UNIVERSITÀ DEGLI STUDI FIRENZE

DINFO
DIPARTIMENTO DI INGEGNERIA DELL'INFORMAZIONE

DISIT
DISTRIBUTED SYSTEMS AND INTERNET TECHNOLOGIES LAB

Distributed Data Intelligence and Technologies Lab
Distributed Systems and Internet Technologies Lab

Paolo Nesi

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http://www.disit.dinfo.unifi.it/

paolo.nesi@unifi.it , http://www.disit.dinfo.unifi.it/nesi/

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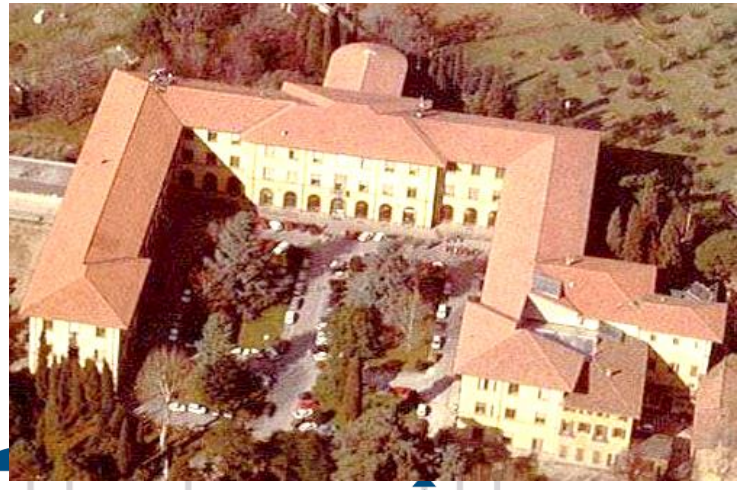
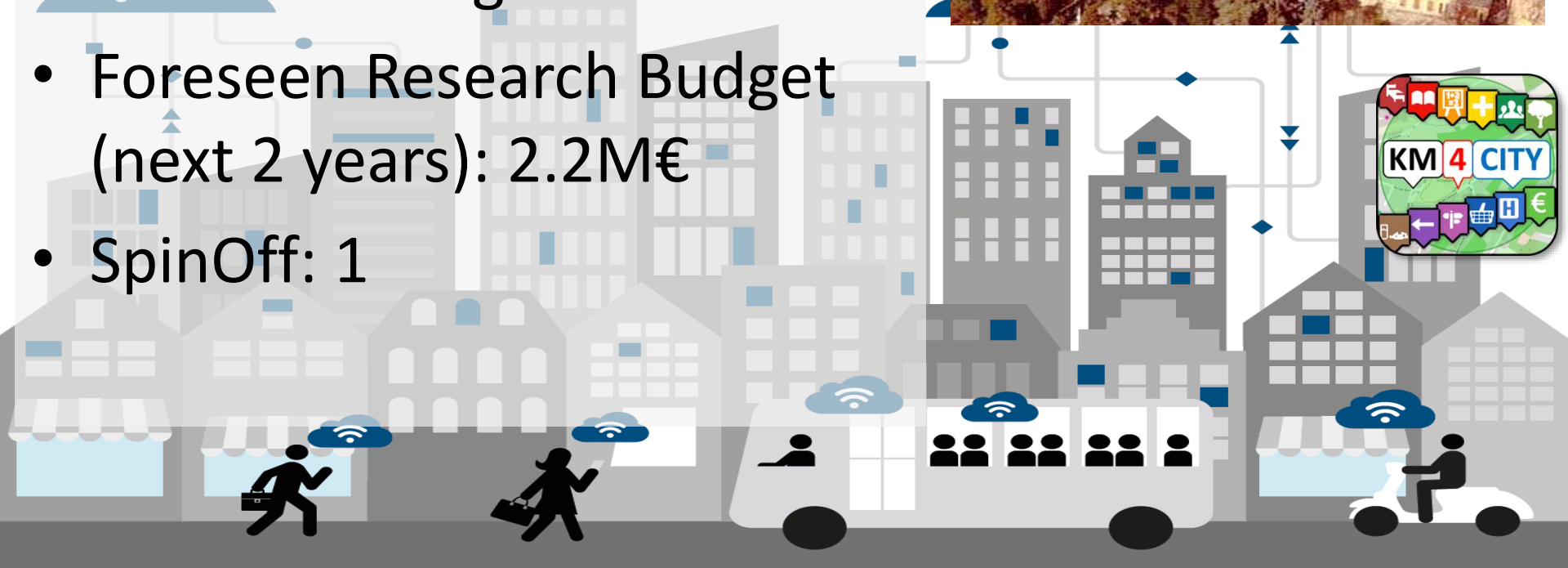
DISIT DISTRIBUTED SYSTEMS AND INTERNET TECHNOLOGIES LAB

DISIT Lab

- Researchers: 20
- Current Active Projects: 10
- Project in the last 4 years: 17
- Research Budget: 1.2M€
- Foreseen Research Budget (next 2 years): 2.2M€
- SpinOff: 1





DISIT Lab, http://www.disit.dinfo.unifi.it

Distributed Systems and Internet Technologies Lab
Distributed Data Intelligence and Technologies Lab
Department of Information Engineering (DINFO)
University of Florence

http://www.disit.dinfo.unifi.it

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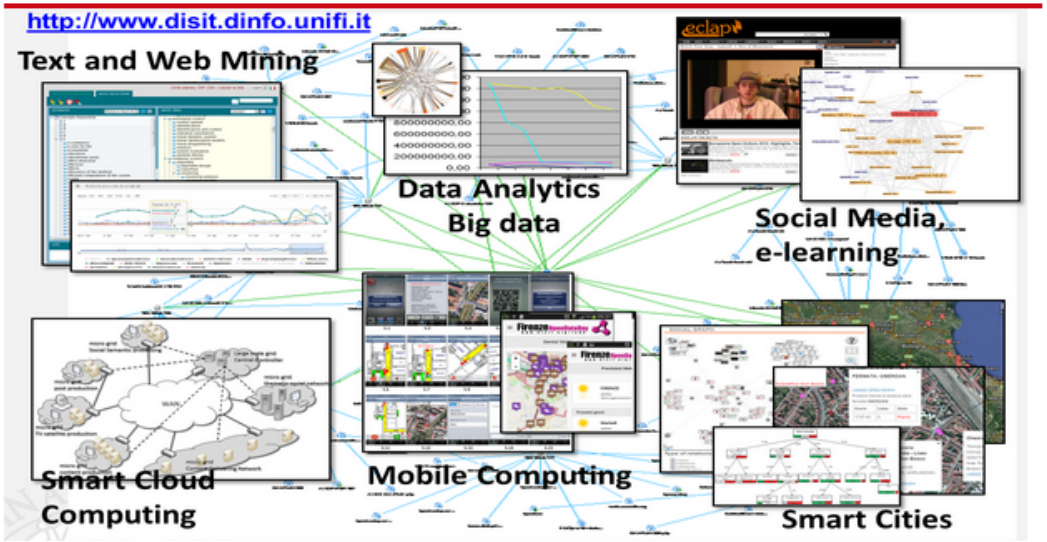
qualsiasi tipo | deep search

HOME | ABOUT | RESEARCH | INNOVATION | CORSI E TESI | COME FARE | EVENTI | MIO PROFILO | root | Uscire

Mostra | Modifica | Log | Translate | Devel

DISIT LAB OVERVIEW



DISIT lab and research group is active since 1994. It is one of the most active ICT labs of the University of Florence, metropolitan Tuscany area. DISIT successfully developed a relevant number of International and National research, development and innovation projects. DISIT provides an infrastructure for cloud and distributed computing.
DISIT has coordinated a number of large EC projects, in many others has

CONTENUTI

- *Ultime Attività*
- *In primo piano*
- *Più visti*
- *Most Viewed (last 500)*
- *Most Viewed All (last 500)*
- *Ultimi caricati*
- *Più votati*
- *Mie collezioni pubblicate*
- *Miei contenuti*
- *Carica un nuovo contenuto*

ROOT

- Gruppi
- Cerca Utenti
- Contenuti ed attività non lette relative ai tuoi gruppi
- Crea la matrice di tassonomia
- Forum
- Invite a colleague
- Issues
- Keyword cloud
- Messaggi e Sottoscrizioni
- Mio MatchMaking

DISIT lab mission

- **Research** and **Innovation** projects founded by:
  - European Commission
  - Italian Ministry of Research, It. Min. of Innovation and Development
  - Foundations
  - Tuscany Region
  - Direct commitment with the industries for technology transfer
  - **Currently** with **more than 60 Partners** at national and international levels
- **Didactical** support to Univ. Firenze Courses, mainly
- **Management** of infrastructures:
  - **ECLAP (social network), ApreToscana, Km4City (Smart City)**

Horizon 2020 European Union Funding for Research & Innovation

MIUR

FONDAZIONE CR FIRENZE

Regione Toscana

National and International Connections

- **DISIT is:**
  - ICT reference lab for the Smart City of Florence metropolitan area
  - Aggregator for Europeana, European Digital Library http://www.europeana.eu/
  - Member of ISO MPEG standardization body
  - NEM: Network and Media group in Europe
  - ETSI: standardization body
  - Node of the CINI National Lab on Big Data, + on Smart City, + on CyberSecturity
  - Member of National Cluster on Transport System, + on Smart Communities
  - Member of CNIT: Consorzio nazionale interuniverstario Telecomunicazioni
- **Stable agreements** with: LAMMA, IBIMET CNR, Regional Mobility Center, several universities, …
- IOT lab: Intel, Fluctus, UDOO, …
- ….
- See for all the list http://www.disit.org/5486

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Department of Information Engineering (DINFO)
http://www.disit.dinfo.unifi.it

Con chi lavoriamo

swarco First in Traffic Solutions.
VARgroup
THALES
BUSITALIA NORD GRUPPO FERROVIE DELLO STATO ITALIANE
BBC
ALTAIR CHIMICA
TIM
ECM
ataf
NORD CTT
BMG
europeana think culture
COSTRUZIONI NOVICROM
ENGINEERING
COMPUTER GROSS
liberologico
SIAE Società Italiana degli Autori ed Editori
Rai
eutelsat
PHILIPS
tiscali:
Fondazione per la ricerca e l'innovazione
Effective Knowledge s.r.l.
GIUNTI EDITORE
e-distribuzione
CERTH CENTRE FOR RESEARCH & TECHNOLOGY HELLAS
ENTE CASSA DI RISPARMIO DI FIRENZE
CITTÀ METROPOLITANA DI FIRENZE
COMUNE DI FIRENZE
Fraunhofer
Consiglio Nazionale delle Ricerche
cini
cnit consorzio nazionale interuniversitario per le telecomunicazioni
Camera di Commercio Firenze
ARPAT Agenzia regionale per la protezione ambientale della Toscana
REGIONE TOSCANA
National Technical University of Athens
ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE
UNIVERSITÀ DEGLI STUDI DI MILANO BICOCCA
UNIVERSITÀ DEGLI STUDI DI CAGLIARI
APRE TOSCANA AGENZIA PER LA PROMOZIONE DELLA RICERCA EUROPEA
ACCADEMIA NAZIONALE DI SANTA CECILIA
CONSORZIO LaMMA

Main Research Sectors

- **Big Data, IOT, IOE, Industry** 4.0
- **…… projects: http://www.disit.org/5501**
  - **Smart City: data management, mobility, user engagement, …**
  - **Social Media and Media: collaborative work, Twitter Vigilance**
  - **Mobile Computing: mobile application, user behavior analysis**
  - **Smart Cloud: cloud simulation, optimization**
  - **Smart manufacturing:**, Factory 4.0, e-factory
  - **Smart Retail:** user behavior analysis, engagment, ..
  - **Autonomous drivers:** operators, high speed trains, driverless

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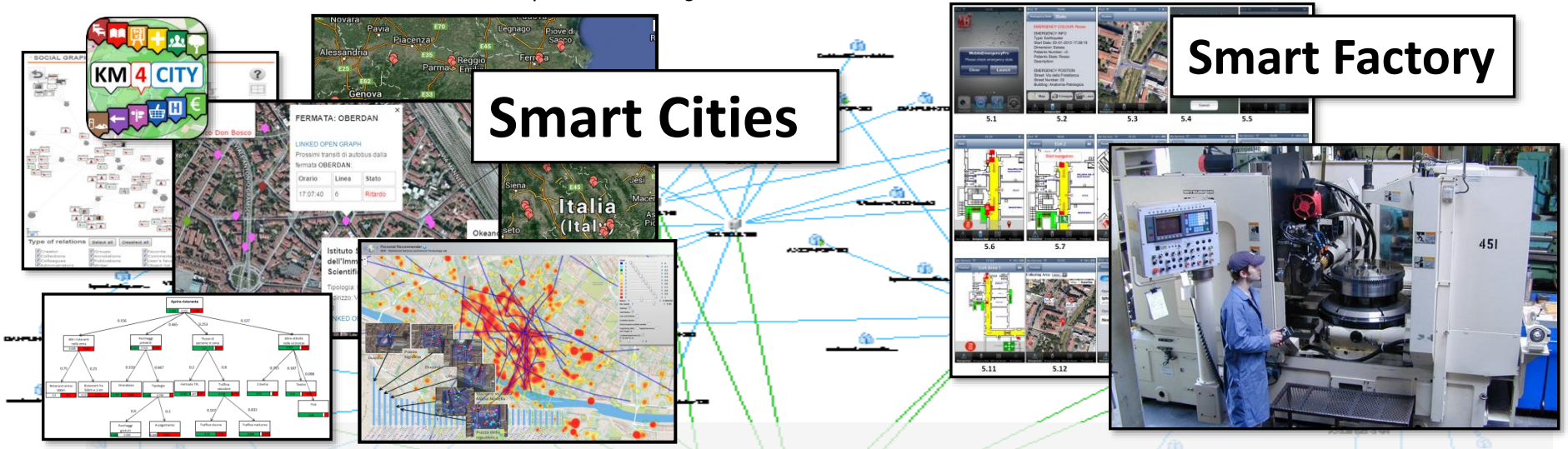
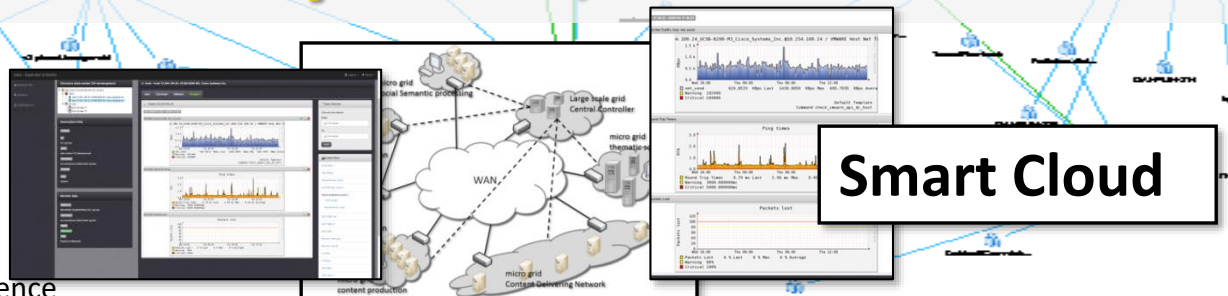
http://www.disit.org

Linee primarie di:
Ricerca, Innovazione e Trasferimento



Data Warehouse, Data Analytics, Big Data, IOT, Natural Language Processing, Semantic Computing, Reasoners, Distributed Systems, Parallel Architecture



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Smart City

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Dept. of Information Engineering (DINFO)
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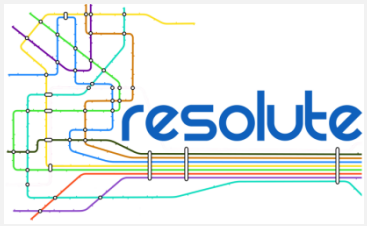
- **Smart City of Florence Metropolitan Area**
- **Km4City**: http://www.km4city.org
- **RESOLUTE H2020, EC:**
  - http://www.resolute-eu.org
- **REPLICATE H2020, SCC1, EC flagship**
  - http://replicate-project.eu/
- **Sii-Mobility SCN MIUR:**
  - http://www.sii-mobility.org
- **Coll@bora Social Innovation, MIUR.**
  - http://www.disit.org/5479
- **TRACE-IT, RAISSS, TESYSRAIL, ….**
- **Mobile Emergency:**
  - http://www.disit.org/5404

Trace-IT

RAISSS

Smart City

- **Progetti:** http://www.disit.org/5501
  - **Km4city: http://www.disit.org/km4city**
  - RESOLUTE: H2020, http://www.resolute-eu.org
  - REPLICATE H2020, SCC1, EC, parte lo 01-01-2016
  - Sii-Mobility, http://www.sii-mobility.org
  - Social Innovation: Coll@bora http://www.disit.org/5479
  - Navigation Indoor/outdoor: Mobile Emergency http://www.disit.org/5404
  - Trasporti e mobilità: TRACE-IT, RAISSS, TESYSRAIL
- **Tool:** http://www.disit.org/5489
  - Service Map: http://servicemap.disit.org
  - Risk analysis, decision support systems
  - Smart city ontology and reasoning tools
  - Data reasoning, deduction, prediction
  - Data gathering, data mining and reconciliation
  - Service analysis and recommendations
  - Autonomous train operator, train signaling
  - Mobile Applications



Trace-IT

RAISSS

www.Km4City.org

Technical info on: http://www.disit.org/km4city

Transport systems
Mobility, parking

Public Services
Govern, events,

Sensors, IOT
Cameras, ..

Environment,
Water, energy

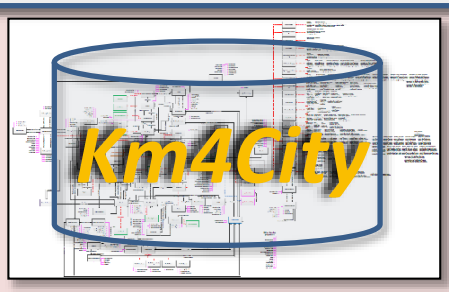
Shops, services,
operators

Social Media
WiFi, network

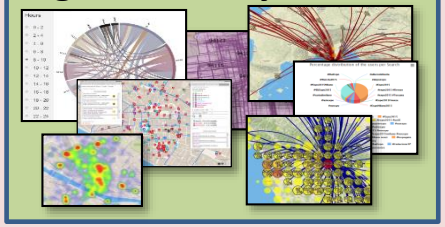
Static, Slow and Real Time data flows

DISCES -- Distributed and parallel architecture on Cloud

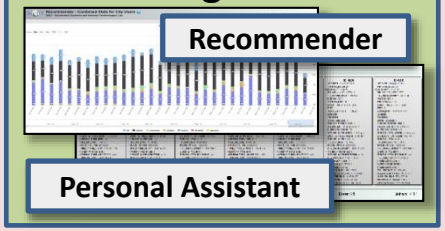
Km4City Smart City Engine



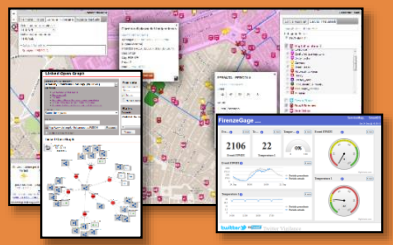
Big Data Analytics



Smartening Tools



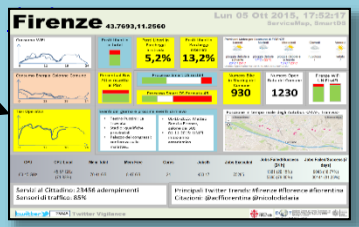
Development Tools



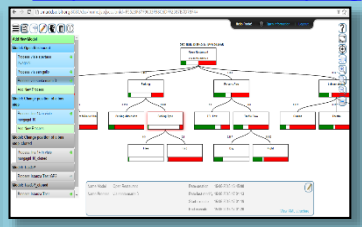
Km4City Smart City API

Tools for City Operators and Decision Makers

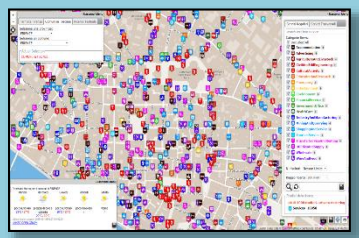
Smart City Dashboard
Http://dashboard.km4city.org/



Smart Decision Support
Http://Smartds.km4city.org

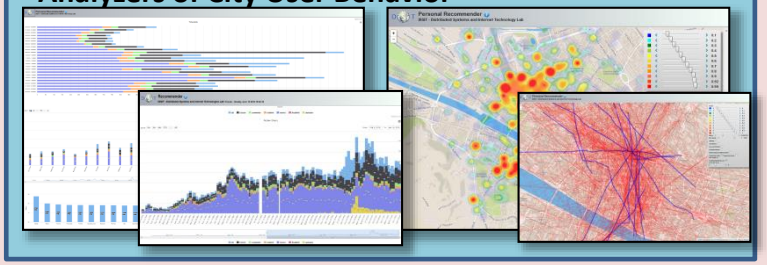


ServiceMap browser
Http://servicemap.km4city.org



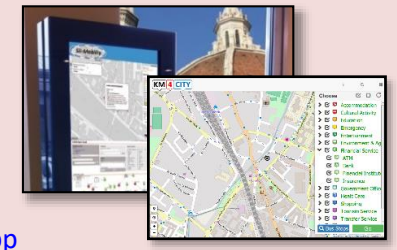
Twitter Vigilance
Http://www.disit.org/tv

Analyzers of City User Behavior



Tools for Final Users

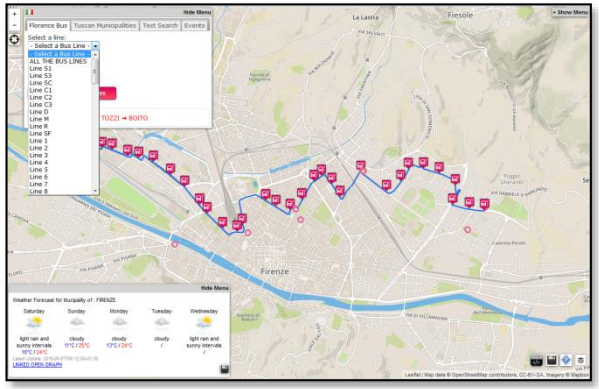
Mobile e Web Apps
Http://www.km4city.org/webapp

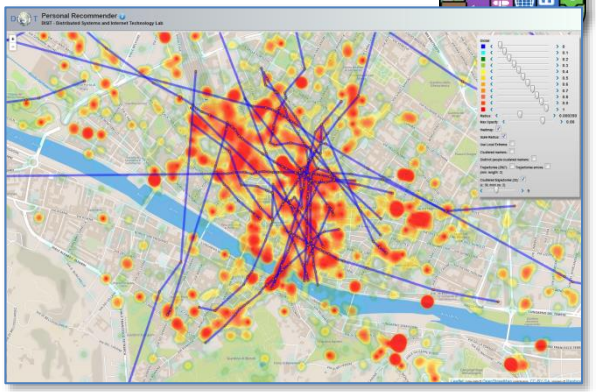


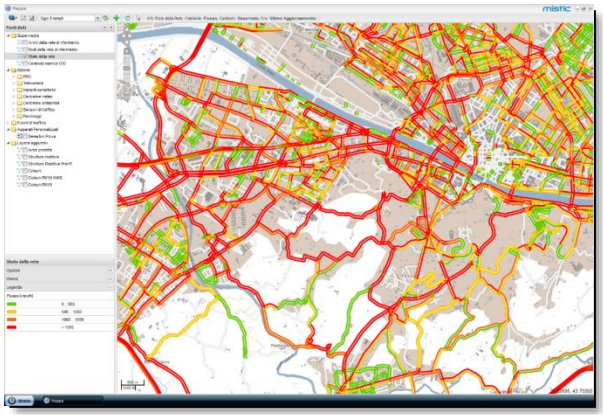
Http://www.km4city.org/app

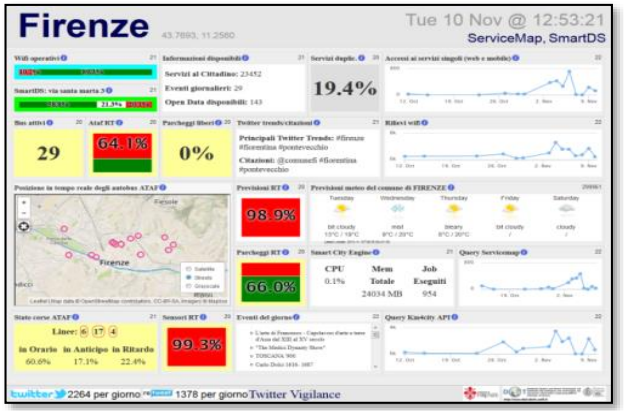
Http://www.km4city.org

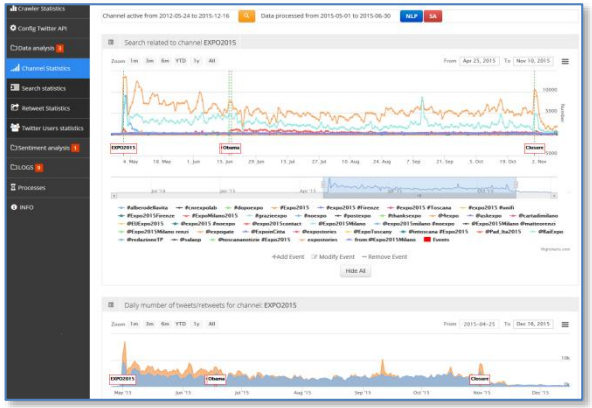
Smart City Dashboard

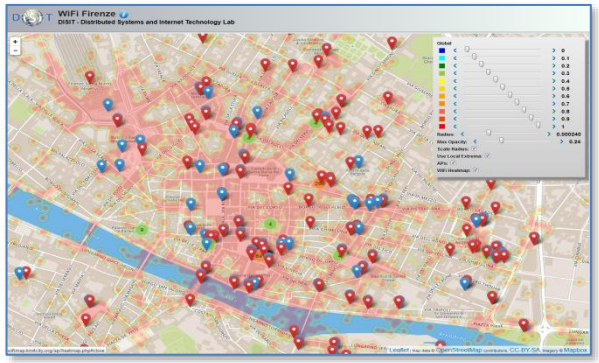


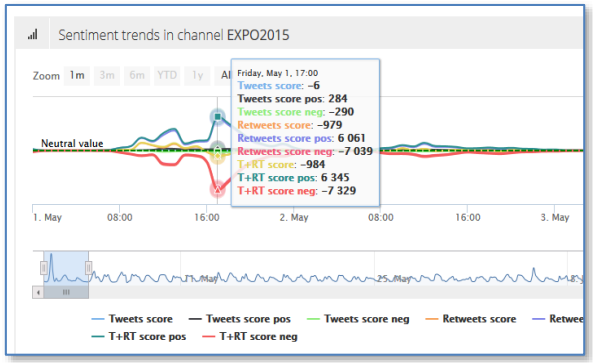








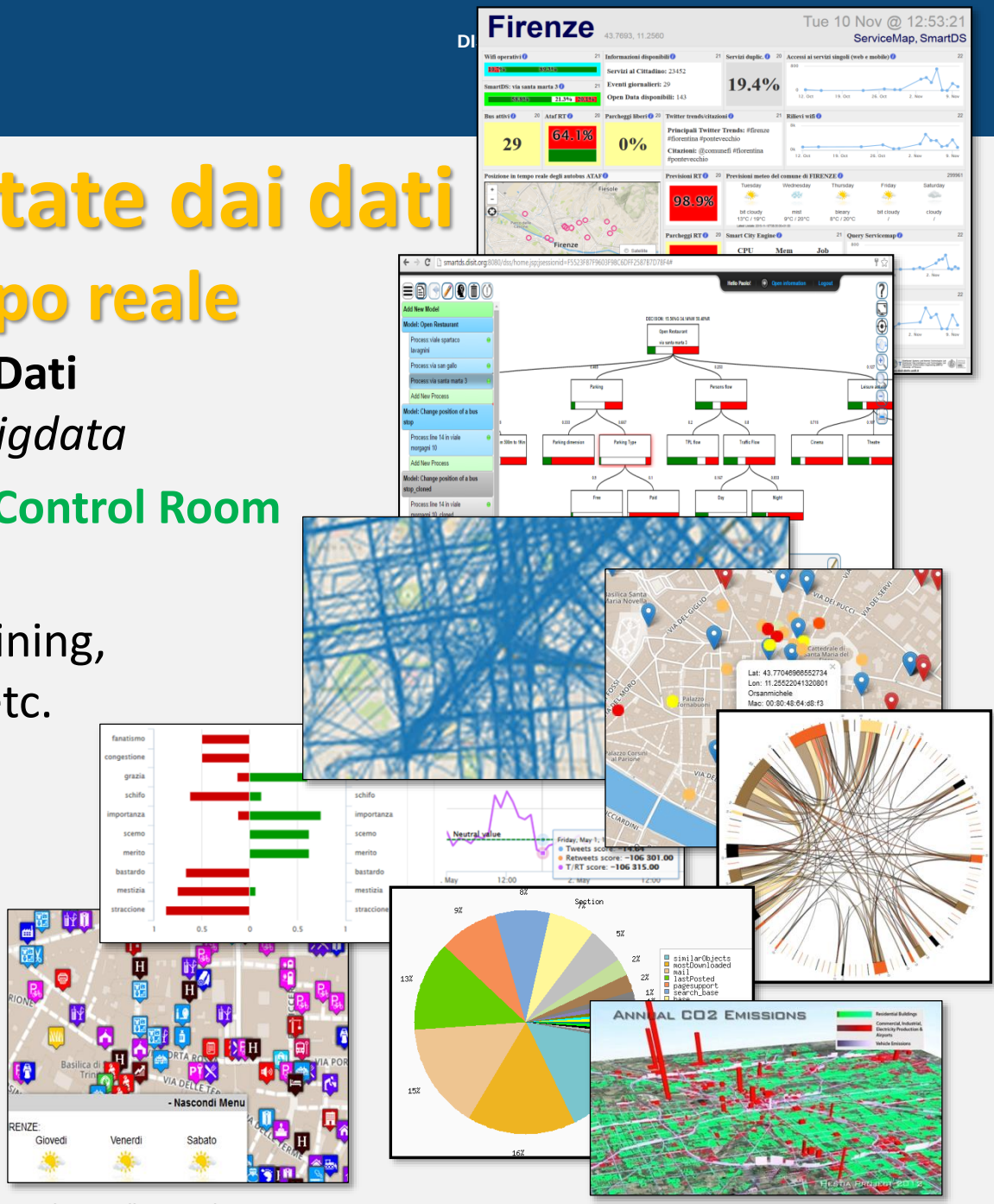


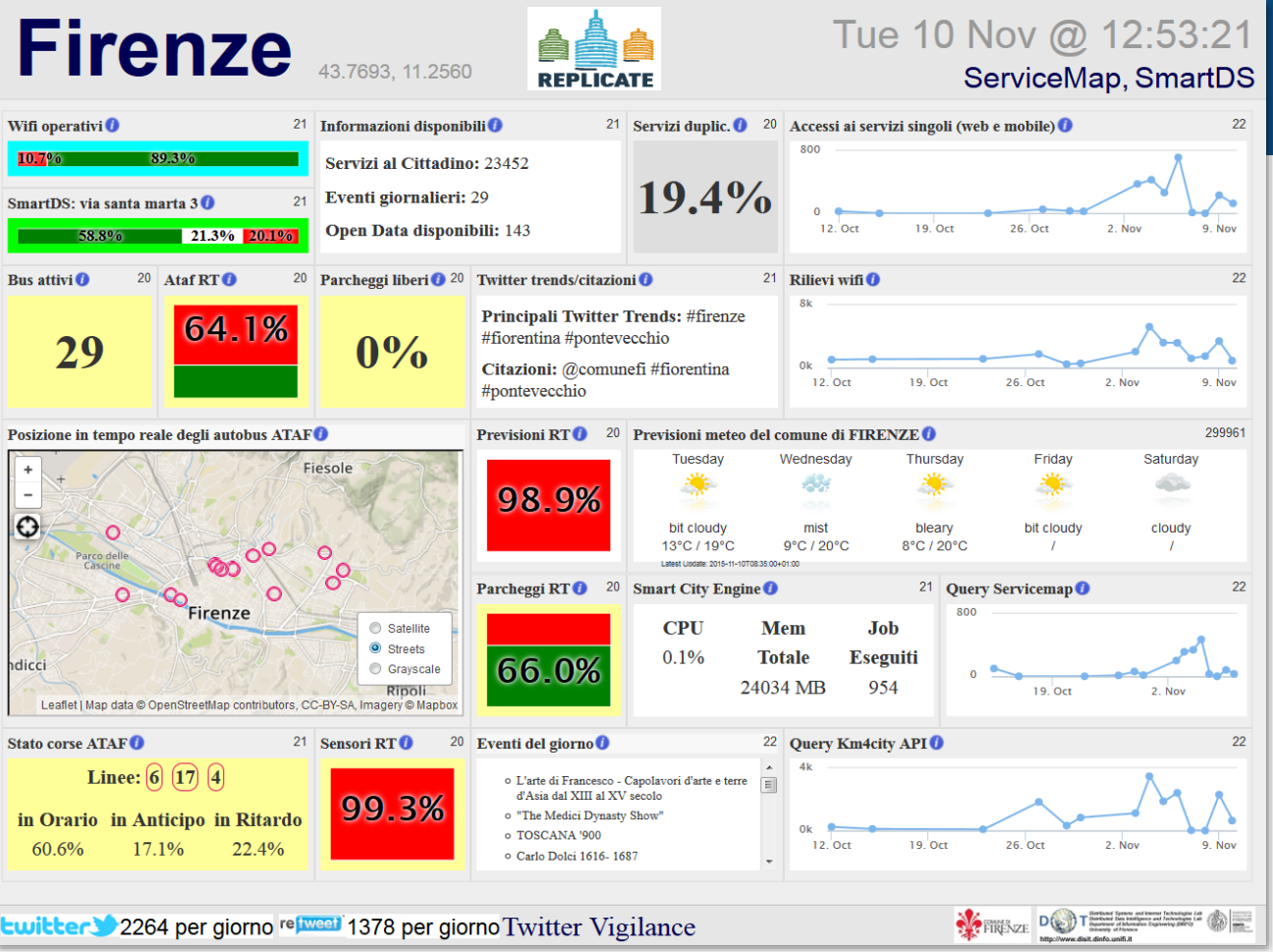


DISIT lab overview, April 2017, Florence

Decisioni supportate dai dati periodiche ed in tempo reale

- **Condivisione e Integrazione Dati multidominio:** *semantica e bigdata*
- **Dati →Smart City Engine → Control Room**
- **analisi**: monitoraggio, flussi e comportamenti, sondaggi, mining, correlazioni, cause – effetti, etc.
  - Per il miglioramento di servizi correnti
  - Per reagire ad eventi, incremento della resilienza,
  - Per la creazione servizi innovativi
  - …





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ICT e infrastrutture di comunicazione sono una chiave per tenere sotto controllo e gestire le CI ma e per il miglioramento della resilienza delle città:

Control Room delle Città Metropolitane devono:

- **arrivare a supervisionare domini multipli** e le interdipendenze fra mobilità, energia, comunicazione, servizi, flussi traffico, flussi pedonali, turismo, etc.
- **Migliorare la loro Resilienza**, capacità di reazione ed assorbimento.

