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## *The MATES project*

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The [MATES - “Maritime Alliance for fostering the European Blue Economy through a Marine Technology Skilling Strategy”](#) project, co-funded by the Erasmus+ Programme of the European Union, aims at developing a Skills Strategy for addressing the main drivers of change in the maritime industry and in particular in the shipbuilding and offshore renewable energy sectors. Both sectors require new skills, which are inextricably linked to green and digital technologies, but also to new business models for their effective utilization.

In this context, a series of Pilot Experiences are to be carried out, aiming at testing several alternatives of **education and training practices** for addressing the current and future skills gaps of the two sectors. To this end, CERTH/HIT will develop and launch a Pilot Seminar which is designed and formed through a series of Workshops with the participation of industry experts and other stakeholders.

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## *Results of the 1<sup>st</sup> Workshop*

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The 1<sup>st</sup> online Workshop on "**Technical training and education in the shipbuilding and ship repair sector**" was successfully held on March 1, 2021, organized by CERTH/HIT with the support of the Piraeus Chamber of Commerce and Industry (PCCI) and the Ministry of Maritime Affairs & Insular Policy and in collaboration with the University of Piraeus and the Port Training Institute “EXANTAS” in the context of their tripartite cooperation. The meeting was attended by representatives of the aforementioned bodies as well as from the Association of Craftsmen-Employers Machinists of Piraeus, the Panhellenic Association of Ship Suppliers, the Association of Shipbuilding Companies (SENAVI). During the meeting, the MATES research project was presented and a brief update on its progress and results was made. Particular emphasis was placed on the results regarding the lack of technical skills in the sector but also on the mismatches that exist between the offered skills and the respective needs of the industry. In this context, the main technical occupational profiles of the industry were presented, as they have been identified by MATES in addition to those already mentioned in previous studies. The main green and digital technologies related to the industry (e.g. alternative fuels, digital twins, additive manufacturing, robotics, etc.) were also highlighted, with particular emphasis on their current and long term impact on the skills that are necessary to the industry and how they affect the training and education needs.

Through the suggestions made by the attendees and the analysis performed by the project team in relation to the project results so far, the importance of **additive manufacturing** was highlighted, and in particular **3D printing**, which is increasingly being adopted by the industry globally and is now an integral part of green skills in the shipbuilding sector both for the short and the long term. Its contribution to the automation of the shipbuilding processes but also to the repair and maintenance of existing ones, through the production of components and spare parts is unquestionable, according to the international literature.

At the same time, in recent years, its contribution to the **risk management** process of the sector is gradually emerging, with regard to the health and safety of the workforce as well as operations and supply chain management. 3D printing achieves the production of both small and large components optimizing also financial, human and natural resources performance, as well as time management. It also provides flexibility in the production of customized and different products from a variety of raw materials (metal, synthetic materials, recycled materials, etc.), as well as flexibility in the implementation of complex product designs. It also allows immediate response to maintenance and repair work, especially in cases of missing parts, while supporting the smooth operation of the supply chain in a variety of ways, such as reducing the need for storage space in shipyards.

The contribution of additive manufacturing also extends to research processes, allowing the easy and flexible production of prototypes, mock-ups and 3D models with exceptional detail. These products allow the testing of new components, as well as the implementation of simulations with regard to their compatibility and functionality with the ship on which they are intended to be assembled / installed. The above contributes significantly to the development of more competitive business models and to the more efficient management of various types of risk in shipbuilding and ship- repair sectors.

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#### *Invitation to the 2<sup>nd</sup> Workshop - Training Seminar*

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Taking into account the results of the 1<sup>st</sup> Workshop, CERTH/HIT with the support of the Piraeus Chamber of Commerce and Industry (PCCI) and the Ministry of Maritime Affairs & Insular Policy (MMAIP) and in collaboration with the Port Training Institute “EXANTAS”, invites all interested parties and their members to the 2<sup>nd</sup> Workshop: **“Training Seminar - Additive Manufacturing in Shipbuilding and Ship-repair and Risk Management”** in the context of the pilot implementation of the MATES project in Greece.

**Based on the above, the 2<sup>nd</sup> Workshop will focus on additive manufacturing and in particular on 3D printing and risk management in a 2-day technical seminar on 10-11/06/2021.**