



EDMS 5.1.1 Release Notes

September 30, 2009

EDMS is a combined emissions and dispersion model for assessing air quality at civilian airports and military air bases. The model was developed by the Federal Aviation Administration (FAA) in cooperation with the United States Air Force (USAF).

These release notes provide a summary of the improvements and bug fixes for EDMS 5.1.1. For more information on EDMS please check the EDMS User's Manual.

New functionalities have been added to EDMS5.1.1 including the ability to:

- Select the pollutants for which the Hourly Rate Emissions (HRE) files are generated.
- Display the properties of the study, scenario, airport, or year selected in the main window
- Auto Sort the aircraft operations when using a detailed schedule
- Revised the AERC dialog to be consistent with the current VALE Technical Report
- Updated the useful life values for the Ground Support Equipment (GSE)

In addition to the new functionalities, the following major updates are discussed more in detail below and in the EDMS5.1.1 User's Manual:

- Renamed Speciated Hydrocarbon (HC) Emissions to Speciated Organic Gas (OG) emissions
- Revised speciated OG profiles for turbine aircraft and APUs
- Updated NAAQS Table in User Manual and EDMS Help
- Updated BADA performance to version 3.7
- Updated aircraft flight performance profiles
- Updated the ICAO certified engine emissions based on the ICAO databank issue 16A
- 11 new aircraft have been added
- 17 new engines have been added

EDMS5.1.1 Improvements and Bug Fixes

EDMS 5.1 Behavior

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Aircraft Operations and Assignments window

Changing the <i>SOx emissions index</i> under the <i>Engine Emissions</i> tab may cause EDMS to fail if another scenario is selected before the changes are applied.	Changing the <i>SOx emissions index</i> does not cause EDMS to fail, even if another scenario is selected before the changes are applied.
Some modes of operation may not be displayed in the <i>Engine Emissions</i> tab when using ICAO Times in Mode.	All modes of operation are properly displayed in the <i>Engine Emissions</i> tab.
There is a mix of units (min and s) of the values for the time spent in each mode in the <i>Engine Emissions</i> tab	Values for the time spent in each mode in the <i>Engine Emissions</i> tab have the correct units (s)
CO EI are erroneously set equal to the NOx EI in the <i>Engine Emissions</i> tab.	CO EI in the <i>Engine Emissions</i> tab are properly displayed.

Configurations Window

EDMS may fail while processing emissions due to an improper handling to the runway configurations.	Runway configuration fractions are properly handled and do not cause EDMS to fail.
New configurations are reloaded into the available list next time the study is reloaded.	New configurations are properly saved and are not loaded into the available list upon reloading the study.

Emissions Inventory

The <i>View Emissions Inventory</i> may be preventing viewing emissions by being improperly “grayed out” when scenarios and/or airports whose emissions have not been updated are in the available list.	Scenarios and/or airports in the available list do not improperly “grayed out” the <i>View Emissions Inventory</i>
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Fuel Consumption for aircraft is only displayed on the <i>Aircraft by Mode</i> and <i>Aircraft/GSE/APU</i> views of the <i>Emissions Inventory</i> .	Fuel Consumption for aircraft is now also displayed in the <i>Summary</i> view of the <i>Emissions Inventory</i> .
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Emissions Processing

Some runway emissions do not get properly allocated due to having some runway sources appear slightly under the surface.	All runway emissions are properly allocated to the appropriate runway sources.
Aircraft emissions are calculated all the way to the mixing height even if they do not reach the mixing height within the 20km horizontal threshold.	The emissions inventory is capped to the 20km horizontal threshold for aircraft that do not reach the mixing height within this range
Sometimes EDMS calculates emissions for scenarios in the available list.	Emissions are not calculated for scenarios in the available list.

