A WEB BASED MAPPING TOOL FOR THE HARMONISED INTERCOMPARISON OF AIR QUALITY MAPS

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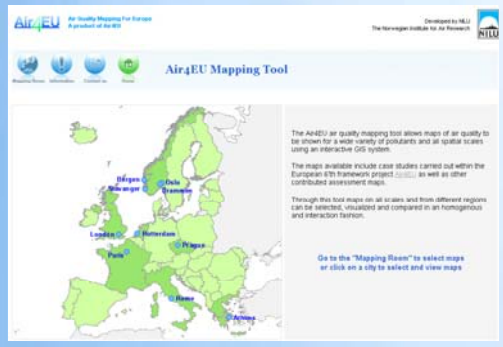
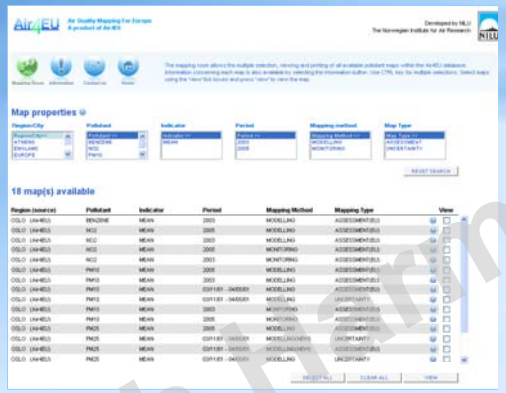
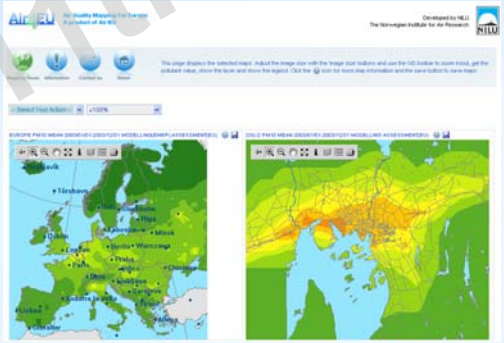
11th Harmonisation Conference Cambridge 2007

Background







Air4EU has provided recommendations for improving air quality assessment in Europe.

A web based GIS tool was developed by the Norwegian Institute for Air Research (NILU).

Aim:

- **Communicate Air4EU results**
- **Harmonises the dissemination of air quality maps**
- **Assessment and uncertainty maps**
- **Comparison of maps**
- **User group: experts and semi-experts**

www.air4eumaps.info

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Overview of the Air4EU mapping tool

- It allows maps on all scales to be displayed.
- Homogenous colour scaling and map projection.
- Easy intercomparison of maps.
- It contains examples of different methodologies.
- Assessment maps are accompanied by uncertainty maps.

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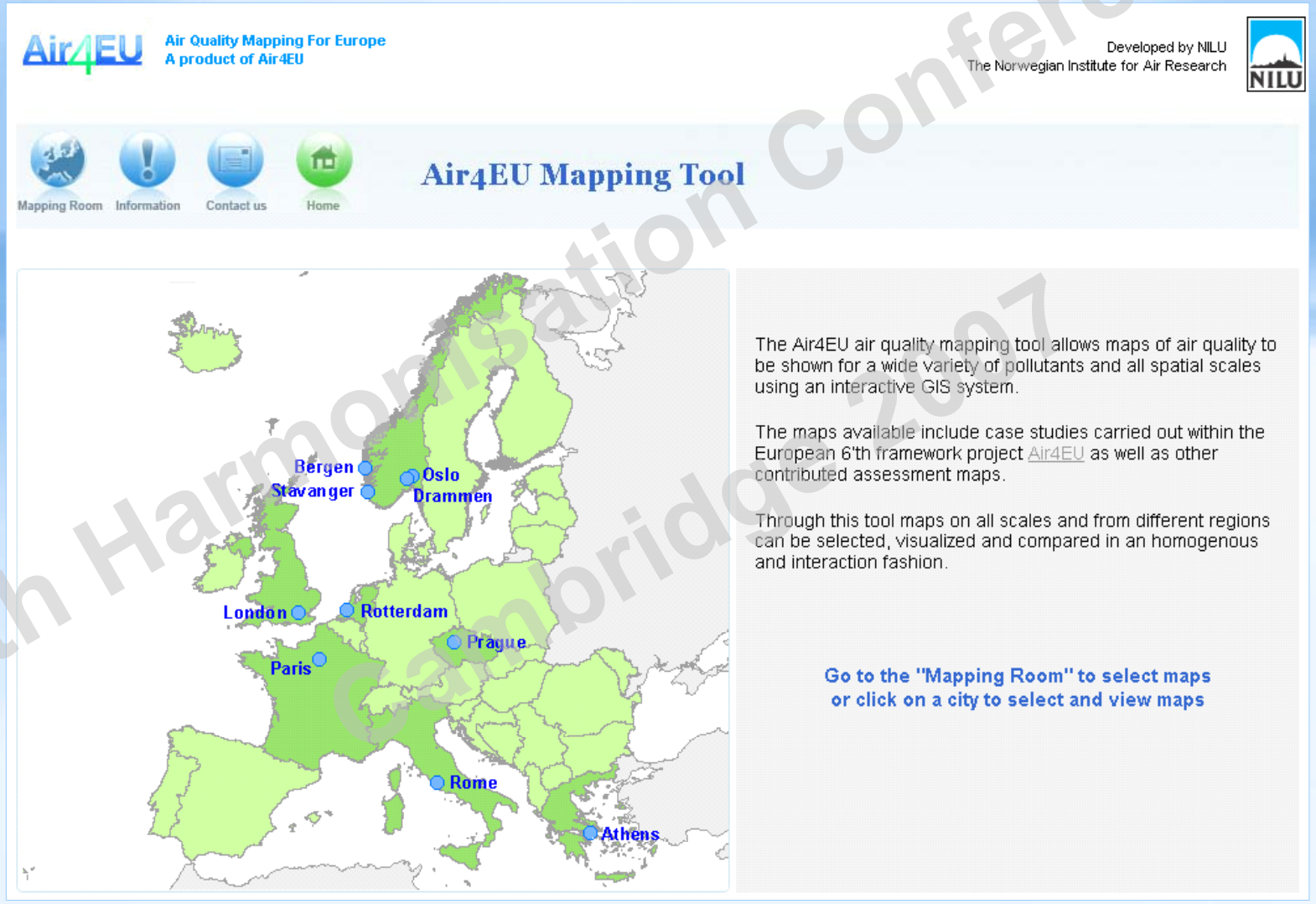
Air4EU Mapping tool



