Wedbed

v1.1

Users Guide

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Contents

Preface

What is *Wedbed?*

Wedbed is a tool that integrates the Airviro emission database into MS Excel®. With *Wedbed* the following tasks can be easily performed:

- *Wedbed* allows you to use the whole power of MS Excel® with data from the fast and compact emission database of Airviro.
- With *Wedbed* it is easier to edit data. You just export the data to MS Excel®, make the changes there and import the data back to Airviro.
- Once you have the data in your MS Excel® workbook, you can either use the excellent reporting features of MS Excel® or easily cut and paste the data to other reporting tools.
- With *Wedbed* you can store an emission database in your PC as an MS Excel® workbook.
- With *Wedbed* you can make an extensive consistency check on the loaded emission database.

How does it work*?*

Dialogs for Airviro emission database access are added to the MS Excel® interface. Just choose import or export, select an emission database in Airviro and the transfer will take place instantly. No diskettes, no difficult commands to get data to and from Airviro, just a few clicks. The transfer of data between MS Excel and Airviro is done directly through the local area network.

Overview and definitions

With **Wedbed** emission databases can be imported to MS Excel® from Airviro or exported to Airviro from MS Excel®. Each table or grid in the Airviro emission database is stored in separate sheet in MS Excel®. All the information from an emission database is stored in MS Excel® end can be easily changed. The emission database can reside in Excel until it is exported back to Airviro, i.e. the information can be manipulated "off line". The emission database in MS Excel® can be thought of as a "pocket emission database."

MS Excel®, a registered trademark by Microsoft Corporation, will be referred to as Excel in the rest of the document. EDB is an abbreviation for emission database.

Getting Started

The following steps are needed in order to use **Wedbed**:

1. Install **Wedbed** on your computer.
2. Start Excel.
3. The **Wedbed** drop down menu should appear to the left of the **Help** drop down menu in the menu bar.
4. Click on the **Wedbed** drop down menu and the **License** item in order to enter license information. See License below.
5. To transfer data from Airviro to Excel click on the **Import EDB to Excel** in the **Wedbed** drop down menu. The **Login** dialog will appear the first time **Wedbed** is used in a working session in order to allow the user to enter the Airviro user and password.

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The procedure to transfer data from Excel to Airviro is very similar.

The Wedbed menu in Excel

When **Wedbed** is installed the **Wedbed** menu is added in the Excel menu bar.
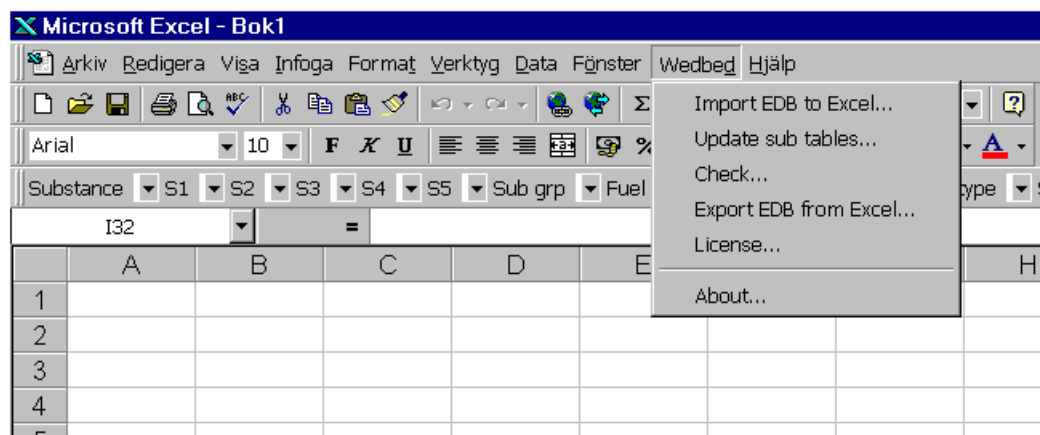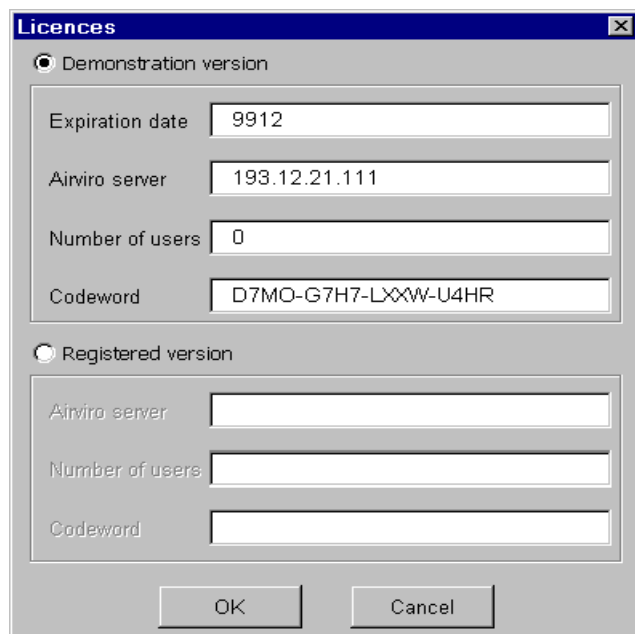
The following menu items are available:

