Conseil en technologies / Service numérique / Ingénierie informatique

Partnerships for Horizon Europe

8 rue des Pirogues de Bercy, CS 42112 75580 PARIS CEDEX 12

Speakers

Paul Ortiz
Manager R&D

PhD in Computer Engineering:
"Energy optimization for carbon emission reduction”

Expertise:
Network communication, Internet of Things, Optimization

Pedro Seger
Manager R&D

PhD in Electrical Engineering:
"Optimization and management of second-life batteries”

Expertise:
Microgrids, Renewable Energies, Optimization, Batteries

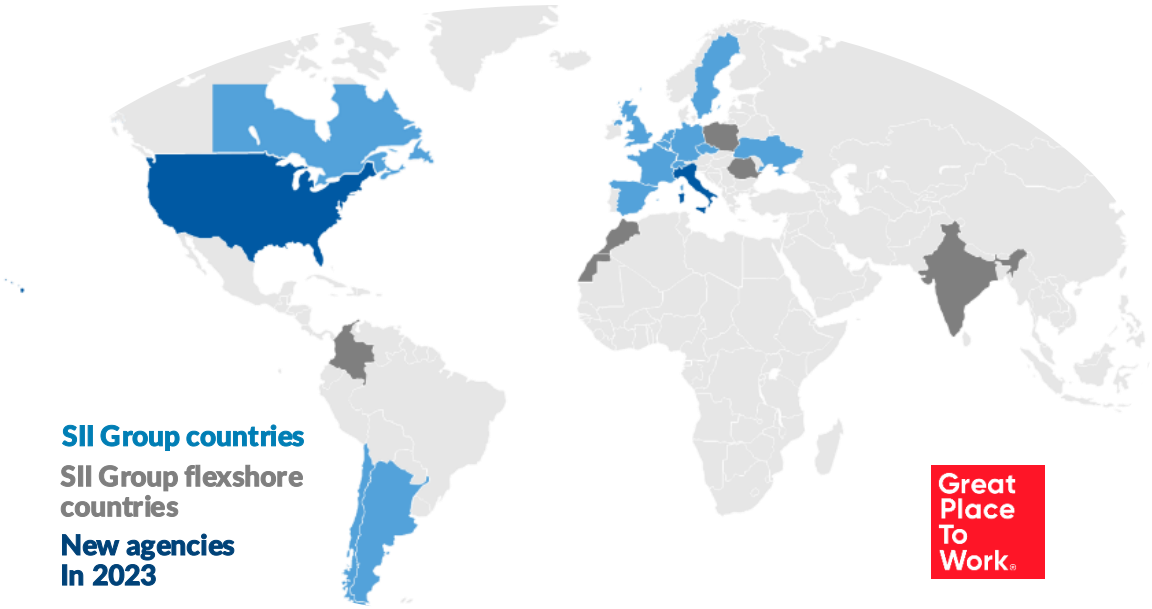
European project experience:
INTERREG NWE RED WoLF
EDF EDINAF

1

SII

1 SII Group – Developing a digital & sustainable world together

Hybrid and Global player in Engineering & IT Services



Great Place To Work.

AIRBUS THALES orange Schneider Electric NAVAL GROUP ENGIE Continental VW
ALSTOM DASSAULT AVIATION EDF bouygues HITACHI amadeus SAFRAN ABB

€ 1,12b Estimation of Turnover 2023/24 (~ +10% vs Year-1)

40% France
60% International

16 000 consultants in **21** countries

>70% of our activities through mature delivery models

- **21.2%** - AeroSpace Defense
- **18.3%** - Banking Insurance
- **10,7%** - Telecoms
- **7,6%** - Energy
- **7,5 %** - Automotive / Transportation
- **34,7%** - Industries, Services, Healthcare, Retail

National hubs and interconnected laboratories

OUR MANTRAS

- Respond to the technological challenges of our society and our customers
- Experiment and develop new technologies
- Developing the expertise of tomorrow