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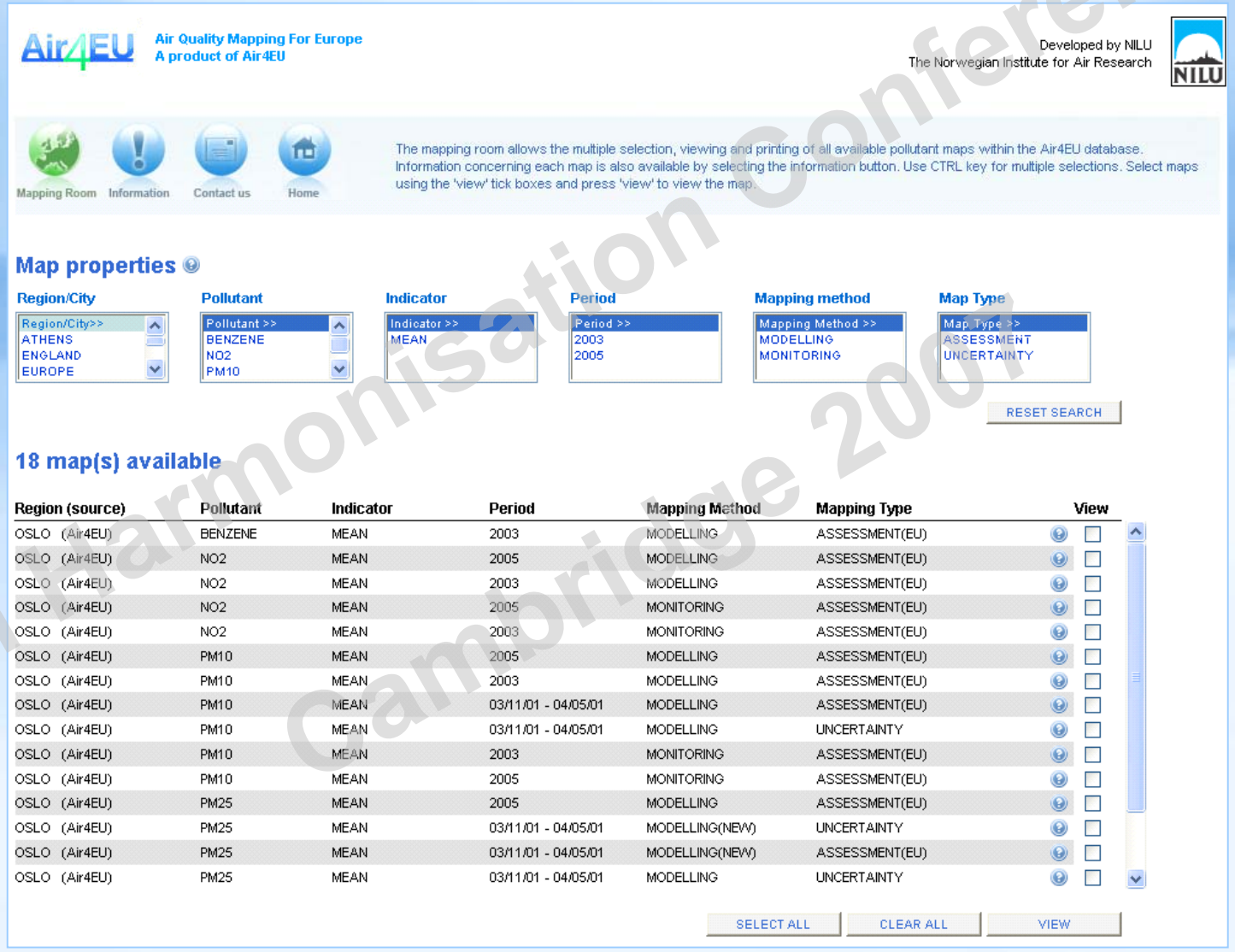
Selection tool



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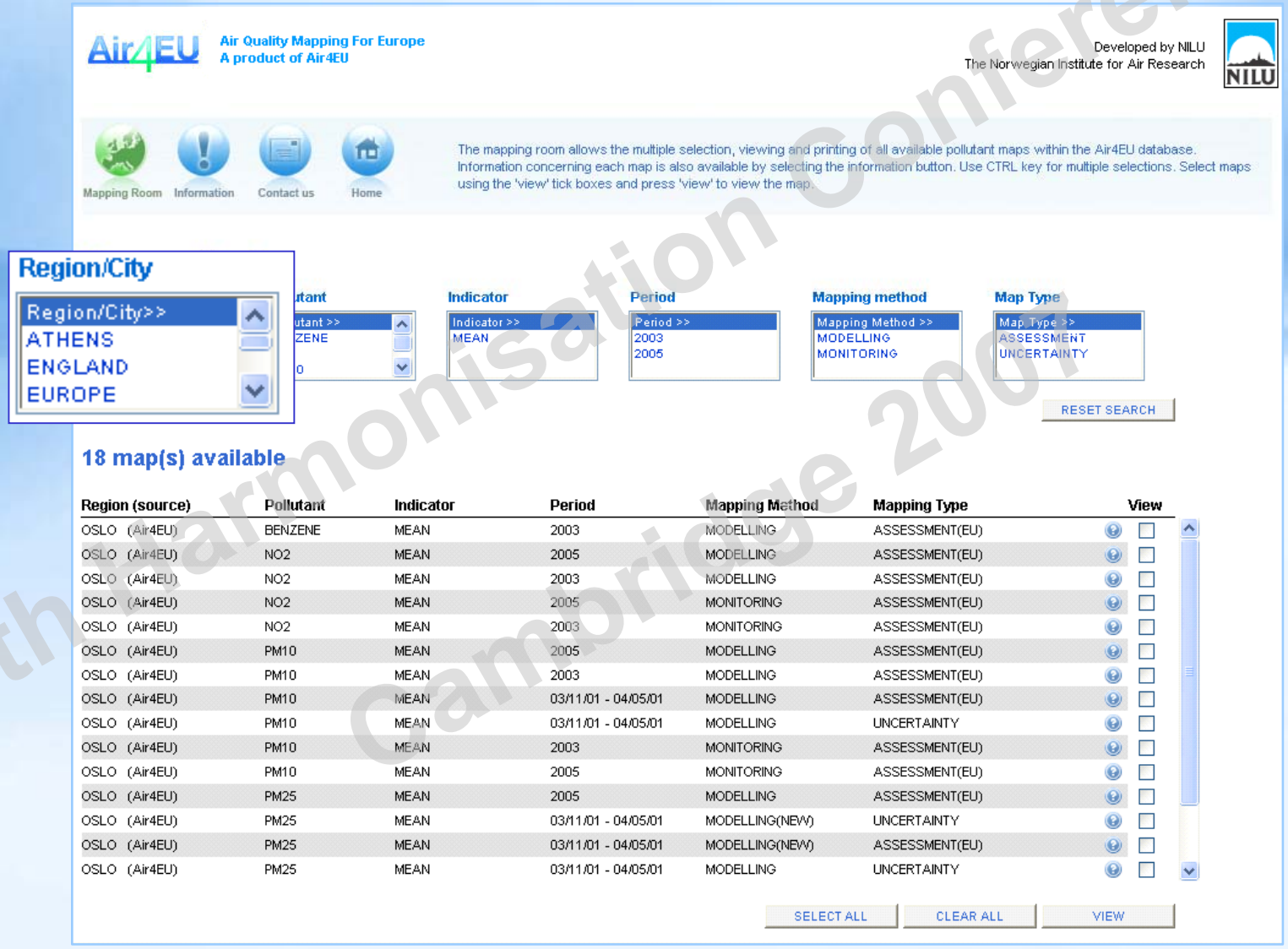

