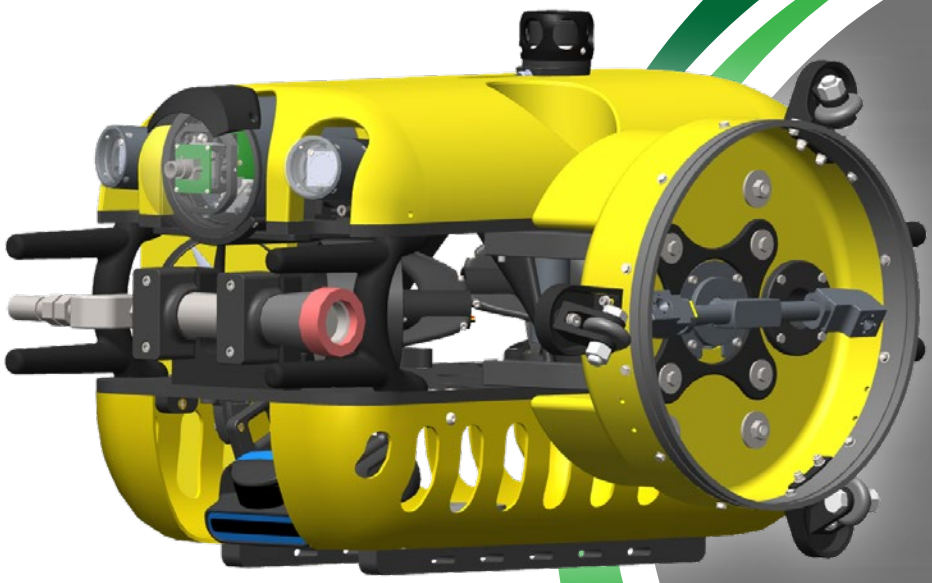
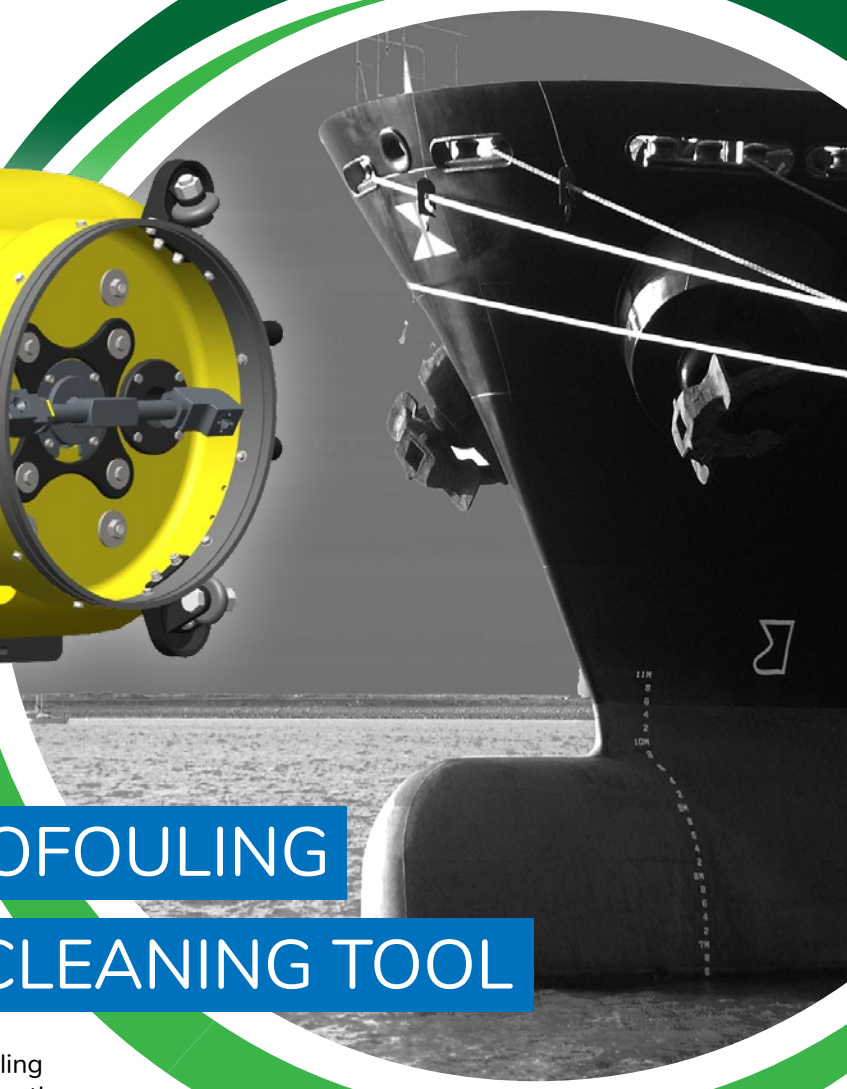
SLEEKSHIP

