

AutoATC

Aviate
Navigate
Communicate

Version 1.0.3

March 11, 2024

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Document changes:

Version	Date	Changes	Page
1.0.3	March 2024	Correct airframes definition folder	6
		Fix document links	various
		Merge FAQ sections	41
1.0.2	January 2024	Settings page update	9
		Update Changelog	21
1.0.1	November 2023	Full Documentation Rewrite	N/A
1.0.0.2	October 2023	Update changelog	N/A
1.0.0	September 2023	Update for X-Plane 12	N/A
0.9.8		Update settings description	N/A
		Version History	N/A
0.9.7	November 2022	Update installation instructions	N/A
		Connection Problems & multi cockpit setups.	N/A
		Airframes definitions	N/A
0.9.6	December 2021	Initial Documentation	N/A

AutoATC Traffic Simulator (Windows, MacOS and Linux)

Aviation Radio Telecommunications (RT) and Traffic simulator provides high quality animated AI aircraft which interact with Air Traffic Controllers to fully capture the experience of navigating complicated and busy airspace.

Using AutoATC will develop your Air Traffic Control communication skills, a vital component of aircraft safety.

Ideal when used in Virtual Reality.

Use AutoATC to learn radio procedures and follow them as if you are flying a real aircraft.

[Join the discord server](#) for open, free and friendly discussion with many other like minded flight and simulation enthusiasts.



System Requirements

Minimum Hardware Requirements

CPU: Intel Core i3, i5, i7, or i9 CPU with 4 or more cores, or AMD Ryzen 3, 5, 7 or 9.

Memory: 8 GB RAM

Video Card: a Vulkan 1.3-capable video card from NVIDIA or AMD with at least 2 GB VRAM

Disk Space: 150MB Base install, 10GB for aircraft models (*Note:* Additional aircraft models will require additional space)

Recommended Hardware Requirements

CPU: Intel Core intel i5-12600K or Ryzen 5 3500 or better, or Apple Silicon

Memory: 16-32 GB RAM or more

Video Card: a DirectX 12-capable video card from NVIDIA or AMD with at least 4-8 GB VRAM (GeForce RTX 2070 or better, or similar from AMD)

Installation

Step 1 Extract files:

Extract the AutoATC folder in the zip file to:

X Plane 12/Resources/plugins/

Which will result in the new folder:

X Plane 12/Resources/plugins/AutoATC

Note: If you have an existing installation, delete the folders:

X Plane 12/Resources/plugins/AutoATC

and

X Plane 12/Resources/plugins/AutoATC_java

Step 2 (Windows only): Install Microsoft updates:

Run the included updates from microsoft.

VC_redist.64.exe

and

vcredist_x64.exe

Two additional executables are included from Microsoft which add support for Multi threading and modern software support which do not ship by default with windows versions prior to Windows 11.

Step 2 (MacOS only): Remove quarantine attribute:

Open a finder window and locate and select the X-Plane directory (default is your home directory).

Click on “Finder” followed by “Services,” and select “New Terminal at Folder.”

Then run the following command:

```
sudo xattr -dr com.apple.quarantine *
```

New versions of MacOS add a quarantine attribute to any files downloaded from the internet which prevents them from running on the machine (this is a good thing). Unfortunately this adds an extra step to get them to run.

This requires manually removing the attribute, to do this.

Step 3 (All OS's) Download and install AI aircraft models:

The addon supports AI aircraft models from multiple community efforts. The easiest of these to install is the X-CSL based models which can quickly be installed and updated using the X-CSL Updater available at.

https://csl.x-air.ru/downloads?lang_id=43

Version 1.3.1 at time of writing.

Up to 30 of the closest AI planes will be added at any one time to the simulator, the furthest away will be swapped out.

In order to specify which airframe and livery X-Plane should use, airframe and livery are defined in the directory:

X Plane 12/Resources/plugins/AutoATC/airframe_definitions/

Each json file uses the expected default locations for these files, if you have installed them to a different location, you can find and replace in the json file to the directory they are installed.

Other styles currently supported are:

BlueBell XSquawkBox style “CSL” models

<https://forums.x-plane.org/index.php?/files/file/37041-bluebell-obj8-csl-packages/>

These have probably the highest quality animations

“World Traffic 3” models

<https://forums.x-plane.org/index.php?/files/file/43952-wt3-airlines-and-aircraft-updates/>

These are generally based on the BlueBell “CSL” models with some additions.

Support for additional models is expected to be added over time.

Control setup

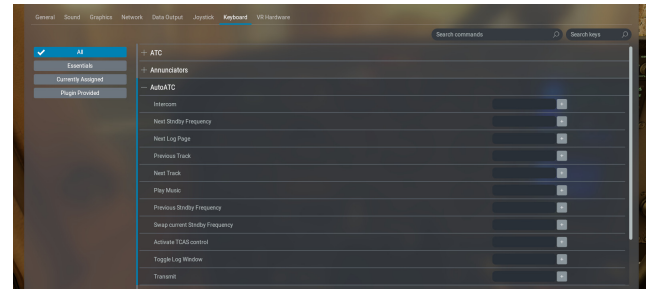
The plugin registers ten Xplane commands.

- Next Log Page – Change the page displayed on the AutoATC information window.
- Next Standby Frequency – move com1 standby frequency forward one.
- Previous Standby Frequency – move com1 standby frequency back one.
- Swap current standby frequency – swap standby and current com1/adv/nav1 frequencies (depending on the current AutoATC pad page)
- Toggle Log window – show/hide the AutoATC information window.

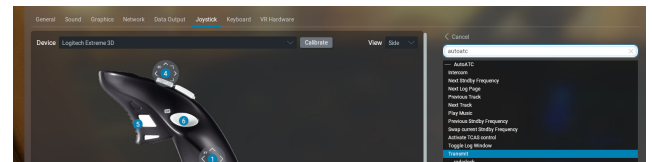
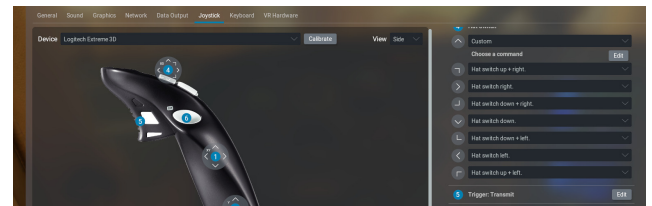
5 of which are for use with AutoATC Radio:

- Previous Track – Play the previous music track on the android application.
- Next Track – Skip to the next music track on the android application.
- Play music – play any mp3s on the android devices (requires accepting media permissions).
- Intercom – use for **voice commands**
- Transmit – Begin voice recognition.

Controls can be bound either to the keyboard.

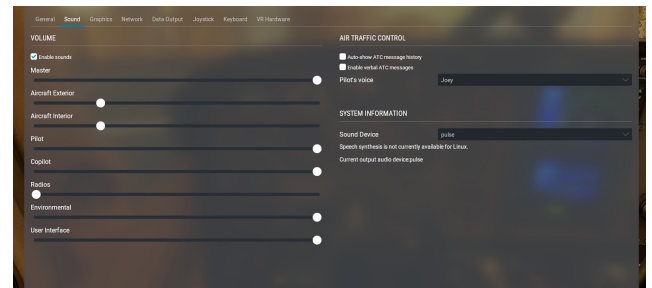


Or to a Joystick



Sound setup

The volume of ATC voice in X-Plane is fixed at maximum volume, in order to stop the voice being drowned out by aircraft noises, turn down the volume of interior and exterior sounds in sound settings.



Plugin Menu



Once AutoATC is installed, the need for configuration options

are intended to be minimal.

Additional settings can be accessed via the plugin menu, which provides:

- (Toggle Log) A window which displays text of any received (and sent) messages, “in range” frequencies, as well as the frequencies of local VORs and NDBs.
- (Restart Radio) Can be used to quickly reset the the plugin in case of problems
- (Settings) Provides additional configuration options
- (About) Displays the current version numbers of the different components of the addon.

Settings

The settings widget provides several controls to configure AutoATC, plus an information window showing the current state.

- Audio Device Slider: Select the system audio device to use for VHF audio, far left is the default device. Currently selected device is shown in the information pane.
- Android IP: Used to connect to [AutoATC Radio](#), see also [Android troubleshooting](#)
- Collision damage (Checkbox): Impacts with AI aircraft will damage the user aircraft.
- Collisions (Checkbox): Impacts with AI aircraft will damage the other aircraft.
- Extended Cockpit (Checkbox): If this machine is a visuals only device, check this box to synchronize the air traffic with the master machine.
- Override TCAS (Checkbox): inject AutoATC traffic into the X-Plane TCAS system (uncheck for interoperability with other online plugins)
- Hoppie ID: Hoppie logon code for using ACARs/DPDLC with the Hoppie network.
- Save: Save settings, Force a connection attempt to a AutoATC VHF simulator
- Information pane: Displays the reported ICAO code of the current aircraft, and the current connection status.



Log window/tab



Airborne VHF radio is notoriously difficult to understand.

The log window lets you quickly see what was actually said.

The log window provides quick access to a transcript of recently received communications.

ATC Mode: When communicating with ATC; this is a quick helper that gives information about what the Air Traffic controller understands about your current intentions. Some common values are:

- unknown: ATC has no information about your flight
- waiting for info: Your **callsign is registered**, but ATC doesn't know your intentions.
- waiting for readback: ATC has given a clearance that requires a readback and is waiting for a response.
- takeoff: ATC expects you to take off.
- inflight/intransit: ATC is following your flight
- waiting (queue position): ATC has given hold instructions and you are in a queue for clearance.
- establishing: ATC expects you to be flying from your last position and joining a landing pattern.
- joining: ATC expects you to be established in a landing pattern
- landing: ATC is expecting you to land

cat: The airspace category you are currently occupying.

Time: (The current server time in UTC).

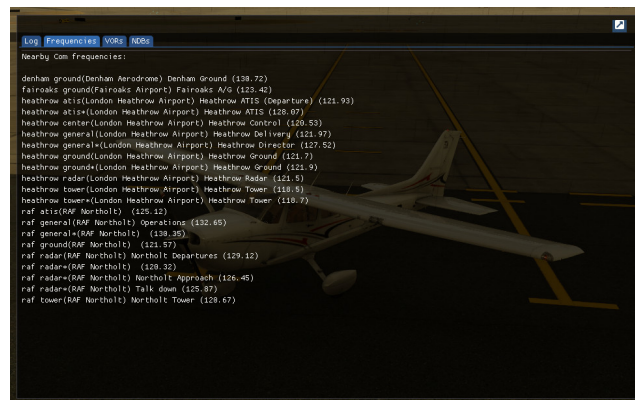
Active tuned frequency and description

The text following these is a log of all communications received in the last few minutes.

Frequency tab

The Frequency tab reports all frequencies that AutoATC is transmitting/receiving on dependant on your current position and altitude.

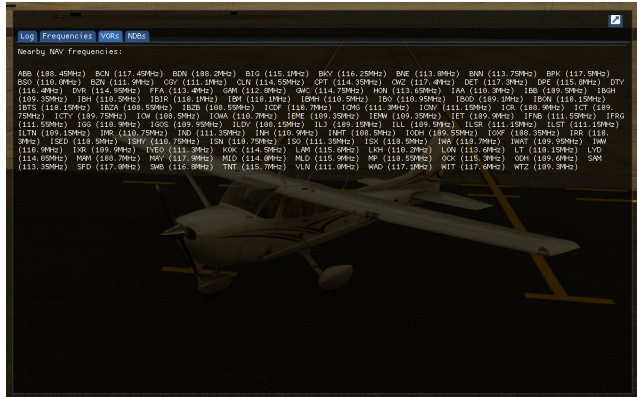
Taking into consideration of any terrain interference.



