



## Case History

### Kizomba ROV UWILD (DNV) ExxonMobil Angola

#### The Challenge

As part of the 5 yearly In-Water UWILD Survey the Kizomba field required surveys carried out on both of their Tension Leg Platforms (TLPs) and both of their FPSOs. The installations have not had marine growth removed in over 10 years and the survey requirements included cleaning and close visual inspection of all the critical connection brackets as well as cleaning and measurements of selected mooring chains.

The mooring chain measurements comprised of twelve consecutive links that each required nine measurements, these measurements being both single diameter readings and double link measurements. In addition to these nine measurements mooring chain angle measurements and CP measurements were required.

Previous attempts at cleaning and inspection of these installation by other parties, using conventional ROVs and cleaning methods have not been successful, hence the excessive buildup of marine growth. Diving operations have proved to be costly, created safety risks and challenging due to POB restrictions. Localized currents around the configuration of the FPSOs and TLPs have caused additional challenges for divers and ordinary ROVs.

Recent COVID-19 restrictions to personnel movement and safety have added to the challenge of mobilizing the large number of personnel normally required to complete UWILDs safely and to the required class standards.

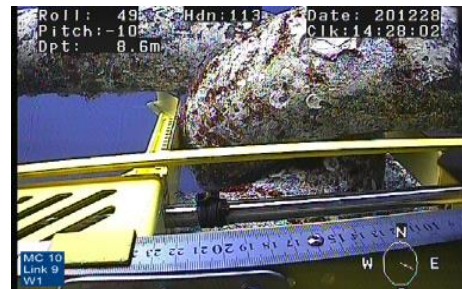
#### The Solution

EM&I have developed, over the past few years successful methods of cleaning and inspecting subsea components safely and to class standards, including the full spectrum of measurements required for mooring chain surveys.

Key features of the EM&I solution include compact ROVs with upgraded power supplies and sophisticated launch/retrieve and cleaning systems. Special control software enables the ROV to function at any pitch and roll angles, enabling efficient cleaning and measurements to be taken whatever position the structure or mooring chains present themselves.



For mooring chain measurements EM&I have developed systems including calipers and laser measurements that can carry out single and double diameter link measurements and mooring chain angle measurements. Custom made tethers enable continuous CP measurements to be taken.



ROV cleaning, inspection and measurements.

The outcome has been a successfully completed, low cost, low POB, DNV approved, UWILD on the TLPs and FPSOs