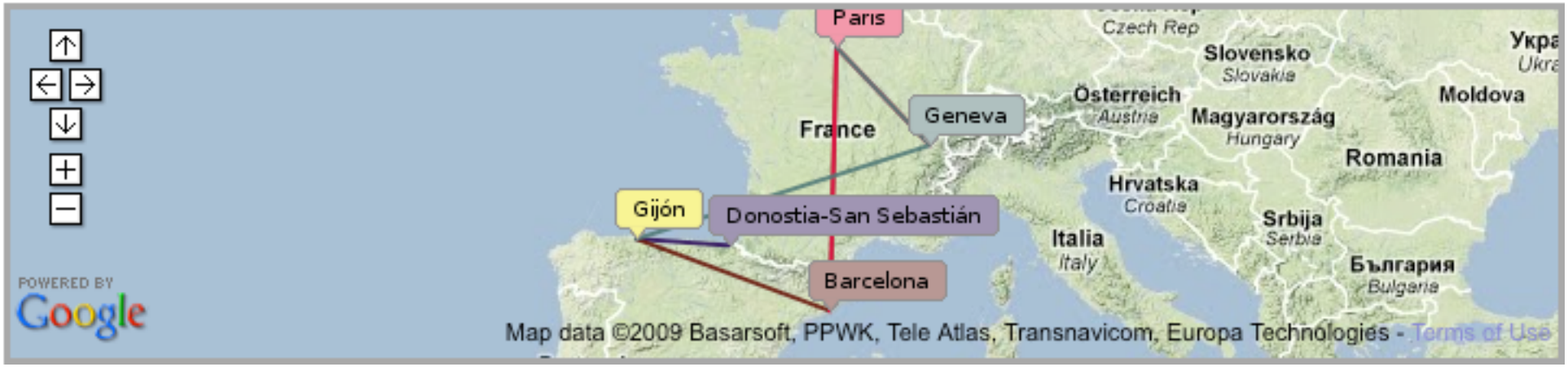
New maps and practices of hybrid spaces

Fabien Girardin
My Map is Not Your Map workshop
San Sebastian, Spain, September 23, 2009

liftLab.



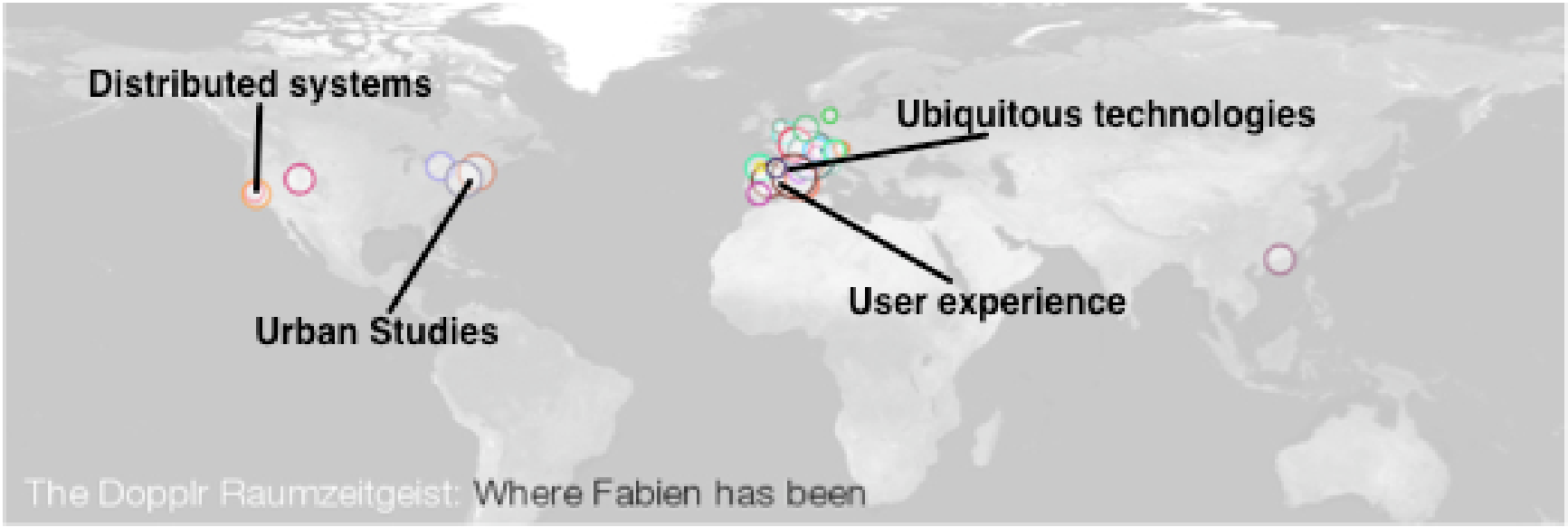
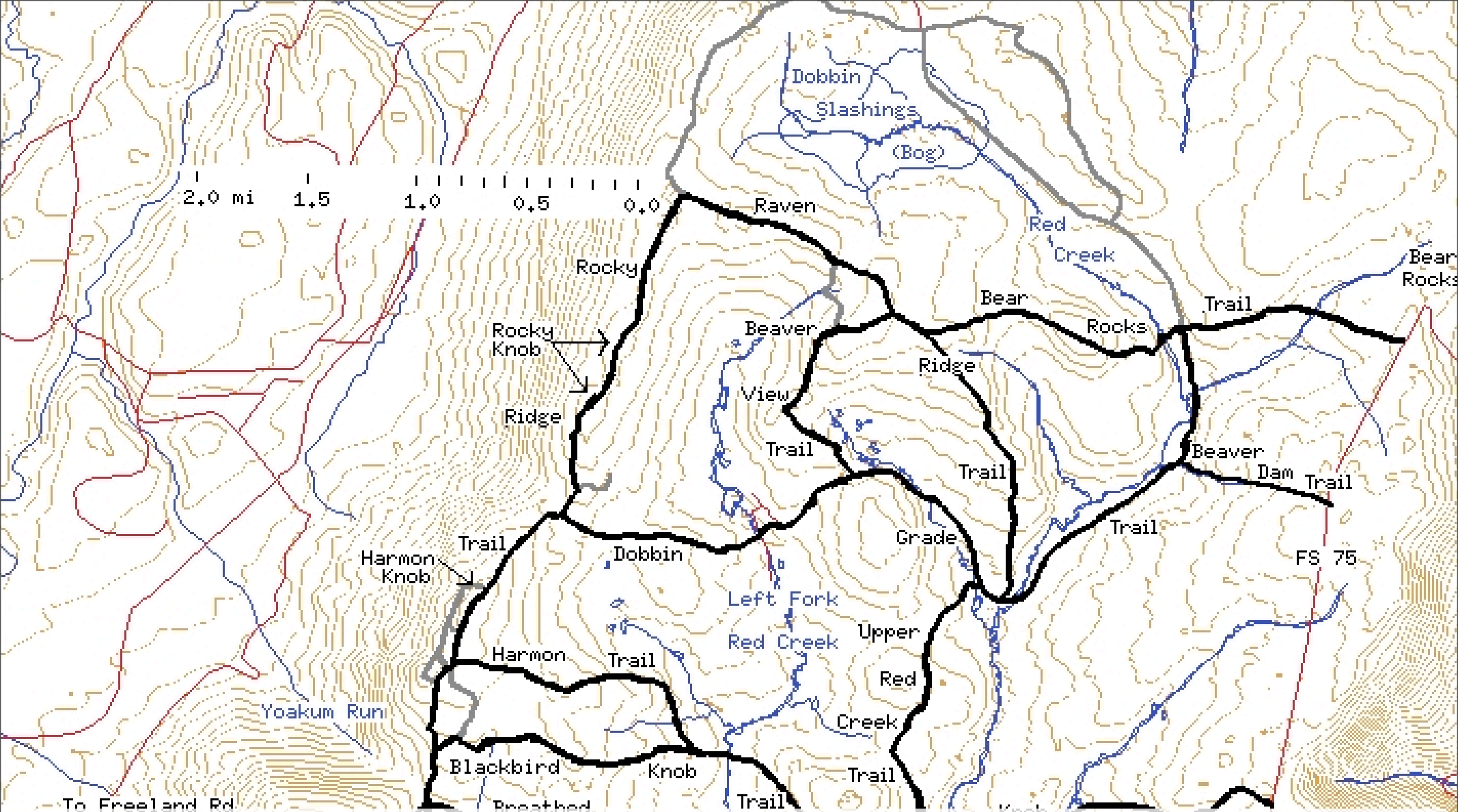


