

### **HOLISHIP** — Holistic Ship Design & Optimisation An Introduction

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### Objectives



- The Design of typically complex Maritime products needs to reflect constantly extended requirements.
- HOLISHIP responds to urgent industry needs by developing advanced and innovative design methods which ...
- integrate all design functional requirements and performance indicators at an early design stage including all relevant technical design disciplines while at the same time considering:
  - life-cycle cost,
  - environmental impact,
  - technical and regulatory constraints
- The result is a set of homogeneous integrated software platforms for all design phases and optimisation for the entire life-cycle of the product including virtual testing.





# Approach





### Integrated Systems Approach to Ship Design







## HOLISHIP's set-up



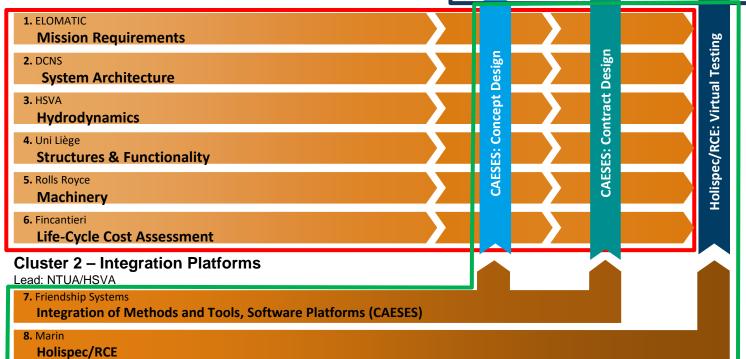
Cluster 3 – Application Cases
Lead: HSVA

