



<https://www.snap4.eu>

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UNIVERSITÀ
DEGLI STUDI
FIRENZE
SPIN-OFF APPROVATO

Soluzioni Digital Twin per sistemi di supporto alle decisioni sostenibili e Business Intelligence



#snap4city
#km4city
#disitlab
@snap4city

Valore innovativo



• Data Platform, Open Source:

- big data ingestion, data management, dashboards, business intelligence, scalability
- GDPR compliance, PEN test passed, ISO 9001, ISO 27001, ISO 27017, ISO 27018
- Any data models, FIWARE, data spaces, 3D models

• Artificial intelligence:

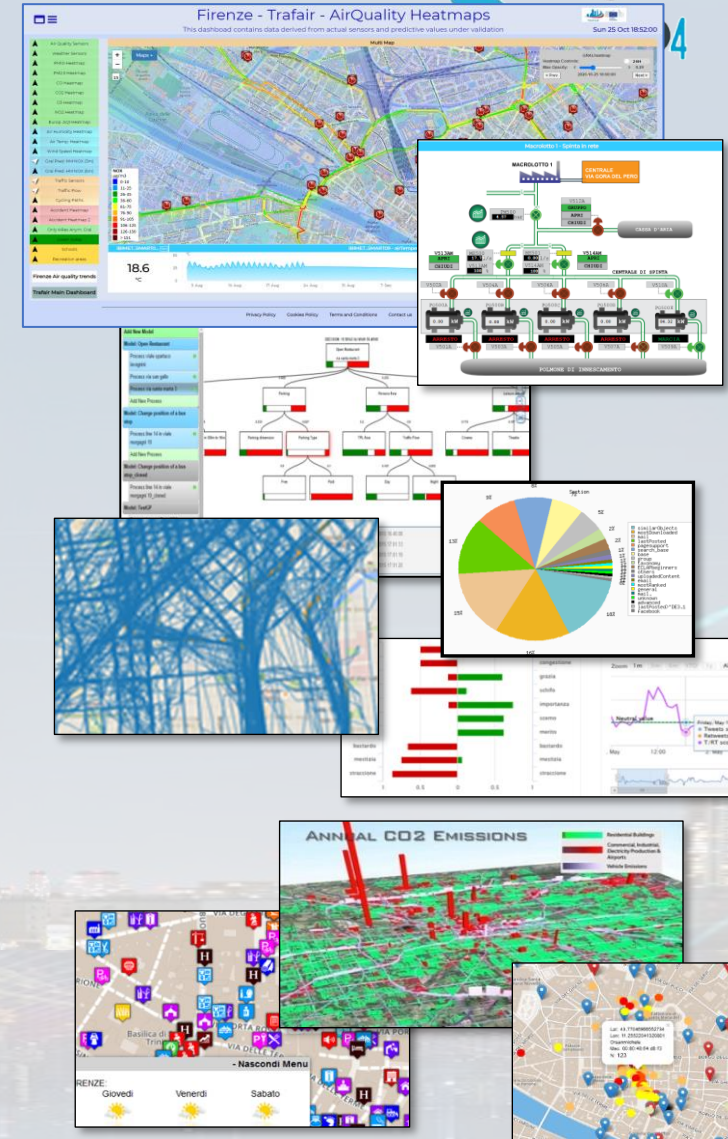
- prediction models, anomaly detection
- expert systems, digital twins, NLP,
- decision support, business intelligence, mobile applications

• Domains of:

- Mobility and Transport Operation and Plan
- Smart Energy and Smart Building
- Environment and Waste Management
- City Users' Services, Tourism Management and Safety/Security
- Control and Plan, Horizontal Platform, Digital Twin for all

• Recent solutions

- **Merano Smart Light:** luminary profiles, management, control, traffic profiling
- **Cuneo Smart City:** thermal cameras, asset management
- **CN-MOST:** eShare in a Snap
- **Energy control:** recharging station, Origin destination models and tools
- **Chemical Plant Control Room Monitoring**
- **Chemical Plant production assessment and analysis**



