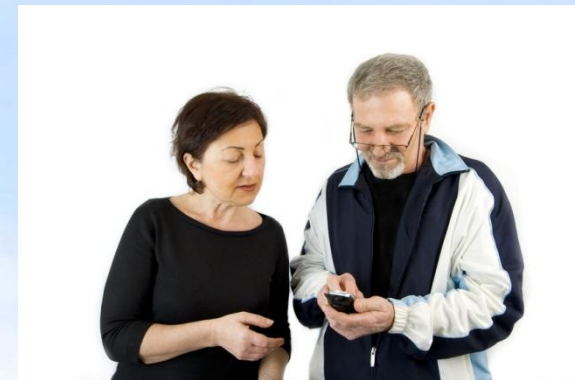




# QCumber Smart City Apps & Services



**CERC**

# Overview

- QCumber Smart City will enable third-party apps and services
- Private prototype apps and services in Phase 1 show the potential of QCumber Smart City
  - Health forecast app
  - QCumber environmental app
  - QCumber Monitoring Based Corrective Action
- Public apps will be developed in Phase 2

# Third-party apps and services

- Open APIs will enable third-party apps, websites and smart devices to create extra value from city data
  - In Phase 1 we have developed private prototype apps to demonstrate the potential of QCumber
  - In Phase 2:
    - we will develop public apps and services
    - we will stimulate the development of apps and services by reaching out to third-party developers