- Import EDB to Excel: Displays the import dialog.
- Update sub tables: Updates the **Wedbed** tool bar**.** Each sub table has a list in the tool bar. The list contains the names of the sub table records. The list is used when the sub table is referred from e.g. a source. A warning and error list exist as well. The sub tables are described in the *"Working with Wedbed sheets in Excel"* section below.
- Check: Checks the consistency of the EDB in Excel. Warnings and errors are reported in the tool bar of **Wedbed**.
- License: Allows the user to set license information.
- About: Displays information about Wedbed.

License

Before Wedbed can be used it is necessary to set up the license. This set up is differently for the demonstration version and the registered one:

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Demonstration version: The expiration date, the name or IP address of the Airviro server, the number of users and a codeword are entered. The expiration date, number of users and the codeword are normally delivered together with the demonstration software. The IP address should be the IP address (or the name if host name lookup is configured in the PC) of the Airviro computer.

Registered version: The name or IP address of the Airviro server, the number of users and a code word are entered. When a Wedbed license is ordered, the name or the IP address of the Airviro server and the number of users are specified. The registered Wedbed software is delivered to the customer together with a codeword.

Import EDB to Excel

In the **Import EDB to Excel** dialog the databases, users and EDB:s are shown in three separate lists. The type of sources to import can be selected. Grid layers to import can be chosen.
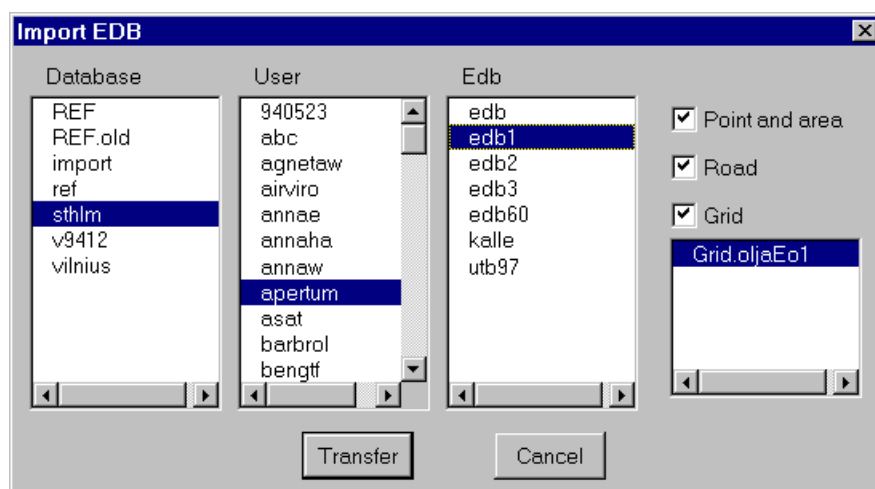
When a database is selected the users of that database are shown in the users list. When a user is selected the EDB:s of that user are shown in the EDB list. When an EDB is selected the *Point and Area*, *Road* and *Grid* check boxes are checked. The grid layers of the EDB are listed in the list box below the *Grid* check box. All grid layers are selected. The type of sources to import can be limited by unchecking the check boxes. If the *Grid* check box is checked a certain grid layer can be selected in the grid layer list. By pressing *Ctrl* on the keyboard and clicking on a grid layer it is possible to select more than one.

When the *Transfer* button is pushed the EDB is imported to Excel. Each table in the selected EDB is imported to a separate Excel sheet. Information about what happens is printed in the status bar of Excel.

Limitations

The sub tables will always be imported. No search criteria for the sources can be specified. Future version will allow possibility to select only sources that match search criteria.

Working with Wedbed sheets in Excel

Sub tables and sources

Source tables are the point, area, road and grid tables. Point and area sources are stored in one sheet. Road sources are stored in one sheet. Each grid is stored in a sheet of its own. Each source is stored in one row. Sources are added by adding a new row.

The sub tables sheets are: Units, Speed-Temp-Scenario, Substance, Searchkey, Formula, Substance group, Fuel, Vehicle and Roadtype. Each sub table entry is stored in one or more rows. Sub table entries are added by adding the proper number of rows.

General information about sheets

All sheets have a title row that defines the information stored in the sheet. Normally, cells that are not meant to be changed are write protected. The title row is write protected with the exception of sheets that refers to substances. In these sheets, substance/unit pairs can be added in the title row.

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References to sub tables

References from sources or sub tables to other sub tables are made using names instead of indices. The Wedbed toolbar can be used when referring sub tables.

