



J R C T E C H N I C A L R E P O R T S

EC Maps Website

Version 2.1

Datasets and Map management User Manual

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Table of Contents

- Table of Contents 2
- 1. Introduction 3
- 2. How to register and manage your profile 4
 - 2.1 Registration 4
 - 2.1 Managing your profile..... 5
 - 2.2 How to recover passwords 6
- 3. Uploading datasets 7
 - 3.1 Models 8
 - 3.2 Runs 11
 - 3.3 Files 14
- 4. Meta data view 19

1. Introduction

The EC Maps Website is intended to support the FAIRMODE-WG1 initiative to collect and assemble modelled air quality maps into an EU wide 'Composite Map'. The website can be accessed through the DELTA benchmarking website at <http://aqm.jrc.ec.europa.eu/>. Through this website users can register to upload their datasets. Datasets have their own format depending on the data context. The formats for emission and concentration data are described in specific user guides. Regarding maps for the composite mapping exercise, each map file (.asc or .tiff) must relate to one pollutant only. When the proposed dataset relates to more than one pollutant, users are kindly requested to keep the maps as separate files and upload all the ASCII or GeoTIFF files separately into the database.

2. How to register and manage your profile

2.1 Registration

Before accessing the database user must register in the JRC AQM (Air Quality and Modelling) Delta Benchmarking website at <http://aqm.jrc.ec.europa.eu/>. After filling in the registration form and submitting it (Figure 2.1), users are approved by a board of experts.

In the application form, users must fill in their details (1) and check all the boxes with all the activities they are interested in participating (2). In particular, for the EC Maps users must check the “*Contribute to Δ - Database (FAIRMODE Composite Maps)*” box.

Application form 1

Email:

First Name:

Last Name:

Affiliation:

I am a member of [FAIRMODE](#)

Tools and software (select desired options) 2

Δ - Assessment & Planning (A&P)

Δ - Emission

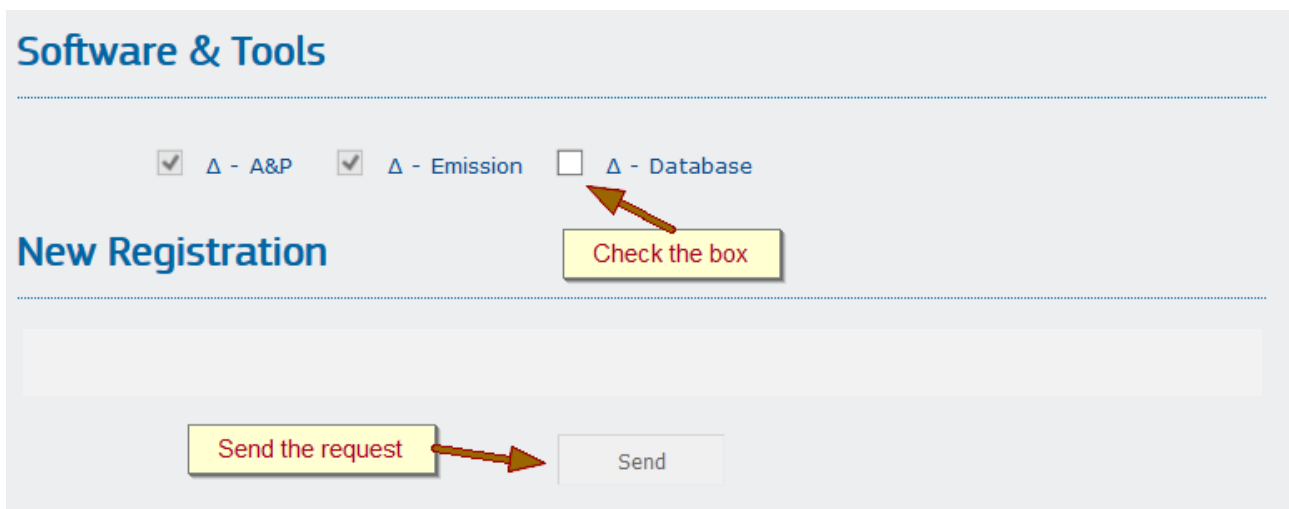
Contribute to Δ - Database (FAIRMODE Composite Maps)

SHERPA (Screening for High Emission Reduction Potential on Air)

Figure 2.1

2.1 Managing your profile

Participants already registered under DELTA but who have not yet participated in the composite mapping have to send a request before they can upload datasets (assessment/concentration or emission). To send a request check the “ Δ – Database” box under the section “Software & Tools” in the “User profile” page and press the send button (Figure 2.2).



