deactivate the checkbox “Start Google Earth automatically”**
- **Activate the checkbox “Google Earth is run on a second computer”**
- Enter the path **“C:\Users\<yourname>\Documents\GoogleEarth”** into **“KML path on second computer”**

9. The camera pod

The camera pod “AiTrackerX Observer” is a small invisible vehicle. You can move it around the airport like a small ultralight aircraft, with the normal flight simulator controls.

It has three instruments that you can use:

1. The AI radar gauge (Shift + 1)
2. The standard GPS 500 (Shift + 2)
3. The standard Bendix King radio stack (Shift + 3)

Example: you could load the same flight plan into your own GPS, that the AI that you have dispatched is following (using the flight planner in the sim). That way you can keep track of where you are while following an AI in chase mode.



10. The AI radar gauge

8.1 Description

The AI radar is a gauge that can be installed into your aircraft. It can either be added to your 2D or VC panels or called as an stand-alone instrument panel. It shows the same AI that are visible on the main list of the AITX window, complete with ATC ID, altitude and direction of movement.

By default this instrument is installed in the LORBY-SI camera pod, and can be accessed with “Shift + 1”.

Note: the gauge can only display traffic if the checkbox “Suspend refresh on task switch” is NOT activated!



Clickspots

already installed on your computer. Please check the Software tab in your Control Panel for these entries:

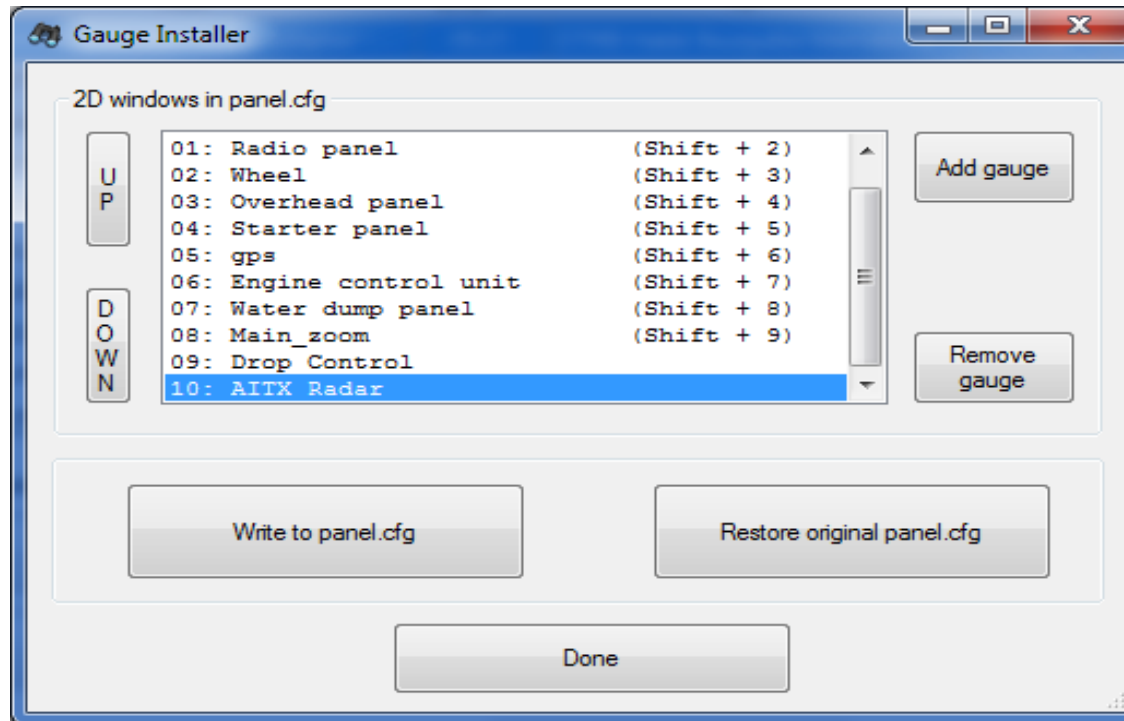
Name	Herausgeber	installiert am	Größe	Version
Microsoft Visual C++ 2013 Redistributable (x64) - 12.0.21005	Microsoft Corporation	12.03.2016	20,5 MB	12.0.21005.1
Microsoft Visual C++ 2013 Redistributable (x86) - 12.0.21005	Microsoft Corporation	12.03.2016	17,1 MB	12.0.21005.1

