



Development and proof of new approaches for through-life asset management based on next generation of materials and production technology

Introduction to the project

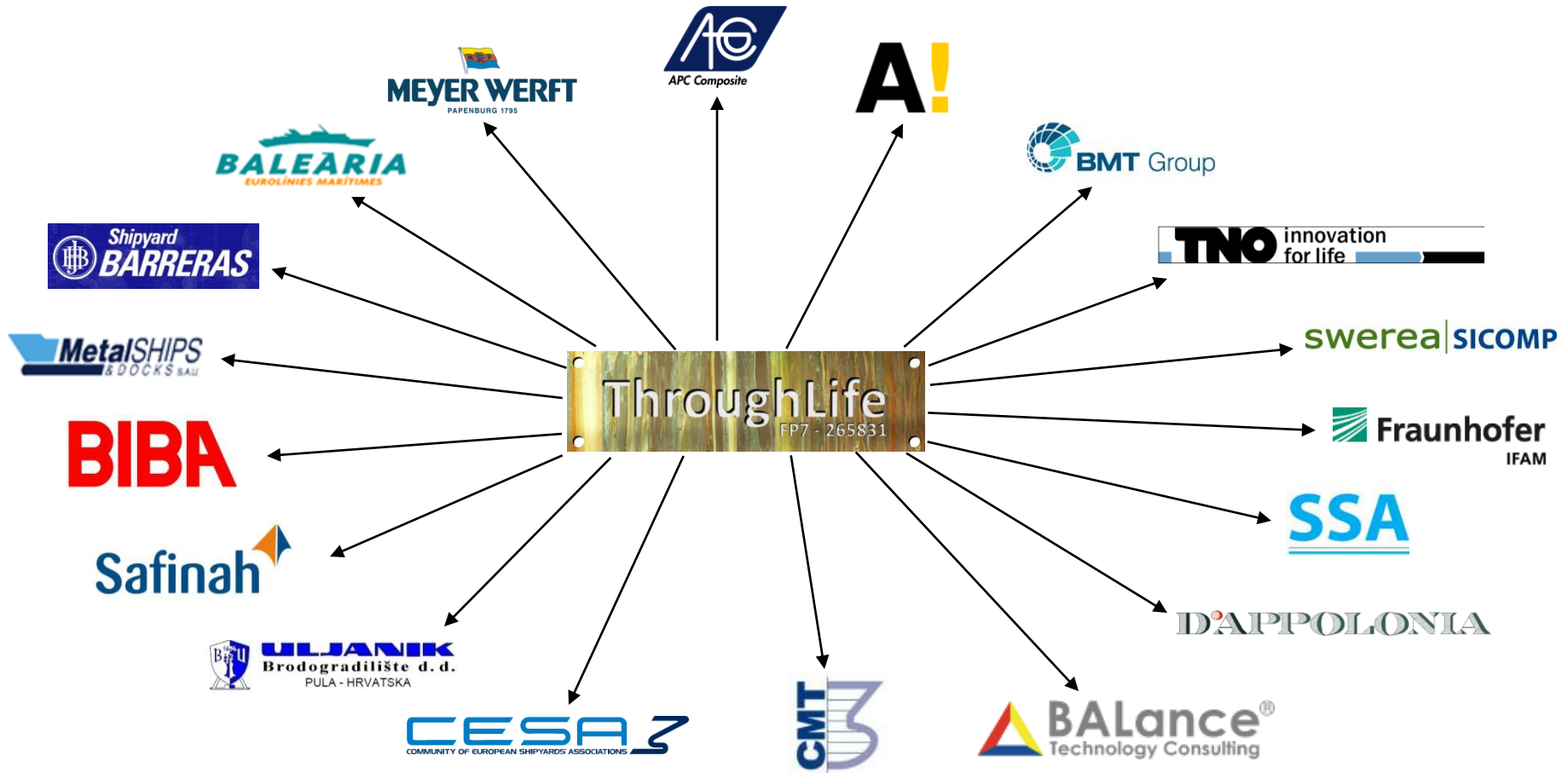
objectives

approach

status



Participating Partners



18 Partners from 9 countrys



Introduction to the project



European project founded in the FP7 call

Duration 36 months / 04.2011 - 03.2014

18 partners from 19 countries

Total budget 3,574,975 EURO

EU contribution 2,532,364 EURO

Project officer: Grzegorz Domanski

ThroughLife was merged from 2 projects ideas:

