# TECHLOGISTICS

## Logistics and Transportation savings with DCbrain AI Tool

SMARTER **NETWORKS**

The AI powered Intelligent Network Solution©
that understands and optimizes your networks

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**Business Representative DCbrain**
#SaaS SW editor for SC optimization

- **Today's challenges**
- AI in Logistics world
- Real case studies
- AI DCbrain solution
- Q&A

# For all: ever-increasing constraints

### Increasingly complex flows

High service level demands, penalties

More parties involved, multi-modality

### Do more with less

10s of thousands of drivers needed

A sharp increase in petrol prices during 2022

### Higher volatility => Higher resilience

React to peak activities and the unforeseen

Adapt to new external constraints

### Corporate Social Responsibility

Adapt to evolving reglementations

Monitor $CO_2$ impact to better plan actions

# Planners cannot respond to these challenges, yet everything rests on their shoulders.

## Value added tasks

**20%** Of planners spend only 20% of their time to actions that are essential for their business

## Redundant tasks

**80%** The remaining time is sepnt to repetitive tasks that can be automated

**A complex transport networks**
**=**
**Billions of combinations**

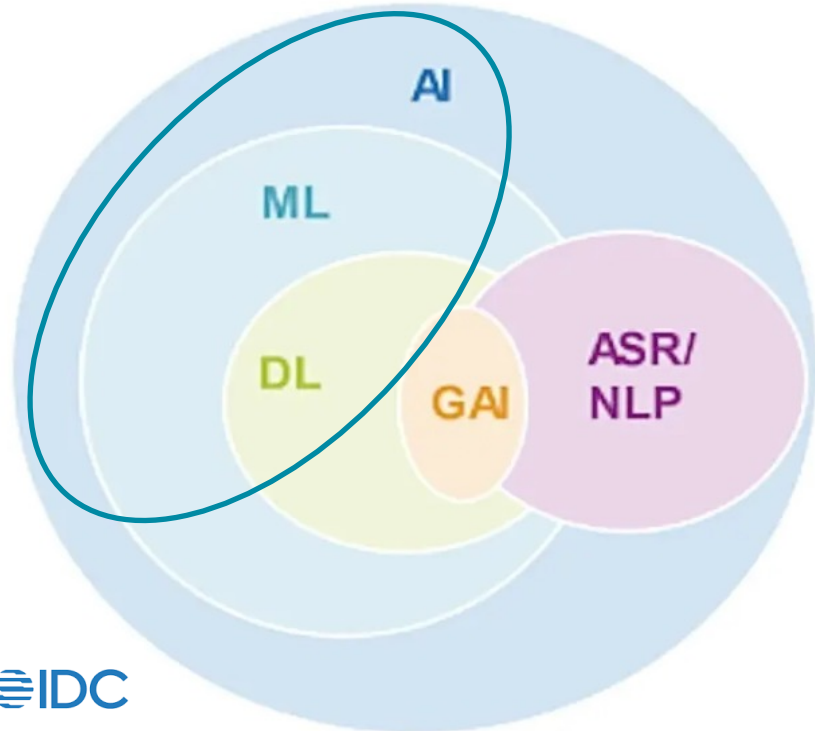**Most of planners have to deal with Excel files with millions of rows to maintain!**

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**AI** for a Sustainable Supply Chain

### AI scope of application to Transportation and Logistics



**IDC**

- Artificial Intelligence
- Machine Learning
- Deep Learning
- Automatic Speech Recognition, Natural Language Processing
- Generative AI

### AI algorithms to optimize SC operations

**How can AI optimize transportation cost to logistics operators on top of a TMS? (in 5 lines)**

1. **AI can analyze historical data,** real-time information, and market trends to identify cost-saving opportunities in transportation operations.

2. By **optimizing routes, load consolidation**, and carrier selection, AI can minimize transportation distances, reduce fuel consumption, and lower overall logistics costs.

3. **AI algorithms can continuously monitor** and analyze factors such as fuel prices, tolls, and driver efficiency to make data-driven decisions that optimize transportation costs.

4. **Integration with TMS enables AI to automate cost calculations**, invoice validation, and rate optimization, ensuring accurate and cost-efficient financial management.

