



[www.snap4city.org](http://www.snap4city.org)  
[www.snap4solutions.org](http://www.snap4solutions.org)



[www.km4city.org](http://www.km4city.org)



#snap4city  
#km4city  
#disitlab  
@snap4city

**November 2026**

**Agentic AI Digital Twin Platform  
Decision Support Systems  
& Business Intelligence**

**DIGITAL TWIN SOLUTIONS TO SETUP SUSTAINABLE DECISION SUPPORT SYSTEMS AND BUSINESS INTELLIGENCE**



UNIVERSITÀ  
DEGLI STUDI  
FIRENZE

**DINFO**  
DIPARTIMENTO DI  
INGEGNERIA  
DELL'INFORMAZIONE

**DISIT**  
DISTRIBUTED SYSTEMS  
AND INTERNET  
TECHNOLOGIES LAB

**2026/27**



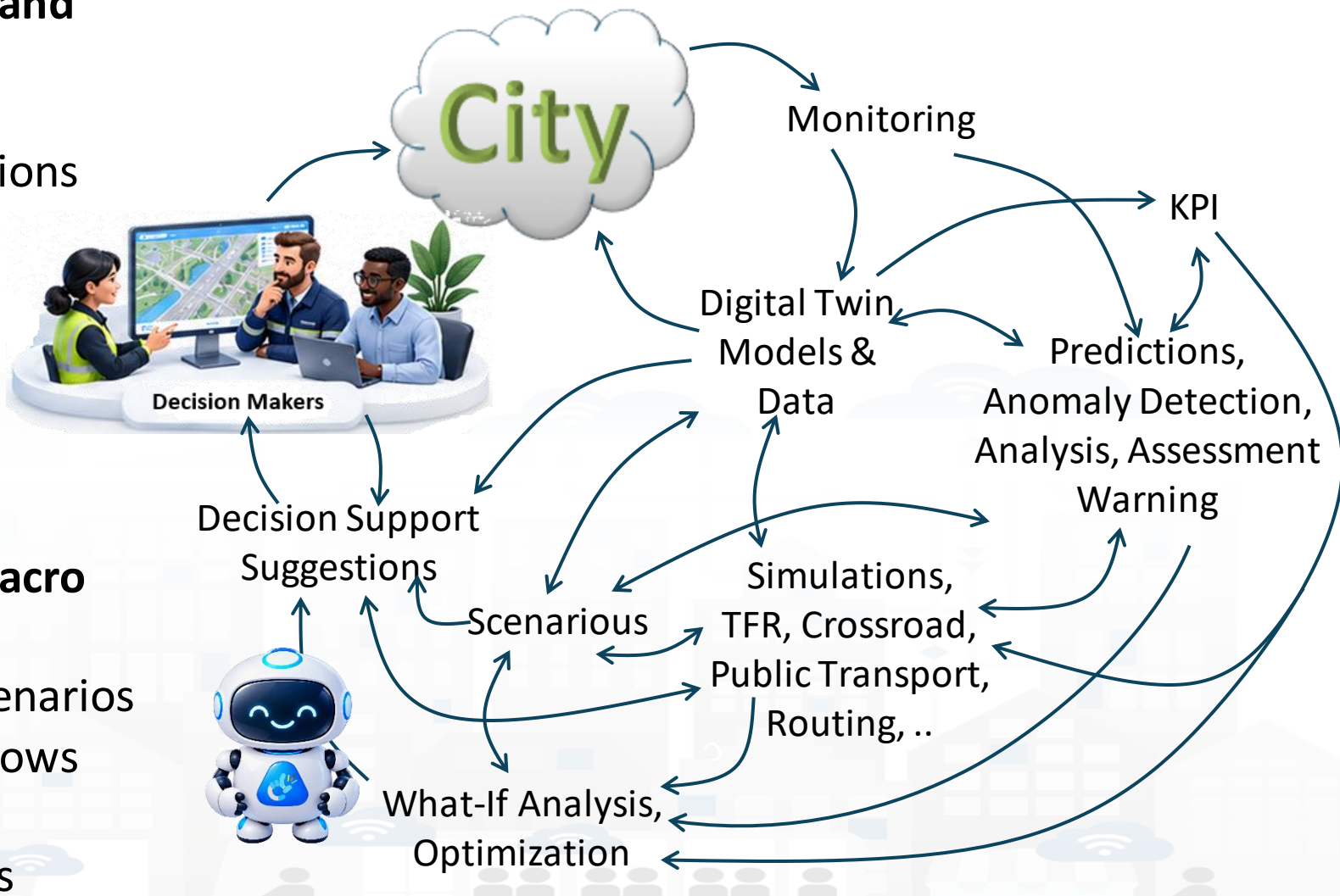
# Agentic Tasks

- **Controlling Status:** management, and operational

- Monitoring via KPI
- Early warning on critical conditions
- Predictions vs KPI
- Anomaly detection
- Neuro-Symbolic analysis
- Risk assessment
- Fast What-if analysis

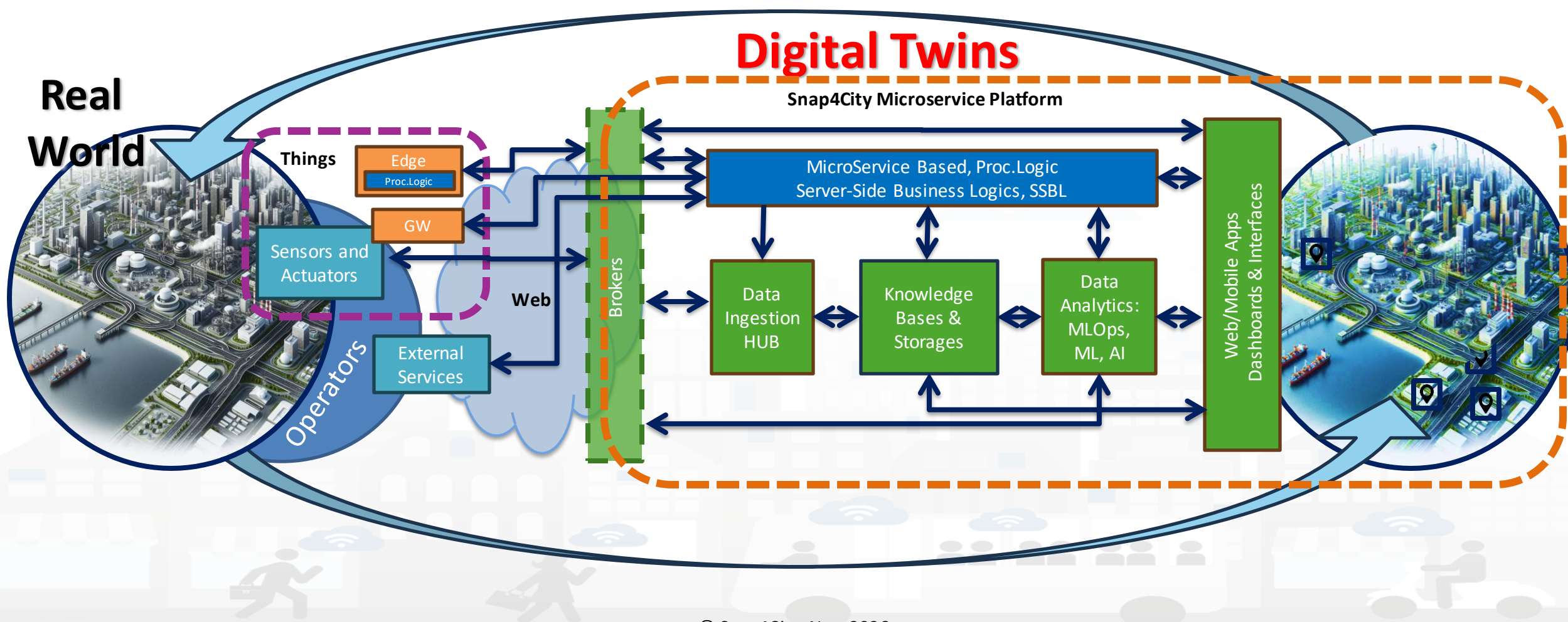
- **Making plan:** tactic and strategic, medium and long range, micro/macro

- Simulation & optimization
- Generative AI Prescriptions, scenarios
- Resilience to Unexpected unknowns
- What-if analysis wrt scenarios
- Collaboration with stakeholders





# Digital Twin Development Platform





# Available *AI Solutions* on Snap4City



<https://www.snap4city.org/997>

More than 80 Available Solutions & 300 AI applic.

- Mobility and Transport
- Waste Collection Optimisation
- Tourism Management
- City Users Behaviour
- Security and Safety
- Energy and Control
- Environment, Weather, Water
- High Level Decision Support Solutions
  - Asset management
  - Resilience and Risks Analysis

03

**Artificial Intelligence:** ML, AI, DL, Fed.AI, LLM, DRL, Agentic AI, MCP tools, generative AI, ...  
SnapAdvisor Copilot for developers, MLOps supp.

04

**Visual Intelligence:** visual programming for visual intelligence tools, Business intelligence, CSBL services, etc.

05

**Smart Applications:** dashboard builder, wizard, exploiting AI tools, Advisor Copilot, CSBL services, mobile Apps, multi services

<https://www.snap4city.org/download/video/course/p4/>



# Value for buyers and delivery partners

## City and enterprise teams



## A shared operational view

Combine information across departments and connect it to daily decisions.

## Developers



## A reusable application toolbox

Use visual flows and APIs while keeping the flexibility of custom code.

## System integrators



## A foundation for differentiated services

Build domain applications and connect customer systems on a common platform.





## CONNECT & BUILD

### Your data. Your systems.

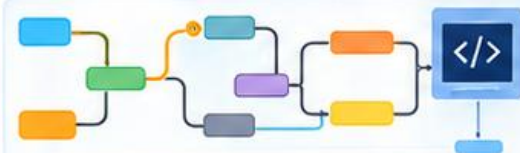


### Shared knowledge & data models



Semantic models  
Spatial context  
Live & historical data  
Interoperable

### Visual development + custom code



Node-RED • APIs • Python / R

**2D / 3D Digital Twin**  
(GIS • BIM • Real-time)

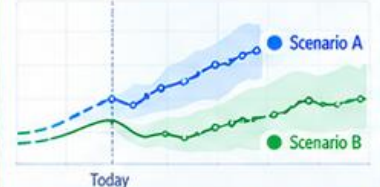


## UNDERSTAND & SIMULATE

### Live operations & KPIs



### Forecasts & what-if scenarios



## DECIDE & DELIVER



### SnapAdvisor Copilot

Agentic AI



What needs attention, and what are our options?



Combine evidence, compare scenarios and recommend actions.



Data & knowledge



Configured tools



Maps & reports

Authorized workflows • Human oversight



Dashboards • Web & mobile apps



For operators, decision makers and developers

### Connected solutions on one shared platform





# Your AI-Powered Assistant for Smart Cities

## SnapAdvisor & CoPilot

 **Conversational interface** **Planning, replanning** **Agentic AI. Multi-Agent** **Analyze, Optimize** **Suggestions, reports** **ACT**  
**Actionable insight**  
Verified answers, forecasts and recommendations.



# *SnapAdvisor* is for

## City operators

Monitor conditions, compare places or periods, investigate anomalies and calculate routes.



## Decision makers

Collect evidence, assess scenarios and compare proposed interventions. City Officers, assessor.



## Developers

Find documentation, identify APIs and use Snap4City tools to build applications.



**A multilingual interface across mobility, energy, tourism and any other domains, including your private collection of document and info.**



# SnapAdvisor & Copilot

## Your AI-powered assistant for the Snap4City Digital Twin

Understand your objectives | Plan and use Snap4City services | Analyse data | Deliver actionable answers

Turn your questions into smarter, data-driven decisions for a smarter city.



### Ask in natural language

- What is happening in this area?
- Find the sensors along this route.
- Which route is better considering current conditions?
- What can be done to reduce the CO<sub>2</sub> emissions in Mercy road at 9:00?
- Why are there no free parking slots in the Guizzer area?
- Find an API to get data of traffic flow in Bologna?



1

### Understand & Plan

Interpret your request and create a multi-step plan

2

### Select & Execute

Choose and invoke the right Snap4City services and APIs

3

### Analyse & Verify

Analyse results, recover from issues eventually replan

4

### Deliver Answer

Provide clear, explainable results in natural language with visuals

### Snap4City Services & APIs

- Access data (live & historical)
- Discover IoT devices
- GIS and geospatial tools
- Analytics and AI models
- Optimisation & what-if analysis
- Open to any data model and format

### Actionable results

Here is the analysis of the area. I used traffic, air quality and parking data. You can see the results on the map, the trends over time and a summary of insights.



#### Key insights

- ✓ Congestion level reached 90% in Via Sparta due to an event.
- ✓ CO<sub>2</sub> emissions are higher at 9:00 in Mercy road.
- ✓ Alternative routes can reduce travel time by 18%.
- ✓ See the full report for details and the data sources used.



Download PDF Report



### Rich knowledge foundation

Snap4City, mobility, energy, tourism, assets, transportation, GIS and more.



### RAG with private collections

Use your PDFs, documents, presentations, images, code and web pages. Domain-customisable, multilingual.



### Agentic capabilities

Multi-step planning, specialist agents, execution, verification and replanning.



### Exploit more resources

Integrate web search and external resources. Generate decision graphs and reuse them.



### Explainable AI

See the plan, tools used, data sources and reasoning behind the answer.

### For multiple domains



Smart Cities



Mobility



Energy



Tourism



Assets



Transportation



GIS



Retail



Legal



Training



Help Desk

... and more

### For everyone



Decision Makers



City Operators



Developers



Organisations & Teams





# SnapAdvisor

Current chat: solution1

Personal  
Advisor LLM



You:

which are the possible to solutions to reduce the lenght of queue at red lights



SnapAdvisor: Tokens details: tokens in prompt: 56759; tokens in answer: 653

## Possible Solutions to Reduce the Length of Queue at Red Lights

Based on the provided context passages, here are some possible solutions to reduce the length of queue at red lights:

### Traffic Management and Road Safety Measures

- Optimizing Traffic Light Timing:** Adjusting the timing of traffic lights to optimize traffic flow and reduce congestion.
- Implementing Intelligent Transportation Systems (ITS):** Using ITS to dynamically adjust traffic light timing in real-time to respond to changing traffic conditions.



Run agentic mode



Write a message...





# SnapAdvisor & Copilot

Technical architecture for the Snap4City Digital Twin conversational decision support system



From natural-language objective to orchestrated analysis, simulation, and explainable decision support.

Conversational / RAG

Agentic orchestration

Multi-domain

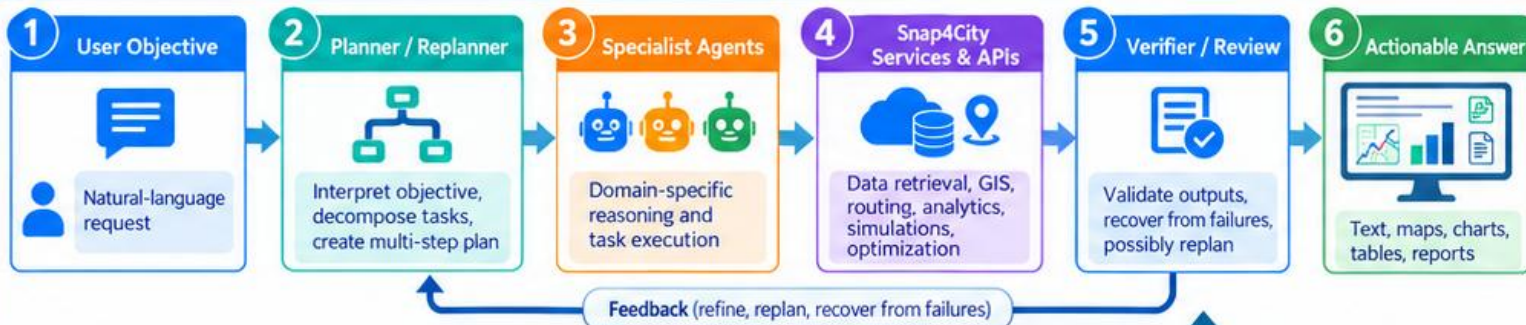
Explainable AI

Report generation

## Example Requests

- "What is happening in this area?"
- "Find sensors and POIs along this route."
- "Which route is better considering current conditions?"
- "Why are there no free parking slots in this area?"
- "What can be done to reduce CO2 emissions at 9:00?"
- "Find an API to get traffic flow in Bologna."