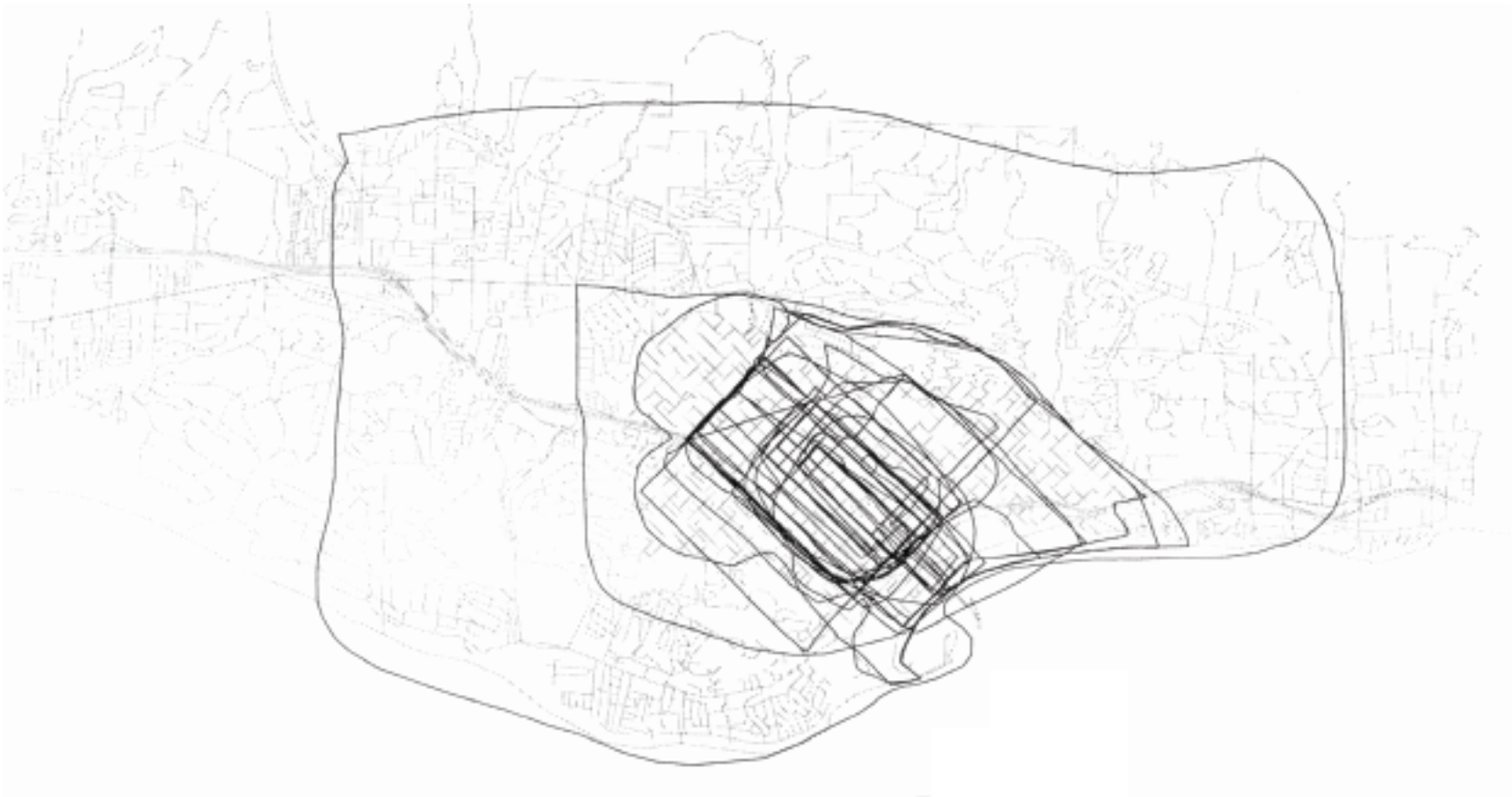
Image courtesy of Dopplr



Traditional maps

Representation of situated reality with precise conventions

Apprehension of the space and the environment

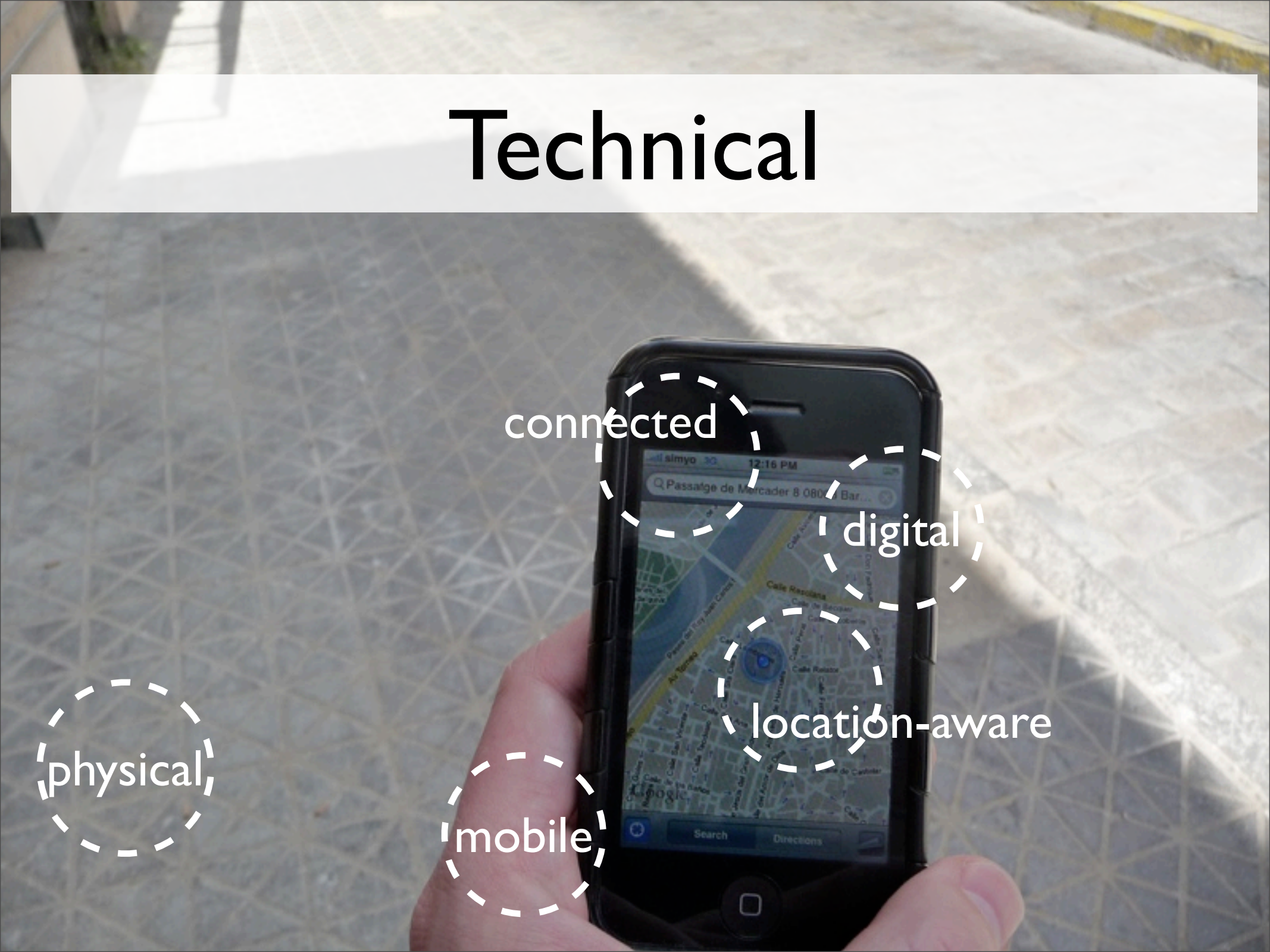


Montello, D. R., Goodchild, M. F., Gottsegen, J., and Fohl, P. (2003). Where's downtown? : Behavioral methods for determining referents of vague spatial queries. *Spatial Cognition & Computation*, 3(2-3):185–204.

Recent evolutions

technical..., yes but also social, political, and economical

Technical



Social

user-generated content, co-production, participatory

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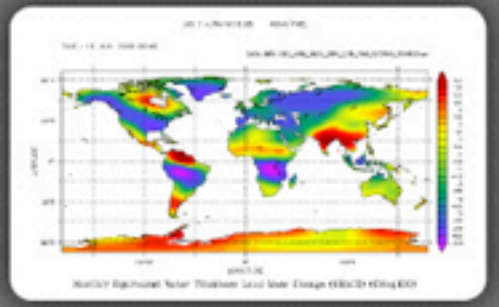
VIEW *THIS* TOOL ▸



