REMONTOWA MARINE DESIGN & CONSULTING

Comprehensive design and engineering services



Salish Orca (LNG Ro-Ro/Passenger Vessel)



Malik Arctica (Arctic Container Vessel)



Ile d'Yeu (Conversion to Cable Laying Vessel)



Ben Woollacott (Hybrid Ro-Ro/Passenger Vessel)



ORP Kormoran (Minehunter)



BC Ferries Spirit Class (LNG propulsion)



Zodiak II (Multi-purpose Vessel)



Siem Aimery (Cable Laying Vessel)



DFDS Fleet (BWTS)



Petrobaltic (Construction upgrade)



Fire-fighting Tug (Newbuilding)



Stena Scandinavica (Scrubber System)

PROJECT: 101056799- DT4GS HORIZON-CL5-2021-D5-01-13





Open collaboration and open Digital Twin infrastructure for Green Shipping (DT4GS)



- EU Founded Programme H2020
- Schedule 36 months (06.2022-05.2025)
- 21 partners from 10 countries of the EU



DT4GS

Smart solutions for a sustainable water industry

Digital Tween (DT)

A highly complex virtual model that is the exact equivalent (or twin) of a physical object or process

PROJECT TARGET





The operation of the entire waterborne transport, from initial ship design to end-of-life across all industries that support the ship's lifecycle.

Industry-wide decarbonization decision support system.

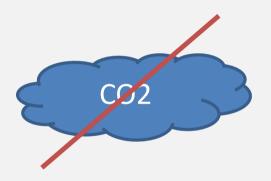
Main strategic objectives:

1

20% CO2 reduction CO2 to 2026r

2.

20% improvement in the cost-effectiveness of "green solutions"



3.

55% CO2 reduction to 2030

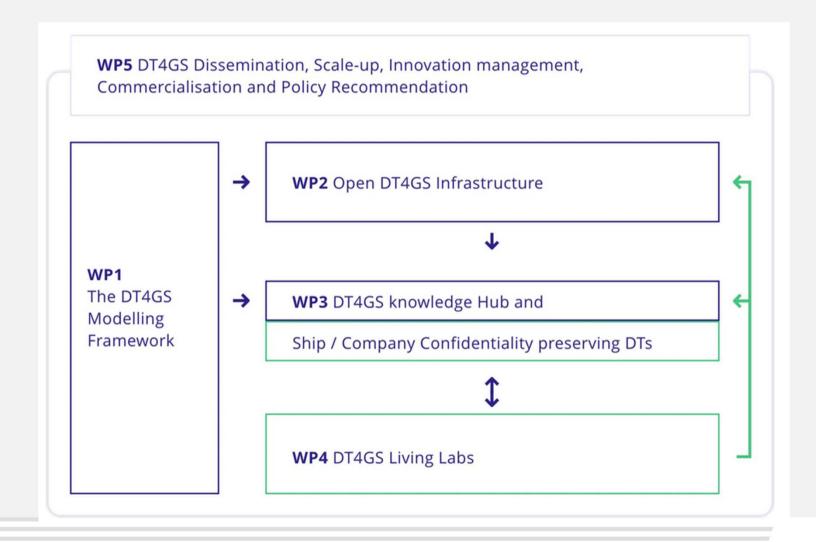
- 4

Zero-emission waterborne transport by 2050

TASK OVERVIEW







www.rmdc.rh.pl

TASK REVIEW- WP1





O1 WP1 - Design structure DT4GS

R1 DT4GS Value-oriented Analysis in enabling Shipping Decarbonisation

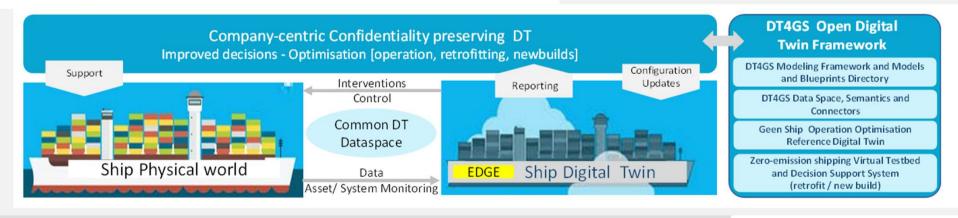
R2 Ship Operational Performance Optimisation targeting 20% reduced CO2e R3 robust benchmarking methodology for green energy solutions to support 2030 Retrofit Planning targeting 55% reduced CO2e R4 DTs in the design and production of new green autonomous vessels 2050 Horizon

R5 GS collaboration models with port and broader Stakeholders and GS Trajectories

R6

comprehensive (retrofit / new build) DTenabled design methodology for zero emission shipping

