LES ORRES 9 JANUARY 2023

Smart Mountain for tomorrow

19th OCOVA FORUM

IOT NETWORKS AND SMART TERRITORIES

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OCOVA ALPMEDNET

egm THE INNOVATION FACTORY

RÉGION SUD PROVENCE ALPES CÔTE D'AZUR

Hautes-Alpes le département

COMMUNAUTÉ DE COMMUNES SERRE-PONÇON

LES ORRES

CRÉDIT AGRICOLE

egm

THE INNOVATION FACTORY

Major player in **data interoperability** and **standardisation**

End-to-end processing of **business data for decision support**

Historical positioning in sectors with high **environmental impact**

Open data-based decision support solutions.

- Since 2010
- SME, ~15 employees
- >30 EU research projects

- 2 poles
  - Internet of Things (IoT) design office
  - Data platform

- Multiple expertise (sensors, networks, electronics, embedded development, backend and frontend, data science, ...)

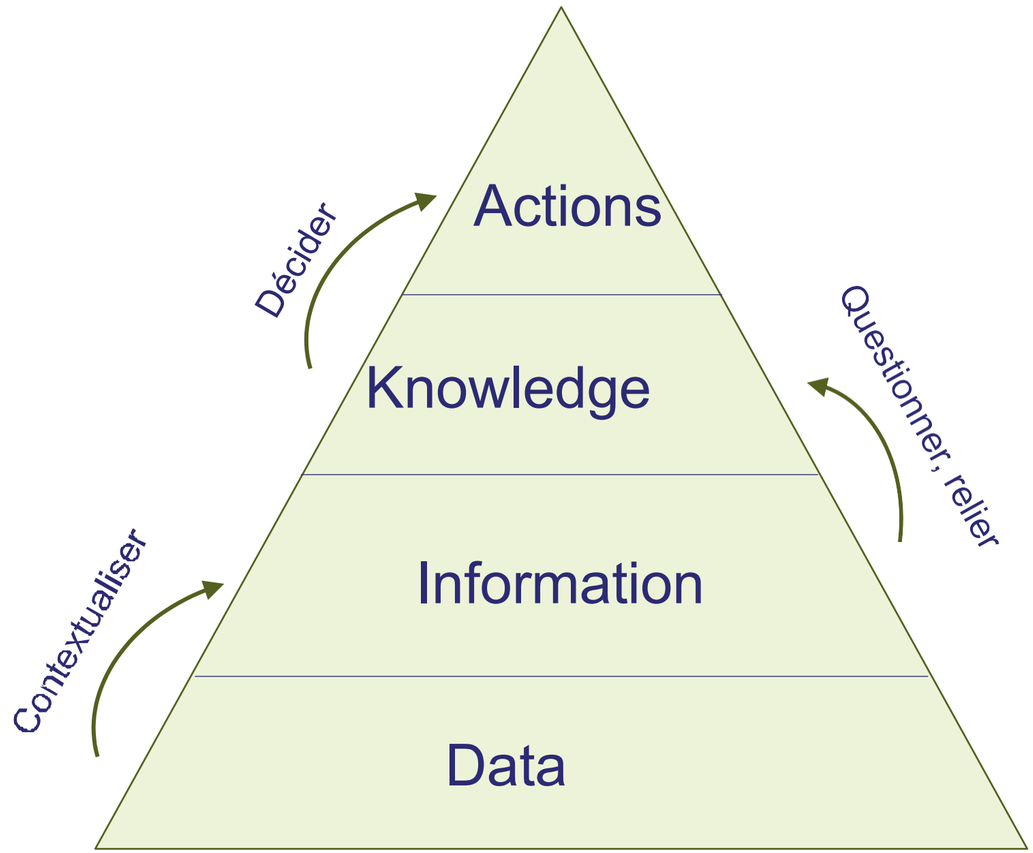
SMART" TERRITORY

What is it about?

- Intelligence
  - Ability to process information to adapt to new situations
  - "Faculty of making artificial objects, in particular tools for making tools" (H. Bergson)

- An intelligent territory is equipped with the capacity to process data, from information to action.

- Digital tools... but not only!