GSE Population Window

Adding a new GSE in a study with multiple years, the default operating time will not be assigned for all years.	The default operating time is properly assigned for all years, when a new GSE is added in a study with multiple years.
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Import - Export

The operational profiles for roadways and parking are not imported properly when using the import-export functionality of EDMS.	The operational profiles are properly imported for roadways and parking.
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User Created Objects

Modifying the <i>Engine Emissions</i> indices of a <i>User-Created Aircraft</i> that was recently added and renamed may cause EDMS to fail.	EDMS will not fail when modifying the <i>Engine Emissions</i> indices of a <i>User-Created Aircraft</i> that was recently added and renamed.
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The “Emissions out of date” indicator is not properly set when the properties of user-created objects (aircraft, GSE, or APU) that are part of an opened study are modified.	Modifying the properties of user-created objects (aircraft, GSE, or APU) that are part of an opened study will sets the “Emissions out of date” indicator.
Renaming a <i>User-Created</i> object which is part of the study may not get properly reflected in the study.	The name change of a <i>User-Created</i> object which is part of the study will be properly reflected in the study.

View System Tables

The <i>Default Annual Usage</i> and the <i>Average Useful Life</i> headers are swapped in the <i>GSE Types & Default Values</i> table.	The <i>Default Annual Usage</i> and the <i>Average Useful Life</i> headers are positioned in the correct column in the <i>GSE Types & Default Values</i> table.
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Other Changes

The first <i>roadway</i> , <i>GSE population</i> , <i>stationary</i> , and <i>training fire</i> source is deleted every time a multiple scenario and/or year EDMS study loads.	All <i>roadway</i> , <i>GSE population</i> , <i>stationary</i> , and <i>training fire</i> sources are properly loaded in multiple scenario and/or year EDMS studies.
UTM coordinates are not properly converted to Lat/long for airports located on the southern hemisphere.	The airport’s UTM coordinates are properly converted to Lat/long when the airport is on the southern hemisphere.
In some dialogs the unit <i>meters</i> is spelled incorrectly as <i>metres</i> .	The unit <i>meters</i> is properly spelled in all dialogs.
N/A	Updated the airport layout diagrams for the following three airports: Seattle-Tacoma International, the Washington Dulles, and the Chicago O’Hare International.
EDMS uses BADA performance version 3.5.	EDMS uses BADA performance 3.7.
N/A	Updated aircraft flight performance profiles.
The ICAO certified engine emissions are based on the ICAO databank issue 15C.	The ICAO certified engine emissions are based on the ICAO databank issue 16A

N/A	11 new aircraft have been added. See Appendix A for a detailed list of the aircraft.
N/A	17 new engines have been added. See Appendix B for a detailed list of the engines.

Appendix A. New Aircraft

The following list shows the 11 aircraft that are new in EDMS 5.1.1. To obtain more information about these aircraft, please select the *Aircraft* table from the *Systems Tables* option under the *View* menu.

- Airbus A330-800 Series
- Bell 407
- Boeing 727-200 Series Super 27
- Boeing 737-800 Short Field Package-Next Gen
- Bombardier Global Express 5000
- EADS Socata TBM-850
- Embraer ERJ135 Legacy Business
- Piper PA-46 500TP
- Raytheon Hawker 900XP
- Robinson R44 Raven
- Rockwell Commander 980/1000

Appendix B. New Engines

The following list shows the 17 engines that are new in EDMS 5.1.1. To obtain more information about these engines, please select the *Aircraft Engines Emissions Data* table from the *Systems Tables* option under the *View* menu.

- GE90-76B PEC
- GE90-76B PEC
- GE90-77B PEC
- GE90-77B PEC
- GE90-85B PEC
- GE90-85B PEC
- GE90-90B PEC
- GE90-90B PEC
- GE90-94B PEC
- GP7270
- PW4164-1D Talon IIB
- PW4168-1D Talon IIB
- PW4168A-1D Talon IIB
- PW4170 Talon IIB
- Trent 972-84 Phase5 Tiled
- Trent 972-84 Phase5 Tiled
- V2527M-A5