Digital Twin Solutions for Sustainability

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

HORIZONTAL AI PLATFORM

MOBILITY AND TRANSPORT

SMART ENERGY AND SMART BUILDING

ENVIRONMENT AND WASTE MANAGEMENT

CITY USER'S SERVICES AND TOURISM MANAGEMENT

- DEVELOPMENT ENVIRONMENT AND METHODOLOGY
- VISUAL PROGRAMMING, ML, AI, HPC
- TRAINING COURSES
- LIVING LABS
- GUI CUSTOM STYLES
- FULL APPLICATIONS, DASHBOARDS AND VIEWS
- MOBILE APPS



VISUAL ANALYTICS - SYNOPTICS - GRAPHICAL WIDGETS - ANALYTICS - BUSINESS INTELLIGENCE - SIMULATIONS

DASHBOARDS, WIDGETS TEMPLATES | **PREDICTION - ANOMALY DETECTION - CLUSTERING - ROUTING - SENTIMENT NLP - TRAFFIC FLOW - PEOPLE FLOWS - SDG** | **API - MICROSERVICES - GIS - BPM**
15 MIN CITY INDEX - KPI - HEATMAPS - ORIGIN DESTINATION - ETC... | **VIDEO - REPORTS - MAPS - 3D ...**

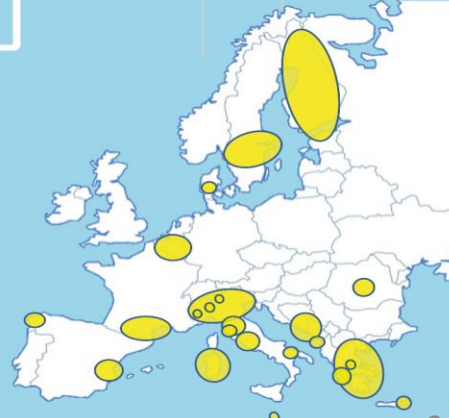
EXPERT SYSTEM, KNOWLEDGE BASE SEMANTIC REASONING
SMART DATA MODEL
IOT DEVICE MODELS, STORAGE

BIG DATA ANALYTICS, ARTIFICIAL INTELLIGENCE
EXPLAINABLE AI, MACHINE LEARNING, GENERATIVE AI
OPERATIVE RESEARCH, STATISTICS

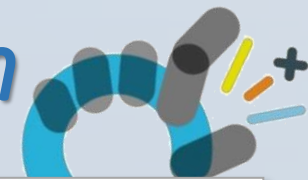
VISUAL PROGRAMMING, ADAPTERS
DATA FLOWS, WORKFLOWS
PARALLEL DISTRIBUTED PROCESSING
DATA DRIVEN