FUTURE OF TRANSPORTATION

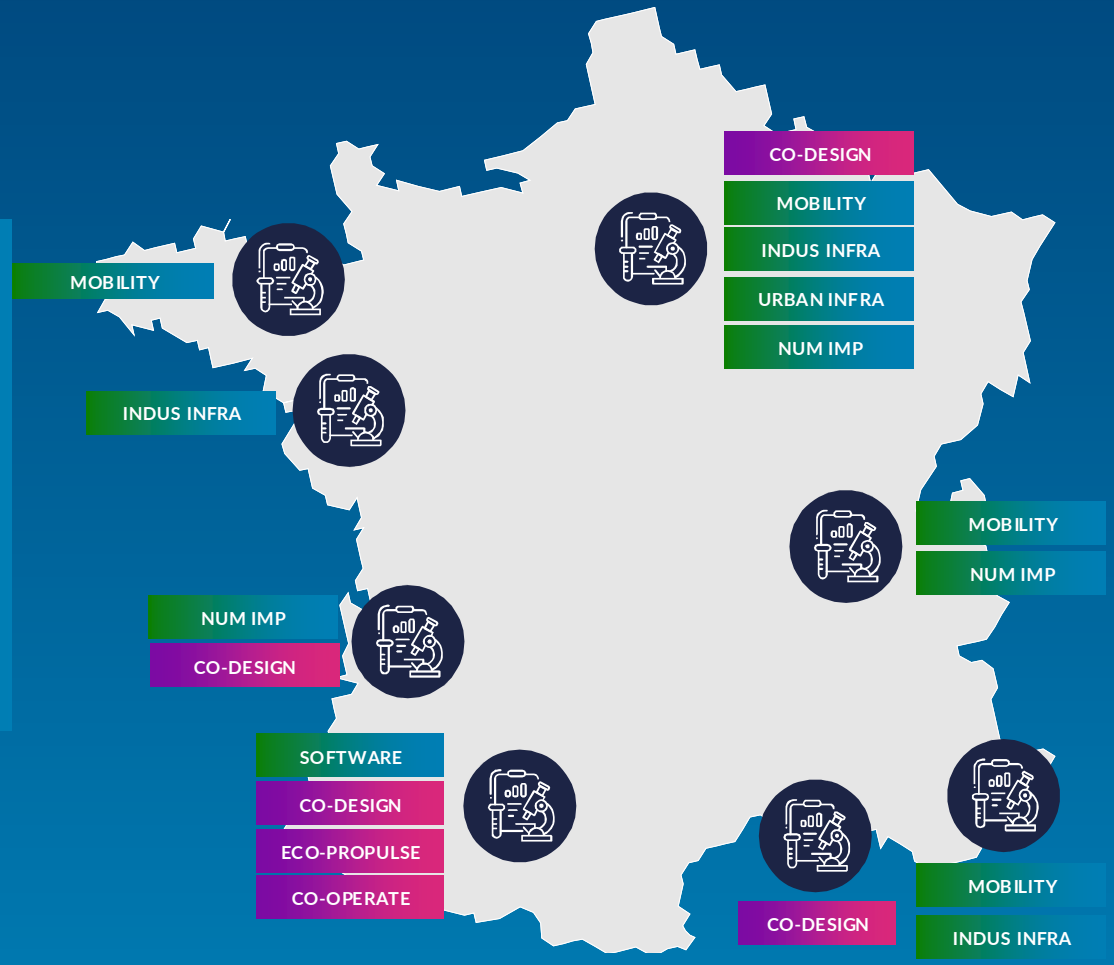
Eco-responsability, autonomy, accessibility

- CO-OPERATE
- ECO-PROPULSE
- CO-DESIGN

FUTURE CITY

Connected, inclusive, sustainable territories

- MOBILITY & ACCESSIBILITY
- NUM& PROC. IMPROVEMENT
- URBAN INFRA
- INDUSTRIAL INFRA & SECURITY



180 employees

- 100 FTE in France,
- 30 PhDs,
- 10 experts,
- 40 interns.