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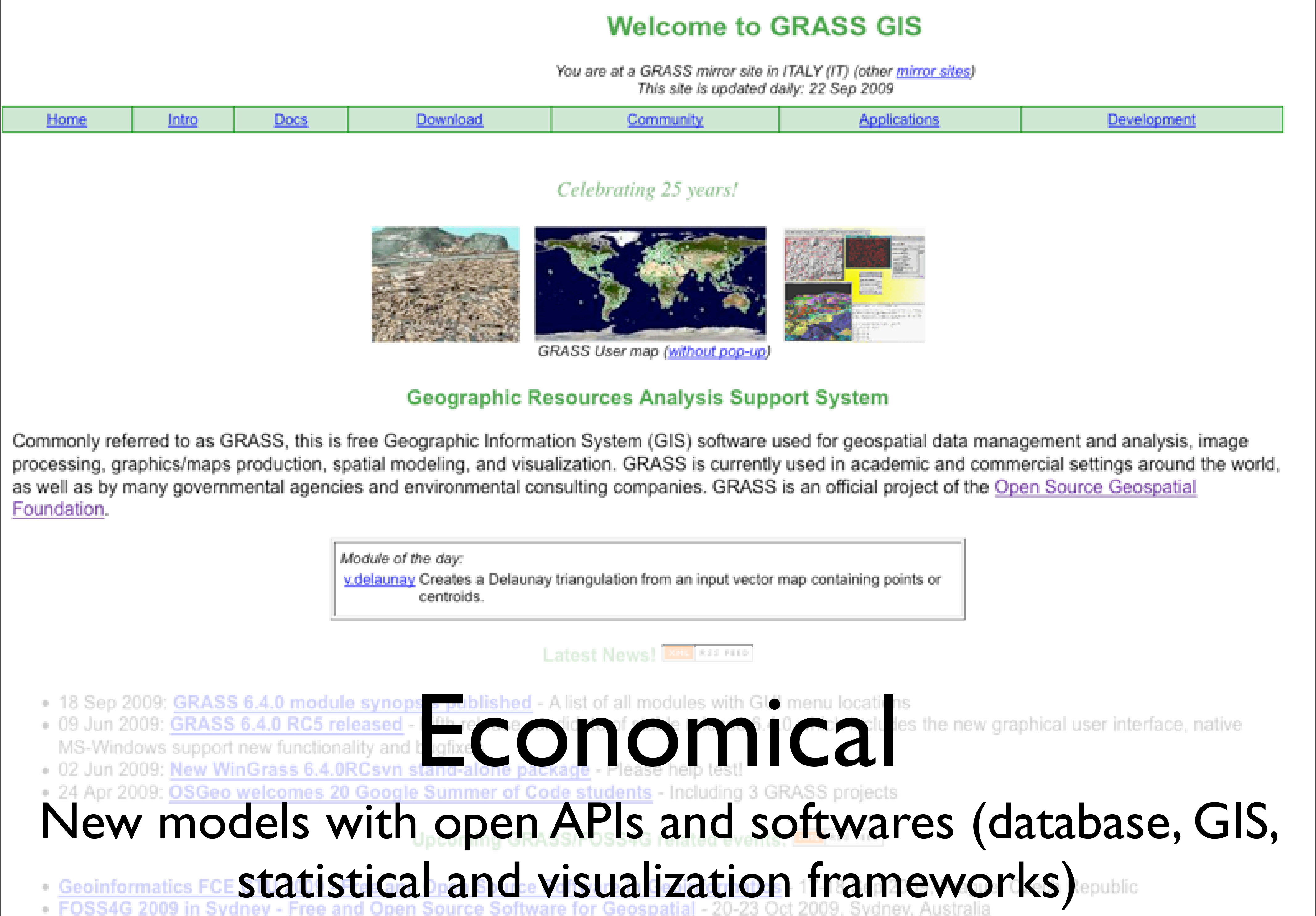
Political

policies for sustainable behaviors, open data initiatives



Economical

New models with open APIs and softwares (database, GIS, statistical and visualization frameworks)

Implications

- People in contact with an interplay of physical and digital contexts (hybrid spaces)
- Deliverance from authorities data and representations of the physical
- Grassroot initiatives
- Access to data produced from people interactions with soft infrastructures

Paris Through Velib'

Openly accessible data

Real-time Rome

Aggregated cellphone network traffic data

Maps to engage

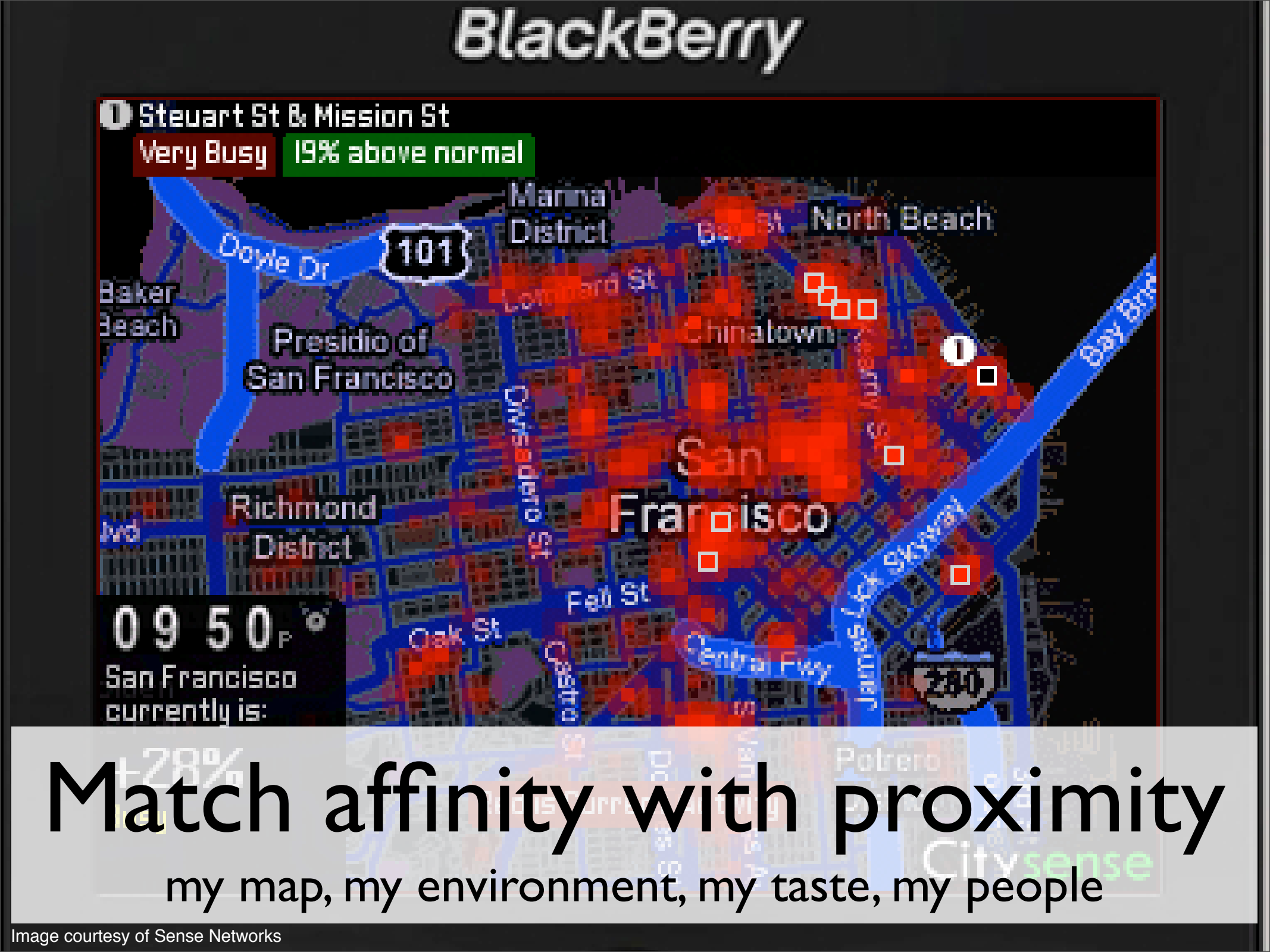
Utility

Practical explorations and operational research

Image courtesy of Timo Arnall

Real-time awareness

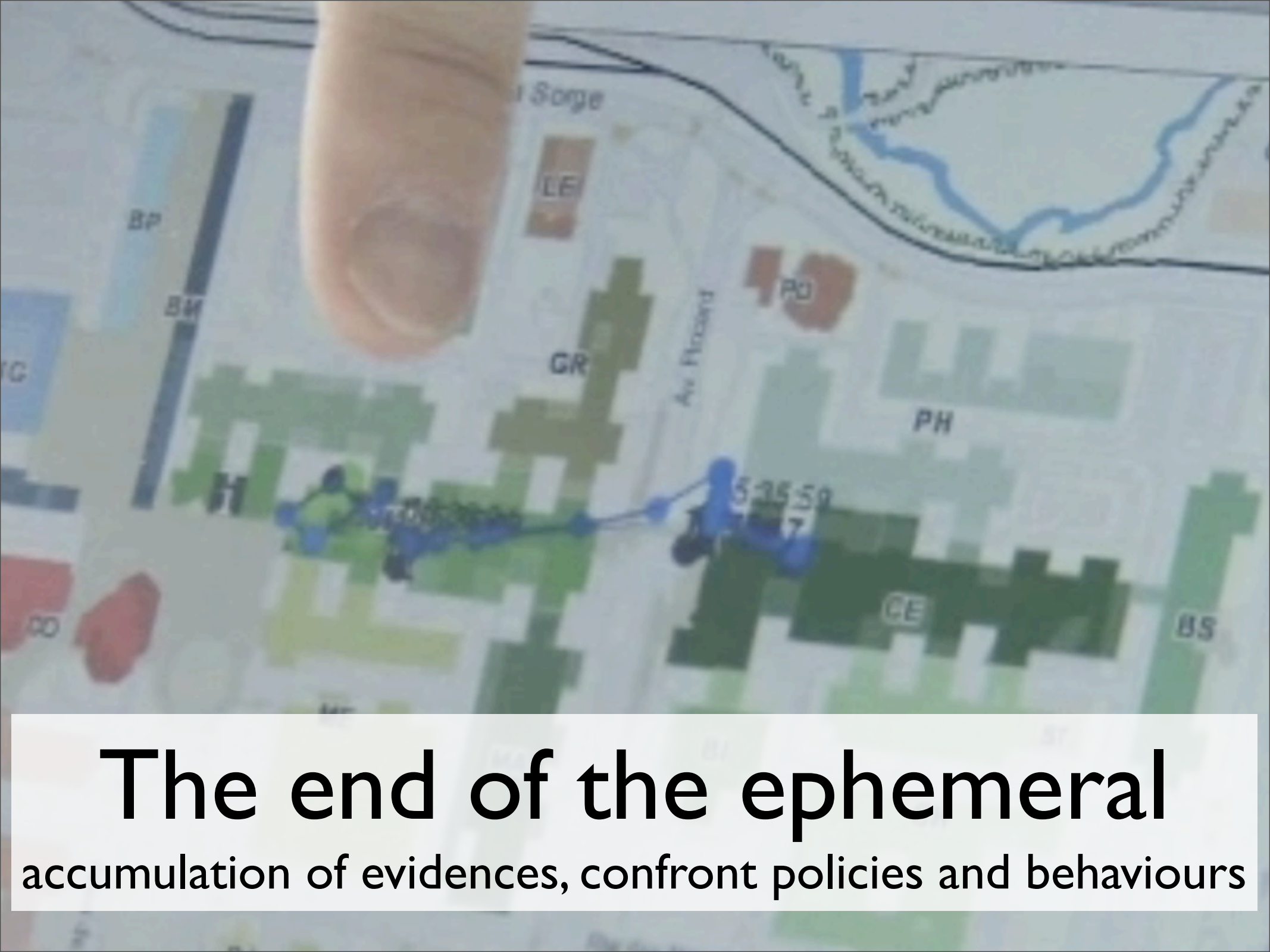
action, decision making and feedback loop



