



Powered by **S**FIWARE

> **FREE** TRIAL



















SMART SOLUTIONS AND DECISION SUPPORT SYSTEMS



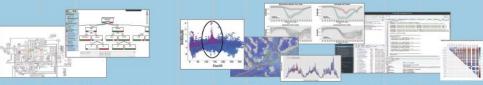




PREDICTION - ANOMALY DETECTION - CLUSTERING - ROUTING - SENTIMENT NLP - TRAFFIC FLOW **DASHBOARDS, WIDGETS TEMPLATES** PEOPLE FLOWS - SDG - 15 MIN CITY INDEX - KPI - HEATMAPS - ORIGIN DESTINATION - ETC...

API - MICROSERVICES - GIS - BPM VIDEO - REPORTS - MAPS - 3D ...

ANY: DATA, BROKER, NETWORK AND VERTICAL



EXPERT SYSTEM, KNOWLEDGE BASE BIG DATA ANALYTICS, ARTIFICIAL INTELLIGENCE SEMANTIC REASONING **EXPLAINABLE AI, MACHINE LEARNING SMART DATA MODEL OPERATIVE RESEARCH, STATISTICS IOT DEVICE MODELS, STORAGE**



VISUAL PROGRAMMING, ADAPTERS DATA FLOWS, WORKFLOWS PARALLEL DISTRIBUTED PROCESSING **DATA DRIVEN**

Native and External Applications

Smart Parking

Smart Light

Smart Waste

Smart Energy

Social Media Analysis



METHODOLOGIES LIVING LABS **COURSES AND COMMUNITY DEVELOPMENT TOOLS**





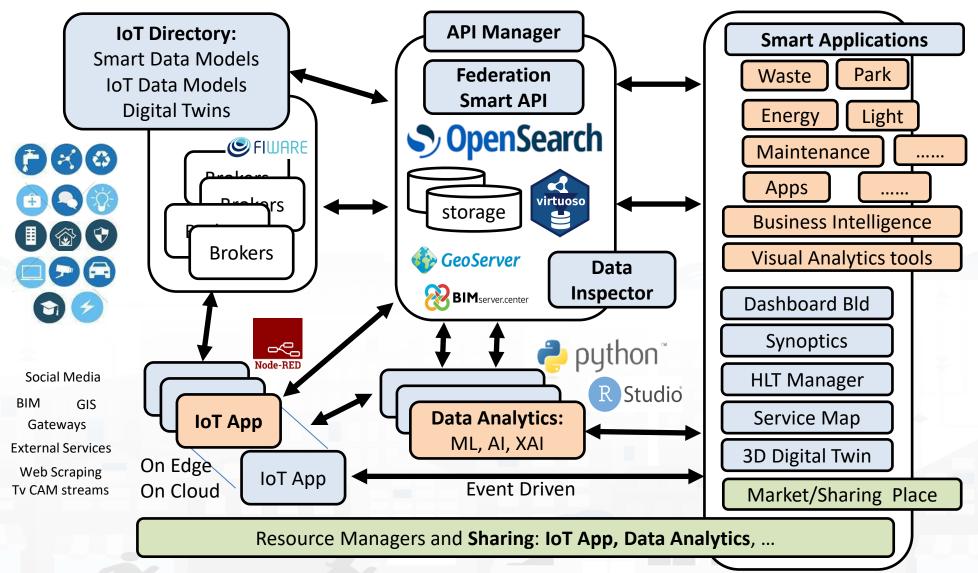






Tech Arch





10/22

Standards and Interoperability (9/2022)

SNAP4CITY

Compliant with:

- IoT: NGSI V2/LD, LoRa, LoRaWan, MQTT, AMQP, COAP, OneM2M, TheThingsNetwork, SigFOX, Libelium, IBIMET/IBE, Enocean, Zigbee, DALI, ISEMC, Alexa, Sonoff, HUE Philips, Tplink, BACnet, TALQ, Protocol Buffer, KNX, OBD2, Proximus, ..
- IoT model: FIWARE Smart Data Model, Snap4City IoT Device Models
- **General**: HTTP, HTTPS, TLS, Rest Call, SMTP, TCP, UDP, SOAP, WSDL, FTP, FTPS, WebSocket, WebSocket Secure, GML, WFS, WMS, RTSP, ONVIF, AXIS TVCam, CISCO Meraki, OSM, Copernicus, The Weather Channel, Open Weather, OLAP,
- Formats: JSON, GeoJSON, XML, CSV, GeoTIFF, OWL, WKT, KML, SHP, db, XLS, XLSX, TXT, HTML, CSS, SVG, IFC, XPDL, OSM, Enfuser FMI, Lidar, glTF, GLB, DTM, GDAL, Satellite, D3 JSON, ...
- Database: Open Search, MySQL, Mongo, HBASE, SOLR, SPARQL, ODBC, JDBC, Elastic Search, Phoenix, PostGres, MS Azure, ...
- Industry: OPC/OPC-UA, OLAP, ModBUS, RS485, RS232,...
- Mobility: DATEX, GTFS, Transmodel, ETSI, ...
- Social:Twitter, FaceBook, Telegram, ...
- Events: SMS, EMAIL, CAP, RSS Feed, ...
- **OS**: Linux, Windows, Android, Raspberry Pi, Local File System, AXIS, ESP32, etc.

























https://www.snap4city.org/65





Ingestion, agg. -> exploitation

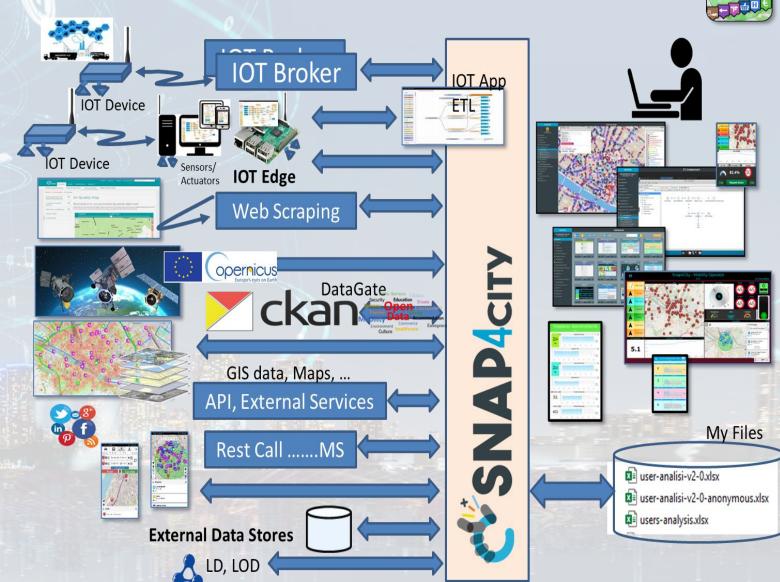








- Snap4City efficient tools for
 - Bidirectional data channels
 - Any format, any channel, any data, any broker, any protocol, ...
 - Km4City Knowledge base Ontology reasoning on geo, space, time, relationships



Expert System semantic queries

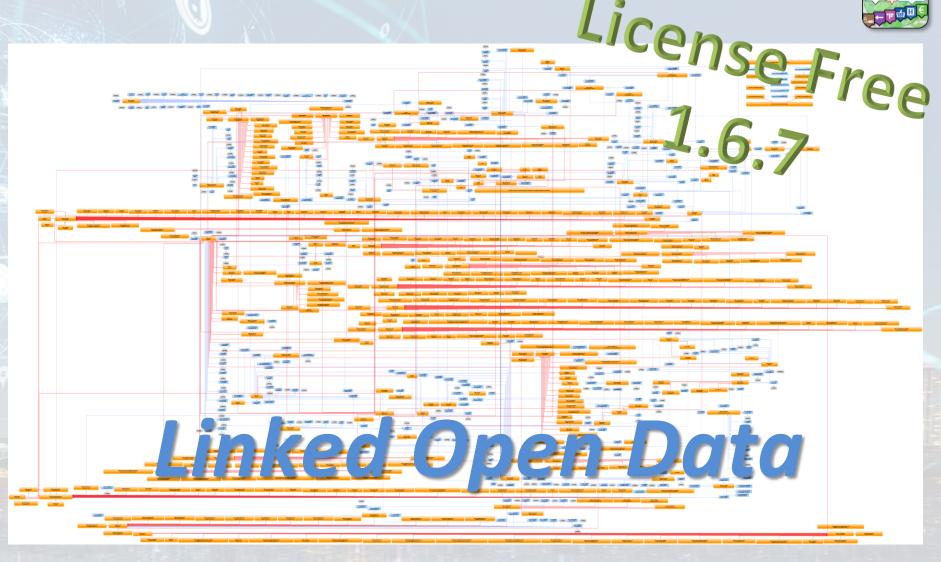
UNIVERSITÀ DEGLI STUDI FIRENZE







- via:
- Smart City API for
 Apps and third party
- MicroServices
 data driven
 develop via
 visual language
 Node-RED



https://www.snap4city.org/19

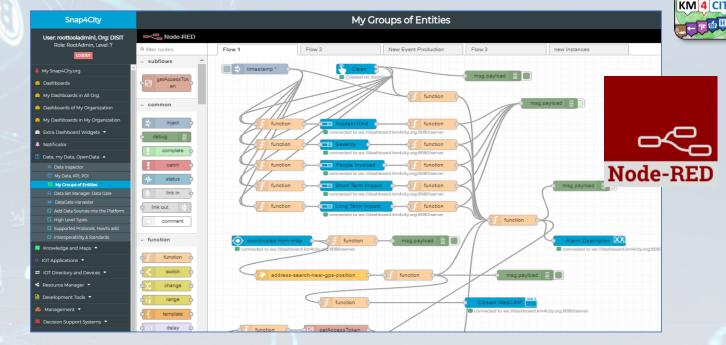
Almost no coding platform

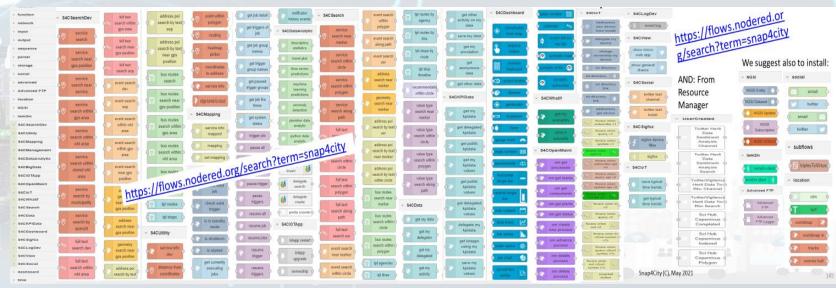
FIRENZE





- IoT App Visual Programming, no coding
 - Data transformation
 - Integration
 - Scripting Data Analytics
 - Data ingestion
 - **Business logic**
- MicroServices data driven develop via visual language Node-RED

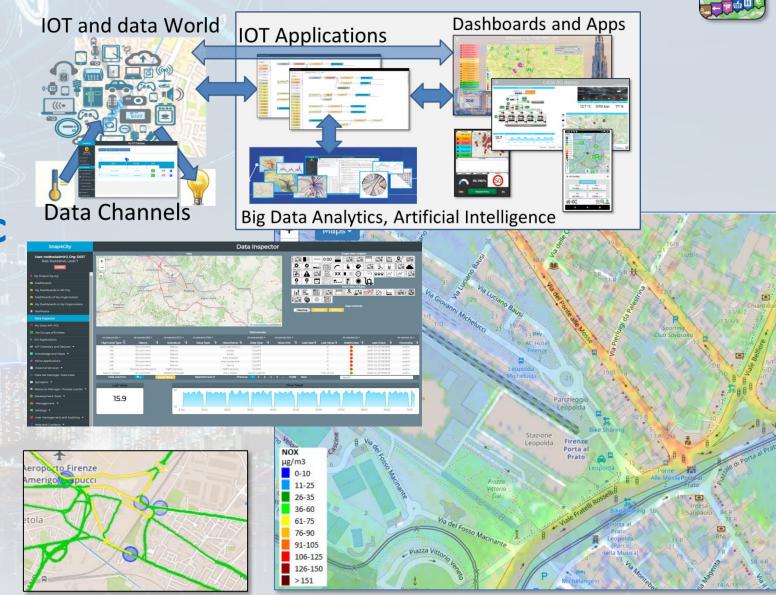




Fast to realize reliable & secure Solutions

CSNAP4CITY

- Via Snap4City tools
 - Dashboard Wizard
 - Dashboard Builder
 - Data/Visual Analytic
- Smart Solutions results to be
 - · Real time data drive
 - Secure end-to-end
 - GDPR compliant
 - Reliable, interoperable
 - Auditable, marketable















10/22





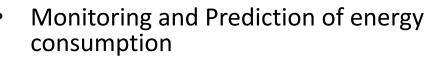




15 Minute City Index:

13 subindexes: energy, slow mobility, fast mobility, housing, economy education, culture and cults, health, entertainment, gov, food, security...