VORs tab

The VORs tab reports nearby VOR stations, their identity (transmitted in morse code), and the frequency they are transmitting on.

Taking into consideration of any terrain interference.



About Window



The about window displays the current version numbers of the different components of the addon. This information is useful when needing technical support to report problems and monitor when any issues are fixed.

Locating AI Aircraft



AI Traffic can be viewed/located on a custom map layer.

Currently visible aircraft are shown with an icon representing their airframe, jet, helicopter, light aircraft etc.

Also shown is their current altitude. These can be used together to find them in the simulator.

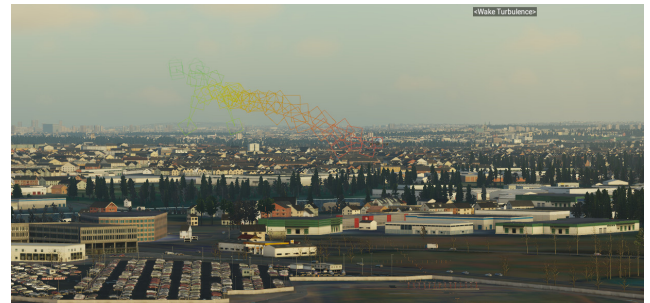
Wake Turbulence

All air traffic produces wake turbulence. Wake turbulence refers to the turbulent air currents left behind by an aircraft as it moves through the air. These turbulent airflows are particularly significant and potentially hazardous for other aircraft flying in close proximity, especially during takeoff and landing phases.

You can view the current wake turbulence being simulated by cycling through the various flight model physics views, the default key combination is:

CTRL + M

Press this combination until “wake turbulence” is displayed in the top of the window. This view, along with the contrails left by the traffic flying at high altitude is an effective way to locate traffic in the simulator.



Tuning to an active Frequency



Using the aircraft radio requires practice and familiarity with standard procedures. It's crucial for pilots to maintain good communication habits for safe and efficient air travel. Always follow the specific guidelines and procedures outlined by your

aviation authority and adhere to the principles of airmanship.

Different aircraft avionics have several interfaces to tune and listen to an active frequency, and may come equipped with several different radios.

“COM1” refers to the primary communication radio in an aircraft’s avionics suite. In aviation, radios are often categorized as COM (communication) and NAV (navigation) radios. The term “COM1” specifically designates the first communication radio unit.

Modern avionics suites may also include a “COM2” radio, which serves as a secondary communication radio. Having two communication radios allows pilots to monitor and communicate on two different frequencies simultaneously. This can be particularly useful in busy airspace or when flying in areas with multiple air traffic control sectors.

AutoATC currently only produces radio communications on COM1.

The standby frequency on a COM1 radio refers to a secondary frequency that can be set and quickly activated when needed. It allows pilots to have a backup or alternate frequency readily available without losing the current active frequency.

Switching the COM1 frequency involves setting the standby frequency, generally using two knobs, one for large changes in frequency and the other for finer changes. Once the desired frequency is selected, there will usually be a “two way” arrow which is used to switch active frequency to standby, and standby to active.

You can find active local AutoATC frequencies in the [Frequencies tab](#). Additionally, three “helper” commands are provided to quickly change between local active frequencies:

- Next Standby Frequency – move com1 standby frequency forward one.
- Previous Standby Frequency – move com1 standby frequency back one.
- Swap current standby frequency – swap standby and current com1/adf/nav1 frequencies (depending on the current AutoATC pad page)

These can be [bound](#) to the keyboard or joystick.

ACARS & CPDLC

ACARS

ACARS stands for “Aircraft Communications Addressing and Reporting System.” It is a digital data link system used in aviation for the transmission of short, simple messages between aircraft and ground stations via radio or satellite communication. ACARS facilitates communication related to various aspects of flight operations, including operational and maintenance information.

Key features and uses of ACARS include:

- **Messaging:** ACARS is primarily used for sending and receiving text messages. These messages can cover a range of topics, including flight plans, weather updates, operational information, and maintenance data.
- **Airline Operational Control (AOC):** ACARS is crucial for airline operational control, allowing communication between the aircraft and ground operations. It helps in managing and coordinating various aspects of flight, such as fuel planning, weather updates, and routing changes.
- **Maintenance Data:** ACARS is used for sending real-time data about the aircraft’s systems and components to maintenance and engineering teams on the ground. This information aids in monitoring the health of the aircraft and can help schedule maintenance tasks more efficiently.
- **Flight Crew Communication:** ACARS enables communication between the flight crew and ground-based personnel, including dispatchers and maintenance teams. This can include requests for information, updates on flight progress, and coordination of operational details.
- **Automatic Reporting:** ACARS can automatically transmit predefined reports at specific points during a flight. These reports may include position reports, system status updates, and other relevant information.
- **Integration with Flight Management Systems:** ACARS is often integrated with the aircraft’s Flight Management System (FMS) to enhance the automation of data reporting and communication.
- **Cost Savings:** The use of ACARS can contribute to operational cost savings by improving communication efficiency, reducing the need for voice communication, and enabling more timely decision-making.
- **Satellite and VHF Data Link:** ACARS messages can be transmitted either through VHF (Very High Frequency) radio or via satellite communication, depending on the coverage and airspace. In remote or oceanic areas, where VHF coverage is limited, satellite communication is often used.

ACARS has been a standard in aviation communication for several decades, and it continues to evolve with advancements in technology. The system plays a critical role in enhancing the efficiency and safety of airline operations by providing

a reliable means of digital communication between aircraft and ground facilities.

CPDLC

CPDLC stands for “Controller-Pilot Data Link Communications.” It is a communication method used in aviation for exchanging digital messages between air traffic controllers and pilots. CPDLC is a component of the broader concept of data link communications, which involves the transfer of information digitally rather than solely through voice communication.

Key points about CPDLC include:

- **Digital Communication:** CPDLC enables the exchange of non-verbal messages between air traffic control (ATC) and aircraft. This can include clearances, instructions, requests, and other routine communications.
- **Reduced Radio Frequency Congestion:** By allowing certain routine communications to be conducted through data link rather than voice communication, CPDLC helps reduce congestion on radio frequencies, particularly in busy airspace.
- **Improved Communication Efficiency:** CPDLC can enhance communication efficiency by providing a standardized and structured format for messages, reducing the likelihood of misunderstandings.
- **Use in Oceanic and Remote Areas:** CPDLC is often used in oceanic and remote areas where traditional voice communication may be challenging due to long distances and limited VHF radio coverage.
- **Standard Phraseology:** While CPDLC messages are digital, they follow standard phraseology and protocols to ensure clarity and consistency in communication.
- **Aircraft Equipage:** To use CPDLC, aircraft need to be equipped with the necessary avionics and systems. This may include a Controller-Pilot Data Link Communication Unit (CPDLCU) and other supporting equipment.
- **Integration with FANS:** CPDLC is often associated with the Future Air Navigation System (FANS), which is a suite of avionics and air traffic management protocols designed to improve navigation and communication capabilities.
- **Regulatory Compliance:** Different regions and aviation authorities may have specific regulations regarding the use of CPDLC. Pilots and operators should be familiar with and comply with these regulations.

It’s worth noting that the implementation and usage of CPDLC can vary between different regions and airspaces, and not all aircraft or air traffic control centers may be equipped for CPDLC communication. As technology continues to advance, CPDLC is becoming more widely adopted in modern aircraft.

FMC integration



ACARS INOP



ACARS Active

AutoATC provides integration of the Aircraft Communications Addressing and Reporting System (ACARS) with the Flight Management Computer (FMC) on supported aircraft aircraft.

When AutoATC is installed, the avionics of supported aircraft will become active allowing their use.

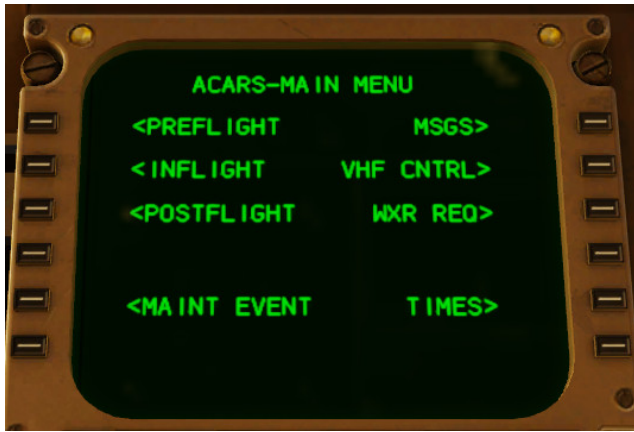
ACARS FMC integration allows for the exchange of data link messages between the aircraft and ground stations. This can include requests for weather updates, flight plan changes, and the transmission of operational and maintenance data.

The integration streamlines communication processes, reducing the reliance on voice communication and enabling more automated data reporting.

ACARS is generally used through the FMC "MENU" and "ATC" buttons.

When the system is active and available, the ACARS option will become available.





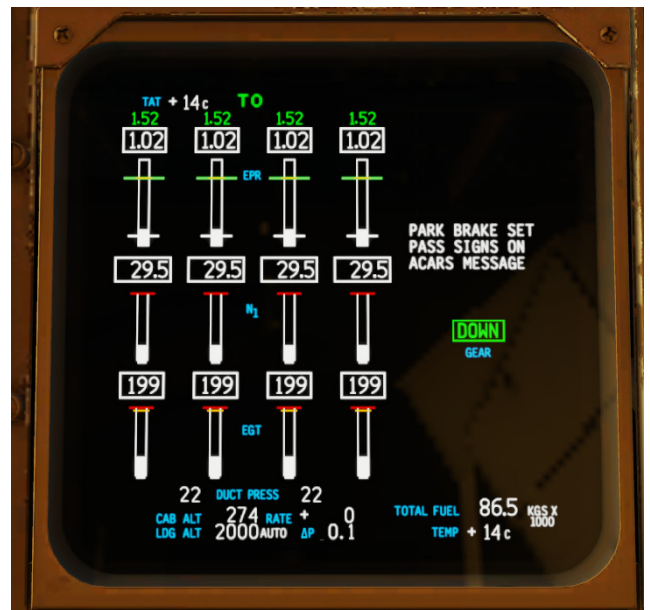
Opening the ACARS menu will bring up options for

- **PREFLIGHT**: initialization and configuration
- **INFLIGHT** options (which can be reached quickly using the “ATC” button on the FMC)
- **POSTFLIGHT**: (Logging off)
- **WXR REQ**: Weather request (airport METAR and TAF)
- **MSGS**: View sent (downlink) and received (uplink) messages
- **VHF CNTRL**: Configure the aircraft radios

When an ACARS message is received,

- *ACARS MESSAGE*

Will be displayed on the EICAS



ACARS Initialization

For initialization to automatically generate and file a flight plan, a cruise altitude (CRZ ALT) needs to be set in the aircraft performance initialization:

MENU -> FMC -> PERF



MENU -> ACARS -> PREFLIGHT



INITIALIZE



ACARS initialization is required to establish communication links with ground stations.

MENU -> ACARS -> PREFLIGHT -> INITIALIZE

When all data has been entered, initialization will begin upon pressing "RETURN".

AutoATC will automatically generate a flight plan and send it to the aircraft.

This will be shown via a received uplink message with the details of the waypoints.

A received flight plan is saved to the

Output / FMS plans

Directory, with a name equal to that of the flight number entered into the ACARS INITIALIZATION page.

