

The reliable Greek partner in ship design and construction

# A brief introduction to STUDIO NAVALE

by Alex Kouros

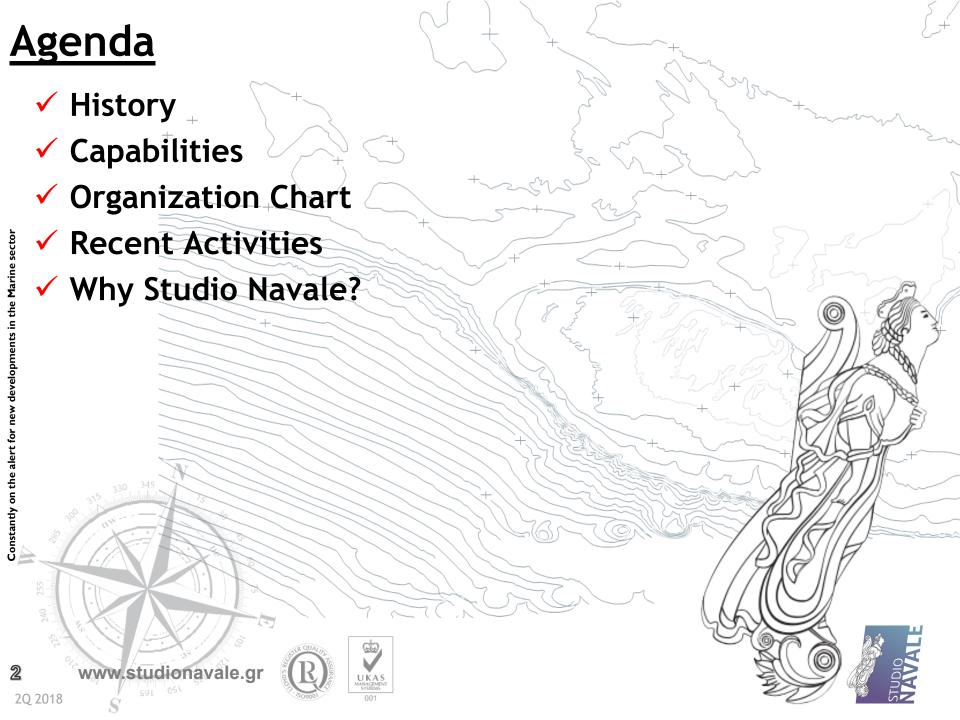
General Manager



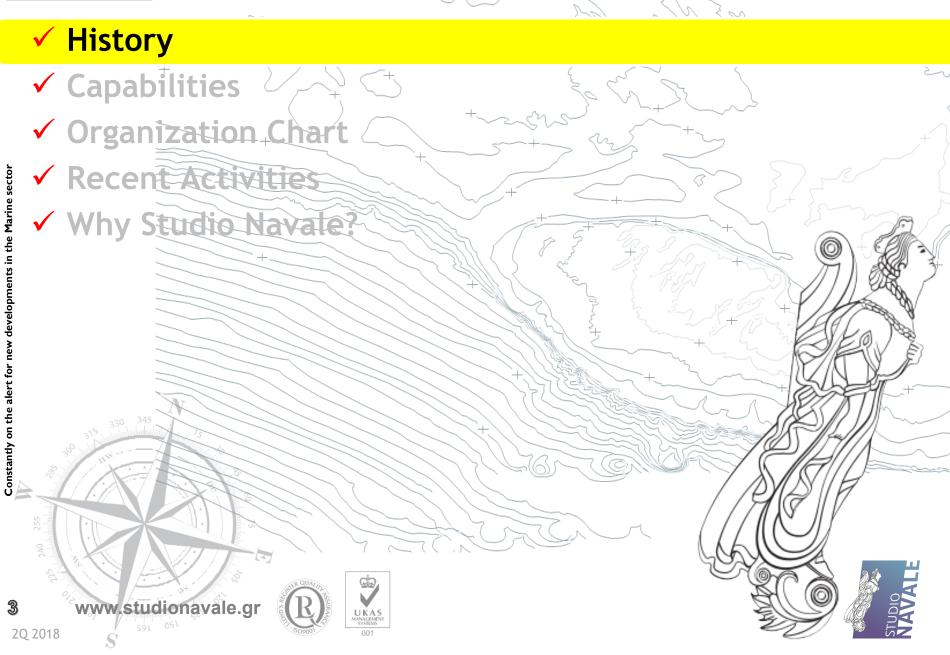




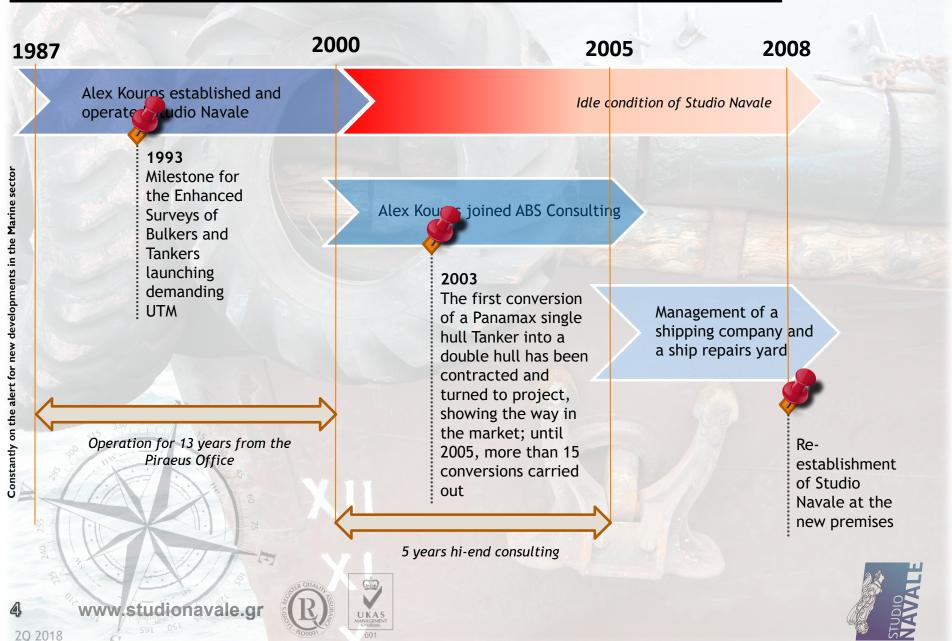




# **Agenda**



# History of Studio Navale 1987 onwards



### Milestones of Studio Navale

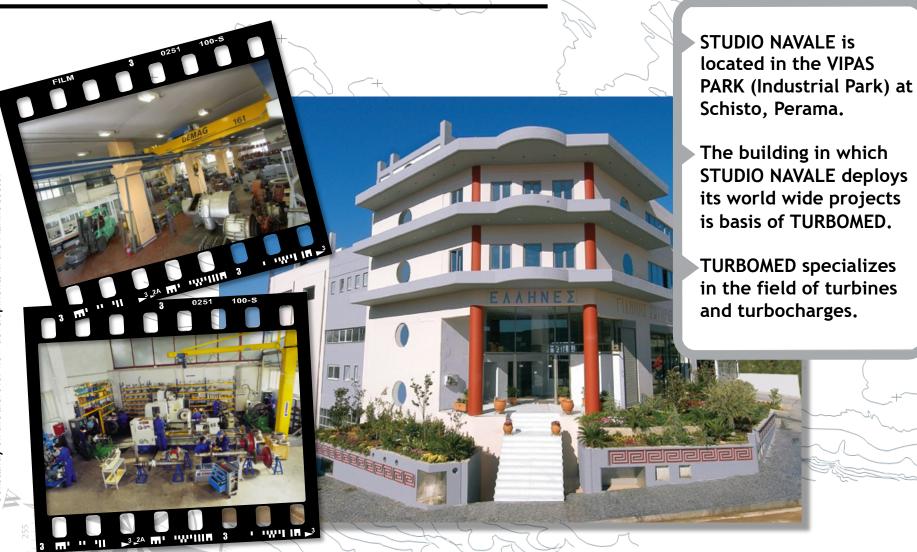
- **√** 1987
  - STUDIO NAVALE is established in Piraeus by the Naval Architect and Marine Engineer Alex Kouros.
- **√** 1989 \_
  - Finite Elements Methodology for the structural form of the cargo holds of a **Cement Barge** and the decks of a **Livestock Carrier**.
- **√** 1990
  - Complete preparation and issuance of drawings and studies in electronic formats.
- **√** 1993
  - Pioneers in the preparation of the Enhanced Surveys' Reports for the requirements of Classification Societies.
  - Pioneers in the certifications as Class Subcontractors (NDTs).
- **√** 2000
  - Feasibility studies for the conversion of single hull tankers into double hull ships.
- **✓** 2003
  - Participation in the first world wide Risk Management Certification on behalf of a Tank Ships Company.
- **✓** 2005
  - The renewal of rudder horn and rudder blade, along with all steering mechanism and reconstruction of the aft part of a Panamax Bulker is achieved within specified time.
- **✓** 2011
  - STUDIO NAVALE is established in the new premises at the Industrial Park of Schisto (VIPAS).
- **✓** 2012
  - STUDIO NAVALE is certified against the ISO 9001:2008 Standard by LRQA, a Lloyd's Register branch.
- **✓** 2014
  - Establishment of link with Panama Canal Authorities, so to prepare the required studies for improvement of the mooring rearrangement of the ships.
- **√** 2016
  - Pioneering in preparation of design studies with the use of FEMAP-NX NASTRAN being the hi-end finite elements method software. Studio Navale is the only one official user of the technical firms in Piraeus!







# **Location of STUDIO NAVALE**











# Jevelopments in the Marine sector

# Fast Facts about Studio Navale

- ✓ A technical and consulting office focused on the services of demanding projects and/or projects requiring eminent expertise and skills.
- ✓ More than 30 years experience in ship repairs, under demanding conditions.
- ✓ High reputation and respect within the shipping industry
- ✓ Fully organized with highly skilled technical personnel.
- ✓ Strives to continuously update equipment and instruments.
- ✓ Availability 24/7.
- ✓ Management Team acts as the frontline at-site.
- Management Team with technical and commercial expertise and experience.







