

Bridging the physical with the 'virtual'

Networked objects, hybridity & information

Hybrid Toys Workshop,
Mediamatic, 23 january 2008

Auke Touwslager, Informationlab.org

Toys?



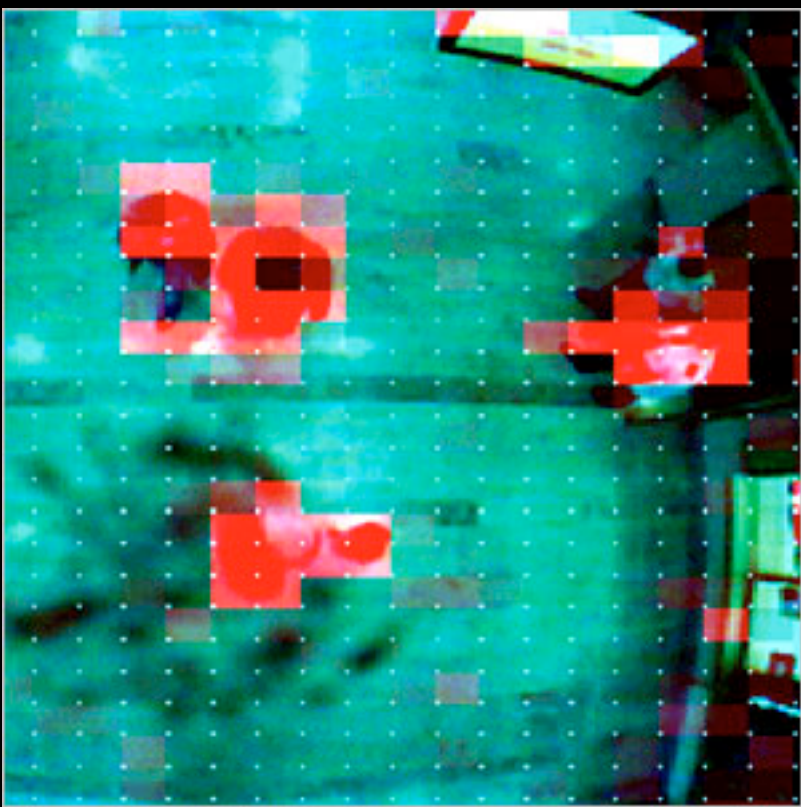
<http://www.fusedspace.org>, 2004

Networked objects

Buildings, fashion, jewelry, plants, toys are trying to connect.

Early projects showed us the need for new **interfaces**, **interaction** and the **growing amount of information** coming from our physical environment.

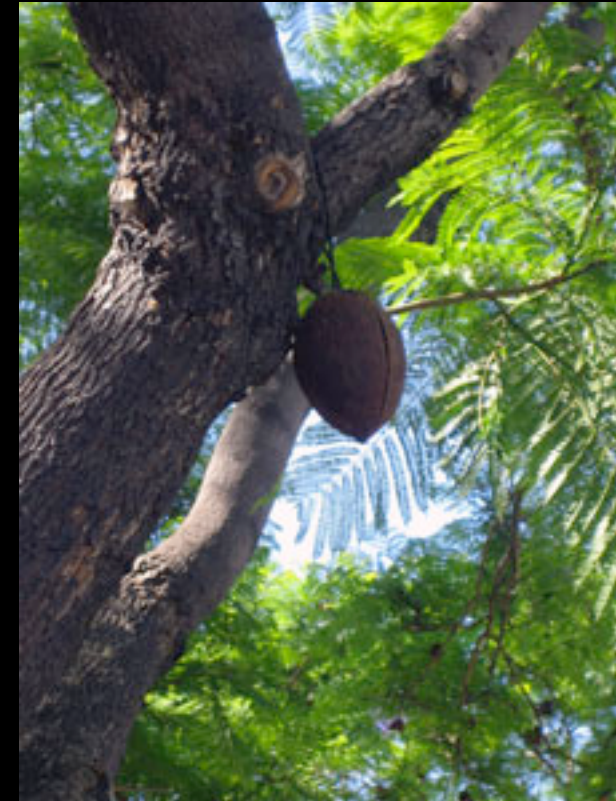
Arch-OS (2004)



Toys, play: only responsive

<http://www.arch-os.com>, 2004

Tripwire



Toys, play: only responsive

<http://web.media.mit.edu/~tad/htm/tripwire.html>, 2006

Networking

There are many types of networks and ways of networking.