SMART CITIES for a better world
FIRENZE. Venerdì 26 febbraio 2016

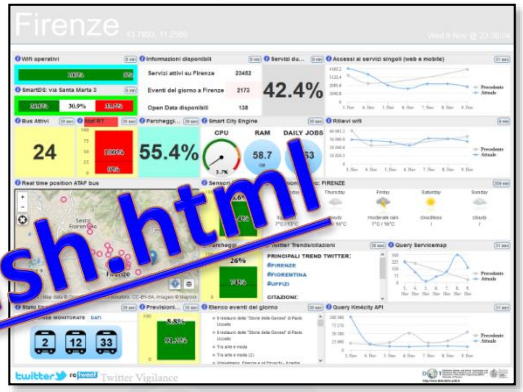
Servizi agli Utenti

irenze

Tue 13 Dec @ 17:01:29

REPLICATE

Horizon 2020 European Union Funding for Research & Innovation

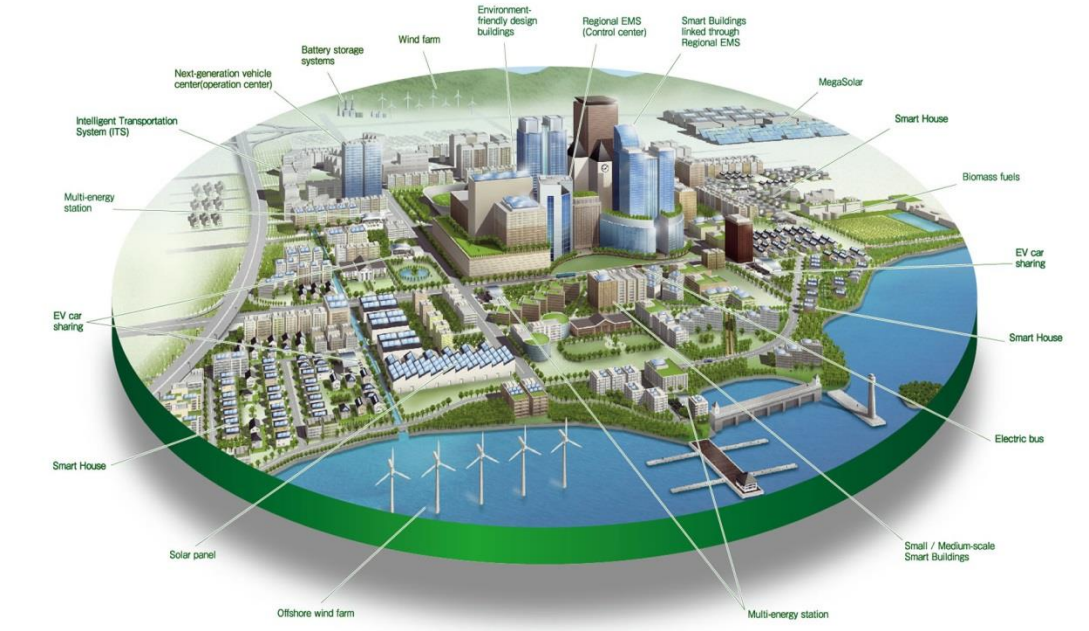


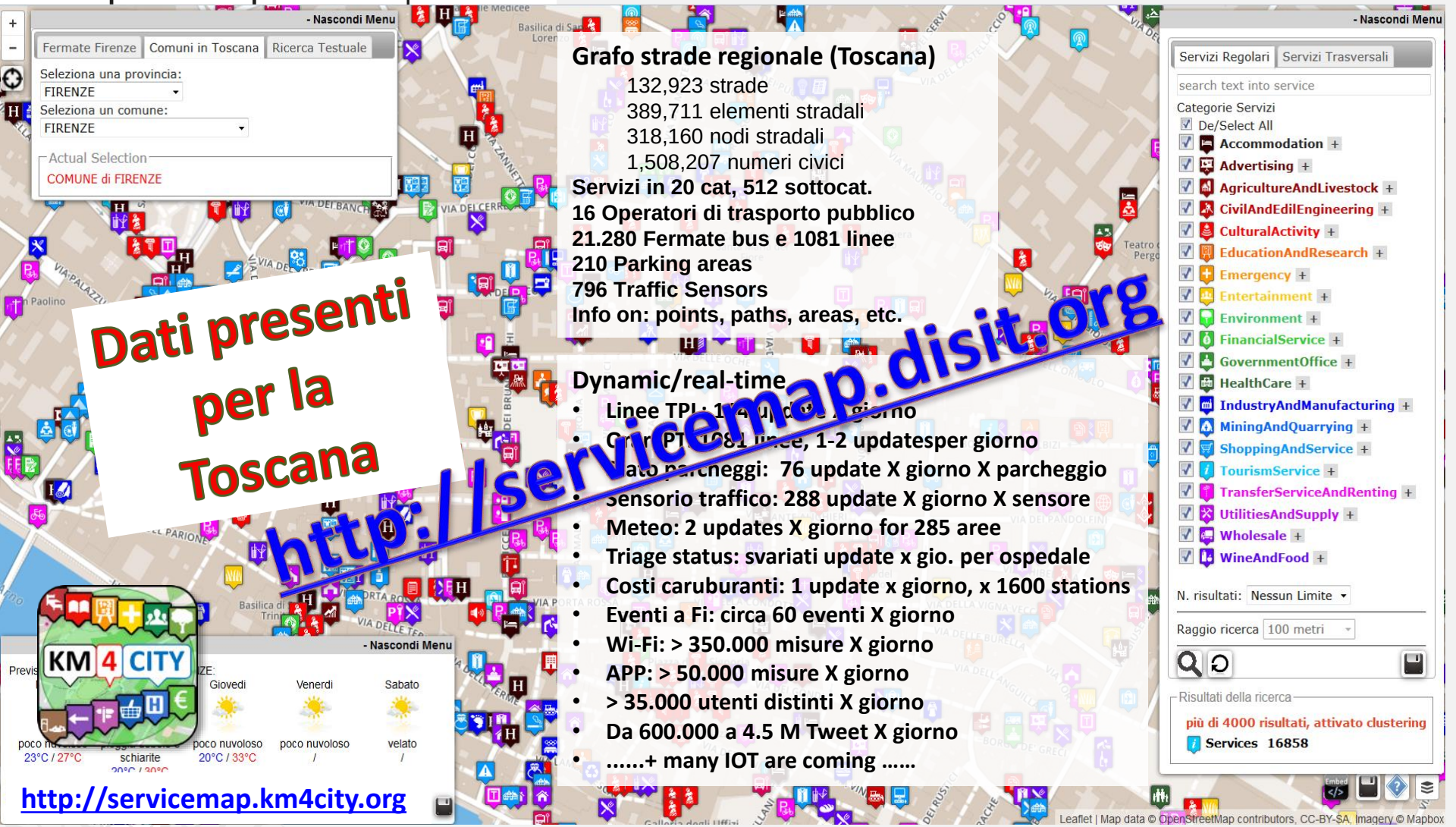
http://www.km4city.org/dash.html

DISIT lab overview, April 2017, Florence

Smartness, smart city needs 6 features

- Smart Health
- Smart Education
- Smart Mobility
- Smart Energy
- Smart Governmental
  - Smart economy
  - Smart people
  - Smart environment
  - Smart living
- Smart Telecommunication





Grafo strade regionale (Toscana)

- 132,923 strade
- 389,711 elementi stradali
- 318,160 nodi stradali
- 1,508,207 numeri civici

Servizi in 20 cat, 512 sottocat.
16 Operatori di trasporto pubblico
21.280 Fermate bus e 1081 linee
210 Parking areas
796 Traffic Sensors
Info on: points, paths, areas, etc.

Dati presenti per la Toscana

http://servicemap.disit.org

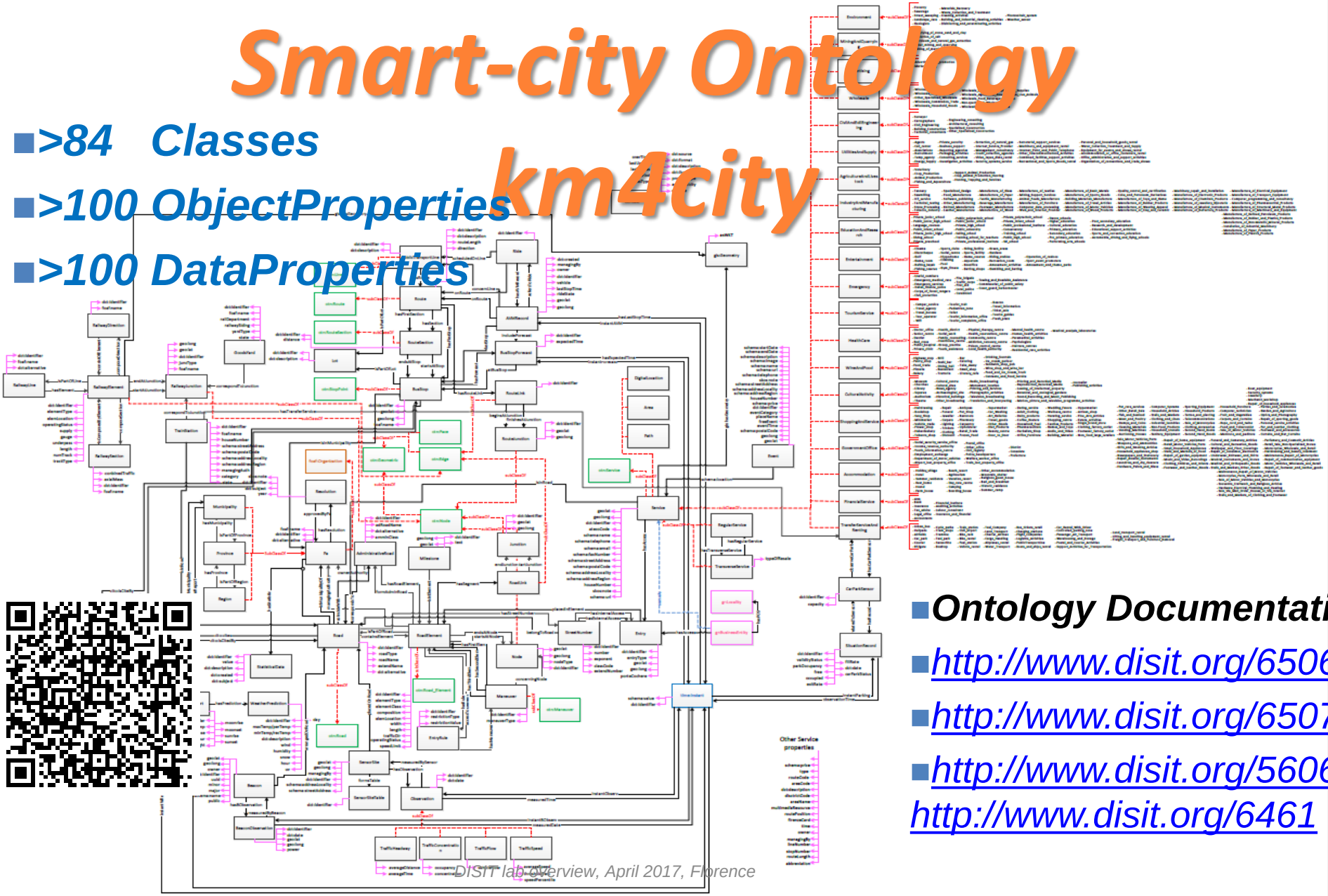
Dynamic/real-time

- **Linee TPL: 1/4 update X giorno**
- **Grafo PT 1081 linee, 1-2 updatesper giorno**
- **Dato parcheggi: 76 update X giorno X parcheggio**
- **Sensorio traffico: 288 update X giorno X sensore**
- **Meteo: 2 updates X giorno for 285 aree**
- **Triage status: svariati update x gio. per ospedale**
- **Costi caruburanti: 1 update x giorno, x 1600 stations**
- **Eventi a Fi: circa 60 eventi X giorno**
- **Wi-Fi: > 350.000 misure X giorno**
- **APP: > 50.000 misure X giorno**
- **> 35.000 utenti distinti X giorno**
- **Da 600.000 a 4.5 M Tweet X giorno**
- **.....+ many IOT are coming .....**

Smart-city Ontology

km4city

- >84 Classes
- >100 ObjectProperties
- >100 DataProperties

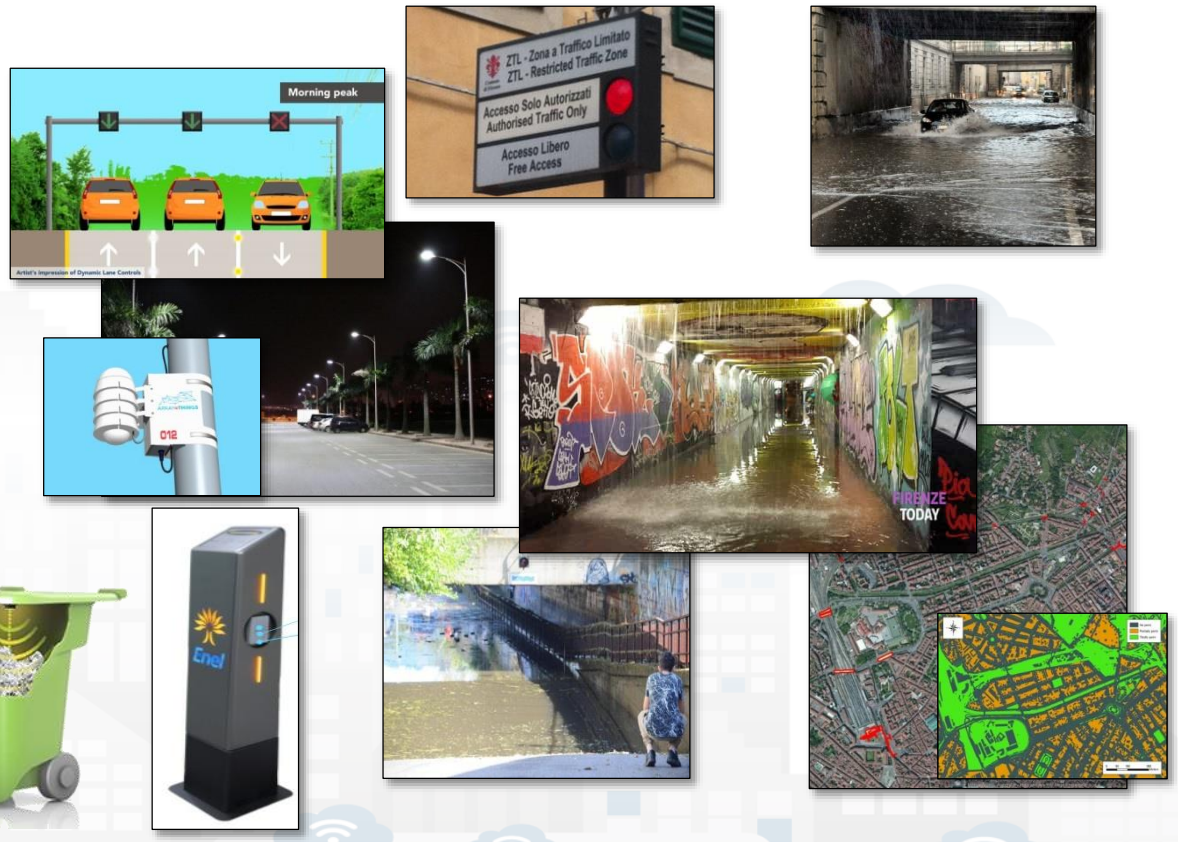


- Ontology Documentati
- http://www.disit.org/6506
- http://www.disit.org/6507
- http://www.disit.org/5606

http://www.disit.org/6461

Si stanno aggiungendo molti altri dati

- IOT/IOE
- ZTL
- Sensori ambientali
- Illuminazione
- Panchine
- Cassonetti
- Colonnine di ricarica
- Parcheggi disabili
- Livelli acqua nei sottopassi
- Etc.



Km4City su Firenze

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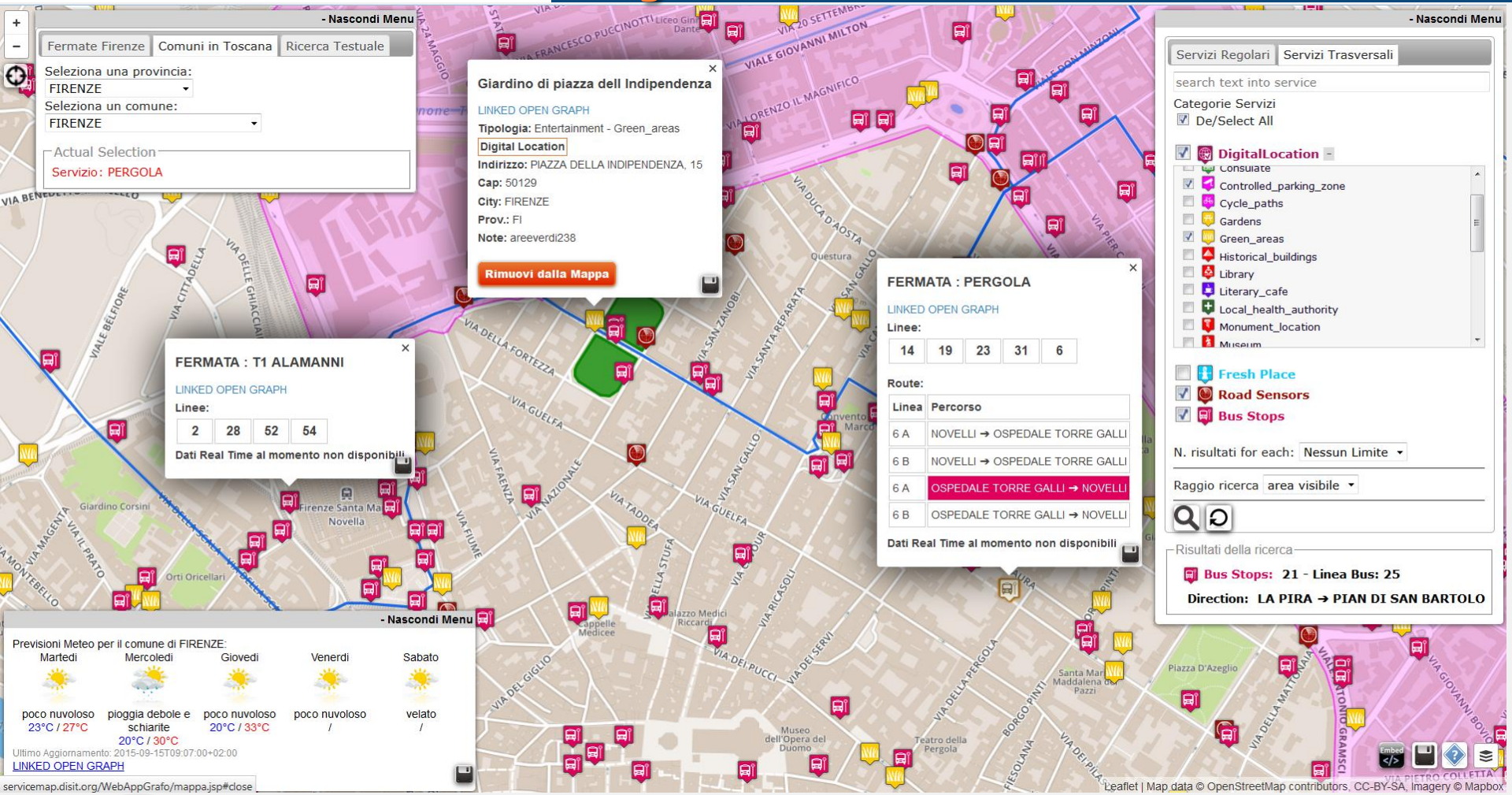

- Aree, percorsi ATAF, Ciclabili, tramvia, ZTL, etc.

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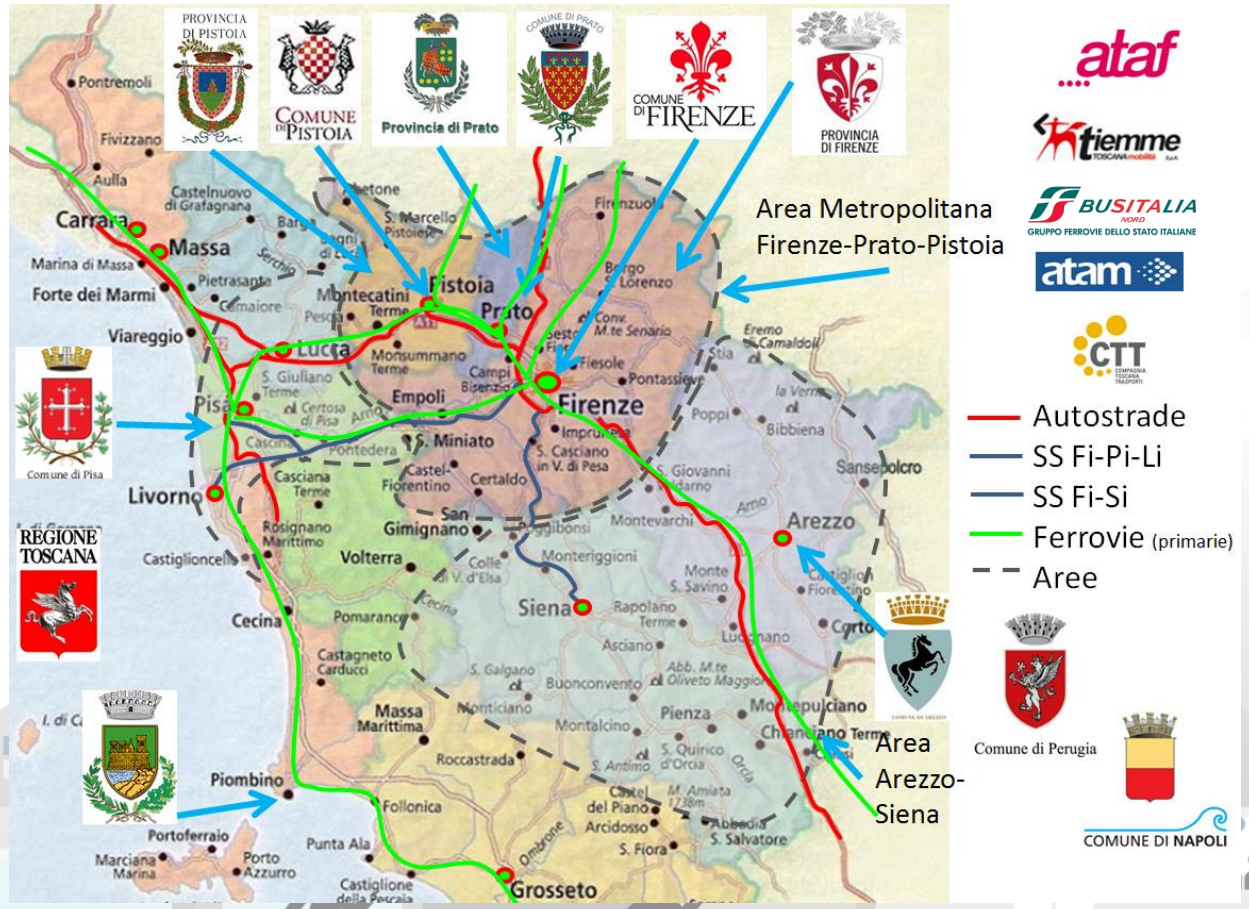
Sii-Mobility

- *Experimentations and validation in Tuscany*
- *Integration with present central station and subsystems*
- *DISIT lab, Università di Firenze, is the coordinator*

■ http://www.Sii-Mobility.org

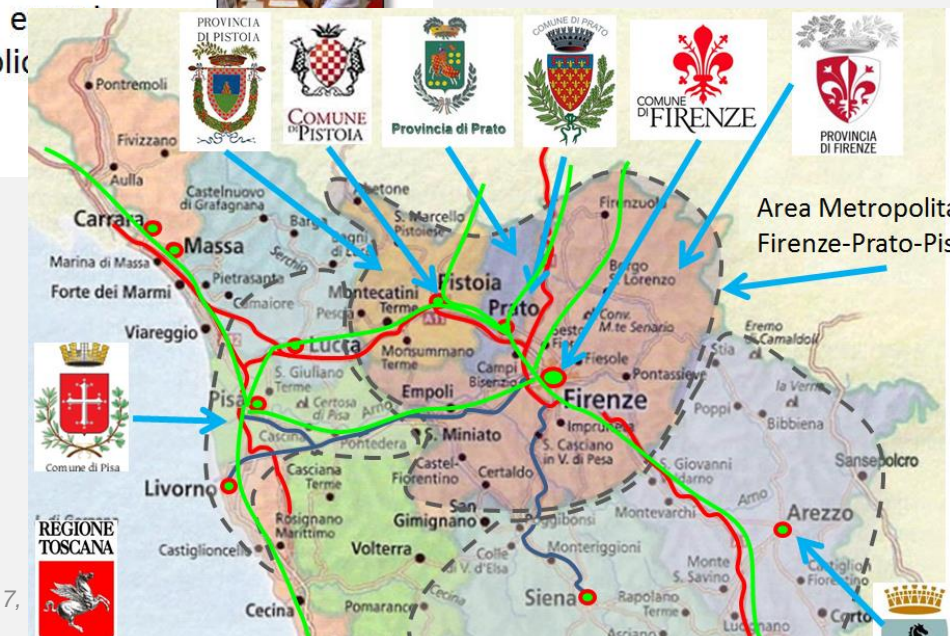


ECM*; *Swarco Mizar*; *Inventi In20; Geoin; QuestIT; Softec; T.I.M.E.; LiberoLogico; ***MIDRA (autostrade, motorola); *ATAF; Tiemme; CTT Nord; BUSITALIA; A.T.A.M.; Effective Knowledge; eWings; Argos Engineering; Elfi; Calamai & Agresti; Project; Negentis***

Distributed Data Intelligence and Technologies
Distributed Systems and Internet Technologies
Department of Information Engineering (DINFO)
http://www.disit.dinfo.unifi.it

Sii-Mobility

http://www.sii-mobility.org



- Sperimentazioni principalmente in Toscana
- Sperimentazioni piu' complete in aree primarie ad alta integrazione dati
- Integrazione con i sistemi presenti

Obiettivi Generali (sintesi)

- **ridurre i costi sociali della mobilità** per le persone
  - consentendo **minori disagi, maggiore efficienza,**
  - **maggiore sensibilità verso le necessità del cittadino**,
  - minori emissioni, migliori condizioni ambientali;
  - percorsi info-formativi in modo che il **cittadino cambi le abitudini non virtuose**;
  - **ridurre i costi di trasporto ed i tempi di percorrenza** per gli utenti, per i gestori e le amministrazioni, tramite soluzioni di ottimizzazione.
- **semplificare l'uso dei sistemi di mobilità**
  - **sensori innovativi per AVM** e mezzi privati sul territorio
  - **Sistemi integrati di pagamento** e di identificazione
  - **soluzioni di guida/percorso connesso** (connect drive, smart drive o walk)
  - **Integrazione di dati** provenienti da gestori e sorgenti di tipo diverso
  - **Gestione avanzata di mezzi**
  - **misurazione di flussi**
  - **realizzazione di sensori, attuatori**

- **Sperimentazione su comuni e province della Toscana**
- **Contribuire al miglioramento degli standard nazionali ed internazionali**

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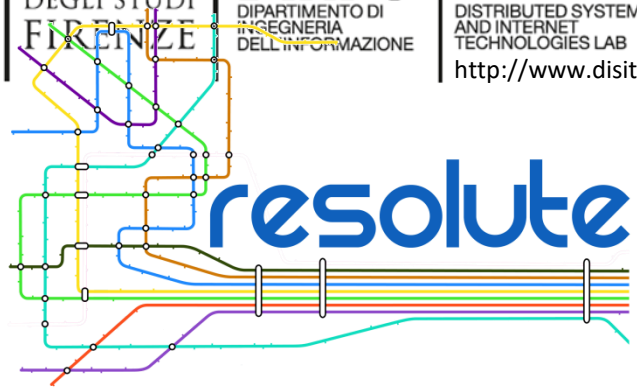
DISIT DISTRIBUTED SYSTEMS AND INTERNET TECHNOLOGIES LAB
http://www.disit.org

Horizon 2020
European Union Funding
for Research & Innovation

KM 4 CITY



http://www.resolute-eu.org

- **Develop European Resilience Management Guidelines (ERMG)**
  - Develop a conceptual framework for creating/ maintaining Urban Transport Systems
- Enhance resilience through improved support of human decision making processes, particularly by training professionals and civil users on the ERMG and the RESOLUTE system
- **Operationalize and validate the ERMG by implementing the RESOLUTE Collaborative Resilience Assessment and Management Support Systems (CRAMSS) for Urban Transport Systems** addressing Road and Urban Rail Infrastructures
  - **Pilots in Florence and Athens**
- Adoption of the ERMG at EU and Associated Countries level

University of Florence: DISIT lab DINFO (Proj coordinator), DISIA and DST	UNIFI	IT
THALES	THALES	IT
ATTIKOMetro	ATTIKO	GR
Comune di Firenze	CDF	IT
Centre for Research and Technology Hellas	CERTH	GR
Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.	FHG	DE
HUMANIST	HUMANIST	FR
SWARCO Mizar	SWMIZ	IT
Associação para o Desenvolvimento da Investigação no Instituto Superior de Gestão	ADI-ISG	PT
Consorzio Milano Ricerche	CMR	IT

