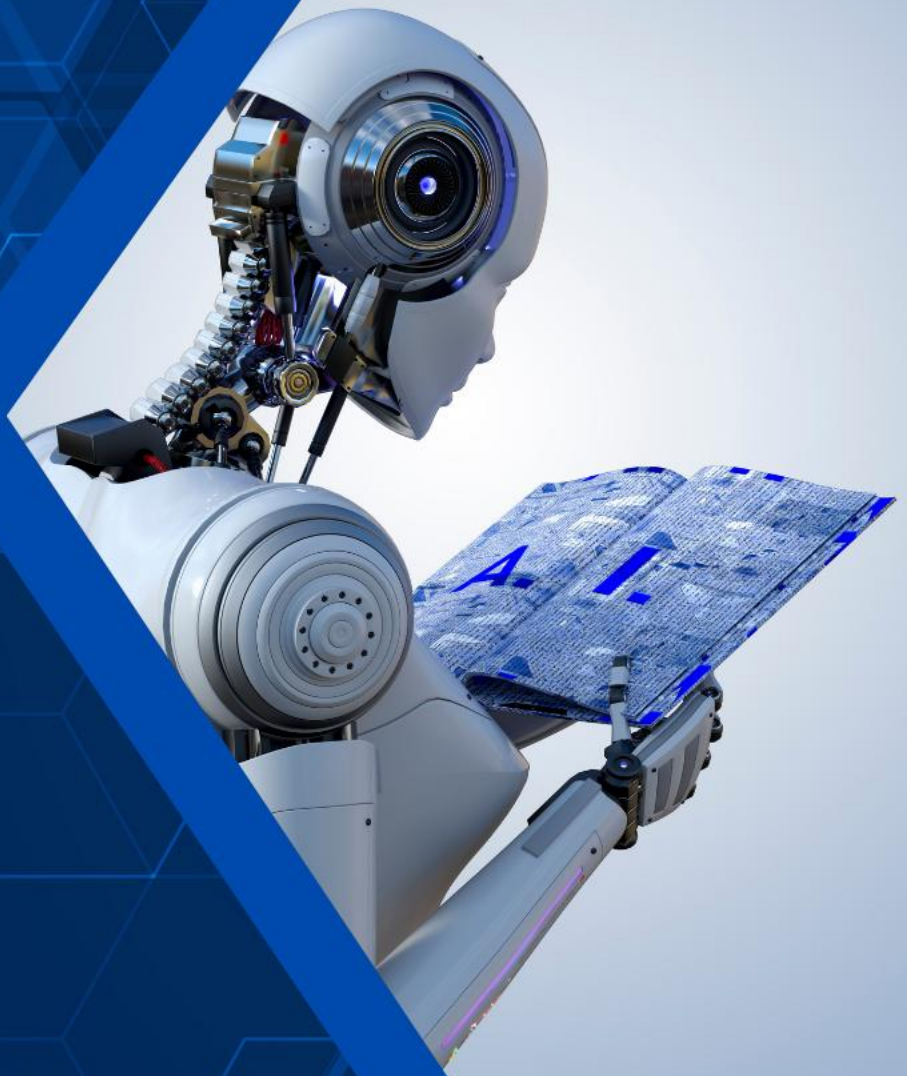
GALIA DAY 2025

Artificial intelligence



Ludovic Doudard
General Manager Ingénierie des Processus End-to-End
RENAULT GROUP