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



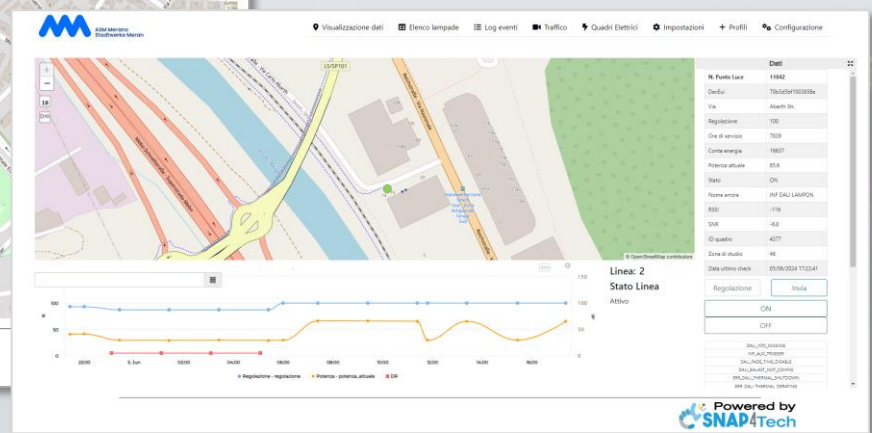
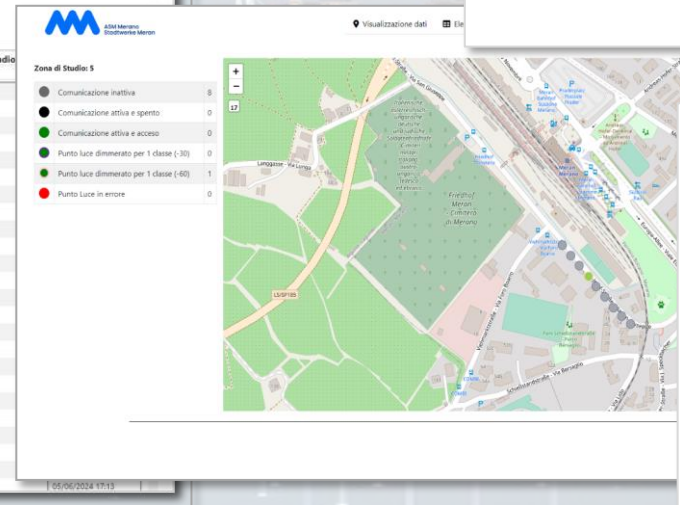
Le Soluzioni (1/4): Smart Energy Operation and Plan



- **Snap4Meran: Smart Light Control and Light Adaptive with Traffic Density**
 - Gestione e monitoraggio smart di migliaia punti luce in Merano
 - 70 Quadri illuminazione e consumi
 - 50 Misuratori traffico
 - Programmazione profili di illuminazione
 - Monitoraggio e Controllo dello stato del servizio
 - **In futuro: Gestione TAI (Traffic Adaptive Installation)**



Via	Numero punto luce	Regolazione	Ore servizio	Conta energia	Potenza attuale	Messaggi d'errore	Stato	DevEUI Lorawan	Zona di Studio
Abarth Str.	10948	100	7839	43388	65.8	INF DALI LAMPON	●	70b3d5ef1003831e	46
Abarth Str.	10949	100	7839	21394	65.3	INF DALI LAMPON	●	70b3d5ef10038321	46
Abarth Str.	11040	100	7838	45609	65.9	INF DALI LAMPON	●	70b3d5ef10038399	100
Abarth Str.	11041	100	7838	46575	66	INF DALI LAMPON	●	70b3d5ef1003832e	46
Abarth Str.	11042	100	7839	16637	65.6	INF DALI LAMPON	●	70b3d5ef1003835e	46
Abarth Str.	11043	100	7836	46882	66	INF DALI LAMPON	●	70b3d5ef1003835c	46
Abarth Str.	11044	100	7839	45977	65.8	INF DALI LAMPON	●	70b3d5ef10038453	46
Abarth Str.	11092	100	7869	27744	66.1	INF DALI LAMPON	●	70b3d5ef10038454	46
Abarth Str.	11094	100	7869	48106	65.9	INF DALI LAMPON	●	70b3d5ef1003836a	46
Abarth Str.	11095	100	7869	49521	66.6	INF DALI LAMPON	●	70b3d5ef1003836e	46
Abarth Str.	11096	100	7868	45533	66.2	INF DALI LAMPON	●	70b3d5ef10038374	46
Abarth Str.	11097	100	7869	25922	65.6	INF DALI LAMPON	●	70b3d5ef1003844c	46
Abarth Str.	11108	100	7869	46182	65.8	INF DALI LAMPON	●	70b3d5ef10038334	46
Abarth Str.	11110	100	7867	49231	66.3	INF DALI LAMPON	●	70b3d5ef10038332	100
Abarth Str.	11111	100	7866	17515	66.1	INF DALI LAMPON	●	70b3d5ef10038312	46
Abarth Str.	11112	100	7869	24667	65.5	INF DALI LAMPON	●	70b3d5ef1003831e	46
Abarth Str.	11113	100	7839	24888	65.7	INF DALI LAMPON	●	70b3d5ef10038323	46
Abarth Str.	11114	100	7866	25596	65.6	INF DALI LAMPON	●	70b3d5ef10038320	46
Abarth Str.	11115	100	7855	25480	29.1	INF DALI LAMPON	●	70b3d5ef1003832b	46
Abarth Str.	11116	100	7869	27075	65.9	INF DALI LAMPON	●	70b3d5ef10038326	46
Abarth Str.	12635	100	7869	46954	65.7	INF DALI LAMPON	●	70b3d5ef10038367	100
Abarth Str.	16353	100	7837	43415	76.9	INF DALI LAMPON	●	70b3d5ef10038318	46
Abarth Str.	16354	100	7837	5376	77.7	INF DALI LAMPON	●	70b3d5ef1003831a	46
Abarth Str.	10951	98	7579	12262	59.5	INF DALI LAMPON	●	70b3d5ef10038314	46



