



SwarmPulse

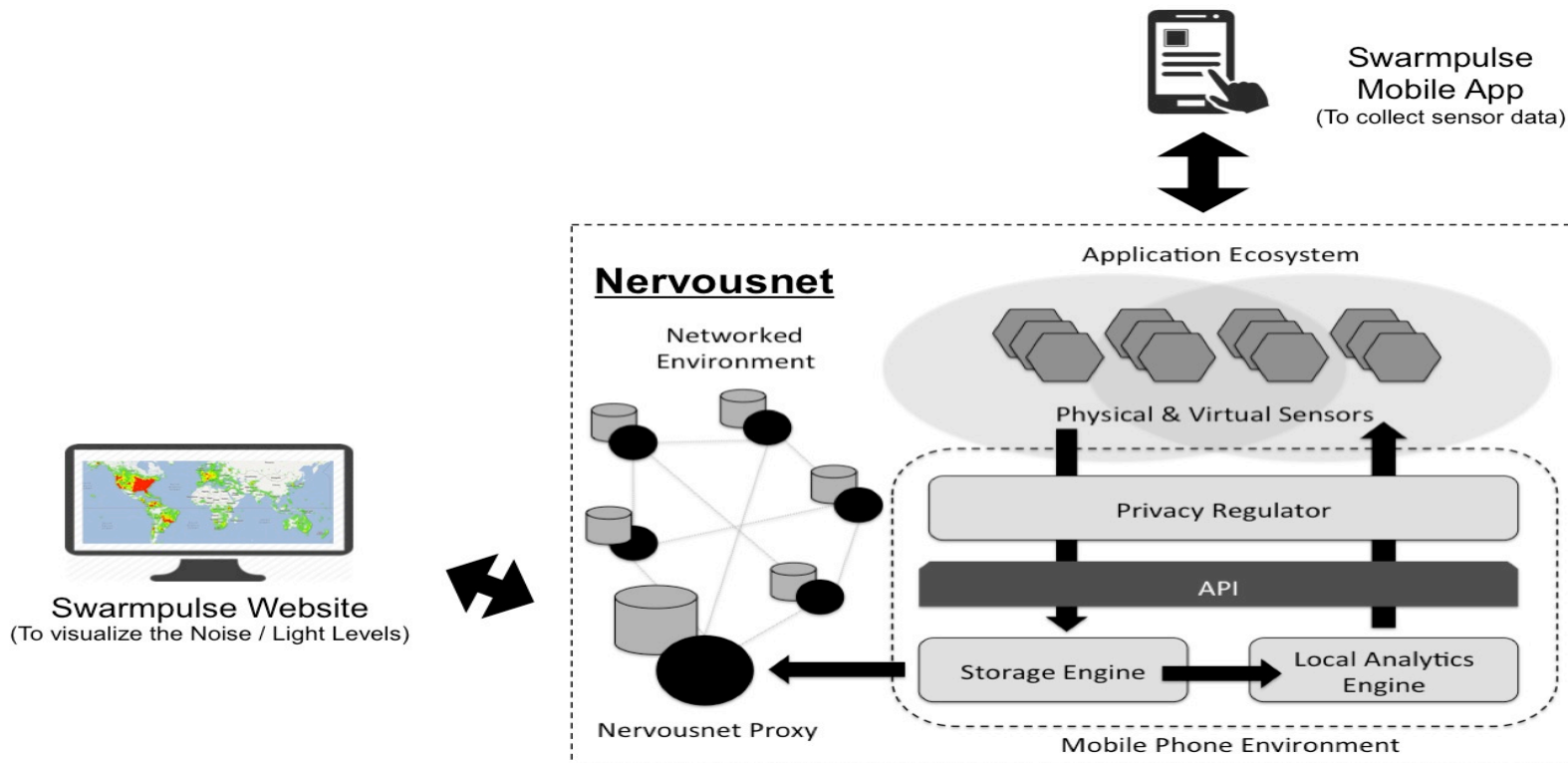
mapping the world together....

www.Swarmpulse.net

What is it?

- Built as part of a research initiative at the ETH Zurich, Professorship of Computational Social Science (COSS)
- Part of the Planetary Nervous System platform, a large-scale distributed research platform that provides real-time social sensing services as a public good
- Allows users to visualize and anonymously share data and digital content (sensors values, media, web links etc.)
- User generated content and data.

System Architecture



Features

Current
version 1.0

- Real-time view
 - Visualize data as it is shared by users in real time.
 - Markers are cleared from the map after 5 minutes (300 seconds) to avoid the possibility of large amount of data being shown on the map.
- Time-Machine
 - Go back in time to view data as was shared by users at specific times.
 - Time range is limited to 30 minutes window period from the start time chosen by the user.
- Sensors
 - Light, Noise
 - Visualize light and noise levels at various geo locations.
- Sharing
 - Text Message and web links.
 - Share links, favorites websites directly from external apps and browser on Android and iOS devices.

