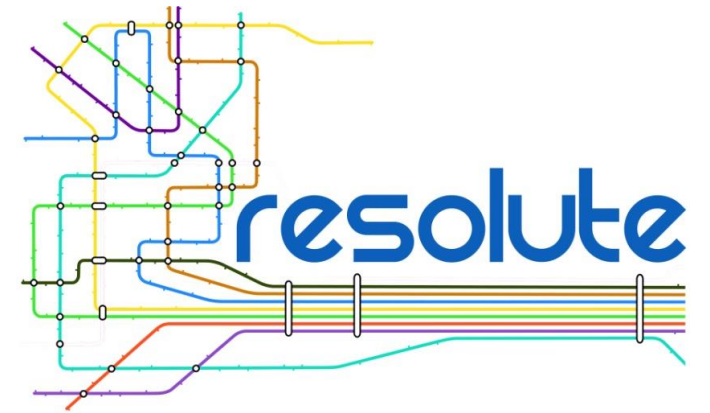




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TECHNOLOGIES LAB



Il Progetto RESOLUTE: Gli Strumenti per la Resilienza

<http://www.disit.org/km4city>

Paolo Nesi, paolo.nesi@unifi.it

<http://www.resolute-eu.org>



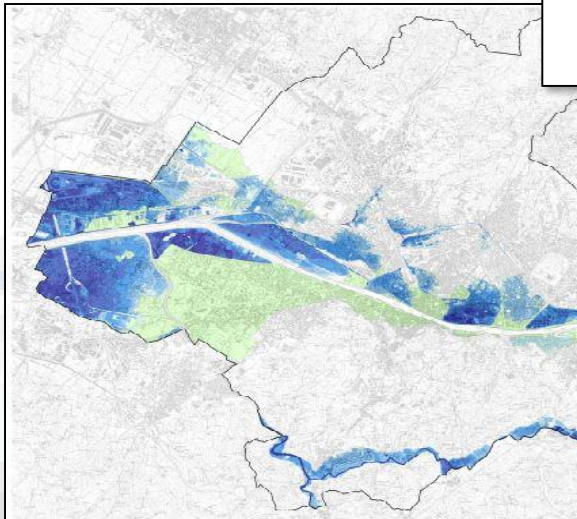
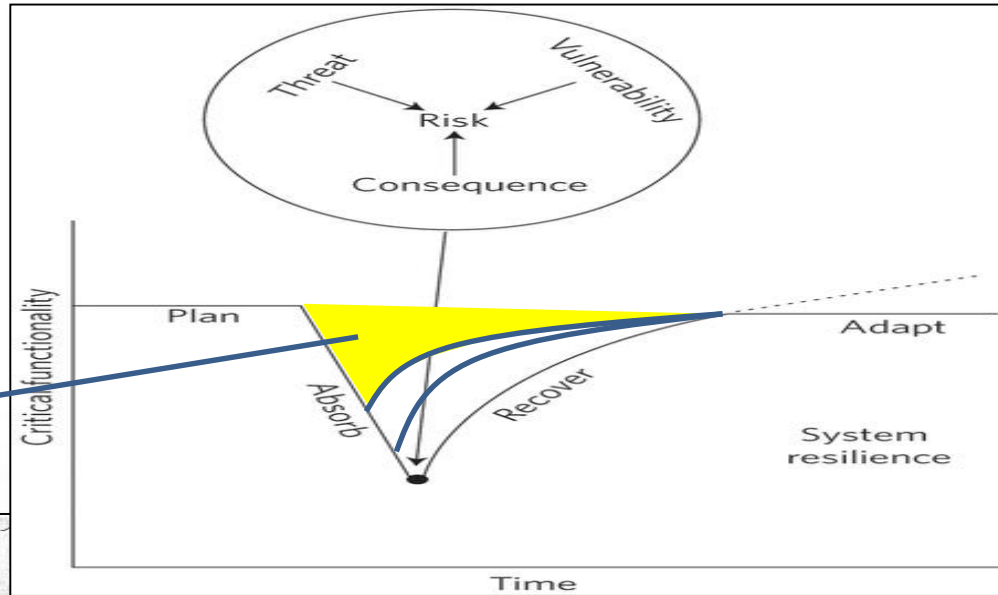
City Resilience



Early warning, detection

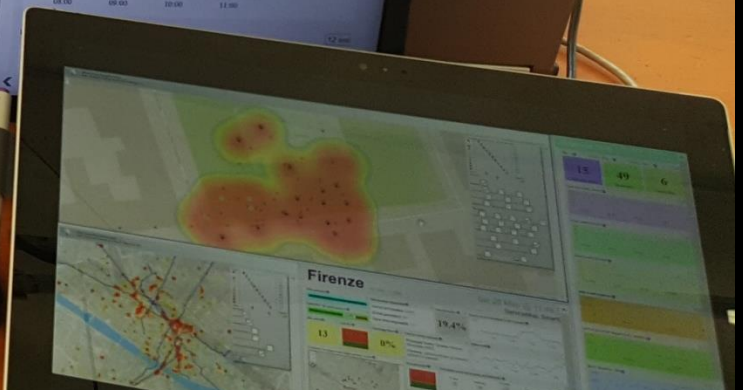
Prepare
Absorb
Recover
Adapt

damage





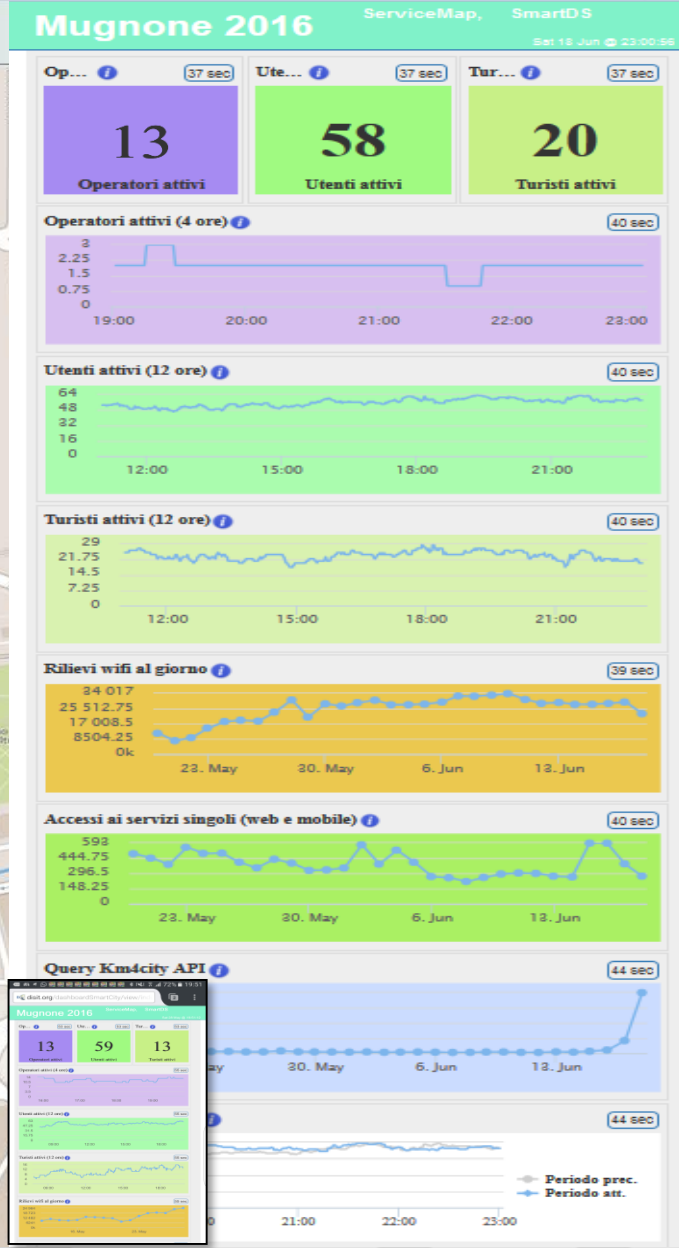
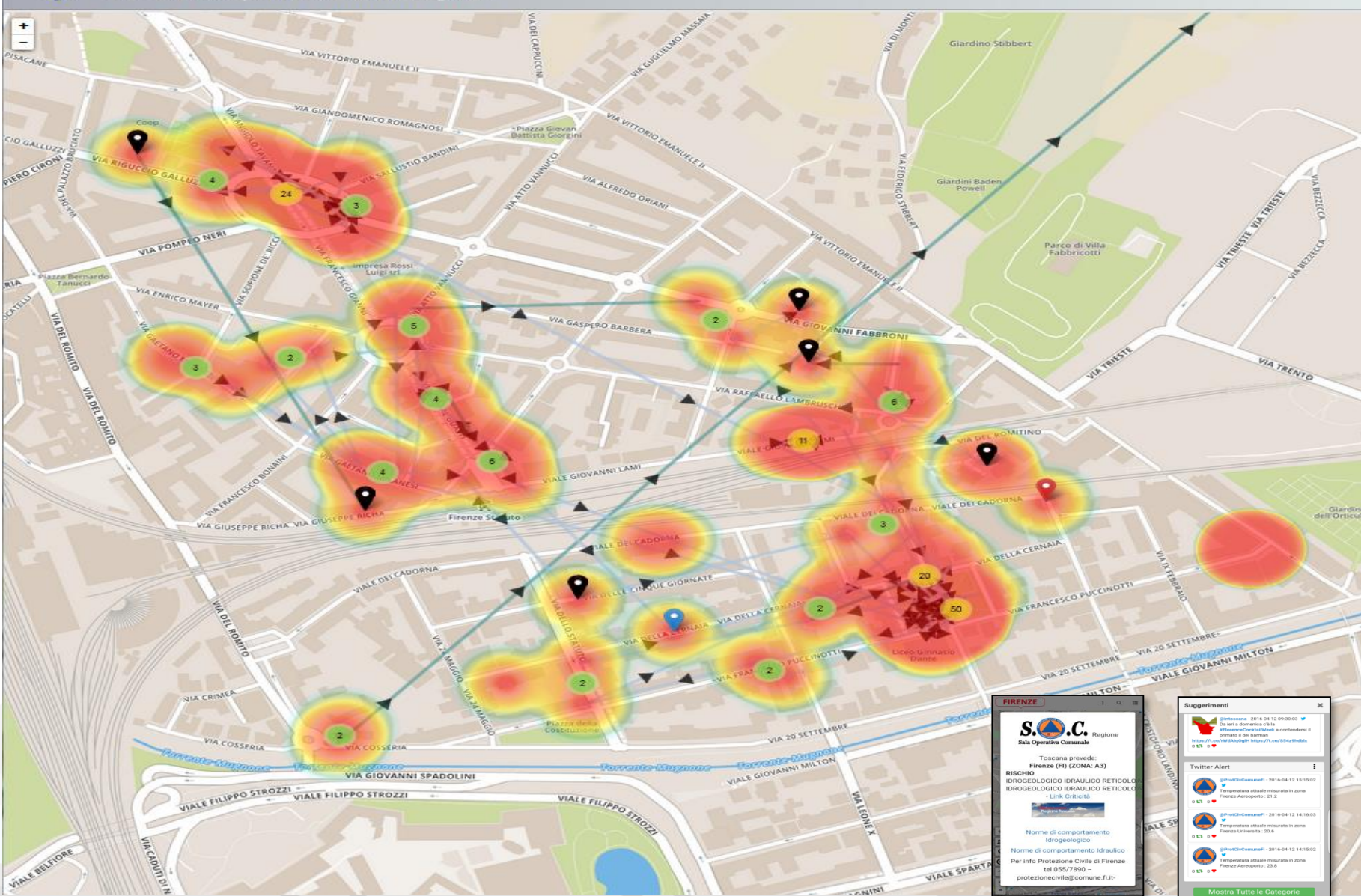
Mugnone 2016





Mugnone 2016

DISIT Recommender - Real Time City Users - positions and movements
DISIT - Distributed Systems and Internet Technologies Lab



S.O.C. Regione Toscana prevede: Firenze (FI) (ZONA: A3) RISCHIO IDROGEOLOGICO IDRULICO RETICOLO IDROGEOLOGICO IDRULICO RETICOLO

Norme di comportamento Idrogeologico
Norme di comportamento Idraulico

Per info Protezione Civile di Firenze
tel 055/71990 - protezionecivile@comune.fi.it

Suggerimenti

Twitter Alert

- Temperature attuale misurata in zona Firenze Aeroporto: 21.2
- Temperature attuale misurata in zona Firenze Sesto San Giovanni: 20.6
- Temperature attuale misurata in zona Firenze Aeroporto: 23.8

Mostra Tutte le Categorie

Mugnone 2016

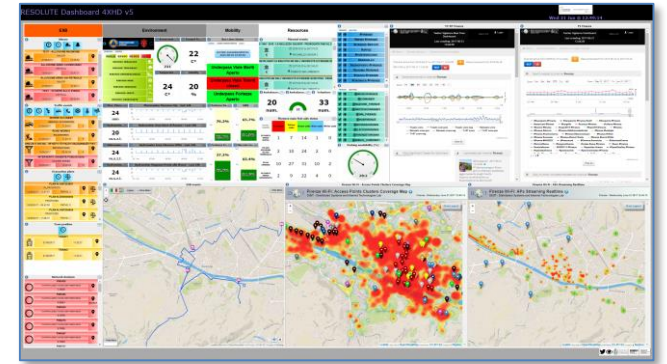
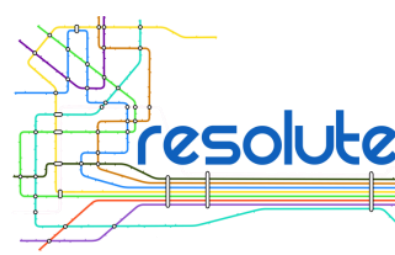
13	59	13
----	----	----



