Research / Development Items

- The China Testbed project strives to form a catalyst for creating new environment related research and business opportunities together with Chinese partners.

- How to determine environmental business applications for Chinese markets by utilizing measurement technology, modeling and environmental efficiency analysis of MMEA?

  - Business study about environment related business opportunities in China.
    - Environmental information market place and value-adding services in China.
    - Business applications in China, combining environmental sensors, sophisticated modeling, mobile technology and citizen involvement

  - Assistance for establishing a PM2.5 knowledge web portal in China

  - Piloting EnviObserver, later MMEA platform - Envitori
    - First trials with EnviObserver services in Shenzhen and Helsinki
    - The long term plan is to introduce MMEA platform and Envitori system in China
## FP3 Partners and their contributions

### Enterprises

<table>
<thead>
<tr>
<th>Company</th>
<th>Contributions</th>
</tr>
</thead>
</table>
| Vaisala | - Testbed and monitoring expertise  
- Expertise in business development in China |
| Fatman  | - Pilot planning, specification and platform consultancy |
| Cubio   | - Service planning and specification & collaboration |
| Dekati, Pegasor | - Pilot air quality measurement equipment manufacturer |

### Researchers

<table>
<thead>
<tr>
<th>Institution</th>
<th>Contributions</th>
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</table>
| VTT         | - Task leader: Coordination and collaboration  
- China Testbed R&D with mobile application for user observations and measurement data.  
- Piloting arrangement in China. |
| Aalto University | - Business model analysis,  
- Mobile measurement and application service expertise with OtaSizzle/SizzleLab, RePortal and ContextLogger -services |
| Finnish Meteorological Institute | - Specialists on meteorology measurements, -analysis and weather forecasts  
- Specialists in air pollution measurements (PM2.5)  
- Network planning and data validation |
Collaboration partners in China

Green China Livinglab

- Partners:
  - Ministry of science and technology of China
  - Shenzhen University
  - ZTE
  - The Shenzhen Cloud and Dimension Technology Co., Ltd (深圳祥云万维科技公司)
    is the legal secretariat entity and coordinates daily issue of Green China Livinglab.

The lead team:

- Mr. Bao Yu, Founder and Chairman
- Prof. Chen Jianyong, Director and Chief scientist
- Mr. Zhang Xinliang, Director and board secretary
- Mr. Cui Le, Director
Air Quality in some Chinese cities

![PM2.5 concentration comparison graph](image)

### PM2.5 Concentration Comparison by City

- **Shanghai**: 100 mg/m³
- **Beijing**: 150 mg/m³
- **Xi'an**: 100 mg/m³
- **Shenyang**: 50 mg/m³
- **Tianjin**: 50 mg/m³
- **Harbin**: 50 mg/m³
- **Changchun**: 50 mg/m³
- **Dalian**: 50 mg/m³
- **Qingdao**: 50 mg/m³
- **Shenyang**: 50 mg/m³
- **Harbin**: 50 mg/m³
- **Changchun**: 50 mg/m³
- **Dalian**: 50 mg/m³

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Shen Zhen Cloud and Dimension Technology Co.,Ltd
The global air quality map hit a purple patch of China
Potential demand

- In the next five years China will have nearly 1000 cities (including county or city), which have population more than 1 M. To achieve the requirements of monitoring PM 2.5 at the city level, the amount of monitoring equipment will rise to tens of thousands of units.

- China have more than 10 M enterprises, (including industry, mining, etc). The need for PM 2.5 testing equipment in enterprises will be more than one million units.

- China has more than 350 million families, of which more than 100 million live in cities and will require cleaner air, which sets demands for more monitoring equipment.

- China currently has about 200 million smartphone users, potential high-end users to PM 2.5 monitoring services.
EnviObserver system

- EnviObserver is a mobile tool for participatory sensing and environmental information services
  - Customizable mobile application and server side components for data handling and service enablement

**Mobile observations**
- Observed parameters and values
- Location and time (automatic)

**EnviObserver service**
- Input Interface
- Data Retrieval Interface
- Data Storage

**Analysis, Research**

**Visualization & Services**

**Other data sources**
Air Quality Now

Shenzhen
13:00
PM2.5 42

Guangzhou
13:00
PM2.5 42

Hong Kong
13:00
PM2.5 42

Beijing
13:00
PM2.5 42

User Observations

Shenzor
How does the air feel for you now?
Your last observation: 18 hours ago

Add Observation

Shenzor
Add photo (optional)

Send

User Observations

Shenzor
You have made 11 observations in total. You are the 3. most active observer during the last seven days. Great - Thank you!

In total, 472 observations have been made. Of these, 34 this week, with these averages:

22% 47% 30%
Achievements in FP2

- China Testbed started during FP2
- Initiation of research collaboration with Green China Livinglab -organization and ZTE and Shenzhen University
- Visiting Shenzhen with China TB delegation in January
- Agreeing about first pilot installation in Shenzhen
- Agreeing on MOU to be signed between parties
- Preparing the start of the first pilot in July 2012 in Shenzhen
Activities in FP3

- Enviobserver and mobile applications are ready for installation in Schenzhen
- Server purchase for EO under negotiations
- Dekati’s and Pegasor’s air quality instruments are integrated with EO and are ready to be shipped to Schenzhen
- Installation sites for AQ –instruments selected at Shenzhen University
- A test group of EO and the mobile service are formed among students of Shenzhen University
Next steps

- Installation of EO in Shenzhen
- Shipment of the AQ instruments to Shenzhen
- Starting EO demo with students in October
- Installation of AQ instruments in Shenzhen in October
- Summary of EO demo in November
- Air quality workshop in Shenzhen in November
- Starting pilot with AQ instruments in Shenzhen and in Helsinki in December
- Pilot ready in February 2013
Thank you!

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