Software & Tools

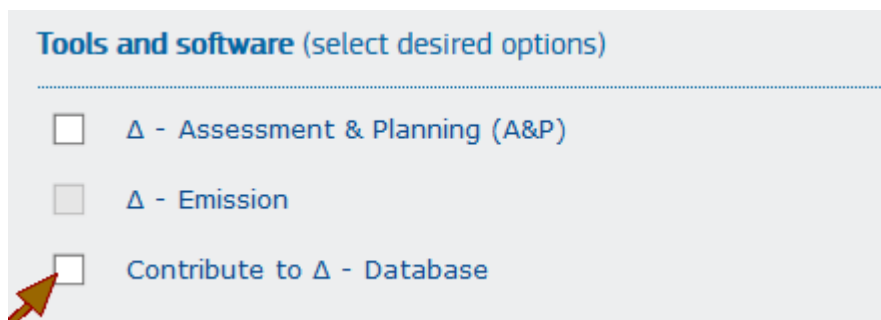
Δ - A&P Δ - Emission Δ - Database

New Registration

Send the request → Send

Figure 2.2

New users can choose to contribute to the Δ – Database during the registration procedure as described above in paragraph 2.1 (Figure 2.3).



Tools and software (select desired options)

Δ - Assessment & Planning (A&P)

