



### **HAROPA PORT: an incubator for collective innovation**

The goal is to promote collaboration between RDI (Research – Development - Innovation) actors in the port and logistics domain, and between the private and public sectors.

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### **5G Lab**

In 2021, “**5G Lab**”, a collective, was set up, based around the port and the Le Havre Seine Métropole urban district authority and including three industrial organisations – **Nokia, Siemens and EDF** – with the aim of identifying and testing 5G use cases that could be developed along the Seine axis.

### **The following were among the practical cases identified:**

- optimisation of port operations essential to safe navigation in the port,
- collection of a wide range of data (weather, seabed status, etc.) to enhance precision and efficiency,
- assistance for cargo handling (straddle carrier operations, equipment maintenance, troubleshooting),
- detection of issues and breakdowns in ro-ro terminal vehicle fleets.

**Partners:** *Siemens, EDF, Nokia, CIRCOE, Hub One, Synerzip-LH, the terminal operators, industrial companies, shipping and transport logistics actors, ARCEP and Orange.*

This project is part of the programme Le Havre, ville portuaire intelligente.

In partnership with Hub One and CIRCOE, HAROPA PORT is **currently conducting a trial at the Normandy Terminals (TN) at Le Havre. Specifically, straddle carriers have been equipped with this technology to test data transmission fluidity and effectiveness:** feedback from operations and carrier maintenance, transmission of task orders, coordination of teams on the ground to prevent collisions, and so on.

### **Trafis Lab**

TRAFIS, a scientific interest grouping (GIS), is a **public/private research laboratory focused on the facilitation of international trade within the limits set by customs procedures.**

**Partners:** *French Customs, SOGET and ISEL – Le Havre Normandy University.*

### **CIDN DRONES - Normandy Drone Innovation Centre**

HAROPA PORT is a participant in CIDN Drones. The purpose of this project is to organise a “drone sector” in order to position Normandy as a national and international region of excellence for the development of drone-based solutions. The Normandy Drone Innovation Centre conducts field trials by pooling the equipment and resources of its partner members. Anti-drone measures, air quality surveillance, 5G, etc. The objective is to develop drone-based solutions relevant to maritime and port operations.

### **EVOLEN'UP**

Since 2020, HAROPA PORT has been a partner in EVOLEN'UP, a trade association comprising firms in the energy field. The EVOLEN'UP programme and its start-up accelerator allow HAROPA PORT to remain up to date with the latest innovations in the energy sector.

EVOLEN'UP also provides a testbed close to the R&D departments of the partners of its programme, many of which are HAROPA PORT customers.

The start-ups that have been selected also have an opportunity to test their solutions in the field.

**HAROPA PORT also has an international outreach ...**

### **MAGPIE**

Led by the port of Rotterdam, and including HAROPA PORT, the port of Sines (Portugal) and Delta Port (Germany), this **unique European collaborative project supports the development of innovative technologies for greener maritime transport.**

### **PASSport**

As a member of the International Association of Ports and Harbors (IAPH), HAROPA PORT is a contributor to the **PASSport project**: this **operational platform manages a fleet of semi-autonomous drones** using the satellite global positioning system. Its purpose is to enhance the safety and security of port areas. PASSport supplements current surveillance systems in order to provide a high level of safety and security for all European ports (cf. EU directive 2005/65/EC).

#### **Ecole 42**

HAROPA PORT is also involved in Ecole 42 Le Havre, whose **disruptive, participatory IT training will help add significantly to the invaluable professional skills for development of our digital innovation ecosystem in the Seine axis region**.

This is an opportunity to witness the emergence of future entrepreneurs able to assist France's leading port in its digital transition projects for ports along the Seine Axis.



*71, quai Colbert, 76600 Le Havre  
+33(2) 79 18 05 00*