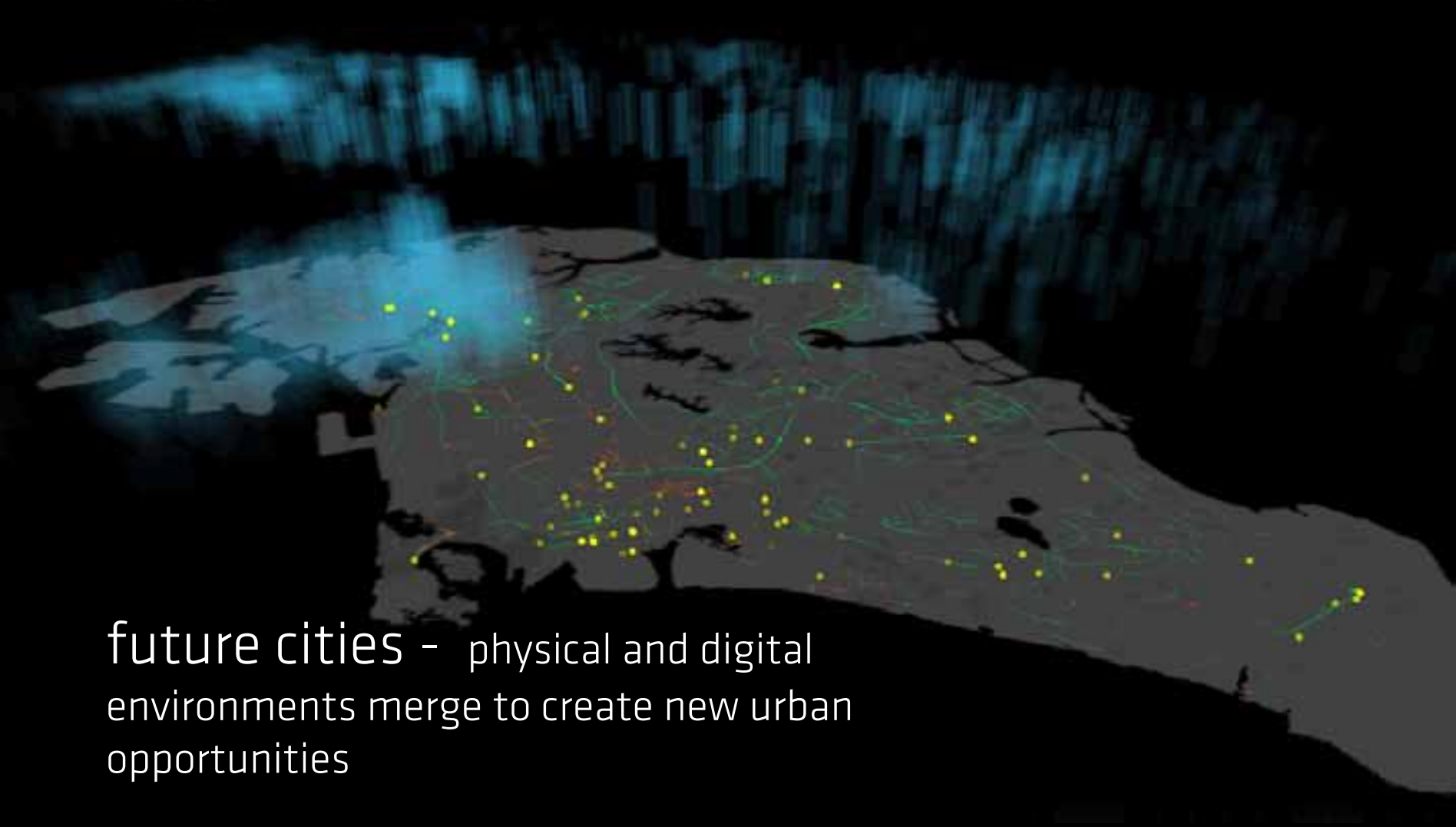
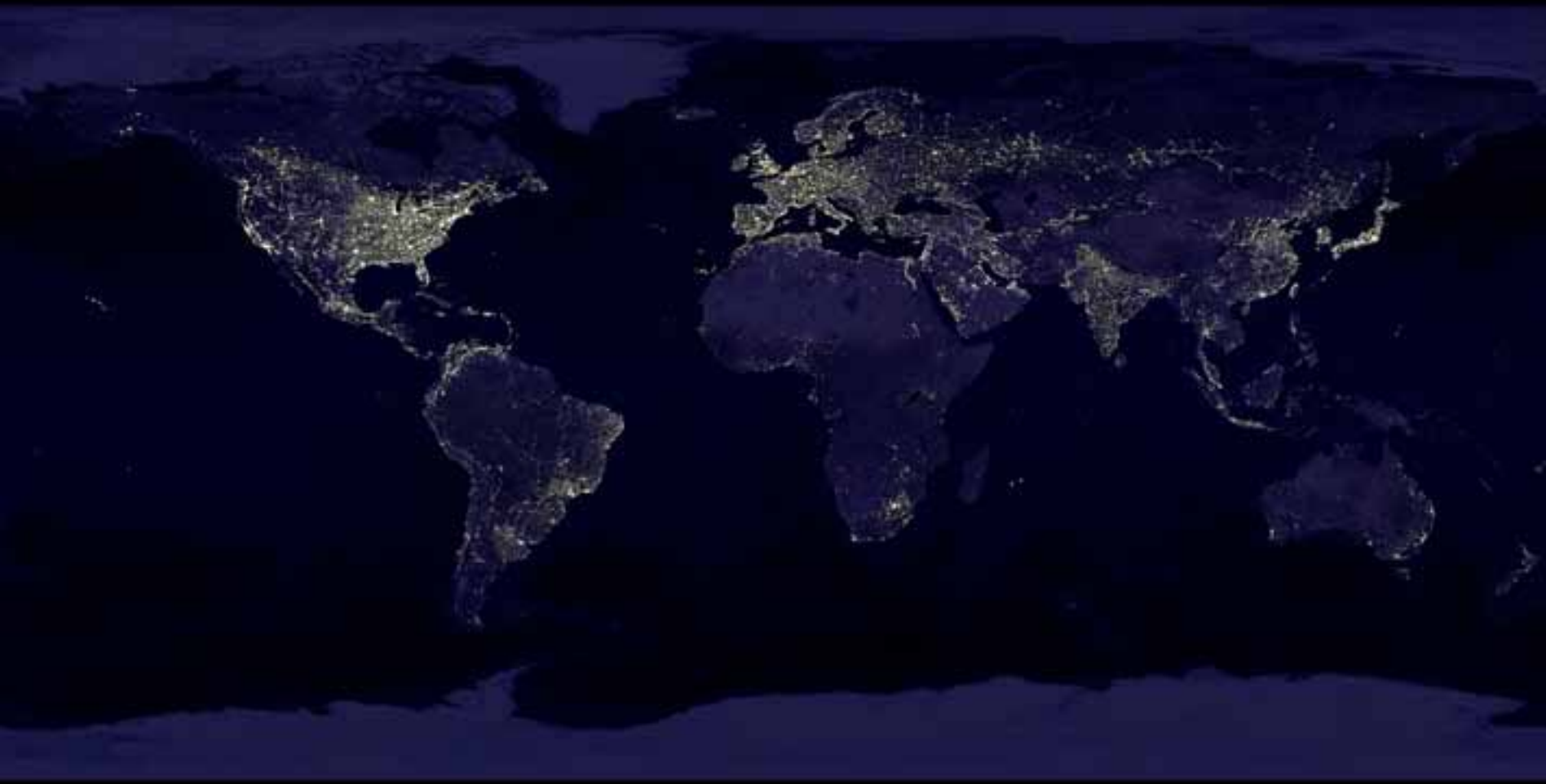
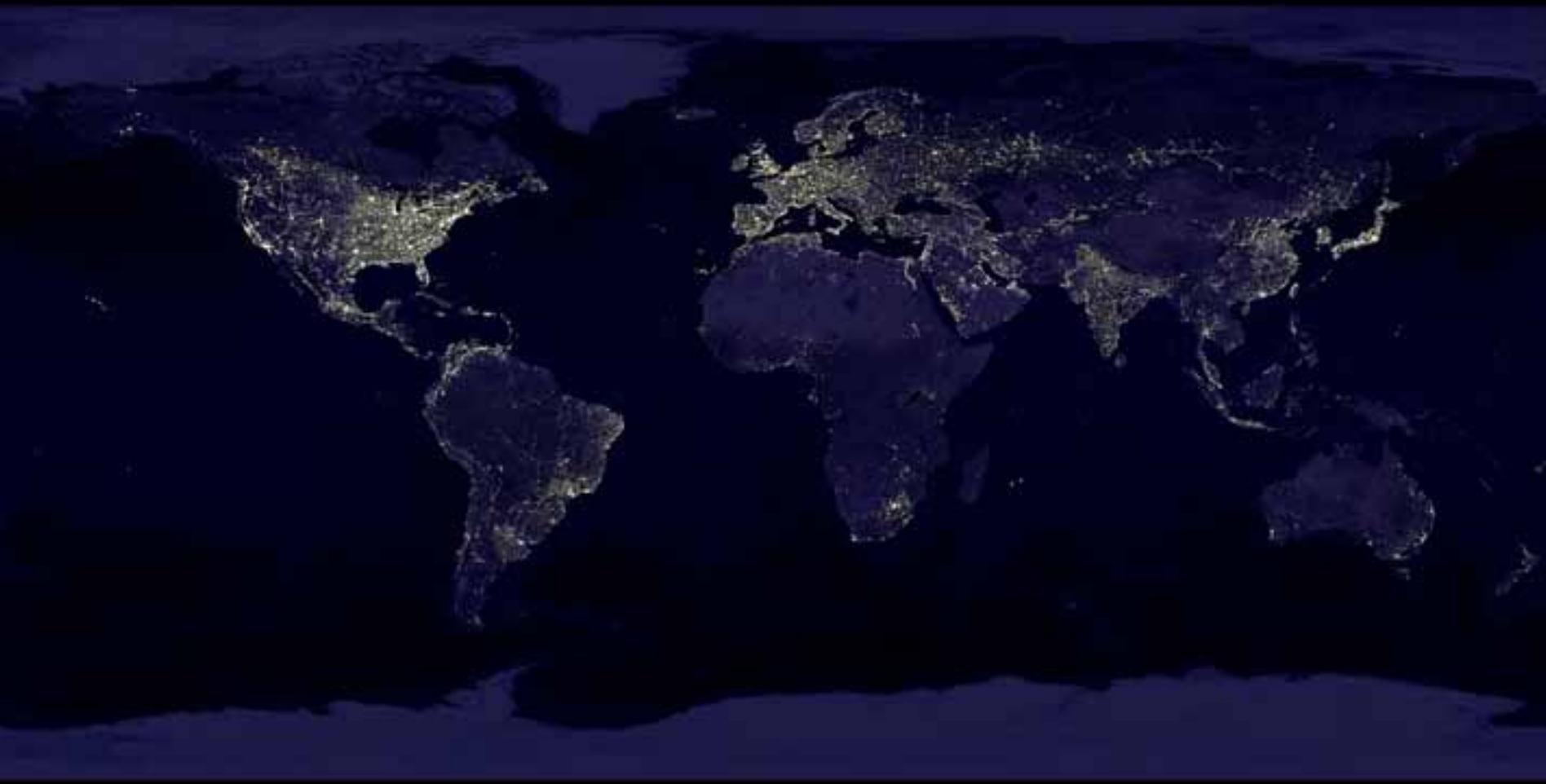