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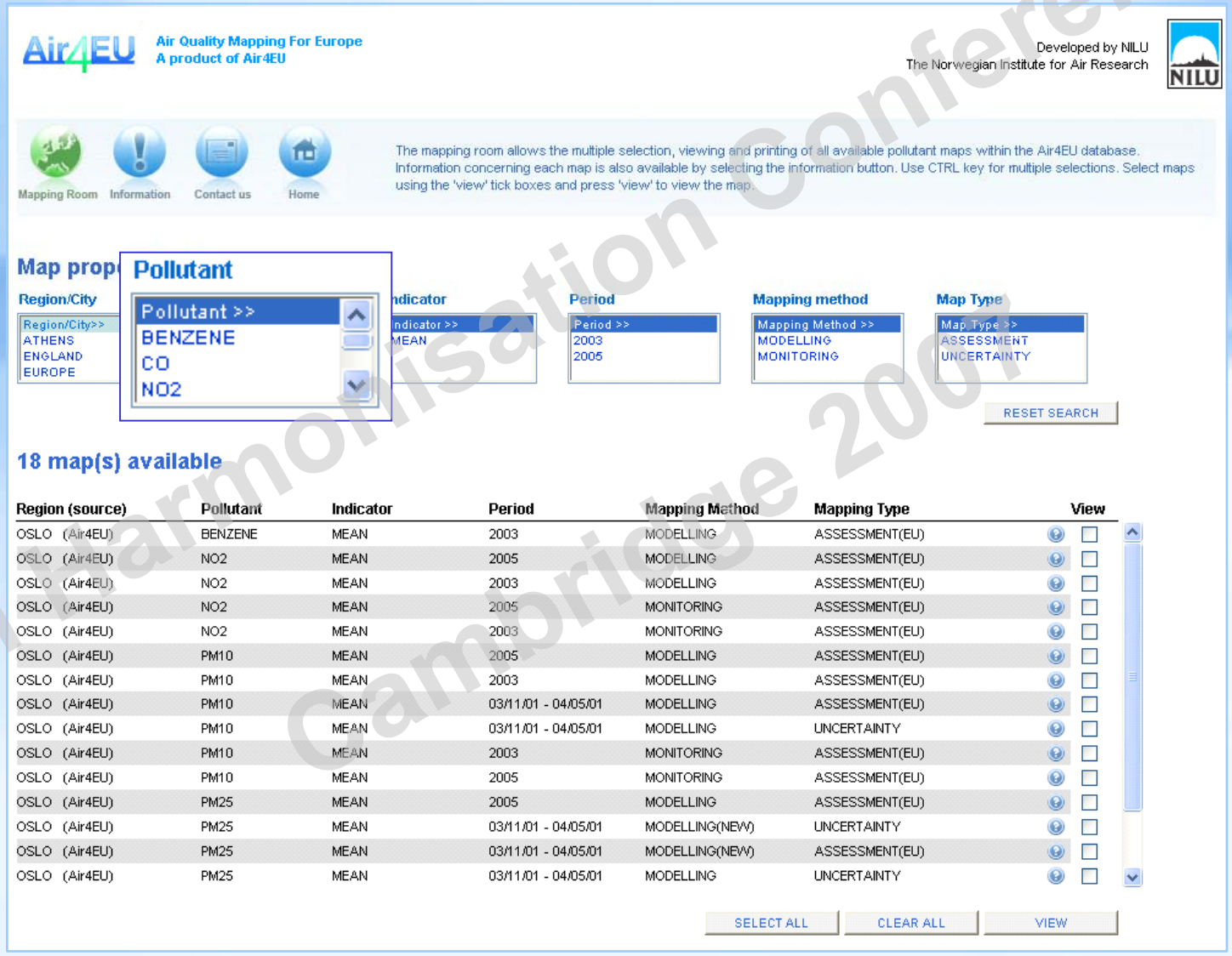

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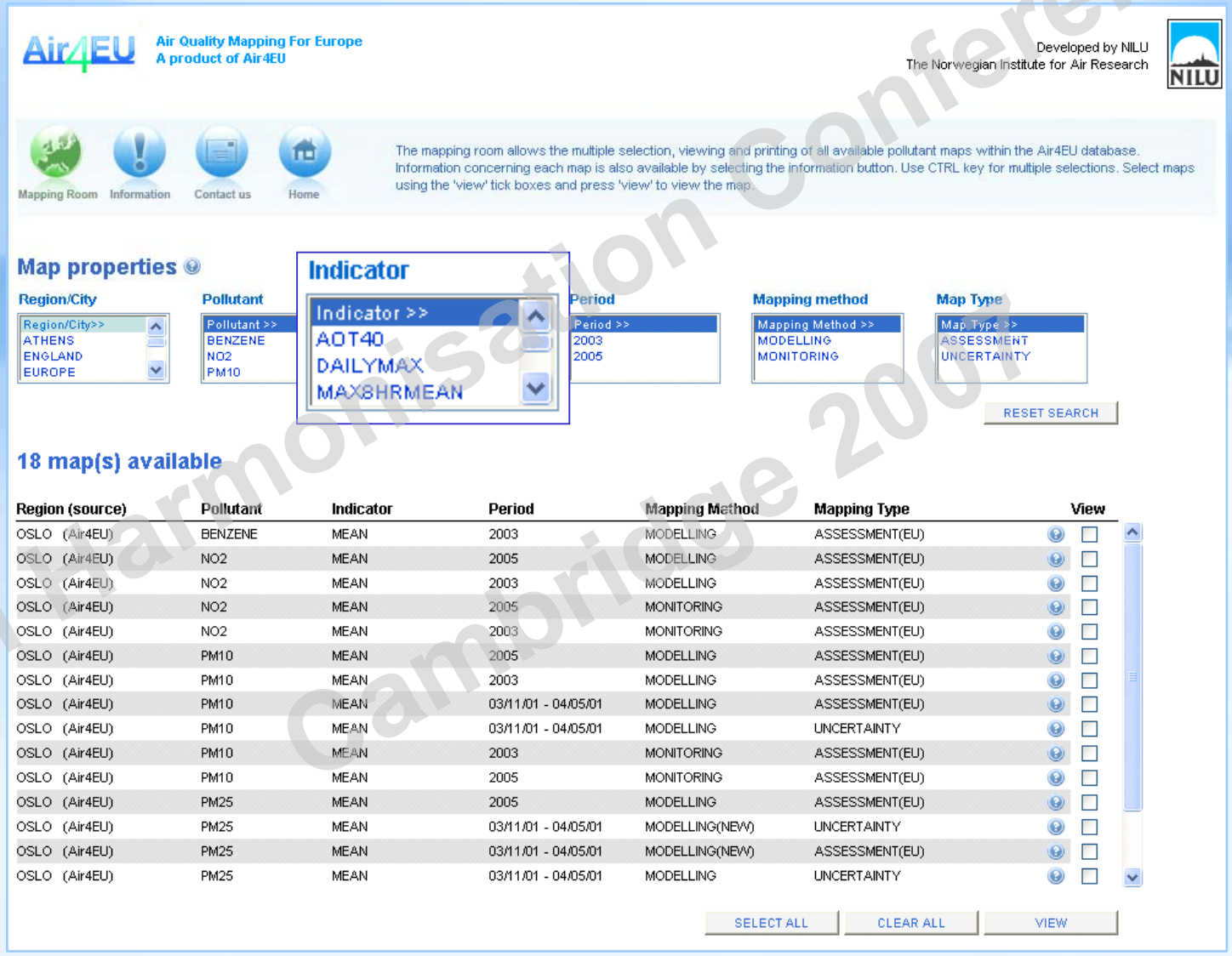