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<http://www.disit.org>

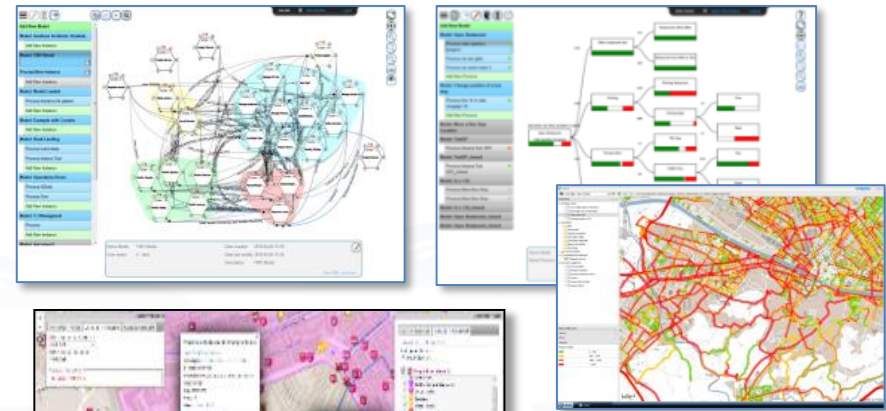
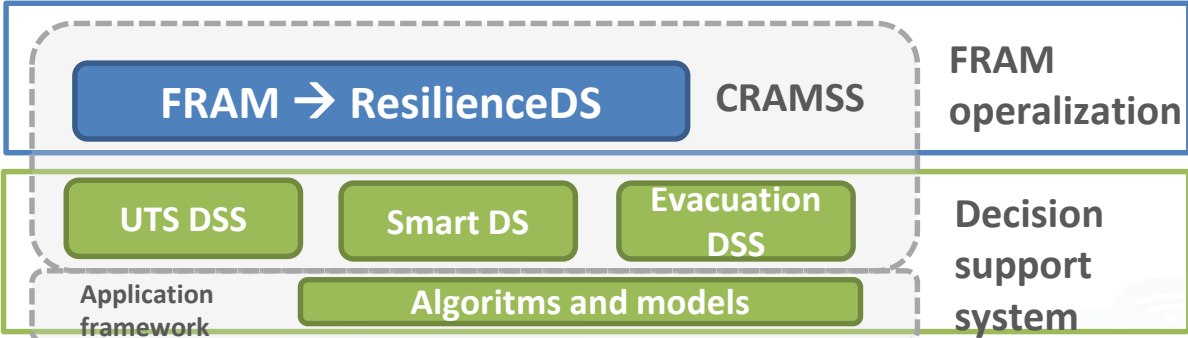


RESOLUTE RESILIENCE Dashboard

Presentation & Visualization

User guidance

RESOLUTE Mobile APPs



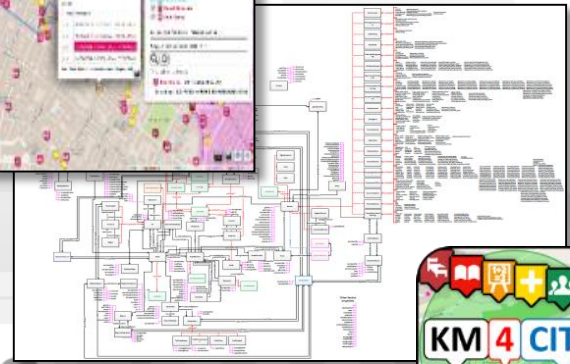
Data Integration APIs

User Profiler APIs

User profiler

Integration framework

Enhanced Km4City Data and Service Aggregator

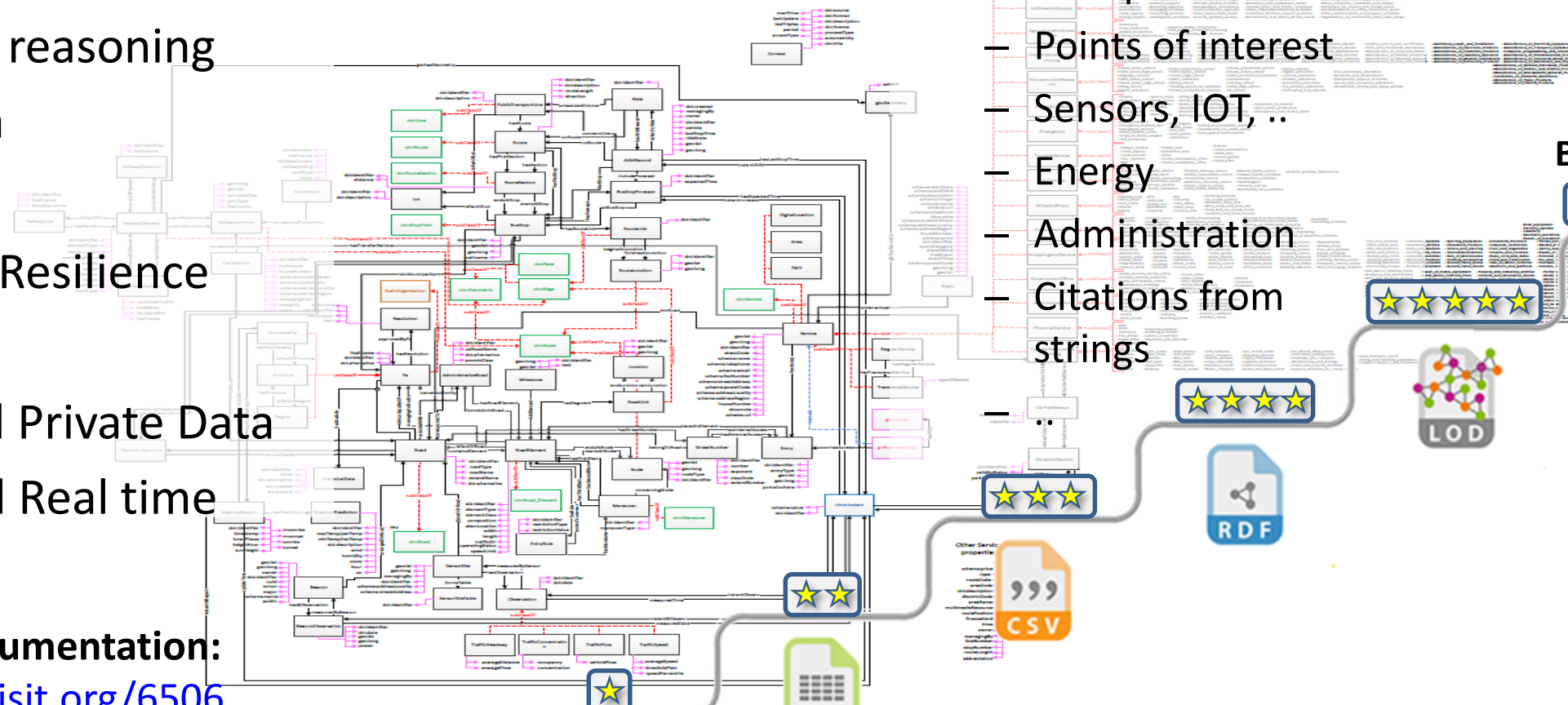


Km4City: Knowledge Base



- Multiple DOMAINS
- Geospatial reasoning
- Temporal reasoning
- Metadata
- Statistics
- Risk and Resilience
- Licensing
- Open and Private Data
- Static and Real time

- Street-Guide
- Mobility and transport
- Points of interest
- Sensors, IOT, ..
- Energy
- Administration
- Citations from strings



Big Data Tools



LOD and reasoners



Ontology Documentation:

- <http://www.disit.org/6506>
- <http://www.disit.org/6507>
- <http://www.disit.org/5606>
- <http://www.disit.org/6461>

**Present data on
Tuscany Region
January 2018**

Road Graph (Tuscany region)

132,923 Roads , 389,711 Road Elements
318,160 Road Nodes, 1,508,207 Street Numbers

Info on: points, paths, areas, etc.

Services (20 cat, 512 cat.)

16 Public Transport Operators

21.280 Bus stops & 1081 bus lines

Dynamic/real-time in Tuscany Region

- Real time bus lines: 144 updates X day X line
- 1081 Transport Pub Lines: 1-2 up per day, time-path
- >210 parking lots status: 76 updates X day X sensor
- >796 traffic Sensors: 288 updates X day X sensor
- 285 weather area: 2 updates X day X area
- >12 hospital Triage status: 96 updates X day X FA
- 22 Environmental data: 20 updates X day X sensor
- 39 Bike Sharing data: Pisa and Siena
- 12 Pollination data
- 140 recharging stations
- Smart benches, waste mng, irrigators, lighting,...
- Florence ent.events: about 60 new events X day
- Different kinds of Florence traffic events,
- [1600 Fuel stations: 1 update X day X station]
- Wi-Fi: > 400.000 measures X day
- App mobiles: >50.000 measures X day
- more than 40.000 distinct users X day
- From 600.000 to 4.5 M Tweets X day
- many IOT sensors

Fermate Firenze Comuni in Toscana Ricerca Testuale

Seleziona una provincia:

FIRENZE

Seleziona un comune:

FIRENZE

Actual Selection

COMUNE di FIRENZE

KM4 CITY

Giovedì

Venerdì

Sabato

poco nuvoloso

poco nuvoloso

velato

23°C / 27°C

20°C / 33°C

schiarite

20°C / 20°C

<http://servicemap.km4city.org>

Servizi Regolari Servizi Trasversali

search text into service

Categorie Servizi

- De/Select All
- Accommodation +
- Advertising +
- AgricultureAndLivestock +
- CivilAndEdilEngineering +
- CulturalActivity +
- EducationAndResearch +
- Emergency +
- Entertainment +
- Environment +
- FinancialService +
- GovernmentOffice +
- HealthCare +
- IndustryAndManufacturing +
- MiningAndQuarrying +
- ShoppingAndService +
- TourismService +
- TransferServiceAndRenting +
- UtilitiesAndSupply +
- Wholesale +
- WineAndFood +

N. risultati: Nessun Limite

Raggio ricerca 100 metri



Risultati della ricerca

più di 4000 risultati, attivato clustering

Services 16858

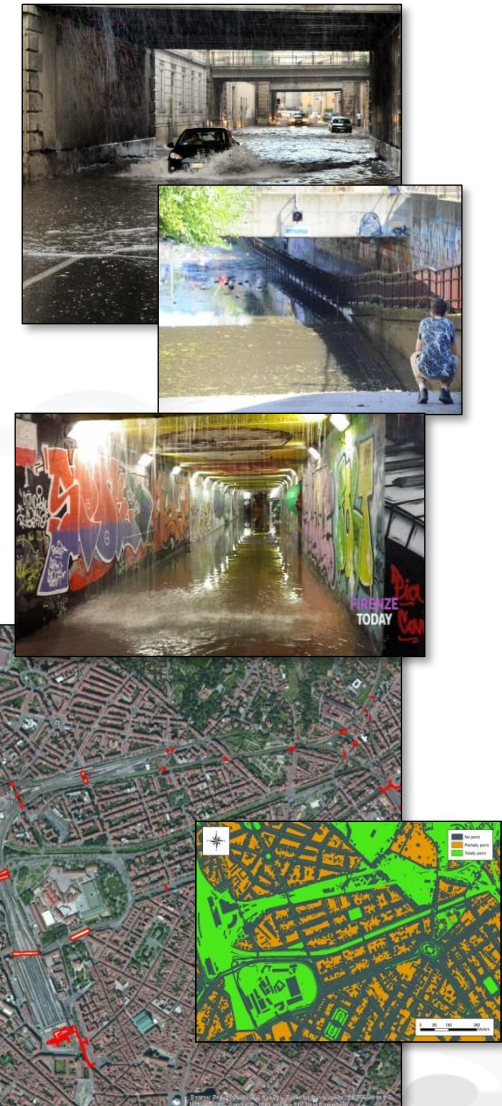


Other Sensors and Actuators, IOT

- Restricted Traffic Zone Gates
 - Passages, payment, alerts,
 - Wi-Fi control, RFI control, etc.
- Road Direction manager: panel, red-light, etc.
 - Status and action
- Environmental Sensors:
 - Air quality, pollution, rain, allergens, temperature,
 - humidity,...
- Public Light Pillar
 - Traffic flows, environment,
 - Wi-Fi, Tv-Camera, BT servers, on/off, percentage of light, ..
- Waste Manager
 - Level, kind, status, on/off
- Recharge station, column
 - Free slots, consumption, next time slot, ...



- **Environmental Sensors:**
 - Air, temperature, humidity,
 - water level in rivers
 - Status of underpass and bridges
- **Risk assessment**
 - Value of the buildings,
 - hydrogeological risk map,
 - earthquake risk map, ...
 - people distribution and location
 - Position of recover places,
- **Traffic Zone Gates**
 - Passages, alerts,
 - etc.





ServiceMap



Search around a GPS point

Search along a line

Regular Services | Transversal Services

search text into service

Services Categories

De/Select All

Area

DigitalLocation

HappeningNow

Path

Fresh Place

Public Transport Line

Road Sensors

Bus Stops

N. results for each: 200

Search Range: 500 mt

Search Results

Services: 35 of 35 available

Bus Stops: 13 of 13 available

Road Sensors: 2 of 2 available

Bus Lines

72 Bus Lines Found.

Bus Line: 23
Direction: NAVE A ROVEZZANO → NUOVO PIGNONE

Bus Line: 23
Direction: SORDANE → NUOVO PIGNONE

Bus Line: 35
Direction: MAGERITA → STAZIONE VIA ALAMANI

Weather Forecast for Municipality of FIRENZE

Day	Weather	Temp
Sunday	light rain and sunny intervals	18°C / 24°C
Monday	cloudy	13°C / 24°C
Tuesday	cloudy	13°C / 25°C
Wednesday	light rain	
Thursday	rainstorm	

Search for Geo Located Services

Get Events in the city

Regular Services | Transversal Services

search text into service

Services Categories

De/Select All

Area

DigitalLocation

HappeningNow

Path

Fresh Place

Public Transport Line

Road Sensors

Bus Stops

N. results for each: 500

Search Range: 500 mt

Search Results

Services: 418 of 418 available

Bus Stops: 23 of 23 available

Road Sensors: 2 of 2 available

Bus Lines

33 Bus Lines Found.

Bus Line: C2
Direction: PIAZZA BECCARIA → LEOPOLDA

Bus Line: C2
Direction: PIAZZA BECCARIA → LEOPOLDA

Bus Line: 12
Direction: STAZIONE PARCHEGGIO → PIAZZALE SERVIZI ANTI-F

20 events found.