GALIA Working Group New technologies

Opportunities from New Technologies

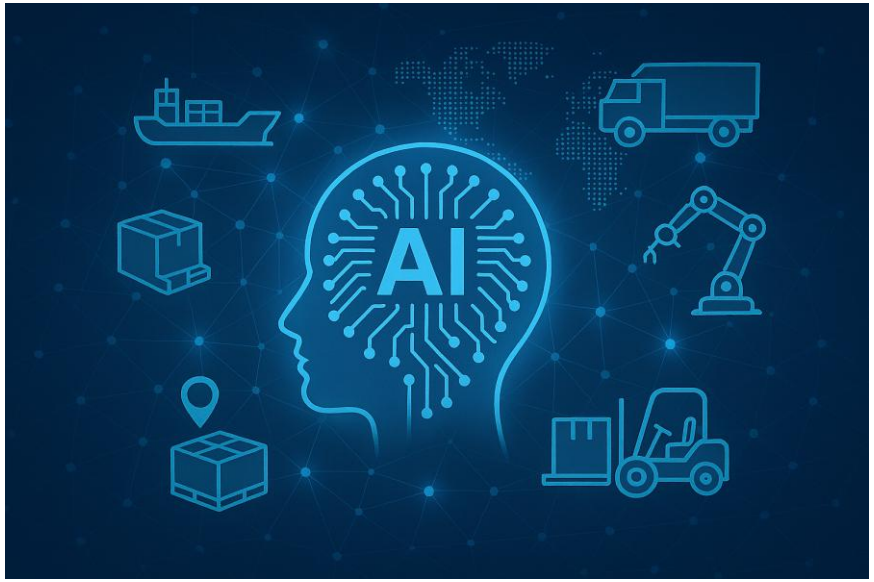
Emerging technologies like AI offer fresh opportunities to enhance digitalization and streamline supply chain processes

Addressing Current Challenges

Some supply chain challenges remain unsolved or are inefficient with existing tools, necessitating advanced technological solutions.

➔ Objectives and Collaboration

Mapping new technologies, sharing research, defining impactful use cases, and identifying collaborative industry projects.



Use cases in focus

- Forecasting
- Transport Optimization
- Supply Chain real time visibility
- Decision Intelligence
- Business intelligences.

Experience and methodology

- Data management
- User acceptance
- ROI Calculation

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mirror your industry

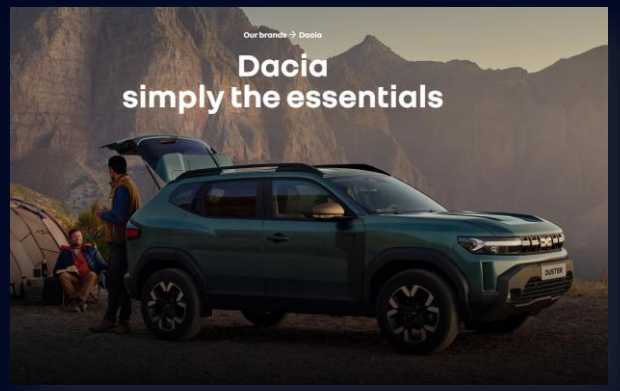
AI-driven Network Design at Renault Group Optimizing a Global Supply Chain