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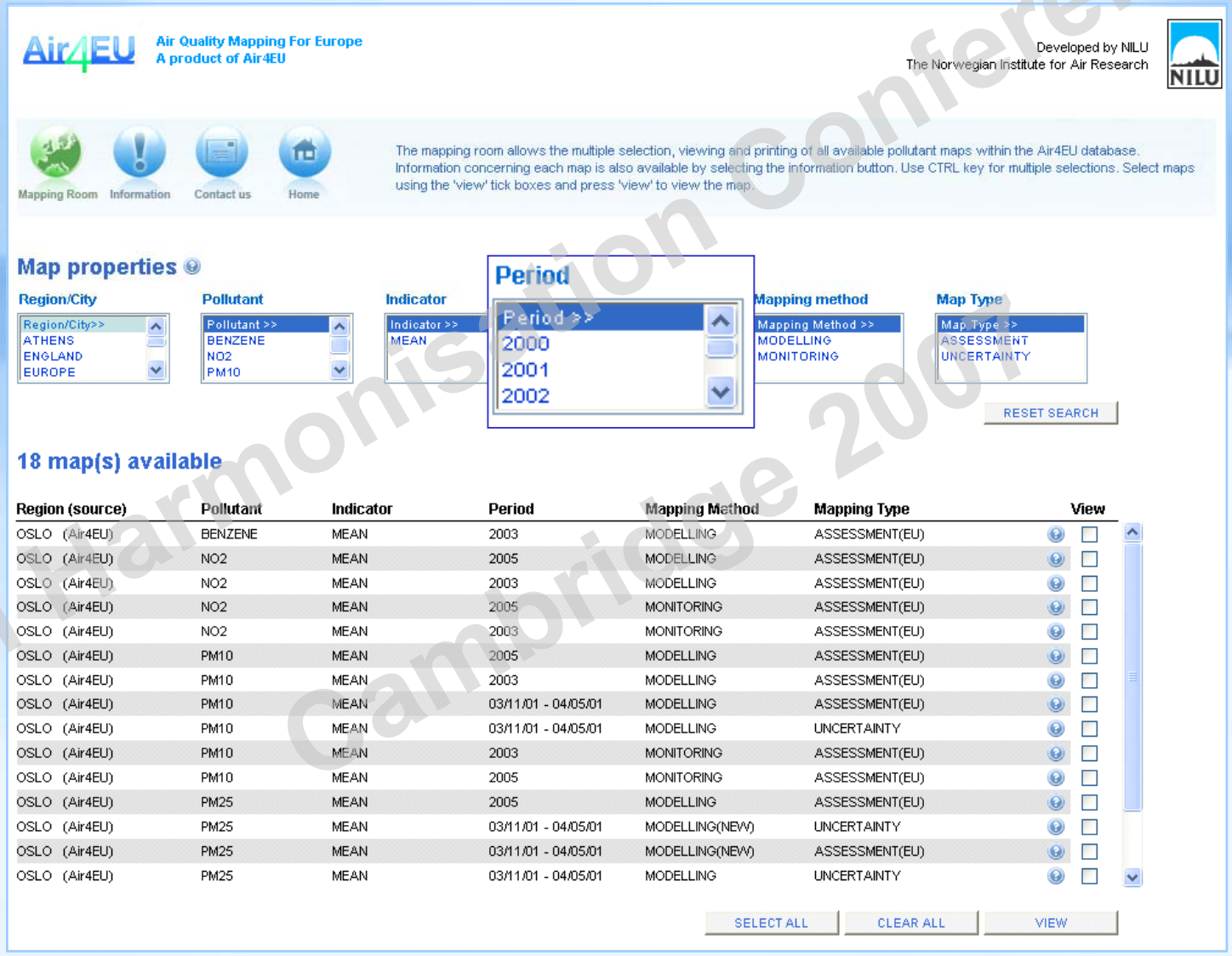

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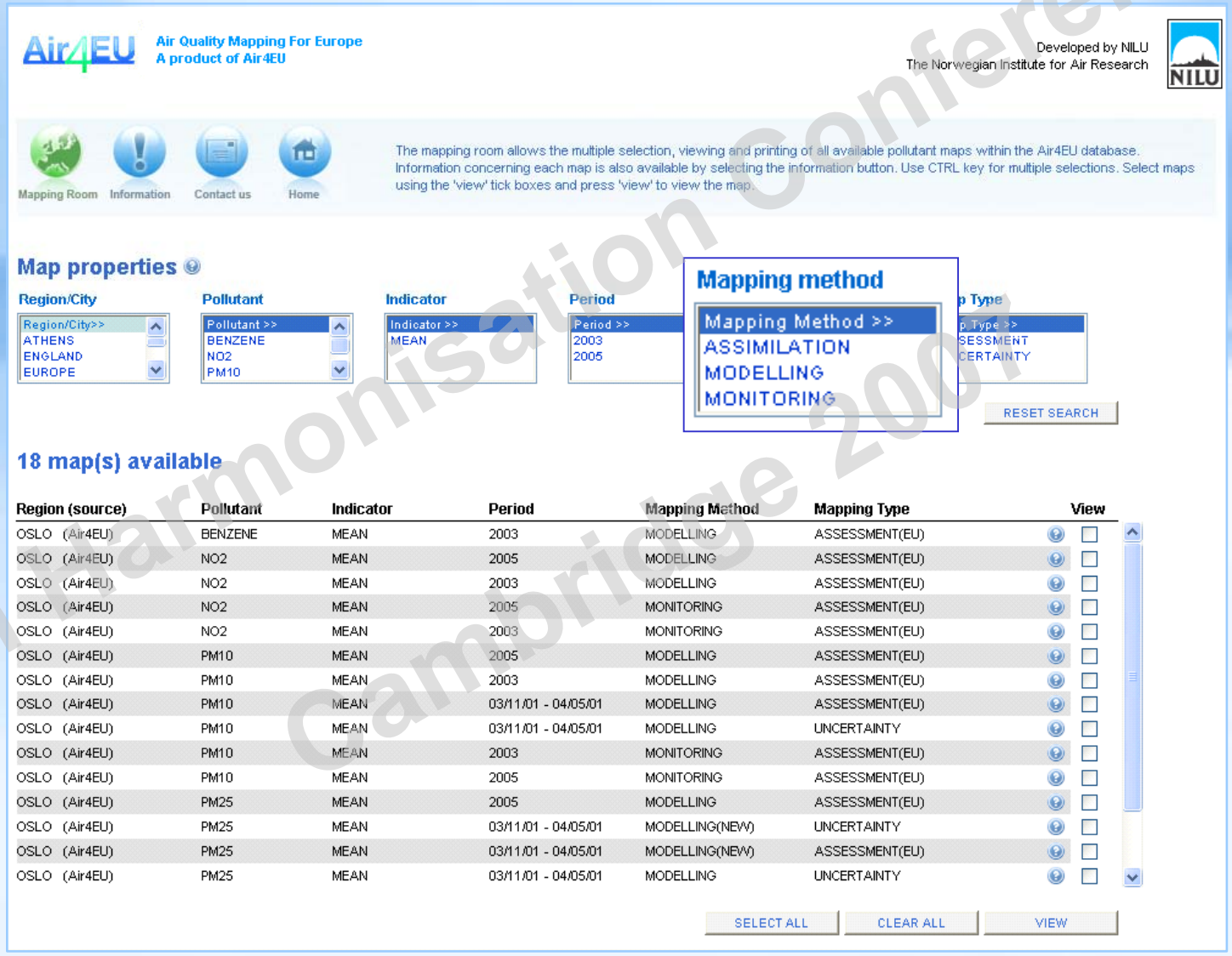

