



What's New in ADMS-Urban, ADMS-Roads and ADMS-Airport 4.1.1?

December 2017

ADMS-Urban, ADMS-Roads and ADMS-Airport 4.1.1 are the latest general releases of CERC's state of the art models for the dispersion of pollutants in urban areas. This version includes the **latest UK emissions factors from EFT 8.0**, and a number of **new features in the user interfaces**.

This document contains details of the new features implemented since the previous version of ADMS-Urban (version 4.1, February 2017). Also contained in this document are instructions for installing ADMS-Urban, ADMS-Roads and ADMS-Airport 4.1.1 and upgrading from previous model versions.

In this release

ADMS-Urban, ADMS-Roads and ADMS-Airport 4.1.1 include updated user interfaces and User Guides. The User Guides can be found in the '*Documents*' sub-directory of the install directory.

Installation

Before installing ADMS-Urban, ADMS-Roads or ADMS-Airport 4.1.1

In this release, ADMS-Urban, ADMS-Roads and ADMS-Airport are installed using a single installation process. Therefore, if you have previous versions of any of these models installed on your computer, they will need to be uninstalled before installing any of the new versions.

Log on to your computer as Administrator, and uninstall any previous versions of ADMS-Urban, ADMS-Roads and ADMS-Airport by selecting **Programs and features** from the Windows Control Panel.

Installing ADMS-Urban, ADMS-Roads or ADMS-Airport 4.1.1

If you have not already done so, log on to your computer as Administrator.

The software will either have been supplied by download link or on DVD. Follow the appropriate instructions:

- **Download:** Extract the downloaded *.zip* file to a local directory. In Explorer, browse to this directory and double-click on the file '*setup.exe*'.
- **DVD:** Insert the installation DVD and the install program should start automatically. If it does not, browse to locate the DVD 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 ADMS-Urban and ADMS-Roads User Guides, copies of which can be found in the installation files or on the [CERC website](#) in *.pdf* format.

After installing ADMS-Urban, ADMS-Roads or ADMS-Airport, copy your existing licence file to the directory in which ADMS-Urban, ADMS-Roads or ADMS-Airport is installed.

Note that the installation procedure automatically puts a generic shortcut to ADMS-Urban, ADMS-Roads and ADMS-Airport on your desktop. The first time you double-click on this shortcut, a screen similar to that shown in Figure 1 will be displayed.

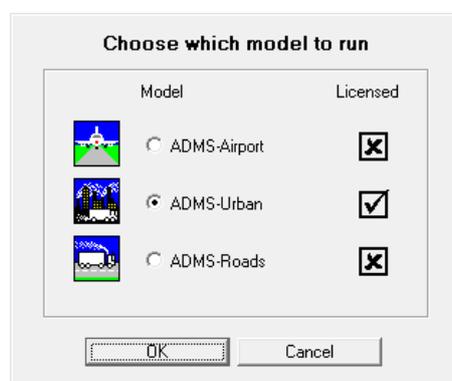


Figure 1 – Model selection screen

Select a model you are licensed to use and click **OK**. (Subsequently, if you are using more than one of ADMS-Urban, ADMS-Roads and ADMS-Airport on your computer, then this generic shortcut will launch the most recently used model.)

You can also set up specific shortcuts to ADMS-Urban, ADMS-Roads and/or ADMS-Airport by browsing to the *<install_path>\Support\Shortcuts* directory in Explorer, copying the appropriate shortcut and pasting it, for example, on to your desktop.

The GIS links you require (ArcGIS &/or MapInfo) can be installed by following the instructions in the ADMS-Urban and ADMS-Roads User Guides.

Users of CERC's run management tool Run Manager can add ADMS-Urban, ADMS-Roads and/or ADMS-Airport to the list of models available in Run Manager using a new Run Manager model definition (.rmd) file. On the **Models** screen, click **<New Model>** at the end of the list of **Available Models**. Click on the **[.]** button next to the **Name** text box to launch the **Select Model Template** screen. Browse to the *<install_path>* directory and select the appropriate .rmd file. The default model details will now be filled out, including the executable, required files, file type and command line arguments. Click **Save** to save your settings.

New Features and Major Changes

Interface

1. The emission factor datasets contained within version 8.0 of the EFT can now be used to calculate emissions from traffic flows specified in the model interfaces by the user.

The EFT 8.0 dataset has added emission factors for NO₂, but removed them for CO. In order to use the new NO₂ factors, make sure NO₂ is added to the list of emitted pollutants for your road sources, particularly if upgrading *.upl* files from earlier EFT datasets.

*To add NO₂ to all road sources, first select a road source on the **Source** screen, open the emissions form by clicking on **Emissions...**, and add NO₂ to the road source. Now right-click on **NO2** and choose **Add to all 'Road' sources**.*

Care should be taken when switching to the EFT 8.0 dataset in a *.upl* file containing user-defined emissions of NO₂ for road sources for which emissions of other pollutants are calculated from traffic flows. In this case, the user-defined NO₂ emissions will be overwritten with values calculated using the EFT 8.0 emission factors.

2. It is now possible to open a *.upl* file from Explorer by right-clicking on it and selecting **Open with ADMS-Urban**, **Open with ADMS-Roads** or **Open with ADMS-Airport**. Also, double-clicking on a *.upl* file in Explorer will cause it to open in the most recently used model interface.