If no version of the “Visual C++ 2013 Redistributable” is present, please download and install the runtime from the Microsoft website:

<https://www.microsoft.com/en-us/download/details.aspx?id=40784>

Automatic Installation

Use the button "Install gauge" to open the gauge installer window



- *2D windows in panel.cfg*: This is a list of all 2D window definitions in the panel.cfg of the aircraft that you are flying in your sim.
- *Add gauge*: This will add the AITX Radar gauge
- *Remove gauge*: This will remove the AITX Radar gauge.
- *UP/DOWN*: Move the selected item in the list up or down. This way you can change the keyboard assignment and sequence of the gauges.

- *Write to panel.cfg*: This will write a new panel.cfg file for your aircraft and reload the aircraft in the sim afterwards – that way you can use the gauges immediately.
Please note that AiTracker X is writing a new file with different formatting. None of your original definitions will be lost though, the original file is retained as a backup:
- ***Restore original panel.cfg***: This will restore your original panel.cfg file, before the gauges were installed.

Manual Installation

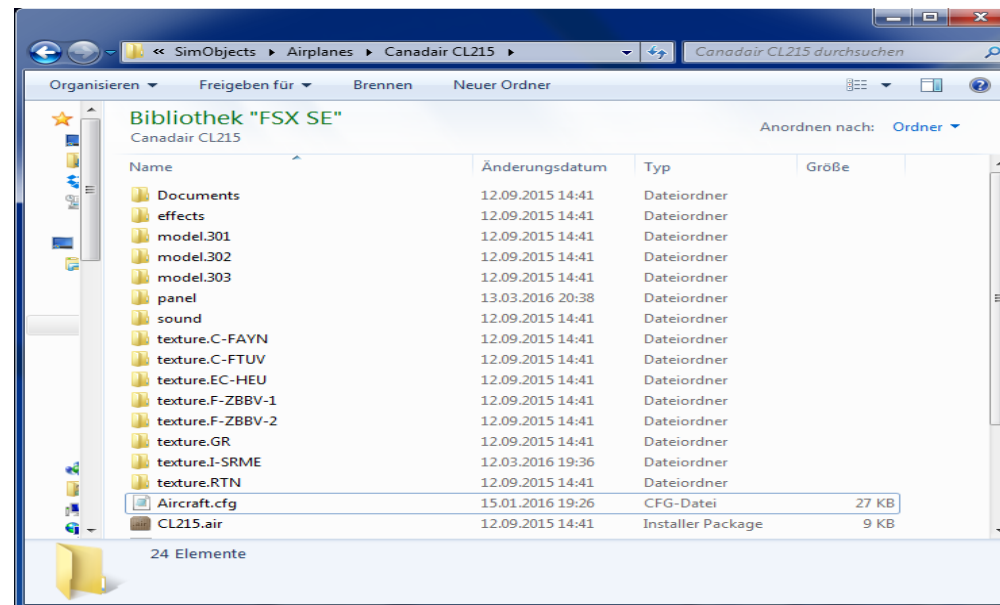
Each AITX installation package (FSX boxed or SE, Prepar3D V2, V3, V4) has its own version of the gauge, and you have to use the correct version and gauge name for your simulator to make it work.

1. Copy the necessary files to your simulator

- If you chose the default copy option when installing the AITX, the gauge files will already been added to the appropriate folders in your simulator.
- If you chose to copy them manually, then you will find the file in your AITX installation directory in the subfolder “Gauges”

