



MN^{3D}

NETWORK FOR 3D-PRINTING
IN THE MARITIME INDUSTRY

Partners · Network · Projects



The Network for 3D-Printing in the Maritime Industry

The MN3D Network is a network of more than 16 partners with a maritime background and products and services for the maritime industry. Back in 2016 the Maritime Cluster Northern e. V. (MCN) started their first additive manufacturing related activities. The MCN's work is based on a very close relationship to its members – currently the association has around 370 members from all maritime sectors – and hence has an excellent overview of the actual needs of the industry and its players. Additive manufacturing has developed into a technology on the rise and constantly gains momentum within the maritime industry.

The MN3D network aims to refine additive manufacturing methods, products and services for the maritime sector and to market them. The network is dedicated to addressing the specific needs and requirements of the maritime industry in 3D printing. The specific challenges of the maritime industry concern the size of components and their exposure to low-frequency vibrations and seawater, their accessibility, durability and associated reliability. Finally, they must meet environmental requirements to a high degree and prove their economic efficiency.

The objectives of the MN3D Network cover a wide range of topics most of all starting joint innovative projects, strengthening the network of its partners, enhancing the knowledge of the potentials of the technology within the maritime industry and proving the excellence of services, research and products of its partners.



MN^{3D} Partners

The MN3D Network is a versatile network with partners from different fields within the maritime industry. The partners support the network with their thorough expert knowledge. The member companies range from science & research institutes to suppliers, industrial companies like manufacturers of 3D-printers, engineering companies and service providers. All of the member companies of the network are referred to as partners. An overview of the partners may be found online:

www.mn3d.de

[Quick-Link](#)

Overview of
our partners:



Each partner supports the network with expert knowledge and insights to their specific branches of business and the respective clients' needs. Furthermore the partners jointly work on innovative projects and the development of solutions for additive manufacturing for the maritime industry. The MN3D-network is still growing and companies interested in joining MN3D are welcome to contact the network.



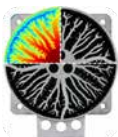
Stainless steel
Impeller printed with
3DMP WAAM
technology by
GEFERTEC

Innovative Projects

All activities of the network partners are aimed at jointly developing specific R&D projects to advance innovations in 3D printing for the maritime industry. In general the projects are planned in a way that enables funding via suitable funding programmes e.g. european or national funding programmes. This enables the development of projects with a higher risk and more partners involved which would usually not be started without funding. Different R&D projects will be started and cover areas such as surface properties, materials, integration of sensors, component sizes and tool life.

The first project has been applied for in December 2020 and will cover aspects of the possibilities of the evaluation of the quality of additive manufactured components. Further projects will be initiated in 2021.

additive
manufactured
air-water heat
exchanger with
inner tree
structure for
improved cooling
effect by 75%



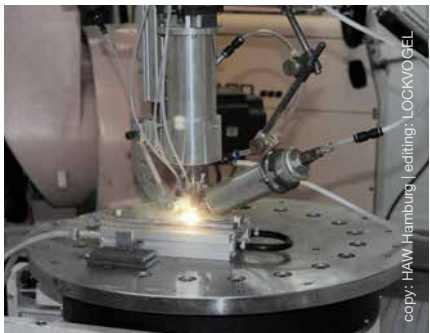
copy: Fraunhofer IPT



Providing Services for the Maritime Industry

The maritime industry is far from a status where the full potential of additive manufacturing is being used. Many manufacturing companies have not yet realized the possibilities this technology offers. The partners of the MN3D Network strive to make this potential known and thus also to enhance the possibilities of manufacturing of maritime parts. In many cases there are various options for the improvement of existing designs of components, new ways of developing new parts and also options to build parts partly by using additive manufacturing and partly by using conservative technologies. The partners are happy to offer their services to any company interested. Please do not hesitate to reach out to us for further information!

rotorbased
application of
Laser Metal
Deposition
(LMD) with
lateral wire feed



copy: HAW Hamburg | editing: LOCKVOGEL

For further information about the MN3D Network
please do not hesitate to contact us:

Maritime Cluster Northern Germany e.V.

Branch Office Hamburg · Wexstraße 7 · 20355 Hamburg

hh@maritimes-cluster.de
www.maritimes-cluster.de
www.mn3d.de