Jan Fabre a Firenze
Place: PALAZZO VECCHIO - ARENGARIO
Date: da 2016-04-15 a 2016-10-02

Jan Fabre a Firenze
Place: PALAZZO VECCHIO - ARENGARIO
Date: da 2016-04-15 a 2016-10-02

Musica ribelle - La forza dell'Amore, a musical
Place: TEATRO DELLA PERGOLA
Date: da 2016-05-03 a 2016-05-08
Time: 20:45, domenica 13:45

"In sua movenza a ferro"
Place: TEATRO DELLA PERGOLA

Weather Forecast for Municipality of FIRENZE

Day	Weather	Temp
Sunday	light rain and sunny intervals	18°C / 24°C
Monday	cloudy	13°C / 24°C
Tuesday	cloudy	13°C / 25°C
Wednesday	light rain	
Thursday	rainstorm	

Search in an area

Regular Services | Transversal Services

search text into service

Services Categories

De/Select All

Accommodation

Advertising

AgricultureAndLivestock

CivilAndITEngineering

CulturalActivity

EducationAndResearch

Emergency

Entertainment

Environment

FinancialService

HealthCare

IndustryAndManufacturing

MiningAndQuarrying

ShippingAndService

Transportation

TransferServiceAndRenting

UtilitiesAndSupply

Wholesale

WineAndFood

N. results: No Limit

Search Range: visible areas

Search Results

Services: 2231 of 2231 available

Query results organized by category

Total number of results: 2231

Category	Count
Accommodation	14
Advertising	21
AgricultureAndLivestock	31
CivilAndITEngineering	31
CulturalActivity	24
EducationAndResearch	24
Emergency	15
Entertainment	104
Environment	241
FinancialService	264
HealthCare	49
IndustryAndManufacturing	51
MiningAndQuarrying	154
ShippingAndService	
Transportation	
TransferServiceAndRenting	
UtilitiesAndSupply	
Wholesale	
WineAndFood	

Weather Forecast for Municipality of FIRENZE

Day	Weather	Temp
Sunday	light rain and sunny intervals	18°C / 24°C
Monday	cloudy	13°C / 24°C
Tuesday	cloudy	13°C / 25°C
Wednesday	light rain	
Thursday	rainstorm	

Get weather forecast

Get Real Time data (public busses, car parks, sensors, traffic flows)

Regular Services | Transversal Services

search text into service

Services Categories

De/Select All

Area

DigitalLocation

HappeningNow

Path

Fresh Place

Public Transport Line

Road Sensors

Bus Stops

N. results for each: 200

Search Range: 500 mt

Search Results

Services: 25 of 25 available

Road Sensors: 3 of 3 available

Actual Selection

Service: F1055ZTL01601

F1055ZTL01601

LINKED OPEN GRAPH

Topology: TransferServiceAndRenting - SensorSite

Address: VIA GUELFA

Data from sensor: F1055ZTL01601

Last Update: 2016-04-26T10:31:00+02:00

Avg Distance(m)	Avg Time (sec)	Occupancy (%)	Concentration (cars/km)
N.A.	N.A.	N.A.	0.0

Vehicle Flow (car/h)	Avg Speed (km/h)	Threshold Perc (%)	Speed Perc (%)
48.0	0.0	N.A.	N.A.

Weather Forecast for Municipality of FIRENZE

Day	Weather	Temp
Sunday	light rain and sunny intervals	18°C / 24°C
Monday	cloudy	13°C / 24°C
Tuesday	cloudy	13°C / 25°C
Wednesday	light rain	
Thursday	rainstorm	



Mobility and Transport

informazioni e ricostruzioni



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Florence Bus Tuscan Municipalities Text Search Events

Select an agency:
Ataf&Linea

Select a line:
- Select a Line -

Select a route:
- Select a Route -

Select a bus stop:
- Select a Bus Stop -

Position of selected Busses

Actual Selection
Bus Stop: Sorgane Piazza Rodolico

Servizi: 16 su 16 disponibili

Parcheggio Stazione Firenze S.M.N.

Più vicini Più vicini Posti liberi

Tempo reale
527 08-06-2030
Previsione
537 08-06-0015

Andamento Giornaliero

Weather Forecast for Municipality of : FIRENZE

Day	Forecast	Temperature
Wednesday	cloudy	17°C / 21°C
Thursday	light rain and sunny intervals	13°C / 18°C
Friday	cloudy	12°C / 18°C
Saturday	bit cloudy	/
Sunday	light rain	/

LINKED OPEN GRAPH



TPL STOP : Sorgane Piazza Rodolico

Ataf&Linea

LINKED OPEN GRAPH

Lines: 24

Display 10 Bus per page

Search:

Time	Line	Direction
08:00:00 2016-11-10	24	Grassina
08:10:00 2016-11-10	24	Sorgane Piazza Rodolico
08:15:00 2016-11-10	24	Osteria Nuova
08:20:00 2016-11-10	24	Grassina
08:42:00 2016-11-10	24	Sorgane Piazza Rodolico

Showing page 1 of 7

Real-time data currently not available

Regular Services Transversal Services

Services Categories

- De/Select All
- Accommodation +
- Advertising +
- AgricultureAndLivestock +
- CivilAndEdilEngineering +
- CulturalActivity +
- EducationAndResearch +
- Emergency +
- Entertainment +
- Environment +
- FinancialService +
- GovernmentOffice +
- HealthCare +
- IndustryAndManufacturing +
- MiningAndQuarrying +
- ShoppingAndService +
- TourismService +
- TransferServiceAndRenting +
- UtilitiesAndSupply +
- Wholesale +
- WineAndFood +

Filter:

search text into service

N. results: 10

Search Range 100 mt

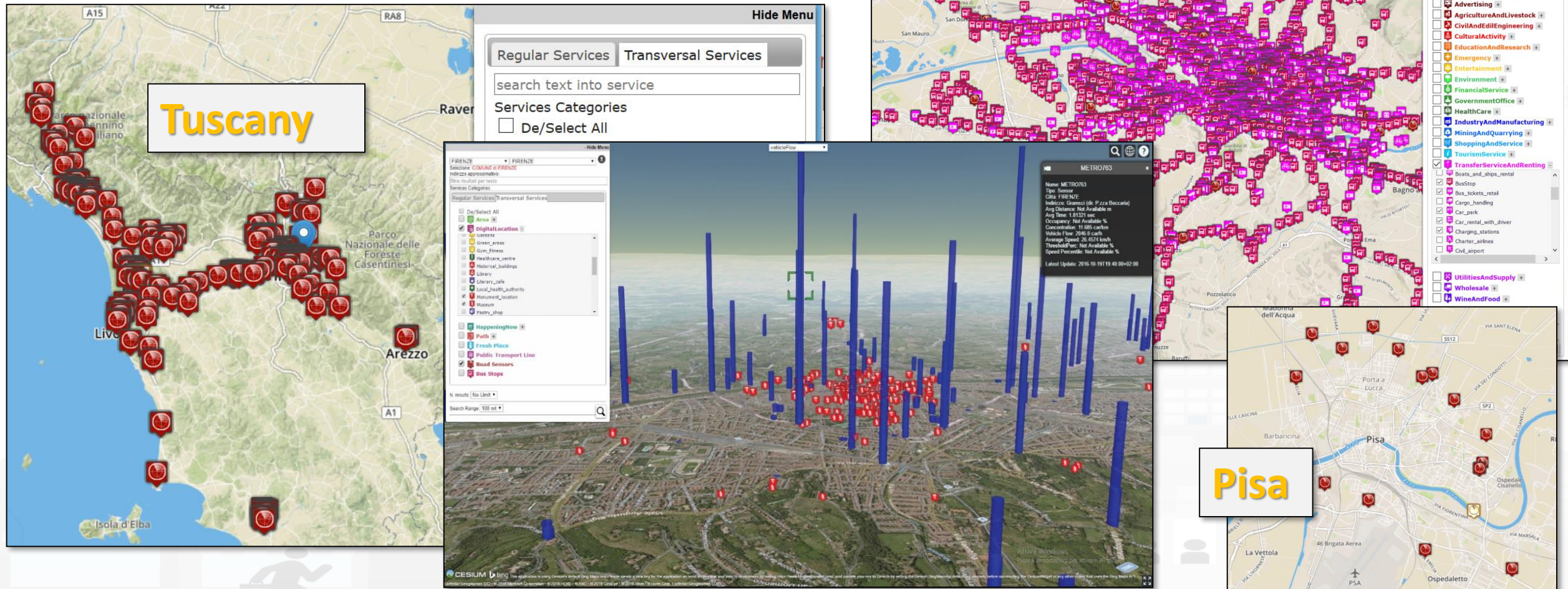
Search Area select...

- Line e Corse dei mezzi pubblici, orari, tempo reale
- Bus, tramvia, treni, traghetti
- Parcheggi ed aree di sosta
- Ciclabili, preferenziali, ZTL, etc.
- Sensori del traffico
- Car e Bike Sharing
- Pannelli a Messaggio Variabile
- Eventi di traffico, ordinanze, etc.
- Pulizia delle strade, raccolta dei rifiuti
- Ricerca: vicino a un punto, lungo linea, in aree,
- Special Routing: modale e multimodale



Traffic Flow Tools

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



Private Mobility: routing and navigation paths

- To get the path from two points:
 - Shortest for pedestrian
 - Quietest for pedestrian
 - Shortest for private vehicles
 - Multimodal with Public transport
- <http://www.disit.org/ServiceMap>

The screenshot displays the Sii-Mobility web application interface. At the top, there are navigation tabs for 'Florence Bus', 'Tuscan Municipalities', 'Text Search', and 'Events'. Below these are dropdown menus for selecting an agency, a line, a route, and a bus stop. A red button labeled 'Position of selected Busses' is visible. A search bar for 'Quick address/location search' includes an 'exclude POI' checkbox. The 'Actual Selection' section shows coordinates (43.7681, 11.2537) and the address 'LUNGARNO DEGLI ARCHIBUSIERI, 18, FIRENZE'. It offers options for 'Path from here' and 'Path to here'. Below this, there are links for 'Sports_facility: Area sportiva Canottieri di Firenze (dist:0,0001)', 'Tourist_trail: Firenze Card (dist:0,0002)', and 'Tourist_trail: Il percorso del Principe - The Prince s way (dist:0,0000)'. The 'Path' section specifies the route from 'PIAZZA DELLA STAZIONE, 42, FIRENZE' to 'LUNGARNO DEGLI ARCHIBUSIERI, 18, FIRENZE' via 'foot_shortest'. A 'Search Path' button is present. The 'Found 1 paths (in 5.959s)' section shows a path with a length of 1262m and an arrival time of 12:58:12 (00:14:24). A list of path segments is provided: 1. nd 305m (12:43:33), 1. foot 13m (12:43:42), 2. foot 15m (12:43:53), 3. foot 29m (12:44:14), 4. foot 35m (12:44:39), 5. foot 16m (12:44:50), 6. foot 7m (12:44:55). The right side of the interface features a map of Florence with a red line indicating the selected route. An inset map at the bottom shows a detailed view of the route with various colored icons representing different mobility services.

Predicting City Users

Via Wi-Fi

<http://www.km4city.org/?controlRoom>

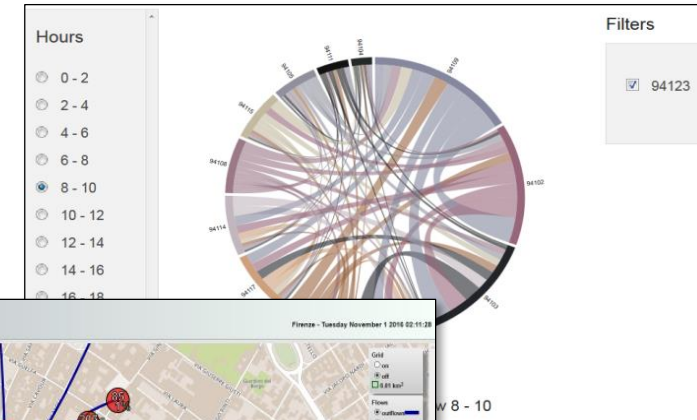
<http://www.km4city.org/?devTools>

<http://www.km4city.org/?infoDocs>

<http://www.km4city.org/?app>

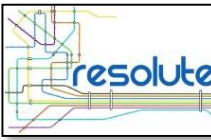
User Behaviour Analysis

- **Monitoring movements by traffic flow sensors**
 - Spires and virtual spires
- **Monitoring movements from Mobile Cells**
 - Unsuitable for precise tracking and OD production
- **Monitoring movements from Wi-Fi**
- **Monitoring movements and much more from mobile Apps**





WiFi Monitor tool



DISIT WiFi Firenze
DISIT - Distributed Systems and Internet Technology Lab

FirenzeWifi monitor

Utenti FWIFI 4 min: **4357**

Eventi FWIFI 4 min: **17001**

AP FWIFI 4 min: **233**

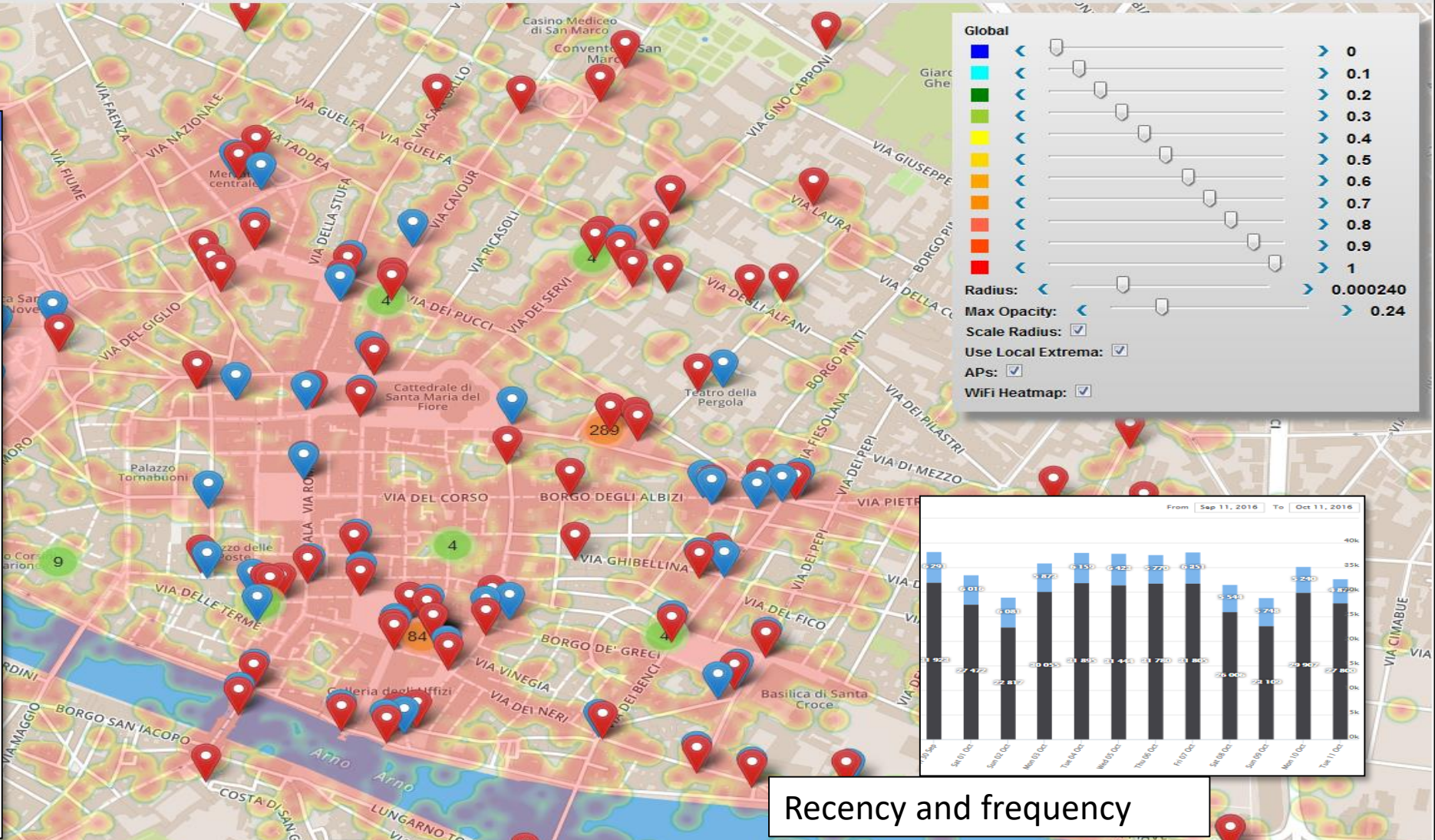
Utenti FWIFI (weekly)

