



# Redefine Naval Ship Design, Stability and Damage Control

Navy Tech



12.11.2024

NAPA Solutions for Navy

# Welcome to the event



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NAVY, Safety Solutions, NAPA**

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- M.Sc. in Naval Architecture
- Over 13 years at NAPA advancing ship safety, particularly concerning ship stability, regulations, and compliance.
- Served as an expert at IMO committee meetings on both intact and damage stability topics.
- Liaise with class societies and regulators, advocating for maritime safety through sustainable and effective regulatory changes.



# Introducing NAPA



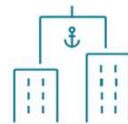
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# NAPA in 2024



**35 +**  
years of experience



**10**  
Offices in 10 countries



**31.97 M**  
euros in turnover



**Over 90%**  
of new ships built by  
NAPA customers

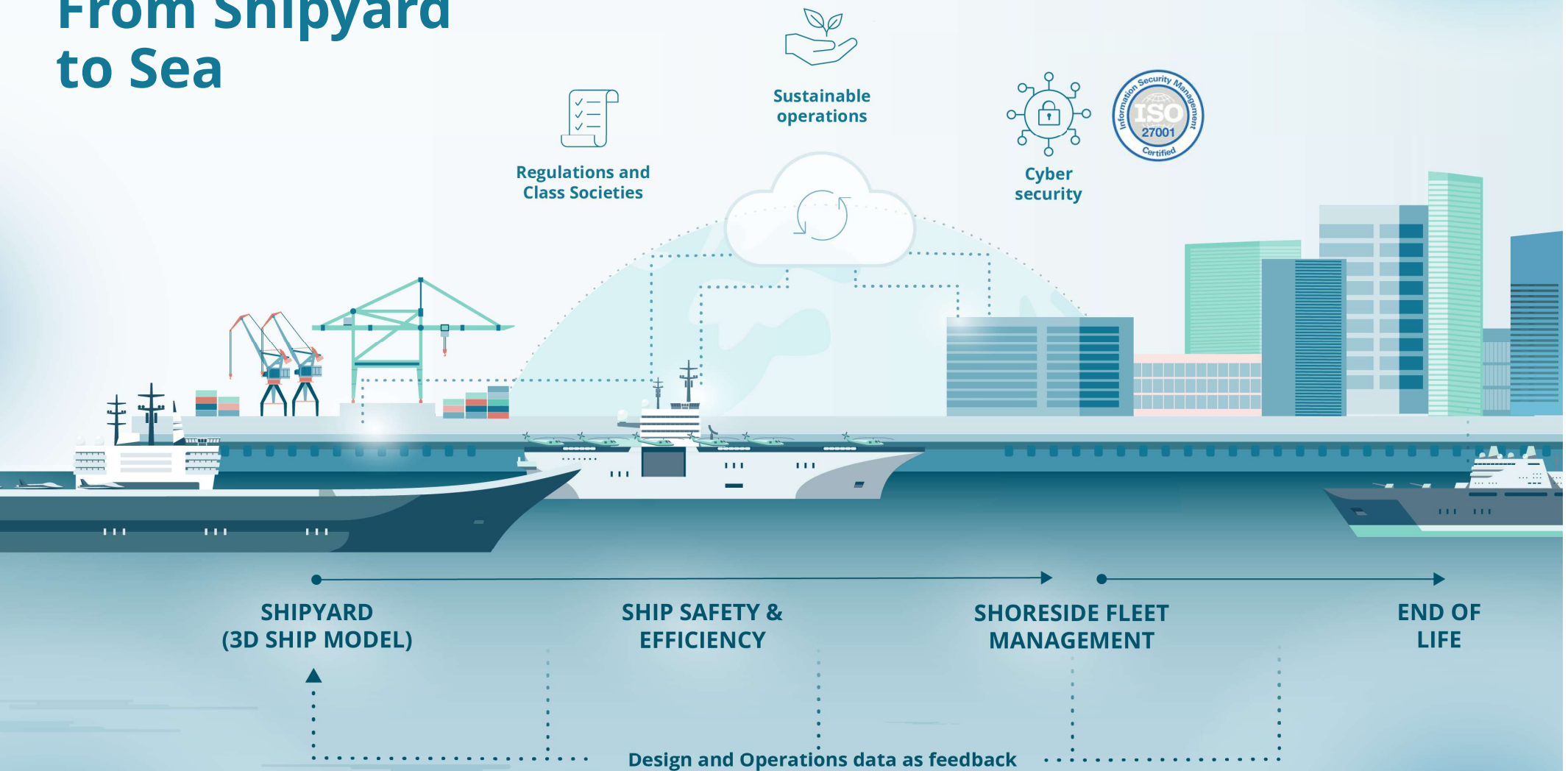


**220**  
employees



**12 000+**  
active users for  
NAPA applications

# From Shipyard to Sea



# For naval shipyards & designers

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Decades of collaboration with naval ship design experts have made NAPA a trusted partner for naval ship designers worldwide.



