

Tools for benchmarking

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Baveno, 12-13 Feb 2015

What do we intend by benchmarking?



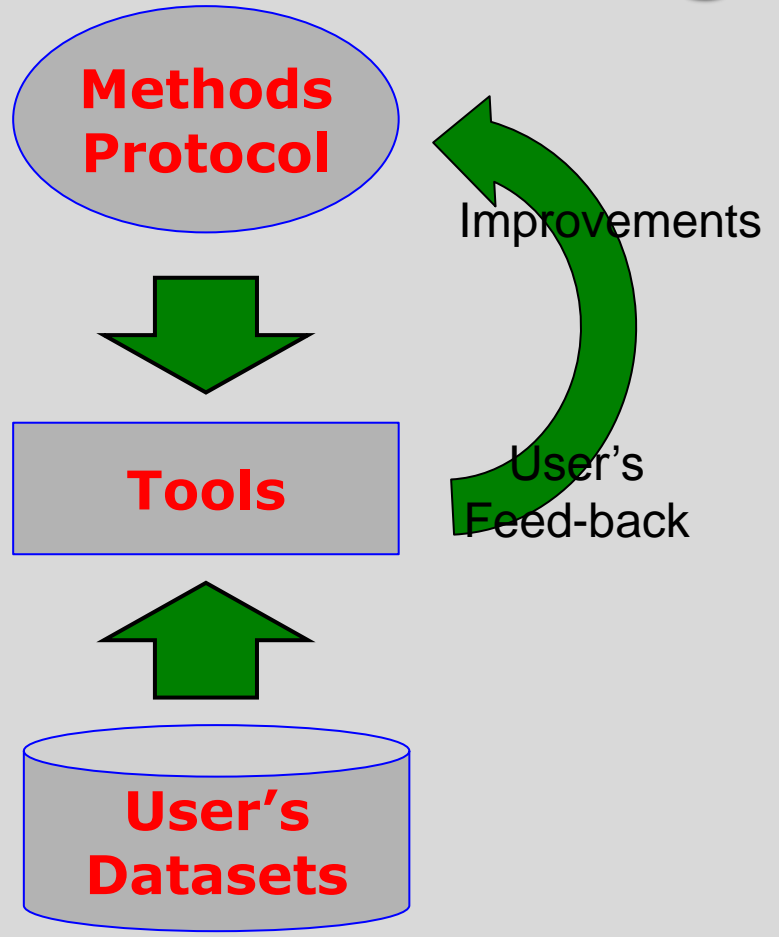
- A **standardized method** for collecting and reporting model outputs in a way that enables relevant comparison with a view to establishing good practice, diagnosing problems in performance, and identifying areas of strength; **Methodology**
- A **self-improvement tool** allowing model validation and model inter-comparison regarding some aspects of performance, with a view to finding ways to improve current performance; **Tool**
- An on-going, systematically oriented process of continuously comparing and measuring models performance providing users with an **external reference and best practices** on which to base evaluation of the results and future developments. **Datasets**

