ATCsynth version 2.01 beta
Document updated on February, 10, 2007

What's new !

Some bugs corrected and phraseology optimized. No more 'trace log' due to slow performance.
A new command (**ALT-D**)allow you to go around while on final. Pilot then must report downwind leg and try a new landing. You can go around only if you have already report on final.

Automatic installation

Nearly similar to the version 1.3, except there is no more specific dll for French language.

1. In the directory ..\modules, copy the files:
   - ATCsynth.INI
   - listsbx.txt (list of used SB files)

2. In the directory..\modules\pc, copy or replace the files:
   - ATCsynt.dll
   - **atcENG.dll**
   If you had a previous ATCsynt installation, remove the file ATCFR.dll from this directory. It is no more used.

3. In the directory..\taxiways, copy the files:
   - ATCways.txt
   This last file, you can change with VolNav, includes departure and arrival routes.
   Currently, only 3D ROTW aerodromes with at least 1 ATC frequency are defined.

4. If it is the first time you install ATCsynth, run the program spchapi.exe which will install the voice synthesizer, then run lhttseng.exe for the English language.

5. This file and other in ..\Fly!II\howto\ATCSynth

Manual installation

You will find these files in ..\Fly! II\ATCsynth_temp and SquawkBox at http://fly.simvol.org/

1. For IFR, 1 dex file for the en route controls: COMM_CENTER.dex. Also the dex file: RUNWAY-modifs-ILS.dex to modify the number of some parallel runways.

2. Install the POTW (Squawkbox) if you want to use virtual planes.
   NOTE: Please read carefully the remark on page 1 of Squawkbox installation.

Fly! settings

- Imperatively disable the Fly!II virtual planes in the appropriate menu.
- Decrease the Fly!II sound level in order to not bother the voices comprehension.

Use

This software is going to allow you to possibly discover the procedures in force in the air control real world.
It is recommended to those who do not know them to learn with tools available on Fly.Simvol or on numerous real aviation sites.

With ATCsynth, the method is to approach the reality as much Fly ! II allows it, in other words to simulate the air control.

Use is nearly similar to the previous version. But …

The VFR flight was profoundly modified and is at perfecting step. The IFR flight, modified too, is still at final development step. There are still some procedures to be set up in order to optimize this simulation.

Latest news - after every flight you will find in the directory ..\modules a file of this type: Trace_20060123_1527.csv. You can read it with the latest version of VolNav 1.50 available on Fly.Simvol. You will see the track of your flight that you may compare with your flight plan! Of course, it is necessary to activate ATCsynth as indicated below.

Here are the main elements:

VFR

- On a controlled aerodrome, at departure, in transit or arrival, the control follows the flight plan, if it exists, and takes into account the exit/arrival/transit points.
- If you arrive/transit in a TMA, contact the approach control. In the arrival, the approach control will transfer you to the tower conrol for landing.
- In transit, and if you do not have flight plan, the controller will ask you passing abeam or vertical: it takes into account the distance beetwen your route and the airport.
- In transit with flight plan, it will take into account the existing points between the airport and your position. When leaving airport, only waypoints within ten miles should be taken in account. If after such a transit, you need to contact a close airport, ATCsynth cannot know which one belong to which airport, so you need to leave frequency using **ALT-X** when overflying waypoint instead of inform control passing over with **ALT-C**.
- If you are lost during an arrival or a transit, **ALT-G** allows you to ask for a QDM.
- If, during a control operation, you unexpectedly change the frequency and thus display a bad one, the program looks if there is a corresponding control agency in the area. If it finds it, the controller asks you to modify the frequency. Otherwise radio silence of course. In the reality, nobody will come to say to you that you made a mistake about frequency.
- In planes equipped with the audio panel, I modified the button Com1 / Com2 answer way.

Fly! not allowing to use the microphone selection for the transmitting, I used the following subterfuge:

  - click on Com2 and COMM2 is in service, and only frequencies displayed on COMM2 will be taken into account.
  - click on com1 and return on COMM1. Thus you can predisplay/display four different frequencies.

  ALT-F takes into account this choice on COMM1 or COMM2. AND the previous remark applies as well on!
- To select an aerodrome in the arrival during a flight without flight plan, display, on COMM1 or COMM2, the frequency to be contacted, and then **ALT-C**.
  Like in the reality the closest airfield equipped with this frequency will answer. Idem for the transit.
  In the case auto-information (123.500 generally but verify for every airfield, there are other ones), the closest aerodrome is taken into account.

- In the arrival on a controlled airfield, the controller will ask you to take the most direct route and, according to your position, to join a long final, the basic stage or either downwind leg.
- ATIS : improvement : if you are on ground range is only 20 NM, else 100 NM in flight for more realism.There is no more delay when you select frequency and the beginning of the ATIS message. However, you have to select this frequency on stand-by and the to change to active, else ATCsynth don't detect the change.
- ALT-0 :Traffic pattern mode. Alternatively change mode to traffic pattern or not.
  You need to select this mode just after **ALT+F11** if you want to have all correct messages.
  On ground you need to activate this mode at least before holding point.
  Next message will be 'downwind leg'.
  In flight, you need to activate/deactivate this mode at least before 'final' message.
- On airport with approach frequency (and so supposed equiped with radar !), controller will give you squawk.

