



Vision towards a smart digital hub

Connect

Collaborate

Innovate

**223**

million tonnes
of freight

**12.500**

hectares
port area

**10,5**

million TEU

**142.654**

jobs in
the port

**7,2**

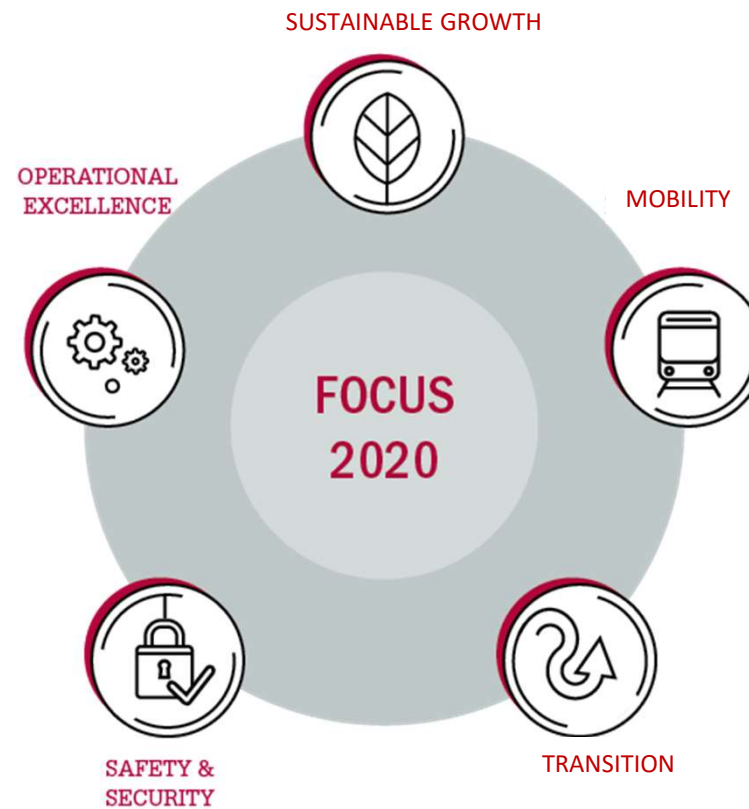
million m³
Liquid bulk
storage capacity

A new mission






a home port vital for a
sustainable future



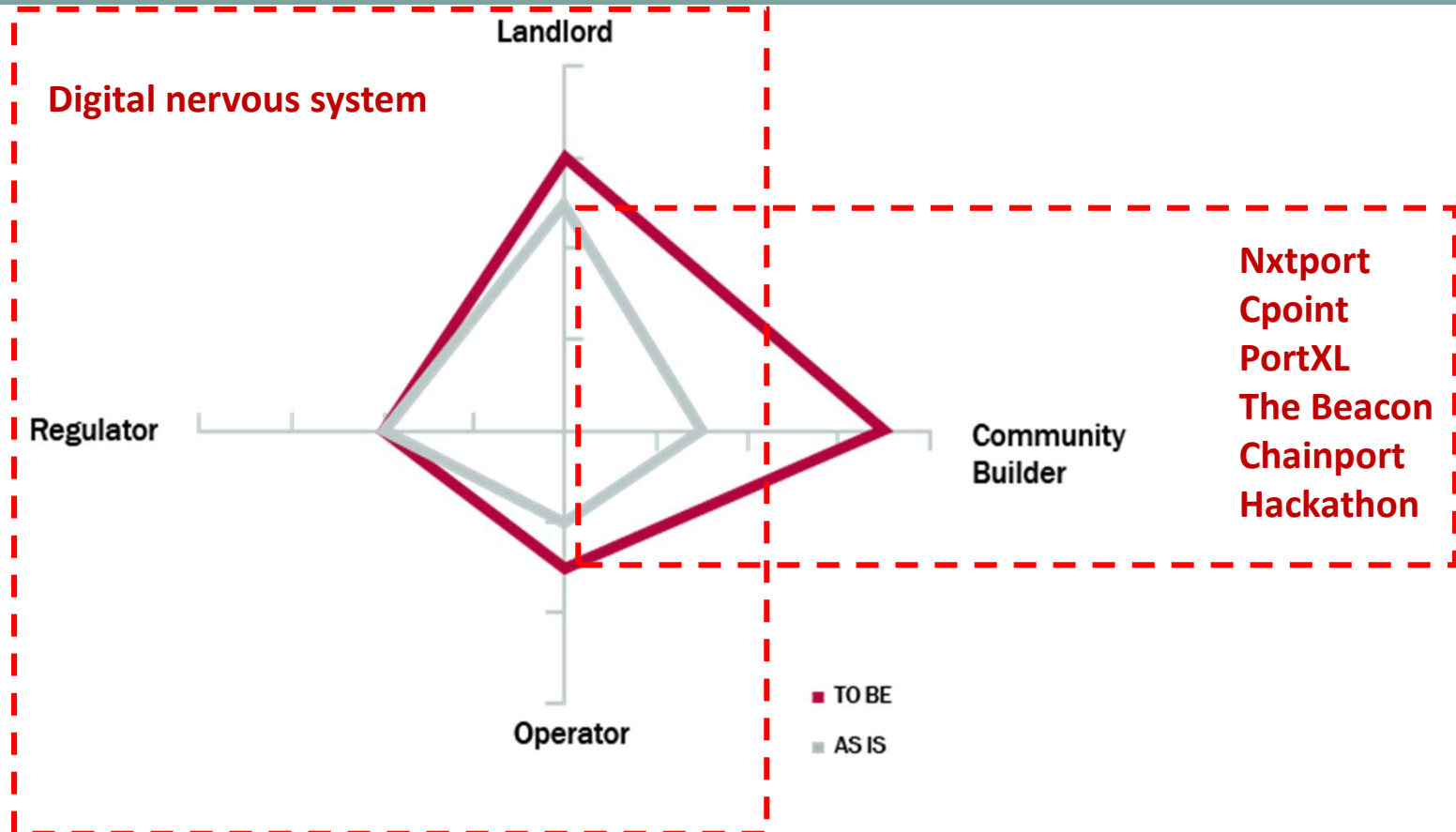
5 strategic priorities (2018-2020)



Strategic priorities & Technology drivers (2018-2020)

Domain	Theme	Sustainable Growth 	Mobility 	Transition 	Safety & Security 	Operational Excellence 
ENERGY	CARBON CAPTURING & STORAGE					
	HYDROGEN					
ENVIRONMENT	SENSORS (eg. air quality)					
NEW ECONOMY	3D PRINTING					
AUTOCONTROL	SMART SHIPS					
	DRONES					
SMART PORT	INTERNET OF THINGS					
	AUGMENTED / VIRTUAL REALITY					
	BLOCKCHAIN					
	ARTIFICIAL INTELLIGENCE					
	BIG DATA (NxtPort, Cpoint)					