Utenti FWIFI (mensile)

AP FWIFI (mensile)

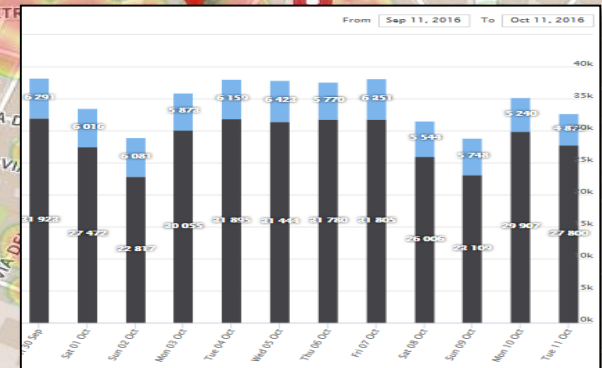
AP FWIFI (weekly)

Twitter Vigilance



Global

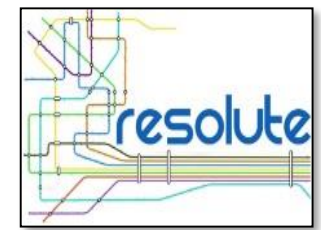
- Color scale: 0 (blue) to 1 (red)
- Radius: 0.000240
- Max Opacity: 0.24
- Scale Radius:
- Use Local Extrema:
- APs:
- WiFi Heatmap:



Recency and frequency

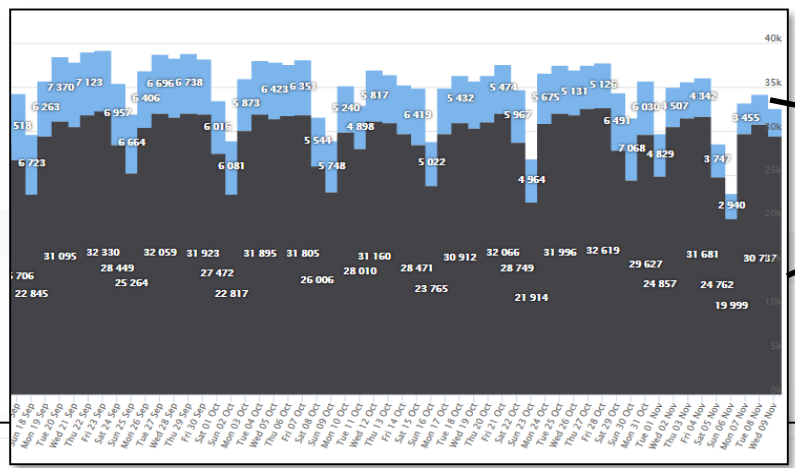
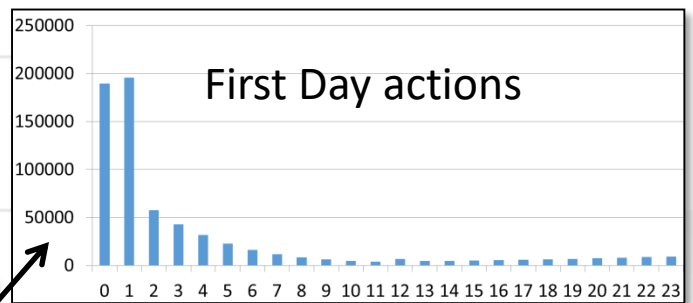


User Behavior Analysis

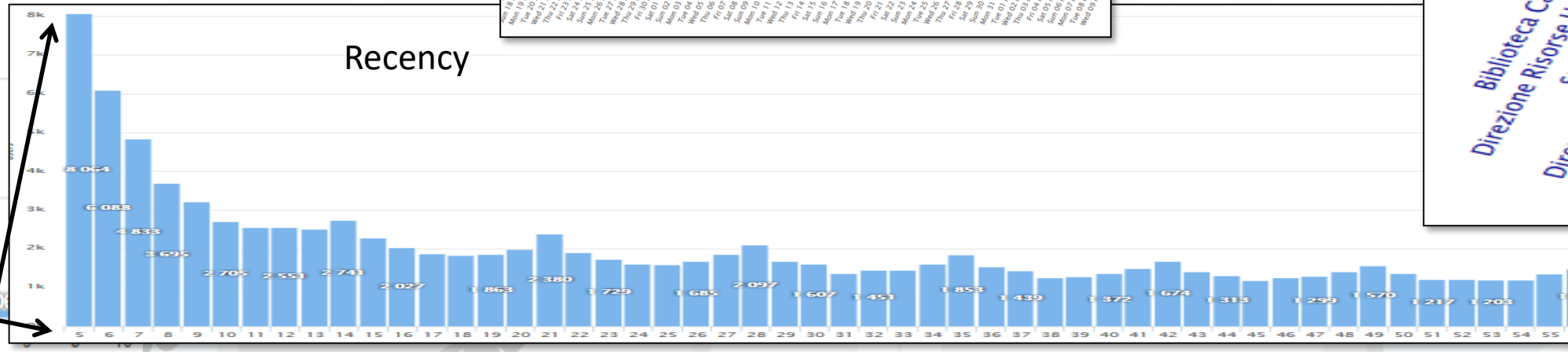
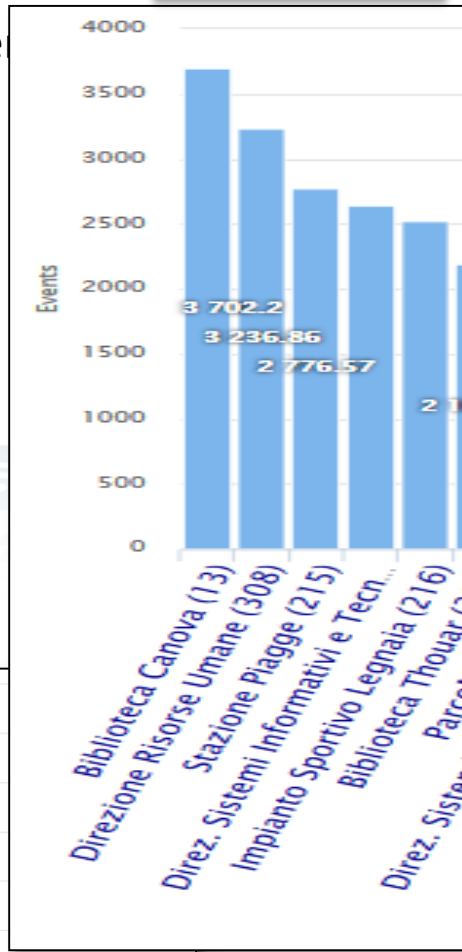


Distinct APs: 343
Distinct APs (last 24 hours): 311
Distinct Users (last 180 days): 1102098
Distinct Excursionists (last 180 days, < 24 h): 687025

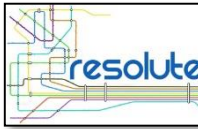
Excursionists
Users



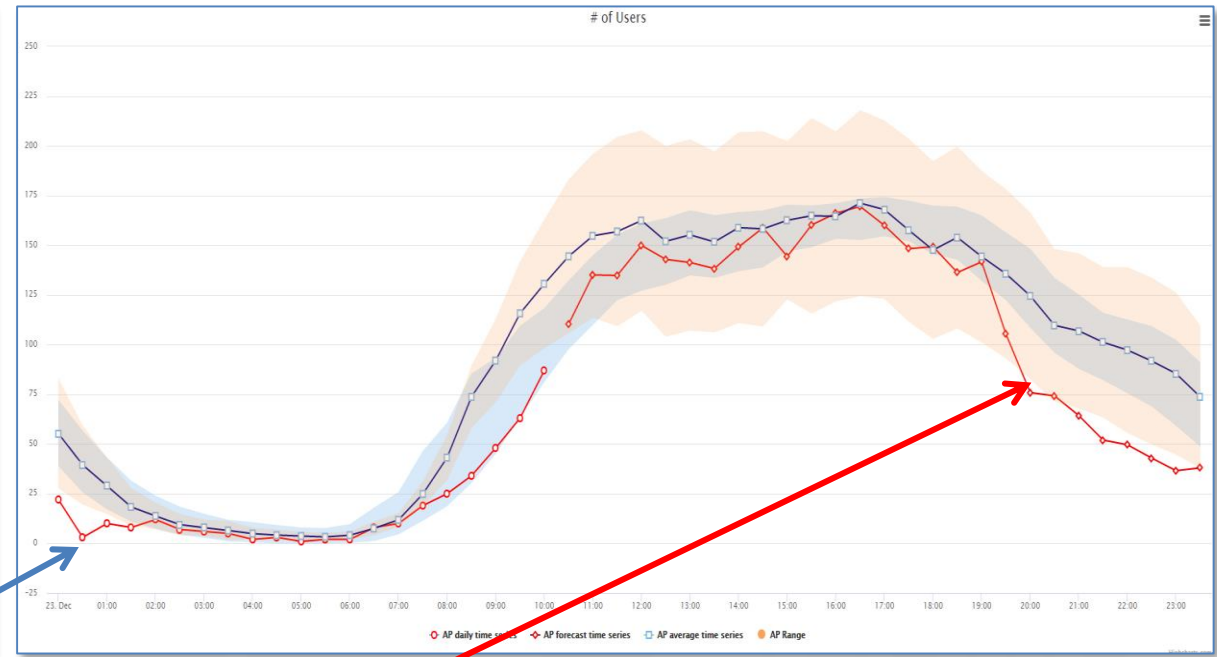
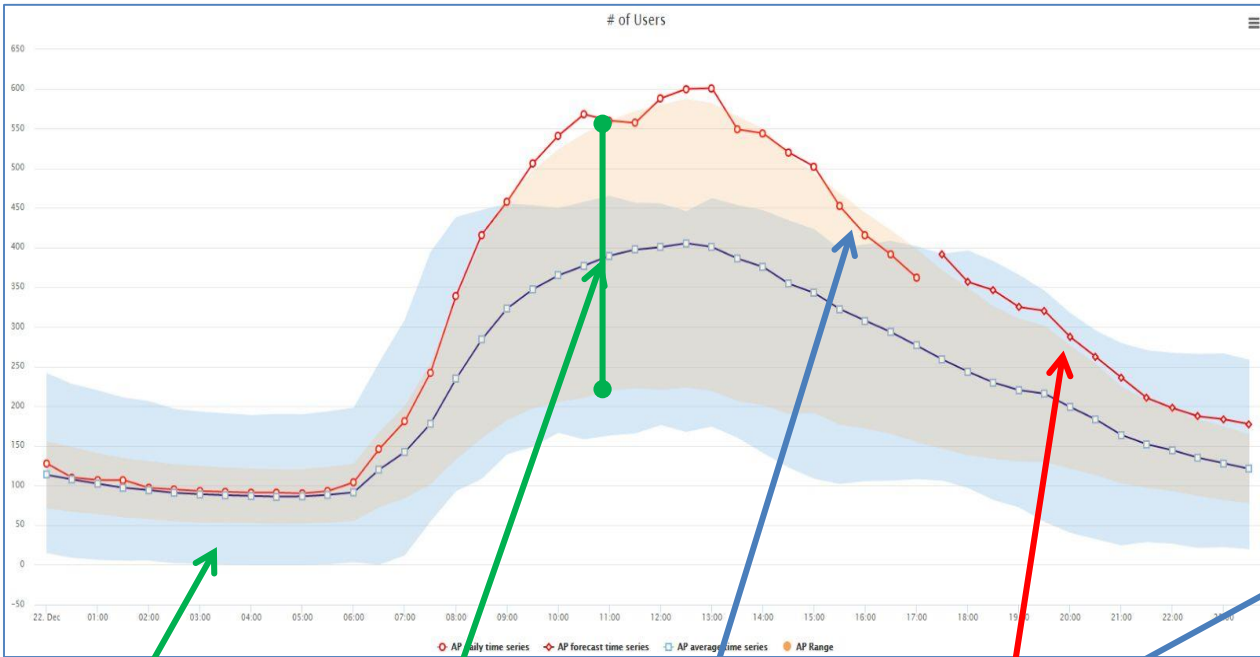
New City Users
VS
Returning



Prediction and identification of anomalies



Guessing number of users of Wi-Fi Access Points



Cluster confidence

AP average and confidence

Actual AP trend for today

AP prediction for the next time slot in the day on the basis of past weeks

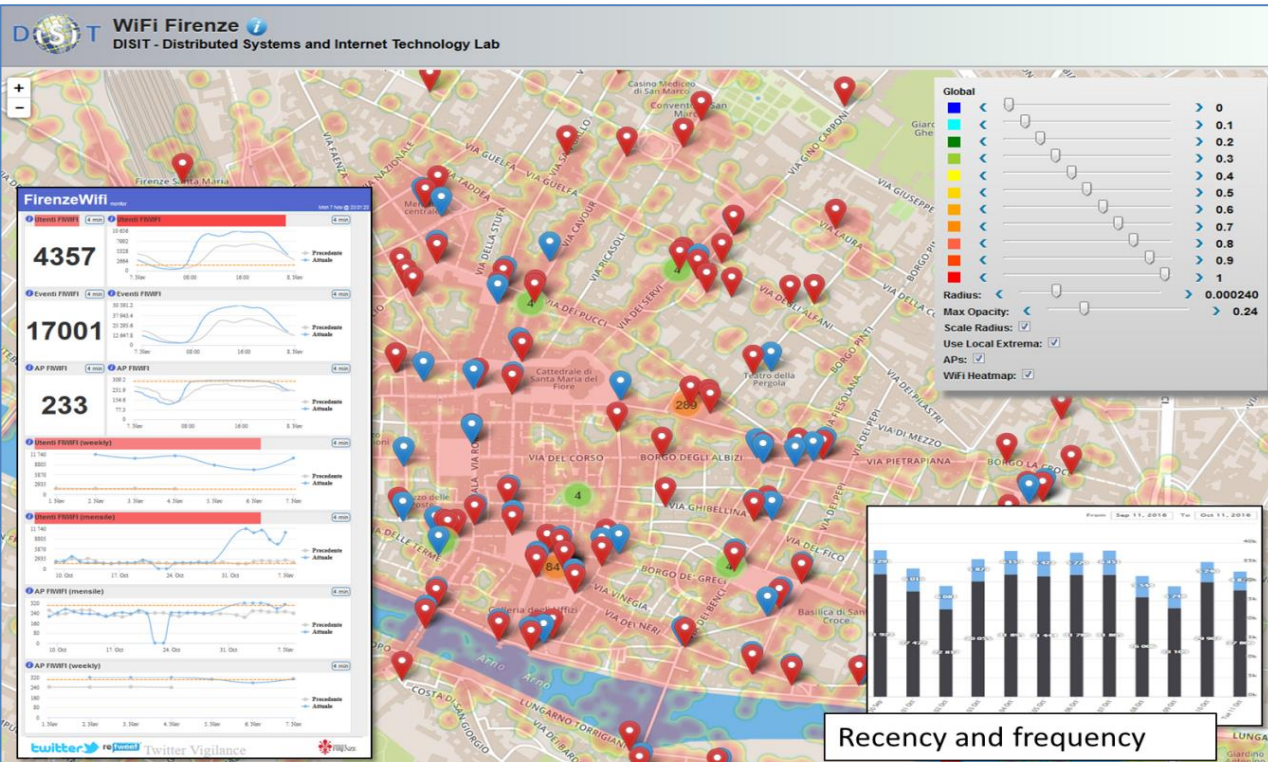
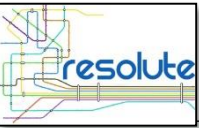


