



What's New in ADMS-Urban 3.1.2?

27th September 2011

ADMS-Urban 3.1.2 is the latest general release of CERC's state of the art model for the dispersion of pollutants in urban areas. ADMS-Urban 3.1 contains a number of new features and model improvements, for instance:

- the ability to model emissions and calculate output in odour units (ou_E)
- the ability to specify any file path for the hourly emissions (*.hfc*) file, the intelligent grid points (*.igp*) file and the noise barrier (*.nbr*) file
- a road can now be modelled as both a street canyon and a road with noise barriers
- the ArcGIS link is now supported for use with ArcGIS 10 and on 64-bit Windows 7
- the MapInfo link is now supported for use with MapInfo 10.5 on 64-bit Windows 7
- improvements to the calculation of stable flows over complex terrain

This document contains details of the new features, scientific improvements and model corrections implemented since the previous version of ADMS-Urban (version 3.0, December 2010). Also contained in this document are instructions for installing ADMS-Urban 3.1 and upgrading from previous model versions.

IMPORTANT NOTE FOR THE UPGRADE OF MODEL RUNS WHEN USING *.hfc*, *.igp*, *.nbr* or *.uai* FILES

In previous versions of ADMS-Urban model runs used data from the hourly emissions (*.hfc*) files, intelligent grid points (*.igp*) files and noise barrier (*.nbr*) files if they had the same name as the model input (*.upl*) file and were located in the same directory as the *.upl* file. **This is no longer the case.** The files can now have any name and be located in any directory. However, **to use these files in ADMS-Urban 3.1, the *.hfc* file must be referenced in the time varying emissions screen and the *.igp* and *.nbr* files must be specified in *.uai* file.**

Note that to use an existing *.uai* file in ADMS-Urban 3.1 the version number at the start of the file must be edited.

There are further details of these changes in this document and in the sections of the User Guide referenced.

On the CD

This version of ADMS-Urban 3.1 includes an updated user interface, model and User Guide. The ADMS-Urban User Guide and guides to using the GIS links can be found in the 'Documents' sub-directory of the ADMS-Urban 3.1 install directory.

Before installing ADMS-Urban 3.1

Log onto your computer as Administrator, and uninstall ADMS-Urban 3.0 by selecting Add/Remove Programs from the Windows Control Panel.

Installing ADMS-Urban 3.1

If you have not already done so, log onto your computer as Administrator. Insert the ADMS-Urban 3.1 installation CD and the install program should automatically start. If it does not, browse to locate the CD in Explorer and double-click on the file 'setup.exe'. Follow the instructions on the screen. Further details are given in Section 2.2 of the User Guide, a copy of which is included on the installation CD in .pdf format.

New versions the GIS links you require (ArcGIS, MapInfo) can be installed by following the instructions in the ADMS-Urban User Guide.

Upgrading your input files

Model input (.upl) files

Model input (.upl) files that were set up using ADMS-Urban 3.0 will not automatically run with ADMS-Urban 3.1. The ADMS-Urban interface will automatically upgrade the .upl files but in this case your ADMS-Urban 3.0 .upl file is overwritten. For this reason you may wish to backup your files before upgrading them:

1. In Explorer, make a backup copy of the .upl file.
2. Load the file into the ADMS-Urban 3.1 interface. A warning message will be issued indicating that the file will be updated to ADMS-Urban 3.1 format. Select Yes to continue.
3. Save the file, with a new name.

Note that if your modelling run used .hfc, .igp, .nbr or .uai files you need to make further changes as described below.

Additional input (.uai) files

Any additional input (.uai) must also be updated so that they are in file version 2 format. To do this:

1. In Explorer, make a backup copy of the file.
2. Open the .uai file in a text editor.
3. Replace the line `uaifileversion1` with `uaifileversion2`
4. Save the file, with a new name.
5. Reference the new .uai file in the Setup screen of the ADMS-Urban interface.

Including .hfc, .igp or .nbr files

The method for including hourly emissions (.hfc) files, intelligent grid points (.igp) files and noise barrier (.nbr) files has changed. In ADMS-Urban 3.1 they no longer need to have the same name as the model input (.upl) file and they can be located in any directory. Consequently, when upgrading any model input (.upl) file that uses .hfc, .igp or .nbr files, a warning message similar to the one shown in Figure 1 may appear. This indicates that the .upl file must be manually upgraded to ensure that these files are still included in the model run.