5. **AI-powered predictive analytics can anticipate changes** in fuel prices, demand patterns, and market dynamics, allowing logistics operators to make proactive cost-saving decisions.

# The superior optimization performance is achieved with 3 components:
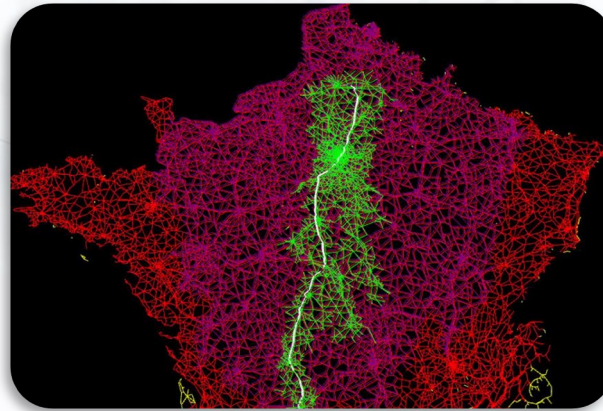
### Digital network twin

A dedicated **digital twin** for every network (agencies, hubs, delivery points...) through relational graph databases.
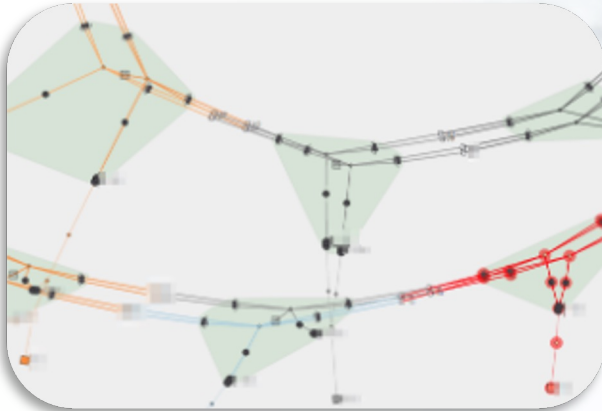


**That sharply reduces calculation times**
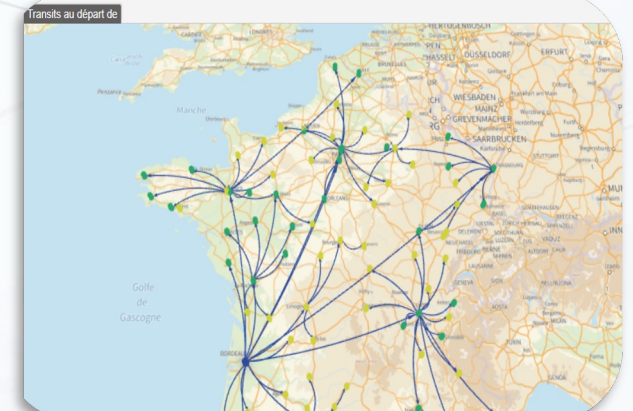
### Hybrid Artificial Intelligence

An AI-powered **optimisation engine** that seamlessly adapts to transportation flow challenges.



**That fits specific requirements with minimum effort**

### User Interface libraries

An extensible set of **User Interface** components, fully developed internally without external dependencies



**That creates personalized user interfaces adapted to each network**

Optimization is performed by using 2 modules to respond to planning challenges

# TACTICAL PLANNING

# OPERATIONAL PLANNING

## Target:

## Up to 15% savings

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**AI** for a Sustainable Supply Chain

# Thanks to Dcbrain with AI tool these companies found solutions that fix their new constraints

**DCbrain**

Lidl reduces costs and emissions to ship more than **50,000 pallets per day.**

Stef optimizes its transport plan by integrating over **100 management rules and 50 variable parameters**

Ceva streamlines route planning work to manage more than **10,000 TOs and 600 trucks per day**

Heppner efficiently manages its dense courier network of over **40 agencies**

Redur increases the efficiency of its transport plans to cover **45,000 km per day with more than 2500 trucks.**

# LIDL CASE STUDY

**Tactical planning to facilitate the construction of transportation plans**

## TACTICAL TRANSPORT

### Presentation / Key Figures

- **25 logistics** platforms of 42,000m2 on average
- **1580 supermarkets in France**, 1 opening per week
- **+50,000 pallets shipped per day**, i.e. more than 15 million per year
- 86% of waste recycled or revalorized