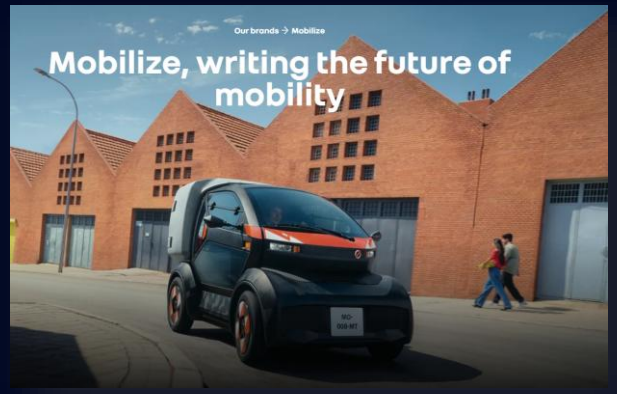
November 27th, 2025

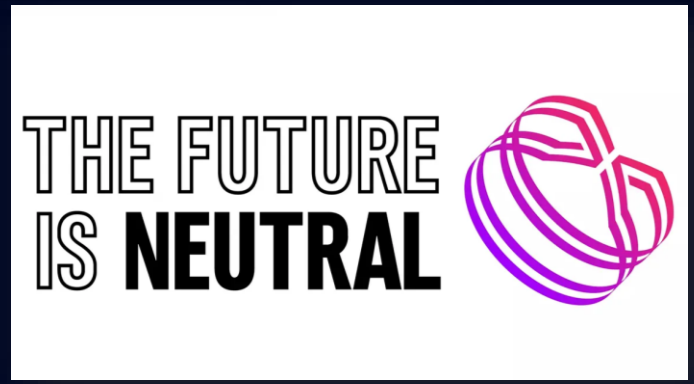
Galia Day

Renault Group

Our spirit of innovation takes mobility further to bring people closer







Renault Group Supply Chain in a few figures

mirror your industry

40 000
Suppliers Tier -N

4 000
Suppliers Tier-1

100 000 references

3 500 inbound transportation /day

25 **Logistics platforms**

10 000 vehicles produced / day

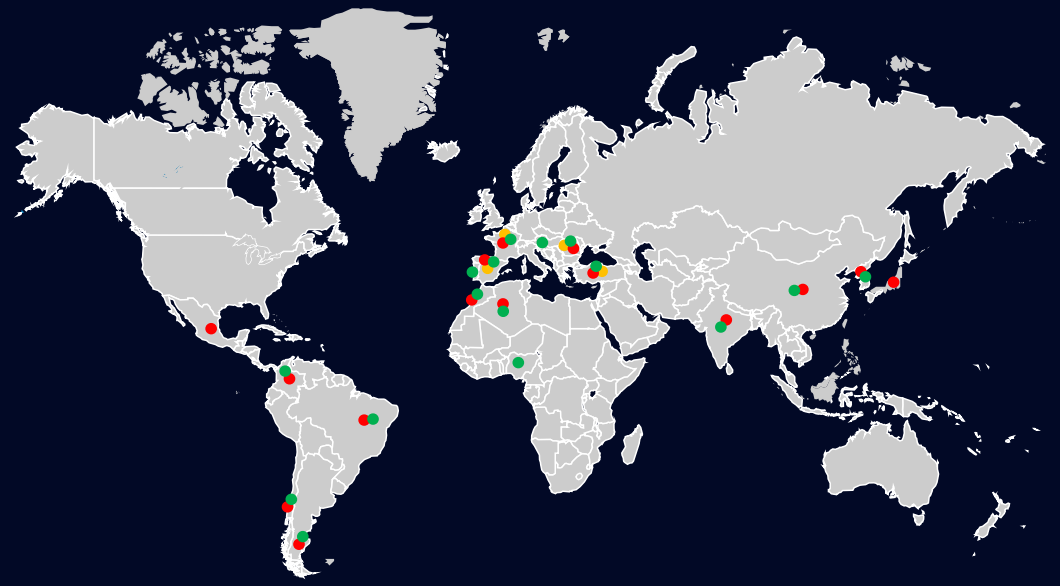
25 **Plants,**

11 **countries**

1 200 outbound trucks /day
1 000 vessels /year

22 000
destinations in 130 countries

~2 400
Employees



A complex global environment

Geopolitical Instability

Energy Costs Fluctuations

Social Tensions

Cyber Security Threats

Climate Change

Financial Unstability Tariffs

Biodiversity & sustainability constraints

Pandemics Disruptions

A Proven Service to Cut Transport Costs and Boost Resilience, Built on Renault's Industrial Expertise

mirror your industry

Why Inbound Logistics Demands a Different Approach?

Most transport management solutions are designed for logistics providers managing outbound flows — not for manufacturers optimizing inbound transport spend

What does it mean for an industrial?

A tailored, AI-driven inbound optimization service unlocks a new level of performance and resilience

Truck Optimization

AI-optimized loading to reach up to 90% fill rate

Route Optimization

AI-powered route design cuts empty miles and CO_2 emissions

Supply Continuity

Real-time alerts and AI-driven mitigation secure plant deliveries

Delivering measurable savings and resilience through an inbound transport optimization service