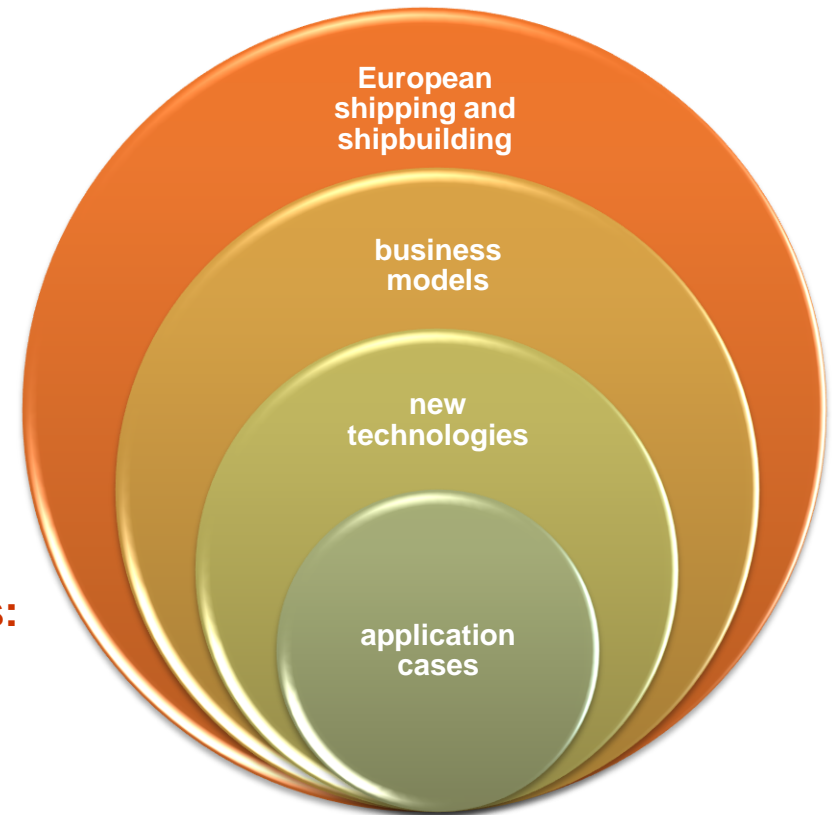
- New business Models
- New technologies

Generic Approach

Develop business cases that open up new business opportunities for shipyards and owners

Technological approach

Develop maintenance friendly technologies for marine applications



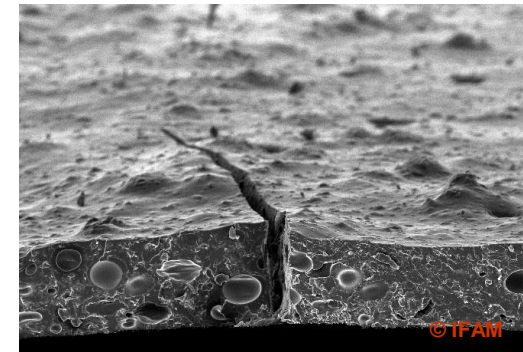
- **project goal:**
 - reducing the friction in the system to improve overall competitiveness of European shipbuilding, ship-repair and shipping
 - better tuned business models
 - trusted product innovations
 - improved life cycle processes



Introduction to the project

What innovative materials can offer

- Example innovative steels and coatings:
- Increase significantly the safety of the ship
- Reduce ship resistance
- Reduce maintenance cost and repair lead time.



Why technologies are not introduced

- Example innovative steels and coatings:
 - No trust into the “sales promises”, often the full potential cannot be used
 - No reliable prediction on the ROI
 - Skills on how to repair and maintain the new materials are neither available worldwide nor over the full LC



The main objective of the project is to develop and prove new, cost effective approaches for through-life asset management for selected technologies and application scenarios.

This will be done by

- **Introducing efficient and environmentally friendly techniques and materials** for ship production (**new building**), operation (**maintenance, repair, conversion**) and end-of life (**dismantling and reuse**);
- **Condition monitoring** and combining information from **all life cycle phases and stake holders** using **state-of-the-art information and communication technologies**;
- **Strategies and tools** for predictive, condition and risk based **maintenance and repair**, including decision support for repair, reuse, recycling or scrapping of materials, components or modules;
- **Innovative design strategies** and assessment tools for improved efficiency and environmental performance over the life cycle of ships;
- **New business models for used products** (ships, parts of ships, components), especially to extend the life span of these products instead of scrapping them;

... **considering all life cycle phases** of the technologies concerned in view of their **cost efficiency, environmental performance and safety**.