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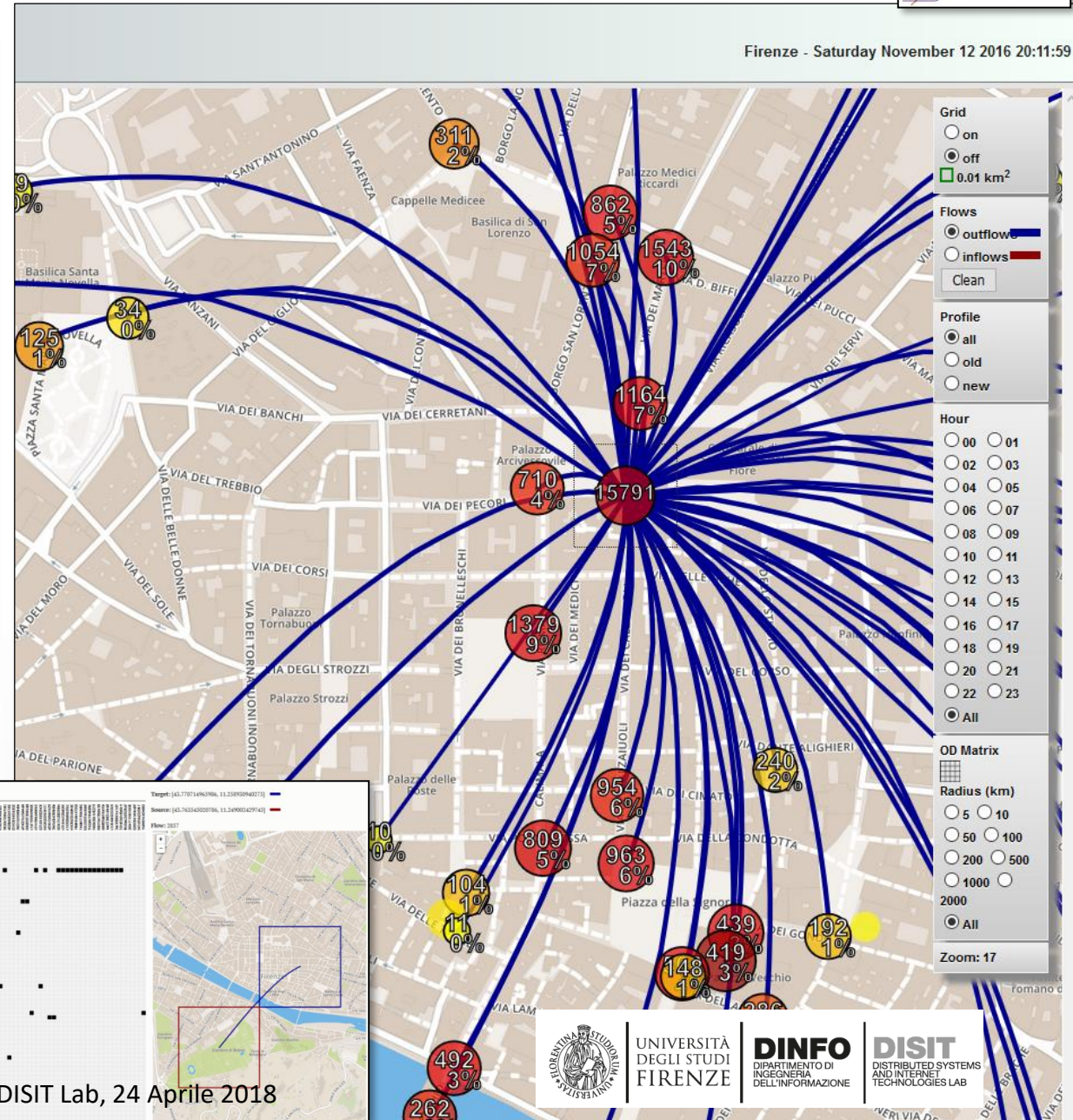
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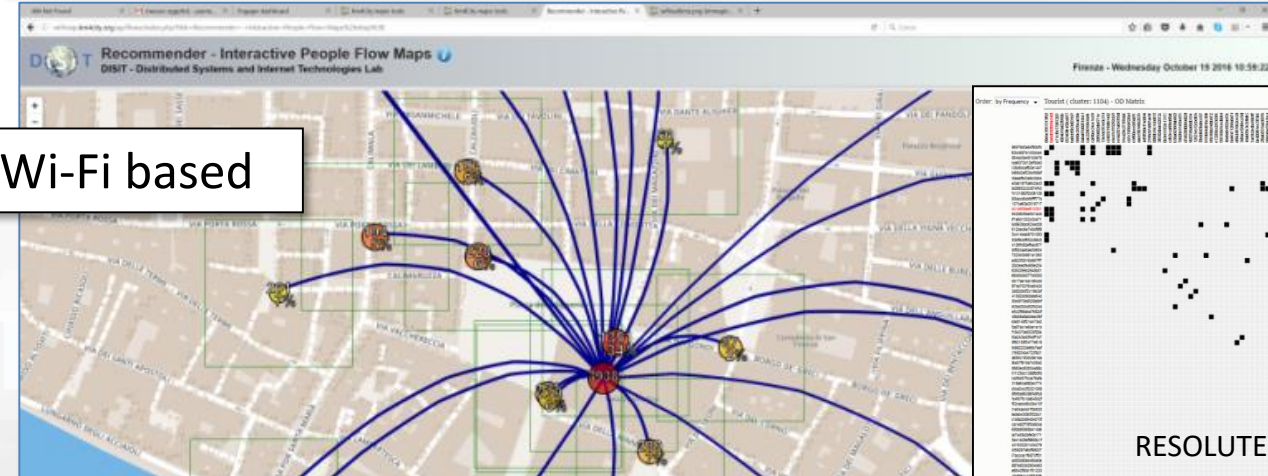
Origin Destination Matrix Estimation



Recency and frequency



Wi-Fi based



Early Warning Via Social Media

<http://www.km4city.org/?controlRoom>

<http://www.km4city.org/?devTools>

<http://www.km4city.org/?infoDocs>

<http://www.km4city.org/?app>

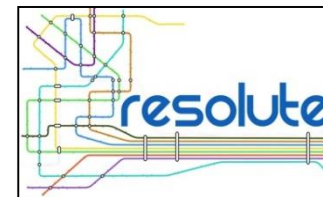


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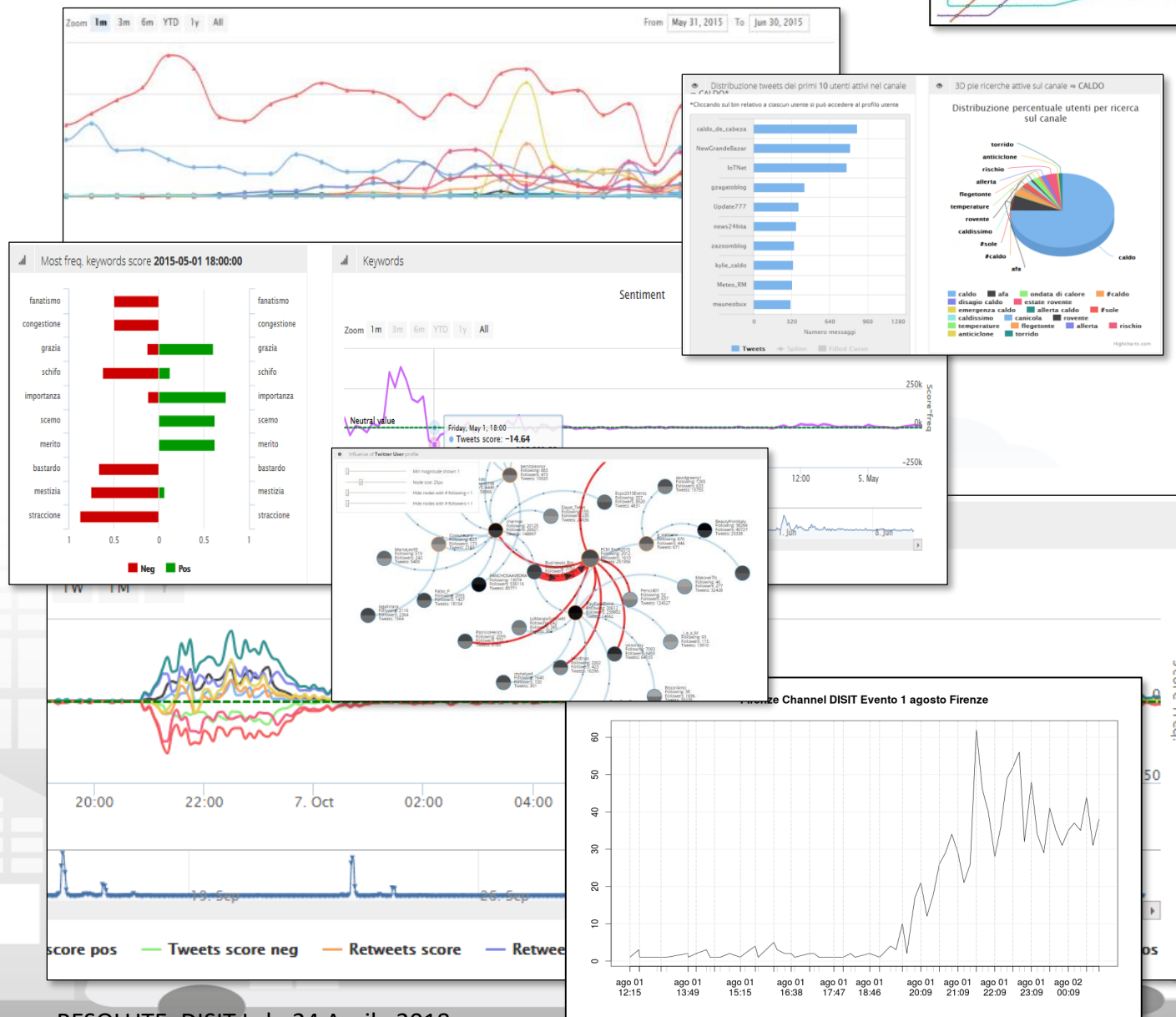
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AND INTERNET
TECHNOLOGIES LAB

Twitter Vigilance

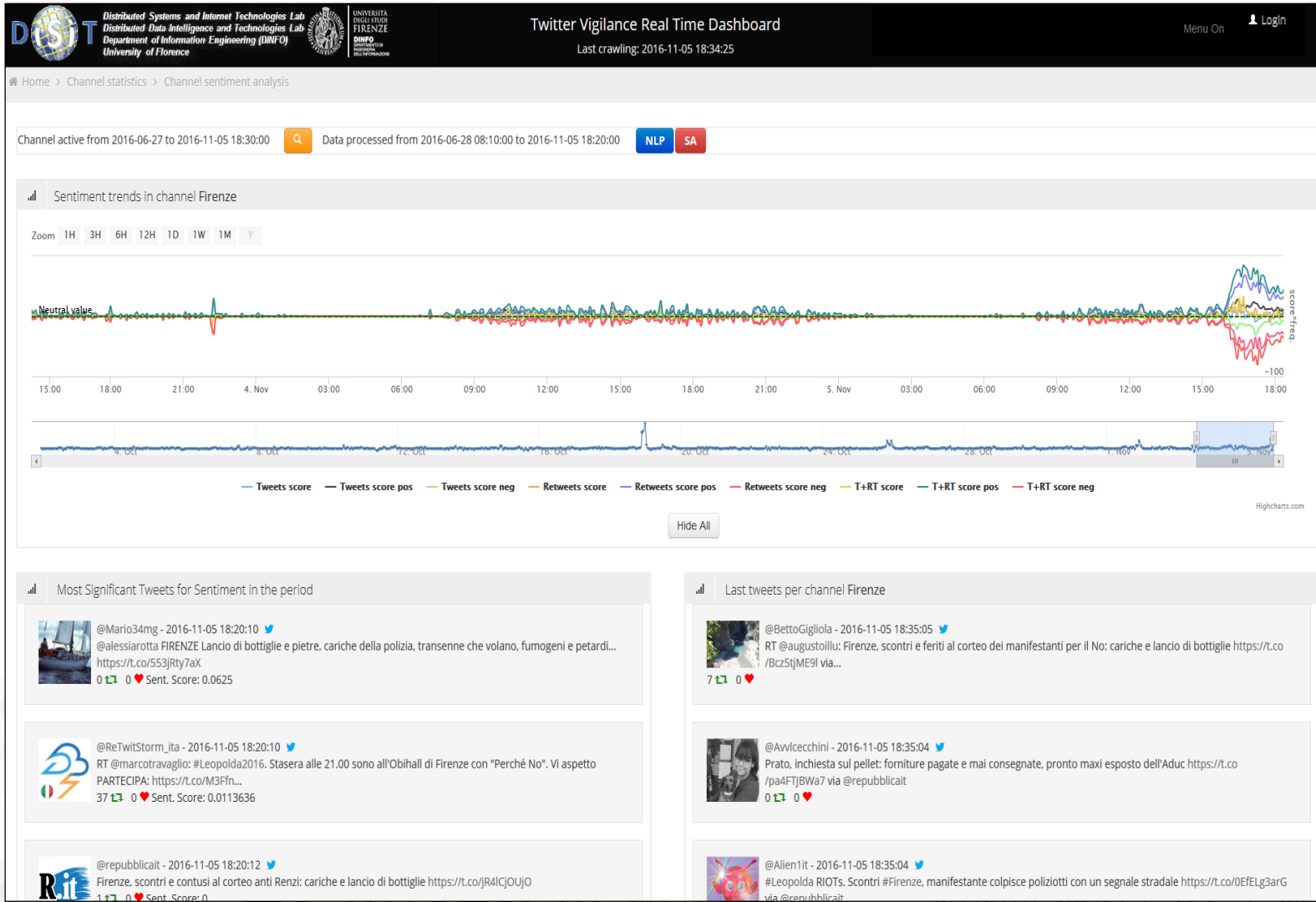


- <http://www.disit.org/tv>
- <http://www.disit.org/rttv>
- Citizens as sensors to
 - Assess sentiment on services, events, ...
 - Response of consumers wrt...
 - Early detection of critical conditions
 - Information channel
 - Opinion leaders
 - Communities
 - Formation
 - Predicting volume of visitors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