Stimulating: Bike sharing, e-bikes, car charge, etc.



- Smart City infrastructure: monitoring and resilience, long terms predictions
- Effective and Low cost smart solutions
- What-if analysis, Simulations
- Origin Destination matrices computation



Monitoring and Predicting: NO2, NOX, CO2, Traffic flow, pollutant, landslide, waste, etc. Traffic flow reconstruction Demand vs Offer of Mobility analysis



- Industry 4.0 integrated solutions
- **Decisions Support Systems**
- Process optimization, control
- Predictive maintenance



- business intelligence tools for decision makers
- Reduction production costs
- Monitoring resource consumption
- **Optimization of Waste Collection**



- Shortening justice time
- Anonymization and indexing legal docs.
- Prediction of mediation proneness
- Ethical Explainable Artificial Intelligence









Available Data Analytics

- Mobility and Transport
- City Users and Social
- Environment and Weather
- Time Series
- Semantic Reasoning
- Matrices, Images, Maps and 3D Digital Models
- Management and strategies
- Resilience and Risks Analysis

https://www.snap4city.org/download/vide o/course/da/





https://www.snap4city.o rg/download/video/DPL SNAP4SOLU.pdf

Big Data Analytics + Artificial Intelligence

- Short and Long terms predictive models on:
 - traffic, parking, people flow, maintenance, land sliding, NO2
- 3D Flow prediction: Pollutant (NOX, NO2, ...)
- Early warning, City Indexes, etc.
- AI & XAI:
 - RF, XGBoost, BRNN, RNN, SVR, DNN, LSTM, CNN-LSTM, Autoencoders, ...
 - Clustering: K-means, K-Medoid, ...
 - XAI: Shap, variations, ..
- Modeling, simulation, routing
 - Traffic Flow reconstruction
 - Constrained Routing
- What-IF analysis (simulation + AI + data)
- Based on several computational models:
 - trajectories, OD matrices, Typical Time Trends, etc.

https://www.snap4city.org/download/video/course/da/



to cope with

- any data, format
- any channel, protocol
- any AI/ML
- any place
- online development
- multi-tenant
- Secure, PENTest
- GDPR, privacy
- > low costs
- → easy to evolve

Snap4City (C), November 2022

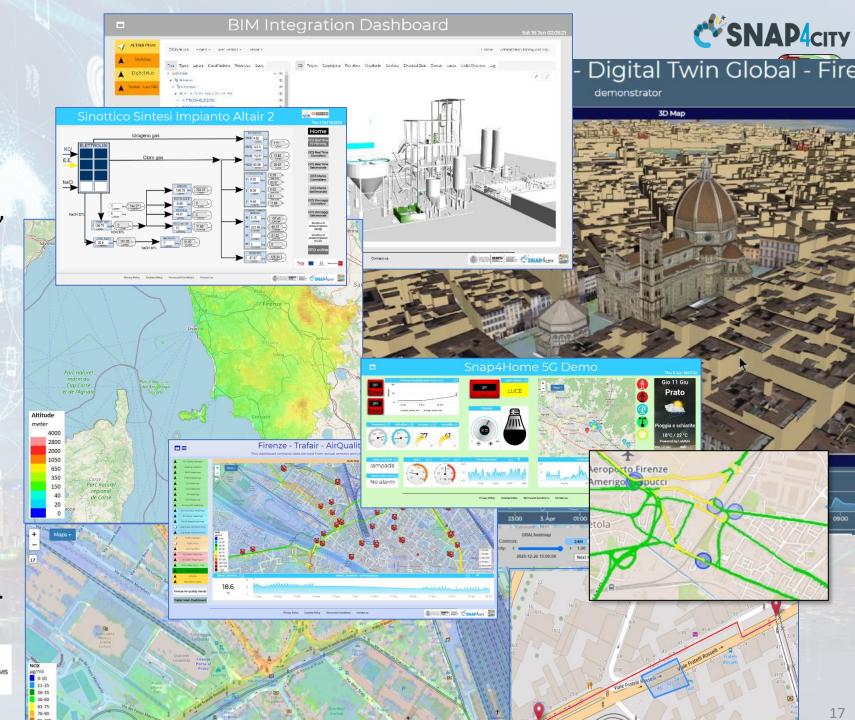
High Level Types

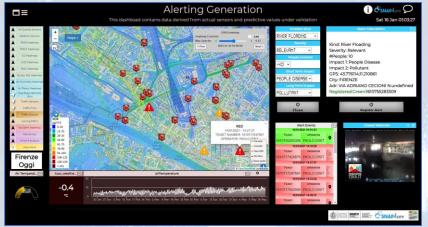
- POI, IOT Devices, shapes,...
- FIWARE Smart Data Models,
- IoT Device Models
- GIS, maps, orthomaps, WFS/WMS, GeoTiff, calibrated heatmaps, ...
- Satellite data, ..
- traffic flow, typical trends, ...
- trajectories, events, Workflow, ...
- 3D Models, BIM, Digital Twins, ...
- · OD Matrices of several kinds, ...
- Dynamic icons/pins, ..
- Synoptics, animations, ...
- KPI, personal KPI,...
- social media data, TV Stream,
- routing, multimodal, constraints, ...
- decision scenarios,
- etc.

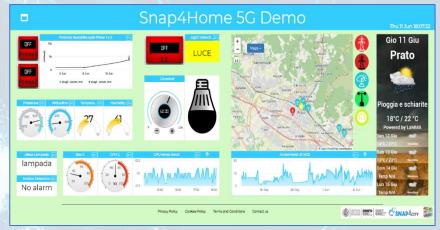


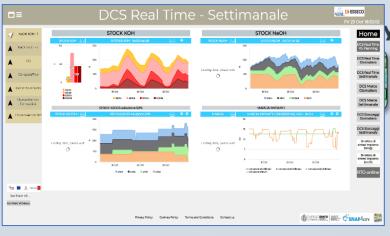


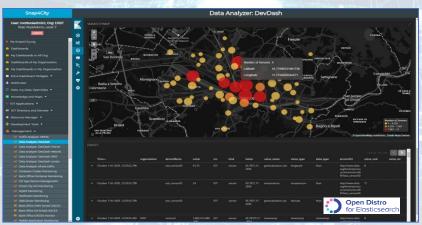




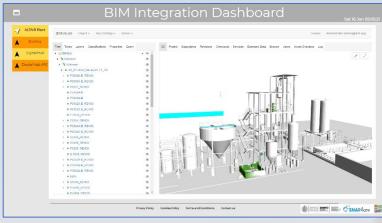




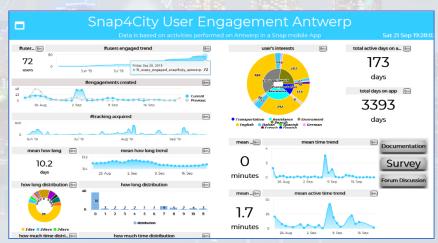


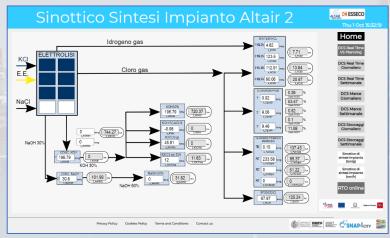


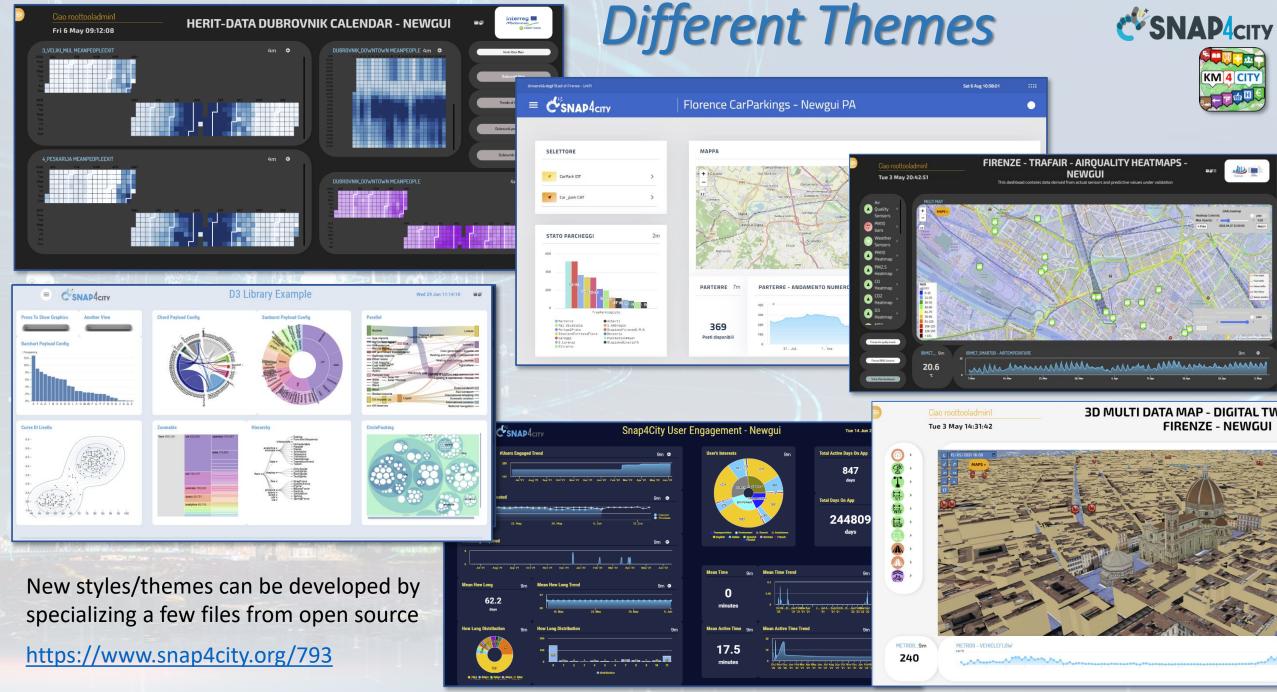












Snap4City (C), November 2022

https://www.Snap4City.org







9







8 running installations in Europe

- Toscana, Pisa, Sweden, ISPRA, Snap4.eu,
- · Altair, Italmatic, Denmark,
- 13 projects, 12 pilots on 10 Countries
 - >40 cities/area

Wide MULTI-tenant deploy, e.g.,

- 18 Organizations / tenant
- > 7400 users on
- > 1400 Dashboards
- > 16 mobile Apps
- > 2 Million of structured data per day
- > 520 IoT Applications/node-RED
- > 700 web pages with training
- > 60 videos, training videos

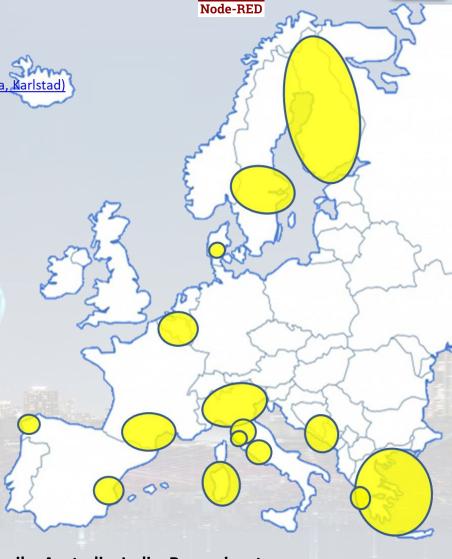


- Antwerp area (Be)
- Bologna (I)
- Capelon (Sweden: Västerås, Eskilstuna, Karlstad)
- DISIT demo (multiple)
- <u>Dubrovnik, Croatia</u>
- Firenze area (I)
- Garda Lake area (I)
- Greece (Gr)
- Helsinki area (Fin)
- Livorno area (I)
- Lonato del Garda (I)
- Modena (I)
- Mostar, Bosnia-Herzegovina
- Oslo & Padova (Impetus)
- Pisa area (I)
- Pistoia (I)
- Pont du Gard, Occitanie (Fr)
- <u>Prato (I)</u>
- Roma (I)
- Santiago de Compostela (S)
- Sardegna Region (I)
- Siena (I)
- SmartBed (multiple)
- Toscana Region (I), SM
- Valencia (S)

EUROPEAN OPFI

- Venezia area (I)
- WestGreece area (Gr)

• Trials in Israel, Colombia, Brasile, Australia, India, Romania, etc.



