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COMPA 2GO

Composite Repairs for Ships: Service Demonstration, Certification and Market Entry

- EU Horizon 2020 – SME Instrument Phase 2
- **Duration:** 2018-2020
- **Project aim:** To demonstrate the quality of COMPA technology through laboratory and onboard tests, to receive certificates from major maritime classification societies and finally, to license the technology.
- **Project results:** The COMPA Repairs brand was created and registered as a trademark. The company has received ISO 9001: 2015 management quality certification, and COMPA Repairs technology has received a Statement of Feasibility from DNV-GL for the use of composite patches to repair corroded steel pipes and plates to provide watertightness and slow down further corrosion. Also, through the project, the company entered into several partnerships for the purpose of expanding the sales network.

Learn more about COMPA technology at www.comparepairs.com.

SHIPLYS

Ship Lifecycle Software Solution

- EU HORIZON 2020
- **Duration:** 2016-2019
- **Project aim:** To develop simulation and modelling tools that will minimize the time and costs involved in ship design and construction.
- **Project partners**
 - TWI LIMITED, United Kingdom
 - FUNDACION CENTRO TECNOLOGICO SOERMAR, Spain
 - ATLANTEC ENTERPRISE SOLUTIONS GMBH, Germany
 - UNIVERSITY OF STRATHCLYDE, United Kingdom
 - ASTILLEROS DE SANTANDER SA, Spain
 - NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA, Greece
 - INSTITUTO SUPERIOR TECNICO, Portugal
 - VARNA MARITIME LTD, Bulgaria
 - FERGUSON MARINE ENGINEERING LTD, United Kingdom
 - AS2CON-ALVEUS I.l.c., Croatia
 - BMT GROUP LTD, United Kingdom
 - LLOYD'S REGISTER EMEA IPS, United Kingdom

More info about the project can be found at www.shiplys.com

COMPA

Market study of composite patch repair for marine pipes

- EU HORIZON 2020 - SME Instrument Phase 1
- **Duration:** 2015-2016
- **Project aim:** To conduct a preliminary feasibility study of the implementation of COMPA technology through market research in order to determine the market attractiveness of individual COMPA repair cases and the possibility of their application.

Learn more about COMPA technology at www.comparepairs.com.

COMPA IMPULS

COMPA – Technology for repairing steel ship structures and pipes using composite patches

- Hamag - Bicro – Measure B2 Innovation in entrepreneurship
- **Duration:** 2014-2015
- **Project aim:** Testing and certification of the technology for repair and reinforcement of ship's pipes was carried out, and an HRB certificate was obtained.

ADAM4EVE

Adaptive and smart materials and structures for more efficient vessels

- EU EP7
- **Duration:** 2013-2015
- **Project aim:** Development and evaluation of the application of adaptive and smart materials and structures in the shipbuilding industry. Explore the potential of adaptive materials and ship structures and pave the way for industrial application.
- **Project partners**
 - CENTER OF MARITIME TECHNOLOGIES, Germany
 - ULJANIK BRODOGRADILISTE, Croatia
 - RINA SERVICES SPA RINA Italy
 - Flensburger Schiffbau-Gesellschaft mbH & Co, Germany
 - FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG, Germany
 - TEKNOLOGIAN TUTKIMUSKESKUS VTT, Finland
 - LLOYD'S REGISTER EMEA, United Kingdom
 - SP SVERIGES TEKNISKA FORSKNING SINSTITUT, Sweden
 - as2con-alveus, Croatia
 - UNIVERSITY OF SOUTHAMPTON, United Kingdom
 - SHIP DESIGN GROUP SRL, Romania
 - UNIVERSITATEA DUNAREA DE JOS DIN GALATI, Romania
 - STX FRANCE, France

- COMPANIA TRASMEDITERRANEA, Spain
- ACCIONA INFRAESTRUCTURAS, Spain
- HAMBURGISCHE SCHIFFBAU-VERSUCHSANSTALT GMBH, Germany
- CARNIVAL PLC, United Kingdom
- SC NAVROM REPARATII, Romania
- MEC Insenerilahendused, Estonia
- SAARE PAAT, Estonia TWI LIMITED, United Kingdom

More info about the project can be found at [project brochure](#).

MOSAIC

Materials on-board: Steel advancements and integrated composites

- EU FP7
- **Duration:** 2012-2015
- **Project aim:** Development of relevant guidelines for the design and application of two new concepts in shipbuilding. First, the introduction of High Strength Low Alloyed Steels (HSLA) in specific structural details and second the replacement of specific structural parts of the ship with composite materials.
- **Project partners**
 - CETENA, The Italian Ship Research Centre, Italy (project coordinator)
 - AIMEN Technological Centre, Spain
 - as2con - alveus Ltd., Croatia
 - Danaos Shipping Co Ltd., Greece
 - Estaleiros Navais de Penische S.A., Portugal
 - Fincantieri Cantieri Navali Italiani S.p.A., Italy
 - Instituto Superior Tecnico (IST), Portugal
 - Lloyd Register, United Kingdom
 - National Technical University of Athens, Greece
 - The University of Birmingham (UoB), United Kingdom
 - TWI Ltd, The Welding Institute, United Kingdom

More info about the project can be found at [project newsletter](#).