REPLICATE

Horizon 2020
European Union Funding
for Research & Innovation

REnaissance of PLaces
with Innovative Citizenship
And TEchnology

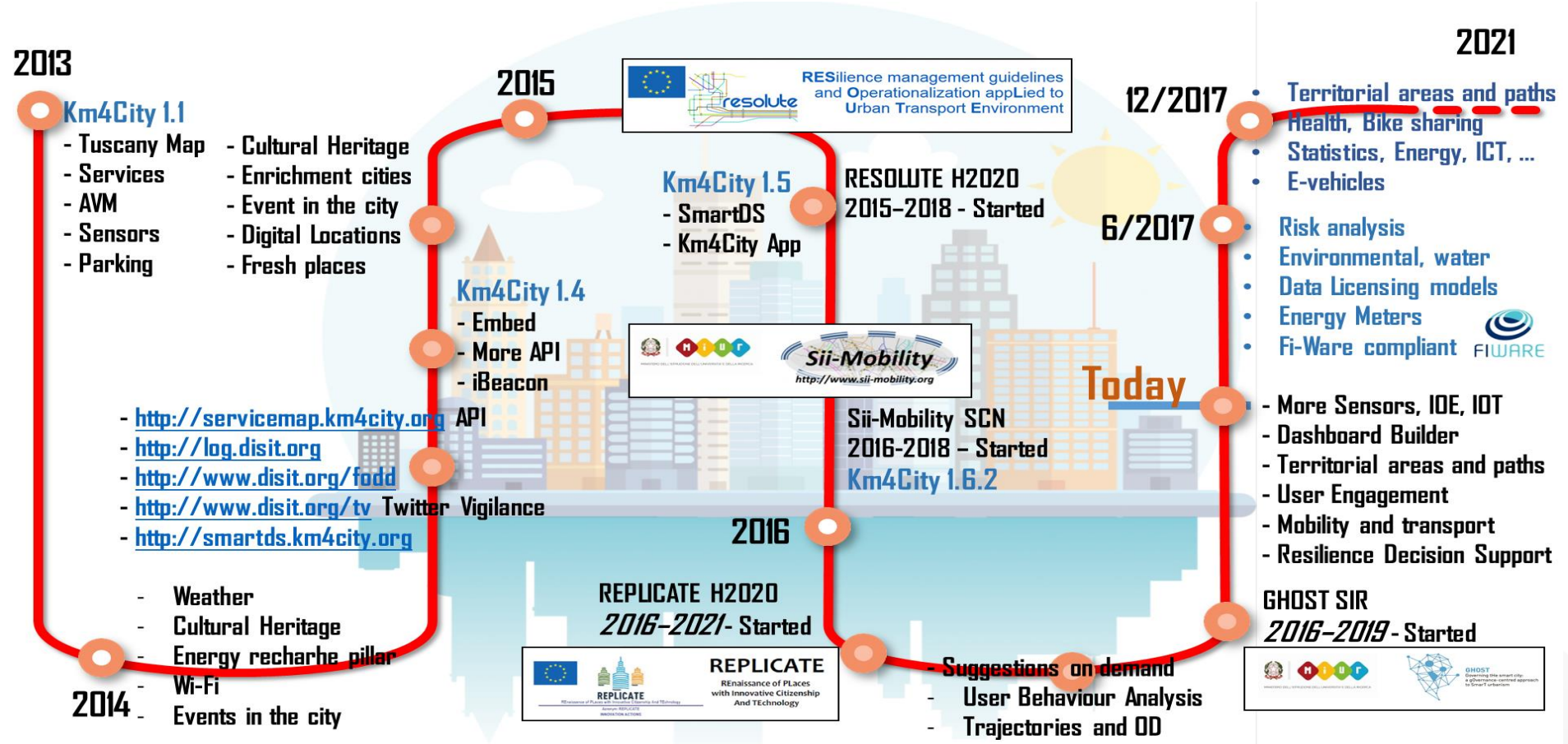
COMUNE DI FIRENZE

Smart Florence Plan

- ***demonstrate Smart City technologies in energy, transport and ICT in districts in:***
  - ***San Sebastian, Florence and Bristol,***
  - ***follower cities of Essen, Nilufer and Lausanne***
- *Cities are the customer: considering local specificities*
- *Solutions must be replicable, interoperable and scalable.*
  - *Integrated Infrastructure: deployment of ICT architecture, from internet of things to applications*
  - *Low energy districts*
  - *Urban mobility: sustainable and smart urban services*

- ***1 (coordinator) FOMENTO DE SAN SEBASTIAN FSS SPAIN***
- *2 AYUNTAMIENTO DE SAN SEBASTIAN SAN SEBASTIAN SPAIN*
- ***3 COMUNE DI FLORENCE FLORENCE ITALY***
- *4 BRISTOL COUNCIL BRISTOL UNITED KINGDOM*
- *5 STADT ESSEN ESSEN GERMANY*
- *6 NILUFER BELEDIYESI NILUFER TURKEY*
- *7 VILLE DE LAUSANNE LAUSANNE SWITZERLAND*
- *8 IKUSI ANGEL IGLESIAS, S.A. IKUSI SPAIN*
- *9 ENDESA ENERGÍA, S.A. ENDESA SPAIN*
- *10 EUROHELP CONSULTING, S.L. EUROHELP SPAIN*
- *11 ILUMINACION INTELIGENTE LUIX, S.L. LUIX SPAIN*
- *12 FUNDACION TECNALIA RESEARCH & INNOVATION TECNALIA SPAIN*
- *13 EUSKALTEL, S.A. EUSKALTEL SPAIN*
- *14 COMPAÑÍA DEL TRANVÍA DE SAN SEBASTIÁN DBUS SPAIN*
- ***15 CONSIGLIO NAZIONALE DELLE RICERCHE CNR ITALY***
- ***16 ENEL DISTRIBUZIONE, SPA ENEL ITALY***
- ***17 MATHEMA, SRL MATHEMA ITALY***
- ***18 SPES CONSULTING SPES ITALY***
- ***19 TELECOM ITALIA, SPA TELECOM ITALY***
- ***20 UNIVERSITA DEGLI STUDI DI FLORENCE UNIFI ITALY: DINFO.DISIT, DIEF***
- ***21 THALES ITALIA, SPA THALES ITALY***
- *22 ZABALA INNOVATION CONSULTING ZABALA SPAIN*
- *23 TECHNOMAR TECHNOMAR GERMANY*
- *24 UNIVERSITY OF BRISTOL UOB UNITED KINGDOM*
- *25 UNIVERSITY OF OXFORD UOXF UNITED KINGDOM*
- *26 BRISTOL IS OPEN, LTD BIO UNITED KINGDOM*
- *27 ZEETTA NETWORKS ZEETTA UNITED KINGDOM*
- *28 KNOWLE WEST MEDIA CENTRE, LGB KWMC UNITED KINGDOM*
- *29 TOSHIBA RESEARCH EUROPE, LTD TREL UNITED KINGDOM*
- *30 ROUTE MONKEY, LTD ROUTE MONKEY UNITED KINGDOM*
- *31 ESOTERIX SYSTMES, LTD ESOTERIX UNITED KINGDOM*
- *32 NEC LABORATORIES EUROPE, LTD NEC UNITED KINGDOM*
- *33 COMMONWHEELS CAR CLUB CIC CO-WHEELS UNITED KINGDOM*
- *34 UNIVERSITY OF THE WEST OF ENGLAND UWE UNITED KINGDOM*
- *35 ESADE BUSINESS SCHOOL ESADE SPAIN*
- *36 SISTELEC SOLUCIONES DE TELECOMUNICACION, S.L. SISTELEC SPAIN*

Km4City Roadmap

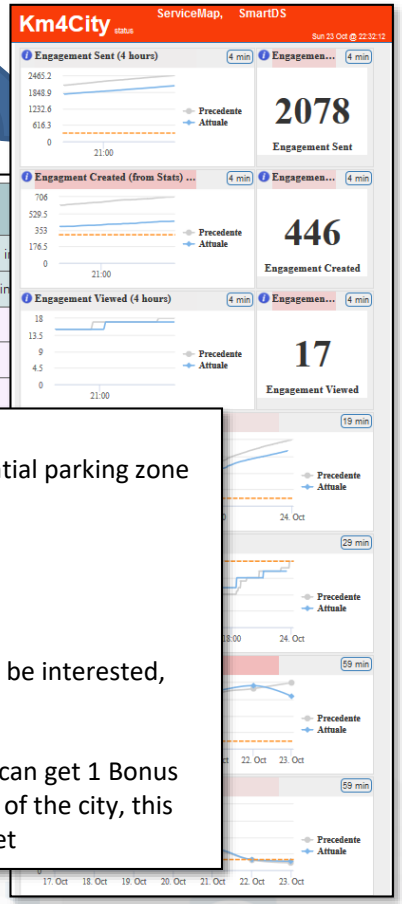


User influencing, engaging, monitoring & Follow Up

City & City Operators Strategy Editor

Any Mobile and Web App

Rule name	Type	#sent	#viewed	#viewed on #sent	Description
daily_event_de	ENGAGEMENT	1 (0%)	0 (0%)	0%	Suggest (in german) an event currently on i
daily_event_en	ENGAGEMENT	1720 (2.12%)	70 (7.1%)	4.07%	Suggest (in english) an event currently on in
	- commuter	5 (0.29%)	0 (0%)	0 (0%)	
	- student	14 (0.81%)	0 (0%)	0 (0%)	
	- tourist	1462 (85%)	25 (35.71%)	25 (1.71%)	
	- citizen	113 (6.57%)			
	- operator	0 (0%)			
	- disabled	0 (0%)			
	- all	119 (6.92%)			
daily_event_es	ENGAGEMENT	6 (0.01%)			
daily_event_fr	ENGAGEMENT	6 (0.01%)			
daily_event_it	ENGAGEMENT	5459 (6.73%)			
parking_en	ASSISTANCE	141 (0.17%)			
parking_es	ASSISTANCE	3 (0%)			
parking_it	ASSISTANCE	187 (0.23%)			
shoot_a_photo_de	ENGAGEMENT	68 (0.08%)			



Inform

You have parked out of your residential parking zone
The Road cleaning is this night
The waste in S.Andreas Road is full

Engage

Provide a comment, a score, etc..

Stimulate / recommend

Events in the city, services your may be interested, etc..

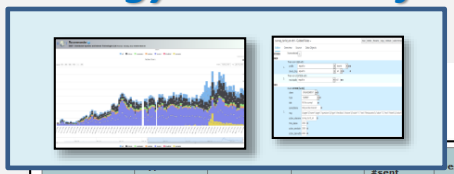
Provide Bonus

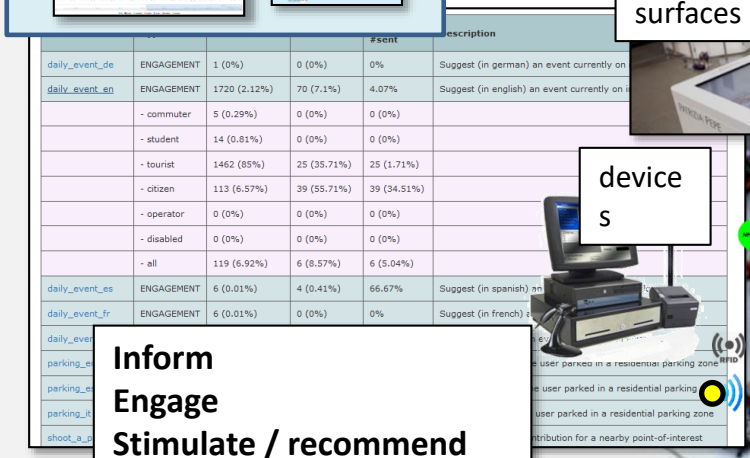
Since you have parked here you we can get 1 Bonus
We suggest you to leave the car out of the city, this bonus can be used to buy a bus ticket

Human monitoring/engaging

Operators

Strategy Editor and feedback





Inform
Engage
Stimulate / recommend
Detect anaomalies
Provide Bonus, incetives

Totem

surfaces

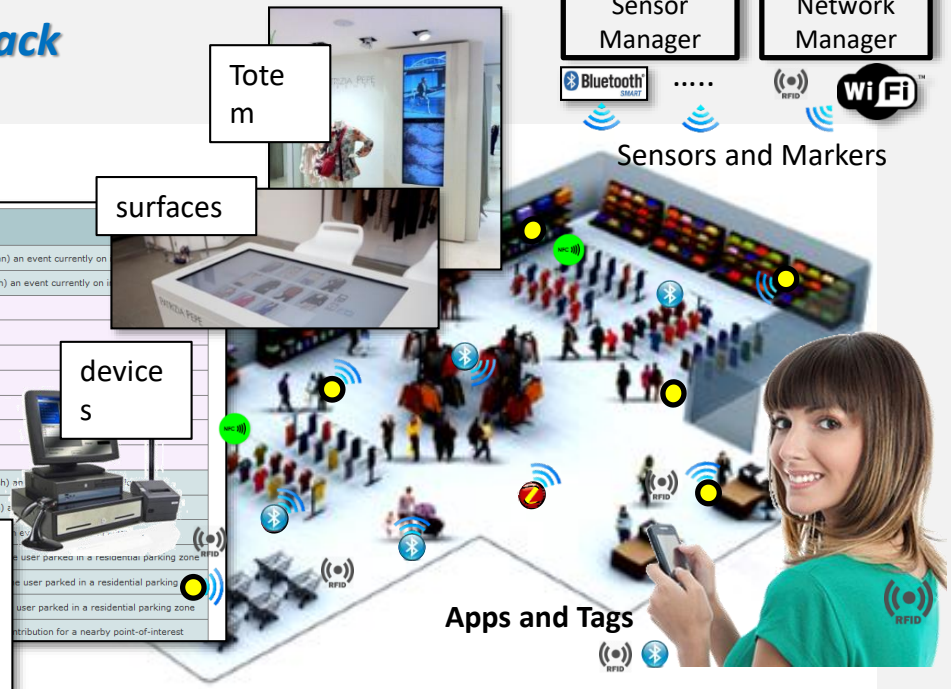
devices

Sensor Manager

Network Manager

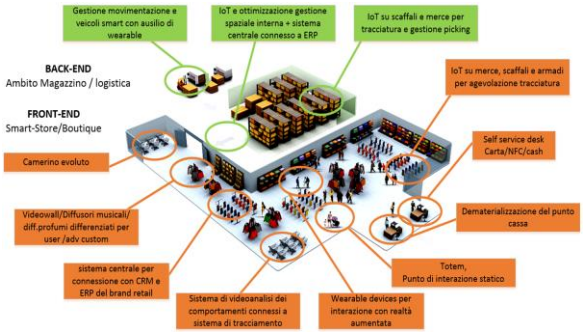
Bluetooth ..... Wi Fi

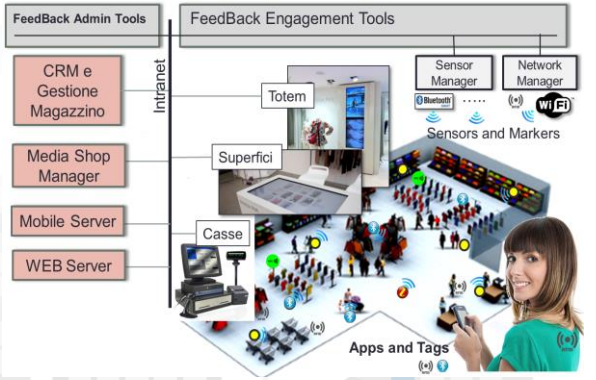
Sensors and Markers



Smart Retail

- **Feedback Project, from Feb 2017**
  - Flexible Advanced Engagement Exploiting User Profiles and Product/Production Knowledge
  - VAR, PatriziaPepe (Tessilform), DISIT, Effective Knowledge, SICE
  - Keywords: retail, GDO, …
- **Goals and drivers:**
  - adaptive user engagement, customer experience
  - Advanced user profiling, user behavior analysis
  - Predictive models for engagement
  - IOT and instrumentation
  - Integrated incity customer experience





Smart Manufactory

- **Riduzione costi e incremento efficienza**
  - **Automazione** della manutenzione e della produzione
  - **Navigazione** indoor – Outdoor integrata
  - **Ottimizzazione** flussi per utensili, pezzi e materiali
- **Progetti Regionali** con PMI e GI

2014 2020 POR CreO PROGRAMMA OPERATIVO REGIONALE CRESCITA e OCCUPAZIONE
Fondo europeo di sviluppo regionale (Fesr)
REPUBBLICA ITALIANA
Le ali alle tue idee

Smart Factory, Factory 4.0

- **Frontman (Novicrom)**
  - Improving efficiency into the production process via a set of heterogeneous numerical control machines
- **Green Capacity (ALTAIR)**
  - Optimizing chemical plant, automating maintenance and control in large chemical plant, dashboarding
- **Indoor/outdoor navigation system for maintenance**
- → → costs reduction, increase efficiency

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http://www.disit.org

Sistemi a Guida Autonoma

Segnalamento Ferroviario

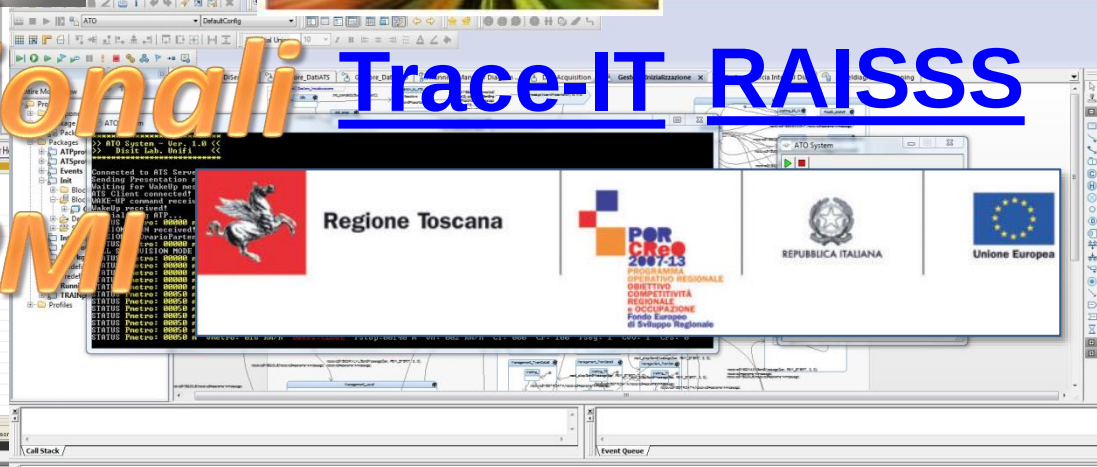
Cluster Trasporti

MINISTERO DELL'ISTRUZIONE DELL'UNIVERSITÀ E DELLA RICERCA

Progetti Regionali

Trace-IT RAISSS

IT verso GI e PMI



Regione Toscana

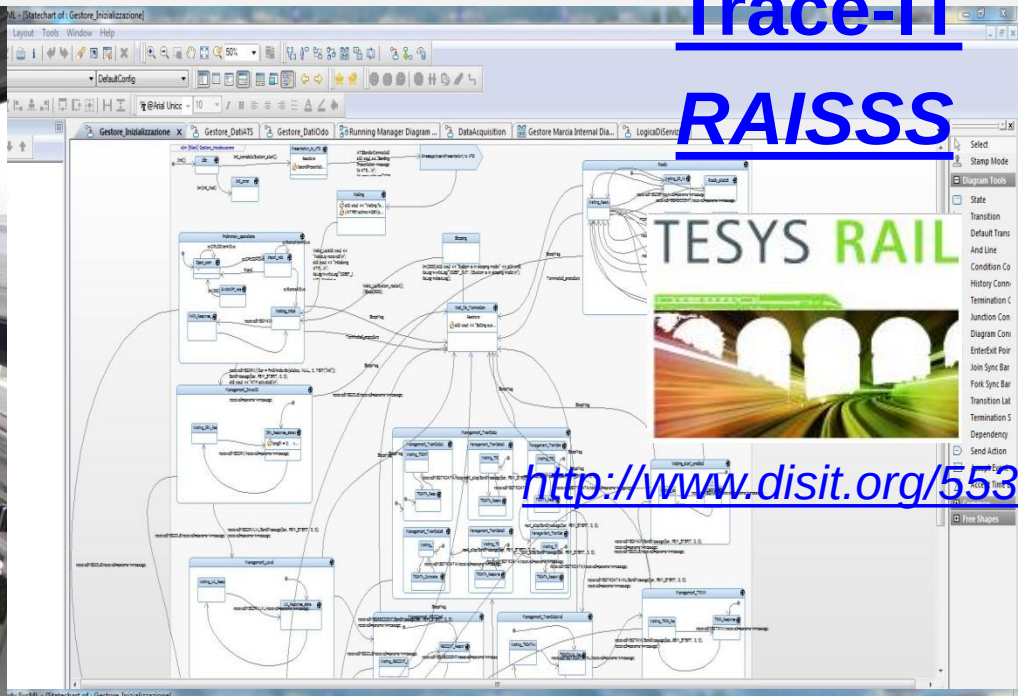
POR CReO 2007-13

REPUBBLICA ITALIANA

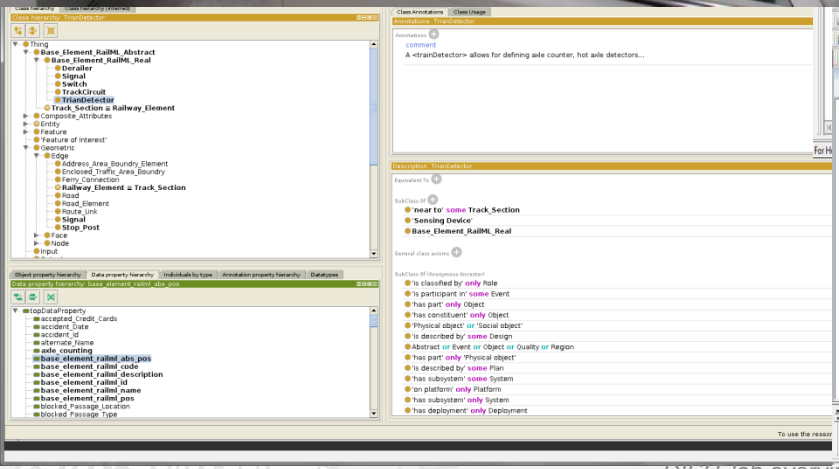
Unione Europea

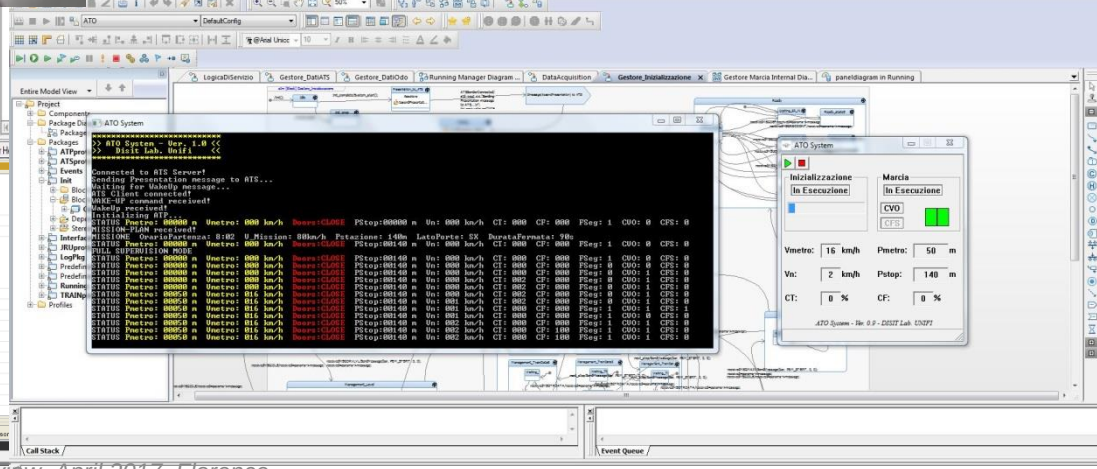
Trace-IT

RAISSS



http://www.disit.org/553





Signaling and formal methods

- **TRACE-IT:** regional project with ECM
  - Design of high speed train software for ATO
  - Verification and validation, train simulator and control
  - ATO: Autonomous Train Operator

Trace-IT

- **RAISSS:** regional project with ECM
  - Design of interlocking system with formal methods
  - Interlocking systems
  - Ontological and property proof approach

RAISSS

- **TesysRail**
  - Signaling system in the national cluster on train and transport solutions

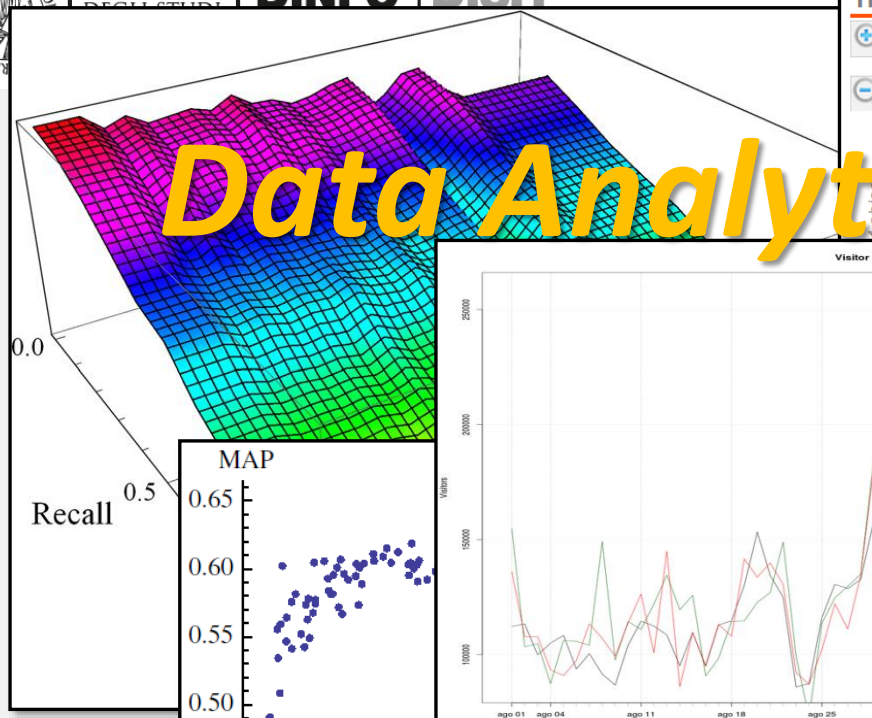
http://www.disit.org/5530

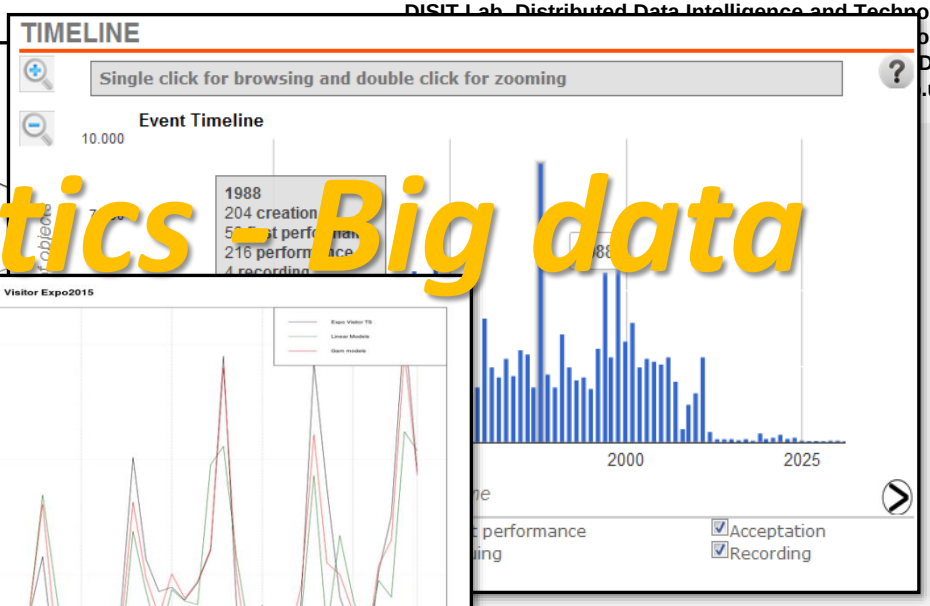
Data Analytics - Big data

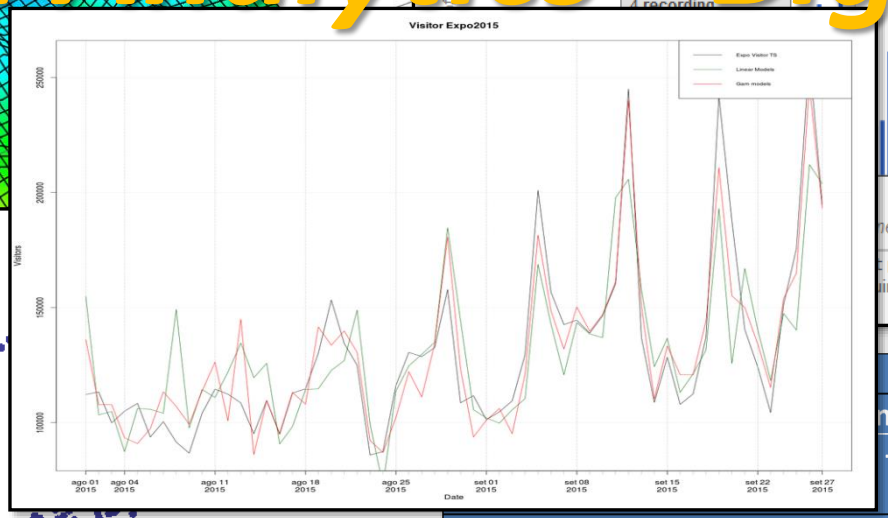
- **Projects:** http://www.disit.org/5501
  - Linked Open Graph: http://LOG.disit.org
  - RESOLUTE H2020: smart decision support, http://www.resolute-eu.org
  - REPLICATE H2020: big data on mobility, services, energy, etc.
  - Sii-Mobility, http://www.sii-mobility.org
- **Tools:** http://www.disit.org/5489
  - Recommendations: Km4city mobile applications
  - Data mining and reconciliation
  - Data reasoning, deduction, prediction, decision support
  - Origin Destination Matrix
    - Traffic and people flow in the city
  - User behavior monitoring and analysis
    - SN Analysis and recommendations
  - Open data and Linked Open Data
    - LOG LOD service and tools

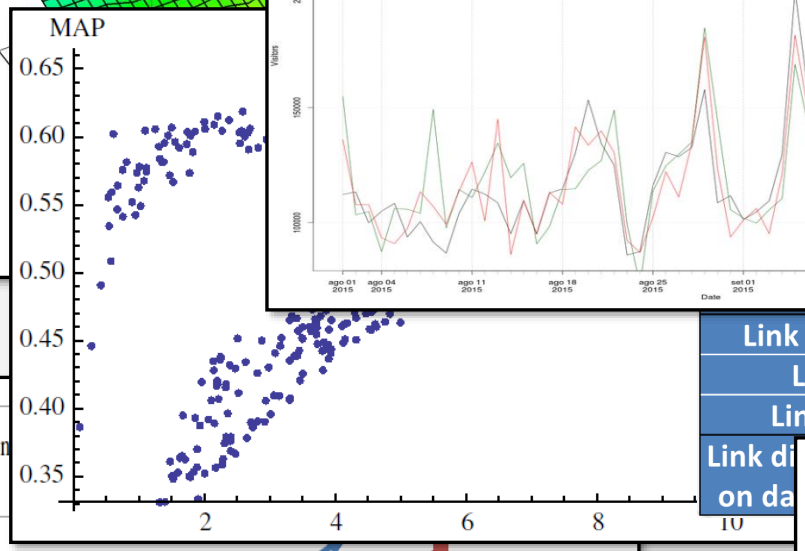
DISIT Lab, Distributed Data Intelligence and Technologies
...logies
...DINFO)
...unifi.it

Data Analytics - Big data

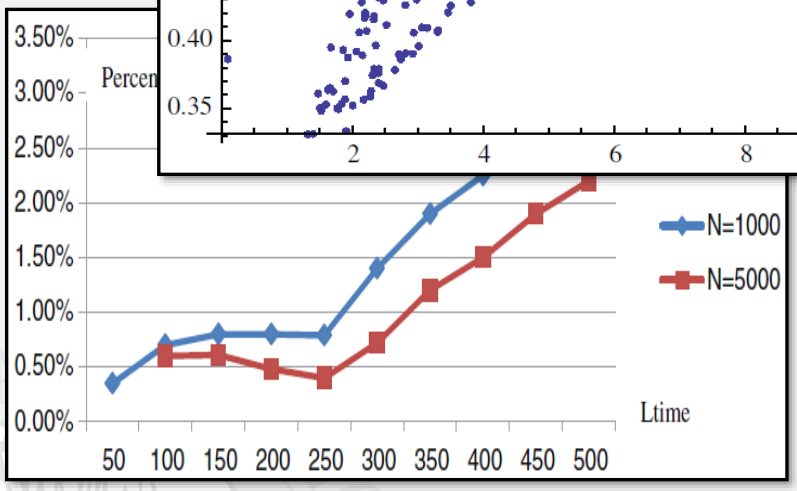


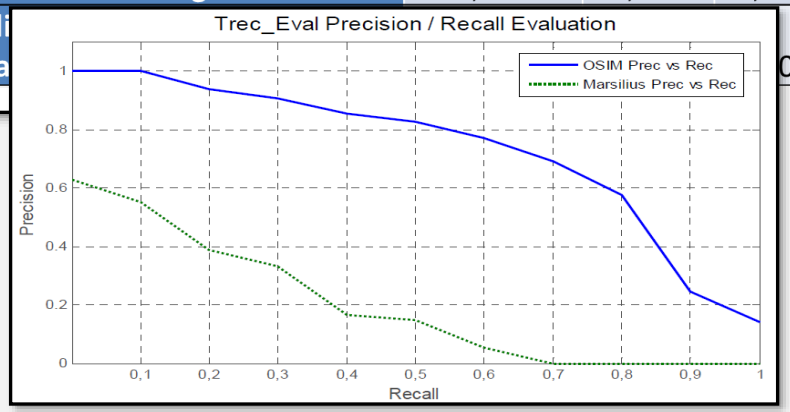




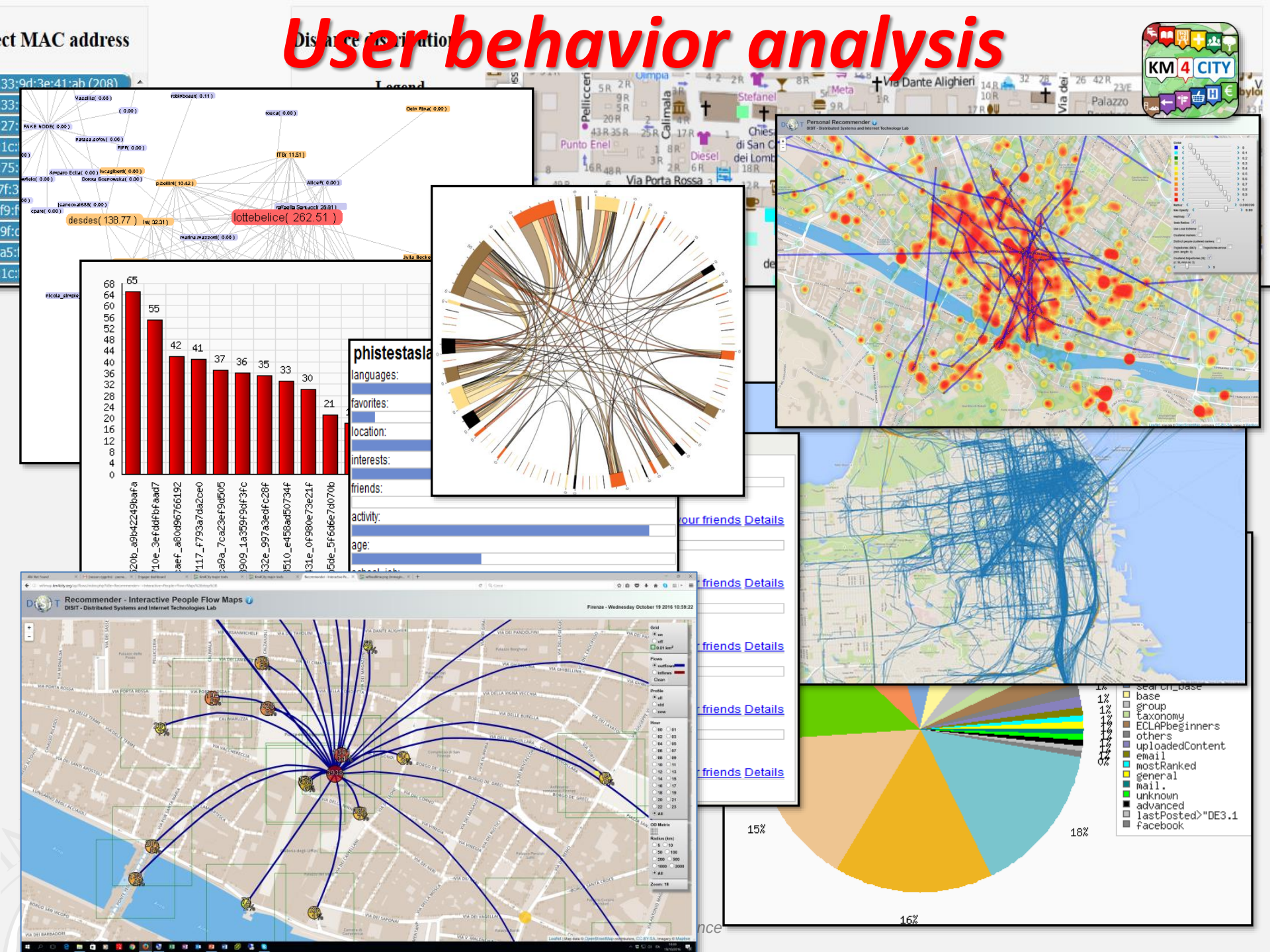


	Precision	Recall	F1
...n	1,00	0,69	0,820
... +	0,985	0,722	0,833
Link discovering - Leveisthein	0,927	0,508	0,656
Link discovering - Dice	0,968	0,674	0,794
Link discovering - Jaccard	1,000	0,472	0,642
Link di... on da...			...06





