

Mari4_YARD project aims at implementing a portfolio of worker-centric solutions, by relying on novel collaborative robotics and ubiquitous portable solutions, enabling modular and reconfigurable solutions targeting the execution of labour-intensive tasks by preserving industry-specific workers' knowledge and skills. This workshop presented Mari4_YARD ambitions and collected feedback from its stakeholders in order to provide user-centred solutions.

WORKSHOP AGENDA

- 10:00-10:15 Brief introduction about Mari4_YARD project and description of workshop objectives and activities (Diego Perez)
- 10:15-10:30 Digital tools for 3D modelling and production (Javier Pamies)
- 10:30-10:45 Human-robot, collaborative solutions (Natalia Zacharaki)
- 10:45-11:00 Coffee Break
- 11:00-11:15 AR for construction support and supervision (Robert Rost)
- 11:15-11:30 Exoskeletons in outfitting and assembly task (Andrea Parri)
- 11:30-12:15 Breakout rooms – Workshop session
- 12:15-12:30 Plenary – Wrap up and conclusions

**15 FEBRUARY
2022**

**“ The Human-
Centric
Shipyard of
the future”
Mari4_YARD 1st
workshop**



Plenary Session Meet the Speakers!



Diego Perez Lozada, AIMEN, Project Coordinator
Team Leader – Advanced Robotic Technologies & Applications
Title of the presentation: *An overview of Mari4_YARD project, objectives and ambition*



Javier Pamies, Ghenova Ingenieria
Naval architect, member of the Spanish Naval Architecture Association
Title of the presentation: *Digital tools for 3D modelling and production*



Natalia Zacharaki, LMS - University of Patras is an Electrical and Computer Engineer
Research Engineer at Laboratory for Manufacturing Systems and Automation
Title of the presentation: *Human-robot, collaborative solutions*



Robert Rost, Technische Universitet Hamburg
Group Leader for Digital Production Management
Title of the presentation: *AR for construction support and supervision*

