

A close-up photograph of a robotic crawler machine. The machine features a large, dark, rotating brush or roller at the front, which is currently in contact with a light-colored, textured surface. The machine's frame is made of metal and includes several pulleys and a yellow cable. A red hydraulic valve is visible on the left side. The machine is supported by a series of yellow wheels. The background is a blue metal structure. The 'Sub C' logo is visible on the machine's frame and in the top right corner of the image.

Sub C

THE ROBOTIC CRAWLER

- Innovation and technology

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INNOVATIVE THINKING
- precision execution

INTRODUCTION

- the robotic crawler

Working in the splash zone presents a unique set of challenges. Waves and structure-induced currents are constantly present, which makes access to and work more difficult and to perform using traditional methods, like Rope Access and Divers. Our objective for solving this issue was to perform work in the splash zone without personnel. Therefore, we developed the Robotic Crawler system.

The Robotic Crawler is designed as a Remote Operated Tool Platform, with endless possibilities of attaching tools and equipment.

Although it is a complicated set-up, the Robotic Crawler requires only a few specialists to operate. With the Robotic Crawler you do not depend on a large set-up that cost a great deal of money in gear, manpower and support vessel. Further, you do not depend on good weather and calm seas, which requires a great deal of preparation involving a lot of resources. The Robotic Crawler solves all the challenges at once.

Don't let the weather control you

The Robotic Crawler has worked in more than 2,5 metres high waves and what is more, it can operate night and day – all time of the year. Before the Robotic Crawler work in the splash zone was full of inherent risk and could only be carried out when waves were no higher than half a meter, which is a rarity in the North Sea. Divers compare it to working in a washing machine where they need to remain in place while also avoiding becoming trapped under the structure. Thereby, the system improves HSE significantly.

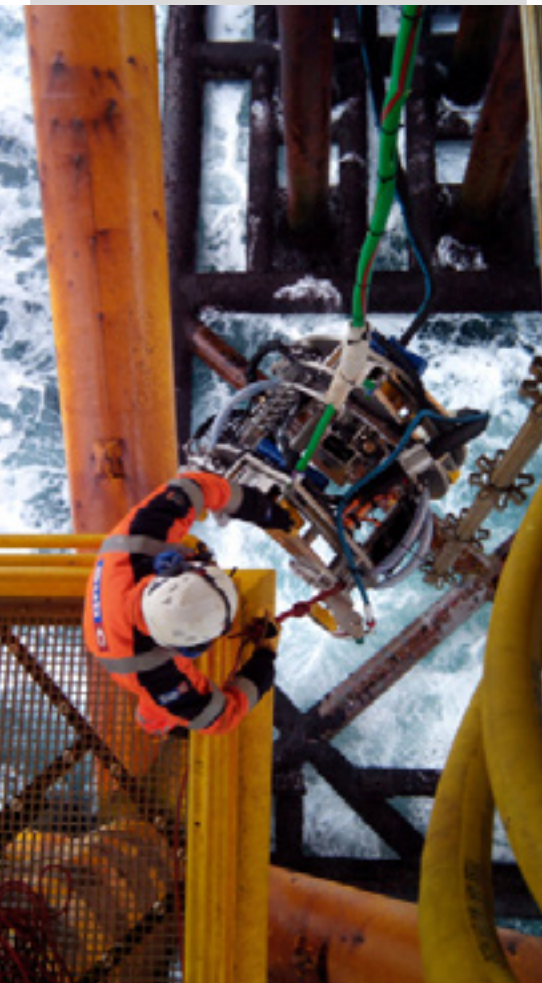
LAUNCH AND OPERATION

- safe and efficient

Launched from the platform, it hook onto the structure and safely crawl to the required position where it can perform its tasks.

Once in position, the tool application is activated, and the job is carried out from a stable working-platform even with waves hitting the crawler every few seconds.

The system is based on a topside operated access solution, from a cockpit located in the containerized control unit placed safely on the topside of the offshore platform. From this, the operator controls the robotic crawler and IT backbones for documentation and analysis are stored.



TOOL PLATFORM

- endless possibilities

The Robotic Crawler is designed based on our extensive ROV experience. It is capable of supplying both control signals, electrical power and hydraulic power to the tool interface.

We believe that the Robotic Crawler system can solve all challenges that currently is solved using Rope Access or Divers.