Le Soluzioni (2/4): Assets Control Domain



- **Snap4Cuneo**

- **Monitoraggio e controllo dei servizi**

- Stato dell'infrastruttura ICT (400 device)
- Videosorveglianza (conteggio persone e bici con telecamere termiche e RGB)
- Varchi traffico (conteggio veicoli)

- Riduzione dei costi di manutenzione, riduzione delle condizioni critiche SLA, miglioramento del livello di servizio



Monitoraggio Dettagliato (Mon 4 Dec 10:54:14)

Tabella Device

ID	Stato	Tipo device	Indirizzo	IP	Azioni
TC010182	●	Camera	Cuneo Sud Palo Angolo Parco Giochi	172.16.12.185	
TC010178	●	Camera	Cuneo Sud Palo Alto verso Asilo	172.16.12.181	
TC010181	●	Camera	Cuneo Sud Palo davanti Biblioteca	172.16.12.184	
TC010179	●	Camera	Biblioteca Cuneo Sud Esterna Sopra Ingresso	172.16.12.182	
TC010184	●	Camera	Cuneo Sud Angolo verso Parco Giochi	172.16.12.187	
TC010185	●	Camera	Cuneo Sud Angolo verso Bar	172.16.12.188	
TC010183	●	Camera	Cuneo Sud Angolo davanti Megafresco	172.16.12.186	
TC010203	●	Camera	Rotonda Corso Francia Croce Rossa	172.16.12.203	
TC010204	●	Camera	Rotonda Corso Francia Distributore	172.16.12.204	
SWITCH041	●	Switch Netonix	Rotonda C so Francia Croce Rossa	172.16.15.222	
TC010202	●	Camera	Rotonda Corso Francia Tabaccaio	172.16.12.202	
SWITCH040	●	Switch Netonix	Rotonda C on Francia Croce Rossa	172.16.15.221	

Tabella Dettaglio (TC010185)

dateObserved: 04/12/2023, 08:01

generalStatus: ●

tempStatus1: 1

TEMP STATUS

Valore	Significato
1	Buono stato

Map showing location of TC010185.