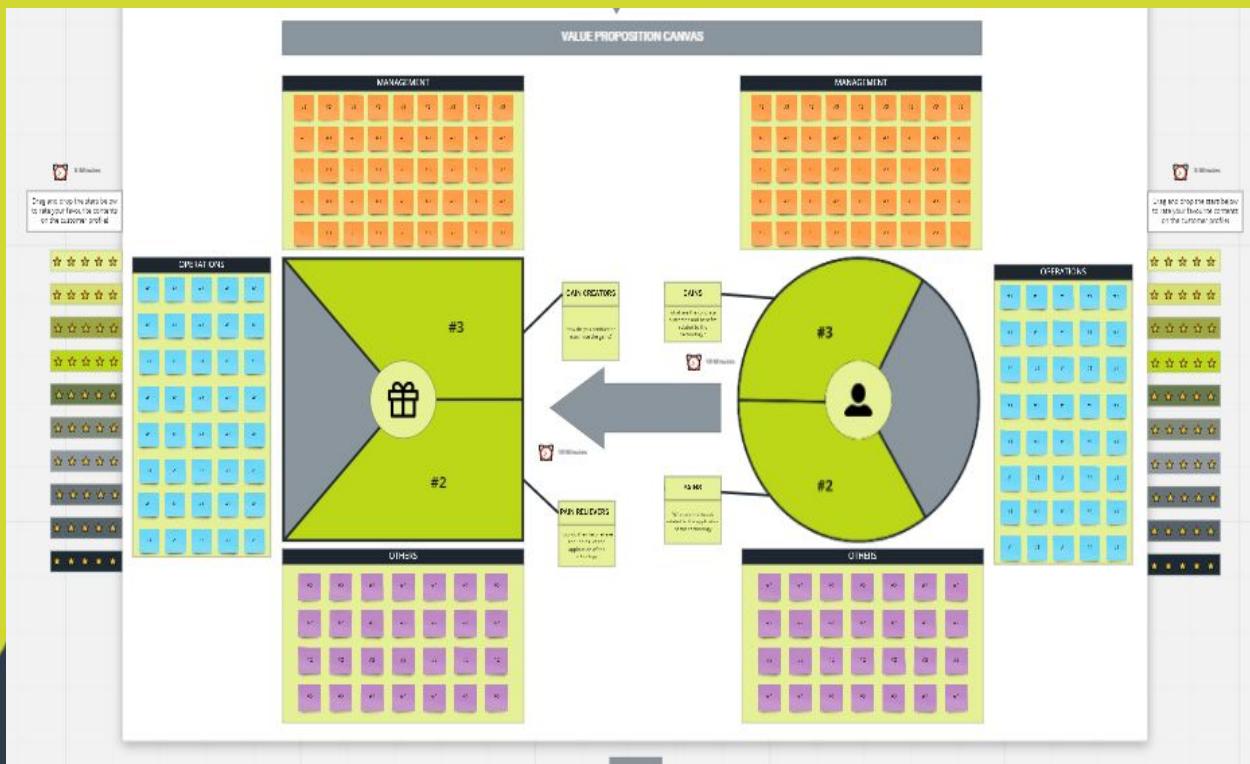


Andrea Parri, IUVO
R&D Biomedical Engineer
Title of the presentation: *Exoskeletons in outfitting and assembly task*

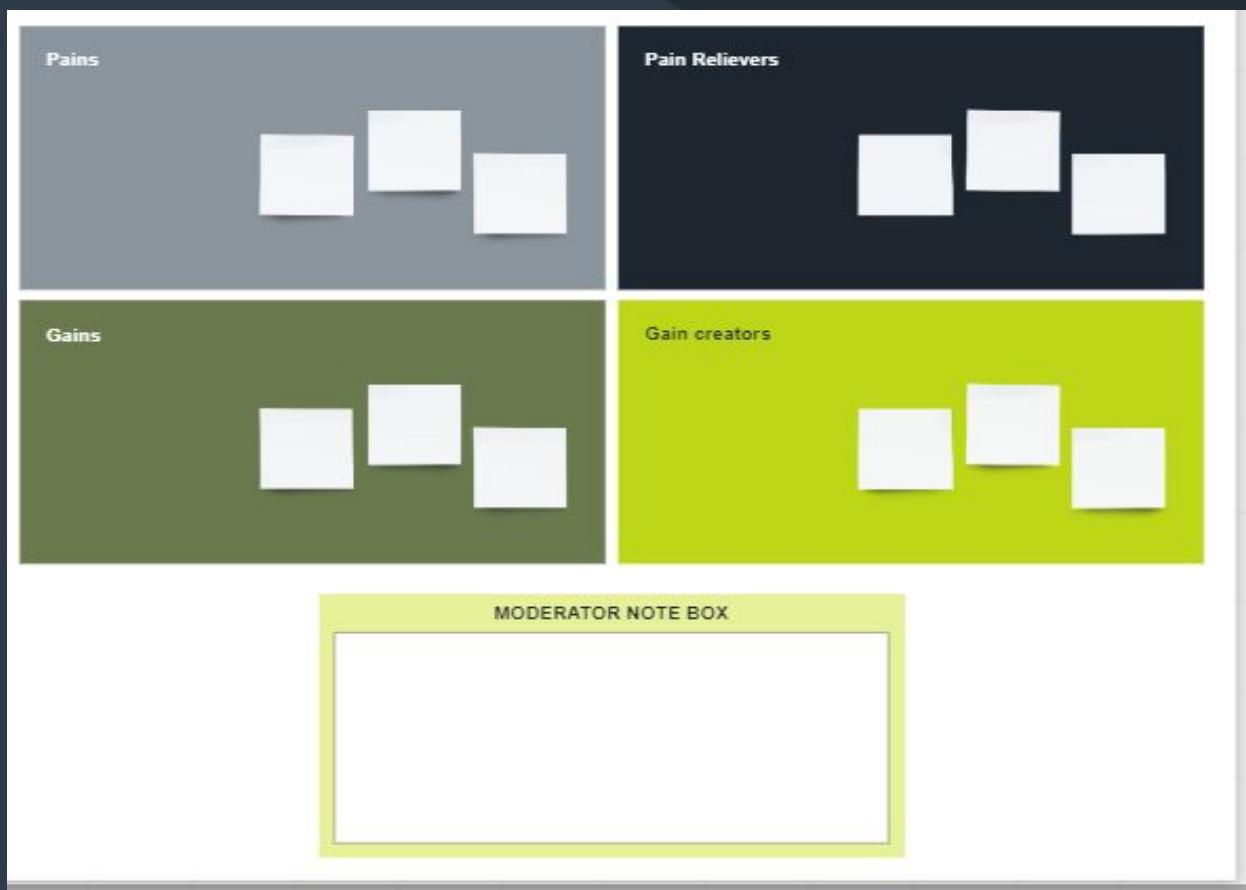
Workshop session

After the plenary session all participants were divided into 4 break-out rooms (one per technology). In the breakout rooms participants were asked to provide feedback on the user-centred specific solution by means of a Miro board. They were supported by a moderator, a technology expert (the workshop speaker) and a facilitator for practical issues.