Smart City Control Room Florence Metropolitan City







Multiple Domain Data

- Thousands of Open/Private data, POI, IOT, etc.
- mobility and transport: accidents, public transport, parking, traffic flow, Traffic Reconstruction, KPI, ...
- AND: environment, civil protection, gov KPI, covid-19, social & social media, people flow, tourism, energy, culture, ...

Multiple dash/tool Levels & Decision Makers

Real Time monitoring, Alerting, quality assess.

Predictions, KPI, DSS, what-if analysis

Historical and Real Time data

Billions of Data

Services Exploited on:

Multiple Levels, Mobile Apps, API

Since 2017









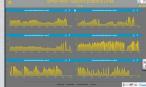












Mobility and Transport Traffic Flow Analysis

Multiple Domain Data

Traffic Flow sensors, city structure, weather

Decision Makers Multiple Locations

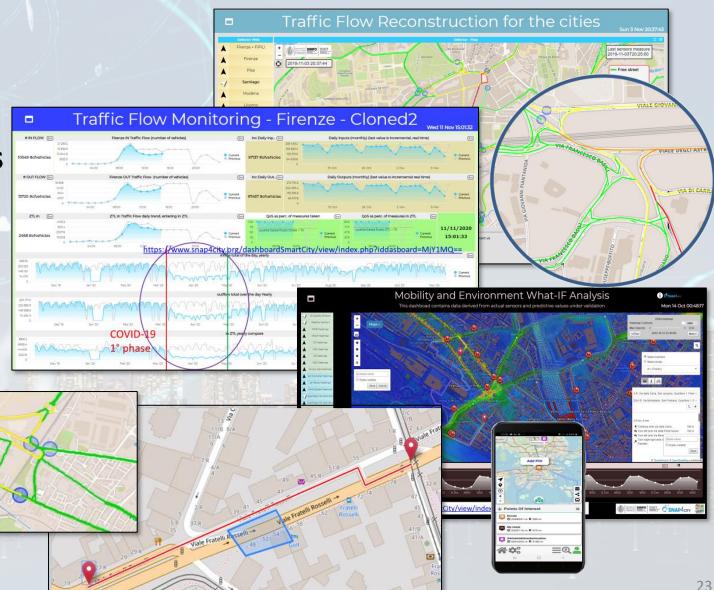
- Real time Monitoring, predictions
- Traffic Flow Predictions,
- Traffic Reconstructions, routing
- Dashboards, What-IF analysis
- Mobile App, people flows

Historical and Real Time data

- Services Exploited on:
 - Dashboards, Mobile App
- Since 2017, 2019

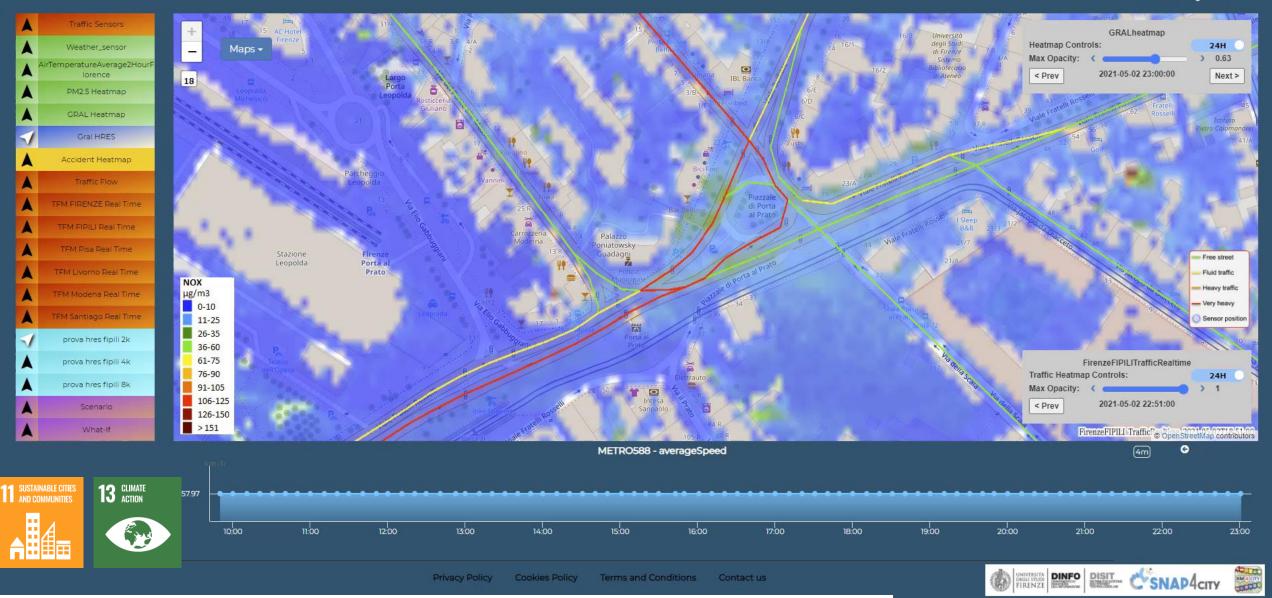
Cities: Firenze, Pisa, Livorno, Modena, Santiago di Compostela





Traffic Flow Manager on multiple cities

Sun 2 May 23:16:31



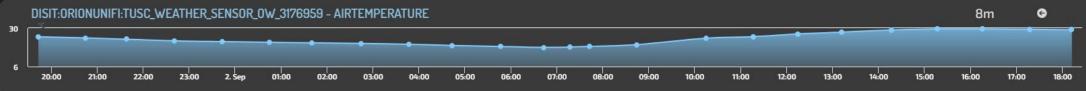
https://www.snap4city.org/dashboardSmartCity/view/index.php?iddasboard=MzEyNg==

3D MAP GLOBAL DIGITAL TWIN -NEWGUI

Fri 2 Sep 19:13:07







Snap4City (C), November 2022





3D views



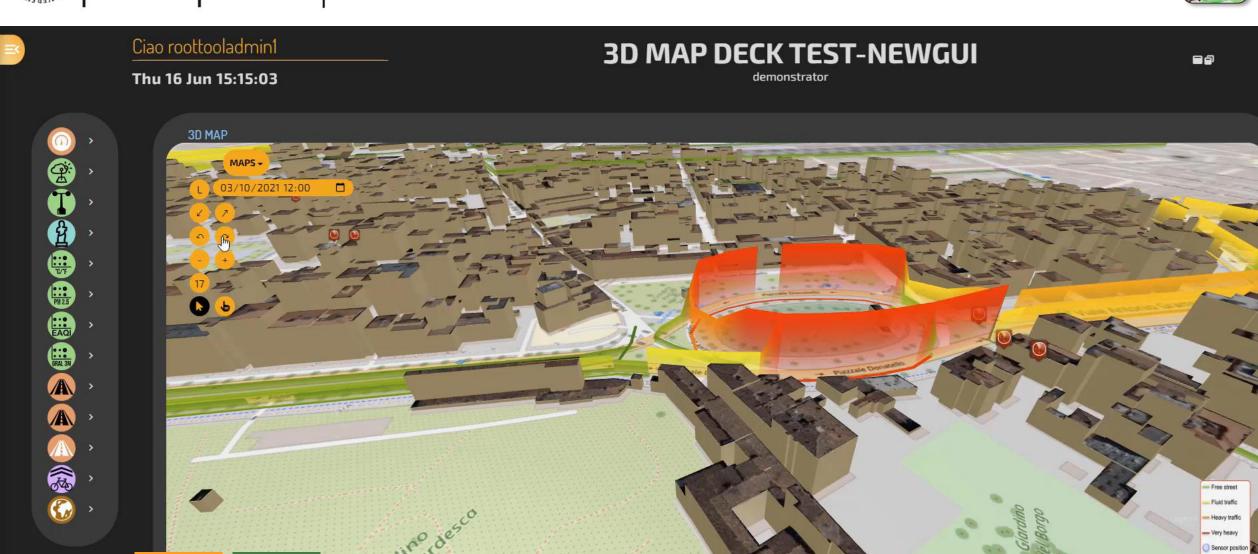












People Monitoring on Pub Services DIGIPOLIS Antwerp







• PAX Counters: museum, pub services, COVID-19

Multiple Levels & Decision Makers

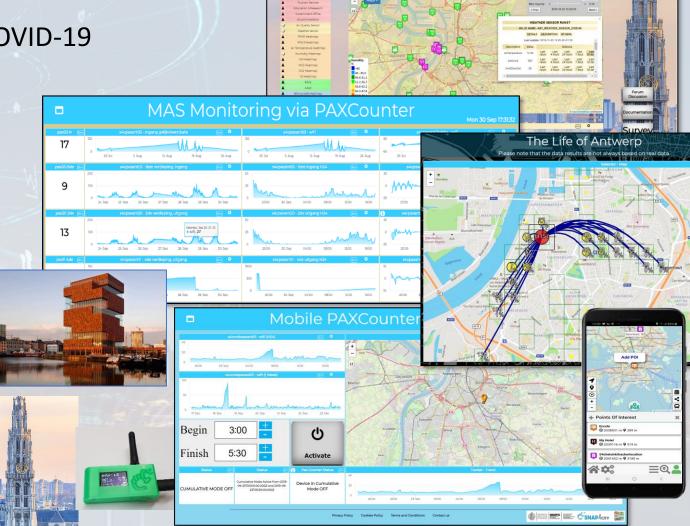
- Business Intelligence Dashboards
- People flow, OD flows
- Detection of critical conditions

Historical and Real Time data

- 20 fixed PaxCounters
- 2 Mobile PaxCounters

Services Exploited on:

- Dashboards, Mobile Apps, API/data
- Fully Controlled Devices by Digipolis
- Since 2019



Impact of COVID-19

Multiple Domains Data

 Traffic, environment, People, parking, stock options, Twitter, tc.

Decision Makers Multiple Locations

- NO2 long term predictions
- Twitter analysis

Historical and Real Time data

Services Exploited on:

- Dashboards
- Social media,
- Sentiment Analysis
- Since 2019, 2020

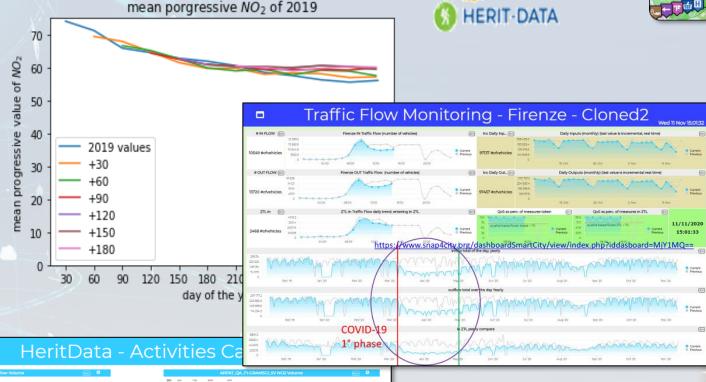
Cities: Firenze, Pisa, Livorno, Toscana











HeritData -	Activities Ca
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metric	model30	model60	model90	model120	model150	model180
MAE	1.21	1.31	1.52	2.04	2.31	2.37
RMSE	2.16	2.61	4.18	6.77	7.83	7.93
MAPE	1.99	2.20	2.65	3.57	4.07	4.18
R2	0.91	0.83	0.80	0.54	0.45	0.14
Table 4	. Assessn	nent of th	e predict	ive model	s with resp	pect to the
actual v	alues of t	he 2019.				

