



MDEM team on the Final Conference and the General assembly 7 of the NAVAIS project



On 20th June 2018, the first General assembly of the NAVAIS project was organized in Rotterdam with attendance from all 16 participating partners in the project.

Four years have passed since we'd started NAVAIS in 2018 in the same place of De Loft by RDM Next, Rotterdam. We've met with challenges, generated ideas, created new and got experience – hundreds of hours investigating and discussing, matching and combining, checking and aligning. New philosophy of future European shipbuilding was rising up in front of maritime community entering the new era of PLM, MBSE, modular design and production, etc. To me it could have last forever but it's time to draw a line and think about the highs and lows, our successes and pitfalls on the way.

This time we met in the same place to celebrate this significant event and put all dots and comas in the history of this remarkable project. It seems nothing has changed but nothing is the same since we proved in demonstrators that all the objectives of NAVAIS have been achieved. But to what extent? That was the question to the Workpackage leaders.

The last meetings of NAVAIS were held May 30th - 31st and

started with Final Conference. Next day final General Assembly 7 summarized all the efforts and announced the official completion of the project. The Final Conference was held in hybrid format allowing large audience to join the discussion and feel the vibes of this remarkable event. However GA7 was fully live event after the 2 years of COVID isolation. Members of consortium had a chance to meet each other alive at the

same hall. Key players of European Maritime industry prepared their stories of success to share with the audience and participate in live discussions. NMT, TU Delft, Damen (DSGo, DEGd, MDEM, MEGA), Dassault Systemès, Eekels, Bureau Veritas, MARIN, CMT and other companies have sent their representatives to the conference and GA to finalize the project and think of its continuation.

Final conference consisted of the reports on the most important topics of NAVAIS and interviews with the key-players of the project. No wonder that workpackage leaders prepared presentations and took the lead in the conference. However, every participant had a chance to ask their questions as well as the questions and comments have been written down in YouTube translation with the audience of several hundred visitors.



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MDEM was presented by Managing Director Olena Zhukova who paid maximum efforts to get this grant project for our company and guarantee the high quality output to our European partners. Our team also included NAVAIS project manager MDEM Stanislav Seleznov and dissemination manager Nataliia Mamarina.



Preparing for the Final Conference

Virtual audience consisting experts and students, engineers and economists, scientists and workers, together with NAVAIS partners had a chance to see and to listen the complete story of the project spit in parts and topics, feel the spirit of innovation and dream on a new European concept of shipbuilding and maritime industry. In fact all the topics are very important and determine the future of industry for many years ahead. The topic “Modularization in shipbuilding work” presented by Damen and TU Delft included MDEM contribution of ferries 3D physical models and delt with modularization principles designed with the help of demonstrators created by our company.



Introduction by Marco Scholtens

“Platform approach to ship design and production’ by Dassault Systemès, Damen and Eekels explained the double meaning of platform approach in NAVAIS. On the one hand it means PLM 3D Experience platform based design and on the other hand it’s ship design using one platform for series of ships to reduce design and production time and costs. MDEM has also contributed in this topic providing investigation of 3D model platform as well checking all the functionality of PLM 3D experience with demonstrators.



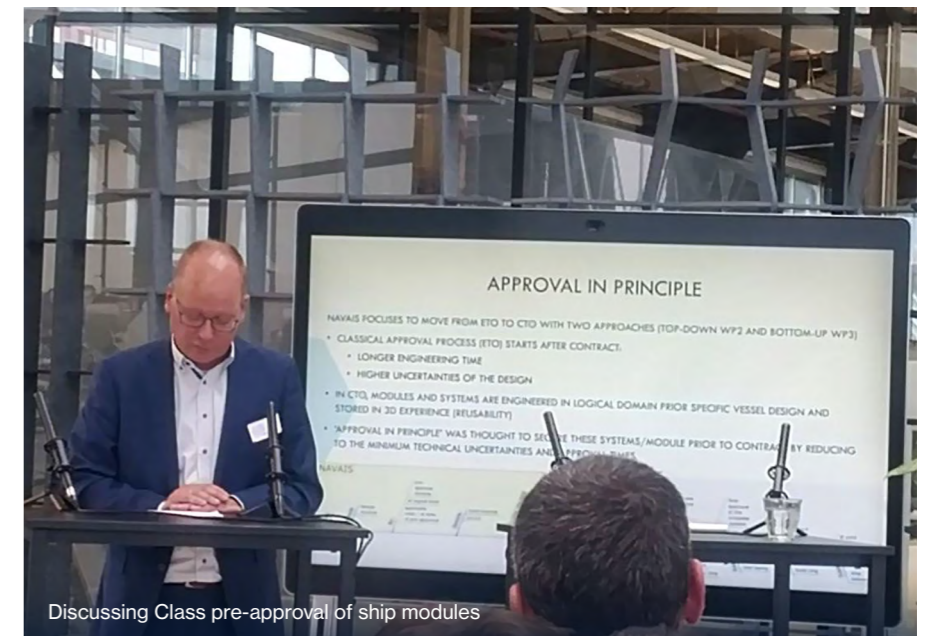
Discussing Modularization in shipbuilding work