future cities - physical and digital environments merge to create new urban opportunities

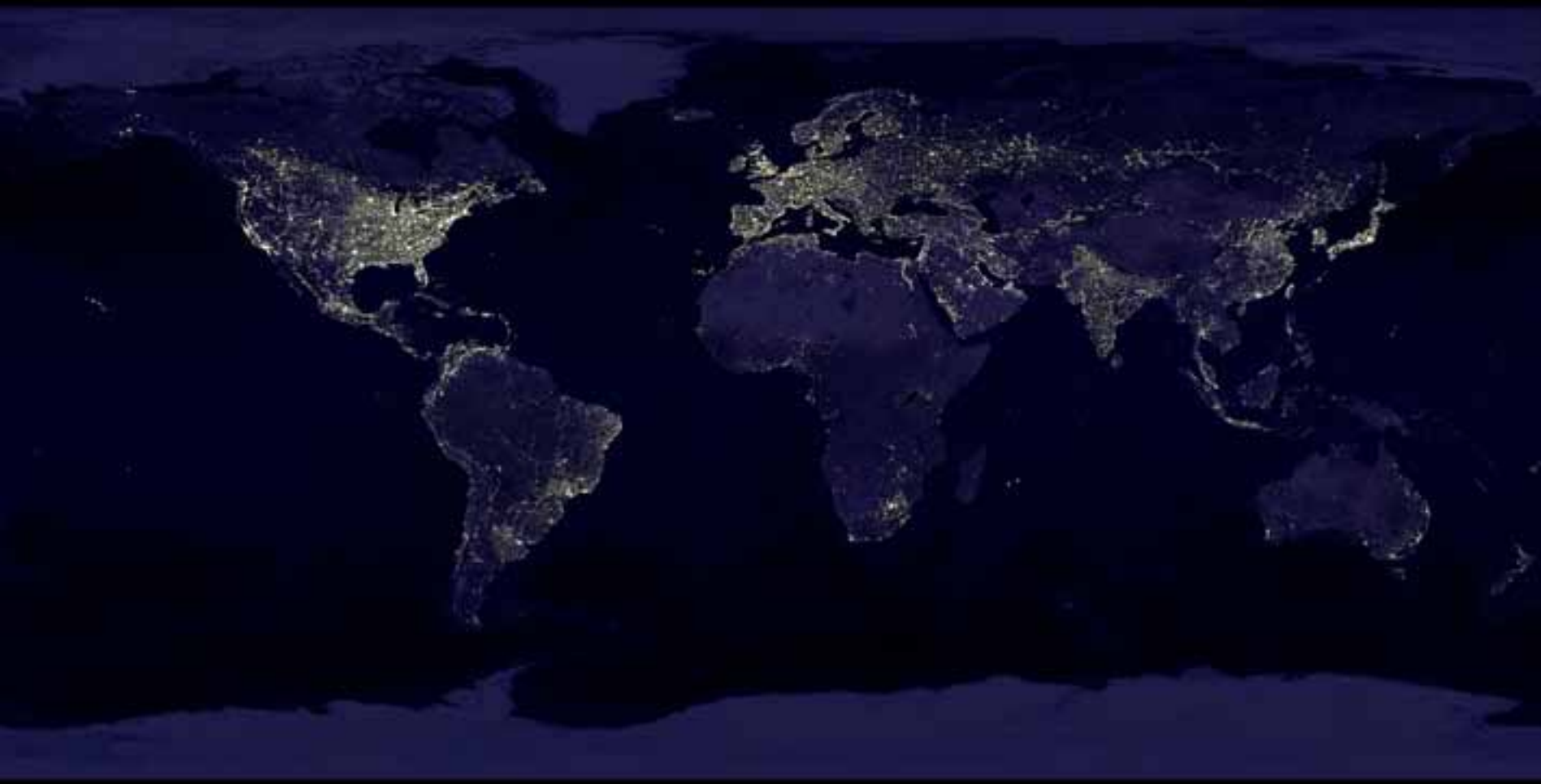
assaf biderman
associate director
senseable city lab, mit
alliance edf porgram on smart cities, new york, ny
october|11|2011



