SMART MEGA EVENTS

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March 14, 2016

Engineering a Connected World

Fraunhofer FOKUS

CHALLENGES AND CHANCES IN URBAN AREAS

»If the nineteenth century was the century of empires and the twentieth century the century of nation states, then the **twenty-first century will be the century of cities**.«

Denver Mayor Wellington E. Webb

Opening the first Transatlantic Summit of Mayors in Lyon, France, April 6-8, 2000.

CHALLENGES AND CHANCES IN URBAN AREAS

In 2050, 6.3 billion people will live in urban areas, double as many as of today

Cities **consume …**

… **75%** global natural resources

… **80%** global energy and **produce** …

… **75%** global CO2 emissions.

Metropolis
Fritz Lang, 1926

VIEWS ON SMART CITIES

»Through the eyes of a high-flying night bird, we take in the scene from midair. In our broad sweep, the city looks like a single gigantic creature – or more like a single collective entity created by many intertwining organisms. Countless arteries stretch to the ends of its elusive body, circulating a continuous supply of fresh blood cells, **sending out new data and collecting the old**, sending out new consumables and collecting the old, sending out new contradictions and collecting the old.«

Haruki Murakami "After Dark", London 2007

Roofer
Vadim Makhorov, 2013

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VIEWS ON SMART CITIES
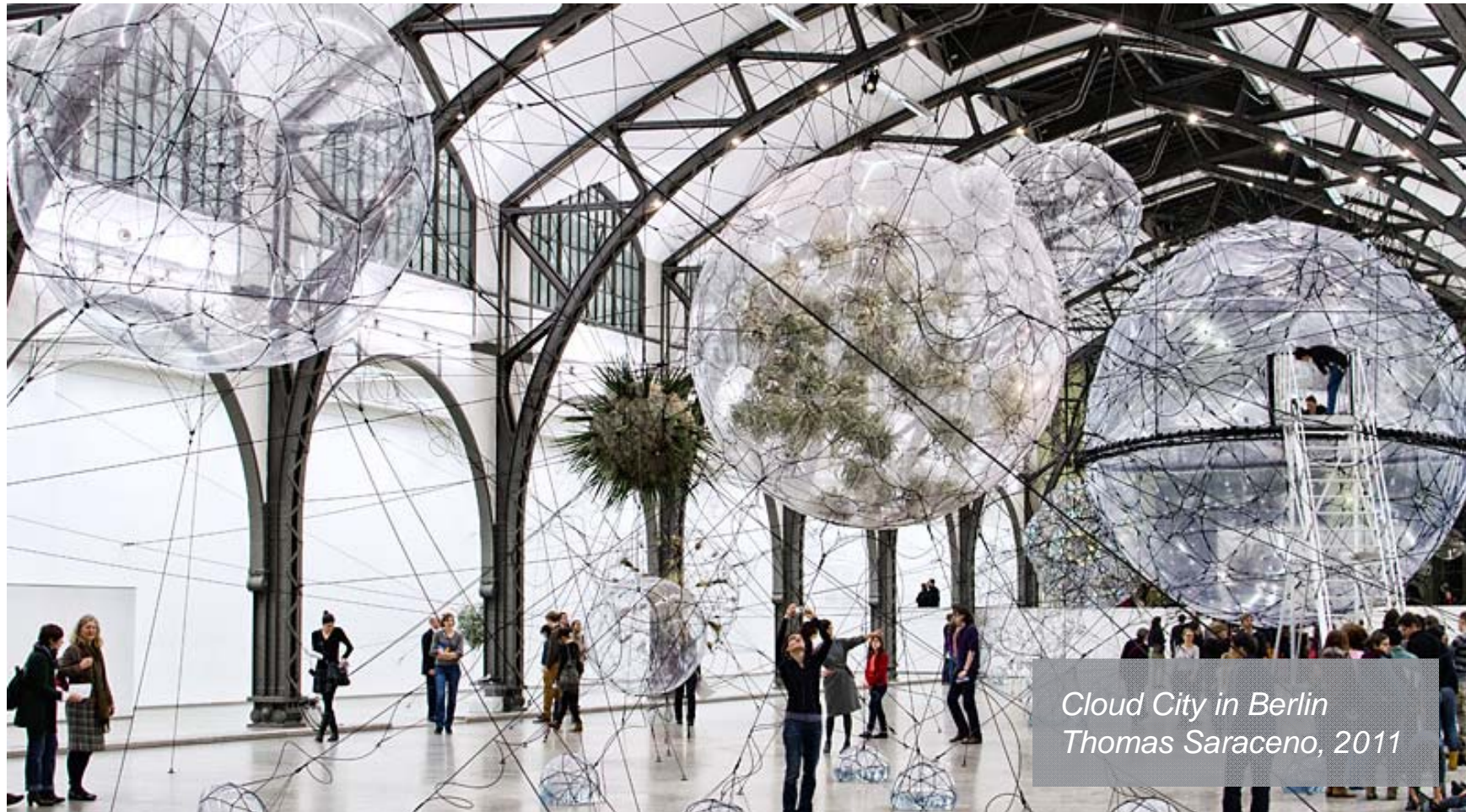
Cloud City in Berlin
Thomas Saraceno, 2011