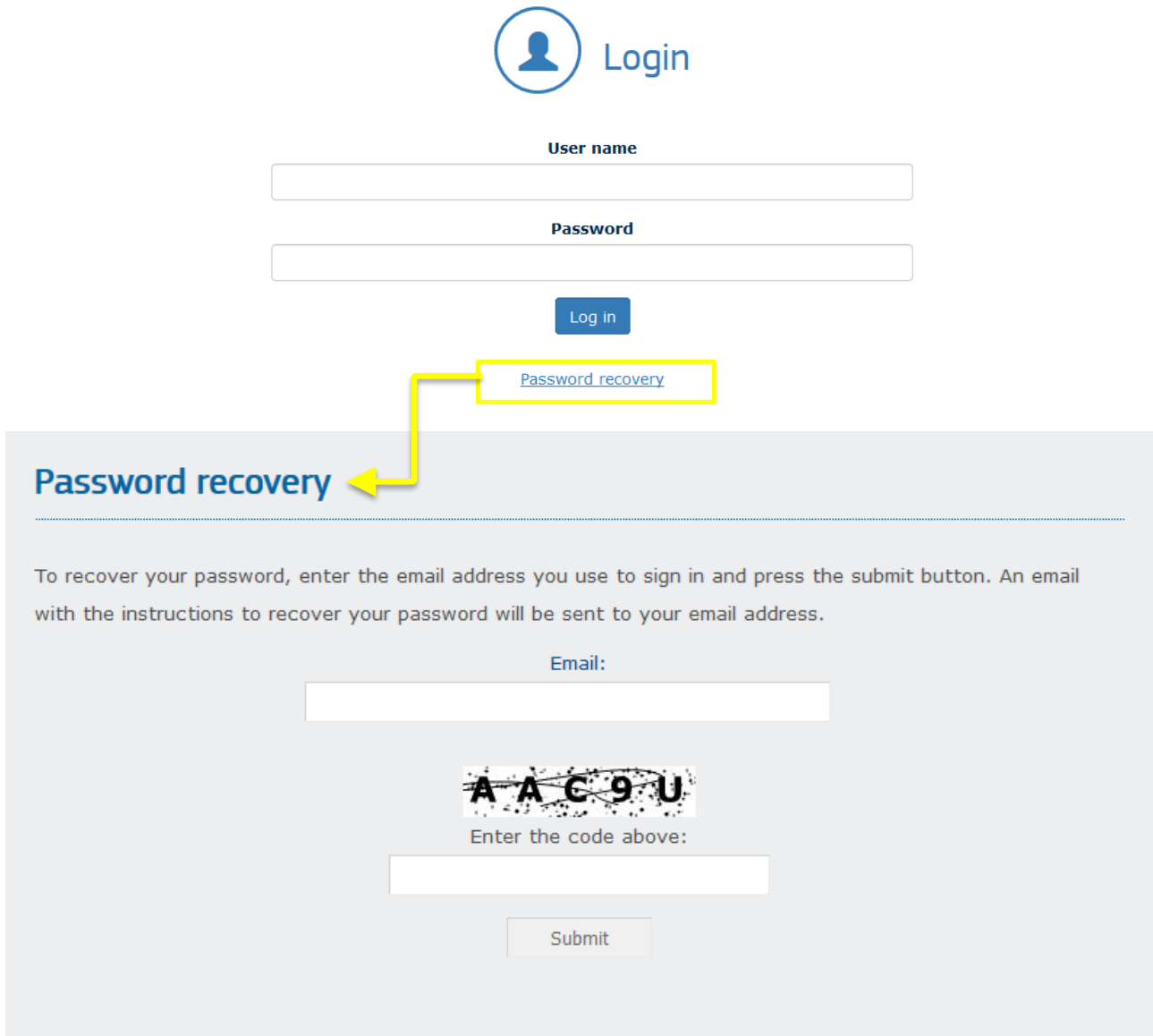
Δ - Emission

Contribute to Δ - Database

Figure 2.3

2.2 How to recover passwords

To reset the password users can follow the password recovery procedure at the Delta Benchmarking website (Figure 2.4).



The image shows a two-step process for password recovery. The first step is the login page, which includes a user icon, a 'Login' label, and input fields for 'User name' and 'Password'. A 'Log in' button is located below these fields. A yellow box highlights a 'Password recovery' link, with a yellow arrow pointing to the second step. The second step is the 'Password recovery' page, which has a title 'Password recovery' and a dotted line separator. Below the title, there is a paragraph of instructions: 'To recover your password, enter the email address you use to sign in and press the submit button. An email with the instructions to recover your password will be sent to your email address.' This is followed by an 'Email:' label and an input field. Below that is a CAPTCHA image showing the code 'A A C 9 U' with a grid overlay. Underneath the CAPTCHA is the text 'Enter the code above:' and another input field. At the bottom of the page is a 'Submit' button.

Figure 2.4

3. Uploading datasets

Approved users are able to access the EC Maps website at <http://fairmode.jrc.ec.europa.eu/ecmaps/>

Before uploading participants must access the website with the credentials (username and password) defined during the registration procedure described in paragraph 2.

To access the website press the button “Your models” or “Login” in the top right corner of the home page of the EC Maps website (Figure 3.1).