40 projects

1 Competencies at SII

SOFTWARE DEVELOPMENT

- **SOFTWARE DEV**
- **EMBEDDED SOFT**

ARTIFICIAL INTELLIGENCE

- **MACHINE & DEEP LEARNING**
  MLOps
- **GENERATIVE IA**
- **NLP**
- **CLOUD COMPUTING**
- **COMPUTER VISION**
- **PREDICTION MODELLING**
  Anomaly detection, time series analysis

ENGINEERING

- **SIMULATION / OPTIMISATION**
  Multi-objective optimisation, meta-heuristics
- **ENERGY ENGINEERING**
  Sizing and control of power plants, grid services
- **ELECTRONICS**
- **MBSE**
- **AUTOMATIC**

HUMAN-COMPUTER INTERACTIONS

- **HUMAN-MACHINE INTERFACE**
- **HUMAN FACTORS**
- **BEHAVIOUR ANALYSIS**

2

Our projects

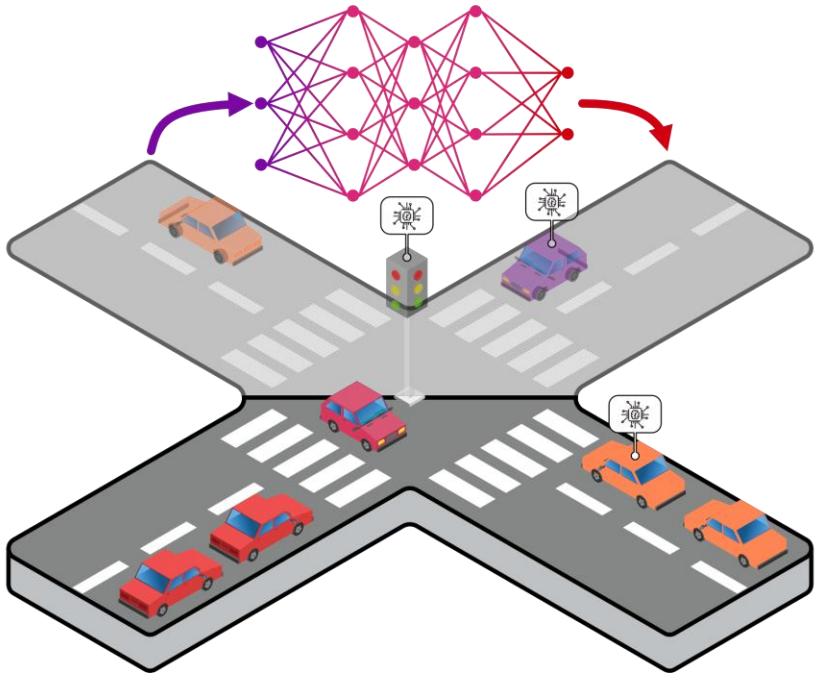
2 R&D Projects - BonsAI

R&D Problem

- Missing a real-time control system for optimizing mixed urban traffic (autonomous and non-autonomous) at city scale.

Innovation Keypoints

- Optimizing urban mixed traffic based on **AI / Deep Reinforcement Learning** (DRL)
- Build **Digital Twin** (DT) for traffic management and standards implementation
- Deploy Multi-Agent control solution to fit **Edge / IoT** based optimization



Partners

UNIVERSITÉ CÔTE D'AZUR | INSTITUT D'INNOVATION ET DE PARTENARIATS IMREDD

TECHNICKÁ UNIVERZITA V KOŠICIACH

HORIZON-CL5-2026-01-D6-05

“Approaches, verification and training for Edge-AI building blocks for CCAM Systems (CCAM Partnership)”

- Possible contributions on following aspects:
  - Validated approaches incorporating edge-AI solutions into the action chain from perception and decision-making up to actuation of advanced CCAM functionalities - both on-board and on the infrastructure side - for systemic applications such as traffic management and remote control, as well as tools and approaches for training of such functionalities, which require optimised and verified edge-AI models.