Study Mapping Smart Cities in the EU,

DG Internal Policies 2014:

A city seeking to address public issues **via ICT based solutions** on the basis of a multi-stakeholder, municipality-based partnership.

acatech TAKES A POSITION – No. 10

> SMART CITIES

GERMAN HIGH TECHNOLOGY FOR THE CITIES OF THE FUTURE
TASKS AND OPPORTUNITIES

CATRENE

Semiconductor Technologies
for
Smart Cities

CATRENE Scientific Committee
December 2014

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BERLIN – THE DIGITAL CAPITAL OF GERMANY AND EUROPE

UdK

TU Berlin

HU Berlin

FU Berlin

Berlin is

- **top entrepreneurial city**
- **top investors city**
- **top booming city**

Charité

Adva Optical Networking

Coriant R&D GmbH

Philips Deutschland GmbH

Robert Bosch GmbH

Cisco Systems GmbH

Daimler AG

Schneider Electric SA

SAP SE

KMUs, GUs, Startups

Deutsche Telekom AG

First Sensor AG

Siemens AG

Stromnetz Berlin GmbH

IBM Deutschland GmbH

Microsoft Deutschland GmbH

TomTom Development Germany GmbH

VDI/ VDE

BITKOM

SIBB

ASQF

BERLIN – THE DIGITAL CAPITAL OF GERMANY AND EUROPE

Charta Smart City Berlin
Berlin Partner et al

Science Year on Future Cities
BMBF et al

ICT for Smart Cities Portal
Fraunhofer FOKUS

Smart City Platform
TU Berlin

Smart City Summit Berlin
SenWTF et al

City of the Future
acatech

Smart City Conference in Berlin
Münchner Kreis

Smart City Network Berlin
Berlin Partner et al

Berlin City Insight Report
Fraunhofer Morgenstadt

Smart City Berlin Study
TSB

10 Points in Digital Agenda
Berliner Kreis zur Digitalisierung

Smart City High Techs
acatech

Smart City Strategy Berlin
SenStadtUm et al

2010   2014   2016

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DATA! DATA! DATA!
URBAN PLATFORMS TAKE FORM

New Forms of Organization Example:	**Commons4EU** — FOKUS represents Berlin in the project „Commons 4 Europe"	**Berlin** — Mediator between needs of the public sector and comitted app developers
Applications Examples:	**KATWARN** — The mobile disaster warning system for citizens	**fix my city** — Efficient reporting and management of citizen issues
Platforms Examples:	**Trusted Cloud gov√Berlin** — The Cloud-based marketplace for public AND commercial service offers	**BERLIN OPEN DATA** — The Berlin Open Data platform

City administration to develop into platform providers !

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# EUROPEAN INNOVATION PARTNERSHIP ON SMART CITIES AND COMMUNITIES

Memorandum of Understanding "Towards Open Urban Platforms for Smart Cities and Communities"

- by 2018, create a strong EU city market for Urban Platforms

- by 2025, ensure that the market of 300m residents of EU cities use Urban Platform(s) to manage their business with a city and

