



### Innovation for cargo and mobility

HAROPA PORT positions itself as a major player in port and logistics research in order to guarantee for its customers a service that is reliable, effective and secure, based on cutting-edge technologies.

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### Cutting-edge technologies to serve ....

... seamless, secure throughput

The fluidity, safety and security with which ships and goods are processed in the port for movement to and from the port hinterland constitute major, high-priority issues for which digital innovation is a source of new opportunities. Below are some of our solutions:

#### 1. The port community system

This is founded on a fourth-generation, **innovative, open and flexible software architecture** the Port Community System (PCS). This provides a **single connection point** for all customers. It can be accessed around the clock and allows real-time information-sharing between port, maritime and logistics operators.

- **Cargo management** based on **S ONE**, which has been developed by the world-leading firm SOGET, a publisher of software dedicated to the facilitation of international commerce, is available across all Seine axis sites, **providing all port professionals with secure interconnections based on the most advanced digital applications.**
- **Management of ships and port operations** using **S-WING**, an application developed by HAROPA PORT. This is used by the entire port community for **reception of declarations and the management, scheduling, organisation and operational follow-up of calls at sea and river ports.**
- **Management of dangerous goods** using **TIMAD** (French acronym for "data processing for dangerous cargo"), the leading European 100% dematerialised platform for managing and monitoring dangerous cargo. It provides all stakeholders in the hazardous materials port logistics chain with a simplified, **dematerialised and optimised process and real-time (24/7) monitoring of the movement of such goods to and from ports.**

#### 2. PortAll

To ensure ever-safer navigation, shipping lines now have the option of access to the PortAll server. This service provides them with electronic maps of Rouen's navigation channel and offers access to useful information to prepare and plan ahead their port calls. It can be accessed via a web link sent on request by the **Rouen Harbourmaster's Office.**

*Alongside this, and with a view to implementation of EU directive no. 2019/1239, HAROPA PORT is endeavouring to integrate all the above solutions into a **Single Maritime and Port One-Stop-Shop (GUMP).** The port has deployed a new **Port Community System (PCS)** in Rouen.*

*Called **DrakHAR**, this solution will increase interoperability with Le Havre and the players in the two ports.*

#### 3. Passage plan: for smarter port calls

HAROPA PORT is working on the **development of a predictive tool for precise forward planning of the management of ship arrivals and departures, in addition to port stopover time.**

Based on the integration and synchronisation of a range of digital data (forecasts of sea and weather conditions, ship characteristics, the nature and volume of goods to be loaded/unloaded, gantry crane status, time at berth, availability of port facilities and personnel, etc.), **HAROPA PORT can optimise the productivity of port operations and the use of the associated resources, thereby enhancing the quality of the services offered to its customers.**



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This tool can also contribute to **shrinking the port's environmental impact**, most notably by reducing GHG emissions.

A solution fully in line with the **JiT Model (Just in Time model)** recommended by the IMO.

### Online waters system

**Thanks to 5G, HAROPA PORT is working on the roll-out of an “online waters” system.** The aim? Real-time information on seabed levels, detailed information on the navigation channel, water temperature, swell height, and more, the purpose being to make dredging operations more effective, along with ship navigation and ship reception in port.

### ... and modal transfer

HAROPA PORT is also working on the development of innovative solutions to advance modal transfer based on cutting-edge technologies.

#### 1. SIF Seine

Available on the Internet since 2019, **SIF Seine (River Information Service)** is a **navigation aid for carriers of freight and passengers**. This application, whose purpose is to optimise river navigation, provides a wide range of information such as water levels, bridge clearance heights, availability of river facilities, waterway traffic, and more.

*Partner: French Waterways Authority (VNF)*

#### 2. Optiroute

The aim of the Optiroute project is to **improve the conditions for reception and transit of heavy goods vehicles** in the Le Havre port industrial area and its nearby hinterland.

The objective: to ensure the fluidity of road traffic along with the safety and security of both goods and rolling stock.

#### 3. Multiland

The Multiland solution is a **resource dedicated to multimodal transport planning**. This latest-generation software program enables our customers to compare the economic and environmental benefits that can be obtained by choosing rail or river transportation from Seine Axis port facilities for journeys in France.

### Innovation for the promotion of smart mobility

For HAROPA PORT, innovation also plays an important role in the **development of new forms of mobility and in accelerating the use of sustainable transport modes**. For example, France's leading port is trialling and developing innovative digital solutions for the promotion of mobility for people and goods.

**These are the flagship projects:**

#### 1. Waze

Since 2018, road users travelling inside Le Havre's port industrial area can plan their journeys in advance and adjust their choice of route using a free **community navigation application: Waze**.

Thanks to a partnership between the company and the port, it is possible to obtain information on current construction works and the movements of mobile port machinery five minutes before the relevant operation.



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## 2. Smart Car Terminal

Providing the operators of the ro-ro terminal with real-time data on their activities (inventory status, arrivals/departures schedule management, etc.) and related services, anticipating the arrival of connected, multifuel vehicles (NGV, electricity, hydrogen) ... all this is the objective of the Smart Car Terminal resource currently under development by HAROPA PORT.

The port's intention? To look forward to the **ro-ro terminal of the future** equipped with the latest technology (drones and 5G, in particular) to make it a benchmark reference for Europe.

Partners: CIRCOE, Le Havre University (GREAH laboratory), logisticians and stevedores, along with the partners at 5G LAB.



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