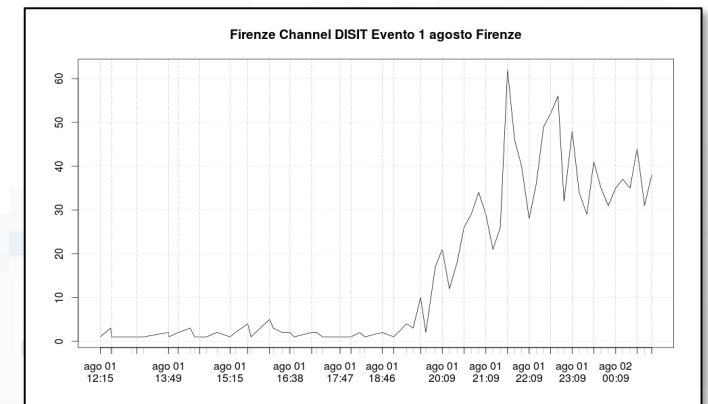
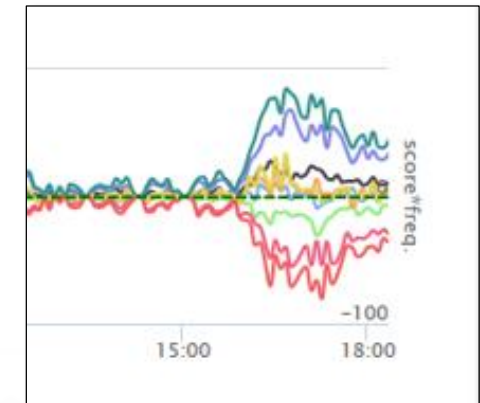
Twitter Vigilance

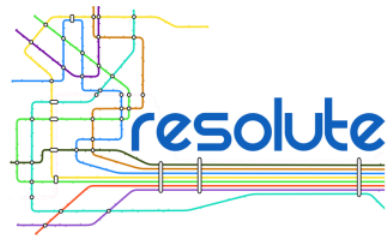


Real Time Twitter Vigilance, Early Warning



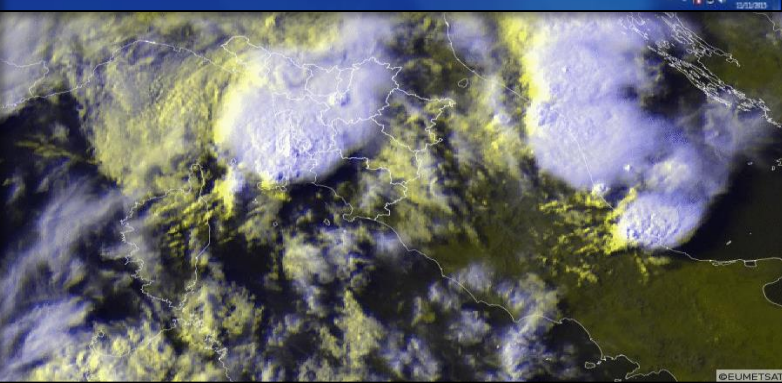
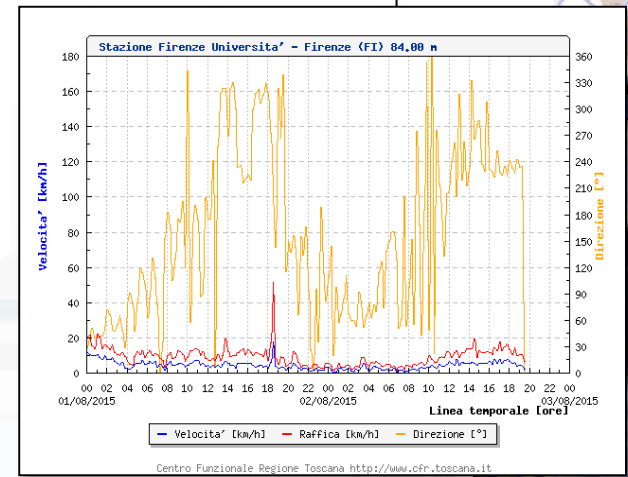
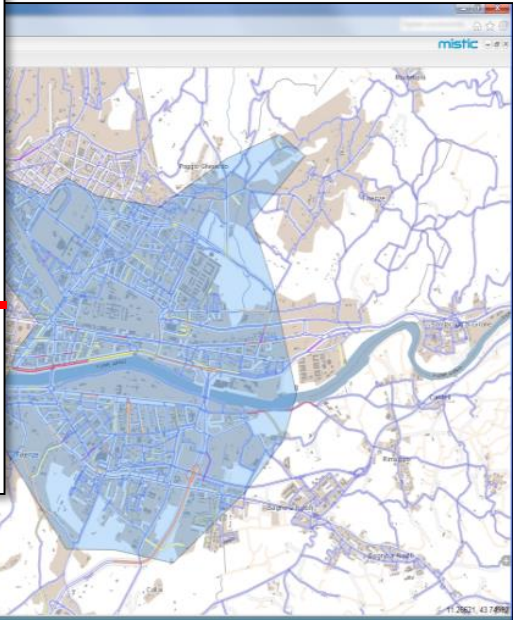
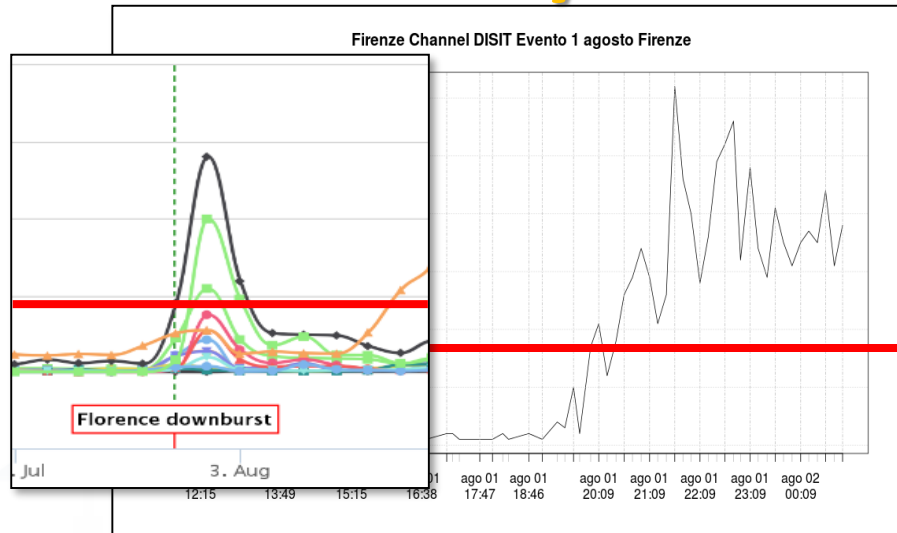
Sentiment Analysis



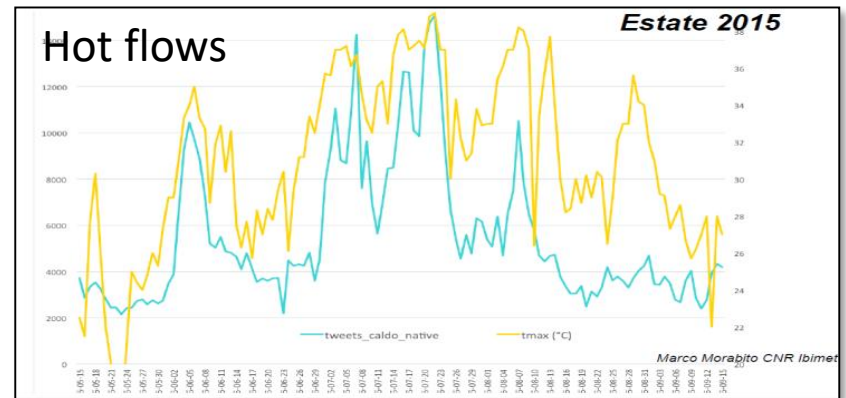


Twitter Vigilance

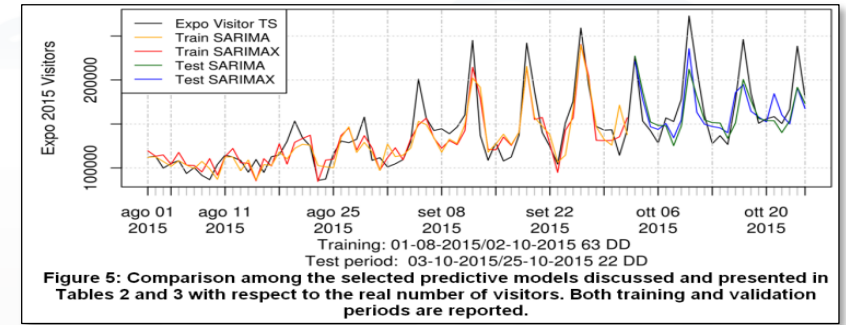
Early Warning



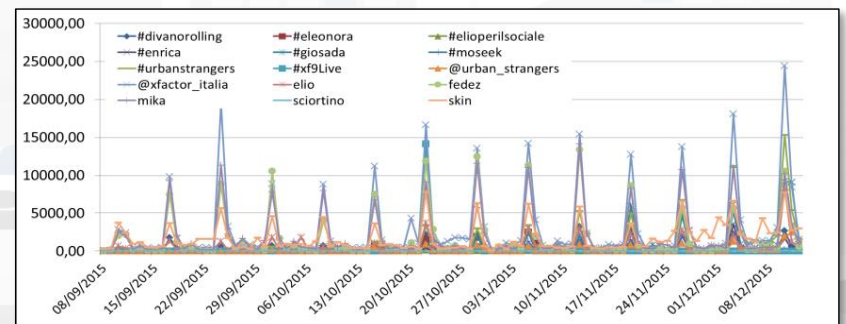
Predictive models



Attendance at long lasting events: EXPO2015



Attendance at recurrent events: TV, football



Informing and Monitoring city user via App

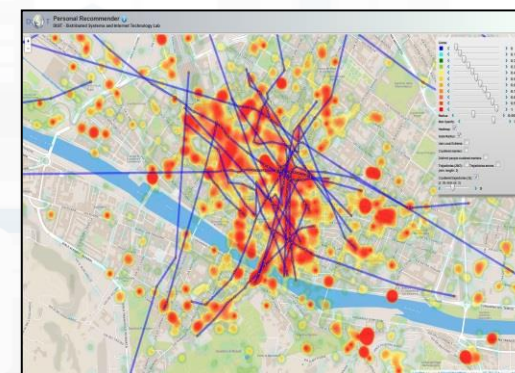
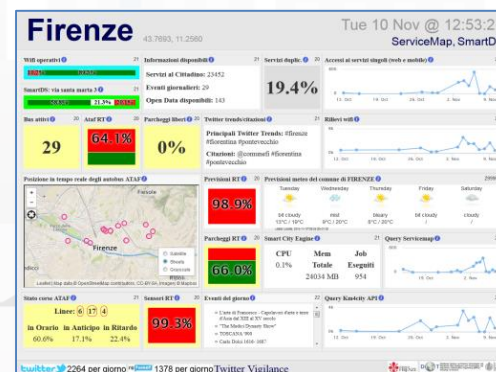


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- Personalized menu for Operators
- Providing information and suggestions to citizens
 - Civil Protection Page
 - Twitter Info
 - Geolocalized Info
- Tracking people and operators flows
- Collecting information from citizens
 - Comments
 - Images



Km4City APP



- **Mobility**

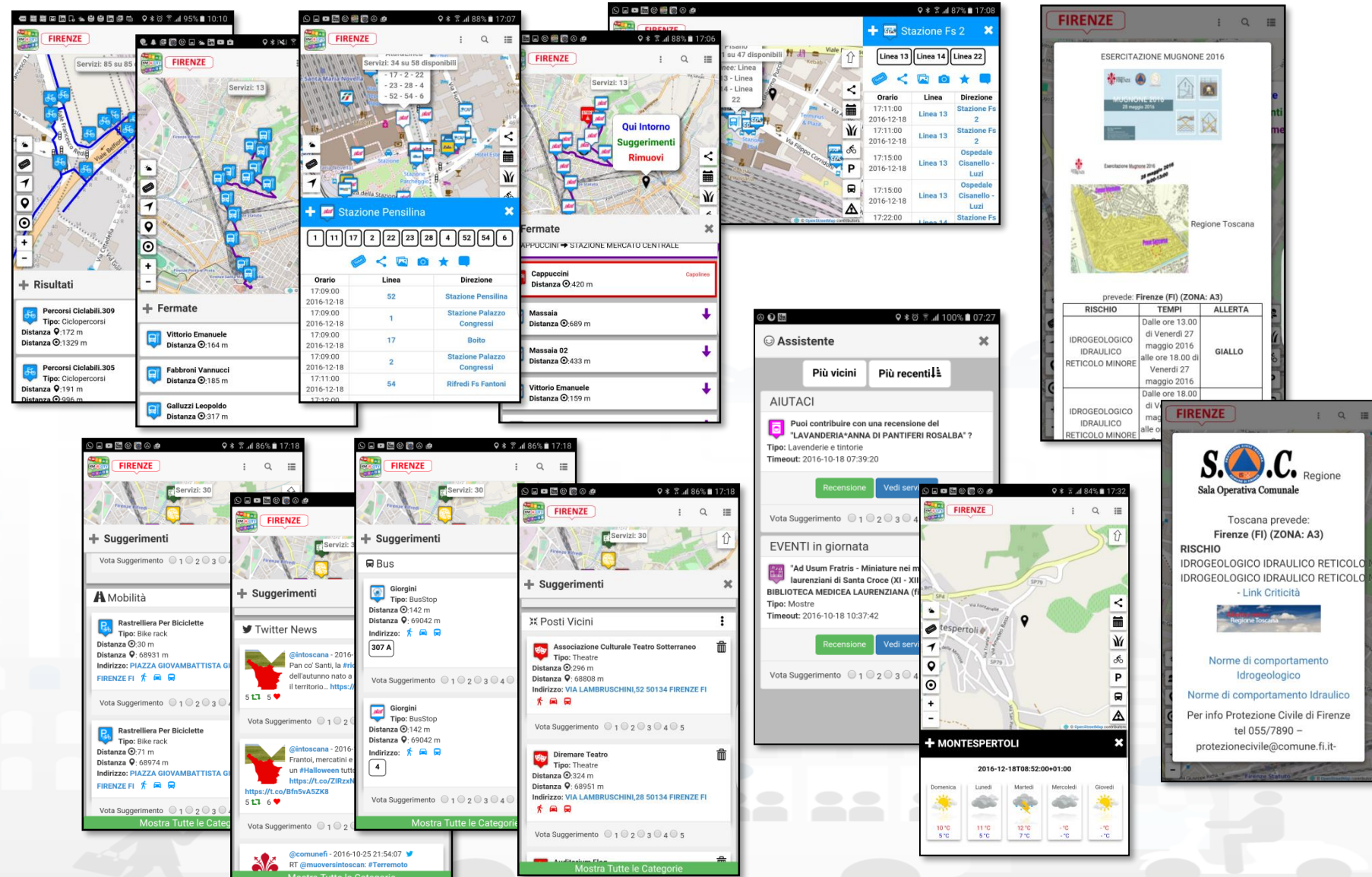
- Paths and stops, time
- Parking + prediction
- Ticketing
- Flow + prediction
- Navigation
- Connection with devices
- XXX Sharing

- **Personal Assistant**

- Info, Engagement
- Help, Civil protection

- **Suggestions:**

- Personalized and adaptive: banned e typed per city user.
- POI, Twitter, Events,
- Weather forecast,
- Civil Protection
- ...