DATA: CHALLENGES AND OPPORTUNITIES

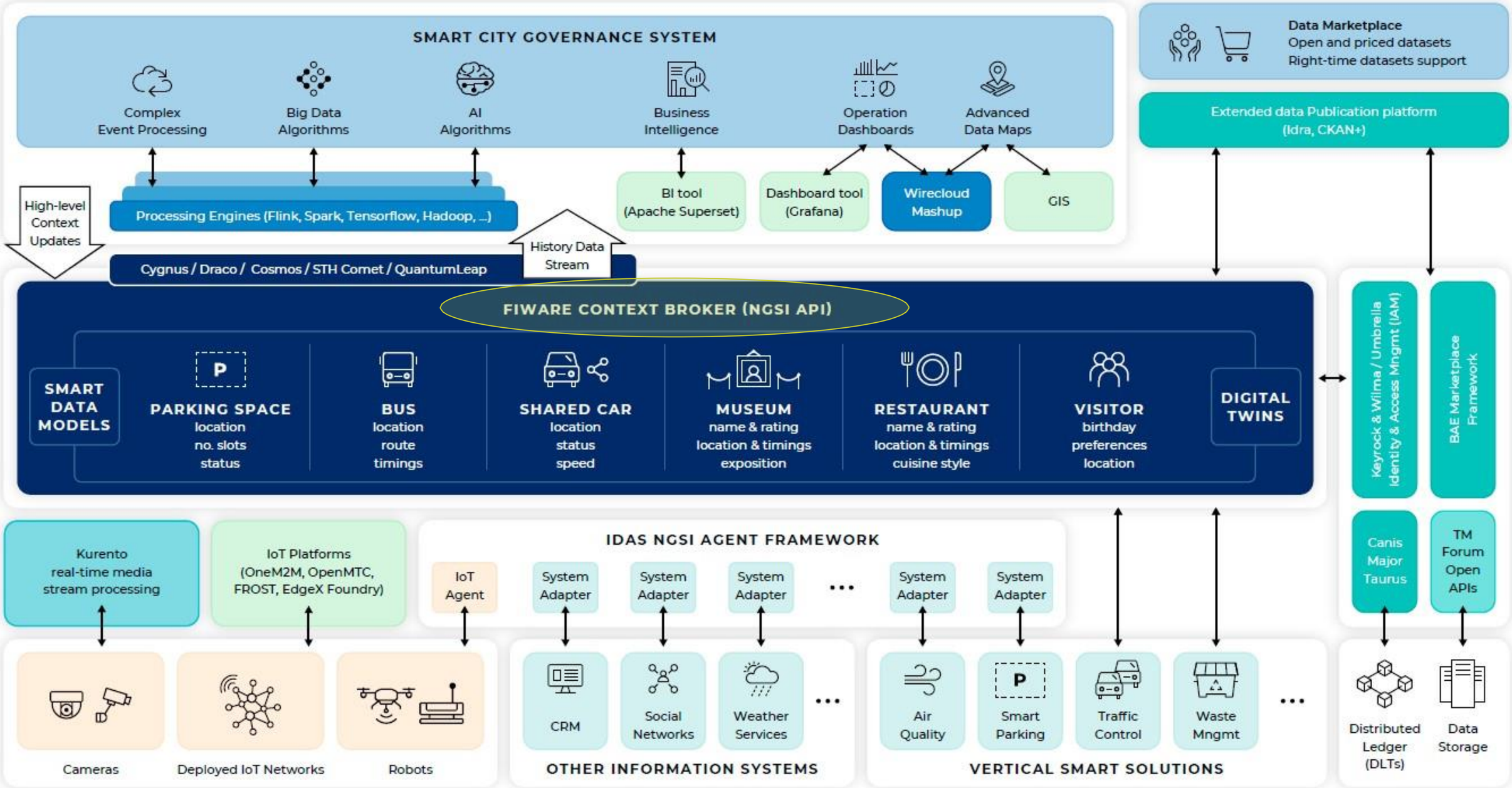
- Store information (data + context)
  - Sovereignty
- Exchanging information
  - Interoperability
- Authorising and controlling access
  - Security