### Vision and Mission of Studio Navale

### ✓ Vision:

To be a partner in the Technical Department of Shipping
Companies or of a Shipping and Offshore interest Entity, at short
notice, in order to offer the best technical advice and consulting
services to our clients.

#### ✓ Mission:

- To share the accumulated technical knowledge with existing and new Clients by strengthening and improving existing business ties and by creating and growing new business relationships in order to help Clients meet the continuously altered challenges of the shipping industry;
- To deploy the firm's considerable resources and deliver services
   of the highest quality and safety standards.







# Certification against ISO 9001:2008

Studio Navale decision to become ISO 9001:2008 certified by Lloyds Register is a proactive one that not only anticipates the demands of our clients, but also demonstrates our commitment to providing quality services to all our clients.









# Agenda ✓ History <sub>+</sub> ✓ Capabilities ✓ Organization Chart ✓ Recent Activities ✓ Why Studio Nav www.studionavale.gr 2Q 2018

# **Capabilities**

- ✓ Studio Navale is a technical office, with the scope of offering ship design, manufacturing, repairs, management services of utmost quality to the benefit of the Client.
- ✓ Up-to-date software and equipment to respond to third parties requirements.
- ✓ Full implementation of Finite Elements software for evaluating structures.
- ✓ 3D Scanning of structures to produce relevant detailed drawings and studies.
- Condition and Evaluation Surveys.
- Management of ship repairs.

#### **Range of Services**

Ships' Technical Documentation

Ship Design

Plan Approval

**Design Review** 

**Engineering Consultancy** 

Conversions, Modifications and Retrofits

**Design Assistance** 

Advance Engineering Analysis (FEM)

3D Scanning of gigantic structures

**Coating and Corrosion** 

Risk and Reliability

**Condition Surveys** 

Evaluation of ships and floating structures

**Ship Management Services** 

Ship Repairs Management

Claims

Defense







# **Consulting Capabilities**

#### Technical Services

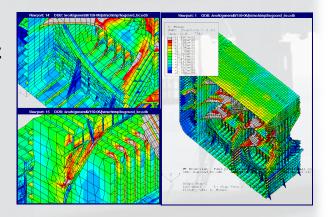
- Design Review and Certification
- Technical Support Services
- AdvancedEngineering Analysis
- Marine and Offshore Certification
- Plant and Pipeline Certification
- New Construction Technical Support
- Environmental Management and Assessments

### Facility Verification

- Boiler and Pressure Vessel Certification
- Plant and Pipeline Commissioning
- Site and Source Inspection
- New Construction Project Support
- Surveys and Condition Assessment
- Marine and Offshore Certification
- Cargo Container and Crane Certification

#### **Specialty Services**

- Asset Management
- Project Financial
- Project Appraisal Service
- Project Management
- Technical Training



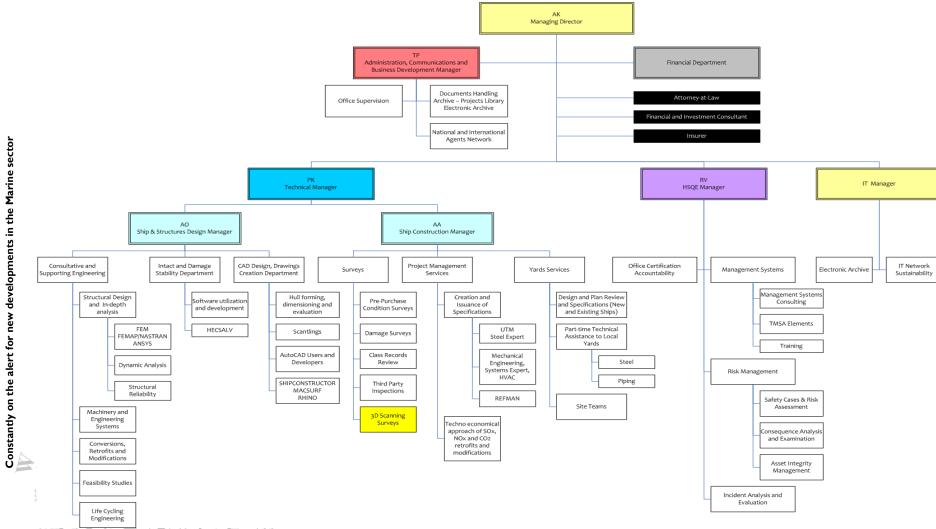






# **Agenda** ✓ History <sub>+</sub> ✓ Capabilities ✓ Organization Chart ✓ Recent Activities ✓ Why Studio Nav www.studionavale.gr 2Q 2018

# **Organization Chart**



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# **Agenda**

- ✓ History 
  <sub>+</sub>
- ✓ Capabilities
- ✓ Organization Chart
- Recent Activities
- ✓ Why Studio Navale:



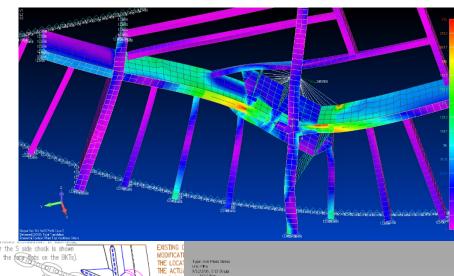


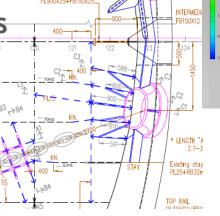
# Finite Elements Method (FEM) support

✓ Any structure's strength analysis is modelled and analyzed with the use of FEMAP-NX Nastran, Autodesk Inventor and FEM.