### Why ?

- To **reduce CO2 emissions** and lower transportation costs
- And also to digitize and **simplify the design of its transport plans**

### For whom?

- Central logistics planning teams
- Local shipping teams

### Before DCbrain

- **Manual updating of transport plans** was done twice a year and did not guarantee optimization

DCbrain

### With DCbrain

- **Optimized transportation plans,** taking into account all requirements
- Faster updating that makes it possible to integrate **more unforeseen events** and operational changes
- Simple for **central and local teams** to share and jointly approve **scenarios**
- $CO_2$ emissions taken into account when constructing transportation plans

### Data Used

- Operational requirements: warehouses, outlets, product typology
- Forecast volumes
- Cost matrix

### Projected Gains

- **Optimized transportation plans**
- **Reduced $CO_2$ emissions**
- **Digitalized operations**

*"LIDL has made a commitment to reduce its $CO_2$ emissions and this means that we must further optimize our transportation plans. With DCbrain's AI, we can meet these challenges."*

Xavier Pierre, Responsable transport et environnement

LIDL

# GEFCO/ CEVA CASE STUDY

**Optimization of transport flows at the operational level**

## OPERATIONAL TRANSPORT

### Presentation / Key Figures

- 4 business lines:
- ⇒ Finished vehicle transport (**FVL**)
- ⇒ **Multimodal** transport
- ⇒ Packaging solutions provider
- ⇒ Management of flows + customs operations
- FVL activity on the Etupes site: **Fleet of 700 long-distance trucks**

### Why ?

- Strategic: **improve competitiveness** and make growth levers more profitable
- Operational: cope with the **reduction in the number of planners**

### For whom?

- Planning agencies in France and Europe
- Team managers for optimization and **KPI's monitoring**
- **Planners for optimization** validation and real time visualization

### Before DCbrain

- **Planners** in agencies were **using data from various sources** and little harmonized: **excel** files, **emails**, **phones** ... which made **difficult** the planning work

## OPERATIONAL TRANSPORT

DCbrain

### With DCbrain

- **Automation of order batching and allocation to delivery vehicles**
- **Daily tracking** of the transportation order completion rate
- Daily and weekly tracking of operational KPIs: load factor, SLA, costs, etc.
- Scenario testing to suggest new, **optimized journeys**, while integrating new order flows as they arise

### Data Used

- **Transportation-related data:** configuration of considered vehicles, maximum travel time, minimum break time, loading/unloading time, etc.
- **Daily and weekly order flows**
- **Management rules**

### Projected Gains

- Transportation plan **optimized in real time**
- **Fewer** delivery vehicles
- Homogeneous average distances travelled by each vehicle
- **Reduced** transportation **cost**
- FTE gains in branches: digitalization and **simplification of the process**
- **Reduced CO2 emissions**

*"Rethinking route planning has led us to challenge our ways of working, to enable us to capitalize on the benefits of AI in automating planners' tasks."*

Thomas Maitre, Chief Project Officer @ CEVA Logistics

CEVA LOGISTICS

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AI for a Sustainable Supply Chain
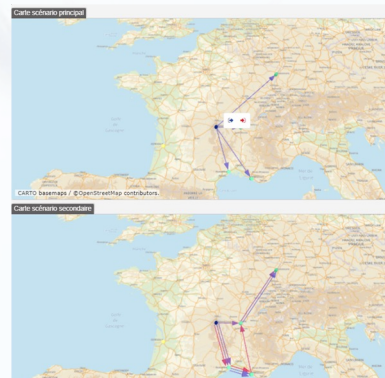
# A simple process, built for planners

**Data**

## Visualize

all relevant data within dashboards

## Simulate

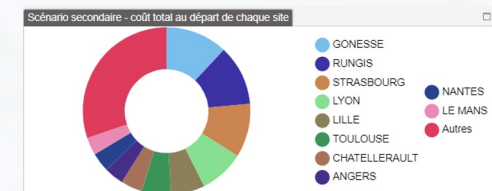scenarios and visualize the impacts on the network