=> Standardised and open-source solution

ETSI NGSI-LD FIWARE Open APIs for Open Minds

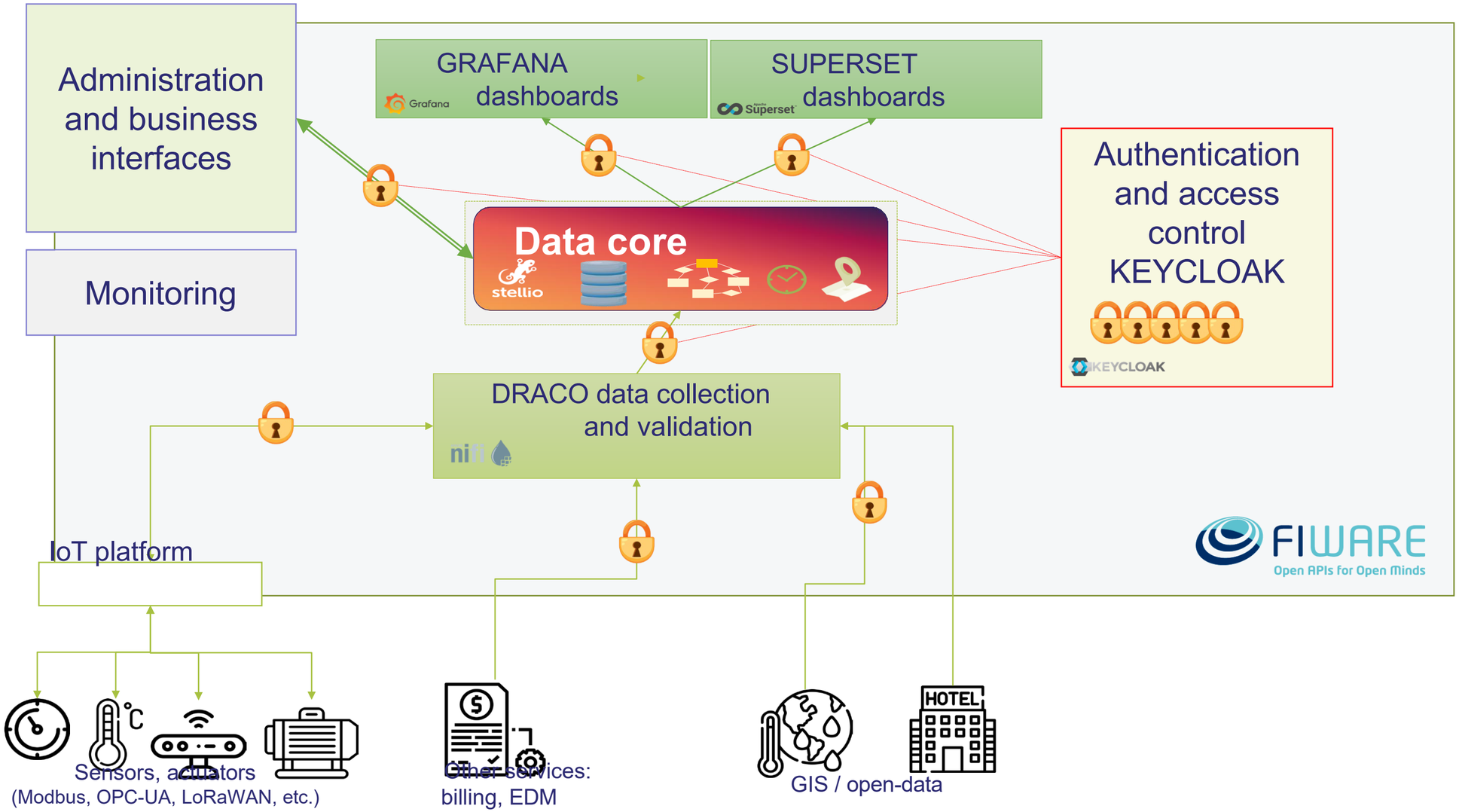
Stimulating innovation and the data economy

The FIWARE Smart Cities Reference Architecture



MULTI-APPLICATION DATA CORE

What is it about?

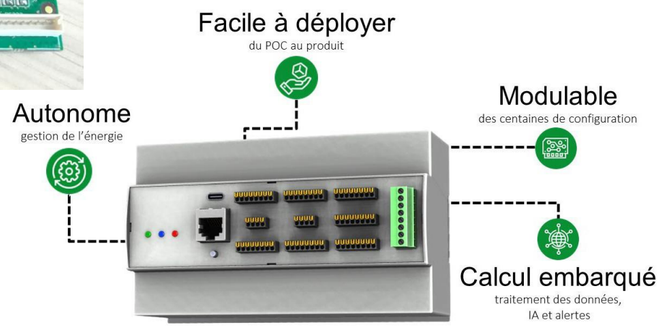


EGM ACCELERATORS

Two products to make the intelligent territory possible

EdgeSpot, versatile IoT card

- Multi-sensor / **multi-network** connectivity (~ 1200 expansion cards and 3 slots)
- Support for standard protocols
- Data logger, edge processing
- Low power & energy autonomy



Stellio, context broker NGSI-LD

- Open-source
- Historical data (time series)
- Geospatial data
- FIWARE catalogue enabler