## System Architecture & Workflow



## Extend capabilities with internal skills

Turn private knowledge and web resources into reusable domain expertise



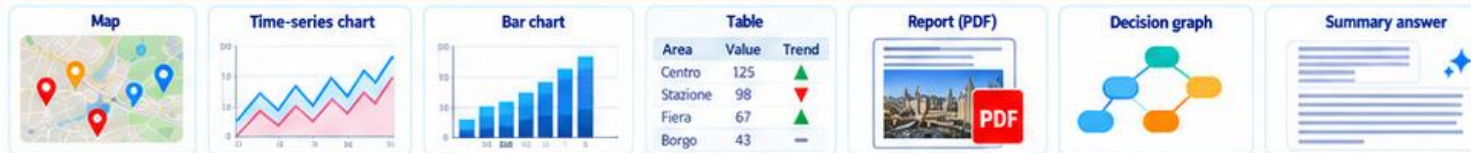
Extend to new domains and workflows as your knowledge grows.

## Tool Families

- Data Management**
  - Metadata
  - Live/historical observations
  - Entities
  - IoT devices
- Geospatial Analysis**
  - Geocoding
  - Spatial search
  - Polygons, POIs
  - Location-aware analysis
- Mobility & Transport**
  - Routing
  - Traffic flow
  - Public transport
  - Simulation, KPI computation
  - Optimization
- ML / AI Analytics**
  - Prediction
  - Statistics, correlation
  - Regression, PCA
  - Time-series analysis
- Media Processing**
  - Image interpretation
  - Image generation
  - Image modification
- Reporting & Rendering**
  - Web pages
  - PDF reports
  - Maps, charts, tables
  - Dashboards
- High-Level Reasoning**
  - Decision graphs
  - Strategy generation
  - What-if analysis

## Outputs

Explainable results with evidence, data sources, and visual analytics.



## Who it supports

- Decision Makers**  
Strategic planning and policy making
- Developers**  
Build solutions and integrate APIs
- City Operators**  
Monitor, manage and respond
- Organisations / Teams**  
Collaborate across domains



**Private knowledge**  
Use your documents and web resources

**Multi-user / multi-organisation**  
Secure isolation and flexible deployment

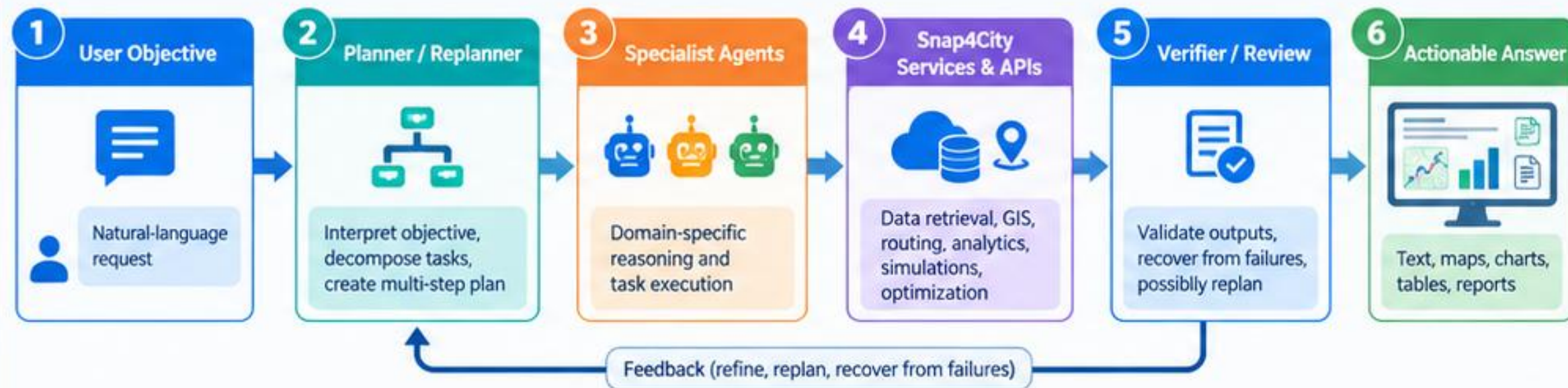
**Traceable answers with sources**  
Explainable outputs with data sources and justifications







## System Architecture & Workflow



## Knowledge & Expertise Layer





# SnapAdvisor evolves with your organisation

Your private resources. Multiple users. Multiple departments.



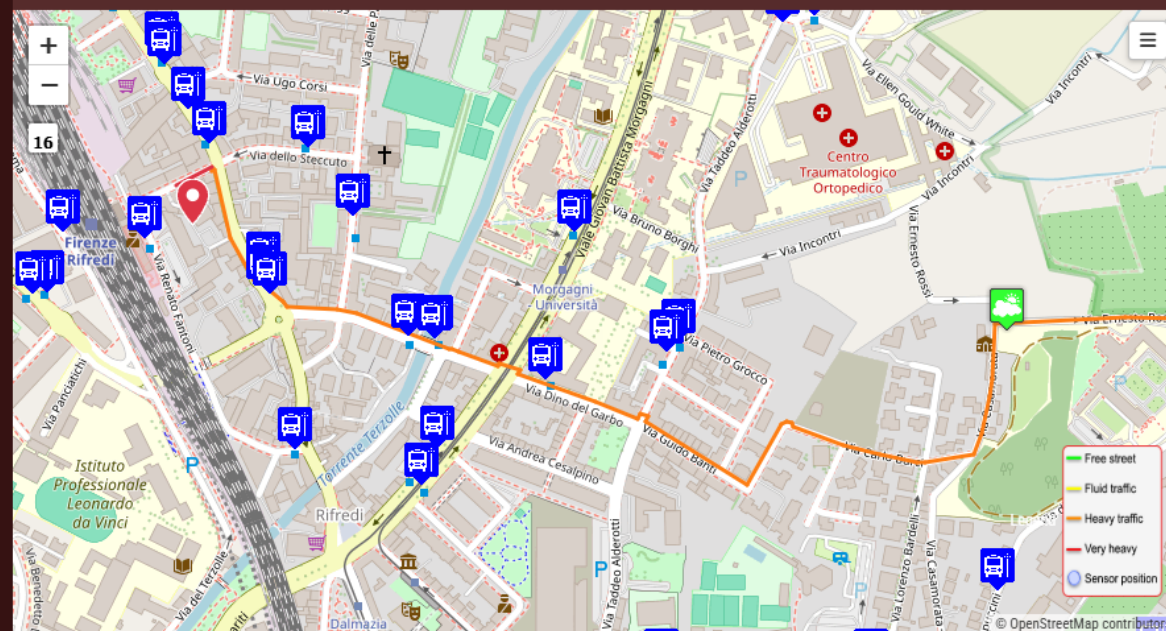
Extend expertise and capabilities with resources you control



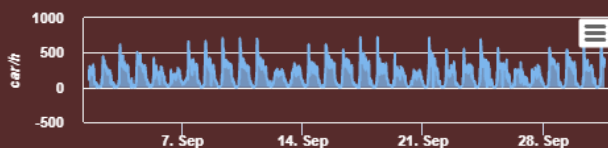
# SnapAdvisor / CoPilot: Agentic AI / RAG For Smart City

Conversational tool for Operators and Decision Makers

Tue 20 Oct 12:31:14

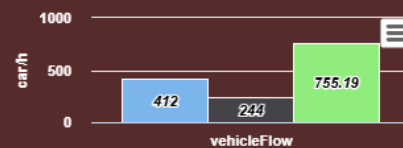


Time Trend



vehicle Flow

Bar Series



METRO20 METRO19 METRO2

## Chat

New Chat

verification

Test

Prod

Clear Map

Clear Bars

Clear Time-Trend



PDF chat

## verification

### Recommendations

- Conduct thorough market research to understand the demand for pizzerias in the area.
- Analyze the competitive landscape by gathering data on existing pizzerias and their popularity.
- Evaluate the financial viability by detailed financial data and projections.
- Assess the location's suitability by gathering data on foot traffic, nearby businesses, and accessibility.

By addressing these uncertainties, a more informed decision can be made regarding the advisability of opening a pizzeria in Via dello Steccuto, Florence.

Is it advisable to open a pizzeria in via dello steccuto, florence?

P 0%

N 100%

Neg 0%

Location

Peso 20%

please produce a decision support graph to open a pizzeria in via dello steccuto, florence



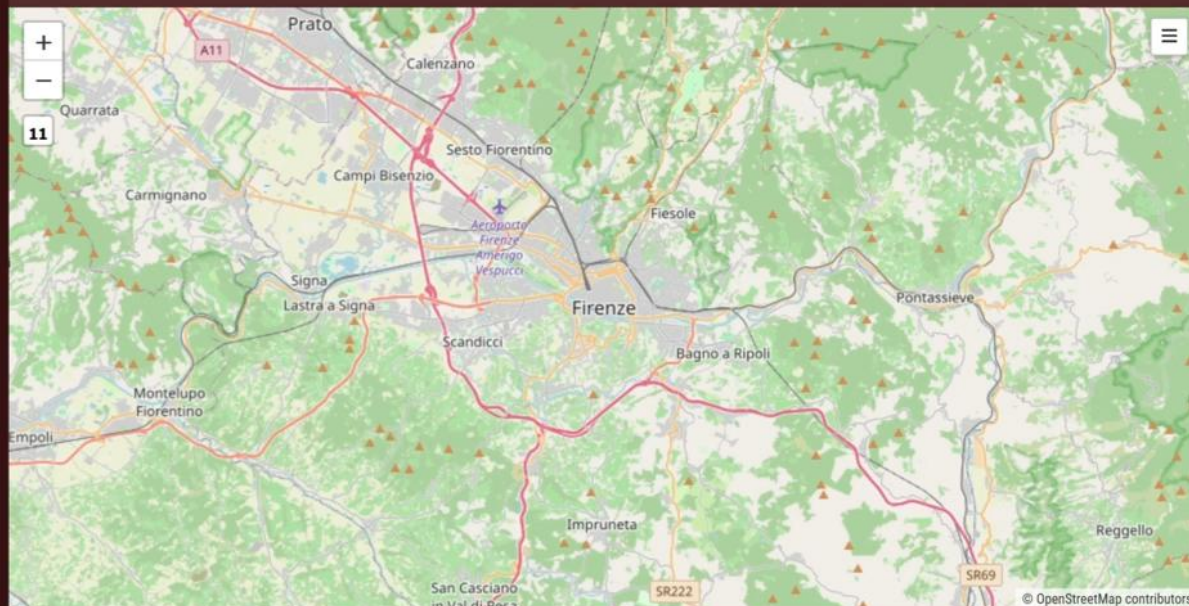




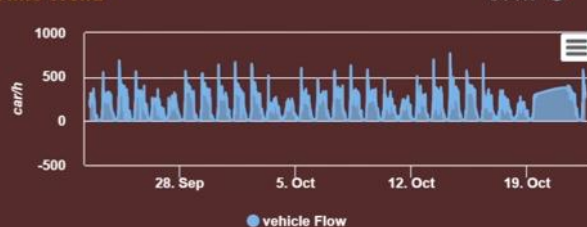
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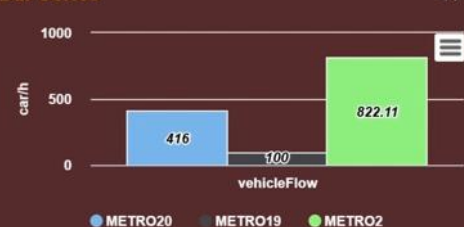
Thu 22 Oct 13:14:05



Time Trend



Bar Series



## Chat

New Chat

Tourismo

Test

Prod

Clear Map

Clear Bars

Clear Time-Trend

## Tourismo

PDF chat

Save

Write a message...



THINKING

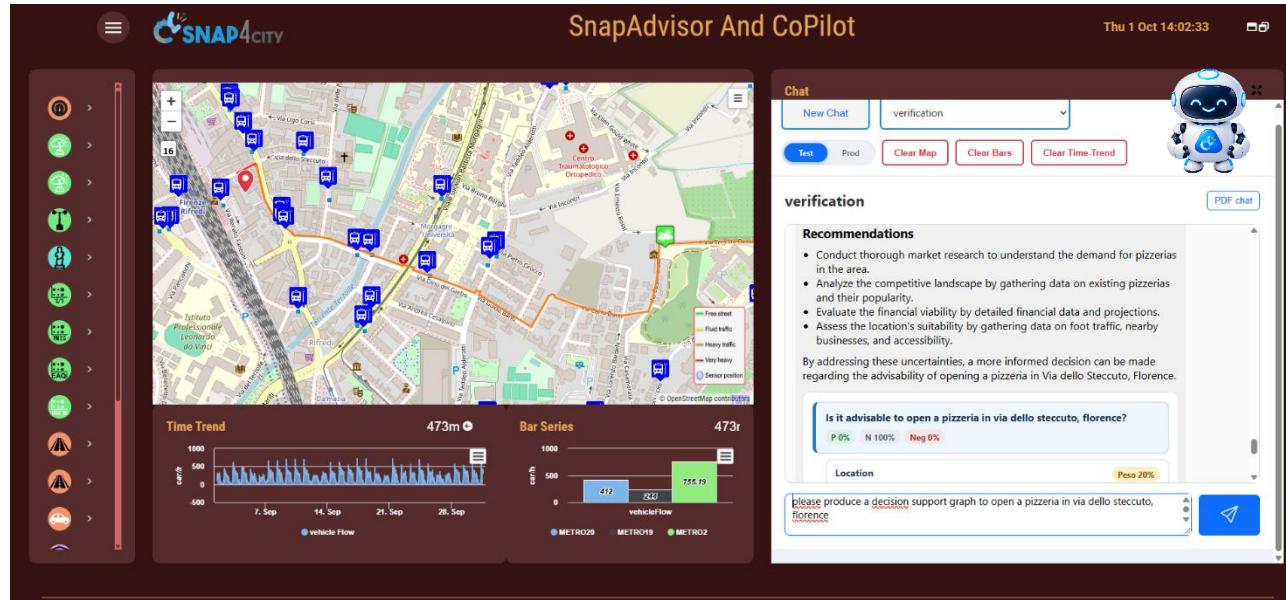
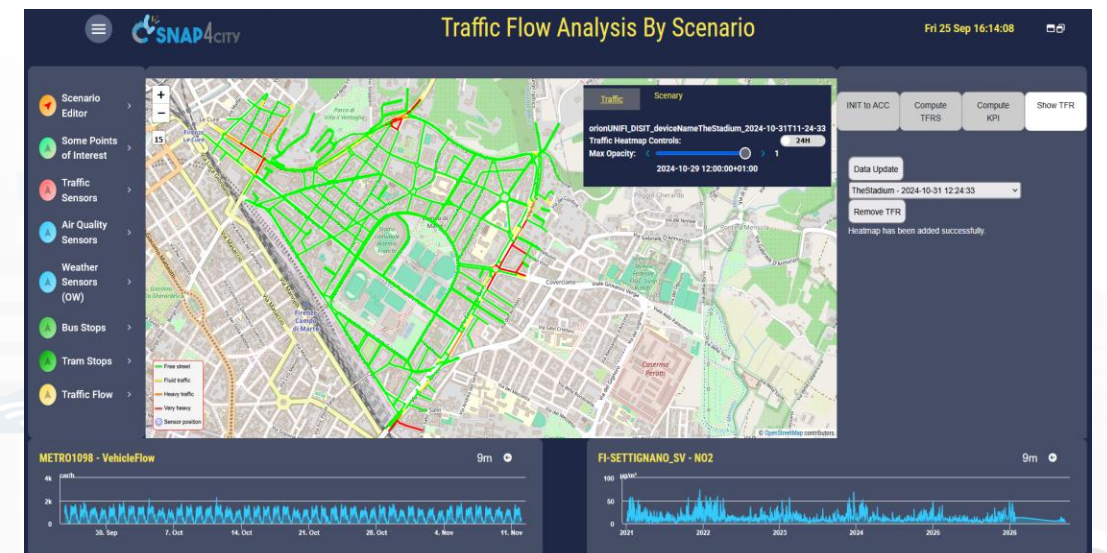
Medium