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# Trusted partners for naval shipyards and designers

- Our **advanced 3D modeling, stability analysis, and agile structural design solutions** offer flexibility for complex Navy projects, enabling fast, compliant design adjustments.
- NAPA ensures precise and safe design of a wide range of naval vessels and submarines, starting from the initial concept design stage.

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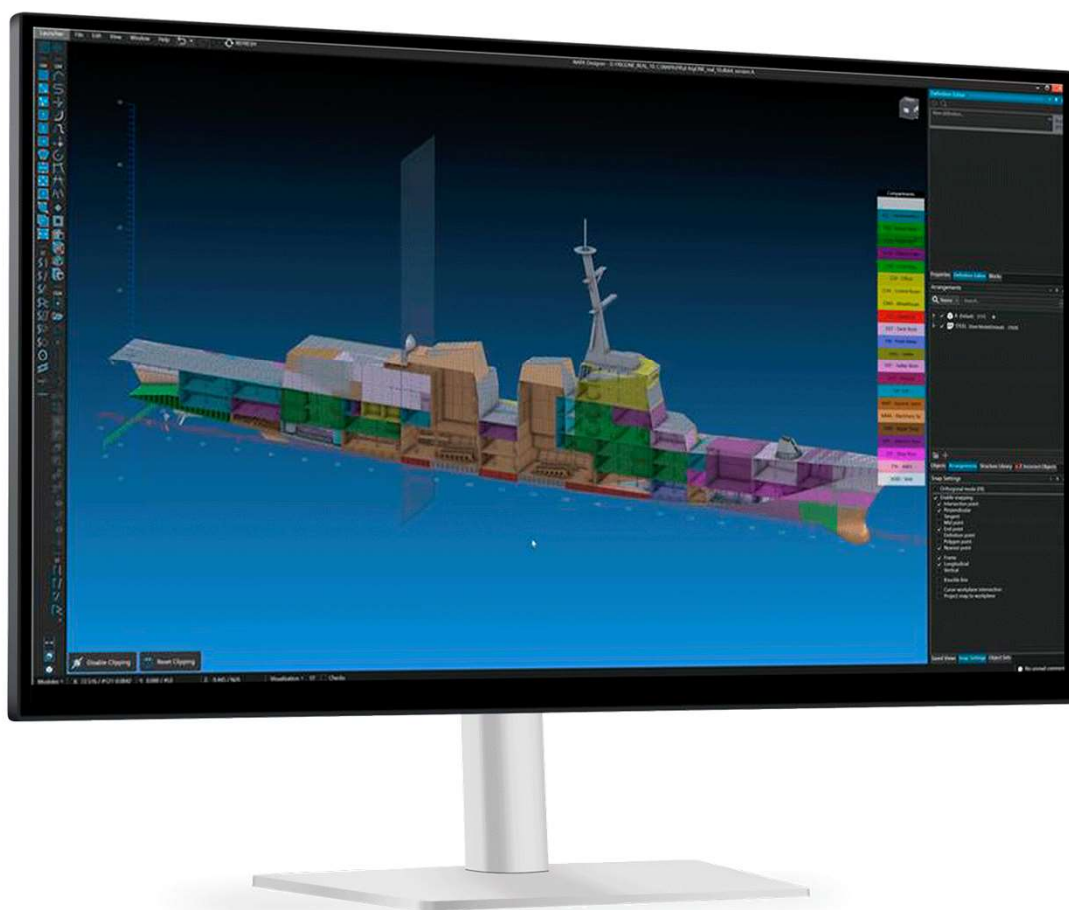
ClassNK





# Efficient and agile design process with NAPA

Developed by naval architects for naval architects.