Tools as a facilitator of benchmarking

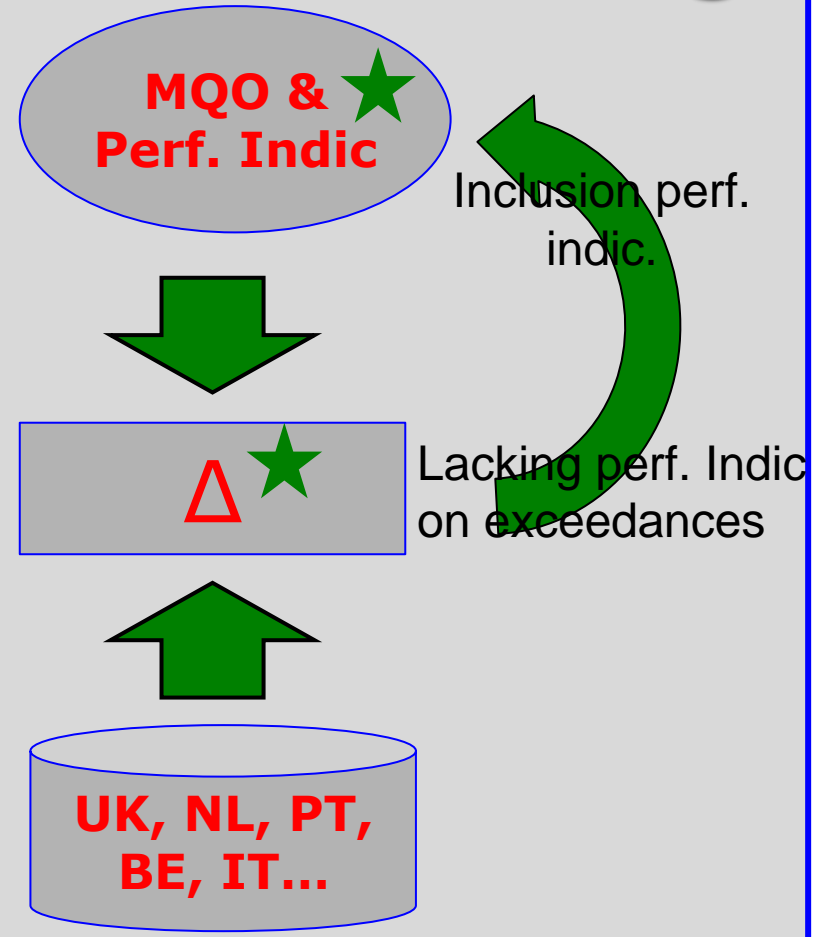


European Commission

Benchmarking



Benchmarking



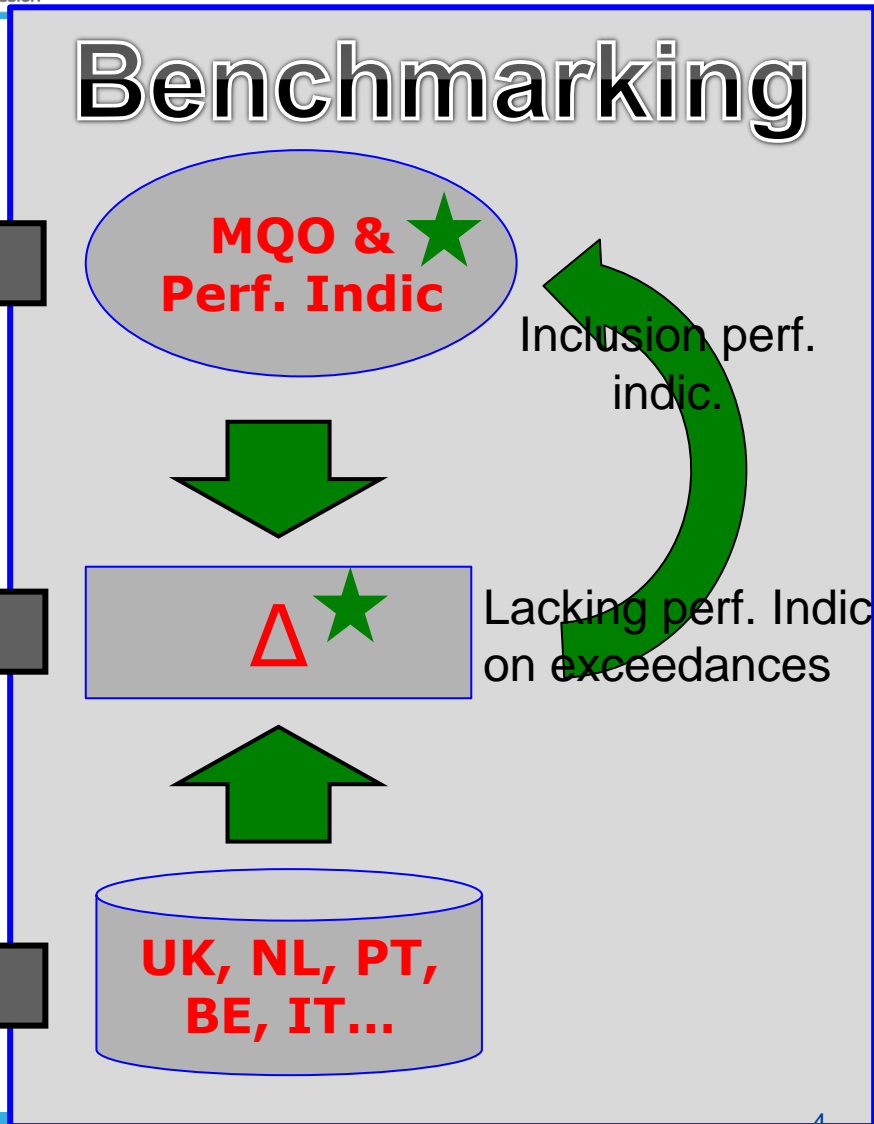
Tools as a facilitator of benchmarking



METHODOLOGY
Input to GUIDANCE
Input to STANDARDIZATION

TOOL → Support to test / compare / improve methods & help to reach converge.