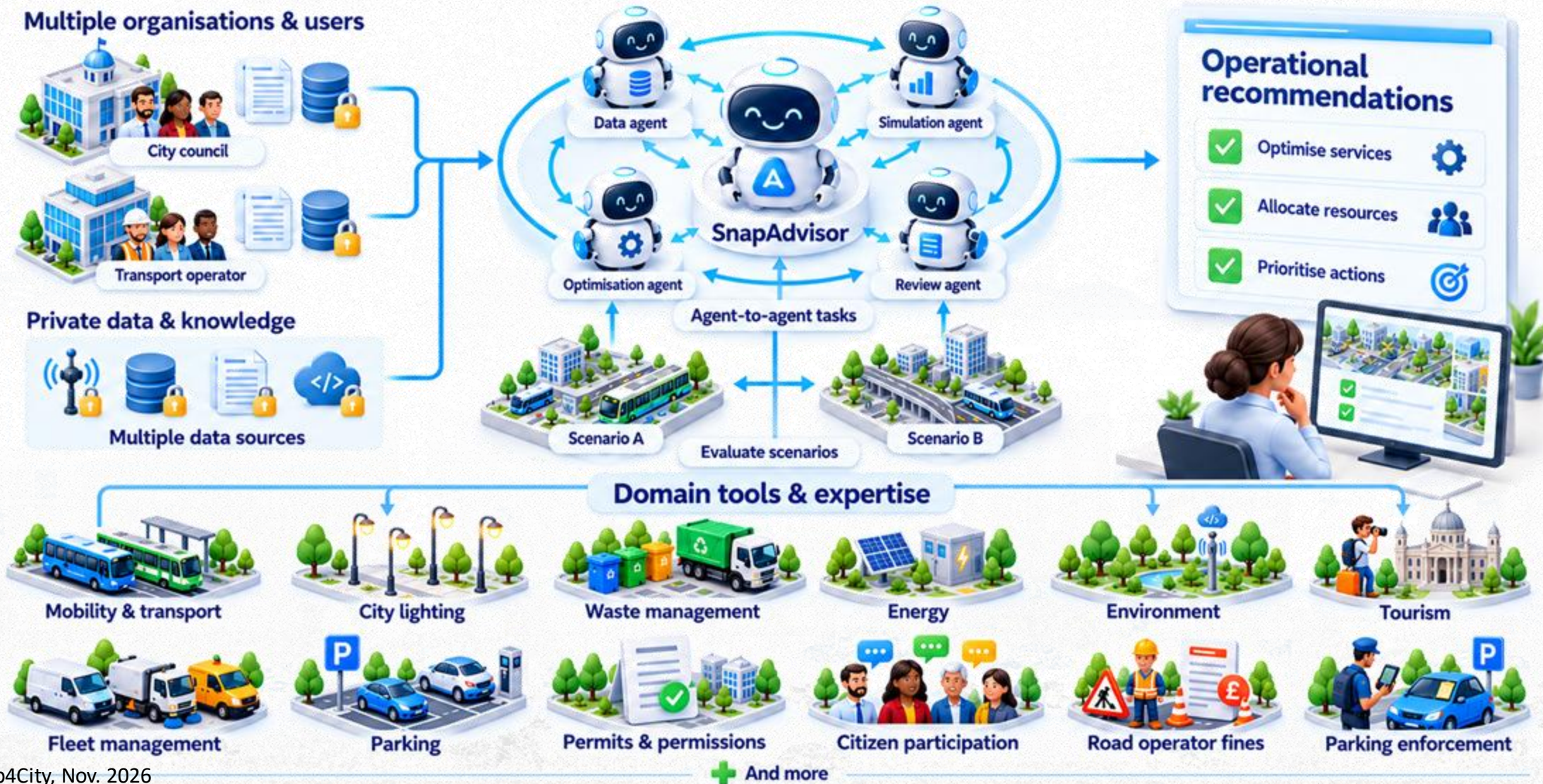
- Routing
- Traffic flow
- Public transport
- Simulation, KPI computation
- Optimization





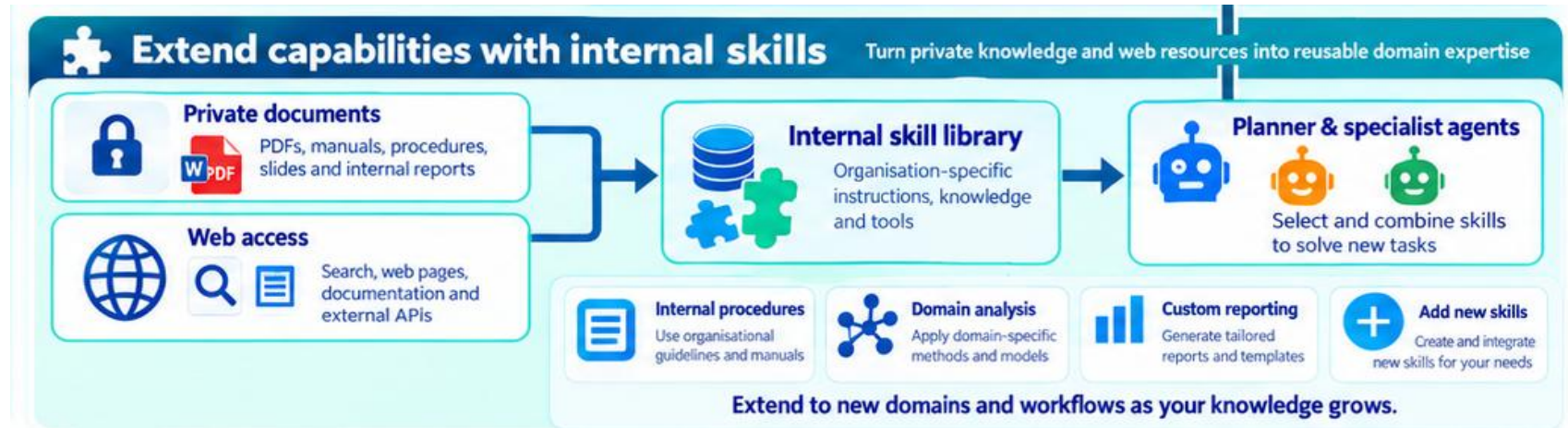
# SnapAdvisor: tools and expertise across city services

Autonomous scenario evaluation and actionable operational recommendations





# Skill Packages



- Multiple and pluggable Skills, for different users and teams
- Full Custom Skills
- Integrate internal skills with web access, when needed

## snap4city4dummies

ID: 280

This collection documents the Snap4City platform, its principal development and management tools, and a...

Open

## TourismExpert

ID: 281

This collection include document and skill regarding about: how to solve problem in...

Open

## ParkingExpert

ID: 286

The collection covers parking policy and supply requirements; demand-responsive...

Open

## CityLightExpert

ID: 287

A curated collection of 30 publicly accessible PDFs supporting expert questions abo...

Open

## WasteExpert

ID: 289

This collection contains 24 authoritative PDFs supporting retrieval-augmented answers...

Open

## snap4citybarc2026

ID: 293

this collection contains promotional material distributed at Smart City world expo...

Open

## CivilProtectionITExp ert

ID: 294

No description provided for this collection

Open



## DSS, Decision Support Systems, produzione di suggerimenti

- Costruisci un modello DSS per scegliere fra aprire una gelateria e aprire un edicola in via Gioberti a Firenze mostra criteri, pesi, punteggi e fonti.
- Un concerto da 40.000 persone è previsto presso il Mandela Forum domenica 25 novembre Usa il DSS per valutare i rischi per mobilità, sicurezza e servizi urbani.
- Usa il DSS per scegliere fra due siti per un nuovo parcheggio Via Carlo Burci Firenze e Via delle Panche Firenze . Considera accessibilità, costo, impatto ambientale e vicinanza al trasporto pubblico.
- Usa il DSS per scegliere quale di questi interventi attuare prima zona parco Cascine a Firenze ridurre la congestione, migliorare l'illuminazione, aumentare la raccolta rifiuti. Spiega come stabilisci le priorità
- Usa il DSS per scegliere fra tre interventi per migliorare l'illuminazione di piazza Dalmazia firenzenueve lampade, aumento della potenza delle lampade esistenti, illuminazione adattiva
- please produce a decision support graph to open a pizzeria in via dello stecuto, florence
- Sabato c'è un concerto da 40.000 persone a Firenze stadio. Valuta i rischi.
- valuta tramite il dss se conviene aprire una gelateria vicino al duomo di Firenze
- Che tipo di supporto alle decisioni mi puoi fornire
- Valutami tramite il dss se conviene aprire un edicola a S. Marta Firenze



## SIMULATIONS, what if, optimization, vari agenti

- Which SUMO scenarios can I simulate?
- Which traffic scenarios in Florence are available for simulating traffic light optimization under different traffic load levels?
- Start a new traffic simulation for the mamotlo1 scenario. please make a simulation of Mamotlo1
- What is the status of the simulations for the mamotlo1?
- List the completed bari-iot-simulation simulations whose indicators I can view.
- How many vehicles were simulated in the scenario mamotlo1 for Simulation\_20261020085145
- Retrieve the mobility indicators for simulation Simulation\_20251205150733 of scenario bari-iot-simulation, including the minimum, maximum, and average values for waiting count, waiting time, and time loss.
- Optimize the Liberta-Case1 scenario to improve traffic state, applying at most 4 changes.
- Optimize the StatutoCase1 scenario to reduce CO2, applying at most 8 changes.
- Retrieve the mobility indicators for simulation Simulation\_20251205150733 of scenario bari-iot-simulation, including the minimum, maximum, and average values for waiting count, waiting time, and time loss.

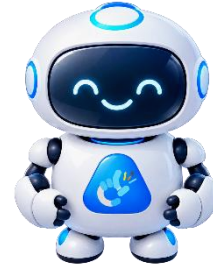


## SKILL ADDIZIONALI e competenze personalizzabili, RAG agent

- Che tipo di conoscenze aggiuntive disponi
- usa la collection snap4city-v1 e fornisci la descrizione di lot Directory
- metti in una tabella le collection che hai
- quali sono i contenuti della collection Snap4city4dummies
- come esperto che tipo di soluzioni proponi per prepararsi ad eventuali alluvioni in città
- fammi un modello decisionale e provalo per decidere se modificare la viabilità di ponte alla Vittoria a Firenze
- avendo problemi di nettezza fuori dai cassonetti in piazza Giorgini a Firenze che cosa mi consigli come esperto di gestione dei rifiuti mi sembra buono



# SnapAdvisor & Co-Pilot



## Natural Language Intelligence

Instant query access to live city metrics, IoT sensors, and GIS layers.



## Agentic Decision Support

Autonomous scenario evaluation and actionable operational recommendations.

- Multiple Users, private data and knowledge
- Multiple Agents & Agent to Agents tasks
- Multiple organisations and data sources



## Digital Twin Synergy

Seamless integration with 3D models and control rooms.



## What-If Simulations

Simulate and optimize, computing KPIs



## GDPR & Security Shield

Privacy compliance with full on-premise cloud deployment.

## AI in Smart City Governance: Infrastructure Performance Dashboards





# *SnapAdvisor* is for

## City operators

Monitor conditions, compare places or periods, investigate anomalies and calculate routes.



## Decision makers

Collect evidence, assess scenarios and compare proposed interventions. City Officers, assessor.



## Developers

Find documentation, identify APIs and use Snap4City tools to build applications.



**A multilingual interface across mobility, energy, tourism and any other domains, including your private collection of document and info.**



# SNAP4CITY



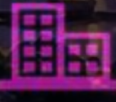


# SNAP4ASSETS



## AI-Powered Digital Twin and **Agentic** Asset Management



-  GIS & ASSETS
-  BUILDINGS & BIM
-  IoT SENSORS
-  MAINTENANCE
-  AI & PREDICTIONS
-  DOCUMENTS & KNOWLEDGE

ASSET STATUS

 **12,458**  
Assets

 **97.8%** Operational  
of total assets

ACTIVE ALARMS

 **2 Critical**

 **28 Warnings**





## CONNECT & MONITOR



## PREDICT & EXPLORE



## DECIDE & ACT

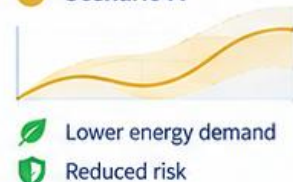
### Live status



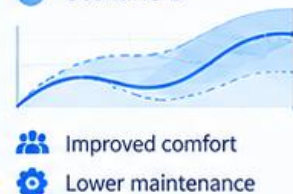
### Maintenance

- Planned tasks
- Open issues
- Asset health

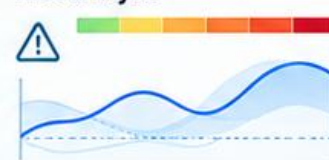
### Scenario A



### Scenario B



### Risk analysis



## SnapAdvisor Copilot



Which assets need attention?



Review alerts, compare scenarios and plan interventions.

Asset data

Documents



### Actionable recommendations

- Inspect HVAC unit
- Plan maintenance
- Check energy anomaly



### Tactical plans

- Optimize operation
- Schedule interventions
- Allocate resources



GIS + BIM + IoT



Live data • Maintenance • KPIs



Predictive analytics • Risk assessment  
What-if simulation • Optimization



One operational view. From city to building to equipment.

University of Florence • DINFO • DISIT Lab



# Standards and Interoperability



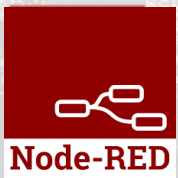
## Compliant with:

- **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, SNMP, TCP, UDP, SOAP, WSDL, FTP, FTPS, WebSocket, WebSocket Secure, GML, WFS, WMS, WCS, RTSP, ONVIF, AXIS TVCam, CISCO Meraki, OSM, Copernicus, The Weather Channel, Open Weather, OLAP, VMS Milestone, TIM, HERE, OGC, ....
- **Formats:** JSON, GeoJSON, XML, CSV, GeoTIFF, OWL, WKT, KML, SHP, db, XLS, XLSX, TXT, HTML, CSS, SVG, IFC, XPD, 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, NeTex, ..
- **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>

01

**Interoperability:** any format, any protocol, any API, visual programming node-red, Python, brokers, etc. Server Sides Business Models, ETL, ELT, ..



**EUROPEAN OPEN  
SCIENCE CLOUD  
MARKETPLACE**



# One operational view of your assets

GIS and Digital Twins connect location with the information teams need to act.



**Dash10 - Active Municipalities** Sun 6 Sep 19:12:53

municipalities

**Municipality Data**

**Nicosia**

| FIELD             | VALUE                                                               |
|-------------------|---------------------------------------------------------------------|
| activeServices    | [Participation, SmartParking, SmartLight]                           |
| contextbroker     | orionCyprus                                                         |
| district          | Nicosia                                                             |
| email             | municipality@nicosia.org.cy                                         |
| groupsList        | [Operators]                                                         |
| municipalitycolor | 2                                                                   |
| nameGreek         | Δήμος Λευκωσίας                                                     |
| phoneNumber       | +35722197000                                                        |
| receiptHeader     | Nicosia Parking Receipt                                             |
| slotPrefix        | NC                                                                  |
| webpage           | <a href="https://www.nicosia.org.cy">https://www.nicosia.org.cy</a> |

**SmartCyprus**

Privacy Policy Cookies Policy Terms and Conditions Contact us

Powered by **SNAP4Tech**

Location and identity

People and documents

IoT and live status

Maintenance and KPIs



# Local Digital Twin vs BIM

## GIS + BIM

Navigate in 2D and 3D.

Connect spaces to  
equipment, sensors and  
technical information.



A shared spatial context for facilities and infrastructure teams



# SnapAdvisor Copilot

Optional conversational and Agentic AI



**“Which assets in this building need attention, and why?”**

Ask in natural language. Bring operational data and selected organisational knowledge together.



## **Grounded answers**

Retrieve documents and data, with references to relevant content.

## **Controlled assistance**

Use authorised tools and resources.

People retain responsibility for operational decisions.



# Understand Mobility and Transport AI Digital Twin + SnapAdvisor Co-Pilot



**SNAP4MOBILITY**





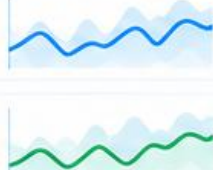


## MONITOR & PREDICT

### Network intelligence



### Availability forecasts



### Current network



### Alternative scenario



### Compare mobility KPIs



## SIMULATE & OPTIMIZE



## DECIDE & ACT



### SnapAdvisor Copilot



What is causing congestion here?



Review traffic, affected services and alternative scenarios.



Live data



Predictions



Simulations

Workflows depend on configured tools.

### Dynamic routing



### Fleet & sharing operations



### Signal & route planning



Traffic • Public transport • Parking • Sharing



What-if scenarios • Signal priority • Multimodal planning



Maps & insights • Operator decision support



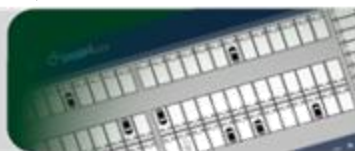
**One operational view of mobility, transport and city context.**  
Open integration: DATEX II • GTFS • OSM • MQTT • NGSI • REST APIs



01

### MONITOR

Unified real-time view of traffic, public transport, parking, shared mobility, people flows, events, weather and environmental conditions.



02

### PREDICT

Forecast congestion, parking availability, public-transport delays, demand, pedestrian peaks, emissions and other KPIs.



03

### PLAN & SIMULATE

Run scenarios and what-if analyses for road changes, traffic-light plans, routing policies and transport-service alternatives.



