

BacLink – EARS-Vet Data Import



WHO Collaborating Centre for
Surveillance of Antimicrobial
Resistance

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Background

EARS-Vet stands for the “European Antimicrobial Resistance Surveillance Network in Veterinary Medicine”. WHONET can assist users with exporting their AMR data to the EARS-Vet file format, which can be uploaded to their data collection platform. For more information on EARS-Vet, please see the following URL: <https://anses.hal.science/anses-04685234v1/document>

About this document

This document provides information on how to import data from an existing electronic data source into the WHONET data structure compatible with exportation to the EARS-Vet file format.

Obtain a sample data file from your existing data source

Please follow the guidance in the section “BacLink – Exporting data from desktop applications, laboratory instruments, and laboratory information systems” found near the bottom of the following support page. <https://whonet.org/training.html>

The steps will be different depending on the type of information system your facility uses, but the goal is to generate a file which can be subsequently processed with the BacLink software.

How to create a new EARS-Vet-specific BacLink configuration

To import existing data stored in an export from your LIS, laboratory instrument, or other electronic data source, you first need to create the corresponding BacLink configuration file tailored for EARS-Vet.

1. From the main screen of BacLink, press the “New format” button highlighted below.

BacLink 2024

File Select language Help

Choose the name and format of the original data file.
Enter a name and format for the new data file. Click on 'Begin conversion'.
If the format of your data file does not appear on the list, choose 'New format'.