- that the city in turn drives efficiencies, insight and local innovation through the platform(s)
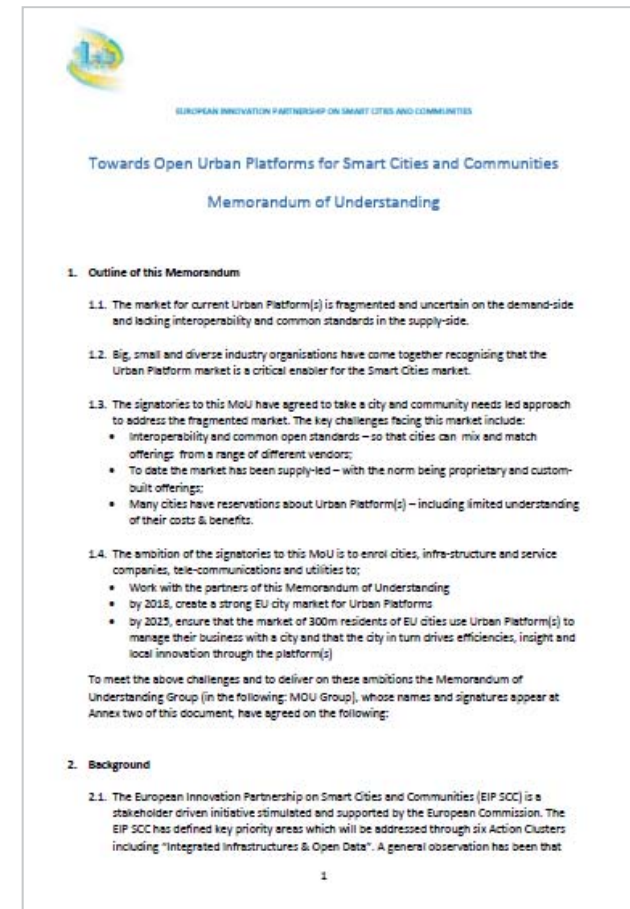
EC EIP on Smart Cities and Communities, Mai 2015

STREETLIFE – AN EU FP7 R&D PROJECT
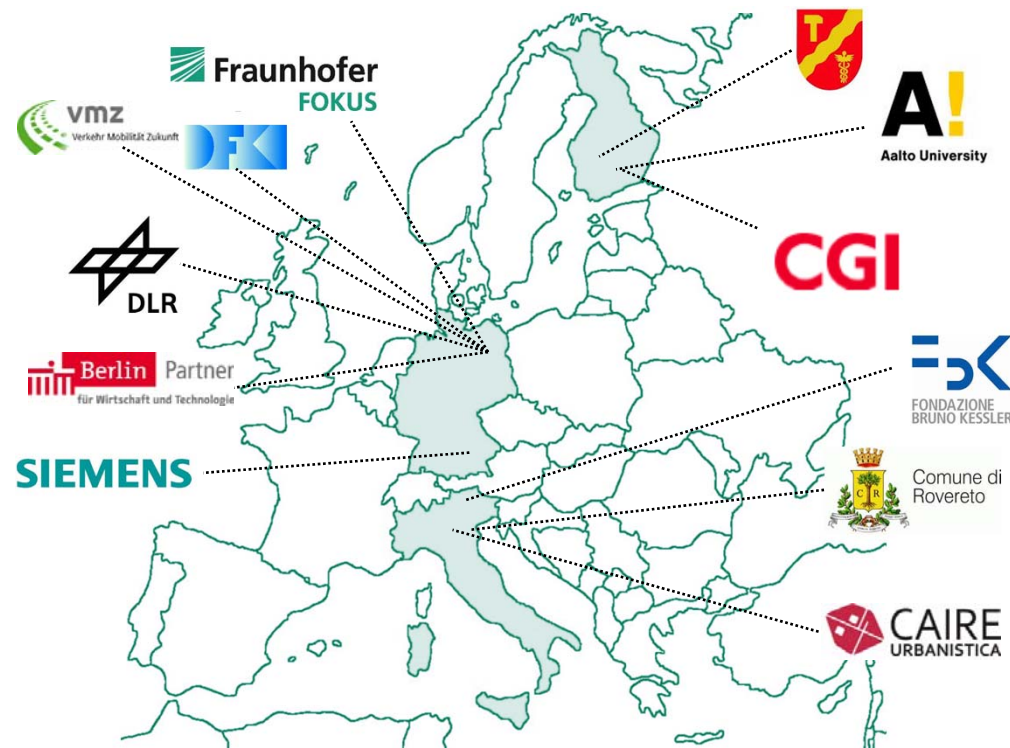
Call
ICT for a Low Carbon Economy

