



kipsum
energy efficiency

**Let's build your digital twin together to reduce
your energy bills and help achieve carbon
neutrality**

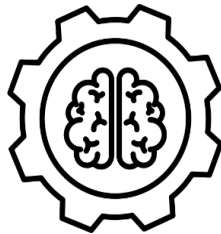


The product

Kipsum has designed a plug and play connected energy manager that minimizes consumption with a digital twin and artificial intelligence



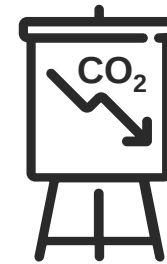
+2 Mm²



**between 10 and
30% energy
savings**



**ROI < 1
year**



**- 15 to - 30
kWh/year/m²**



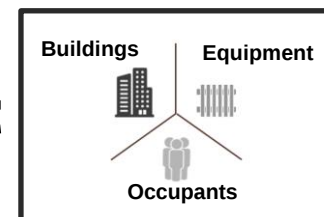
**Labelled Solar Impulse
Efficient Solution**



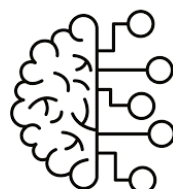


Implementation

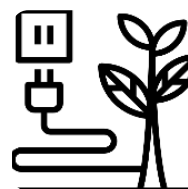
A standardized process at Kipsum



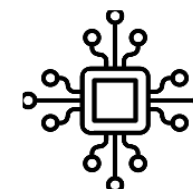
Site identification.
Installation of sensors
+ API
• T0 → GO + 1M



