RESURGAM project

Presenter's name

Company role name

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Project Overview

- Partners
- Challenges
- Impact
- Objectives
- Q&A

Partners

Shipbuilding and maintenance stakeholders

EWF

AISTER
BOATS • MARITIME • MARINAS

NED PROJECT
NAVAL ARCHITECTS & SHIP DESIGNERS

GISBIR
TURKISH SHIPBUILDERS' ASSOCIATION

ACLUNAGA
ASOCIACIÓN CLUSTER DEL NAVAL GALLEGO

Research Organisations

TWI

University of Limerick
Ollscoil Luimnigh

Lancaster University

TU Delft

Specialist Industrial SMEs

FORTH

elementsix
DE BEERS GROUP

ESi

stirweld

Motivation

Conventional welding requires highly skilled workers, is dangerous and low productivity

Repair of ship hull damage requires very expensive manual divers or dry docking

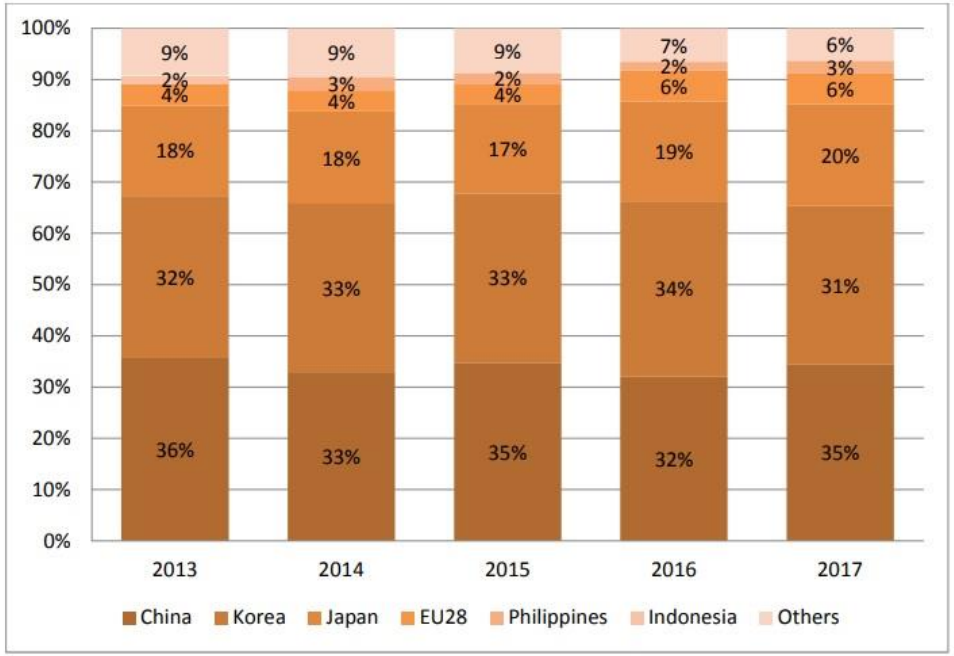
RESURGAM
Robotic Survey, Repair and Agile Manufacture

Will introduce high productivity Friction Stir Welding of steel to European shipyards.

Friction Stir Welding is mechanised, low-distortion, safer welding solution; applicable to (modular) fabrication and underwater repair