Environment and Quality of Life

Air Quality Predictions

Multiple Domain Data

- Traffic Flow data, Pollutant: NOX, CO2, PM10, PM2.5, O3,
- 3D City structure, weather, ...

Multiple Decision Makers

- Pollutant Predictions: NOX, NO2, ...
- City officers, energy industries
- Dashboards, What-IF analysis
- Traffic Flow Reconstruction

Historical and Real Time data

- Billions of Data
- Services Exploited on:
 - Dashboards, Mobile App
- Since 2020



Cities of: Firenze, Pisa





Smart City / Smart Parking + Environment

Reverberi, Lonato del Garda







Smart Parking, Environment, Wi-Fi

Multiple Decision Makers

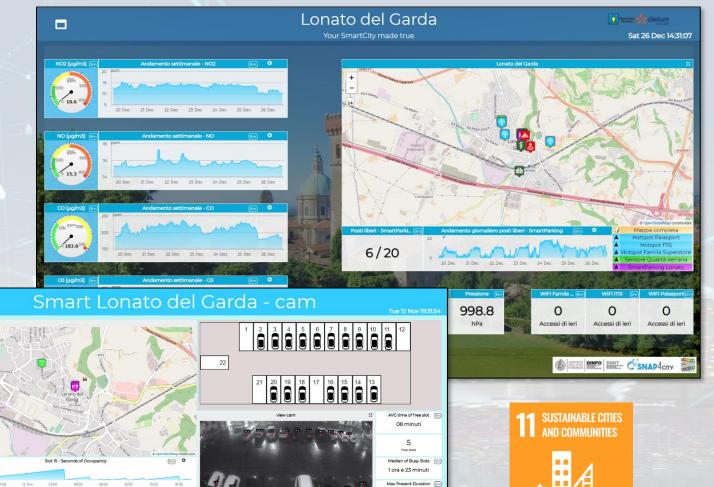
- City Officer, operators
- Data monitoring, alerting
- analytics

Historical and Real Time data

Dashboards

Services Exploited on:

- Dashboards, API
- Since 2019





Smart Light Control of CAPELON

25. Apr

26. Apr

27. Apr





- Energy Domain
 - Smart Light, MQTT,
 - IoT Orion Broker FIWARE
- Dashboards
 - Map coverage on Sweden
 - Monitoring and real time control
 - Energy control, analytics
 - Direct control
- Historical and Real Time data
- Services Exploited on:
 - Multiple Levels, API
 - Dashboards
- Since 2020







29. Apr





Pont du Gard

- Tourism Domain
 - KPIs
 - Social Media
 - People Flows
 - Bike Flows
- Dashboards
 - Monitoring KPI
 - People and bikes flows
 - Twitter Vigilance
- Historical and updated data
- Services Exploited on:
 - Dashboard
- Since 2020

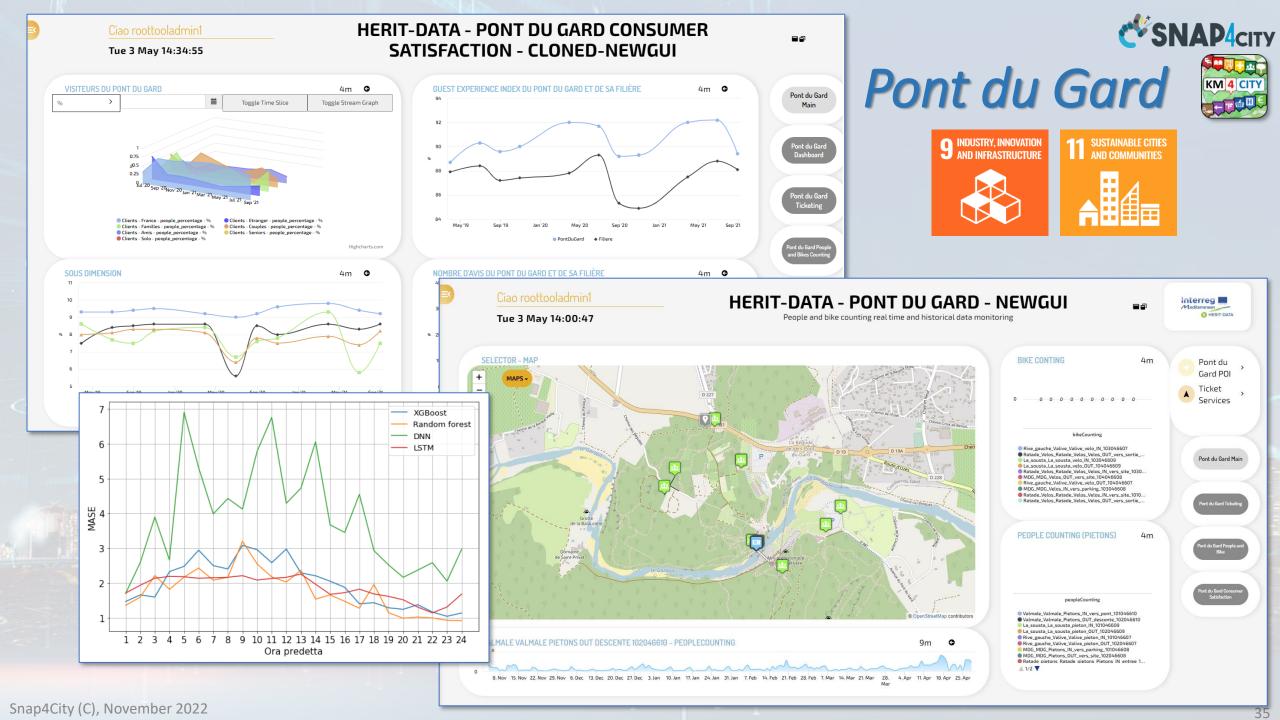












Dubrovnik

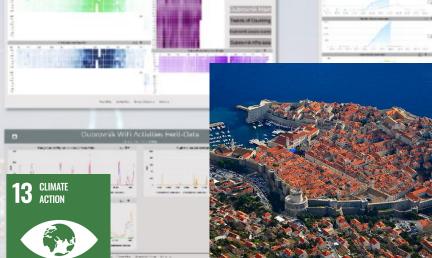
- Tourism Domain
 - Counting People
 - TV Cameras and WiFi
 - Social Media
- Dashboards
 - Monitoring and real time control
 - People flow
 - Twitter Vigilance
- Historical and Real Time data
- Services Exploited on:
 - Dashboard
- Since 2020





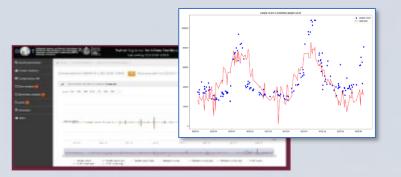
















Valencia, FSMLR

Tourism Domain

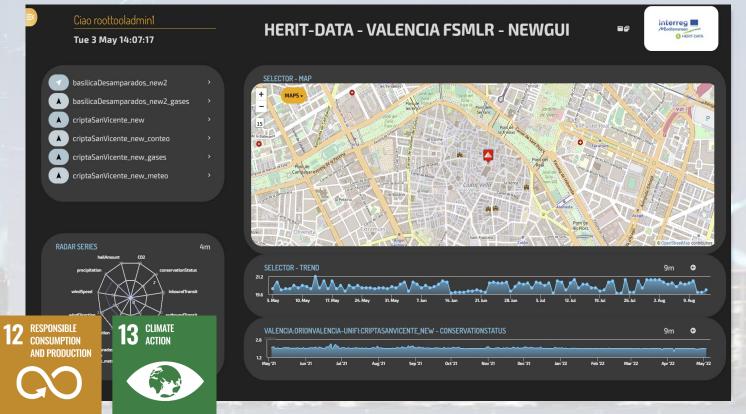
- Counting People
- Environmental data
- Social Media
- Dashboards
 - Monitoring and real time control
 - People flow
 - Twitter Vigilance
- Historical and Real Time data
- Services Exploited on:
 - Dashboard
- Since 2020











West Greece

Tourism Domain

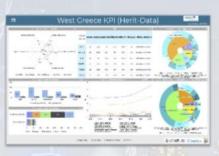
- KPIs: ODM, Flows, ...
- Social Media
- People Flows

Dashboards

- Monitoring KPI
- People flows
- Twitter Vigilance
- Historical and updated data
- Services Exploited on:
 - Dashboard
- Since 2020



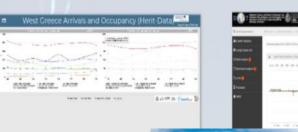




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Interregi

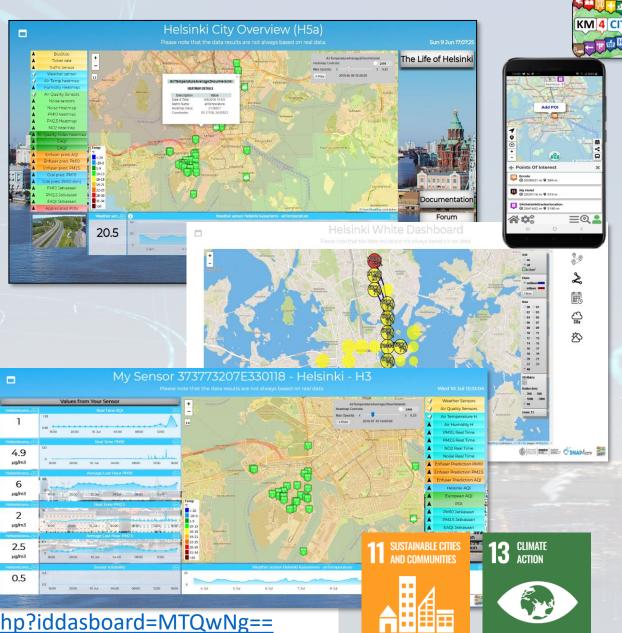
MERIT-DATA





Helsinki, Finland

- Dashboards & Services:
 - Environment & Weather, PM10, PM2.5,NO, SO2, CO, noise, etc.
 - Sensors values, Heatmap & Alerts on critical
 - FMI Enfuser prediction: PM10, PM2.5, ...
 - GRAL predictions PM10, validations
 - Private sensors in Jätkäsaari area (personal dashboards)
 - Mobility: Traffic Sensors, Operators, routing, multimodal routing, whatif
 - Social: Twitter Vigilance, early warning
 - Life in Helsinki: OD matrix people flow, Twitter Vigilance SA, hot places, etc.
 - Tourism and Culture
- Mobile App and MicroApplications:
 - Helsinki in a Snap (all stores)



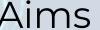
https://www.snap4city.org/dashboardSmartCity/view/index.php?iddasboard=MTQwNg==

Industry Plant Supervision and Maintenance









- **Control Room**: Higher level supervision and monitoring (since 2020)
 - Management of Production Plan Optimization
 - Control of Perimeter with drone and sensors

Maintenance ticketing (since 2017)

- predictive (in development)
- 3D Digital Twin (in development)



Snap4Altair Decision Support supervision and control, Industry 4.0







Multiple Domain Data

• Distributed Control System: energy, flows, storage,

chemical data, settings, ...

