Port change

Save time & emissions
Every port call

Danube Port Days
04-Oct-2022

Objectives & Agenda

- PortXchange in the Port of Rotterdam
- Similarities and disparities with the Danube River Ports ecosystem
- Our approach and proposed action plan

Port**X**change

an0   Port call + individual solutions for each party

abhishek nair; 2022-09-21T07:14:05.355

PortXchange introduction
Mission

We believe

- Sustainability
- Operational efficiency
- Digitalization
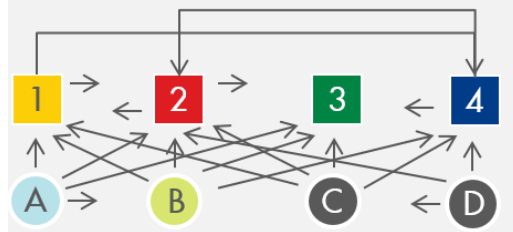
will go hand in hand shaping the future of shipping

Spun off from Port of Rotterdam, we are
on a mission to **work with the shipping industry**
to **connect port communities worldwide**
and **reduce emissions at large scale and low cost**

Purpose driven – impact oriented

The problems we see in ports globally

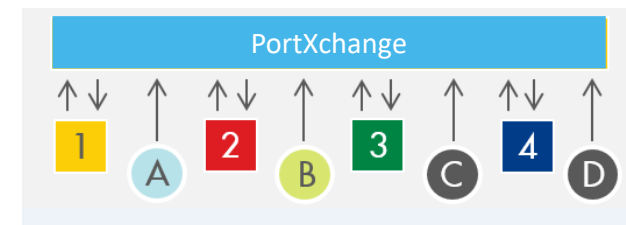### Current state in many ports

(1) Terminal – (A) Schedules
(2) Vessel – (B) ETA/ETD
(3) Authority–(C) Pilots/Tugs
(4) Service Providers – (D) bunkering

Often ports face fragmented information that hampers a clear view of the different activities of a port call
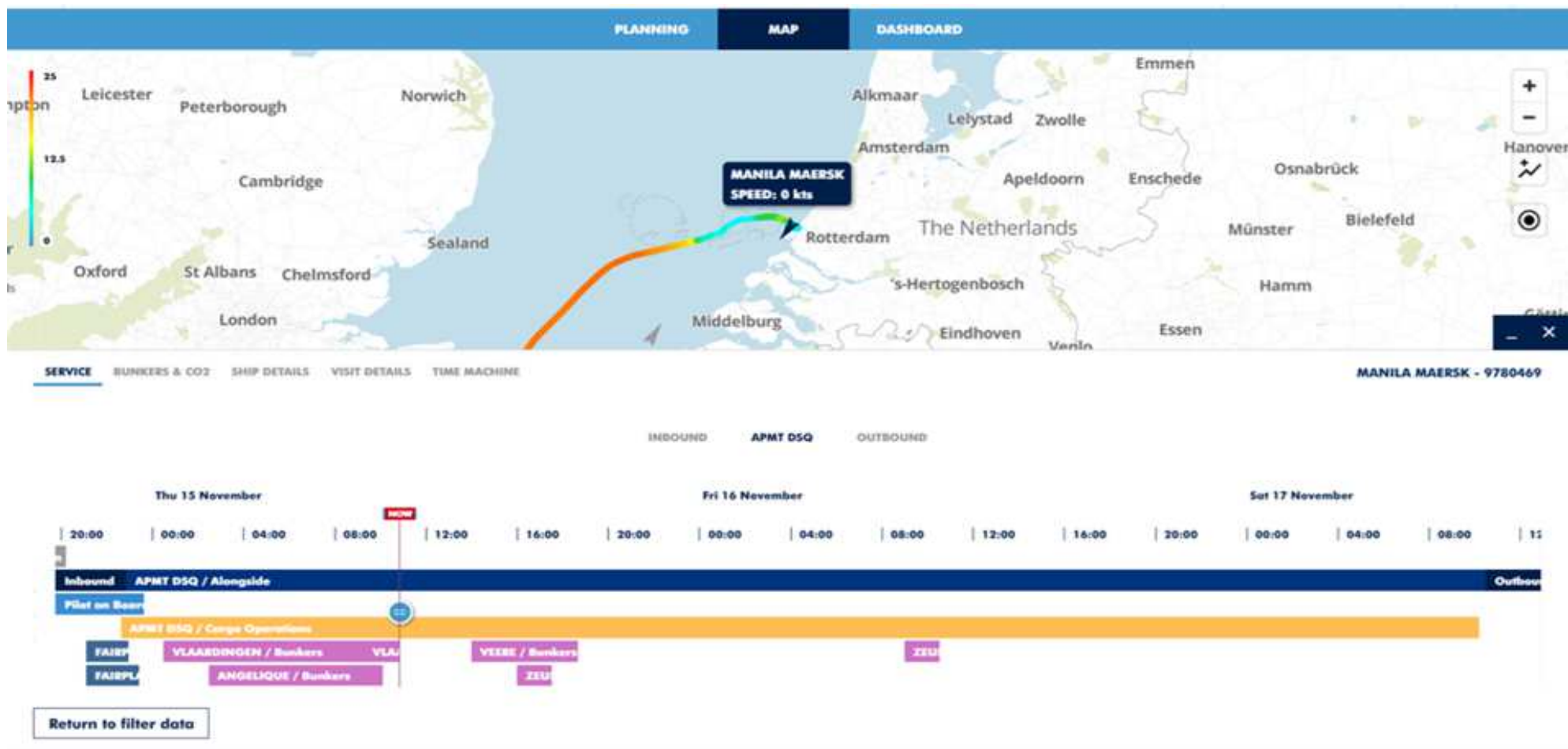
Future State