Match affinity with proximity

my map, my environment, my taste, my people

Image courtesy of Sense Networks

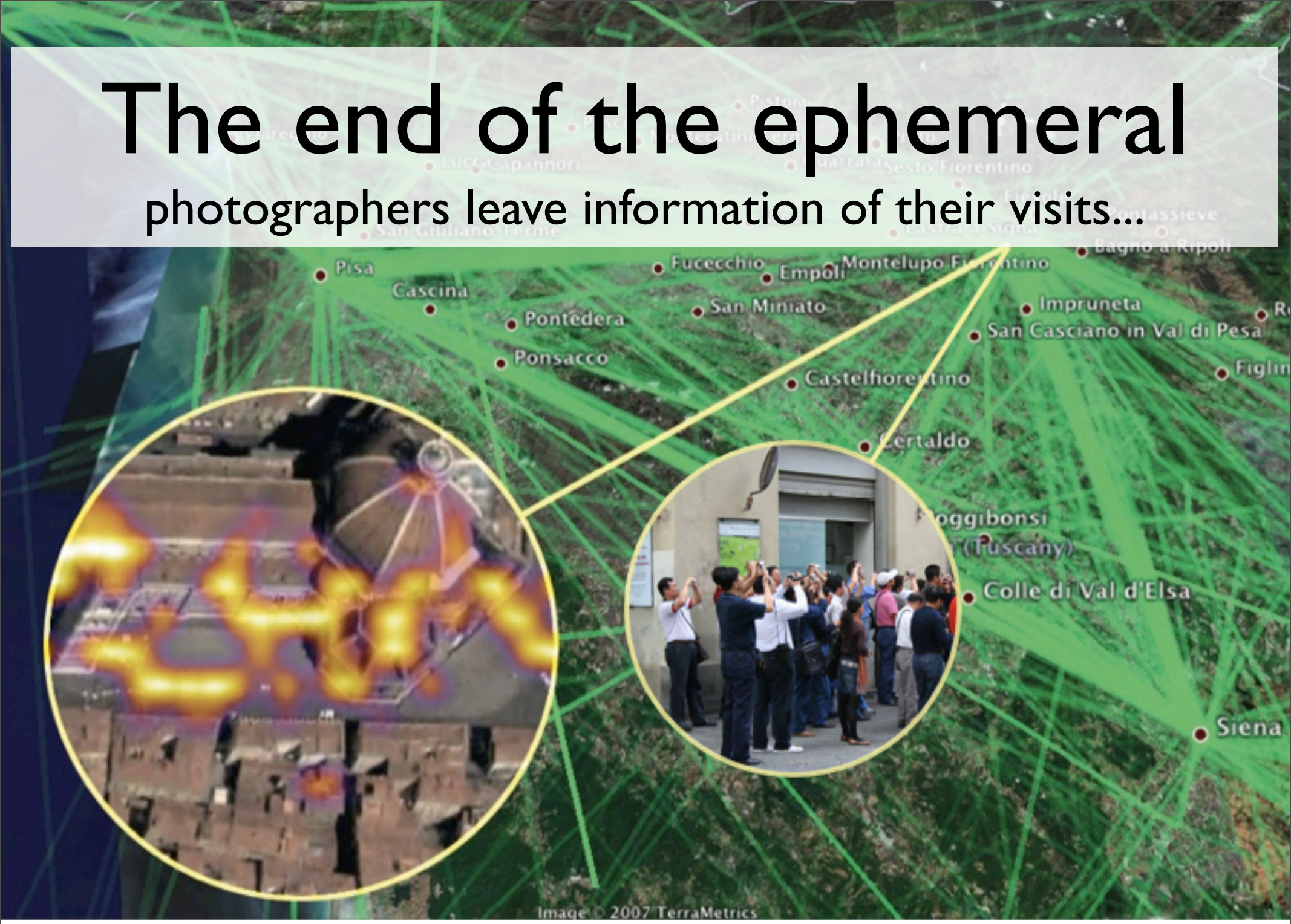


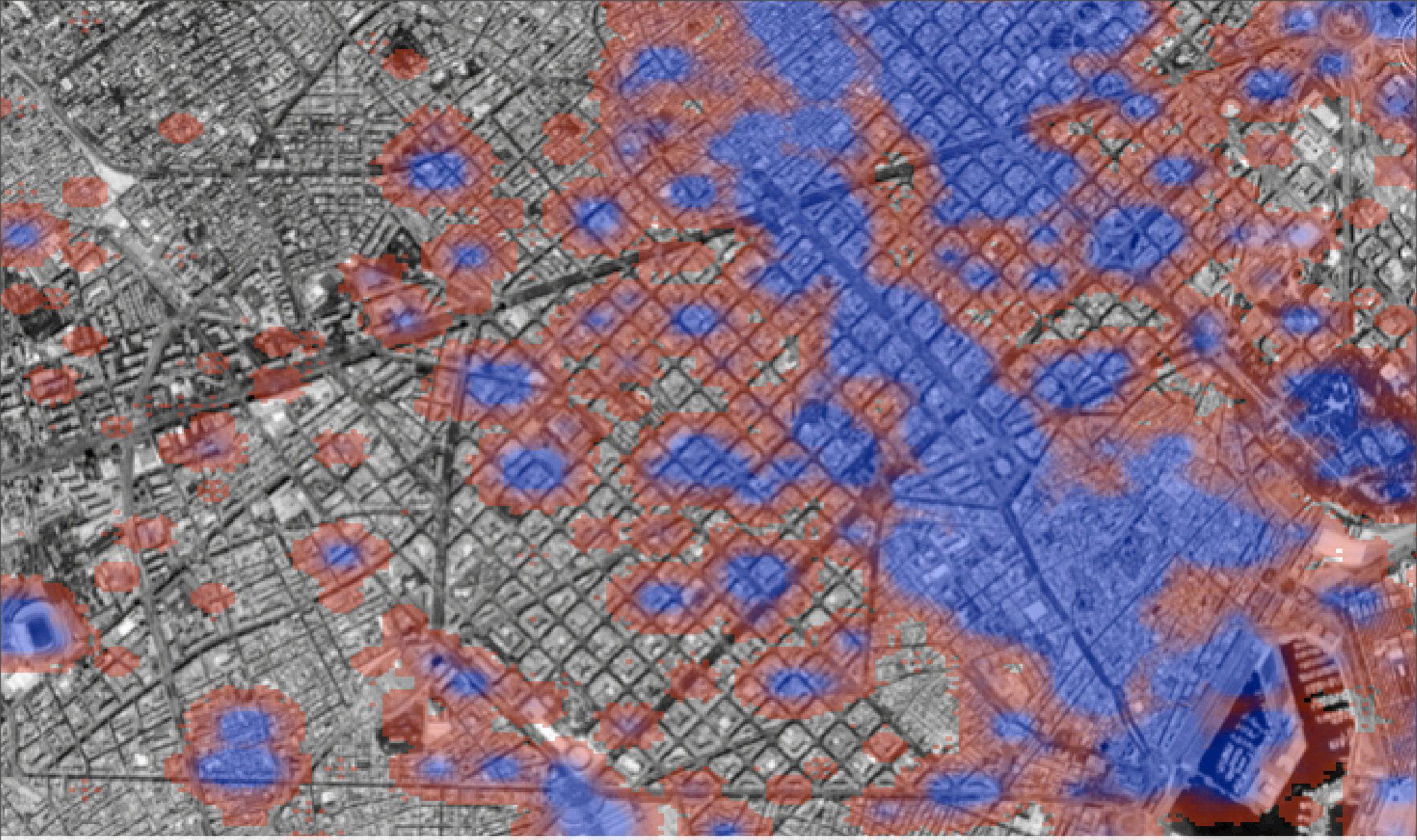
The end of the ephemeral

accumulation of evidences, confront policies and behaviours

The end of the ephemeral

photographers leave information of their visits...