- Cost of energy, Orders,
- Production Parameters
- Maintenance data

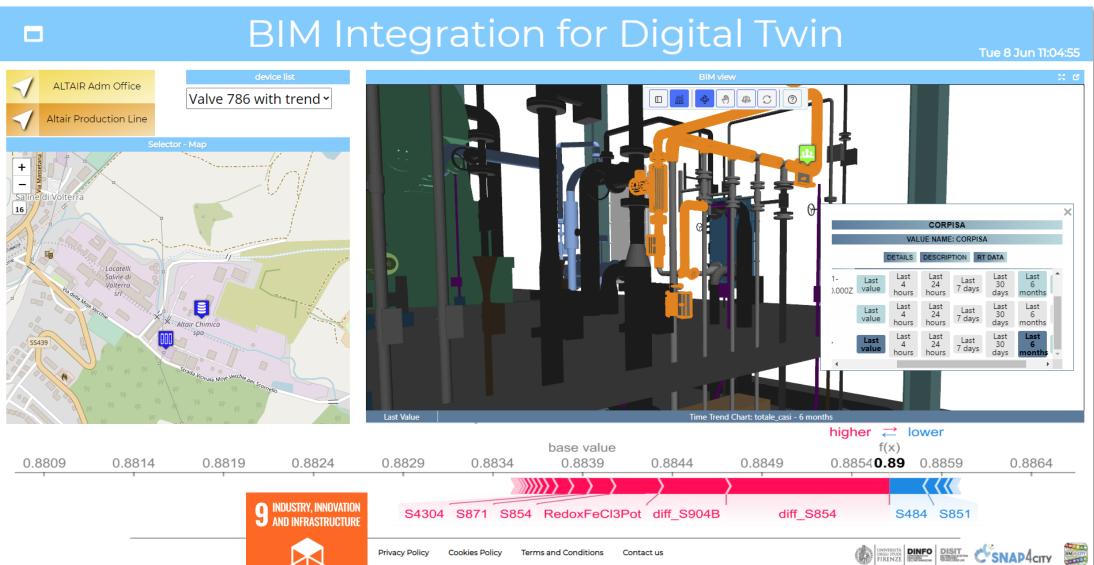
Multiple Levels & Decision Makers

- Optimized planning on chemical model
- Business Intelligence on Maintenance data
- Historical and Real Time data
 - Billions of Data
- Services Exploited on:
 - Multiple Levels, Mobile Apps, API
- Since 2020



Digital Twin Local, 3D vs Real Time Data











GeNotiLab Architecture for ALTAIR





Analytical Data from the product quality Lab(LIMS/SAM)



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IOT App Analytics

Dashboards



IOT App Tools: Management

- -- List of Chemical Analyses
- -- List of Notifications
- -- Define notifications
- -- Program, send notifications
- -- see notification status





IOT App

AS400

Notifications

Users

Analysis

Snap4City (C), November 2022







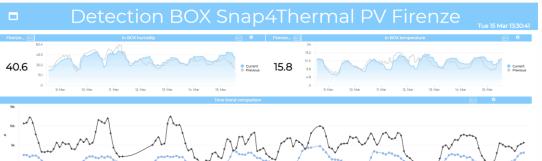








A view and data from the Thermal Camera







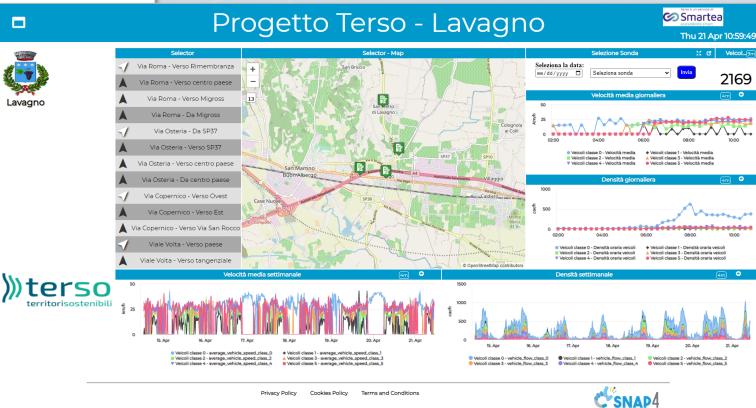












- Traffic Data
- Environmental Data
- People counting (pedestrian)

Snap4City (C), November 2022

PaD

Predictive Analytics Dashboard

Piano Linea 2

| Description | Proceedings | Procedings | Proceedings | Procedings | Proceedings | Procedings | Proceedings | Proceedings | Procedings | Proceedings | Procedings | Procedings





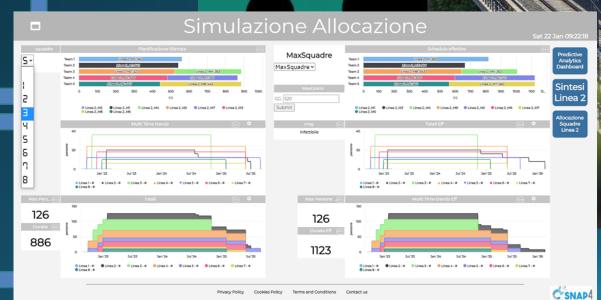




	Data partenza in stima	Data fine in stima	Durata stimata	Data effettiva partenza	Data effettiva fine	Durat
Progetto di base	02/06/2022	31/08/2022	90	02/06/2022	31/08/2022	
Progetto esecutivo	31/08/2022	29/11/2022	90	31/08/2022	29/11/2022	
Vr_ODI PE	29/11/2022	28/01/2023	60	29/11/2022	28/01/2023	
Realizzazione	28/01/2023	20/09/2025	966	28/01/2023	20/09/2025	
Prove	20/09/2025	19/12/2025	90	20/09/2025	19/12/2025	
CVT e ANSFISA	19/12/2025	18/05/2026	150	19/12/2025	18/05/2026	
Totale	02/06/2022	18/05/2026	1446	02/06/2022	18/05/2026	

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Predictive Analytics Dashboard





Jewel Alarms AMPERE







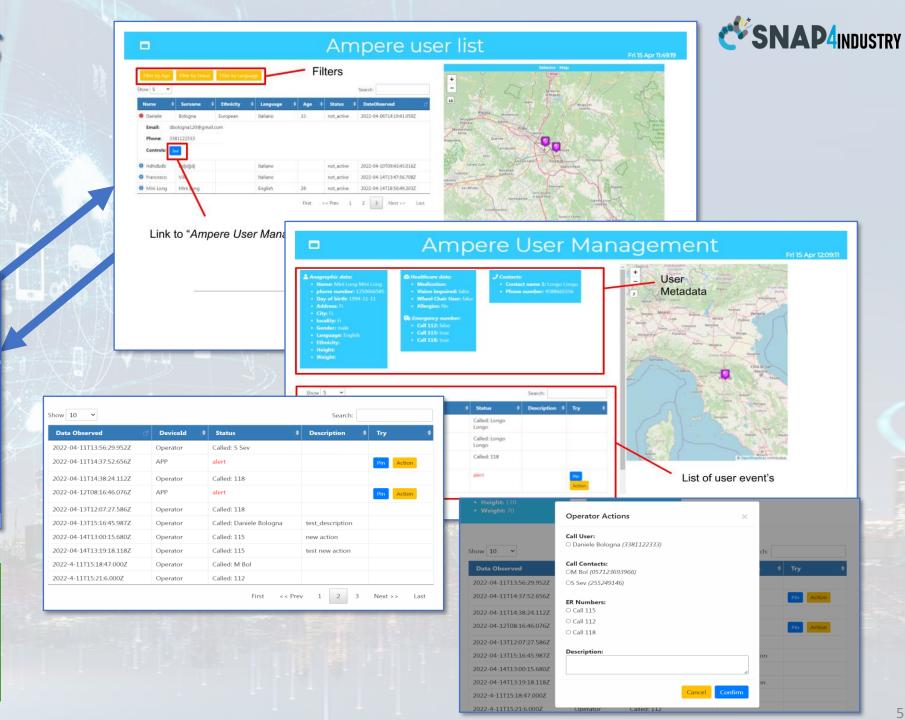






Click on Jewel





Smart Waste – Map view







Search bins on map by filtering per:

- **Kind** (All, generic, plastic, paper, glass, metal, organic)
- **Status** (Active, Not Active)
- Fullness (Full, Half-full, Empty)
- **Address**
- **Group of bins** (by GroupID)







- Refine a search by using the filters on the left side
- Click on a waste bin pin on the map:
- A popup with real time data is shown
- The fullness status of the selected group of bins is shown in the synoptic below the map
- Specific fullness weekly trends are shown below the map
- Chick on the «Table view» button to access the other dashboard