Main challenges

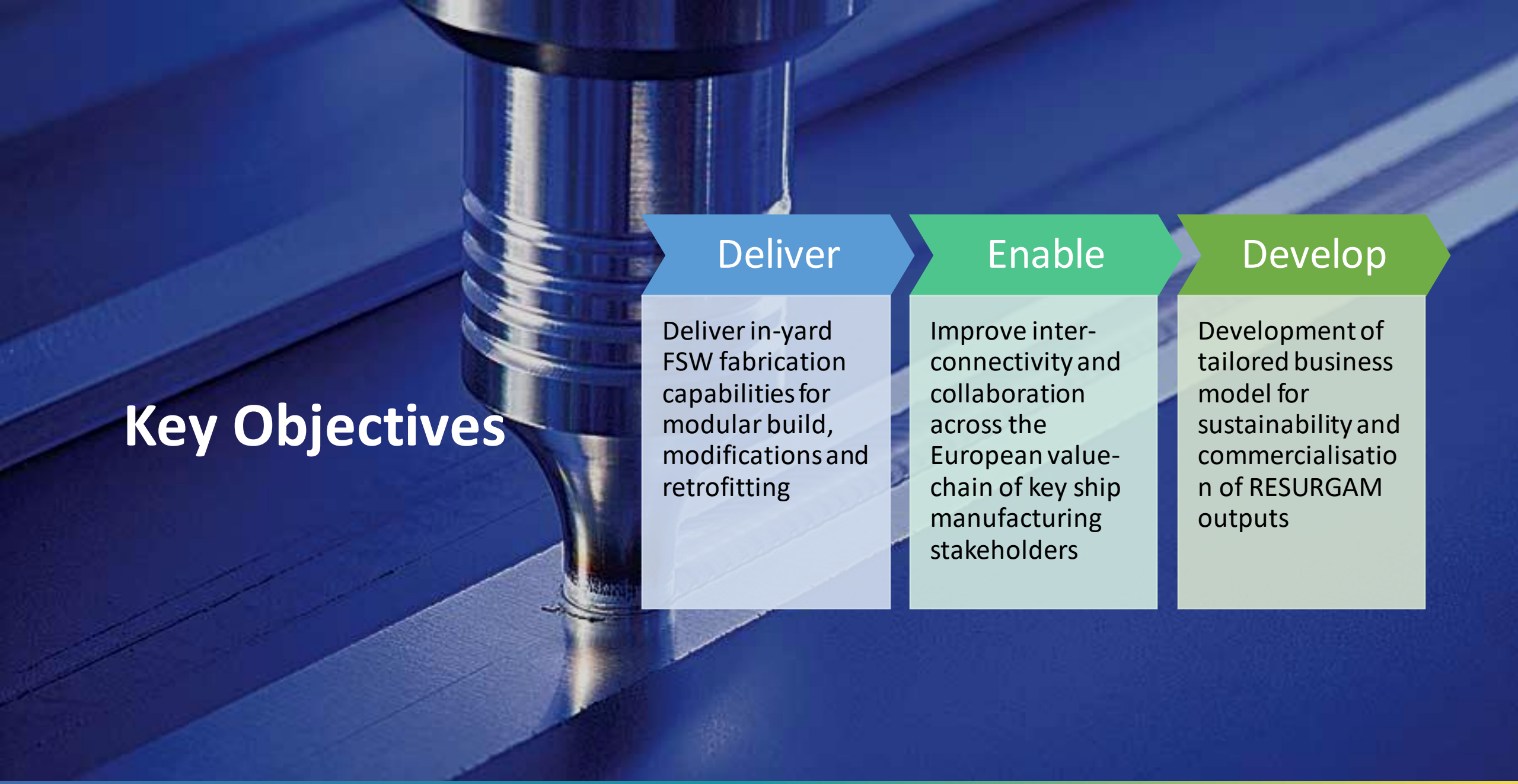
- Ongoing competition from shipyards in Asia
- Limited investment capabilities from smaller European shipbuilding clusters
- Shipyard repair processes are still:
  - Expensive
  - Require highly qualified personnel
  - High-risk procedures
  - Often inefficient and time-consuming



Source: OECD, 2018, Market shares by shipbuilding economies

Key Objectives

Enable	Deliver	Deliver
Enable the use of Friction Stir Welding (FSW) for underwater and under oil welding of steel;	Deliver a prototype underwater (U-FSW) head capable of robotic deployment;	Deliver AI-enabled robotic UFSW system capable of performing inspection and FSW underwater and in confined spaces



Key Objectives

Deliver

Deliver in-yard FSW fabrication capabilities for modular build, modifications and retrofitting