✓ Before any presentation in 2D drawings the majority of white State 1:30 of the structures are modelled in 3D environment (e.g. (0.000, 1.000) (e.g. (0.000, 1.000) (e.g. (0.000) (e.g

In most of the cases, the review by the Classes is being done with beam elements, not FEM.





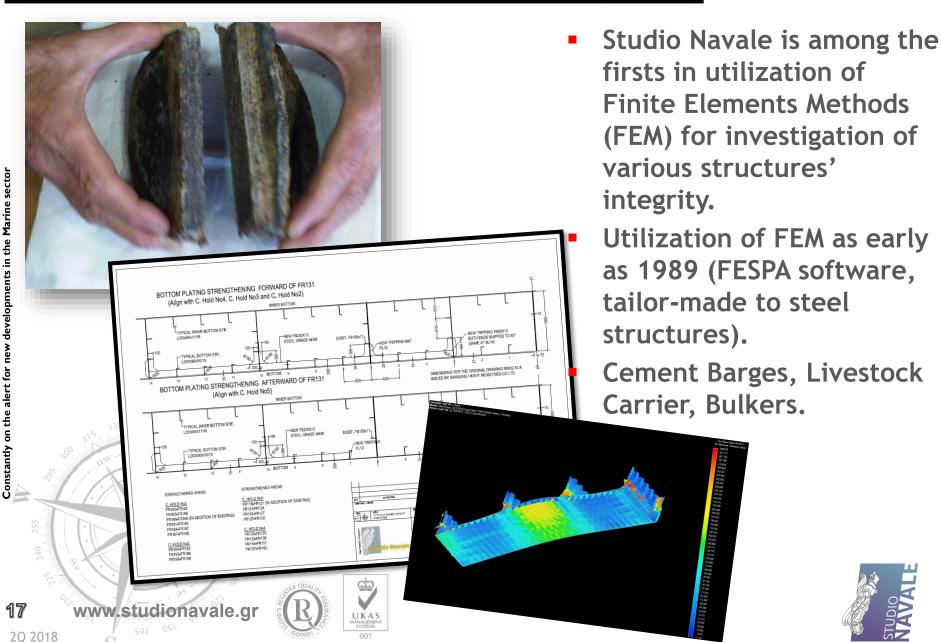






etc.).

# **Activities on Finite Elements (FEM)**

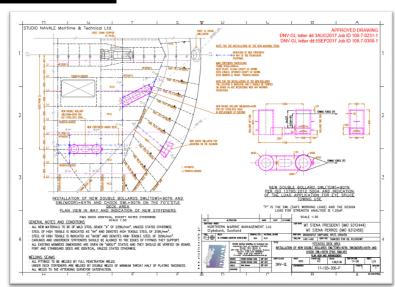


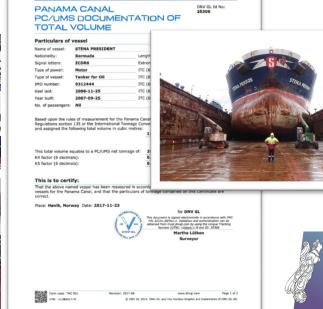
- ✓ ACP requirements
- ✓ Mooring items re-arrangements
- ✓ Preparation of design pack
- ✓ Many Aframaxes and Suezmaxes of major players, like Teekay, Stena, Columbia and more, have been modified as Neopanamaxes







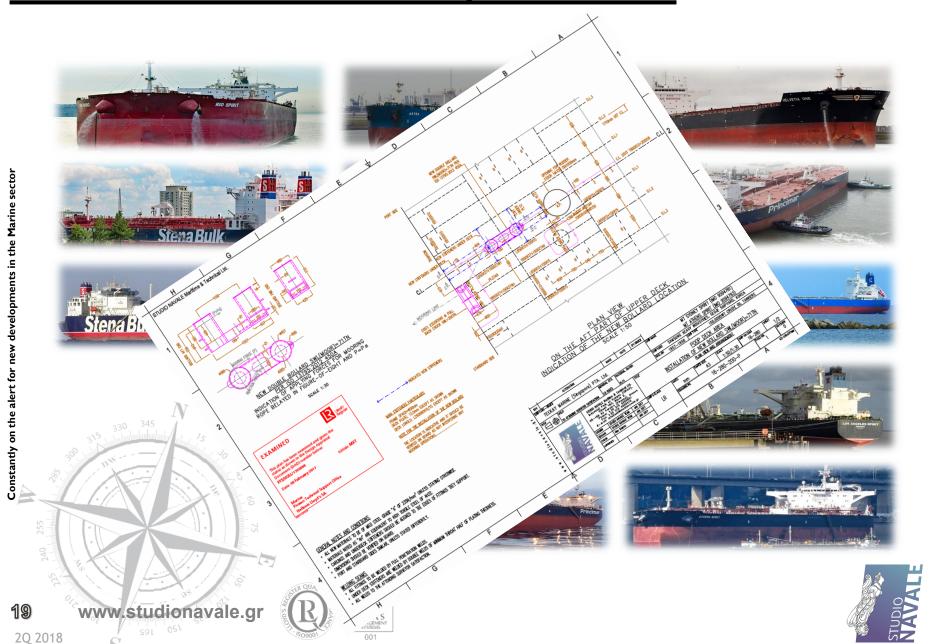




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**Attendance during modification** 