Wedbed Toolbar
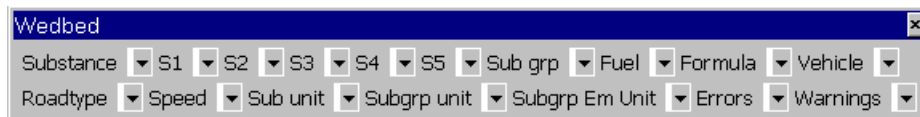
The Wedbed toolbar contains a number of lists. Each list corresponds to a sub table and contains the names of the entries in that sub table. By selecting an entry in the list, that name is copied to the active cell in the active sheet. This way, references to sub tables can be made in an easy way from sources or other sub tables. The lists are loaded when an EDB is imported or by selecting *"Update sub tables..."* in the Wedbed menu.

Besides the sub table lists, there are two special lists: Errors and Warnings. These contain errors and warnings from the consistency check in Wedbed. By selecting an error or warning in one of these lists, the cell that caused the error /warning becomes the active cell in the active sheet.
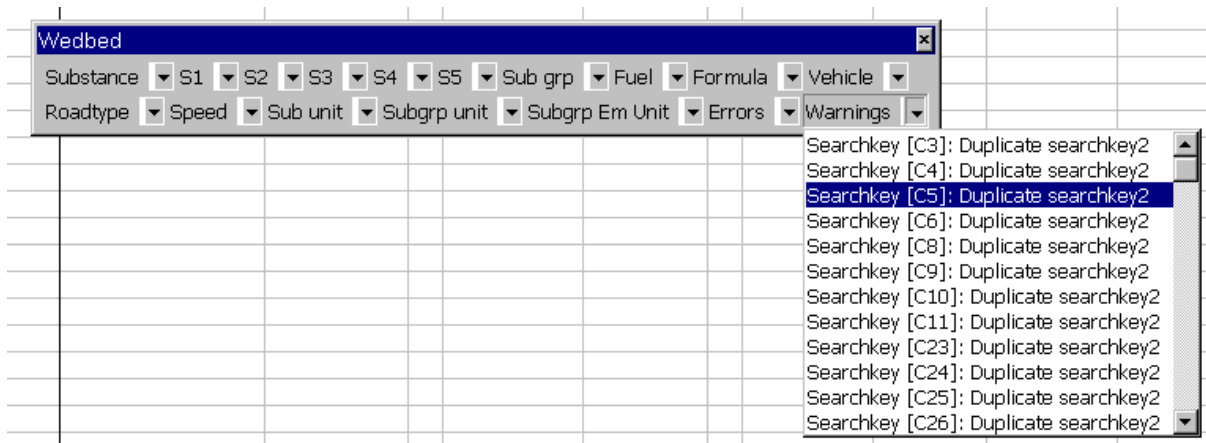
Export EDB from Excel

In the **Export EDB from EXCEL** dialog the possible databases to export to are shown in a list box. There are two choices: Either to export the data to an *Existing Edb* or to create a *New Edb*. These alternatives are chosen with the radio buttons to the right of the database list.

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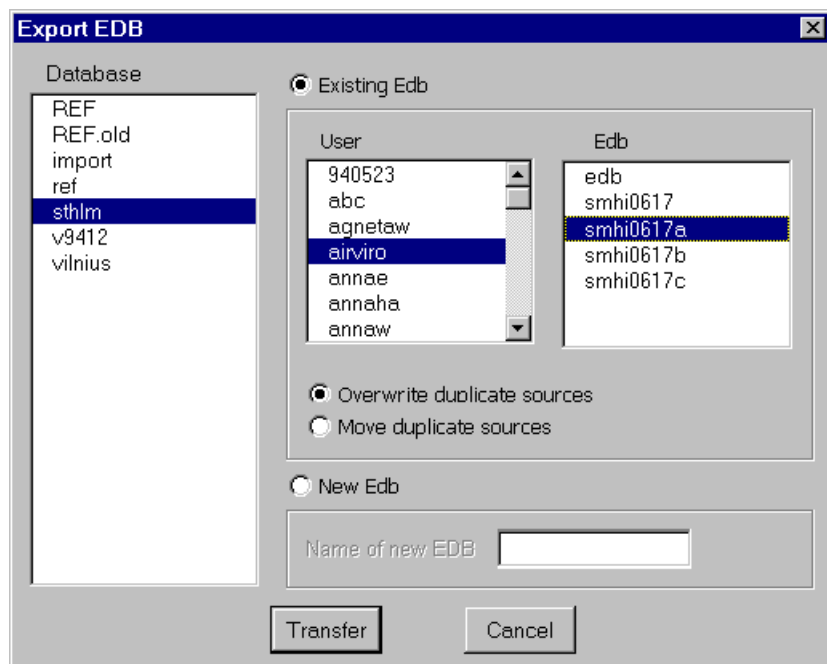
When *Existing Edb* is chosen the User and the Edb can be selected from the lists. The sub tables and grid layers of the chosen Edb are always overwritten. Grid layers in the chosen Edb that do not exist in Excel are left as they are. For point, area and road sources two alternatives exists: Either to *Overwrite duplicate sources* or to *Move duplicate sources* until their coordinates become unique. These alternatives are chosen with the radio buttons below the User and Edb lists.