File format: Test configuration

C:\WHONET\

Test configuration-TEXT.cfg

File name: C:\WHONET\Data*.txt

New data file

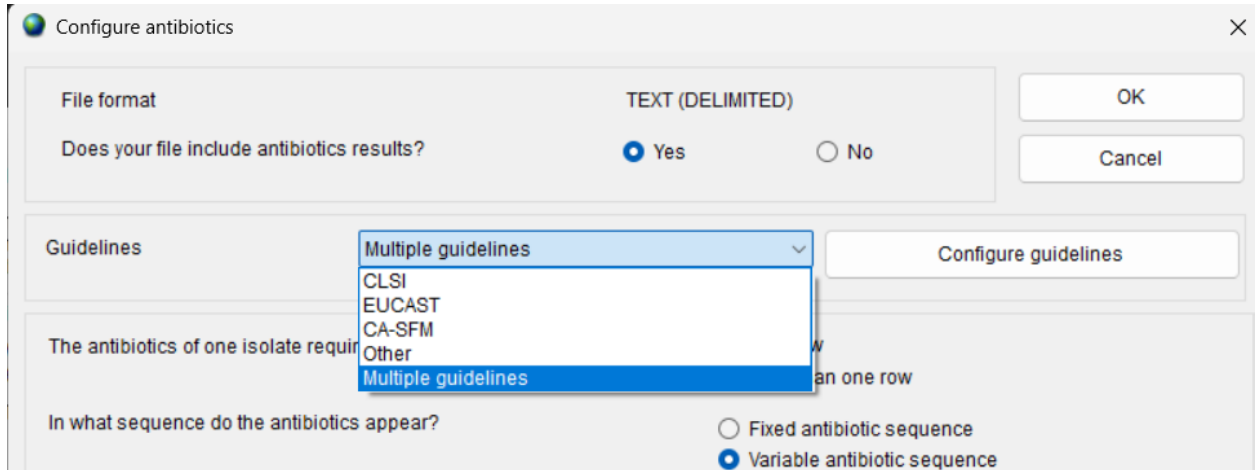
File name: C:\WHONET\Data*.sqlite

Table name: For Access files only

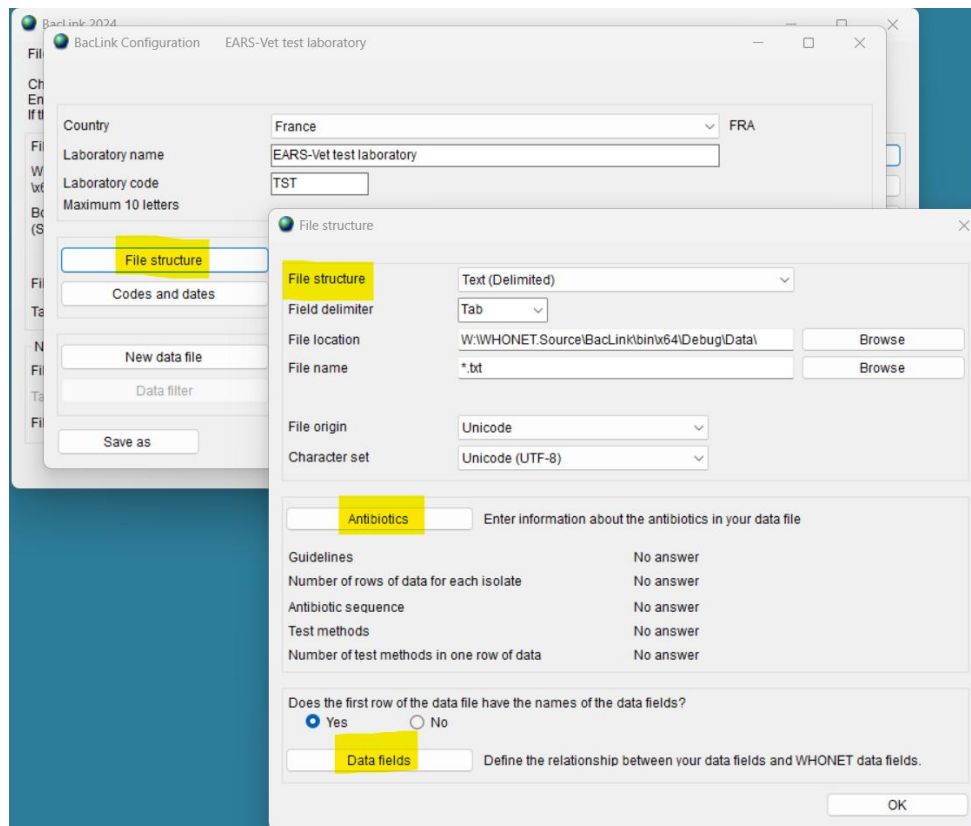
File format: WHONET (SQLite)

Buttons: New format, Edit format, Delete format, Browse, Begin conversion, Exit

2. Fill in the first three questions regarding your country, laboratory description, and laboratory code.
3. Press the “File structure” button and select from the list of options depending on the type of existing data files you have.
 - a. Please see the “BacLink – Getting started” document at the following URL for more information. https://whonet.org/WebDocs/BacLink.1_Getting_started_Introduction.pdf
 - b. You may also wish to review the links in the section entitled “BacLink – Exporting data from desktop applications, laboratory instruments, and laboratory information systems” found near the bottom of the following support page. <https://whonet.org/training.html>
 - c. You may also need to configure the antibiotics for your data file. Please follow the general guidance available on our support page at the links above for more information.
 - d. While configuring the antibiotics, you will answer questions about the specific way your antibiotic results appear in the file, such as whether the antibiotics appear horizontally in their own columns, or whether they appear vertically with one antibiotic per row. Because of the many possible responses to these questions, we cannot provide a comprehensive set of instructions here which will cover every scenario.
 - e. If you are unable to answer the questions on the “Antibiotics” screen, then you should consult the documentation mentioned above, or contact the WHONET group for additional support.
4. One of the questions on the “Antibiotics” form is related to the antibiotic guidelines which were used in performing the tests in your data file. Some laboratories use CLSI, EUCAST, or SFM exclusively, while others use a mixture of these. If your laboratory uses mixed guidelines, please choose “Multiple guidelines” from the list of shown below.



- a. Currently, BacLink only supports multiple guidelines for data files which have antibiotics on separate rows of the data file.
 - b. If you have a mixture of guidelines, but your antibiotics are horizontally in separate columns, please contact the WHONET team for more support with your configuration.
 - c. When “Multiple guidelines” is selected, there will be an additional data field added to your configuration called “Antibiotic test guideline” which should be matched to one of your data fields which serves this purpose.
5. After answering the questions on the “Antibiotics” form, you must now add the EARS-Vet data fields to your configuration. Press the “Data fields” button near the bottom of the “File structure” form shown below.