Enable

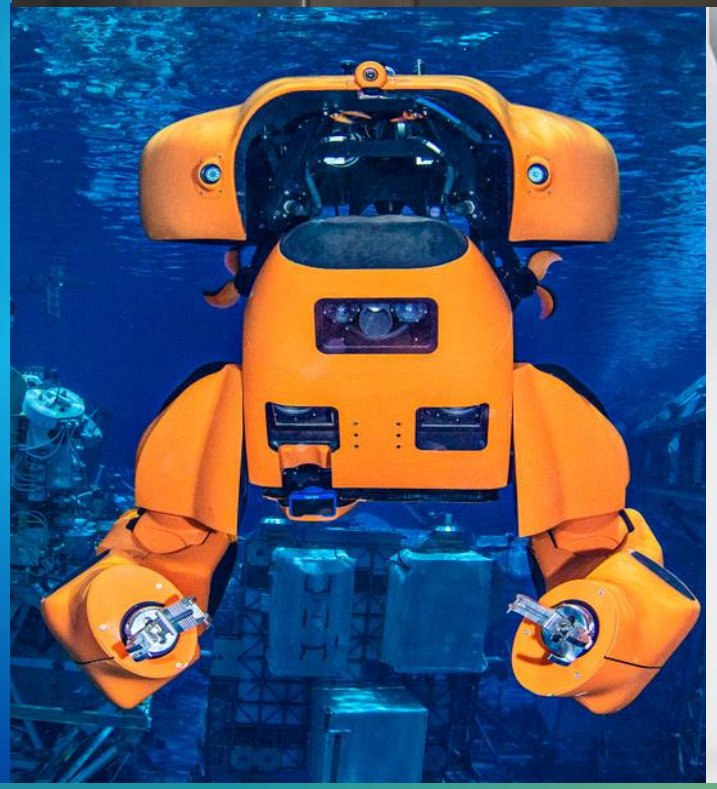
Improve inter-connectivity and collaboration across the European value-chain of key ship manufacturing stakeholders

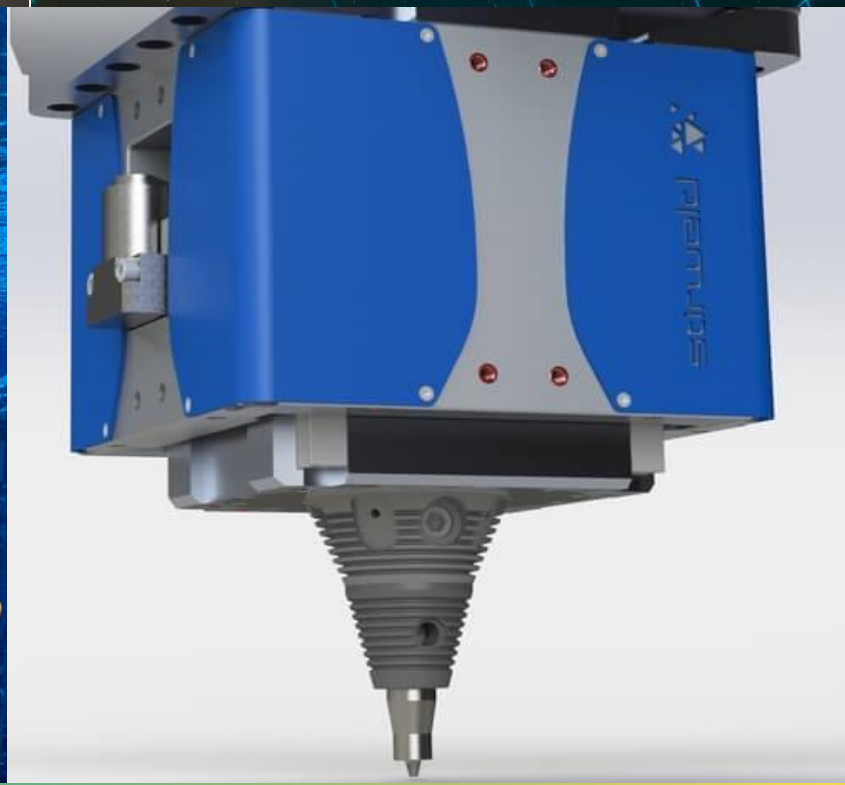
Develop

Development of tailored business model for sustainability and commercialisation of RESURGAM outputs