When *New Edb* is selected the name of the new Edb is input. The new Edb is created for the user used when logging on.

When *Transfer* is pushed the following happens:

1. The sub tables are updated.

2. The consistency of the EDB is checked.

3. If *Existing Edb* is chosen a check is made between the sub tables of the Airviro Edb to export to and the sub tables in Excel. Sub table entries having the same index in Airviro and Excel must have the same name. If errors are encountered, the export is aborted.

4. The EDB is exported to Airviro.

Information about what happens is printed in the status bar of Excel.

Consistency Check

When an EDB is exported, a consistency check is performed. The check consists of the following steps:

1. The sub tables are updated. If errors are encountered, the consistency check and export is aborted. The error and warning lists contains more information about the errors and warnings.

2. Verification of the EDB in Wedbed. This includes syntax check of sheets, references to sub tables, length of strings, limits of values, required values, etc. If errors are encountered, the consistency check and export is aborted.

Setting up privileges for export from Excel

The same privileges are valid for Wedbed as for the Airviro EDB. The privileges for the Airviro EDB are set up in the file *priv.rf*, normally located in */usr/airviro/rsrc*. For information about the resources effecting the Airviro EDB see the manual page *xedb(1)*.

Layout of the Wedbed sheets in Excel

Sheet Units

This sheet corresponds to the unit part of the *edb.rsrc* file in Airviro. Units for different quantities in EDB are listed with their conversion factors. The first line below the title row states the default units of Airviro and may not be changed.

	A	B	C	D	E	F	G	H	I
1	Sub unit	Conv fact	Sub grp unit	Conv fact	Sub grp em unit	Conv fact	Search unit	Conv fact	
2	ton/year	1.0	%	1.0	ton/year	1.0	g/s	1.0	
3	g/s	31.557667	ml/l	0.1	g/s	31.557667	kg/h	0.2778	
4	kg/day	2.73785079	kg/ton	0.1	kg/day	2.73785079	ton/year	0.0317	
5	stones/day	1.11			stones/day	666	ounce/minute	0.017	
6									
7									
8									
9									
10									
11									
12									
13									
14									

Blad1 / Blad2 / Blad3 \ **Units** / Speed-Temp-Scen / Substance / Searchkey / Substance

Sheet Speed-Temp-Scen

This sheet contains the rest of the *edb.rsrc* file in Airviro. Three columns stating the labels to use in Airviro for **Speed**, **Temperature** and **Scenario**.

	A	B	C	D	E	F	G	H	I
1	Index	Speed	Temperature	Scenario					
2	1	20	-30--28	1993					
3	2	30	-28--26	1994					
4	3	40	-26--24	1995					
5	4	50	-24--22	1996					
6	5	60	-22--20	1997					
7	6	70	-20--18	1998					
8	7	80	-18--16	1999					
9	8	90	-16--14	2000					
10	9	100	-14--12	2001					
11	10	110	-12--10	2002					
12	11	120	-10--8						
13	12		-8--6						
14	13		-6--4						

Blad1 / Blad2 / Blad3 / Units / **Speed-Temp-Scen** / Substance / Searchkey / Substance

Sheet Substance

This sheet corresponds to the substance database of the Airviro EDB. No changes are allowed since this information only persists in the global EDB of Airviro.

	A	B	C	D	E	F	G	H	I
1	Index	Substance							
2	1	NO							
3	2	NO2							
4	3	NOx							
5	4	HNO3							
6	5	HNO2							
7	6	PAN							
8	7	NH3							
9	8	N2O							
10	9	-							
11	10	-							
12	11	-							

Blad1 / Blad2 / Blad3 / Units / Speed-Temp-Scen / **Substance** / Searchkey / Substance

Sheet Searchkey

This sheet contains the searchkey database of the Airviro EDB. Searchkeys may be empty (not used) but duplicates should be avoided.