04

### OPTIMIZE

Use decision-support and AI/DRL approaches to improve traffic signals, infrastructure and public-transport offer against measurable objectives.



05

### ACT

Support dynamic routing, control-room interventions, digital signage, permissions, fleet operations and authorised workflows through APIs.



06

### ASSIST

Use SnapAdvisor Copilot as a natural-language interface to data, analytics, routing, simulation, optimisation, RAG knowledge and visualisation.



- **Parking: on-road and off-road**
- **Flexible Business Models by area**
  - Any kind of parking slots
  - Any kind of vehicles
- **Mobile App for city users**
  - Parking
  - Notifications
  - Permissions and subscriptions
  - Multiservices
  - Payments
- **Mobile App for Enforcement, onroad operators, fines**
- **Integrated with**
  - Traffic intelligence
  - Public Transportation
  - Sharing mobility
  - Routing and MaaS



Decarbonization



Safety



Accessibility

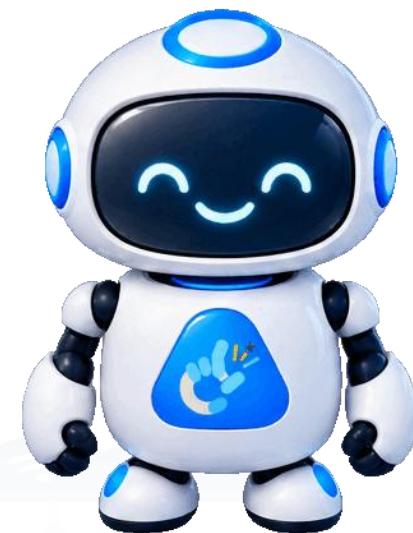


Decongestion



Cost Reduction







# A connected view of daily operations

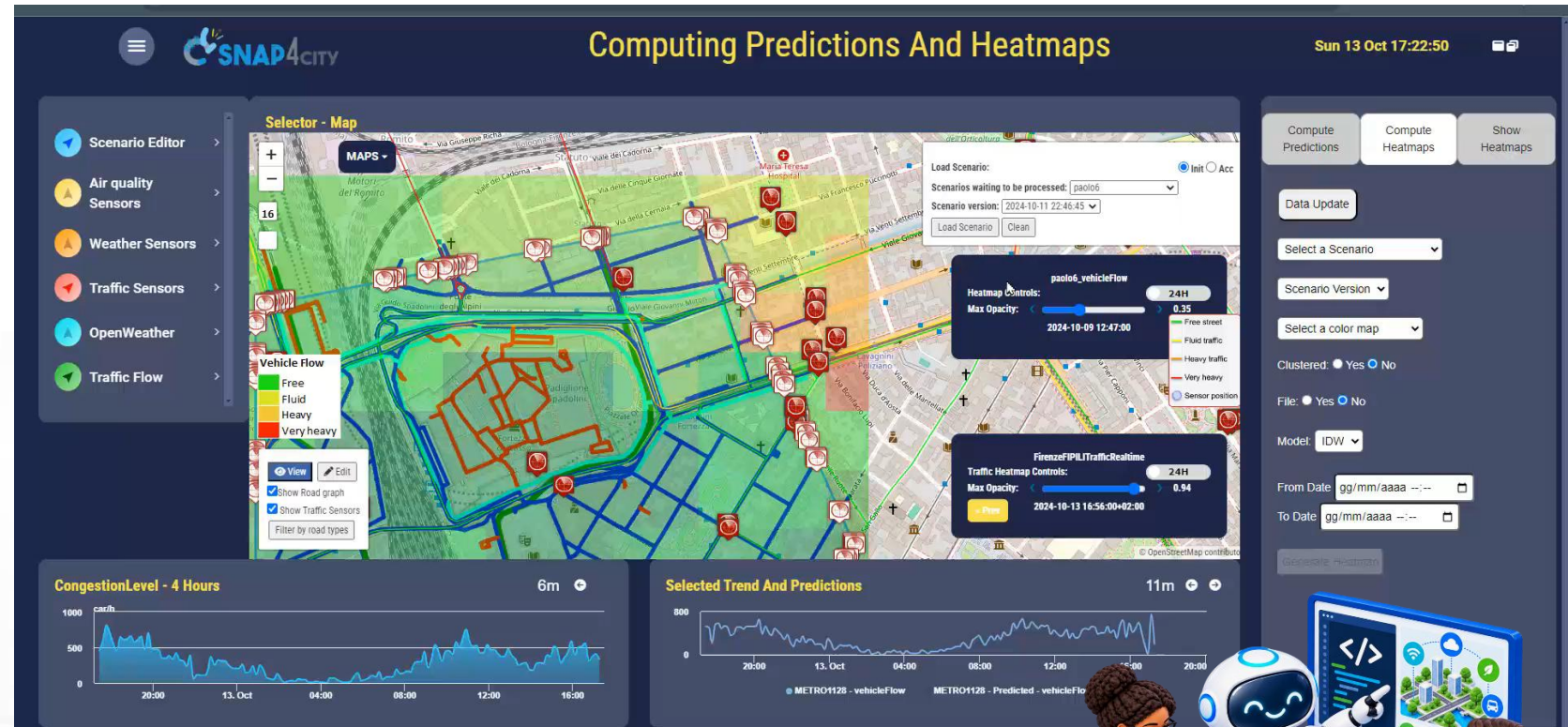
## Shared context

Combine mobility conditions with roadworks, events, weather and air quality.

## Early detection

Monitor queues, vehicle delays, parking occupancy and restricted-zone access.

Traffic prediction and heatmap interface



02

**PREDICT**

Forecast congestion, parking availability, public-transport delays, demand, pedestrian peaks, emissions and other KPIs.





# Optimisation for transport priorities

## Traffic signals

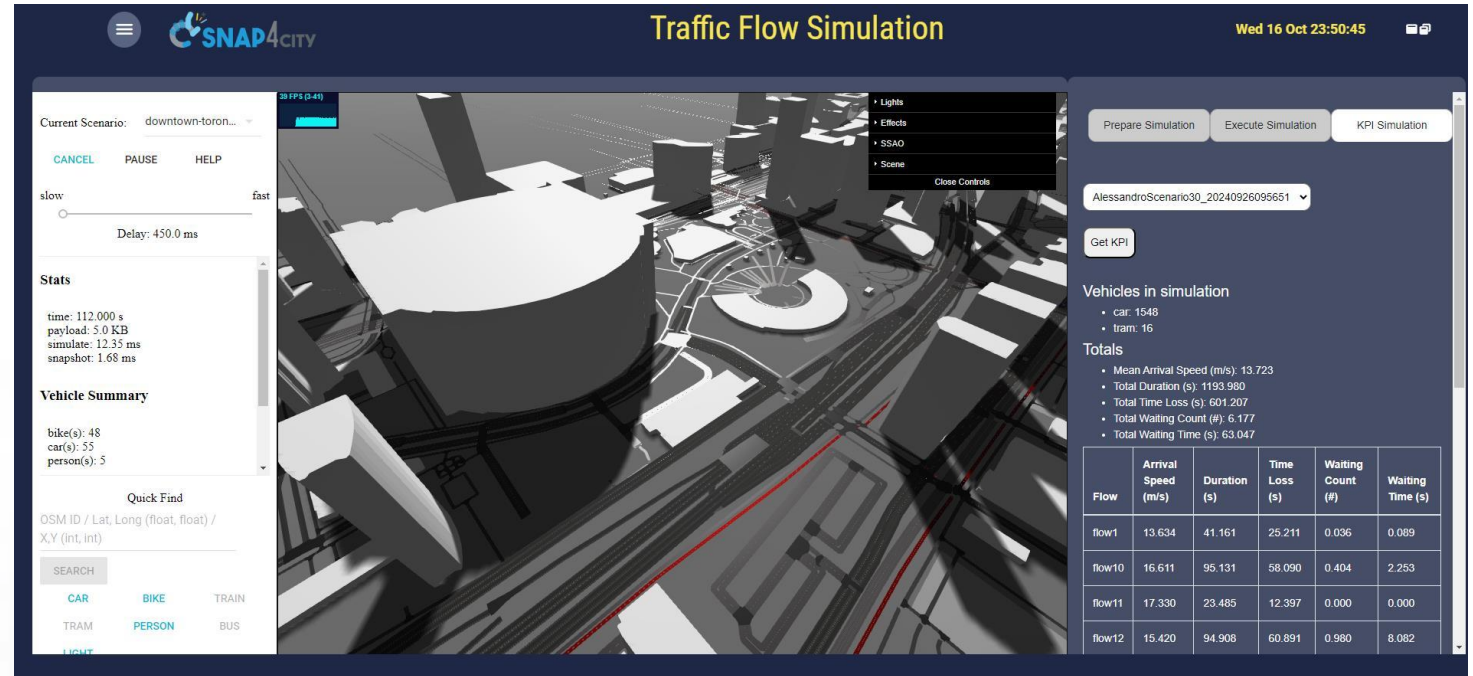
Evaluate green waves and priority for public transport or emergency vehicles.

## Road infrastructure

Explore alternatives against congestion, travel time and emissions objectives.

## Public transport

Assess demand versus offer to support route, timetable and dispatch decisions.



- 03 PLAN & SIMULATE**  
 Run scenarios and what-if analyses for road changes, traffic-light plans, routing policies and transport-service alternatives.
- 04 OPTIMIZE**  
 Use decision-support and AI/DRL approaches to improve traffic signals, infrastructure and public-transport offer against measurable objectives.







# SnapAdvisor Copilot

An operator can start with a question

**“What is causing congestion here,  
and which bus lines could be affected  
in the next 30 minutes?”**

The Copilot selects configured tools, analyses their results and explains findings through text, maps, charts or dashboard content.

Available workflows depend on the tools and services configured for the deployment.





# SNAP4PARKING

-  Sensors and Gates
-  Real time data
-  On-street / off street
-  Mobile Apps
-  Reports
-  Permissions
-  User engagement
-  Fines Management
-  Optimized Pay Models
-  AI & Analytics

 **SNAP4CITY**  
**Parking for Smarter  
More Liveable Cities**

## AI PREDICTION

### HIGH AVAILABILITY

Predicted for the next 60 minutes

**+18%**

EXPECTED AVAILABILITY



Based on historical data, traffic, weather and events

## FREE SPACES

AVAILABLE NOW



**684**

AVAILABLE SPACES

CITY CENTRE  
✓ +42  
LAST 15 MIN

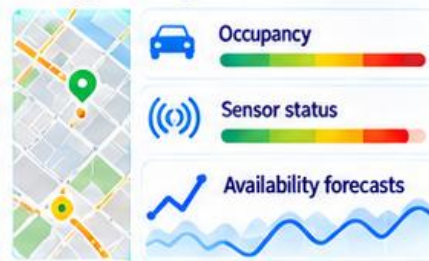
UPDATED 8 SECONDS AGO





## FIND & MANAGE PARKING

### Live parking view



## PERMITS & PARTICIPATION

### Permits & subscriptions



- Residents
- Visitors
- People with disabilities
- Delivery & commercial

### Citizen participation

Report an issue  
Select a category



Send report

### Report history

- Issue resolved
- In progress
- Received

Operator updates  
Roadworks in Zone A from 12 June

### City services

- Reports received
- Issues updated
- Notifications sent



## OPERATE & IMPROVE

### Operations & enforcement

- Overstays
- Permit checks
- Fine management

### Performance & policies

- Occupancy
- Revenues
- Tariff policies

### SnapAdvisor Copilot

- Which parking areas need attention?
- Review occupancy, anomalies and expected demand.

- Parking data
- Predictions
- Policy scenarios



On-street & off-street • Guidance • Payments



Access rules • Citizen reports • Notifications



KPIs & reporting • Pricing insights • AI support



One parking digital twin. Shared services for cities and citizens.

Open APIs • City ERP & payment portals • Multi-city operation

© Snap4City, Nov. 2026



## Smart Parking

- payments, profiles
- Fines
- mobile for parking

### Dash8 - To Be Fined Management

Fri 19 Sep 12:46:24

**Fines**

Show Search: 10 First << Prev 1 Next >> Last

| device               | dateObserved             | groupid         | sensordid        | slotType     | vehicleType | Actions |
|----------------------|--------------------------|-----------------|------------------|--------------|-------------|---------|
| parkingSlotOffRoad_9 | 2025-09-10T14:16:34.344Z | alberti_offRoad | offRoad_sensor_9 | handicap     | car         |         |
| parkingSlotOffRoad_8 | 2025-09-10T14:16:14.340Z | alberti_offRoad | offRoad_sensor_8 | handicap     | car         |         |
| parkingSlotOffRoad_7 | 2025-09-10T14:15:54.338Z | alberti_offRoad | offRoad_sensor_7 | handicap     | car         |         |
| parkingSlotOffRoad_3 | 2025-09-10T14:14:34.329Z | alberti_offRoad | offRoad_sensor_3 | recharge_car | car         |         |

**Fine Form**

\* Parking ID: parkingSlotOffRoad\_8

\* City: Limassol \* Area: area\_4

\* Datetime: 19/09/2025 12:45:23

Vehicle brand: Suzuki Vehicle model: Sport

Vehicle color: red \* Vehicle plate: AA456BB \* Vehicle Type: Motor

**Infraction Codes**

- ☐ P001 - No parking zone
- ☒ P002 - Double parking
- ☐ P003 - Blocking driveway
- ☐ P004 - Expired meter
- ☐ P005 - Fire hydrant zone

\* Infraction Points Deducted: 0

\* Vehicle Stop Status: REMOVED

\* Amount to be Paid (Euro): 43

**Upload Evidence**

Click or drag files here

Submit Cancel

### Dash3 - Policy Area Management

Fri 12 Sep 15:38:29

**Search Area**

Careggi 1

Show area Show slots

View mode

Shape Pin

**Slot/Area List**

- parkingSlot\_193593
- parkingSlot\_193594
- parkingSlot\_193595
- parkingSlot\_193596
- parkingSlot\_193597
- parkingSlot\_193598
- parkingSlot\_193599
- parkingSlot\_193600
- parkingSlot\_193601
- parkingSlot\_193602
- parkingSlot\_193603
- parkingSlot\_193604
- parkingSlot\_193663
- parkingSlot\_193664
- parkingSlot\_193665
- parkingSlot\_193666
- parkingSlot\_193667
- parkingSlot\_193668
- parkingSlot\_193669
- parkingSlot\_193670
- parkingSlot\_193671
- parkingSlot\_193672
- parkingSlot\_193673
- parkingSlot\_193674
- parkingSlot\_193822
- parkingSlot\_193823
- parkingSlot\_193824
- parkingSlot\_193825
- parkingSlot\_193826
- parkingSlot\_193828
- parkingSlot\_193829

**Parking Type**

- Bus
- Cargo
- Event car
- Event moto
- Forbidden
- Free car
- Free moto
- Handicap
- Mixed car
- Org car
- Org moto
- Recharge car
- Recharge moto
- Resident
- Taxi
- Timed car
- Timed moto
- Women car

**Group free**

- > 40
- 25 - 39
- 10 - 24
- 0 - 9

**Free Slots Of Careggi\_01**

8m

See parking area stats

**Manage Area Policy**

policy\_0

permissionBus

12:00-13:00

**Calendar**

settembre 2025

| dom | lun | mar | mer | gio | ven | sab |
|-----|-----|-----|-----|-----|-----|-----|
| 1   | 2   | 3   | 4   | 5   | 6   | 7   |
| 8   | 9   | 10  | 11  | 12  | 13  | 14  |
| 15  | 16  | 17  | 18  | 19  | 20  | 21  |
| 22  | 23  | 24  | 25  | 26  | 27  | 28  |
| 29  | 30  |     |     |     |     |     |

**Policy price range**

- 0 - 0.30
- 0.30 - 0.60
- 0.60 - 0.90
- 0.90 - 1.20
- 1.20 - 1.50
- 1.50 - 1.80
- 1.80 - 2.10
- 2.10 - 2.40
- 2.40 - 2.70
- 2.70 - 3.00
- > 3.00

Set policy to selected area

Privacy Policy Cookies Policy Terms and Conditions Contact us

**05 PREDICT**  
AI-based forecast of occupancy, demand and potential congestion.

**06 ASSIST**  
Ask the AI Assistant for insights, forecasts and recommended actions through natural-language interaction.





# SnapAdvisor AI for parking operations



## Questions operators can ask

### “Which parking areas need attention?”

Review occupancy, anomalies and expected demand using historical data, traffic, weather and events.

### “What happens if we change a pricing policy?”

Explore scenarios and recommended actions while keeping permissions and access controls in place.