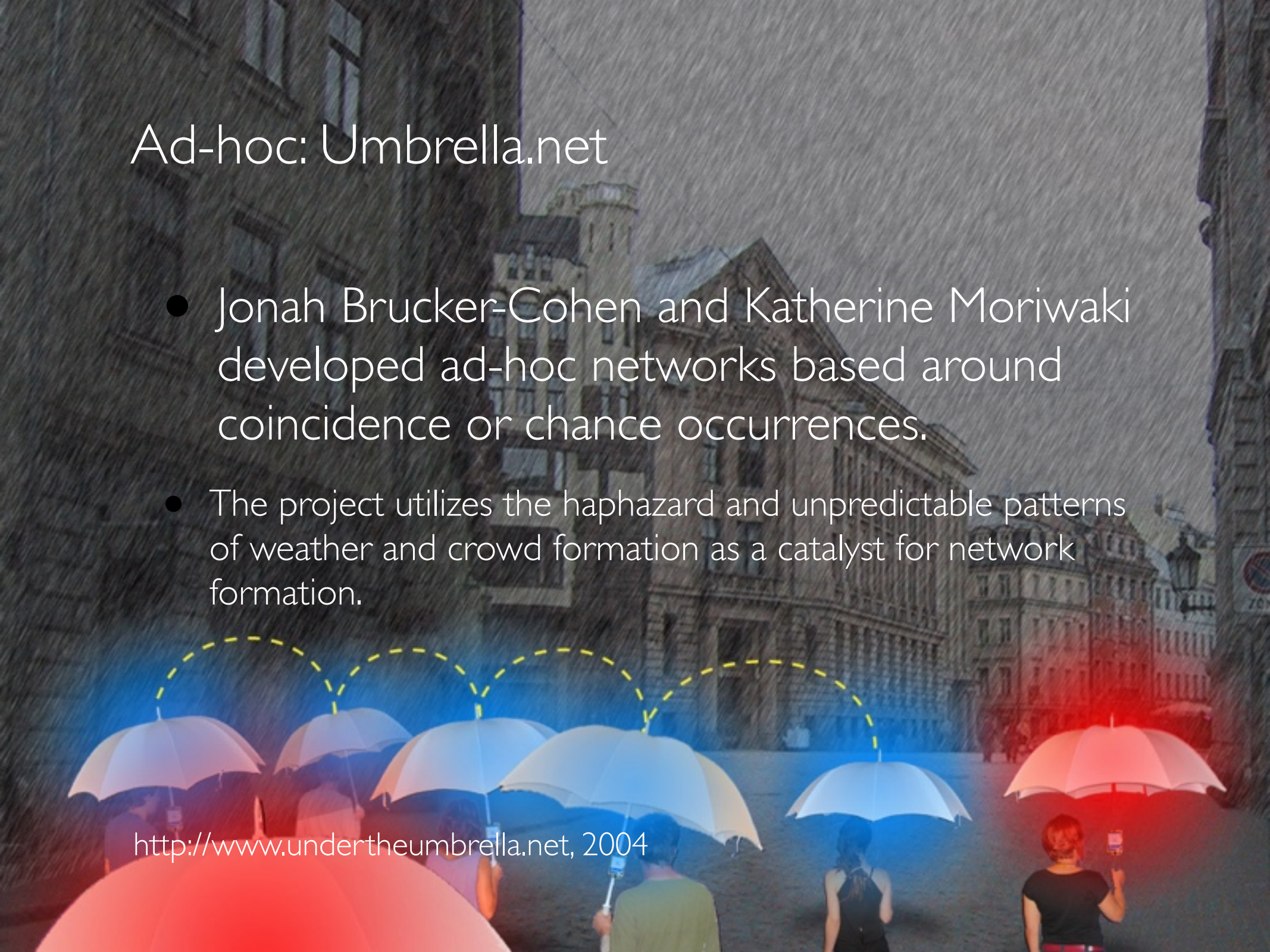
Existing network infrastructures such as the internet, mobile phone networks, remote sensors grids, gps, urban screens and so on.