User influencing, engaging, monitoring & Follow Up

City & City Operators Strategy 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 i
- 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 by a bus ticket

City Resilience and, DSS, Decision Support Systems

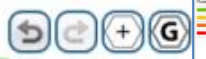
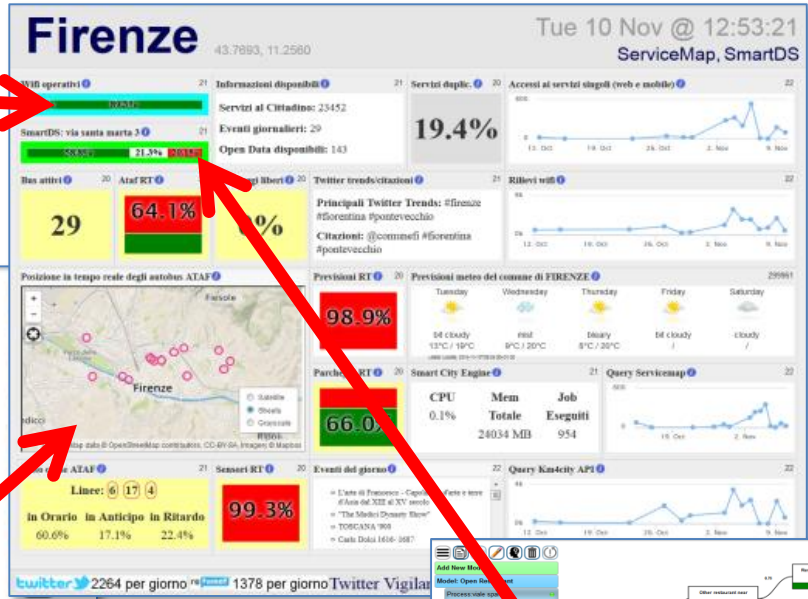
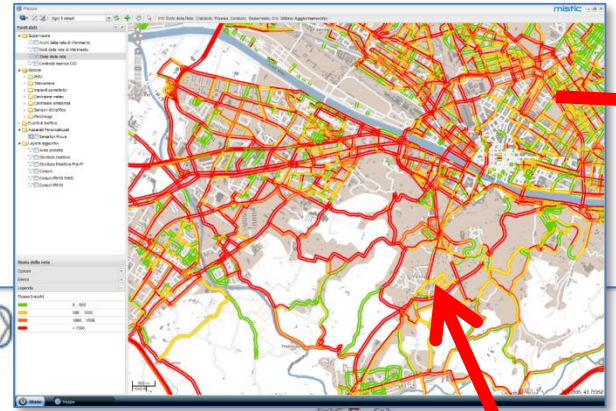
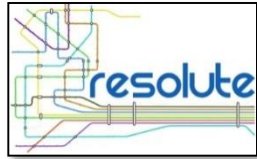


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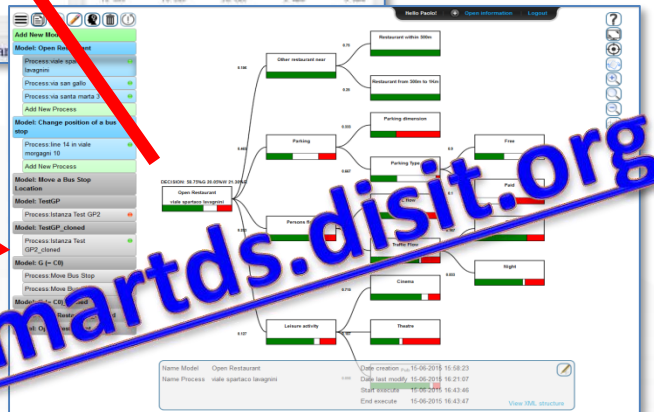
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Assessing / Controlling city resilience

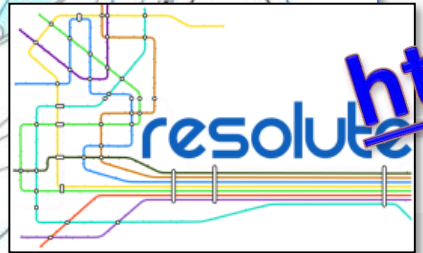


Hello dicit! Open Information Logout

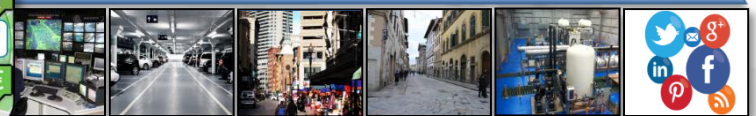


<http://resilienceds.disit.org>

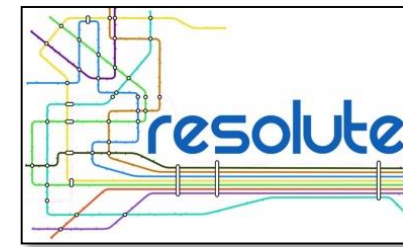
<http://smartds.disit.org>



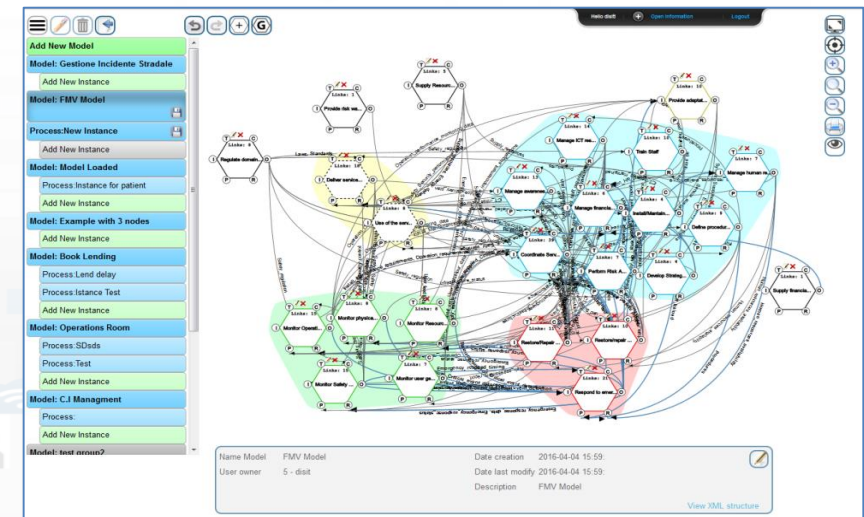
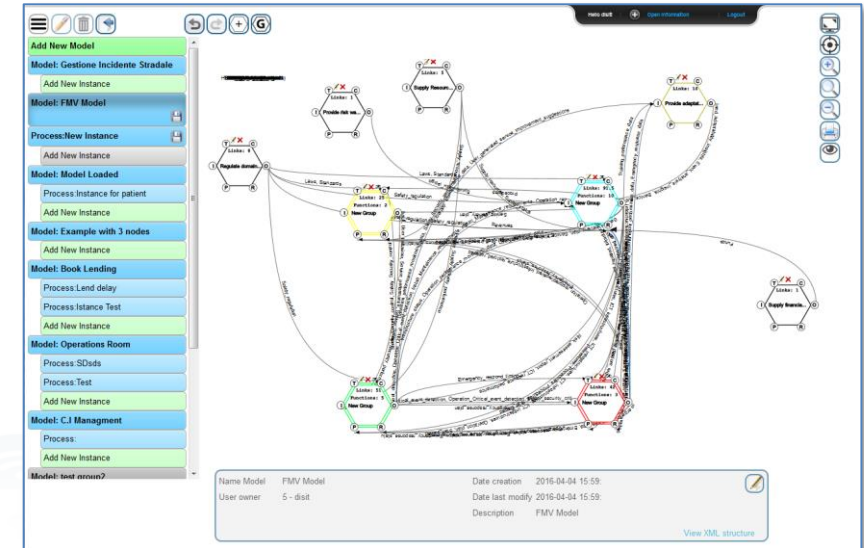
Data and Service Aggregator



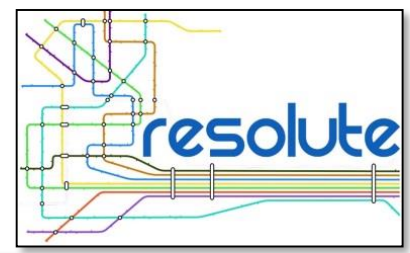
ResilienceDS tool



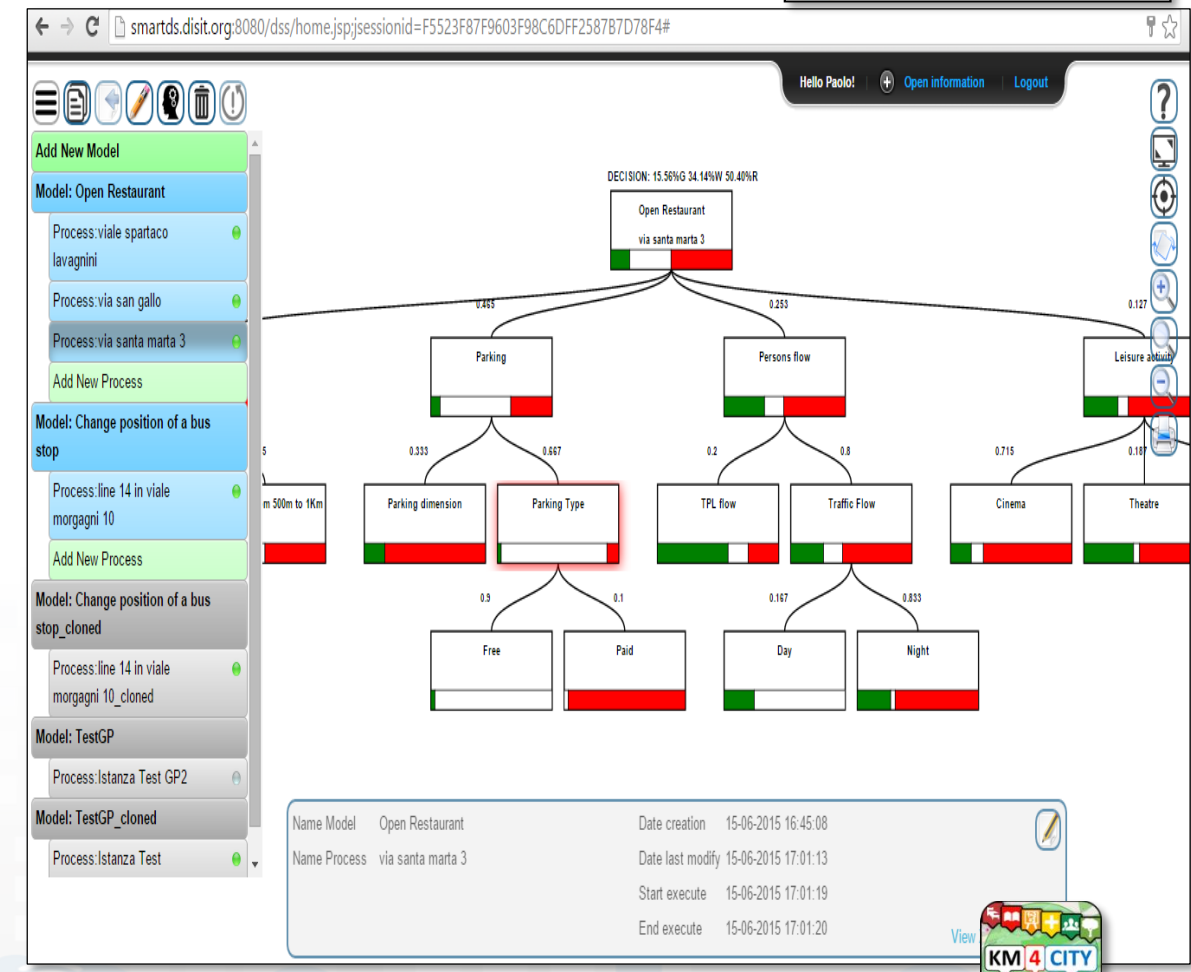
- **FRAM Model**
 - Macro FRAM processes
 - Metrics for Process complexity assessment
 - Operational Semantic for executing FRAM model
 - Connection with SmartDS
 - Connection with BigData open to multiple sources of data and workgroup results, Km4City
- **Collaborative work**
- **Open for all**
- **Validated on ERMG**
- **Web Tool**



<http://resilienceds.disit.org>

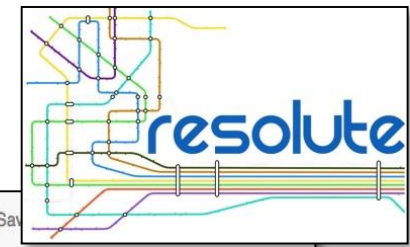


- Smart Decision Support System based on System Thinking plus
- Actions to city reaction, resilience, smartness..
- Enforcing
- Mathematical model for propagation of decision confidence..
- Collaborative work...,
- Processes connected to city data: DB, RDF Store, Twitter, etc.
- Production of alerts/alarms
- Data analytics process
- Twitter Processes
- reuse, copy past, ...





