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

SEVENTH FRAMEWORK PROGRAMME

innovative concepts combined with new business models

Partners

ThroughLife FP7 - 265831

3 Shipyards:

MEYER WERFT PAPENBURG 1795

MetalSHIPS & DOCKS S.A.U.

ULJANIK Brodogradilište d.d. PULA - HRVATSKA

1 Ship operator

BALEARIA EUROLÍNIES MARÍTIMES

3 Maritime associations:

CESA COMMUNITY OF EUROPEAN SHIPYARDS' ASSOCIATIONS

CMT

SSA

5 Research institutes:

Fraunhofer IFAM

BIBA

TNO innovation for life

swerea | SICOMP

1 University

A!

2 Manufacturers:

Safinah

APC Composite

3 Consultancies:

BALance® Technology Consulting

D'APPOLONIA

BMT Group

In total 18 partners from 9 countries

Introduction

European project founded in the FP7 call

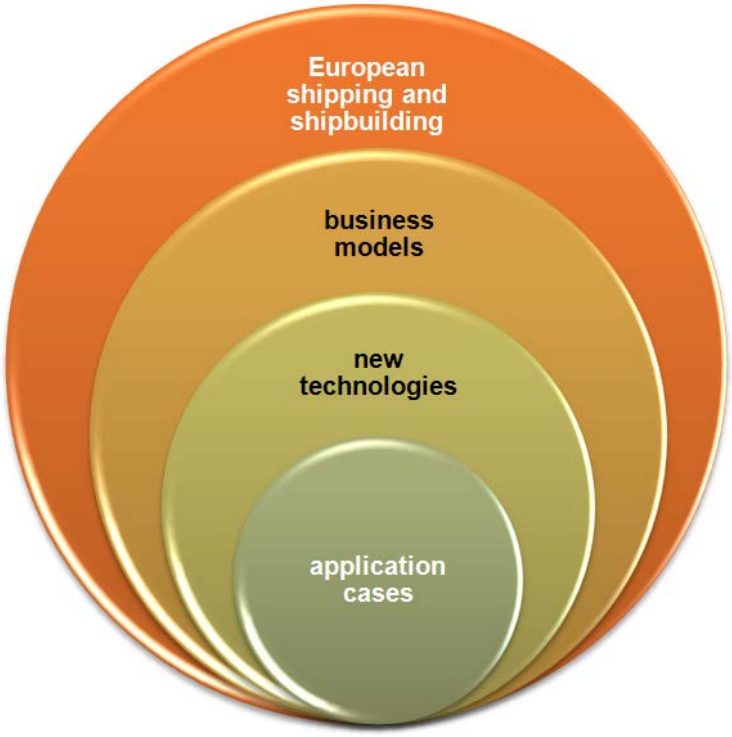
Duration 36 months / 04.2011 - 03.2014

18 partners from 9 countries

Total budget 3,574,975 EURO

EU contribution 2,532,364 EURO

Coordinator: Mr. Markus Elfgen, Meyer Werft



ThroughLife includes both

- New business models
- New technologies

Generic Approach

To develop **business models** that open up new business opportunities for shipyards and ship owners