Different types as well, such as ad-hoc to 'always on':

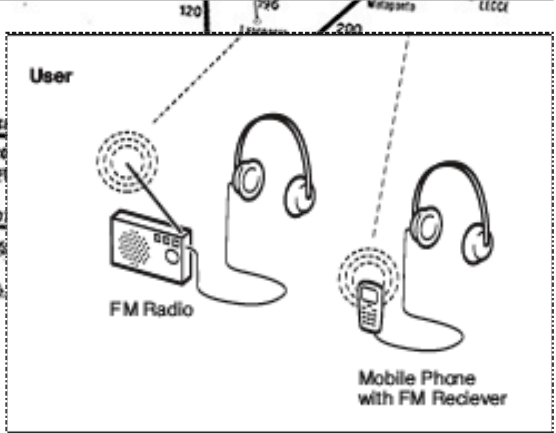
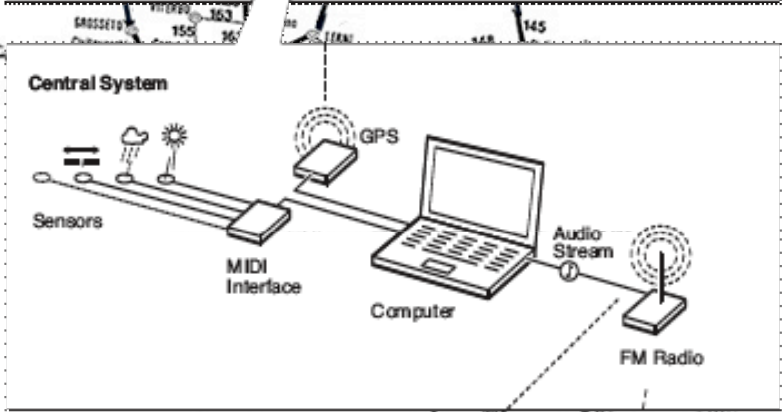
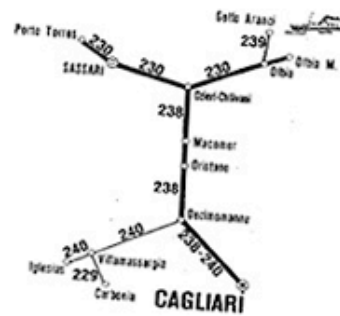
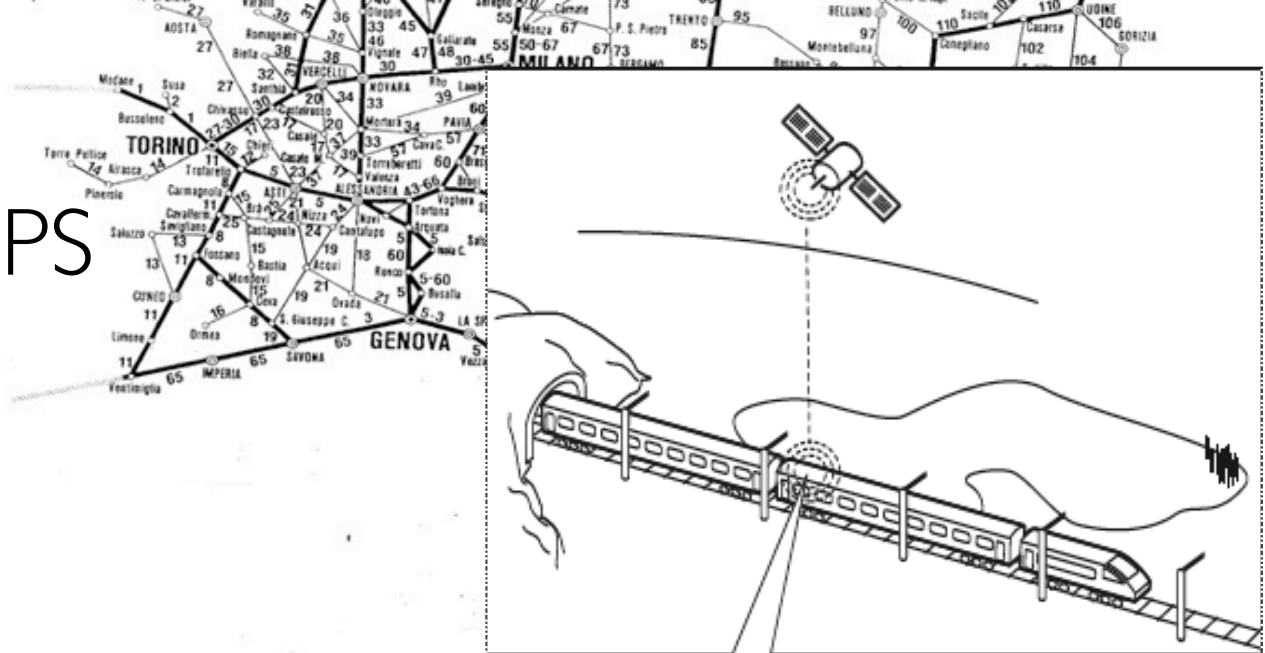
Ad-hoc: Umbrella.net

- Jonah Brucker-Cohen and Katherine Moriwaki developed ad-hoc networks based around coincidence or chance occurrences.
- The project utilizes the haphazard and unpredictable patterns of weather and crowd formation as a catalyst for network formation.