(1) Terminal – (A) Schedules
(2) Vessel – (B) ETA/ETD
(3) Authority –(C) Pilots/Tugs
(4) Service Providers – (D) Bunkering

By connecting all relevant port community players on one platform, PortXchange will support data sharing and collaboration in the port

Port Xchange

Pillar 1 - Shared view of operational planning
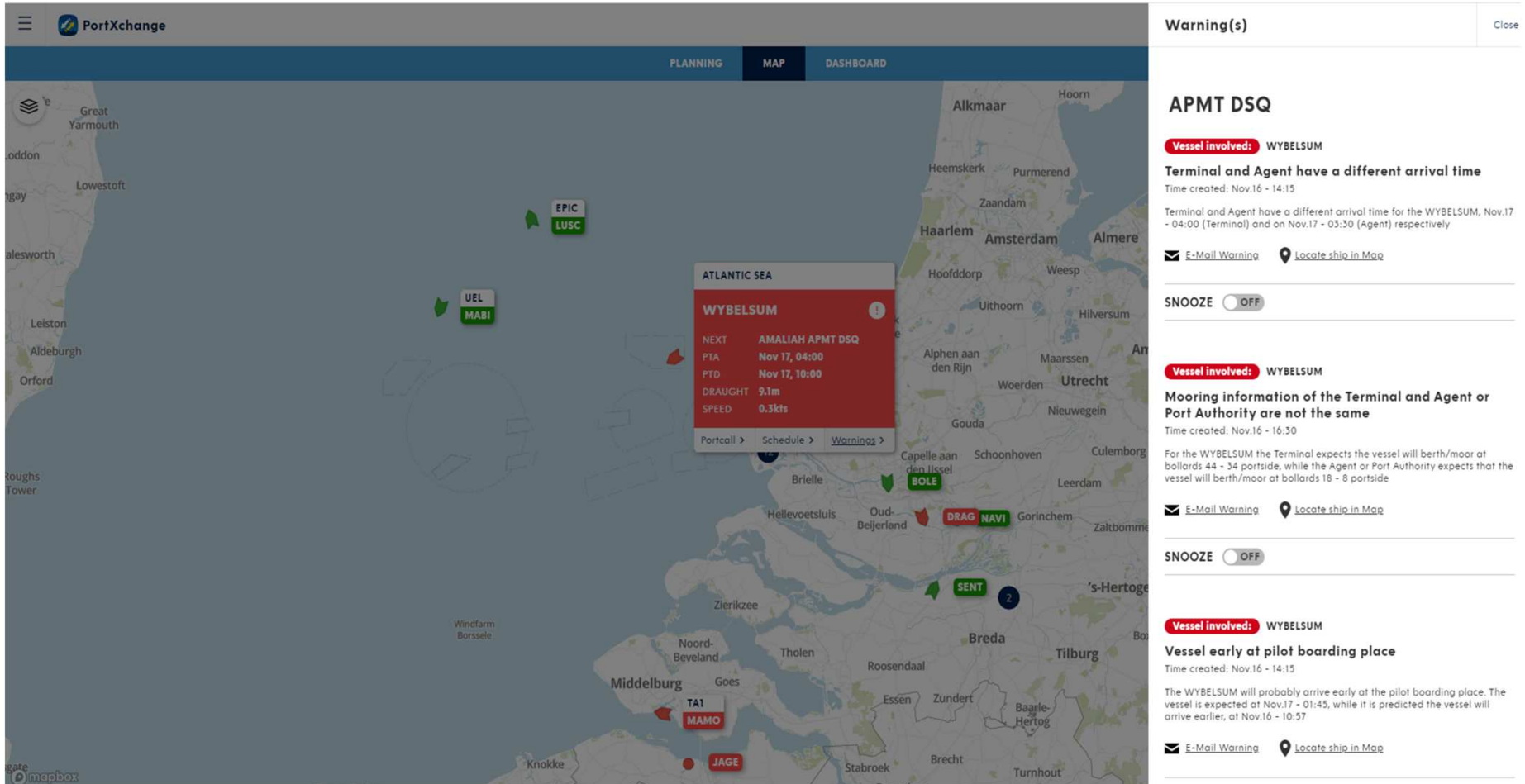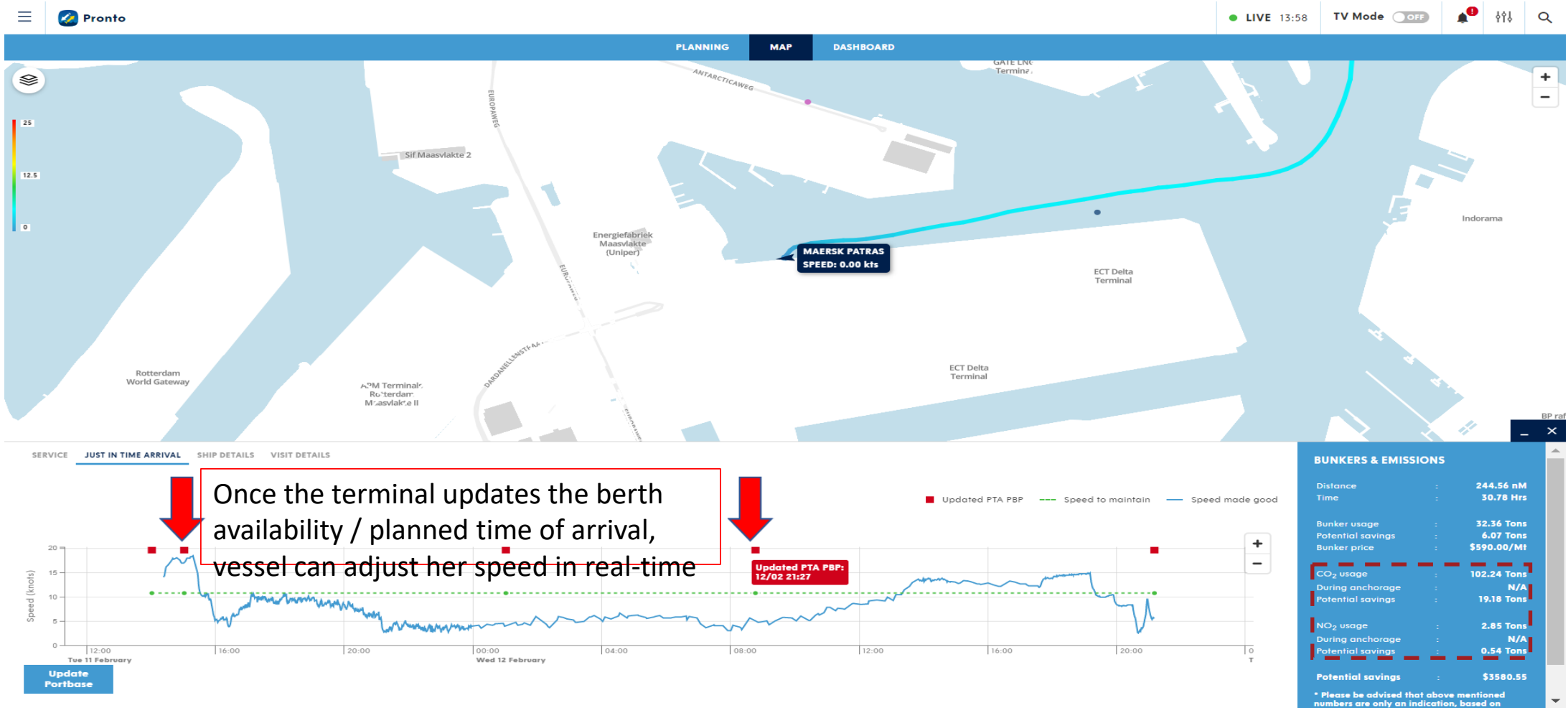
an0   Use Synchronizer
                 abhishek nair; 2022-09-21T07:33:42.012