	A	B	C	D	E	F	G
1	Index	Searchkey1	Searchkey2	Searchkey3	Searchkey4	Searchkey5	
2	1	Botkyrka 27	27	Individ. uppv.	Tillverkning		
3	2	Danderyd 62	27	Pannc. uppvärmn	Lagring		
4	3	Ekerö 25	27	Energianläggn.	Konsumtion		
5	4	Haninge 36	27	Ind. energianl	Avfall,sopförbr		
6	5	Huddinge 26	27	Bensinstat ej 6	Förbr. fossilt		
7	6	Järfälla 23	62	Biltvättar	Förbr. övrigt		
8	7	Lidingö 86	62	Depå petroleum	Naturliga utsl.		
9	8	Nacka 82	62	Kemtvättar			
10	9	Norrtälje 88	62	Verkst ind ej10			
11	10	Nynäshamn 92	62	Lackeringsind			
12	11	Salem 28	25 Ekerö	Graf ind ej 12			

◄ ► ►| / Speed-Temp-Scen / Substance \ **Searchkey** / Substance group / Fuel / Formula / Point |◄ ►

Sheet Substance group

This sheet corresponds to the substance group database of the Airviro EDB. There is substance group per row. Names and indices must be unique, including names and indices for the substance groups. After the **Name** and **Index** columns, pairs of *substance* and **Unit** columns follow. Add a substance/unit pair by adding them after the last existing substance/unit pair. To delete a substance remove the substance/unit columns. The order of substances is not significant.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Name	Index	VOC	Unit	NOx	Unit	SO2	Unit	CO	Unit	CO2	Unit	Dust
2	Bensin steg 1 o 2	1	0.055500	%									
3	Bensin steg 1	2	0.133000	%									
4	Bensin steg 2	3	0.177000	%									
5	Bensin inga steg	4	0.255000	%									
6	Arbetsfartyg	6	0.110220	%	2.130940	%	0.047760	%	0.293920	%	97.362000	%	0.05511
7	Fritidsbåtar	7	5.286900	%	0.359600	%			13.769200	%	80.374802	%	0.20530
8	Arbetsfordon	8	0.252100	%	1.756660	%	0.123600	%	1.253700	%	96.495300	%	0.13490
9	HC-diurnal	9	1.234567	%									
10	Handelsfartyg	16	0.063800	%	2.126800	%	0.808170	%	0.170140	%	96.767303	%	0.06380
11	EO2-5 S<0.4%	41	0.040000	%	0.700000	%	0.800000	%	0.050000	%	310.000000	%	0.08000

◄ ► ►| Substance / Searchkey \ **Substance group** / Fuel / Formula / Point and area / Veh |◄ ►|

Sheet Fuel

This sheet corresponds to the fuel database of the Airviro EDB. One fuel per row. Names and indices must be unique, including names and indices for the substance groups. After the **Name**, **Index** and **Energy value** columns, pairs of substance and unit columns follows. Substances and units are added/deleted in the same way as for substance groups.

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	A	B	C	D	E	F	G	H	I	J	K	L
1	Name	Index	Energy value	NOx	Unit	SO2	Unit	CO	Unit	CO2	Unit	Dust
2	38_BollmoraVV_Eo5	29	41.000000	0.111700	g/MJ	0.212000	g/MJ	0.050000	%	310.000000	%	0.0096
3	84_KarolinskaPC_Eo4	30	41.000000	0.146000	g/MJ	0.228000	g/MJ	0.050000	%	310.000000	%	0.016C
4	63_RotebroPC_Eo5	31	41.000000	0.183000	g/MJ	0.120000	g/MJ	0.050000	%	310.000000	%	0.024C
5	86_LidingöVV_Eo5	32	41.000000	0.200000	g/MJ	0.280000	g/MJ	0.050000	%	310.000000	%	0.024C
6	62_DrydsjukhPC_Eo4	33	41.000000	0.110000	g/MJ	0.123400	g/MJ	0.005520	g/MJ	71.580002	g/MJ	0.0074
7	84_SundbyVV_Eo5	35	41.000000	0.110000	g/MJ	0.290000	g/MJ	0.050000	%	310.000000	%	0.0800
8	36_JordbroVV_Eo4	37	41.000000	0.130000	g/MJ	0.220000	g/MJ	0.050000	%	310.000000	%	0.0077
9	60_GaltFarmCity_WRD	44	42.700001	0.100000	g/MJ	0.200000	%	0.050000	%	310.000000	%	0.0117
10	36_JordbroVV_trä	46	1.000000	0.150000	g/MJ	0.022000	g/MJ	0.120000	%			0.0000
11	38_BollmoraVV_brini	51	1.000000	0.142000	g/MJ	0.000000	%	1.000000	%			0.0007

Sheets: Substance / Searchkey / Substance group / **Fuel** / Formula / Point and area / Veh

Sheet Formula

This sheet corresponds to the formula database of the Airviro EDB. Each formula spans over four rows. Names and indices must be unique. After the **Name** and **Index** columns, the following information follows:

- **H.1** to **H.24** stating the hourly variations. The four rows correspond to type days Mon-Thu, Fri, Sat and Sun.
- **Jan** to **Dec** stating the monthly variations. Only first row of each formula.
- *Scenario1* to *Scenario10* stating the scenario variations. Only first row of each formula.
- *Temperature1* to *Temperature30* stating the temperature dependency. Only first row of each formula.
- **100-95** to **5-0** stating the gas flow dependency. Only first row of each formula.