Conteggi Telecamere (Thu 28 Mar 12:05:32)

TC010246 Piazza Audifreddi - Media Ogni 10 Minuti

TC010247 Via Roma-Piazza Galimberti - Media Ogni 10 Minuti



Monitoraggio Generale (Fri 2 Feb 17:08:24)

CameraModelP1448-LE

UpsModelRiello

UpsModelSeitec

SwitchModelMicrosense

SwitchModelNetonix

SWITCH027

VALUE NAME: 1721615216

Description	Value	Last	4h	24h	7d	30d	90d	1y	2y	10y
dateObserved	03/02/24 03:05:50 PM	Last	4h	24h	7d	30d	90d	1y	2y	10y
fanSpeed	6165	Last	4h	24h	7d	30d	90d	1y	2y	10y
generalStatus	0	Last	4h	24h	7d	30d	90d	1y	2y	10y
portValue1	48	Last	4h	24h	7d	30d	90d	1y	2y	10y
portValue2	48	Last	4h	24h	7d	30d	90d	1y	2y	10y
portValue3	0	Last	4h	24h	7d	30d	90d	1y	2y	10y
portValue4	0	Last	4h	24h	7d	30d	90d	1y	2y	10y
portValue5	0	Last	4h	24h	7d	30d	90d	1y	2y	10y
portValue6	0	Last	4h	24h	7d	30d	90d	1y	2y	10y

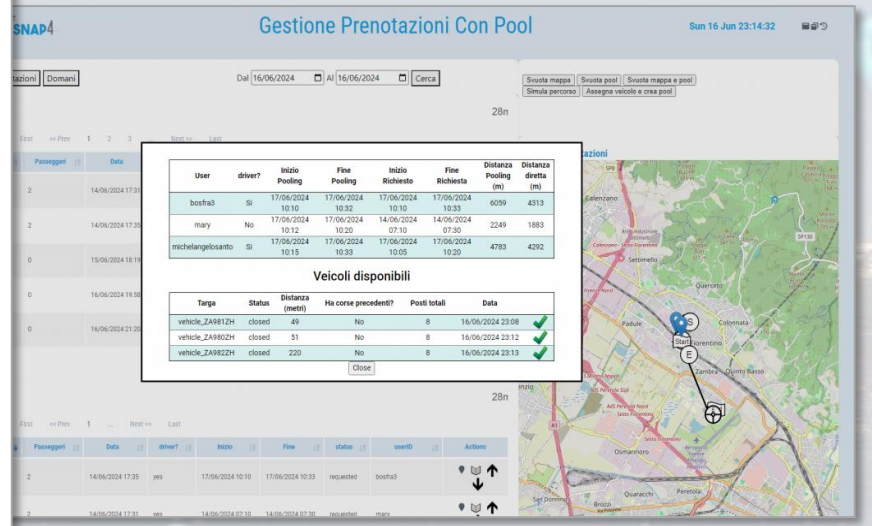
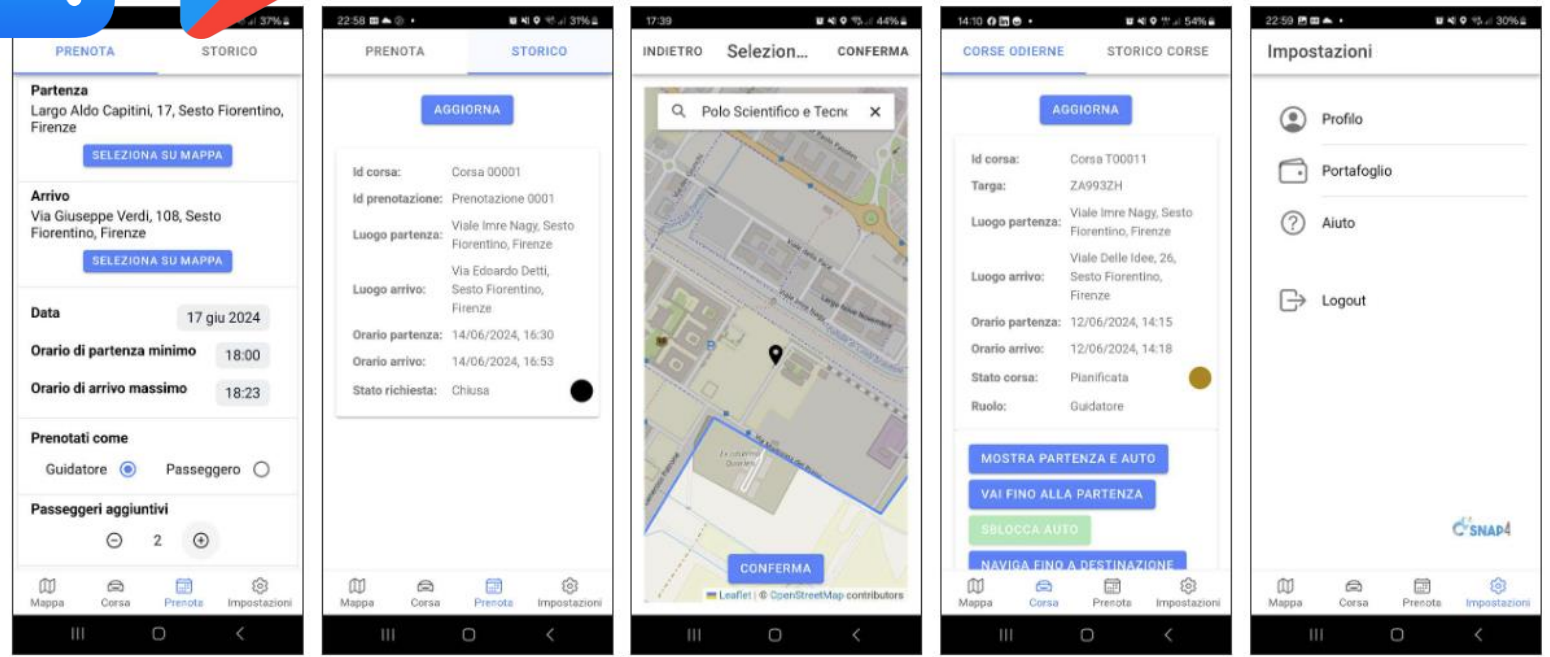
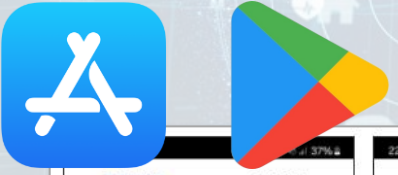
Stato Attuale: 0