The end of the ephemeral

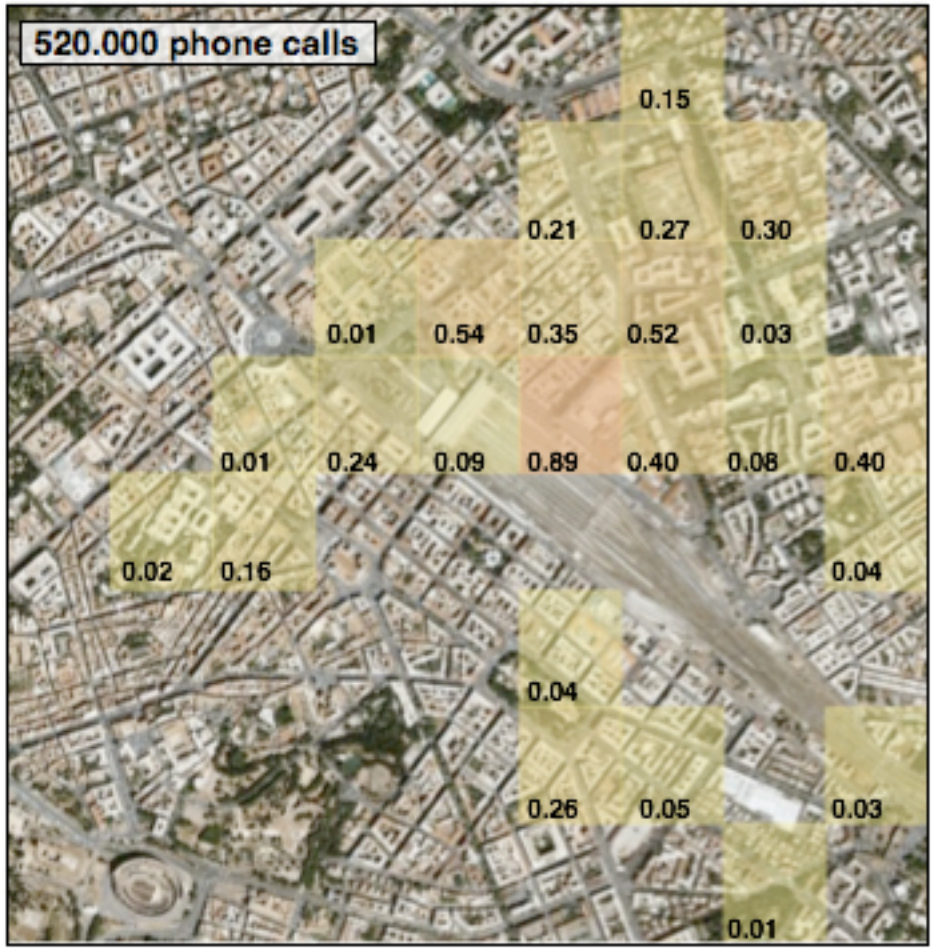
value of the act of communication

The end of the ephemeral

...partners of photographers as well

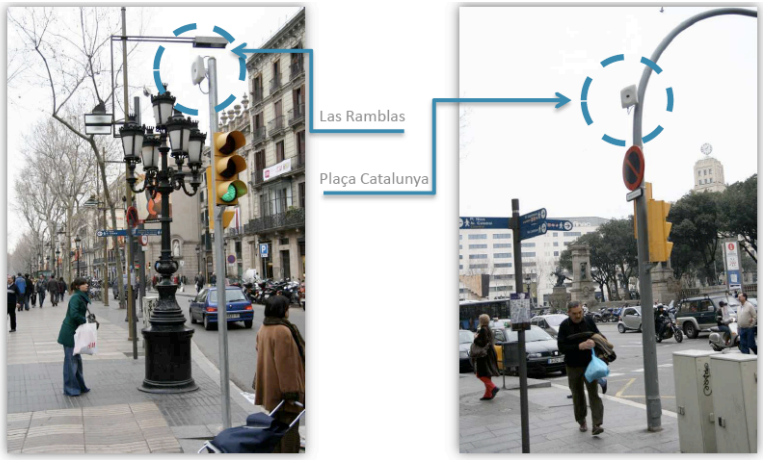
The end of the ephemeral

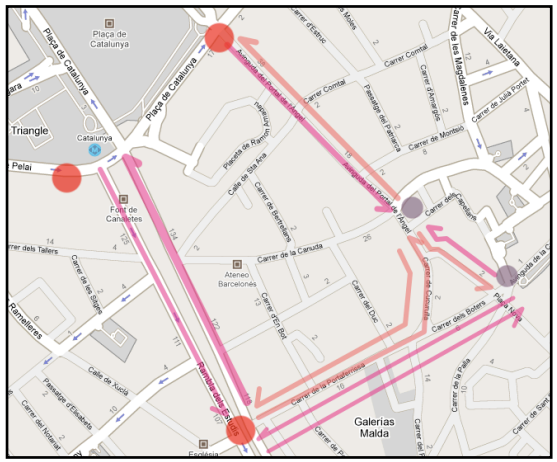
multiple views one one phenomena

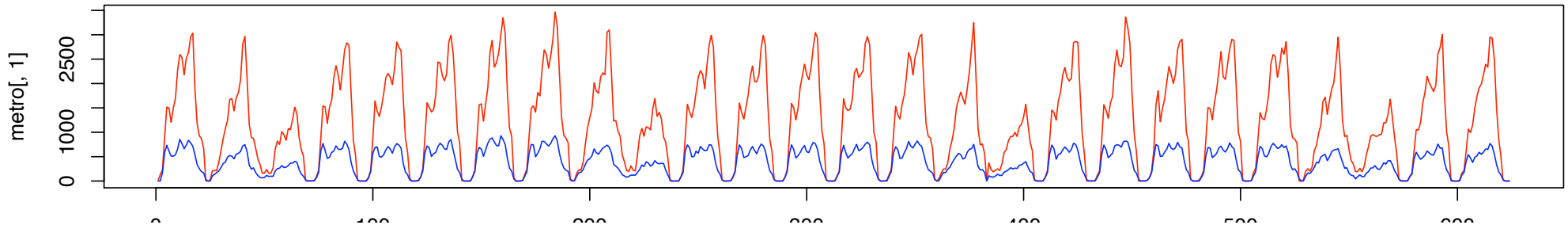


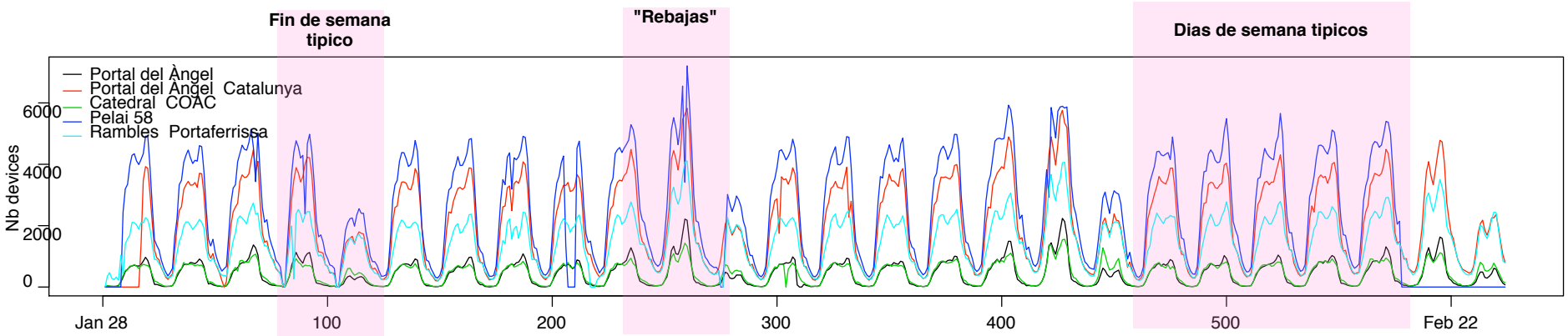
Visitors in Rome city center (Sept-Nov. 2006)