# ONE PLATFORM. THREE MOBILE APPS. ANY CITY SERVICE.

Distinct mobile experiences for citizens,  
enforcement teams and waste collection operators

**All connected to Snap4City platform**



## **Multiservices CITY USER APP**

Parking, payments and permits.  
Reports and local waste  
information.



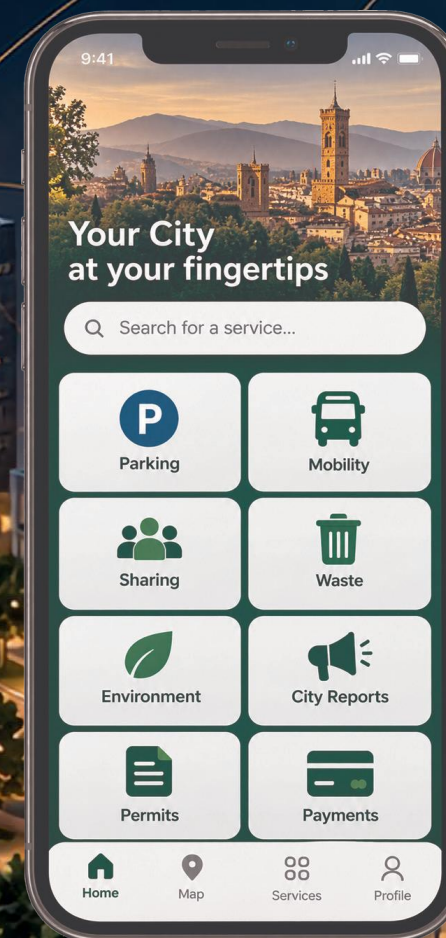
## **ENFORCEMENT APP**

Check parking, verify permits,  
issue fines and print tickets.



## **WASTE COLLECTION APP**

Truck navigation, dynamic routes  
and  
collection progress.





# ONE PLATFORM. THREE MOBILE APPS.

Connected services for citizens, enforcement and waste collection.



## CITY USER APP

Everyday services, in your pocket.



- Find parking, navigate and pay
- Permits and subscriptions
- Reports, alerts and notifications
- Nearby bins and local information

Connected city services



## ENFORCEMENT APP

The full picture, in the field.



- Check plates, spaces and permits
- Capture evidence and issue fines
- Print tickets and send reports
- Work online and offline

Connected to Snap4Parking



## WASTE COLLECTION APP

Collection intelligence, on the road.



- Follow planned and dynamic routes
- View bin details and fill levels
- Track stops and collection progress
- Record photos and service issues

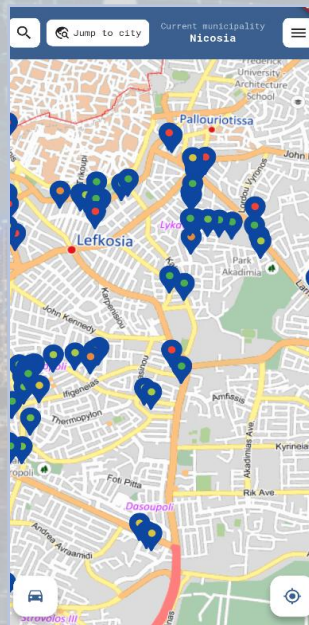
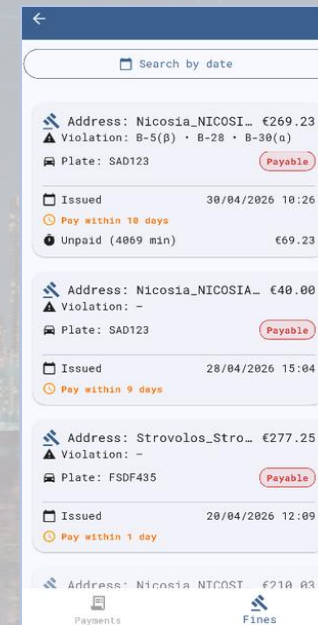
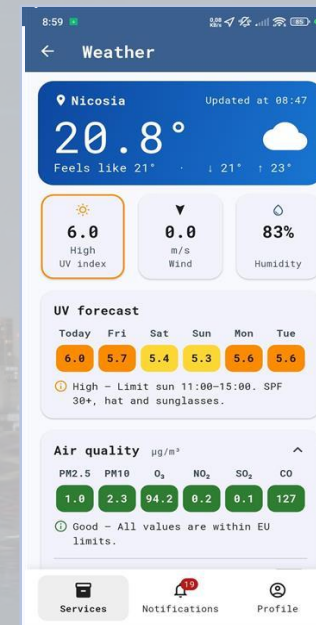
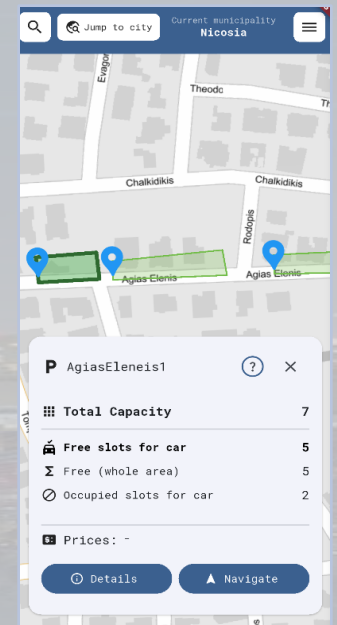
Connected to Snap4Waste + Snap4Fleets





# Multi Service Mobile Apps

- Parking
- Permissions
- Notifications
- Payments
- Participations
- Environment and Weather
- Monitoring: Waste, services
- Points of Interests
- Info Mobility
- Etc.

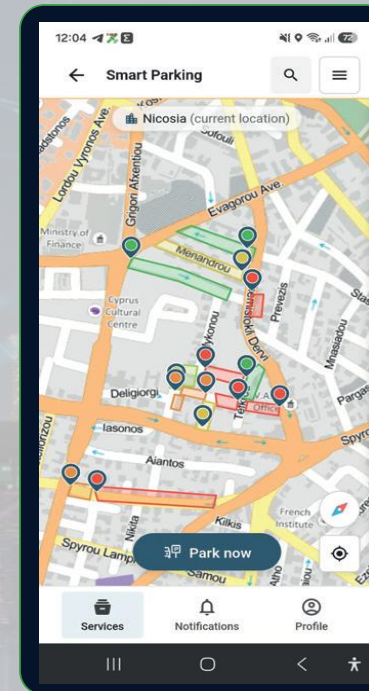




# Bring city services into everyday life.

## For city users

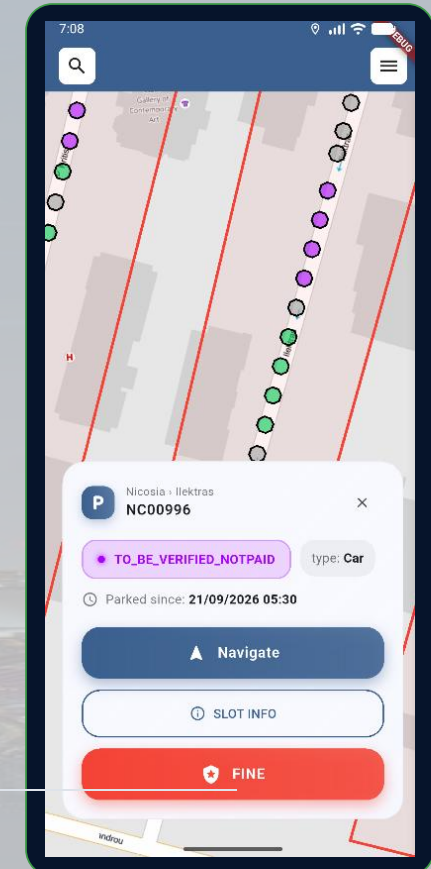
- Parking discovery and guidance
- Permits and subscriptions
- Parking and fine payments
- Receive alerts
- Retrieve your car
- Complaints and notifications
- Locate nearby waste bins
- Many other services: environment, etc.
- **Connected with:**
  - Snap4City, Snap4Parking, Snap4Assets, Snap4Environment, etc.





# Give field teams the full picture. For On road Operators, enforcement

- Live monitoring of parking slots to be verified
- Plate verifications
- Slot verifications, slot status filtering
- Permits verifications
- Enforcement, fine creation with photographic evidence and fine printing
- Connection with fine management system, back-office coordination, reporting
- On-line, off-line working
- **Connected with Snap4Parking**





# SNAP4TOURISM



VISITORS



ATTRACTIONS



EVENTS



DENSITY

HIGH

Historic Centre



VISITORS NOW

12,458

+1.4% vs yesterday



AIR QUALITY

GOOD

AQI 28

Understand the destination.  
Shape the experience  
Smart Tourism Management  
System

1

IMPROVE  
QUALITY OF LIFE

2

OVERTOURISM  
MITIGATION

3

SUSTAINABILITY

4

LOWER  
SERVICE COSTS

5

ACCESSIBILITY  
& SAFETY





## MONITOR & UNDERSTAND

### Destination intelligence



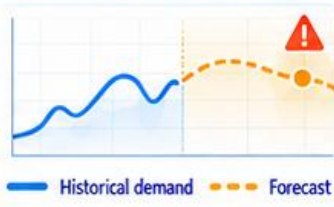
- Presence & density
- Flows & trajectories
- Attraction queues

### Reputation & feedback



## FORECAST & REBALANCE

### Demand forecasts



### What-if scenarios



### Local economy

- Explore secondary streets and attractions.



## ENGAGE & SUPPORT

### SnapAdvisor Copilot

- Why is the centre crowded?
- Compare visitor flows, events and alternative routes.
- Destination data
- Forecasts
- Scenarios

Evolving capability • Operator-reviewed actions

### Visitor engagement

- Suggestions and real-time information

### Destination planning

- Prioritize options and review impacts



Visitors • Mobility • Events • Weather



Early warnings • Scenarios • Alternative attractions



Recommendations • Engagement • Operator insights



One operational view of visitors, places and the local economy.

Powered by the Snap4City Digital Twin.



01

## MONITOR

### What is happening now?

Monitor visitor presence, density, trajectories, origin-destination patterns and hotspots in real time.



02

## PREDICT

### What will happen next?

AI models forecast visitor pressure, congestion and demand at attractions, events and services.



03

## SIMULATE

### What if we change something?

Digital Twin + what-if scenarios to evaluate the impact of decisions before implementing them.



04

## OPTIMIZE

### How can we redistribute visitors?

Identify alternative attractions, routes and areas to balance flows and reduce pressure on hotspots.



05

## CONNECT

### How can tourism support local economy?

Analyze footfall and retail data to support local business and strengthen commercial areas.

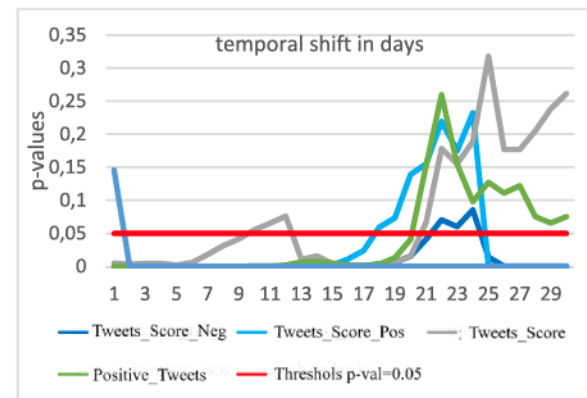


06

## ASSIST

### Ask the city. Get answers.

The Agentic AI Assistant understands your question and proposes the best actions with data-backed insights.





# Forecasting and scenario planning

Anticipate demand and compare options before intervening.

## Forecast

Visitor demand and congestion

## Warn

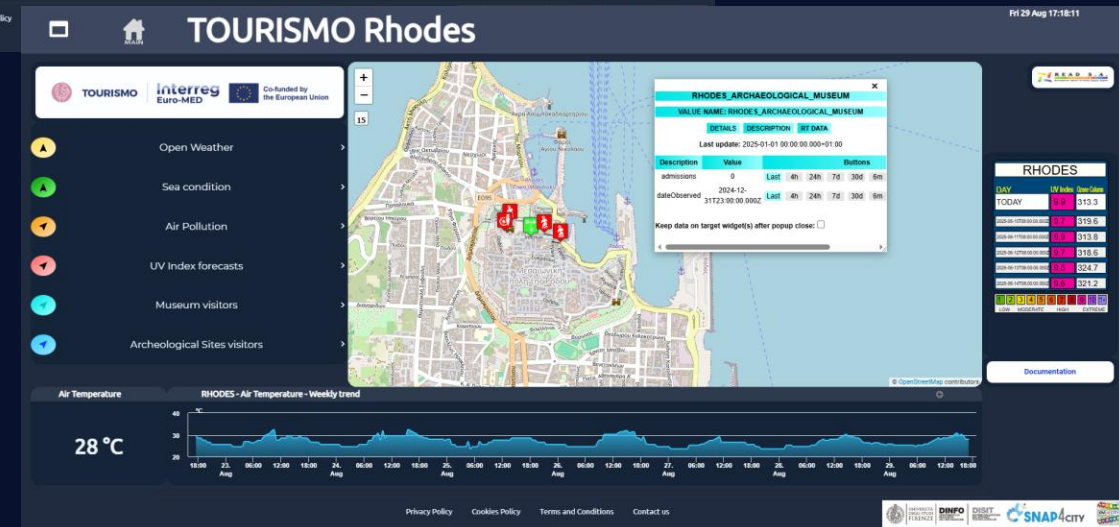
Thresholds and critical conditions

## Simulate

What-if scenarios in the Digital Twin

## Optimize

Alternative routes and attractions





# Agentic AI for the city operator

Evolving capability built around SnapAdvisor Copilot



Example operator question

**“Why is the historic centre crowded, and what could reduce pressure in the next three hours?”**

- 1 Interpret the objective
- 2 Combine destination data
- 3 Use analytical tools
- 4 Explain and prioritize options

Modular knowledge and tools connect the question to destination data.  
The city operator reviews the proposed actions.

## **SIMULATE**

### **What if we change something?**

Digital Twin + what-if scenarios to evaluate the impact of decisions before implementing them.

## **OPTIMIZE**

### **How can we redistribute visitors?**

Identify alternative attractions, routes and areas to balance flows and reduce pressure on hotspots.

## **CONNECT**

### **How can tourism support local economy?**

Analyze footfall and retail data to support local business and strengthen commercial areas.

## **ASSIST**

### **Ask the city. Get answers.**

The Agentic AI Assistant understands your question and proposes the best actions with data-backed insights.



**SNAP4LIGHT**



# Flexible and reliable Smart Light Management System

## Multi-tenant, any platform



ENERGY SAVING



FAULT DETECTION & ALERTS



AUTOMATED CONTROL



ENVIRONMENT



REAL TIME MONITORING



RETAIL & SERVICES



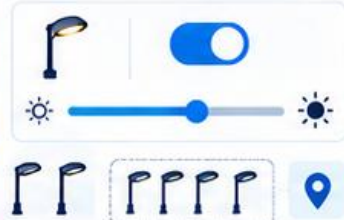


## MONITOR & CONTROL

### Live lighting status



### Individual & group control



## AUTOMATE & DETECT

### Adaptive dimming



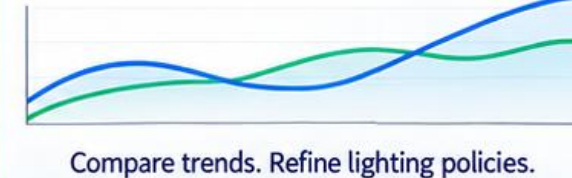
### Fault alerts



## OPTIMIZE & ASSIST



### Energy & service performance



### SnapAdvisor Copilot



How can we reduce energy use?



Review traffic, dimming profiles and energy KPIs.