DATASETS → learn from each other's experience & increase robustness of methodology.



Which tools for what purposes?



DEVELOPMENT

OPERATIONAL

Not yet available

Tested within Fairmode

Freely distributed

Emissions

Data Assim.

Sp. Repr.

Δ - Assessment

Forecast

Src. Apport.

Planning

Tools: status & challenges



	Difficulty to design and apply a methodology	Efforts requested in terms of analysis	Difficulty to collect Datasets
Assessment	●	●	●
Source App.	●	●	●
Emissions	●	●	●
Planning	●	●	●

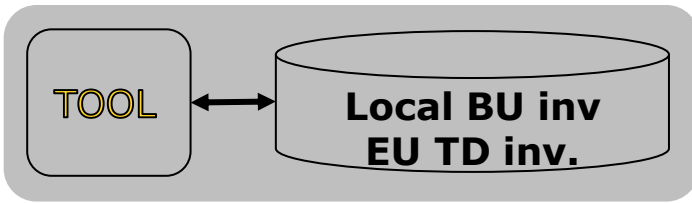
Sharing datasets: status & outlook



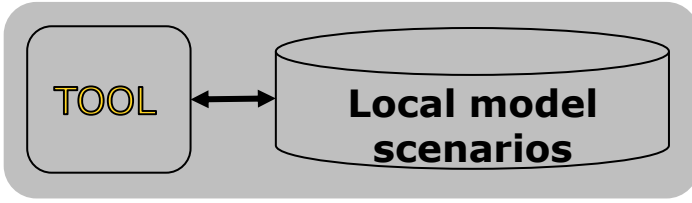
SHARED

REMOTE

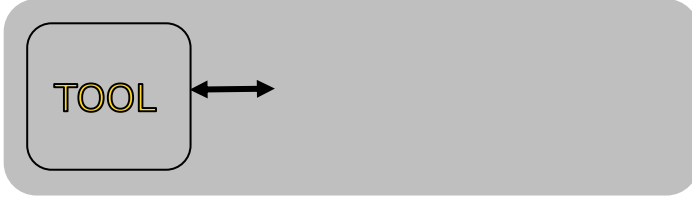
Emissions



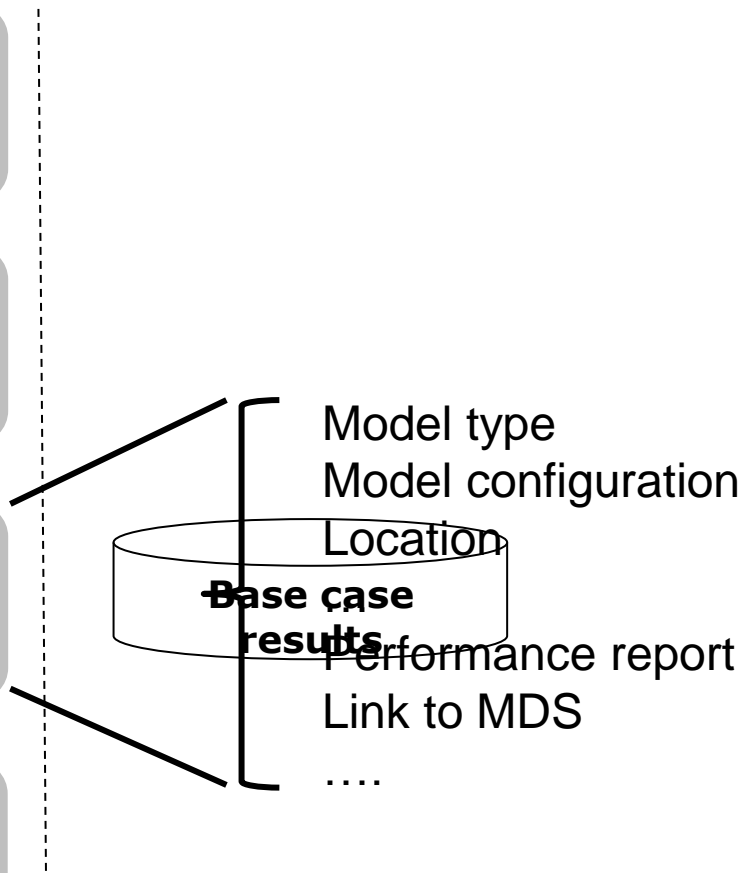
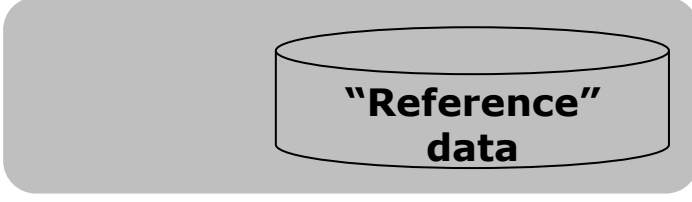
Planning