Technological approach

To develop **maintenance friendly technologies** for maritime applications

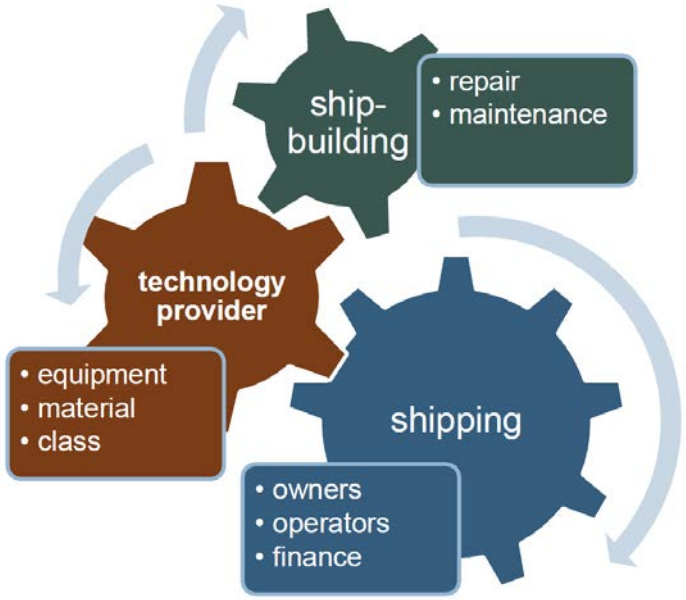
Practical approach

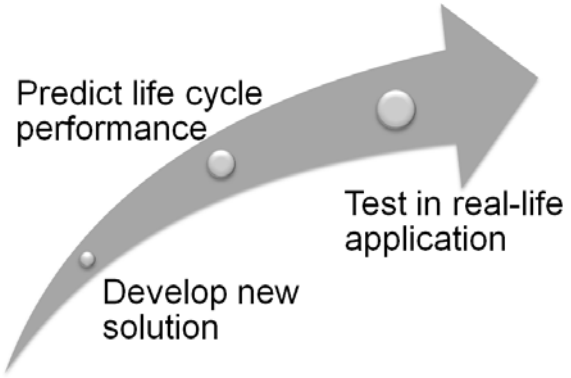
To test the project results in **real life application cases**

Objectives

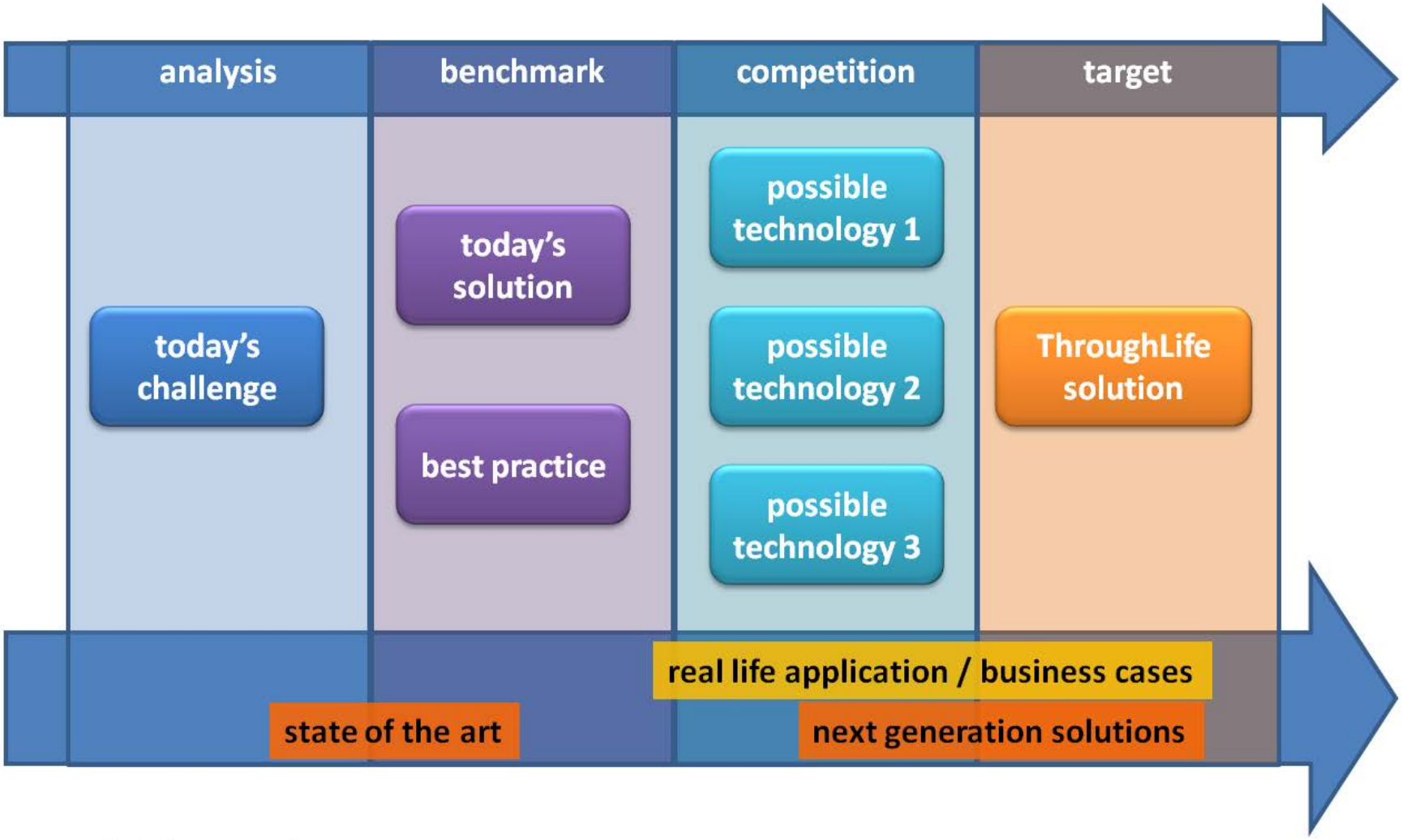
Goal: To improve overall competitiveness of European shipbuilding, ship repair, and shipping by reducing friction in the system through