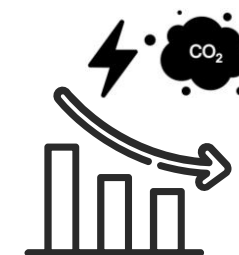
Digital twin
• T0 + 4s
• learning



Open loop control
• T0 +4s à T0 +8s



Installation of
Optimal control
• T0+2M



Annual CO₂ plan
• Recommendations
for implementation



AIRBUS

DAHER

STELLANTIS

FORVIA
faurecia

Schlumberger

ENGIE

RENAULT

MINES
ParisTech

VILLE DE
COURBEVOIE

cetim

framatome

Cerema

a2a

saft

CELSIUS
ENERGY

ArcelorMittal

dalkia
GROUPE EDF

toulouse
métropole

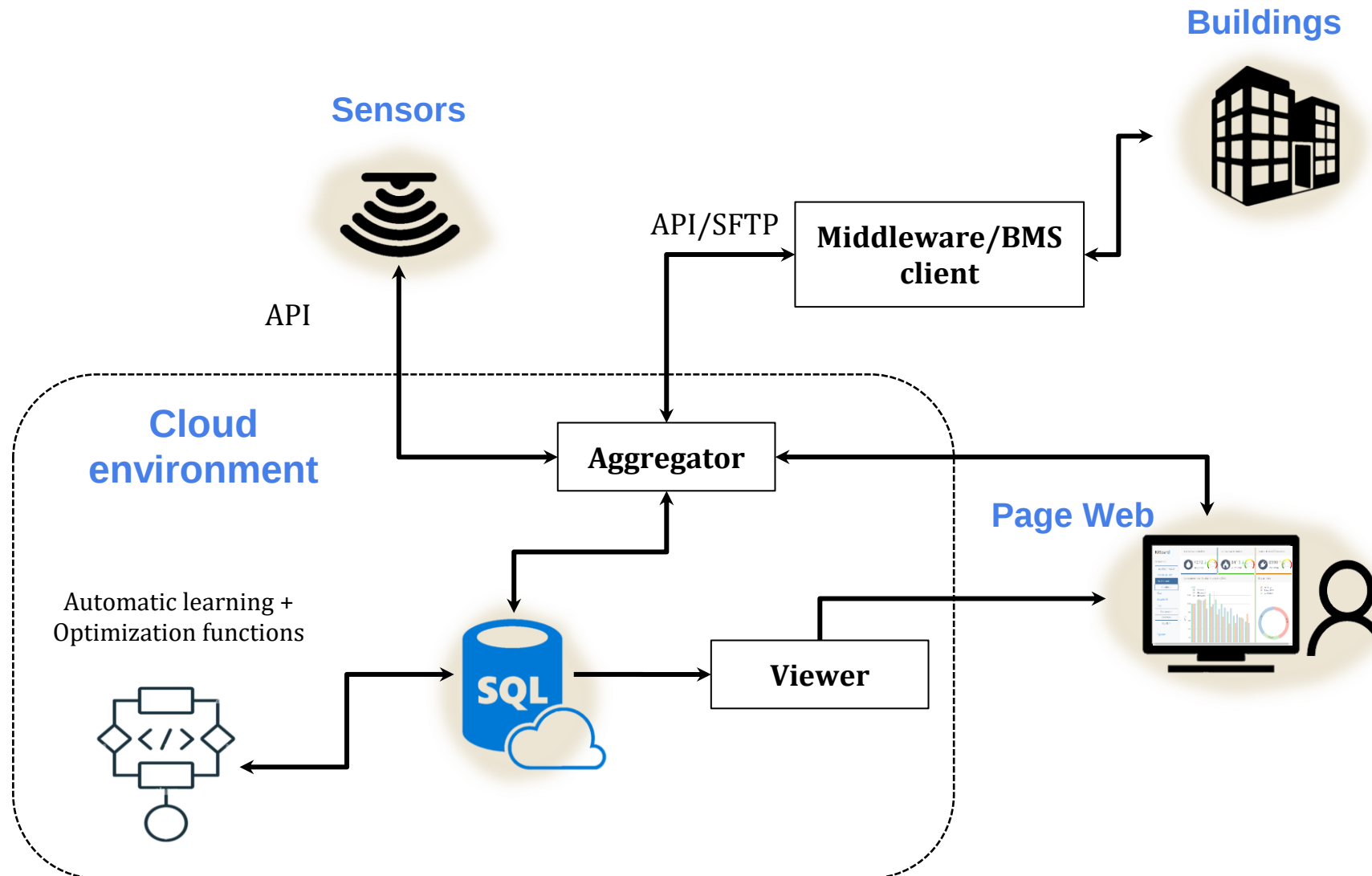
intent
TECHNOLOGIES

TotalEnergies

Strasbourg.eu
euro-metropole



The solution





Added values



Modeling on a physical and mathematical basis: Accelerated learning. In 2 to 3 weeks



Kipsum owns its sensors



Modular solution: Kipsum can control or make recommendations



Targets: tertiary and industrial buildings, processes (painting airplanes at Airbus, ovens) and public lighting



Solution patented at the European level and software to the agency of protection of the programs



Team and results

- » Turnover x2 between 2020 and 2021
- » Positive net results
- » 8 FTE at the end of 2022
- » Turnover >800K€ in 2022
- » A network in universities and industries to recruit key execution skills
- » A strong project management team for multi-million dollar projects
- » Kipsum is not dependent on any one customer for more than 25% of its turnover. Kipsum has an international presence in Italy
- » Kipsum has recently joined the **TotalEnergies**  program at STATION F

SaaS



The Board



Philippe CHEVALIER

Founder - CCO



Rami ABOU-EID

Founder - CEO



Bruno VALLET

Founder - CTO



The only digital twin on the market capable of controlling a complete process in real time