FIWARE
Open APIs for Open Minds

NGSI-LD

ETSI

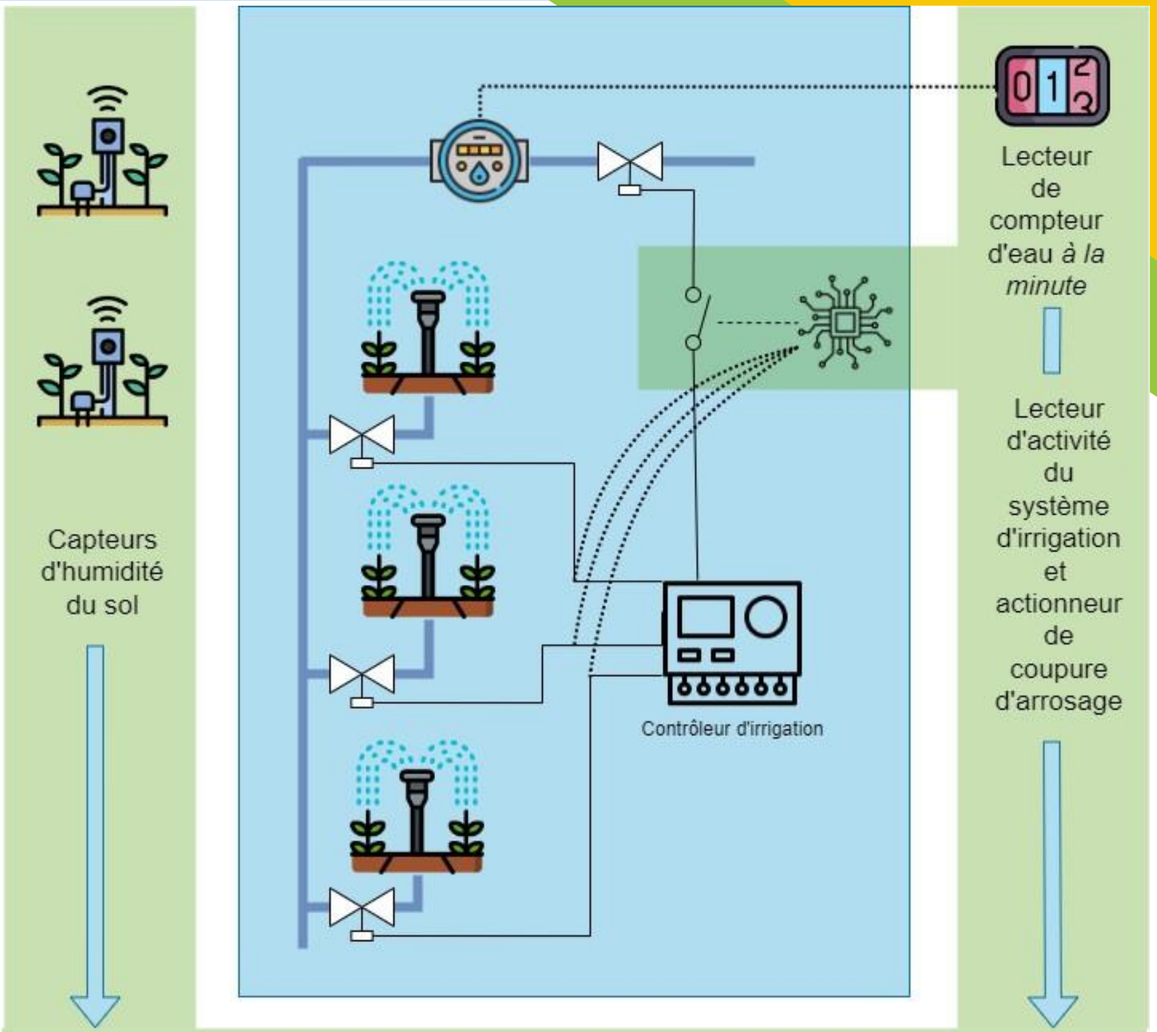
USE CASE - IRRIGATION

Saving water for green areas

Experimentation for the city of Menton

- Detection of irrigation schedules
- Up-to-the-minute water meter

- Water balance / irrigation optimisation predictions (-40%)
- Leak detection
- Few sensors but lots of information
- Cross-referencing of various sources (weather, water consumption, irrigation programmes)
- Dashboards, mobile application