Features

To be implemented
in version 2.0

- Allow for sharing of images, audio and video clips of limited duration.
- Rate Shared content.
- Report inappropriate content.
- Data Volatility – Allow for users to choose how long their data remains on the server.
- Auto Upload of Sensor data at specific time intervals.

How – to?

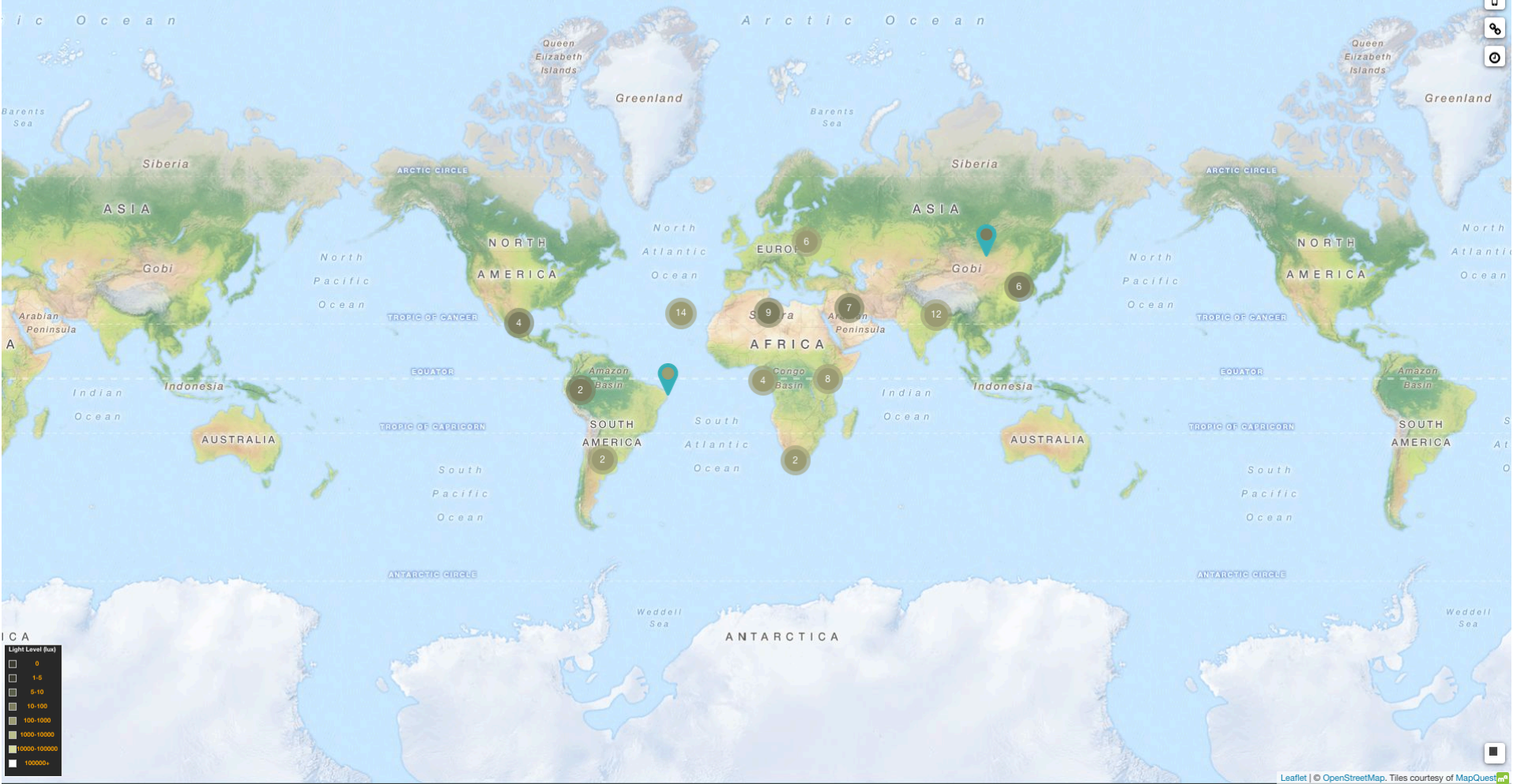
- Mobile Client Download (Android only):
 - On you mobile phone, use the download mobile app button in the right corner on the website at www.swarpulse.net.
 - Visit the following URL on your android phone:
<https://play.google.com/store/apps/details?id=ch.ethz.coss.nervous.pulse>
- Website for visualization:
View website at: www.swarpulse.net

Limitations

- Web Browsers limitations
 - Large amount of data (> 20000 markers) causes problems with the browser performance.
 - To avoid this Clusters have been used to group together markers that are close. This is useful to an extent i.e. 60000 markers.
 - Secondly the pulse of the system is set to 5 minutes, i.e. data is removed after 5 minutes in Real-Time view and in the Time-Machine view the results are limited to only 30 minutes from the start time chosen by the user.

