



DIGITAL TWINS

Visualize today
Simulate tomorrow

July 2022

SIRADEL

- Simulation Software developer
- Geographical Database producer
- 3D City/Territory Digital Twins builder
- Smart City Platforms co-constructor
- An ENGIE company since 2016

Founded in 1994

180+ employees

7 offices (HQ in France, Toronto, Shanghai...)

300+ references in 60 countries

15% of revenues in R&D



SIRADEL'S DIGITAL TWINS A COMMON DATA REFERENTIAL & BEYOND

SIRADEL DIGITAL TWIN APPROACH A UNIQUE COMBINATION OF :

- ✓ **GEODATA** - 3,000 3D cities worldwide, unique production capability with various Level of Detail
- ✓ **DATA** - infrastructures, flows, population, open & private data, alignment and integration...
- ✓ **SIMULATION, AI & ANALYTICS** - mobility, environmental, connectivity, energy, resilience...
- ✓ **DATAVIZ** - dynamic 2D/3D rendering, dashboarding
- ✓ **COLLABORATIVE** - Web solution
- ✓ **CLOUD** - native SaaS solution based on AWS, tailor-made deployment on any cloud environment



SIRADEL'S DIGITAL TWINS USE CASES DRIVEN



USE-CASE & CUSTOMER NEEDS CENTRIC

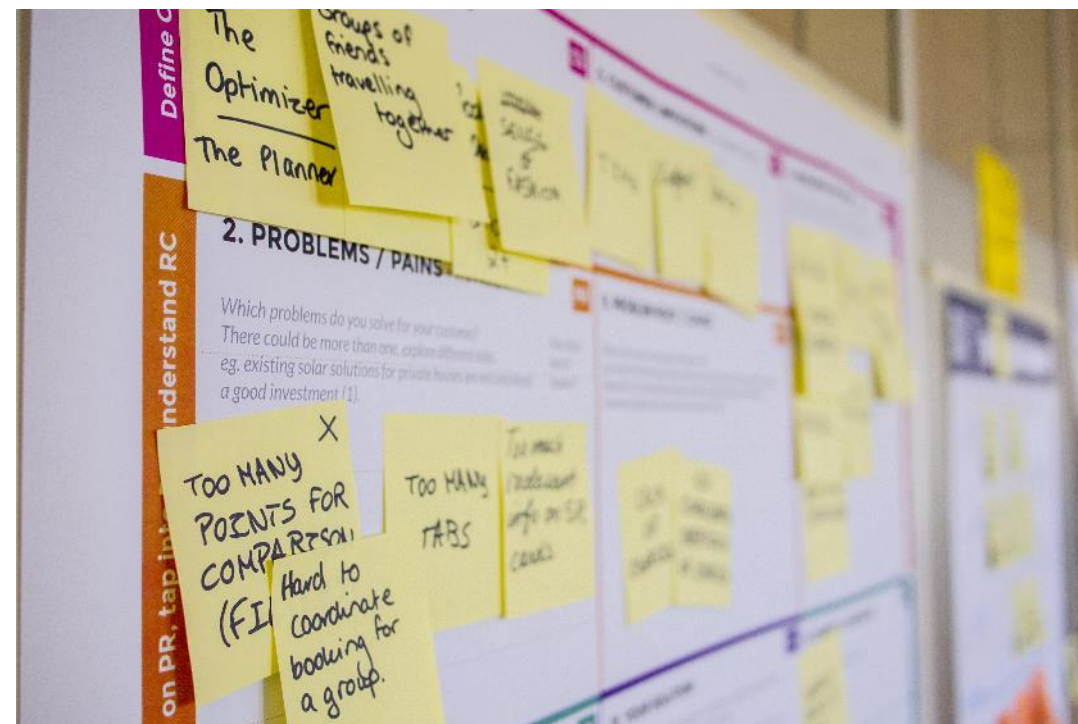
- ✓ Support cities in their **digital, environmental, economic, societal** and **resilience** challenges.
- ✓ Assist our customer on their **decarbonation** path to becoming **carbon-neutral**
- ✓ Help **sustainable urban planning**
- ✓ Validating public **policies** and **investments**.
- ✓ Improving **design & operation** of urban services