The Robotic Crawler is designed as a [Remote Operated Tool Platform](#), with endless possibilities of attaching tools and equipment, such as;

- Manipulator arm
- Cleaning equipment
- Thickness measurements probes
- Eddy current equipment
- Cutting tools
- Grabber tools
- Sandblasting and Painting tools etc.



INHOUSE EXPERTISE
- subsea and splash zone specialists

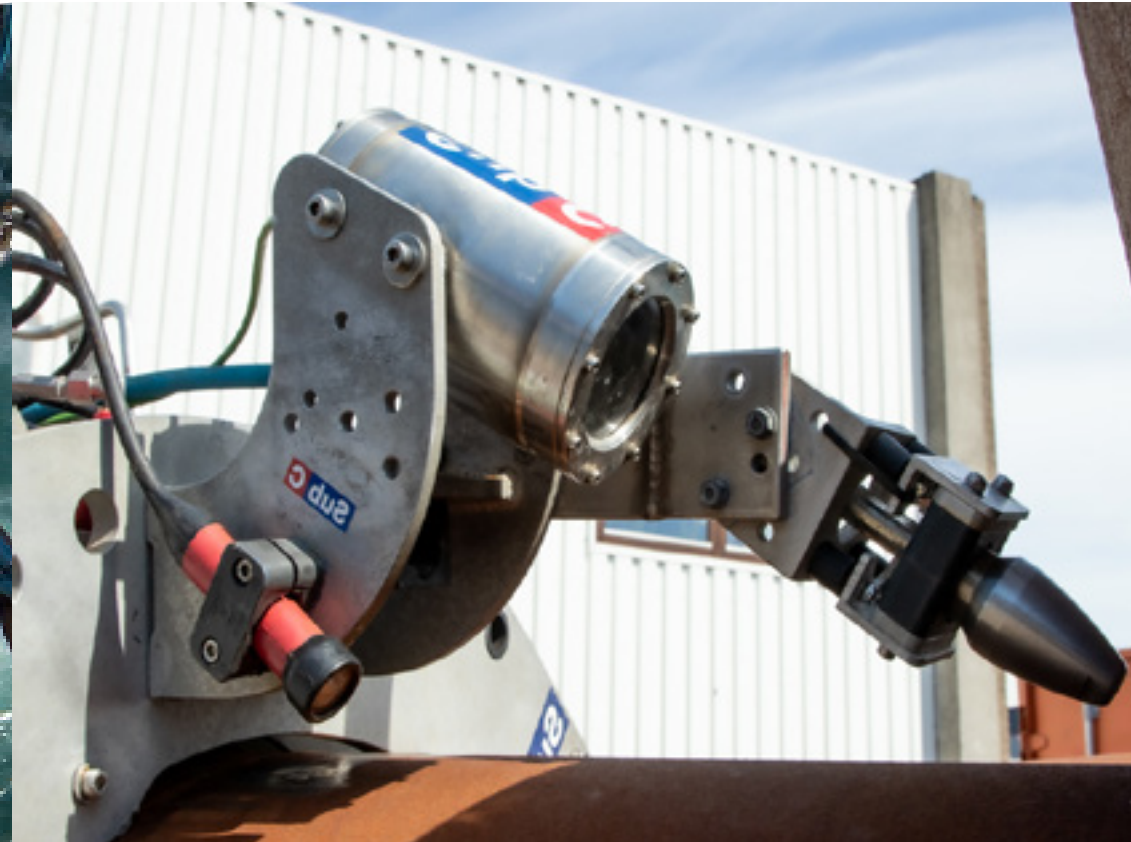
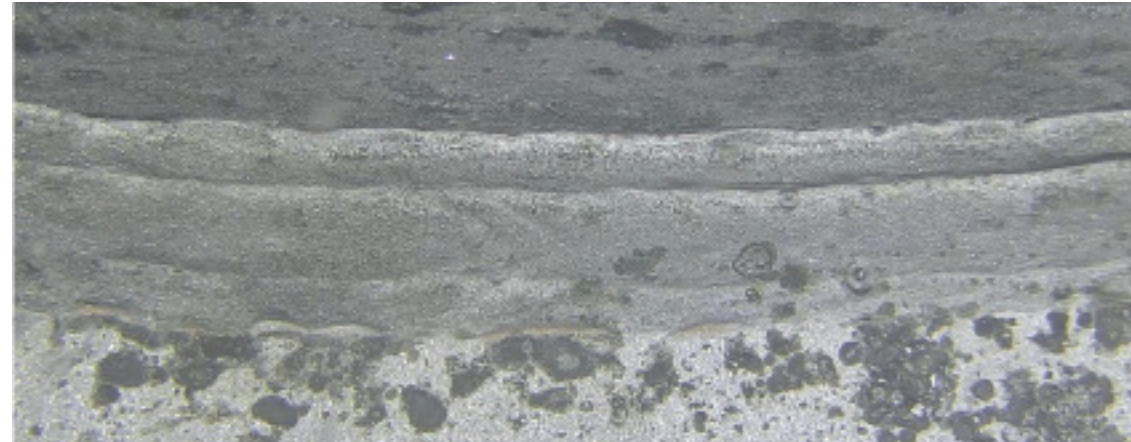
AVAILABLE TOOLS