RG Comprehensive solution for inbound transport

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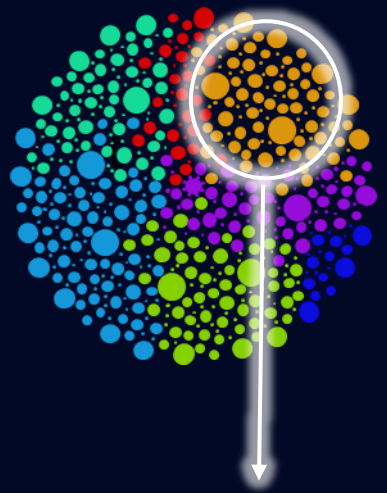
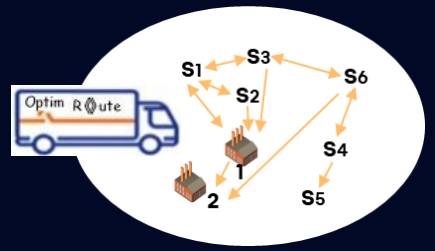
Strategic (Long term)

Overall Flow optimization

Network Design

Tactical (Mid term)





Route Design

Operational (Short term)

Trucks 3D & Container 3D optimization

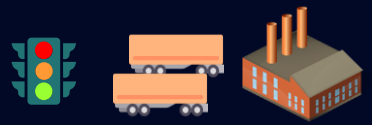
Transport spot bidding

Packaging Dispatch optimization

Transport plan

E2E Cost management

Trucks tracking



Plant in/out Drop & Swap

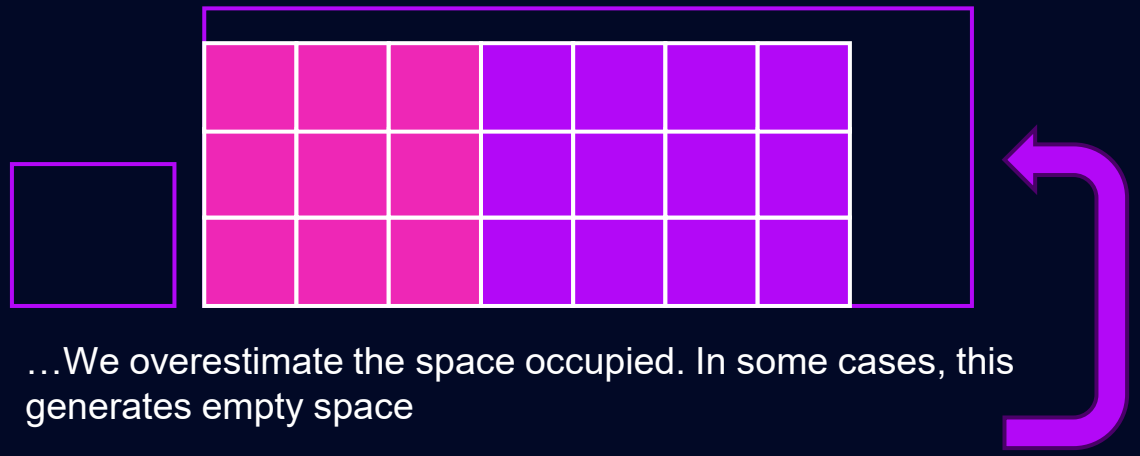
Containers booking & tracking

OPTIM 3D – OVERVIEW

Before OPTIM3D :

Space occupied by packaging with 1D approach.