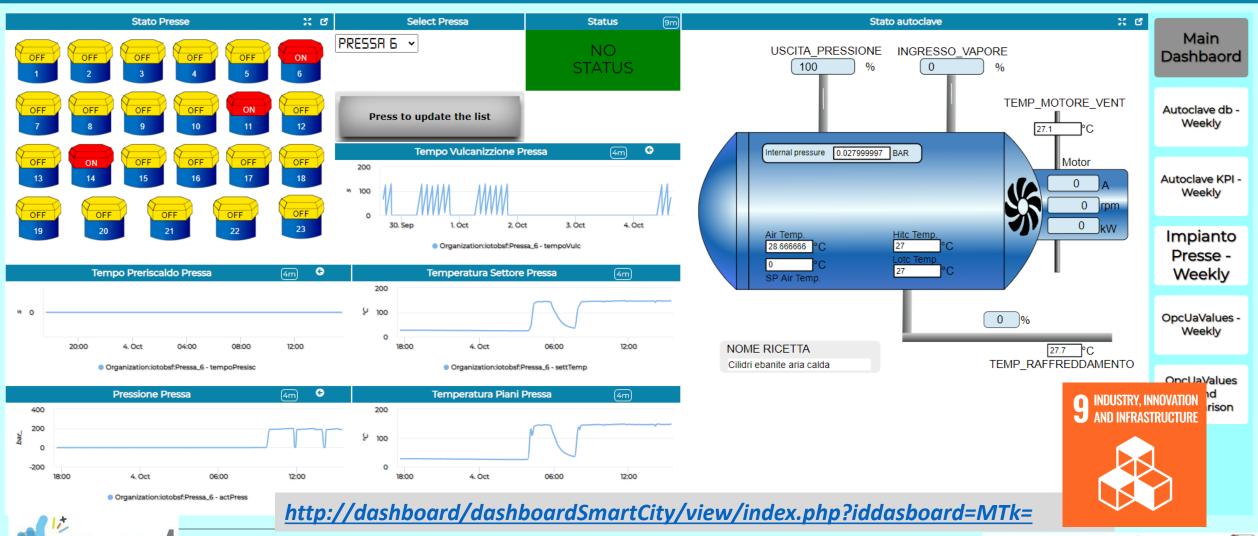


Sinottico Impianto

Sinottico Impianto Presse - Autoclave



Mon 4 Oct 15:34:59



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Cookies Policy

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TOP

Data Ingestion and Digital Twin Management



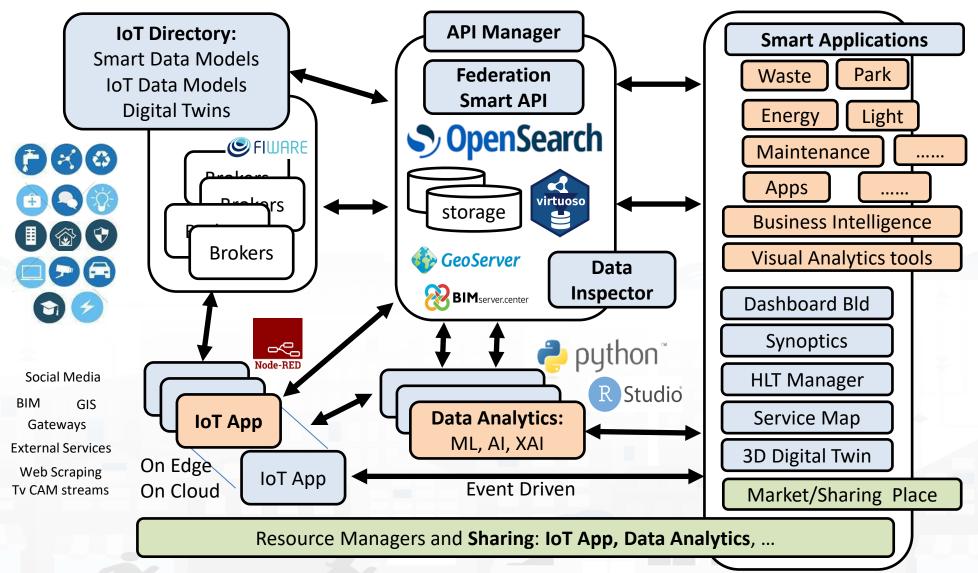






Tech Arch





10/22

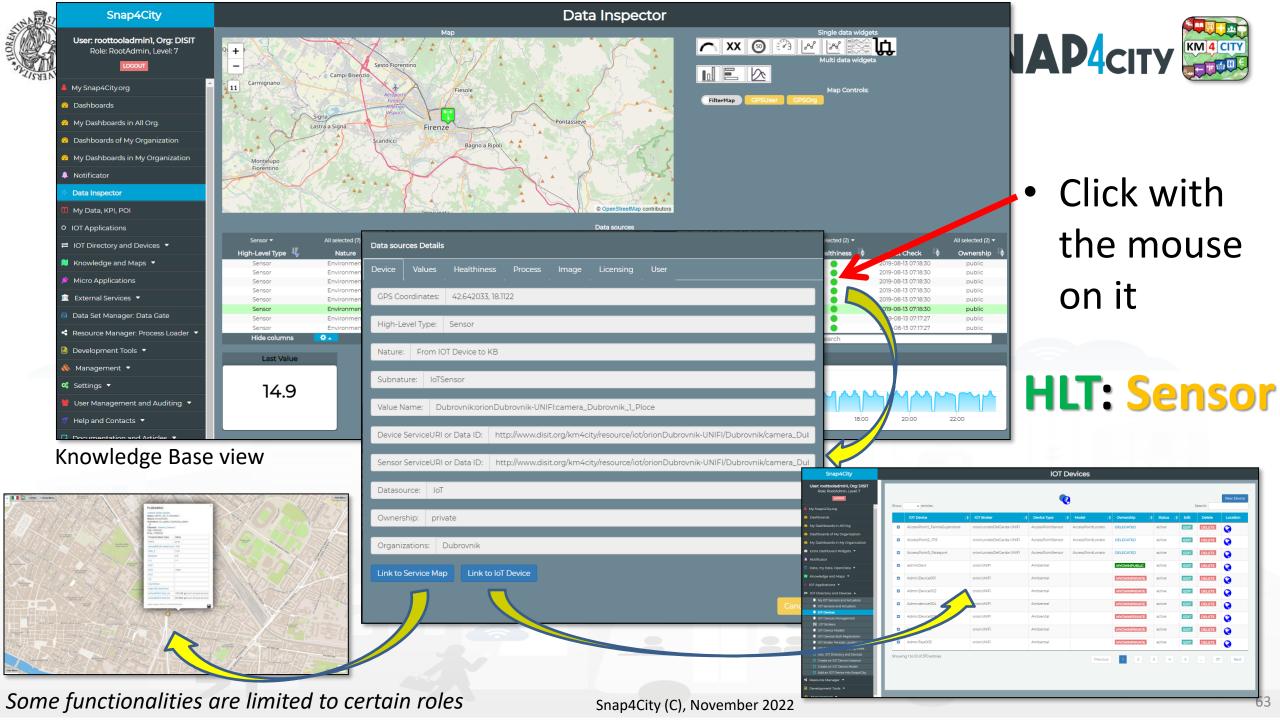






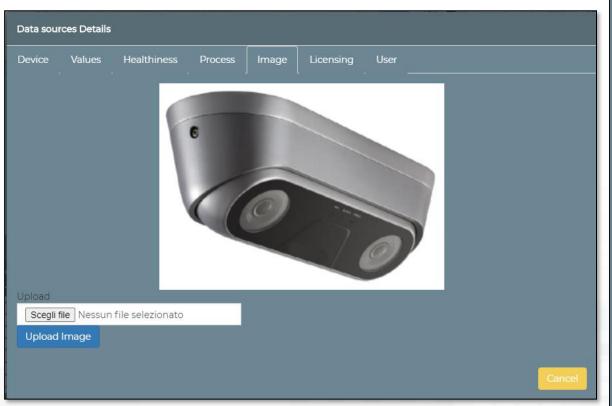








Image of the Devices and Licensing



Data sources	Data sources Details						
			Process	Image	Licensing	User	
Licence (o	n:Dubrov	/nik:orionDubrov	nik-UNIFI:ca	amera_Dubr	ovnik_1_Ploce	e):	
e https://crea	_	nmons.org/licens	es/by-nc-nd/	/4.0/legalcod	de		
			_	_	_		
Provider:	Dubrov	vnik Developmer	nt Agency DI	URA			
Address:					_		
E-mail:	scavar@d	dura.hr					
Reference	Person:	Stjepan Cavar					
Telephone	: 0038	35 20640557					
Website:							
Edit param	neters						
						Cancel	

Some functionalities are limited to certain roles

Snap4City (C), November 2022

SCALABLE SMART ANALYTIC APPLICATION BUILDER FOR SENTIENT CITIES





15MinCityIndex

What would support my neighborhood to become a 15-Minute City?

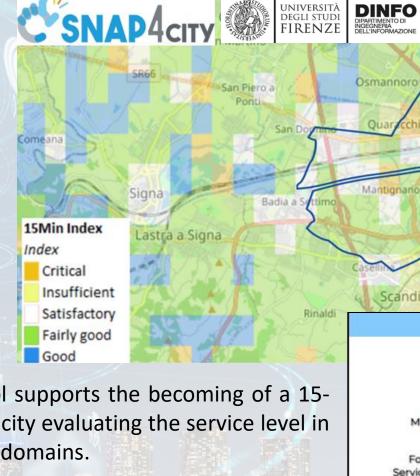
Using the Open Data:

We developed a data analytic tool based on municipal and national open data to assess services adequacy for people living in each 15 minutes areas of the city.

Good public transport services: bus, new tram line, train stations, cycle paths.

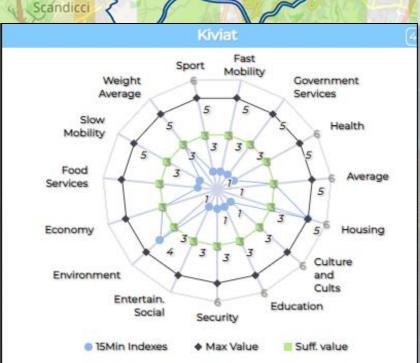


Careggi/Rifredi is a relevant district in Florence because of hosting the main Florence/Tuscany hospitals Careggi and Meyer, but also university headquarters and many other workplaces.



The tool supports the becoming of a 15-Minute city evaluating the service level in various domains.





DISTRIBUTED SYSTEMS AND INTERNET TECHNOLOGIES LAB

https://www.snap4city.org/dashboardSmartCity/view/index.php?iddasboard=MjkzOA==

Snap4City (C), November 2022



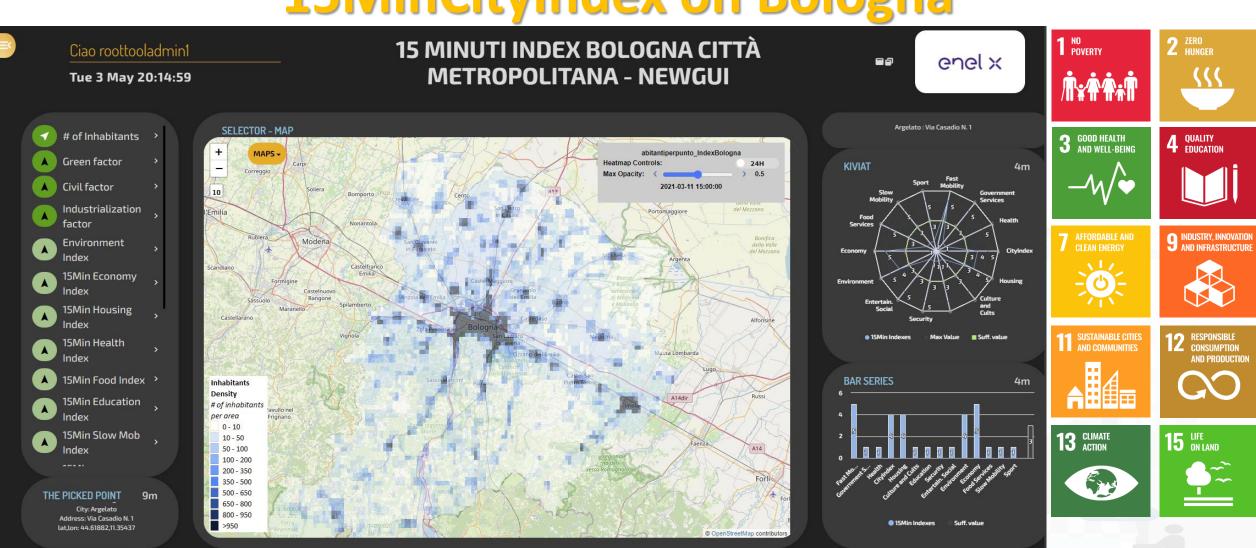






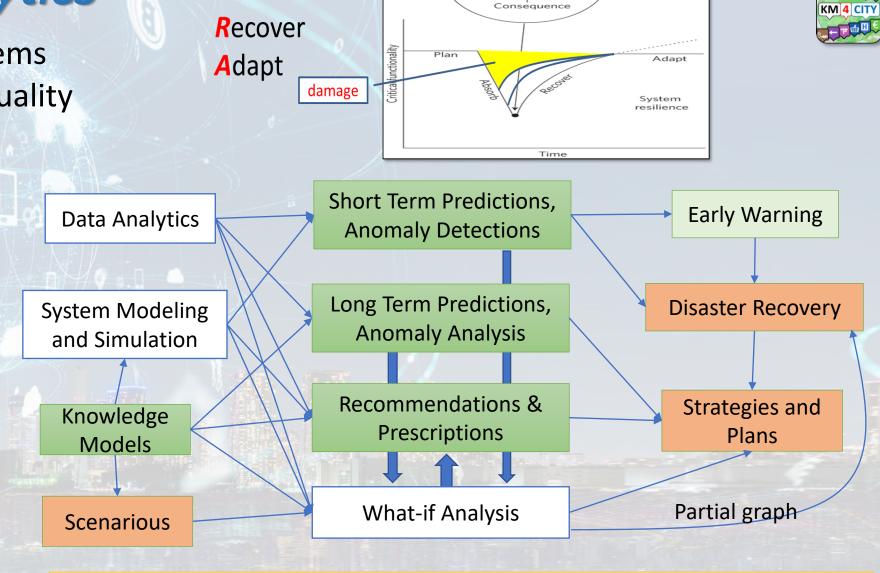


15MinCityIndex on Bologna



Snap4City Analytics

- Decision support systems
- Improvement of life quality
- Sustainable Solutions
- Reduction of costs
- Risk Assessment
- Resilience



Decision Support System, targeting: Quality of Life, KPI, SDG, 15MinIndex,...

Snap4City (C), November 2022

Prepare

Absorb

What-if Analysis on Pub Transport







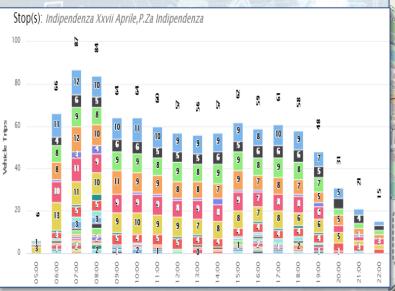




- Definition of scenarious impact on
 - Traffic, Pollutant, parking, public transport, private flows, etc.

KPI analysis

Public Services













SNAP4city KM4 City

Decision Support Systems, What-if

Event planning, via what-if analysis

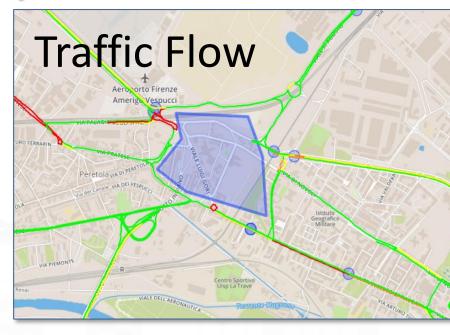
- Change in the graph structure of the city
- Impact on the flow of people and vehicles
- Adaptation: public transport, traffic, pedestrian management, etc.

