NILU

METEO ROMANIA

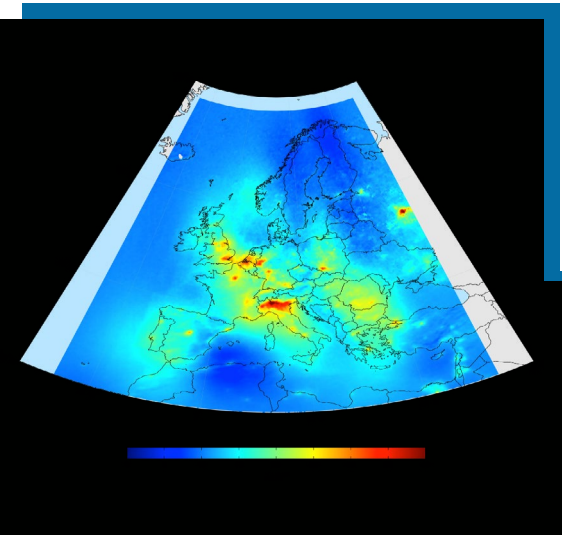
INOE 2000

CZECH HYDROMETEOROLOGICAL INSTITUTE

UNIVERSITATEA BABEȘ-BOLYAI

UNIVERSITY OF WARSAW

IDEA-ENVI
Integrated development of applications



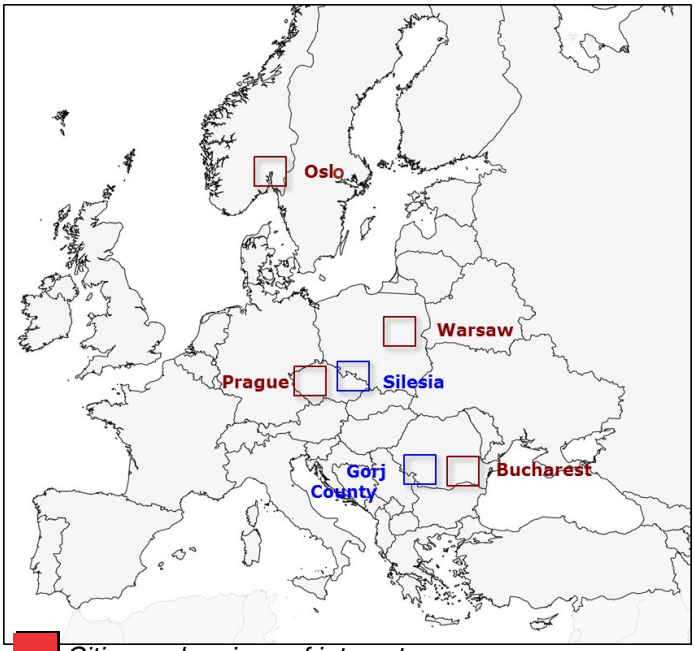
# SAMIRA

## SATELLITE BASED MONITORING INITIATIVE FOR REGIONAL AIR QUALITY

ESA funded project under grant no:
ESA ESRIN/4000117393/16/I-NB

# OVERALL GOAL

The overall goal of the project is to improve regional and local air quality monitoring through synergetic use of data from present and upcoming satellites, traditionally used in situ air quality monitoring networks and output from chemical transport models.




*Cities and regions of interest*

# EXPECTED RESULTS

## 1. SEVIRI AOD retrieval

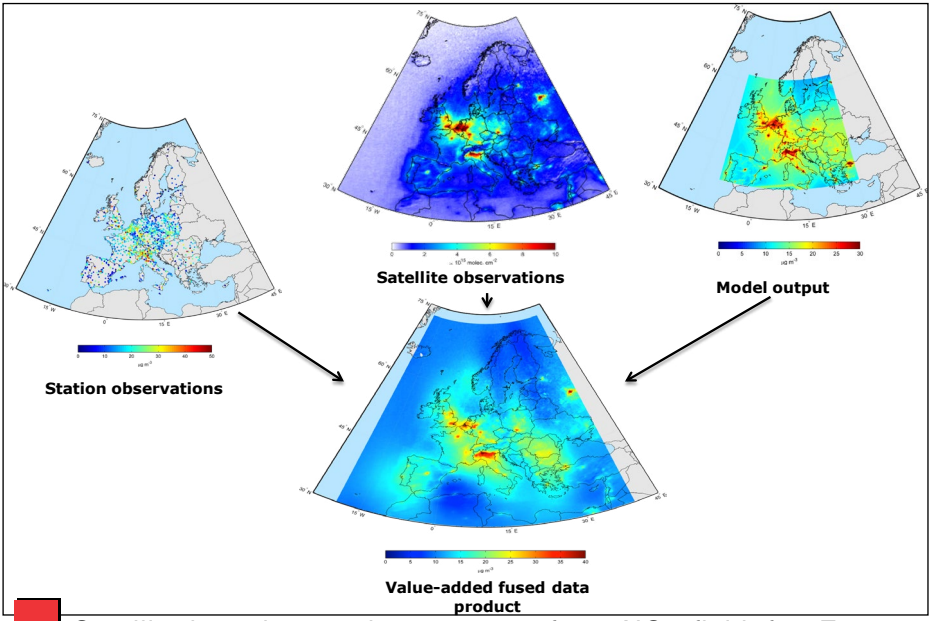
Development of techniques and algorithms for the retrieval of hourly aerosol optical depth - AOD maps from SEVIRI instrument onboard of the geostationary Meteosat Second Generation (MSG) platform.The product will provide up-to-date AOD information over the territories of Poland, Romania, the Czech Republic and southern Norway.

## 2. AOD to PM conversion

The column and near surface hourly $PM_{2.5}$ and $PM_{10}$ maps for the study areas will be retrieved from SEVIRI-AOD and WRF Chem modelled data.

## 3. Data fusion

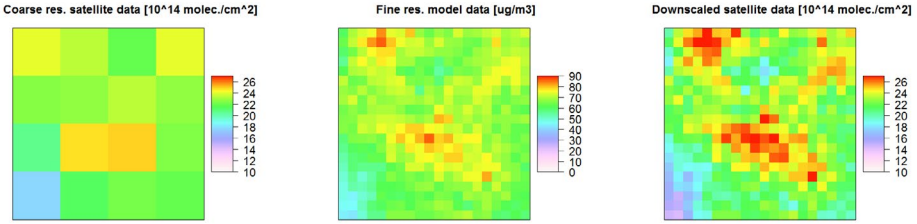
Data fusion techniques will be tested for satellite based $NO_2$, $SO_2$, and AOD/PM.




*Satellite-based annual-average surface $NO_2$ field for Europe, combining station data (Airbase), model data (EMEP/CHIMERE), and satellite-based roposperic $NO_2$ column (OMI).*

## 4. Downscaling of satellite data for air quality

Combine satellite data with a high resolution model output in order to create an added value product for small regions.




## 5. Data assimilation

Development of a pre operational system for improved PM air quality forecast over Czech Republic, Norway, Poland and Romania using observational in situ and satellite data assimilation.

SAMIRA


CONTACT

**Norwegian Institute for Air Research - NILU**
**Project manager**
Kerstin Stebel
**kst@nilu.no**

**ANM**
**Andrei Diamandi**
**diamandi@meteoromania.ro**

**UBB**
**Nicolae Ajtai**
**nicolae.ajtai@ubbcluj.ro**

**INOE**
**Anca Nemuc**
**anca@inoe.ro**