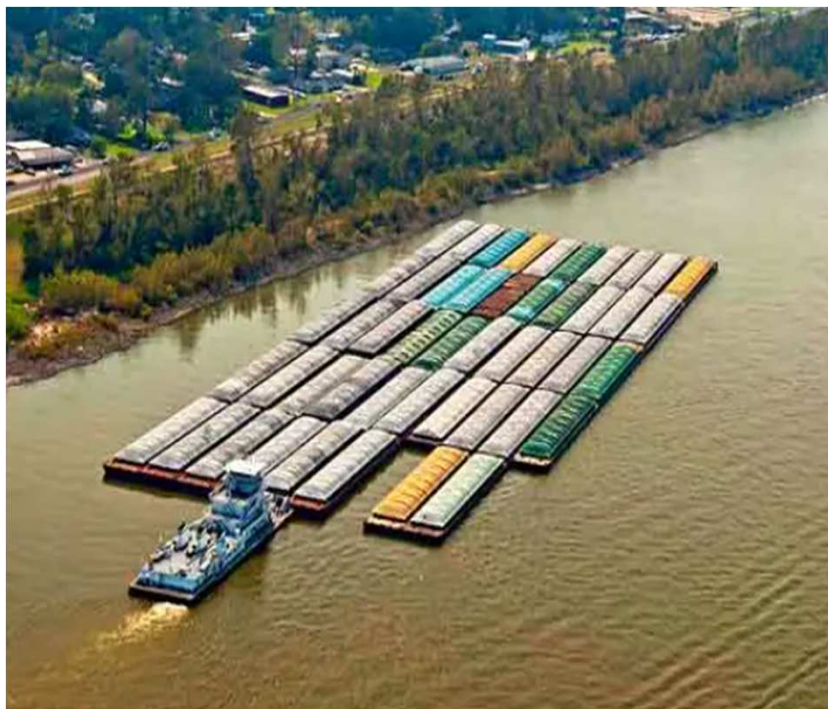# Pillar 2 - Timely notifications and warnings

Pillar 3 – Just In Time Arrivals to eliminate waiting time at anchorage that drives operational efficiency, lesser congestion and a greener port

Supporting over 100.000 port calls worldwide

Port Xchange

Bespoke solutions tailored to industry and client's needs

Improve utilization rates and productivity of client's assets and increase customer satisfaction through the use of AI-enabled planning tools for proactive decision-making.