*If *.upl* files were previously associated with another program, such as a text editor, on your computer, then this new feature may not be available to you. In this case, please contact CERC for advice on how to change the association of *.upl* files.*

3. Multiple copies of the interface can be used simultaneously. This is particularly useful for comparing two *.upl* files side by side.
4. When defining the geometry of road, line, area and volume sources, vertices can be inserted between two existing vertices by right-clicking on one of the existing vertices and selecting **Insert above** or **Insert below**. The new vertex will be added half-way between the two existing vertices.
5. The emission calculation mode for road sources (i.e. whether emissions are user-defined or calculated from traffic flows) can be set for all road sources simultaneously using a new **Set...** button next to **Emissions:** on the **Source** screen. However, this should be used with care – when switching from **All pollutants user defined** to **Calculate emissions using traffic flows**, any user-defined emissions previously entered for pollutants included in the chosen emission factor dataset will be lost.
6. Additional information about your model licence is available from the **Licence details** screen on the **Help** menu (Figure 2). The licence file path and licence number can be copied and pasted into other documents using the **Copy**  buttons. The licence can be located in Explorer using the **Find**  button. The number of sources, groups and

buildings that can be modelled with your licence can be seen by clicking **Details** (Figure 3).

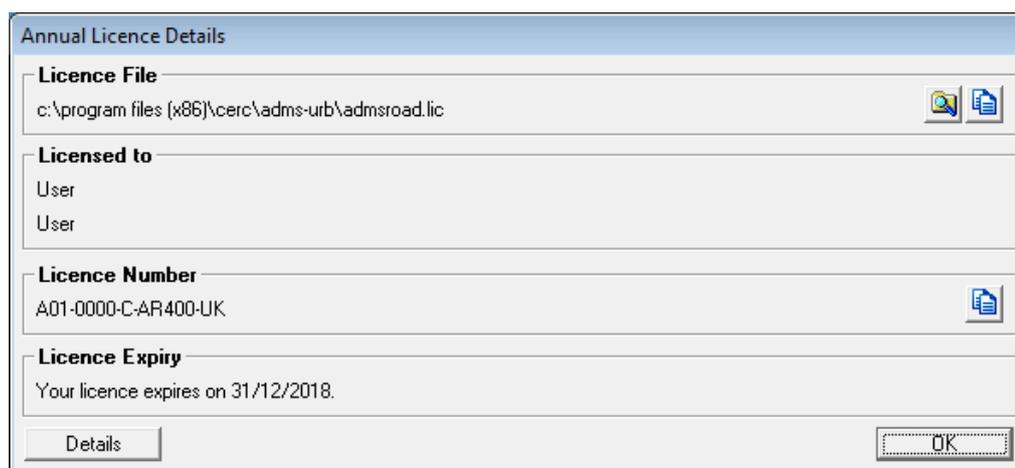


Figure 2 – Licence details screen

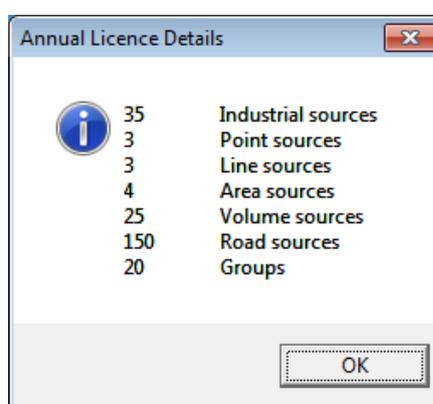


Figure 3 – Details screen

ADMS Mapper

7. Circular area and volume sources can now be defined using the ADMS Mapper. To define a circular area or volume source, select the appropriate layer in the **Legend** (e.g. the **Area sources** layer), click on the **Add Feature** button on the toolbar, then click on the drop down arrow next to the button and select **Circle**. Click in the map window on the location of the centre of the source, and while holding down the mouse button, move the cursor until the circle is of the required diameter before releasing the mouse button. This will create a polygon representation of the circle.

Minor Changes

8. Sources with no emissions defined are now permitted in the *.upl* file. On saving the file, the user will be asked whether such sources should be kept or deleted. It is also possible to save a *.upl* file before any sources have been added.
9. It is now possible to drag and drop multiple external files (for example *.met*, *.ter*, *.asp* etc) simultaneously from Explorer into the model interface. The paths will be added to the appropriate places in the interface. Note, however, that the corresponding model options will not automatically be switched on – for example, dragging and dropping a terrain file into the interface does not cause the complex terrain option to be switched on.
10. The format of the data in the *.ptt* file, used for importing data to and exporting data from the pollutants palette, has changed slightly for particulate pollutants containing multiple particle species. Lines in the file corresponding to the second and subsequent particle species should have ‘n/a’ entered in all columns except for the pollutant name, deposition velocity, terminal velocity, particle diameter, particle density and mass fraction. Please see the model User Guides for full details of the format of the *.ptt* file.
11. A number of new options have been added to the list of gridding methods available when producing contour plots of model results using Surfer. The default gridding method is now ‘Natural neighbour’. This method is recommended for plotting output from ADMS-Urban, ADMS-Roads and ADMS-Airport, as it provides a good level of accuracy close to road sources when source-oriented gridding is used.