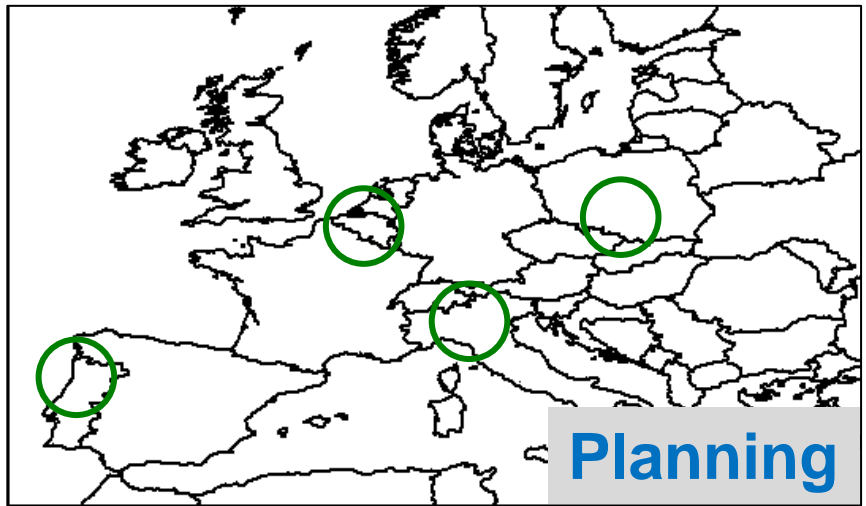
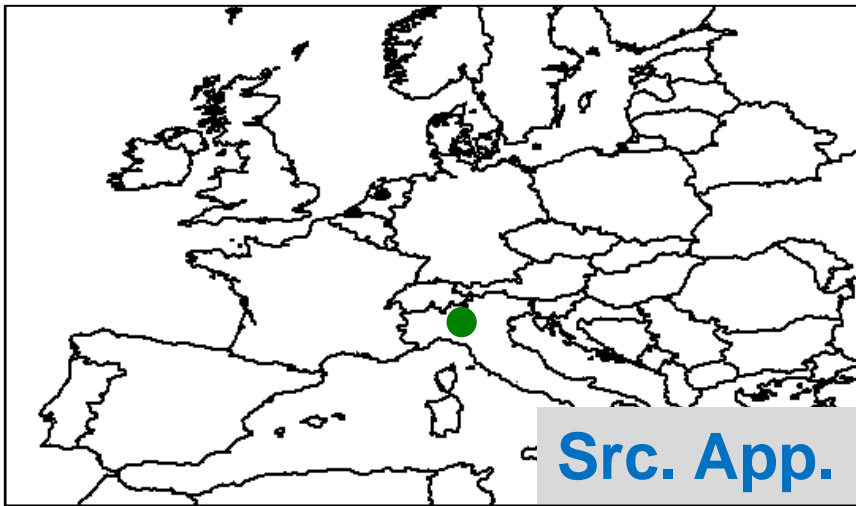
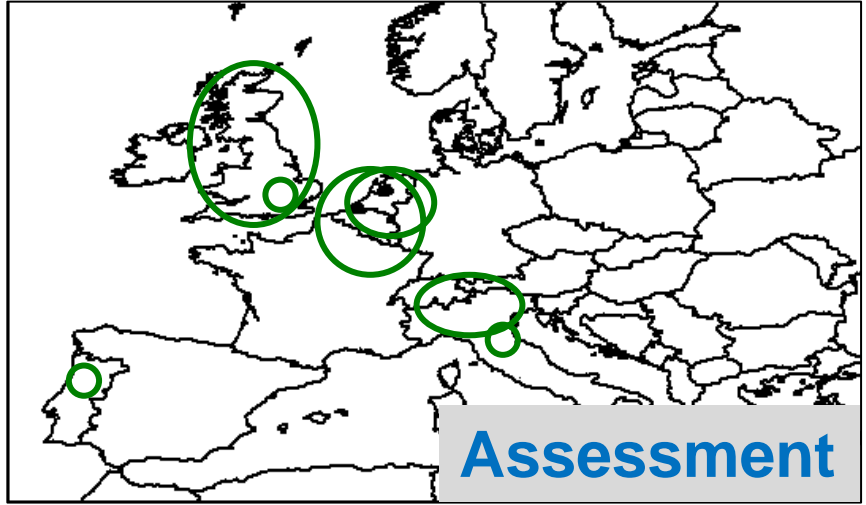
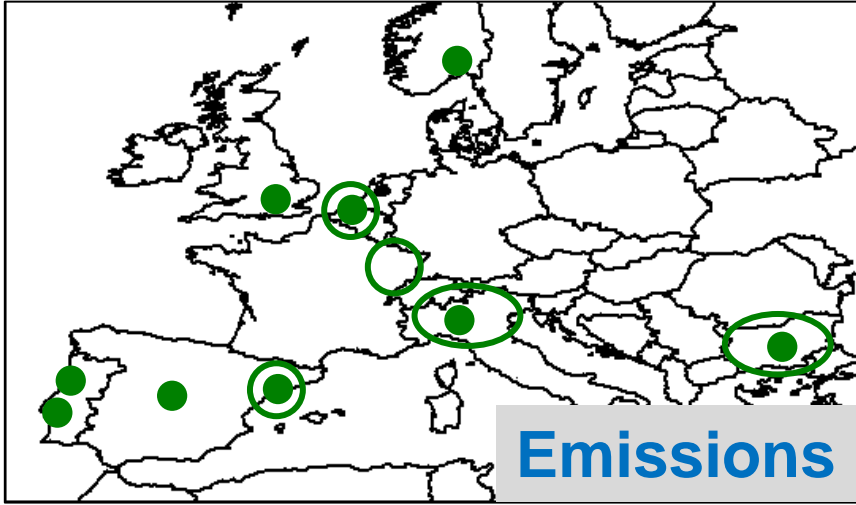
Δ - Assess