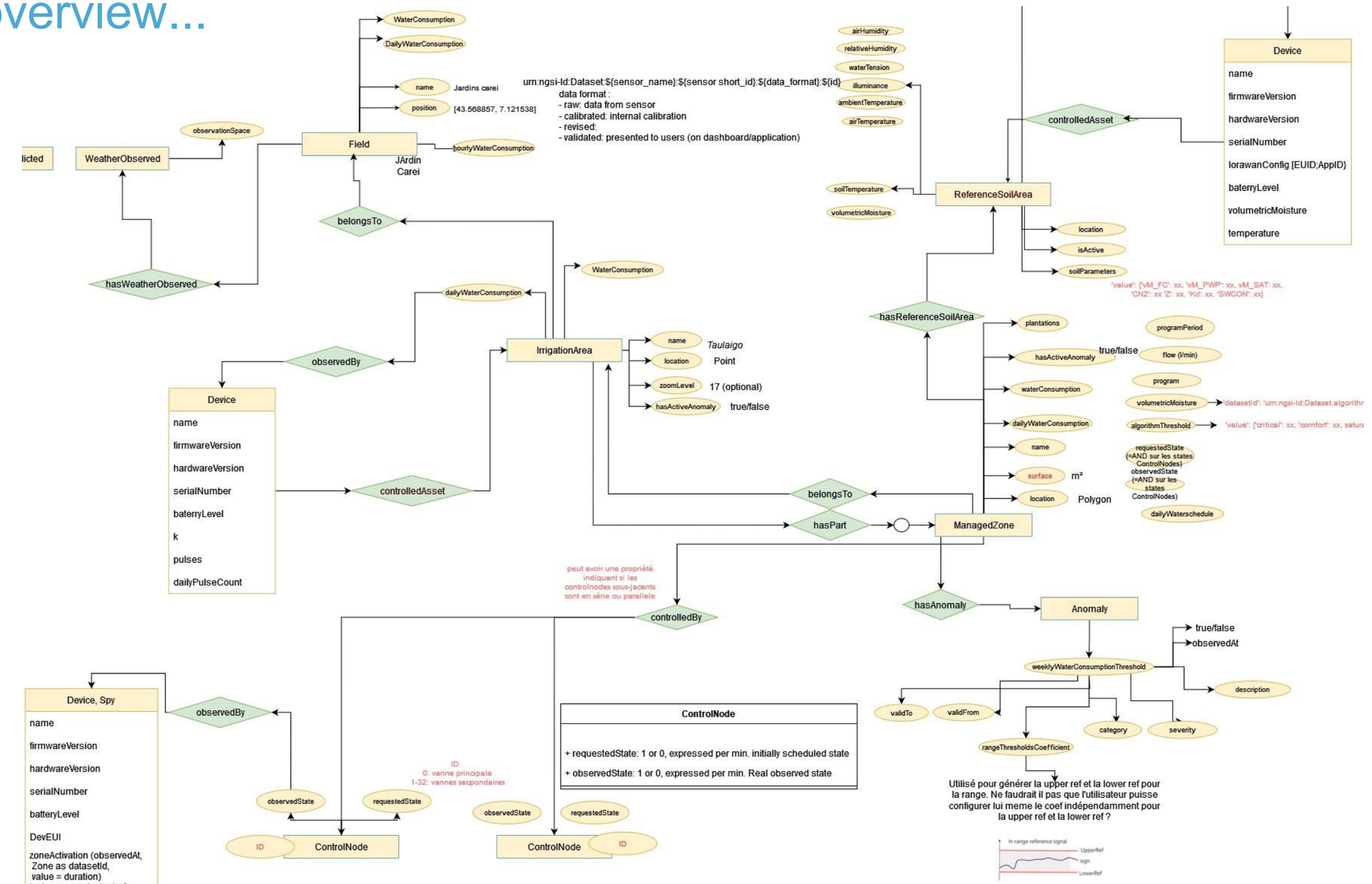


Solution EGM pour une irrigation optimale

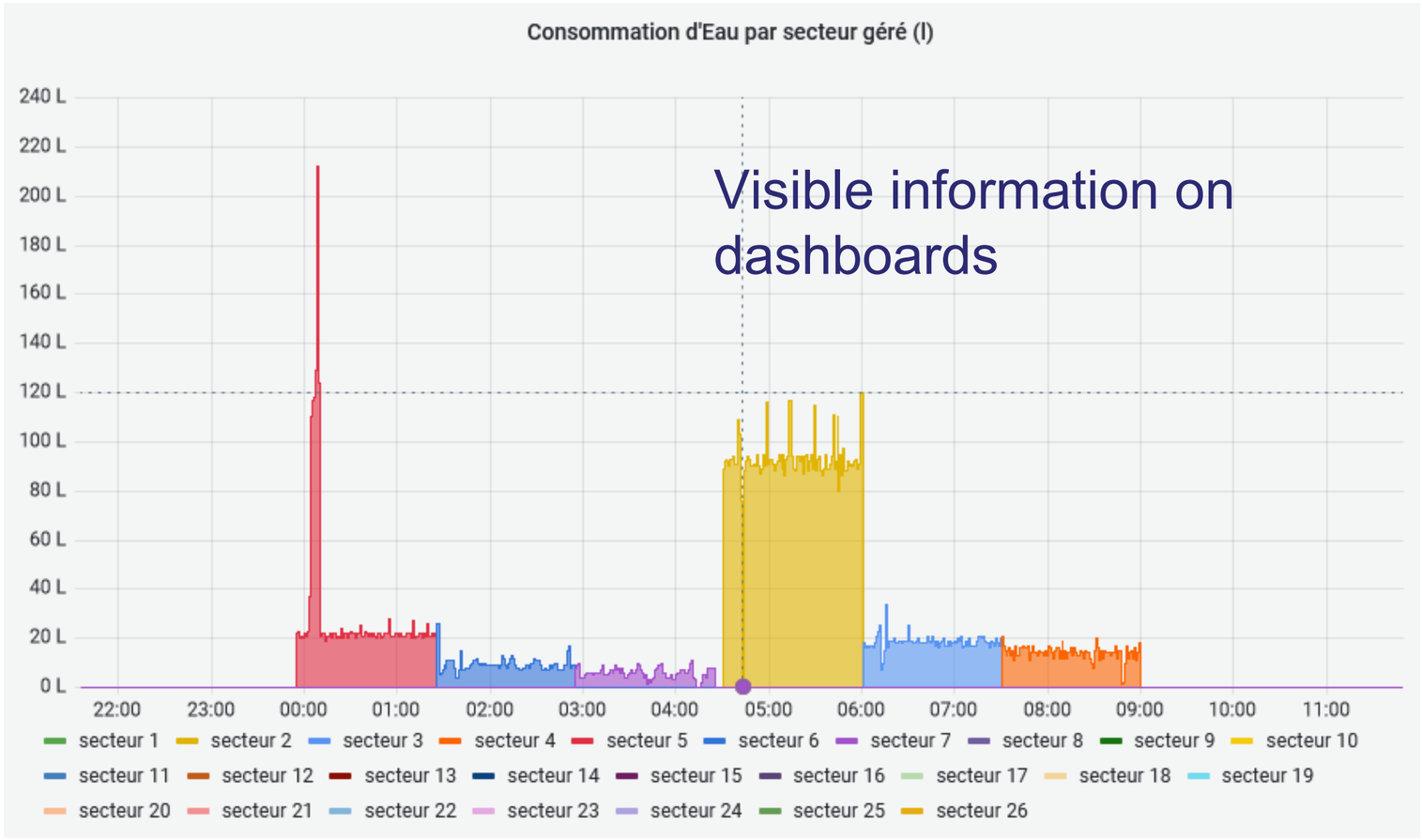
- Recueil et stockage des données
- Algorithmes de prévision de l'état hydrique du sol
- Recommandations de temps d'irrigation
- Limitation des temps d'arrosage

