

## **Brownfield Units: Autonomous operation with low/no human interaction**

Offshore oil and gas brownfield production platforms are complex and hazardous process facilities which are usually attended by a permanent human crew to run the daily operations. In recent years, the oil and gas industry has demonstrated strong commitment to change this traditional operations approach and move towards inherently safer, more reliable and efficient philosophy for offshore facilities design and operations by progressively removing human crew from the facility and operating it remotely from a safe location over extended periods.

Consequently, TechnipFMC launched in 2019 its Digitalization Program called “BEYOND”, including Plant Performance Improvement, advanced Data Management & Analytics capabilities, and Digital Twin Model in view of providing innovative solutions to Clients for advanced operation management, live monitoring & reporting, conditioned based & smart predictive Maintenance capabilities, and optimized information management processes over the entire lifecycle of the project.

The Cybernetix Offshore Robotics Program aims to develop the use of smart robotics, with highly dexterous capabilities and equipped with multiple sensing instruments, in maintaining an offshore oil and gas production facility in full operation without a permanent human crew, and with planned visits to the platform at 12-week+ intervals. The robots are developed to be remotely operated from an onshore control center and may be programmed to function autonomously for routine missions on the offshore facility.

Unmanned Design Studies executed by Kanfa also intends to develop facilities for transforming offshore oil and gas production platforms into smart unmanned installations by designing topsides processes compatible with remote, low or unmanned operations.

As a consequence of the reduction of Human activities on the assets, current projections reveal that measurable benefits will apply to OPEX cost reduction, improved HSE records productivity and uptime, transforming facility into a smart digitally connected asset and reduce CO2 footprint.