The Port Authority is focussing strongly on Community building





ENERGY

- Waterstof
- CCU/S

- Sensoren
- Luchtkwaliteit



- 3D Printing

NEW ECONOMY



AUTOCONTROL

- Drones

- Autonome Vaartuigen



- Artificial Intelligence

- Block Chain

- AR / VR

- Big data

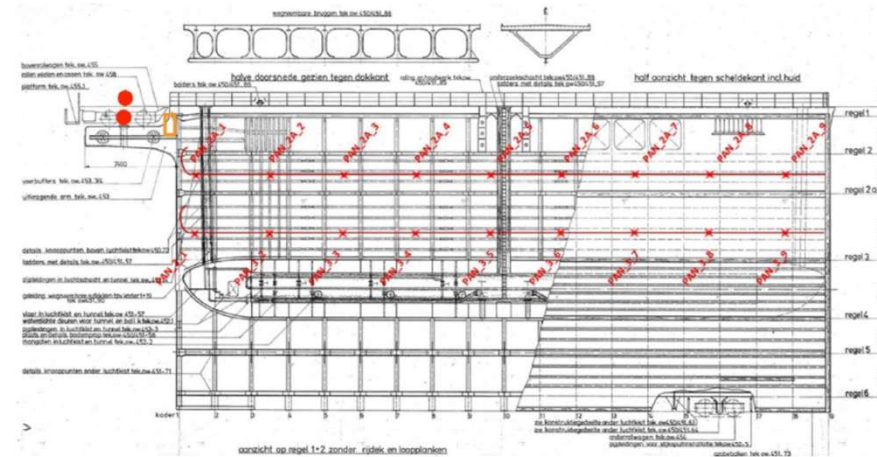
SMART PORT

- IoT

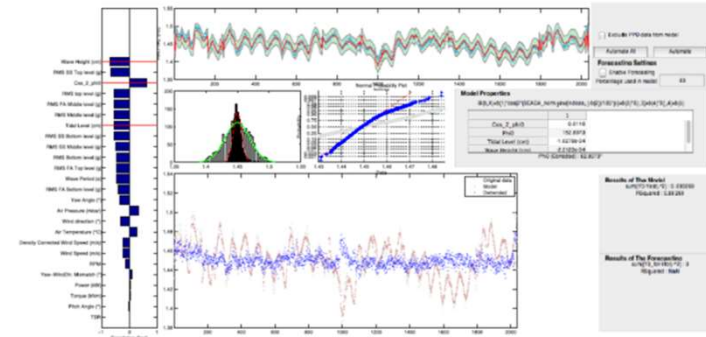
- MOBILITEIT
- TRANSITIE
- OPERATIONAL EXCELLENCE
- SAFETY & SECURITY
- DUURZAME GROEI



IoT lockdoor Kallo

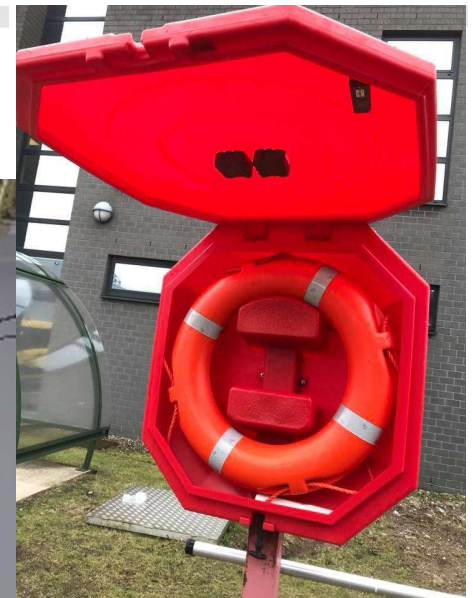
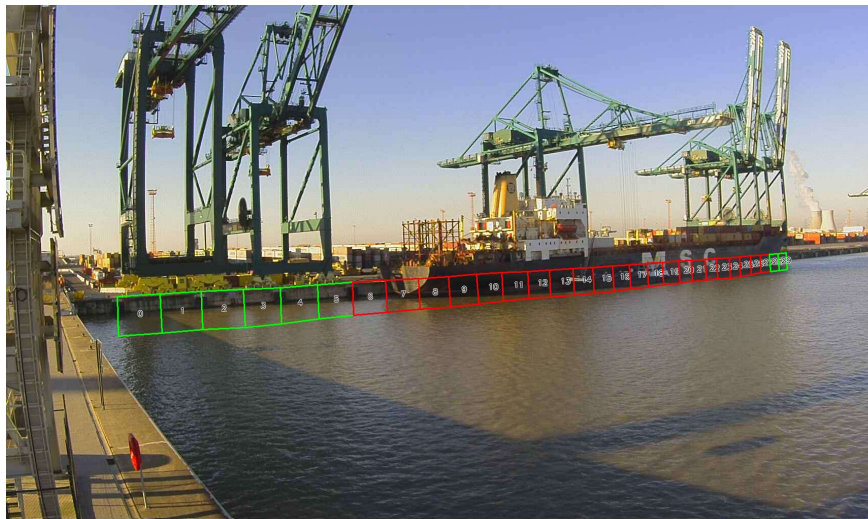


● 2x4 fbs (gewicht) □ Optische DAQ unit

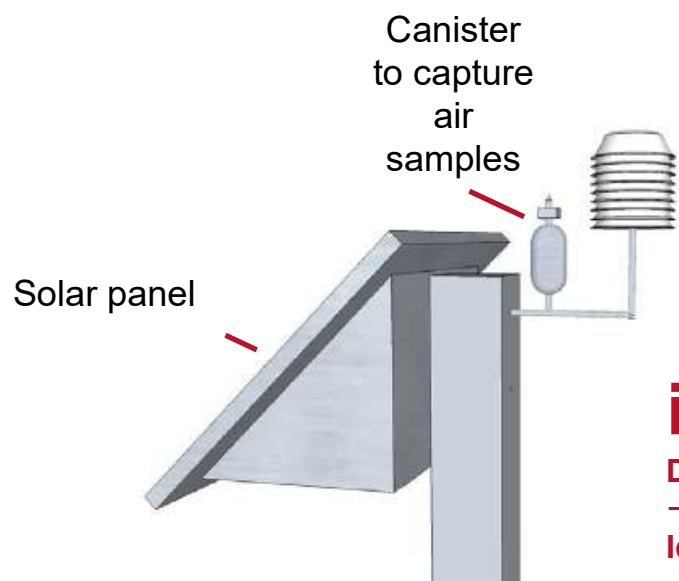


Figuur 11 Automatische correlatieanalyse en data normalisatie tools die alle operationele data in rekening brengt (deel van een eigen ontwikkelde toolbox)