Lighting data



Maintenance history



GIS dashboards • Remote control • Energy KPIs



Lighting profiles • Alarms • Maintenance



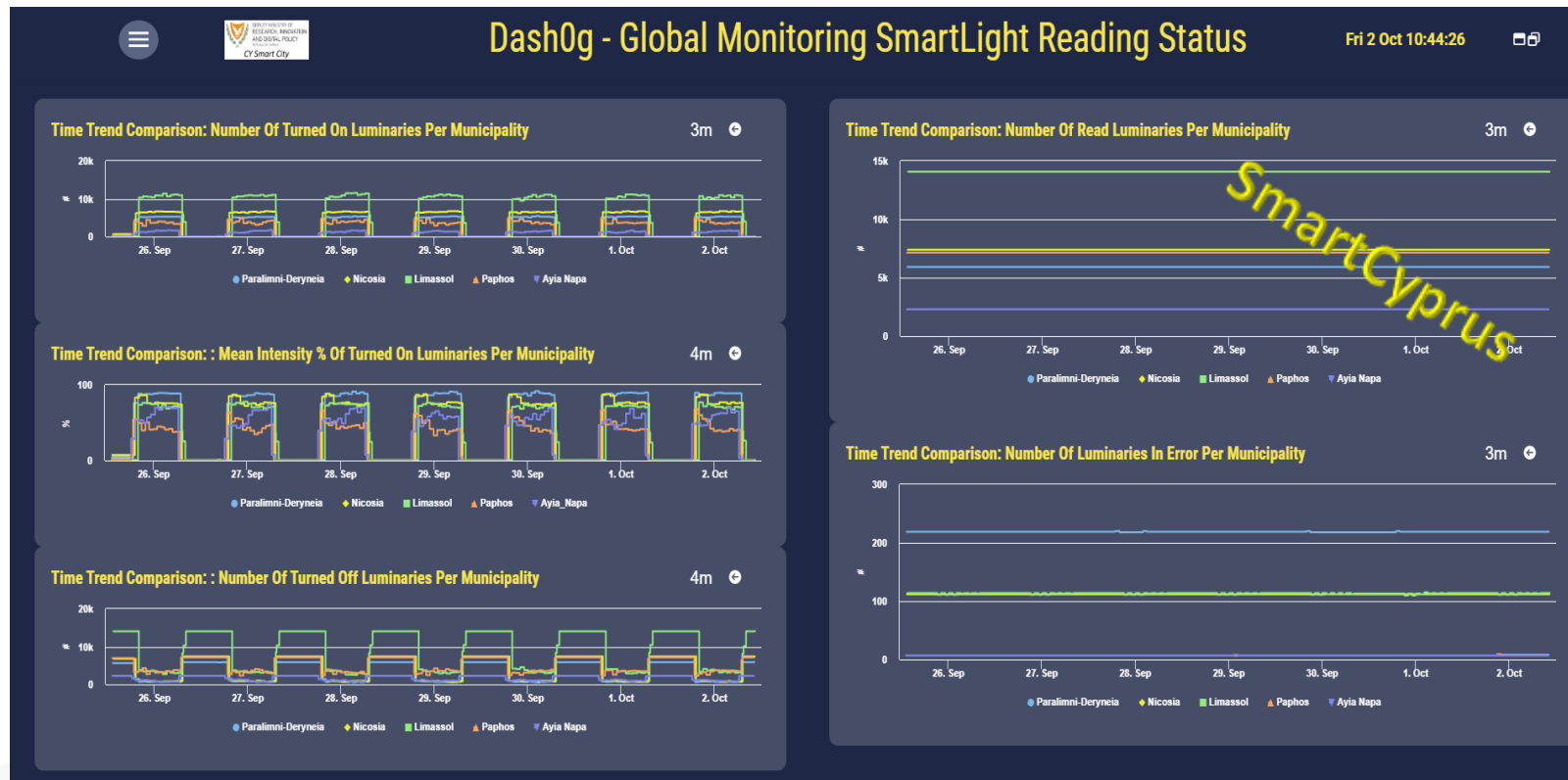
Energy analytics • AI-assisted decisions



One platform for luminaires, cabinets and lighting operations.  
Open integration: LoRaWAN • NB-IoT • DALI-2 • MQTT • REST APIs



# Energy and service performance in view



## Track consumption

Review energy trends by asset or area.

## Investigate faults

Use alarms and status history to support maintenance.

Reporting gives operators evidence for lighting policy decisions.

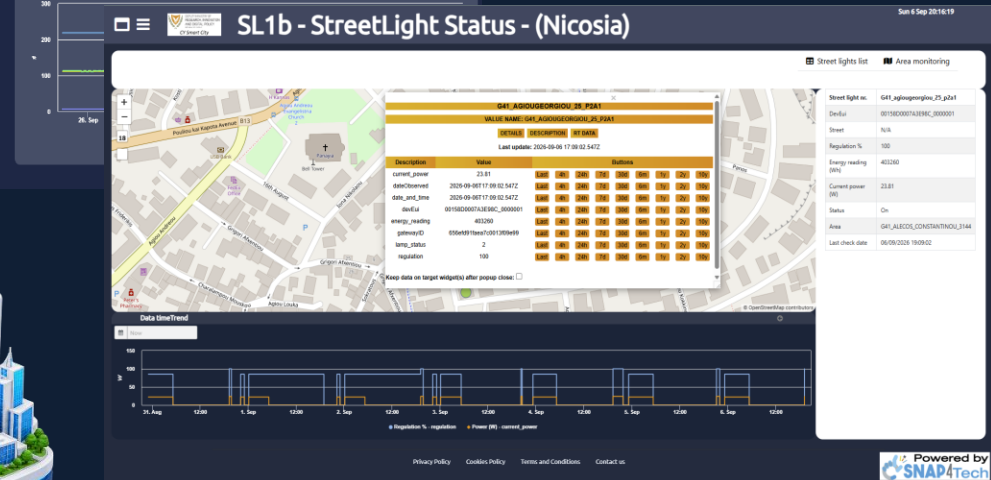






**SNAP4**

# luminaires in Merano, Italy





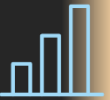
# SNAP4WASTE



## Optimize waste management in urban environments using AI



Bins



Prediction



Optimisation



Live Monitoring



Efficient



Agentic AI



BIN FILL LEVEL

78%

Plastic - Zone A







## MONITOR & PREDICT

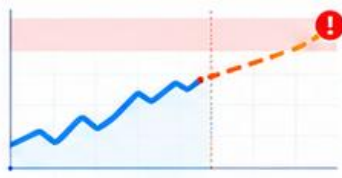
### Live bin status



- Fill levels
- Waste streams
- Sensor alarms

Readings depend on installed sensors.

### Collection forecasts



Prioritize bins before overflow.

### Route planning



- Capacity
- Waste type
- Travel time

### Driver app



## OPTIMIZE & COLLECT



## CONNECT & IMPROVE

### Citizen services

- Report an issue
- Request bulky-waste collection

### PAYT support

- Access permissions
  - Identification + quantity data
- Requires suitable equipment.

### SnapAdvisor Copilot Optional integration

- Which bins could overflow today?
- Review fill forecasts and suggest collection priorities.

- Live data
- Bin history
- Route scenarios

### Operational analytics



Routes • Service KPIs • Collection records



Bin data • Early warnings • Collection priorities



Dynamic routes • Fleet assignment • Proof of service



Citizen engagement • PAYT support • AI insights



**One operational view of bins, fleets and collection services.**

Open APIs • ERP, GIS & billing • Multi-city operation



# Routing Optimize around your service



## Operational constraints

Depot locations

Truck capacity and fleet size

Bin locations and waste type

Travel times



## Flexible collection strategies

Dynamic daily routing, scheduled collection and on-demand jobs.

03

**OPTIMIZE**  
Smart routing and dynamic collection planning.

04

**CONNECT**  
Integrate with existing systems, apps and city services.



# SnapAdvisor for operational decisions



## Optional SnapAdvisor integration



Example operator question

Which bins could overflow today,  
and how should we adjust  
the collection plan?



|    |                                                                                 |                                                                                                                                                                                                                                               |              |         |
|----|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------|
| 05 | <b>ACT</b><br>Enable operators and field teams with the right informations.     | Mobile App                                                                                                                                                                                                                                    | Control Room | Reports |
| 06 | <b>ASSIST</b><br>Ask the Agentic AI. Get insights, recommendations and reports. | Which bins need collection first?<br>46 bins with generic waste have risk of overflow. The optimised routes for the truck fleet have been produced and are available in the Routes planned dashboard! ( <a href="#">click here to open</a> ). |              |         |

## Explain unusual conditions

Combine live data with city procedures and history.

## Recommend priorities

Suggest bins that need attention and possible route changes.

## Compare scenarios

Explore changes to thresholds, fleets or collection policy.

## Support authorized actions

Connect approved workflows through services and APIs.



A CLEANER  
STRONGER EUROPE

INDUSTRY TODAY.  
A SUSTAINABLE TOMORROW.

 **Control of emissions**

Real-time monitoring  
and intelligent control

 **Reduction of emissions**

AI-optimised operations  
for a lower footprint

 **Early warning**

Predict. Prevent.  
Act in time.

 **Meet the EC targets**

On track for a cleaner,  
more competitive Europe.

 **Reduction of EC taxation  
via AI, Agentic AI,  
neurosymbolic solutions**

Smarter compliance.  
Lower costs. Higher impact.

# Snap4Environment



**AIR QUALITY**

|                 |          |
|-----------------|----------|
| PM2.5           | 5 µg/m³  |
| NO <sub>x</sub> | 18 µg/m³ |
| SO <sub>2</sub> | 6 µg/m³  |
| CO <sub>2</sub> | 312 ppm  |

**NET ZERO  
INDUSTRY  
REAL IMPACT**

DATA  
INTELLIGENCE  
COOPERATION  
A HEALTHIER PLANET

PEOPLE  
PLANET  
PROSPERITY

CLEAN  
INDUSTRY  
THRIVING  
COMMUNITIES  
BRIGHTER  
TOMORROWS

**SENSE  
ANALYSE  
REASON  
COORDINATE  
ACT**

**AI AGENTS  
FOR A CLEANER TOMORROW**

-  Monitor Agent
-  Analyse Agent
-  Plan Agent
-  Compliance Agent
-  Optimise Agent



**NEUROSYMBOLIC AI**



Neural Learning  
Pattern Detection  
Symbolic Reasoning  
Rule Compliance  
Explainable Actions

**KNOWLEDGE + DATA + REASONING = REAL IMPACT**



INTELLIGENT SOLUTIONS  
FOR A SUSTAINABLE EUROPE

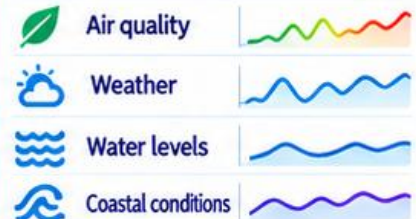
-  LOWER EMISSIONS
-  COMPETITIVE INDUSTRY
-  HEALTHIER COMMUNITIES
-  A BRIGHTER EUROPE





## MONITOR & UNDERSTAND

### Environmental monitoring

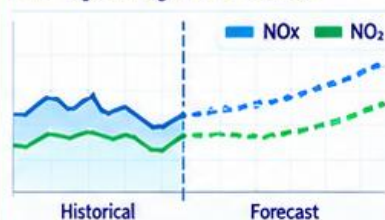


### Hotspots & trends



## PREDICT & SIMULATE

### Air-quality forecasts



### Risk scenarios



## ASSESS & SUPPORT

### Traffic-related CO<sub>2</sub> estimates



### Resilience & planning



### SnapAdvisor Copilot



Which areas need attention?



Review forecasts, identify hotspots and compare interventions.



Environmental data



Forecasts



Scenarios

Operator-reviewed decisions



Sensors • Open data • Territorial heatmaps



Early warnings • Dispersion models • What-if scenarios



Impact assessment • Planning KPIs • AI support



One territorial view of air, water, weather and environmental risk.

Open APIs • IoT & open data • Connected city systems



01

## MONITOR

Weather, airquality, land slides, water levels, ..  
Production of heatmaps, distribution of data via  
mobiles.

02

## PREDICT

Early warning, Predictions of air quality,  
identification of causality, prediction of NOX,  
NO2, CO2, etc., 3D prediction of pollutant flows.

03

## SIMULATE

Simulation of environmental prticles flowing  
into the city, take care of city 3D, wind,  
temperature, etc.

04

## OPTIMIZE

Traffic flow and mobility infrastructure for the  
reduction of emissions.

05

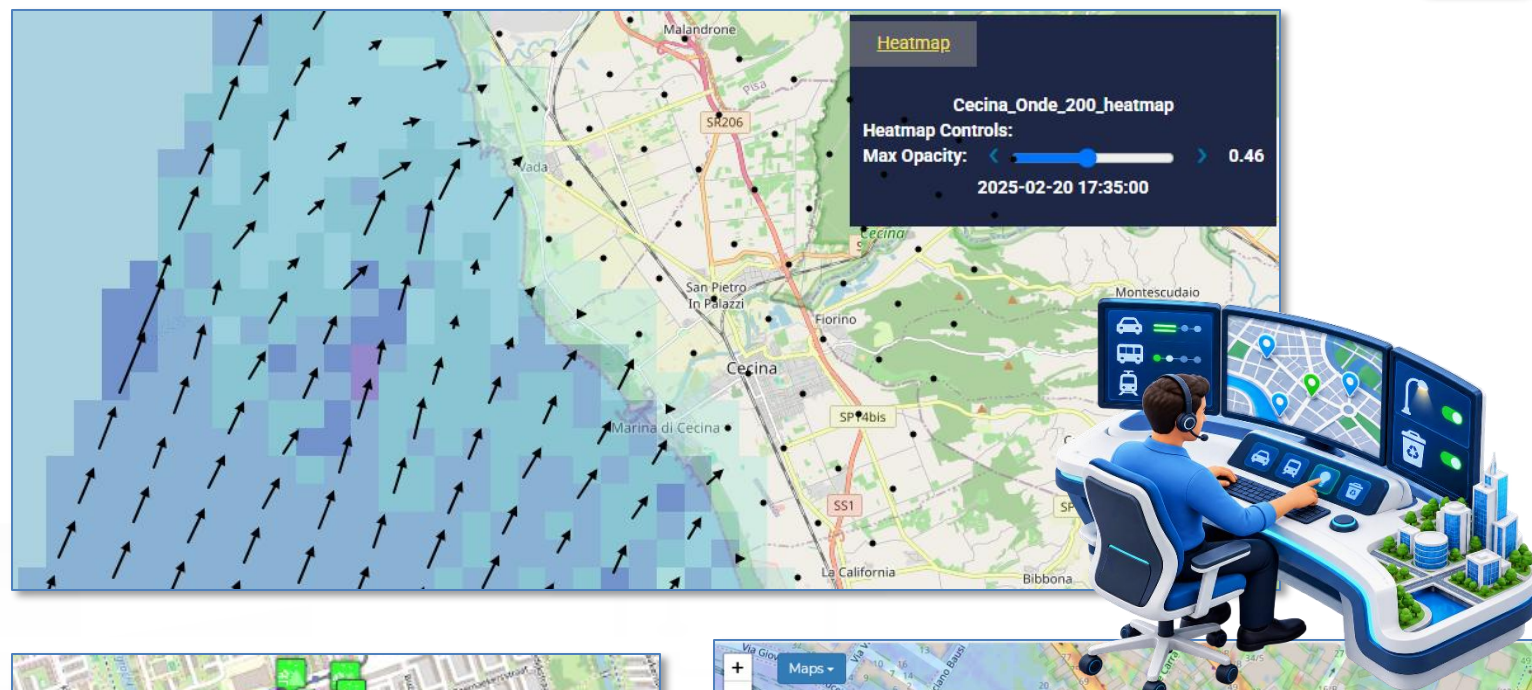
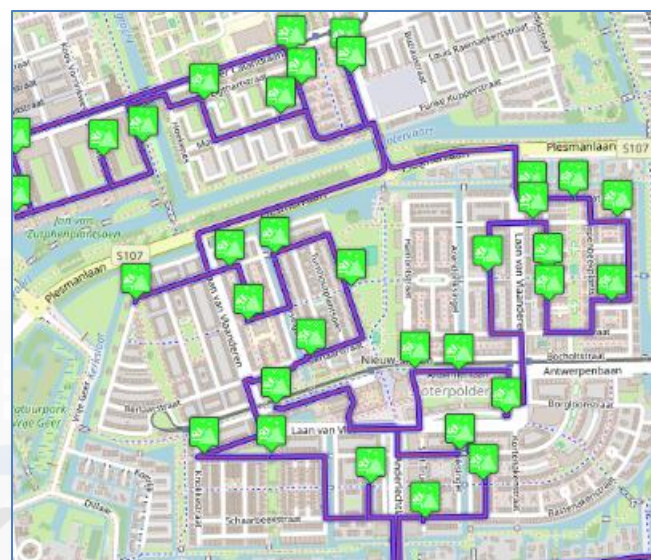
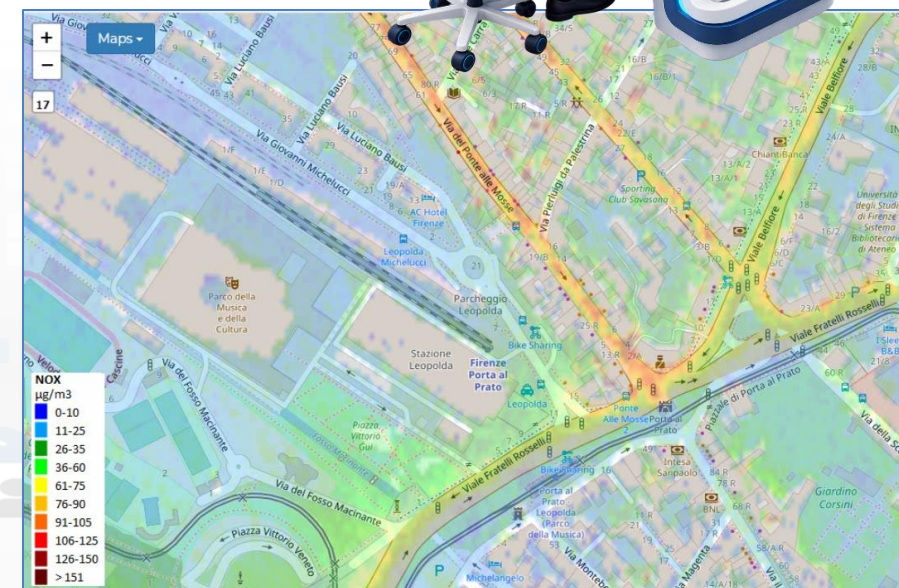
## CONNECT

Causes and effects, location of cycling paths  
and emissions, entropic area, 15 Min City Index,  
SDG and AI algorithms, SUMI/SUMP.