- **New business models**
  - To improve interaction between all stakeholders to promote innovation, increase overall efficiency, etc.
  - To overcome innovation barriers such as difficult maintenance of unconventional solutions due to IPR issues etc. and a high risk for the owner due to uncertainty about the performance of new technologies (no trust in sales talks)
  - Business models for used ship products
- **Innovative, efficient and environmentally friendly technologies**
  - Techniques and materials for ship production, operation (maintenance, repair, conversion), and end-of-life
  - Strategies and tools for predictive, condition and risk based maintenance and repair using information from all LC phases and stake holders.

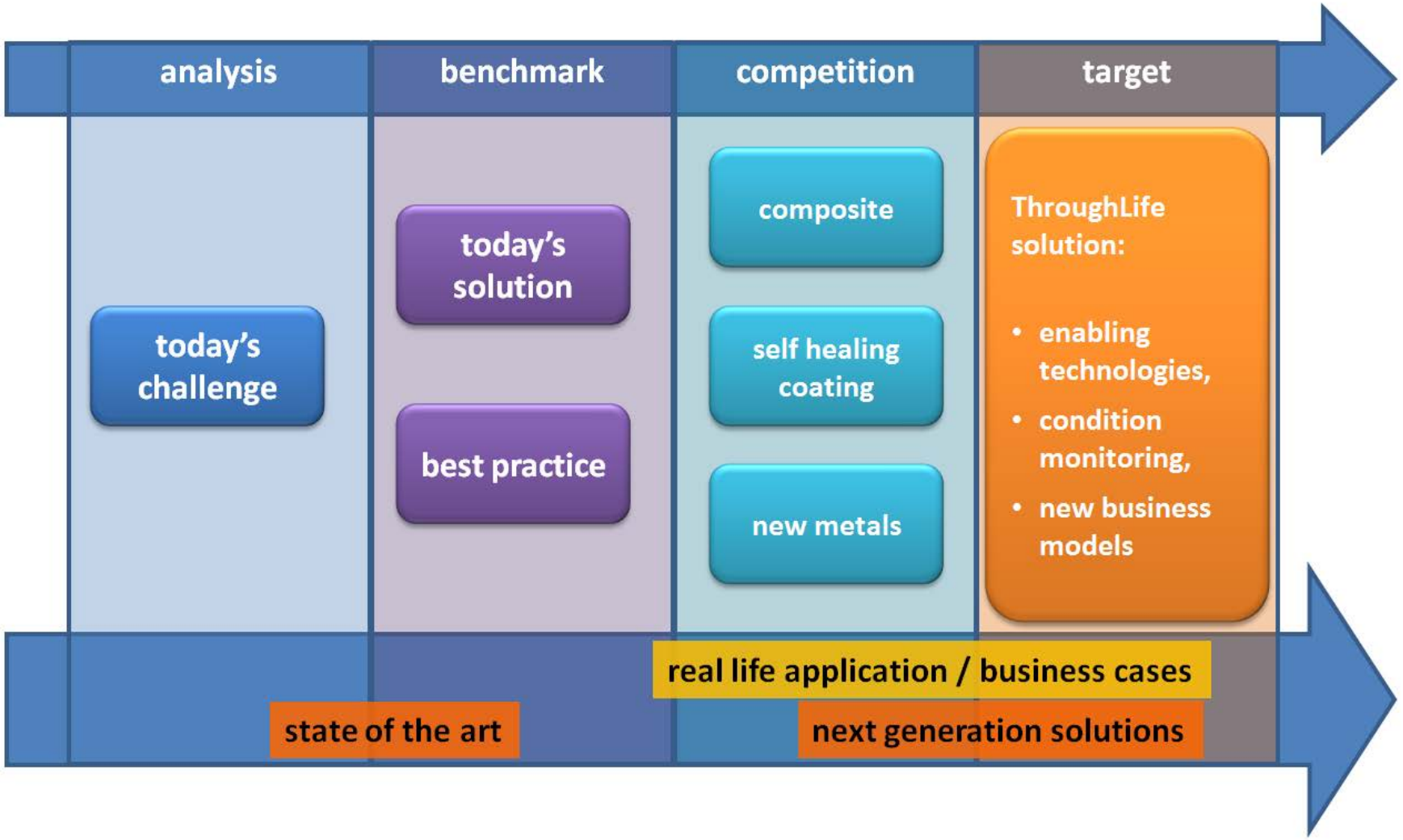




Approach (1)


analysis
benchmark
competition
target
today's challenge
today's solution
best practice
possible technology 1
possible technology 2
possible technology 3
ThroughLife solution
real life application / business cases
state of the art
next generation solutions

Approach (2)


analysis
benchmark
competition
target
today's challenge
today's solution
best practice
composite
self healing coating
new metals
ThroughLife solution:
• enabling technologies,