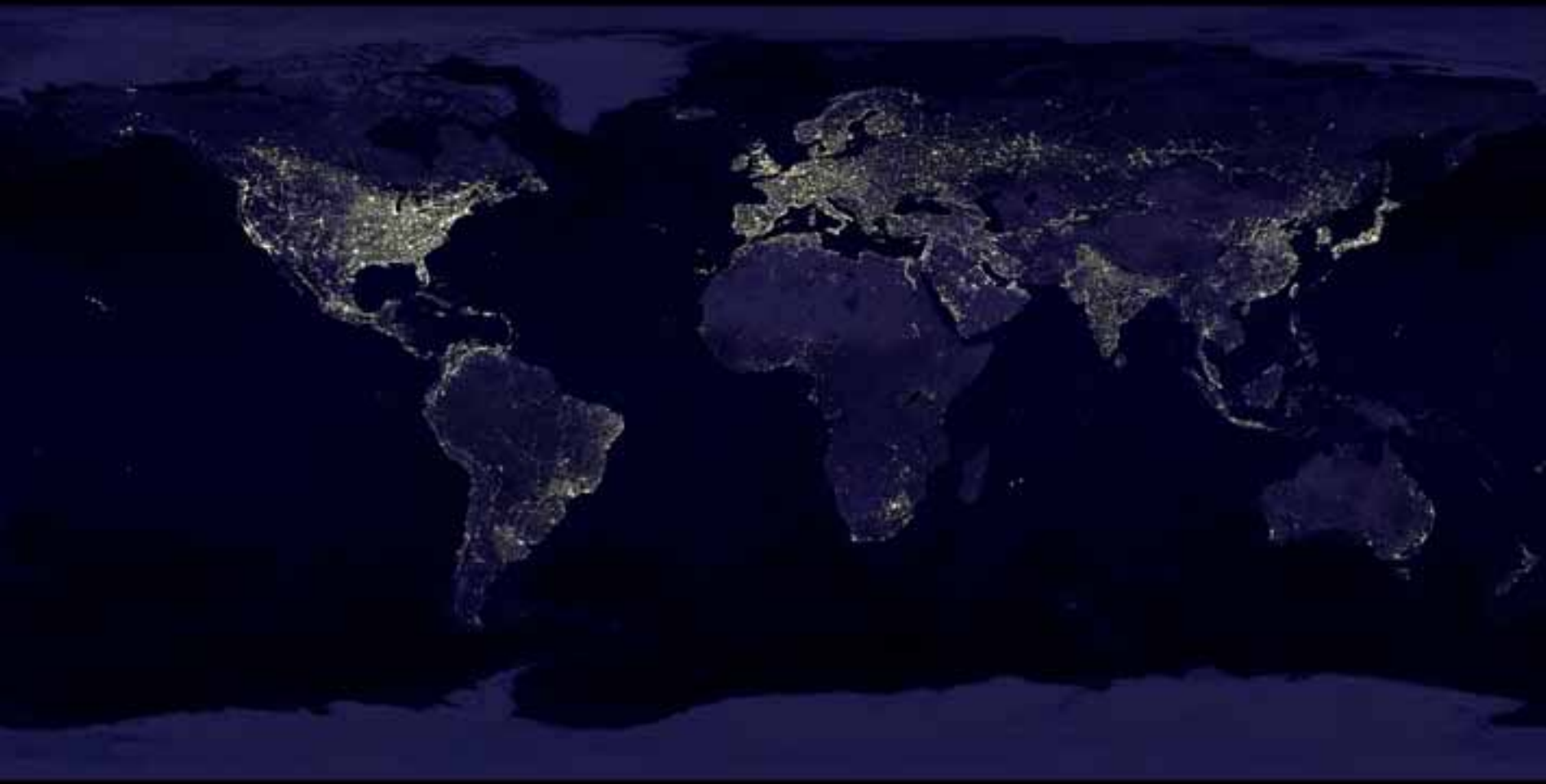
2 – 50 – 75 – 80



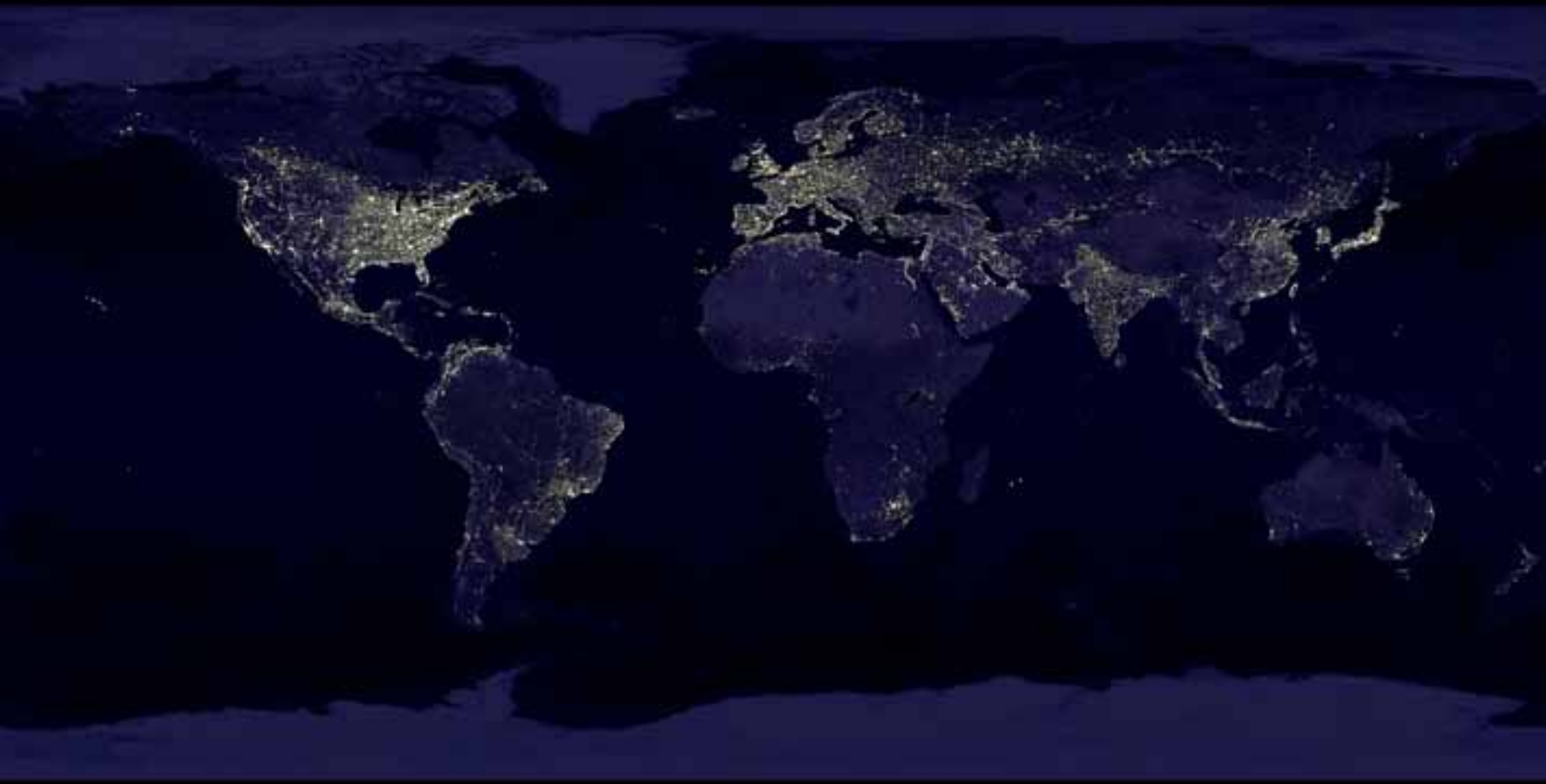
2 – 50 – 75 – 80



2 – 50 – 75 – 80



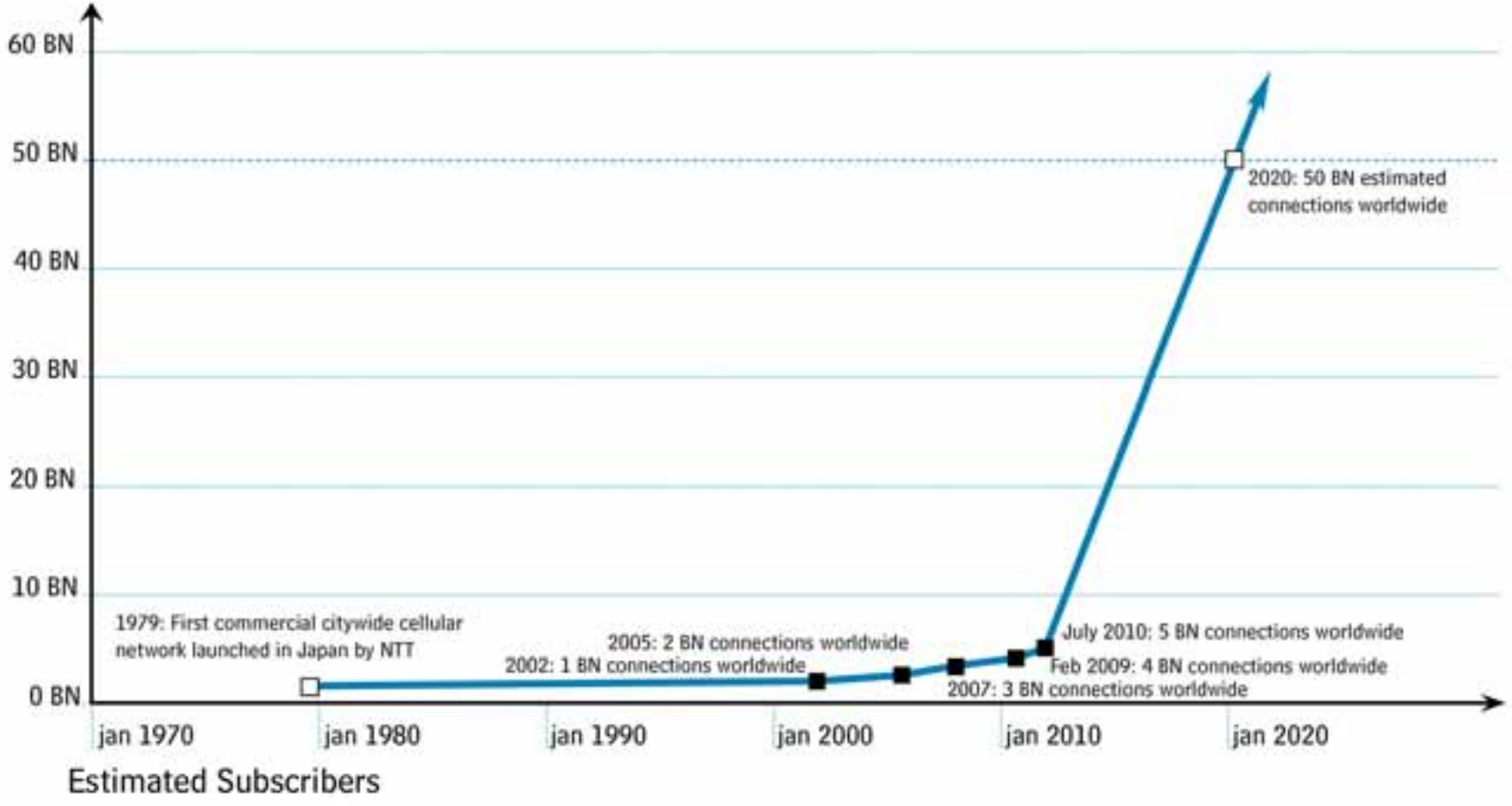
2 – 50 – 75 – 80

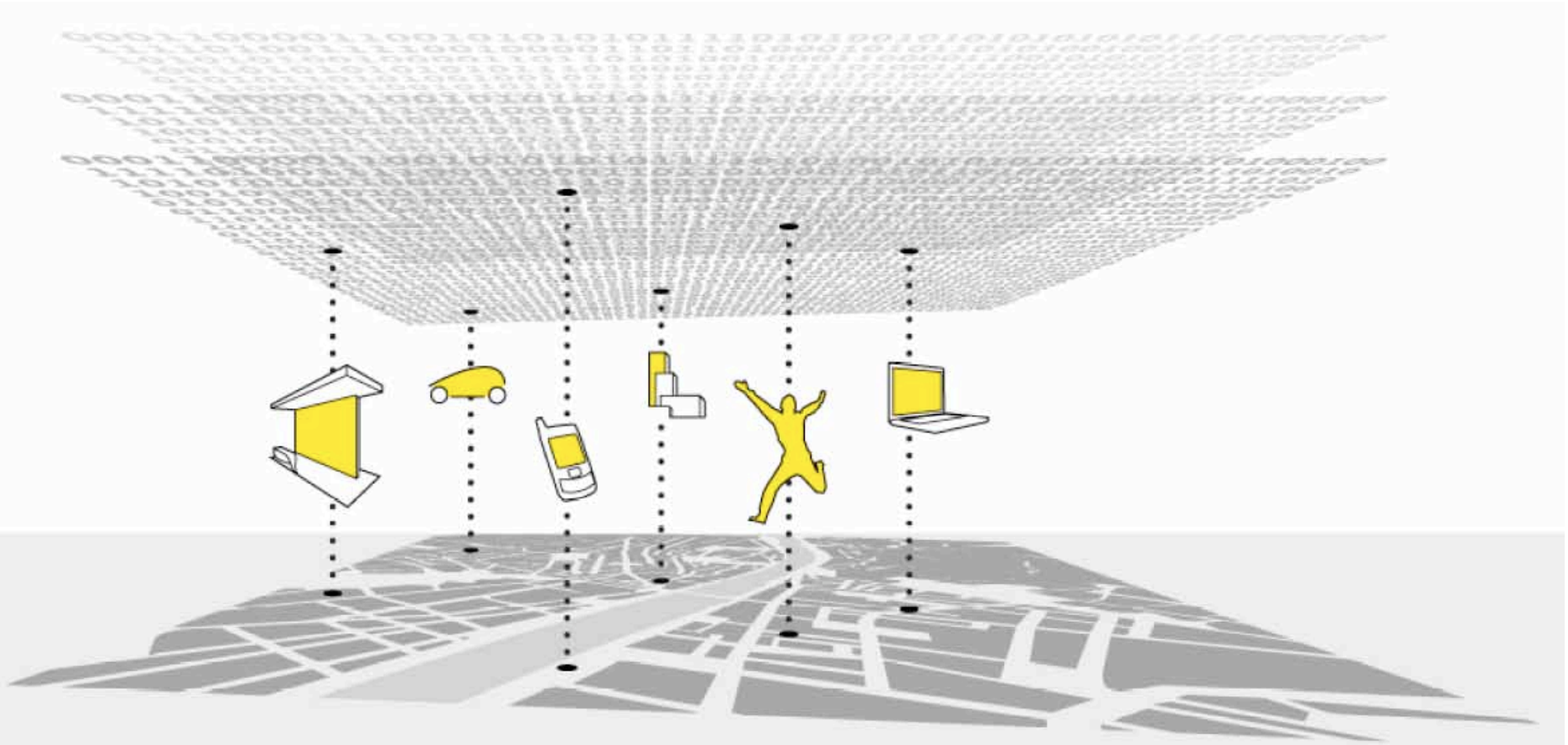


2 – 50 – 75 – 80

ERICSSON
WORLD
T28s

0168
UC864-E
TYPE : UC864
Made in Korea
By Tail Wireless Solutions
ES2UFFPIN14


60 BN
50 BN
40 BN
30 BN
20 BN
10 BN
0 BN
1979: First commercial citywide cellular network launched in Japan by NTT
2002: 1 BN connections worldwide
2005: 2 BN connections worldwide
2007: 3 BN connections worldwide
Feb 2009: 4 BN connections worldwide
July 2010: 5 BN connections worldwide
2020: 50 BN estimated connections worldwide
jan 1970
jan 1980
jan 1990
jan 2000
jan 2010
jan 2020
Estimated Subscribers



a new type of planning?
people + space + technology?

actuating
sensing

exploring urban futures by developing partnerships between cities and MIT...

real time rome 2006

[shown at venice biennale 2006]

venice biennale, 2006

REAL TIME 12:56
low
high

new york talk exchange

[shown at MoMA 2008]

NYTE

new york tele exchange

Globe Encounters

Globe Encounters visualizes the volumes of Internet data flowing between New York and cities around the world based on data collected over the past 24 hours. The size of the glow on a particular city location corresponds to the amount of IP traffic flowing between that place and New York City. A larger glow implies a greater IP flow.

