Project acronym: CityZen

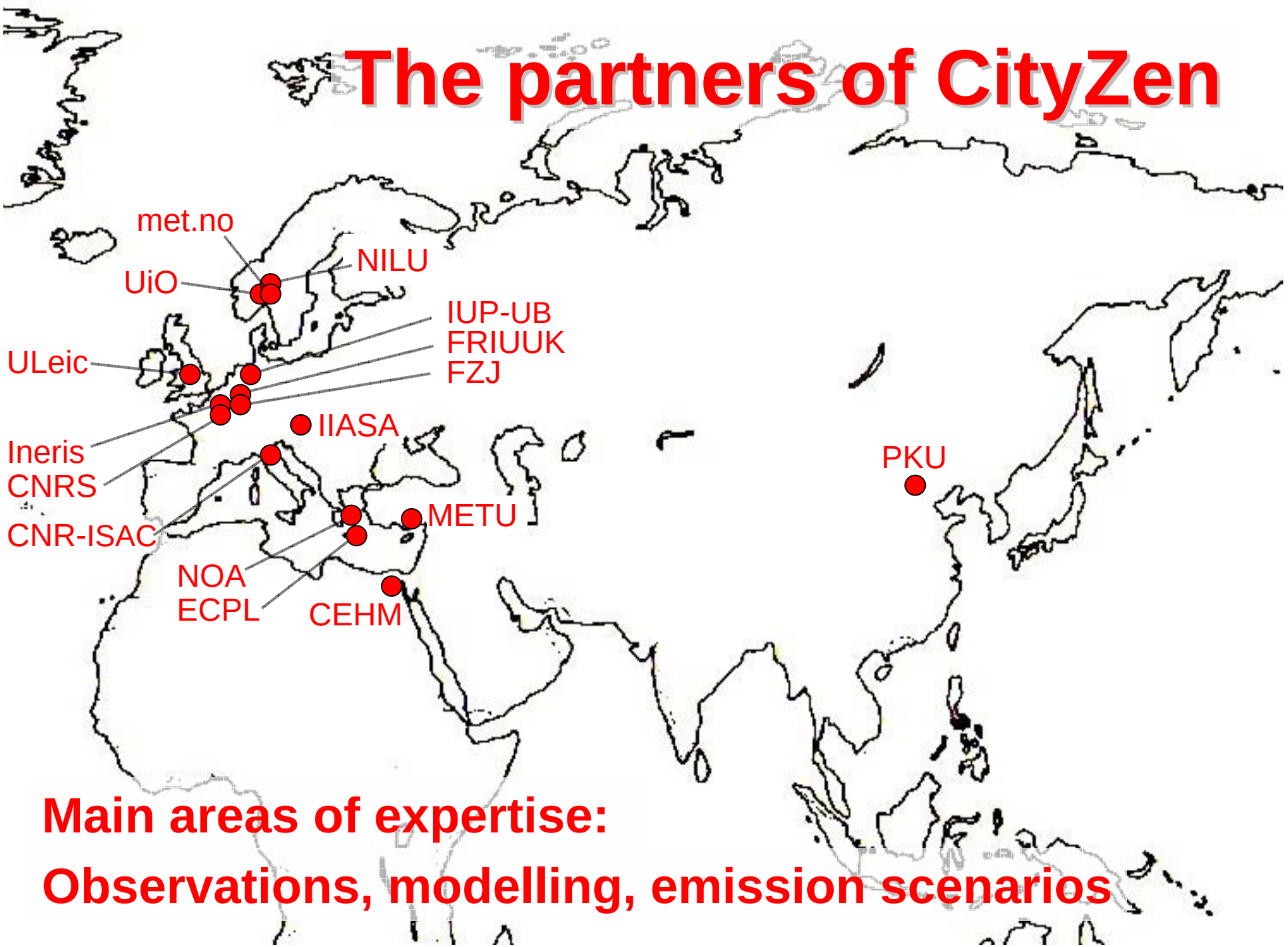
Project full title:
megaCITY - Zoom for the Environment

Total budget: ~ 4 m€

(FP7 medium-scale focused research project)

Duration: 3 years (start: September 2008)

The partners of CityZen



Main areas of expertise:

Observations, modelling, emission scenarios

The main objectives of CityZen (1/2)

- **Quantify and understand current air pollution in and around selected megacities/hot spot regions**
  - **distribution and evolution over time**
  - **interaction across the different spatial scales**
- **Estimate how megacities/hot spots influence climate change**
  - **emissions of greenhouse gases, particles, precursors**
  - **different spatial scales**
- **Estimate how megacities are responding to climate forcing**
  - **transport patterns**
  - **chemical oxidation and biogenic emissions**
- **Development of tools to estimate interactions between different spatial scales**
  - **modeling**
  - **analysis of observational data**

The main objectives of CityZen (2/2)

- **Estimate the impact of future emission changes**
  - **rapid growth in the population of megacities/hot spots**
  - **increasing background of pollutants**
  - **focus on ozone, particulate matter, and their precursors**
- **Study mitigation options**
  - **introduction of alternative fuels**
  - **different public transportation options**
  - **structural changes in population distribution**
- **Provide technical underpinning of policy work**
  - **both during and after the project has ended**

- Focus on four selected emission hot spots

- BeNeLux and Ruhr area
- Po Valley
- Eastern-Mediterranean (Athínai, İstanbul, Al-Qāhirah, etc.)
- Pearl River Delta (Guangzhou, Shenzhen, etc.) + Hong Kong

- Interactions between spatial scales

- local
- regional
- global

- Feedbacks

- air pollution → climate
- climate → air pollution

- Case studies

- extreme summer of 2003 (NW and central Europe)
- extreme summer of 2007 (SE Europe)

Measurements in CityZen

- Satellite:
  - Global coverage with GOME, SCIAMACHY, GOME-2, OMI, ...
- Ground-based:
  - Within the four selected hotspot regions of CityZen

Participating models

- Global scale:
  - MOZART, ECHAM5-HAMMOZ, EMEP, OsloCTM2, TM4-ECPL (1°x1°)
- Regional scale :
  - CHIMERE, EMEP, EURAD, Models-3/CMAQ (~0.5°x0.5°)
- Local scale :
  - CHIMERE, EMEP, EURAD, BOLCHEM , Models-3/CMAQ (~1x1 - 10x10 km^2 resolution)

Past – present - future

- Trend studies for the last decade using both observations and models
- Process studies to calculate import and export fluxes from megacities
- Future time slices for different emission scenarios (incl. mitigation)

Collaboration with MEGAPOLI

- Emissions
  - Country totals, regridding capabilities
- Observations
  - Satellites, local measurements
- Modeling
  - Common experiments with focus on megacities
- Publications
  - IGAC assessment


http://wiki.met.no/cityzen/start
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