To avoid risk of merchandise left at the dock…



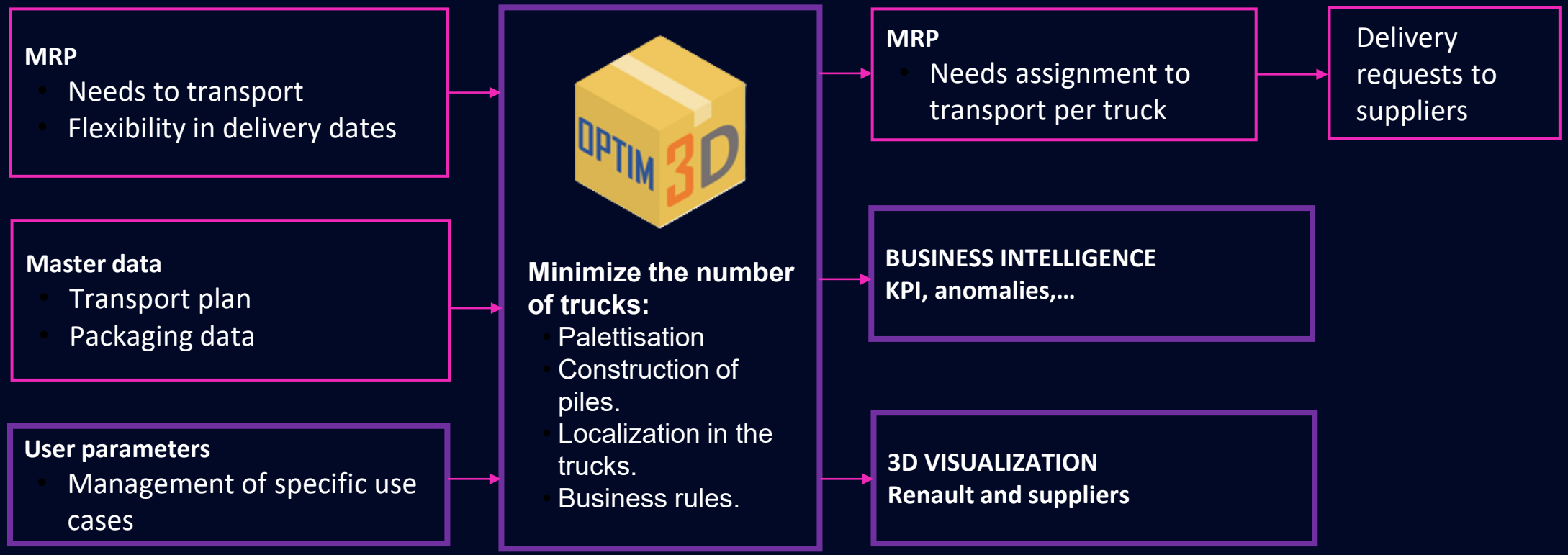
…We overestimate the space occupied. In some cases, this generates empty space

With OPTIM3D:

- 3D Volumization
- Optimization of the truck filling rate
- Compliance with business rules

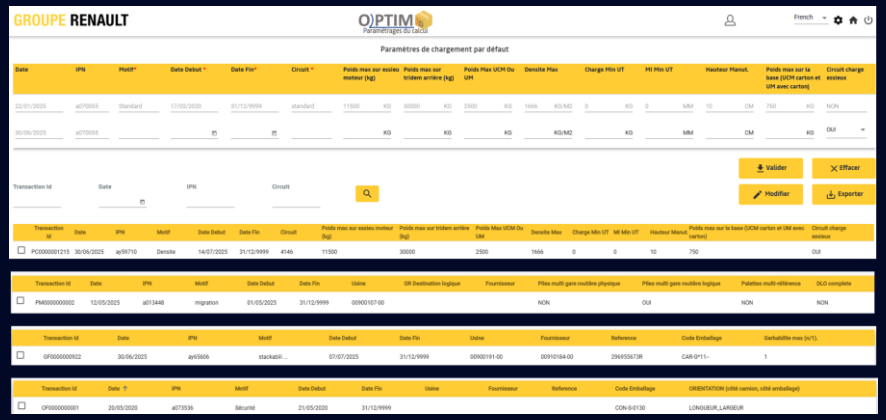
OPTIM 3D – A robust architecture

Optimization algorithm connected to MRP, called during the procurement process, every night in all our factories.

