PT-DAP – Data submission

- Particulate Matter (PM_{10}, $PM_{2.5}$)

User Manual

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Introduction

The PT-Data Acquisition Platform (PT-DAP) is a web application designed to facilitate proficiency testing (PT) for particulate matter measurements, specifically PM10 and PM2.5. During the DATA SUBMISSION phase, participants are required to submit their measurements in well-structured CSV files by a specified deadline, ensuring consistency and accuracy in reporting. After preparing their data, users can upload their results through the web interface.

This process centralises data collection, allowing PT coordinators to evaluate submissions, analyse performance, and provide feedback. The platform plays a crucial role in enhancing the reliability of particulate matter assessments, contributing to improved air quality monitoring and compliance.

Data submission

During the data submission phase, according to the displayed start and end date, you can either withdraw your participation in the PT-scheme round (click WITHDRAW and CONFIRM) or submit your data (click SUBMIT) (figure 1).

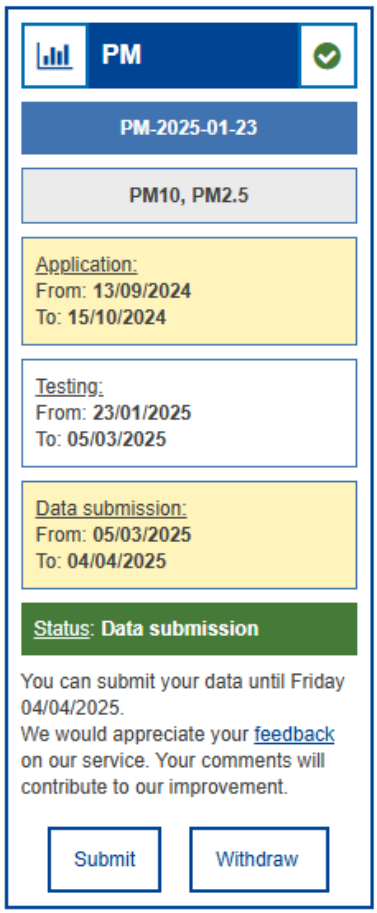

figure 1 – Data Submission Phase, submit and withdraw button

Submission forms

Submission sampling metadata

Please enter the unique code (i.e. serial number) for your instrument and the filter used by clicking the "Manage" button. Once this information is entered, the "Upload" button will be activated, allowing you to upload the measurement data. (Figure 2)

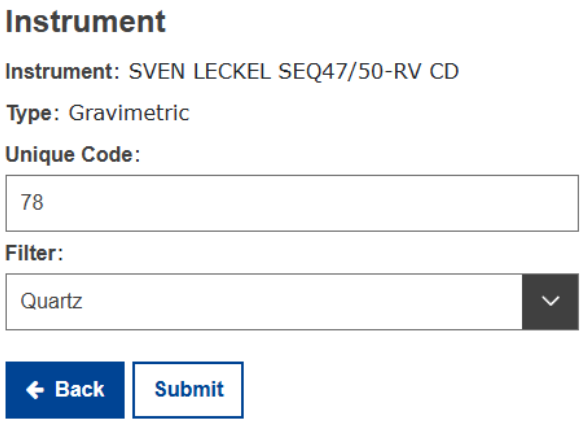

Figure 2: Submission sampling metadata

Submission measurement data (csv file)

Description of the CSV format expected by the Proficiency Testing - Data Acquisition Platform (PT-DAP), along with additional considerations for the uploading procedure:

Data Records: Each line with a date in the CSV file shall correspond to a single measurement.
Delimiter: The name "Comma-Separated Values" indicates that the comma is used to separate the values in each record. Although other delimiters exist, the PT-DAP platform accepts only commas (,) as delimiter.
Decimal separator: the PT-DAP platform accepts only dots (.) as decimal separator in CSV files uploaded to the database.
Fields: Each record consists of one or more fields, separated by the delimiters. The number of fields must be the same in each record/row.
Headers: The first line of a CSV file must contain headers, which label each field in the records of the PT-DAP database.
Content: Please insert dates and values only, avoiding any special characters (e.g., TAB), comments, or descriptive text.
Duplicate Records: Duplicate records (same date) will be discarded; only the first record will be uploaded.
Character Encoding: CSV files must be encoded in UTF-8.
Length: The CSV file must contain exactly 43 lines (including headers + 42 records).
Empty Line: Any empty lines will not be considered.

