

14 Configuring AvnFPS for a Simulation

In Section 5.7 we started with pre-packaged AvnFPS data. In Section 14 you will learn how to configure AvnFPS and your case for a simulation.

For the following examples, we will step through configuring AvnFPS and the WES test case to work with downloaded OUN data. This example uses TAF data from 2000 to 2100 on 2007Mar21 for the Oklahoma City airport (KOKC). To become familiar with the process we recommend downloading the OUN data as outlined below. When you create AvnFPS data for your own archived case, you will need to apply these steps to your case.

14.1 Download TAFs

To begin a simulation with archived TAFs, this section will show you how to obtain historical TAFs from the National Climatic Data Center (NCDC) for ingest into AvnFPS during a simulation. You may use other sources for historical TAFs, provided the format is the version AvnFPS uses.

1. Go to the following website: <http://has.ncdc.noaa.gov/>
2. Click “**SRRS Text**” in the Surface & Marine category
3. Request your desired TAFs using the interface to select the time, type and location. Here is the OUN input for this example:

- Station: **KOKC – OKLAHOMA CITY(AWOS) , OK**
- Bulletin Id: **FTUS - Terminal Aerodrome Forecast**
- Start Date/Time: **2006082412**
- End Date/Time: **2006082420**
- Email Address: Enter your own e-mail address

Click the “**Continue with Selections**” button

4. You should receive a message in your web browser saying your selection has been submitted for processing. At some point you will receive an e-mail with “**Your SRRS Request.....**” in the subject. This message will contain a link to a webpage with all available TAFs from the requested time frame. Open this webpage in a web browser.

The example request in step 3 above should return three identical TAFs, issued at 1739Z and valid between 18Z on August 24 to 18Z August 25. Copy **one** of the TAFs (not all three!) from the website into a text file with a name of the form **CCCTAFXXX** where **CCC** is the AFOS node site and **XXX** is the TAF site identifier. **The file name must have exactly nine characters with no extension!**

e.g. Make a file named **OUNTAFOKC** and copy / paste one TAF into this file

Note: The line before the TAF ID (e.g. **KOKC 241739...**) must contain a valid WMO header or AWIPS PIL like **"FTUS31..."** or **"TAFOKC"**. Otherwise the AvnFPS initialization will fail, and the AvnFPS GUI will fail to start.

5. Copy the TAF over to your WES machine.

e.g. `cp /media/cdrecorder/OUNTAFOKC /awips/fixa/WEScustomization`

6. In the `<data_case>/avnfps/archived_TAFs` directory, create a new directory where the downloaded TAF is to be stored.

e.g. `mkdir <data_case>/avnfps/archived_TAFs/test`

Note: This directory will eventually be selected from the run simulation entry window when running a simulation.

7. Copy the TAF created in step 4 into this directory

e.g. `cp /awips/fixa/WEScustomization/OUNTAFOKC
<data_case>/avnfps/archived_TAFs/test`

14.2 Configure /awips/adapt/avnfps/etc/ids.cfg

The file `ids.cfg` should contain the list of TAF sites for your current simulation. With the release of WES 8.3 update 1, this file is now located in your data case and automatically soft linked from `/awips/adapt/avnfps/etc` by WES.

1. If it doesn't already exist, create the `drt/avnfps` subdirectory within your case.

e.g. `mkdir <data_case>/drt/avnfps`

2. If you are using your own case (not the OUN example), then copy the `/awips/adapt/avnfps/etc/ids.cfg` file from your real-time AWIPS into the `<data_case>/drt/avnfps` directory:

e.g. `cp /media/cdrecorder/ids.cfg <data_case>/drt/avnfps/`

3. Identify the TAF sites for which we will copy in climate data in Section 14.4 (the climate files are listed in the `ids.cfg` file):

e.g. `cd /awips/adapt/avnfps/etc/`

e.g. `more ids.cfg`

14.3 Modify .cfg files in /awips/adapt/avnfps/etc/tafs

There are several files and subdirectories in the `/awips/adapt/avnfps/etc/tafs` directory that configure AvnFPS for your WFO. Steps 1-3 below detail how to copy the files from a local machine. For the OUN example, then we have provided the files.

1. For your own case (not the OUN example), copy the AvnFPS config file(s) in `/awips/adapt/avnfps/etc/tafs` from your real-time AWIPS into the `/awips/fxa/WEScustomization` directory for temporary storage. This file just lists the TAF sites (see `/awips/adapt/avnfps/etc/tafs/Norman.cfg` for an example):

e.g. `cp /media/cdrecorder/Norman.cfg
/awips/fxa/WEScustomization`

2. For your own case (not the OUN example), also copy the TAF site subdirectories in `/awips/adapt/avnfps/etc/tafs` from your real-time AWIPS into the `/awips/fxa/WEScustomization` directory for temporary storage. These directories (e.g. `KOKC` for the KOKC TAF site) have `*.template` files and an `info.cfg` file inside (see `/awips/adapt/avnfps/etc/tafs/KOKC` for an example).