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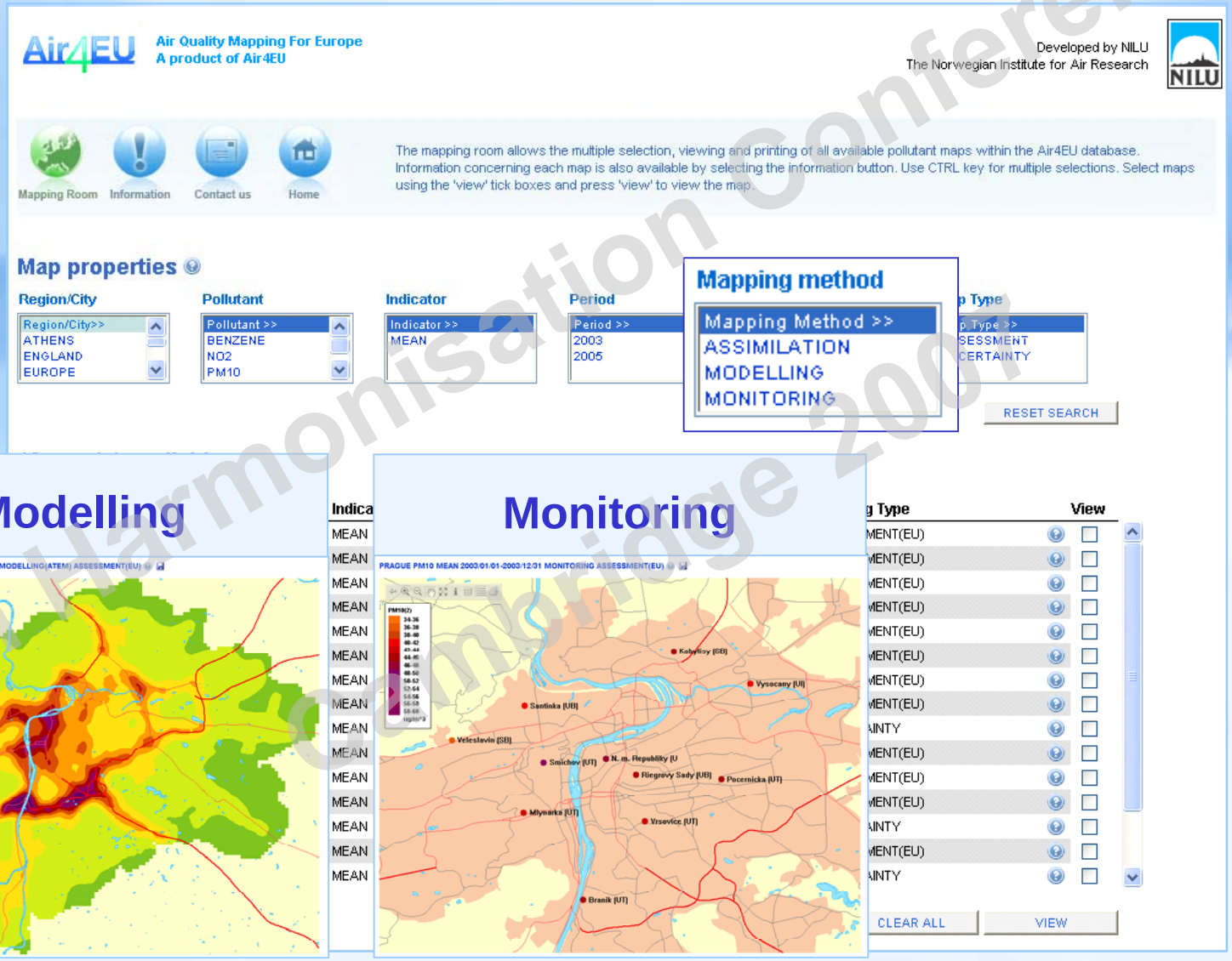

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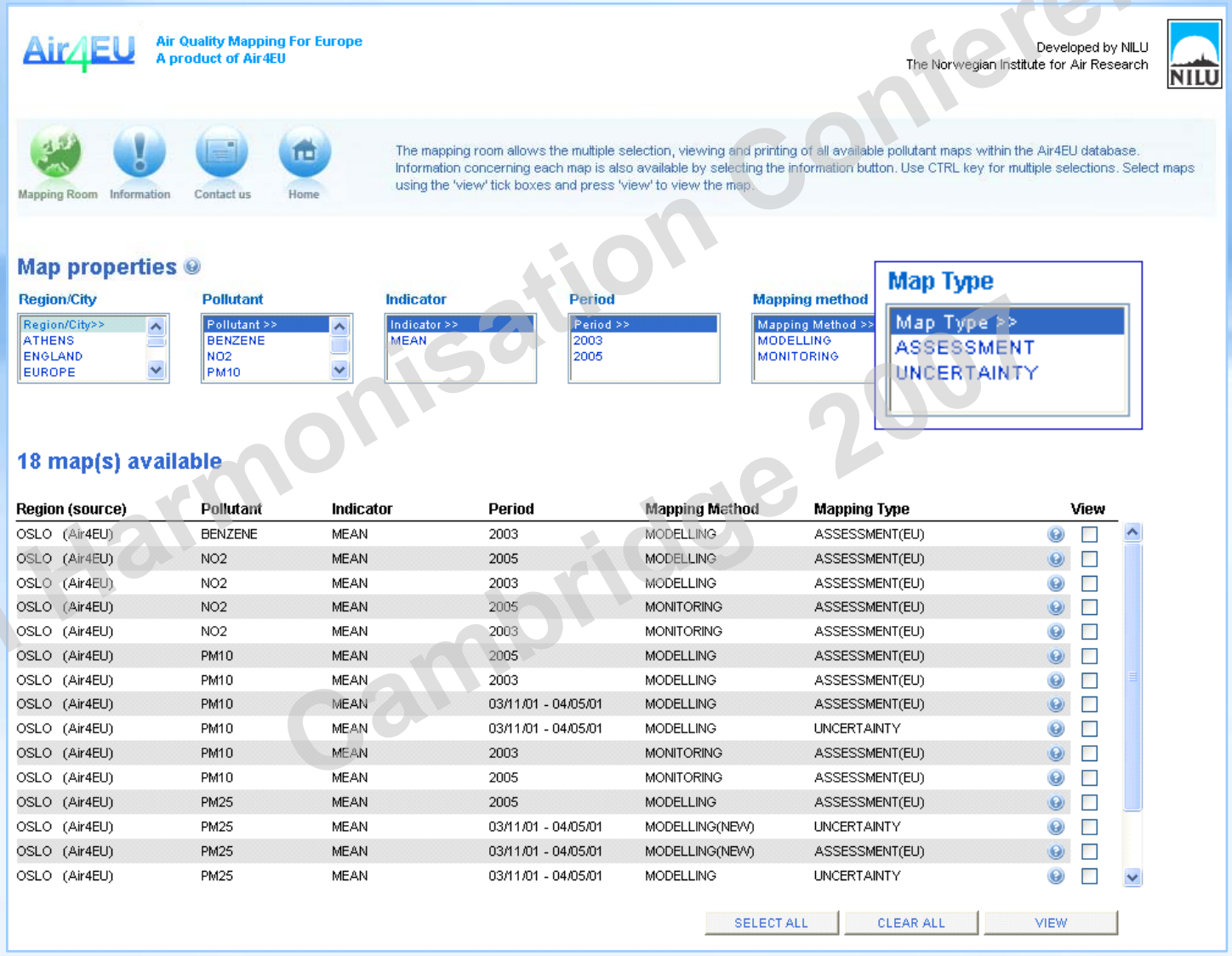
Selection tool



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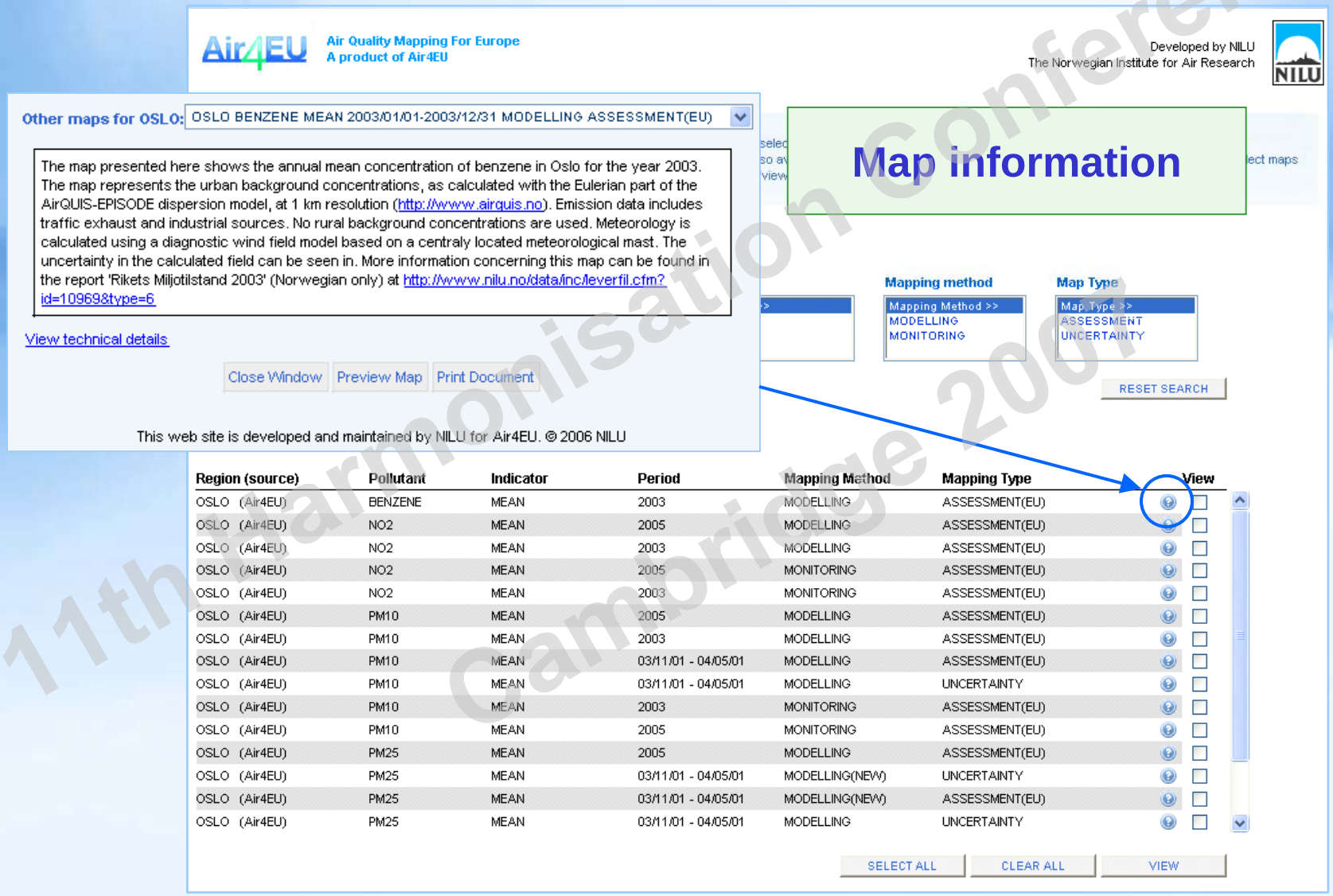