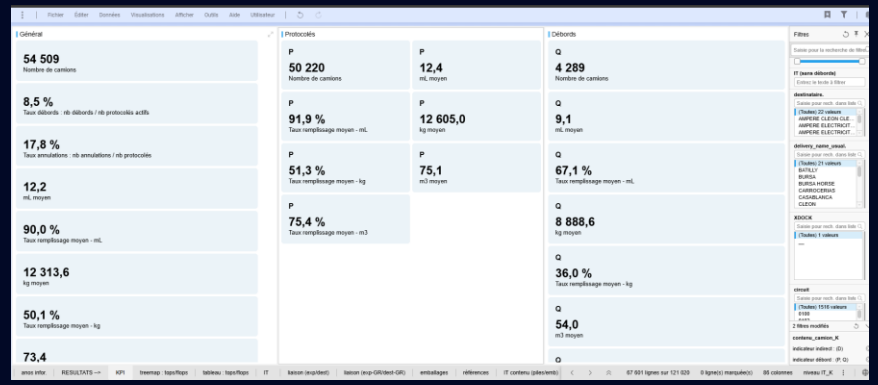


OPTIM 3D – BUSINESS IMPACT

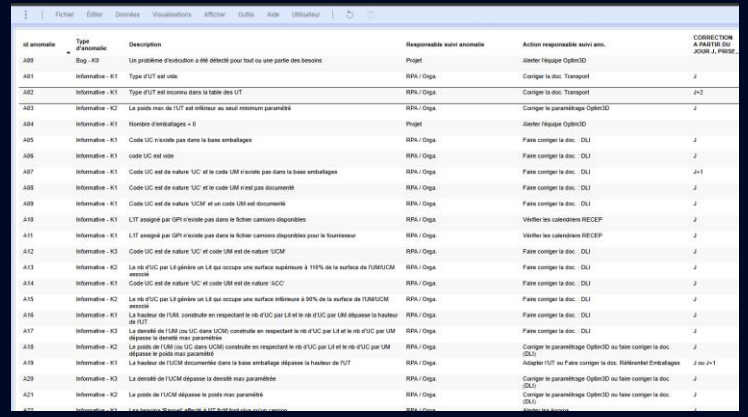
Flexibility ➔ 15 possible settings



Performance ➔ Monitoring via a KPI-Dashboard

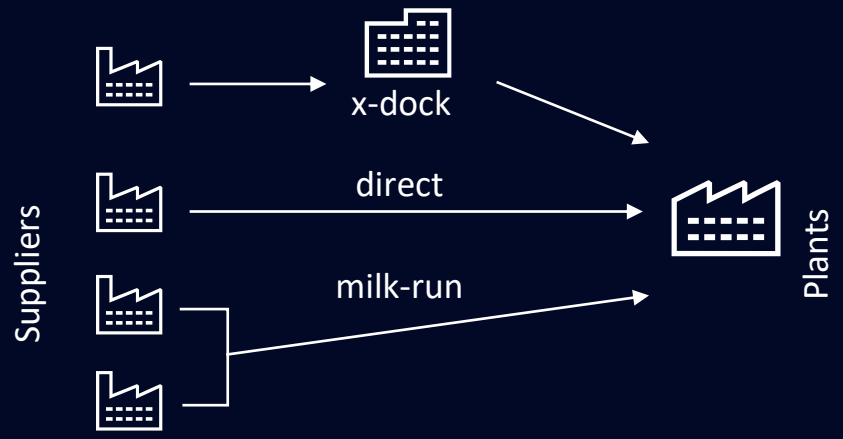


Reactivity ➔ Monitoring of anomalies & Performance Transversality ➔ A visualization tool to ensure execution opportunity



OPTIM ROUTE – OVERVIEW

Route optimization – parts logistics



Big complexity

~6000 suppliers, 13 x-dock, 26 plants

Big volume (parts only)

~400k trucks per year

Big stakes

~XXX M€ per year

Provide an **aid-decision tool based on AI** to optimize **inbound flows routes**

Process evolution

Before

Manual decisions based on Excel, Google Maps,…

Now

Full simulations

Complete application for business users.

Benefits > 10 M€

OPTIM ROUTE – A robust architecture

Comprehensive simulation tool integrating an optimization algorithm.
Used weekly by transport organizers.

