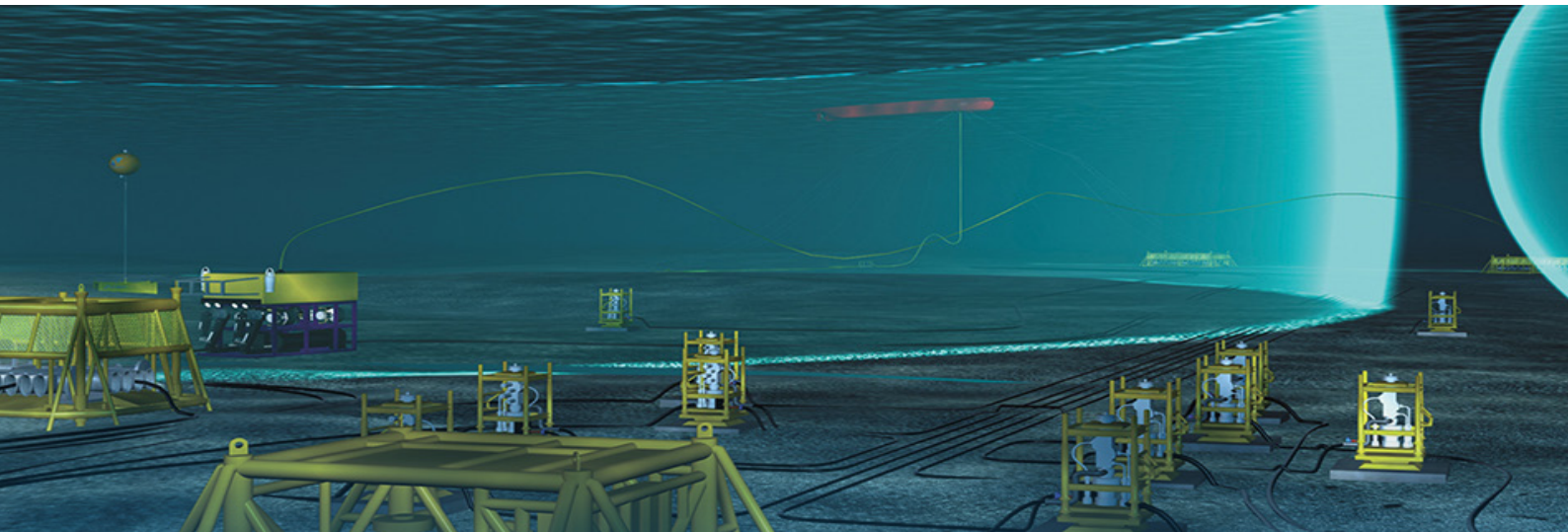




# 3U Sonar Imaging Computer

Precise 3D Positioning & Asset Tracking



Captec, took an existing prototype and leveraged our in-house design and engineering expertise to transform it into a fully refined solution that meets every requirement of the application. By applying a deep understanding of operational environments and user needs, we were able to customise the design for optimal functionality and reliability.