• condition monitoring,
• new business models
real life application / business cases
state of the art
next generation solutions

New technologies

The project focuses on three specific technologies, which all show significant potentials for **life cycle cost savings** and **increased environmental performance**, but are currently not widely applied while they require specific maintenance skills etc. throughout the life cycle phases:

Recyclable and / or long life (reusable) composites (WP 2)

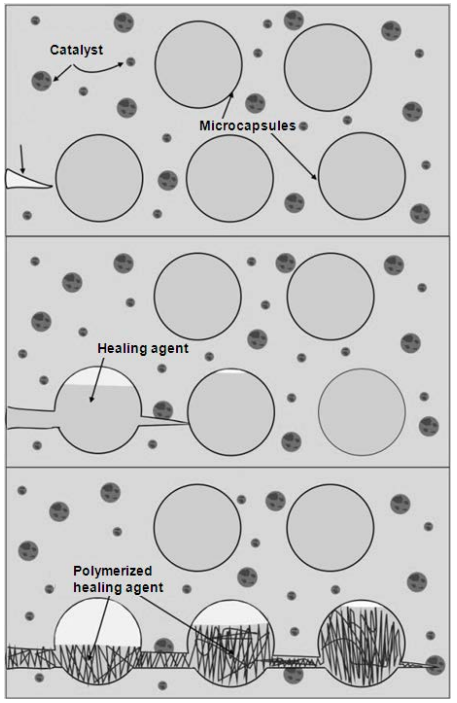
- To evaluate how introduction of traditional polymer fiber composites and green polymer fiber composites onto ships can improve the LC performance through case study (**proof of advantages**)

Innovative self-healing coatings and corrosion monitoring (WP 3)

- To develop a **self healing paint** that can recover from scratches and small cracks to the surface
- To develop **a corrosion monitoring system** to be used for the testing of the self healing coating

Innovative and anti-corrosive steels and steel structures (WP 4)

- To create **innovative structural design concepts** by analyzing the application of three different innovative steels and their synergies with other unconventional materials.