MRP
- Needs to transport

Master data
- Current transport plan
- Packaging data
- Transport tariff grids

User settings
- Prepare the simulation

Mnimize transport costs:
- Clusters
- Routing
- Master problem
- Scheduling
- Evaluation with OPTIM3D

OPTIMIZED TRANSPORT PLAN
- Transport solution for each supplier

RESULTATS
- KPI
- Optimized roads
- Mapping

Finalist award indus RO 2025 (ROADEF)

RG Comprehensive solution for inbound transport

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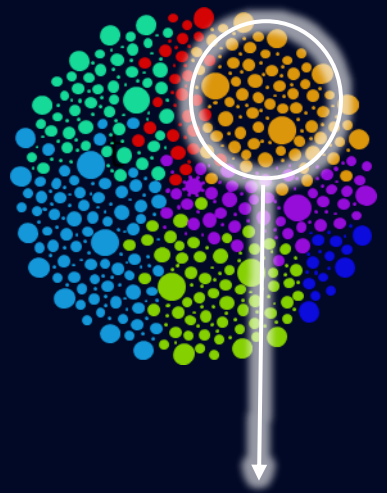
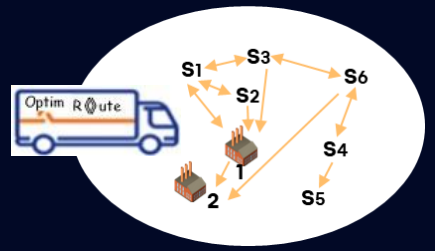
Strategic (Long term)

Overall Flow optimization

Network Design

Tactical (Mid term)





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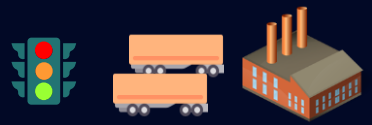

Plant in/out Drop & Swap

Containers booking & tracking

A crisis before our autonomous transport control tower

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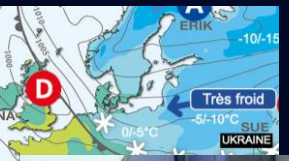
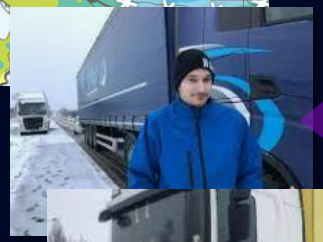
Driver | **Carrier Agency** | **RG Transport Driver** | **RG Customer plants**



Snow storm in North Europe



I don't know how long I'm stuck for...

I'm stuck here, still for at least 6 hours...

I don't know where I'm going to be able to go

- I take a record of the trucks that are blocked or slowed down
- I inform my customers

I'm looking for solutions to unblock my trucks

I respond to my customers' requests

I am looking for reliable information

- I inform the factories of delayed trucks
- I identify with them the risks of disruption

I am looking for solutions (where can I find parts? What alternative transport?)

I'm looking for visibility

I follow the critical trucks closely

- I open a crisis unit
- I identify the factory impacts
- I confirm the emergencies

I try to find degraded modes (available stocks, film modifications, incomplete manufacturing, ...)

I want to know where trucks are
I want to know the deadlines

I want to be informed

Renault Group

RG Inbound Control Tower

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Extended capabilities unlocked

Transport Plan
for the 6,000 shipments per day

Trucks & vessel position and estimated time of arrival

Transport events
(Incidents, manual ETA[1]…)

Parts forecasted shortage (date & time) – ie 300k parts

Risk sensing data
(Traffic, weather, transit time)

Machine learning module
(proposing alternative scenarios)