Most aircraft support loading flight plans from this directory. In the Sparky744 this can be achieved by selecting

RTE -> CO ROUTE

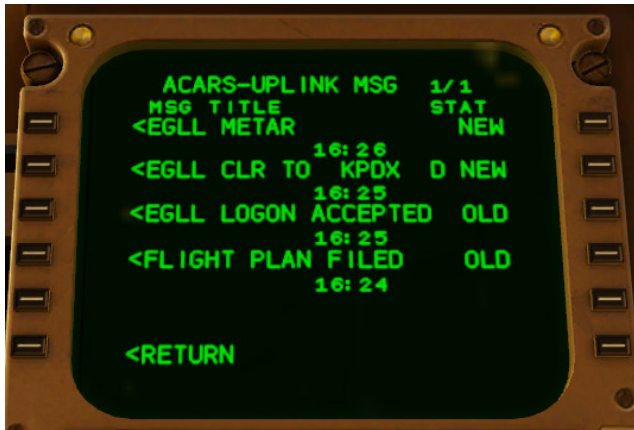
Which will open a page with the names of the files in this directory, and subsequently load them.

ACARS Weather requests

Once initialized, ACARS can be used to request the weather of an airport via the airport ICAO code.

AIRPORT shows the airport to which the request will be sent.

Selecting METAR or TAF will take the FMC to the messages page awaiting the arrival of the response. It is possible to return to WXR REQ before a response is received and request further weather information.



Uplink (Received) and Downlink (Sent) messages can be accessed everywhere there are:

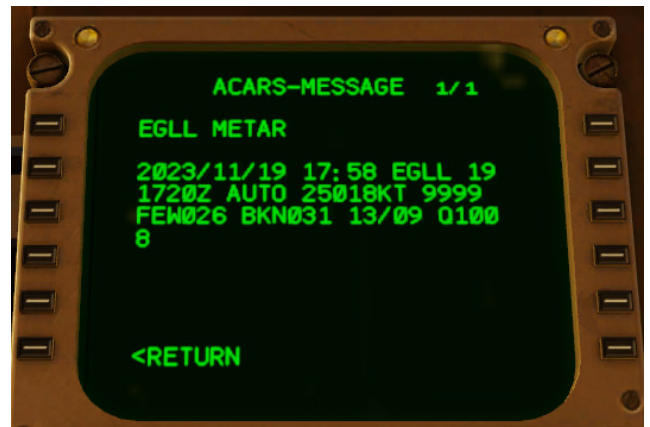
MSGs

or

MSG LOG

Options. Selecting the message will open it for viewing.

Received weather information is available in uplink messages



ACARS Logon



Messages are sent to the currently logged on ground station, the logon page is accessible via

ATC -> LOGON STATUS

or

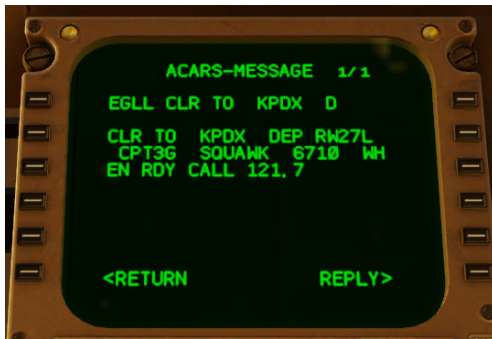
MENU -> ACARS -> INFLIGHT -> LOGON STATUS

Enter the ICAO code of the ground station into

LOGON TO

To activate a logon to that ground station.

LOGON response messages are visible in the UPLINK messages, but do not show a “ACARS MESSAGE” notification on the aircraft EICAS.



After an *ACCEPTED* logon to either the departure or arrival airport AutoATC will automatically send an arrival / departure clearance.

This may not be the case for online networks administered by hoppie.nl

A received *SQUAWK CODE* should be entered into the aircraft transponder

Follow Me Car



Follow me cars are commonly used for various purposes, including guiding aircraft to and from parking stands, helping them find their way to the runway for takeoff, or assisting them after landing by guiding them to the appropriate taxiways and parking areas. This service enhances the overall safety and efficiency of ground movements at airports, especially in situations where there may be a complex layout or limited visibility.

Flight log transcription

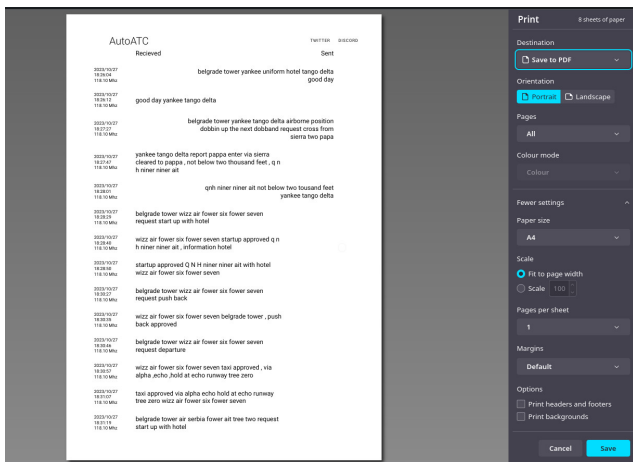
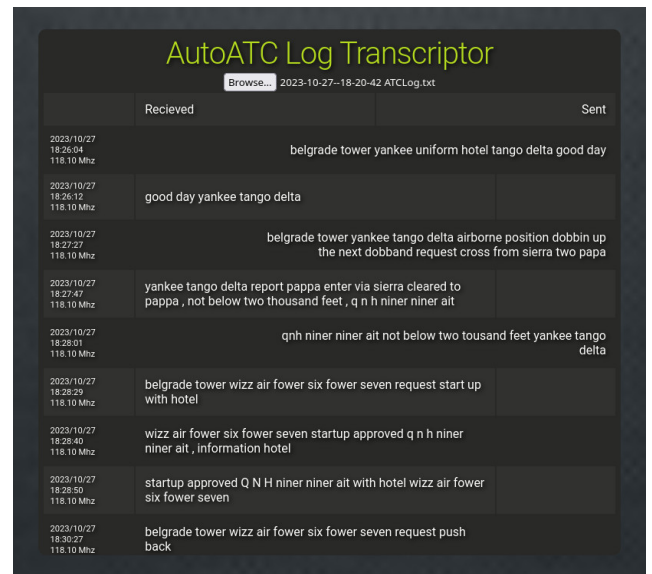
Logs of flights for the past few days are stored in:

Resources/plugins/AutoATC/ATCLog/{YYYY-MM-DD-HH-mm-ss} ATCLog.txt

These logs can be uploaded to the:

[AutoATC Log Transcriptor](#)

To review the sent and received messages during that flight.



Selecting “print” will format the transcripts suitable for A4 PDF/printing.

Version History

1.0.2.5 (January 2024):

- Better traffic ground handling
- More settings exposed on the settings page
- Aircraft pushback simulation
- Map Layer optimisations
- Improve pause handling

1.0.1.1 (November 2023):

- Networking API for Hoppie support
- Fix getting zeros while setting object data array
- Prevent negative airspeed
- Fix buffer overflow in get frequencies
- Follow me car character physics
- Speed/direction based movement
- Optional TCAS binding for VATSIM/IVAO compatibility
- Airframe loading fixes

1.0.0 (September 2023):

- X-Plane 12 support
- “Under the hood” updates in preparation for complete menu based communications
- Script animation objects and behaviour with XTLua
- Support X-CSL objects
- Support ACARs without connected android applications
- IMGUI interface initial

0.9.8 (February 2022):

- Support for changing output audio device.

0.9.7 (December 2021):

- Follow me car.
- Support clearing yousay popup from lua
- Migrate to Java 17 for better performance and memory management, especially on lower end systems
- ACARS/CPDLC fixes (Sparky744)
- Apple M1 support

0.9.6 (March 2021):

- Turbo prop sound type support and other audio improvements
- You say popup
- Fix nav tuning
- Better libxplanemp object support
- Add TCAS map layer
- Fix drawing of high speed AI Aircraft
- Pad background update
- MacOS support and testing
- ACARS support
- Bundled openJ9 JVM

0.8.7 Beta 1 (July 2019):

- Better android integration (power control, frequency list, flight model etc)
- Support for multi PC cockpits with AutoATC Pro android app (set external views as such in Plugins->AutoATC->Settings)

- Fix for multiple Java plugins (see <https://forums.x-plane.org/index.php?/forums/topic/175706-sharing-the-jvm/>)

0.8.69 (May 2019):

- Turn logging back on (ATCLog.txt)
- miscellaneous fixes
- Compatibility with android application version 0.8.69 B3
- “always on” android connection to simulator and api version check.
- Ground school
- Separated simulator connection and standalone flight modes.
- Innumerable bug fixes
- LGPL plugin release at <https://github.com/mSparks43/XPlane-11-AutoATC-plugin/>
- Support for custom voice command scripts.
- Fixed Mac build.

0.8.6 Release Candidate 2 (February 2019):

- Add vocabulary trainer to android application.
- Increase log message visibility to 60 seconds
- Add AutoATC/Toggle Log Window command

0.8.6 Beta 2 (December 2018):

- Airframe definitions for 3rd party AI aircraft models + liveries
- Automatically build airframe index from airframe definitions and installed models.
- 3D Surround Sound engine for AI planes
- Added option to AutoATC Pro to always use android application for Text to Speech
 - (allows use of a headset plugged into the android device to both hear and talk to ATC)
- Added option to AutoATC Pro to select controller voice (with test readout)
- Performance optimisations
- Added simulator connection notifications to AutoATC for Xplane and AutoATC Pro android applications
- Added ATC Logging to simulator plugin (ATCLog.txt)
- AI aircraft now obey holding height instructions
- AI aircraft now fly entire route when in the presence of a user

0.8.5.1 (November 2018):

- Update default jvm to v1.8.192
- Available frequency scanner
- Next and previous frequency commands
- Added “About” and version strings
- Add recommended volume settings (seems to be the only way to get the volume right) and control setup screenshot
- Track squawk and com1 frequencies on android display
- deprecated voice.wav
- Fixed occasional clipping/incomplete text to voice
- multiple fixes for non functional airports

0.8.4.2 (October 2018):

- Stop crash on “restart radio” (new .xpl files now included)
- Recover from network software aborts

- Add 2 new voices

0.8.4 (October 2018):

- Improved voice recognition for longer sentences,
- VR Support
- Support for android app versions 0.8.4 onward:
- New AI Server networking protocol - no more skipped messages.
- Busy Skies v2: In simulator AI planes controlled according to ATC instructions (AutoATC Pro only)
- voice recognition now displays in the ATC log for a few seconds before sending
 - hit transmit before the timer ends to retry
- RMS bar in the ATC log “(T)...” and phone apps to ensure voice is being heard by the phone apps
- Refactored all the code to allow better testing and procedure development.

0.7.3 (October 2018):

- Merged common codebase for AutoATC Radio and AutoATC Pro

0.4.3 (September 2018):

- Fix for some non working windows installations

0.4.2 (September 2018):

- Second batch of ATC communication handling fixes.
- Support for automatic synchronization with phone apps

(no need to set plane squawk before talking) - new phone applications required (“AutoATC for Xplane” > v1.2.2 or “AutoATC Pro” > v0.4.2), At time of writing may not be fully available from the play store.

- Fixed “freeze on startup” (however, it can still take a few seconds to get going, check the AutoATC log from the menu for a change from “Radio powering up” to “ATC Mode:unknown” after powering up an aircraft to see when it is actually active)

0.3.7 (August 2018):

- Mac OS support.
- Better installation instructions included in the file,
- Stability improvements to the plugin for installation setup.
- Performance improvements, and better handling of networking failures.
- “Busy Skies”: All international airports (and a fair few others) now serviced by AI traffic.
- First batch of ATC communication handling fixes.