- for the Robotic Crawler

Close Visual Inspection

The Close Visual Inspection tool allows for very high-resolution images of specific areas that might be of concern. The tool will clean up, light up and photograph areas of very high resolution. Further, it stores all data with information about location and time for later review.

The tool allows for documentation and review of very small defects, cracks and anomalies.



AVAILABLE TOOLS

- for the Robotic Crawler

Vertical Wire Diamond Cutter

Original, is the Wire Diamond Cutter designed to cut and decommission tubulars on spider decks. The application is thereby suited for decommission jobs as well as removal of tubulars such as caissons, risers etc. Jobs are done safely and controlled; one section at a time.

The Vertical Diamond Wire Cutter can be used for decommissioning of surplus steel structures on tubulars – at a fixed distance leaving a minimal drag profile and thereby limiting the forces on the structure.

The Robotic Crawler handle the tubulars after cutting and bring them to a safe position on the platform.



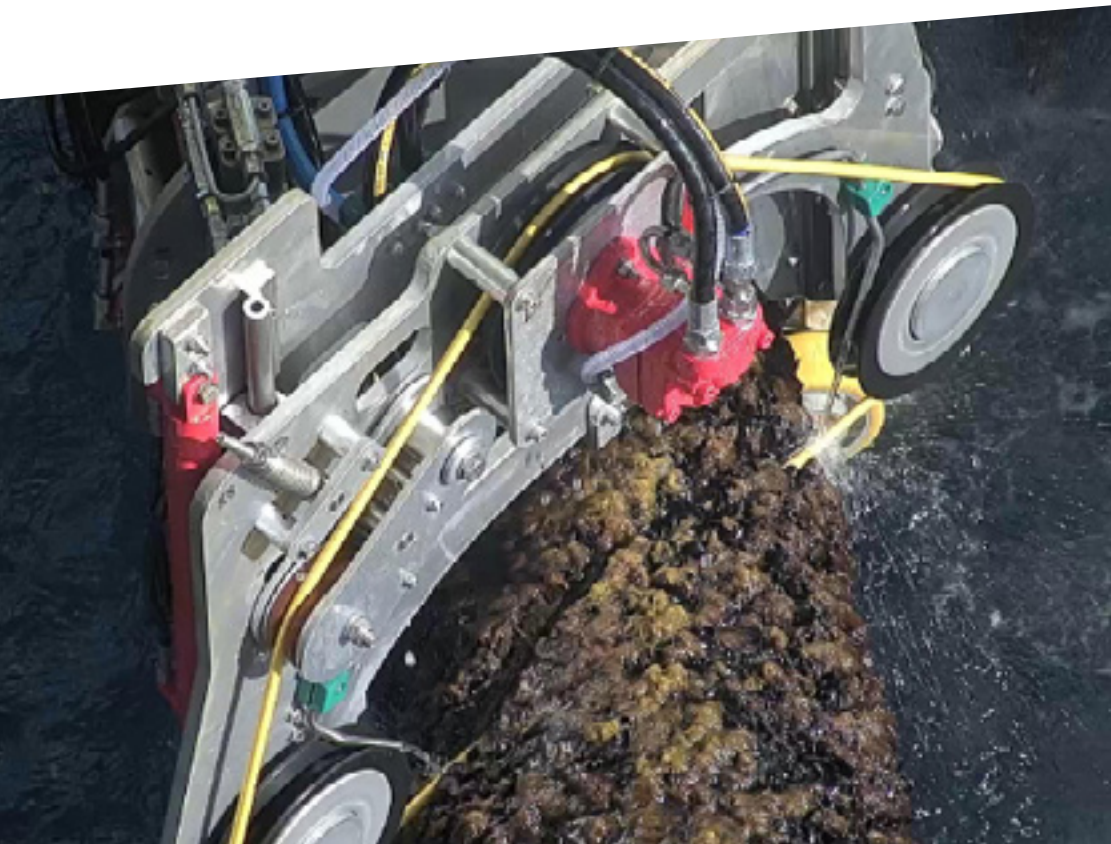
AVAILABLE TOOLS

- for the Robotic Crawler

Circumferential Wire Diamond Cutter

The Circumferential Diamond Wire Cutter can be used for decommissioning of surplus steel structures on tubulars – at a fixed distance leaving a minimal drag profile and thereby limiting the forces on the structure.

The Grabber tool handle the tubulars after cutting and bring them to a safe position on the platform.



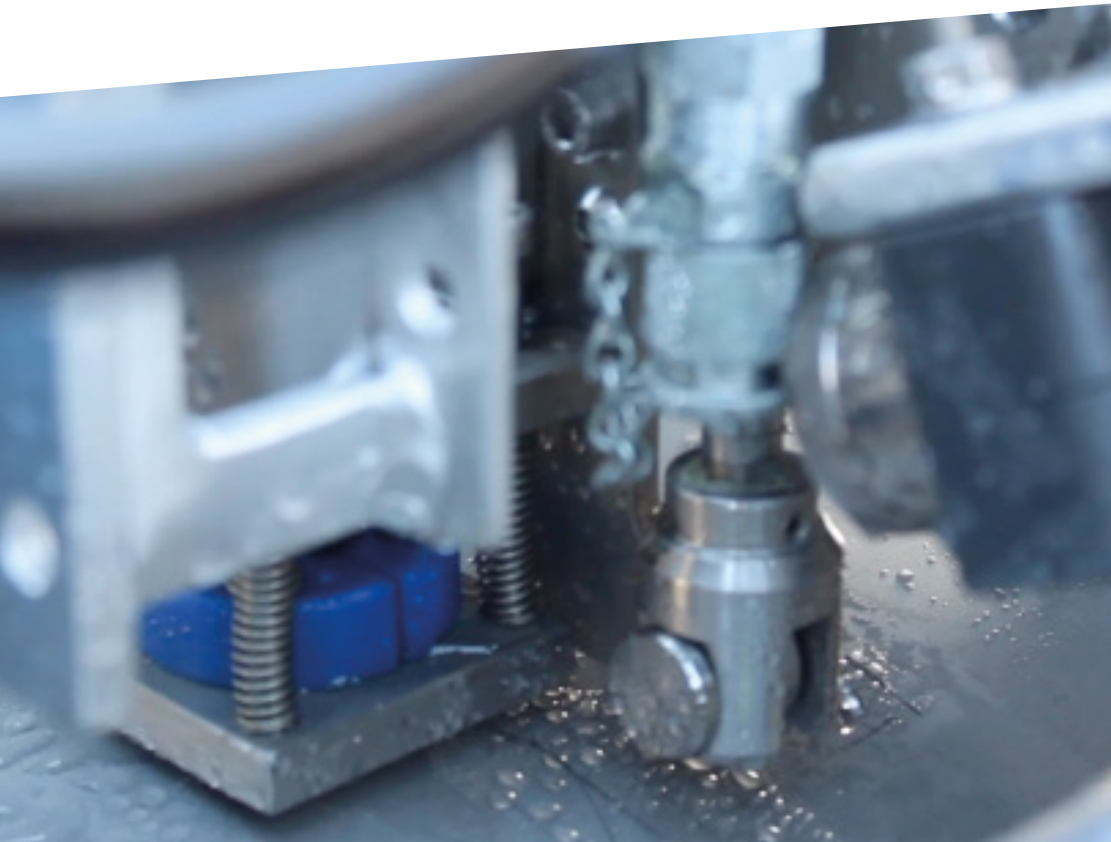
AVAILABLE TOOLS

- for the Robotic Crawler

Ultrasonic Thickness Measurements

The Ultrasonic Thickness Measurement tool will, in combination with the Robotic Crawler, create a mesh of measurements that allows, for structural integrity, engineers to assess the actual strain on old as well as new installations.