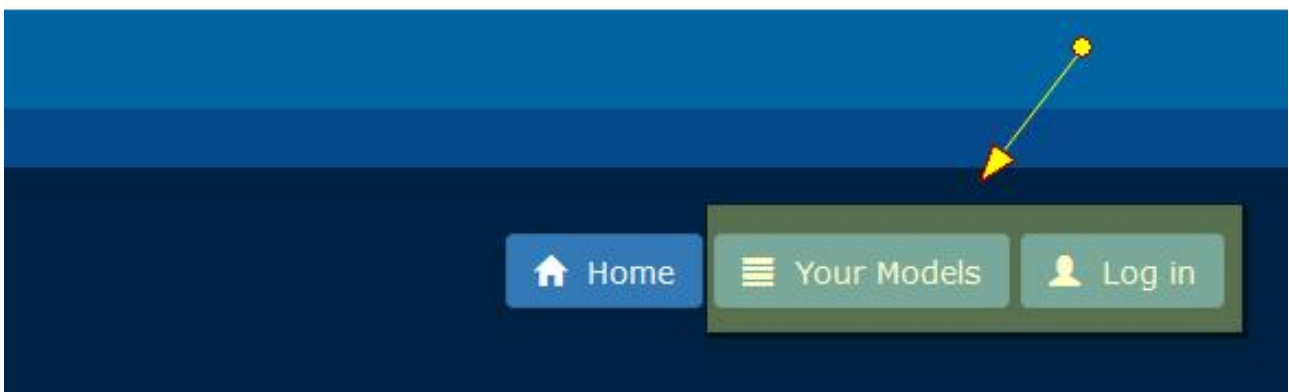
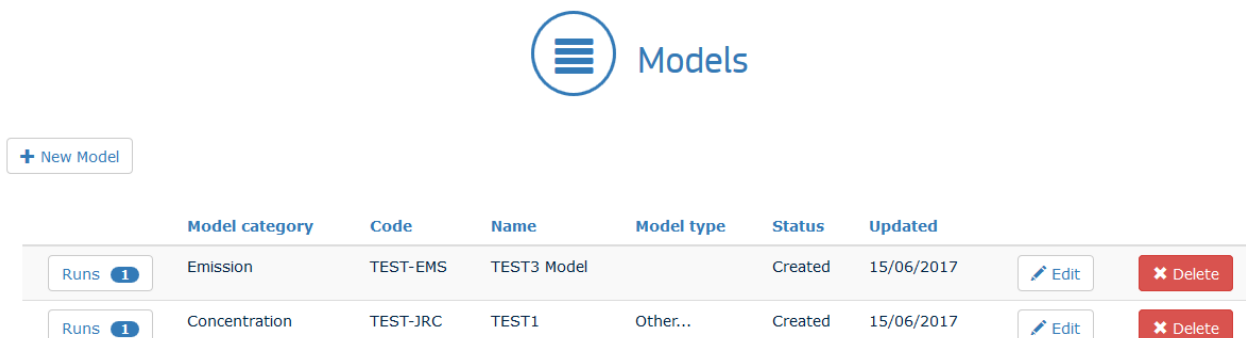


Figure 3.1

3.1 Models

After logging in, users are able to manage their own models (Figure 3.2)



	Model category	Code	Name	Model type	Status	Updated		
Runs 1	Emission	TEST-EMS	TEST3 Model		Created	15/06/2017	Edit	Delete
Runs 1	Concentration	TEST-JRC	TEST1	Other...	Created	15/06/2017	Edit	Delete

Figure 3.2

By pressing the button “New Model”, users can add one or more models to their personal list (Figure 3.3). A dropdown list allows to choose between “Concentration” and “Emission” depending on the type of data that must be uploaded in the database.

The type of models (Eulerian, Gaussian, Lagrangian, etc) makes sense only for concentrations.



New Model

Category

Code

Reference code to your model (model_institute). This code will be used to identify your data on the EC Maps viewer.

Model name

Description (optional)

Model Type is available for concentration models only



Model type

Figure 3.3

When adding new models to the database, users must fill in:

- **Category:** Concentration or Emission models;
- **Code:** a reference label that will be used on the map viewer to identify the data. The recommended format is institute model where the institute identifies the user and could also be the name of an administrative unit or a university for example. If the resulting label is not specific enough this can be extended to institute model country city keeping in mind that the label should be suitable for use in a legend. The length of the Code must not exceed 16 chars. Abbreviations or acronyms are therefore advised;
- **Model Name:** name of the model that was used to generate the results;
- **Description** (optional): some additional information;
- **Model type (*):** the type of model used, selected from a drop down list with choice between Eulerian, Gaussian, Lagrangian and Other.

(*) concentration models only

The model is successfully added to the database when all mandatory fields are filled in correctly and the button "save" is pressed. Once added to the database models can be edited or deleted.

3.2 Runs

When a model has been created, users must add runs to it. Runs contain attributes which describe the files uploaded in the final step. Runs can be added to a model by pressing the button “Runs” in the model list.