DATA MODEL

A small overview...

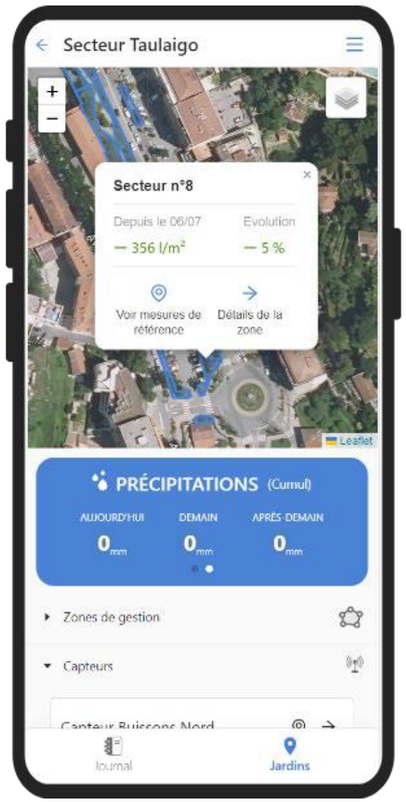


Smart Data Models



Visible information on dashboards

Mobile application to decide and act



USE CASE - DFCI ACCESS

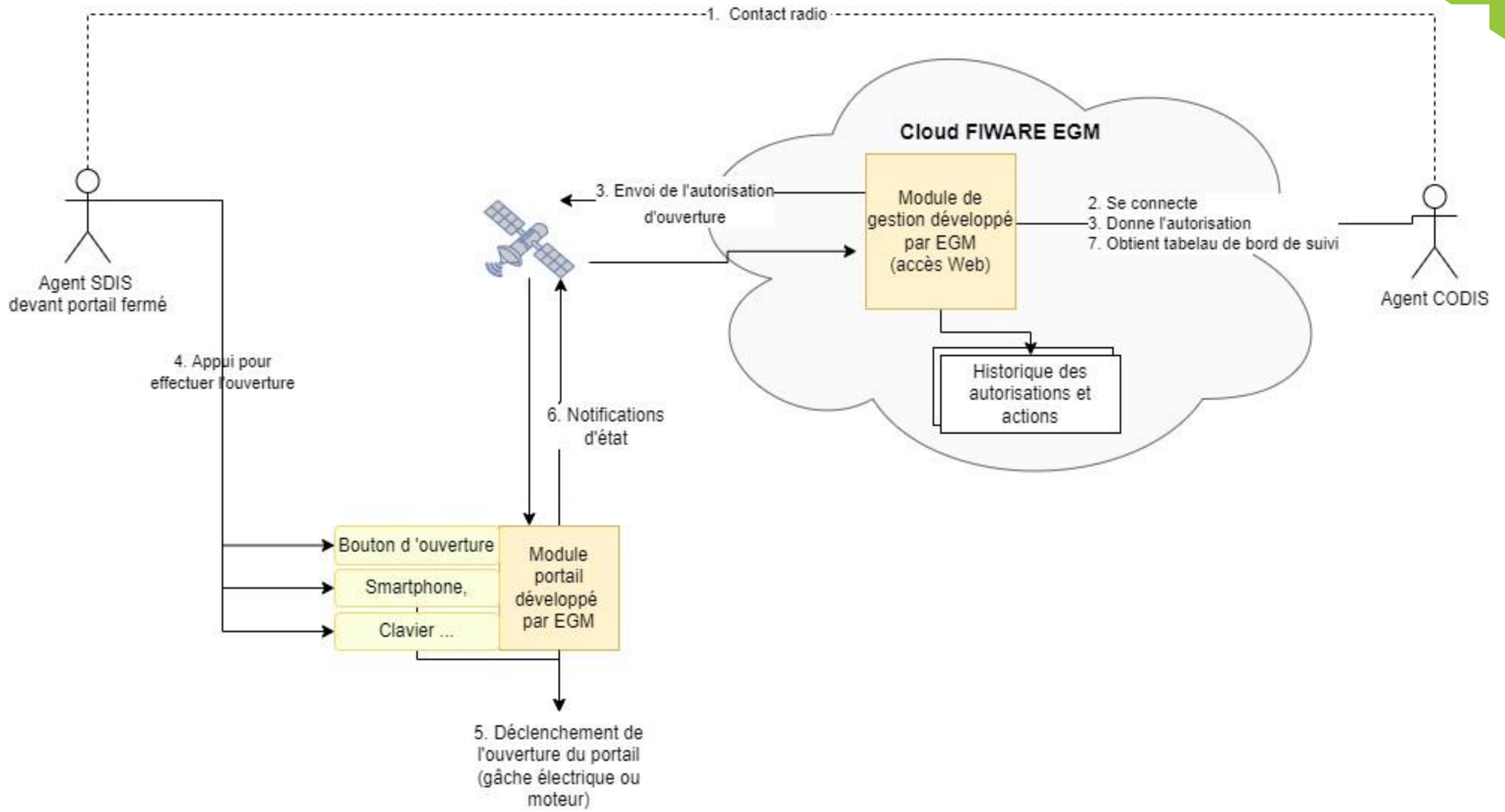
CA Provence Verte, SDS 83, PNR Ste Baume, COFOR 83 / SUD Region