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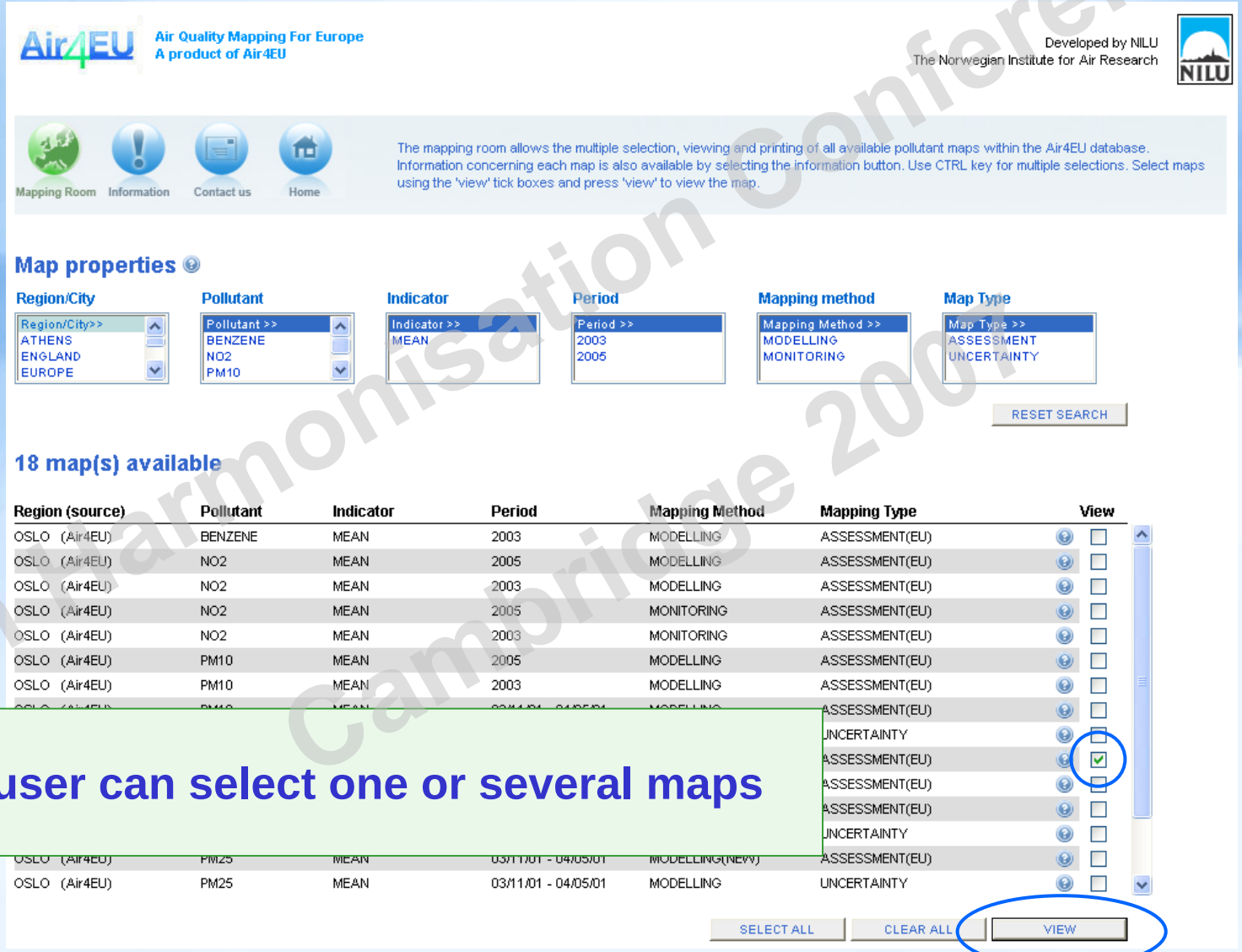

The user can select one or several maps

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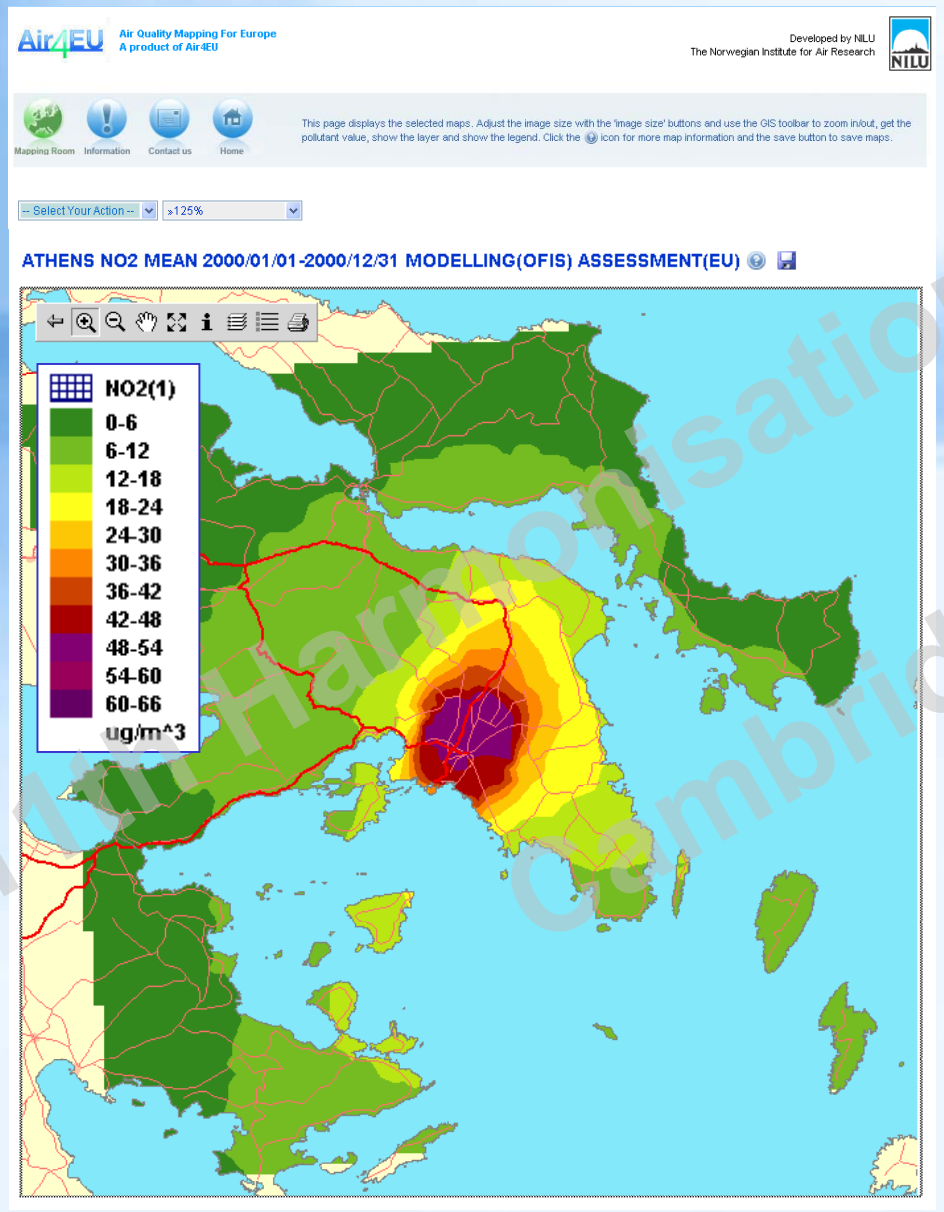
Single map display