When adding a new run (Figure 3.4), users are requested to fill in the following information:

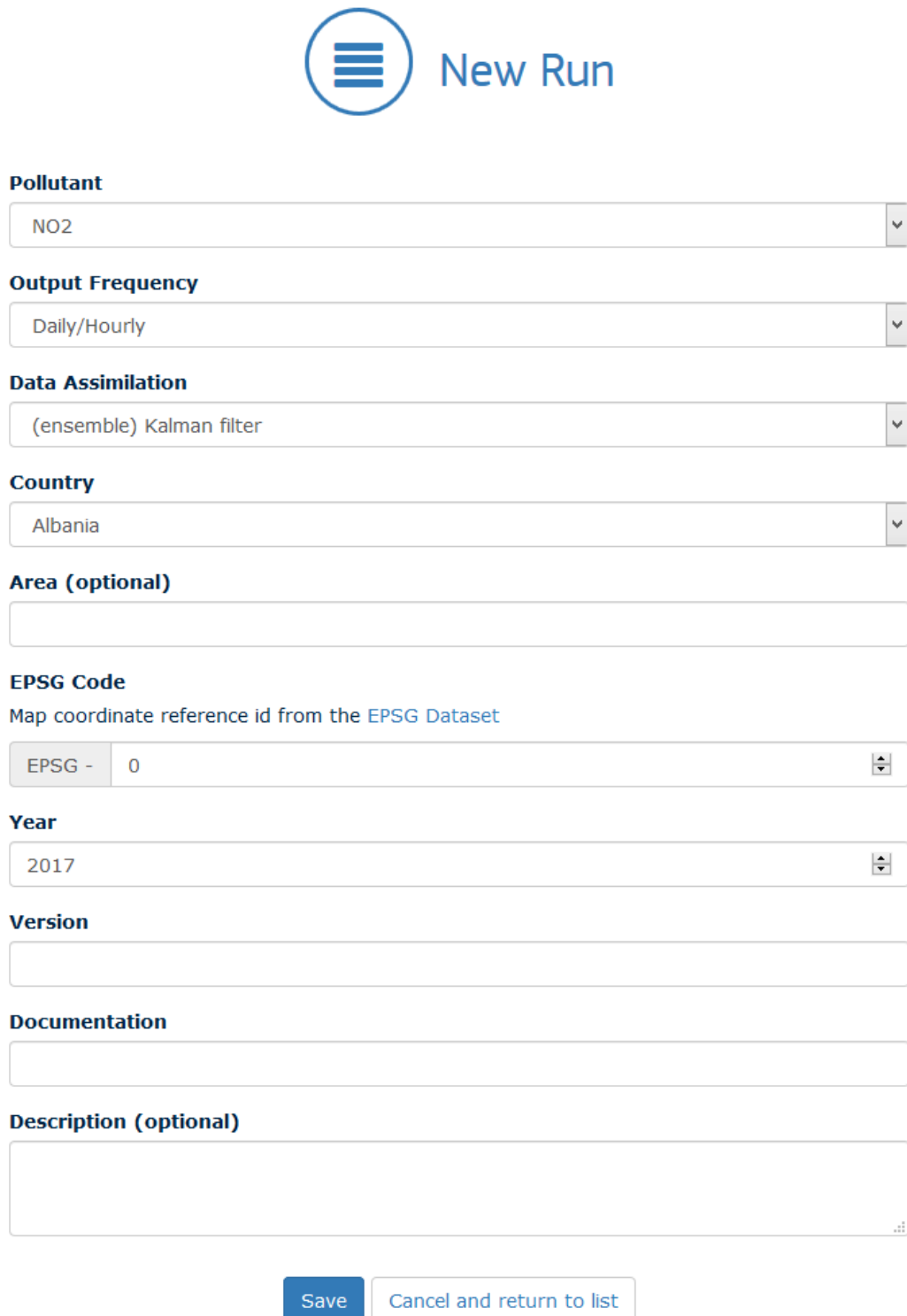
- **Pollutant:** selected from a drop down list: NO₂, O₃, PM₁₀ or PM_{2.5}
- **Output Frequency:** select between daily/hourly and yearly
- **Data Assimilation (*):** select the data assimilation method from a drop down list:

None, 3D-Var data assimilation, 4D-Var data assimilation, Background Measurement values, (residual) Krigging, Linear regression, Interpolation, Optimal interpolation, Successive correction method, Support vector regression (machine), Variation analysis, (ensemble) Kalman filter, Other...

