

## Submarine components from 3D printers to enter series production

thyssenkrupp Marine Systems plans to use 3D printers increasingly in manufacturing submarine parts. This offers decisive advantages over conventionally produced components. The corresponding quality and safety approvals have already been granted. Through acquisition of the thyssenkrupp TechCenter Additive Manufacturing (in Mülheim an der Ruhr, North Rhein-Westphalia), the required technology and expertise will now come to the Kiel Fjord. Completion of the transition is planned for June 2020.

Dr. Luis Alejandro Orellano, COO of thyssenkrupp Marine Systems: "3D printing opens up completely new potentials for us. In the design engineering, we no longer have to consider the limits of conventional manufacturing processes everywhere. In this way, we give our customers more freedom in the design of the boats. At the same time, we can produce components faster and more cost-effectively. Bringing the necessary expertise and equipment to serve us in Kiel is the prerequisite for being able to make smaller batches quickly and easily in series in the future."

The printers can be used to produce more complex structures that are at the same time more robust, stronger and lighter than components produced by conventional methods, which often require many small elements to be manufactured and then assembled. For example, by using a 3D printer to make the hydraulic block for a submarine, 83 percent of the weight was saved – from 14 down to 2.1 kilograms.

In summer 2019, the thyssenkrupp TechCenter Additive Manufacturing was the world's first producer of 3D printed components for maritime applications to receive manufacturer approval from the renowned classification society DNV GL. The certificate guarantees the material properties of the finished component in accordance with specified standards issued by independent testing bodies.

In future, thyssenkrupp Marine Systems plans to use 3D printers mainly in manufacturing the parts that are required in small batches for a submarine. The company will focus not only on components for newbuildings, but also on spare parts production.

The thyssenkrupp TechCenter Additive Manufacturing is currently located in Mülheim an der Ruhr and will move to the Kiel facilities of thyssenkrupp Marine Systems by summer 2020.

### About thyssenkrupp Marine Systems

thyssenkrupp Marine Systems is one of the world's leading naval companies with approx. 6,000 employees and is active as a systems supplier for submarines and naval surface vessels as well as for maritime electronics and security technologies. A history spanning more than 180 years and the constant striving for improvement allow the company to set new standards time and time again. thyssenkrupp Marine Systems offers its customers worldwide tailored solutions to meet the highly complex challenges of a changing world. The driving forces behind this innovative energy are the company's employees, who shape the future of thyssenkrupp Marine Systems with passion and commitment every day.

27 February 2020

Page 2/2

More information at: [www.thyssenkrupp-marinesystems.com](http://www.thyssenkrupp-marinesystems.com)

[Download picture](#)

### Press contact

thyssenkrupp Marine Systems

Stefan Ettwig

Head of Communications

T: +49 172 2490090

[stefan.ettwig@thyssenkrupp.com](mailto:stefan.ettwig@thyssenkrupp.com)