## Optimize

to calculate recommendations on how to optimize the network

# Tactical planning module

## Starting point and requirements

**No simple tool to visualize the network, the linehauls and all the local constraints**

Weakly structured data at a low level of confidence

No simulation and optimisation tool
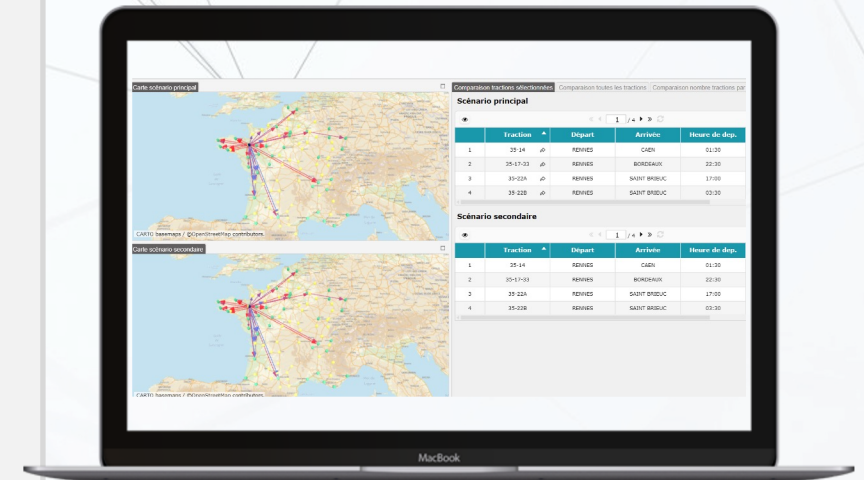
## AI DCbrain Tool brings you

**Modeling and update of the entire network / constraints**

Calculate network changes (new customer, new agency, acquisition...)

Global or local optimisation of the transport plan

Scheduling of lines

**Follow-up of global KPIs** (**transport cost**, cost per agency, **$CO_2$**,...)

# Operational planning module

## Starting point and requirements

## DCbrain brings you

**On top of a TMS there is no tool that can :**

- **Dynamically optimize transport plans** (collection, middle mile, distribution)

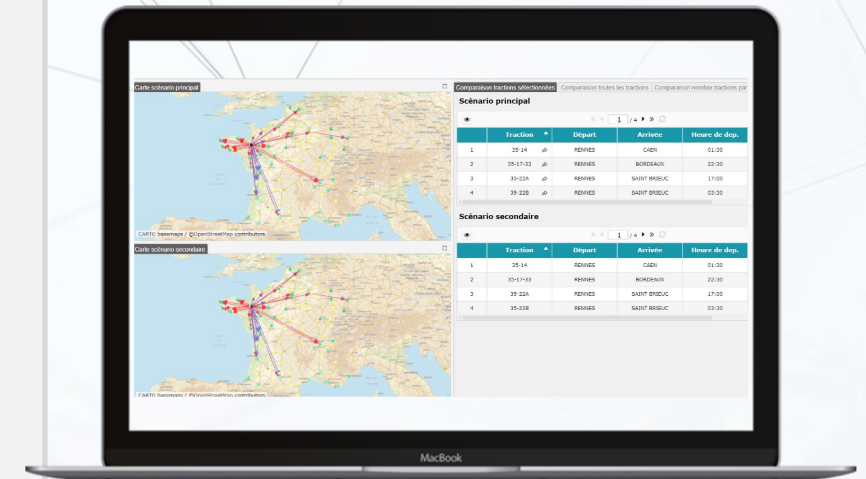- And **quickly adapt to unforeseen events** (broken truck, delays from customers, additional flows…)

**Visualize the entire network and its constraints**

Automate and **optimize Transport Orders versus Means**

Calculate the impact following an unforeseen element

**Follow operational KPIs** (completion of TOs, cost per TO..)

# For simplified and cost-effective planning

## 80%

Less time required for planning

## 10 - 15%

Cost savings per year

## 9 - 12%

Reduction per year

# A unique combination that only DCbrain can bring you

| | |
|---|---|
| **DECARBONATION WITH TECH** | Cutting edge technology build for planning |
| **LOGISTIC EXPERTISE** | Recognized by market leaders |
| **DATA EXPERTISE** | Know-how and support to extract value from data |
| **CLOSE TO YOUR BUSINESS** | Proven change management methodology |
| **HYBRID AI** | Always up-to-date optimisations |

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# Q&A

**Thanks**
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**AI** for a Sustainable **Supply Chain**