User behavior analysis



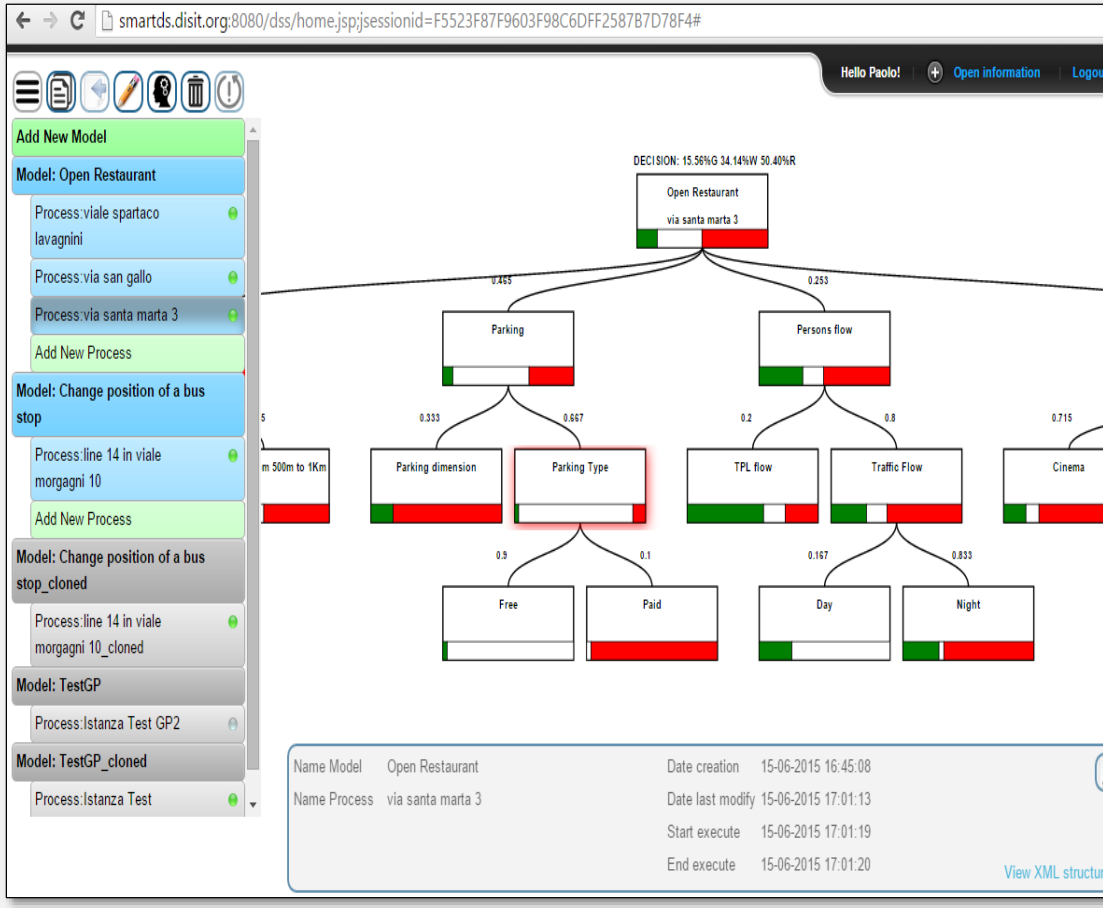
Smart City Decision Support

- http://smartds.disit.org (user paolo.nesi@unifi.it, password= prova)

- ***System Thinking***, well known tool for Smart City decision support sys..

Plus:

- Collaborative work…,
- reuse, copy past, …
- Processes connected with RDF Store of the city via SPARQL queries
- Mathematical model for propagation of decision confidence..



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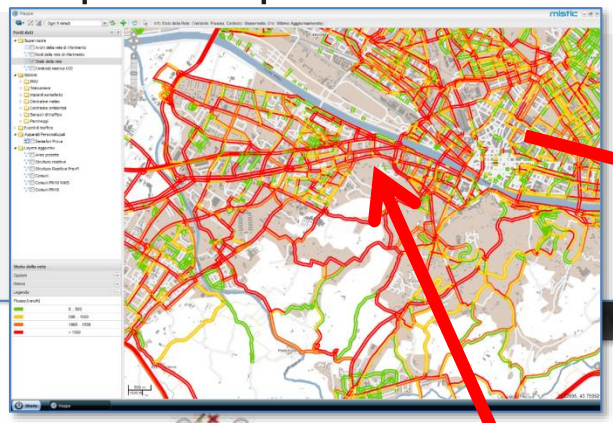
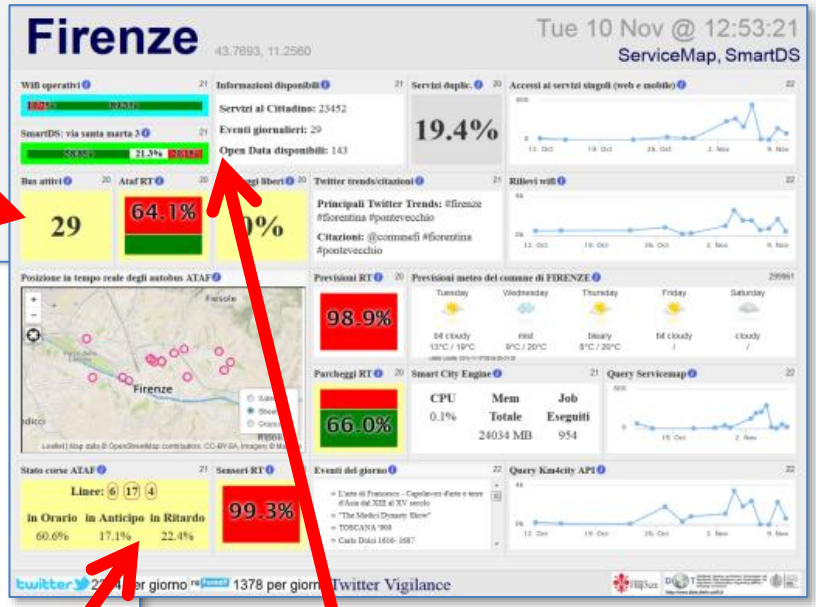
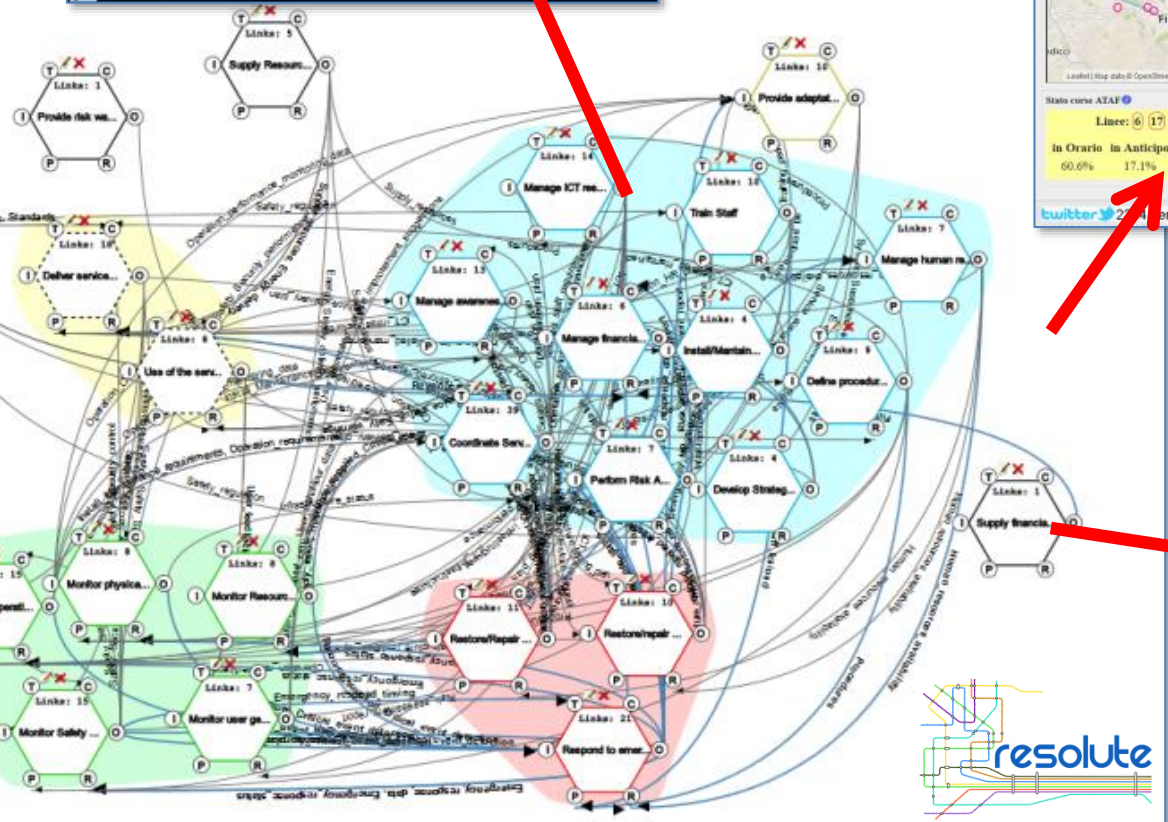
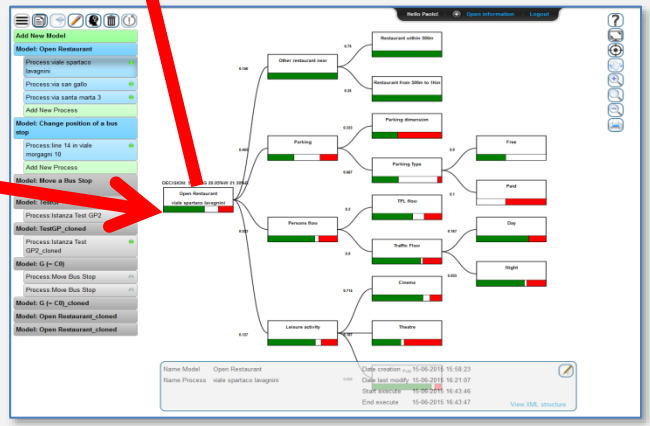
DI DIPARTIMENTO INGEGNERIA DELL'INFORMAZIONE
...ence and Technologies
...Internet Technologies
...n Engineering (DINFO)
...www.disit.dinfo.unifi.it

Dashboarding city resilience





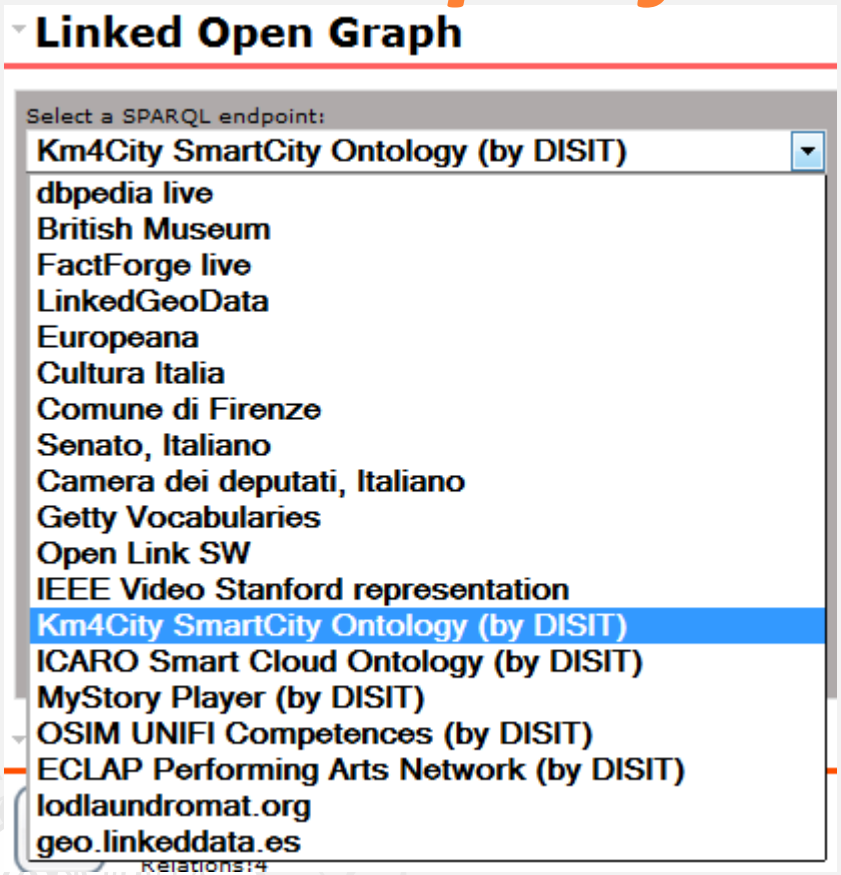


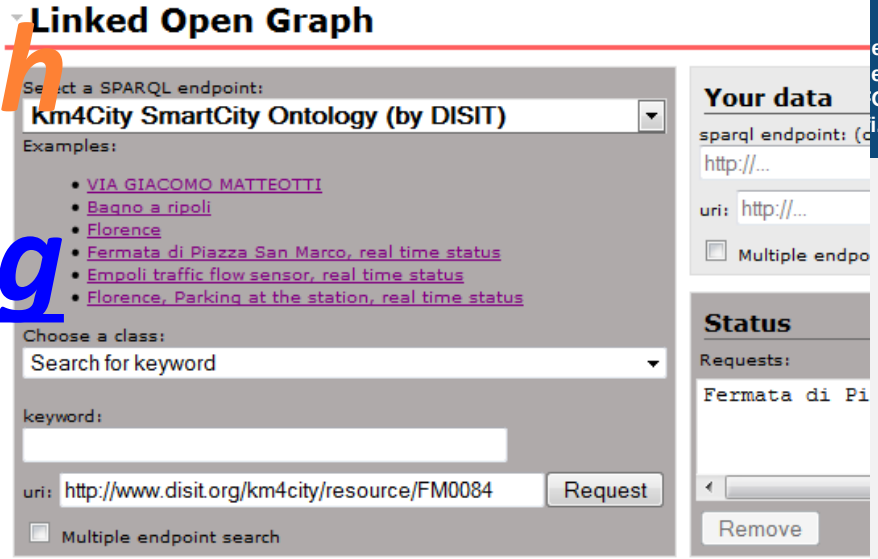


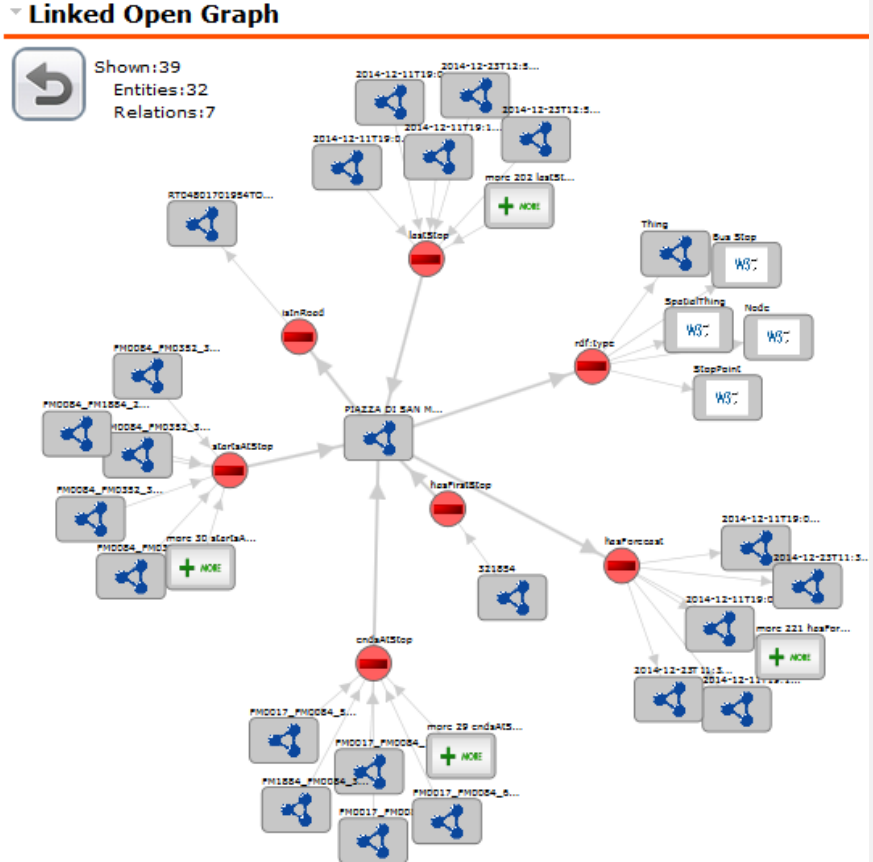
Linked Open Graph

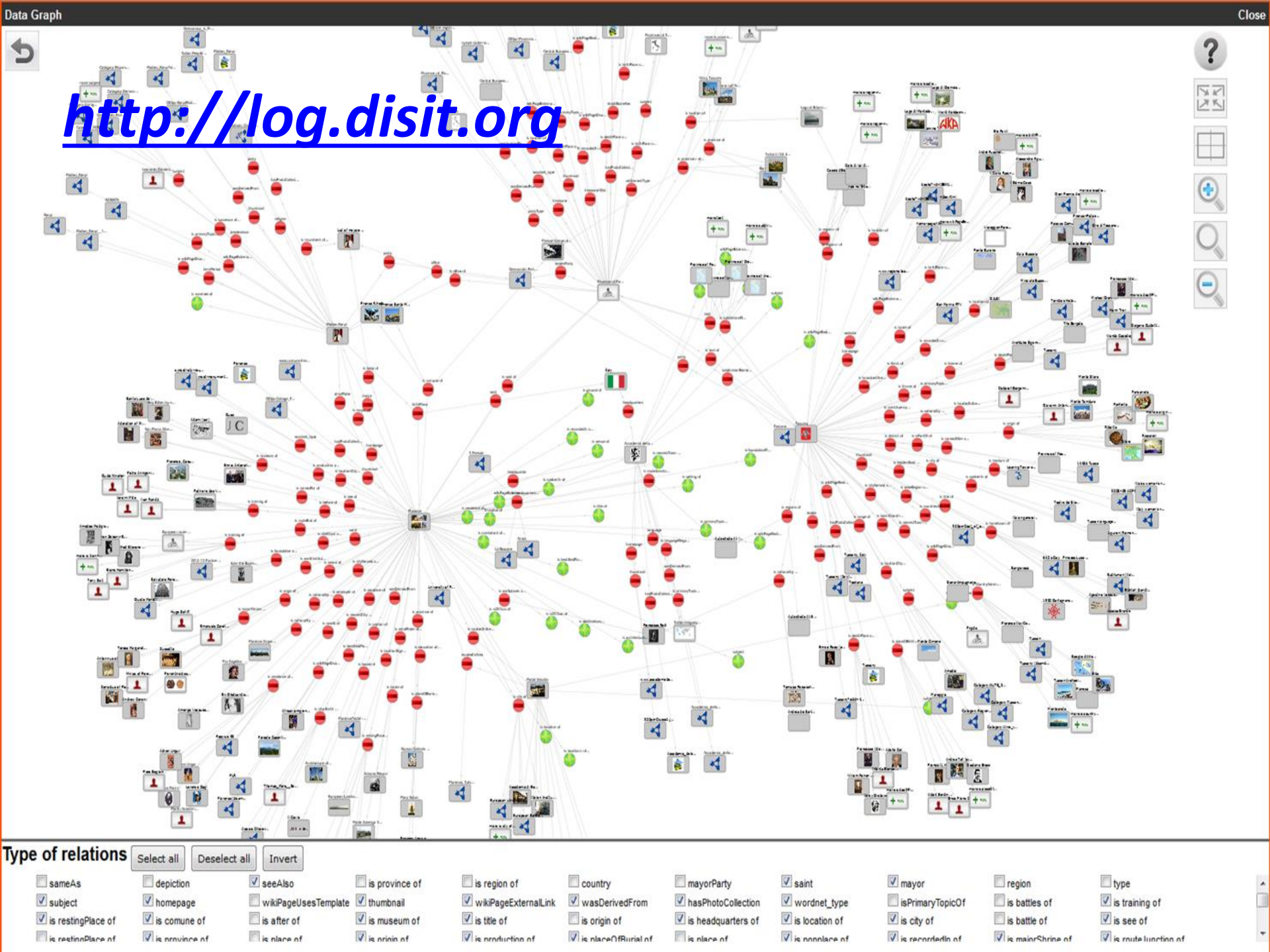
http://log.disit.org

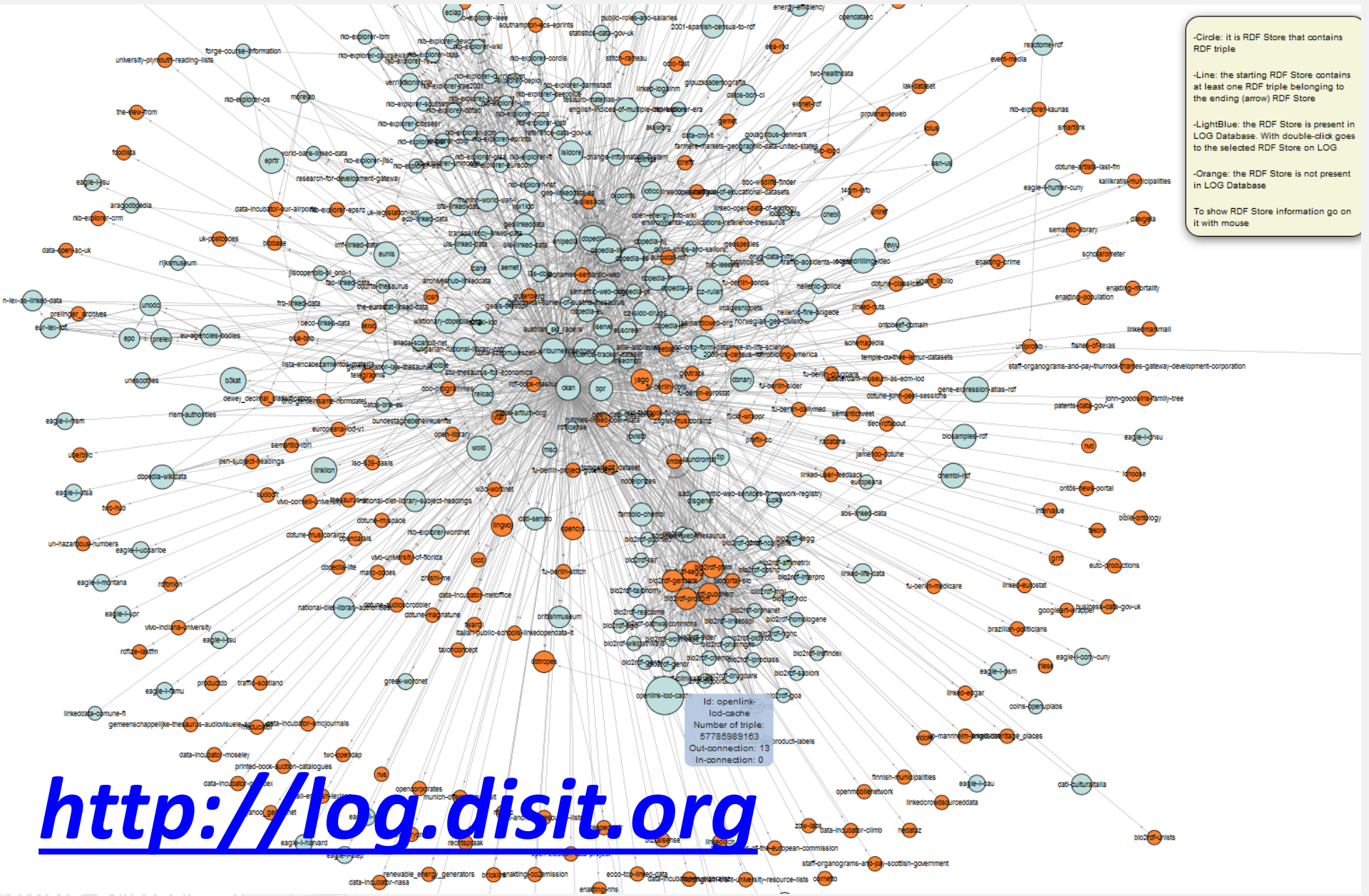
A bus stop info….





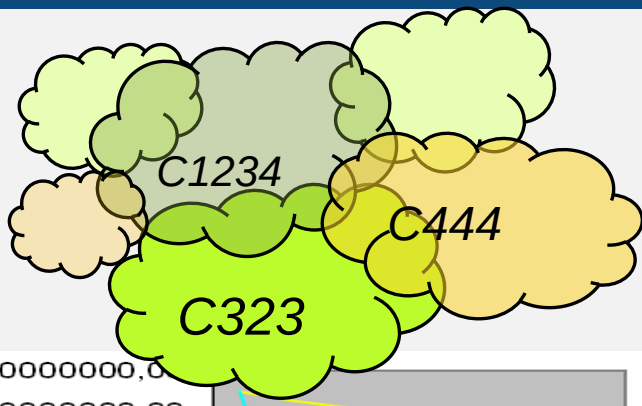


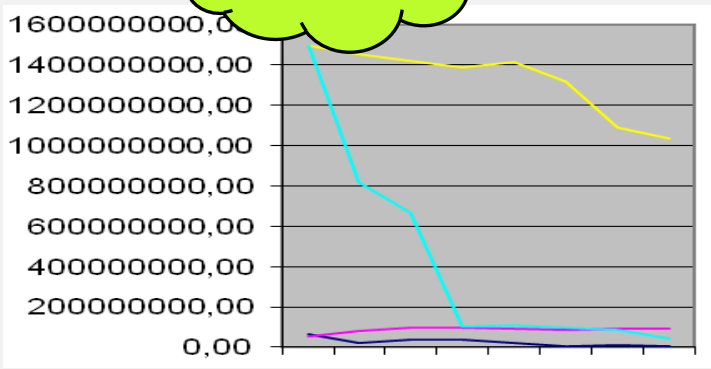

Data Graph
Close
http://log.disit.org
Type of relations
Select all
Deselect all
Invert
sameAs
subject
is restingPlace of
depiction
homepage
is comune of
seeAlso
wikiPageUsesTemplate
is after of
is province of
thumbnail
is museum of
is region of
wikiPageExternalLink
is title of
country
wasDerivedFrom
is origin of
mayorParty
hasPhotoCollection
is headquarters of
saint
wordnet_type
is location of
mayor
isPrimaryTopicOf
is city of
region
is battles of
is battle of
type
is training of
is see of


-Circle: it is RDF Store that contains RDF triple
-Line: the starting RDF Store contains at least one RDF triple belonging to the ending (arrow) RDF Store
-LightBlue: the RDF Store is present in LOG Database. With double-click goes to the selected RDF Store on LOG
-Orange: the RDF Store is not present in LOG Database
To show RDF Store information go on it with mouse
Id: openlink-lod-cache
Number of triple: 57785989163
Out-connection: 13
In-connection: 0
http://log.disit.org

Semantic Computing

- **Semantic Reasoning** on user profilers and content descriptors, clustering
  - **Symbolic profiling reasoning** user/content :
    - static and dynamic aspects
  - **Scalable/incrementable** math solutions
    - For recommendations, suggestion, ads
    - Via symbolic clustering
    - On Millions of users X millions of items
- **Semantic Indexing/Query** of **Multilingual** cross media content:
  - Indexing, fuzzy ad faceted
  - Text processing for Semantic Extractions (comments, forum, profiles, doc, etc.)
  - Ontology and SKOS/taxonomy tools

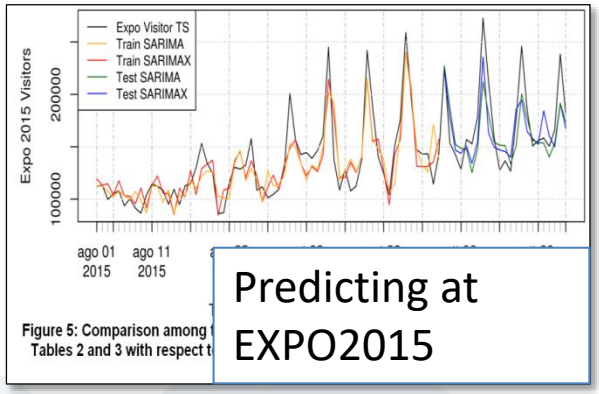




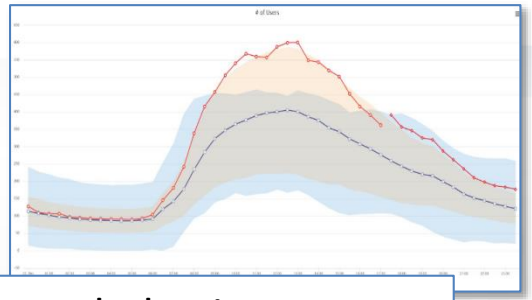
Analysing: Predicting, detection

- Aiming at managing
  - Appreciation
  - User relationships
  - quality of service
  - workload
  - early warning/detection
  - Dysfunction
  - Habitudes