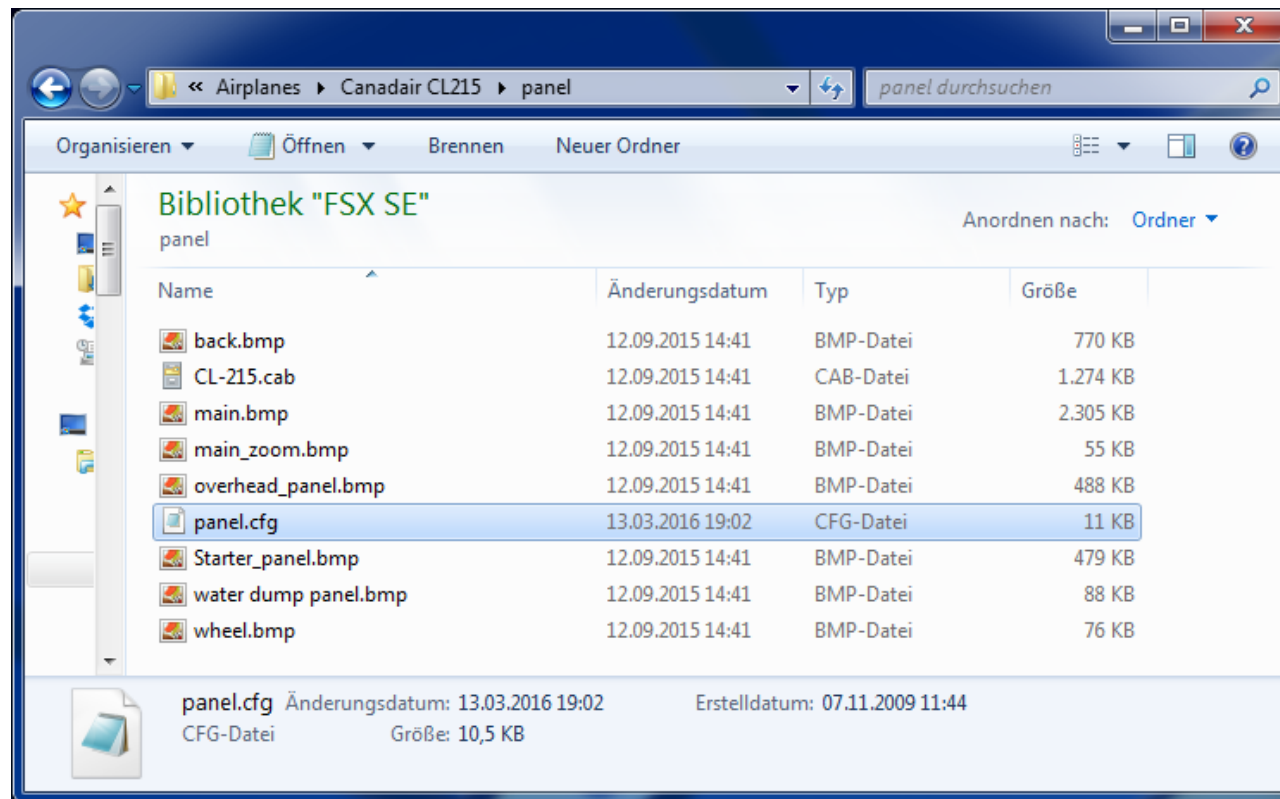
2. Locate the folder where your aircraft files are stored

- This folder is by default in your simulator main directory, subfolder “\Simobjects\Airplanes”
- The contents of this folder will look something like this:

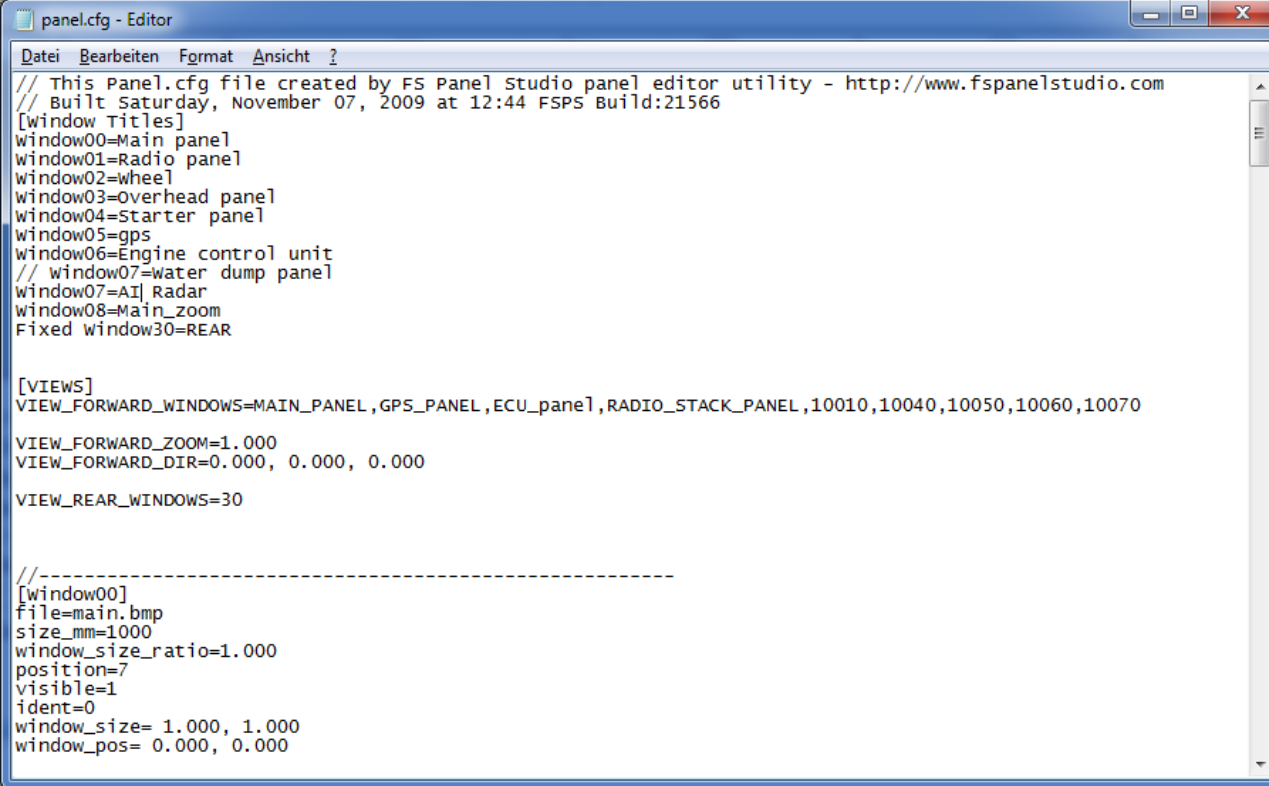


3. Edit the panel configuration file

- The file is located in the “panel” subfolder



- Open the file using “notepad” or any text editor you like



```
panel.cfg - Editor
Datei Bearbeiten Format Ansicht ?
// This Panel.cfg file created by FS Panel Studio panel editor utility - http://www.fspanelstudio.com
// Built Saturday, November 07, 2009 at 12:44 FSPS Build:21566
[window Titles]
window00=Main panel
window01=Radio panel
window02=wheel
window03=overhead panel
window04=Starter panel
window05=gps
window06=Engine control unit
// window07=water dump panel
window07=AI Radar
window08=Main_zoom
Fixed window30=REAR

[VIEWS]
VIEW_FORWARD_WINDOWS=MAIN_PANEL,GPS_PANEL,ECU_panel,RADIO_STACK_PANEL,10010,10040,10050,10060,10070

VIEW_FORWARD_ZOOM=1.000
VIEW_FORWARD_DIR=0.000, 0.000, 0.000

VIEW_REAR_WINDOWS=30

//-----
[window00]
file=main.bmp
size_mm=1000
window_size_ratio=1.000
position=7
visible=1
ident=0
window_size= 1.000, 1.000
window_pos= 0.000, 0.000
```

There are basically three ways to add the gauge:

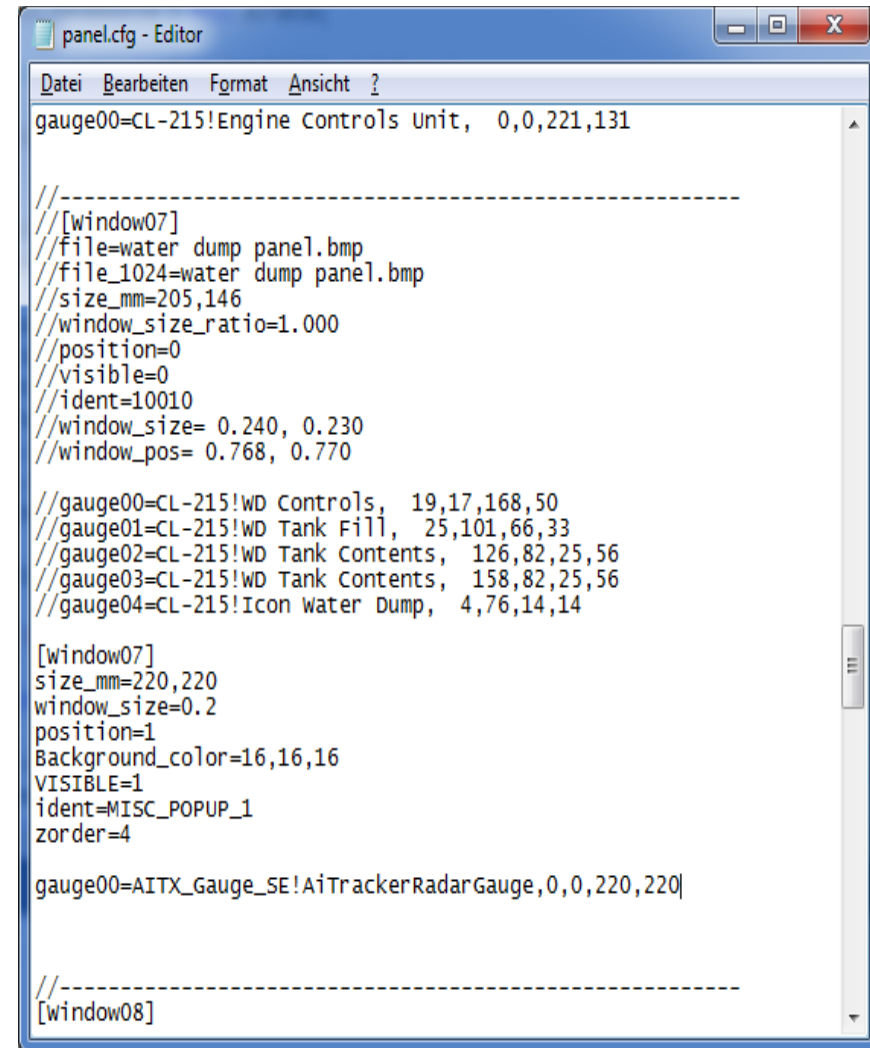
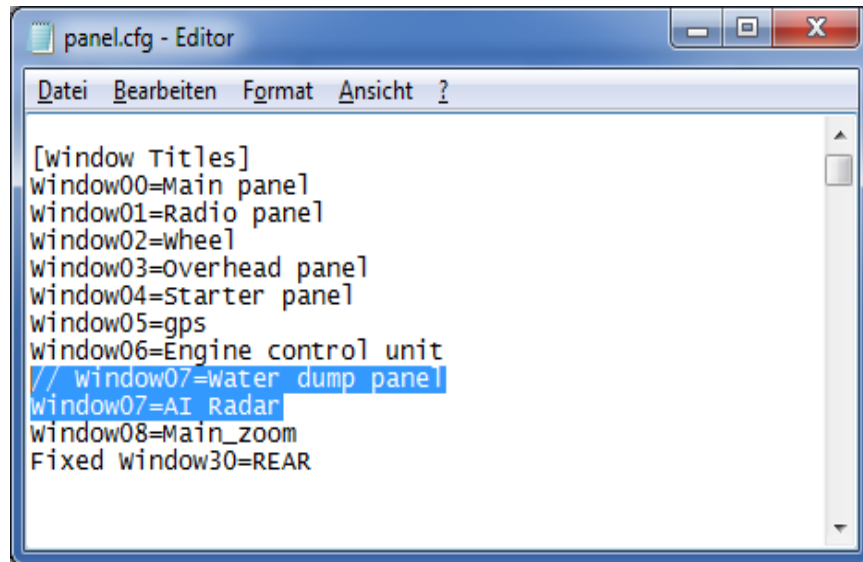
- 1. Stand alone instrument window**
- 2. Replace a gauge in your 2D panel**
- 3. Replace a gauge in your virtual flightdeck / VC**

Options 2/3 will only work if you have the necessary space and a spare gauge that you can replace.