0.2.0 (July 2018):

- Added “restart radio” option to the menu.
- Bound receiving and transmitting functionality to aircraft battery power (doesn’t start until the battery is turned on, and stops when the battery is turned off)
- added link to phone app and some more documentation in the description.

AutoATC Radio Mobile Application Communications Simulator (Android)

Aviation radio telecommunications simulator.

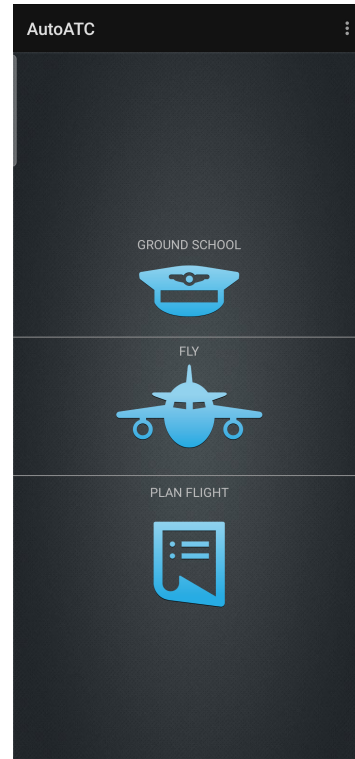
AutoATC Radio simulates Air Traffic Controllers (ATC) and traffic, capturing the experience of navigating complicated and busy airspace.

Using AutoATC Radio will develop your Air Traffic Control communication skills, a vital component of aircraft safety.

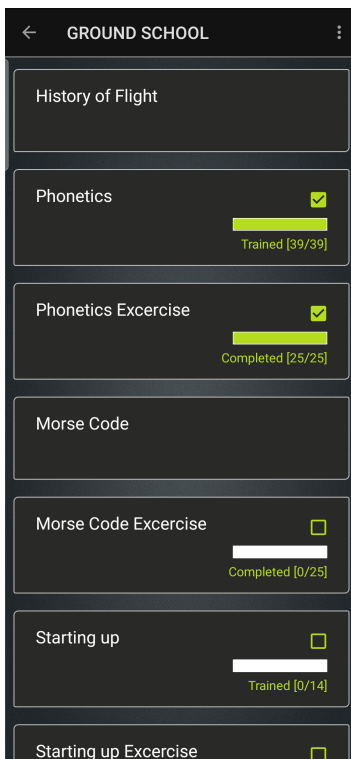
The application includes everything required to practice and improve on all aspects of radio communication.

Ideal when used in combination with Virtual Reality (VR).

[Join the discord server](#) for open, free and friendly discussion with many other like minded flight and simulation enthusiasts:



Ground School



Use AutoATC Radio to learn radio procedures and follow them as if you are using a real VHF radio.

AutoATC Radio uses speech recognition. This converts your transmissions into text which is then interpreted against standard radio procedure using the latest in AI technologies.

When starting the application for the very first time, you will be taken to the ground school section. The ground school includes everything you need to know to become proficient in VHF communications used in aviation.

Pressing/gesturing back, or pressing on the bar at the top of the page will bring you back to the previous page.

The ground school is divided into several sections, including both theory and exercises.

Ground School also serves a secondary purpose to set the auto correction functions.

Word training increases recognition accuracy for procedural words which sound like other words and may be converted to text incorrectly.

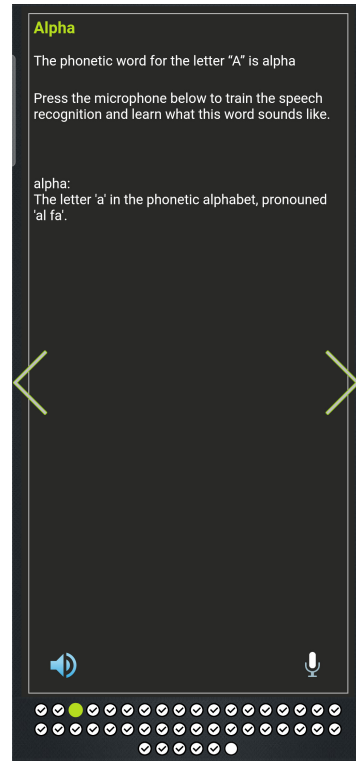
Completing the word training sections therefore greatly reduces the need to repeat requests and required read backs by standardising the spelling of these words.

Each ground school section is divided into several pages of text and images, pages with associated word training will have a microphone in the lower left corner of the page.

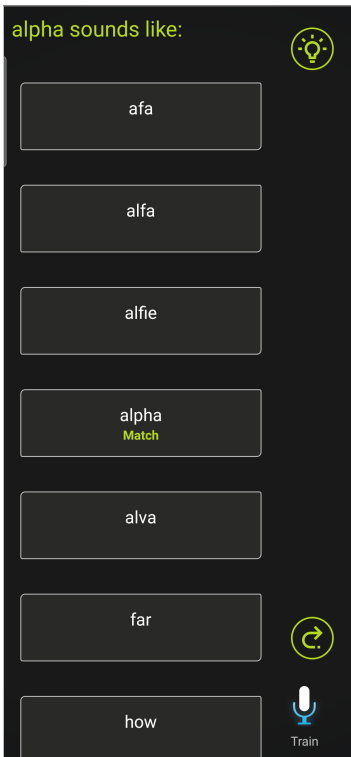
Additionally, such pages will not “check” in the lower portion of the page if word training/auto correct has not been completed.

Voice recognition works by creating a probability of a sound being a word. For optimum recognition accuracy and to assist you understanding often noisy radio communications key words and phrases need training what they “*sound like*”.

The first example of this is the phonetic word “alpha” in the phonetics section.



Word training / auto corrections.



In the case of Alpha, the words alfa, alphr and balfour all “sound like” alpha.

By completing the word training, all of these alternatives will always be converted to “alpha”.

Repeat for any alternates you wish to be recognised, such as if you find the wrong words being recognised during use.

Selecting the light bulb in the top right will give some brief information about how the word is used in radio procedure.

Press and hold train and then speak into the microphone to train the software which words sound like the word which should be used.

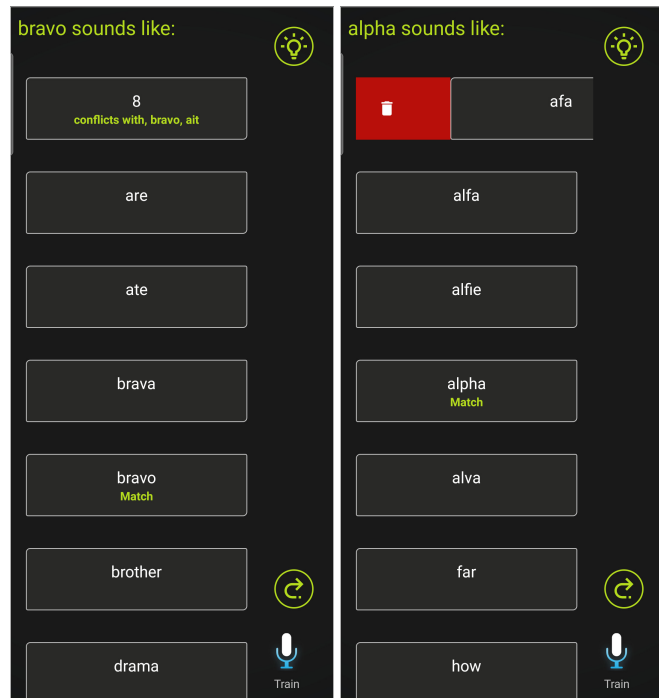
The complete list of auto corrections can also be reached by selecting “auto correction” from the menu in the top right. Each sounds like must be unique, duplicates will be highlighted in red in the auto corrections list. New words can be manually added to this less by selecting the green plus at the bottom of the page.

Word conflicts and deleting auto corrections.

Standardised phonetics and phrases are intended to limit confusion and misheard words, however occasionally you may run into the situation where two phrases “sound like” this same word.

When this happens, the offending word will be highlighted in red and should be deleted.

You can open the full list of expected phrases to train by selecting auto correction from the menu in the top right.



If you wish to delete a sounds like item, you can do so by swiping it to the right

Knowledge tests

Exercise sections contain a mixture of spoken and multiple choice tests.

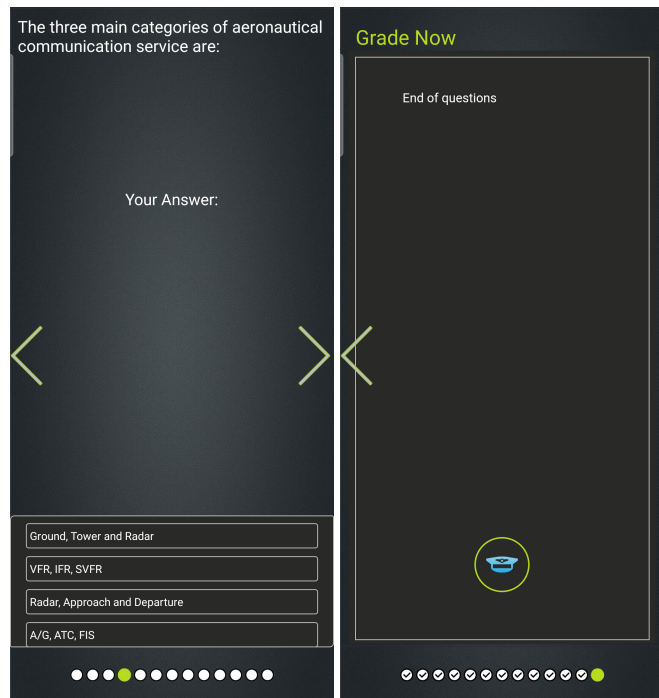
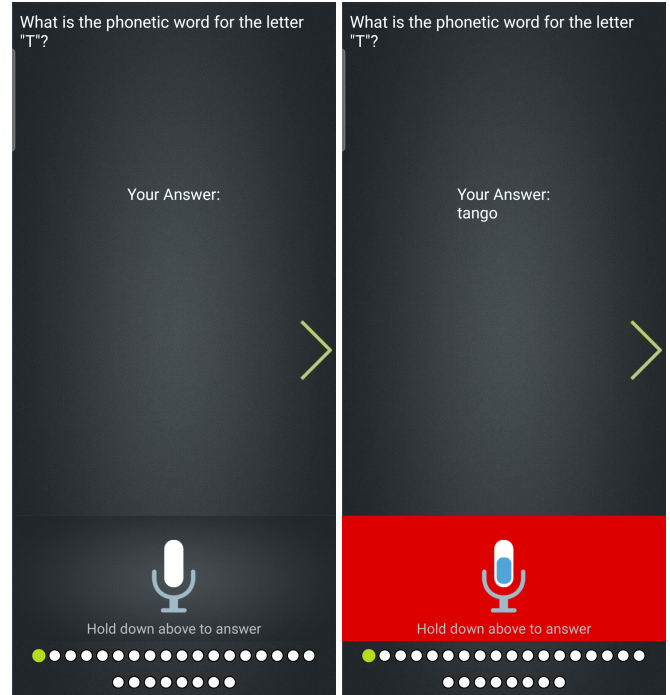
Each time you start an exercise the selection and order of questions will be different.

As with the rest of the ground school pages, you can navigate left and right using either the arrows or a swipe gesture.

Auto corrections are applied to the given answer, if the answer does not match what you expected you should add the result to the word training for that specific question.

You can also use “words twice” format (e.g. Tanga Tango).

Press and hold on the microphone icon and then speak the correct answer.



To answer multiple choice questions, select the correct answer. The order of multiple choice questions will change each time an exercise is started.