Spectral Imaging Powered Ship Hull Biofouling Detection and Cleaning





AN INNOVATIVE BIOFOULING INSPECTION AND CLEANING TOOL

SleekShip redefines the management of ship hull biofouling enabling inspection and cleaning to take place at early stages and in turbid waters

The build-up of marine fouling on hulls can dramatically alter the hydrodynamics of the ship, increasing drag, fuel consumption and emissions, and promote the transport of invasive species. There is currently no efficient way to assess the hull fouling condition when the ship is in the water, and dry-docking results in costly down-time for ship operators. Furthermore, if a ship is not regularly taken out of water for inspection, the likelihood of biofouling increases, necessitating harsher cleaning methods which can damage the hull coating.

By bringing together a Semi-Autonomous Underwater Vehicle (SAUV), a Hyper Spectral Imaging (HSI) system and a novel cavitation-based cleaning tool, our product enables quantified biofouling measurements previously impossible with conventional visual inspection due to light backscattering caused by waterborne particles in dock waters. By enabling inspection and cleaning service providers to reliably detect early stages of biofouling within contaminated ports, i.e. without needing the vessel to halt its journey at clear waters, SleekShip will drive cost reductions exceeding three billion euros over five years after market launch for the global shipping industry.

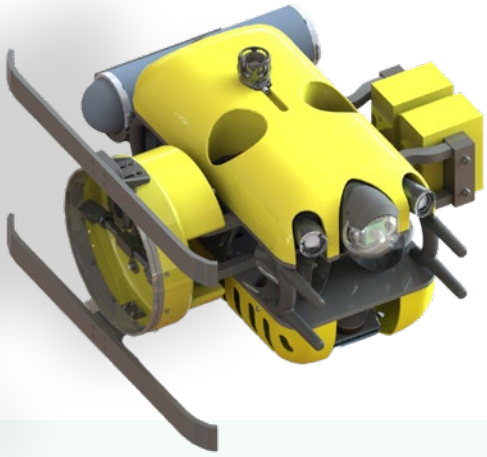
www.sleekship.eu

INNOVATIVE
SleekShip combines hyperspectral imagery and cavitation cleaning

COST-EFFECTIVE
SleekShip will allow cutting operating costs by a factor 2 compared to conventional process

SAFE AND EFFICIENT
By using a semi-autonomous robotic system, SleekShip dramatically reduces the risk for operators

USER-FRIENDLY
Non-expert personnel can easily operate SleekShip with minimum training

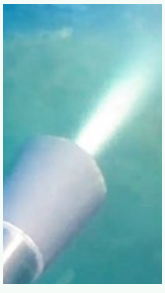


The Mini TORTUGA
Full equipment

UNDERWATER ROBOTIC PLATFORM
The semi-autonomous underwater vehicle (SAUV) has 4 horizontal and 2 vertical thrusters allowing maximum manoeuvrability. The platform is interoperable with all acoustic positioning systems making SleekShip able to localise itself with <5cm accuracy. This, in conjunction with the ultrasound distance sensors around its frame and the Inertial Measurement Unit (IMU) linked to the main board provides the measurements required for a Smart Cruise Control algorithm to automatically regulate the path of the system around the vessel. This level of autonomy allows SleekShip being used by non-expert operators.

HYPERSPECTRAL CAMERA
Underwater conditions cause loss of contrast and colours, as well as light absorption which are a nightmare for ordinary cameras. Hyperspectral imaging overcomes these 3 challenges, being an information-rich technology that uses spectral colour bands to identify objects and materials in an image.

CAVITATION CLEANING TOOL
The cavitation-based stream induces much lower forces than conventional jetting. Our cleaning tool comes with an integrated suction-based debris collection system that absorbs fouling dust making our tool usable within port waters even under stringent regulatory frameworks.



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