✓ The most important step for an effective and successful modification is the pre-commissioning inspection of the ship and the dedicated locations







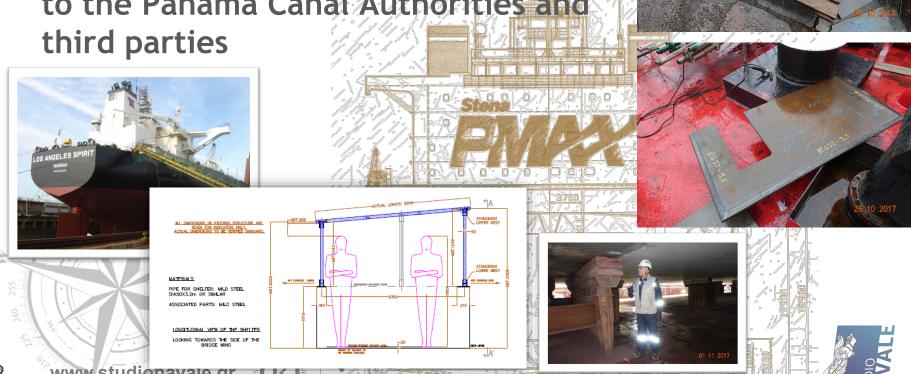
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WATER DESIGNATION OF THE REAL PROPERTY OF THE REAL

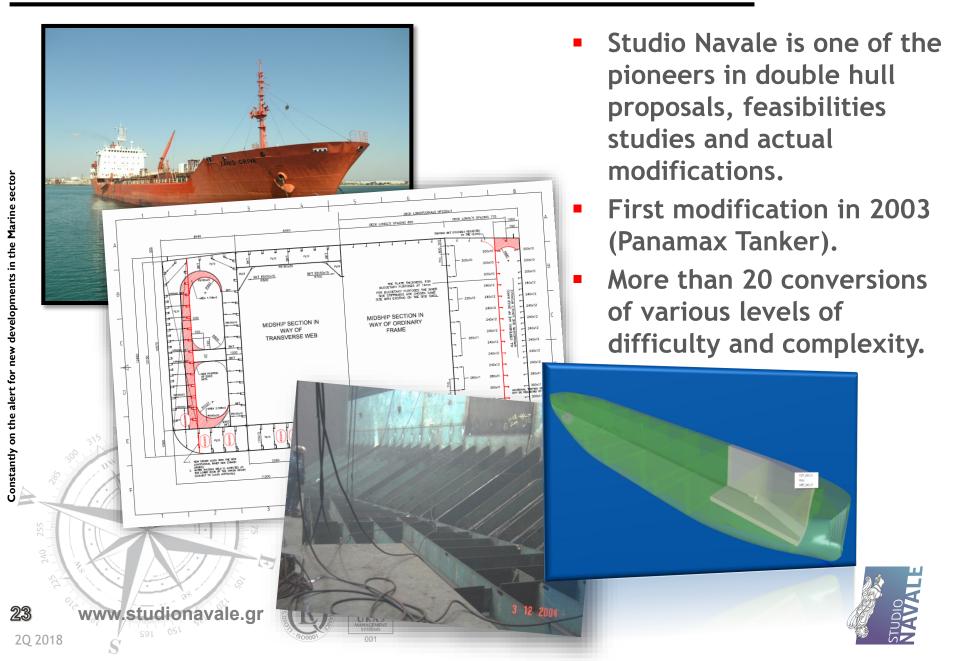
# New Panama Canal Requirements Attendance during modification

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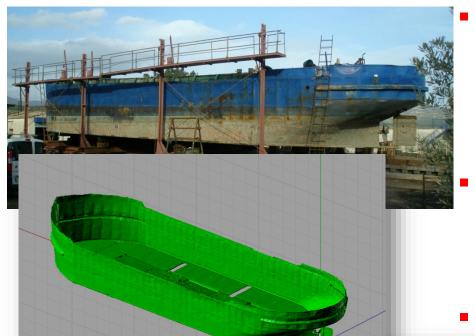


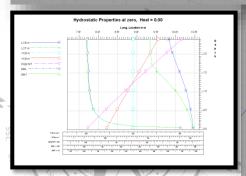


### **Activities on Double Hull Conversions**



# **Activities on 3D Scanning**





- 3D scanning is achieved by noncontact technique, with a highend 3D Scanner, for creation of accurate digital models of the surfaces.
- Accurate and "As Fitted" hull modelling of gigantic structures surfaces and preparation of Hull Lines.
- Evaluation of the draft marks accuracy.
  - Accurate digital representation of any internal space (engine room, cargo tank etc.).
  - Digitated parts of damaged areas, based upon a symmetrical one.