SIRADEL'S DIGITAL TWINS

USE CASES DRIVEN WITH PROVEN METHODOLOGY

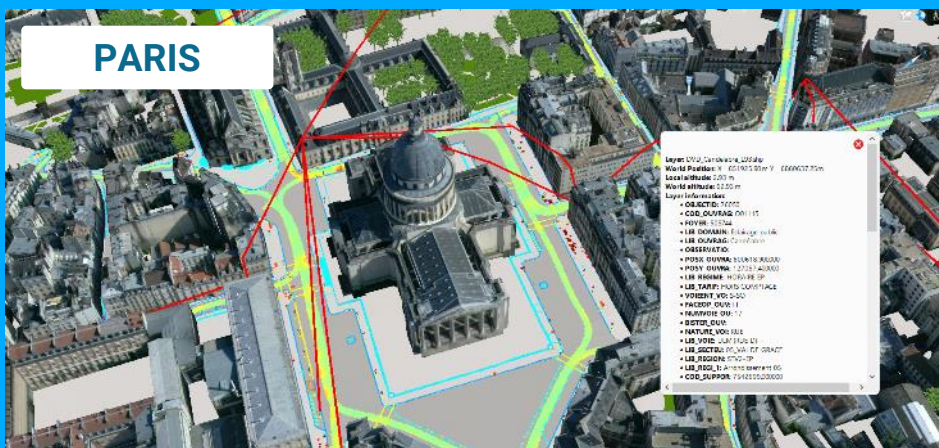
A PROVEN METHODOLOGY

- ✓ End-to-end support, from the user needs definition to the development of real use cases
- ✓ Open solution, favor local ecosystems of partners & collaboration
- ✓ Data governance & privacy
- ✓ A specific internal & vertical expertise via our pool of Smart City Managers
- ✓ New business models



3D CITY MODELING

One of the biggest 3D Geodata provider worldwide
Unique production capability



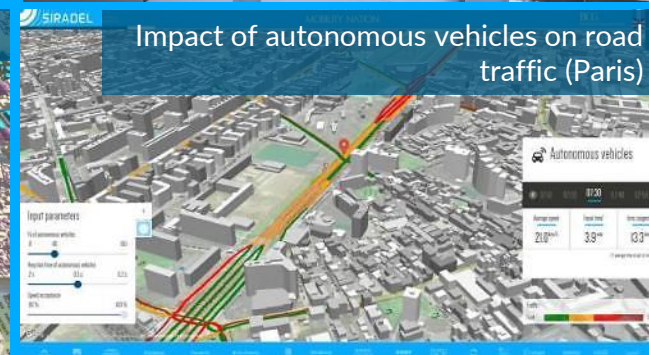
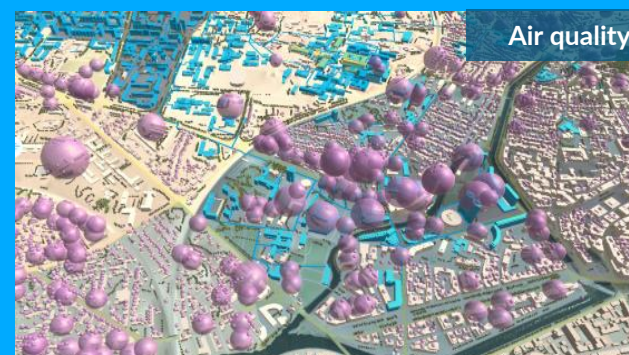
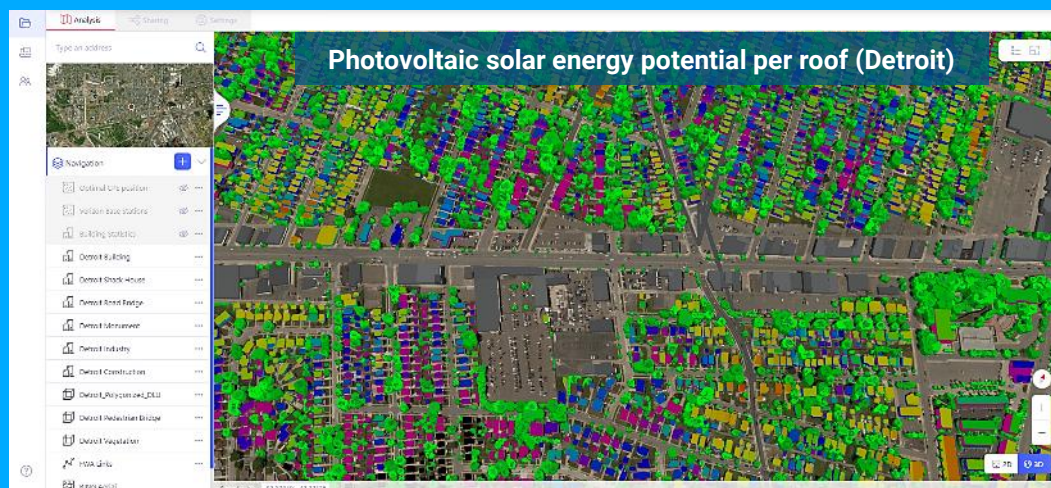
3,000 cities in 45 countries
Production capability worldwide at large scale

