



News & updates

Vol.4 - November 2023



DT4GS Insights

We want to share with you the **4th edition of DT4GS Newsletter** marks the relevant activities, reports, posts that occurred the past months. Our intention is not only to inform the public on those specific activities but also to show the implemented work to understand the effectiveness and influence towards a greener horizon.

DT4GS Consortium invites you to read project insights. In this issue, you will read about:

1. DT4GS Technical developments on the Transferable DT4GS (Digital Twin for Green Shipping) architecture.
2. DT4GS Advisory (Strategy) Board meeting.
3. DT4GS at the Waterborne Days 2023 in Brussels.
4. DT4GS presentation at the event of Bugwirght2 project by DANAOS partner.
5. DT4GS and NH3CRAFT projects collaborate!



DT4GS Advisory (Strategy) Board meeting, 28th of September, Brussels - Belgium

DT4GS Technical Developements on the Transferable DT4GS(Digital Twin for Green Shipping) architecture.

As we approach a significant milestone in our project, it's exciting to reflect on the progress made in recent months. Our team has been intensely working on the Transferable DT4GS (Digital Twin for Green Shipping) architecture, a groundbreaking initiative poised to revolutionize the shipping industry.

The DT4GS architecture represents the culmination of extensive research and development efforts, aimed at fostering a green shift in shipping. This sophisticated platform synergizes digital twinning, knowledge graphs, and edge computing, offering a versatile and transferable solution for ship decarbonization.

At the core of DT4GS is a functional metamodel supported by a robust knowledge graph, accommodating diverse use cases, ships, and stakeholders. It emphasizes advanced simulation and optimization tools for decarbonization, marking a pivotal step towards sustainable, eco-friendly shipping practices.

Digital twinning, a key component of DT4GS, enables the virtual replication of physical ships. This approach provides unparalleled insights into real-world scenarios, allowing for effective analysis,

prediction, and optimization. DT4GS stands out with its open architecture model that facilitates interdisciplinary collaboration and leverages a unified dataspace for all shipping vessels.

The DT4GS Functional Metamodel, central to the architecture's transferability, semantically translates green transition scenarios into an exchangeable format. This Metamodel serves as an invaluable asset for both business and technical users, simplifying the interplay between operational requirements, environmental conditions, optimization strategies, and decarbonization technologies. It effectively captures the ship's environmental and economic performance indices.

Additionally, the architecture integrates a knowledge graph (KG) as a semantic broker, encoding sector-related parameters and bridging high-level operations with the intricate details of ship assets and functions. The KG empowers an event-driven messaging system that consolidates diverse data sources, enhancing data reusability, streamlining execution paths, and facilitating knowledge exchange.

With foresight into technological advancements, the architecture incorporates edge computing, ensuring scalable deployment and minimal latency. This adaptability supports model transferability and automated deployment. Central to our recent advancements is the successful implementation of edge computing. In a recent workshop, we demonstrated the capability to remotely deploy applications to the edge, a testament to the project's forward-thinking and practical application.

We are now poised to transition from theory to practice by deploying the DT4GS architecture in our Living Labs. This phase will benchmark the tangible benefits of the DT4GS framework. Stay tuned for more updates on this transformative journey in green shipping.

DT4GS Advisory (Strategy) Board meeting on the 28th of September, in Brussels

The 1st DT4GS Advisory (Strategy) Board meeting with prominent actors of the waterborne industry, was held on the 28th of September, in Brussels. During the meeting, the progress of our project 4 Living Labs was presented as well as the latest implementation of the DT4GS Digital Twin platform. Moreover, the launch of the DT4GS

Alliance was thoroughly discussed and the way ahead.

More Key Takeaways that was elaborated during the meeting are:

- Exploration of the potential of digital twins in revolutionizing green shipping.
- Outlining the roadmap for DT4GS's upcoming phases, ensuring a sustainable maritime future.
- Deliberation on integrating cutting-edge technology to minimize the carbon footprint in shipping.