e.g. `cp -R /media/cdrecorder/KOKC /awips/fxa/WEScustomization`

Note: Make sure the directories are still in upper case. Using a USB device to move files can sometimes result in lower case path and file names, and this will cause errors since Linux is case sensitive. If this happens you will need to rename them:

e.g. `mv /awips/fxa/WEScustomization/kokc
/awips/fxa/WEScustomization/KOKC`

3. For your own case (not the OUN example), copy the AvnFPS config file from the `/awips/fixa/WEScustomization` directory (from step 1 above) to the `/awips/adapt/avnfps/etc/tafs` directory.

```
e.g. cp /awips/fixa/WEScustomization/Norman.cfg
/awips/adapt/avnfps/etc/tafs
```

4. For the OUN example, view the AvnFPS config file in `/awips/adapt/avnfps/etc/tafs/Norman.cfg` that will be used by AvnFPS. The file should have a list of TAF sites.

```
e.g. more Norman.cfg
```

5. Create a text file `<data_case>/drt/avnfps/DEFAULT` containing the filename of the AvnFPS config file without the “.cfg” extension.

```
e.g. Create <data_case>/drt/avnfps/DEFAULT in a text editor, type Norman,
and save the file.
```

6. Make sure a subdirectory exists for each TAF site (e.g. KOKC) specified in the `<data_case>/drt/avnfps/ids.cfg` file (see step 3 of Section 14.2).

```
e.g. cp -Rp /awips/fixa/WEScustomization/KOKC
/awips/adapt/avnfps/etc/tafs.
```

Also make sure each such subdirectory contains the following files:

- 00.template
- 06.template
- 12.template
- 18.template
- info.cfg

There should also be an “XXXX” subdirectory in addition to the sites listed in the `ids.cfg` file.

Note: Be selective and careful about copying over any other AvnFPS files from your local AWIPS. You should be able to copy any forecaster specific display customizations in the `/awips/adapt/avnfps/etc/app-resources` directory with no problems. **Do not** overwrite or replace the WES versions of the `server.cfg` and `localhostinit.cfg` files.

14.4 Insert Climate Data into AvnFPS

In this section we will copy the climate data for the case into AvnFPS. For the OUN example, we have provided these files for you. For a local case, you can download the climate files from your local AWIPS. If you do not have access to the climate files you need, you may download the files from the MDL website as illustrated below.

1. For your own case (not the OUN example), copy the `/awips/adapt/avnfps/data/climate` directory from your real-time AWIPS to the WES as user `fxa`.

e.g. as user `fxa`, `cp /media/cdrecorder/climate/* /awips/adapt/avnfps/data/climate`

2. If you are following the OUN example, then view the contents of the climate directory. There will be netCDF files for each TAF site.

e.g. `cd /awips/adapt/avnfps/data/climate`

e.g. `ls`

3. If you do not have access to climate files, obtain them from a WFO, or follow step 4 below. Otherwise skip step 4.
4. Download the HDF5 climate files for each TAF station name in `ids.cfg`
 - Go to the following website: <http://www.mdl.nws.noaa.gov/~avnfps/data/hdf5/>
 - Click on the TAF station name and save the `kxxx.hd5` file to `/awips/adapt/avnfps/data/climate`
 - Repeat for every TAF station in `ids.cfg`

Note: Make sure that the station id in each file name is in upper-case. For instance you want `KOUN.hd5` not `koun.hd5`. If any of your filenames are lower-case, rename them before continuing. Also be sure all extensions are lower-case:

e.g. `mv koun.hd5 KOUN.hdf`

14.5 Prepare the case to run a simulation

1. Once your AvnFPS configuration files are in place (Section 14.3) you need to **Convert case to DRT format** using the WES **Tools** button. If your case is already

in DRT format prior to WES8.3, you need to restore to original format, then re-convert to DRT format. In the conversion to DRT format, all files with a “.cfg” extension in /awips/adapt/avnfps/etc/tafs will be used to generate METAR text files for the TAF sites from the hourly netCDF files.

e.g. in `start_simulator` run “**Convert to DRT Format**” under the “**Tools**” button

2. After the case has been converted to DRT format, run a simulation to test the TAFs and the data. When configuring the simulation, you need to select the “**TAFs Directory**” to be the directory name containing the TAFs you created in Section 14.1. Make sure to set your start time after the time of the TAFs created in Section 14.1.

e.g. for the OUN example, load the **WES83_AvnFPS_test_case_ABR** macro

e.g. select “**test**” for the “**TAFs Directory**”, and click “**OK**”

3. After the simulation has started, run “`start_avnfps`” to check the TAFs and METAR data in AvnFPS as in Section 5.7.

e.g. “`start_avnfps`”

4. If your data looks good, you are free to set a new start time. Make sure the issuance time of your TAFs in the `<data_case>/avnfps/archived_TAFs` directory is consistent with your simulation start time (i.e. don't make future TAFs visible by setting your start time before your TAF's valid times).
5. To set up a new simulation in another case from the same CWA (i.e. the same AvnFPS configuration), you only need to do Section 14.1 and Section 14.5.
6. To switch between running already-prepared simulations on cases with different AvnFPS customizations, modify the following appropriate files:

- `<data_case>/drt/avnfps/ids.cfg`
- `<data_case>/drt/avnfps/DEFAULT`
- `/awips/adapt/avnfps/etc/tafs/*.cfg`