Winners of Med'Innovant 2022



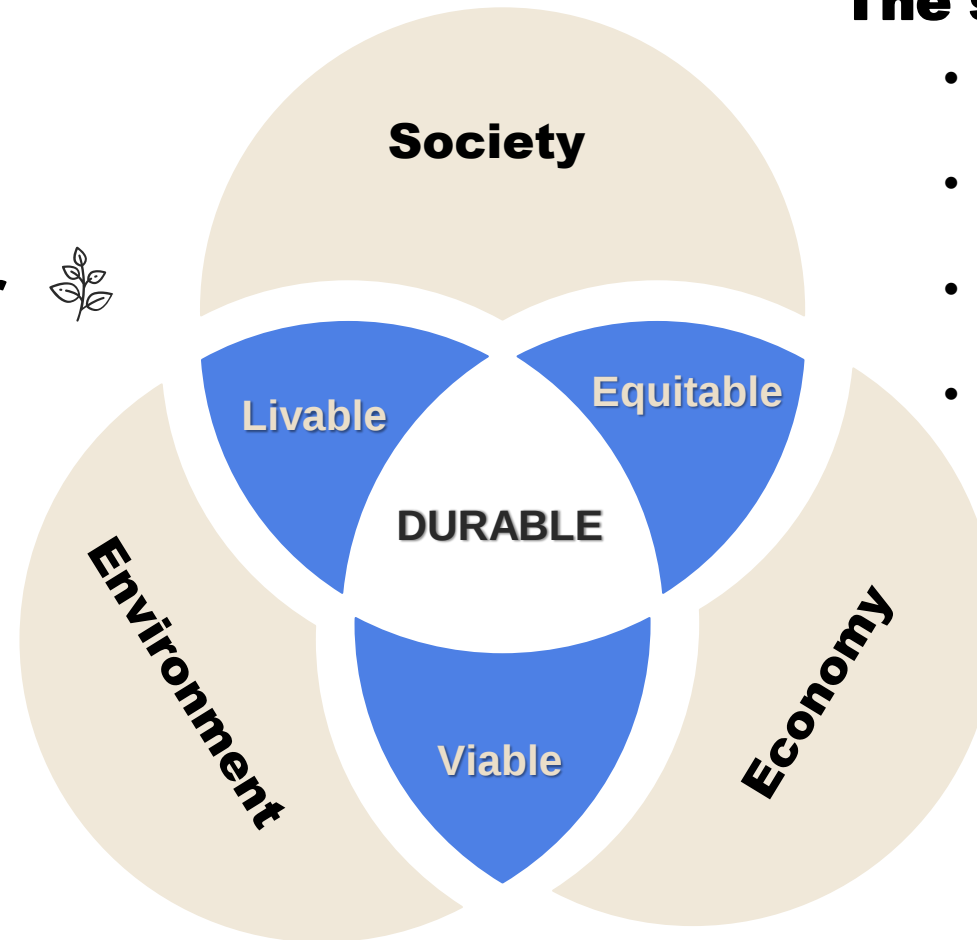
Winners of Smart Port Challenge 2023



Engagements HSE

The environmental pillar

- Reduce greenhouse gas emissions;
- Use natural resources in a responsible and sustainable manner;
- Limiting waste, especially hazardous waste.



The social pillar

- Strengthen equal opportunity and diversity;
- Ensuring health and safety in the workplace;
- Ensuring full compliance with labor laws;
- Train staff.

The economic pillar

- Satisfy and retain customers;
- Ensure quality of service;
- Support local suppliers;
- Pay invoices on time;
- Be transparent with investors.



Thank you for your attention



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Details about :

- ✓ *The installation phase*
- ✓ *The subscription and the services*
- ✓ *The technological advantages*

The installation phase

- ▶ Visit of the site, definition of the needs, meeting with the technical and IT interlocutors
- ▶ Structuring of the database, definition of the sensors to be installed, definition of the necessary information exchanges and breakdown of the energy bills
- ▶ Implementation of a reliable measurement of the thermal and energy state, integral modeling of the site, the occupants, the means and creation of the digital twin
- ▶ Progressive implementation of an optimal manual control with a technical contact person by separating the buildings and the industrial equipment
- ▶ Exchanges with the IT contact to automate the implementation of the optimal order integrating the planning of the rounds and the returns on invoices
- ▶ Technical and economic validation of the customer to move on to the subscription phase

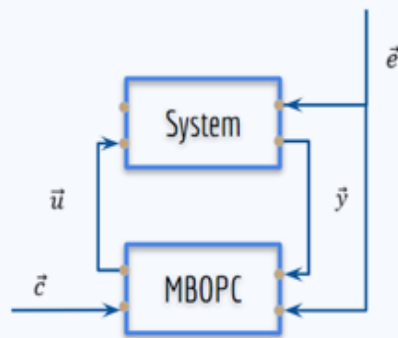
The subscription and the services

- ▶ Energy performance KPI with the ISO site manager
- ▶ Carrying out technical support and other training
- ▶ Maintain the whole system of sensors, cloud, recommendations and optimal controls
- ▶ Monitoring of predictive maintenance of buildings and industrial equipment
- ▶ Identification of possible additional optimization paths
- ▶ Periodic visit of the site with presentation of new R&D developments

The technological advantages

Optimization according to dynamic loads (sunshine, occupancy, etc.) will be implemented via a remote management system that will ensure the implementation of a closed loop between our IT infrastructure and the installations in place. The principle is based on the optimal predictive regulation calculated by a comfort and consumption optimizer using the digital twin.

Exchange principle taking into account the system variables (y), control variables (u) and stresses (e)



Principle of optimal predictive control over a 24-hour horizon