IoT: Smart quay – lifebuoy – bolt indicators



iNose: intelligent electronic nose



iNose

Detection

→ *"Something present"*

Identification

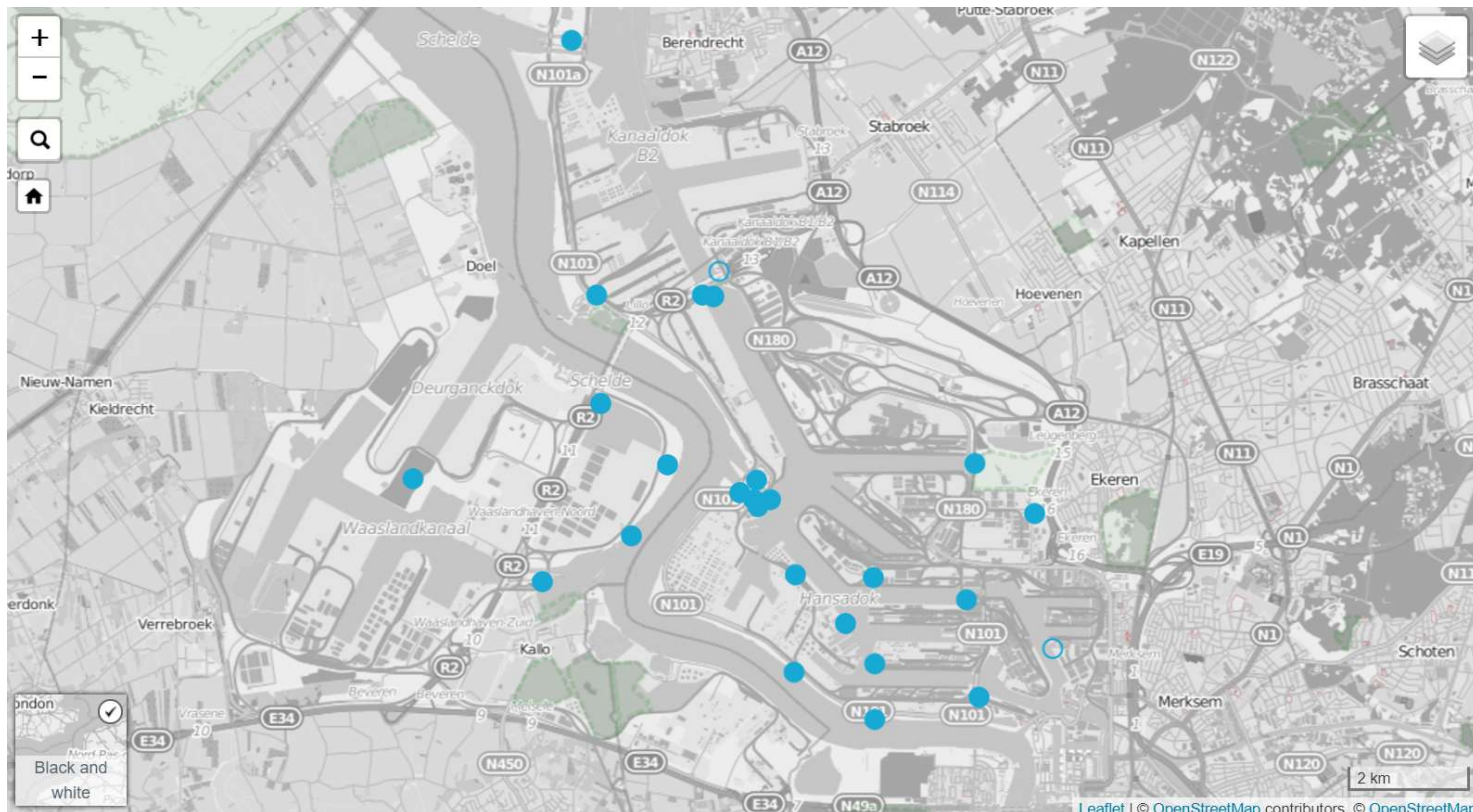
→ *"It's probably component X"*

Quantification

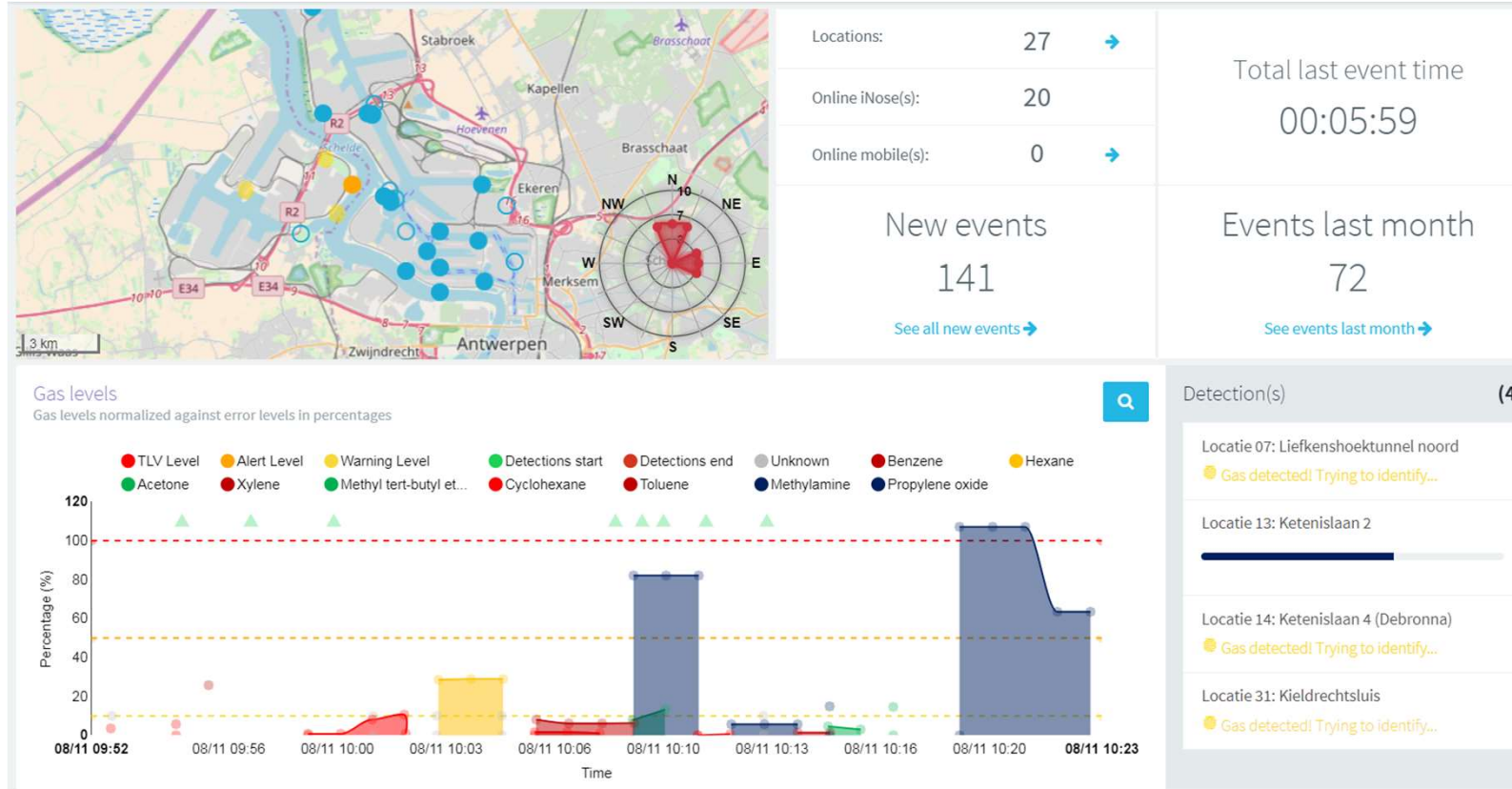
→ *"Density is high/low"*



25 iNoses in Port of Antwerp



iNose: Events



THE BEACON

- **Location:** Tolhuis (= city center, close to port) – 12.500 m²
=> opening september 2018
- **International IoT ecosystem & Physical office hub**
 - Startups & scaleups
 - Technological corporates (IoT business development teams)
 - IoT research labs (University of Antwerp & imec)
- **Focus:**
 - Product development IoT applications
 - IoT research valorisation
- **Dedicated Management & Consultancy Services**