06

## ASSIST

SnapAdvisor co-pilot with it capabilities of  
Agentic AI solution to identify solutions, and  
provide results and on the fly assessments.





## Early Warning, Detection

### Issue:

- Detection of critical condition
- Not easily detected with other means

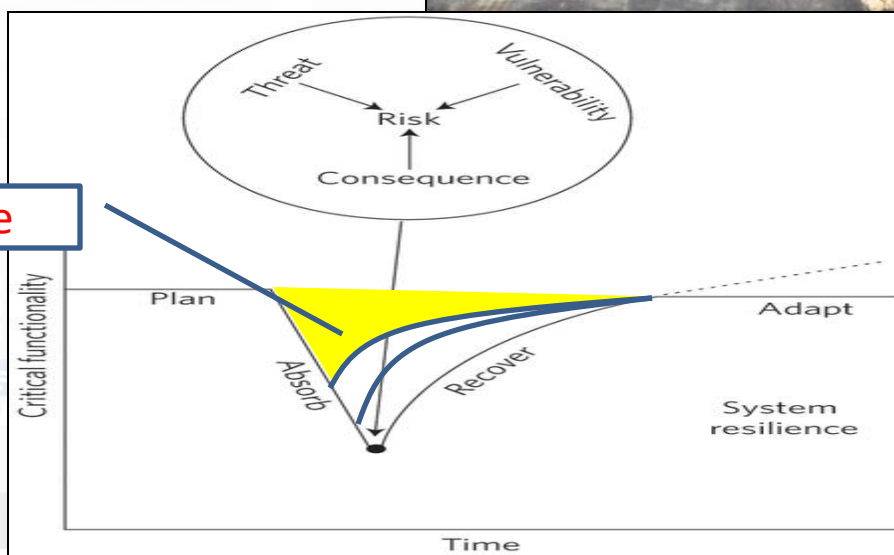
### Impact:

- Early warning, faster reaction
- Increased resilience

### Several metrics related to:

- Volume of retweets
- Sentiment analysis

**P**repare  
**A**bsorb  
**R**ecover  
**A**dapt







# Snap4City

## Development Environment

From Data to Smart Cities. Together.

INTEROPERABLE • INTELLIGENT • SUSTAINABLE • FOR A BETTER TOMORROW

SMART  
PEOPLE  
SMART  
PLACES  
SMART  
SOLUTIONS



Parking



Waste  
Management



Smart  
Lighting



Environment  
Monitoring



Mobility



Ports & Logistics



Energy  
Management



AI & MLOps  
Agentic AI

### Snap4City Development Environment

Home Dashboards Data Models Applications Tools

Search anything...

#### City Live Map



#### Total Sensors

1,428  
↑ +12%

#### Active Services

24  
↑ +6%

#### Air Quality Trend



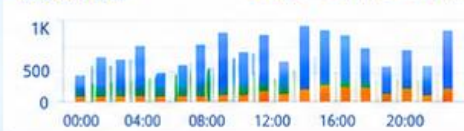
#### CO<sub>2</sub> (avg)

18.5 µg/m<sup>3</sup>  
↓ -6%

#### Energy Consumption

2.4 GWh  
↓ -11%

#### Traffic Flow



#### Data Models



#### Dictionary & Ontology

- Schemas (JSON-LD)
- Domain Dictionary
- Ontologies (SAREF)
- Linked Data

#### AI Tools & MLOps



#### Visual Editor



#### MCP Agentic Tools



#### Data Interoperability

Node-RED Python



```
# Read data from IoT devices
import snap4city as s4c
data = s4c.get_sensors_data("parking")
df = s4c.to_dataframe(data)

# Process and publish
result = df[df['status'] == 'free']
s4c.publish("smartcityparking", result)
```



SAME DATA  
BRIGHTER CITIES

#### SnapAdvisor AI Copilot

How can I help you today?  
I can assist with development, data analysis, city operations and smart city solutions.

- Create an AI workflow for city data
- Build an MCP agent for smart mobility
- Set up an MLOps pipeline
- Generate insights from urban data
- Help me with model deployment
- Support decision making with AI

Ask SnapAdvisor...