<http://www.undertheumbrella.net>, 2004



Always on: GPS



www.notdefined.net/locosound/

Networking

The **diversity, availability** and **quality** of information and data as **a material** for hybrid and networked objects.

I'll be focusing more on the network part and to be precise on the information part.

Merge, mash-up, contextualizing

RFiD, Bluetooth, WiFi, GPS, Cell Phones we know them all.

What if we overlay all?

Invisible borders



<http://www.europelostandfound.net>, 2006

Network information



Sremska Mitrovica



<http://www.europelostandfound.net>, 2006

Mapping CellID to GPS coordinates

Alternative positioning through GSM towers by adding location information to static network nodes.

Many services freely available to use such as Google Mobile Maps(<http://www.google.com/gmm/>), Navizon (<http://www.navizon.com>) PlaceEngine <http://www.placeengine.com/> (WiFi)

<http://client338.lab.telin.nl:8080/wasp/jsp/CellStats.jsp>

46086829

Operator: vodafone N

LAC: 104

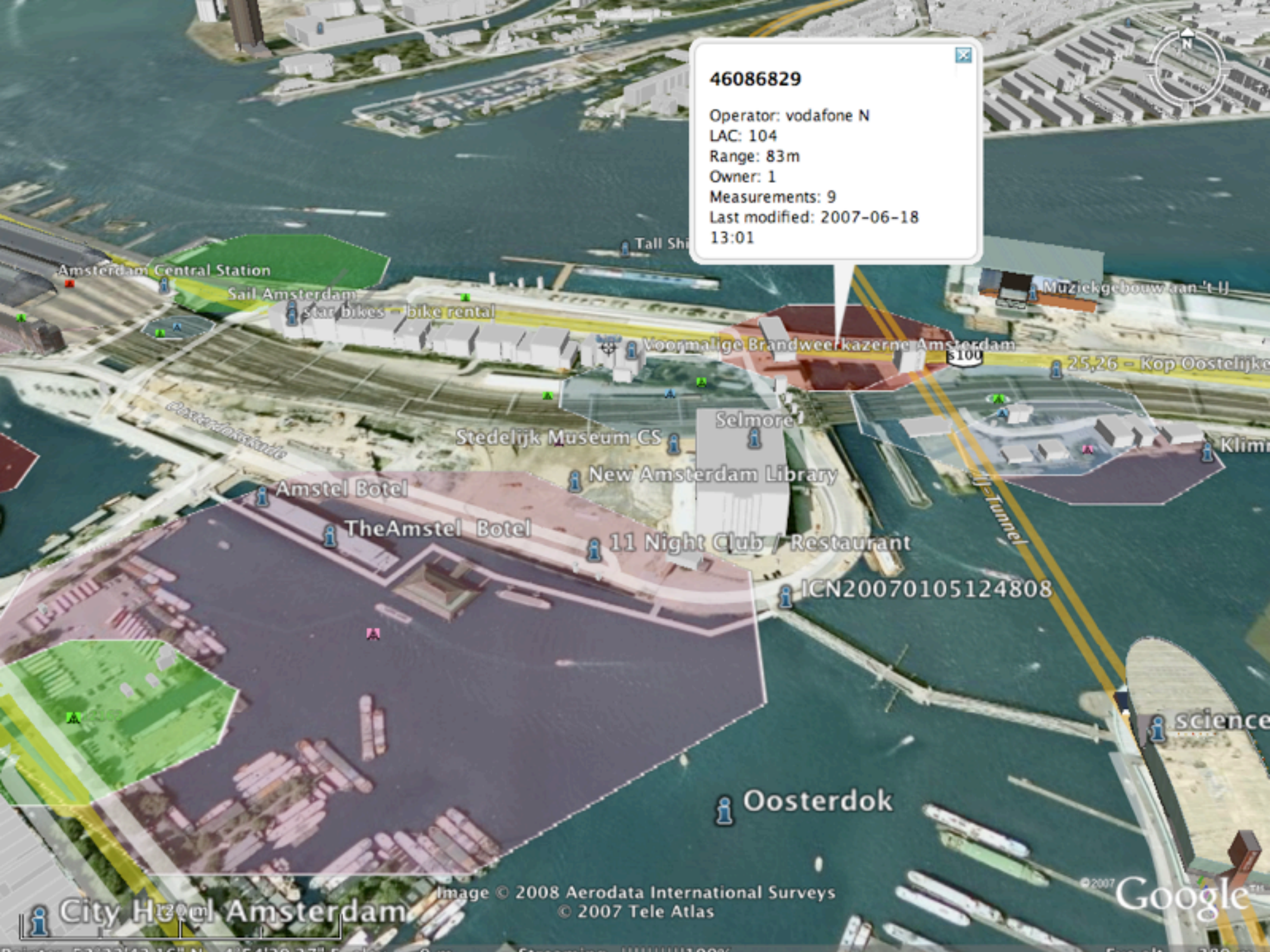
Range: 83m

Owner: 1

Measurements: 9

Last modified: 2007-06-18

13:01



Amsterdam Central Station

Sail Amsterdam

star bikes

bike rental

Tall Ship

Muziekgebouw aan 't IJ

Voormalige Brandweerkazerne Amsterdam

25,26 - Kop Oostelijke

Postkantoor

Stedelijk Museum CS

Selmore

Klim

Amstel Botel

New Amsterdam Library

The Amstel Botel