Virtual planes

Before using virtual aircraft you have to place ATCways.txt file in ..\taxiways directory. In this file you'll find some path for some French airports (just read ROTW_AIRPORT.pdf in ..\howto\ATCsynth directory to found it.
VolNav version 1.5 will allow you to draw path for any airport : it just take about 5 minutes !

Fly!II allows, in the menu 'Scenery' to create controlled virtual planes (maximum 20) which often crash with your aircraft when starting Fly! II.
This new version of ATCsynth allow you to have many virtual aircraft with different activities : starting for traffic pattern or a local flight, arrival from other airport. It's only at that time VFR traffic : IFR soon for heavy aircraft.
So you can only use 'light' aircraft at that time (SkyHawk, PA28, Seneca, etc).

However if you are using IFR flight plan, you can activate virtual aircrafts.
Please note that all these aircraft are controlled and you can hear the controler if you are on the right frequency !

Please remember this is a beta version and if you have some troubel send me an email wiyh the log file found in ..\modules directory.

Attention : you need to install SquawkBox as ATCsynth use SBX aircrafts ! Then you need to activate ATCsynt with **ALT+F11** or **ALT+ F12** before to use them.

Note
- At that time you have to activate manually these virtual aircrafts.
- Before activate an aircraft, please verify there are paths for this airport. Please read ROTW_AIRPORT.pdf file.

Three keys possibilty :
- **ALT+1** : select a parking area if there is one free, then aircraft will take off for a traffic pattern and come back to parking is there is one free. Else aircraft go around and leave airport. Then aircraft will disapear when at a few minutes from airport.
- **ALT+2** : select a parking area if there is one free, then aircraft will take off and leave airport. Then aircraft will disapear when at a few minutes from airport.
- **ALT+3** : aircraft is coming from outside, contact airport and do a traffic pattern. If any free parking when landing, aircraft wil taxi and stop. Else aircraft go around and leave airport. Then aircraft will disapear when at a few minutes from airport.

Virtual aircrafts use same capabilites than your aircraft :
- they change frequency as needed : ground, tower, approach, etc.

- they will stop at holding point waiting a clearnce to take off is there is any traffic in the pattern. Align and wait on the runway while another aircraft finish to land (maybe you !) and many other realistic situation.

Don' forget than you need to select appropriate frequency to hear virtual pilot speaking ! So if you are with ground you cannot hear traffic wit tower or approach. You can only follow the with vector map or change vehicle with 'V' key.

How may virtual aircraft can I activate? No theorical limits, may be computer limits, but if you want to take off don't activate ten aircrafts coming from outside!
Sometimes messages may be not synchronize with aircraft position! It's a hard work to do that !
In the real life, sometimes, due to heavy traffic, pilot can't send all accurate messages.
Once stop on a parking area, virtual aircraft will disappear in a few minutes allowing other aircraft to land or take-off.

Virtual aircraft should avoid collision (no crash if they don't: they only run through !) but in certain circumstances program failed to avoid it !

IFR

- Controler realy need squawk and will ask you to select right code and alticoder mode.
- Below 10,000', speed is controlled at 250 kts IAS. In case of excess, the controller calls you.
- While 'en route', controler (approach or center) controler will send you instruction to correct your heading if you are more than 5 NM from main axis.
- Radar vector in arrival, with approach controller only : **ALT-V**. Controler will give you vector (heading) too join ILS final (maybe if in some case there are no ILS: further developpement should be more appropriate)
- For France only, I create a special EX file called COMM_CENTER.dex. It contain 'en route' frequency for Center. So center controler change from time to time. You can complete it for your own country : just add center frequency and a location (have a look with VolEdit to the contains of the dex).

In case of problem send me the log file you will find in the directory ..\modules, otherwise delete it systematically. It is like ATC_20060123_1527.log.

I hope that I did not forget anything as there are such possibilities!
Enjoy !

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Table of the used keys you will find also in a PDF file:

ALT-F11	VFR flight: with or without flight plan
ALT-F12	IFR flight: mandatory flight plan
ALT-1	Virtual plane creation: it leaves from the end of the runway in use, does a runway circuit, touches down and disappears
ALT-2	Virtual plane creation: it leaves from the end of the runway in use, does a runway circuit, touches down and disappears
ALT-3	Virtual plane creation: it leaves from the end of the runway in use, does a runway circuit, touches down and disappears

ALT-F	Automatic frequency setting on COMM1 (non-active frequency)
ALT-C	Contact the controlling agency (equivalent to mike press-to-talk bar)
ALT-R	Ask the controller to repeat the last message
ALT-O	« Flip-flop » key for the runway circuit mode
ALT-S	Transit request over an aerodrome The controlling agency frequency must be displayed first (tower or approach)
ALT-L	Landing request on an aerodrome The controlling agency frequency must be displayed first (tower or approach)
ALT-X	Request for leaving the frequency after a takeoff or a transit. Optional. To use when there are numerous successive waypoints: the program cannot distinguish the route waypoints from the progression ones
ALT-V	Request for a radar vector: IFR only, with the arrival approach control
ALT-G	QDM request Can be made only if a contact is already in progress (tower or approach)