	A	B	C	D	E
1	Name	Index	H.1	H.2	H.
2	STANDARD	1	100	100	10C
3			100	100	10
4			100	100	10C
5			100	100	1C
6	Fritidsbåtar	2	0	0	0
7			0	0	0
8			0	0	0
9			0	0	0
10	Industri_01	3	0	0	0
11			0	0	0
12			0	0	0
13			0	0	0

Sheets: Substance / Searchkey / Substance group / Fuel / **Formula**

Sheet Vehicle

This sheet corresponds to the vehicle database of the Airviro EDB. Each vehicle spans over eleven rows. Names and indices must be unique. The speed column must contain the eleven speed labels ordered as in the Speed-Temperature-Scen sheet. After the **Name**, **Index** and **Speed** columns, substance columns follow. Add a substance by adding it after the last existing substance. To delete a substance remove the column of the substance. The order of substances is not significant.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Name	Index	Speed	NOx	CO	CO2	VOC	HC exhaust	HC run+hot soak	Veh km	Fuel consumpt	SO2
2	pb A110/ 1VTI	1	20	3380	11728	194	2690	1990	620	1000	83390	
3			30	3380	11728	194	2690	1990	620	1000	83390	
4			40	3380	11728	194	2690	1990	620	1000	83390	
5			50	3380	11728	194	2690	1990	620	1000	83390	
6			60	3380	11728	194	2690	1990	620	1000	83390	
7			70	3380	11728	194	2690	1990	620	1000	83390	
8			80	3380	11728	194	2690	1990	620	1000	83390	
9			90	3380	11728	194	2690	1990	620	1000	83390	
10			100	3380	11728	194	2690	1990	620	1000	83390	
11			110	3380	11728	194	2690	1990	620	1000	83390	
12			120	3380	11728	194	2690	1990	620	1000	83390	
13	pb A 90/ 2VTI	2	20	2820	11766	179	2120	1420	620	1000	76790	
14			30	2820	11766	179	2120	1420	620	1000	76790	
15			40	2820	11766	179	2120	1420	620	1000	76790	
16			50	2820	11766	179	2120	1420	620	1000	76790	

Substance / Searchkey / Substance group / Fuel / Formula / Point and area \ Vehicle / Roadtype / Road /

Sheet Roadtypes

This sheet corresponds to the roadtype database of the Airviro EDB. Names and indices must be unique. Each roadtype may contain up to ten vehicle variations. Each vehicle variation spans over four rows. In the first line of each vehicle variation, the **Vehicle**, **Min vel** and **Max vel** must be specified. The **Vehicle** column contains reference to the Vehicle sub table. The **Min vel** and **Max vel** columns contains references to the **Speed** sub table. After the **Name**, **Index**, **Vehicle**, **Min vel** and **Max vel** columns, the following columns follow:

- **H.1** to **H.24** stating the hourly variations. The four rows correspond to type days Mon-Thu, Fri, Sat and Sun.
- **Jan** to **Dec** stating the monthly variations. Only first row of each vehicle variation.
- *Scenario1* to *Scenario10* stating the scenario variations. Only first row of each vehicle variation.

	A	B	C	D	E	F	G	H	I	J	K
1	Name	Index	Vehicle	Min vel.	Max vel.	H.1	H.2	H.3	H.4	H.5	H.6
2	A 70 07 reg hv SSS	1	pb A 70/ 3VTI	20	120	166	104	73	73	93	35:
3						230	161	115	104	115	35:
4						328	248	200	168	112	12:
5						459	378	306	243	153	11:
6			pb B 70/ 3VTI	20	120	166	104	73	73	93	35:
7						230	161	115	104	115	35:
8						328	248	200	168	112	12:
9						459	378	306	243	153	11:
10			pb C 70/ 3VTI	20	120	166	104	73	73	93	35:
11						230	161	115	104	115	35:
12						328	248	200	168	112	12:
13						459	378	306	243	153	11:
14			lb A 70/ 3VTI	20	120	166	104	73	73	93	35:
15						230	161	115	104	115	35:
16						328	248	200	168	112	12:
17						459	378	306	243	153	11:
18			lb B 70/ 3VTI	20	120	166	104	73	73	93	35:
19						230	161	115	104	115	35:
20						328	248	200	168	112	12:
21						459	378	306	243	153	11:
22	A 70 10 reg hv SSS	3	pb A 70/ 3VTI	20	120	166	104	73	73	93	35:
23						230	161	115	104	115	35:
24						328	248	200	168	112	12:

|◄ ◄ ► ►|/ Fuel / Formula / Point and area / Vehicle \ **Roadtype** / Road / Grid.uppv60 /

Sheet Point and Area

This sheet corresponds to the point and area database of the Airviro EDB. One point or area source per row. Below is a description of the columns:

- **Name**   Name of the point or area source.
- **X1**   X coordinate for point sources and left X coordinate for area sources.
- **Y1**   Y coordinate for point sources and lower Y coordinate for area sources.
- **X2**   Empty for point sources and right X coordinate for area sources.
- **Y2**   Empty point sources and upper Y coordinate for area sources.
- **Info**   String.
- **Info2**   String.
- **Address**   String.
- **PostAddress**   String.
- **Info. supp.**   String.
- **Date**   A date or can be empty.
- **Changed**   A date or can be empty.
- **Misc**   String.
- **Chimney hgt.**   Number.
- **Gas temp.**   Number.
- **Gas Flow**   Number.
- **Formula**   Reference to **Formula** sub table.
- **S1** to **S5**   References to **Searchkey** sub tables.