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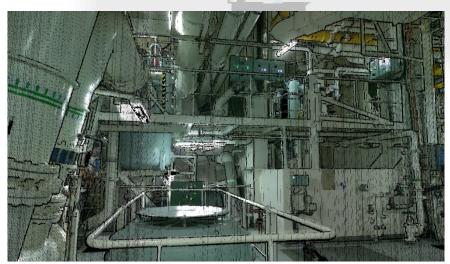


# **Activities on 3D Scanning**



- 3D scanning in service of the **Ballast Water Treatment Systems** and scrubbers installations.
- Close cooperation with the steel and pipe repairs contractors so to achieve better results and much more effective time.



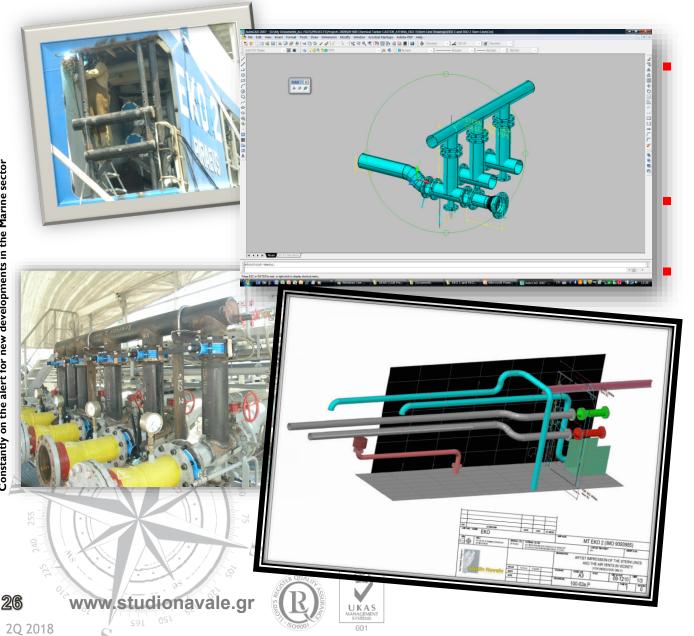








### **Activities on Stern Lines Installation**



Design for production and cost-effective installation.

Tailor-made design and installation.

Accurate measurements and 3D drawings preparation for ease of prefabrication and installation, even when the ship is still in operation



# **Activities on Piping Modification**

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# **Activities on Shaft Alignment**



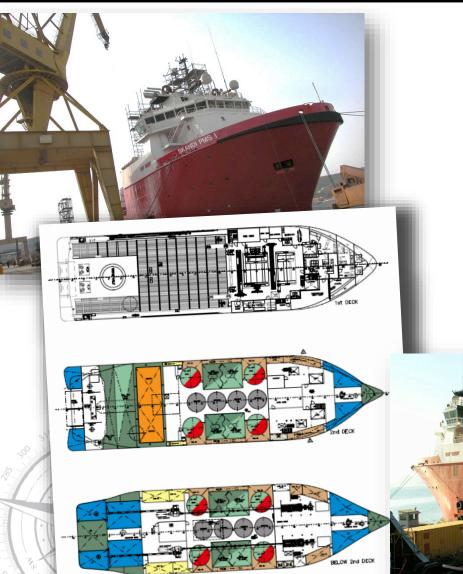
- Up-to-date and high-end instrumentation FixturLaser NXA Ultimate with all necessary components.
- Application in new buildings alignment verification, existing ships and pro-active alignment related evaluations.
- Evaluation of shafting alignment on small ships and yachts, in order for vibration to be mitigated.
- Evaluation of geometrical and shape problems resulting in averse outcome.







# **Activities on Shaft Alignment**



✓ Offshore Supply and Anchor Handling Vessels

> Evaluation of alignment of Main Engines, Transmission Gears, Auxiliary Diesel Generator

 Evaluation of alignment of Thrusters (Bow and/or Propulsion Thrusters).



developments in the Marine sector

# Activities on Repairs Management

Evaluation of the existing deep well pumps in order to handle viscus liquids. Cooperation with the Makers.

Contamination of the ballast tanks with fuel oil, due to a cross pipe leakage.
Assessment, evaluation of the case and permanent repairs within 7 days (CARELL SA Project).



Survey of the ship for a PPCS purpose and evaluation of the existing damage/repairs.

Replacement of an anchor and modification of IG SW pipe within ONE day, having the ship in INERTED condition (CARELL SA Project).









# Activities on Repairs Management

Repairs on a drilling platform under a demanding specification and strict HSEQ issues (NAVEP works at ELEFSIS Shipyards).

Demanding repairs specification of a Singaporean AHTB (CARELL SA Project).



Acquisition of the ship on behalf of Owners and putting her in trading. Various repairs and Class matters were dealt with.

Preparation of the Shipping Company.

Extensive repairs specification of a Polish AHTB (CARELL SA Project partially conducted at NEORION Shipyards).









### PANAMAX BULKER'S RUDDER DAMAGE

- The rudder cropped out and disappeared at the level of the rudder stock.
- The bulker was tugged from Atlantic Ocean to Piraeus (42 days) with the tug Fotiy Krylov.
- New configuration with a Becker type rudder was designed and fabricated.
- Manoeuvrability of the bulker was improved.