# Open APIs

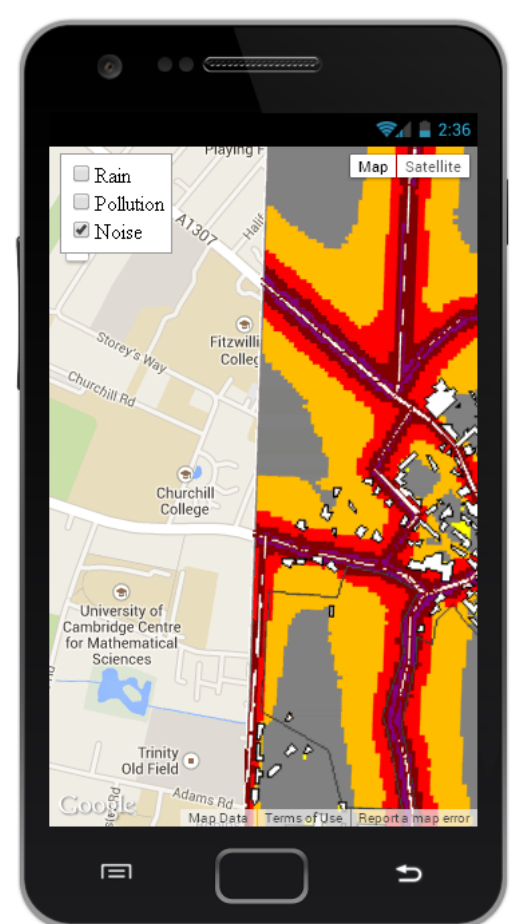
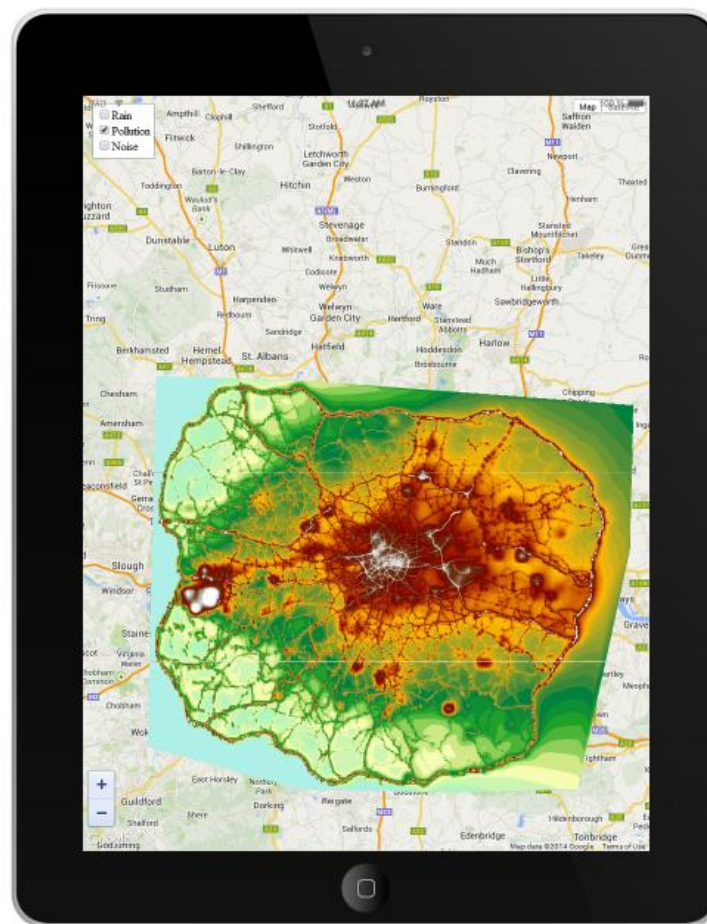
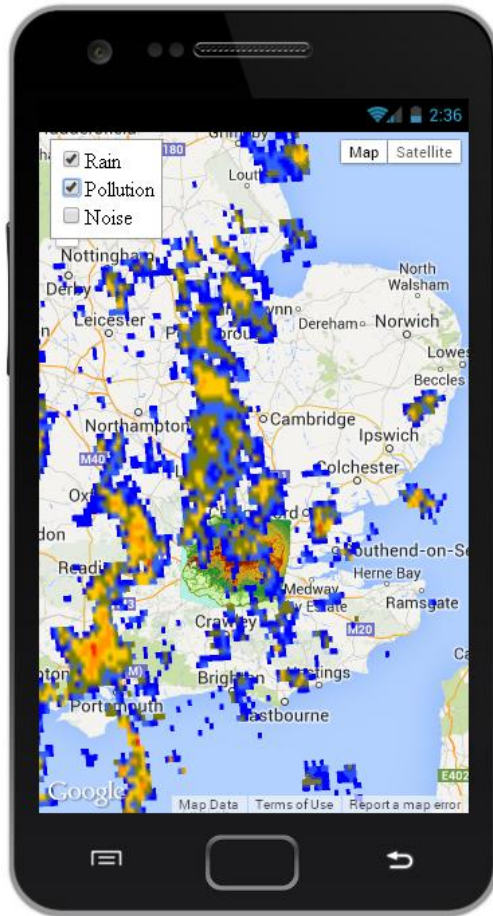
- QCumber APIs will be based on widely-used open standards to maximize interoperability.
- **GeoJSON** is a simple, widely-used standard format for APIs with geographical data.
- **OGC WMS** (Web Mapping Service) is a widely-used standard for map imagery. The UK has adopted WMS for the UK Location Programme.
- **OGC CSW** (Catalog Service for Web) is a widely-used standard for metadata. The UK has adopted WMS for data.gov.uk and the UK Location Programme.
- **Hypercat** is an emerging standard for API metadata which was initially developed by the TSB project OpenIoT