We're deeply grateful to our board members for their invaluable insights, and our team, for orchestrating a fruitful session. The maritime industry is on the brink of a transformative era, and with projects like DT4GS, we are optimistic about sailing towards a greener horizon.

DT4GS participated at the Waterborne Days on September 26th and 27th in Brussels.

In the context of the Waterborne Days 2023 that took place in Brussels INLECOM the DT4GS project Coordinator, as a member of the WaterborneTP, attended the Waterborne Days on September 26th and 27th in Brussels. The DT4GS - The Digital Twin for Green Shipping project, has been represented by the Project's Coordinator Dr. Takis Katsoulakos, the Project Manager Georgia Tsiochantari and the Technical Coordinator Anargyros Mavrakos.

During the two-day conference, the INLECOM team participated in the workshops and discussions regarding the Strategic Research and Innovation agenda for the Partnership on Zero-Emission Waterborne Transport which will influence the direction of future research.

DT4GS presentation at event of Bugwright2 project by DANAOS partner

The presentation was in the context of BugWright2 workshop, addressed to industrial stakeholders, and was held in Lisbon, Portugal on Friday September 15. DANAOS project partner presented the DT4GS concept and latest advancements of the project, and established an interconnection and a possible synergy between the hull simulation model they are developing and the DT4GS infrastructure in terms of data exchange/validation and model employment for assessing the condition of the hull and applying appropriate mitigation measures.

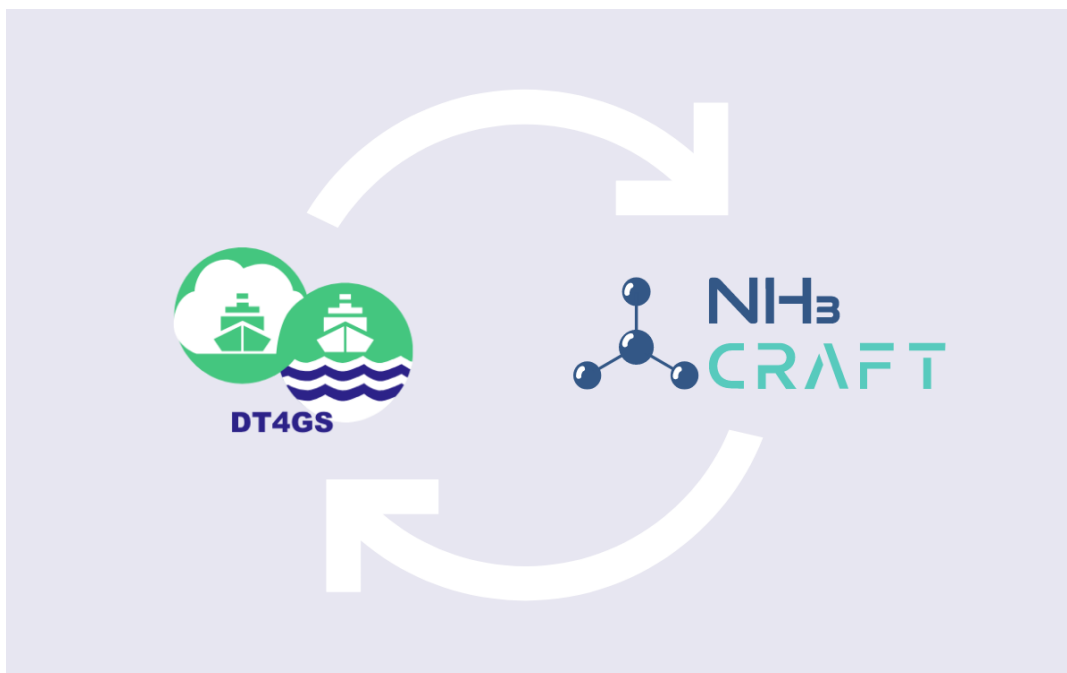
A few words about the DT4GS and NH3CRAFT projects collaboration in the context of creating synergies with related EU-funded projects!