6. Press the “Modify the list of data fields” button.

7. On the “Data fields” form which will appear, press the “Modify list” button.

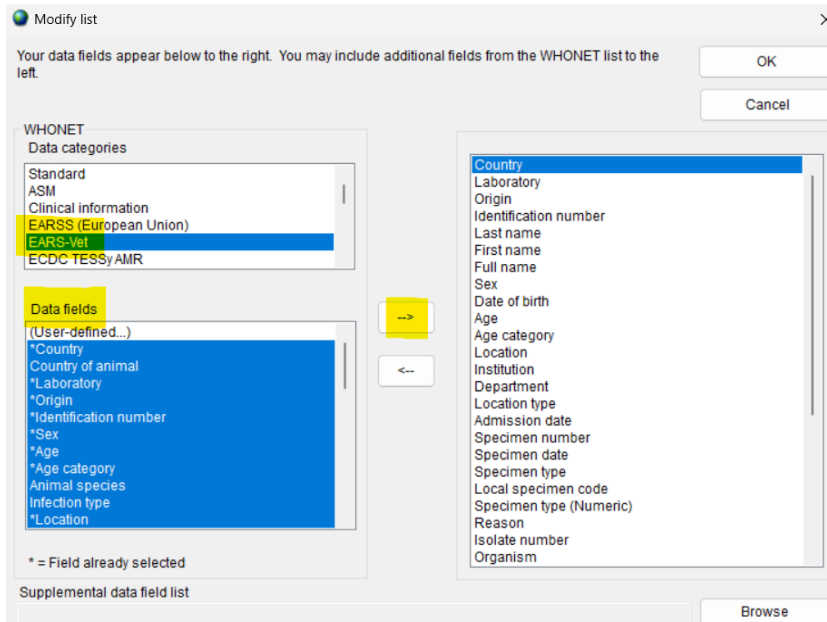
8. BaLink has a default set of data fields included with all new configurations, shown in the box on the right. For the purposes of EARS-Vet, you should remove all the optional default data fields by highlighting each data field and pressing the arrow which points to the left near the center of the form.

a. There is a small number of data fields which cannot be removed, for which you will receive a message. Please remove all other data fields.

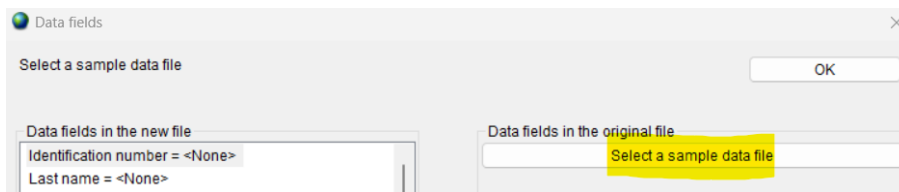
9. Now that you have cleared the default data fields from your configuration, you can proceed to include the EARS-Vet set.

10. Choose “EARS-Vet” from the “Data categories” list and add all the EARS-Vet data fields to your configuration by selecting one or more data fields (using the shift key and your mouse) and pressing the arrow which points to the right.

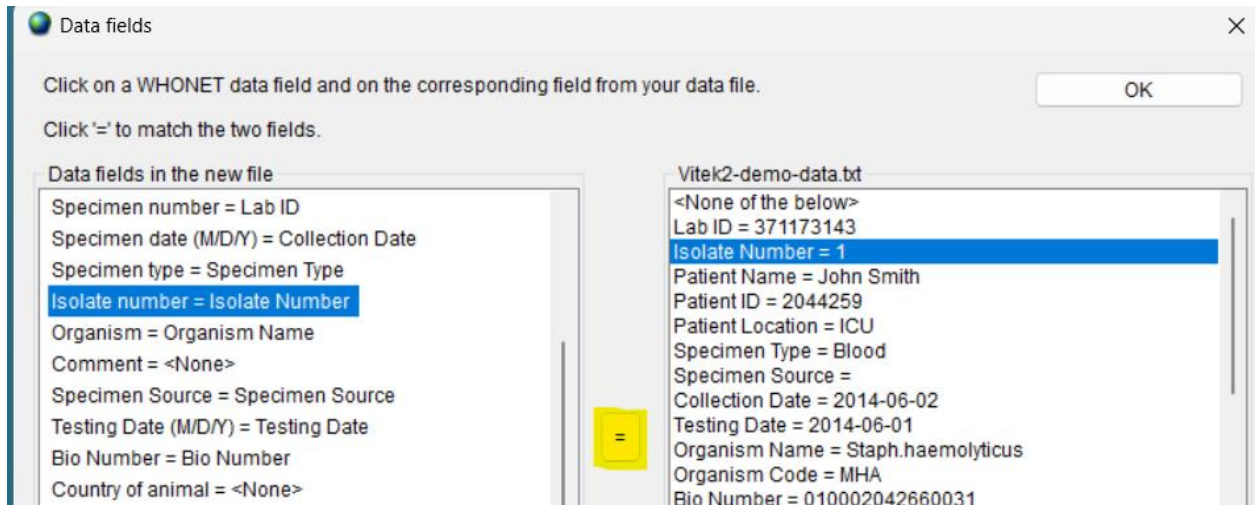
a. If you attempt to add a data field which is already part of your configuration, you will receive a message indicating that this data field was skipped.