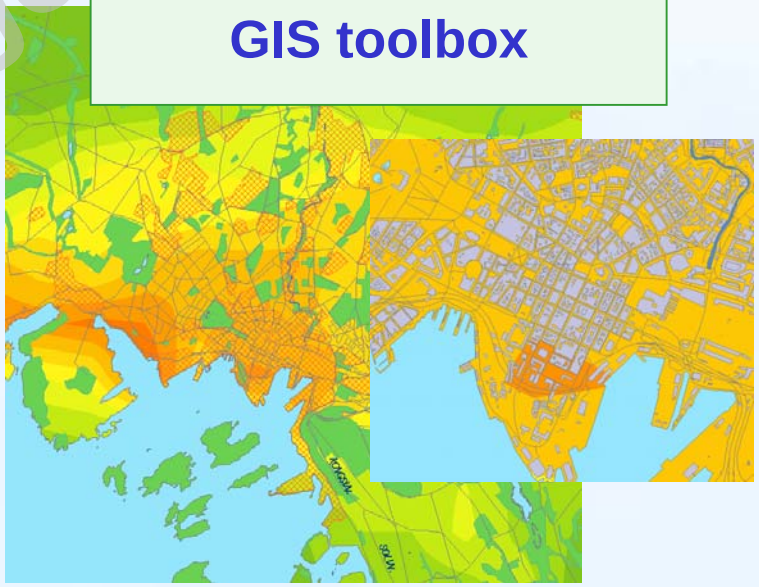


Map title with map properties

Map information

Save and print maps

GIS toolbox



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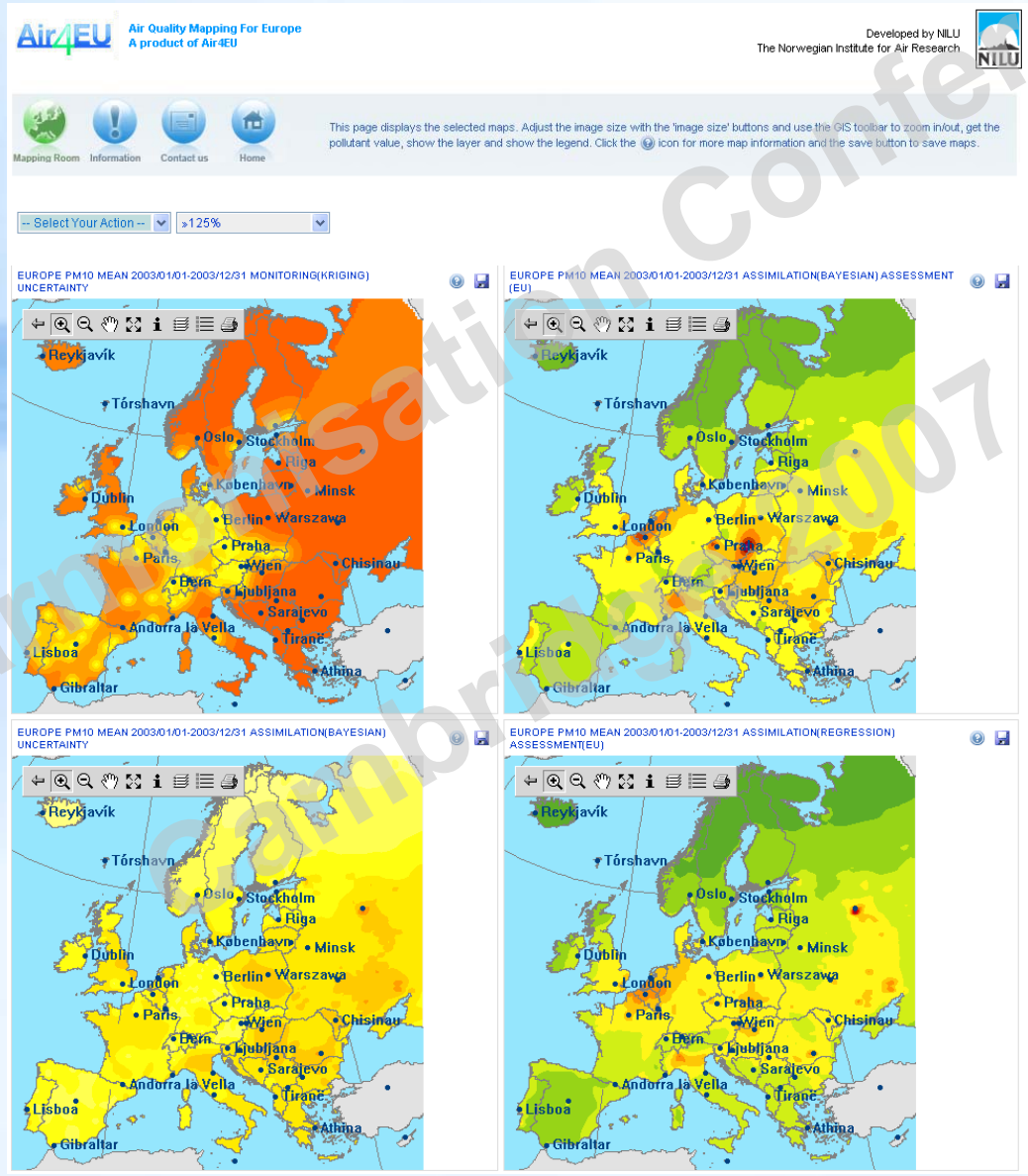
Multiple map display