# Prototype 1: Health Forecast App

- An enhanced health forecast app building on CERC's *airTEXT* forecasting service for London which provides air quality, temperature, pollen and UV
  - **Transferable** to other cities using open data
  - **Extended** with rain and noise forecasts
  - **Live map imagery** can be embedded through open APIs (WMS)
    - Example: the Met Office open data service DataPoint offers live satellite imagery such as rain radar
    - Example: other data from Q-Cumber (official or crowd-sourced)
  - **Crowd-sourcing** would allow the public to report and discuss air quality, noise, pollen (or perhaps in Britain, the weather!)

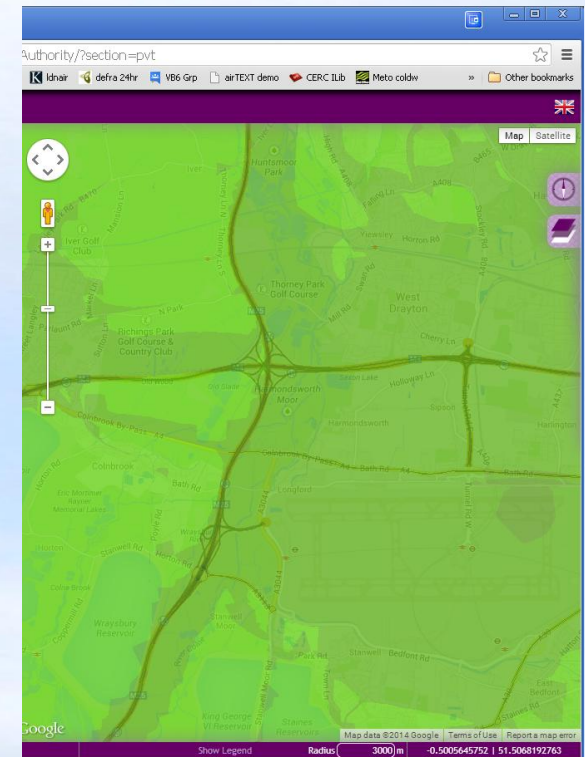
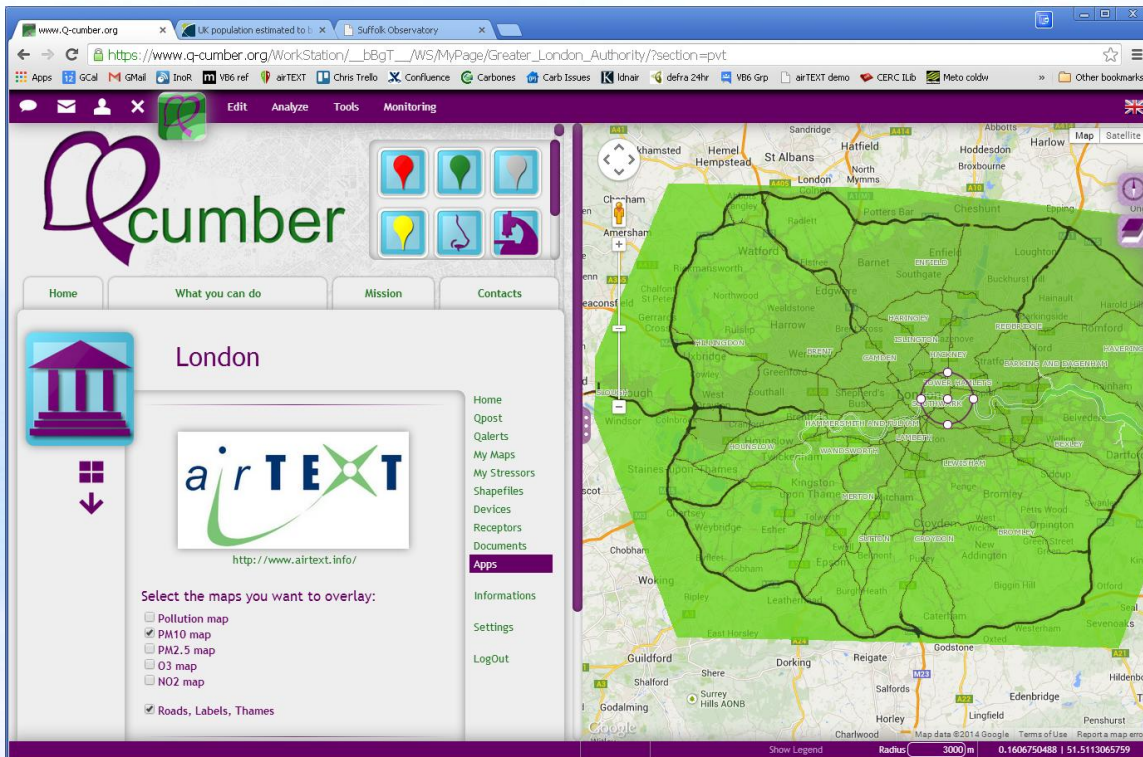


# Prototype 1: Health Forecast App



# Prototype 1: airTEXT in QCumber

- WMS API has been used to embed live airTEXT forecast maps in QCumber



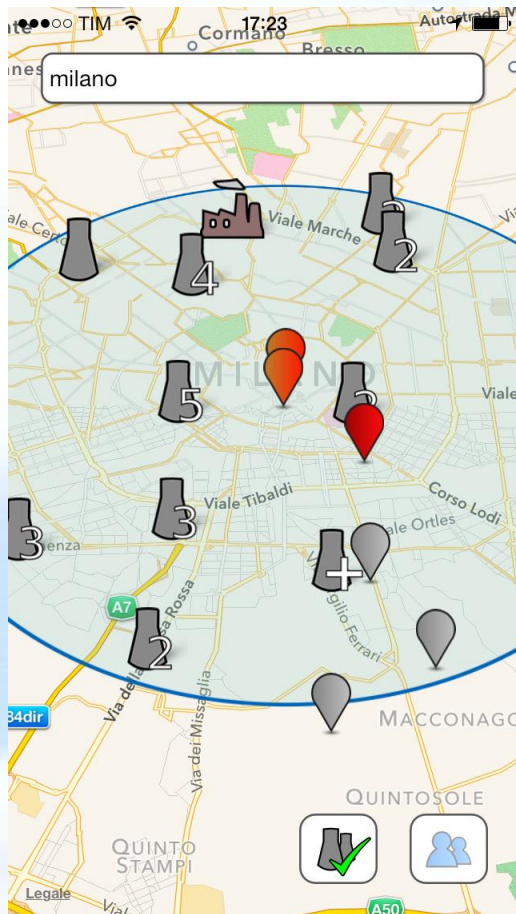


# Prototype 2: Q-App for environmental issues

- A smartphone and tablet app to report and discuss environmental problems and vulnerable sites
  - A map display showing the data held in QCumber. This is similar to the map display in the web interface for Qcumber
  - The ability to ‘tap’ on the map to identify a point, or use your current location, and
    - enter a QPost for that point
    - view any further information that is available at that point, for example the air pollution levels