Maximizing supply chain efficiency

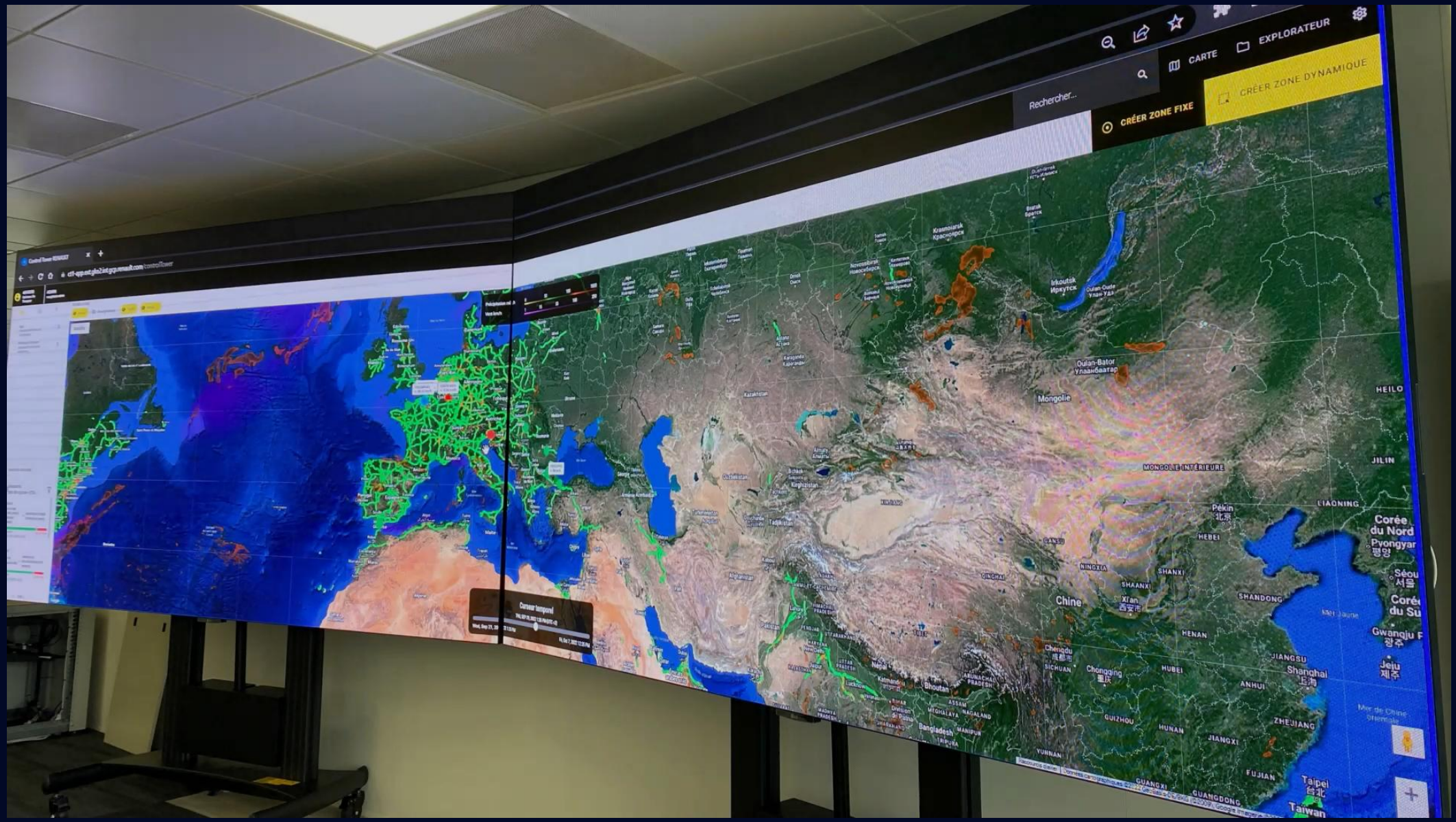
End-to-end securization of our industrial system

Cost reduction through increased anticipation

Breakdown reduction

Inventory reduction

Inbound Control Tower – demo



Why Our Optimization Service Delivers More Value Than Traditional Approach

mirror your industry

Why we are different…

Traditional approach	Mirror your Industry
Provide basic visibility of truck location	End-to- end visibility combining real-time tracking with production scheduling
Offer partial optimization, focusing only on transport execution	Provide end-to-end optimization and simulation aligned with manufacturing and supply-chain constraints
Deliver generic use cases built for logistics providers	Deliver tailored, flexible models adapting to each industrial network and operational reality

Different by design: industrial expertise, advanced AI, and a proven service delivering measurable transport savings

We propose a value-sharing model based on jointly measurable impact

mirror your industry

Proven Results from Renault's Operations

- **Truck Numbers**
- **Emergency cost reduction**
- **Transport Management Headcount**
- **Inventory cost savings**

- We commit to deliver measurable value
- Flexible, modular solutions tailored to each client's needs
- Engagement options ranging from managed services to SaaS models

Thank you