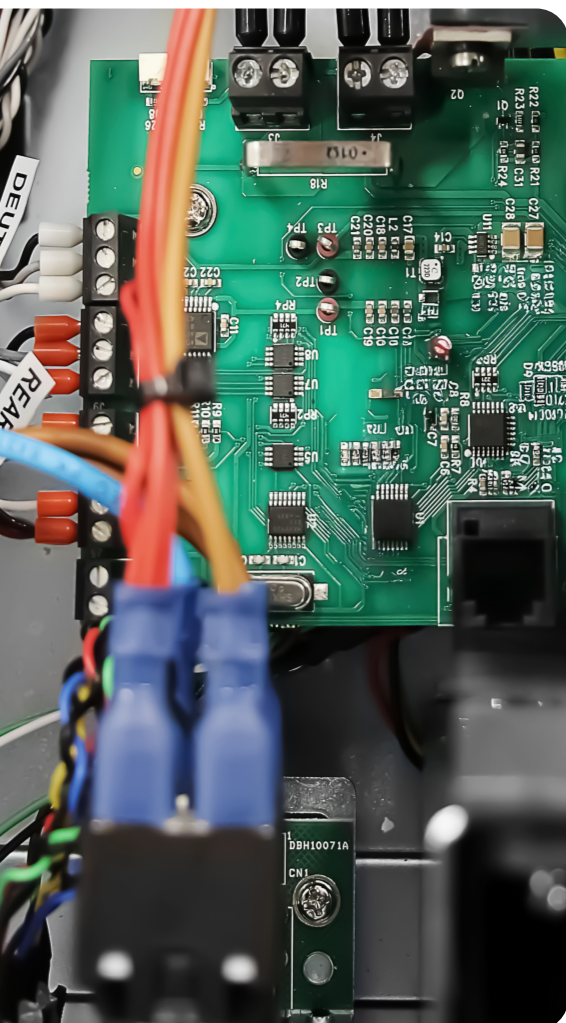
The customer is a leading provider of advanced underwater technologies and real-time 3D imaging solutions, supporting mission-critical operations across Defence, Marine Science, Energy, and Subsea Infrastructure. Their innovative sonar and visualisation systems enable precise mapping, navigation, and inspection in complex underwater environments, helping to enhance situational awareness, improve operational safety, and support regulatory compliance.



# The Challenge

The customer faced a series of complex challenges in developing a next-generation subsea system. They required a specialised computing platform capable of operating reliably in harsh marine environments while supporting advanced data processing and integration with evolving control technologies. An existing prototype needed to be refined and re-engineered to meet stringent, application-specific requirements, including minimal connection points to reduce subsystem power supplies and simplify cable runs.

Ensuring product longevity and locked-in supply was critical, with the system expected to support long-term deployments without frequent redesigns or updates. The solution also needed to deliver high-performance processing, fast and reliable data integration, and exceptional on-screen rendering quality to support real-time monitoring and decision-making.



## The Solution

To meet the demanding requirements of the subsea application, Captec engineered and delivered a custom 3U 19" rackmount computing platform, specifically developed to align with the customer's design and performance criteria, which included the integration of custom connectors, specifically designed cable looms and optimised board configurations to meet their requirements. Leveraging deep in-house engineering expertise, the platform was precisely configured to ensure full compatibility with the customer's advanced control systems. Longevity of supply was secured through expert component selection and proactive obsolescence management, ensuring the solution remains viable for long-term deployment. To support the customer's branding and identification requirements, Captec also applied custom silk screen artwork to the unit, utilising our in-house finishing capabilities for a professional and durable result.

The system was designed to act as a single connection point for sonar peripherals, streamlining cable runs and reducing the number of subsystem power devices. Its rugged construction, integrated dust filters, and Captec's in-house thermal emissions testing provided confidence for the level of critical protection for reliable operation in harsh marine environments. Equipped with high-specification processors and graphics cards, the platform delivers fast data transfer and exceptional 3D rendering, supporting high-resolution visualisation and analysis, which is critical for the customer in their real-time subsea operations.



# The Outcome

Captec's specialised redesign and enhancement of the existing platform resulted in a solution that precisely met the customer's demanding application requirements. The final platforms proved versatile and robust, making them suitable for deployment across a variety of subsea environments and operational scenarios.

Successfully integrated into the customer's sonar survey systems, the computers now play a vital role in enhancing imaging accuracy and data processing efficiency. Fully compatible with 3D acoustic imaging and GPS-supported positioning platforms, the solution supports high-performance surveying with pinpoint precision. Captec's proven engineering expertise and the successful delivery of a highly reliable, customised solution earned the customer's trust, securing repeat orders and establishing a long-term partnership built on confidence and collaboration.



# CAPTEC

Delivering end-to-end, **like no one else.**

Bring us your challenge & experience the difference.

#### EMEA and Group Headquarters

+44 (0) 1489 866 066  
sales-emea@captec-group.com

#### UK Subsystems

+44 (0) 1252 512 919  
sales-cse@captec-group.com

#### Canada Headquarters

+1 (519) 650 4000  
sales-canada@captec-group.com

#### USA Headquarters

+1 (519) 650 4000  
sales-usa@captec-group.com

    [captec-group.com](https://www.captec-group.com)

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