(Fraunhofer IFAM)

Business groups

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

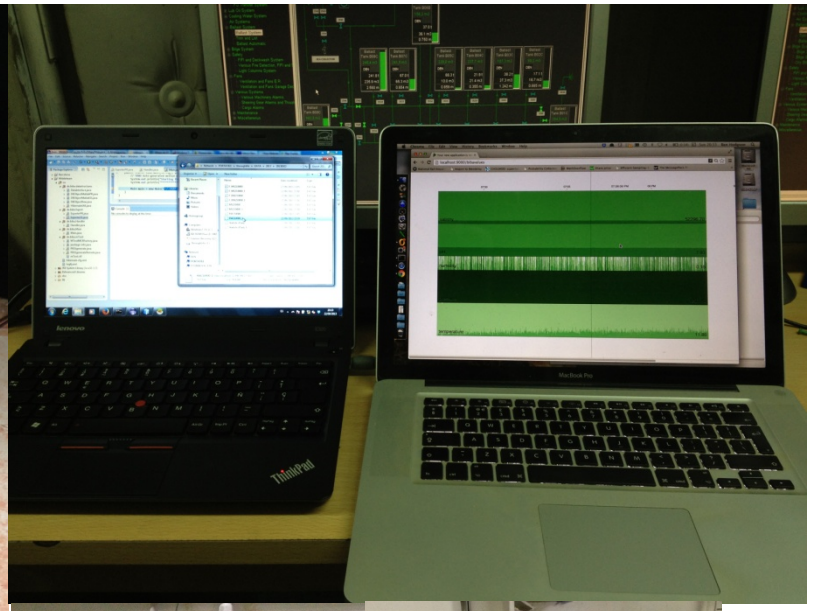
River cruisers on the Danube river
Meyer Werft, Arosa, ÖSWAG

Hopper Suction Dredger, Mid-range cargo vessels
Uljanik, Victor Lanic, Jan de Nul Group,

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).

Hardware demonstrator – self-healing coating

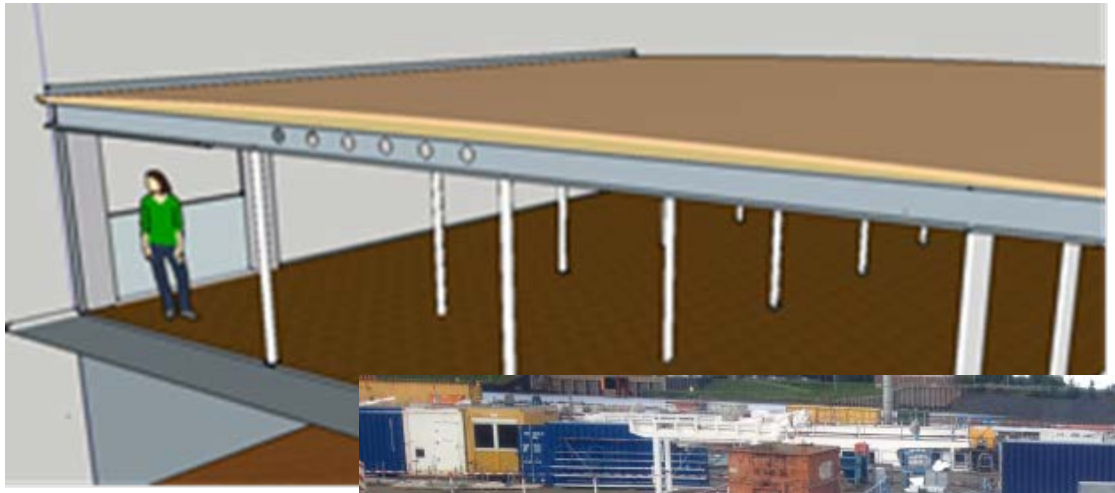
Hardware demonstrator – condition monitoring