Data is continuously updated.

IP traffic | total
outgoing from new york

new york time: night | morning | afternoon | evening

world's eyes

[barcelona, 2008]

The World's Eyes
Where are the parties?

Current Week in 2007

28 45

The World's Eyes

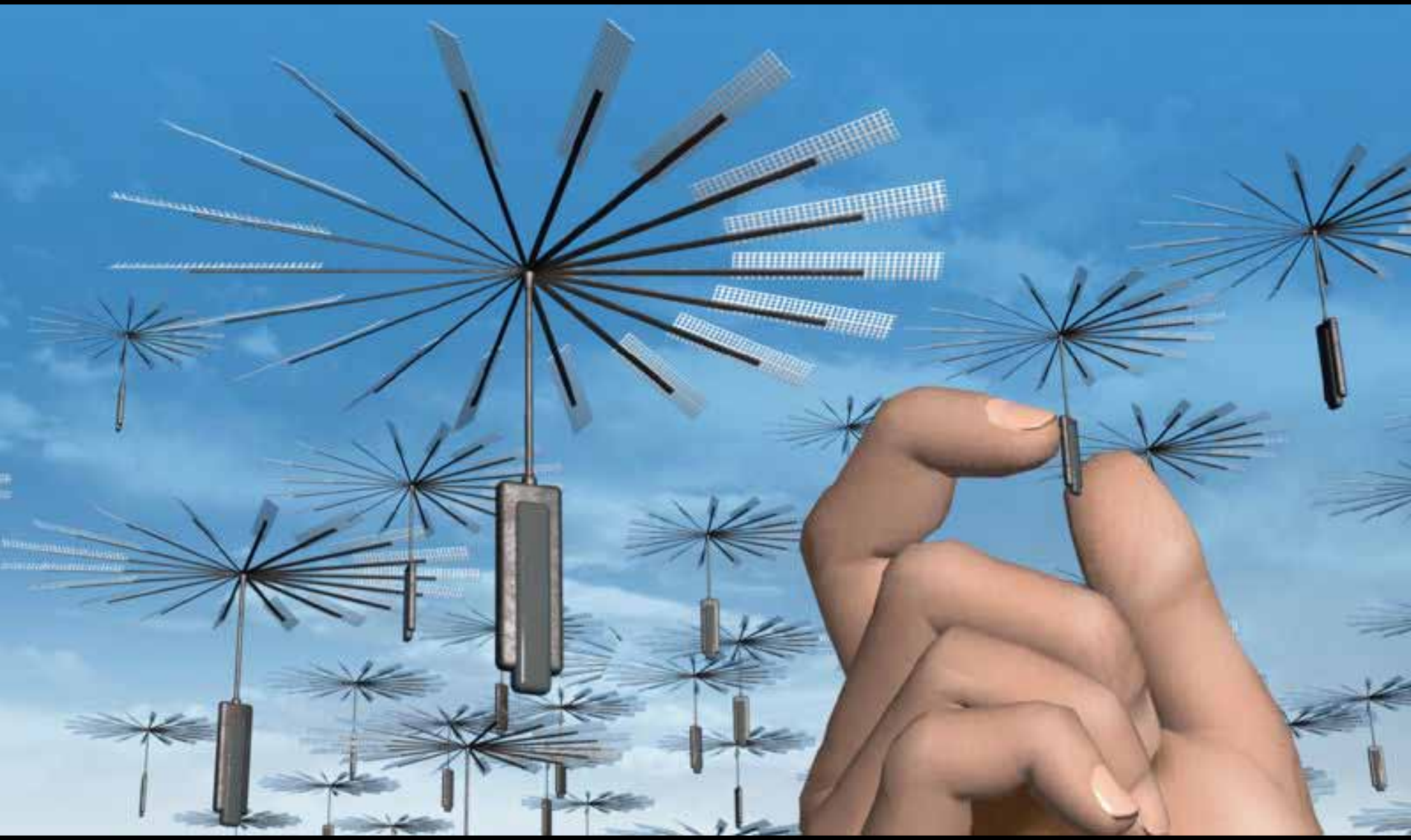
Where is the color green?

Current Week in 2007

20 22

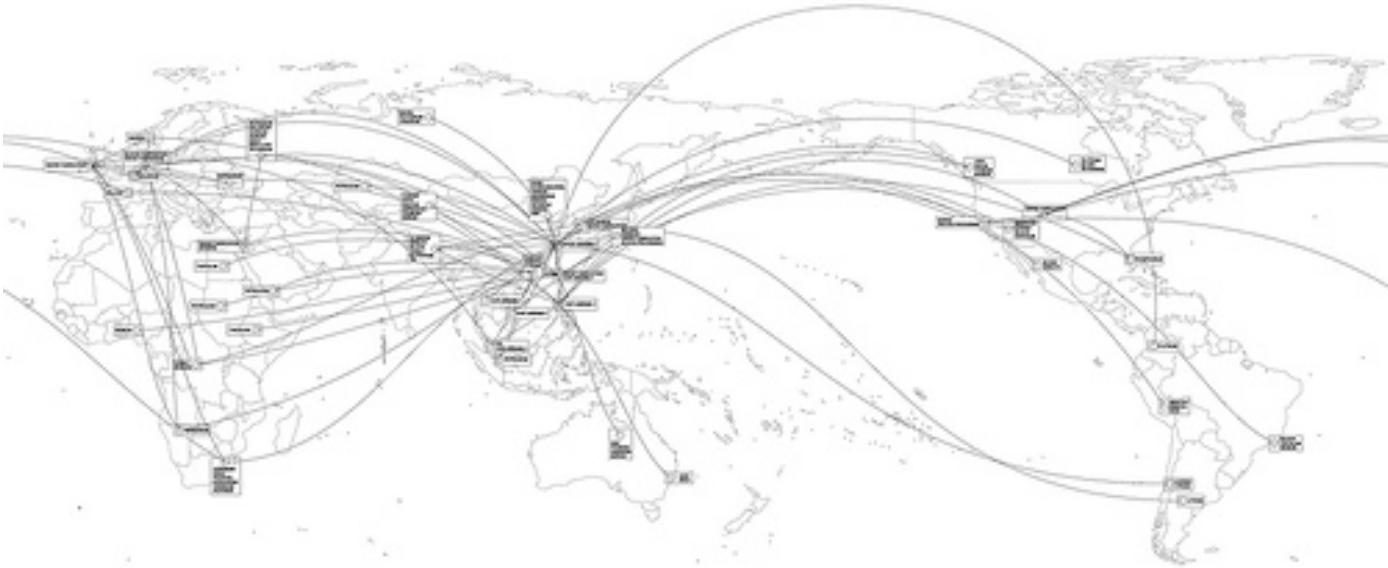
trash|track

[seattle, new york, london 2009]



smart dust http://userwww.sfsu.edu/~infoarts/links/wireless/future.reseach.f/perv.SmartDustFinal.jpg

smart dust + waste



>

QUALCOMM

CE0168

_television set

_book shelf

_children's shoe

_blender

_mattress

_keyboard

_cardboard box

_motor oil / glove

_leather case

_dvd player

_phone book

_computer

_jeans

_tire

_porcelain soup bowl

The day of deployment

backtalk

[worldwide, seattle, 2011]

co2go

[paris, 2011]