Screenshots

Website & Mobile Client



- ☒ Hide Labels
- ☐ Show Labels

Overlays

- ☒ Light
- ☐ Noise
- ☐ Messages



- ☒ Hide Labels
- ☐ Show Labels

Overlays

- ☒ Light
- ☐ Noise
- ☐ Messages

Layers

Download Mobile App
button

Server Connection Status
Indicator

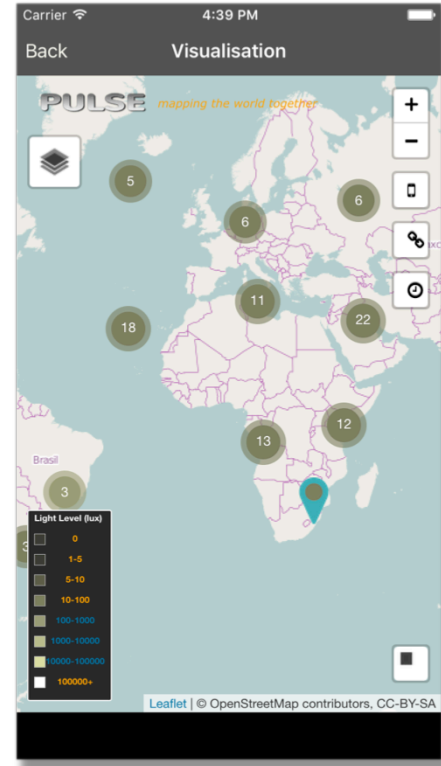
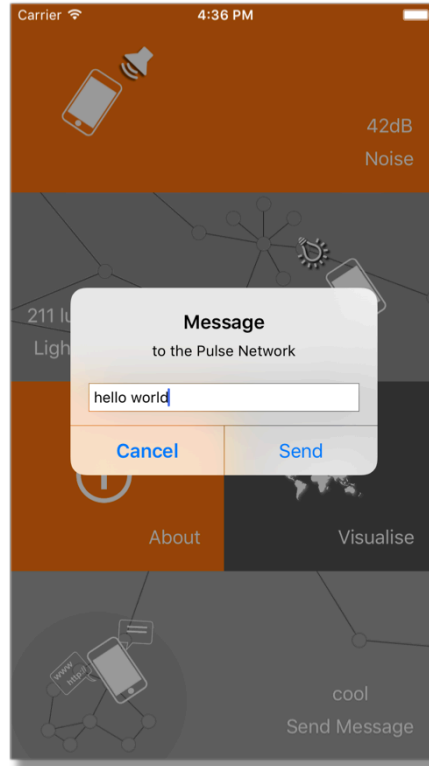
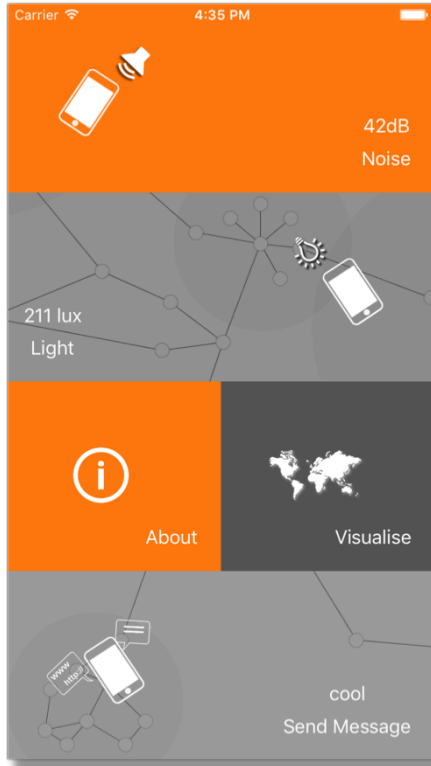
Real-time or Time-Machine
button / indicator

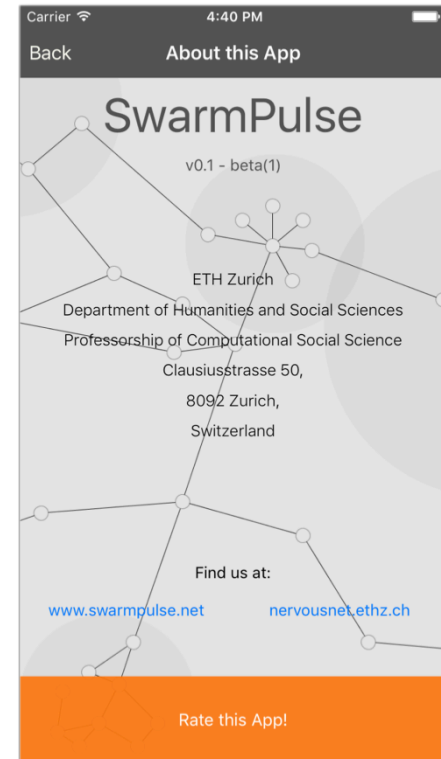
Sensor values &
Colors



Time-Machine.

(Select Date & Time to visualize data from the past)





Sample Video

<https://www.youtube.com/watch?v=i7NHOCpvFIY>