Work carried out at Hellenic Shipyards (HSY).





# Activities on Repairs Management



# CONTAINER VESSEL'S RUDDER HORN FRACTURE REPAIRS

- The cast rudder horn fractured as deep as +150mm.
- Repairs in way of the fractured horn (on a 24-hour basis for 7 days continuously).
- Upon completion of repair works verification of the rudder stock alignment.









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# Activities on Repairs Management



✓ GENERAL CARGO SHIP COLLISION DAMAGE

> The Chinese vessel was damaged in way of the CO2 Room, which was totally destroyed

The scope of work was the redesign of the CO2 Room, its installations (piping, electrical), rectification of the damaged hull and accommodation areas and commissioning of the installations.

Work carried out at Elefsis Shipyards, being CARELL SA the primal Contractor.

# Activities on Ships' Dry Docking Works



- Repairs Management.
  - Repairs Specification preparation.
  - Yards' evaluation.

Attendance of various dry docking operations with normal or extraordinary scope of works.

Attendance in various
Shipyards within Greek
territories or worldwide
(Singapore, China, Portugal,
Latin America etc.).

Representation in the Yard for negotiations.



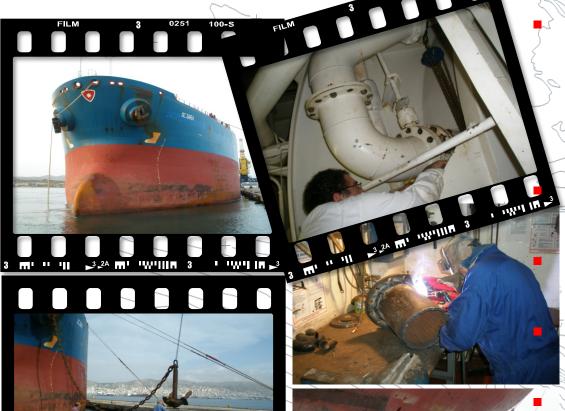
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Activities on Ships' Emergency Works



Preparation, arrangements and execution of all necessary actions in order for an emergency call to be satisfied.

**Emergency accommodation** of ships.

Emergency repairs at dock or with riding teams.

Availability of technical support on 24/7 basis.

Replacement of anchors and anchor chains.

Bow thrusters and rudder related projects.









# Activities on demanding steel works

- ✓ Stranding of a tanker
  - Alignment of the sub-assembly with respect to ship's lines and symmetry.
  - Work carried out at HSY by NABEP Ltd.



# Activities on demanding steel works

- ✓ VLCC Tanker stranding
  - Modeling of the side shell in way of the damage (fore port side), in order to fabricate the pre-cut transverse webs.
  - Verification of the symmetry.
  - Renewal of 300TN in 16 days.
  - Work carried out at HSY by NABEP Ltd.







