



OCTOBER 2023 – dTHOR NEWSLETTER #1



Dear Partners and Readers,

We are delighted to launch dTHOR Newsletter, which aims to provide regular updates on the progress of the project and promote dTHOR outside of the consortium. The intention with this new biannual paper is to keep our readers on track of the latest developments of the projects, and the events the consortium participated in. In addition, links will be regularly drawn to events and articles of interest for dTHOR partners.

We hope that this newsletter will give you a better understanding of our vision, mission, and long-term goals.

Please feel free to reach out at sr@seaeurope.eu if you think that some elements in your work package should be put under the light.

IN THIS EDITION:

dTHOR Kick-Off Meeting, 23-24 January 2023

Second Consortium Meeting and First General Assembly, June 2023

Second dTHOR General Assembly, 5-7 December 2023

Work Package 7 Anticipate their Kick Off Meeting in November 2023

Work Package 9: Defining Individual Scenarios to Increase Weapon System Accuracy

Progressive Structuration of Work Package 10 Following their Kick-Off Meeting in May 2023



dTHOR Kick-Off Meeting, 23-24 January 2023

"It is an honor to lead such an ambitious project with so many competent and central actors in the defence and research industry. We are really looking forward to furthering the ambitions of EDF to promote cooperation among companies and research actors of all sizes and geographic origin in the EU, in research and development of state-of-the-art and interoperable defence technology and equipment." – said Trond Kvamsdal, dTHOR Project Coordinator.

After being selected last July 2022 by the European Commission (EC) under the European Defence Fund (EDF 2021), the "Digital Ship Structural Health Monitoring" (dTHOR) consortium is proud to announce the official start of the project, which will last 36 months. Led by SINTEF, dTHOR will develop the next generation of a predictive Ship Structural Health Monitoring system based on innovative utilization of sensor measurement and hybrid analysis modeling enabling digital twins with high physical realism.

The dTHOR Kick-Off meeting took place last 23 and 24 January at the Norway House, in Brussels. It gathered representatives of the consortium and the European Commission. The consortium is composed of 34 partners from 11 countries including Norway: SINTEF, SINTEF Ocean, JOTNE, Light Structures; Belgium: SEA Europe; France: Naval Group, Commissariat à l'Énergie Atomique et aux énergies alternatives, Ecole Nationale Supérieure d'Arts et Métiers, SAFRAN DS, SIREHNA, Testia, an Airbus company; Germany: thyssenkrupp Marine Systems, QRelation; Greece: ISD, Ethnicon Metsovion Polytechnion, Ethniko Kai Kapodistriako Panepistimio Athinon, Ethniko Kentro Erevnas Kai Technologikis Anaptyxis, HERON, Intracom Defense AE, Panepistimio Patron; Italy: CETENA, Consiglio Nazionale delle Ricerche, Politecnico di Milano; Netherlands: MARIN, DAMEN, Ministry of Defense, RNL Aerospace, TU Delft; Spain: Navantia, Instituto Nacional de Tecnica Aeroespacial Esteban Terradas, SAES, Tecnicas y Servicios de Ingeniería; Sweden: SAAB Kockums; Estonia: CAFA Tech; Denmark: Structural Vibrations Solutions.

Second Consortium Meeting and First General Assembly, June 2023

Held on 22 and 23 June 2023 in Trondheim, Norway, the second dTHOR Consortium Meeting was the opportunity for all the partners to discuss the content of the work packages, and the planned organization for the next three years. The second day was dedicated to the first dTHOR General Assembly. It was therefore the occasion for all the work package leaders to update the other partners on the improvement of their work. Very fruitful, these two days laid the basis for the work to be done and for good collaboration between all the partners.



Second dTHOR General Assembly, 5-7 December 2023

From 5 to 7 December 2023, the dTHOR Partners will be reunited in Den Helder, Netherlands, for the second General Assembly.

On the agenda will be the updates from each work package leader to all on the various developments of the project, the preparation of the way forward, and the visit of navy facilities arranged by MARIN and the Dutch Ministry of Defence.