STANDARDS



REAL-TIME  
DATA

BUILD > INTEGRATE > ANALYZE > DEPLOY > SMARTER CITIES



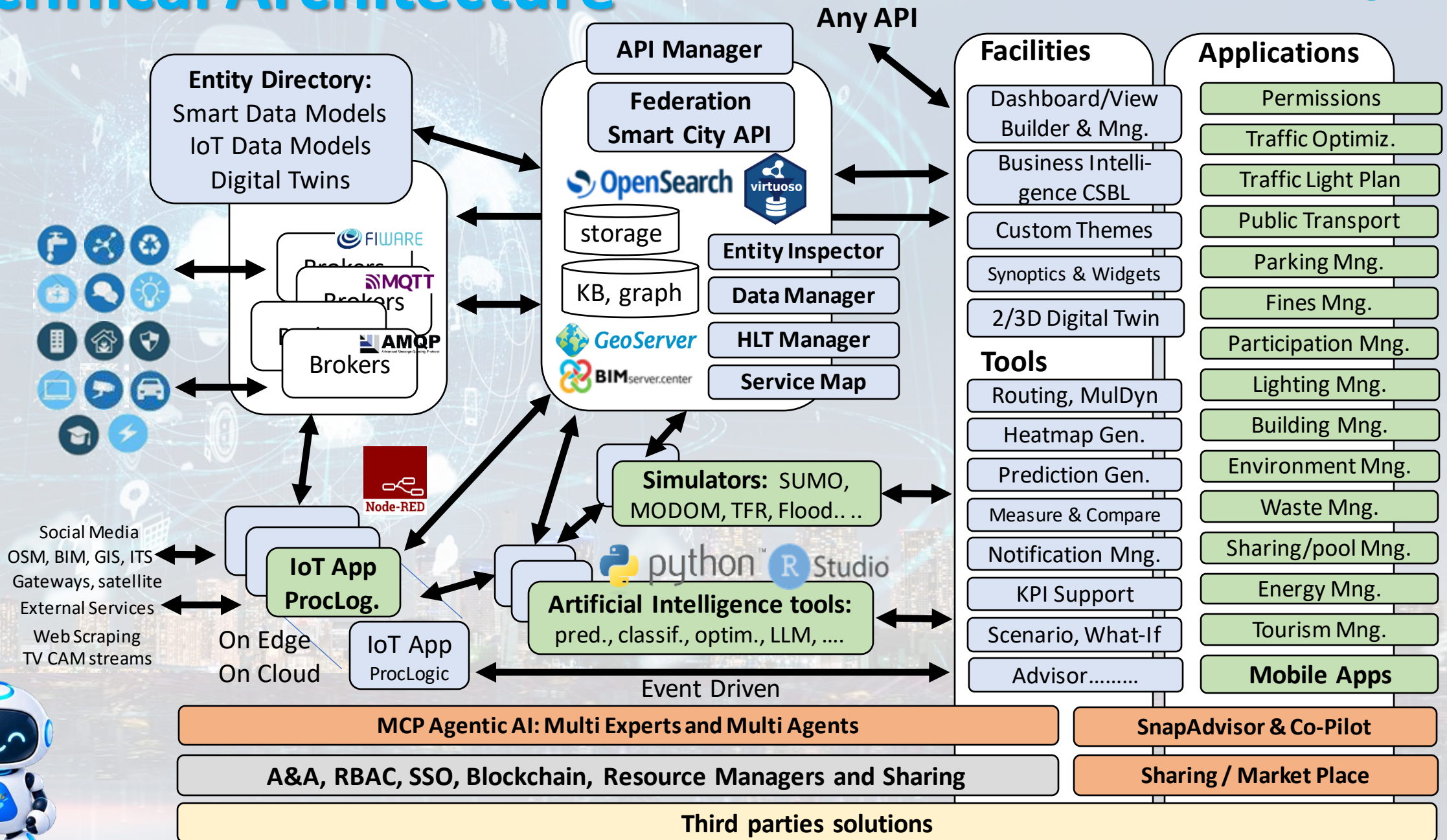
SCALABLE  
SOLUTIONS



PEOPLE-CENTRIC  
SOLUTIONS

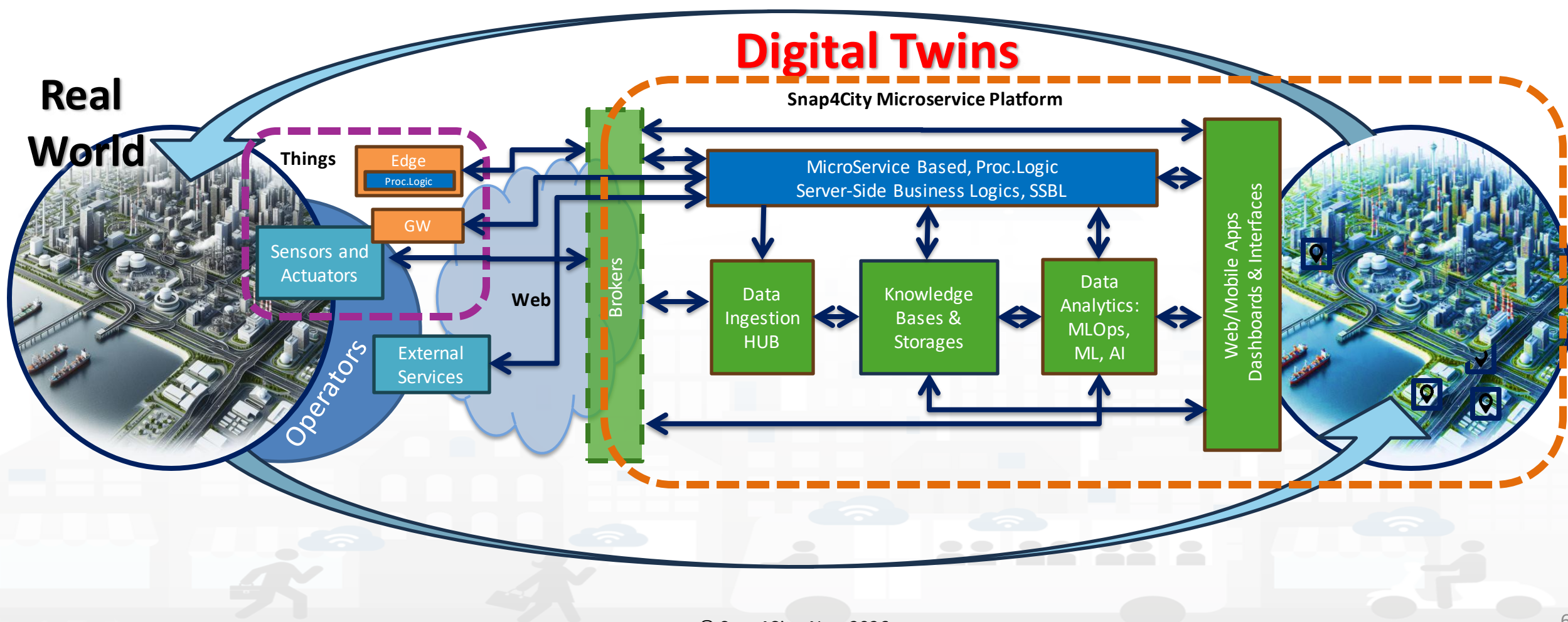


# Technical Architecture



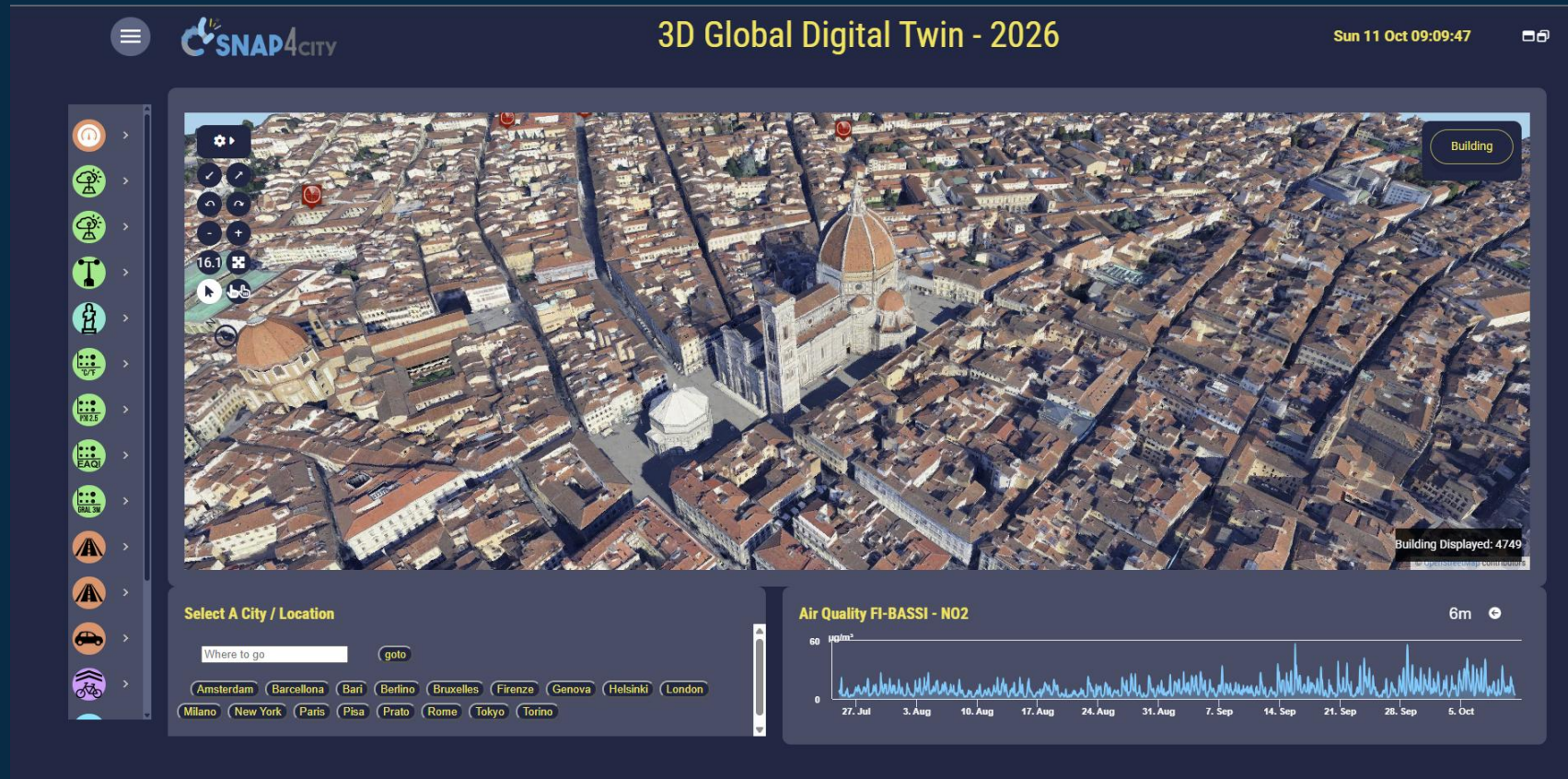


# Digital Twin Development Platform





# Digital twins connect place, assets and data



## City context

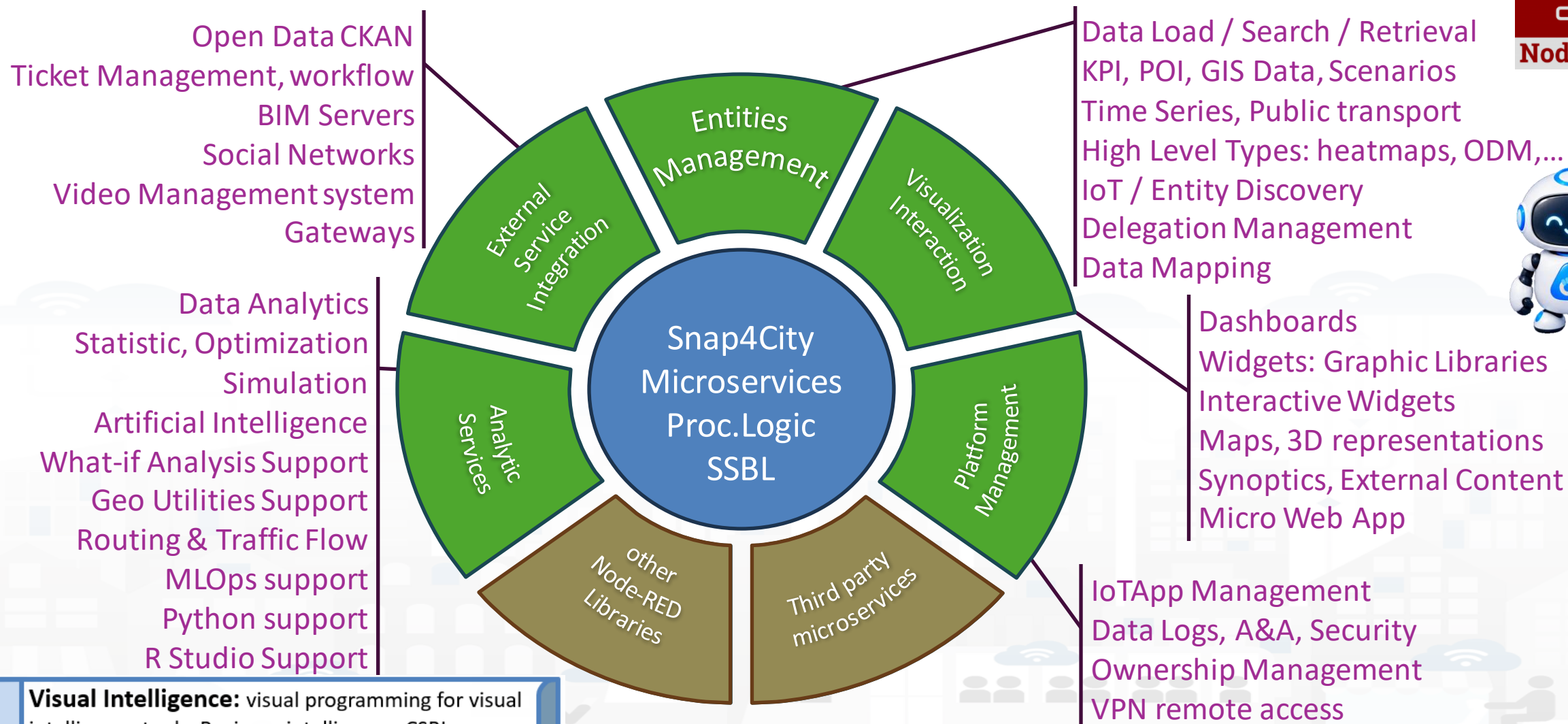
Combine 3D models with sensor readings, traffic information and time series.

One view for exploring how the city changes.



> 60.000 downloads (up to 2024)

## Areas





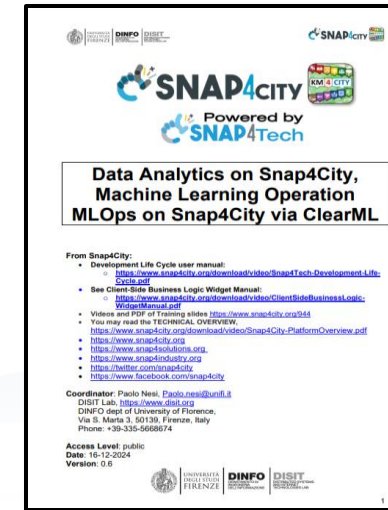
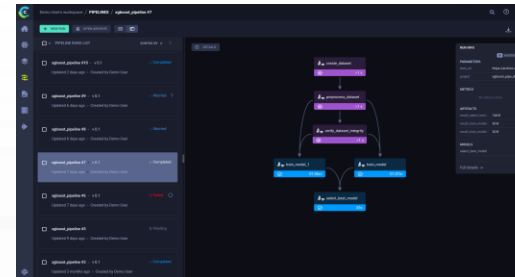
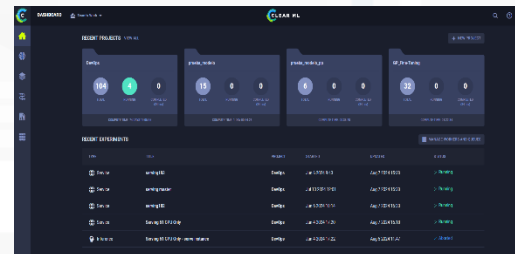
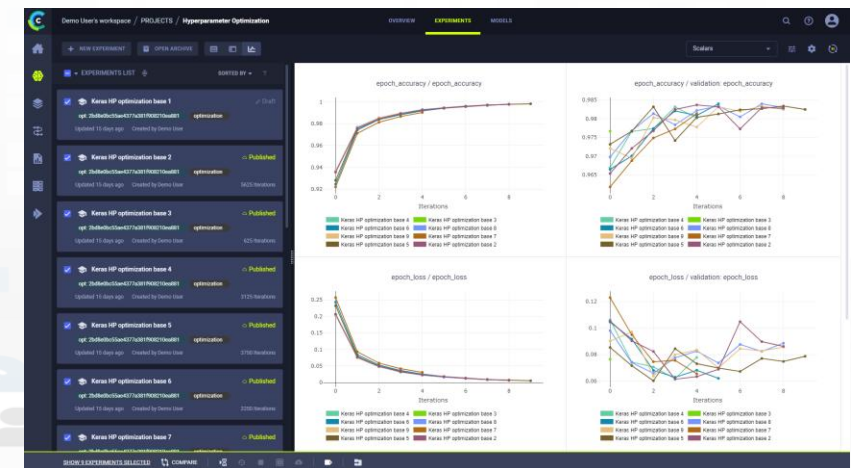
# AI/ML developers, MLOps

MLOps: AI, ML development  
Automating training, hyperparam, optimisation  
Any library and AI model, API, Agentic AI, MCP  
Exploiting CPU/GPU clusters

03

**Artificial Intelligence:** ML, AI, DL, Fed.AI, LLM, DRL, Agentic AI, MCP tools, generative AI, ...  
SnapAdvisor Copilot for developers, MLOps supp.

<https://www.snap4city.org/download/video/Snap4City-MLOps-Manual.pdf>





# SnapAdvisor & Copilot

## Your AI-powered assistant for the Snap4City Digital Twin

Understand your objectives | Plan and use Snap4City services | Analyse data | Deliver actionable answers

Turn your questions into smarter, data-driven decisions for a smarter city.

 CLEANER CITIES

 MORE EFFICIENT OPERATIONS

 BETTER DECISIONS

### Ask in natural language



What is happening in this area?



Find the sensors along this route.



Which route is better considering current conditions?



What can be done to reduce the CO<sub>2</sub> emissions in Mercy road at 9:00?



Why are there no free parking slots in the Guizzer area?



Find an API to get data of traffic flow in Bologna?

I understand your objective. I'll create a plan, use the right Snap4City services, analyse the data and give you an actionable answer.

1

### Understand & Plan

Interpret your request and create a multi-step plan

2

### Select & Execute

Choose and invoke the right Snap4City services and APIs

3

### Analyse & Verify

Analyse results, recover from issues eventually replan

4

### Deliver Answer

Provide clear, explainable results in natural language with visuals

### Snap4City Services & APIs



Access data (live & historical)



Discover IoT devices



GIS and geospatial tools



Analytics and AI models



Optimisation & what-if analysis



Open to any data model and format

### Actionable results



Here is the analysis of the area. I used traffic, air quality and parking data. You can see the results on the map, the trends over time and a summary of insights.



#### Key insights

- ✓ Congestion level reached 90% in Via Sparta due to an event.
- ✓ CO<sub>2</sub> emissions are higher at 9:00 in Mercy road.
- ✓ Alternative routes can reduce travel time by 18%.
- ✓ See the full report for details and the data sources used.

#### Traffic flow



#### Air quality (CO<sub>2</sub>)



#### Parking availability



 Download PDF Report



### Rich knowledge foundation

Snap4City, mobility, energy, tourism, assets, transportation, GIS and more.



### RAG with private collections

Use your PDFs, documents, presentations, images, code and web pages. Domain-customisable, multilingual.



### Agentic capabilities

Multi-step planning, specialist agents, execution, verification and replanning.



### Exploit more resources

Integrate web search and external resources. Generate decision graphs and reuse them.



### Explainable AI

See the plan, tools used, data sources and reasoning behind the answer.

### For multiple domains



Smart Cities



Mobility



Energy



Tourism



Assets



Transportation



GIS



Retail



Legal



Training



Help Desk

...

... and more

### For everyone



Decision Makers



City Operators



Developers



Organisations & Teams



# An open platform that connects city systems



## Existing data and sensors

Combine IoT, open data and legacy sources in one territorial context.

## Flexible deployment

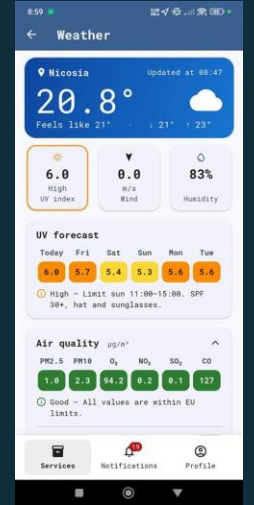
Use a service offering or install in your own environment.

## Open-source foundation

Extend the platform through documented APIs and data models.

## Cross-domain decisions

Connect environment with mobility, energy and city operations.





# Value for buyers and delivery partners

## City and enterprise teams



## A shared operational view

Combine information across departments and connect it to daily decisions.

## Developers



## A reusable application toolbox

Use visual flows and APIs while keeping the flexibility of custom code.

## System integrators



## A foundation for differentiated services

Build domain applications and connect customer systems on a common platform.



# Flexible deployment and controlled access

## Open and interoperable

Build on the Snap4City ecosystem and connect existing data sources.

## Deployment choice

Cloud, SaaS or on-premise to suit organisational needs.

## Multiple cities and teams

Support multiple tenants and service domains.

## Access by responsibility

Role-based access and controlled private knowledge collections.





# Sources and further reading

## Development framework

**Developer guide:** [snap4city.org/843](https://snap4city.org/843)

**Protocols:** [snap4city.org/65](https://snap4city.org/65)

**Training:** [snap4city.org/944](https://snap4city.org/944)

**Installation:** [snap4city.org/738](https://snap4city.org/738)

## Solutions

**Main applications:** [snap4city.org/1180](https://snap4city.org/1180)

**SnapAdvisor:** [snap4city.org/1178](https://snap4city.org/1178)

**Digital Twin:** [digitaltwin.snap4city.org](https://digitaltwin.snap4city.org)

**Scenariious:** [snap4city.org/4](https://snap4city.org/4)







# THE POWER OF AGENTIC AI AT THE SERVICE OF YOUR OPERATIONS AND PLANS

OPERATION AND PLAN - CONTROL ROOMS - DECISION SUPPORT SYSTEMS - WHAT-IF ANALYSIS - OPTIMIZATION - APPLICATIONS - AGENTS

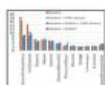
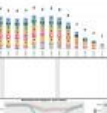
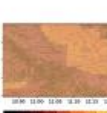
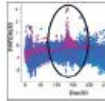
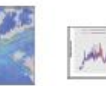
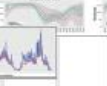
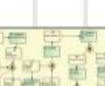


AGENTIC AI

- DEVELOPMENT ENVIRONMENT AND METHODOLOGY
- VISUAL PROGRAMMING, ML, AI, HPC
- TRAINING COURSES



LOW-CODE DEVELOPMENT, VISUAL PROGRAMMING, SMART APPLICATION DEV.,  
DIGITAL TWIN DEV. PLATFORM, PROCESSING LOGIC, MICROSERVICES  
API-DRIVEN DEV., EDGE & CLOUD DEV.

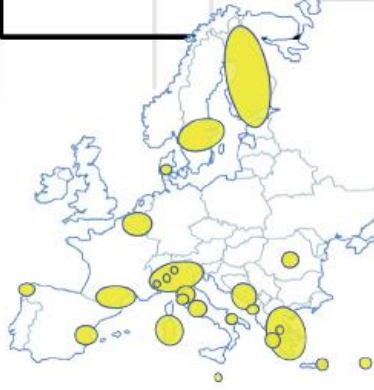


KNOWLEDGE GRAPH, SEMANTIC KNOWLEDGE,  
KNOWLEDGE-DRIVEN, CONTEXT-AWARE DATA,  
SEMANTIC REASONING, DATA HARMONIZATION

INTEROPERABILITY, SEMANTIC INTEROPERABILITY,  
CROSS-PLATFORM, OPEN STANDARDS  
VENDOR-AGNOSTIC, LEGACY SYSTEMS

ANY DATA INGESTION, REAL-TIME, INTEGRATION,  
IOT/WOT, HETEROGENEOUS DATA,  
EDGE-TO-CLOUD DATA INTEGRATION,  
BIDIRECTIONAL EVENT DRIVEN

FULL INTEROPERABILITY, ANY: DATA, BROKERS, NETWORKS AND VERTICALS



Powered by  
**FIWARE**

FREE  
TRIAL

PEN Test  
Passed

EU GDPR  
COMPLIANT

SNAP4  
Appliances and Dockers  
Installations

EUROPEAN OPEN  
SCIENCE CLOUD

Node-RED

JS Foundation

E015  
digital ecosystem

NVIDIA



# SNAP4CITY









- **Smart Cyprus:** Parking, participation, Light, Waste, etc.
- **ISPRA JRC contract**, EC: DSS, SOC, control room, energy, <https://www.snap4city.org/970>
- **Merano Smart Light**, contract <https://www.snap4city.org/1023>
- **Cuneo Asset management**, contract <https://www.snap4city.org/975>
- **TOURISMO**, Interreg, EC: Tourism, NLP, DSS, <https://www.snap4city.org/1001>
- **ELLIE**, Horizon Europe, EC: AI, VR, <https://www.snap4city.org/1056>
- **AMMIRARE**, Interreg, EC: AI, environment, Big Data, <https://www.snap4city.org/1002>
- **Reg4IA**, LLM, DL AI for regional public administration, A project of presidency of national council
- **Energia**, RT, contract: Federated Learning, AI, PINN, DSS, on manufacturing
- **SADI-MIAC**, RT, partner: AI predictions, Tourism, Retail, Computer Vision, <https://www.snap4city.org/1055>
- **CN MOST**, PNRR: sustainable mobility, AI, platform, <https://www.snap4city.org/1050>
- **MUSEOAct**, Deep Learning AI for condition deformation predictions wrt environmental aspects
- **Reverberi contract**, Smart Parking monitoring
- **LIBROCO**, AI for predicting events effects on commerce, LLM
- **RFI contract**: mobility, AI, DSS
- **++ other contracts covered by NDA**

#### Closed in 2025-early 2026

- **BullVIT**, RT, conv: Agentic AI, NLP, LLM on commercial phases
- **UrbanDT4TF**, CN HPC: Digital Twin mobility, <https://www.snap4city.org/1057>
- **DI-DTPlatform**, CN HPC: Digital Twin, mobility, environment, <https://www.snap4city.org/1097>
- **Sasuum**, CN MOST, PNRR: AI, mobility, <https://www.snap4city.org/999>
- **OPTIFaaS**, CN MOST, PNRR: AI, mobility, DSS, <https://www.snap4city.org/1008>
- **LeverageOPTIFaaS**, CN MOST: PNRR, mobility, <https://www.snap4city.org/1064>
- **CAI4DSA**, FAIR PE1, PNRR: AI, Neuro-Symbolic, PINN, NG-DSS, <https://www.snap4city.org/1016>
- **SMART3R**, PRIN UNICagliari: mobility, DSS, <https://www.snap4city.org/1087>
- **Tuscany X.0, EDIH**, TestBeforeInvest, Training on AI, Big Data, Security, HPC: <https://www.tuscanyx.eu/>
- **The IE**, PNRR: AI, NLP, LLM, Legal Aspects, SnapAdvisor, RAG LLM
- **Salerno Port**: AI for container ID recognition and tracking
- **Talent Hub**, ECRF, conv: NLP, match demand vs offer