flyfire

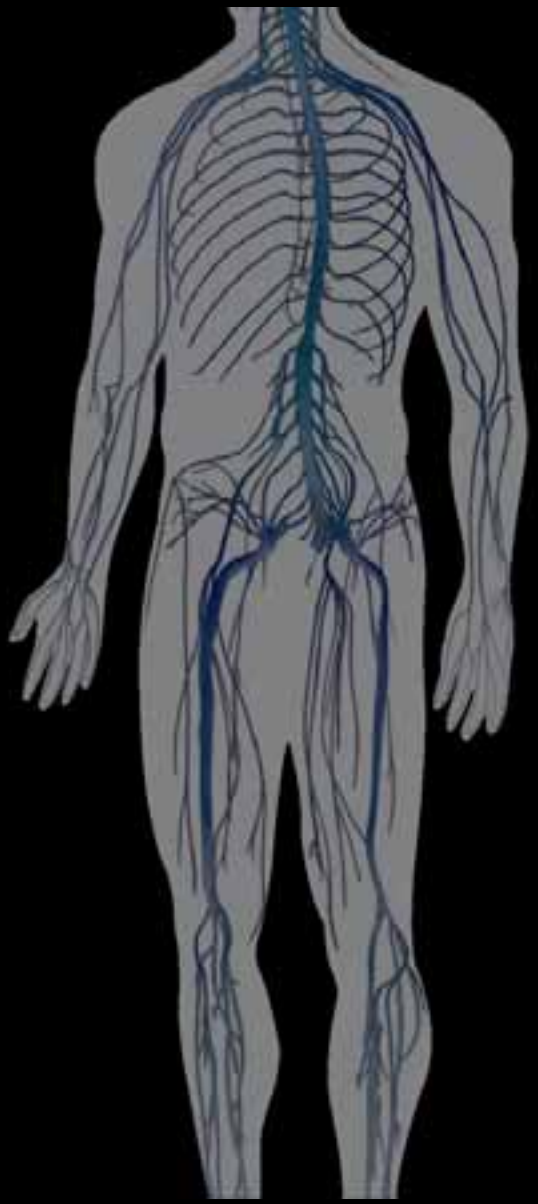
[2010]

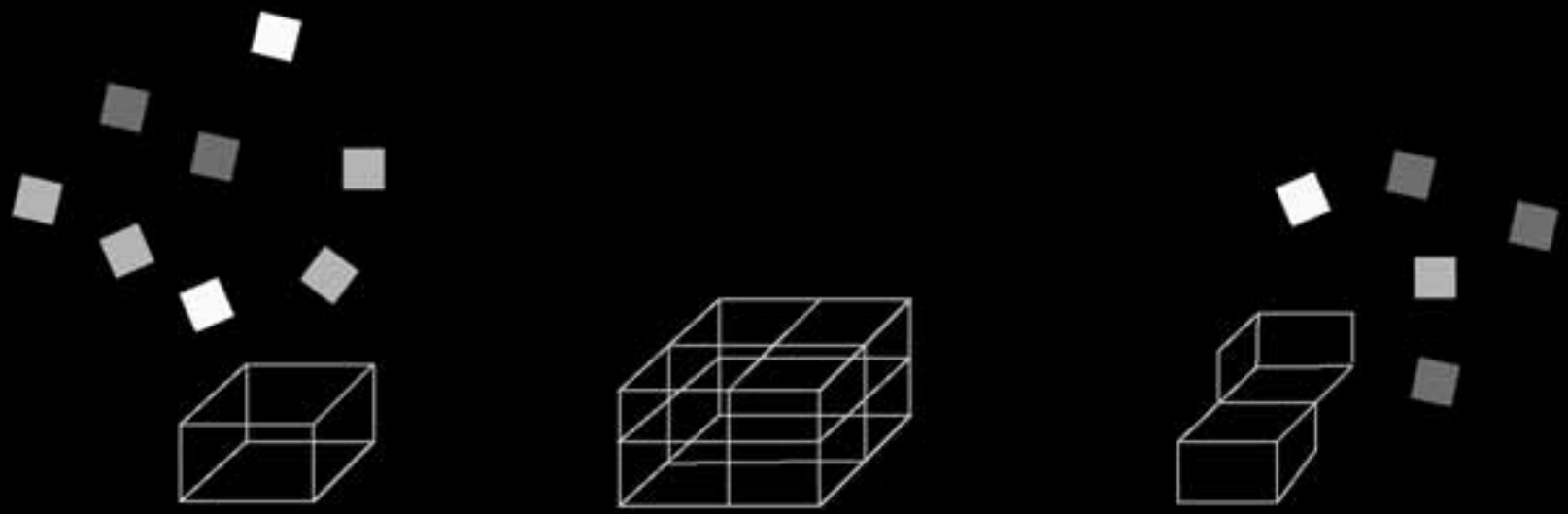
aida

[in collaboration with audi vw, 2008 - ongoing]

senseable plant

[mochovce, slovakia, 2010-2011]





construction

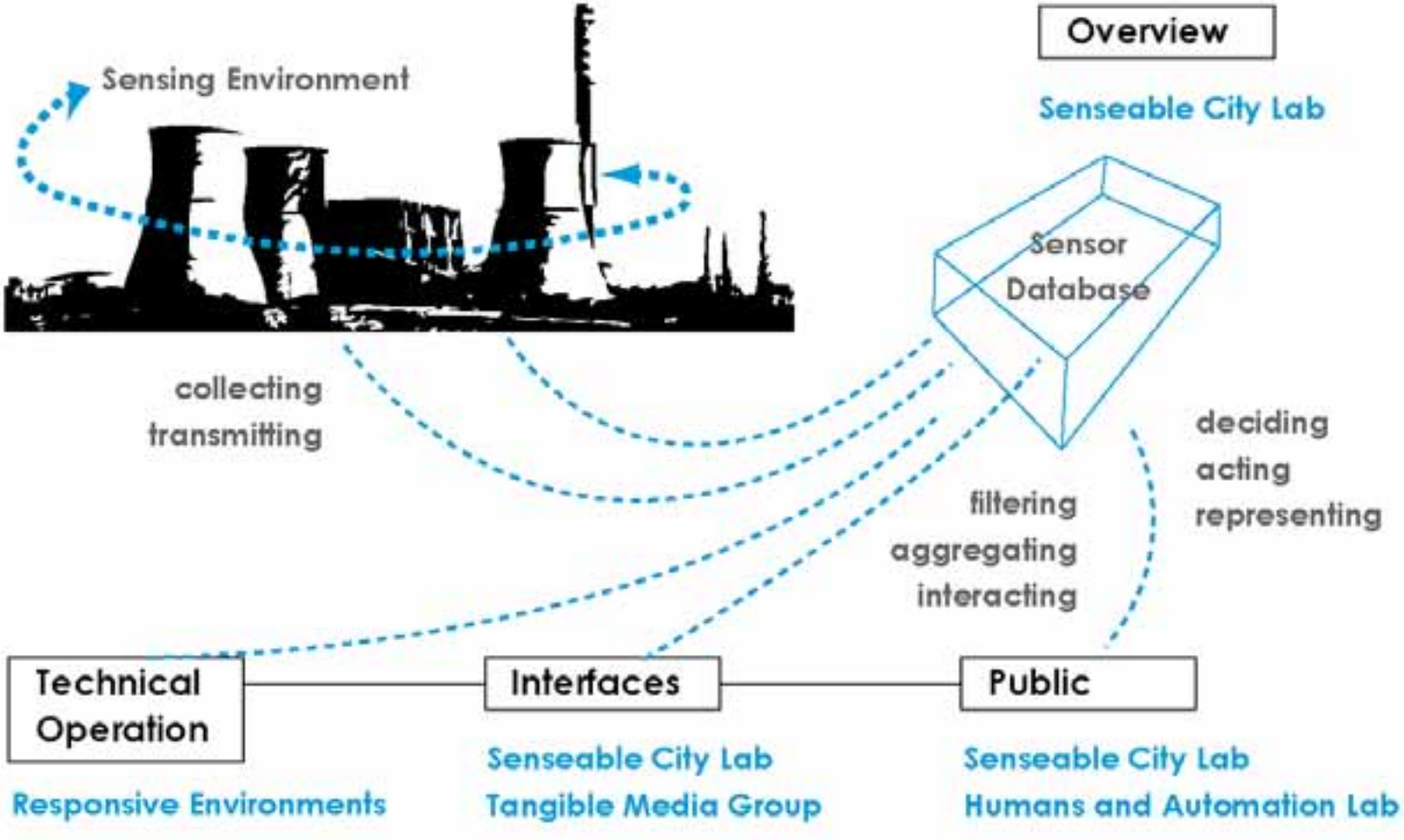
People Safety
Building Sensing
Flow Materials