 - co-financed by Capital of Things & AGORIA
 - Attracting complementary IoT companies





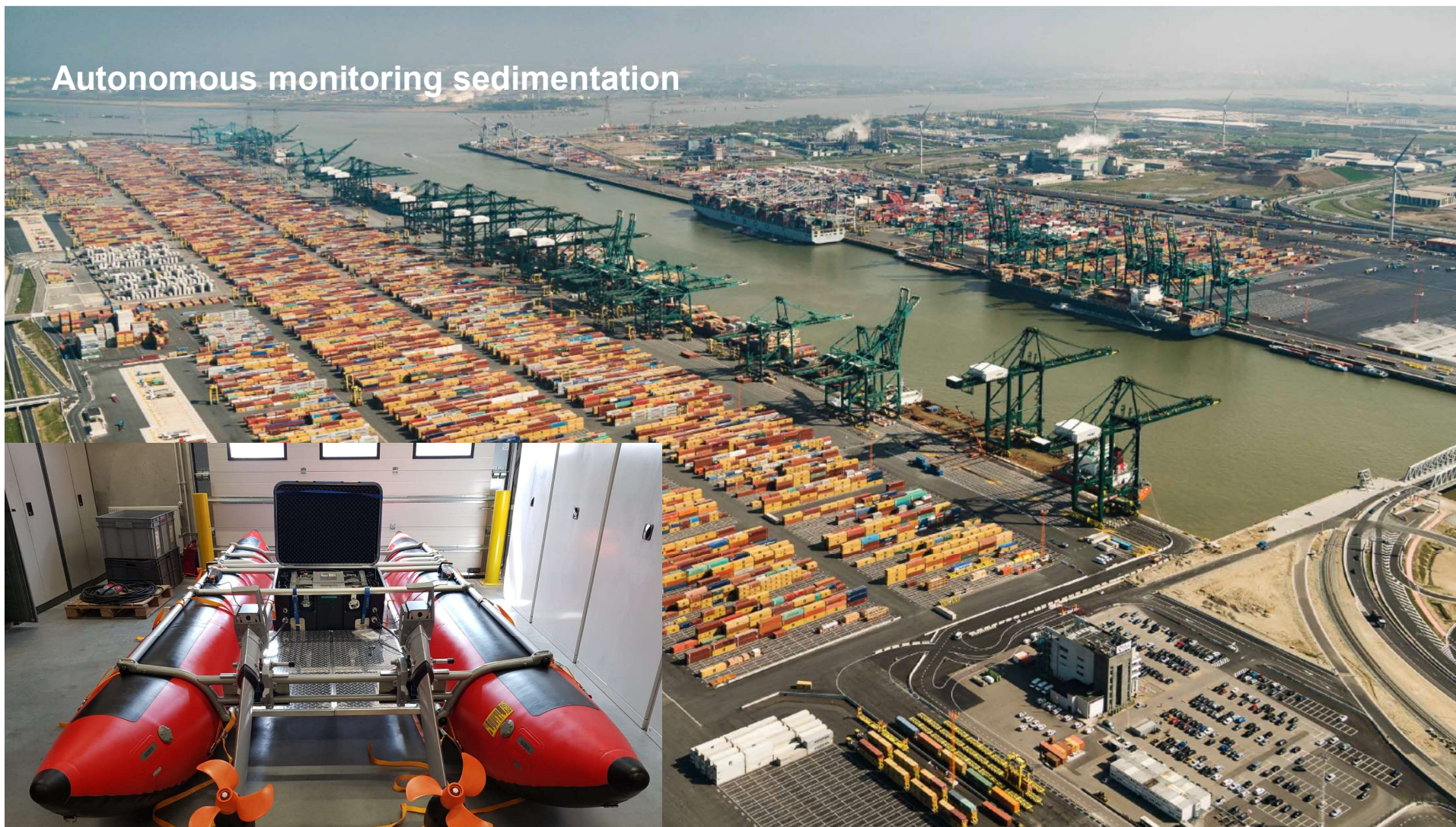
SMART
SHIPS

The image depicts a sleek, white autonomous surface vessel (ASV) with a solar panel array on its deck, navigating through dark, choppy waters. A translucent digital map is overlaid on the sea, showing depth contours and navigational data. The text 'SMART SHIPS' is displayed in the lower-left corner.

De Tuimelaar (Length: 14m)



Autonomous monitoring sedimentation





Antwerp Introduces Autonomous Vessel

SupplyCain Dive - Autonomous workboat navigates by cloud data in the Port of Antwerp



Schiffahrt: Autonomes Peilboot in Antwerpen

Neuartiges Boot navigiert über die Cloud und misst die Wassertiefe im Hafen.