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- **Chimney out**   Number.
- **Chimney in**   Number.
- **House Width**   Number.
- **House hgt.**   Number.
- **Fuel**   Reference to **Fuel** sub table.
- **Max effect**   Number.
- **Sub grp**   Reference to **Substance group** sub table.
- **Sub grp emission** Number.
- **Sub grp unit**   Reference to **Unit** sub table.

Then *Substance* and **Unit** pairs follow. They can be added and deleted in the same way as for Substance groups.

There are three possible ways to specify the emission for a source:

1. Fuel: The reference to the Fuel sub table and the Max effect are specified.
2. Substance group: A reference to the Substance group sub table, a substance group emission and its unit are specified.
3. Substance: The emissions for different substances are specified in the corresponding substance columns. For each specified substance, a unit must be specified.

Only one of the three ways to specify emission can be used for a source. The other columns must be empty.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Name	X1	Y1	X2	Y2	Info	Info2	Address	Postaddress	Info. Supp.	Date	Changed	Misc	Chimney hgt.	Gas temp.	Gas Flow
2	&Hässelbyverket P1	1614807	6584090			0180-xxxxfB410201	Värmdö 1	Vassbrinken 5-11	Box 5335, 162 15 Vällingby	Mattias Edstedt	1993-12-31	1998-03-31		135	130	20
3	Sundbybergsverket	1623450	6585250			0183-001fB410202	Värmecentralen 2	Dimslöjan 2	172 40 Sundbyberg	08/706 89 60	1992-12-31	1998-03-31		81	200	20
4	&Värtaverket VV1 P1	1630556	6583640			0180-xxxxfA410201	Nimrod 6	Jägmästargatan 2, 100 54 Stockholm		Mattias Edstedt	1994-01-26	1998-03-31		105	200	21
5	&Farsta P1	1630793	6570448									1998-03-31		60	165	20
6	Hallstavik kraftverk	1655150	6665450			0188-001fA410201	Tulka 1:48	Box 82	763 23 Hallstavik	0173-82 019	1993-12-31	1994-10-07		35	200	20
7																
8																
9																
10																
11																

▸ \ Fuel \ Formula \ Point and area \ Vehicle \ Roadtype \ Road \ Grid.uppv60 \

Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
Formula	S1	S2	S3	S4	S5	Chimney Out	Chimney In	House Width	House hgt.	Fuel	Max effect	Sub grp	Sub grp emission	Sub grp unit	NOx	Unit	SO2	Unit
I80_HässelbyP1-3	Stockholm 80		Energianläggn.	Förbr. fossilt		4.370000	3.650000	0	0						0.000000	ton/year	464.000000	ton/year
I83_SbybergVV_Eo5	Sundbyberg 83		Energianläggn.	Förbr. fossilt		1.500000	1.000000	0	0								121.000000	ton/year
I80_VärtanVV1-3_Eo5	Stockholm 80		Energianläggn.	Förbr. fossilt		8.200000	1.800000	0	0								36.000000	ton/year
Arbetsf.Jordbruk						3.000000	0.800000	0	0								184.000000	ton/year
STANDARD	Norrtälje 88		Energianläggn.	Förbr. fossilt		0.000000	1.000000	0	0						2.600000	ton/year	1.400000	ton/year

a \ Point and area \ Vehicle \ Roadtype \ Road \ Grid.uppv60 \

Sheet Road

This sheet corresponds to the road database of the Airviro EDB. One road source per row. Below is a description of the columns:

- **Name**   Name of the point or area source.
- **Info**   String.
- **Info2**   String.
- **Vehicles**   Number.
- **Corr**   Number.
- **Lanes**   Number.
- **Speed**   Reference to **Speed** sub table.
- **Roadtype**   Reference to **Roadtype** sub table.
- **S1** to **S5**   References to **Searchkey** sub tables.

