

SENAI CIMATEC

Technology and Innovation to Change the World

Sistema FIEB



PELO FUTURO DA INOVAÇÃO

www.SENAICIMATEC.com.br



The Integrated Campus of Manufacturing and Technologies – SENAI CIMATEC, inaugurated in March 2002, is one of the most advanced education, technology and innovation centers in the country.

The institution integrates a Technological Center, a University Center and a Technical School, which operate synergistically on a campus with a built-up area exceeding 35,000 m², more than 800 employees, 56 laboratories, 42 areas of competence aligned with the demands of the industry, incubator and technology-based accelerator (40 startups per year) and a portfolio of more than 80 RD&I (Research, Development and Innovation) projects with national and international companies.

SENAI CIMATEC's advanced robotics projects revolutionize Industry 4.0

In partnership with large companies in the oil industry, SENAI CIMATEC develops robots to meet demands aimed at reducing environmental impacts

With the advent of Big Data, Artificial Intelligence and Internet of Things (IoT), robotics began to have great expression in several branches of industrial production, from automotive manufacturing to military drone operations and the landing and exploration of Mars.

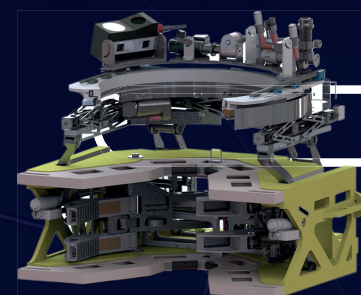
Thereby, the set of refined advanced robotics technologies allows the execution of increasingly complex tasks that are often impossible to be performed by human hands. Machines are capable of processing large amounts of data and learning with as little human interaction as possible.

At the forefront of main technology trends for the industry, SENAI CIMATEC is increasingly investing in robotics projects and applications to meet market demands. For this, the company

has the largest technological complex in Bahia, consisting of industrial laboratories, and all high-level infrastructure to carry out the projects.

Furthermore, partnerships are extremely fundamental for the realization of projects. One example is the development of JIRO (Joint Inspection Robot), a robot capable of inspecting and cleaning the flexible joints of rigid risers on platform ships (FPSOs) that produce oil and gas in partnership with Shell Brazil.

Among some robotics cases developed by SENAI CIMATEC and partners are:



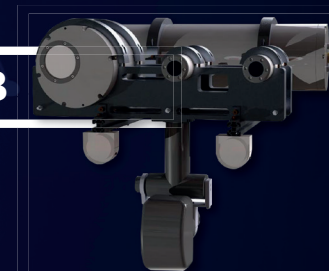
Jiro

It is a prototype of remotely operated robot to clean and inspect submerged flexible joints within an oil and gas field. The project, development, manufacturing, and testing was made in partnership with Shell Brazil.



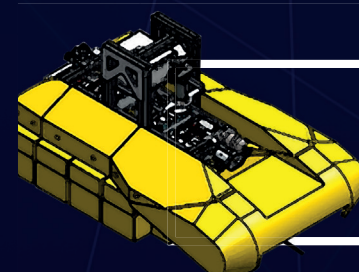
Flatfish

It is an Autonomous Underwater Vehicle (AUV) that performs high-resolution 3D visual inspections to achieve advanced oil and gas exploration levels in deep-waters. Developed in partnership with Shell Brazil and DFKI (German Institute of Robotics and Artificial Intelligence), the project aims to reduce the environmental impact and maximize operational safety, as well as drastically reducing current costs for operations of this type. CIMATEC is working with SAIPEM and Shell in the industrialization phase of FlatFish and the first sea trials on Brazilian oil fields will happen by mid-2022.



DIGISUB

Developed in partnership with Petrobras, this prototype scanner provides a high-resolution 3D point cloud to be used in generating CAD models of installed subsea equipment.



**MEC Combi
Crawler Robot
(MCCR)**

Robot for the inspection of in-service platform ships' (FPSOs) cargo tanks. Developed from a partnership between SENAI CIMATEC, Shell Brazil and the British company "Innospection", the robot is equipped with devices for cleaning marine encrustations and for detecting defects and anomalies in the hull structure of platform ships.

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