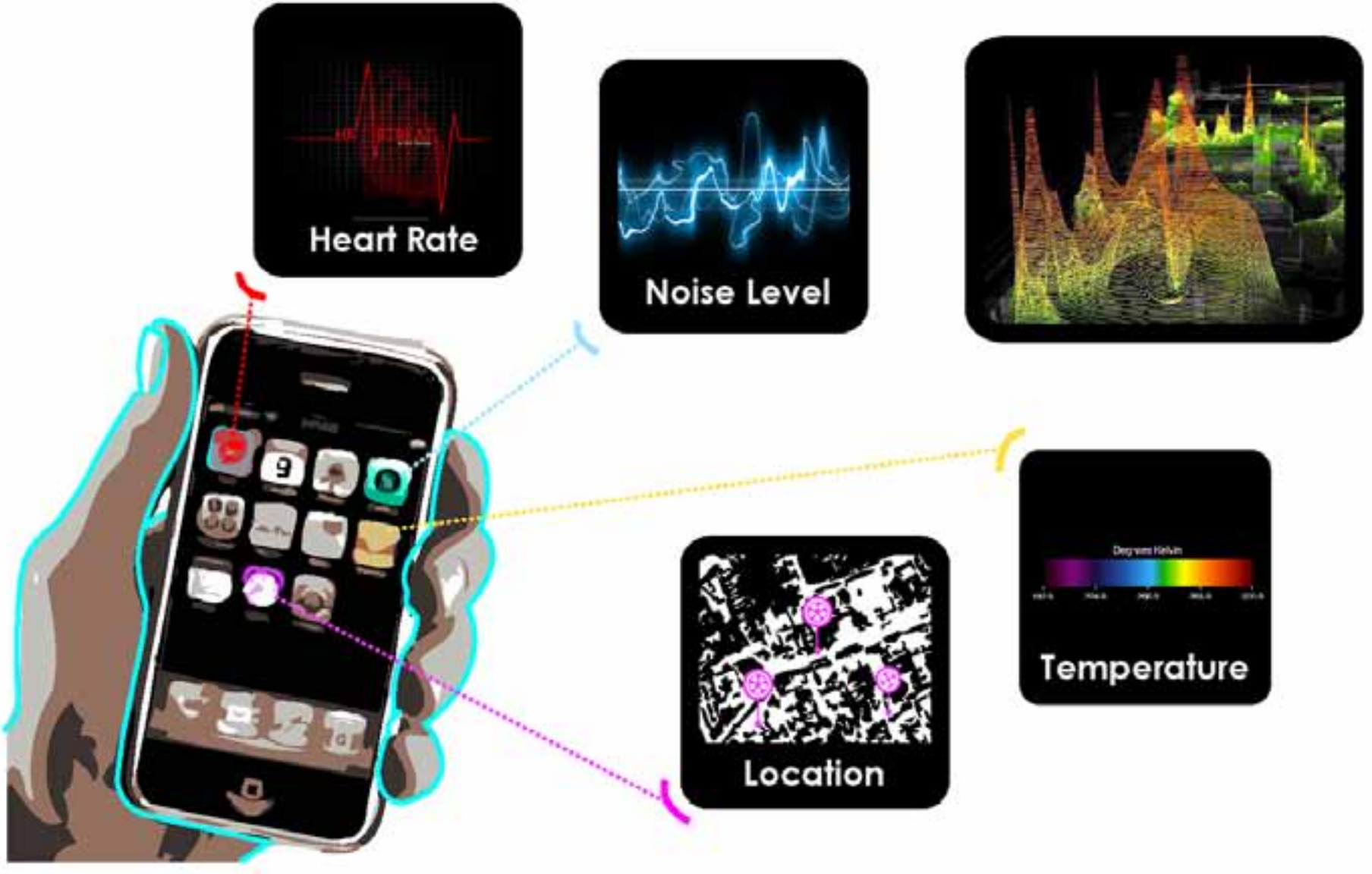
operation

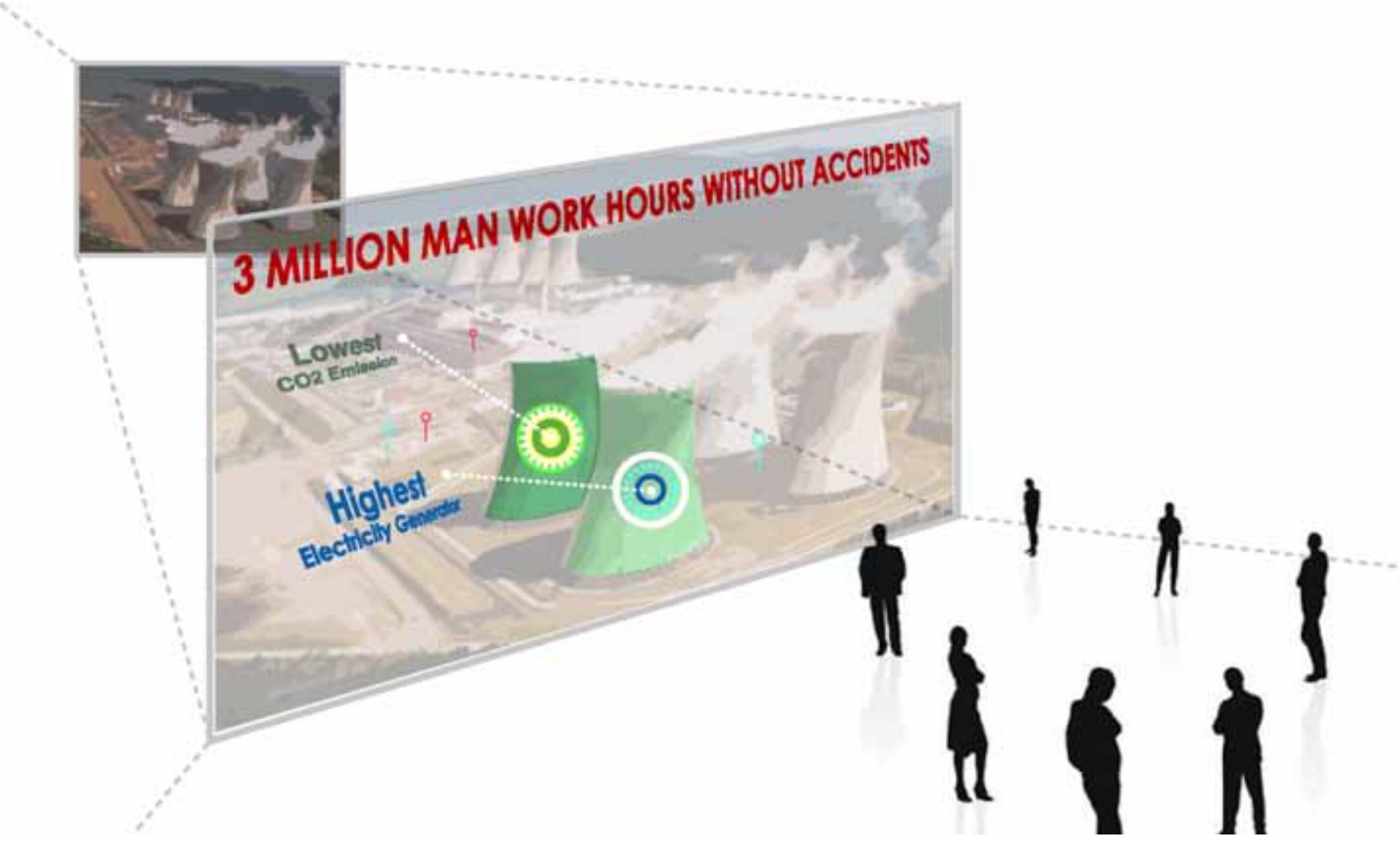
People Safety
Operation Sensing
In/Out Flows
Waste Tracking

decommission

People Safety
Flows of Materials
Waste Tracking
Recycling


Overview
Senseable City Lab
Sensing Environment
Sensor
Database
collecting
transmitting
deciding
acting
representing
filtering
aggregating
interacting
Technical
Operation
Responsive Environments
Interfaces
Senseable City Lab
Tangible Media Group
Public
Senseable City Lab
Humans and Automation Lab