Definition of three "Business Cases" with industry stake holders

Starting with small groups of stakeholders...

- New building yards
- Repair yards
- Ship operators

.....and defining new business scenarios combined with the application of new technologies for different ships.



Ferries operating in the Mediterranean
BARRERAS, Metal Ships & Docks, BALEÀRIA

River cruisers on the Danube river
Meyer Werft, Arosa, ÖSWAG



Mid-range cargo vessels
Uljanik, FC- Palermo, Grimaldi and Jadrolinija

Several workshops will be organised. The first one with project partners only, while the other ones will be extended to members from the partner associations (CESA, CMT and SSA).

Definition of three "Specific Technologies"

The project focuses on three specific technologies which all show significant potentials for life cycle cost savings and increased environmental performance and require specific skills throughout the life cycle phases:

Recyclable and / or long life (reusable) Composites

E.g. weight reduction around 50%, not more than 30% increase in production cost, at least equal LC cost and good potential for re-use or recycling; [WP2]

Innovative self-healing coatings and corrosion monitoring

E.g. development of one model self healing paint, proof of (better) corrosion performance, different sensors and arrangements will be investigated and tested [WP3]

Innovative and anti-corrosive steels and steel structures

E.g. investigate at least three different innovative steels, reduce corrosion, improve the LC performance without increasing the new building cost; [WP4]

Develop solutions for "Enabling Technologies"

The project will develop solutions for enabling technologies, which are necessary to implement innovative life cycle asset management across specific technologies:

Monitoring

- **In-service validation** of the safety of new components based on composites or innovative steels
- A **monitoring plan** to support condition-based maintenance and life cycle decision making

Maintenance

- Monitoring supported **condition-based maintenance** for high payoff maintenance activities (e.g. corrosion & fatigue)
- Add a **risk based factor** to the predictive maintenance;
- To reduce off-service time of the vessel provide improved **tools for maintenance planning** based on specific maintenance, repair and conversion tasks, the shipyards schedule and the sailing schedule of the vessel

Management

- Monitoring supported **decision making software** to optimize ship operation
- Development of **operational database** to support decision making (design, retrofit, maintenance, and operation)

Proof of concepts by "Hardware Demonstrators"

Based on the technological solutions, the generic enabling technologies and the business concepts, 3 prototypes will be build to test and demonstrate the practical feasibility and the life cycle impacts.

Production of technical prototypes

- Combining the technologies
- Prototypes shall reflect technologies for the specific conditions in the new building, retrofitting and operation industry
- During the trials the demonstrators will be compared to conventional solutions / ships

Proof and Validation of Business Concepts

- Using the assessment tools developed for specific technologies and materials
- Feasibility and potential impact shall be elaborated and demonstrated.

Validation of the overall project results and feasibility for a wider industrial community

- Lessons learned
- Preparation of guideline for a wider industrial community.

activities you can join



- Questionnaire on www.throughlife.eu
- workshop with all stakeholders in Munich
13th an 14th of September

The screenshot displays the ThroughLife questionnaire interface. The header includes a navigation menu with links for Home, Project, Work packages, Partners, Documents, Questionnaire, Contact, and Internal. The main content area is titled 'Questionnaire' and features a section for selecting the user's company type. The form is currently set to 'Shipping company' and contains the following questions:

Please select your type of company:

Shipping company | Yard | Other

ThroughLife questionnaire for shipping company

ThroughLife questionnaire for shipping companies

1. What type of shipping company are you?

- ship owner
- ship operator
- ship owner and ship operator

2. In which department do you work?

- administrative department
- procurement department
- technical department
- Other (please specify)

3. What are your products of interest?

- ferry

The page also includes a sidebar with the text: 'Development and proof of new approaches for through-life asset management based on next generation of materials and production technology.' and a box titled 'Issues addressed by ThroughLife' containing the text: 'Innovative design strategies and assessment tools for improved efficiency and environmental performance over the life cycle of ships'.



thank you for your attention!

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