11 Night Club / Restaurant

IJ-Tunnel

ICN20070105124808

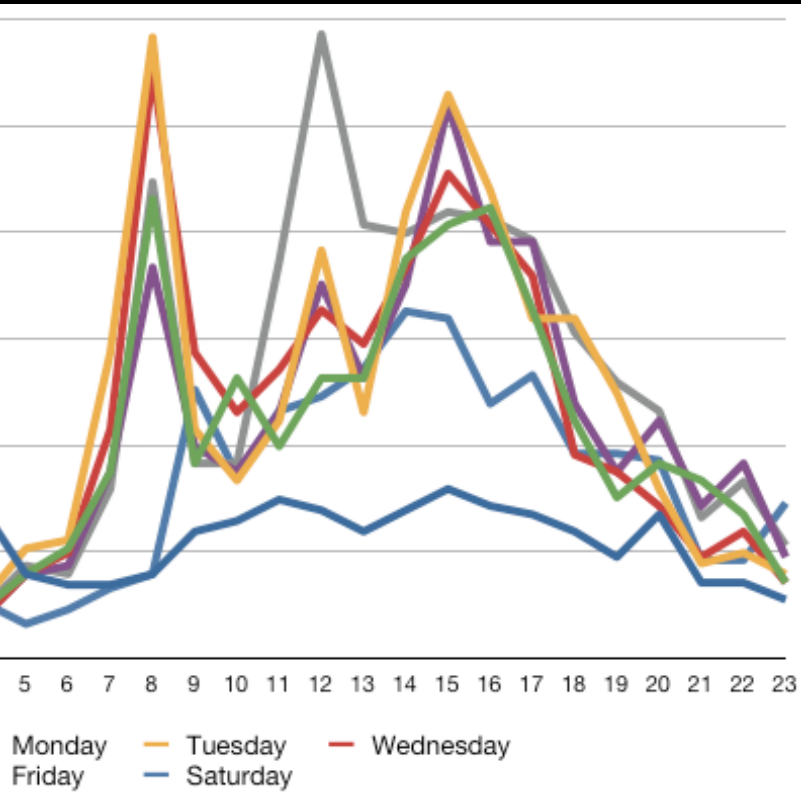
science

Oosterdok

"53,000 bluetooth devices milestone"

Tracking MAC addresses of bluetooth devices.
With just 5 locations since September 2007.

"53,000 bluetooth devices milestone"



<http://www.bluetoothtracking.org>, 2007

Familiar Strangers

Recognized from regular activities, but with whom one does not interact, while sharing background of experiences (Stanley Milgram, 1972)

Gap of interaction possibilities. Can we connect playfully?

"Hailing all frequencies"



Photo by cbcastro

"Hailing all frequencies"

Getting the information across through new and existing infrastructures.

Ultrawideband (IPS), Powerline (BPL) even through light (Talking Lights)

<http://www.sciam.com/article.cfm?id=indoor-positioning-system>

http://en.wikipedia.org/wiki/Power_line_communication

<http://www.talking-lights.com/>

"Hailing all frequencies"

'Elfs' are small mechanical systems powered by solar energy that behave as natural living systems in many aspects.

After seeing this work of Pascal Glissmann & Martina Höfflin a few days ago I can only imagine what a next hybrid with 'talking lights' would bring.

Toys, play: recognizable / memories



http://www.khm.de/~pascal/elf/elf_rich.mov

“We will be getting real-time data from the physical world for the first time on a large scale.”