First step – Value Proposition Canvas: Participants were asked to identify key features, pains and gains of each technology in the canvas. Afterwards they had to vote the inputs from the other participants.

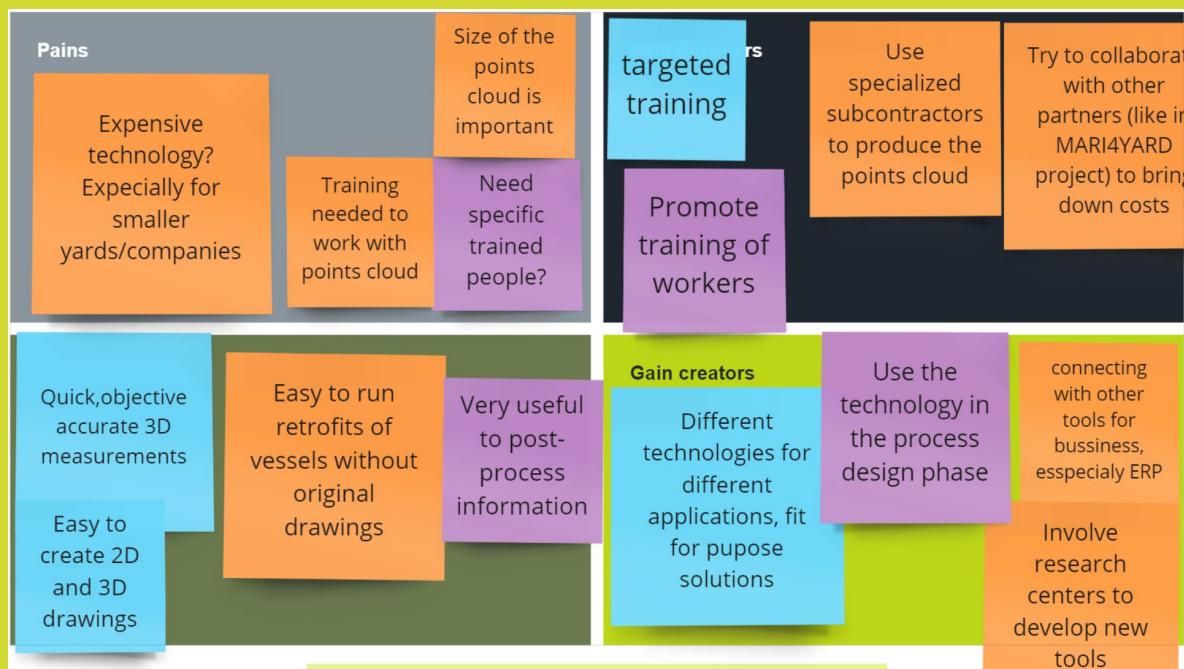


Second step – Key-takeaways: After a brief discussion, the most voted suggestions and comments were collected and included in this template that was used to present the results of the breakout rooms in the plenary