Objective
ICT-2013 6.6 –
Integrated personal mobility for smart cities

Coordinator
Fraunhofer FOKUS

Duration
10.2013 – 09.2016

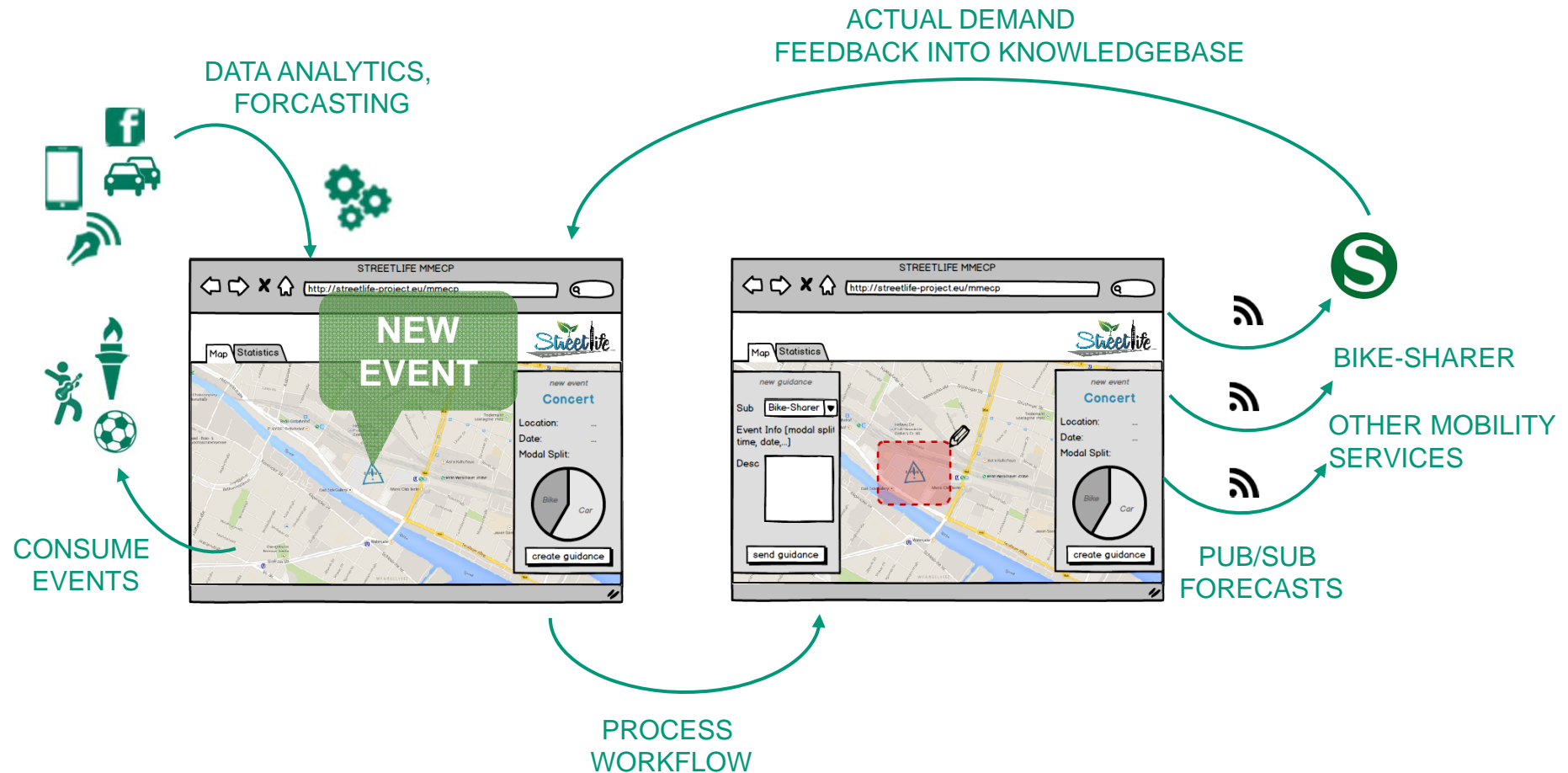**12 Partner (Transport and ICT)**

3 Pilot cities
Berlin, Rovereto, Tampere

Budget
6,1 Million Euro

ONE SCENARIO

SERVICE ADJUSTMENT BASED ON GROWING DEMAND

ACTUAL DEMAND
FEEDBACK INTO KNOWLEDGEBASE

DATA ANALYTICS,