To learn about the new method for including .hfc files refer to Section 4.1.2 of the user guide.

To learn about the new method for including .nbr files refer to Sections 3.2.1 and 4.9.4 of the user guide.

To learn about the new method for including .igp files refer to Sections 3.5.2 and 4.9.5 of the user guide.

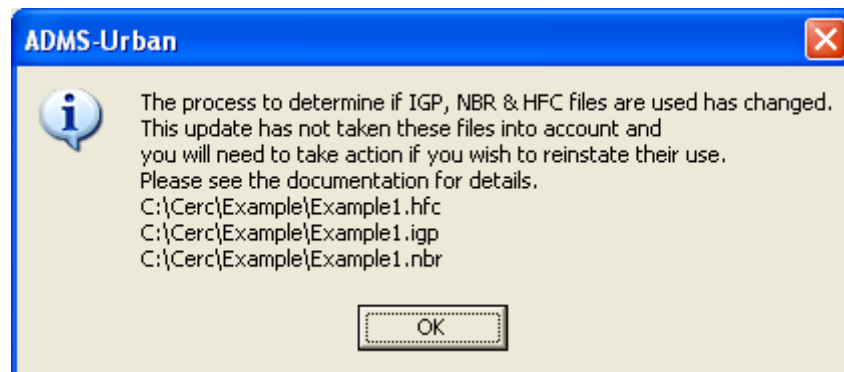


Figure 1: Warning message about the process of including .igp, .hfc and .nbr files

New Features

1. It is now possible to model emissions and calculate output in odour units (ou_E). Refer to Section 4.8 of the User Guide for further details.

Major Changes

1. The method of including data from hourly emissions (*.hfc*) files, intelligent grid point (*.igp*) files and noise barrier (*.nbr*) files has changed. See Section 4.1.2, Sections 3.2.1 and 4.9.4, and Sections 3.5.2 and 4.9.5 of the User Guide respectively.
2. The additional input (*.uai*) file version has been updated to file version 2. Refer to Section 4.9 of the User Guide for further details.
3. A road can now be modelled as both a street canyon and a road with noise barriers.
4. The ArcGIS link is now supported for use with ArcGIS 10 and on 64-bit Windows 7.
5. The MapInfo link is now supported for use with MapInfo 10.5 on 64-bit Windows 7.

Minor Changes

1. Lithuanian air quality standards are now included in the model. Refer to Section 3.6.4 of the User Guide for further details.
2. The minimum allowed road width is 2m. The interface will now automatically update any road widths of less than 2m to be 2m.
3. The critical Froude number for flows over complex terrain has been changed from 1.0 to 1.5. Flows with a Froude number less than 1.5 are considered to be very stable. Refer to Section 9.14 of the User Guide for further details.
4. The model will no longer stop if grid sources with no emissions are included in a model run.
5. Improvements have been made to the method of determining whether or not a source is in a reverse flow region.
6. An improvement has been made so that the model will run correctly when short term output, long term output, buildings and chemistry are modelled together.
7. An improvement has been made so that the meteorological data is correctly written to the comprehensive output file when meteorological data is entered on screen rather than in a *.met* file.
8. An improvement has been made so that hourly sequential meteorological data may now include data at times that are not integer-multiples of hours.

9. An improvement has been made so that when an intelligent grid point (.igp) file is used, only the road sources listed in the .igp file will have additional receptor points added around them.
10. An improvement has been made to the calculation of plume buoyancy for line, area and volume sources in complex terrain. Formerly it could depend on whether pollutants from other sources in the run had gravitational settling.

Met Converter

11. Improvements to the handling of missing data in .sfc files, to the handling of years expressed by 2 digits and to fix the automatic overwriting of the input met file.

Comprehensive Output File Processor

12. The gridded output in the report file that showed incorrect data in most cases, now shows the correct data.
13. Improvements have been made to the handling of insufficient data in the netCDF file to calculate AQS statistics, to disallow start times that are after the end time, to handle data that starts after midnight and to correct errors associated with date selection in the View Averages forms.

ArcGIS link

14. The ArcGIS link is now supported for use with ArcGIS 10 and on Windows 7 64bit systems.
15. The emissions inventory link no longer adds repeated columns in the attributes table when aggregating multiple times to a grid layer.

MapInfo link

16. Correction of the cases in which incorrect traffic data were shown.