Port Xchange

Folie 9

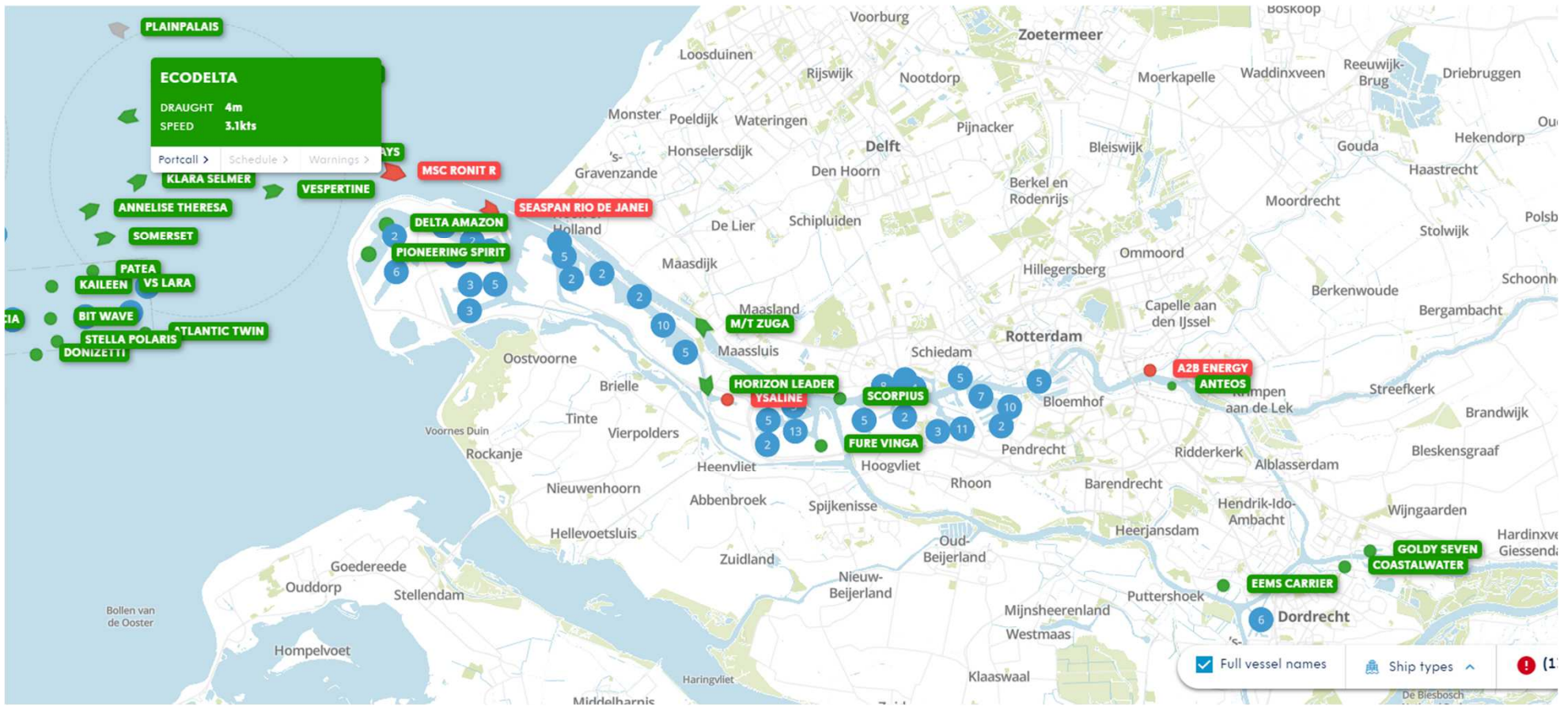**an0**   Include reference to Miss river
abhishek nair; 2022-09-21T07:08:46.112