1721612145 - GeneralStatus - Andamento Settimanale

Le Soluzioni (3/4): Mobility and Transport Operation and Plan



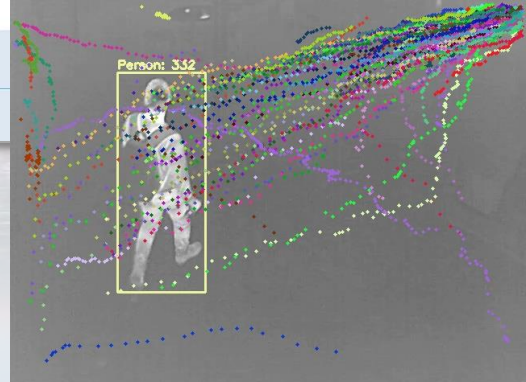
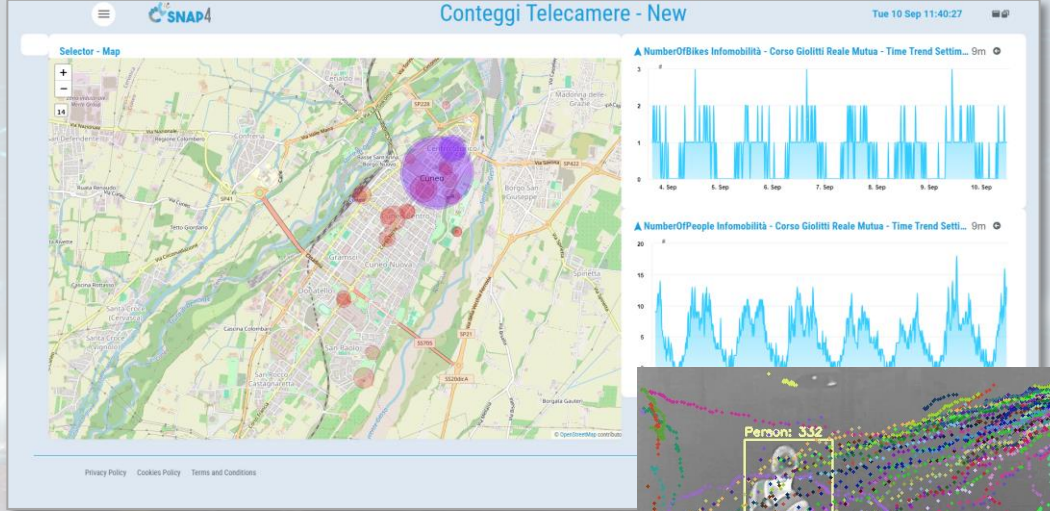
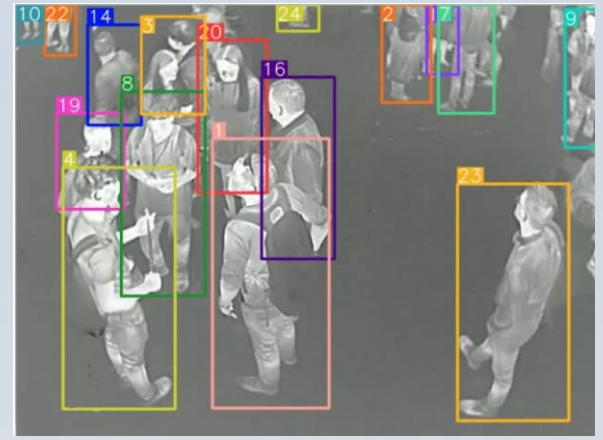
- **CN-MOST: eShare in a Snap**
 - Integrated car sharing and pooling
 - Multiple drivers on the same vehicle
 - Dynamic pooling and e-sharing



Le Soluzioni (4/4): Critical Conditions Monitoring/Detection



- Soluzione GDPR compliant basata su telecamere termiche
- People counting and tracking
- Soluzione indoor e outdoor
- Integrazione con VMS per le segnalazioni di anomalie



Track Record

- Snap4Waste
 - Waste management and optimization
- Snap4Rodhes
 - Single Smart City & Cyber Security Monitoring Platform per Rodi
 - Energy
 - Environment
 - Mobility and Transport
 - ...
- Snap4Altair Chimica
 - Notificatore Smart per il monitoraggio della qualità della produzione
- ENEL X, ITALFERR, Asymmetrica, Unisystems, IDT Global Solutions, CyTA
 - ...



The Gestore Notifiche Laboratorio - GeNotiLab interface displays a table of laboratory data. The table has columns for 'Prodotto', 'Descrizione', 'Unità', 'Valore', 'Minimo', and 'Massimo'. The data rows include various chemical products and their associated parameters.

Prodotto	Descrizione	Unità	Valore	Minimo	Massimo
ALFIFA	Alfalfa come s.s.	g/kg	0,00	0,0	100,0
ASPECT	ASPECTO, LIMPIDO				
ASPECT	ASPECTO, LIMPIDO				
COLOUR	COLORE APHA, 63 [APHA] max 50				
DEN	densità a 25°C, 1,25 [Kg/L]				
DEN	densità a 25°C, 1,25 [Kg/L]				
TITCL	Tenore in Cloro come Cl, 51.1 [% w/w]				



2024 booklets



- Smart City



https://www.snap4city.org/download/video/DPL_SNAP4CITY.pdf

- Industry



https://www.snap4city.org/download/video/DPL_SNAP4INDUSTRY.pdf

- Artificial Intelligence



https://www.snap4city.org/download/video/DPL_SNAP4SOLU.pdf



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