- **Actuation**

- Satellite links
- Autonomy
- Difficult environment

- FIWARE software bases
- Access key management via the cloud

Start-up in spring 2023



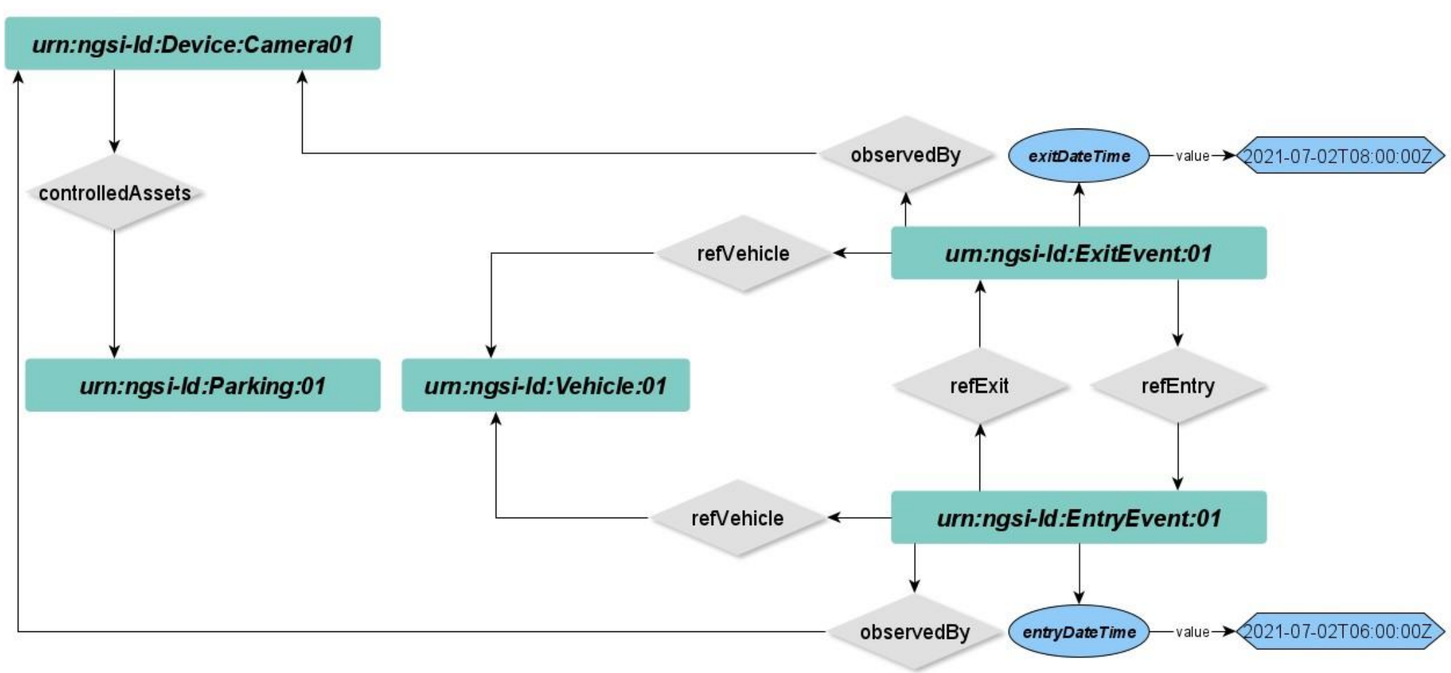
USE CASE - CARPOOL PARKING

Conseil départemental des Pyrénées Orientales (66)

- Detection of the various types of use of the drop-off zone, carpooling, long stays, etc.
- Statistics by type of user
- Automatic monthly report
- Estimated impact on CO_2

- Respect for the privacy of users
  - ***Edge processing*** / AI in the car park => no image transmission
  - Pseudonymisation of data

- Experimental contract: 3 car parks equipped / 2 years



Stationnements A LA JOURNEE : > 15 heures

Nombre de passages | Entrées | Sorties | Durées | Types de carburants

Total

1,921

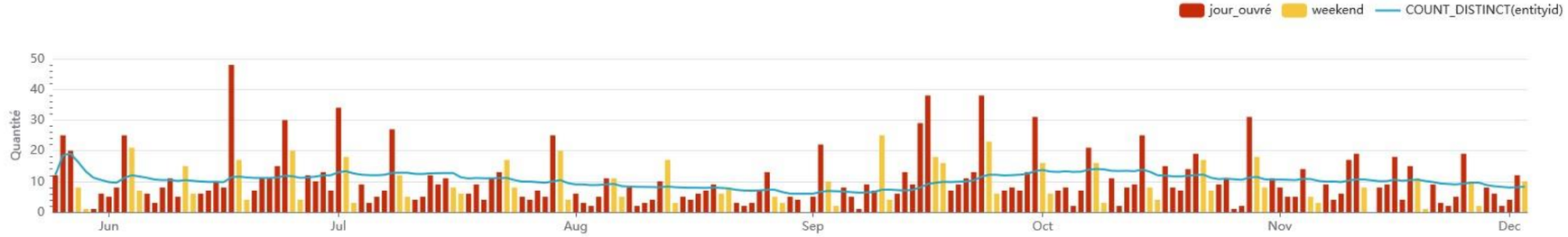
Jours ouvrés

10
passages/jour

Weekends

9
passages/jour

Evolution du nombre de passages



Quantité des émissions de CO2 évitées

34
tonnes

Stationnements COVOITUREURS : [5, 15] heures

Nombre de passages | Entrées | Sorties | Durées | Types de carburant

Total

5,670

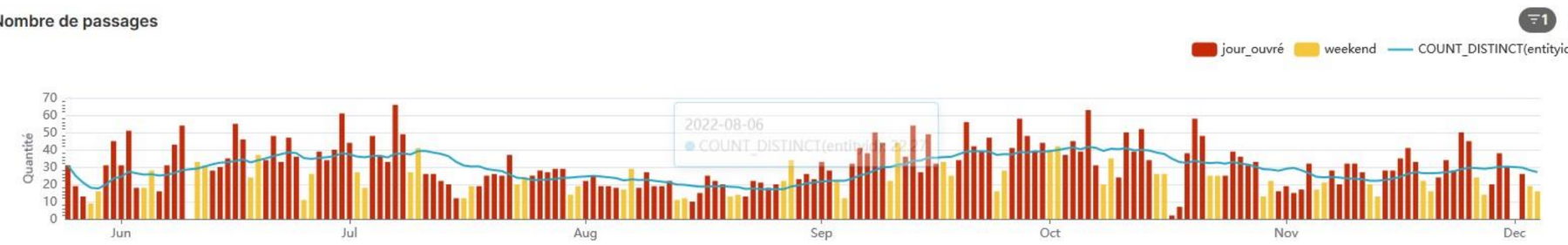
Jours ouvrés

31
passages/jour

Weekends

22
passages/jour

Nombre de passages



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MERCI POUR VOTRE ATTENTION
THANK YOU FOR YOUR ATTENTION

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