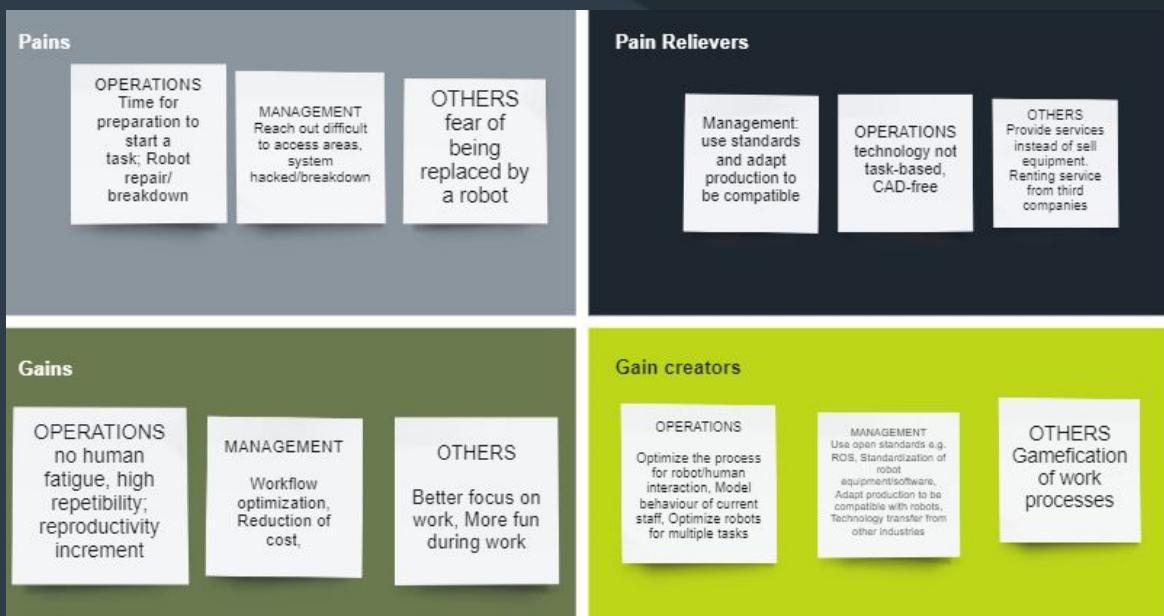
Workshop Results

Main Takeaways



Break-Out room 1
(Moderator: Kasper Uithof, NMTF)
Digital tools for 3D modeling and production

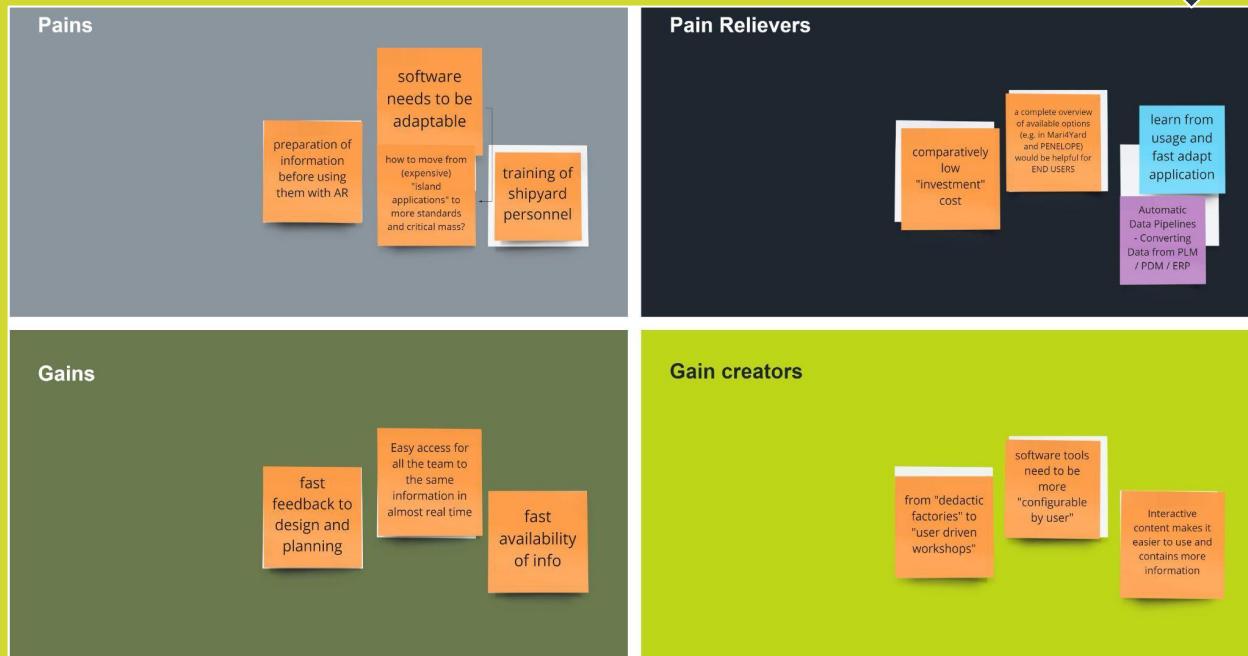
- 3D modelling technology appears to be a great opportunity for the market as it is versatile, able to tackle different types of applications and it can be used on a very early stage of the process design
- The high implementation and training costs can be balanced by increasing efficiency via collaborating with other partners to exploit economy of scale



Break-Out room 2
(Moderator: Arnold De Bruijn, NMTF)
Human-Robot collaborative solutions

- The Human-Robot solution is of great value for diminishing man fatigue and management costs as it optimizes the workflow, as well as the human-machine interaction process
- The high investment costs it is assumed could be reduced by renting services from 3rd parts

Workshop Results Main Takeaways



Break-Out room 3 (Moderator: Michael Hubler, CMT) Digital tools for AR for construction, support and supervision

- Augmented Reality Technology stands out as very versatile, providing quick feedback for design and planning.
- For a smooth implementation, the software should be made more adaptable, connected with the existing system shipyards are already using, as well as configurable and open to all external users.