Project Outcomes

Technical Area	Outcome
FSW/UFSW	Adapting FSW to new medium (liquid) and materials (steel)
Industry 4.0 & Digital Solutions	The RESURGAM Digital Platform
Advanced Robotics Solutions	New autonomous ROV
System Integration & Demonstration	Development of new FSW head





Expected Impact

- Increased competitiveness of small/medium sized European shipyards and shipbuilders
- Reinforcing European employment and competitiveness based on skills development for innovative production processes
- Improving environmental performance of shipyards and shipbuilders

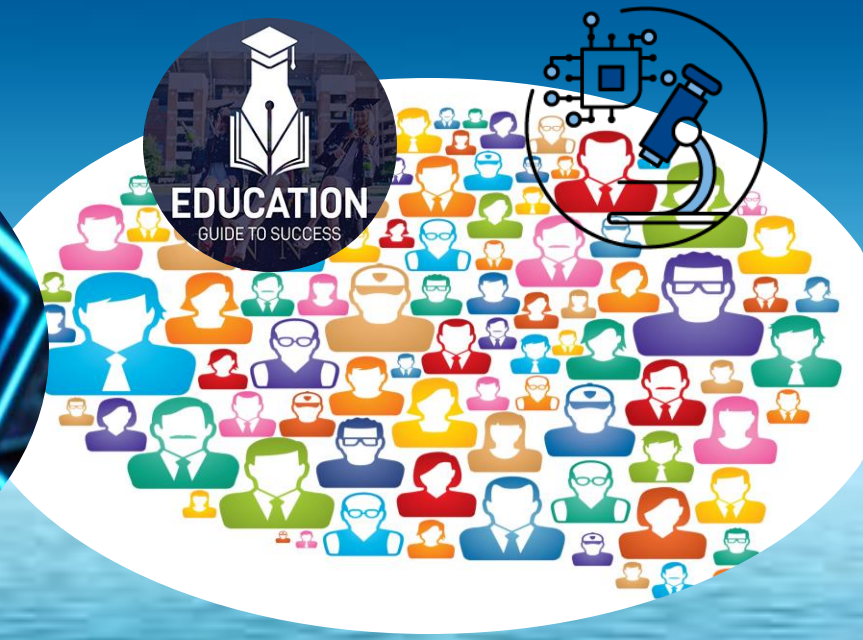
Expected Impact

- Support multiplication effect within Europe beyond core consortium
- Gains in the modular construction and maintenance of new ships
- Economic benefits of in-water/underwater maintenance to wider European ship maintenance sector

Innovation Associated Technologies

Artificial Intelligence

Blockchain



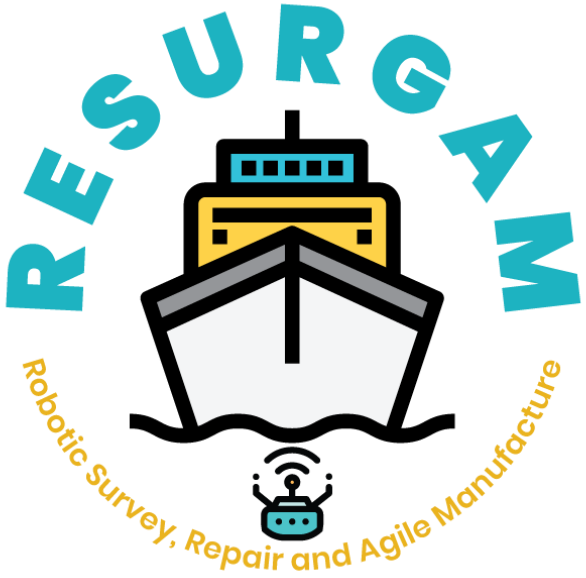
Innovation Community

Conclusions

- Develop a brand new FSW Underwater Repair Robot for the benefit of European shipyard manufacturers
- Contribute towards strengthening innovation and capacity of European shipbuilding community
- Improve closer collaborations with existing projects and EU initiatives

Any Questions?

Contact us at
ewf@ewf.be



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Thank you

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