FORCASTING

NEW EVENT

CONSUME EVENTS

BIKE-SHARER

OTHER MOBILITY SERVICES

PUB/SUB FORECASTS

PROCESS WORKFLOW

Athlets

Mobile Sensor &
Communication Poles

Stewards

Emergency
Forces

Airborn
Surveilance

Mobile C&C
Center

Spectators

Existing
Infrastructure

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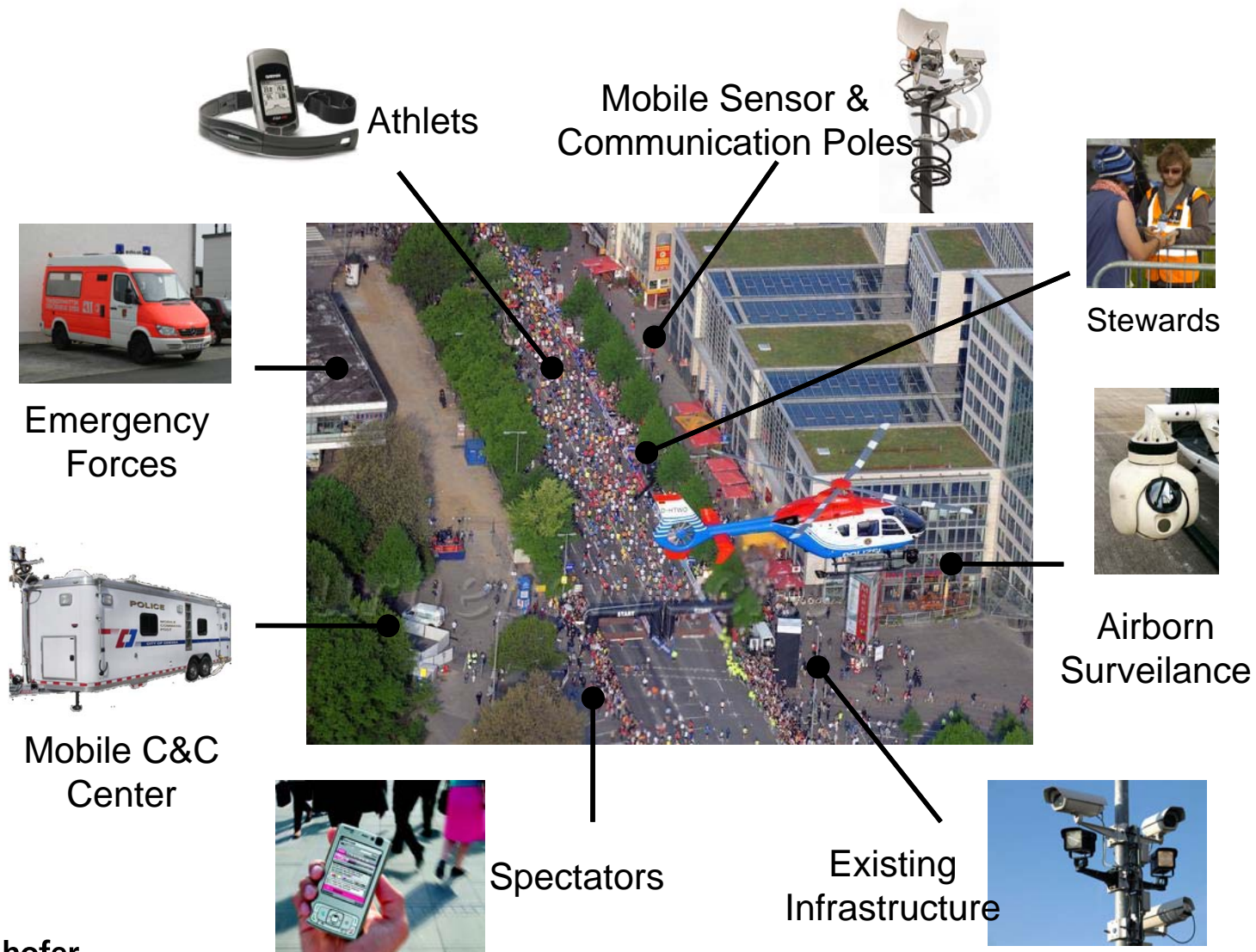
INDUSTRIAL STUDY UNDER NDA