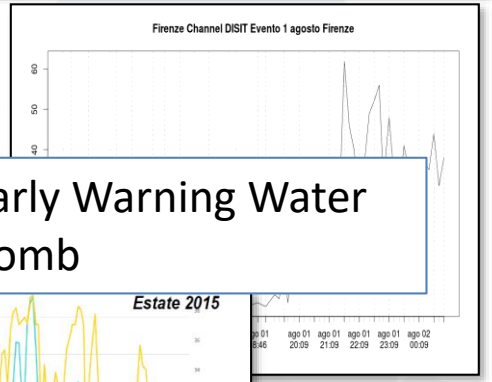
Predicting City Users on Areas



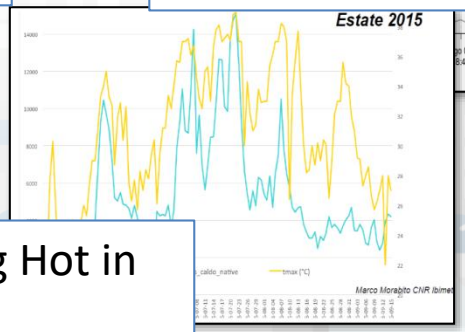
Predicting at EXPO2015



User behaviuor

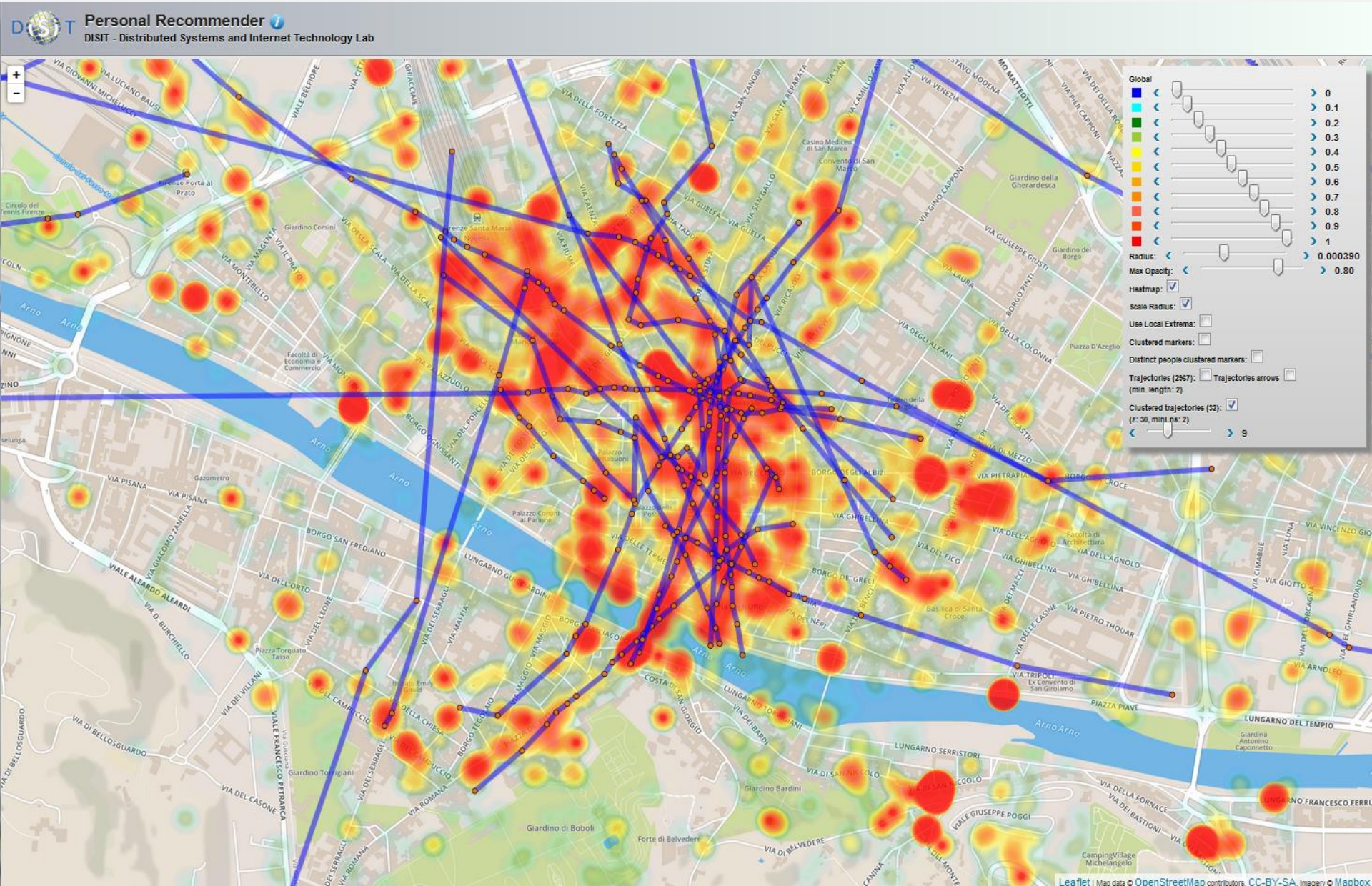


Early Warning Water Bomb



Early Warning Hot in Tuscany

User Behavior Analyzer



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DISIT Lab, Distributed Data Intelligence and Technologies
Distributed Systems and Internet Technologies
Department of Information Engineering (DINFO)
http://www.disit.dinfo.unifi.it

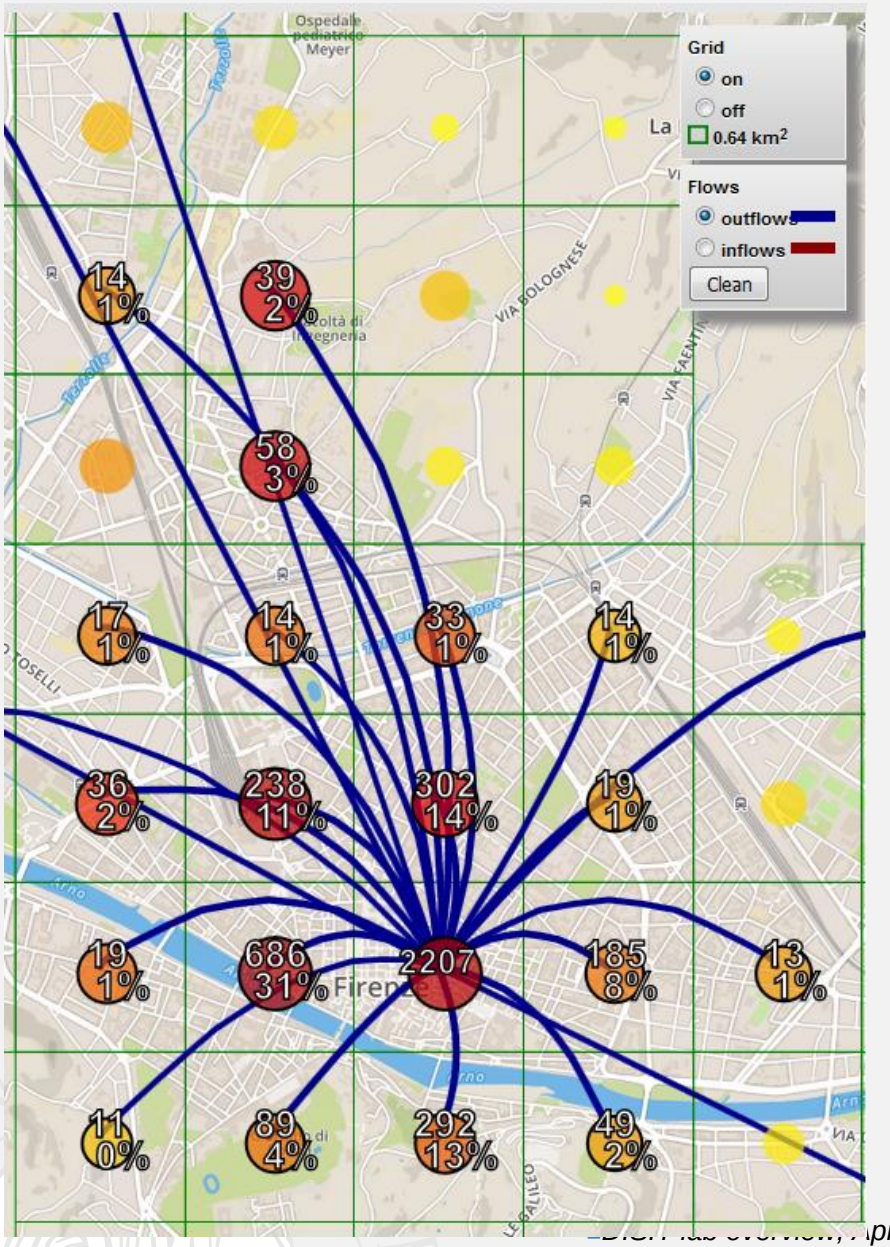
User Behavior Analyzer

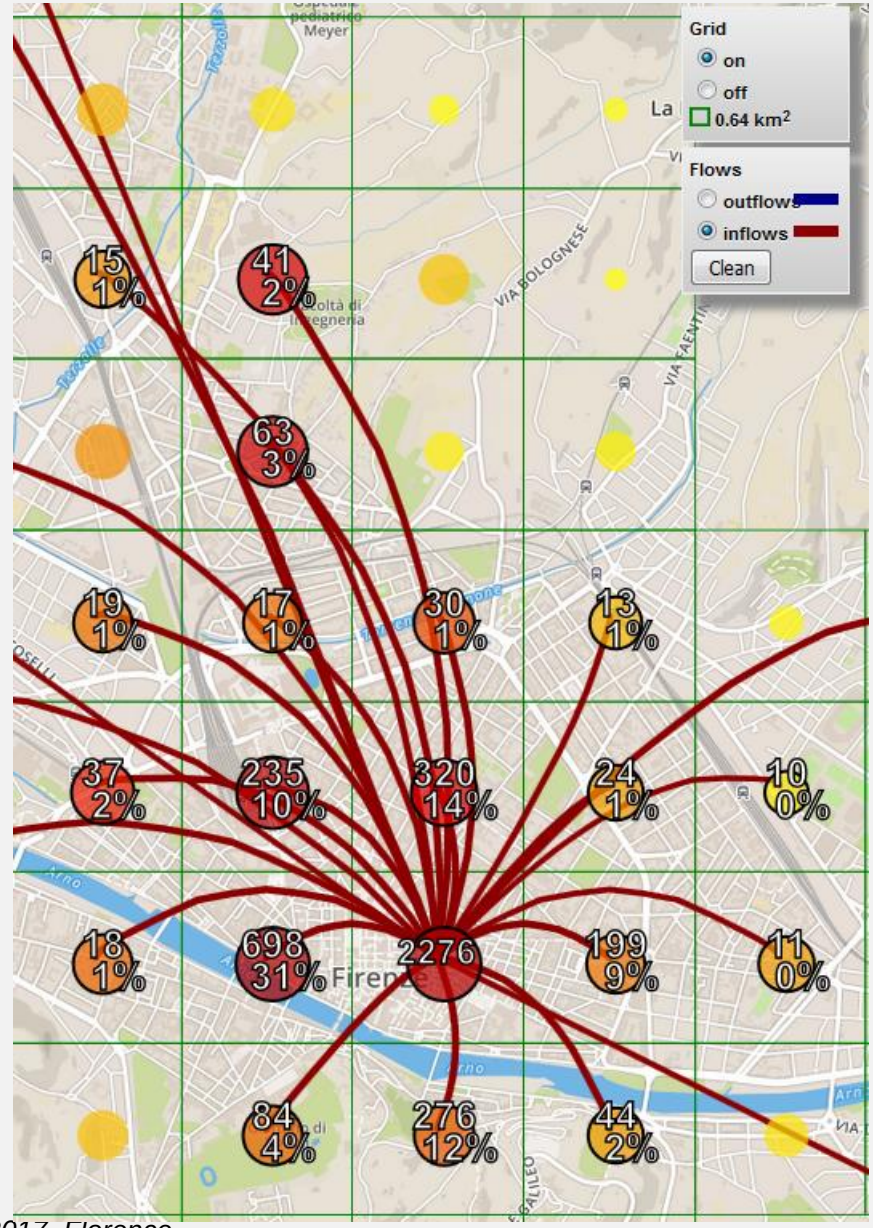
Personal Recommender
DISIT - Distributed Systems and Internet Technology Lab

Duomo
Piazza Signoria
Duomo
Uffizi
Stazione vs Santa Maria Novella
Piazza della repubblica

OD Matrix scalabile

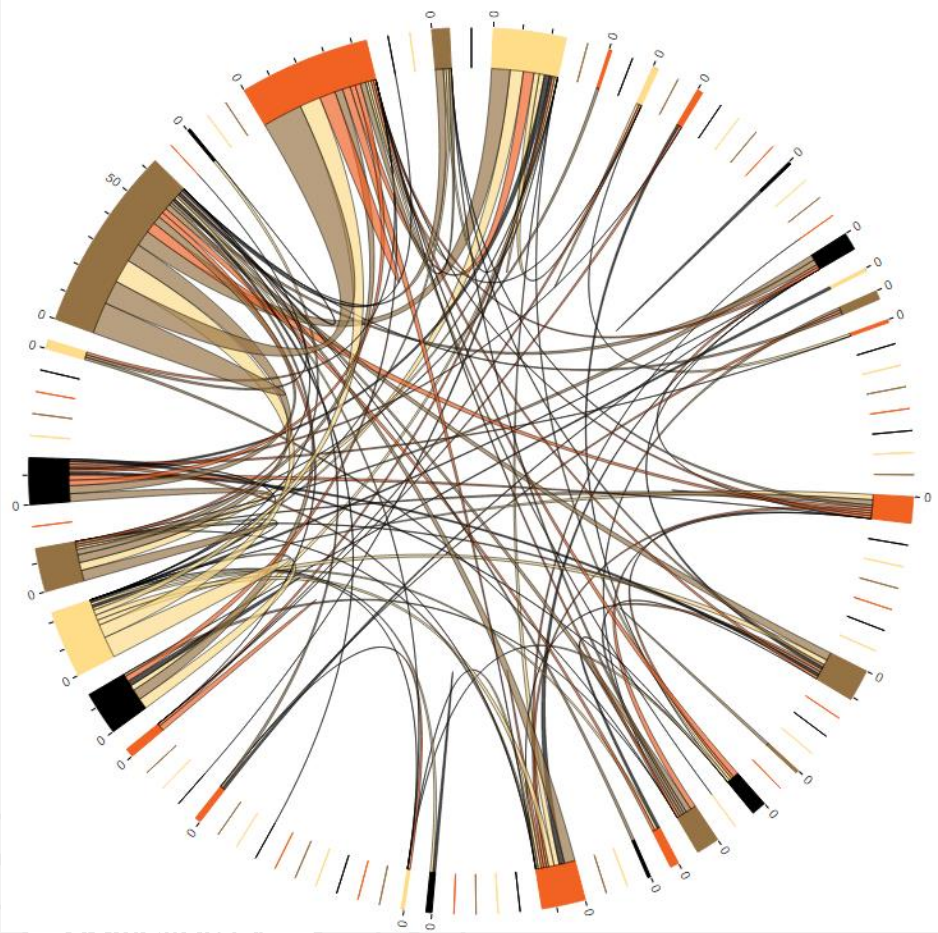
DISIT Lab, Distributed Data Intelligence and Technologies
Distributed Systems and Internet Technologies
Dipartimento di Ingegneria dell'Informazione (DINFO)
http://www.disit.dinfo.unifi.it

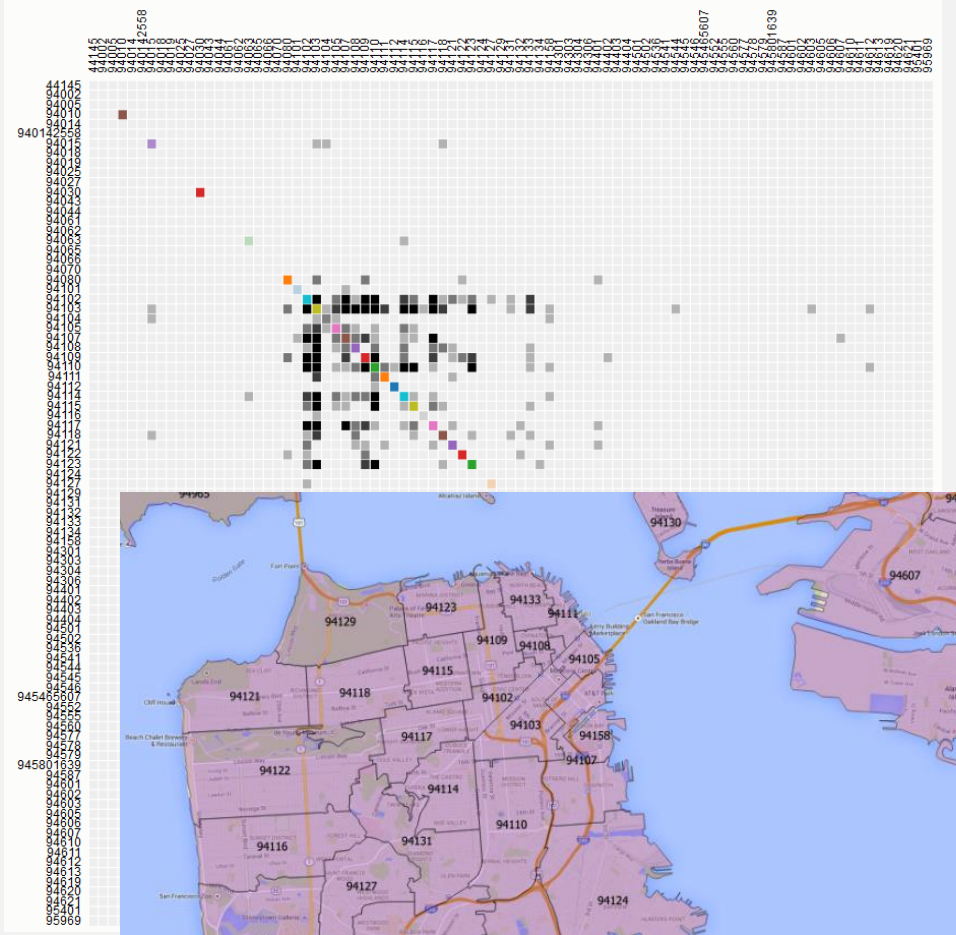




People Flow, Vehicle Flow, OD Matrix

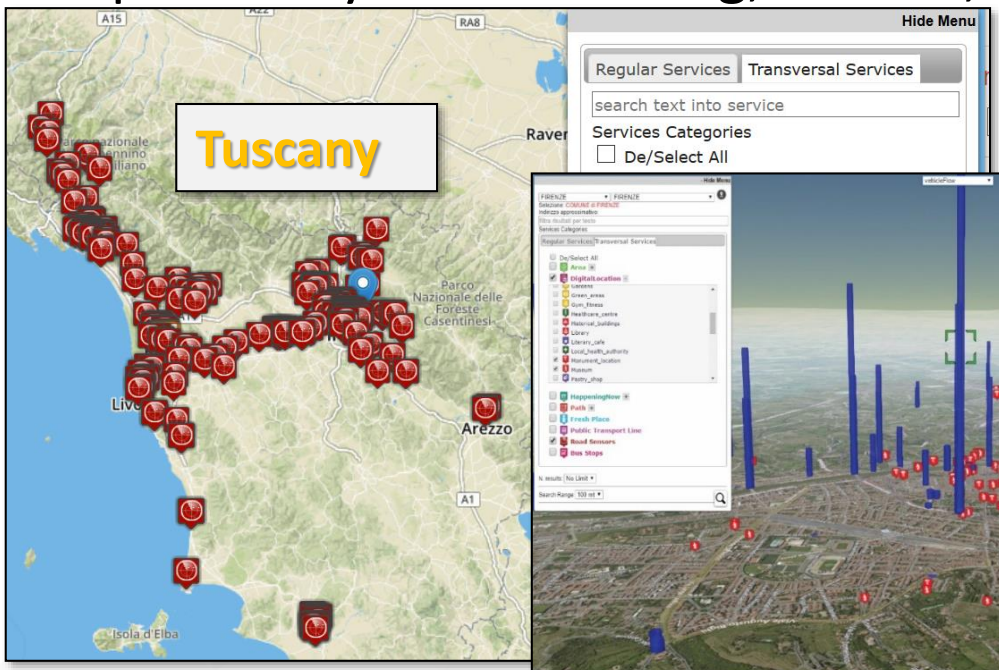
http://www.disit.org/6694

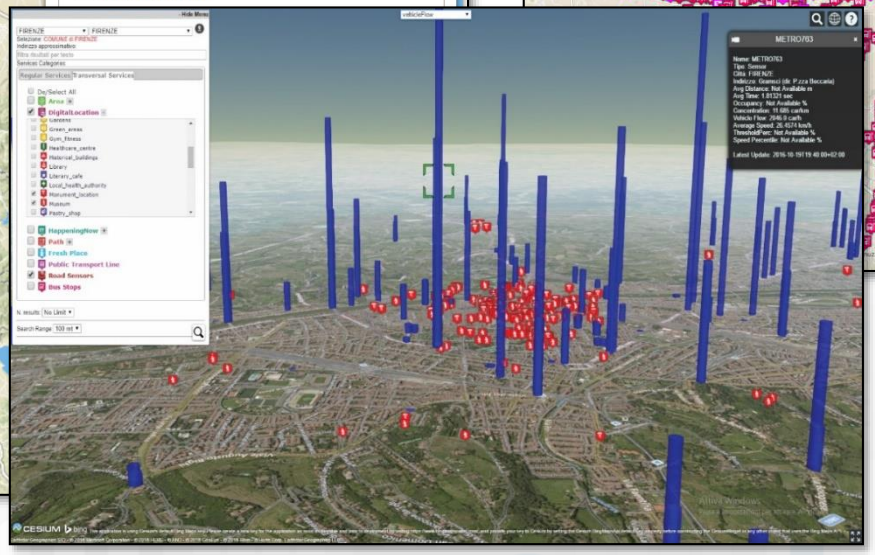


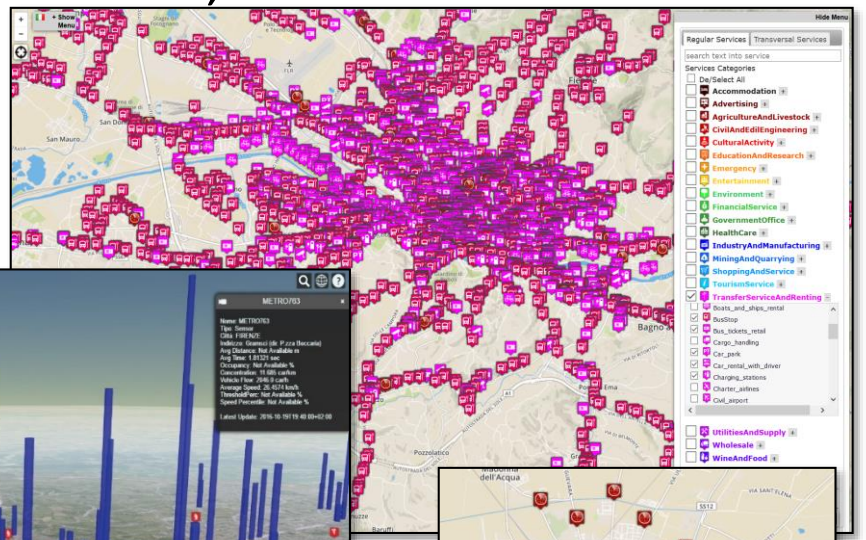


Traffic Flow Tools

- Spire and Virtual Spires (cameras), Bluetooth, ..
- Specifically located: along, around, ..



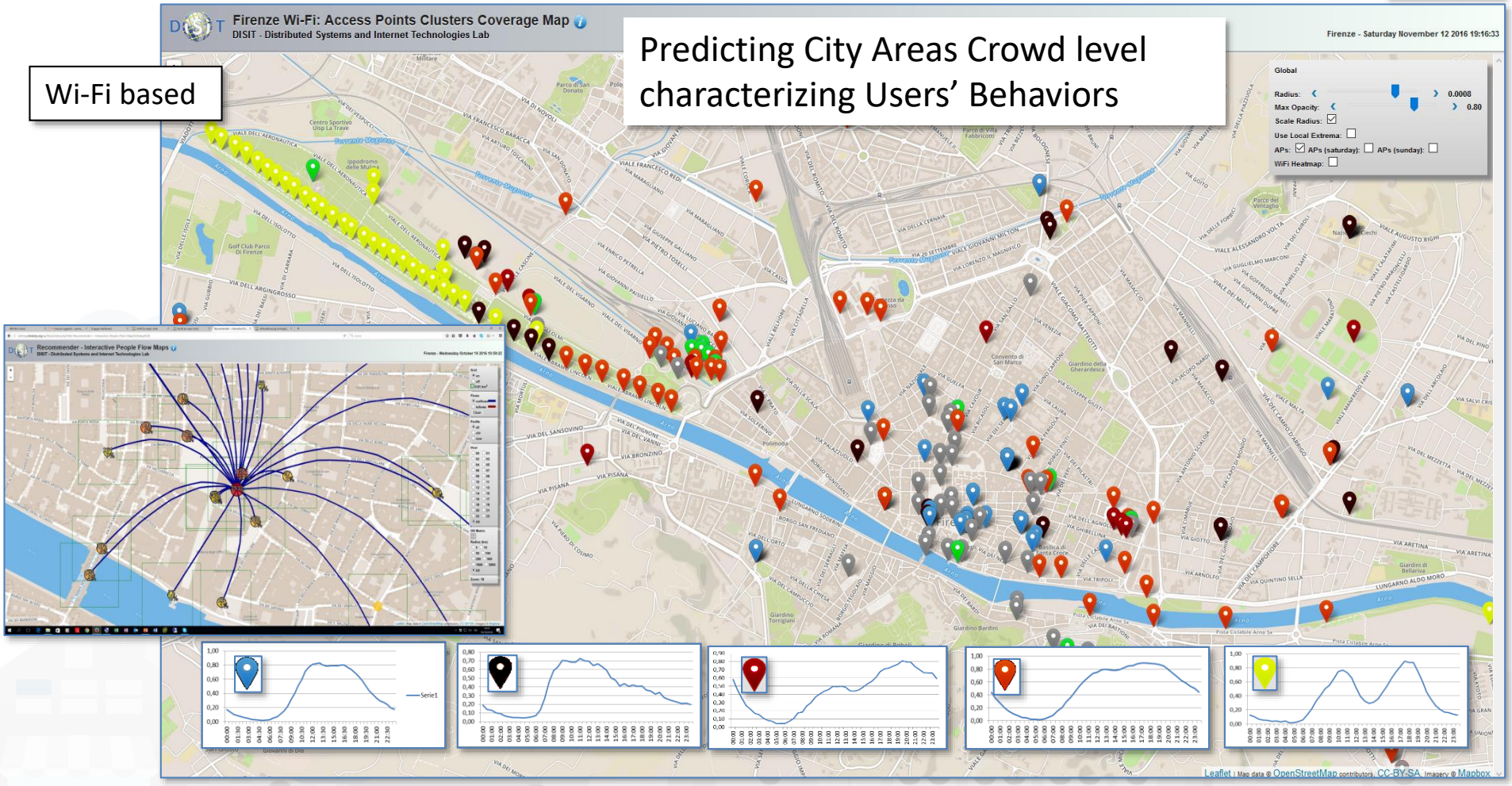




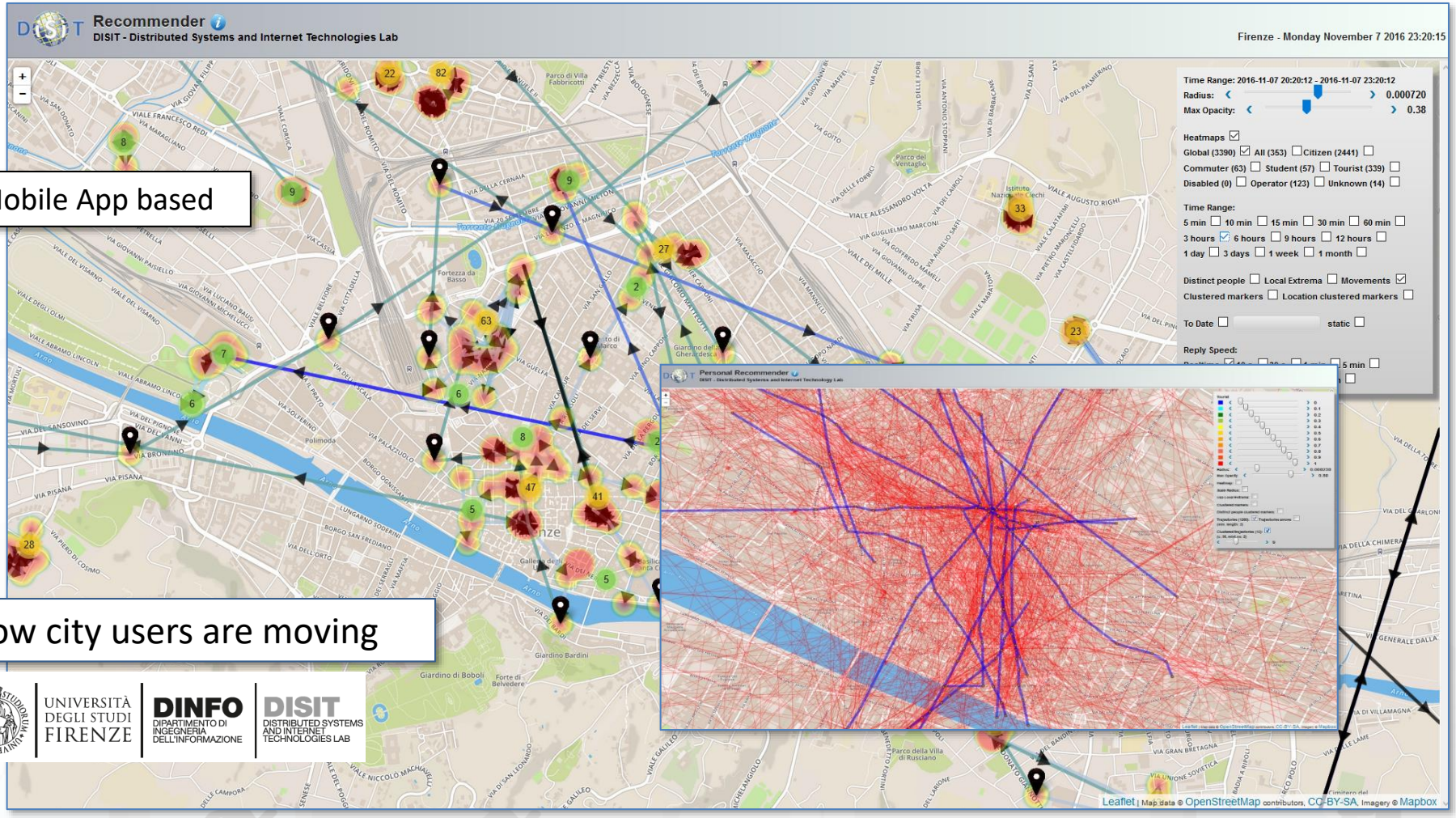
Characterizing City Areas

Wi-Fi based

Predicting City Areas Crowd level characterizing Users' Behaviors



Anonymous User Behavior Analysis



Mobile App based

How city users are moving

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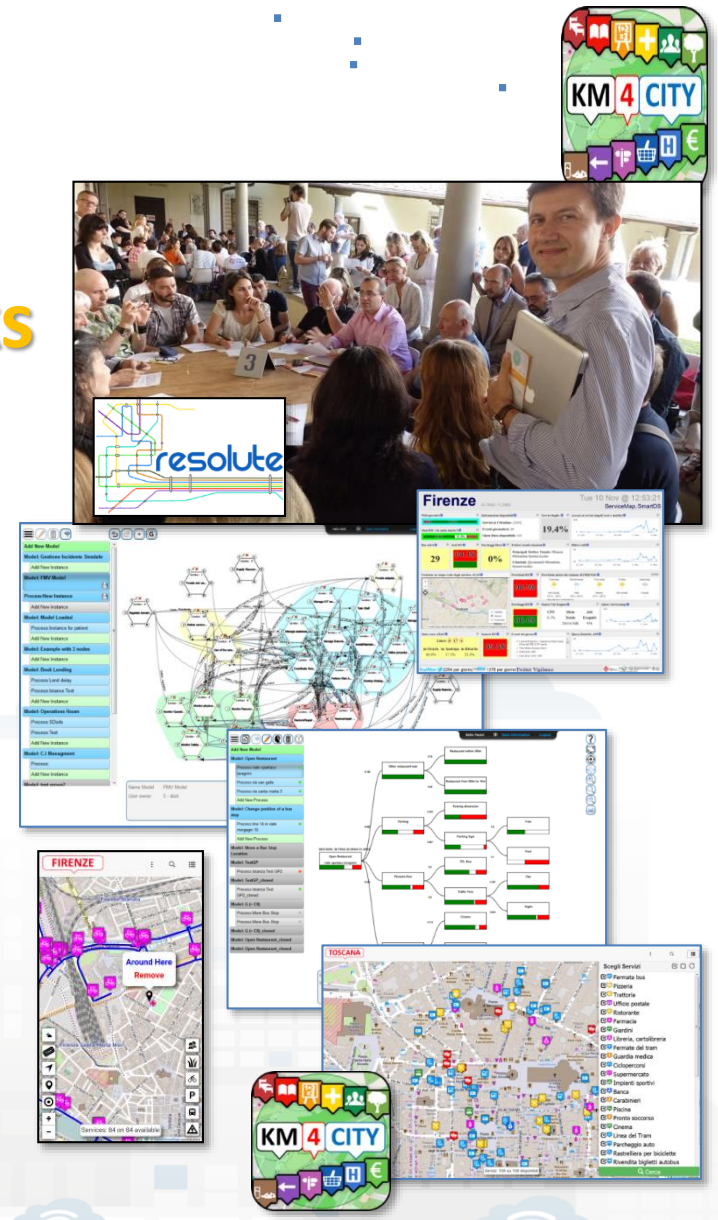
Improve resilience, reducing risks and decision support

- **assessing** and improving **resilience** level, controlling risk
- **User behaviour** analysis and stimulation
- **improving** users **awareness** with personal assistants and participatory tools