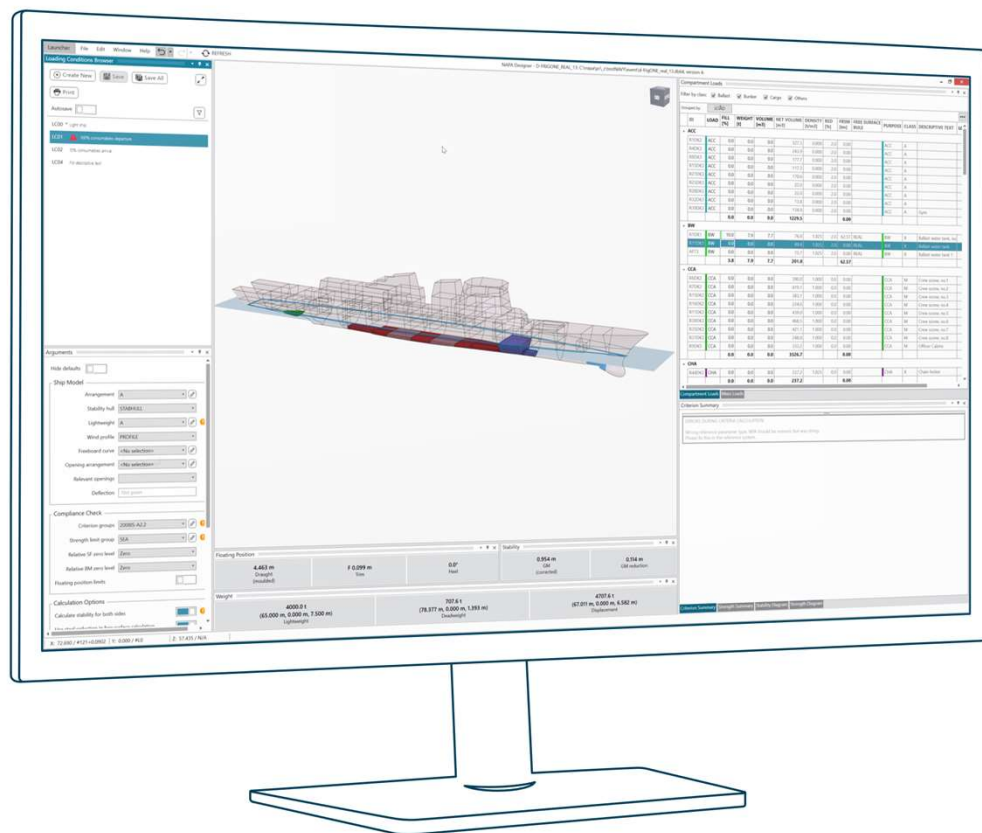


NAPA is the ultimate solution for managing complex ship design projects.

- **Advanced 3D model** of NAPA streamlines workflows from the very early concept design phase.
- **Rapid iterations** are enabled to deliver complex and large-scale projects on time.
- Leverage **stability as a design tool** to ensure safety and compliance.
- **Seamless 2D-to-3D transitions** to make an efficient design process, including classification rule checks and design updates.