It is always recommended to check the file format with a text editor (i.e. notepad) before uploading it to the database.
Only well-formatted CSV files are accepted by the PT-DAP validation procedures.

Below is an example of a CSV file that includes the expected header line and sample values, created solely for demonstration purposes. When you open your CSV file in a text editor with all values populated, you will see a similar structure, though with different values:

```
day,value,uc,ue
23/01/2025,22,1.7,3.4
24/01/2025,17,1.7,3.4
25/01/2025,26,1.7,3.4
26/01/2025,24,1.7,3.4
27/01/2025,13,1.7,3.4
28/01/2025,31,1.7,3.4
29/01/2025,51,1.8,3.6
30/01/2025,40,1.8,3.6
31/01/2025,34,1.8,3.6
1/2/2025,38,1.8,3.6
2/2/2025,54,1.9,3.8
3/2/2025,71,2,4
4/2/2025,57,1.9,3.8
5/2/2025,36,1.8,3.6
6/2/2025,51,1.9,3.8
7/2/2025,19,1.9,3.8
8/2/2025,28,1.7,3.4
9/2/2025,31,1.7,3.4
10/2/2025,32,1.7,3.4
11/2/2025,6.2,1.7,3.4
12/2/2025,5.4,1.7,3.4
13/02/2025,30,1.7,3.4
14/02/2025,40,1.7,3.4
15/02/2025,54,1.7,3.4
16/02/2025,61,1.9,3.8
17/02/2025,17,1.7,3.4
18/02/2025,17,1.7,3.4
19/02/2025,23,1.7,3.4
20/02/2025,20,1.7,3.4
21/02/2025,12,1.7,3.4
22/02/2025,15,1.7,3.4
23/02/2025,28,1.7,3.4
24/02/2025,29,1.7,3.4
25/02/2025,25,1.7,3.4
26/02/2025,30,1.7,3.4
27/02/2025,25,1.7,3.4
28/02/2025,58,1.9,3.8
1/3/2025,41,1.8,3.6
2/3/2025,21,1.7,3.4
3/3/2025,11,1.7,3.4
4/3/2025,6.8,1.7,3.4
5/3/2025,19,1.7,3.4
```

In this example, each line represents a measurement, and commas are used as delimiters. Headers have the following meaning in the PT-DAP database:

day: the day of the measurement starting at 00:00 UTC and finishing at 24:00 UTC. Date must be expressed with a "dd/MM/yyyy" format, where "dd" is the day, "MM" is the month and "yyyy" is the year of the measurement (i.e.: 23/01/2025);
value: concentration expressed in µg/m^3
uc: combined uncertainty expressed in µg/m^3
ue: expanded uncertainty expressed in µg/m^3

The reported data should follow the rounding rules defined in the following table:

Value x	**Number of decimals**	**Example : before rounding**	**Example: after rounding**
x ≥ 10	integer	17.83	18
1 ≤ x < 10	1 decimal	2.345	2.3
0.1 ≤ x < 1	2 decimals	0.865	0.87
0.01 ≤ x < 0.1	3 decimals	0.0419	0.042

Proceed to upload your data:

Click "Upload" (Figure 3)

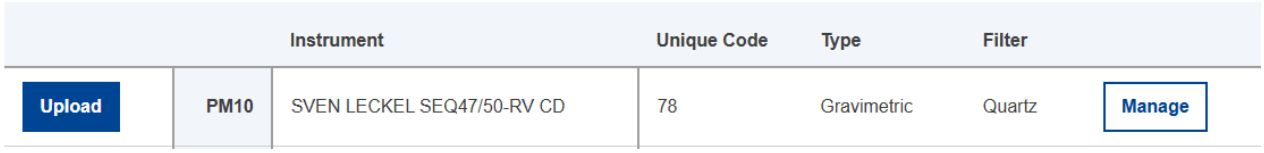

Figure 3: Upload data form

Click "Choose file" button (Figure 3Figure 4)