Maritime Quote - A first for the port of Antwerp: innovative autonomous sounding boat with unique technology

17 August 2018

A smart port thanks to innovative technology: that's what the port of Antwerp is fast becoming.



Port of Antwerp unveils prototype sounding boat



THE MARINE
PROFESSIONAL

Port of Antwerp deploys autonomous depth-sounding boat

American Shipper

Antwerp testing autonomous vessel



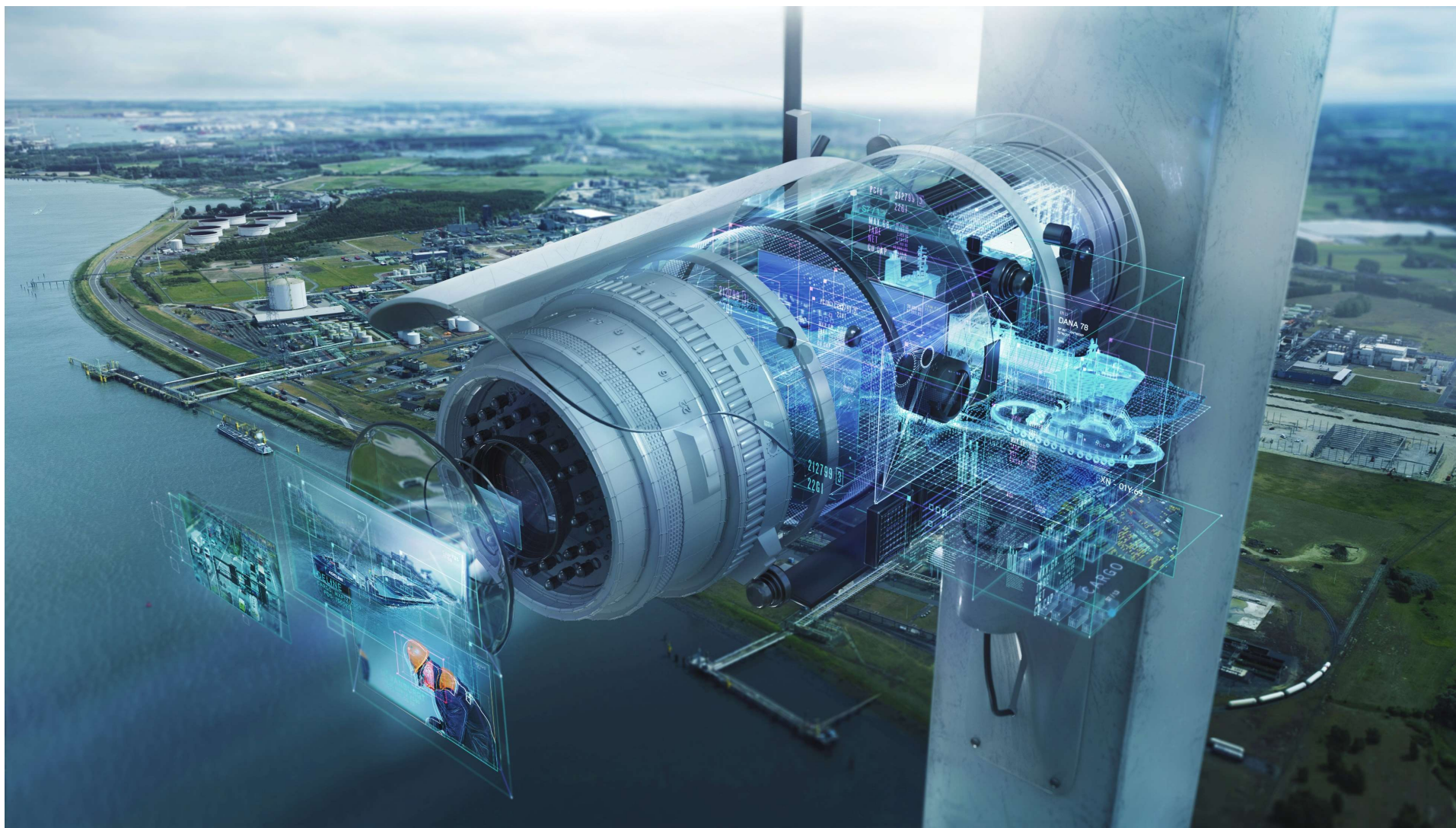
Hafen Antwerpen: Innovatives autonomes Peilboot mit einzigartiger Technologie