SIRADEL SIMULATION CAPABILITIES

SIMULATION SERVICES AI & URBAN INDICATORS

5G/IoT CCTV Air Quality Carbon
Road traffic Urban Heat islands
Public lighting Photovoltaics Noise
Soil permeability...

Ex. of KPI (ISO): % of routes covered by public transport services with sufficient connectivity to commuters



Data Management - Visualization - Simulation

ENGINEERING

Infrastructures design & planning

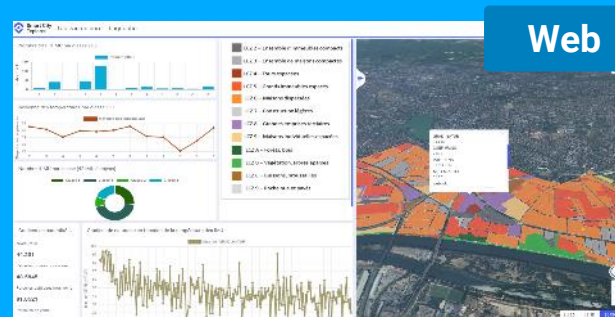


Pro

- Expert
- On premise or SaaS / SDK
- S_Products plugins

CO-CONSTRUCTION / CO-DECISION

Decision-makers, partners, citizens...



Web

- Expert & non-expert
- SDK
- Plugins

COMMUNICATION



Media

- Multiplatforms
- Apps, AR, VR



PORTFOLIO OF SOLUTIONS OR TAILOR-MADE DEVELOPMENTS

Energy and
environmental impact

Adaptation to climate
change & territorial
resilience

Employment and
economic
attractiveness

Planning, development
and real estate
promotion

Quality of life, wellbeing
and social inclusion

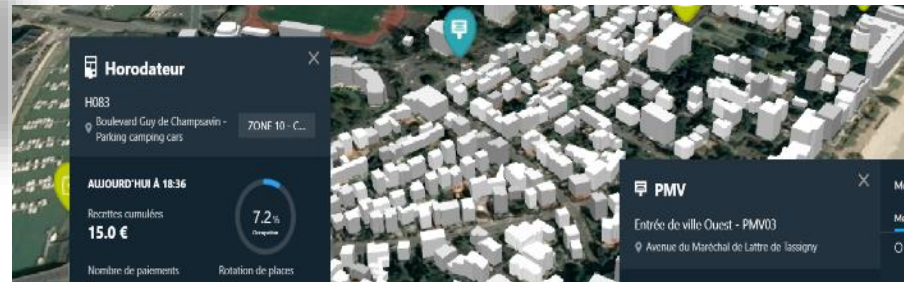
Public policies,
transparency and
communication

New mobilities
(infrastructures and
usages)

Management of major
events

Population vulnerability
& health

FOCUS ON 3 SMART CITY PROGRAMS (ONGOING)



- The **biggest data concentrator** in Europe (8k+ data sets)
- **2,5 million of 3D buildings**
- PPP with **180+ partners to co-construct** digital services
- 20+ services for citizens, cities & companies
- **100K+ unique visitors** each month
- The **biggest smart city project** in France (180 million USD)
- City **hypervision** (9 connected infrastructures to the Digital Twin)
- Global performance contract
- 3D Digital twin **available from multiple platforms**
- **100 million € of saving over 25 years**
- Improve the operational excellence of Government actions:
- **hyper-realistic** 3D digital twin (cm)
- Ex. of use cases :
 - Planning and management of construction sites/road works
 - Nature in city
 - Exposure to EM field
 - Geothermal
 - Drone piloting assistance



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