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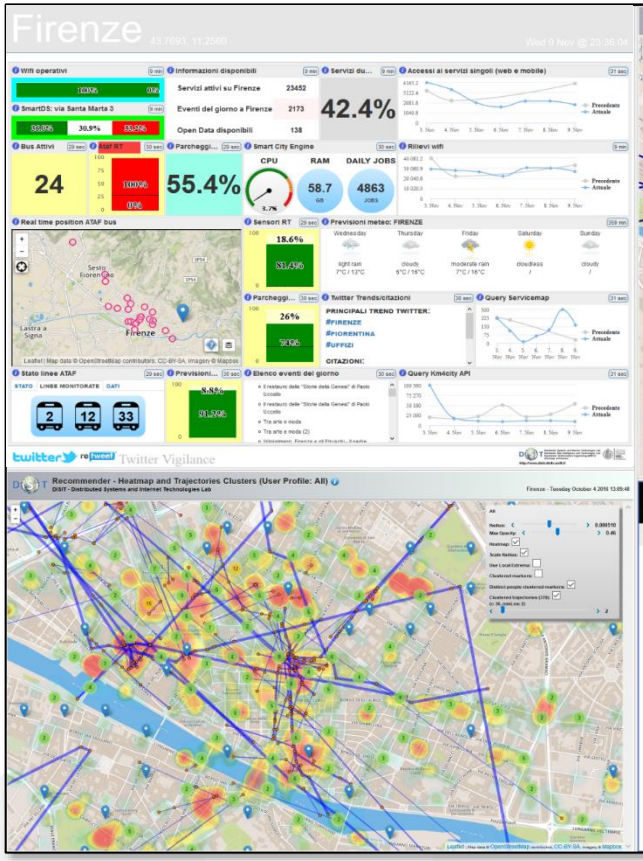
http://www.disit.org

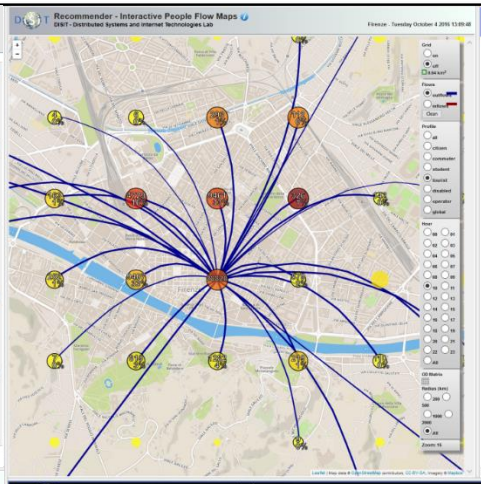
KM4CITY

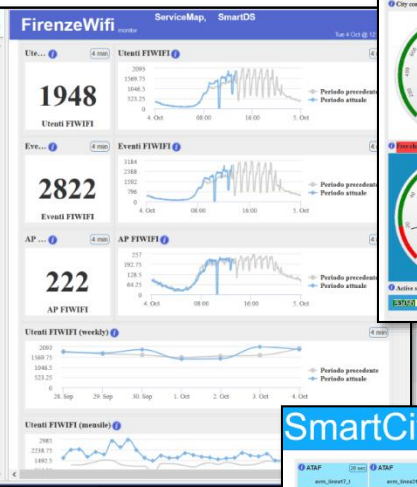
Smart City Dashboard

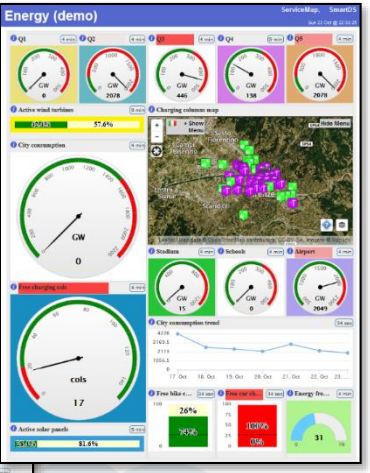
REPLICATE

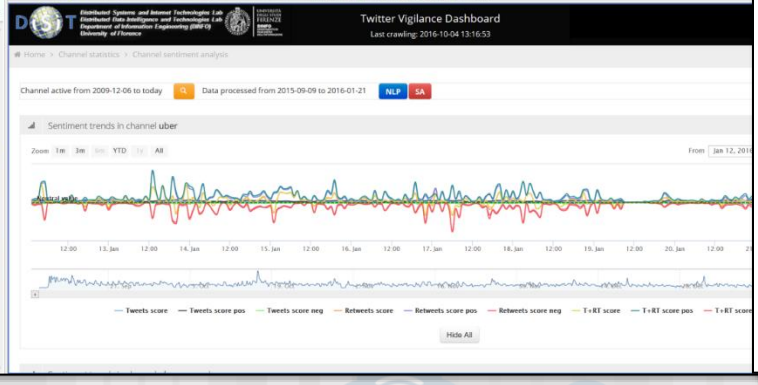
Horizon 2020 European Union Funding for Research & Innovation



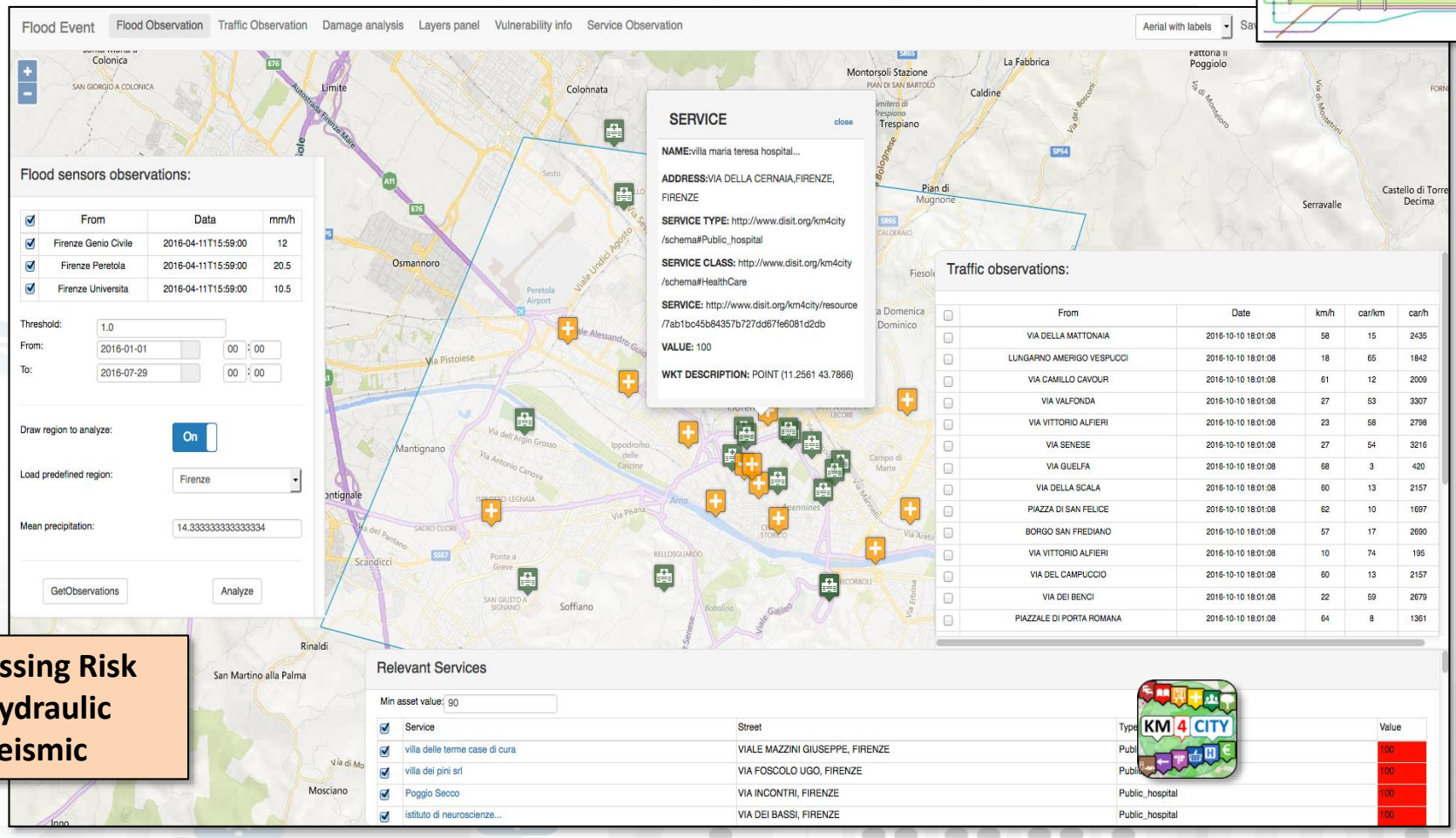








Risk Assessment



Assessing Risk

- **hydraulic**
- **Seismic**

Computing on Parallel and Massive Architectures for big data

- Cloud
- Hadoop
- Distributed scheduling
- Streaming and flow
- GRID

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Sii-Mobility

http://www.sii-mobility.org

hadoop

axmedis

APACHE STORM™
Distributed · Resilient · Real-time

Distributed Scheduler

Sii-Mobility

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192.168.0.14
- LAST_CHECK: 2014-12-16 11:29:04
- SCHEDULER_INSTANCE_ID: hadoopnode01b1418718662488
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- SCHEDULER_NAME: SCE
- CURRENT_TIME: 2014-12-16 11:29:58
- JOBS/h: 0
- RUNNING_SINCE: 2014-12-16 09:31:02
- CLUSTERED: 1
- PERSISTENCE: 1
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- CURRENTLY_EXECUTING_JOBS: 0
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- OPERATING_SYSTEM_NAME: Linux
- FREE_SWAP_SPACE: 12860071936
- PROCESS_CPU_TIME: 32870000000
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- NUMBER_OF_PROCESSORS: 4
- OPERATING_SYSTEM_ARCHITECTURE: amd64
- TOTAL_SWAP_SPACE: 1.2881752064E10
- IS_SCHEDULER_STANDBY: 0
- IS_SCHEDULER_SHUTDOWN: 0
- IS_SCHEDULER_STARTED: 1
- TOTAL_DISK_SPACE: 2321541849088
- UNALLOCATED_DISK_SPACE: 1937102204928
- USABLE_DISK_SPACE: 1819765923840
- PREV_FIRE_TIME: 2014-12-15 23:09:17
- CPU: Intel(R) Xeon(R) CPU X3470 @ 2.93GHz

192.168.0.26
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- JOBS_EXECUTED: 0
- SCHEDULER_NAME: SCE
- CURRENT_TIME: 2014-12-16 11:29:58
- JOBS/h: 0
- RUNNING_SINCE: 2014-12-16 09:32:03
- CLUSTERED: 1
- PERSISTENCE: 1
- REMOTE_SCHEDULER: 0
- CURRENTLY_EXECUTING_JOBS: 0
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- NUMBER_OF_PROCESSORS: 4
- OPERATING_SYSTEM_ARCHITECTURE: amd64
- TOTAL_SWAP_SPACE: 1.2881752064E10
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- IS_SCHEDULER_SHUTDOWN: 0
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- USABLE_DISK_SPACE: 1820929695744
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- FREE_PHYSICAL_MEMORY: 10849054720
- JOBS_EXECUTED: 26
- SCHEDULER_NAME: SCE
- CURRENT_TIME: 2014-12-16 11:29:58
- JOBS/h: 14.91
- RUNNING_SINCE: 2014-12-16 09:45:22
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- PERSISTENCE: 1
- REMOTE_SCHEDULER: 0
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- TOTAL_SWAP_SPACE: 1.2881752064E10
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- IS_SCHEDULER_SHUTDOWN: 0
- IS_SCHEDULER_STARTED: 1
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- UNALLOCATED_DISK_SPACE: 195266711552
- USABLE_DISK_SPACE: 185156763648
- PREV_FIRE_TIME: 2014-12-16 09:53:47
- CPU: Intel(R) Xeon(R) CPU X5690 @ 3.47GHz

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- CURRENT_TIME: 2014-12-16 11:29:58
- JOBS/h: 0
- RUNNING_SINCE: 2014-12-16 09:36:34
- CLUSTERED: 1
- PERSISTENCE: 1
- REMOTE_SCHEDULER: 0
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- COMMITTED_VIRTUAL_MEMORY: 3679342592
- OPERATING_SYSTEM_NAME: Linux
- FREE_SWAP_SPACE: 12159328256
- PROCESS_CPU_TIME: 29620000000
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- NUMBER_OF_PROCESSORS: 4
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- USABLE_DISK_SPACE: 1819684929536
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- CURRENT_TIME: 2014-12-16 11:29:58
- JOBS/h: 0
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- CLUSTERED: 1
- PERSISTENCE: 1
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- OPERATING_SYSTEM_NAME: Linux
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- PROCESS_CPU_TIME: 29770000000
- TOTAL_PHYSICAL_MEMORY: 1.260085248E10
- NUMBER_OF_PROCESSORS: 4
- OPERATING_SYSTEM_ARCHITECTURE: amd64
- TOTAL_SWAP_SPACE: 1.2881752064E10
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- IS_SCHEDULER_SHUTDOWN: 0
- IS_SCHEDULER_STARTED: 1
- TOTAL_DISK_SPACE: 2321541775360
- UNALLOCATED_DISK_SPACE: 1937131741184
- USABLE_DISK_SPACE: 1819795460096
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192.168.0.70
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- SCHEDULER_NAME: SCE
- CURRENT_TIME: 2014-12-16 11:29:58
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- RUNNING_SINCE: 2014-12-16 09:34:42
- CLUSTERED: 1
- PERSISTENCE: 1
- REMOTE_SCHEDULER: 0
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- IS_SCHEDULER_SHUTDOWN: 0
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- USABLE_DISK_SPACE: 1820004864000
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- CPU: Intel(R) Xeon(R) CPU X3470 @ 2.93GHz

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- CURRENT_TIME: 2014-12-16 11:29:58
- JOBS/h: 0
- RUNNING_SINCE: 2014-12-16 09:35:21
- CLUSTERED: 1
- PERSISTENCE: 1
- REMOTE_SCHEDULER: 0
- CURRENTLY_EXECUTING_JOBS: 0
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- OPERATING_SYSTEM_NAME: Linux
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- PROCESS_CPU_TIME: 36300000000
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- NUMBER_OF_PROCESSORS: 4
- OPERATING_SYSTEM_ARCHITECTURE: amd64
- TOTAL_SWAP_SPACE: 1.2881752064E10
- IS_SCHEDULER_STANDBY: 0
- IS_SCHEDULER_SHUTDOWN: 0
- IS_SCHEDULER_STARTED: 1
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- UNALLOCATED_DISK_SPACE: 1938246713344
- USABLE_DISK_SPACE: 1820910432256
- PREV_FIRE_TIME: 2014-12-15 23:09:15
- CPU: Intel(R) Xeon(R) CPU X3470 @ 2.93GHz

CPU: 18.01 GHz | **CPU Load:** 1.48 GHz (8.19%) | **Mem Tot:** 82.15 GB | **Mem Free:** 45.47 GB | **Cores:** 28 | **Jobs/h:** 14.91

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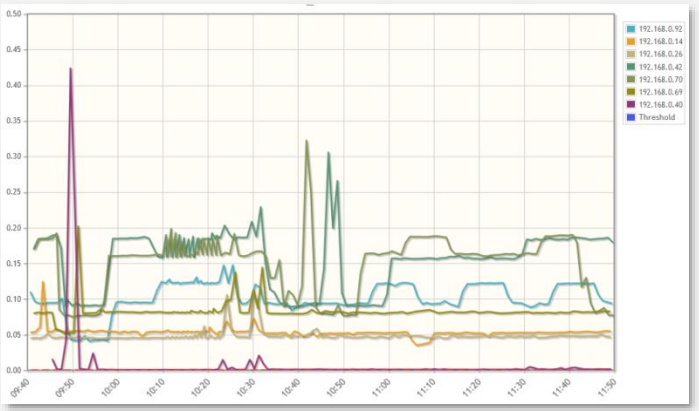


Smart Cloud - Computing

- **Progetti:** http://www.disit.org/5501
  - ICARO: http://www.disit.org/5482
  - Social Museum and Smart Tourism
- **Tools:** http://www.disit.org/5489
  - Smart Cloud Engine and reasoner http://www.disit.org/6544
  - Cloud ontology and tools: http://www.disit.org/5604
    - Configuration analysis and checker
    - Service Level Analyzer and control
  - Cloud Simulation, ICLOS
  - Cloud Monitoring, SM

http://www.cloudicaro.it

Regione Toscana

Smart Communities Tech
Italian Technology Cluster for Smart Communities

http://www.disit.org/6588

MIUR

Mobile Computing

- **Smart City Problems:**
  - Reaching the users
  - Understanding the user preferences and behavior
  - Understating how they move, where they go, etc..
- **Solutions:**
  - Monitoring the activities on the mobile device
  - Monitoring the activities of user in the environment
- **Technologies for Solutions:**
  - Assessing the usage of Smart city and services
  - Integrated Indoor/outdoor navigation
    - Routing, multimodal routing
  - Content distribution: e-learning
  - User networking and collaboration
  - OS: iOS, Android, Windows Phone, etc.
  - Tech: IOT, iBeacoms, NFC, QR, ….

Available on the App Store

ANDROID APP ON Google play

Download from Windows Phone Store

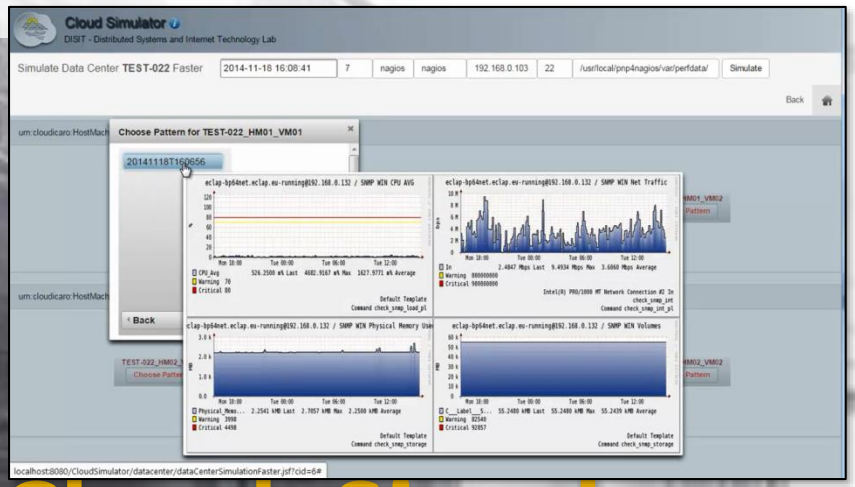
TOSCANA

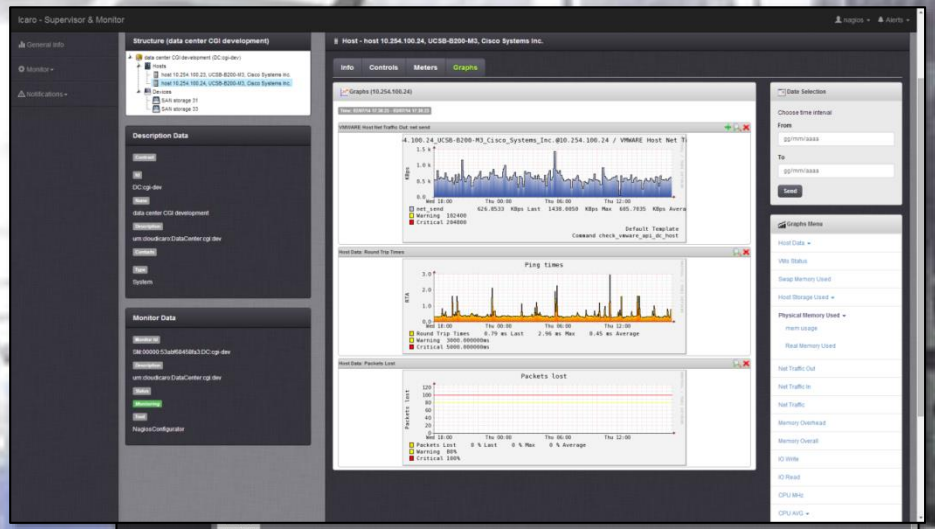
Smart Cloud

UNIVERSITÀ DEGLI STUDI FIRENZE

DINFO DIPARTIMENTO DI INGEGNERIA DELL'INFORMAZIONE

DISIT DISTRIBUTED SYSTEMS AND INTERNET TECHNOLOGIES LAB





Cloud Simulator

Cloud Monitoring

Cloud Management

Progetti Regionali: ICARO

TT verso PMI e GI

Regione Toscana

POR CReO 2007-13 PROGRAMMA OPERATIVO REGIONALE OBIETTIVO COMPETITIVITÀ REGIONALE e OCCUPAZIONE Fondo Europeo di Sviluppo Regionale

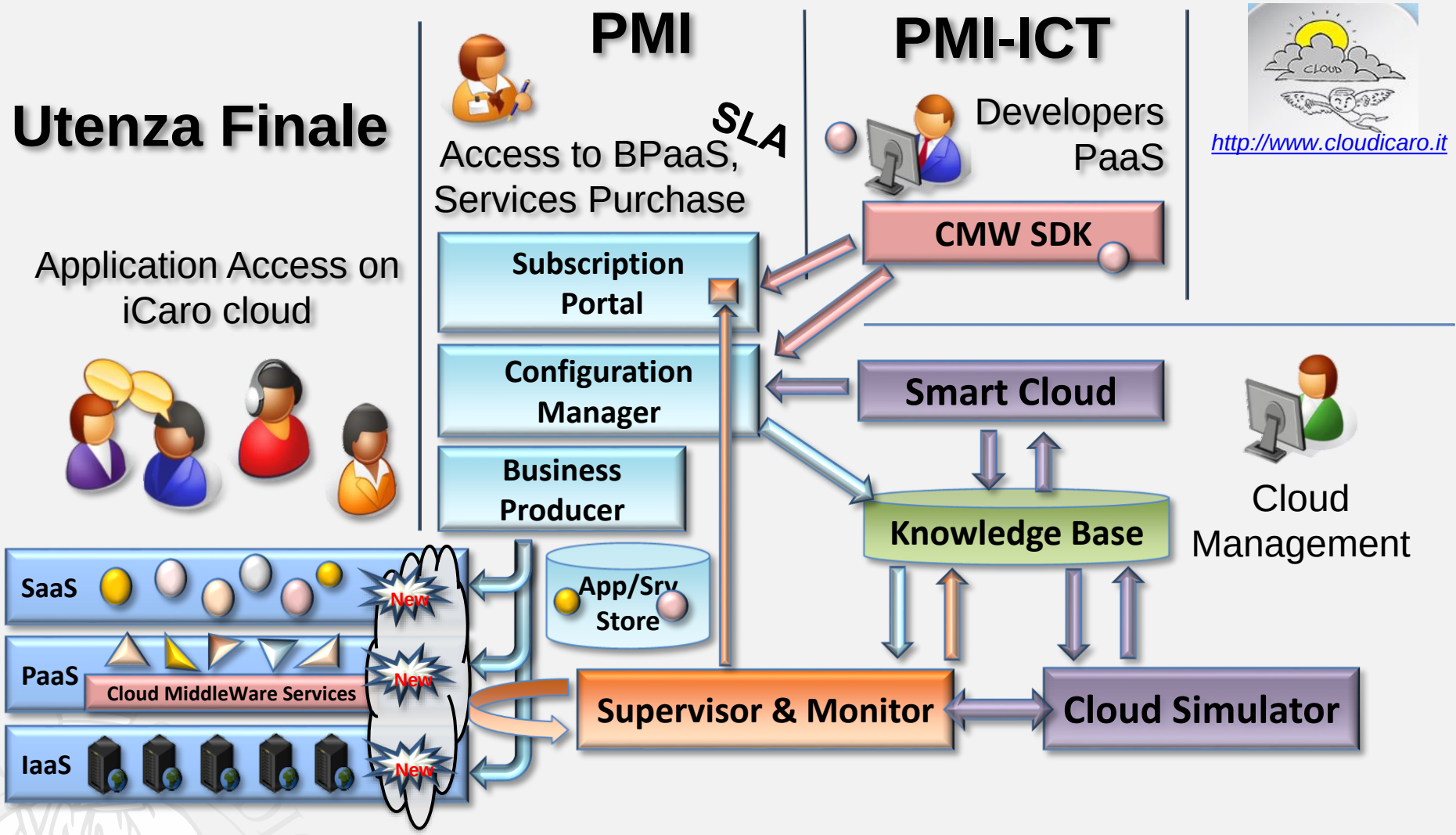
REPUBBLICA ITALIANA

Unione Europea

Start Cup Toscana 2016, Pisa


Smart Cloud Engine

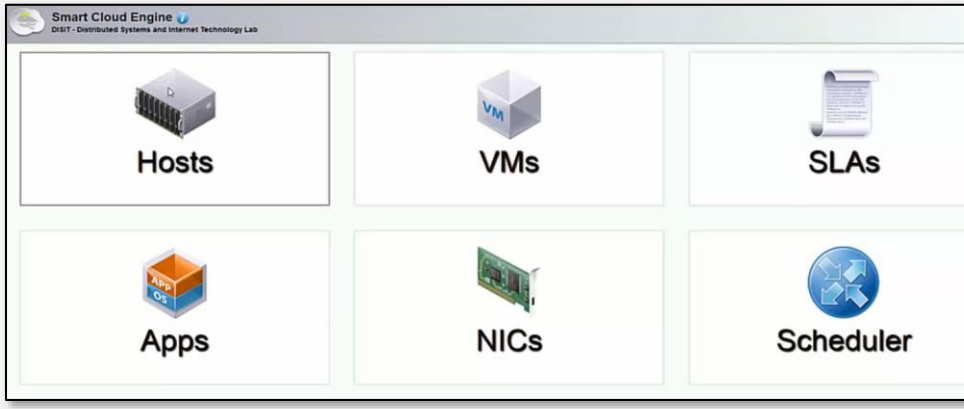
Cloud ICARO Architecture

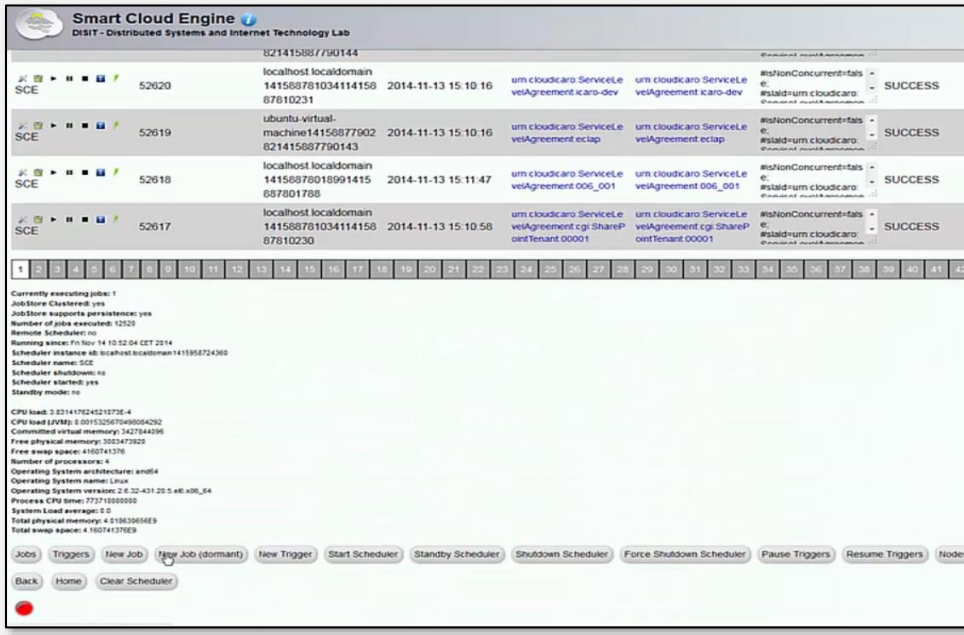


Smart Cloud Engine

http://www.cloudicaro.it

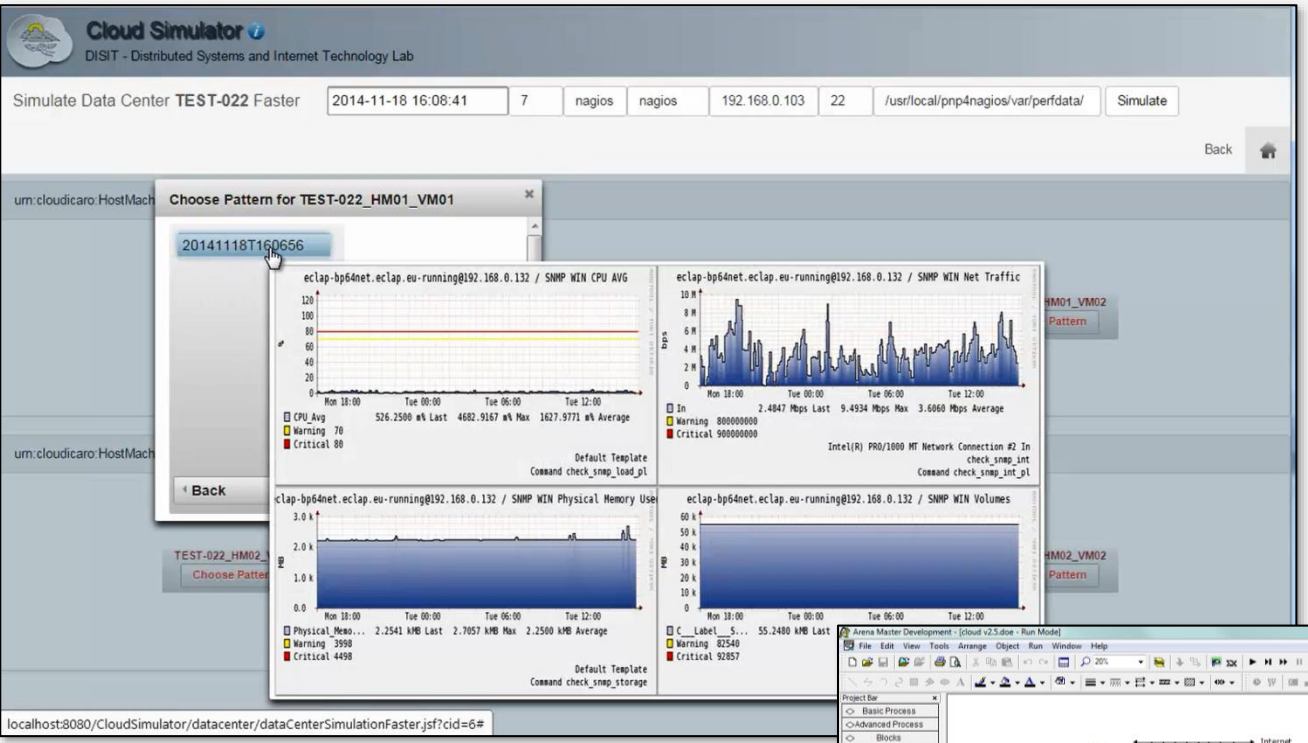
- **SCE Engine Algorithms**
  - Cloud configuration verification and validation
  - Monitoring services: IaaS, PaaS, SaaS, BPaaS !! With sophisticated metrics
  - Health V&V of Business configurations and SLA
  - Decision support for Scaling, cloning, migration, reconfiguration, etc.
  - Cloud optimization

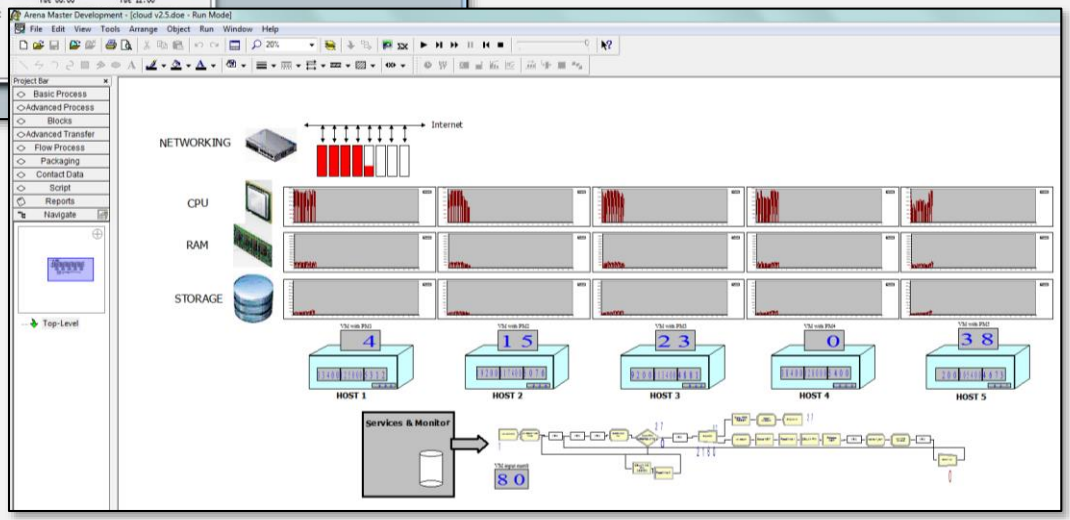




UNIVERSITÀ DEGLI STUDI FIRENZE
DISIT
DISIT Lab, Distributed Data Intelligence and Technologies
Distributed Systems and Internet Technologies
Department of Information Engineering (DINFO)
http://www.disit.dinfo.unifi.it