3 Clusters

Cluster 1 – Tools

Lead: Bureau Veritas







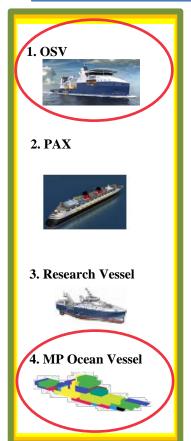


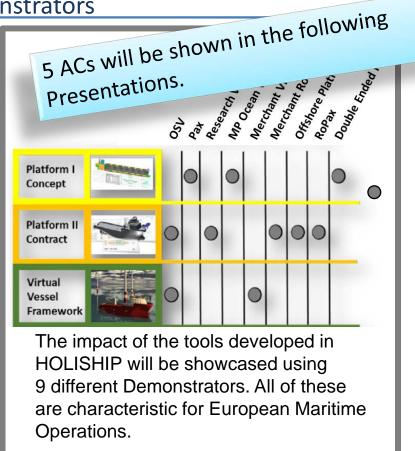


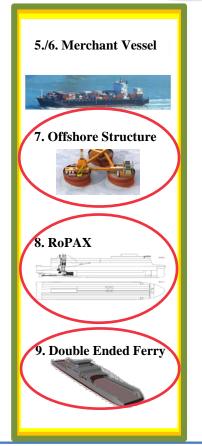
## **Application Cases**

#### 9 HOLISHIP Demonstrators













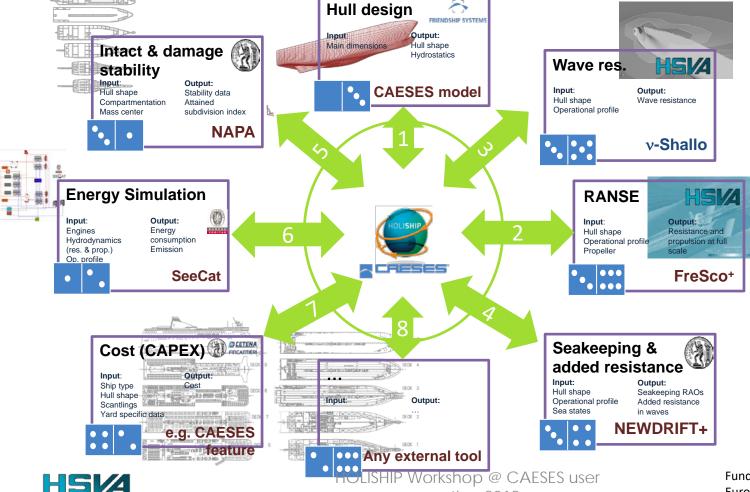
# Implementation





Coupling of tools for RoPAX ferry





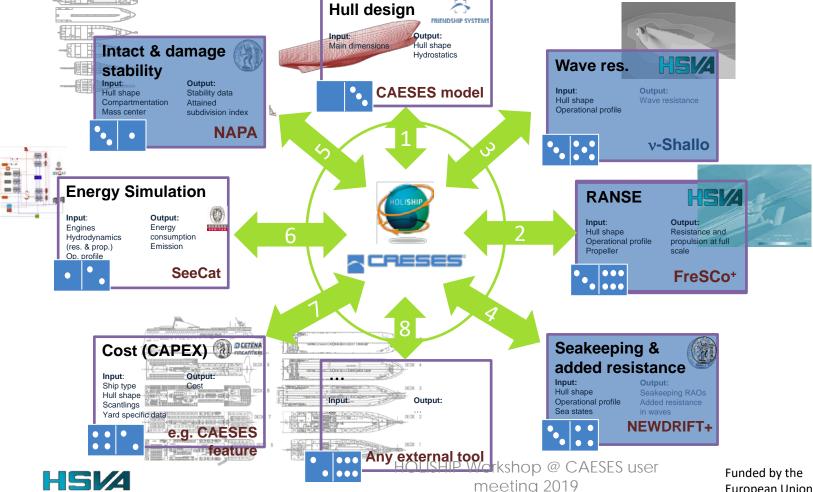
meeting 2019

Funded by the European Union



### Replacing tools with surrogates

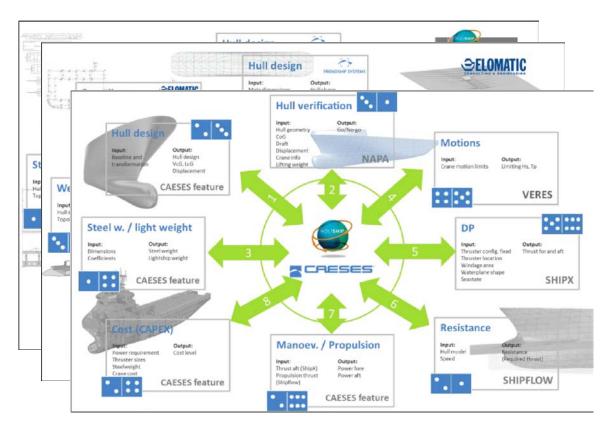




European Union

# This can be done for many different applications (using different tools)





- RoPAX ferry
- Double Ended ferry
- OSV





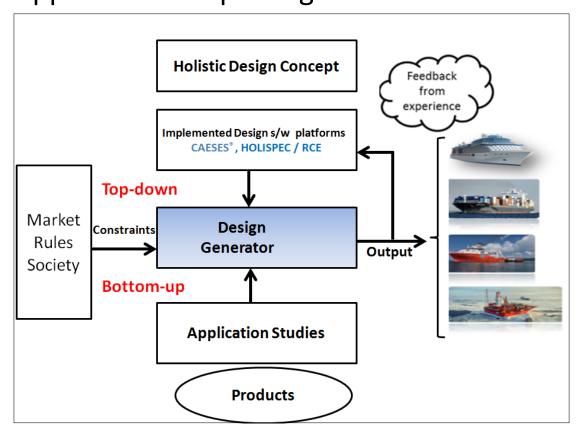
# **HOLISHIP's Platforms**



#### **HOLISHIP**

# Combined Bottom-up and Top-down Holistic Approach to Ship Design

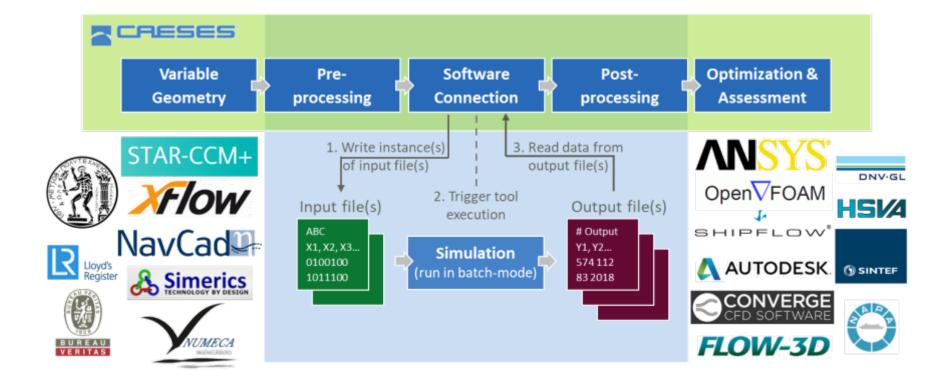






# Overview of CAESES® main functionalities with a selection of integrated software systems & providers from the HOLISHIP consortium