Src. App.



Datasets: what is available currently?

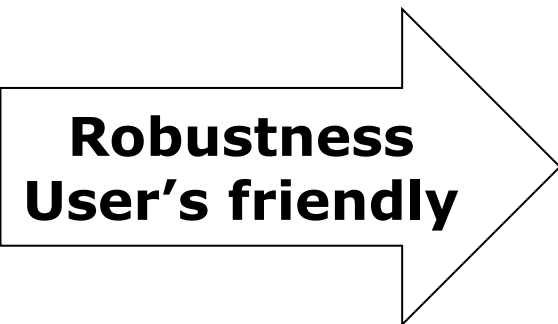


DELTA tool: status



V4.0

- Exceedances MQO
- Access to MQO parameters
- Added species (PM2.5)
- ...



V5.0

- Installation (time 1000, Sp: 100)
- Robustness
- I/O formatting
- ≠ Version environments

Conclusions (I)



- ✓ Benchmarking tools are developed (or planned) to support the testing and further improvement of evaluation methodologies in each WG.
- ✓ Aspects related to the CCA are elaborated progressively within these tools
- ✓ Currently user's data are available for assessment, emissions and planning and can be shared freely. The more datasets we have the more robust will be the methodology

Conclusions (II)



- ✓ Efforts are needed in each WG but they vary according to the state of advancement of the WG but also on its specificity:
 - Assessment & emissions: need for thorough analysis
 - Src. App. & Planning: need for collecting additional datasets
- ✓ Centralized data-banking for assessment is a little delayed but a proposal including a beta database version will be made for the technical meeting.
- ✓ "Self installing" DELTA V5.0 is released. Quick installer are also available for the emissions and planning tools
- ✓ A training will be organised at the JRC in Autumn
 - ✓ Methodology vs. tools
 - ✓ For which applications (assessment, planning, emissions...)

Links for additional information



fairmode.jrc.ec.europa.eu

aqm.jrc.ec.europa.eu/DELTA

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FAIRMODE

Forum for air quality modelling in Europe

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News and events [more updates...](#)

- Mailing list
- Meetings
- 12/13 FEBRUARY 2015** The "FAIRMODE PLENARY MEETING" will take place in Baveno (IT) Registration available soon

Working groups [details...](#)

- Assesment
- Emissions
- Source Apportionment
- Planning

Cross cutting activities (CCA) [read more...](#)

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DELTA Benchmarking

Fairmode Tools and Software

LOGIN REGISTER CONTACT

DELTA

The DELTA software is an IDL-based model evaluation software developed in the framework of the FAIRMODE procedure for benchmarking of Air Quality Directive (AQD) modelling applications.

You can freely download this tool by filling in the [application form](#) and by accepting the license agreement. If you already have a user name and a password, please proceed to the [download area](#)

Target Plot PM10: Stations within Crit (T=1): 75% BIAS < 0



Centre