an1   Traffic and characteristics
abhishek nair; 2022-09-21T07:09:02.415

Bespoke solutions tailored to industry and client's needs

Similarities and disparities with the Danube River Ports ecosystem

an0

Similarities and disparities with the Danube River Ports ecosystem
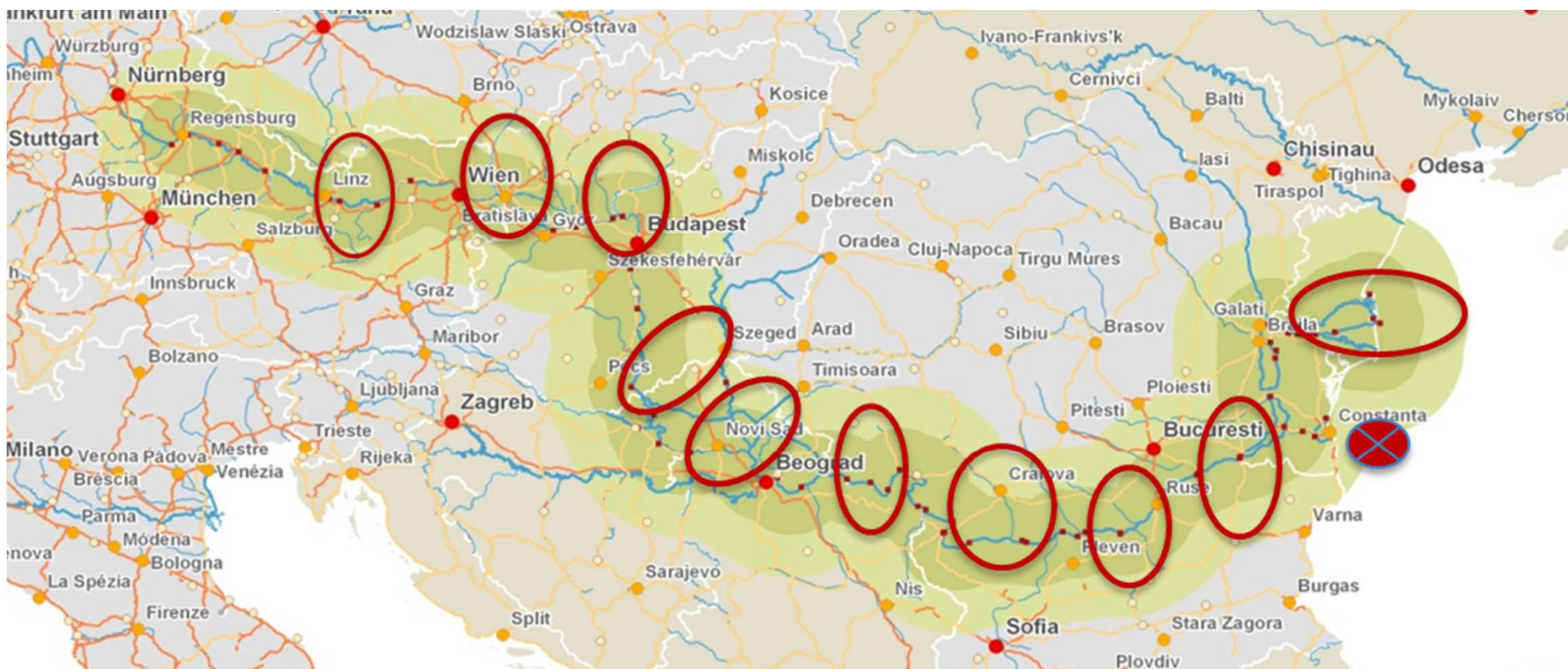
Courtesy : © Pro Danube

Port Xchange

an0　　　　Container vs dry bulk

abhishek nair; 2022-09-21T07:26:07.167

Addressing the essential needs of a multi-port ecosystem

Pillar 4 - Network effects

- Fostering co-operation between ports while staying maintaining a healthy competition

    - Better utilization of fixed infrastructure

    - Eases pressure off road and rail transport networks

- Facilitate Synchro-modality

- Drives economic growth and employment for local communities in the region.