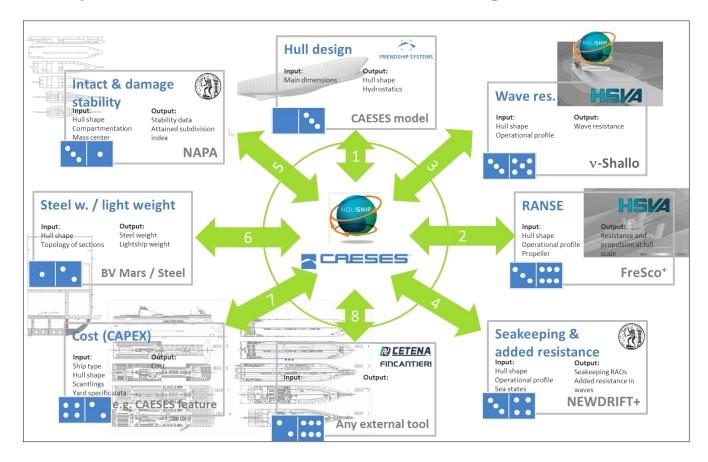








#### CAESES Synthesis of Tools for RoPAX Design

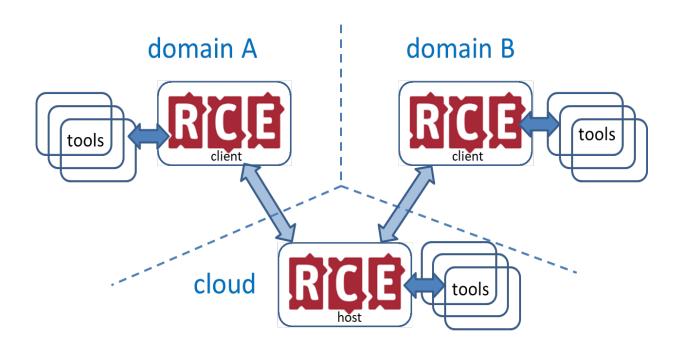






# HOLISHIP's VR Platform: RCE® of DLR RCE Clients and RCE Server in the Cloud (Distributed Working)



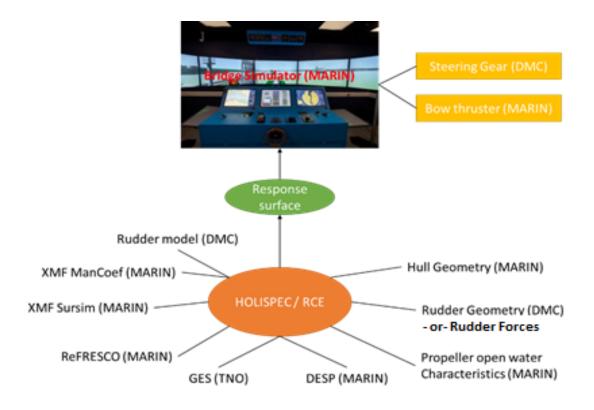






# RCE Synthesis of Tools for Simulation of Ship Manoeuvring on Bridge Simulator (MARIN)







#### Communication of HOLISHIP Platforms RCE & CAESES



for multisite/distributed & multidisciplinary collaboration









# **Exploits of HOLISHIP**





### A day at the "Design-Market" (2020 ff.)





- HOLISHIP plans to provide a market place for ship design tools and services.
- "The market" offers Affordable, well maintained tools for industry and academia.
- It targets first time customers as well as regulars,
- ... and offers tools and services for any size of projects.
- And it will be open for others who wish to join us (on the same basis) later.





#### Conclusions



- HOLISHIP's tool and platform developments have matured.
- A total of abt. 30 different tools are now integrated into the two design platforms, covering initial design, ship stability, hydrodynamic performance, structural analysis, energy simulations and initial cost assessments.
- HOLISHIP offers a lot of potential for future extensions to include more and more refined models.
- The demo cases to be presented (in the following) indicate that a considerable amount of this potential has been unleashed already ...
- ... and there is more to come until summer 2020 including a commercialisation of the concept.





# Thank you.

Watch this space: <a href="https://www.holiship.eu">www.holiship.eu</a>

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