When all questions in an exercise have been completed, the pips in the lower portion of the page will all have checks, and the last page will grade the exercise.

All questions should be completed to be able to grade an exercise.

Incomplete problems will not contain a tick in the pip.

Pips can be pressed to go straight to that problem.

You can review and answer the problems as many times as needed before grading.

Your highest score is stored against each exercise.

To grade the exercise, press one the captains hat of the last page.

After grading, incorrect answers will be shown in ~~strikethrough~~ in a list, along with the expected correct answer.

Pressing on an incorrect answer will take you to the respective page of the ground school where the problem is explained.

Using back from a ground school page will return the application to the list of incorrect answers.

The back arrow at the bottom of the page will return you to the ground school.

Question: What is the shortest possible callsign for charter flight operated by scandinavian airlines in an aircraft registration GO-FLY

Correct Answer: scandinavian lima yankee

~~golf lima yankee~~

Question: Having requested start up clearance, you receive the message "scandinavian 3 9 8 startup approved QNH 1020, wind 160 degrees 6 knots, squawk 4655", how could you respond?

Correct Answer: startup approved qnh wun zero two zero squawk fower six fife fife scandinavian tree niner ait

~~startup approved qnh wun zero two zero seore fower six fife fife scandinavian tree niner ait~~



Flight Planning

Creating a flight plan

VFR flights may (but are not required to) file a flight plan.

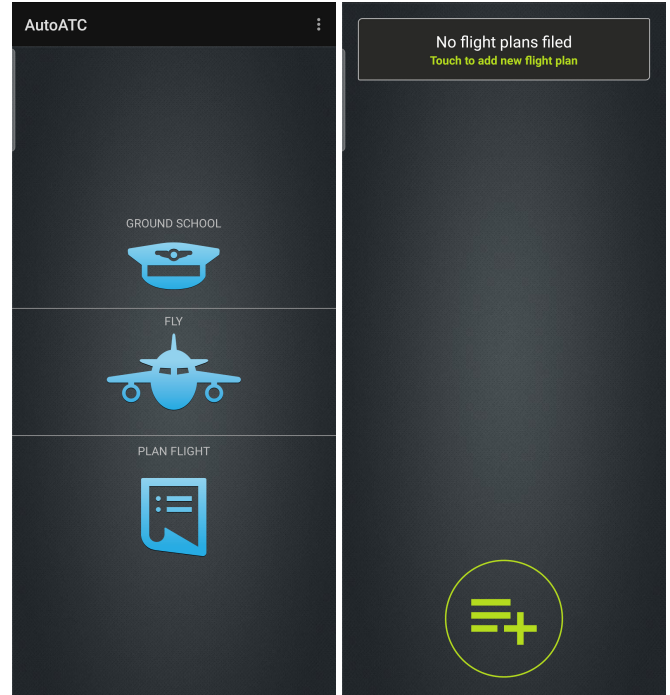
IFR flights must file a flight plan.

Regardless of where you are flying, ICAO countries and the United States (FAA) have standardised on the ICAO flight plan form.

Selecting “Plan Flight” from the landing page opens the flight plan documentation section of the android application.

Once a flight plan is created it is listed on this page and must be filed in order to become active. The status of each flight plan will be given underneath it (when it was created, when it was filed, it it was rejected and the reason why).

New plans can be created by pressing the green plus. Existing plans can be filed, duplicated and edited (if not already successfully filed) by selecting the flight plan from the list.



Two types of flight plan can be filed, an AI flight plan, or a user flight plan.

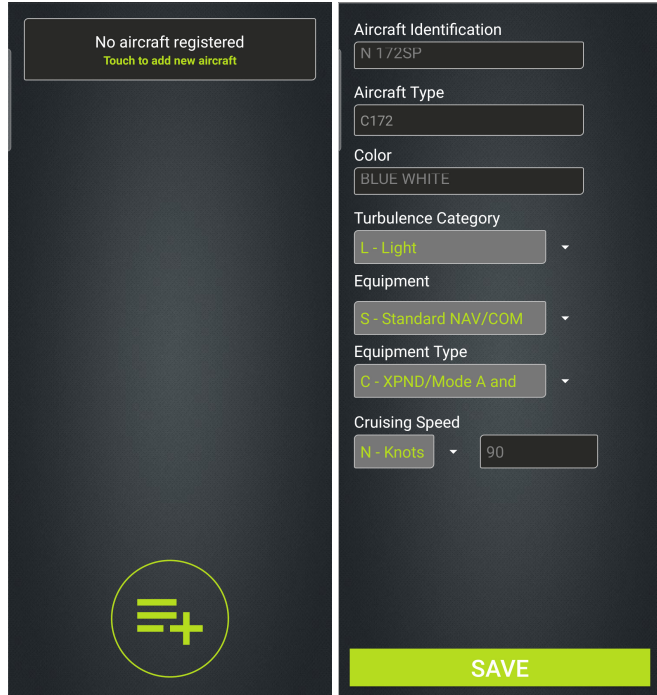
When creating a new plan, the first option is to select whether this is an AI flight plan (the flight will be flown by an AI pilot) or a normal flight plan that will be used when registering a callsign.

Whether the flight is an AI or standard plan can also be changed on the following page by changing the first radio button.

To minimise the need to enter all data for the same aircraft each time, aircraft information is stored separately.

To create an aircraft definition, select the “edit” button next to the aircraft dropdown.

Your hanger



AutoATC Radio stores details of the aircraft in your hanger for re use so they do not need to be entered each time, these can be selected by registration in the aircraft options. Initially the hanger will be empty and you will want to fill it with the aircraft you will be flying.

To add aircraft details select the plus icon at the bottom of the page. Entering aircraft details functions similarly to that of entering flight plan data.

Aircraft type is used for determining the capabilities of the aircraft when filing a flight plan.

For example, a flight plan will be rejected if the request cruise altitude is above the service ceiling of the aircraft.

After a few characters have been entered into aircraft type, options of known airframes will pop up. Select the one that best matches the aircraft you wish to use for the flight.

Cruising speed is entered separately and is used to determine if the estimated duration of a filed flight plan is reasonable.



Aircraft Identification
N172SP

Aircraft Type
C172 CESSNA 172 CUTLASS

Color
white

Turbulence Category
L - Light

Equipment
S - Standard NAV/COM

Equipment Type
C - XPND/Mode A and

Cruising Speed
N - Knots 110

SAVE

Once all the identifying details of the aircraft have been entered, press the save button at the bottom of the page (scrolling down if necessary) to store them.

Filing a flight plan

Departure and Destination airports are entered using their ICAO code. Airports without an ICAO code use the code "ZZZZ".

Flight plans can also be imported into the application, generated by sites such as flightplandatabase.com (.fms format). Simply download the file on your device and open it with the application.

You will still need to plan the route in advance of filing, get retrieve weather reports and NOTAMS and select a reasonable time in the air given your expected cruise speed.

Once all the details have been completed, scroll down to the bottom of the page and save them, which will return you to the list of flight plans.

EGLA
EGLC
EGLD
EGLF
EGLH
EGLJ
EGLK
EGLL
Egl

Destination airport
Egl | Eglstreams | Eglinton

Route

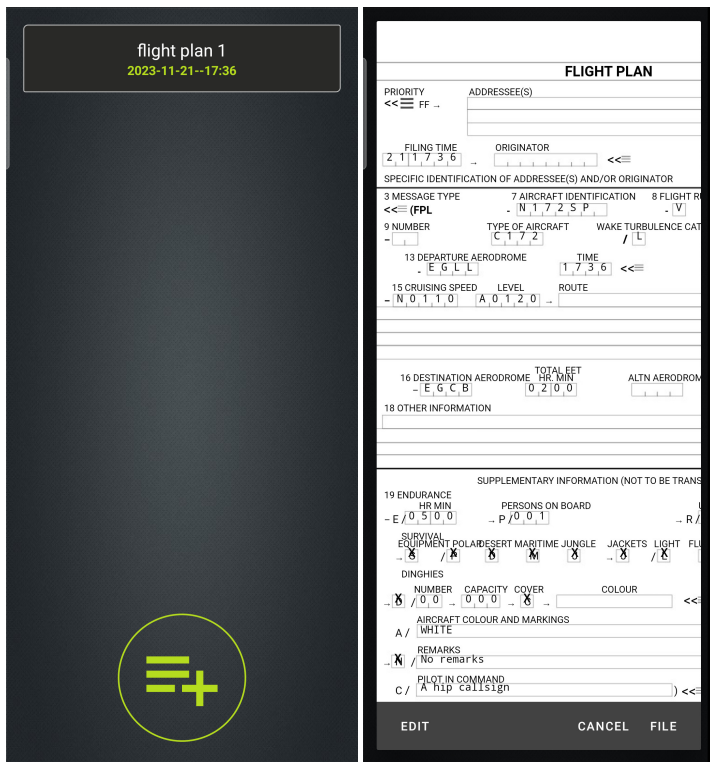
Total EET
01 : 59
02 : 00
03 : 01

Endurance
04 : 59
05 : 00
06 : 01

Alternate airport

2nd Alternate airport

SAVE



Saving a flight plan does not file it for use. Once a flight plan is saved it will appear in the flight plans list for review. Swiping a plan right will delete it. Selecting it will open it as an ICAO Flight Plan form for review, with the option to duplicate it (when previously filed), edit or file it.

After reviewing the information in the flight plan it can be filed for use.

The form displayed when reviewing a flight plan uses the standard layout and format used in a ICAO flight plan form.

Once filed, AutoATC will update the entry in the flight plans list with the result (time filed, or reason for rejecting it)

If a flight plan is rejected, reasons for the rejection will be displayed against the list entry.

Select it, choose edit and fix any issues.

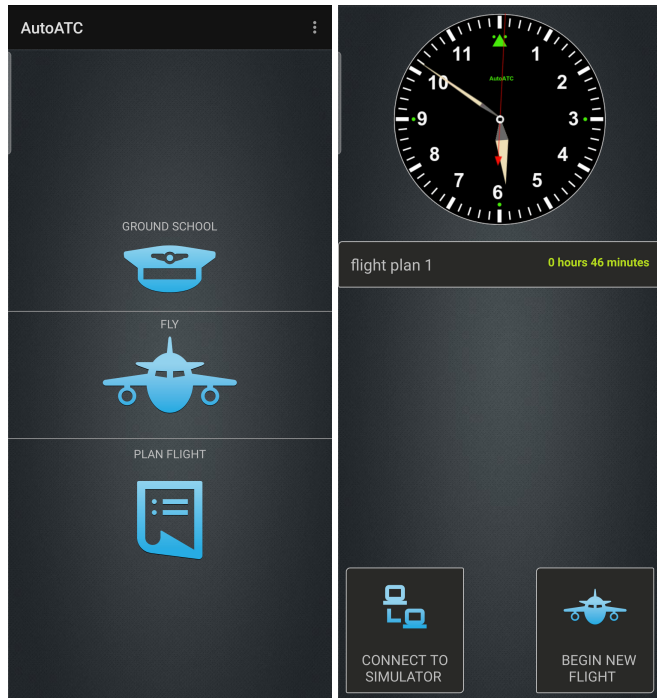
For example a cruise alt to high for the airframe would be fixed by entering a lower cruise altitude.

Start times need to be in the future. All times are UTC.

An accepted flight plan will become active when you check in with a controller using the aircraft identification filed with the flight plan.



VHF Radio Simulation



Connecting to the AutoATC network

AutoATC Radio can operate in to very distinct modes:

- As the traffic provider and VHF avionics system for aircraft of the X-Plane flight simulator
- As a stand alone VHF and flight progression simulator

Little to no configuration is required for either mode, to connect to the AutoATC network:

From the home page

- *Select Fly*

(CONNECT TO SIMULATOR) will listen on the local network for an instance of the Traffic Simulator addon installed to X-Plane before activating.