Quality of Experience

Efficiency

Smart Mega Events

Safety

Visitors

Smart Mega Events

Organizers

Authorities

Static Sensors

Mobile Sensor Poles

Participants' Sensors

Smart Mega Events Software

Participant Services

Command & Control

Emergency Services

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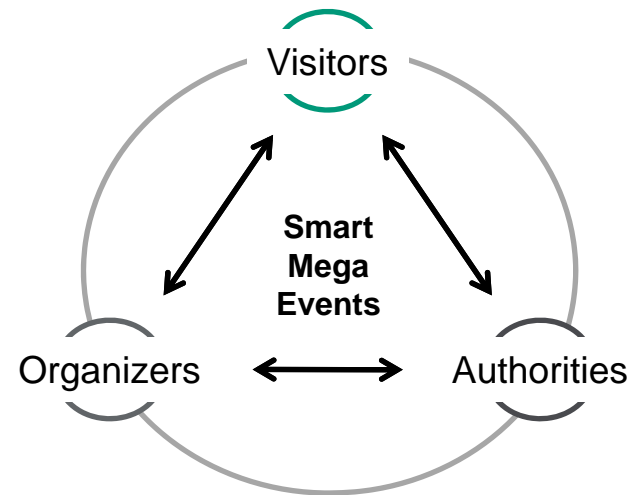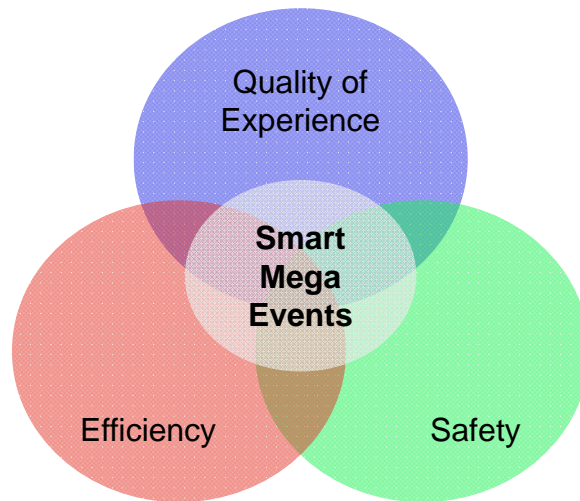
URBAN ICT AS CRITICAL INFRASTRUCTURE

Smart cities imply …
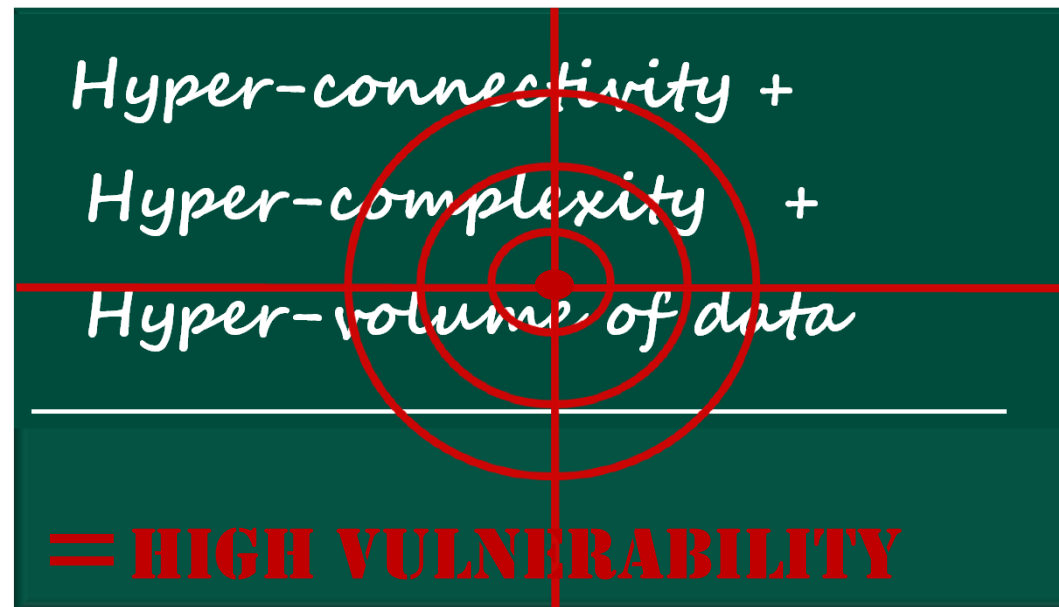
- High complexity of the ICT systems

- Highly interconnected components

- High volume of data generated

… and need to be designed with…
- Cyber security
- Privacy
- Integrity
- Compliance
- Reliability
- Resilience

…in mind.

Hyper-connectivity +

Hyper-complexity +

Hyper-volume of data

= HIGH VULNERABILITY

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Giampiero Nanni: Cyber-security, data protection and cyber-resilience in Smart Sustainable Cities, ITU-T Workshop, April 2015

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is the network of excellence for the software development industry in German-speaking European countries.

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