- **Country:** country to which the map applies, select from drop down list
- **Area** (optional): name of the region, city, ... to which the data relate. This should be left blank if your data is for the whole country.
- **EPSG Code:** spatial reference code. Through the link (<http://spatialreference.org/ref/epsg/>) next to the entry a list of existing EPSG codes can be consulted
- **Year:** year to which the model run results relate, example 2015 or 2012
- **Version:** version of the model run
- **Documentation:** a web link to the manual or documentation for the model
- **Description** (optional): extra information for the model run such as a reference to a project, main intention for the model run, if the model run was validated, etc.

(*) concentration models only

Runs are saved to the database when the button "Save" is pressed. Runs can always be edited or deleted (Figure 3.5).



The form is titled "New Run" and features a blue circular icon with three horizontal lines. It contains several input fields and dropdown menus:

- Pollutant:** A dropdown menu with "NO2" selected.
- Output Frequency:** A dropdown menu with "Daily/Hourly" selected.
- Data Assimilation:** A dropdown menu with "(ensemble) Kalman filter" selected.
- Country:** A dropdown menu with "Albania" selected.
- Area (optional):** An empty text input field.
- EPSG Code:** A dropdown menu with "EPSG - 0" selected. Below it is a link: "Map coordinate reference id from the [EPSG Dataset](#)".
- Year:** A dropdown menu with "2017" selected.
- Version:** An empty text input field.
- Documentation:** An empty text input field.
- Description (optional):** A large empty text area with a small "..." icon at the bottom right.

At the bottom of the form are two buttons: a blue "Save" button and a white "Cancel and return to list" button with a blue border.

Figure 3.4

[⏪ Back to models](#) [+ New run](#)

	Run Year	Country	Data Assimilation	Output Frequency	Pollutant	Area	EPSG code	Updated		
Files 1	2017	Italy	(ensemble) Kalman filter	Daily/Hourly	PM10	Milano	EPSG-3210	23/05/2017	✎ Edit	✖ Delete
Files 0	2017	Albania	(ensemble) Kalman filter	Daily/Hourly	O3	test	EPSG-3210	23/05/2017	✎ Edit	✖ Delete

Figure 3.5

3.3 Files

The last step consists in uploading files and datasets. This can be done by pressing the button “Files” in the “Runs” list (Figure 8).

The map code that will be used in the ECMAP Viewer is shown at the top of the page. This code can be easily modified by clicking on the corresponding meta-tag (model code, year, pollutants, country and area) before uploading a new file or setting a link.

To upload a file or to set a link in the database press the button “Add new map” (Figure 3.6)

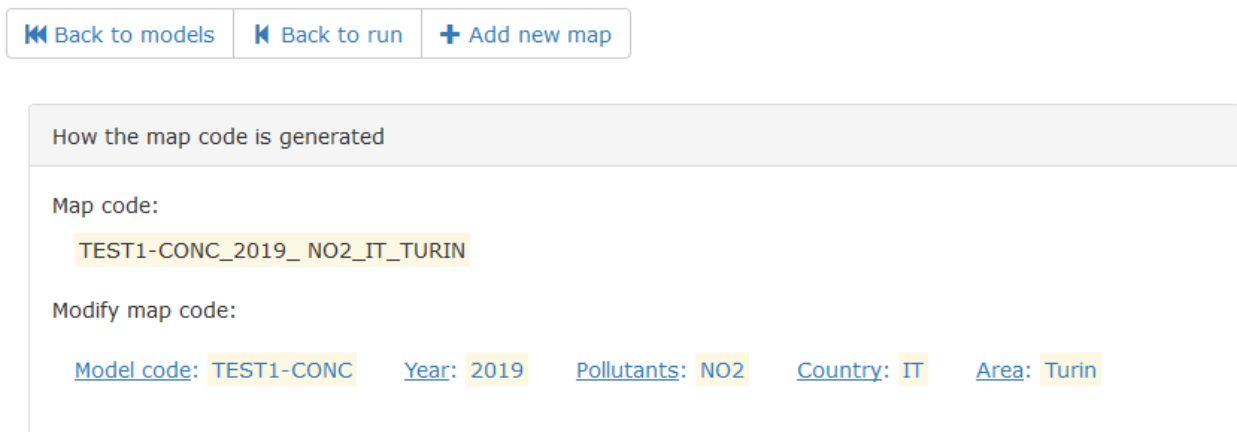


Figure 3.6 – Uploading files

From version 2.1 of the ECMAP Database there are three ways to store dataset in the database (Figure 3.7):