Measures of dynamics







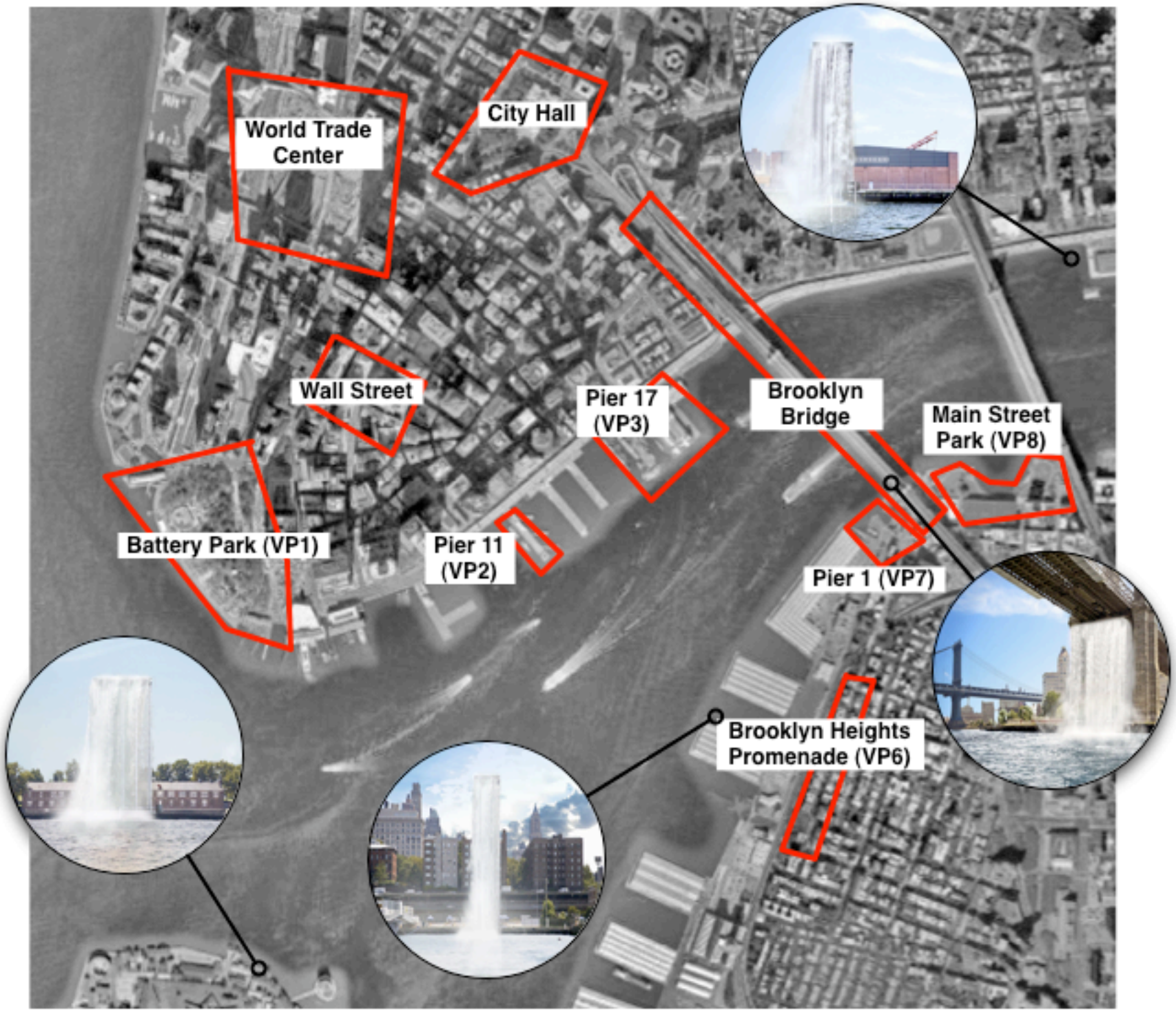


Barcelona, Puerta del Angel, February 2009

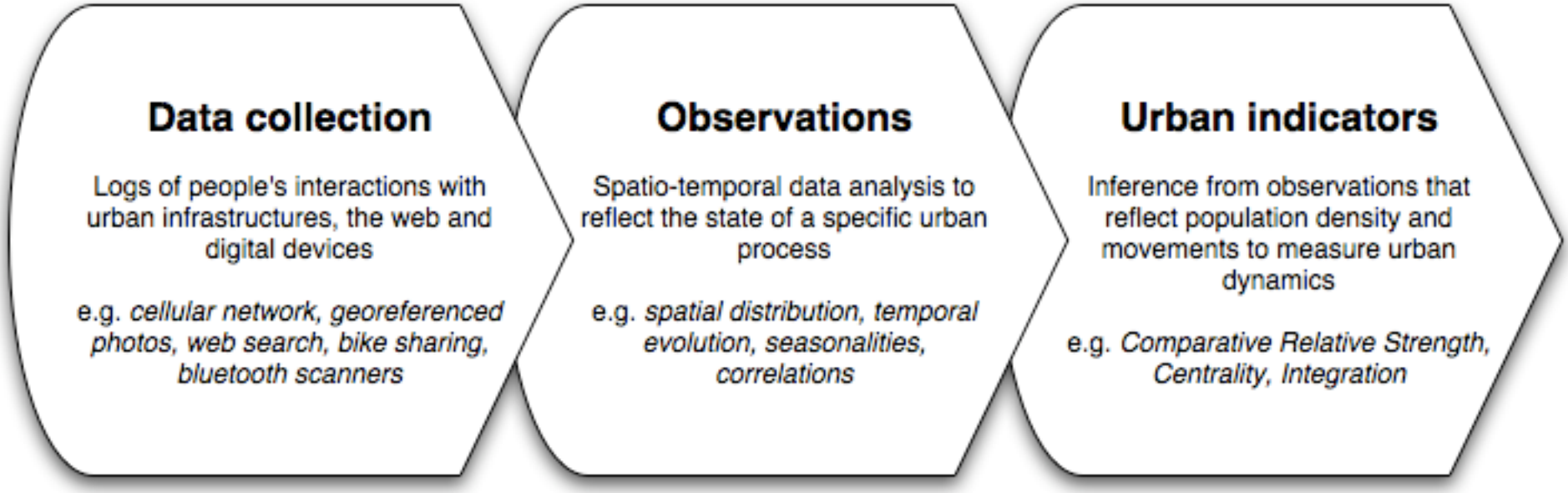
In collaboration with BitCarrier

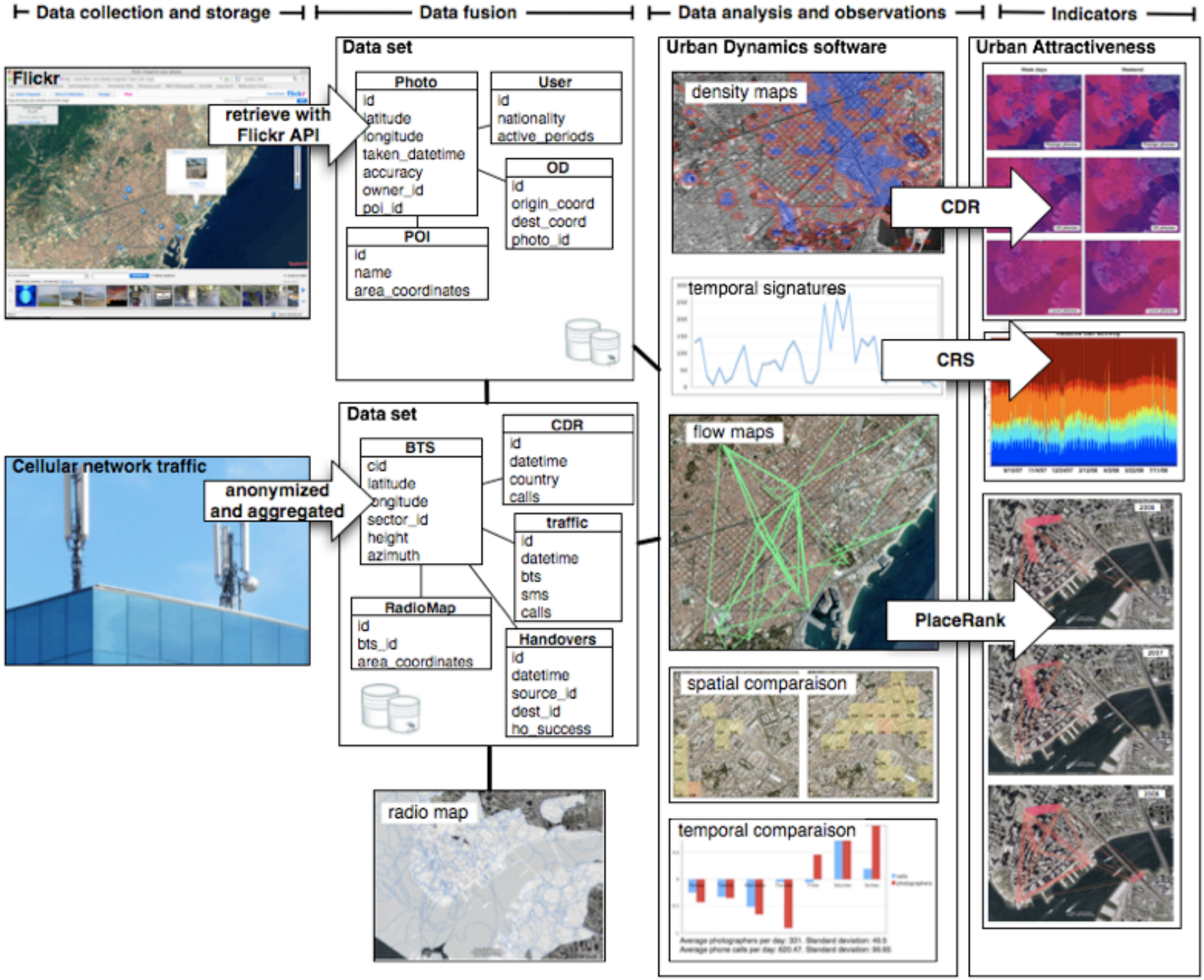
Evaluate strategies

attractiveness of the NYC Waterfalls


World Trade Center
City Hall
Wall Street
Pier 17 (VP3)
Brooklyn Bridge
Main Street Park (VP8)
Battery Park (VP1)
Pier 11 (VP2)
Pier 1 (VP7)
Brooklyn Heights Promenade (VP6)

Process


Data collection
Logs of people's interactions with urban infrastructures, the web and digital devices
e.g. cellular network, georeferenced photos, web search, bike sharing, bluetooth scanners
Observations
Spatio-temporal data analysis to reflect the state of a specific urban process
e.g. spatial distribution, temporal evolution, seasonalities, correlations
Urban indicators
Inference from observations that reflect population density and movements to measure urban dynamics
e.g. Comparative Relative Strength, Centrality, Integration


Data collection and storage
Data fusion
Data analysis and observations
Indicators
Flickr
retrieve with Flickr API
Data set
Photo
id
latitude
longitude
taken_datetime
accuracy
owner_id
poi_id
User
id
nationality
active_periods
OD
id
origin_coord
dest_coord
photo_id
POI
id
name
area_coordinates
Cellular network traffic
anonymized and aggregated
Data set
BTS
cid
latitude
ongitude
sector_id
height
azimuth
CDR
id
datetime
country
calls
traffic
id
datetime
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sms
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RadioMap
id
bts_id
area_coordinates
Handovers
id
datetime
source_id
dest_id
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radio map
Urban Dynamics software
density maps
temporal signatures
flow maps
spatial comparaison
temporal comparaison
CDR
CRS
PlaceRank
Urban Attractiveness