(BEGIN NEW FLIGHT) will immediately connect to the AutoATC network and enable the avionics simulation.

Radio Power On and tuning

When initially connecting to the AutoATC network, the VHF radio simulation will be switched off, and a quick check will be conducted that all auto corrections have been defined.

If some autocorrections are incomplete a notification will be displayed. This notification is primarily for information purposes, autocorrections do not need to be complete to use the application.

Pressing the tick on the notification will clear it instantly.

Pressing the notification will move to the list of autocorrections.

Once the radio is powered on, the application will display the current and standby frequencies, standby is the smaller lower frequency, active the larger upper frequency.

Turning the dial will rotate the standby frequency though the in range frequencies.

Active and standby can be swapped by pressing on either standby or active frequencies

N.B. If connecting to, but not yet connected to the AutoATC Traffic Simulator addon, most functions will not be available until the addon is found and a connection established.

N.B. To switch between stand alone simulation and connecting to a flight simulator, the application should be closed and restarted.





Selecting the scanner in the bottom left, active and standby can be swapped by pressing on either standby or active frequencies, or via the simulator controls for the radio.

The scanner page shows the description of the frequency along with its frequency.

Reception of transmissions varies depending on location, altitude and surrounding terrain. AutoATC models these and periodically updates stations that should be able to receive radio communications from the current location.

Selecting an item from this list will tune the standby frequency to that value.

It can then be made the active frequency by pressing on either the standby or active frequency displays.

N.B. If connected to X-Plane, it will take a few seconds to search through to the new standby frequency

This list of in range frequencies populates the next and previous radio frequency commands when connected to the X-Plane flight simulator, and the dial on the frequency page.

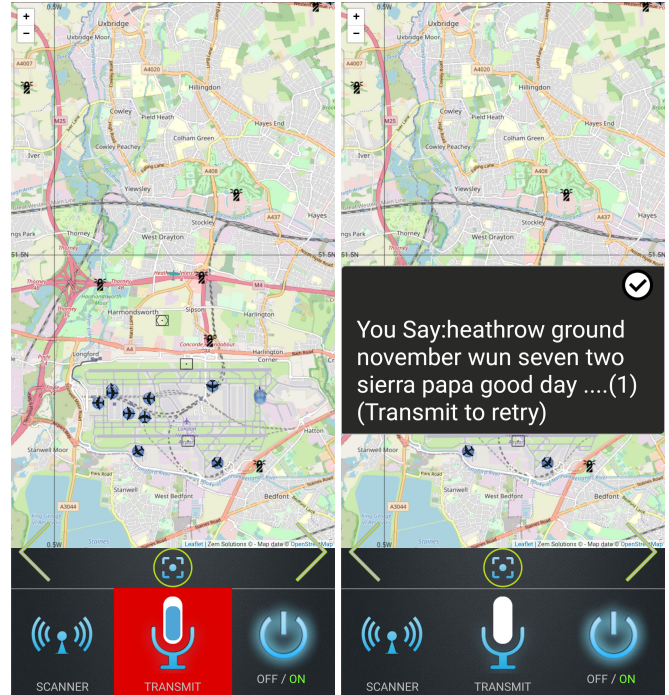
Making a transmission

To make a transmission, press and hold the transmit button and speak into the microphone. Your voice will be converted to text and sent to the current controller.

When you release the transmit button, your request will be converted to text and displayed for a short time, configurable in settings, before being sent. To correct the message before it is sent, press and transmit again before the timer expires.

Requests will not be received by a controller unless you have registered your call sign (see the next section), and are tuned to a radio receiver in range of your current position.

For best recognition accuracy and realism a headset with microphone should be used. Even those typically provided with mobile phones will greatly improve accuracy over a built in device microphone.



Registering your callsign

Since voice recognition (and indeed VHF communication) is not 100% perfect and clear all of the time AutoATC will remember the identity of your station from an initial “registration” call.

Callsigns are often abbreviated. **Abbreviating a callsign**

Type A, used by general aviation, where the callsign is the full aircraft registration.

Air Traffic control may decide to shorten this to *the first character plus at least the last two characters*.

Type B, used by agencies, which is the agency designator plus the last 4 characters of the aircraft registration.

The callsign for agency aircraft on **non** scheduled flights consists of the agency designator plus the last 4 characters of the aircraft registration.

These can be shortened by ATC in the same manner as Type A callsigns.

may only be initiated by air traffic control, and how they are abbreviated depends upon the callsign type.

There are three types of Aircraft callsigns.

G123AB - Golf Wun Too Tree Alpha Bravo

“Golf Wun Too Tree Alpha Bravo”

Becomes

“Golf Alpha Bravo”

An agency with a designator “speedbird” (British Airways) and an aircraft registration “GABCD” - Golf Alpha Bravo Charlie Delta:

“Speedbird Golf Alpha Bravo Charlie Delta”

Becomes

“Speedbird Charlie Delta”

Type C, used for scheduled flights, which is the agency designator plus the flight number.

Scheduled flights are issued a flight number.

These flights use the Agency Designator plus the flight number for their callsign, which are never abbreviated.

Scandinavian 9 3 7

“Scandinavian niner tree seven”

Radio check is used to confirm two way communications, and additionally register a callsign with the ATC controller

The following can be used to register and correct a callsign.

Request:

- [Agency] [callsign], request radio check

Request:

- [Agency] [callsign], good day

Readback:

- [Agency] correction my callsign is [callsign]

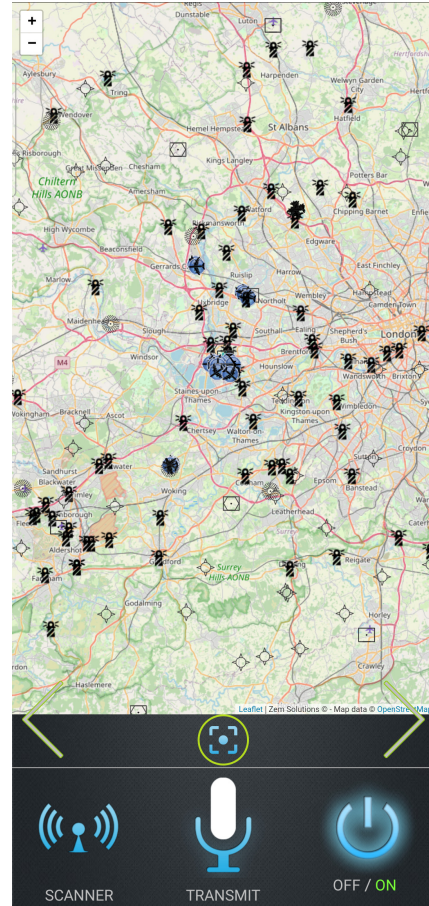
Moving Map View

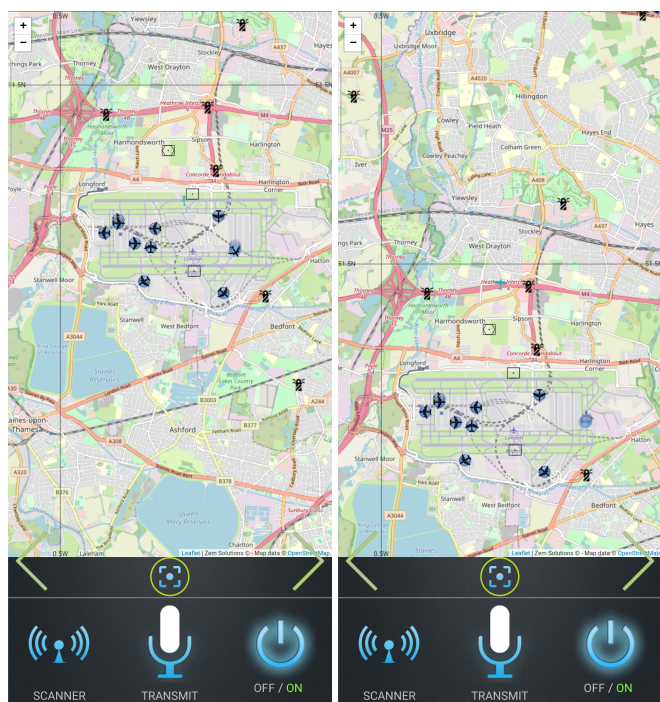
The arrows to the left and right of the page scroll through the sub pages of the application, these can also be reached by swiping left and right on the page.

The map page, to the right, centers on the current position, aircraft are shown with their current flightpath.

The circled point below the mini map can be used to:

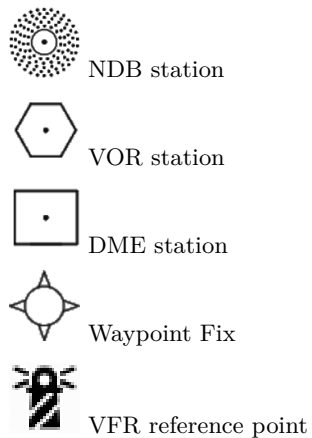
- *One press* Returns to the current aircraft position.
- *Two presses* Returns to the current aircraft position and zoom.
- *Three presses* Opens the **settings page**. (Enter a new ICAO code to jump to a new airport)





Move around by swiping and pinch zoom the map

Icons on the map can be selected to view further information such as their name and Frequency:



- *In standalone mode:*

The aircraft location will move to the center of the map after a few seconds, potentially changing the frequencies in range.

- *When connected to a full flight simulator:*

The aircraft position and map centers on the current position in the simulator (moving map functionality).

Application Settings

Applications settings can be reached by:

Selecting *settings* from the menu in the upper right of the home page.

or

Pressing the map center icon three times in quick succession.

- *ATC Voice Rates*: Changes the range of speech speed used by the text to speech conversion.

Left: Voices will tend to speak more slowly Right: Voices will speak more quickly

- *Radio Distortion*: Text to Speech conversion creates clear, easy to understand speech. This checkbox applies additional noise filters based on reception strength making received transmissions closer to what you would expect to hear over a VHF radio.
- *Offline Recognition*: Many new devices come with dedicated AI chips for voice recognition, these tend to be the fastest and most accurate way to convert text to speech. However not all devices include these chips, and online voice recognition is not supported in all regions. Try changing this checkbox if you experience severe voice recognition problems.

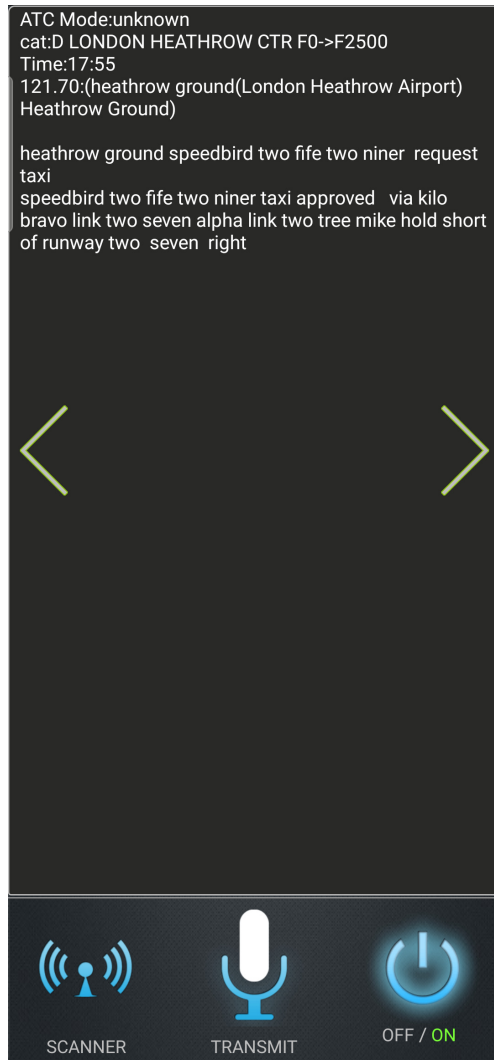


- *Use Sim Voice*: This option will send all audio to be played via a connected PC audio.
- *In Sim Voice Text*: During speech recognition by default the recognised text is displayed in a small box on a connected simulator, if this spoils your immersion - especially in VR this box can be unchecked to disable it.
- *Transmit Timer*: Specifies the length of the timer for retrying a transmission
- *ATC Voice*: The preferred voice to use for transmissions from ATC, from the list on voices installed on the device.