- Greenhouse gas Emissions per unit transport work reduced significantly

Port Xchange

an0 No congestion due to less cargo
     abhishek nair; 2022-09-21T07:24:50.022

an1 Include competition
     abhishek nair; 2022-09-21T07:25:13.032

an2 Foster cooperation
     abhishek nair; 2022-09-21T07:25:21.621

an3 Facilitate Synchromodality
     abhishek nair; 2022-09-21T07:34:01.573

Marine Emissions Dashboard

Port Emissions

ROTTERDAM

From: 12-05-2022 **To:** 19-05-2022

From 12-05-2022 to 19-05-2022
Total Emissions in NLRTM

CO_2 95 MT	CH_4 21 MT	N_2O 11 MT

	UNDERWAY	ANCHORED	MOORED	TOTAL
CO_2	4h / 41.5 MT	96h / 49.8 MT	40h / 3.8 MT	140h / 95.1 MT
CH_4	92h / 8.8 MT	43h / 1.3 MT	18h / 10.4 MT	153h / 20.6 MT
N_2O	37h / 1.5 MT	60h / 5.0 MT	78h / 4.4 MT	175h / 11.0 MT
SO_2	74h / 1.1 MT	22h / 1.2 MT	90h / 1.1 MT	186h / 3.3 MT

EMISSIONS OVER TIME

May 12 | May 13 | May 14 | May 15 | May 16 | May 17 | May 18 | May 19

Legend: CO_2 | CH_4 | N_2O | SO_2

Components Breakdown

VESSEL TYPE

Bulk Carrier

	UNDERWAY	ANCHORED	MOORED	TOTAL
CO_2	38h / 21.0 MT	12h / 11.5 MT	43h / 0.6 MT	93h / 33.1 MT
CH_4	14h / 3.8 MT	77h / 10.4 MT	97h / 2.2 MT	188h / 16.5 MT
N_2O	68h / 0.4 MT	45h / 12.5 MT	33h / 6.9 MT	146h / 19.8 MT
SO_2	96h / 2.4 MT	82h / 1.0 MT	9h / 0.1 MT	187h / 3.5 MT

Chemical Tanker

	UNDERWAY	ANCHORED	MOORED	TOTAL
CO_2	31h / 9.8 MT	3h / 18.5 MT	44h / 6.0 MT	78h / 34.4 MT
CH_4	61h / 6.1 MT	15h / 19.3 MT	64h / 6.9 MT	140h / 32.3 MT
N_2O	34h / 10.5 MT	38h / 3.0 MT	64h / 2.6 MT	136h / 16.1 MT
SO_2	6h / 2.6 MT	21h / 0.8 MT	90h / 3.1 MT	117h / 6.5 MT

Combination Carrier

	UNDERWAY	ANCHORED	MOORED	TOTAL
CO_2	53h / 8.1 MT	22h / 7.8 MT	14h / 27.0 MT	89h / 42.9 MT
CH_4	36h / 2.0 MT	87h / 10.2 MT	24h / 3.2 MT	147h / 15.4 MT
N_2O	96h / 7.4 MT	99h / 10.5 MT	49h / 1.3 MT	244h / 19.2 MT
SO_2	39h / 1.7 MT	39h / 2.2 MT	17h / 1.7 MT	95h / 5.6 MT