Cloud Simulator





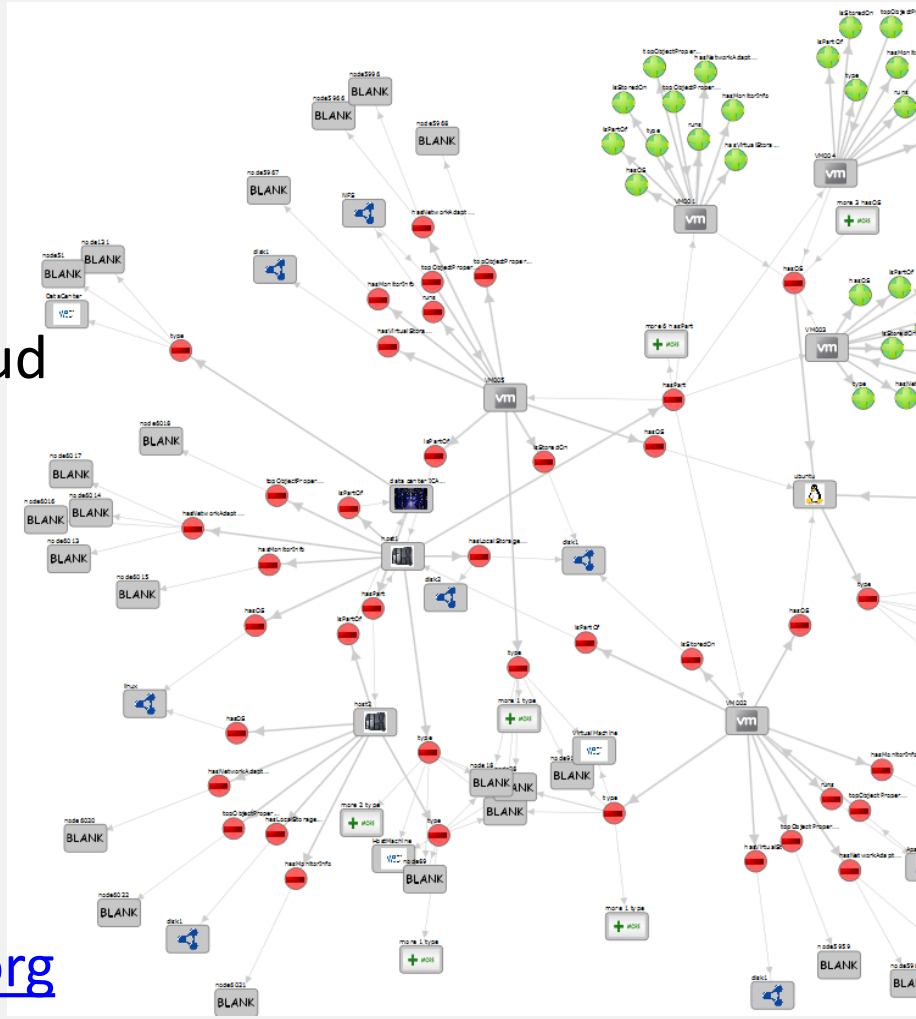
To simulate complex cloud configurations

http://www.cloudicaro.it

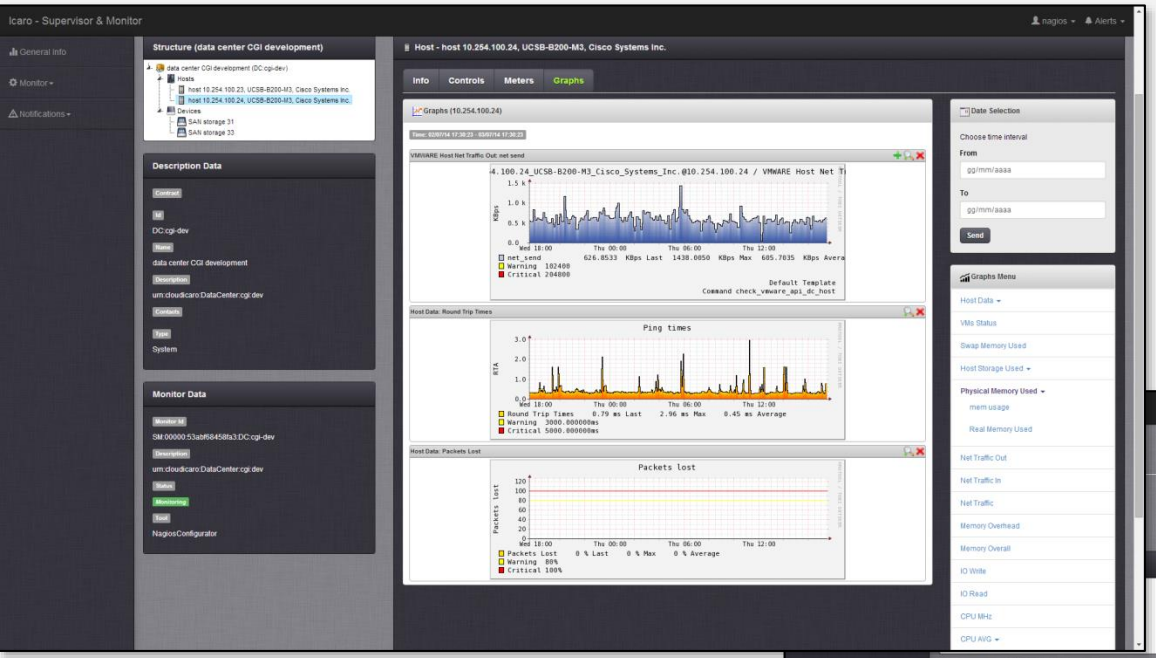
Identification of optimal configurations allocations on the basis of effective workload

Knowledge Base & Tools

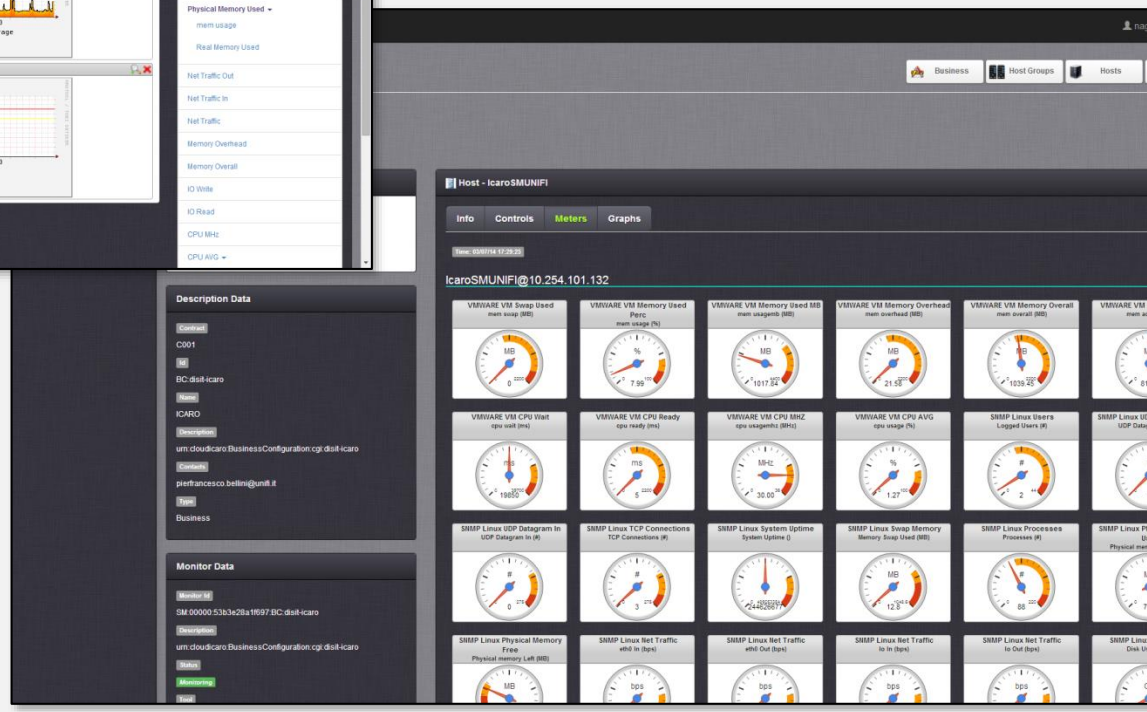
- **Smart Cloud Modeling**
  - Formalization of cloud models: layers, SLA (Service Level Agreement), consumptions, constraints reasoner
  - Decision support for Smart Cloud Engine directly connected with monitoring
- **Technologies**
  - Knowledge base: RDF store e inference engine
  - Smart Cloud Ontology: http://www.disit.org/5604
  - Example of accessible model in real time from http://log.disit.org



Cloud Supervisor & Monitor



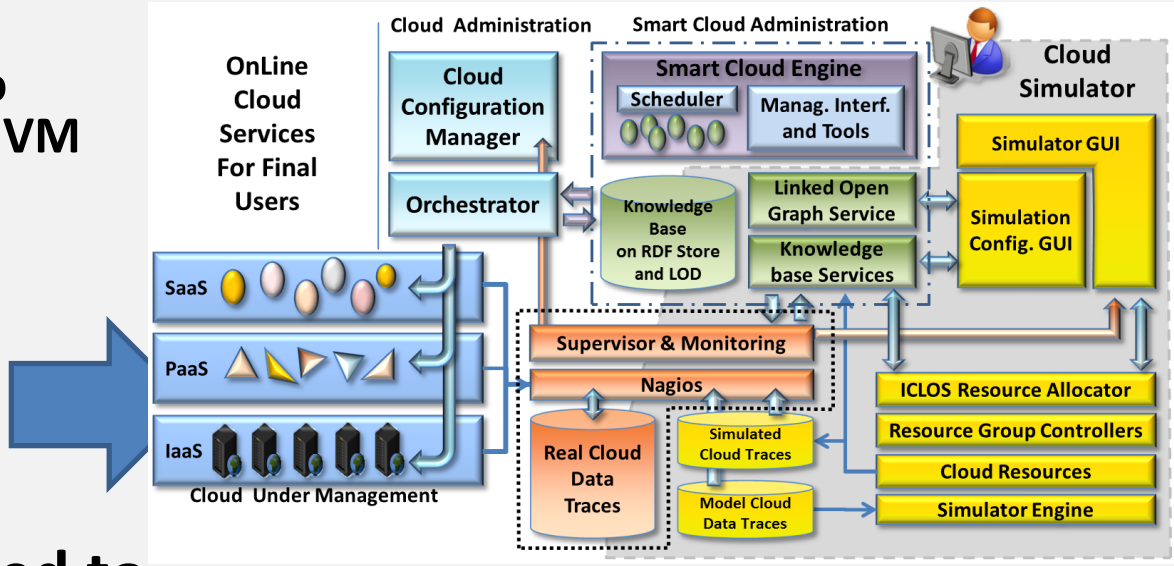
http://www.cloudicaro.it

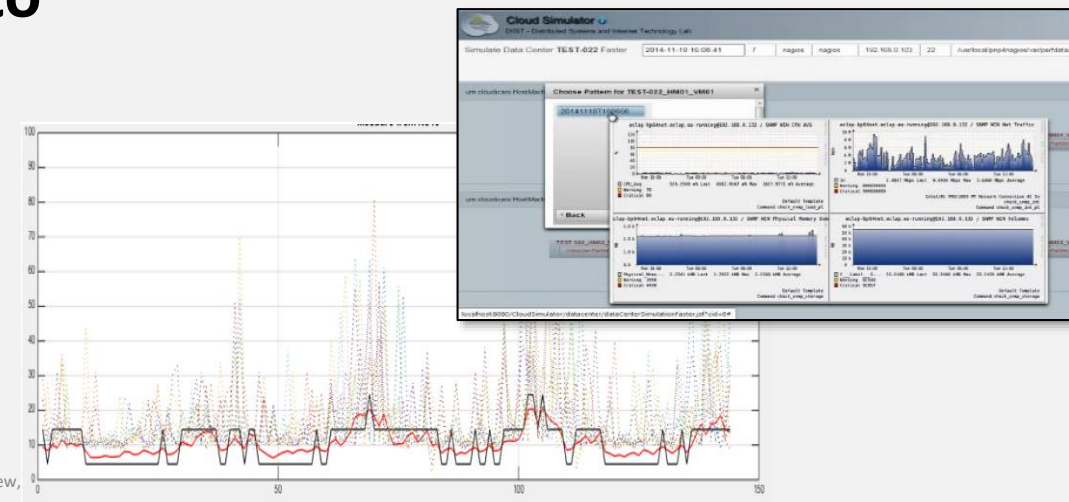


- Monitoring real business configuration, SLA
- Uplayer wrt classical monitoring tools

Simulating Cloud Workload

- **Issue:**
  - Given a Cloud Status how to better allocate a number of VM according to their probable workload
  - Probable workload profile
- **Impact:**
  - Optimization of resource workload
- **Several parameter related to**
  - Cloud status: hosts, resources, …
  - VM and their resources patterns
  - Relationships among VM and resources
  - Optimization models



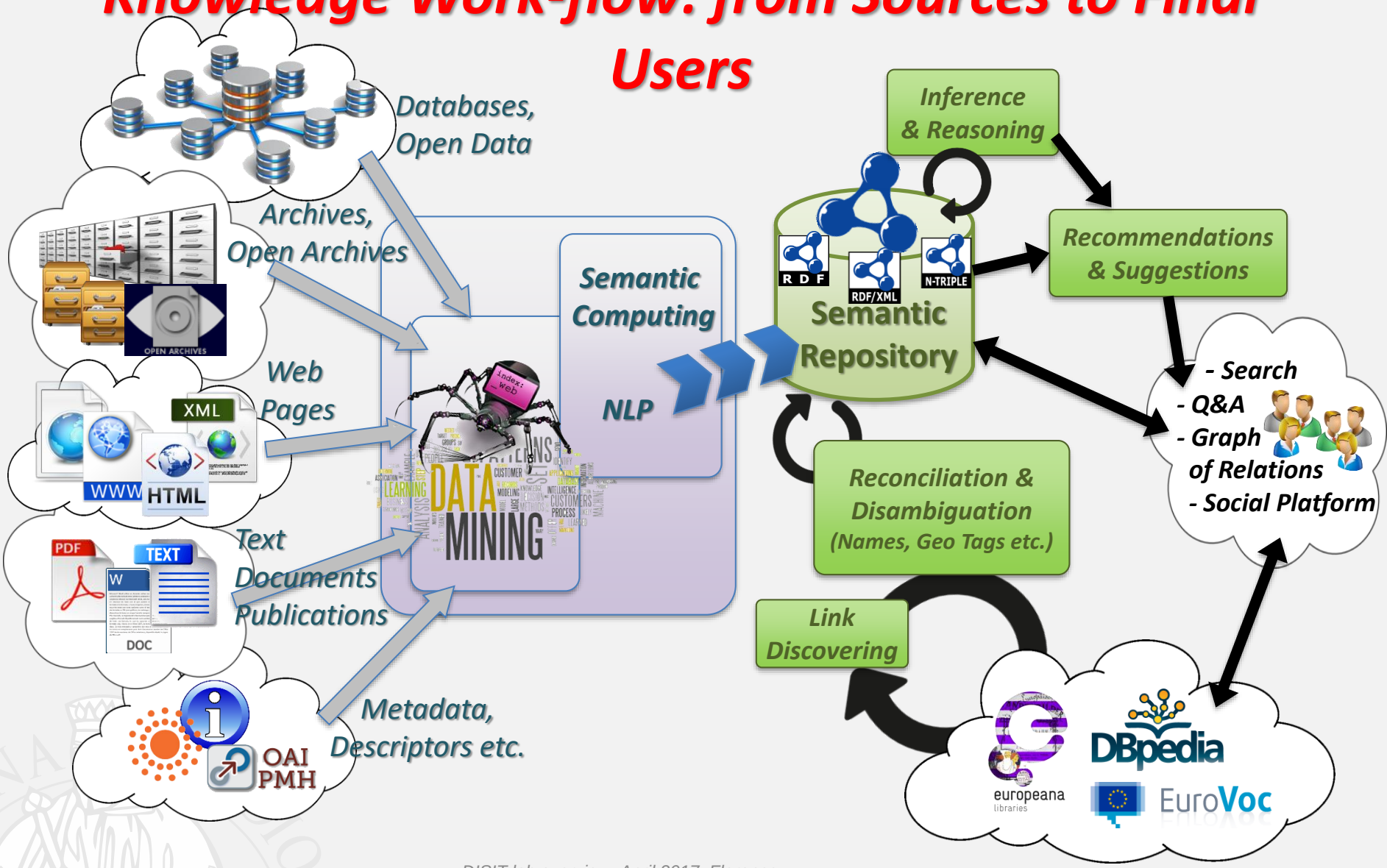


Text and Web Mining

- **Projects:** http://www.disit.org/5501
  - OSIM: http://www.disit.org/5482
  - SACVAR: http://www.disit.org/5604
  - Blog/Twitter Vigilance
- **Tools:** http://www.disit.org/5489
  - Text and web mining, Natural Language Processing
  - Service localization
  - Web Crawling
  - Competence analysis
  - Blog Vigiliance, sentiment analysis

http://osim.disit.org

Knowledge Work-flow: from Sources to Final Users

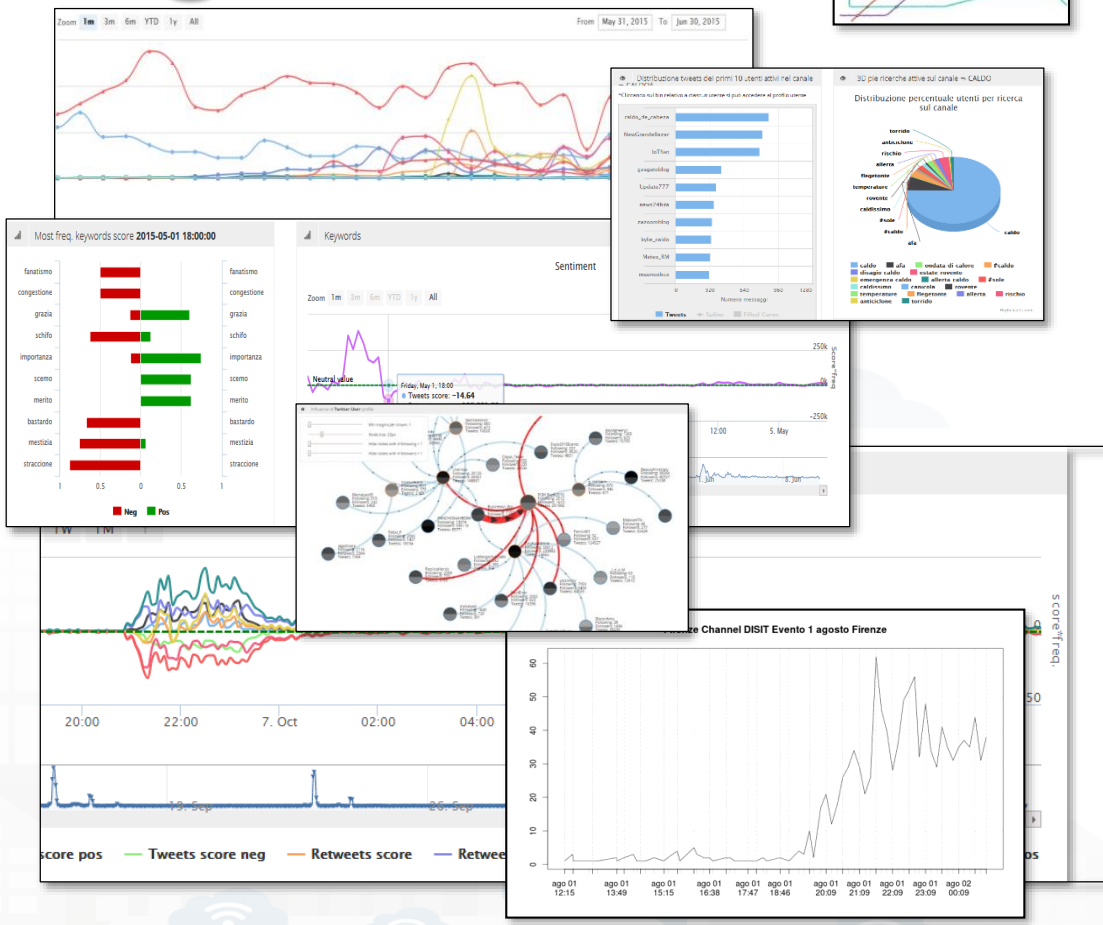


RDF Store Enrichment, for service Localization via web crawling

- Using the **Ge(**o)**Lo(**cator) framework:
  - Mining, retrieving and geolocalizing web-domains associated to companies in Tuscany (thanks to a Distribute Web Crawler based on Apache Nutch + Hadoop)
  - Extraction of geographical information based on a hybrid approach (thanks to Open Source **GATE** Framework + using external gazetteers)
  - Validation in 2 steps: Evaluation of Complete Address Array Extraction, Evaluation of Geographic Coordinate Extraction
- New services found, can be transformed into RDF triples and added to the repository!

Twitter Vigilance

- http://www.disit.org/tv
- http://www.disit.org/rttv
- Citizens as sensors to
  - Assess sentiment on services, events, …
  - Response of consumers wrt…
  - Early detection of critical conditions
  - Information channel
  - Opinion leaders
  - Communities
  - Formation
  - Predicting volume of visitors for tuning the services

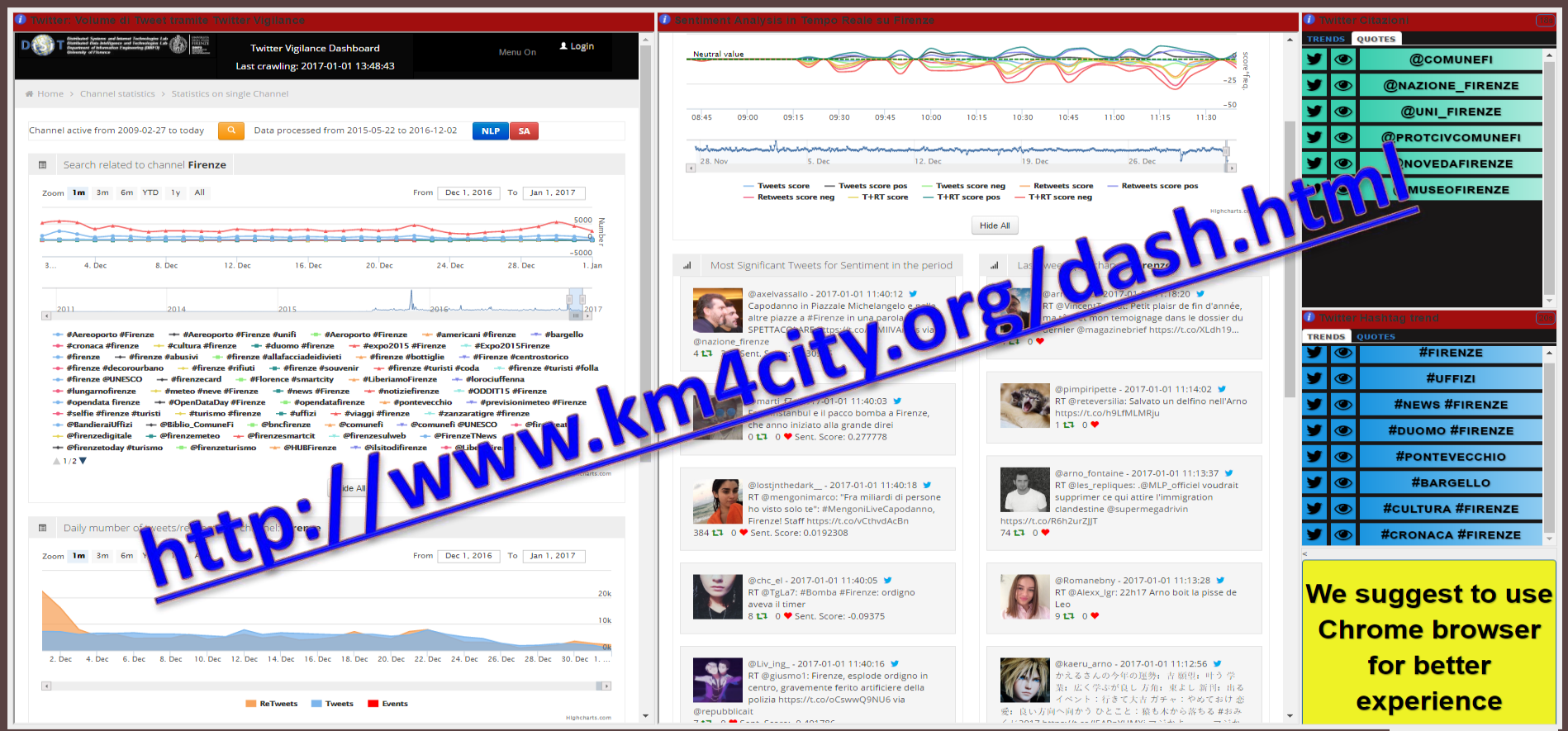


Twitter Vigilance

Twitter Vigilance su Firenze

(sperimentale)

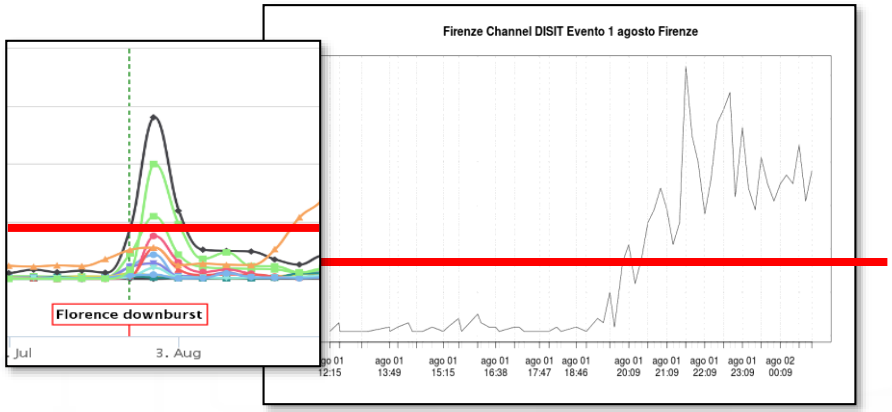
Sun 1 Jan @ 11:51:16

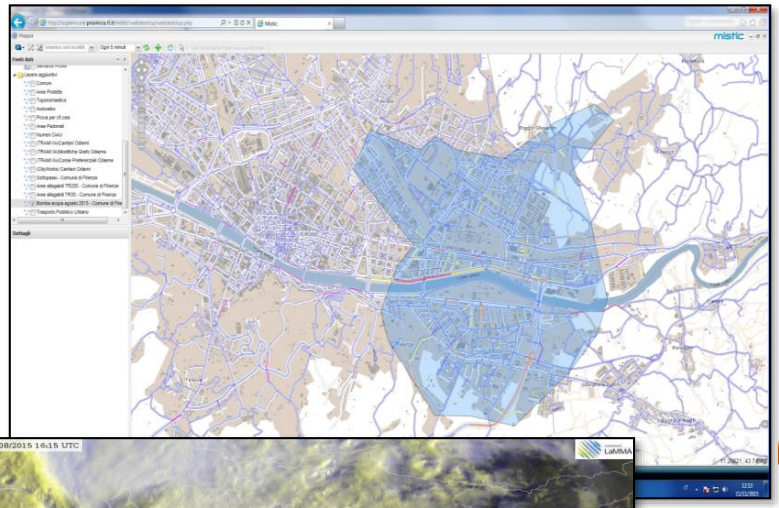


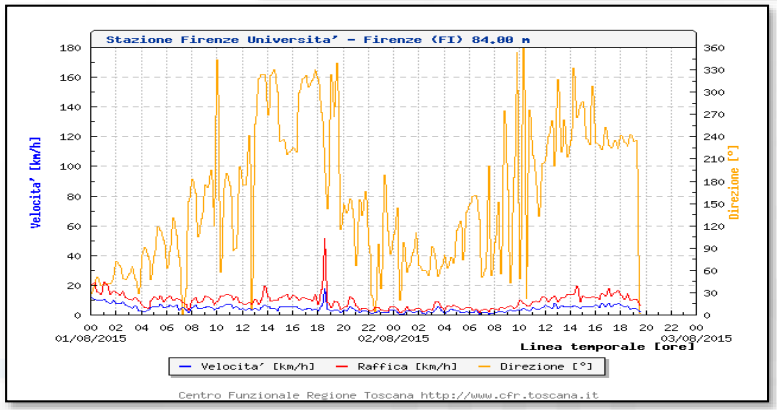
We suggest to use Chrome browser for better experience

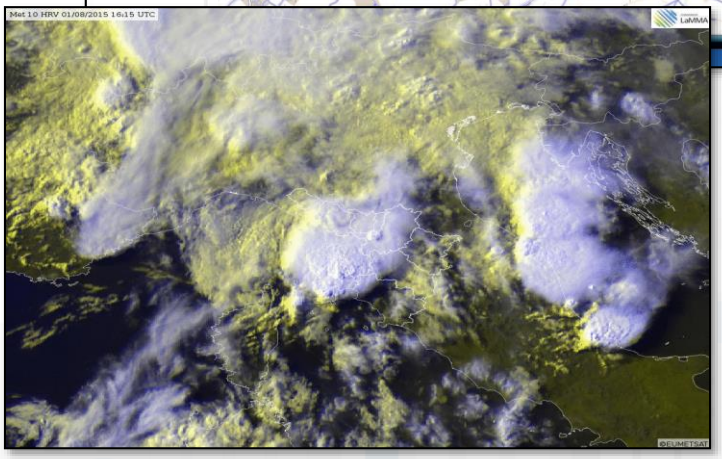
Early Warning

Twitter Vigilance and Water Bomb







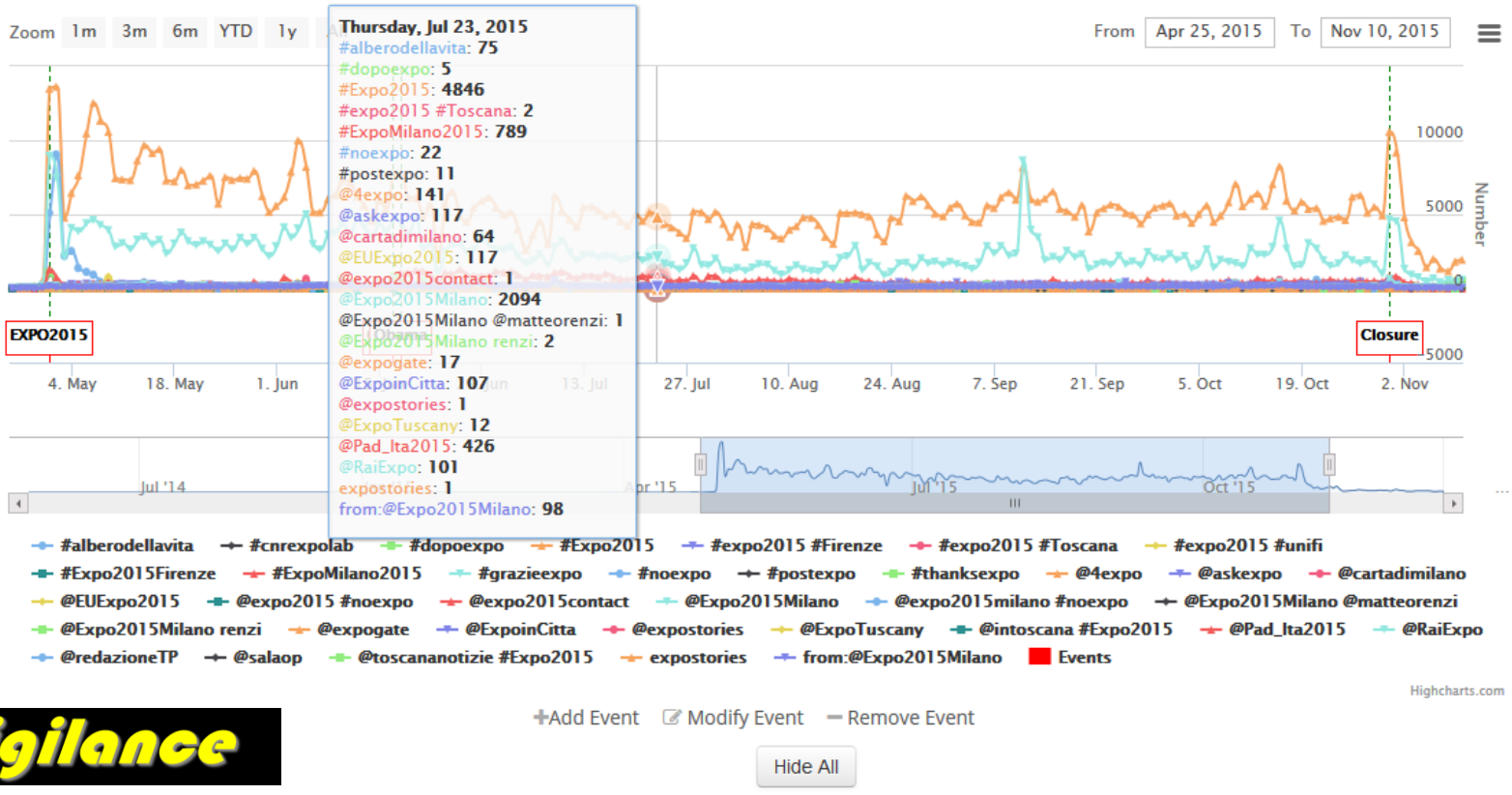


Twitter Vigilance

Case Study D

Channel active from 2012-05-24 to 2015-12-16 | Data processed from 2015-05-01 to 2015-06-30 | NLP | SA