Test device for anti-abrasive coatings

Hardware demonstrator – composite sundeck

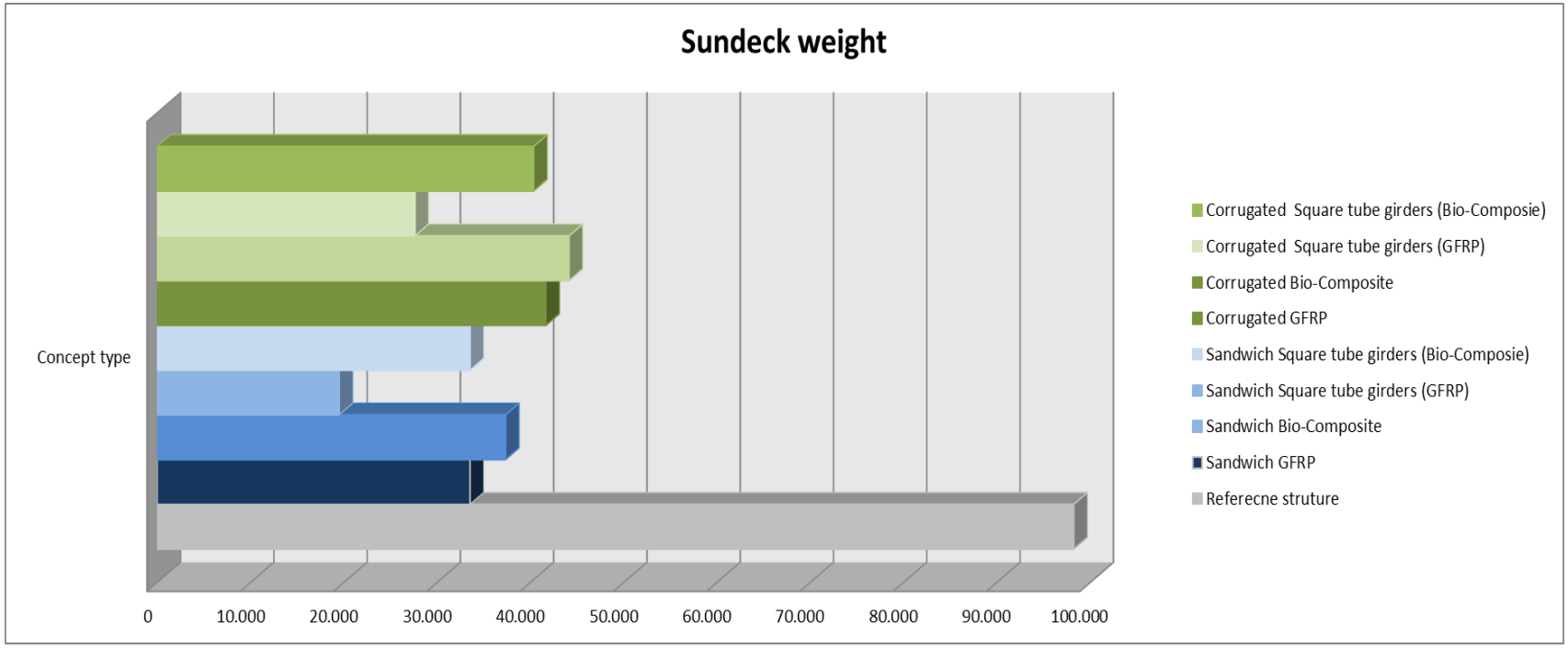
Hardware demonstrator – composite sundeck