Then up to 20 coordinate pairs follows: **X0**, **Y0**, **X1**, **Y1**, **…**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Name	Info	Info2	Vehicles	Corr	Lanes	Speed	Roadtype	S1	S2	S3	S4	S5	X0	Y0	X1	Y1
2	Länsväg 57 V1	0181ANS1993/001500ÅMD		7000	1.000000	2	90	H 90 07 lv	Södertälje 81		Vägtrafik	Förbr. fossilt		1582327	6567347	1582534	656
3	Länsväg 57 V2	0181ANS1993/001500ÅMD		7000	1.000000	2	90	H 90 07 lv	Södertälje 81		Vägtrafik	Förbr. fossilt		1586493	6567058	1586619	656
4	Mölnbovägen N6	0181VVR1990/004950ÅMD		2970	1.000000	2	90	H 90 07 lv	Södertälje 81		Vägtrafik	Förbr. fossilt		1591439	6547805	1591302	654
5	Mölnbovägen N5	0181VVR1990/004450ÅMD		2670	1.000000	2	90	H 90 07 lv	Södertälje 81		Vägtrafik	Förbr. fossilt		1591749	6548003	1591607	654
6	Mölnbovägen N4	0181VVR1990/004450ÅMD		2670	1.000000	2	50	D 50 07 lok v övr	Södertälje 81		Vägtrafik	Förbr. fossilt		1593320	6548966	1593148	654
7	Maskinförarväg_ V2	0181GKR1992/003300ÅVD		1860	1.000000	2	50	F 50 01 inn lokg	Södertälje 81	81 Nykvarn	Vägtrafik	Förbr. fossilt		1592362	6563471	1592481	656
8	Länsväg 57 V3	0181ANS1993/001500ÅMD		7000	1.000000	2	90	H 90 07 lv	Södertälje 81		Vägtrafik	Förbr. fossilt		1594574	6564518	1594574	656
9	Holländarvägen V1	0181GKR1991/000700		360	1.000000	2	40	F 50 01 inn lokg	Södertälje 81	81 S-tälje stad	Vägtrafik	Förbr. fossilt		1592427	6562935	1592512	656

Fuel / Formula / Point and area / Vehicle / Roadtype / Road / Grid.uppv60 /

Sheet Grid

Since there can be any number of grids in an Airviro EDB each grid corresponds to a sheet in **Wedbed**. This sheet is named **Grid.***gridname*. In a grid, there can exist both static and dynamic information. Below the title row, a row follows that states if the information in that column is static or dynamic. Static is indicated by a value (or empty) and dynamic is indicated by the string DYNAMIC. The following rows correspond to one grid cell each. Below is a description of the columns:

- **X** First row contains X coordinate for left side of whole grid. The following lines contains the left side coordinate for that grid cell. This information must be specified.
- **Y** First row contains Y coordinate for lower side of whole grid. The following lines contains the lower side coordinate for that grid cell. This information must be specified.
- **NX** Number of grid cells on the X-axis. Only on first row.
- **NY** Number of grid cells on the Y-axis. Only on first row.
- **DX** Width of each grid cell. Only on first row.
- **DY** Height of each grid cell. Only on first row.
- **Name** String.
- **Info** String.
- **Info2** String.
- **Address** String.
- **PostAddress** String.
- **Info. supp.** String.
- **Date** Date.
- **Changed** Date.
- **Misc** String.
- **Formula** Reference to **Formula** sub table.
- **S1** to **S5** References to **Searchkey** sub tables.
- **Sub grp** Reference to **Substance group** sub table.
- **Sub grp emission** Number. This column only exists if Substance group is used.

If Substance group is not used, then *Substance* and **Unit** pairs follow. They can be added and deleted in the same way as for Substance groups.

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Using Wedbed over a dial up network

Wedbed can be used over a dial up network from your remote PC:s. However, large EDBs may be difficult to transfer via modem since the amount of information contained within a large EDB can take too long time to transfer.

In HP-UX 10.20, the only network protocol that is supported is SLIP. To set up a dial up network on your Airviro machine please contact Apertum IT AB.

Installation of Wedbed in Spanish versions of Excel

The Spanish versions of Excel is different compared to the English and American ones. The Airviro extension needs to be registered in Excel. Please do the following:
1. Select **Herramientas** and there after **Complementos** from the Excel menu bar.
2. Select *Wedbed* in the **Complementos disponibles** list.
3. Click on **Acceptar**.
4. The Airviro menu is shown in menu bar of Excel.

Support

Support for Wedbed is available from Apertum IT AB. Send an email to info@apertum.se or call Apertum at +46 13 212960.

Technical specification

Wedbed includes the following features:
- No installation of any programs on the Airviro workstation. The only installation of software is done in the client PC as a plug-in module to Excel.
- Extremely fast transfer of data due to the fact that the low level C interface of Excel is used. Large EDBs may take some time to transfer due to the enormous amount of information.

Technical requirements

- Microsoft Office 97®
- MS Windows 95® / MS Windows 98® / MS Windows NT 4.0®
- At least 32 MB RAM required.
- A display of at least SVGA capability (800x600 pixels).
- Occupies about 1 MB of disc space.
- Network (TCP/IP) connection from the client PC to the Airviro workstation.

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About Apertum

Apertum is owned by two of the leading Airviro developers including the former Airviro development manager and the designer/developer of the Airviro EDB. Apertum has worked within Airviro projects for several years and knows the weaknesses of Airviro import/export.

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