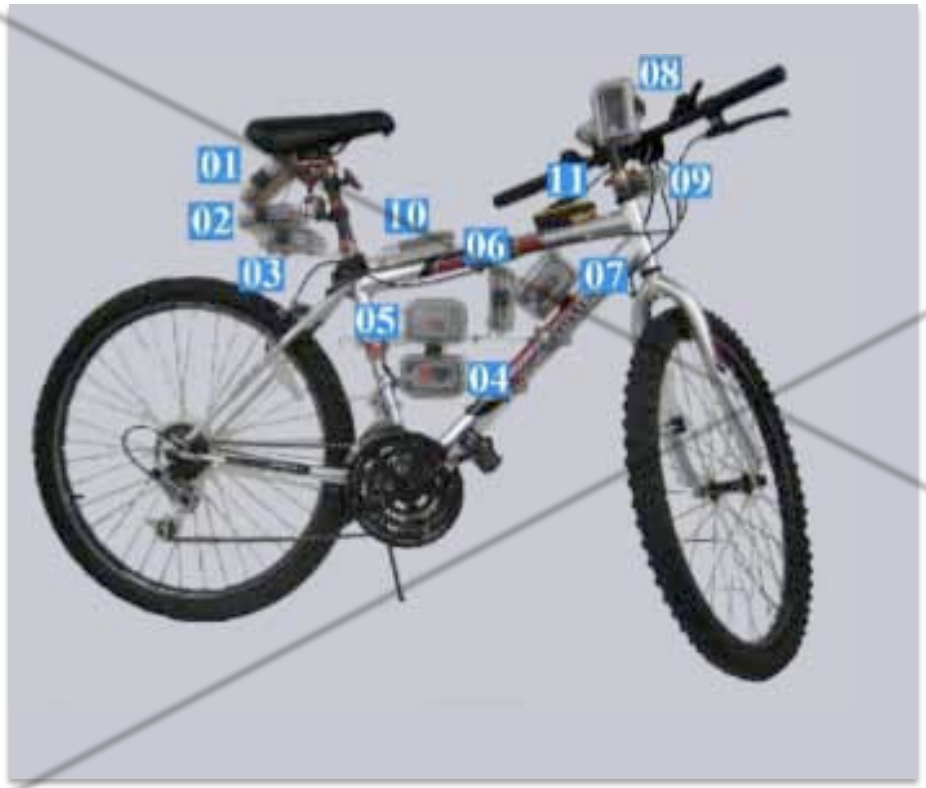

Heart Rate
Noise Level
Temperature
Location


3 MILLION MAN WORK HOURS WITHOUT ACCIDENTS
Lowest
CO2 Emission
Highest
Electricity Generator

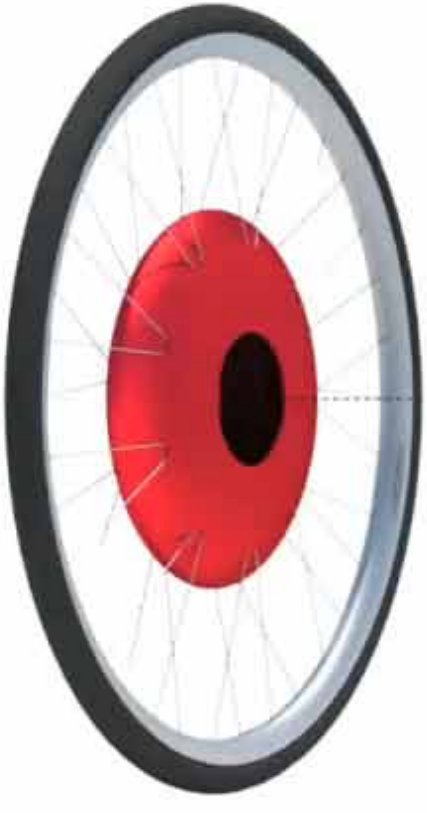
copenhagen wheel

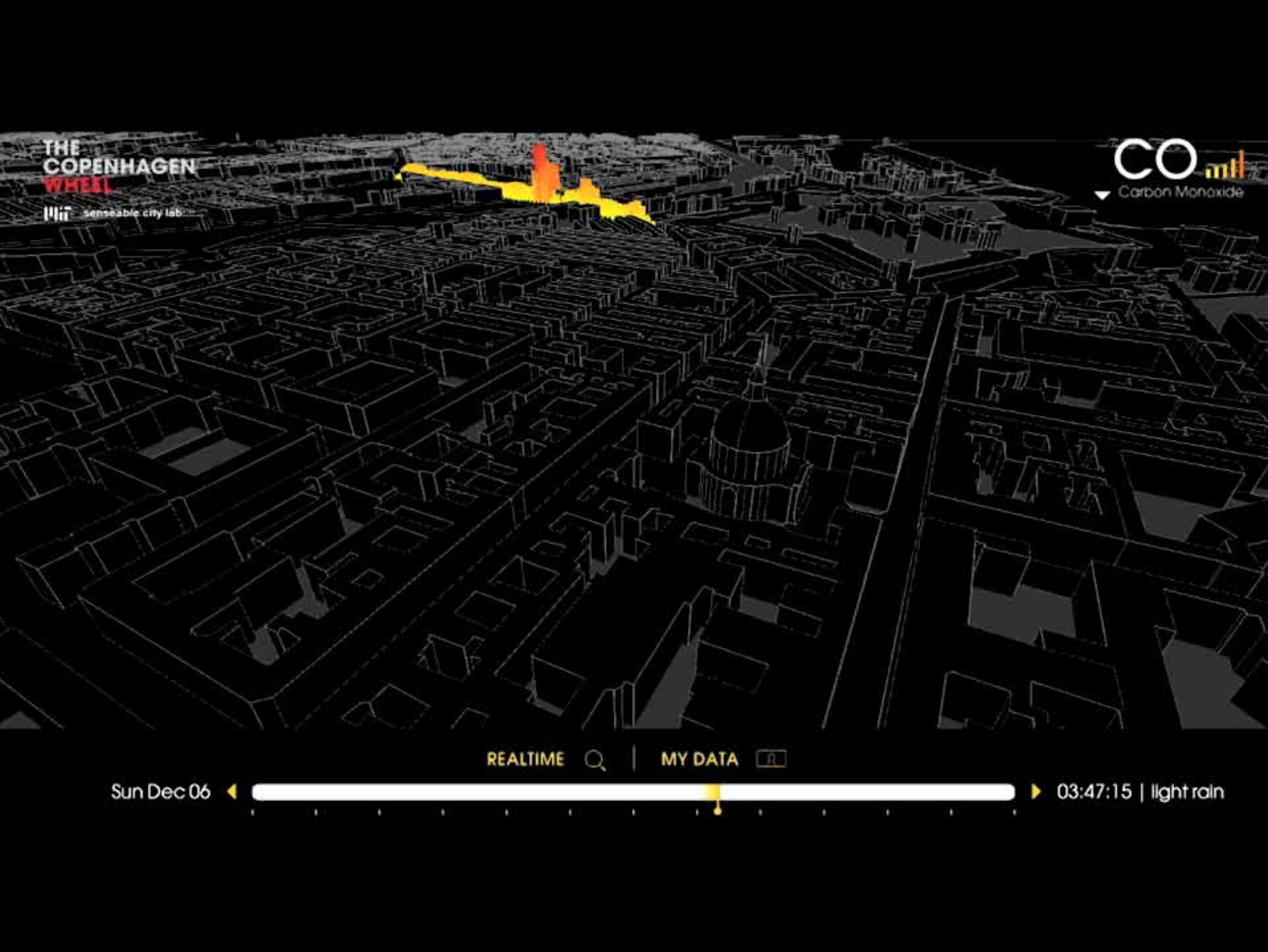
[copenhagen, dec, 2009]

GEORG JENSEN


01
02
03
04
05
06
07
08
09
10
11

eTrex




THE
COPENHAGEN
WHEEL
MIT senseable city lab
CO
Carbon Monoxide
REALTIME
MY DATA
Sun Dec 06
03:47:15 | light rain

thanks!

assaf biderman
[abider@mit.edu]