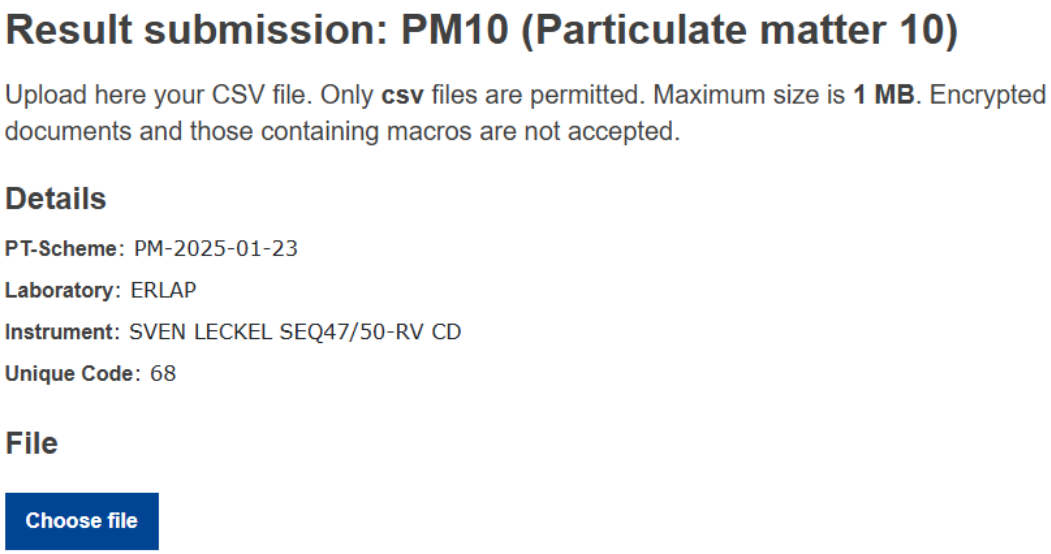

Figure 4: Choosing csv file

Browse, select, and OPEN the data file. The file name will be shown on the web page and the "Submit" button appears.

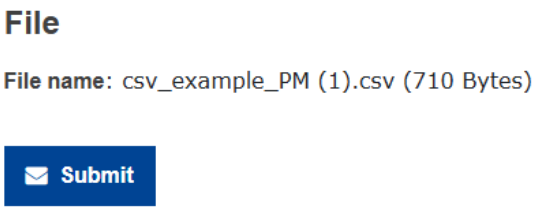

Figure 5: Submission csv file

Click "Submit" to upload the selected file (Figure 5).
The data file is automatically verified for format and completeness; in case of a well-formed file,
data are shown in a table on the same web page; The fields null are highlighted in yellow. Note that
cells highlighted in yellow indicate missing entries, left intentionally or mistakenly empty (Figure 6).

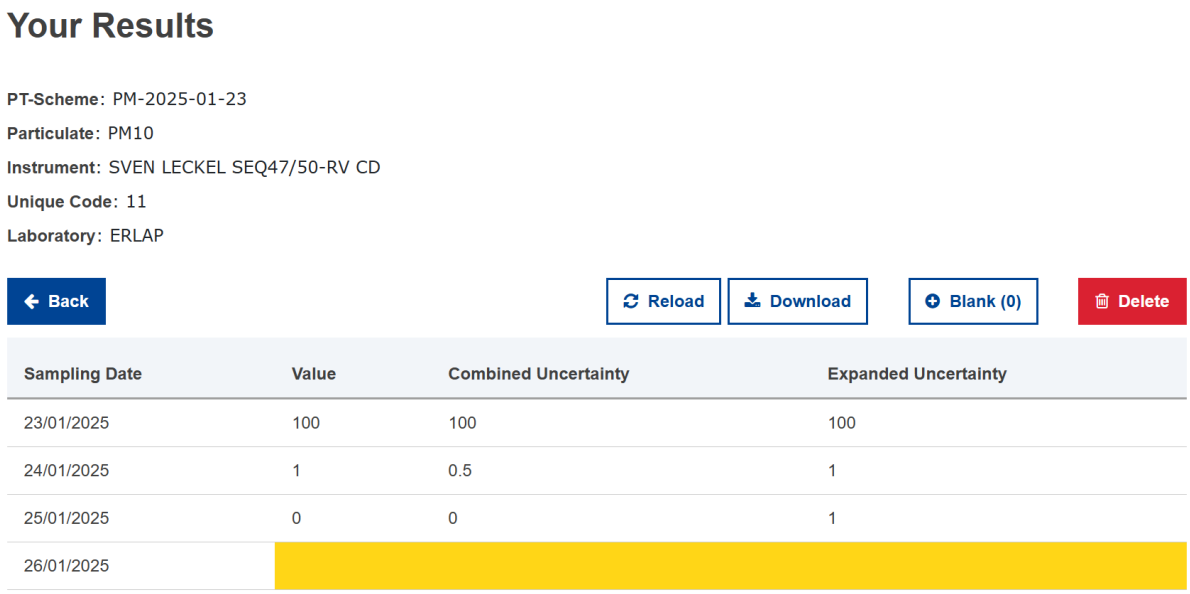

Figure 6: Data uploaded

If the file is not well formed, error details are provided.