Risk Assessment



Flood Event | Flood Observation | Traffic Observation | Damage analysis | Layers panel | Vulnerability info | Service Observation

Aerial with labels

Flood sensors observations:

<input checked="" type="checkbox"/>	From	Data	mm/h
<input checked="" type="checkbox"/>	Firenze Genio Civile	2016-04-11T15:59:00	12
<input checked="" type="checkbox"/>	Firenze Peretola	2016-04-11T15:59:00	20.5
<input checked="" type="checkbox"/>	Firenze Università	2016-04-11T15:59:00	10.5

Threshold:

From: :

To: :

Draw region to analyze: On

Load predefined region:

Mean precipitation:

SERVICE close

NAME: villa maria teresa hospital...

ADDRESS: VIA DELLA CERNAIA, FIRENZE, FIRENZE

SERVICE TYPE: http://www.disit.org/km4city/schema#Public_hospital

SERVICE CLASS: <http://www.disit.org/km4city/schema#HealthCare>

SERVICE: <http://www.disit.org/km4city/resource/7tab1bc45b84357b727dd67fe6081d2db>

VALUE: 100

WKT DESCRIPTION: POINT (11.2561 43.7866)

Traffic observations:

<input type="checkbox"/>	From	Date	km/h	car/km	car/h
<input type="checkbox"/>	VIA DELLA MATTONAIA	2016-10-10 18:01:08	58	15	2435
<input type="checkbox"/>	LUNGARNO AMERIGO VESPUCCI	2016-10-10 18:01:08	18	65	1842
<input type="checkbox"/>	VIA CAMILLO CAVOUR	2016-10-10 18:01:08	61	12	2009
<input type="checkbox"/>	VIA VALFONDA	2016-10-10 18:01:08	27	53	3307
<input type="checkbox"/>	VIA VITTORIO ALFIERI	2016-10-10 18:01:08	23	58	2798
<input type="checkbox"/>	VIA SENESE	2016-10-10 18:01:08	27	54	3216
<input type="checkbox"/>	VIA GUELFA	2016-10-10 18:01:08	68	3	420
<input type="checkbox"/>	VIA DELLA SCALA	2016-10-10 18:01:08	60	13	2157
<input type="checkbox"/>	PIAZZA DI SAN FELICE	2016-10-10 18:01:08	62	10	1697
<input type="checkbox"/>	BORGO SAN FREDIANO	2016-10-10 18:01:08	57	17	2690
<input type="checkbox"/>	VIA VITTORIO ALFIERI	2016-10-10 18:01:08	10	74	195
<input type="checkbox"/>	VIA DEL CAMPUCCIO	2016-10-10 18:01:08	60	13	2157
<input type="checkbox"/>	VIA DEI BENCI	2016-10-10 18:01:08	22	59	2679
<input type="checkbox"/>	PIAZZALE DI PORTA ROMANA	2016-10-10 18:01:08	64	8	1361

Assessing Risk

- hydraulic
- Seismic

Relevant Services

Min asset value:

<input checked="" type="checkbox"/>	Service	Street	Type	Value
<input checked="" type="checkbox"/>	villa delle terme case di cura	VIALE MAZZINI GIUSEPPE, FIRENZE	Public	100
<input checked="" type="checkbox"/>	villa dei pini srl	VIA FOSCOLO UGO, FIRENZE	Public	100
<input checked="" type="checkbox"/>	Poggio Sacco	VIA INCONTRI, FIRENZE	Public_hospital	100



ESB

Alarms

- TEST - ALLUVIONE MUGNONE MAJOR
- 07/08/2017 12:45:54
- ALLUVIONE ARNO COVERCIANO CRITICAL
- 15/08/2017 15:47:31
- ALLUVIONE ARNO VIA PETRIOLO MAJOR
- 07/08/2017 18:48:11
- TEST - SCONTRI ALLO STADIO CRITICAL
- 15/08/2017 09:50:04

Traffic events

- SEVERE ACCIDENT SERIOUS ACCIDENT(S)
- 21/08/2017 11:24:01
- ROAD WORKS ROADWORKS
- 11/24/10 5
- ORD 2017-001302 - SP NA*17 A?ALTO VALDARNOA?1ST... RESTRICTIONS
- 13/08/2017 00:00:00 5
- INTERVENTO URGENTE PUBBLICACQUA CLOSED AHEAD
- 20/08/2017 10:00:00 10

Evacuation plans

- PLAN N.1497263867 IN_PROGRESS
- 12/08/2017 - 11:37:47 PATHS: 3
- PLAN N.2000000000 PROPOSED
- 18/08/2017 - 09:42:08 PATHS: 2
- PLAN N.1497604404 PROPOSED
- 18/08/2017 - 11:08:47 PATHS: 1

Tram position

- TRAM1
- 21/08/2017 11:32:27
- TRAM2
- 21/08/2017 11:32:31

Network Analysis

- FM0495 (NORMALIZED) NODE BETWEENNESS 1.0000
- FM0496 (NORMALIZED) NODE BETWEENNESS 0.8091 ON MAP
- FM0500 (NORMALIZED) NODE BETWEENNESS 0.7878
- FM2276 (NORMALIZED) NODE BETWEENNESS 0.7858
- FM0497

Environment

PROTEZIONE CIVILE

GENERAL METEO

RISCHIO IDRAULICO
RISCHIO TEMPORALI
RISCHIO IDROGEOLOGICO
RISCHIO NEVE
RISCHIO GHIACCIO
RISCHIO VENTO
RISCHIO MAREGGIATE

Pluv. Flore...
24 mm

Hydromete...
20 m.s.z.l.

Hidromete...
24 m.s.z.l.

Hydromete...
24 m.s.z.l.

Pluviometer Florence City - Last 24h

Hydrometer Arno Nave di Rosano - Last 24h

Hydrometer Arno Florence Uffizi - Last 24h

Hydrometer Mugnone Ponte alle Mosse - Last 24h

Mobility

Bus Lines Status

ULTIMO AGGIORNAMENTO: 2016-08-04 23:59:03

Underpass Viale Mariti Aperto

Underpass Viale Talenti closed

Underpass Fortezza Aperto

Parterre Pa... 76.2%

Fortezza Fi... 37.2%

Parterre Pa... 65.7%

Mercato Ce... 65.4%

20 num.

33 num.

28:2

Florence main first aids status

Priority	Red code	Yellow code	Green code	Blue code	White code
PS SANTA MARIA NUOVA	1	7	14	1	0
PS SAN GIOVANNI DE' DEO TORREGALLI	2	10	24	2	0
PS AD CARREGGI	10	27	31	10	2
PS SANTA MARIA ANNUNZIATA	2	9	22	4	0

Resources

Planned events

- 1966 - 2016 - LA BELLEZZA SALVATA - PROROGATA FINO AL 2
- 2016-12-01 to 2017-07-02
- VIA CAMILLO CAUVOR 3
- 2017-02-15 to 2017-06-23
- PIAZZA DI SAN LORENZO 9
- 2017-02-15 to 2017-08-29
- PIAZZA PI SAN LORENZO 9

Ambulance...

Voluntiers

20 num.

33 num.

28:2

TRENDS QUOTES

- #FIRENZE
- #NEWS #FIRENZE
- #FIRENZE #FIFIUTI
- #UFFIZI
- #PONTEVEGGHIO
- #BARGELLO
- #AEROPORTO #FIRENZE
- #DUOMO #FIRENZE
- #VIAGGI #FIRENZE
- #CRONACA #FIRENZE
- @MUSEOFIRENZE
- @COMUNEFI
- @NAZIONE_FIRENZE
- @PROVICOMUNEFI
- @UNI_FIRENZE
- @HUBFIRENZE
- @NOVEDAFIRENZE
- @FIRENZETURISMO
- @BIBLIO_COMUNEFI

TV-RT Firenze

Twitter Vigilance Real Time Dashboard

Last crawling: 2017-06-21 12:44:30

Channel active from 2016-06-27 to 2017-06-21 12:35:00

Data processed from 2016-06-28 08:10:00 to 2017-06-21 12:35:00

Sentiment trends in channel Firenze

Zoom 1H 3H 6H 12H 1D 1W 1M 1Y

Most Significant Tweets for Sentiment in the network

Last tweets per channel Firenze

@Giorgialodi - 2017-06-21 12:13:45
RT @emanuelegeri: Primo giorno d'Estate: pubblicato aggiornamento luoghi freschi https://t.co/skZwZcWw su #openDataFirenze @comunefi

TV Firenze

Twitter Vigilance Dashboard

Last crawling: 2017-06-21 12:44:49

Channel active from 2009-02-27 to today

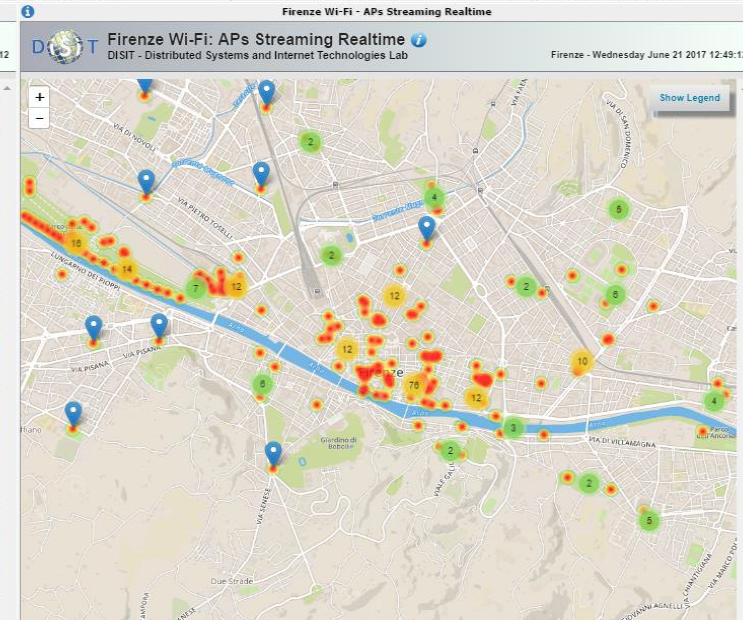
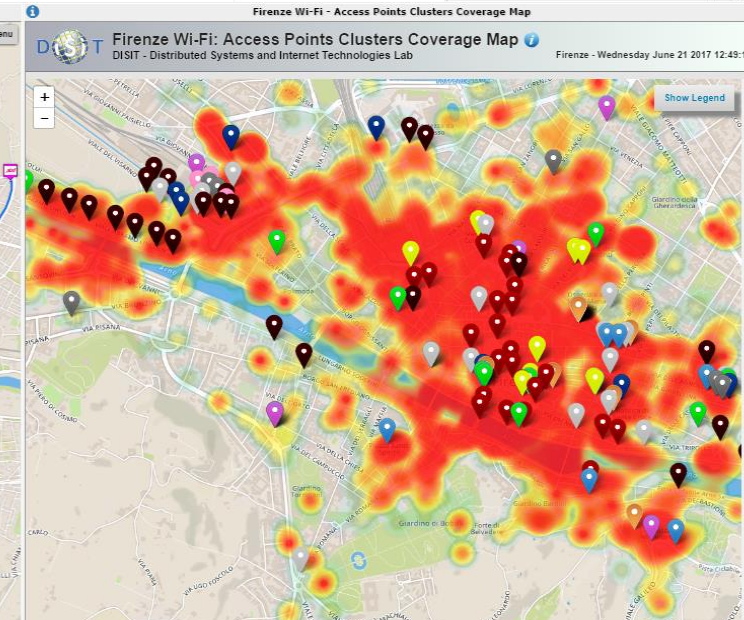
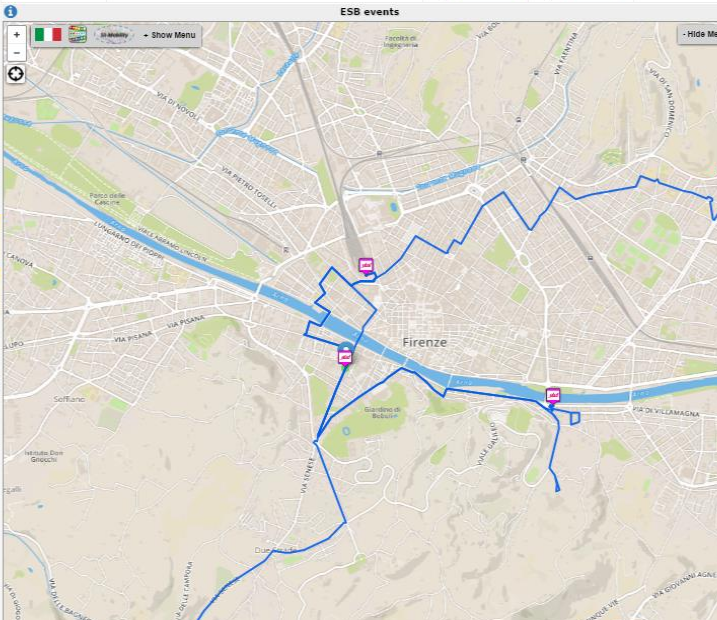
Data processed from 2015-05-22 to 2017-02-24

Search related to channel Firenze

Zoom 1m 3m 6m YTD 1y All

From May 21, 2017 To Jun 21, 2017

Daily number of tweets/retweets for channel: Firenze



<http://dashboard.km4city.org/dashboardSmartCity/view/index.php?iddashboard=MT15>

Acknowledgement

- Thanks to the European Commission for founding. All slides reporting logo of **RESOLUTE H2020** are representing tools and research founded by European Commission for the RESOLUTE project. **RESOLUTE** has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement n° 653460).
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- **Km4City** is an open technology exploited by those projects and line of research of DISIT Lab. Some of the innovative solutions and research issues developed into the above mentioned projects are also compliant and contributing to the Km4City approach and thus are contributing to the open Km4City model of DISIT lab.

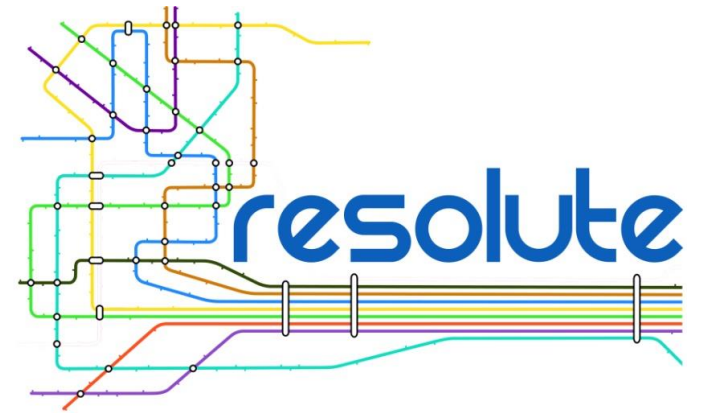




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Il Progetto RESOLUTE: Gli Strumenti per la Resilienza

<http://www.disit.org/km4city>

Paolo Nesi, paolo.nesi@unifi.it

<http://www.resolute-eu.org>