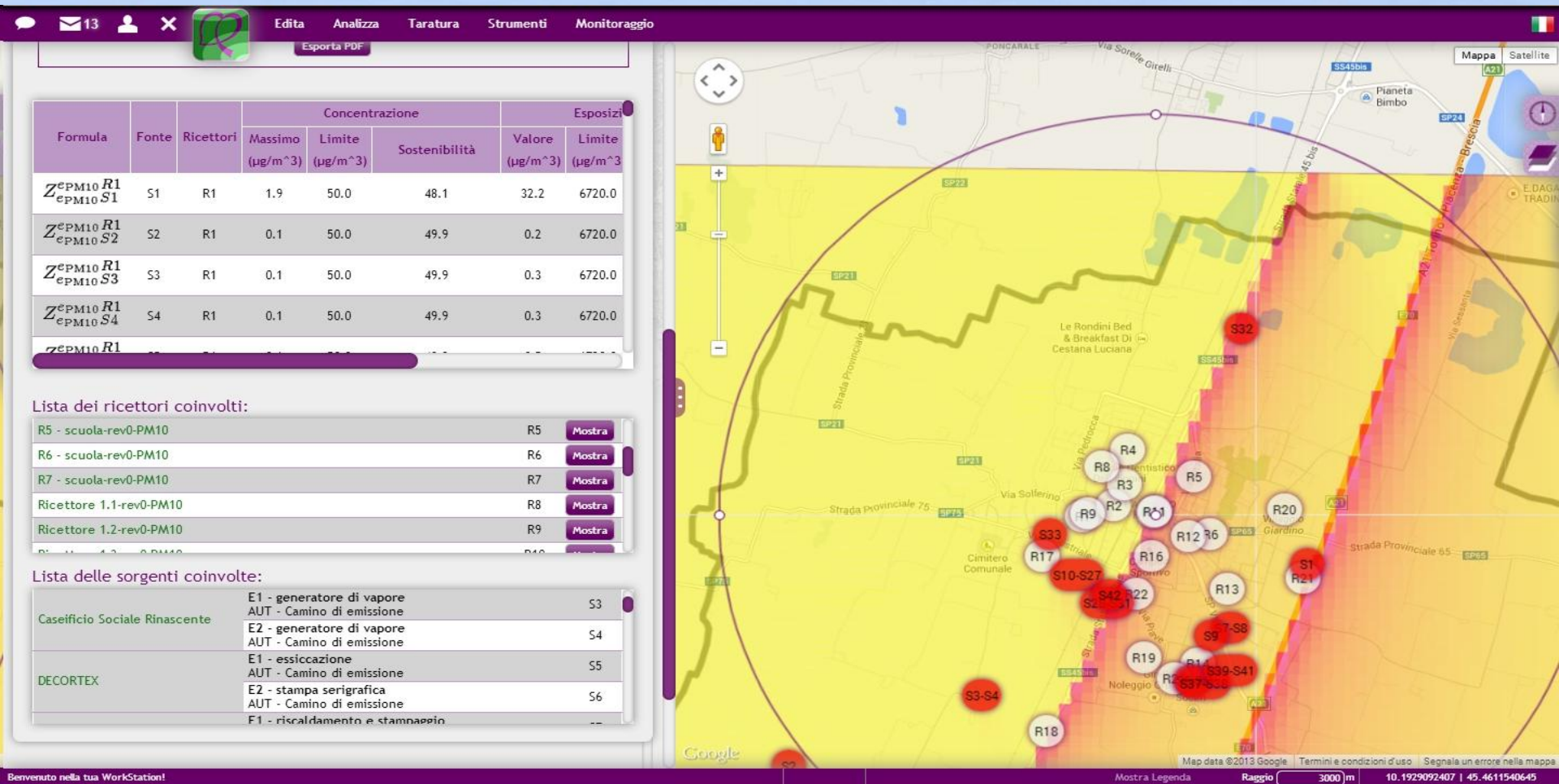


# Prototype 2: Q-App for environmental issues

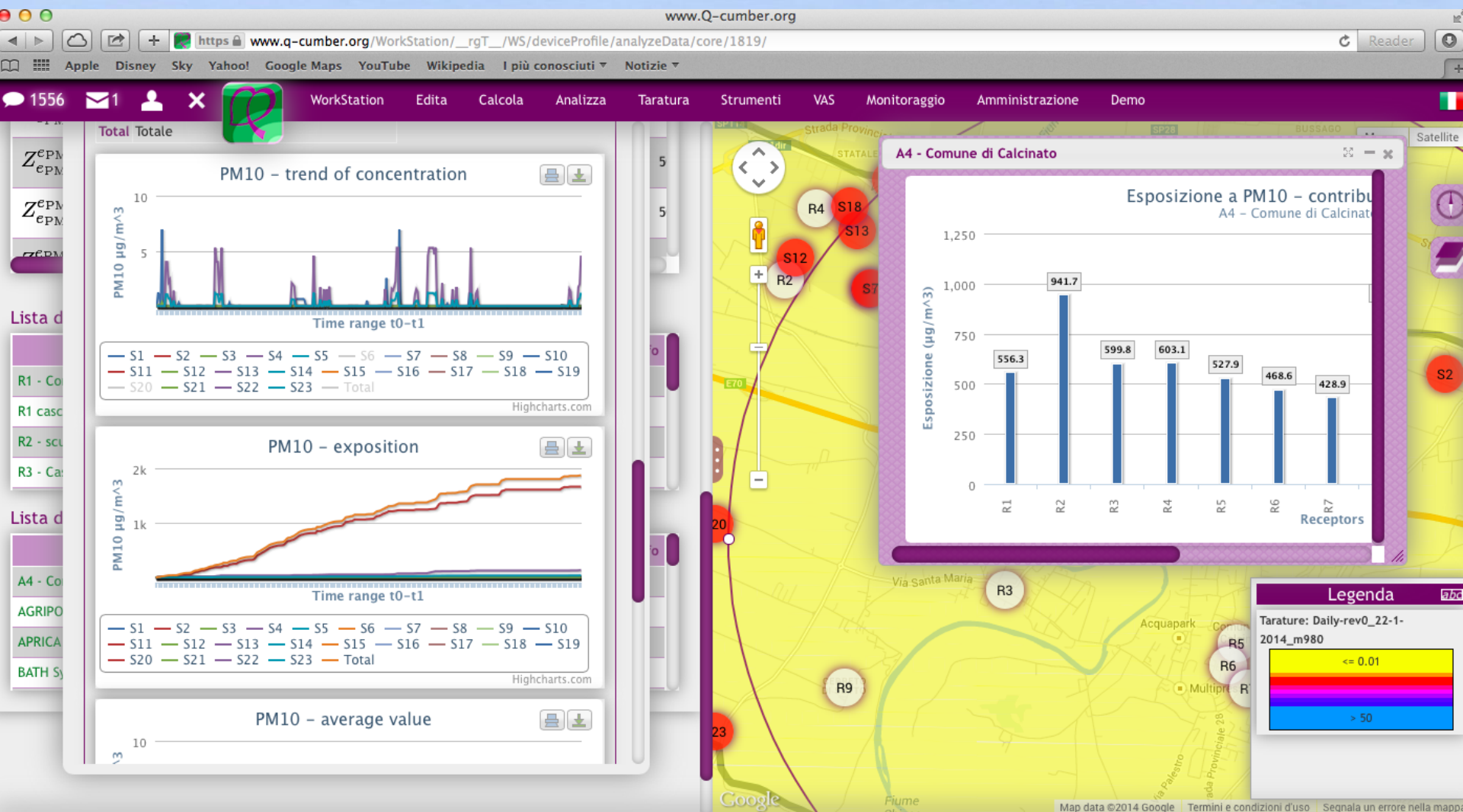


# Monitoring Based Corrective Action

- Fully-working and in use (not a prototype!)
- An example of a sophisticated scientific data-processing tool based on the QCumber platform







# Ideas for apps and services

- There are unlimited possibilities for apps and services
- Input from Local Authorities will be very useful
- A couple of other ideas to stimulate discussion:
  - A bus app, with live bus data, supplementing bus data sets through crowd-sourcing
  - Retail/high street/town centre app, perhaps with “loyalty” scheme allowing Q-posts to recognise and applaud traders or others who make a difference

# Summary & Next Steps

- Developed prototype apps to demonstrate possibilities of QCumber Smart City
- Continue to develop ideas for public apps
- Liaise with cities to refine proposal for Phase 2