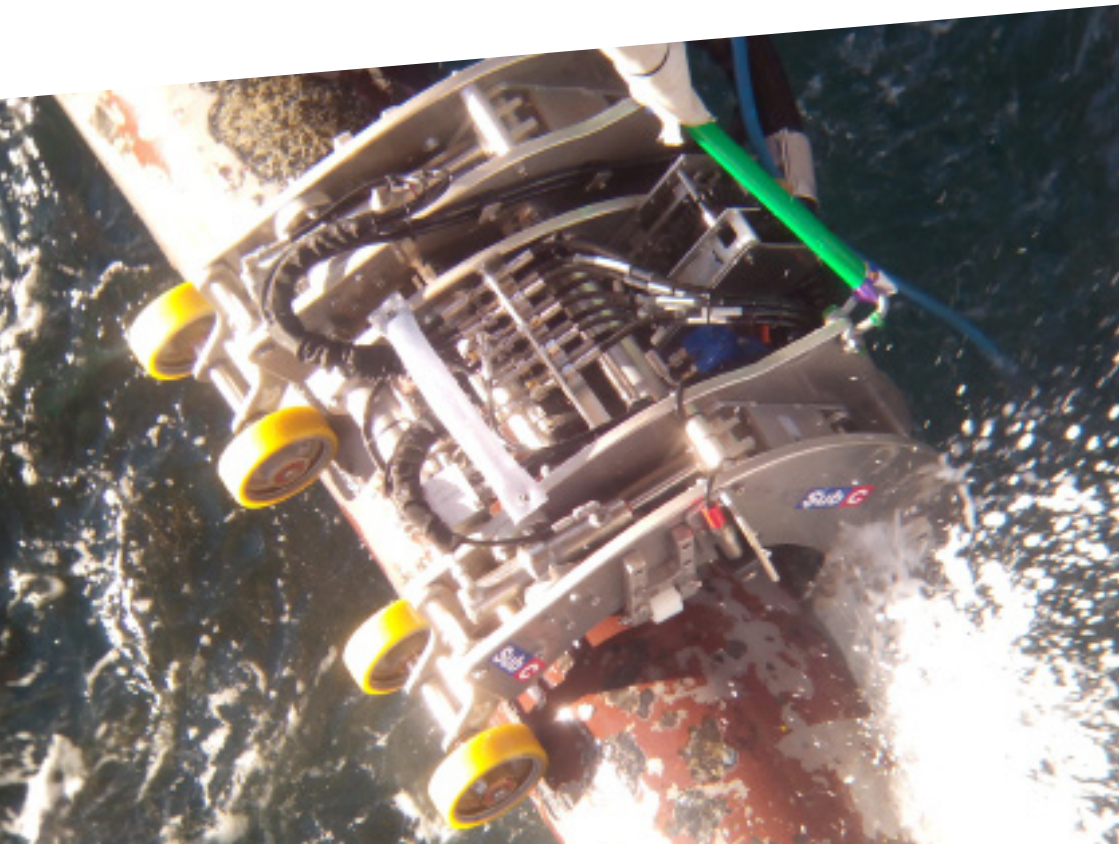
The Ultrasonic Thickness Measurement tool will effectively clean and prepare the surface before probing. Mesh size resolution can be varied. Measurements can be done both above and below surface level as well as in the splash zone.



AVAILABLE TOOLS

- for the Robotic Crawler

Marine Growth



A high-angle, close-up photograph of an offshore oil rig. A large, bright yellow crane arm is visible on the left, extending over the ocean. A subsea control module, a complex piece of machinery with various pipes, valves, and a network of blue and green cables, is being lowered into the water. The module is suspended by a chain and is positioned above a large, rusted metal structure, likely part of the rig's subsea infrastructure. The ocean is a deep blue with white foam from the waves. The text "INNOVATIVE THINKING - precision execution" is overlaid in the top right corner.

INNOVATIVE THINKING
- precision execution



SAFE OPERATIONS
- In splash zone