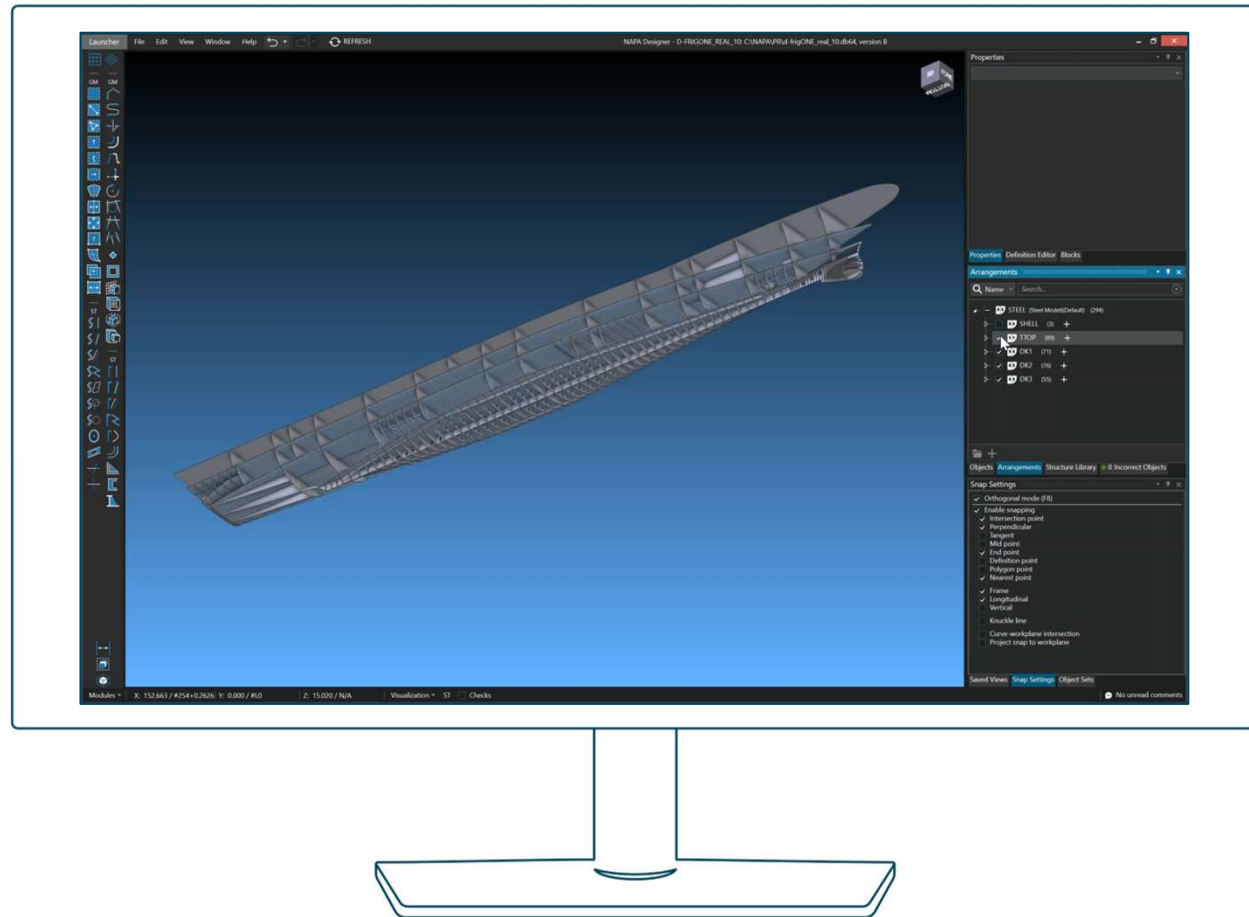
# Powerful naval architectural analysis tool



- **Industry-de facto solutions** for stability, hydrodynamics, and hull design, trusted across the shipbuilding sector.
- **Powerful calculation tools** enable rapid design changes, and time-saving scripts and macros.
- Our solution provides operational support in emergencies with **flooding simulations** and alternative **loading scenarios**.
- **Intact and damage stability analysis** enhances design and safety.
- **Special stability solutions** includes **submarine**: submerged conditions, trim and compensation, and equilibrium polygon analysis.