11. The list of data fields shown in the column on the right should now include the EARS-Vet data fields. Press “OK” on the “Modify list” form to return to the “Data fields” form.
12. It is now time to match the data fields in your sample input file with those you’ve just added to your configuration. Begin by pressing the “Select a sample data file” button and choosing your sample AMR data file you’ve extracted previously from your facility’s information system.



13. After selecting your sample file, BaLink will read the first isolate and display it on the screen along with the data field header names found in your sample file as shown below.
14. You must now match each of your data fields in the left column with the corresponding column shown on the right by highlighting the fields in both columns and pressing the equals sign in the center of the screen.

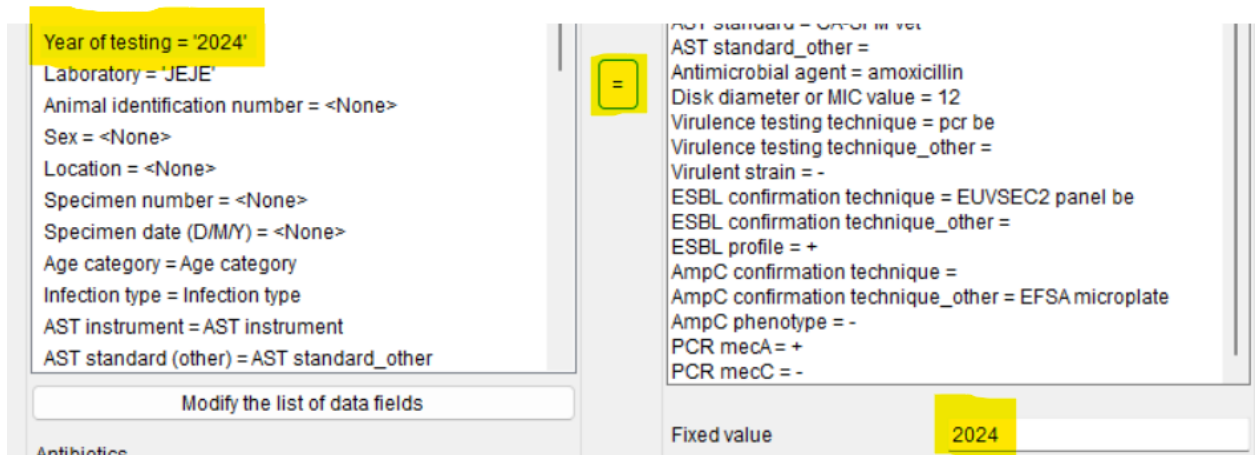


15. There are several differences between the WHONET and EARS-Vet terminology used to describe the same concepts. Please refer to the following table.

EARS-Vet name	WHONET/BacLink name
Isolate ID	Isolate number
Bacterial species	Organism
AMPc phenotype	AMPc production
ESBL profile	ESBL
AST technique*	Antibiotic test method
AST standard*	Antibiotic test guideline

* An important note: partners who have only one AST method or guideline used in their data set (specified in the “file structure” configuration) will not see the corresponding “AST technique” or “AST standard” respectively. In all cases, the columns will be present in the WHONET export to EARS-Vet.

16. Some of the EARS-Vet data fields may not have a corresponding field in your input file. For example, if you do not have a data field for “Year of sampling”, then you should use a “Fixed value”, for example “2024”. To do this, type the fixed value into the corresponding text box and press the “equals” sign in the center of the screen.
- You may be missing other data fields, such as the AST instrument, etc. You can use a fixed value to provide these as well.
 - If you needed to set a fixed value for the “Year of sampling”, you will need to adjust this fixed value each year in your configuration.

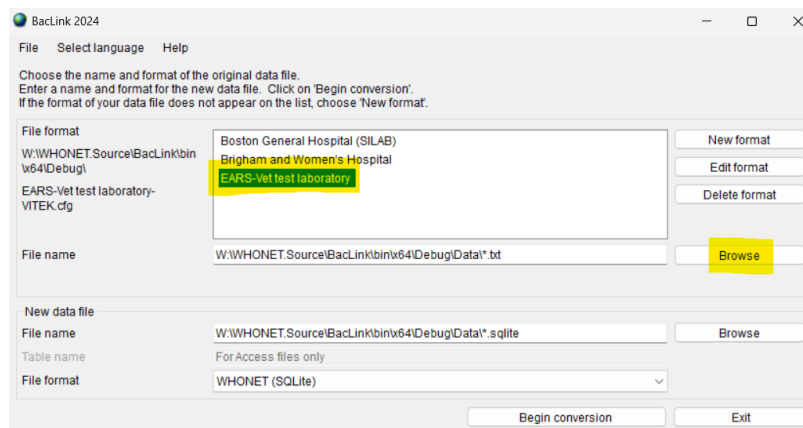


17. Once you have completed your data field matches, you may press “OK” to return to the “File structure” screen.
18. Press “OK” on the “File structure” screen to return to the “BacLink Configuration” screen.
19. Press “Save” on this screen and return to the main menu, where your new configuration file should be listed.