We've already seen an example of information that was merged (CellID with GPS coordinates)

Next up: contextualizing



46275060

010925

Image © 2006 Aerodata International Surveys

© 2006 Europa Technologies

© 2006 Google™

<http://www.iyouit.eu>

59°51.32' N 4°22'44.23' E elev 0 ft

Streaming ||||| 100%

Eye alt 641 ft

IYOUIT (Contextwatcher)

Auto blogging (lifestream), connecting to other information services, gaming, LBS

Cluster detection

Location, proximity, activities and meetings, body data, weather, books etc. etc.

Usage: contextualizing information

Toys, play: document, evolve, aware

<http://www.iyouit.eu>

Social: urban information

SensorBase provides you with a way to publish, share, and manage your sensor data much in the same way that you can publish, share, and manage journal entries in a blog.

<http://www.sensorbase.org>

Combining layers

Mobile phones

Taxi's

Public Transport

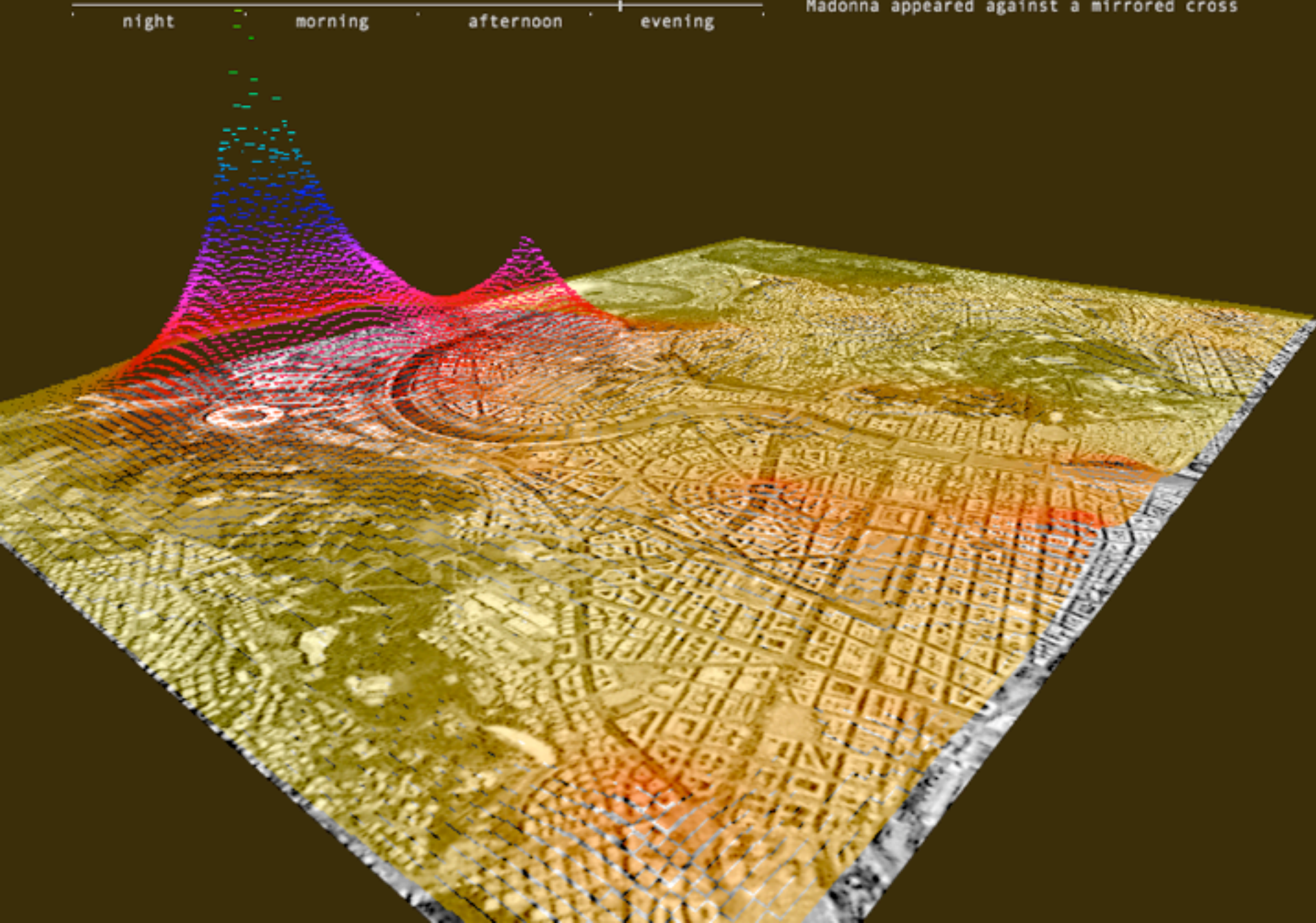
senseable.mit.edu/realtimerome

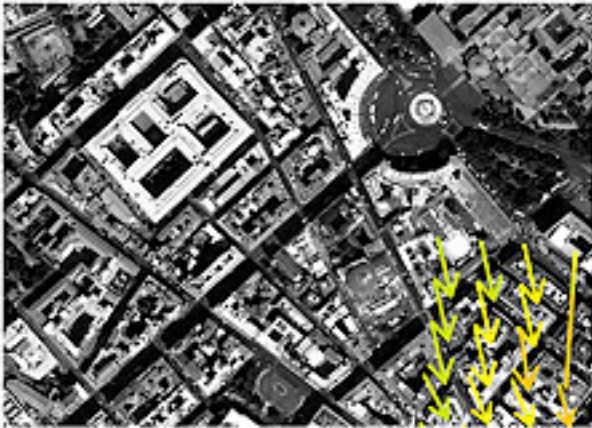


Madonna Concert
Cellphone activity in Stadio Olimpico Rome
2006-08-06

But receives rave reviews from 78,000 in attendance
At Rome's Olympic Stadium
Located about three kilometres from the Vatican
During the song Live to Tell...
Madonna appeared against a mirrored cross