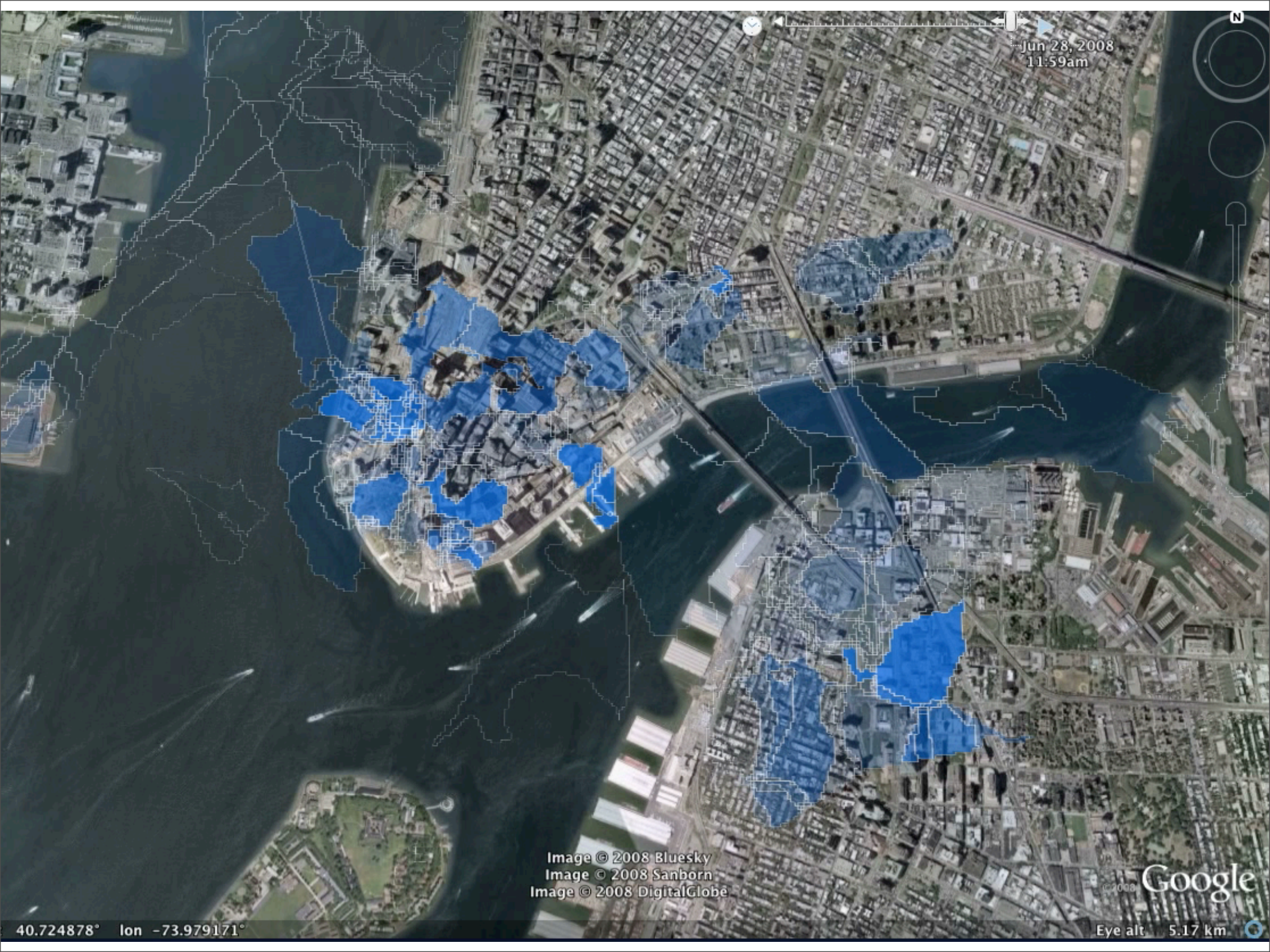
Jun 28, 2008
11:59am
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Image © 2008 Bluesky
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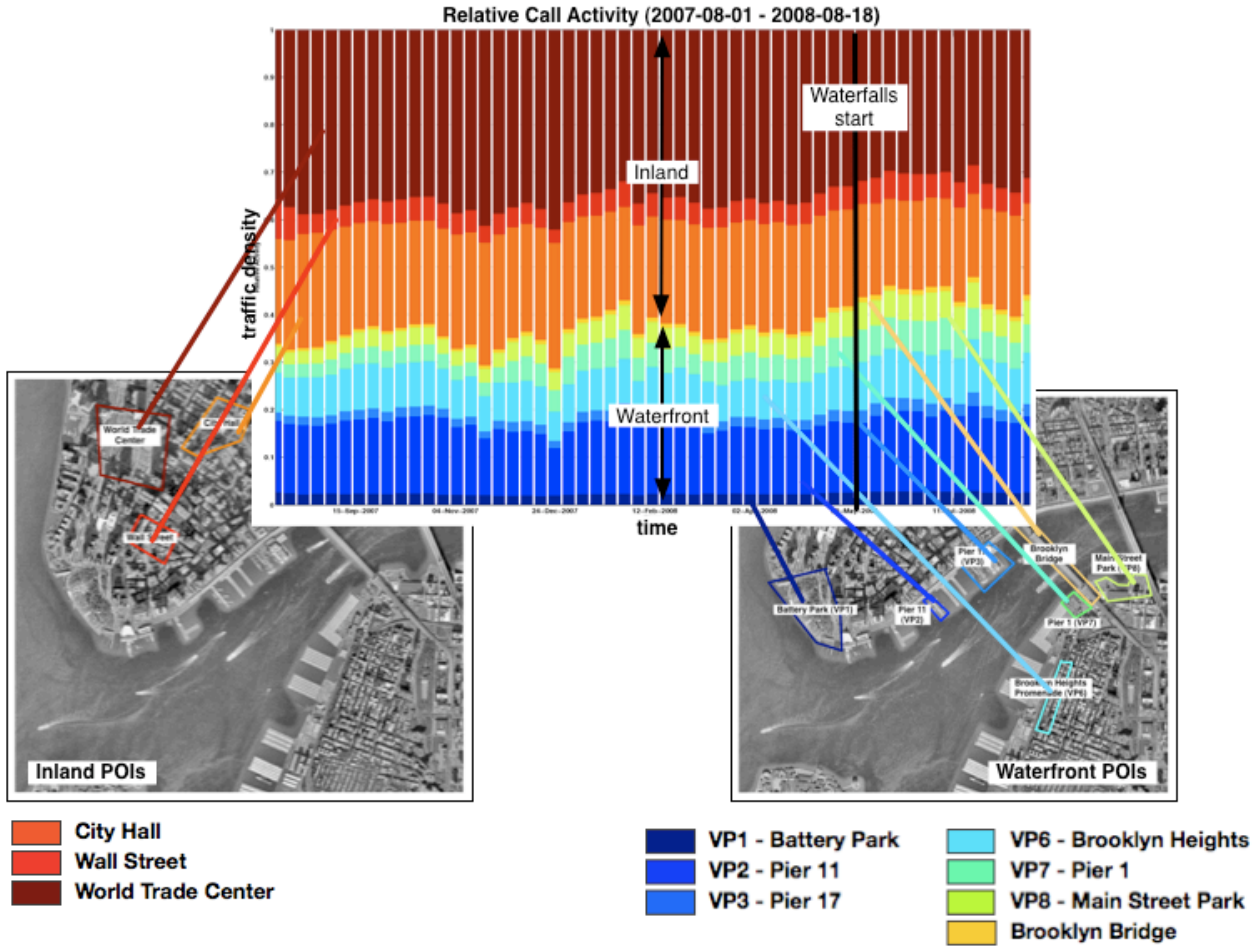
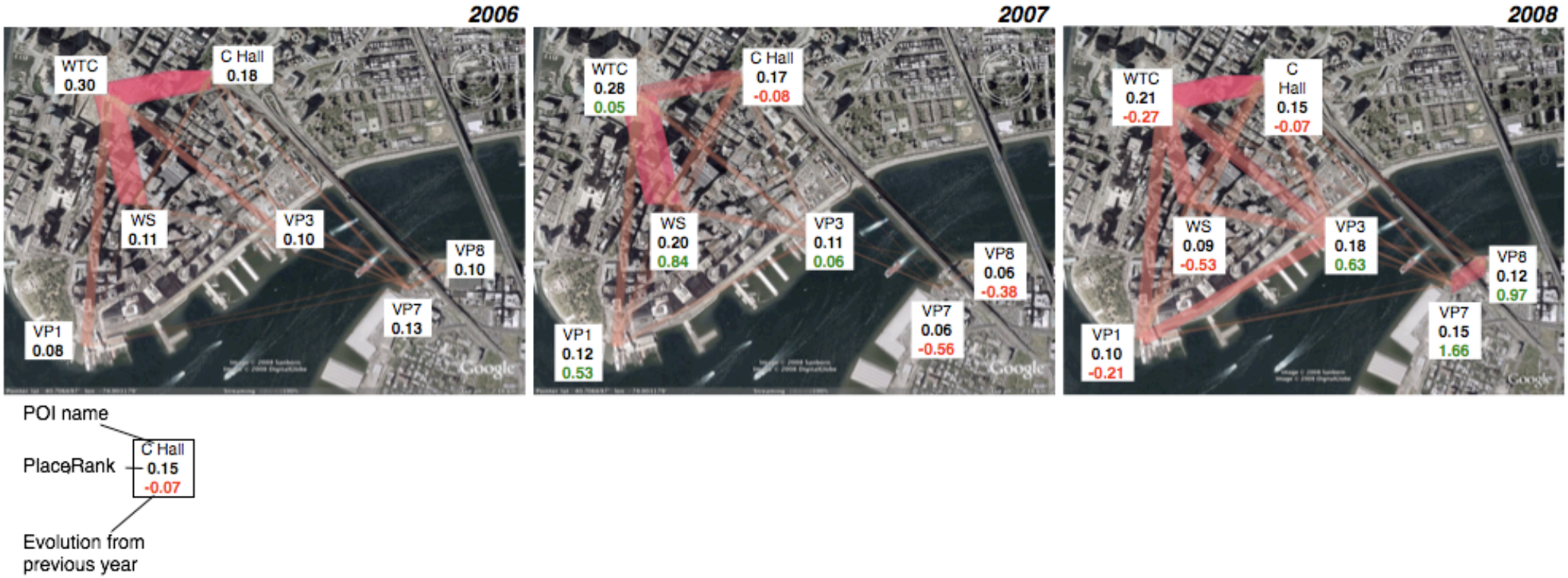
40.724878° lon -73.979171°
Eye alt 5.17 km

Comparative relative strength



The CRS indicator compares the (normalized) activity of one area of interest with respect to the overall activity of the city.