Importing data files with BacLink

The procedure above for generating your BacLink configuration must only be performed once on your system. Once you have an EARS-Vet configuration, you can simply select it from the list, choose your corresponding data file, and convert the data into the WHONET data file structure using the procedure below in a few clicks. While the configuration process can be tedious due to the number of details that must be managed in describing your input files, the data export process itself is very simple. After you have successfully created a configuration for your data files, this is the only section of this document that you will need to repeat on an ongoing basis, unless your files or other details change which would necessitate a corresponding change to your configuration.

1. Choose your EARS-Vet configuration file from the list of options on the BacLink main screen.
2. Press the “Browse” button associated with the file name, highlighted in the image below.



3. Choose your input data file using the file browser and press OK to select it.

4. A default output file name will be provided in the “new data file” section once you select your data file above. You may choose another name or location for the output data or accept the default.

The screenshot shows the BacLink 2024 application window. The title bar reads 'BacLink 2024'. The menu bar includes 'File', 'Select language', and 'Help'. Below the menu bar, there is instructional text: 'Choose the name and format of the original data file. Enter a name and format for the new data file. Click on 'Begin conversion'. If the format of your data file does not appear on the list, choose 'New format'.

The 'File format' section contains a list of formats: 'Boston General Hospital (SILAB)', 'Brigham and Women's Hospital', and 'EARS-Vet test laboratory'. To the right of this list are three buttons: 'New format', 'Edit format', and 'Delete format'. Below the list is a 'File name' field containing 'C:\WHONET\Data\test.txt' and a 'Browse' button.

The 'New data file' section contains a 'File name' field with 'C:\WHONET\Data\FRA-TST-test.sqlite' (highlighted in yellow), a 'Browse' button (also highlighted in yellow), a 'Table name' field with 'For Access files only', and a 'File format' dropdown menu set to 'WHONET (SQLite)'. At the bottom of the window are two buttons: 'Begin conversion' and 'Exit'.

5. Press “Begin conversion” near the bottom of the form.
6. The first three isolates will be shown sequentially so that you can make a brief visual inspection. Some fields will be translated into the WHONET code set, others will be copied as-is. The system should also recognize your antibiotics, which are shown in the lower window. If you do not see antibiotics on this screen, then the system may need to finish processing the file to request that you match these with the known WHONET antibiotics.

BacLink 2024 - Isolate 1

Field name	Local value	WHONET value
Identification number		
Location		
Department		
Specimen number		
Specimen date		
Specimen type	CECUM	cecum
Local specimen code	CECUM	CECUM
Isolate number		
Organism	ESCCOL	eco
Local organism code	ESCCOL	ESCCOL
Comment		
Data year		
Data representativeness		
Surveillance program		
Animal species	PIC	
Animal use	MEAT	mea
Market category	DOM	d
AMP_EM = 2	CHL_EM = 64	CIP_EM = 0.015
COL_EM = 1	CTX_EM = 0.25	CAZ_EM = 0.5
GEN_EM = 0.5	MEM_EM = 0.03	NAL_EM = 4
SMX_EM = 1024	TCY_EM = 64	TGC_EM = 0.25
TMP_EM = 32		

Next Cancel

7. For each isolate, press “Next” once you have finished looking over the record.
8. After the third isolate, the remainder of the data file will be processed. You can monitor the conversion on the progress screen. Newly discovered codes will appear, as well as any conversion problems, such as dates with unrecognized formats, etc.
9. Once the conversion has completed, you will be presented with a dialog box allowing you to either continue back to the BacLink main screen, or you can view the entire database’s contents if you choose “View database”.
 - a. If there are undefined codes, please follow the standard BacLink documentation regarding code mapping found on the training page of our website.
 - b. If one of the date fields was incorrectly formatted, you can change this in the “Data fields” configuration area. This is also covered in the standard BacLink documentation.
10. If you have defined new codes or made any other modifications to the configuration you should rerun the BacLink conversion again using the updated configuration. Once the data appears correct, and no further changes are required, you may use the data files generated by BacLink with WHONET analyses and the EARS-Vet export.
11. For general BacLink questions not covered in this document, please refer to the documentation found on your computer at C:\WHONET\Documents\ or online at the following URL:
 - a. <https://whonet.org/training.html#baLinkResources>