- Competencies:
  - We work on traffic management using CCAM
  - We have competencies on edge and AI
  - We are very interested in working on cloud-edge-IoT technologies

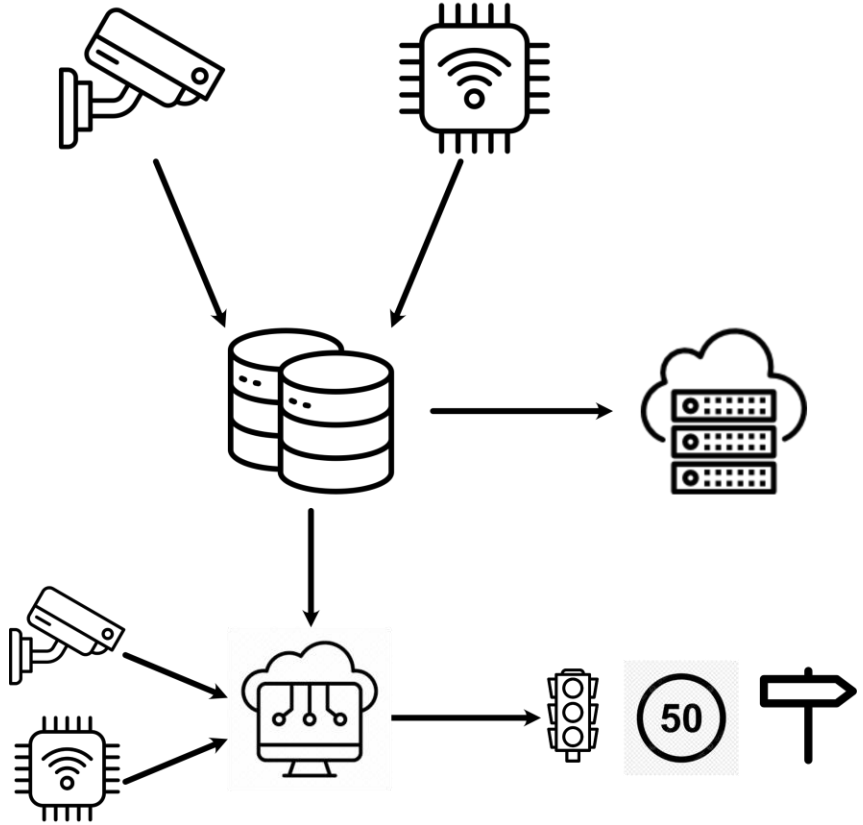
2 R&D Project - Idea

R&D Topic

- Accident prevention and road crashes avoidance

Innovation Keypoints

- Using **Roadside Unit** (RSU) and **embedded sensor** to create dataset road crashes paterns
- Build **Digital Twin** (DT) for identifying risky behavour in real-time based on IA classification
- Deploy **Edge / IoT** system to inform driver and act to reduce/limit road crashes risk and gravity



HORIZON-CL5-2026-01-D6-14

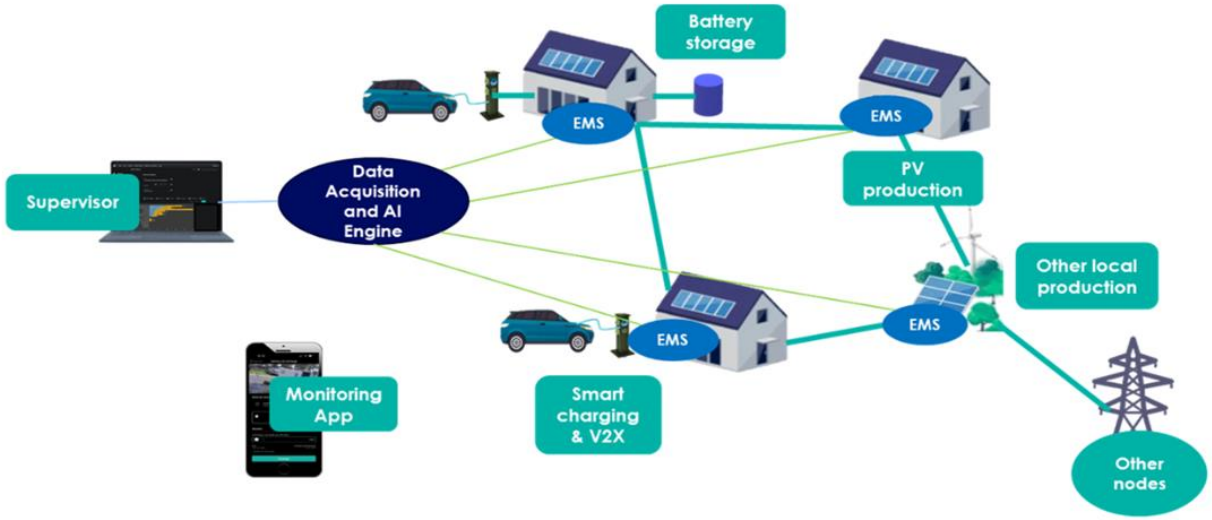
“Predicting and avoiding road crashes based on Artificial Intelligence (AI) and big data”