PlaceRank



PlaceRank determines the centrality of a location within a set of areas of interest based on the amount of digital footprints generated in each area and the traces that connect them

THE NEW YORK CITY WATERFALLS

The Economic Impact of a Public Art Work

Prepared for
New York City Economic Development Corporation
October 2008

Prepared by Appleseed and Audience Research & Analysis

NYC
Michael R. Bloomberg
Mayor

New practices

in disciplines that touch the physical character of the world and humand activities. More to explore in this workshop

engineers, architects, urban designers, psychologists, economists, social scientists, entrepreneurs, lobbyists, artists

Privacy issues

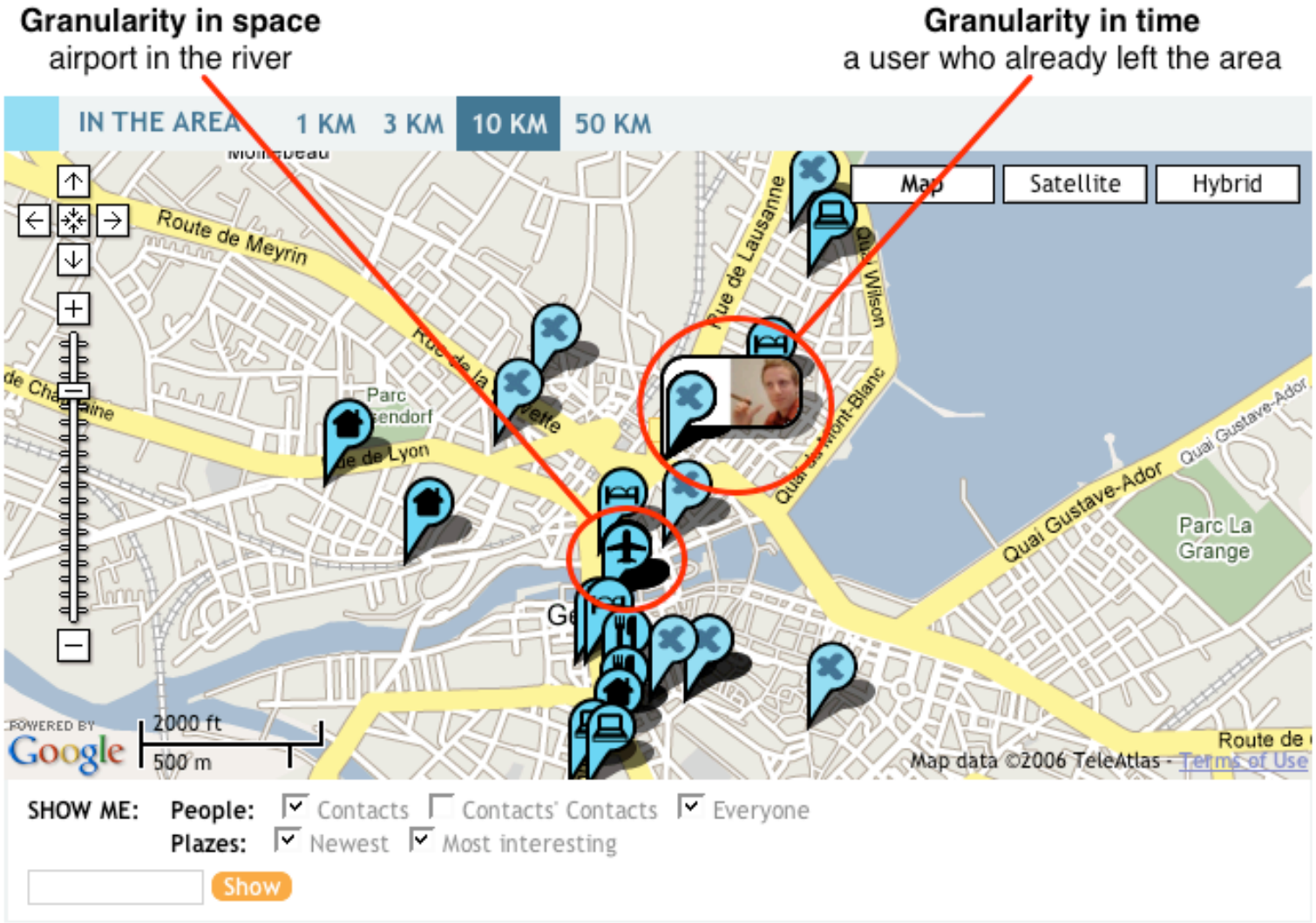
opaque processes, trade-off, perfect surveillance system

Imperfect mirror to reality

technological limitations, sense what is cheap to sense

Spatial uncertainty

vagueness, space made made of pins instead of surfaces



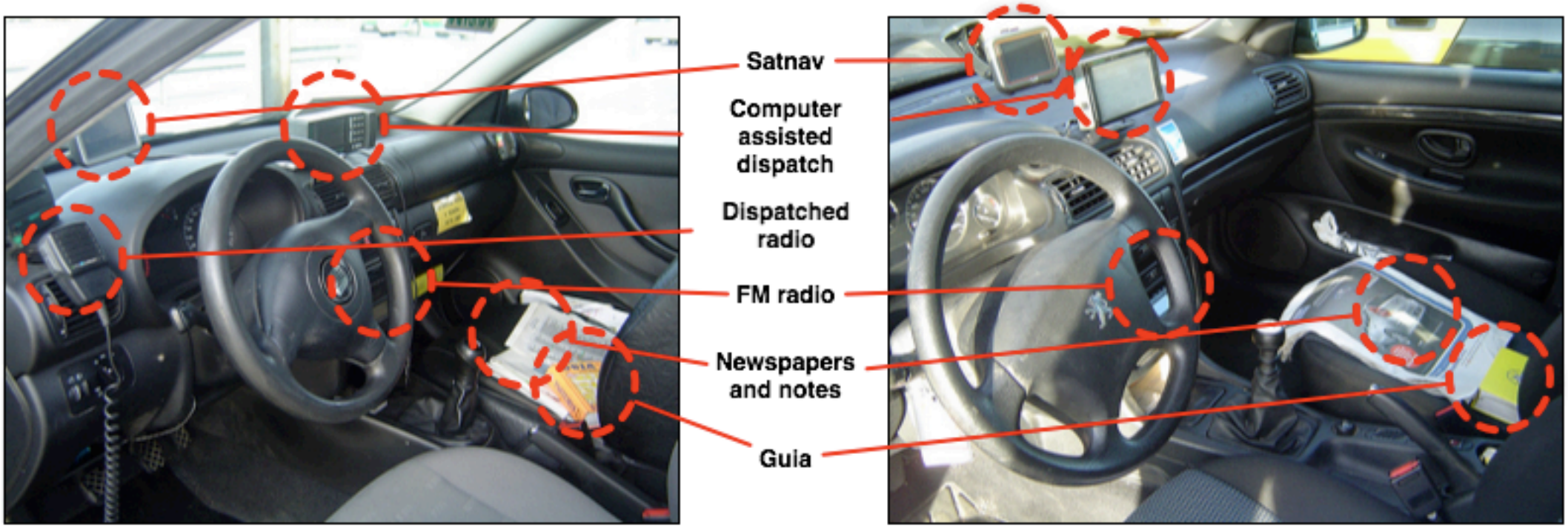
New practices

field observations

Co-evolution of taxi drivers with their satnav

- Ethnographic study with 12 informants
- Procedure: artifact model, semi-structured interviews, coding
- Focus: acquisition, expectation gap, evolution

Ecosystem of artifacs



Every extension is [also] an amputation*

- Automation of wayfinding reduces argumentation with customers; affects the learning of the city
- Aspects of imperfections as the routine part of the convenience of computers: Strategies to assess the uncertainty in the information

see Marshall McLuhan's "The Medium is the Message"

New practices

assessing the quality of the geoinformation

Take-aways

- Technical, social, political and economical **eco-evolutions** lead to the enrichement of hybrid spaces
- **New maps** to represent the hybrid; no conventions, bottom-up initiatives
- **New practices**, new apprehensions of the space, end of ephemeral, engage, measure, evaluate, confronte
- **Utility** from taxi drivers to urban planners and policy makers
- Beware of the trade-offs and the **amputations**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Thank you
liftLab.