1. Stand alone instrument window

Edit the panel file like this:

Replace or add a window definition:



In this example we disabled the existing window07 and replaced it with the AI radar. (Putting “//” in front of a line disables it.)

Note: The gauge DLL has a different name for each simulator:

FSX boxed:

gauge00=AITX_Gauge!AiTrackerRadarGauge,0,0,220,220

FSX SE:

gauge00=AITX_Gauge_SE!AiTrackerRadarGauge,0,0,220,220

P3D V 2.5

gauge00=AITX_Gauge_P3D!AiTrackerRadarGauge,0,0,220,220

P3D V3.x

gauge00=AITX_Gauge_P3D_V3!AiTrackerRadarGauge,0,0,220,220

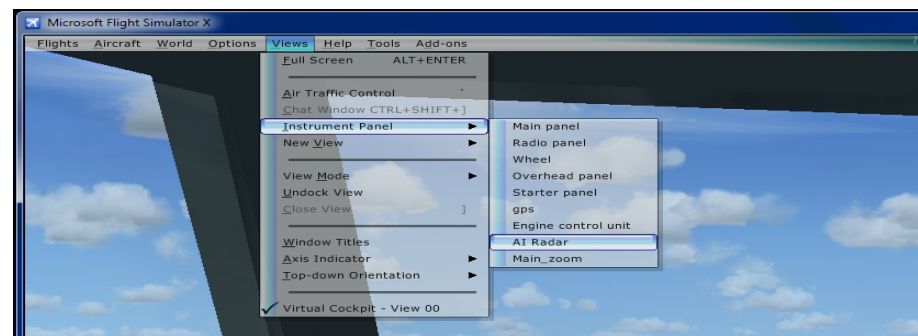
P3D V4.x

gauge00=AITX_Gauge_P3D_V4!AiTrackerRadarGauge,0,0,220,220

P3D V5.x

gauge00=AITX_Gauge_P3D_V5!AiTrackerRadarGauge,0,0,220,220

Now save and close the panel.cfg. You can access the AI radar with the usual key controls (in this case Shift+8) or by using the menu:



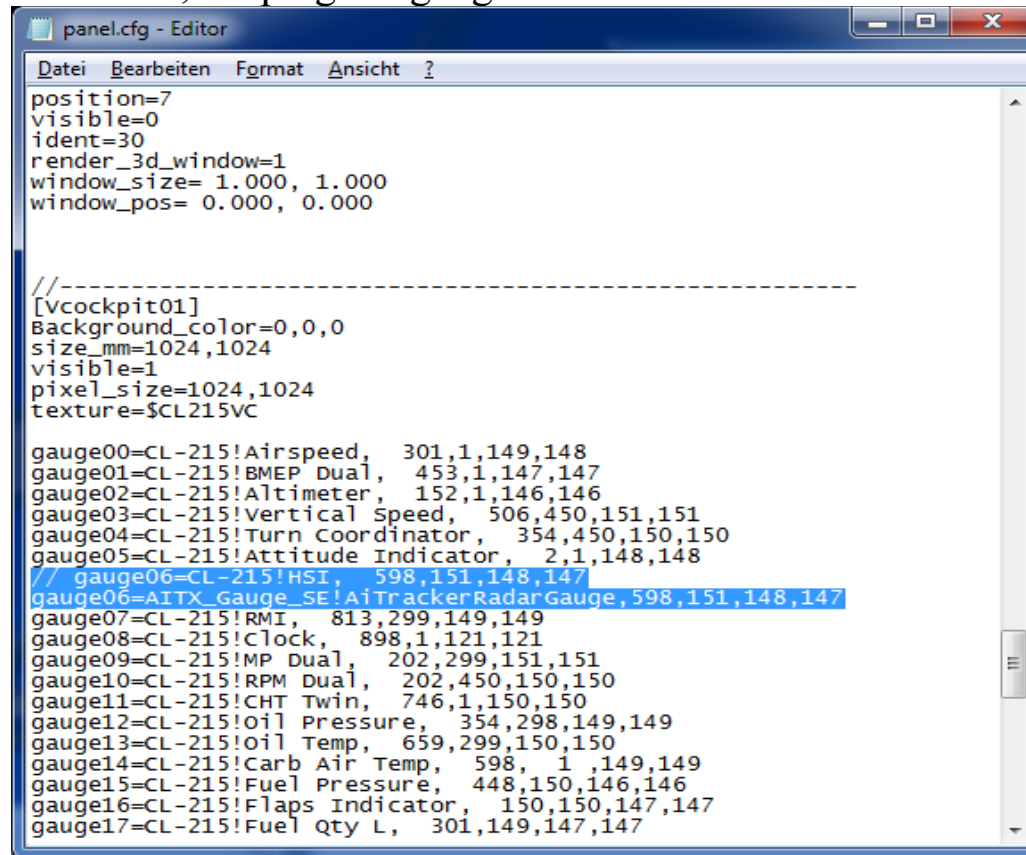
2. Replace a gauge in your 2D panel

or

3. Replace a gauge in your virtual flightdeck / VC

Edit the panel file like this:

Replace an existing gauge definition, keeping the gauge size



```
panel.cfg - Editor
Datei Bearbeiten Format Ansicht ?

position=7
visible=0
ident=30
render_3d_window=1
window_size= 1.000, 1.000
window_pos= 0.000, 0.000

//-----
[Vcockpit01]
Background_color=0,0,0
size_mm=1024,1024
visible=1
pixel_size=1024,1024
texture=$CL215VC

gauge00=CL-215!Airspeed, 301,1,149,148
gauge01=CL-215!BMEP Dual, 453,1,147,147
gauge02=CL-215!Altimeter, 152,1,146,146
gauge03=CL-215!Vertical Speed, 506,450,151,151
gauge04=CL-215!Turn Coordinator, 354,450,150,150
gauge05=CL-215!Attitude Indicator, 2,1,148,148
// gauge06=CL-215!HSI, 598,151,148,147
gauge06=AITX_Gauge_SE!AiTrackerRadarGauge,598,151,148,147
gauge07=CL-215!RMI, 813,299,149,149
gauge08=CL-215!Clock, 898,1,121,121
gauge09=CL-215!MP Dual, 202,299,151,151
gauge10=CL-215!RPM Dual, 202,450,150,150
gauge11=CL-215!CHT Twin, 746,1,150,150
gauge12=CL-215!Oil Pressure, 354,298,149,149
gauge13=CL-215!Oil Temp, 659,299,150,150
gauge14=CL-215!Carb Air Temp, 598, 1,149,149
gauge15=CL-215!Fuel Pressure, 448,150,146,146
gauge16=CL-215!Flaps Indicator, 150,150,147,147
gauge17=CL-215!Fuel Qty L, 301,149,147,147
```