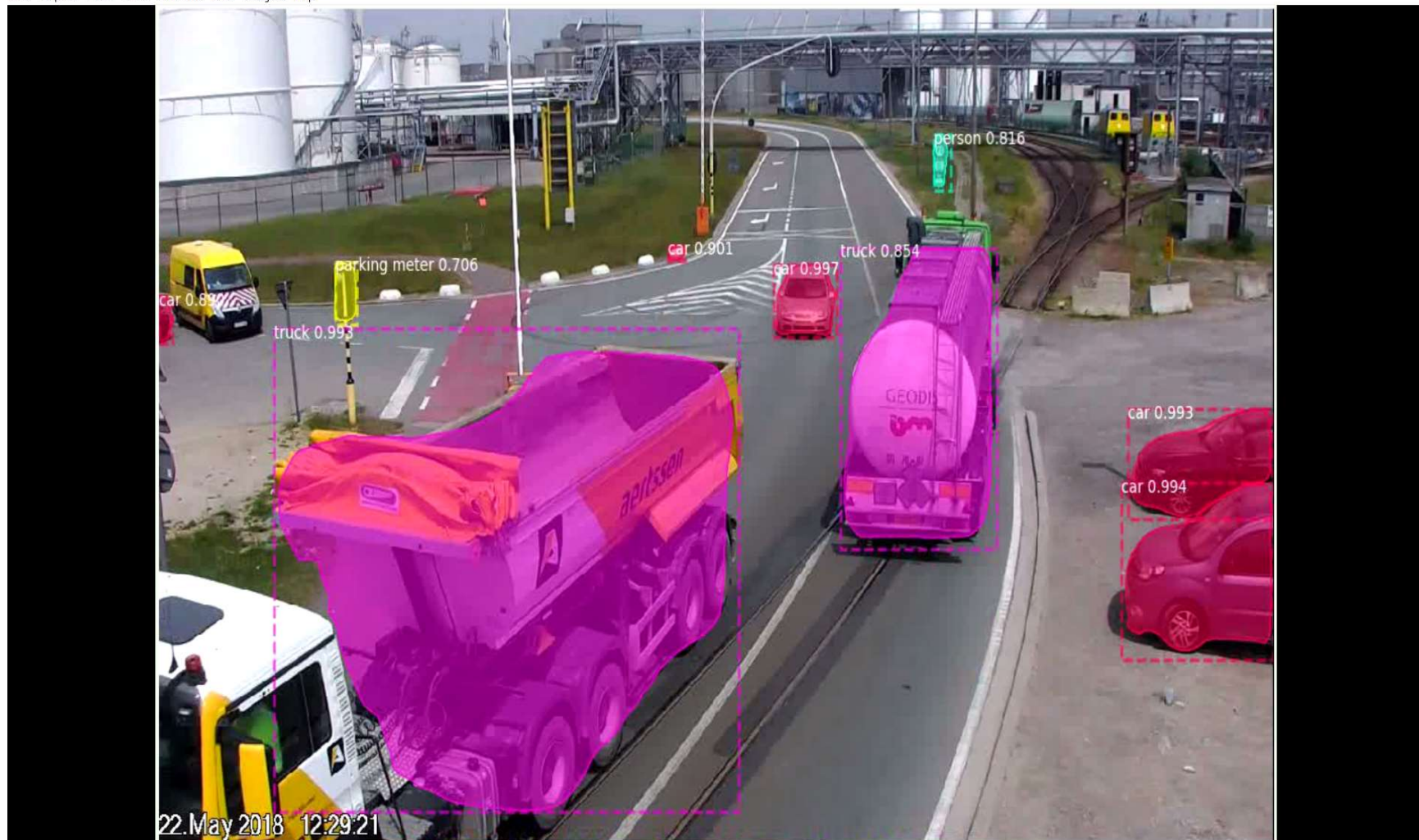


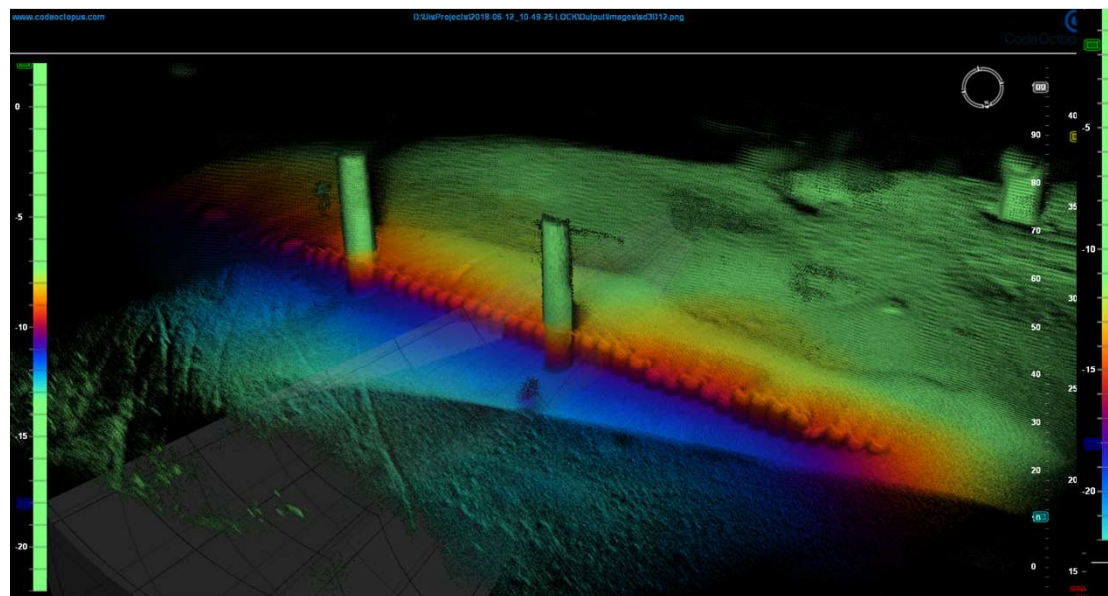
Antwerp Introduces Autonomous Sounding Boat



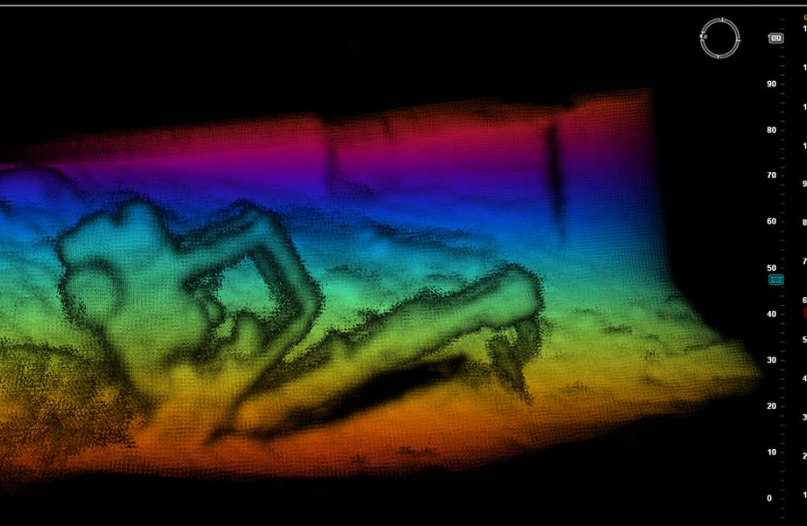
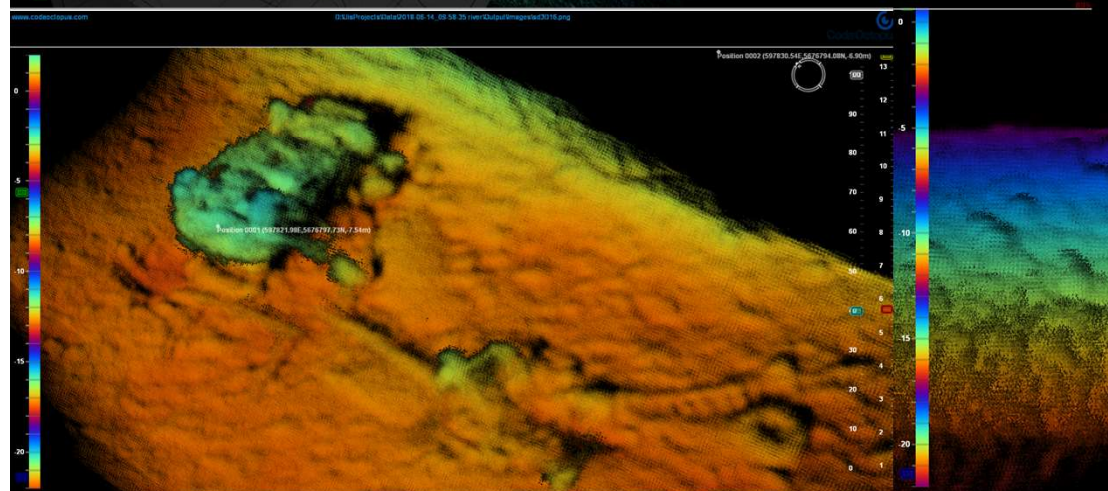
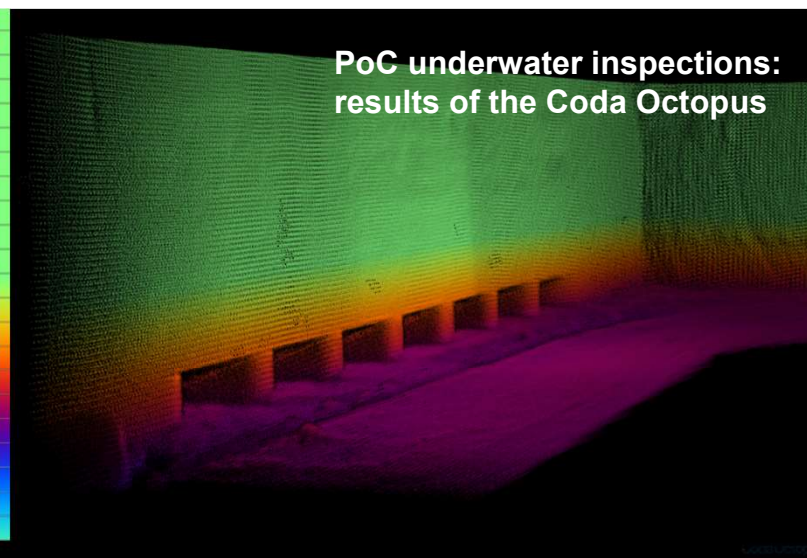
DRONES