DT4GS pursues to join forces with other EU projects. The project aims to create synergies with related EU- funded projects in the field of Waterborne Transport. In that respect, representatives from the DT4GS & NH3CRAFT consortia met in Glasgow (UK) during the NH3CRAFT GA meeting ([link to this event](#)) and in Valencia, Spain ([link to this event](#)) and agreed to establish connections and synergies to better achieve their intended objectives and to increase the impact of EU investments under Horizon Europe.

DT4GS aims to providing an industry-wide decarbonization decision-support system for shipyards, equipment manufacturers, port authorities and operators, river commissions, classification societies, energy companies and transport /corridor infrastructure companies.

NH3CRAFT project will develop a next generation sustainable, commercially attractive and safe technology for high-volume storage and transportation of ammonia as fuel on-board ships.

Both projects have established a common task force and kicked-off discussions to identify common areas of interest and explore ways to adopt best practices and to enhance their sustainability plan.



[Click here for more details](#)

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COMMUNICATION HIGHLIGHTS

- DT4GS videos are available [here](#)
- The project's flyer and leaflet available on the [website](#).
- Project's press release is available [here](#).
- Project's publications are available [here](#)



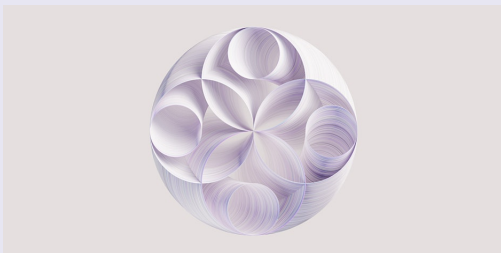
DT4GS project , funded by the European Commission (GA N0.101056799) establishes the DT4GS ALLIANCE, a consortium of leading organizations working together to accelerate the decarbonization of the shipping industry through the use of Digital Twin technology.

DT4GS News

Comprehensive DT-enabled design methodology for zero emission shipping

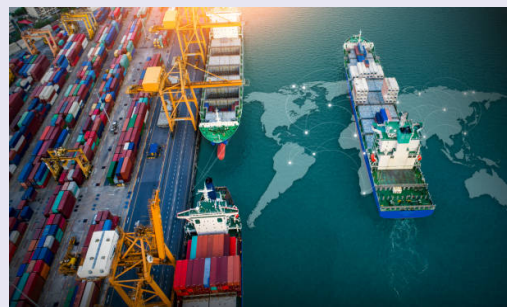
This task aims to deliver a comprehensive comprehensive DT-enabled design methodology for zero emission shipping that integrates the new methods and models proposed in the project both for retrofit and new builds.

[Read more](#)



DT4GS presentation at Trinity College Dublin

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Our latest update on LL4 STARBULK Bulkers-centric DT by GLM partners

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**GLM partner's participation at
DT4GS Advisory Board
Meeting in Brussels, Belgium**

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**DT4GS held its 2nd workshop
on 26th of September 2023**

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DT4GS Flyer

[DOWNLOAD HERE](#)



The Digital Twin for Green Shipping

A decision support system for the waterborne industry to achieve decarbonization



DT4GS will provide an industry-wide decarbonization decision-support system for shipyards, equipment manufacturers, port authorities and operators, river commissions, classification societies, energy companies and transport/corridor infrastructure companies.

DTs can revolutionize the workings of the entire waterborne transport, from preliminary ship design right through to decommissioning across all the industries serving a ship's.

Impact

The results of the project will contribute to the acceleration of green shipping transformation targets in the short, medium term and long term.

i1

20% reduction CO₂e in the short term

i2

20% improvement costs efficiency for GS solutions

i3

55% reduction CO₂e by 2030

i4

Zero-emission waterborne transport by 2050



DT4GS will provide an **industry-wide decarbonization decision-support system** for shipyards, equipment manufacturers, port authorities and operators, river commissions, classification societies, energy companies and transport /corridor infrastructure companies.

[Go to our website](#) →

For more information about the DT4GS project, please feel free to contact us at

info@dt4gs.eu

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This project has received funding from the European Union's Horizon Europe research and innovation program under grant agreement no. 101056799

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