



## Project Sense-City

### Prototyping and validation of micro- and nanosensors for a sustainable urbanization



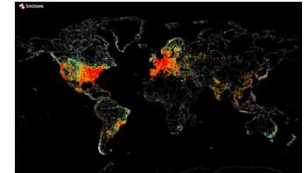
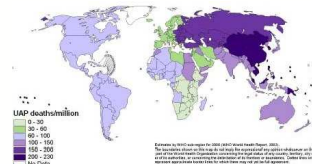
#### Context

##### Galloping urbanization

- 75% of World population in 2050
- Degradation of everyday life conditions
- Variety of nuisances (pollution, degraded transportation systems...)

##### Nanotechnologies

- 110 G€ in 2008, 1700 G€ en 2015
- Internet of things
- 10 Billion connected devices in 2013
- 50 Billion in 2020



Tomorrow's sustainable cities will require massively distributed sensors  
Toward Smart Cities, Sense-City consortium proposes

Decision-support tools based on innovative sensors, physical models, data representation

#### Topics of interest

- Environmental quality
- Eco-buildings and eco-districts
- People exposure and health
- Infrastructure and network durability

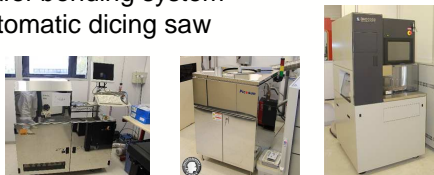
#### Program

- A repertoire of novel micro&nano sensors combined with
- Advanced modeling
- Contextualized visualization

The entire chain of values for sensor prototyping

#### Prototyping & packaging facility

- Atomic Layer Deposition
- Ultra high resolution ink-jet printing
- Wafer bonding system
- Automatic dicing saw



#### Climatic mini-city for end-of-chain validation in realist scenarii

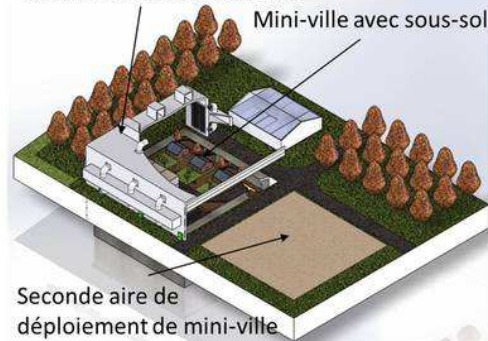
- 400 m<sup>2</sup> mobile climatic chamber with tunable underground
- Ability to incorporate models (scale 1 to 1/3) of above-ground (house or condo, waterbodies, roads) and underground (networks, soil) scenarii → unique in Europe
- From humid winter conditions to dry heat wave to rainstorm

#### Benchmarking facility

- Small scale environmental chamber.
- High speed Infrared camera
- Automated vapor water sorption equipment



#### Chambre climatique mobile



Private-public facility for **Research - Innovation - Development**