19:00
night morning afternoon evening

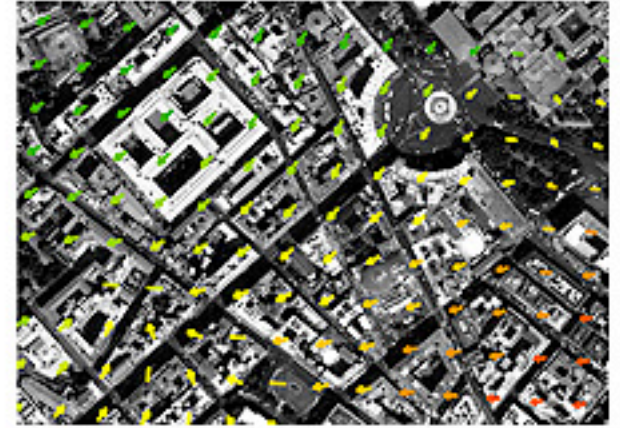




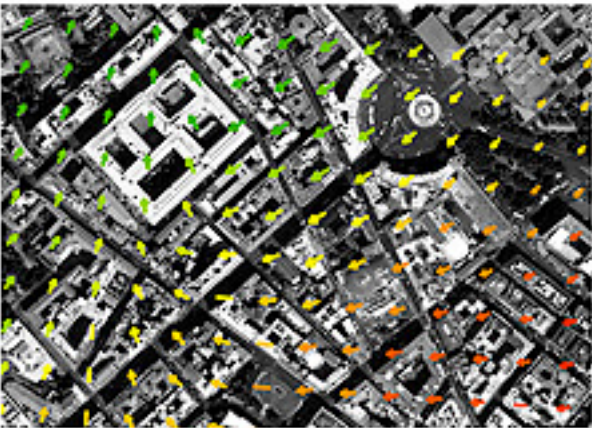
00 - 00 AM



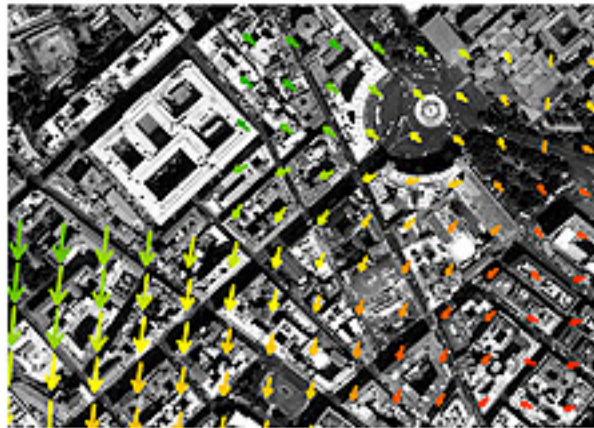
04 - 00 AM



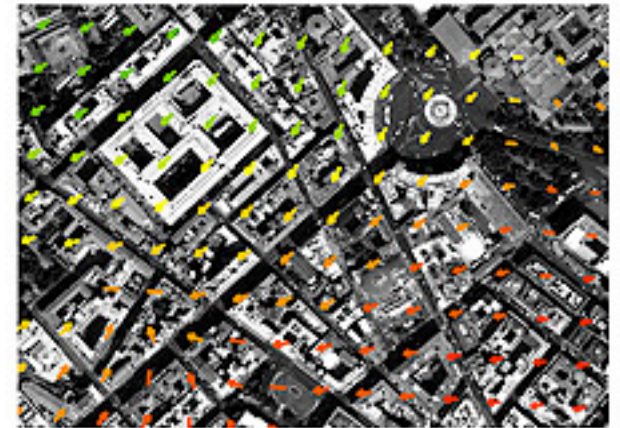
08 - 00 AM



12 - 00 PM



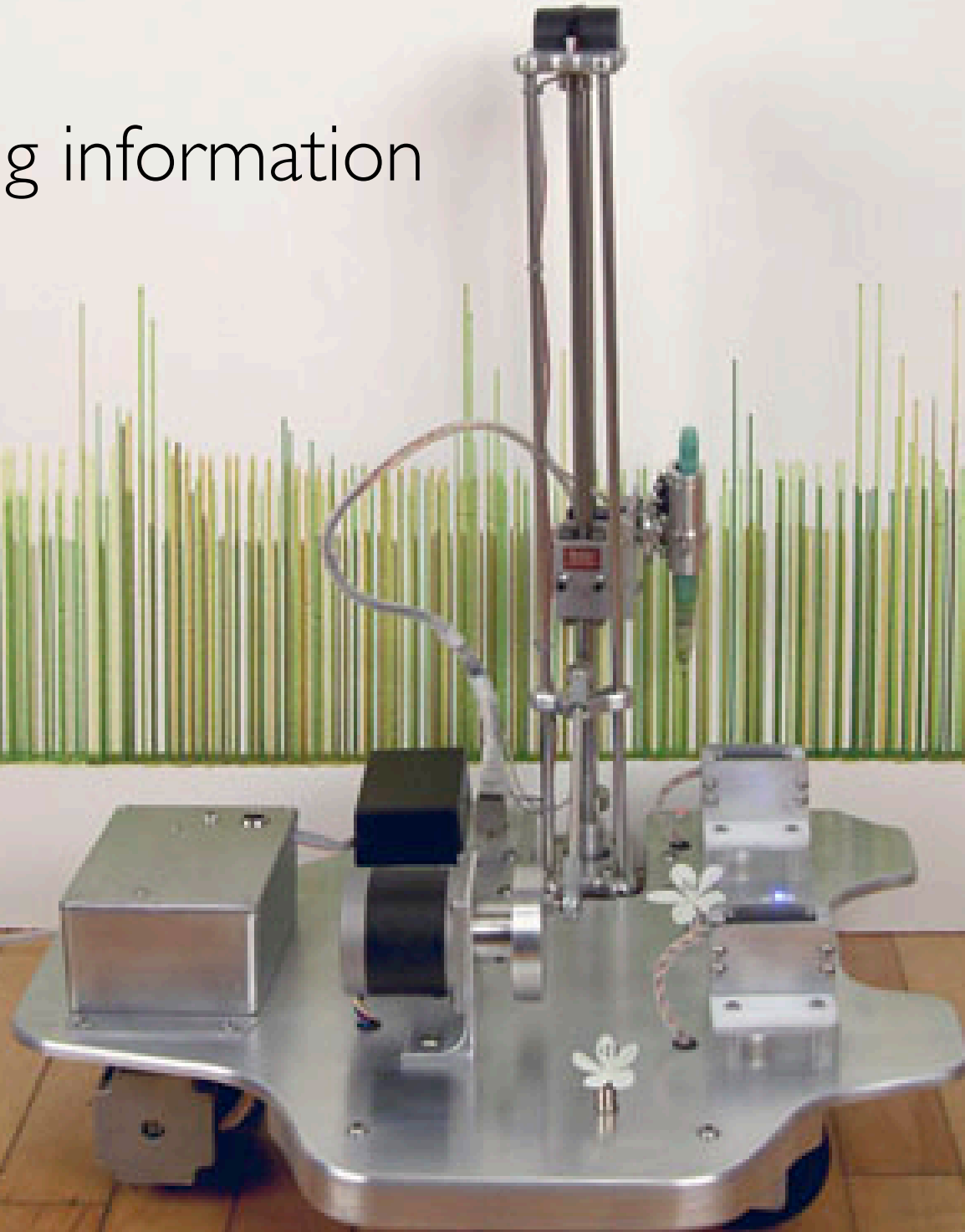
04 - 00 PM



20 - 00 PM

senseable.mit.edu/realtimerome

Representing information



Thoughts

Environmental information through API's and sensors are rapidly available.

We need to bridge the borders of object types too (from fashion to buildings and back)

This demands **new interfaces**, but opens true **networktivity**.