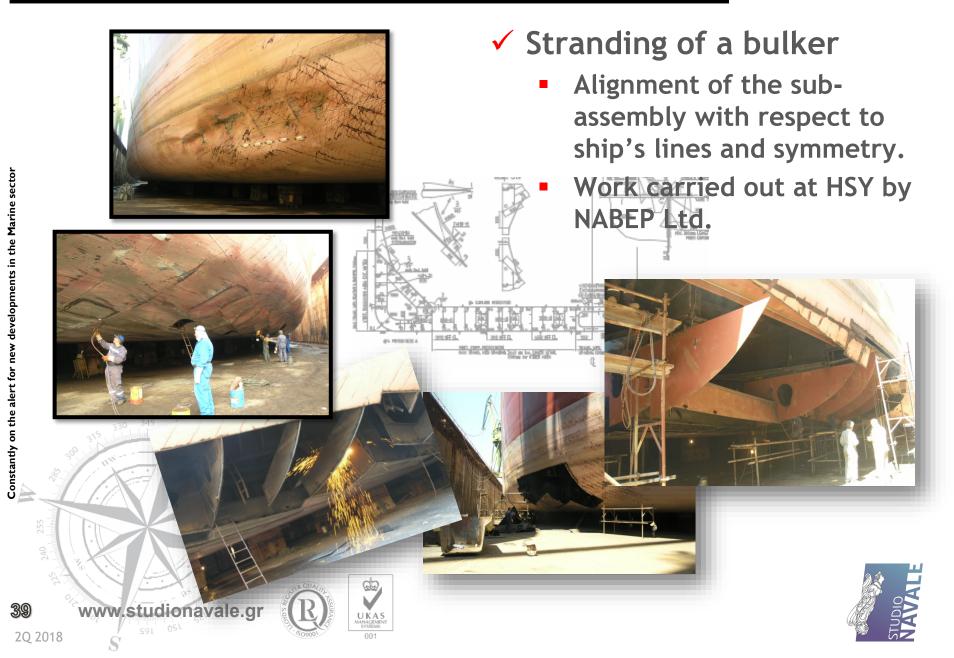




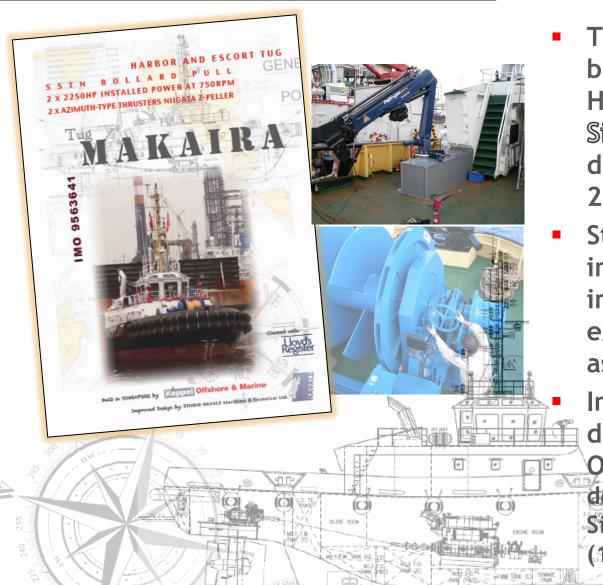




# Activities on demanding steel works



# Tugs Deliveries: MAKAIRA



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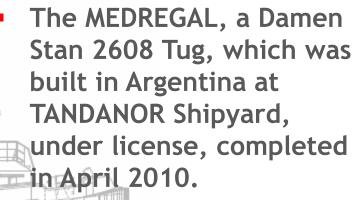
- The 55TN Bollard Pull new building tug MAKAIRA (Hull H354) was built by Keppel Singmarine Pte Ltd. and delivered in September 2011.
- Studio Navale scope included the re-design and improvement of the existing tug design, as well as the regulatory package.

In addition, the tug was delivered on behalf of Owners and prepared for a deep-sea voyage from Singapore to Venezuela (12,500nm).

# Tugs Deliveries: MEDREGAL







Delivered in Cuba and went straight to Venezuela.

Studio Navale was attending the delivery on behalf of the new Owners and prepared the tug for the voyage.

 Bollard Pull trial was conducted.











# Tugs Deliveries: RM BARRACUDA & RM MARLIN

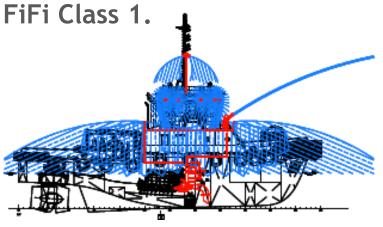


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Studio Navale scope of work included the representation of the new Owners, delivery on their behalf and preparation for a deep-sea voyage from Singapore to Venezuela, through Suez Canal.

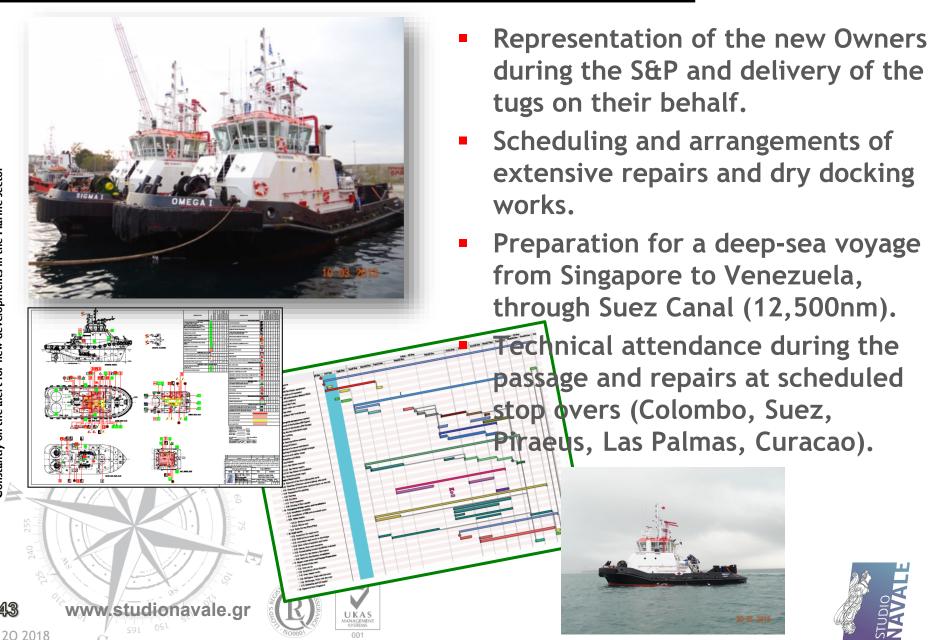
Studio Navale scope of work included, among others, recommendations on new automation ensuring security and comfort of piloting and ease of operations.

Feasibility studies for conversion to





# Tugs Deliveries: SIGMA I & OMEGA I





- ✓ Services aiming solely for the Client's satisfaction.
- Experience of more than 30 years in the production.
- Experienced engineers with up-to-date skills.
- Knowledge of the ship repairs market from the inside.
- Excellent relationships with Classification Societies.
- Competitive and cost-effective business relationships.
- ✓ Pool of unique subcontractors, worldwide.
- Respect of the market.
- ✓ 24/7 service.



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# **Location: GREECE!**



Reliable and friendly environment.

- Within main shipping trading routes.
- Competitive cost and uncompromised Quality.
- In the front door to Europe.