Immediate reaction to natural events or not

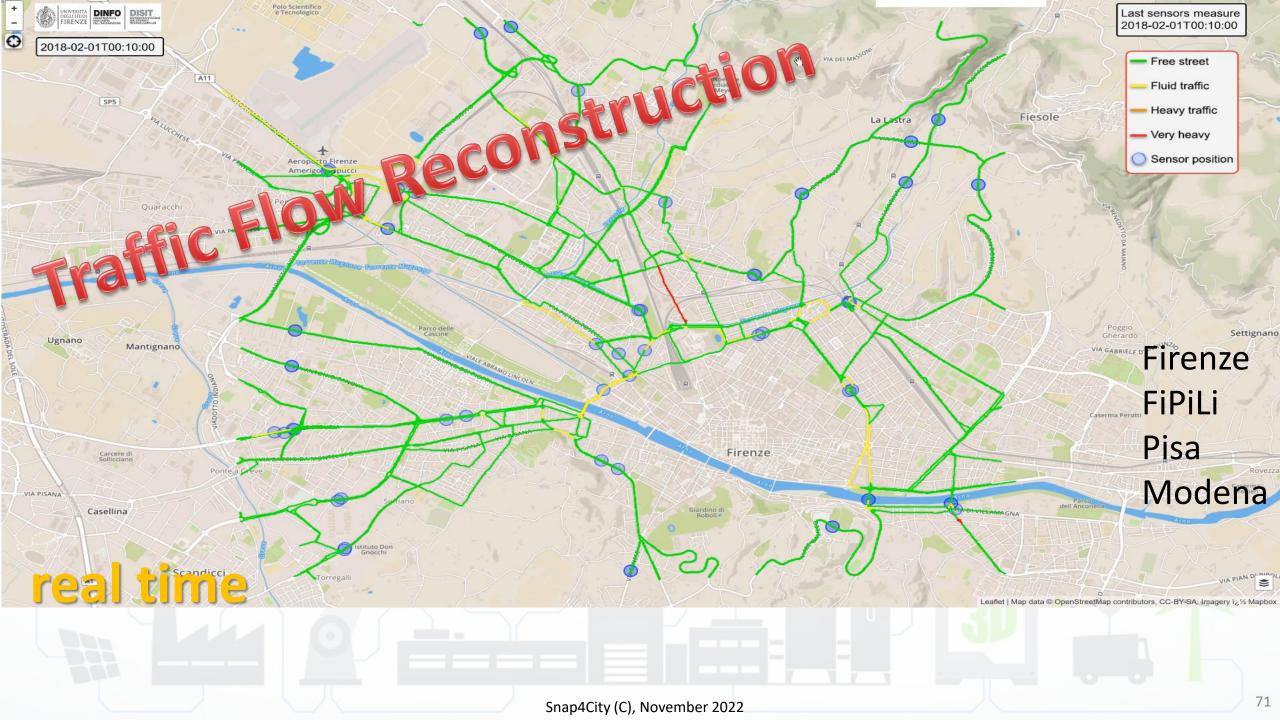
- Everything is ready and updated in real time
- Each view is contextualized in terms of data: descriptive and prescriptive

Digital Twin

- More detail in the context integrated data
- Greater realism in deductions and representations
- Less fragmentation and non-uniformity in the views to support decisions







SNAD CITY KM 4 CITY Characterizing City Areas

Pirenze Wi-Fi: Access Points Clusters Coverage Map

DISIT - Distributed Systems and Internet Technologies Lab **Predicting City Areas Crowd level** characterizing Users' Behaviors Wi-Fi based APs: APs (saturday): APs (sunday): Prediction resolute

















To propose suggestions and Engage city user we need to know how they are moving



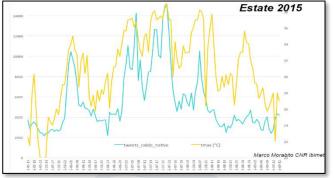


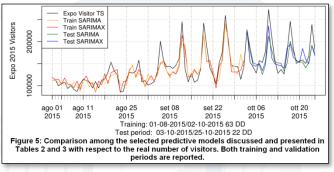


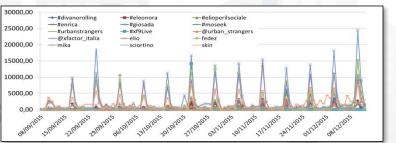


Prediction/Assessment

- Football game results as related to the volume of Tweets
- Number of votes on political elections, via sentiment analysis, SA
- Size and inception of contagious diseases
- marketability of consumer goods
- public health seasonal flu
- box-office revenues for movies
- places to be visited, most visited
- number of people in locations like airports
- audience of TV programmes, political TV shows
- weather forecast information
- Appreciation of services















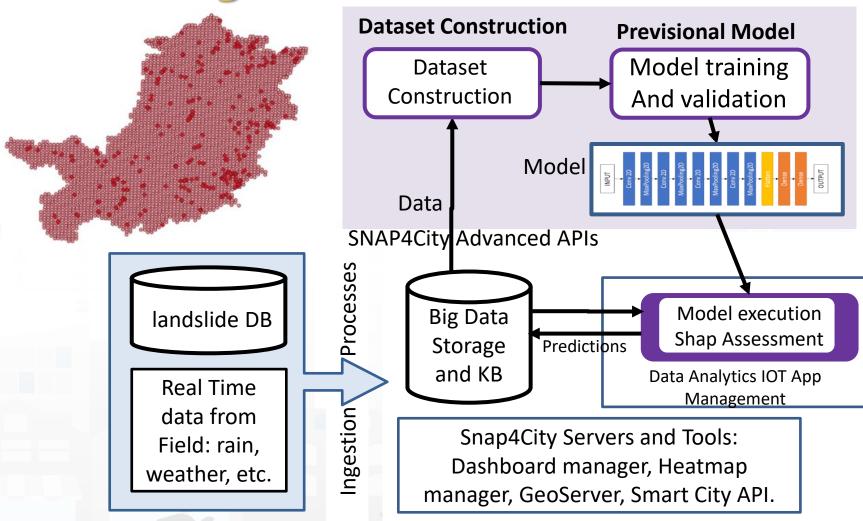








Predicting Land slides



(c) 21-12-2019 predictions Dashboards and

Mobile Apps

E. Collini, L. A. I. Palesi, P. Nesi, G. Pantaleo, N. Nocentini and A. Rosi, "Predicting and Understanding Landslide Events with Explainable AI," in IEEE Access, doi: 10.1109/ACCESS.2022.3158328.

Data Analytics on Snap4City platform

tools

other

and

Base

from Knowledge

API

City

Smart



Studio









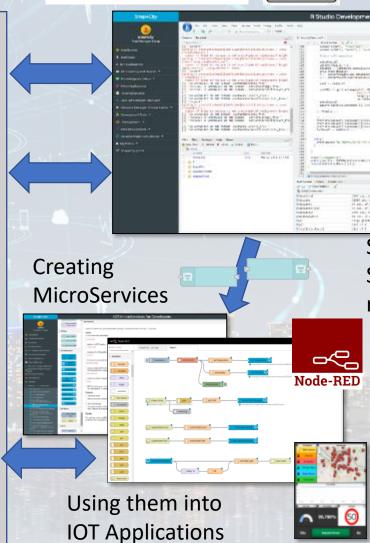


Ontology Schema

LOG.disit.org



Big Data Store Facility



TensorFlow

Saving / Sharing reusing

OUDA.



Resource Manager



SCALABLE SMART ANALYTIC APPLICATION BUILDER FOR SENTIENT CITIES





Snap4City (C), November 2022





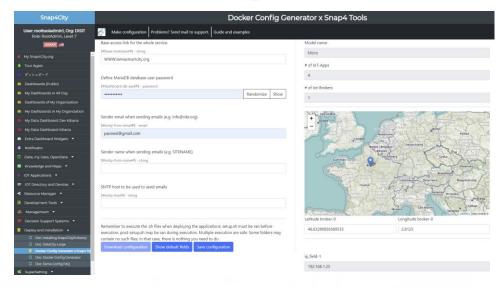


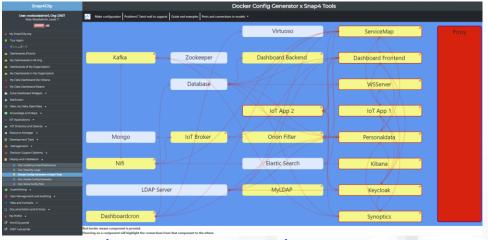


Installations, different models a TOOL to get them

- Micro X:
 - 1 VM of dockers
- Normal X,Y:
 - 2 VM of dockers
- Small X,Y: scalable
 - 4 VM of dockers
- DataCitySmall X,Y,Z: scalable
 - 6 VM of dockers
- DataCityMid X,Y,Z,T: scalable
 - # VM + X/70 VM + Y/3 VM + Z VM + T VM of dockers
- DataCityLarge: scalable
 - depending on your needs





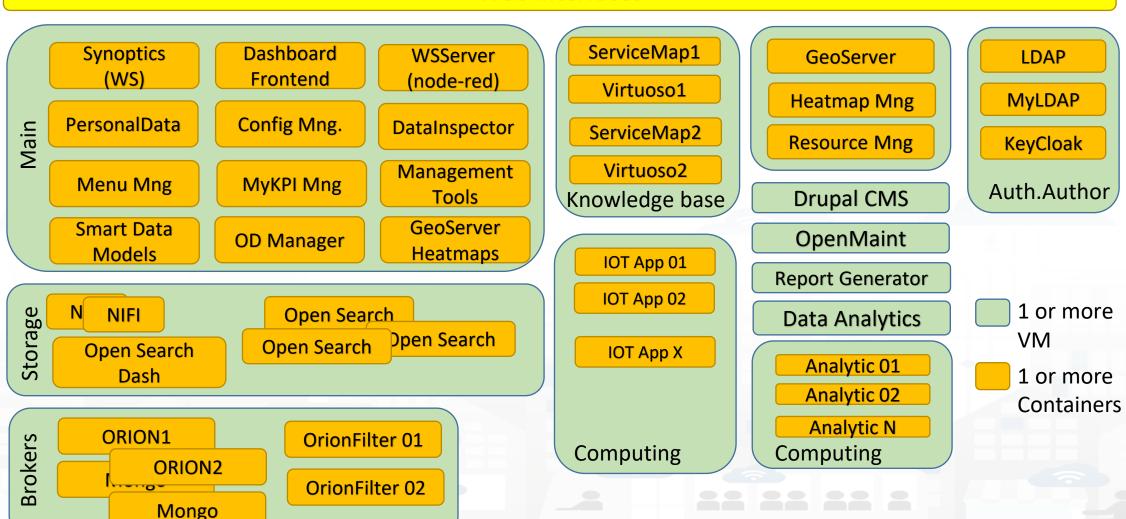






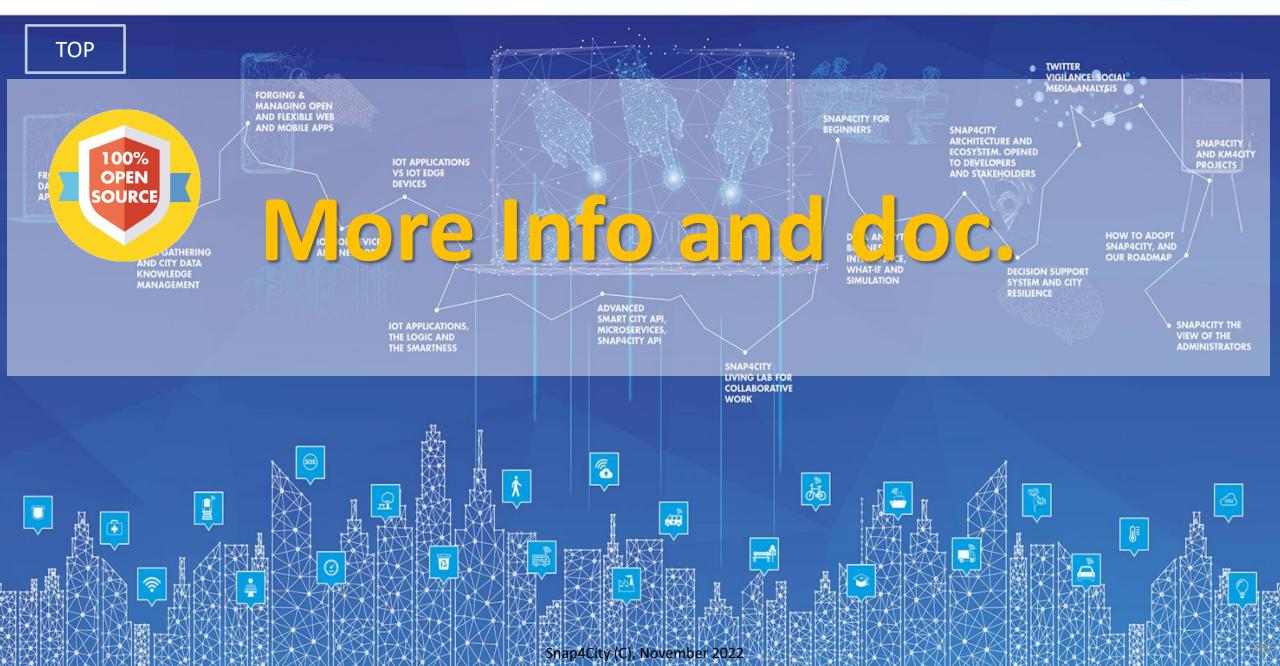
DataCitySmall X-2-2

Web Interfaces



SCALABLE SMART ANALYTIC APPLICATION BUILDER FOR SENTIENT CITIES





https://www.snap4city.org/577





On Line Training Material (free of charge)