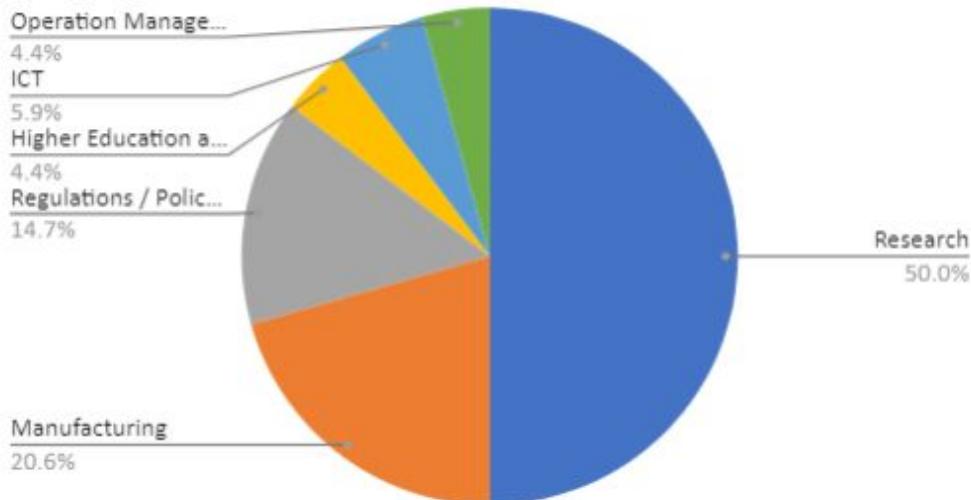


Break-Out room 4 (Moderator: Markus Lehne, BAL) Exoskeletons

- The Exoskeleton technology will lead to less injuries, more productivity and a more attractive workspace for youngsters. This may result in healthier workers, higher productivity and overall smarter processes
- A fear of a non-returned investment must yet be overcome, however making spare parts standard across different models has the effect of lowering maintenance costs

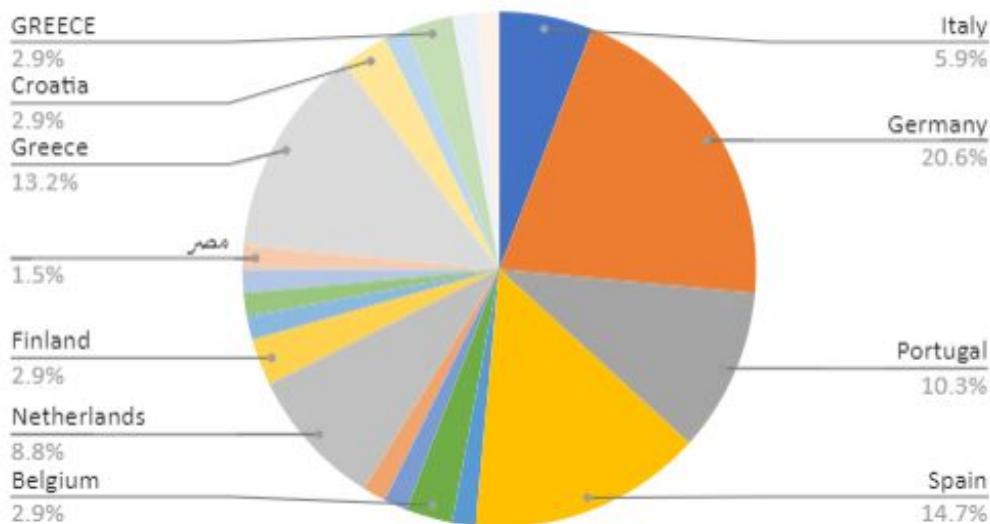
Workshop Audience

Count of Which sector do you work in?



Mari4_YARD workshop participants per sector

Count of Country



Mari4_YARD workshop participants per country



Mari4_YARD Consortium