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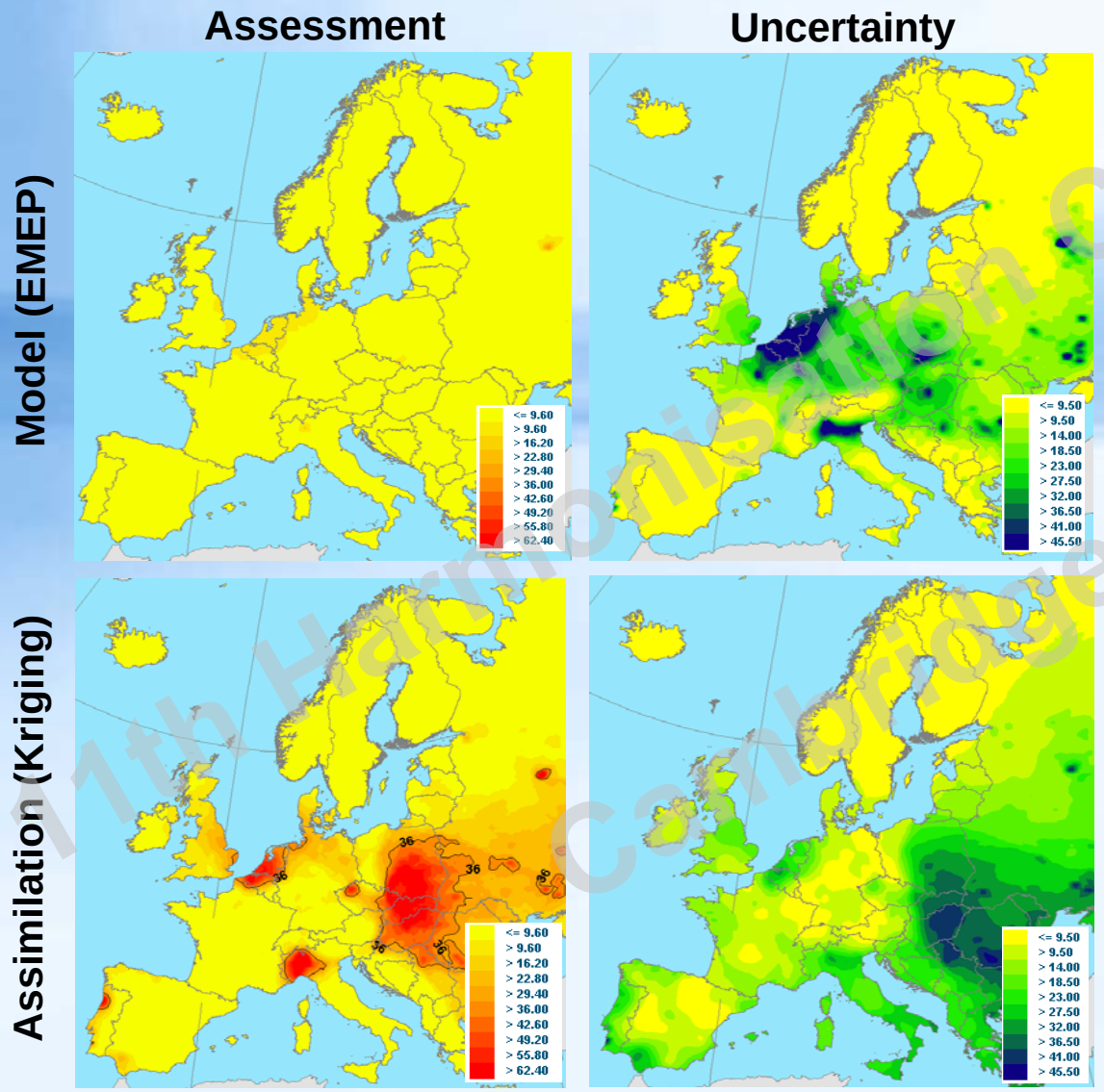
Exceedance of PM_{10} daily mean limit value of 50 µg/m³ for Europe (2003)



Basic data assimilation methods were tested for combining Unified EMEP model with Airbase monitoring data for PM_{10}.

EMEP model underestimates PM_{10} concentrations.

The assimilation map is constructed by residual kriging after linear regression of the model.

Uncertainty maps show areas of high uncertainty (over 40 days).

Uncertainty is reduced where measurements are available.

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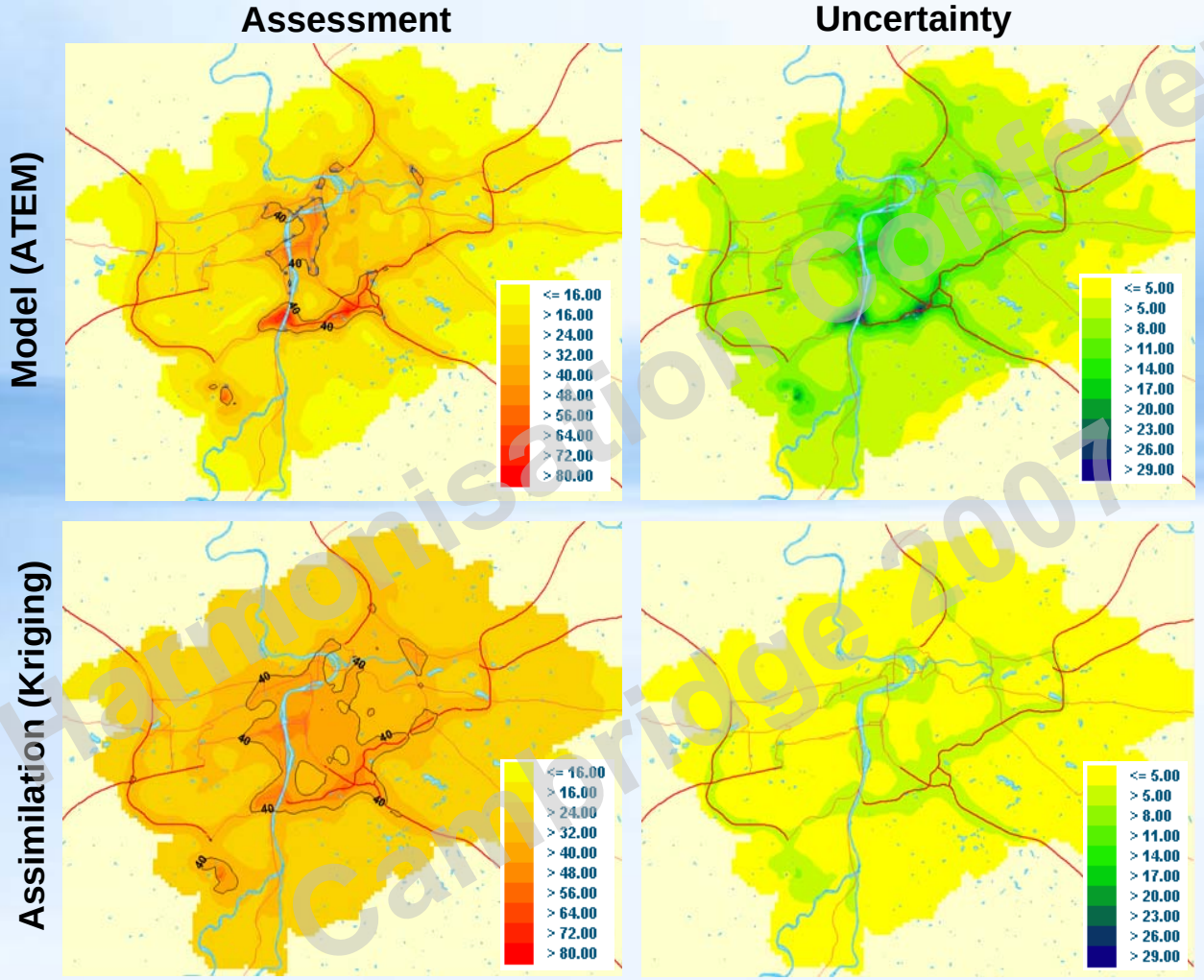
Exceedance of NO_2 annual mean in Prague (2003)



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Basic data assimilation methods were tested using monitoring data from 12 sites in the urban area of Prague and NO_2 annual mean concentrations calculated by ATEM model.

The use of assimilation increases the region exceeding 40 μg/m^3 but reduces uncertainty.

Conclusions

The tool improves and harmonises the dissemination of mapping information for both authorities and institution involved in air quality assessment.

Air4EU mapping tool encourages the production of uncertainty maps associated with them.

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Conclusions

The tool provides centralised and ordered access for a mapping database.

The tool can be used to aid dissemination of mapping information for both city users and institutes involved in air quality assessment.

It is possible to add new maps to the mapping tool database. These data can be delivered in standard GIS formats.

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Acknowledgments

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