The last two topics “Class pre-approval of ship modules” by Bureau Veritas and Damen and “Lowering the environmental impact with design decisions” by Marin and Damen have also touched the objectives of NAVAIS and figured out the new principles of pre-approval by Class in PLM platform and multiple investigations of propeller shapes in order to reduce URN as well other measures to minimize environmental impact of the new vessels.



Discussing Platform approach to ship design and production

And the GA itself. It looked like logical continuation of the Final Conference but with another markers. The point was key result obtained in each discipline or topic with an attempt to estimate the progress or already obtained value.



Discussing Class pre-approval of ship modules

Objective 1 key results included KR1-Modularization principles, KR2-Module library for road ferries and workboats, KR3-System engineering based modular design procedure and KR4 - Modular production method. No doubts that positive result and great progress achieved in this objective and we are proud that MDEM was an active player contributing with the demonstrator 3D models, simplified models for scaling, structural libraries, etc. This is also very important since in NAVAIS definitions module means not only equipment module but complete part of the vessel ready to use for another one in the series. MDEM also has created the input for CMT modular production method providing highly detailed 3D model created in PLM 3D Experience considering all the NAVAIS principles.



GA7 – Objective 1 report

objective as well and participated in structural design of demonstrators and modular principles checking.

The last but not least Objective 3 key results KR7-Low impact and low energy principles and KR8-Validated URN predicting tools turned out to be successful due to multiple investigation provided to obtain the results. MDEM has joined Damen R&D team and put efforts to create the algorithm for the definition of the propeller parameters based on the propulsion system configuration. We celebrated the achievements together and know for sure that this information will be used in future ship design.

of digital twins, update of PLM platform. We are not living in ideal world and continuation of NAVAIS seems obvious to every NAVAIS partner. We briefly discussed the next grant project called [“Computational Tools for Shipbuilding”](#) and MDEM has been officially invited to join it. New challenges are waiting for us..but it will be another story.

What is expected for our company? Though the NAVAIS tasks are over but we still have pretty much to do to save our knowledge and train our personal with the new PLM platform and design methods. We are intended to join new project of megayacht for Damen in the nearest time and implement our skills an expertise. We have ambitions to become one of the pioneers of PLM implementation in Damen, ready to accept System Engineering approach and this valuable experience of cooperation with European partners. So completing NAVAIS we are chasing another dream and are believe it will come true. Trust us – we are MDEM. ■

The report was made by NAVAIS project manager MDEM Stanislav Seleznov



GA7 – Objective 2 report

Objective 2 key results with KR5-Digital twin of modular car ferry design and KR6-Digital twin of modular multiuse workboat were highly appreciated but still not fully reached. This happened because of the PLM readiness and delay in logical/physical design start. However in general the results were accepted and recognized as successful. And though it's hard to say that NAVAIS team obtained the completed digital twin but we've got a step forward that is the basement for future investigation. Our company has contributed in this

NAVAIS is also about dissemination so Implementation plan presentation was accepted by members of international consortium.

What else? So far so good...Final report is still to be completed. That was the end of GA7.

Success of NAVAIS doesn't mean the end of investigation. We've passed the long way but still have a lot to do. This is mostly related to practical methods of design, start of new vessels, completion