1. A physical dataset (Map file) (Figure 3.7.a)
2. A link to a public dataset (Map Link) (Figure 3.7.b)
3. A target diagram (Figure 3.7.c)

Select file or link to map data

The [CMAPPING tool](#) should be used to check the concentration maps before these are uploaded to the Composite mapping database. Please, avoid to upload unvalidated data to the database to help us keeping the database consistent.

File or link type

-- Please select --

-- Please select --

Map File

Map Link

Target Diagram

Submit Cancel and return to list

Figure 3.7 – Select a resource

Select file or link to map data

The [CMAPPING tool](#) should be used to check the concentration maps before these are uploaded to the Composite mapping database. Please, avoid to upload unvalidated data to the database to help us keeping the database consistent.

File or link type

Map File

Browse...

Submit Cancel and return to list

Figure 3.7.a – Uploading a map file

Select file or link to map data

The [CMAPPING tool](#) should be used to check the concentration maps before these are uploaded to the Composite mapping database. Please, avoid to upload unvalidated data to the database to help us keeping the database consistent.

File or link type

Map Link

Web Link

http://test.jrc.eu/file1.asc

Submit Cancel and return to list

Figure 3.7.b – Setting a public link

Select file or link to map data

The [CMAPPING tool](#) should be used to check the concentration maps before these are uploaded to the Composite mapping database. Please, avoid to upload unvalidated data to the database to help us keeping the database consistent.

File or link type

Target Diagram

Browse...

Submit Cancel and return to list

Figure 3.7.c – Uploading a target file

The **CMAPPING tool** is used to validate your data. It should be adopted to check the concentration or emission maps before these are uploaded. The [CMapping Tool v1.0.0](#) can be downloaded from the home page of the EC Maps website: <http://fairmode.jrc.ec.europa.eu/ecmaps/>

Your maps and target files are shown in two distinct areas of the page (Figure 3.8).

How the map code is generated

Map code:
TEST1-CONC_2019_NO2_IT_TURIN

Modify map code:

Model code: TEST1-CONC Year: 2019 Pollutants: NO2 Country: IT Area: Turin

Maps files or links

✕ Delete [TEST1-CONC_2019_NO2_IT_TURIN] [MAP] [773] ⬇️ Download

+ Target Diagram 🔍 Details

Target Diagram

✕ Delete [TEST1-CONC_2019_NO2_IT_TURIN] [TG] [774] ⬇️ Download

Figure 3.8

4. Meta data view

For both concentration and emission maps it's now possible to view the metadata provided by all data providers (Figure 4.1 and Figure 4.2).