Container Ship

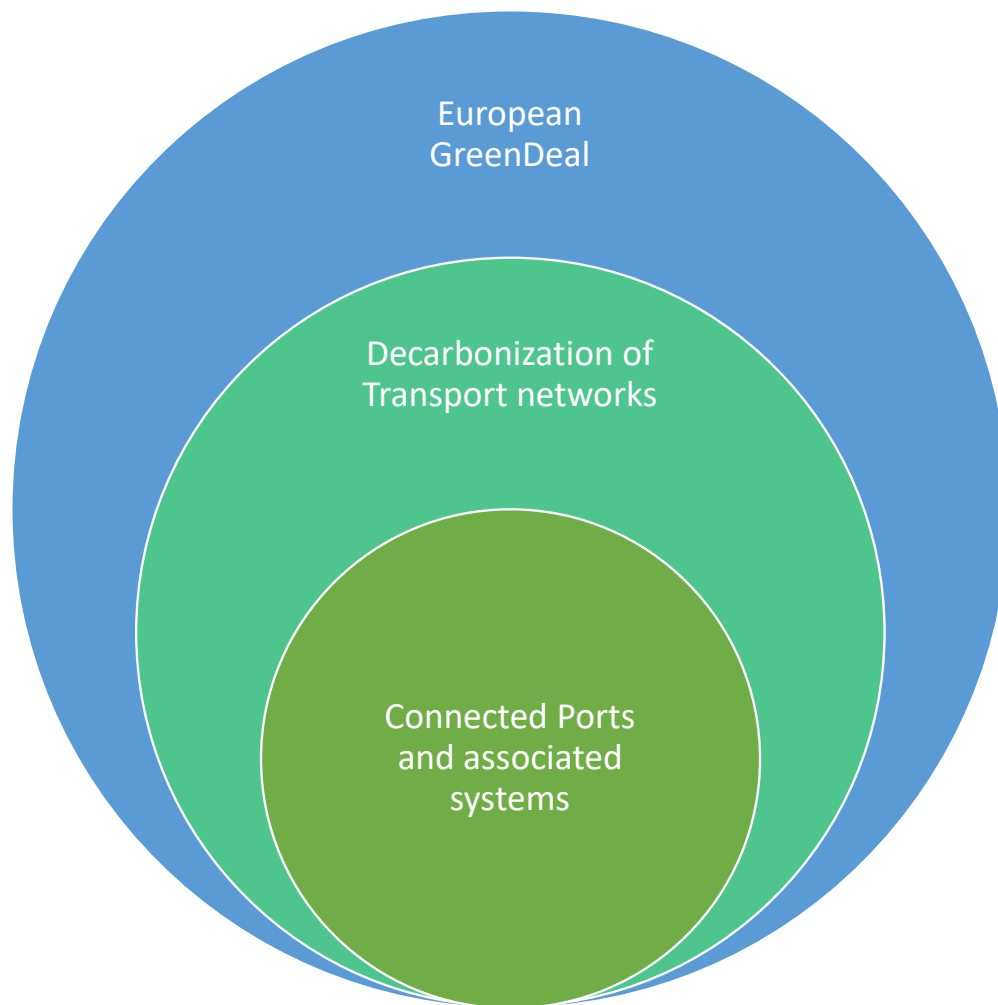|	UNDERWAY	ANCHORED	MOORED	TOTAL
CO_2	41h / 0.6 MT	91h / 10.7 MT	24h / 18.8 MT	156h / 30.1 MT
CH_4	5h / 1.5 MT	74h / 8.9 MT	36h / 21.2 MT	115h / 31.7 MT
N_2O	46h / 11.3 MT	34h / 10.5 MT	2h / 8.7 MT	82h / 30.6 MT
SO_2	37h / 1.0 MT	27h / 0.7 MT	6h / 2.4 MT	70h / 4.2 MT

Crude Oil Tanker

	UNDERWAY	ANCHORED	MOORED	TOTAL
CO_2	73h / 7.9 MT	88h / 9.8 MT	93h / 2.6 MT	254h / 20.3 MT
CH_4	55h / 18.9 MT	91h / 16.7 MT	90h / 26.8 MT	236h / 62.4 MT
N_2O	62h / 12.0 MT	84h / 8.8 MT	88h / 11.7 MT	234h / 32.5 MT
SO_2	12h / 2.3 MT	71h / 2.8 MT	94h / 1.5 MT	177h / 6.6 MT

Passenger Ship

	UNDERWAY	ANCHORED	MOORED	TOTAL
CO_2	49h / 15.5 MT	35h / 4.2 MT	46h / 24.0 MT	130h / 43.7 MT

Port Xchange

Towards a connected ports ecosystem...

European
GreenDeal

Decarbonization of
Transport networks

Connected Ports
and associated
systems

A digital port is a connected port

A connected port is one which harnesses the collective expertise of manpower, AI and machinery to drive operational efficiency

An operationally efficient port is a greener and safer port

Port change

PortXchange introduction
Mission

To become world leader in sustainable portcalls