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EURONAVAL Talks

A year ahead of Euronaval 2024, online roundtables are organized to discuss current or increasingly important topics related to the naval domain. Some of these quarterly talks may be of interest, such as that of 13 June on the opportunities in the global defence market.

More information can be found at: [Euronaval 2024 - Talks](#).

3-7 June 2024 : 9th ECCOMAS

The 9th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS) will take place next June in Lisbon, Portugal. This will be the opportunity to discuss state-of-the-art developments in scientific computing applied to engineering sciences with lectures, special technology sessions, and mini-symposia. Trond Kvamsdal, dTHOR Project Coordinator, has been invited to talk about predictive digital twins. More information is available at: [ECCOMAS 2024](#).

Work Package 7 Members Anticipate their Kick-Off Meeting in November 2023

Since the work of Work Package 7 will start this December, the partners have already taken some steps to anticipate the Kick-Off meeting, by organizing the tasks within the group (choosing task leaders and team members) and by organizing and preparing the agenda of the Kick-Off Meeting in November 2023. The core objective of this meeting is to define each partners' roles and responsibilities, establish periodic technical meetings, and organize the tasks according to the links with other Work Packages.

In addition, Work Package 7 has already provided a state-of-the-art analysis and help determining the KPIs for Work Package 2 entitled "Requirements and Specifications".



Work Package 9: Defining Individual Scenarios to Increase Weapon System Accuracy

In the past months, Work Package 9 members (TSI, Navantia, ISD, Sintef, and tkMS) have discussed the conceptual approach to adopt, the development of the state-of-the-art and the definition of individual scenarios, laying the foundation for the work to be done in near future.

Aiming to increase the weapon system accuracy, the work carried out within this work package deals directly with the functional chain to minimize potential errors. To do so, individual sources of error must be identified and quantified. This explains the importance of individual scenarios, from which requirements can be derived and error influence can be deduced, and therefore the current focus chosen by Work Package 9.

Call for Papers – ICCAS 2024

The next edition of the International Conference on Computer Applications in Shipbuilding will take place in Genoa, Italy, from 1 to 30 September 2024. This event will address the implementation of digital technologies in the shipbuilding and marine environments. A call for papers has been sent out to discuss practical applications of digital technologies and their success in use. Papers can be submitted until 1 February 2024. Information can be found at [ICCAS 2024 - International Conference on Computer Applications in Shipbuilding - Coming Soon \(rina.org.uk\)](https://www.rina.org.uk/iccas2024).

Progressive structuration of Work Package 10 following their Kick-Off Meeting in May 2023

After Work Package 10 Kick-Off Meeting last May, its 18 members have been actively working to provide dTHOR Partners with the resources to validate, verify, and demonstrate the technologies that they will develop during the project.

Since the end of May, the Work Package members worked to reach a well-organized structure around a resource management group where each of the main contributors lead one of the following resource areas:

- CAD/FEM model of a use case ship both as a full model and as a scaled model
- Design, build, and dry testing of a scaled model of the use case
- Wet testing of the scaled model, e.g., in a towing tank
- Demonstration of a prototype system on a real ship

In addition, the resource management group also includes two support functions for defining Technology Readiness Levels (TRLs) and for helping partners with error analyses.

All of this structuration work was carried out during multiple meetings, held through VTC and in physical format, the last one being held at the research facilities of CNR-INM, Rome, last 13 July.



Further Reading:

Raluca Csernatonu & Bruno Oliveira Martins (2023) Disruptive Technologies for Security and Defence: Temporality, Performativity and Imagination, Geopolitics

In this academic article, the authors come back to the notion of disruption itself and its implications proposing a new analytical framework to study disruptive security and defence technologies, based on three axes: temporality, performativity, and imagination. The intention is to propose a centralized approach to the concept of disruption, drawing its core elements from the different meanings it can have depending on the field (critical security studies, science and technology studies, and innovations studies). The analysis is illustrated with recent examples of the EU, NATO, and US efforts to mainstream emerging security and defence disruptive technologies. DOI: [10.1080/14650045.2023.2224235](https://doi.org/10.1080/14650045.2023.2224235).