DT4GS Modelling Framework O1-WP1



www.rmdc.rh.pl

TASK REVIEW-- WP2





R11 DT4GS Smart Edge and Orchestration infrastructure

R10 DT4GS Models Blueprints directory

R9 Modelling, Analysis, Simulation and Optimisation Tools

R8 DT4GS Data Space, Semantics and Connectors

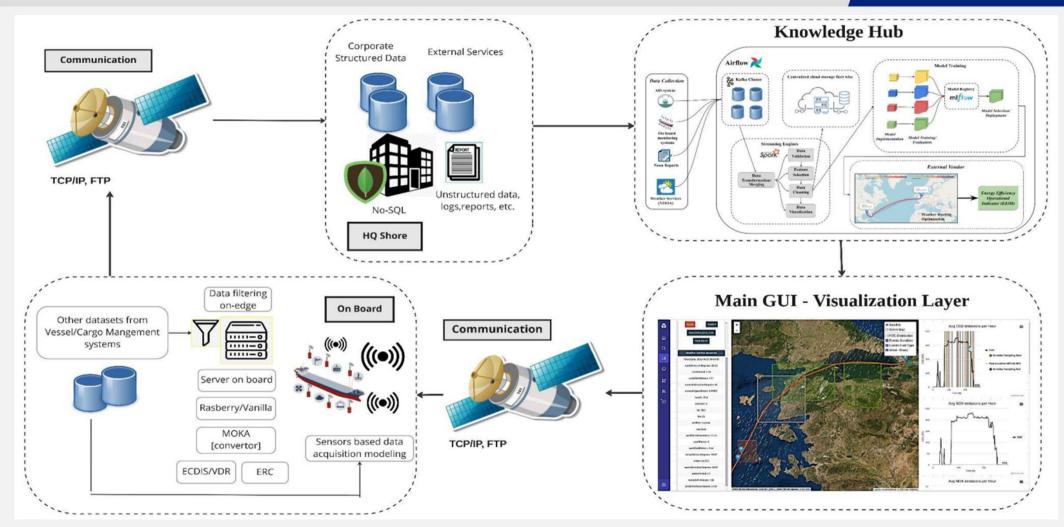
R7 Transferable DT4GS Architecture

Open DT4GS Infrastructure O2-WP2

WP2 –DT structure for maritime industry



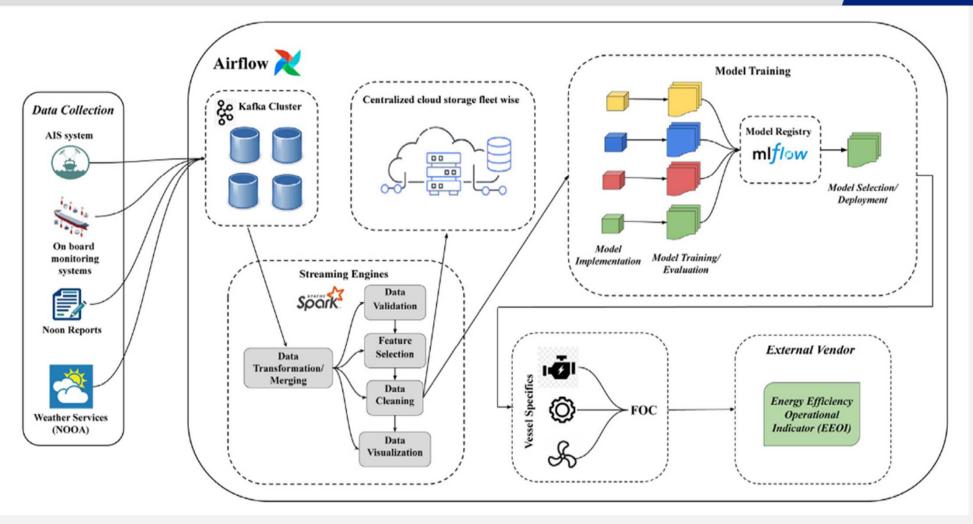




WP2 – data flow for FOC (fuel oli consumption)



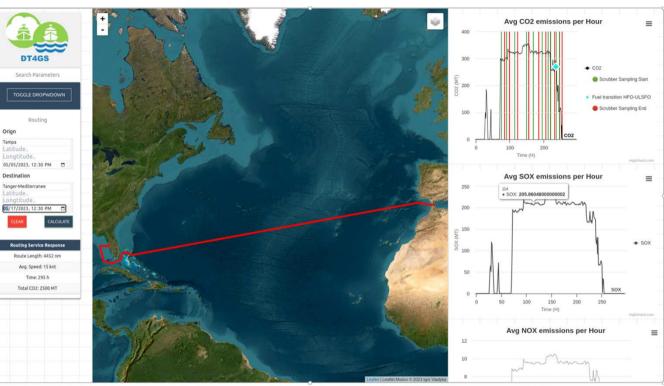


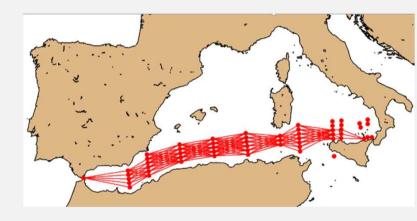


WP2 – routing optimization











Voyage	Date	Latitude	Longitude
Departure	2019-09-21	27.7° N	82.5° W
Arrival	2019-10-03	35.8° N	6° W
BASIC COMPARISON	Actual route estimation	Optimized route estimation	
Distance (nm)	4787.4	4369.36	
Time (hours)	289.97	264.63	
Avg Speed (kt)	16.52	16.51	
Total FOC (MT)	774.53	759.97	
CO_2 (MT)	2411.88	2366.54	

TASK REVIEW-WP3





R16 DT4GS-DT User Interface

R13 GS Operational Optimisation DT R14 Zeroemission shipping Decision Support System (retrofit / new build) R15 Ship or company specific DT Configuration and Deployment support services

R12 DT4GS Decarbonisation knowledge Hub for and EU Policy Testbed for zero-emission shipping

DT4GS knowledge Hub and Ship/Company Confidentiality preserving DTs O3-WP3

TASK REVIEW-- WP4





O4_WP5 – Living Labs



LL1 – Euronav NV – Crude Oil Tanker



LL2 – Danaos Shipping Co – Container



LL3 - Balearia - ROPAX



LL4 – Star Bulk – Bulk Carrier

TASK REVIEW- WP5





O5_WP5 – Commercialization DT4GS

T5.1 Dissemination and communication

T5.4 Capacity building and policy recommendations



T5.2 Cluster DT4GS

T5.3 Innovation Management & Utilization Strategy

www.rmdc.rh.pl





THANK YOU