When not connected to X-Plane:

- *Select Airport*: Enter an airport ICAO code in here to jump to a new airport
- *Aircraft Type*: Change the current airframe (does affect phraseology, light slow aircraft are managed by ATC differently than large fast aircraft).
- *CLEAR MUSIC LIST*: Will stop AutoATC Radio looking for music.
- *SELECT MUSIC*: Will open a device specific folder chooser to specify where on the device to find music file, see the [Integrated Music Player](#)

Transcript view



The Transcript view provides quick access to a transcript of recently received and sent communications.

ATC Mode: When communicating with ATC; this is a quick helper that gives information about what the Air Traffic controller understands about your current intentions. Some common values are:

- unknown: ATC has no information about your flight
- waiting for info: Your **callsign is registered**, but ATC doesn't know your intentions.
- waiting for readback: ATC has given a clearance that requires a readback and is waiting for a response.
- takeoff: ATC expects you to take off.
- inflight/intransit: ATC is following your flight
- waiting (queue position): ATC has given hold instructions and you are in a queue for clearance.
- establishing: ATC expects you to be flying from your last position and joining a landing pattern.
- joining: ATC expects you to be established in a landing pattern
- landing: ATC is expecting you to land

cat: The airspace category you are currently occupying.

Time: (The current server time in UTC).

Active tuned frequency and description

The text following these is a log of all communications received in the last few minutes.

Integrations

Music Player

Some aviation headsets and aircraft include additional connectivity (e.g. Bluetooth) which provides pilots with the flexibility to customize their in-flight experience. They can choose to listen to music during non-critical phases of flight, make or receive phone calls, or use other connectivity-enabled features, enhancing comfort and convenience.

It's crucial for pilots to be aware of and follow the specific guidelines and regulations set by the aviation authority governing their flights. Listening to music while communicating with ATC may be more acceptable in certain general aviation or non-commercial flying scenarios, but it's important to check and follow the relevant rules and guidelines.

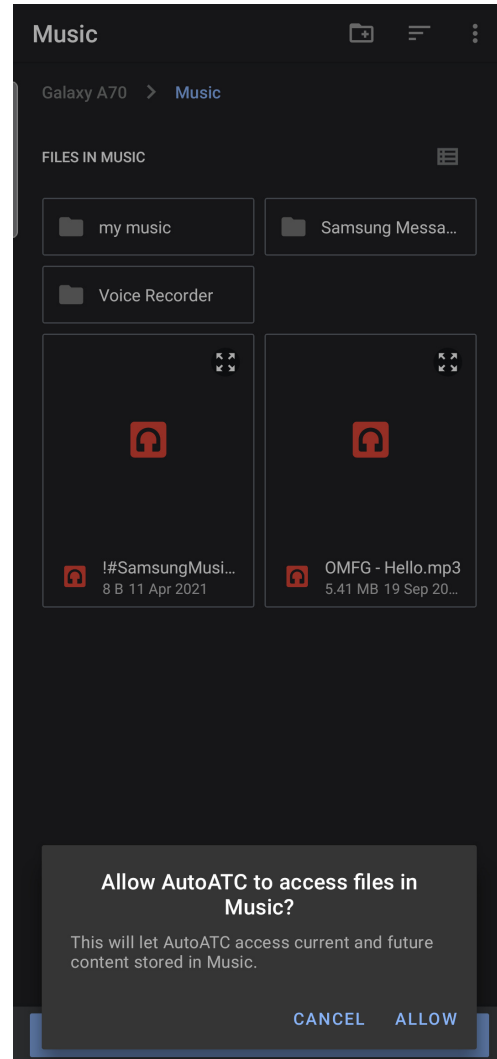
AutoATC offers the best of both, the integrated music player can be used to listen to music on your device, but that music will be paused when receiving VHF communications.

For this functionality AutoATC Radio needs to be given permission to read the music files on your device.

To give AutoATC permission to read the music files on your device:

Select the folder that contains the music you wish to listen to,

Press "Select this folder" -> "allow"



Voice commands

In addition to VHF radio communications, when connecting AutoATC Radio to the X-Plane flight simulator, AutoATC Radio provides voice control functionality and scripting for any X-Plane command or value.

Voice commands will function using either "transmit" or "intercom" X-Plane commands.

*Transmit: Upon recognising a voice command, the command will be actioned and the call will **not** be transmitted over the VHF.

*Intercom: Recognise and action a voice command, otherwise do nothing.

Using the intercom function is an effective way to ensure communications intended as voice commands are not accidentally transmitted over the radio.

General FAQ and Troubleshooting

FAQ

Q: What about performance?

A: Performance is optimized to give quality performance on high latency/low bandwidth networks, and takes advantage of the latest developer tools to provide smooth animations without impacting your framerate.

Q: Does the AI traffic know I exist?

A: Yes, but their response rate is intentionally slow. During taxi you need to be a good 20 seconds or more in front of them, and if you leave your aircraft on the runway they are very likely to crash into you when landing.

Q: What about airports with inadequate or missing data?

A: AutoATC draws the data it uses from multiple sources, generally this data is adequate for most purposes, however individual airports can be given extra attention if they are not, [contact us on discord](#).

Q: Can I set AI traffic?

A: AI traffic runs simultaneously for all users. What they see you see. AutoATC Radio includes the capability to “order” AI traffic by filing an AI flight plan.

Q: What traffic can I see?

A: Air traffic is simulated through all phases of flight in “real time”. From start up, taxi, take off, flying to their destination, joining, landing taxiing

Q: Can I really talk to the ATC controller?

A: Yes, future versions of the addon are expected to include a menu based request system through a [Log window tab](#), for now, ACARS aircraft integration is well underway (see the [Sparky744](#)) firmware.

[AutoATC Radio](#), available separately provides a full VHF simulator.

Q: What operating systems does AutoATC support?

A: Windows, Linux and MacOS (x86 and Apple silicon)

to gate and disembarking passengers. Military traffic and “real world” flights have also been tested, and are expected to be generally available in the future.

Q: Can I make the communications easier to understand?

A: Yes, in addition to the transcript capabilities visible in the [Log window](#). You can remove the noise filter from the Text to Speech by changing the voice setting in

Resources/plugins/AutoATC/voicesettings.txt

Optionally, Connecting AutoATC Radio offers a much wider variety of voices with control of the speed of speech, the distortion effects and whether the audio is played via the PC sound system or Android device.

Missing aircraft

- **Missing aircraft or the same aircraft everywhere**

AutoATC supports multiple model formats for AI aircraft, which give the aircraft their liveries and aircraft type. Each AI aircraft has its own callsign, ICAO airframe and livery.

Models to support these are available from [multiple sources](#) that should be installed in addition to the simulator addon. When the addon is first installed, the default aircraft for AI planes is likely to be a 747 (or maybe a deer) and all AI aircraft will use this regardless of how they should appear. Review the setup section for links to install additional airframe support. Liveries are matched to callsigns, (e.g. speedbird for British Airways) and airframe types and routes for the AI aircraft are generally based on filed real world flightplans.

- **Plugin fails to start on windows**

The windows JVM has a dependency on

`C:\windows\system32\msvcr100.dll`

Sometimes windows (particularly new machines, or ones without MS office) do not have this installed, ensure you have run both executable files included with the windows version of the plugin.

- **No traffic visible**

You can use the [X-Plane map](#) to see the expected positions of the AI traffic, if these are visible but the models are not, it may be that the aircraft models are not installed. The addon attempts to create reasonable defaults when a model is not available (such as using the first jet found for a given airline, if a model for the specific jet is not installed)

AutoATC AI traffic is an online service, the status of this service can be checked at the following link:

[AutoATC Status](#)

A server reset/upgrade may result in traffic disappearing.

My requests aren't recognised

The most common cause of a request not producing the expected result is poor voice recognition. Auto correction is provided to work around this issue, the first thing to check is that the text that was transmitted matches what was expected, and complete as required any auto corrections.

_For example: "runway" being recognised as "run away" can result in failed readbacks.

AutoATC tries to strike a fair balance between strict readback and request matching, verses being less sensitive to recognising "sounds like" language. Default auto corrections must be recognised correctly for a correct reponse.

Despite claims of "standard phraseology", there is significant variation in the real world between regions and airports of used procedures. It is possible that what is expected to be a standard procedure phraseology is not currently supported by AutoATC. As a general guide, if you hear an AI plane say something, you can say it to, either exactly or with some variation.

In the case of identifying an important procedure missing or

not working correctly, please raise it as an issue with support.

You can also refer to the ground school and phrase book for the format of the requests. The only part of radio procedure which is strictly enforced is that to progress from one flight state to the next, you must correctly make the required read backs. Additionally, when on the runway and ready to take off, the only command accepted by AutoATC is "ready for departure" At no point should you use the words "take off" unless reading back take off instructions. If you hear the words "report airborne" This means you have been given permission to depart and take off at your own discretion. You should call tower with "airborne" once you are in the air.

Cancelling/changing a transmission

If you wish to retry voice recognition, press transmit again before the timer expires. The time between recognition completing and the message being acted upon can be changed in settings in the top right menu of the phone application under "transmit timer". Occasionally it has been noted that repeating the same sentence twice in a row results in recognition failing to complete. To work around this retry with a different message first (for example "testing").

AutoATC Radio to AutoATC Traffic Simulator connection problems

There are two ways the X-Plane plugin can establish a connection to your AutoATC Radio.

The default is what is called a “broadcast packet”, here the PC shouts over the network “I’m here and want a radio”, when AutoATC Radio receives this message and replies with “connect to me here”.

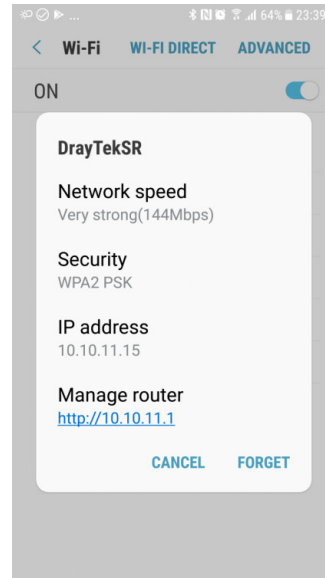
Some routers prevent these messages reaching the device running AutoATC radio.

The alternate method when this happens is to specify the IP address of device running AutoATC Radio.

To do this, retrieve the IP address of the device from its network settings, and enter this address in the AutoATC Traffic Simulator configuration window (Plugins → AutoATC → Settings).

If the Simulator only partially connects to the android device, you should check your PC firewall settings to ensure that the android application can connect to the PC, in windows this can usually be achieved by resetting the firewall to default.