			· · · · · · · · · · · · · · · · · · ·	THE PERSON NAMED IN			
	1st part (*)	2nd part (*)	3rd part (*)	4th part (*)	5th part (*)	6th part (*)	7th part (*)
what	General	Dashboards	IOT App, IOT Network	Data Analytics	Data Ingestion processes	System and Deploy Install	Smart City API: Web & Mob. App
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Video3	You	You	You	You	You Tube	You	You
Video4	You	You	You	none	You Tube	none	none
duration	2:55	3:16	3:41	2:00	2:48	2:35	1:47

2022 booklets

Snap4City



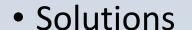


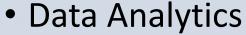
https://www.snap4city.org/download/video/DPL_SN AP4CITY 2022-v02.pdf Snap4Industry





https://www.snap4city.org/download/video/DPL SNAP4INDUSTRY 2022-v03.pdf









https://www.snap4city.o rg/download/video/DPL SNAP4SOLU.pdf







Overview

















Snap4City Platform

Technical Overview

From: DINFO dept of University of Florence, with its

DISIT Lab, Https://www.disit.org with its Snap4City solution

Snap4City:

- Web page: <u>Https://www.snap4city.org</u>
- https://twitter.com/snap4city
- https://www.facebook.com/snap4city

Contact Person: Paolo Nesi, Paolo.nesi@unifi.it

- Phone: +39-335-5668674
- o Linkedin: https://www.linkedin.com/in/paolo-nesi-849ba51/
- Twitter: https://twitter.com/paolonesi
- o FaceBook: https://www.facebook.com/paolo.nesi2

Access Level: Public

Date: 05-04-2021

Version: 5.3

https://www.snap4city. org/drupal/sites/default /files/files/Snap4City-PlatformOverview.pdf





















Development Life-Cycle

https://www.snap4city.org/download/video/Snap4Tech-Development-Life-Cycle-v1-1.pdf

From Snap4City:

- We suggest you to read the TECHNICAL OVERVIEW:
 - https://www.snap4city.org/download/video/Snap4City-
- https://www.snap4city.org
- https://www.snap4industrv.org
- https://twitter.com/snap4city
- https://www.facebook.com/snap4city
- https://www.youtube.com/channel/UC3tAO09EbNba8f2-u4vandg

Coordinator: Paolo Nesi, Paolo.nesi@unifi.it

DISIT Lab, https://www.disit.org DINFO dept of University of Florence, Via S. Marta 3, 50139, Firenze, Italy Phone: +39-335-5668674

Access Level: public

Date: 21-10-2022

Version: 1.4







https://www.snap4city.org/d ownload/video/Snap4Tech-**Development-Life-Cycle.pdf**













SMART CITIES AND SMART INDUSTRY

Snap4City: FIWARE powered smart app builder for sentient cities





- https://fiwarefoundation.medium.com/snap4cityfiware-powered-smart-app-builderfor-sentient-cities-acfe24df49d5
- https://www.snap4city.org/drupal/sit es/default/files/files/FF ImpactStorie s Snap4City.pdf









https://www.snap4city.org/4

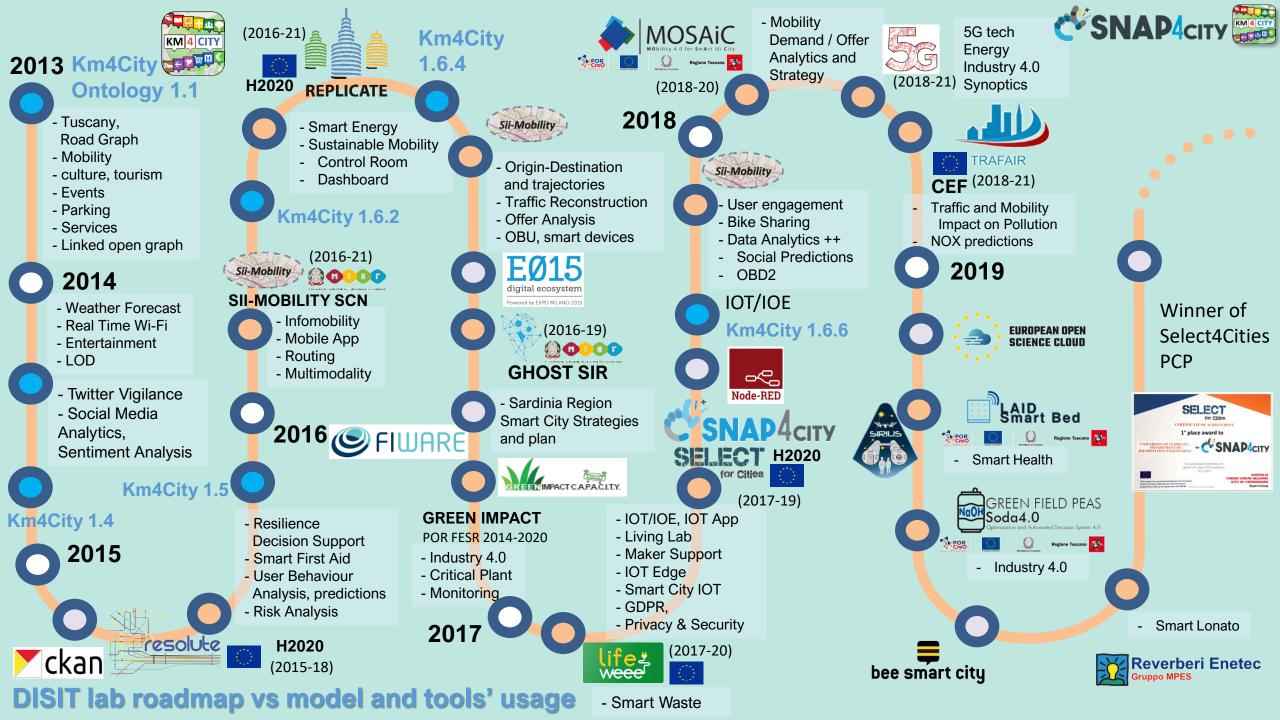
- <u>Scenario: SnapBot: Real Time Smart City services via Telegram</u>
- Scenario: Copernicus Satellite Data
- Scenario: SmartBed, Materasso Intelligente
- MicroServices Suite for Smart City Applications
- Scenario: MODBUS for Snap4Industry Snap4City Applications
- Scenario: MOBIMART Interreg: MOBilità Intelligente MARe Terra
- Scenario: City of Roma case, mobility and environmental data
- Scenario: Herit-Data video and aims
- Scenario: Control Room vs Video Wall
- Scenario: Snap4Home the case of: Alexa, Philips, Sonoff, TP-link, etc. (Italiano)
- Scenario: how to manage maintenance and accidents workflows
- Scenario: Snap4Home, how to exploit Snap4City solution on home automation
- Scenario: Energy Monitoring
- Scenario: Multipurpose User Engagement Tools
- <u>Scenario: 5G Enabled Water Cleaning Control</u> (smart city, industry 4.0)
- Scenario: High Level Control of Industrial Plant (industry 4.0)
- Scenario: Vehicle Monitoring via OBD2
- Scenario: Events and Museums Monitoring in Antwerp
- Scenario: High Resolution Prediction of Environmental Data
- Scenario: Mobility and Transport Analyses in multiple cities
- Scenario: People Flow Analysis via Wi-Fi
- Scenario: Antwerp Pilot on Environmental Data
- Scenario: Helsinki Pilot on Environmental Data
- Scenario: Firenze Smart City Control Room
- Scenario: Mobile & Web App: Toscana Where What ... Km4City, Toscana in a Snap
- Scenario: Helsinki Pilot on User Behaviour
- Scenario: Antwerp Pilot on User Behaviour

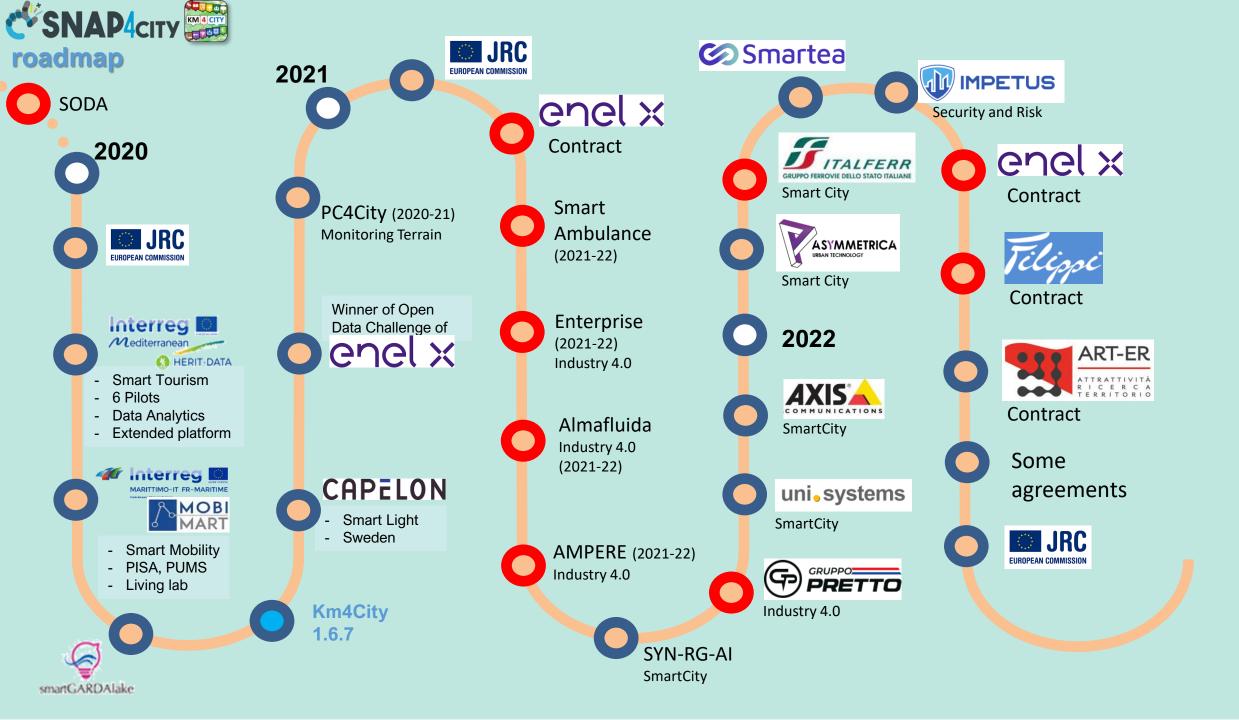




Scenarious

- Data Analytic: Origin Destination Matrices, Algorithms and tools
- Data Analytic: Traffic Flow Reconstruction
- Data Analytic: in general, and the cases of Antwerp and Helsinki
- Data Analytic: Predicting Air Quality
- <u>Data Analytic: Analyzing Public</u>
 <u>Transportation Offer wrt Mobility Demand</u>





TOP









CONTACT

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