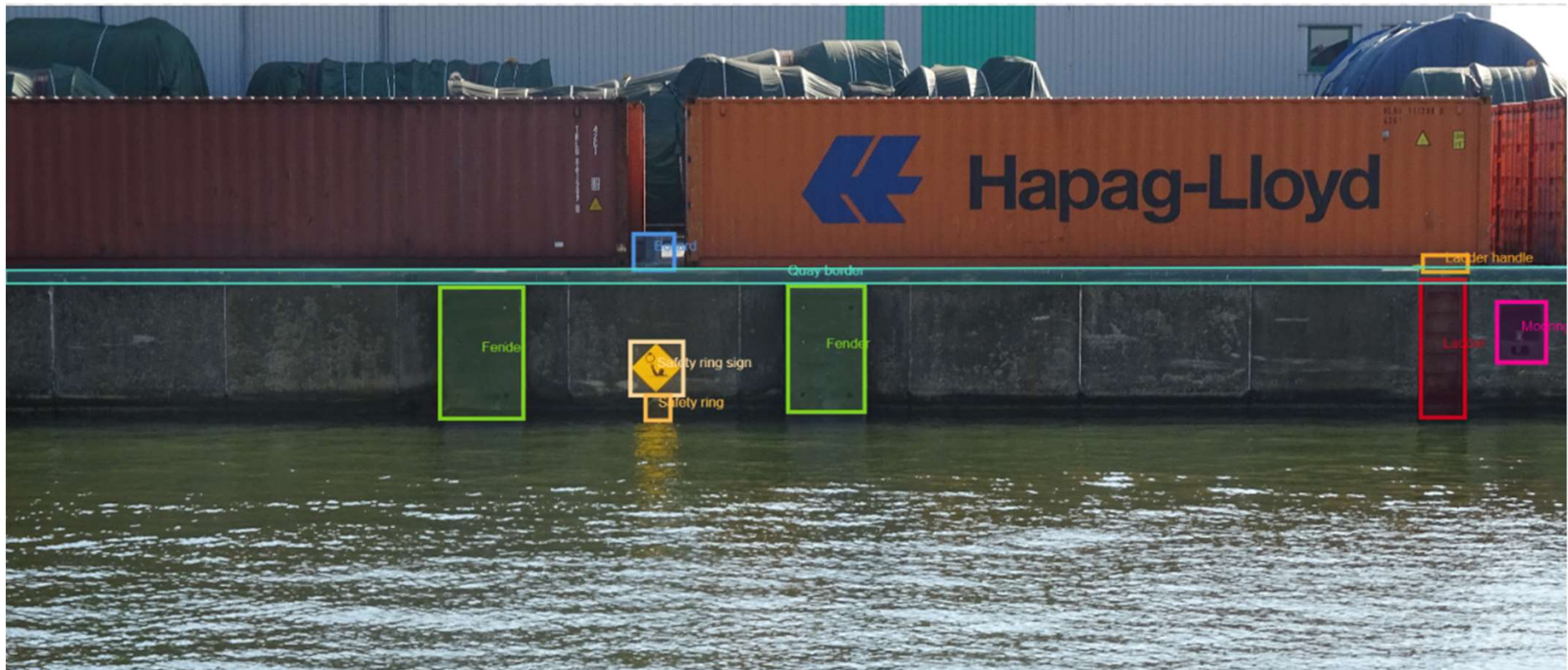




PoC underwater inspections:
results of the Coda Octopus



PoC Image processing: inspection quay walls (ladders, fenders...)





WELCOME TO PORTXL ANTWERP!

1000 START-UPS SCOUTED, 22 ACCELERATED, 64 CONTRACTS SIGNED, 3RD YEAR RUNNING...AND NOW DOCKED IN ANTWERP

Antwerp is one of the most innovative and vibrant maritime and logistics hub in the world. With a large diversity of economic activities in all sectors related to ports, it has the ambition to remain the leading port in the future. Topics like digital logistics, blockchain, sustainability and Harbour of Things are all focus areas for this vibrant hub. The PortXL program accelerates maritime, logistics, energy and chemical & refinery start-ups in all these domains together with an ecosystem of corporates.

PortXL is launching it's Antwerp program, with Port of Antwerp Authority as one of the first partners, in 2018. The aim is to scout and accelerate international and Belgium

Connect

Collaborate

Innovate



Co-envision



Co-build



Co-market

Connect

Collaborate

Innovate



Connect

Collaborate

Innovate



Blockchain: The new kid on the block ?