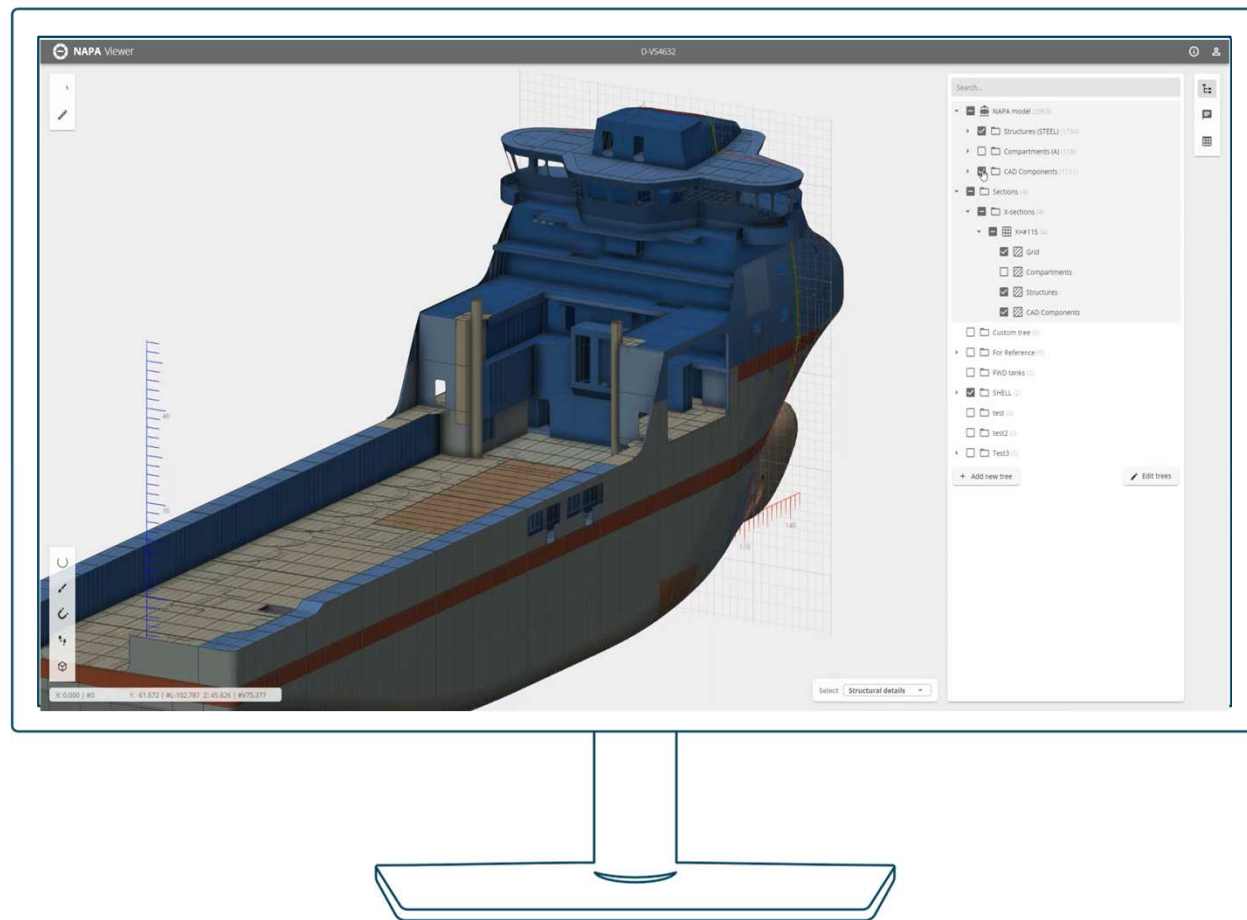
# Agile structural design solutions

- Enables **seamless design iterations** to optimize ship design.
- **3D design** streamlines geometry creation and modern workflows.
- Automated drawings speed up **3D-to-2D transitions** with improved quality.
- Weight control ensures structural balance and integrity.
- Comprehensive **Finite Element Analysis (FEA)** supports strength, vibration, shock, and explosion analysis.
- Pioneers **3D model-based approval (3DMBA)** for compliance and validation.



# Digital twin for modern naval design

- NAPA's Digital Twin merges real-time data with 3D models for smarter decisions.
- Ensures **secure data** sharing while protecting sensitive information.
- Supports naval asset upgrades with continuous monitoring and optimization.
- Boosts collaboration and communication among **multi-stakeholders**.
- Connects physical and digital worlds for **end-to-end lifecycle** management.



# For naval fleets

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Equipping naval ships with state-of-the-art Ship Stability and Damage Control solutions for decades.



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# Current Challenges and tech gaps

In ship stability and flooding damage control.

**01**  
**New surface and sub-surface threats**

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**03**  
**No real-time situational awareness**

**02**  
**Harsh conditions demand 'fit-for-purpose' technologies**

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**04**  
**Need for skilled lean-manned operations**

# Maintaining Mission Resilience: Technology for Enhanced Survivability and Recoverability



## NAPA Stability

Manage intact and damage stability in real-time with next-generation technology

## NAPA Emergency Computer

Gain clarity on ship vulnerability and enhance survivability in critical moments

## NAPA Logbook

Make data collection and record-keeping easy, secure and error-free



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# Equipping naval fleets for decades

- For over 30 years, we have equipped naval fleets with **easy-to-use and secure** software that integrates harmoniously and meets rigorous data security requirements.
- **Serving NATO and NATO allied forces globally**
- Our solutions are onboard **2000+ commercial vessels, and 40 naval ships**--tested, proven, and continually refined to meet the unique use cases of operations today and for future needs.