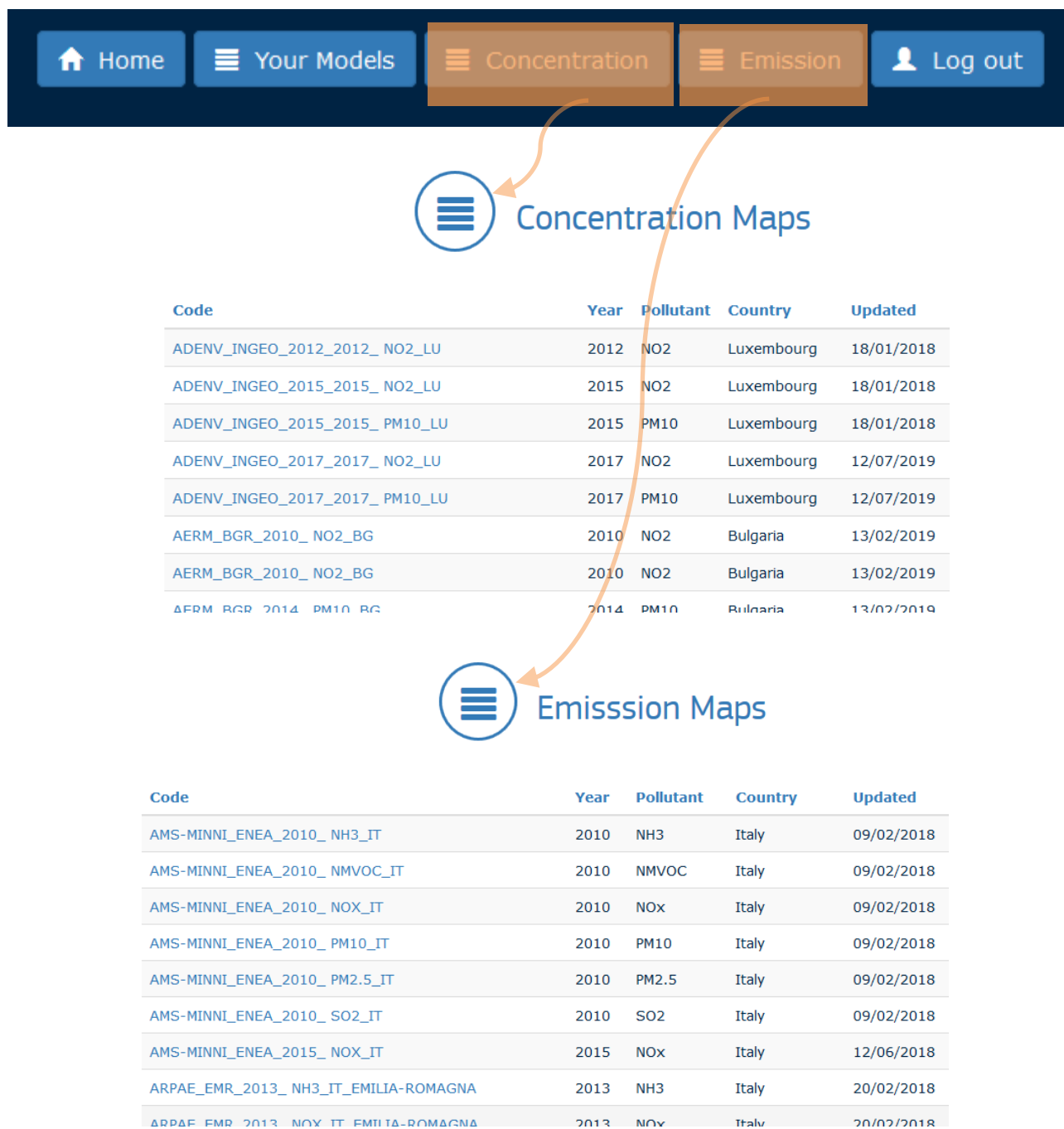


Figure 4.1



Map Details

[⏪ Back to list](#)

Emission Map

Map code: AMS-MINNI_ENEA_2010_NH3_IT

Meta-tags

Category: Emission

Model name: AMS-MINNI

Model type:

Pollutant: NH3

Output Frequency: Yearly

Data assimilation:

Country: Italy

Area:

EPSG Code: EPSG-32632

Release version: v2017

Documentation: http://www.minni.org/progetto-en?set_language=en

Last Update: 09/02/2018

Owner

Name:

Affiliation: ENEA

Files (10)

Sector: S1

Estimation Approach: Top-Down

File code: AMS-MINNI_ENEA_2010_NH3_IT_S1

Sector: S2

Estimation Approach: Top-Down

...

Figure 4.2

As the Commission's in-house science service, the Joint Research Centre's mission is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle.

Working in close cooperation with policy Directorates-General, the JRC addresses key societal challenges while stimulating innovation through developing new standards, methods and tools, and sharing and transferring its know-how to the Member States and international community.

Key policy areas include: environment and climate change; energy and transport; agriculture and food security; health and consumer protection; information society and digital agenda; safety and security including nuclear; all supported through a cross-cutting and multi-disciplinary approach.