The IP address here is “10.10.11.15”

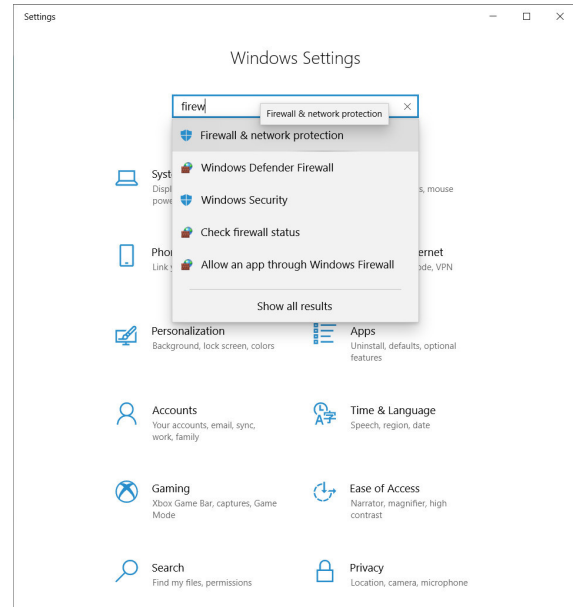


Enter this value into “Android IP”, or use “any” for automated search.

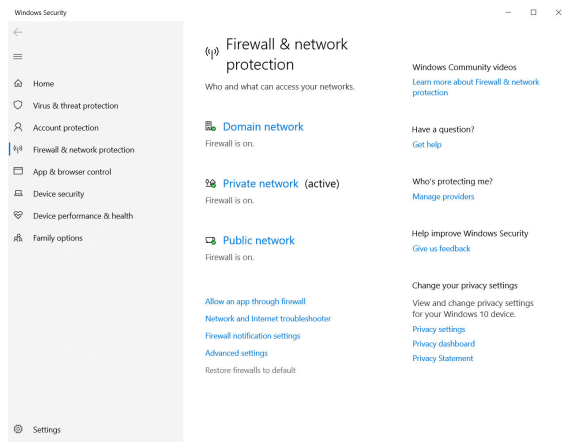


If you are still experiencing connection issues and the have confirmed the AutoATC network service is online, Windows firewall may be preventing the addon from connecting over the network.

In order to reset the permissions and allow applications to talk to each other, open windows settings, search for firewall and select “firewall & network protection.

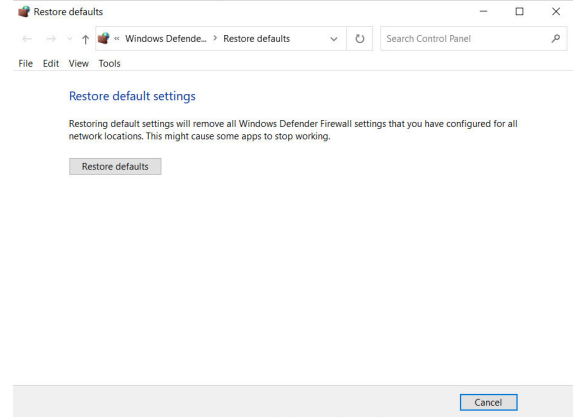


1. In the firewall & network protection window:

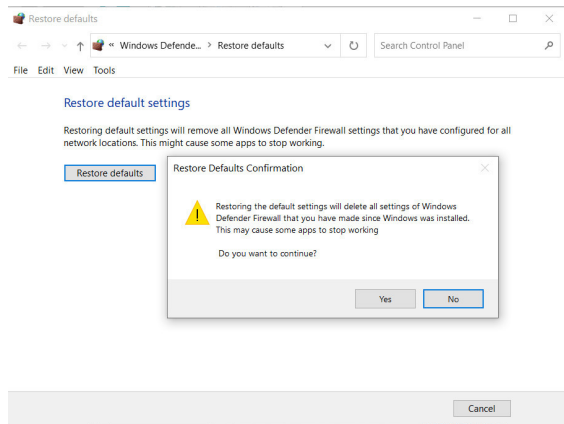


2. Select “Restore firewalls to default”

3. Press the “Restore defaults” button



4. Press Yes to continue.



5. After the firewall has been reset, a dialogue will appear whenever a program is opened for the first time that uses the network, press “allow”.

AutoATC Phrasebook

This is a quick reference phrasebook for use with air traffic communications.

This phrasebook is intended as a quick reference aid for pilots.

1. Placeholders

In the following chapters, “[]” represents a placeholder, which is to be replaced with the agency name or callsign or frequency, etc. used in the current session.

[agency]: The agency that is communicated with, e.g. “Heathrow Tower” or “Frankfurt Approach”

[altitude]: The cleared or current altitude, measured in feet e.g. “5000” or flight level e.g. “level 350”

[callsign]: Your callsign, e.g. “G-COOL” or “Condor EDC” or “Speedbird 74” ATC may reply with a shortened callsign (see AutoATC ground school)

[clearance]: A procedural clearance to a destination when approaching/departing an airport

[fix]: Departure or arrival fix that is to be crossed before clearance for the next fix or flight phase. Can be a navigation aid or VFR reporting point

[heading]: A magnetic heading to fly while being vectored by ATC in IFR

[QNH]: QNH, as expressed in hectopascals, e.g. “1006”. US and Canada uses inches mercury, e.g. “29.82”

[runway]: The runway designator, e.g. “28L”, “05”

[squawk]: Transponder code, e.g. “2168”

[taxiways]: A list of taxiways, e.g. “Y R M F1”

[time]: Expresses minutes after the hour, or 4 digit 24 hour time UTC if more than 1 hour in the future

[weatherinfo]: *If the airport has ATIS*, this is the current weather information, e.g. “with november”

2. Communications

Communications are presented in this form:

Note: Further information about a request, such as required conditions are mentioned in a note below the respective heading.

2.1 General

2.1.1 Radio check Radio check is used to confirm two way communications, and additionally register a callsign with the ATC controller

2.1.2 Registering a callsign Good day and Radio check can be used to register a callsign.

Request:

The request that invokes a reply by ATC. Variations of a request are indicated with an asterisk

Readback:

If a request lists one or more readbacks, ATC replies will have to be read back. The correct readback depends on the content of the reply by ATC.

Request:

- [Agency] [callsign], request radio check

Request:

- [Agency] [callsign], good day

Request:

- [Agency] [callsign], with you

Readback:

- [Agency] correction my callsign is [callsign]

2.2 Start-up

2.2.1 Requesting start-up with pushback

Note: Requesting pushback from a gate can be done in one go with this request or separately (see below)

2.2.2 Requesting start-up

Note: When requiring pushback, request it in a separate call or request startup using the call above

2.2.3 Requesting pushback

Note: Startup should be requested before (see above)

Request:

- [Agency], [callsign], request push and start [weatherinfo].

Readback:

- Push back and startup approved, altimeter [QNH], [callsign].
- Push back and startup approved, QNH [QNH], [callsign].
- Push back and startup approved, altimeter [QNH], [weatherinfo], [callsign].
- Push back and startup approved, QNH [QNH], [weatherinfo], [callsign].

Request:

- [Agency] [callsign], request start up [weatherinfo].

Readback:

- Startup approved, altimeter [QNH], [callsign].
- Startup approved, QNH [QNH], [callsign].
- Startup approved, altimeter [QNH], [weatherinfo], [callsign].
- Startup approved, QNH [QNH], [weatherinfo], [callsign].
- Startup approved, altimeter [QNH], [weatherinfo], squawk [squawk], [callsign].
- Startup approved, QNH [QNH], [weatherinfo], squawk [squawk], [callsign].
- Startup approved, altimeter [QNH], squawk [squawk], [callsign].
- Startup approved, QNH [QNH], squawk [squawk], [callsign].
- Startup approved, altimeter [QNH], squawk [squawk], [callsign].
- Startup approved, QNH [QNH], squawk [squawk], [callsign].

Request:

- [Agency] [callsign], request push back.

Readback:

- Push back approved, [callsign].

2.3 Taxi

2.3.1 Requesting taxi clearance

Note: Applies to taxiing from parking/gate to the runway or from the runway to the gate/parking

Request:

- [Agency] [callsign], requesting taxi.
- [Agency] [callsign], request taxi.
- [Agency] [callsign], ready to taxi.

Readback:

- Holding position, [callsign].
 - Taxi approved, via [taxiways], [callsign].
 - Taxi approved, via [taxiways], runway [runway], [callsign].
-

2.4 Departure/Line-Up

2.4.1 Requesting departure **Note:** Subject to change; to be used to issue IFR (SID) clearance

Request:

- [Agency] [callsign], request departure.
- [Agency] [callsign], requesting departure.

Readback: Cleared [clearance], line up runway [runway], [callsign].

2.4.2 Requesting runway lineup

Import Note: Entering any runway area in a controlled airport requires ATC clearance

Request:

- [Agency] [callsign], holding short of runway [runway].

Readback:

- Holding position, [callsign],
 - Cleared [clearance], line up runway [runway], [callsign].
-

2.5 Take-off

2.5.1 Requesting takeoff

Note: Departure clearance does *not* mean take-off clearance.

Request: * [Agency], [callsign], ready for departure.

Readback: * Holding position, [callsign]. * Cleared for takeoff, runway [runway], wilco [callsign].

2.6 Navigation

2.6.1 Reporting waypoint arrival time

VFR or IFR flight rules

An important aspect of maintaining a clear, common understanding of intentions between ATC and an aircraft is communicating expected time of arrival at the next destination.

2.6.2 Reporting the current position

Reporting of position and altitude is used by air traffic to locate an aircraft calling.

2.6.3 Reporting the next position

Note: This informs ATC of the next, precise location. When making an unplanned flight, this will invoke frequency changes to stay in contact once you go out of the agency's radio range.

2.6.4 Requesting vectors to a fix

Note: Useful when getting lost. ATC replies with distance and heading from your current position to the desired fix.

2.6.5 Requesting a direct-to

Note: Only when flying a filed IFR flight plan. Makes the requested fix the next destination and updates the flightplan automatically.

Request:

- [Agency], [callsign], estimate [fix] at [time].

Readback:

- Wilco, [callsign].
- Fly [heading], proceed direct to [fix] after [fix], [callsign].
- Altimeter [QNH], [callsign].
- Q N H [QNH], [callsign].

Request:

- [Agency], [callsign], position [fix] altitude [altitude].

Request:

- [Agency], [callsign], next [fix].
- [Agency], [callsign], next [fix], point at [time].
- [Agency], [callsign], next [fix] at [time].

Readback:

Wilco, [callsign].

Request:

*[Agency], [callsign], request vectors to [fix].

Request:

*[Agency], [callsign], request direct to [fix].

2.7 Approach/Landing

2.7.1 Requesting approach and landing

Approach patterns can be left or right handed.

2.7.2 Reporting established (approach/pattern)

As soon as an aircraft is on a landing pattern it should report its position and intentions

2.7.3 Reporting final

Import Note: Before commencing landing procedures, permission is required to land.

Request:

- [Agency], [callsign], estimate [fix] at [time], request join, [weatherinfo].

Readback:

- Holding at [fix], [callsign].
- Altitude [altitude], hold at [fix], expecting runway [runway], [callsign].
- Cleared for approach, runway [runway], fly [heading], [callsign].
- Cleared for approach, runway [runway], wilco [callsign].

Request:

- [Agency], [callsign], established, runway in sight.
- [Agency], [callsign], downwind.
- [Agency], [callsign], aerodrome in sight.

Readback:

- Cleared to approach, runway [runway], report final, [callsign].
- Fly heading [heading], wilco, [callsign].
- Wilco, [callsign].

Request:

- [Agency], [callsign], outer marker.
- [Agency], [callsign], final.
- [Agency], [callsign], short final.

Readback:

- Go around, [callsign].
- Cleared to land, runway [runway], [callsign].