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Beautiful <3  
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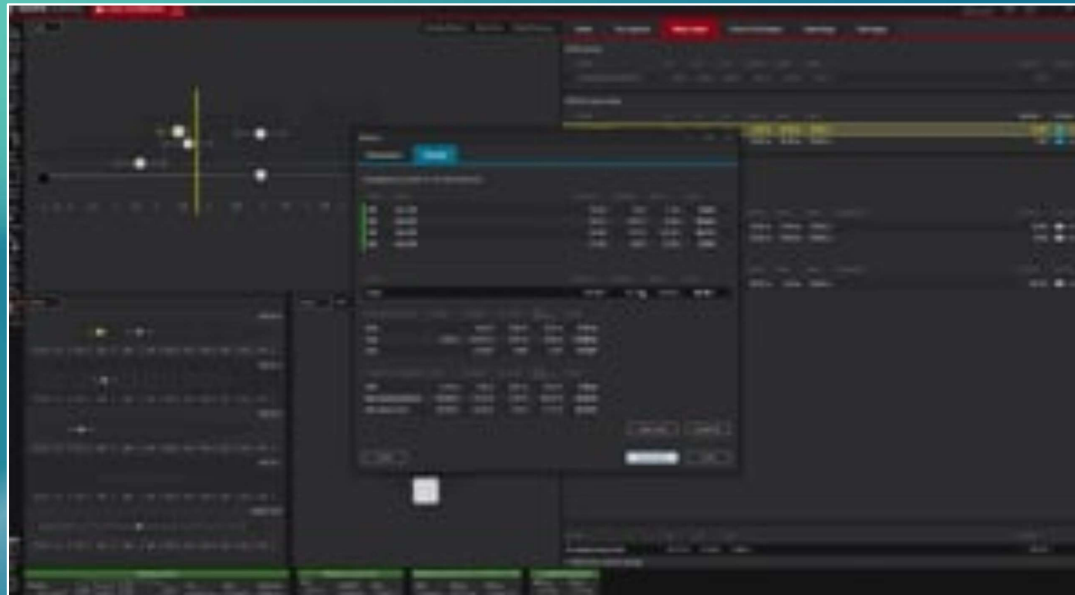
# NAPA Stability

Next-gen Loading Computer

Real-time intact and damage stability calculations

Precise data and information for decision-making

Easy to understand and use, even for officers without a technical background



# NAPA Emergency Computer

In emergency:

Real-Time Flooding and Stability  
Monitoring: Continuous updates on  
damage, stability, and  
recoverability.

**Survivability on a time-line:**

Calculate critical factors and events,  
like time before capsizing.





# NAPA Logbook

Adopted by several naval fleets in recent years, NAPA Logbooks provides a reliable digital record-keeping platform that reduces shipboard administrative burdens so officers can focus on mission-critical tasks.

## Effective and Error-Free Data Collection:

Streamlines data entry ensures all operational data—from navigational logs to maintenance records—is accurately recorded and easily retrievable. Structured formats and validation checks reduce human errors, enhancing data quality.



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# Bridging ship design & operations

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The NAPA Edge: Having synergies between ship design and operations



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# Our edge: Synergies between ship design to operations



## **Operational Consistency and Continuity**

Built on the original NAPA vessel design model, ensures alignment without conversion and simplifies transitions from design to operation



## **Future Updates, Retrofits and Lifecycle management**

Consistency also means easier retrofits when updates occur in the future.



## **Flexible and adaptable**

As per your Navy- and vessel-specific requirements



# Your partner for advancing digital solutions that meet modern naval needs

We believe that our technology and expertise hold great potential to support evolving naval needs.

We also know **the best solutions come from working closely together.**

That's why we're eager to **deepen our collaboration** with NATO and NATO-allied defence forces, so we can continue to adapt, and develop technologies that truly meet the unique challenges of naval fleets.



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# Q&A and discussions

Have more questions, or want to get a demo?

Meet us at  
Stand 03

Or

Contact: Markus Tompuri  
[markus.tompuri@napa.fi](mailto:markus.tompuri@napa.fi)

Website: [napa.fi/navy](http://napa.fi/navy)

## Maintaining Mission Resilience: Technology for Enhanced Survivability and Recoverability



### NAPA Stability

Manage intact and damage stability in real-time with next-generation technology

### NAPA Emergency Computer

Gain clarity on ship vulnerability and enhance survivability in critical moments

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Make data collection and record-keeping easy, secure and error-free



# Get a demo: Meet us at Stand 03

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## Contact:

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