Click “Back” and repeat the previous steps for each instrument.
You can modify your results at any time during the submission phase of the PT-DAP. The last CSV file uploaded before the submission phase closes will be considered your final result.

Additional data: filter blanks

To add a blank filter value, click the “Blank” button located above the table displaying your results (Figure 6). This will open an input form (see Figure 7) where you can enter the relevant data. The blank values must correspond to the sampling period. For example, if you sampled 14 filters between January 23, 2025, and February 5, 2025, you should fill in the blank filter value corresponding to this period, expressed in µg. Participants can add multiple blank values for each sampling period by repeating the previous steps for each filter blank.

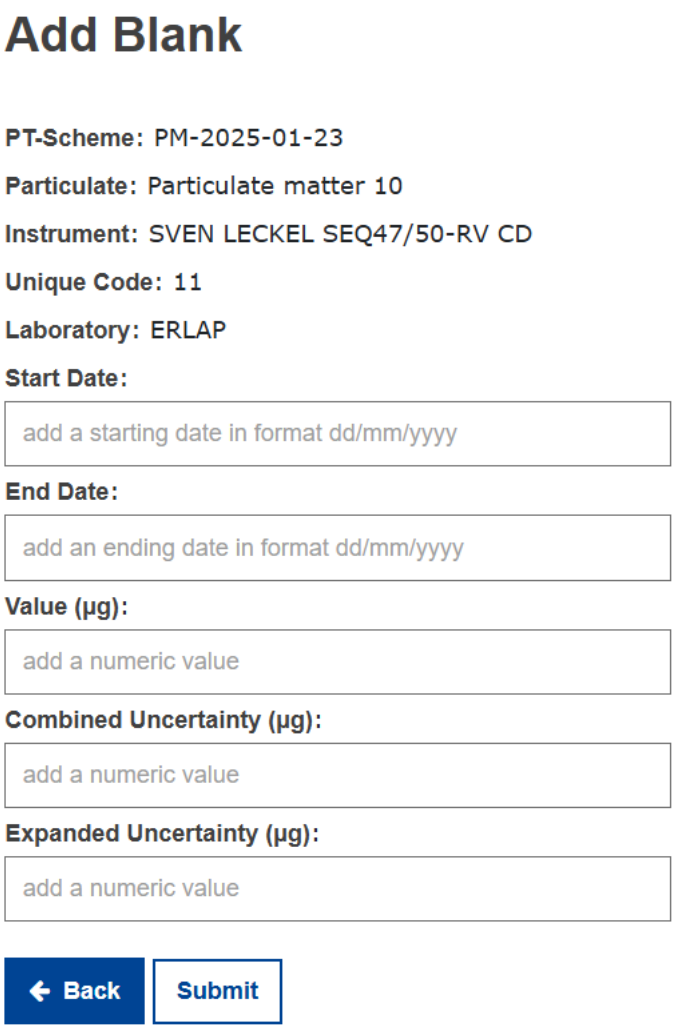

Figure 7 - Input form for filter blanks

Once you submit your input values by clicking the "Submit" button, a secondary grid will appear, displaying all the values you have added. (Figure 8)

Blanks (4)

Start Date	End Date	Value (µg)	Combined Uncertainty (µg)	Expanded Uncertainty (µg)	
23/01/2025	05/02/2025	67	6	12	Delete
23/01/2025	05/02/2025	67	6	12	Delete
06/02/2025	19/02/2025	32	5	10	Delete
06/02/2025	19/02/2025	33	5	10	Delete

Figure 8 - Filter blanks

Manage your data

With the buttons above your uploaded data, you may (Figure 6):
1. RELOAD your data set: refresh a data set by reloading a new file;
2. DOWNLOAD your data set: export a data set;
3. DELETE your data set: permanently delete a data set (measurements and the filter blank data);

Contact ERLAP

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