Proof of Concepts tested in blockchain environment



- Secure **Container Release** (secure container pickup, without pincode)
- Exchanging **Phytosanitary Documents** (apple trade between New Zealand and Port of Antwerp)
- Supporting the International Port Community Systems Association (IPCSEA) in their PoC for Bill of Lading



HACKATHON



Oct 11–13 2018
Antwerp Expo

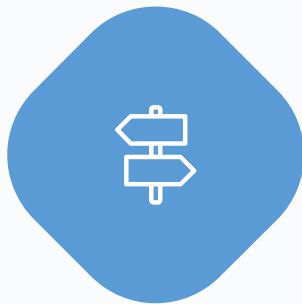
www.chainporthack.com

Themes for the ChainPort Hackathon

More info at www.chainporthack.com

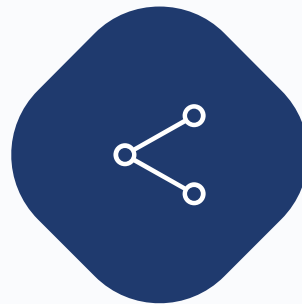


MOBILITY



Create an efficient and sustainable modal shift

INTER PORT



Share data between world ports

SECURITY



Security in and around the port

PROCESS & DOCUMENT FLOW



Digitalization in supply chain processes

SUSTAINABILITY



Data as extra energy source for the future

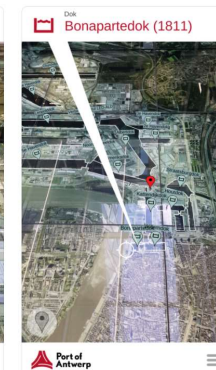
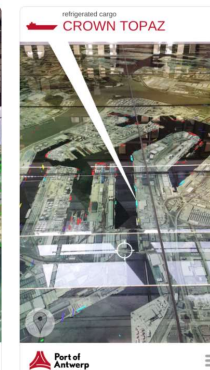
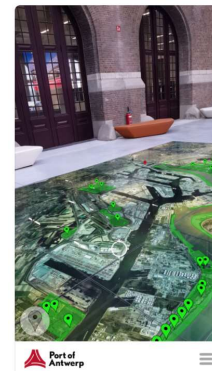
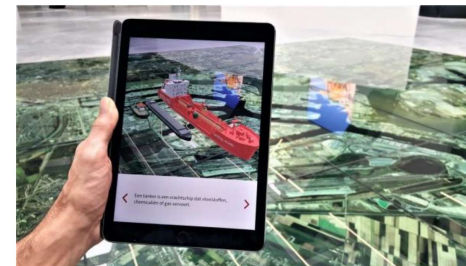
Augmented reality



Antwerp Port Experience
Port Of Antwerp

Free

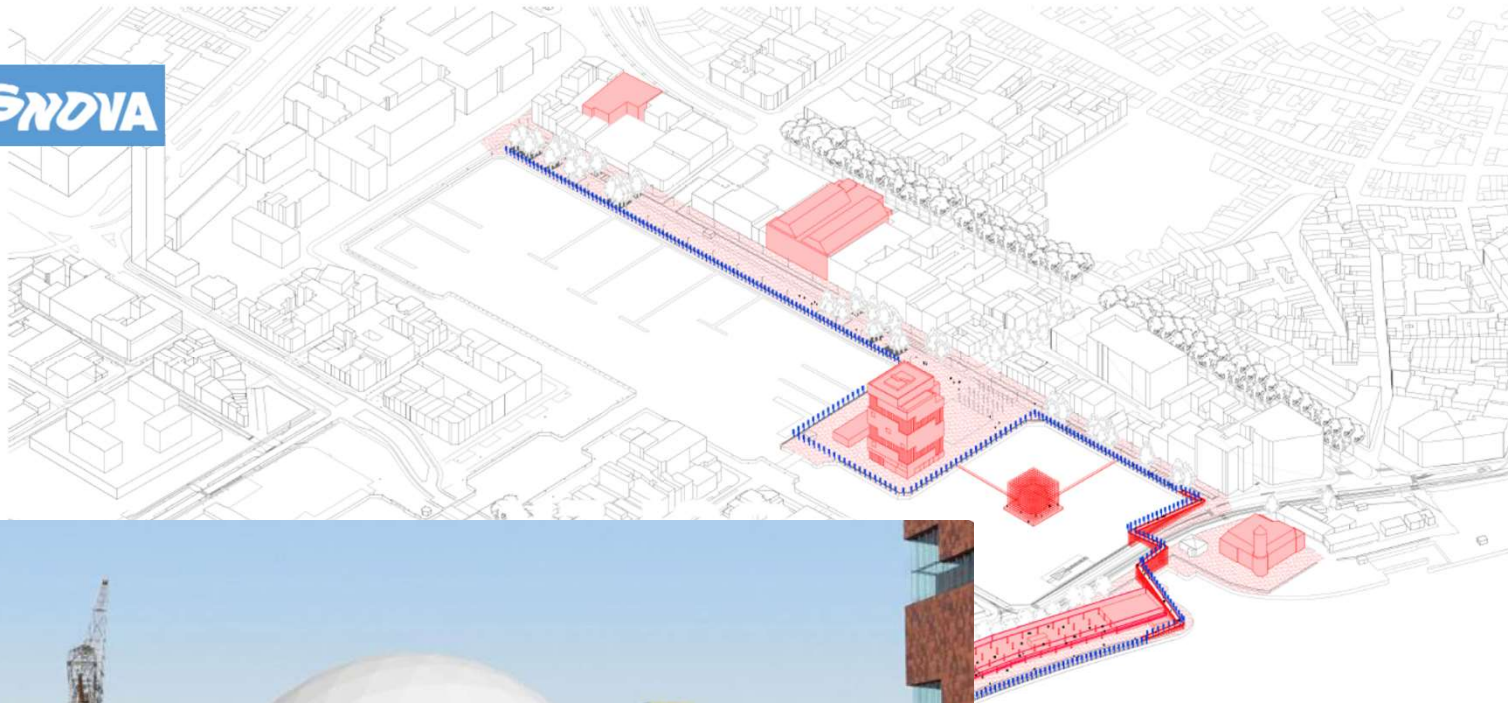
container ship (full)
MSC VIVIANA





Project Supernova
 Tekening isometrie - masterplan B2C 29/09-30/09
 Datum 09 04 2018
 Schaal n.v.t.
 Architect Gips Van Varenbergh
 Opdrachtgever Flanders DC

AVONSUPER



A woman's profile is shown in silhouette, looking towards the left. Her head is filled with a complex, glowing digital network of lines and nodes in shades of blue, green, and purple, resembling a neural network or a data visualization. The background is dark and textured with faint, glowing patterns.

APICA

Antwerp Port Information and Control Assistant

<https://www.youtube.com/watch?v=RsMnN-WSObQ>

Thank you !



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