- Possible contributions on following aspects:
  - Predictive identification of safety-critical situations based on data from multiple sources and enabling real-time interventions to avoid crashes;
  - Enhanced monitoring of traffic flows and incorporation of traffic flow variations and patterns in real-time crash prediction, which will also lead to more effective traffic management by foreseeing unexpected or disruptive events.
  - Development of an artificial intelligence (AI)-enabled digital twin of traffic and infrastructure. This would integrate historical, current, and forecast data, including crowdsourcing and infrastructure sensors, infrastructure topology and condition, along with environmental (e.g. local weather and visibility) and road and traffic conditions. Such a digital twin can allow monitoring and preventively optimising both safety and traffic flow, equally addressing congestion and resilience issues.
- Competencies:
  - IA / Modelling / Digital twin /
  - SII works on simulating traffic flow using a digital twin of traffic and infrastructure. The objectif of our project is to optimise traffic flow integrating autonomous vehicles

2 R&D Project – Decentralized Energy Communities (DECO)

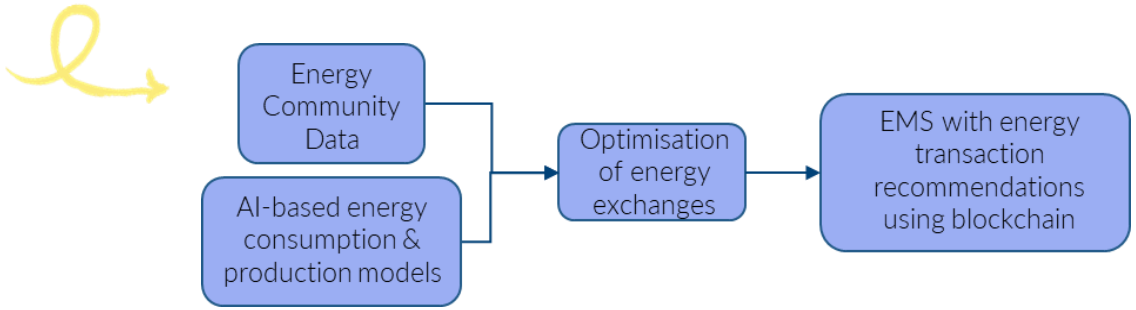
R&D Problem

- How can we improve **energy exchanges** in a community of **prosumers**?



Innovation Keypoints

- Forecasting of individual production / consumption based on an **AI / Deep Learning model**
- Optimized energy transactions to improve **collective self-consumption**
- Development of a **user EMS application** and implementation of a simulated case study
- Blockchain-secured **P2P transactions** between community members



2 HORIZON-CL5-2026-02-D3-20

“Innovative tools and services to manage and empower energy communities”

- Possible contributions on following aspects:
  - Facilitate local energy trading and distributed grid-oriented services using micro market and transactions (e.g., peer-to-peer) and improve the market participation for citizens
  - Enhance the integration of energy communities in European energy grids and increase the renewable energy share and use of flexibility by providing transparent and efficient market-based cost sharing mechanisms
  - Increase synergies using a cross-sectoral approach (e.g., electricity, gas, mobility, heating/cooling)
  - Develop innovative and open-source tools for managing shared energy community assets and optimising energy community management
  - Develop open-source tools for forecasting, prediction and advanced data analysis using AI tools and in-depth data analysis

- Competencies:
  - Development of energy management methods (including grid services and electric mobility)
  - Data analysis and predictions with IA methods
  - Data exchange modelling in an IoT network
  - Development of digital platforms to enhance cooperation

Contacts

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