CO-PATCH

Composite patch repair for marine and civil engineering infrastructure applications

- EU FP7
- **Duration:** 2010-2013
- **Project aim:** Testing and introduction of composite materials for repairs and reinforcements in large ship structures with damage. Definition of new efficient repair and reinforcement methods for large damaged steel structures.
- **Project partners:**
 - National Technical University of Athens, Greece (project coordinator)
 - AIMEN Technological Centre, Spain
 - Astilleros y Varaderos Francisco Cardama S.A., Spain
 - CETENA, The Italian Ship Research Centre, Italy
 - Bureau Veritas, France
 - Estaleiros Navais de Penische S.A., Portugal
 - Hellenic Register of Shipping, Greece
 - Instituto de Soldadura e Qualidade, Portugal
 - METTLE, France
 - Norwegian University of Science and Technology, Norway
 - The Shipbuilders and Shipreperairs Association of UK, UK
 - TWI Ltd, The Welding Institute, UK
 - as2con - alveus ltd., Croatia
 - University of Surrey, UK
 - Umoe Manadal AS, Norway
- **Stakeholder Forum members:**
 - Amber Composites
 - Anek Lines
 - Atlantic Bulk Carriers Management Ltd
 - Autralian Department of Defence – Defence Science and Technology Organisation
 - Avin International S. A.
 - Babcock
 - Carnival Corporation & plc
 - Construction Industry Research and Information Association – CIRIA
 - Croatian Register of Shipping
 - Devold AMT
 - ESR Technology
 - Fincantieri
 - Furmanite
 - Grimaldi Group
 - Gurit
 - Havel Composites
 - Highways Agency
 - ICC group

- Marine Technical Limits
- Neptune Research Inc.
- Network Rail
- Port of Lisbon
- Reichhold
- Saipem
- SolarTech International Ltd
- Tankerska Plovidba
- Underground transport for London
- Walker Technical

More information about the project can be found at www.co-patch.com

SAFEWIN

Safety of winter navigation in dynamic ice

- EU FP7
- **Duration:** 2009-2013
- **Project aim:** Development of an efficient system for predicting ice dynamics to increase the safety of winter navigation in difficult conditions through ice. General increase in safety of navigation in ice conditions: (1) improvement of meteorological forecasting models for displaying compression forces in ice masses and thus enabling optimal navigation of the ship through ice areas; (2) improvements to the ship's hull structure in terms of hull-ice interaction.
- **Project partners:**
 - Helsinki University of Technology, Finland (project coordinator)
 - as2con - alveus ltd, Croatia
 - Arctic and Antarctic Research Institute, Russia
 - Finnish Institute of Marine Research, Finland
 - Finnish Maritime Administration, Finland
 - ILS Oy, Finland
 - Knutsen OAS Shipping AS, Norway
 - Stena Rederi AB, Sweden
 - Swedish Maritime Administration, Sweden
 - Swedish Meteorological and Hydrological Institute, Sweden
 - Tallinn University of Technology, Estonia

ULYSSES

Ultra slow ships

- EU FP7
- **Duration:** 2009-2013
- **Project aim:** By combining ultra-slow speed and complementary technologies, the aim is to show that the efficiency of the world's fleet can be increased to the point where the GHG reduction targets are met: by 2020 by 30%, after 2050 by 80% compared to 1990 levels.
- **Project partners:**
 - Bureau Veritas, France (project coordinator)
 - as2con - alveus ltd, Croatia
 - Centre de Recherche pour l'Architecture et l'Industrie Nautiques, France
 - Chalmers University of Technology, Sweden
 - Danish Maritime Authority, Denmark
 - Technical University of Denmark, Denmark
 - EURONAV, Belgium
 - Germanischer Lloyd AG, Germany
 - SSPA Sweden AB, Sweden
 - TNO, Netherlands
 - Newcastle University, UK
 - WÄRTSILÄ Finland, Finland
 - WÄRTSILÄ Netherlands, Netherlands

INTERNSHIP

Joint project between Hanken School of Economics, Helsinki, Finland and Faculty of Economics in Rijeka, Croatia

- **Duration:** 2010-2013
- **Project aim:** To define and describe value of websites for multiple users in business-to-business relationships in the context of the shipping industry. The project makes contributions to the literature on value and business-to-business websites and to the use of websites in practice.

LNG CARRIER

as2con - Conceptual design of 750t DWT crashworthy coastal LNG carrier

The LNG tanker is designed to carry and distribute LNG cargo along the Adriatic coast and the Croatian islands. Gas distribution in ports will be performed through the LNG reception facilities what should aid in strengthening and development of the gas networks of the geographically remote parts. The vessel is designed with a crashworthy side and bottom hull structure in order to reduce the risk of collision and grounding. In combination with azimuthing propeller, this will allow safe harbour operations without tug assistance.

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The vessel is designed with a crashworthy side and bottom hull structure in order to reduce the risk of collision and grounding. In combination with azimuthing propeller, this will allow safe harbour operations without tug assistance. A 3D model has been built in [CAFE software](#).