Search related to channel EXPO2015



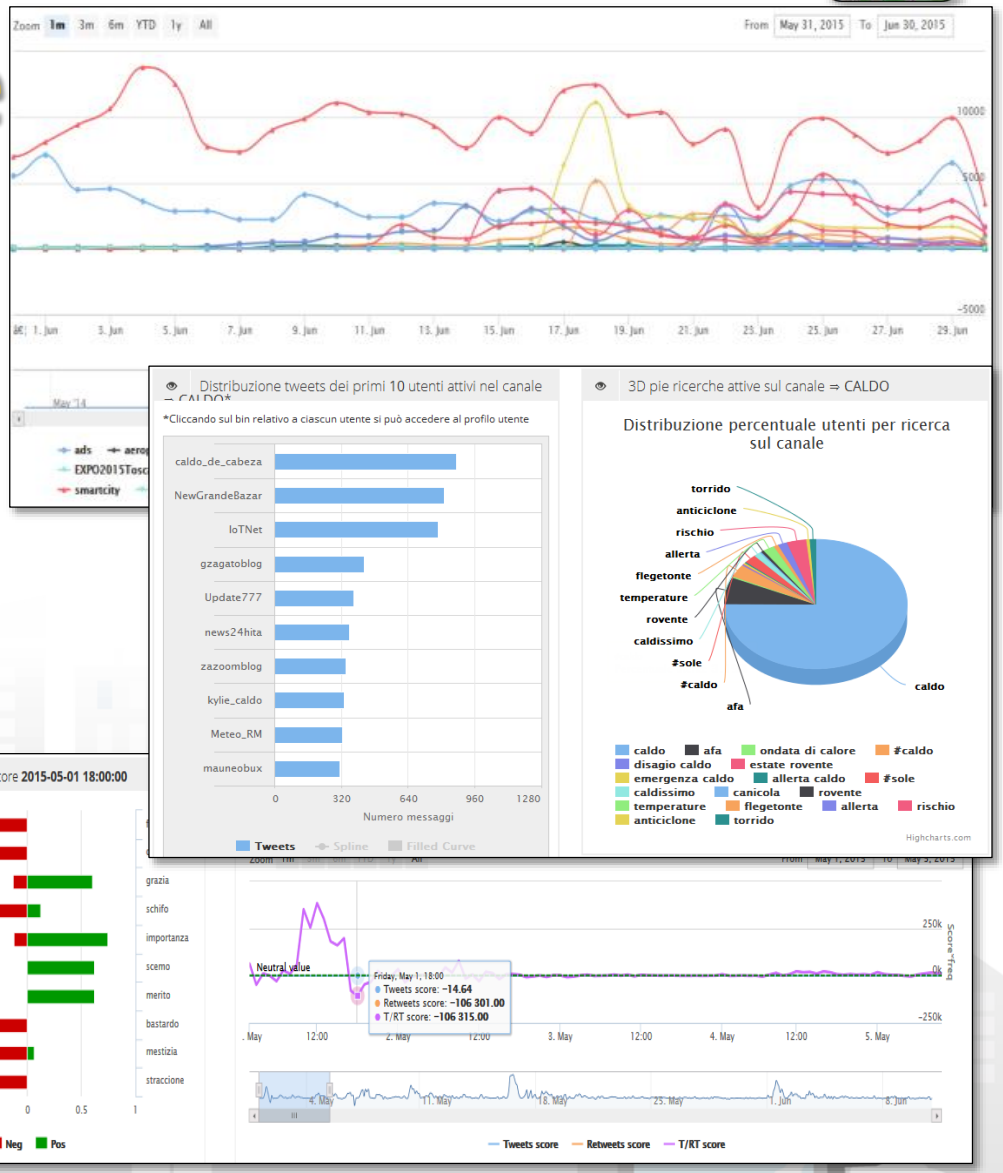
Twitter Vigilance

Twitter Vigilance on EXPO2015 channel

Daily number of tweets/retweets for channel: EXPO2015

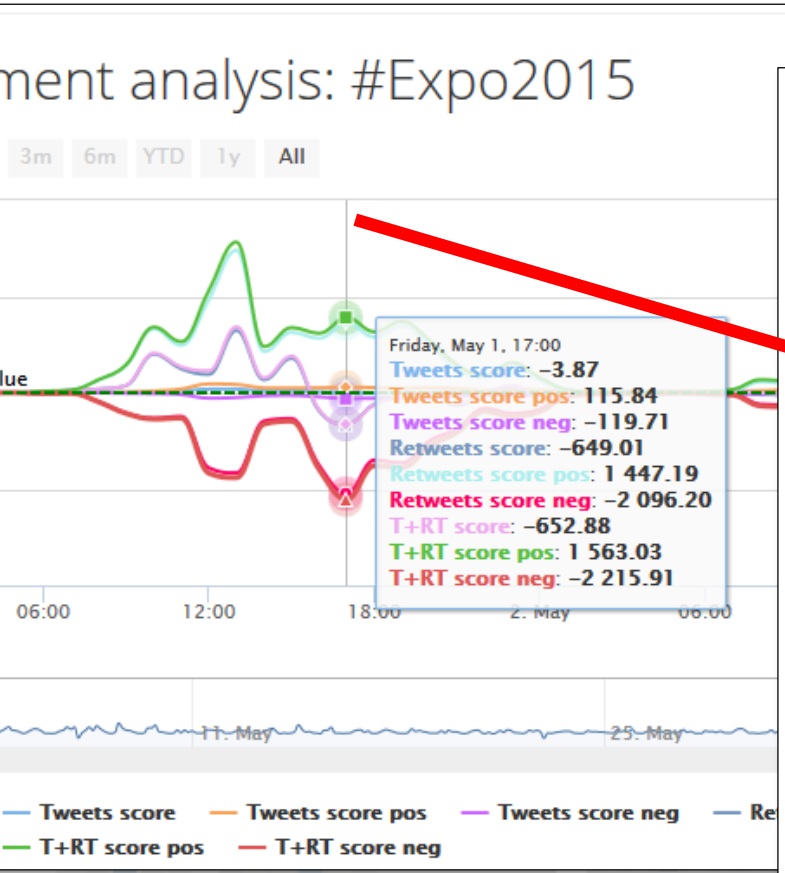
Twitter Vigilance

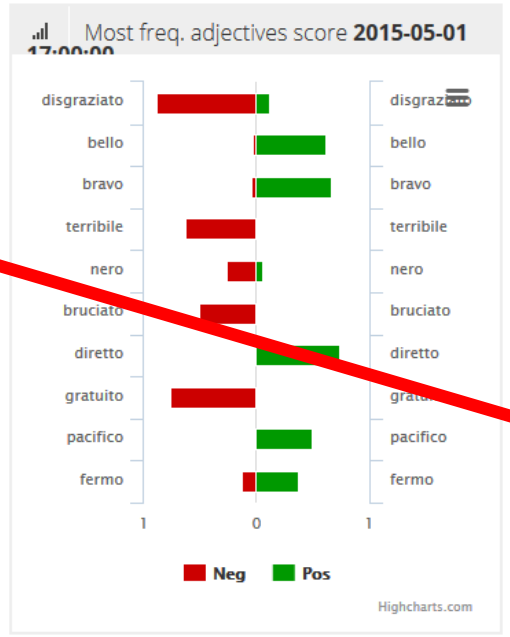
- http://www.disit.org/tv
- Citizens as sensors to
  - Assess sentiment on services, events, …
  - Response of consumers wrt…
  - **Early detection** of critical conditions
  - Information channel
  - Opinion leaders
  - Communities
  - Formation
  - **Predicting volume of visitors for tuning the services**

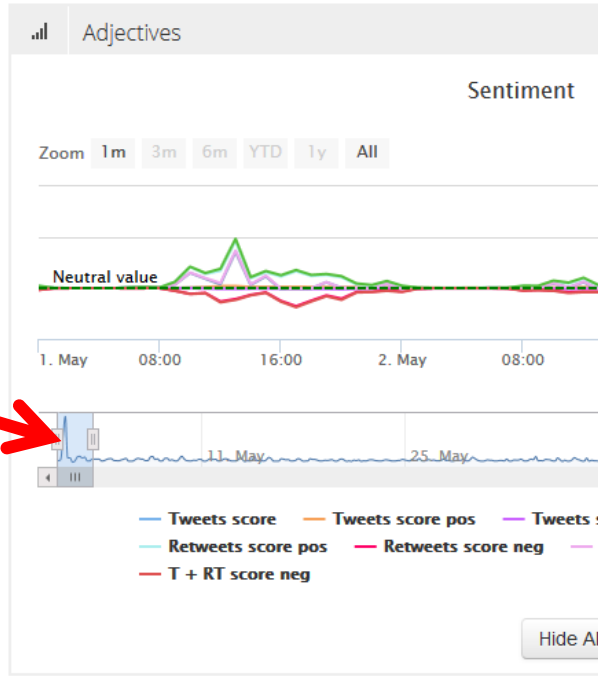


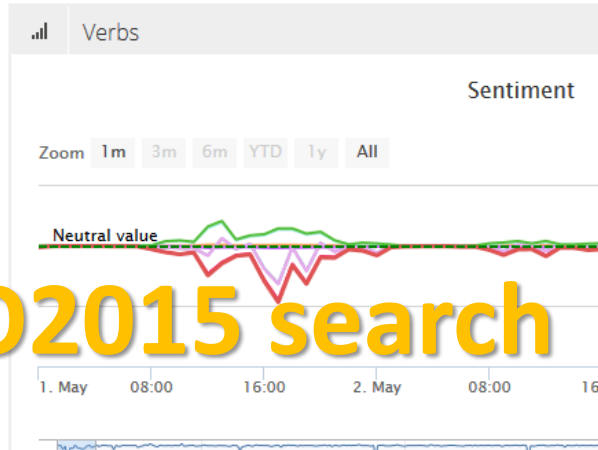
UNIVERSITÀ DEGLI STUDI FIRENZE | DINFO DIPARTIMENTO DI INGEGNERIA DELL'INFORMAZIONE | DISIT DISTRIBUTED SYSTEMS AND INTERNET TECHNOLOGIES LAB
http://www.disit.org

Twitter Vigilance









Some views on details of the SA of a Search

Sentiment Analysis on #EXPO2015 search

Twitter Vigilance

DISIT

Social Media, e-learning

- **ECLAP**: life long learning, social learning
  - http://www.eclap.eu
- **FirstClass**: certified blended learning, paid courses
  - http://fad.fclass.it
- **APRETOSCANA**: formation for researchers
  - http://www.apretoscana.org
  - Matchmaking
- **DISIT.DINFO.UNIFI.IT**: research management and dissemination
  - http://www.disit.dinfo.uinifi.it

Social Media and e-Learning

- **Projects:** http://www.disit.org/5501
  - ECLAP, http://www.eclap.eu
  - ApreToscana: http://www.apretoscana.org
  - Others: AXMEDIS, VARIAZIONI, SMNET, etc.
  - Samsung Smart TV: http://www.disit.org/6534
- **Tools:** http://www.disit.org/5489
  - XLMS, Cross Media Learning System
  - IPR and content protection and distribution
  - Mobile and SmartTv Applications
  - Suggestions and recommendations
  - Matchmaking solutions
  - Media Tools for cross media content

Dario Fo e Franca Rame, evento 20 ottobre 2011, live

RELOAD 1 ACTIONS

RELATED OBJECTS BY TEXT


ECLAP MyStoryPlayer, ECLAP networking,


Dario Fo e Franca

ECLAP Opportunities


Una vista del portale

COMMENTS MORE

METADATA

Metadata languages

Title
Dario Fo e Franca Rame, evento 20 ottobre 2011, live

Creator marco

Classification

IPR information

Technical

Location

Subject
Dario Fo e Franca Rame, evento 20 ottobre 2011, live

Description
Dario Fo e Franca Rame, evento 20 ottobre 2011, live

Provider DSI

Short url http://www.eclap.eu/63497

ACTIONS

CONTENT

- Featured
- Popular
- Popular in the period
- Last Posted
- Top Rated
- Location
- Timeline

CLASSIFICATION

THEMATIC GROUPS

Best practice network for performing arts

ECLAP Social TV on Samsung SmartTV

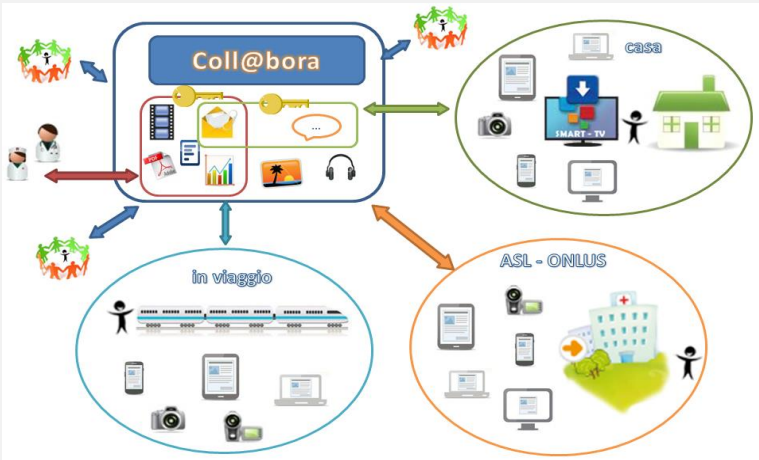
Coll@bora

http://www.disit.org/5479

Title: ***collaborative support for operators, families and disables***
(Smart City Social Innovation: technologies for the health, inclusion and medicine)

- **Objective:** solve the problems to manage protection of information needed to set up effective and secure collaborations in the team that follow the disables, and support the mechanism of second consultation

- **Technologies:**
  - Collaborative work;
  - Models for protection and privacy control of sensitive information as complex personal content based on cross media
  - Personalized services in the respect of user profiling and privacy



Mobile Computing

- **Km4City:** Smart City mobile applications
  - Http://www.km4city.org/app
- **Content Organizer:** Media Distribution and Social Support, e-learning
- **Mobile Emergency:** navigation and collaborative emergency management
  - http://www.disit.org/5500
- **Mobile Medicine:** http://mobmed.axmedis.org
- **Coll@bora**: support for impaired people
- **FODD 2015:** http://www.disit.org/6593
- **Other**: Monitoring Cloud, monitoring camper, …

Mobile Computing

- **Smart City Problems:**
  - Reaching the users
  - Understanding the user preferences and behavior
  - Understating how they move, where they go, etc..
- **Solutions:**
  - Monitoring the activities on the mobile device
  - Monitoring the activities of user in the environment
- **Technologies for Solutions:**
  - Assessing the usage of Smart city and services
  - Integrated Indoor/outdoor navigation
    - Routing, multimodal routing
  - Content distribution: e-learning
  - User networking and collaboration
  - OS: iOS, Android, Windows Phone, etc.
  - Tech: IOT, iBeacoms, NFC, QR, ….

Available on the App Store

ANDROID APP ON Google play

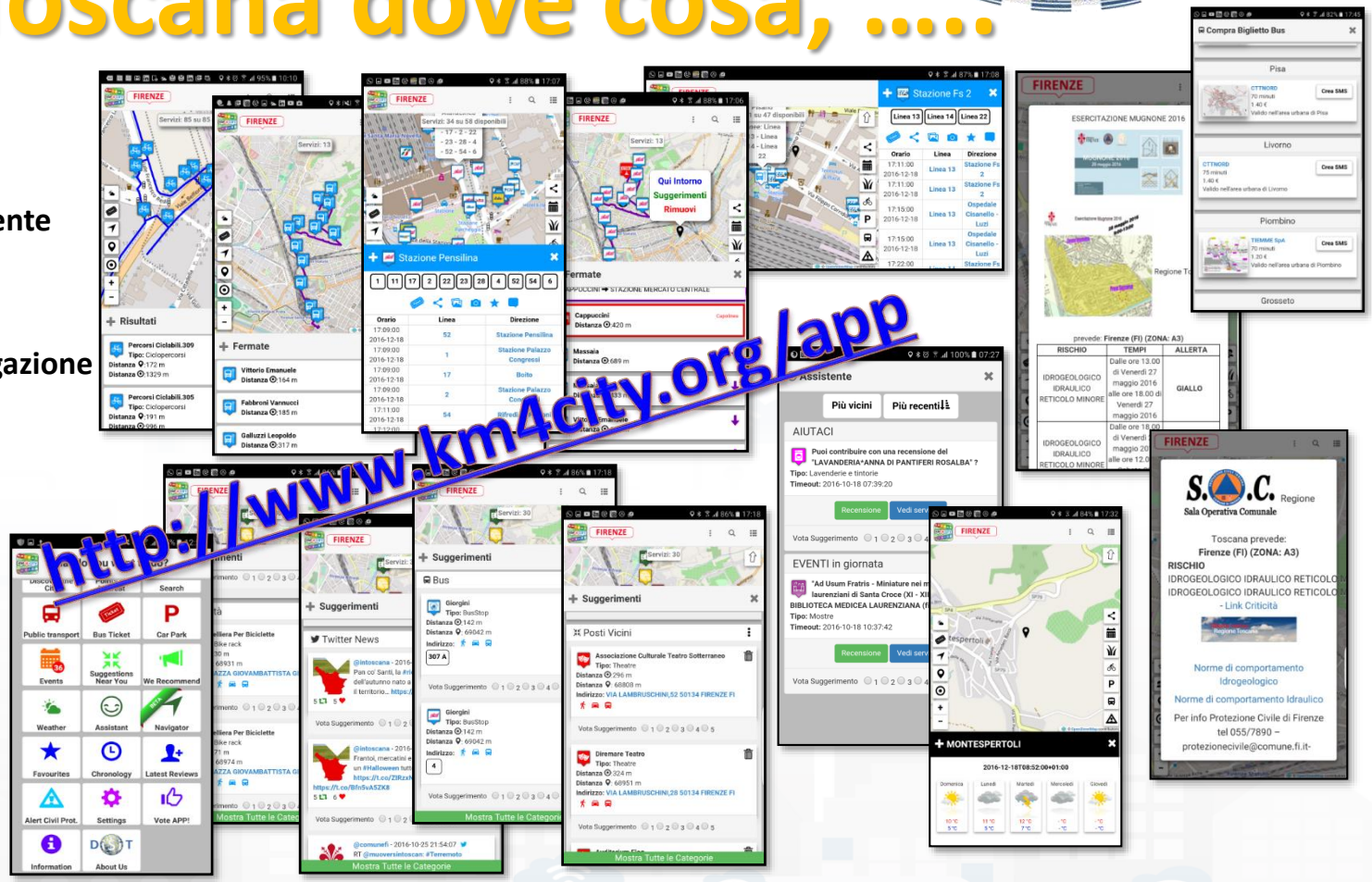
Download from Windows Phone Store

TOSCANA

Toscana dove cosa, ….

- Tutta la Toscana
- Personalizzable
- Profilata per tipo di utente

- Trasporto pubblico
- Traffico, percorsi, navigazione
- Parcheggi liberi
- Costi benzina
- Suggerimenti
- Assistenza
- Protezione civile
- Meteo
- Biglietti bus
- Punti di Interesse
- Contributi degli utenti



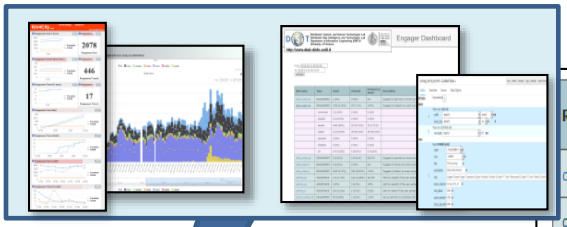
Km4CityMobile App: Google Play and Apple Store

- https://play.google.com/store/apps/details?id=org.disit.siiMobile
- https://itunes.apple.com/us/app/florence-km4city/id1028356115?mt=8

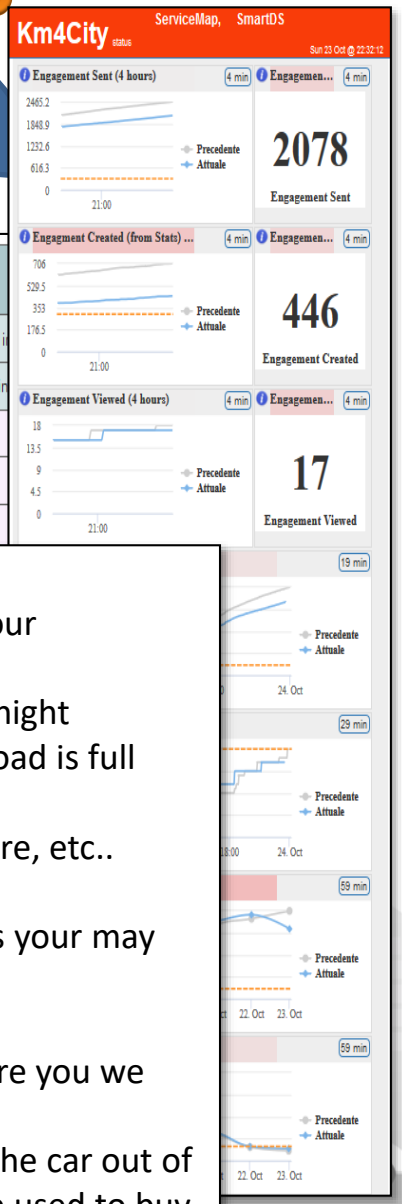
- *web application*
- *http://www.km4city.org*

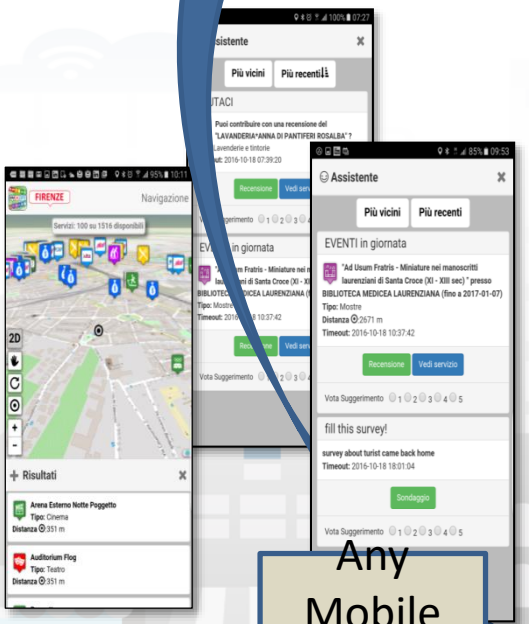
User influencing, engaging, monitoring & . Follow Up

City & City Operator Editor



Rule name	Type	#sent	#viewed	#viewed on #sent	Description
daily_event_de	ENGAGEMENT	1 (0%)	0 (0%)	0%	Suggest (in german) an event currently on i
daily_event_en	ENGAGEMENT	1720 (2.12%)	70 (7.1%)	4.07%	Suggest (in english) an event currently on in
	- commuter	5 (0.29%)	0 (0%)	0 (0%)	
	- student	14 (0.81%)	0 (0%)	0 (0%)	
	- tourist	1462 (85%)	25 (35.71%)	25 (1.71%)	
	- citizen	113 (6.57%)			
	- operator	0 (0%)			
	- disabled	0 (0%)			
	- all	119 (6.92%)			
daily_event_es	ENGAGEMENT	6 (0.01%)			
daily_event_fr	ENGAGEMENT	6 (0.01%)			
daily_event_it	ENGAGEMENT	5459 (6.73%)			
parking_en	ASSISTANCE	141 (0.17%)			
parking_es	ASSISTANCE	3 (0%)			
parking_it	ASSISTANCE	187 (0.23%)			
shoot_a_photo_de	ENGAGEMENT	68 (0.08%)			





Any Mobile and Web App

Inform

You have parked out of your residential parking zone

The Road cleaning is this night

The waste in S.Andreas Road is full

Engage

Provide a comment, a score, etc..

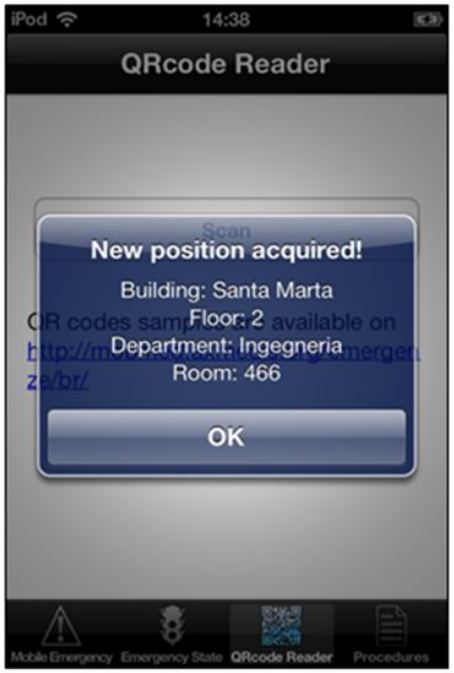
Stimulate / recommend

Events in the city, services your may be interested, etc..

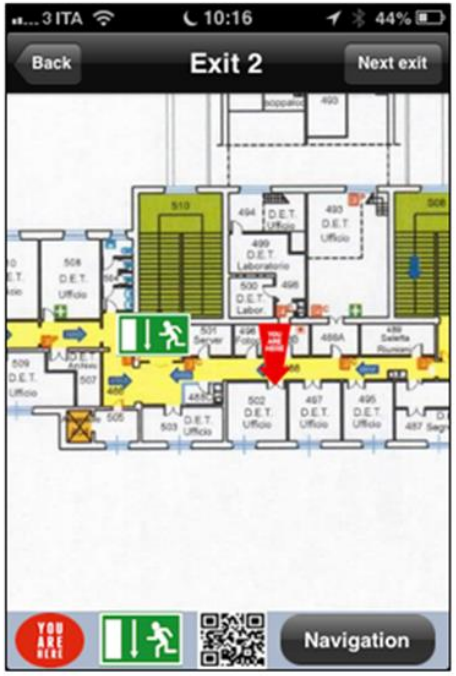
Provide Bonus

Since you have parked here you we can get 1 Bonus

We suggest you to leave the car out of the city, this bonus can be used to buy

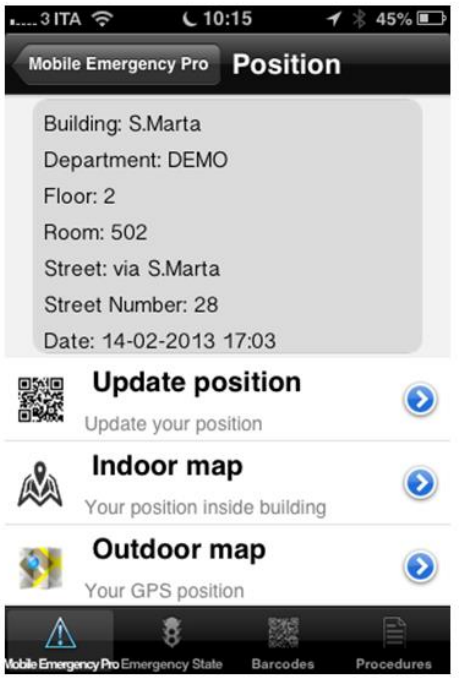


13.1

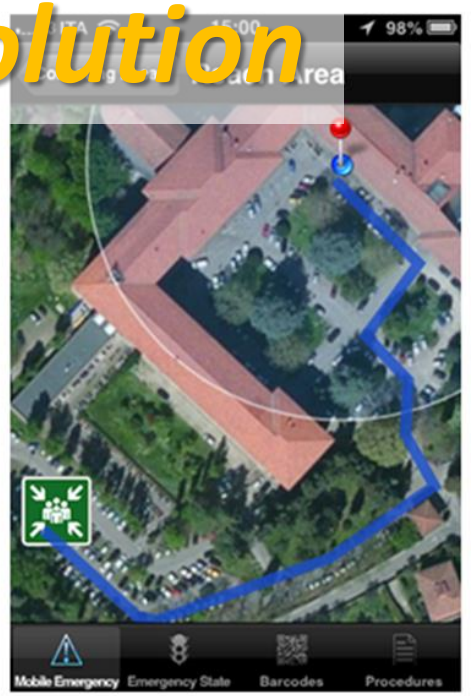


13.2

13.3



Integrated Indoor/outdoor solution

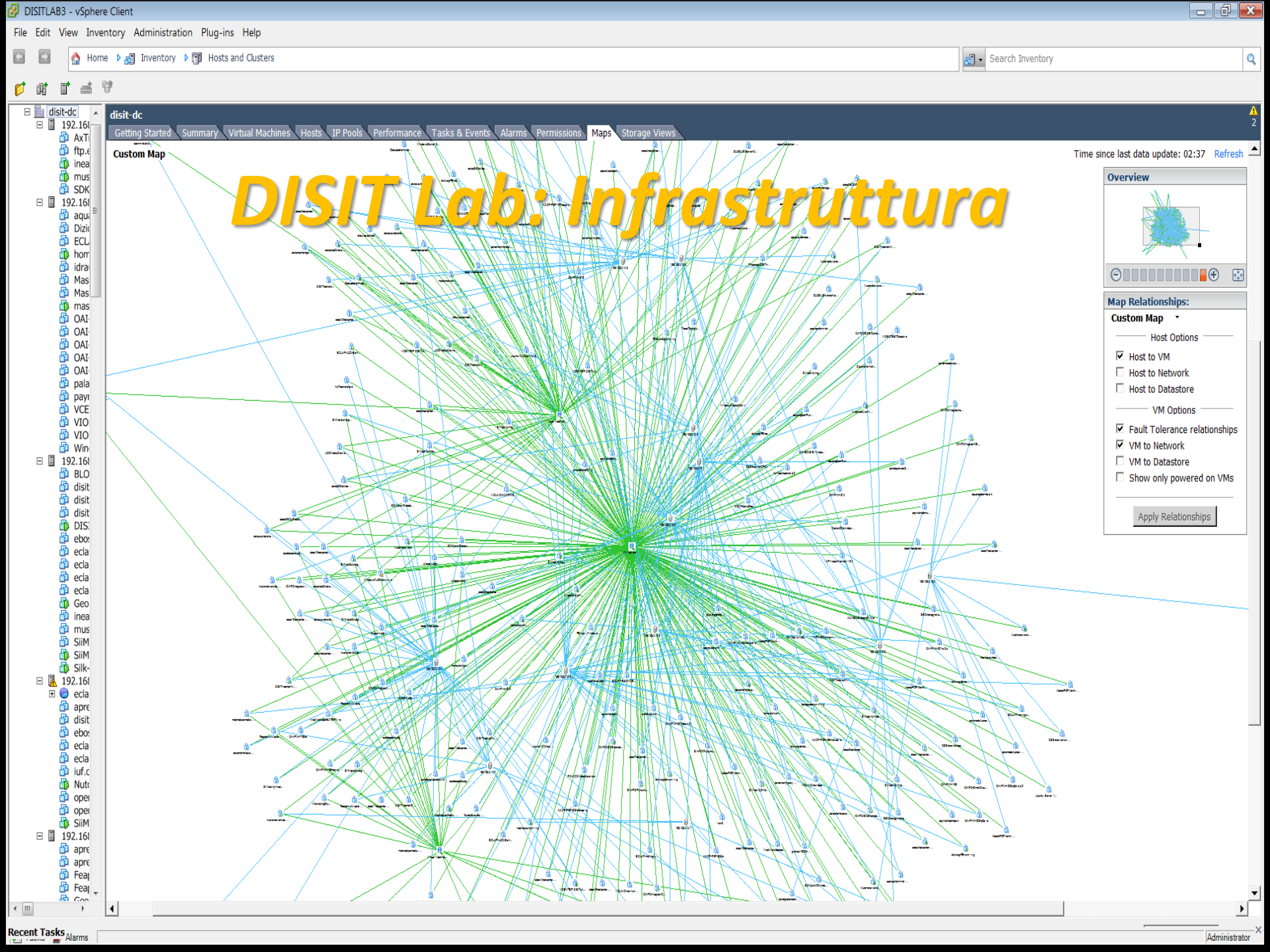


nywhere learning

SAMSUNG SMART TV

Infrastructure and support for

- **Research group with more than 20 years of activities**
- **Cloud and data center** with several servers and more than 450Tbyte storage in raid 50.
  - Managing several infrastructure: Km4City, Sii-Mobility, ECLAP, ApreToscana, IUF, SMNET, etc.
- **IOT center**: reference center for Fluctus, UDOO, e Intel Galileo
- **Open Data and Linked Open Data center**
  - **Integration of more than 400 different Open Data** sets coming from Tuscany area (geographical information, ambient and weather, transportation and mobility, public administration and services, statistics, point of interest, sensors, events, time lines, etc.) see Sii-Mobility project http://www.disit.dinfo.unifi.it/siimobility.html
  - **LOD** for global linked data http://LOG.disit.org
- **Technology Transfer** to SMEs via APREToscana http://www.apretoscana.org/ and CSAVRI center for TT and incubator.
- Management of Call for proposals in EC projects
- Project Management, Dissemination Management, Exploitation Plan


DISITLAB3 - vSphere Client
File Edit View Inventory Administration Plug-ins Help
Home Inventory Hosts and Clusters
Search Inventory
disit-dc
Getting Started Summary Virtual Machines Hosts IP Pools Performance Tasks & Events Alarms Permissions Maps Storage Views
Custom Map
DISIT Lab: Infrastruttura
Time since last data update: 02:37 Refresh
Overview
Map Relationships:
Custom Map
Host Options
Host to VM
Host to Network
Host to Datastore
VM Options
Fault Tolerance relationships
VM to Network
VM to Datastore
Show only powered on VMs
Apply Relationships
Recent Tasks
Alarms
Administrator

DISIT Lab

Distributed Data Intelligence and Technologies Lab
Distributed Systems and Internet Technologies Lab

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