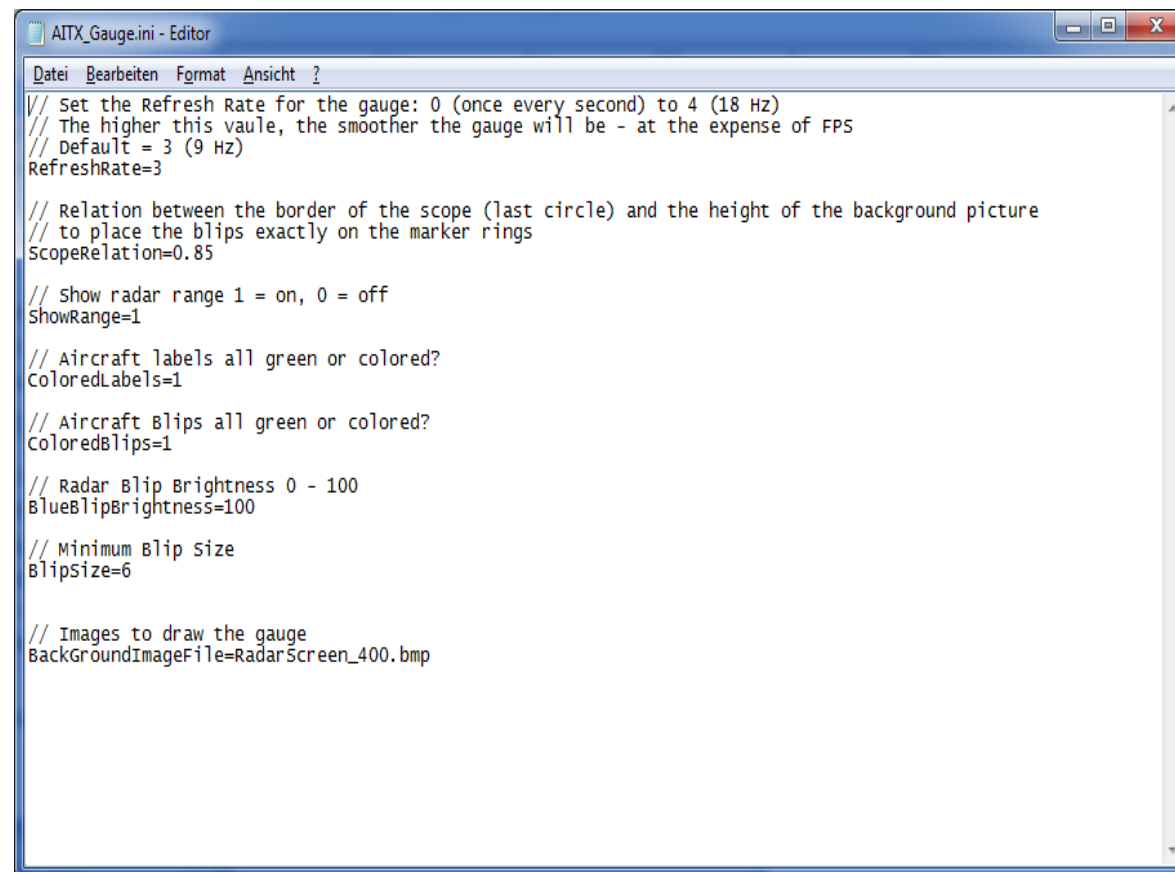

In the example we disabled the HSI display on the pilots' instrument panel and replaced it with the AI radar.



8.3 The INI-File

The appearance of the AI radar gauge is configurable by editing the “AITX_Gauge.ini” file.

The file is located in the “\Gauges\AITX_Gauge” folder of your main simulator directory and can be edited with the standard Windows Notepad.



```
AITX_Gauge.ini - Editor
Datei Bearbeiten Format Ansicht ?
// Set the Refresh Rate for the gauge: 0 (once every second) to 4 (18 Hz)
// The higher this vaule, the smoother the gauge will be - at the expense of FPS
// Default = 3 (9 Hz)
RefreshRate=3

// Relation between the border of the scope (last circle) and the height of the background picture
// to place the blips exactly on the marker rings
ScopeRelation=0.85

// Show radar range 1 = on, 0 = off
ShowRange=1

// Aircraft labels all green or colored?
ColoredLabels=1

// Aircraft Blips all green or colored?
ColoredBlips=1

// Radar Blip Brightness 0 - 100
BlueBlipBrightness=100

// Minimum Blip Size
BlipSize=6

// Images to draw the gauge
BackGroundImageFile=RadarScreen_400.bmp
```

Options:

- *RefreshRate*: using this gauge will have an impact on your FPS. With this parameter you can adjust the refresh rate of the gauge display to best suit your computers' capabilities.
- *ScopeRelation*: If you replace the background “radar scope” image with one of your own, you may have to adjust the “gridlines” to reflect the actual distances.
Example: with the default green scope, the relation between the total image height to the radius of the outermost green ring is 1:0.85. By setting the value 0.85, a blip that is 20 miles out will be placed exactly on the outermost green ring at range 20.
- *ShowRange*: Switch the text on the top right corner on or off
- *ColoredLabels*: Toggle if the aircraft labels should all be green or colored like the blips
- *ColoredBlips*: Toggle if the blips should all be green or colored red/blue/yellow
- *BlueBlipBrightness*: Set the brightness of the blips. Accepts values between 0 (dark) and 100 (bright)
- *BlipSize*: the minimum size that a blip may have.
- *BackGroundImageFile*: Background image

All picture files have to be located in the same “gauges\AITX_Gauge” folder where the INI itself is.

11. Disclaimer

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- any results, output, or data provided through or generated by the software will be accurate, up-to-date, complete or reliable;
- the software will be compatible with third party software;
- any errors in the software will be corrected.
- the software will not cause errors or damage to the computer system it is installed on.

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