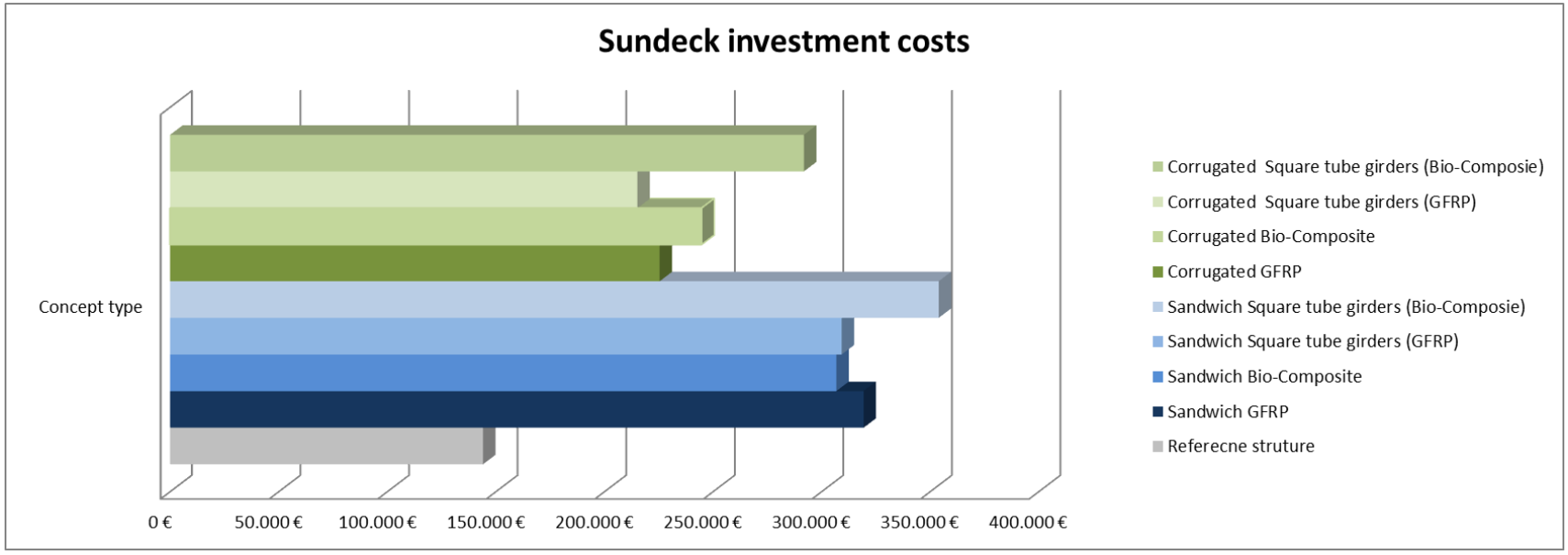
Next Steps:

→**Prototype testing**

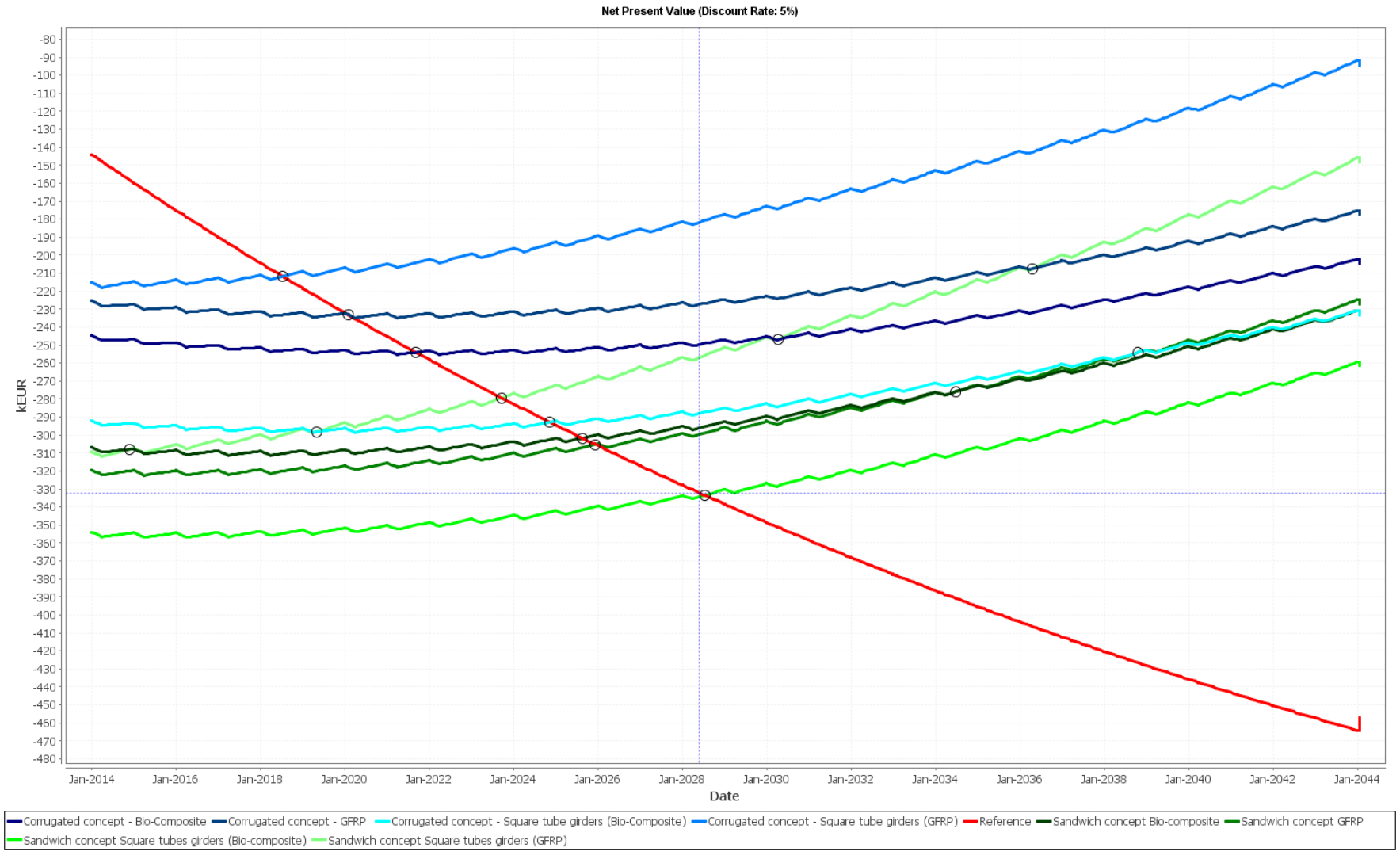
Weight comparison



Investment costs



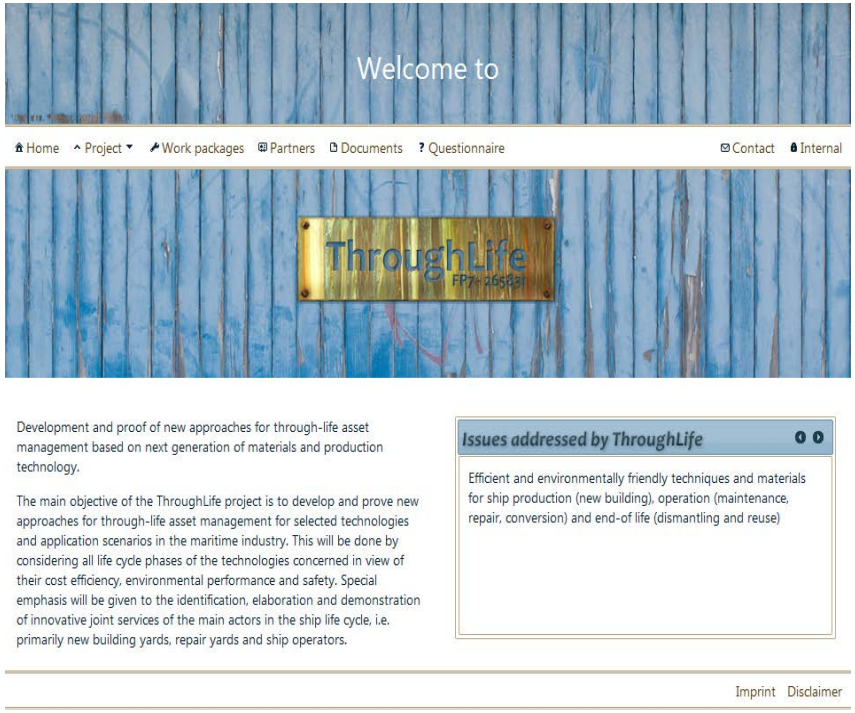
Results of the LCCC



Further information

Please visit our official project website for further information:

www.throughlife.eu



Project coordinator:

Markus Elfgen

Research & Development Department

MEYER WERFT GmbH

Phone: +49 4961 81-5356

Markus.Elfgen@meyerwerft.de