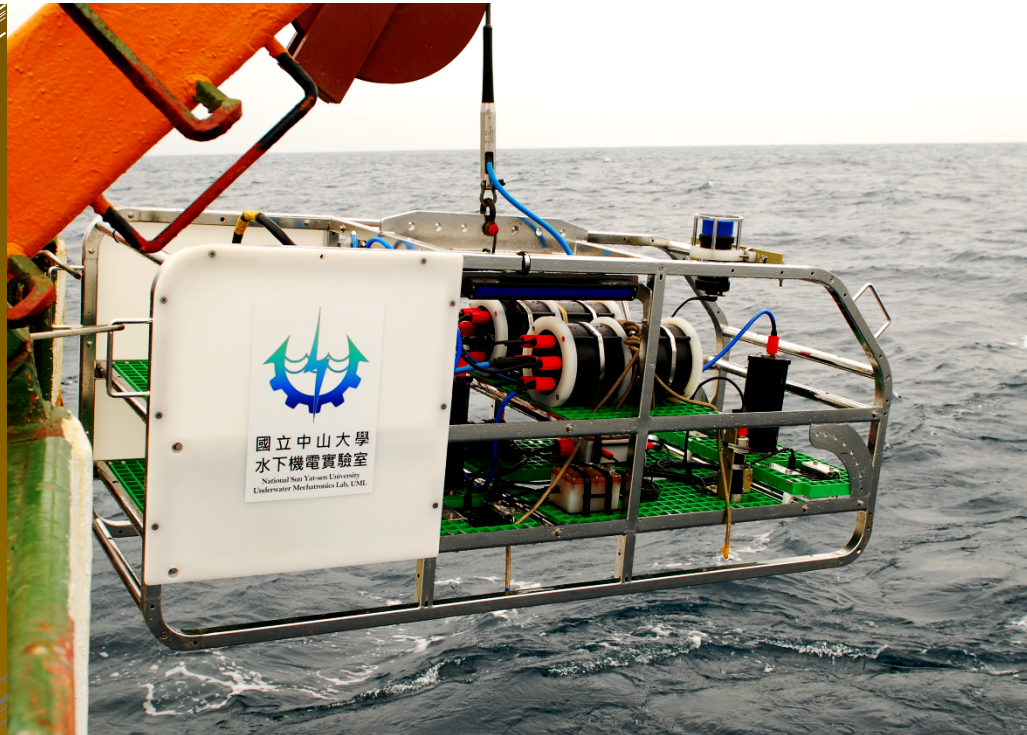
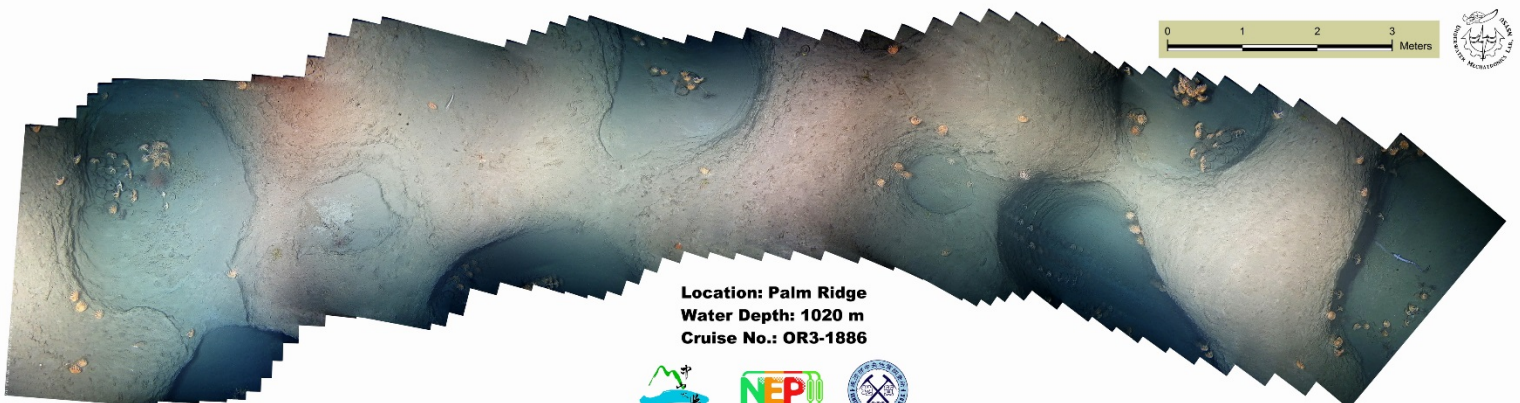


# FITS

## Fiber-optical Instrumentation Towed System



The FITS (Fiber-optical Instrumentation Towed System) developed by the Institute of Undersea Technology, National Sun Yat-sen University in Taiwan, is equipped with video cameras and acoustic sonars for geological/biological investigation around the methane gas seeps off SW Taiwan. With a fiber-optic cable as its backbone, streams high definition (HD) live video and sensor data is transmitted to a surface vessel from thousands meters deep in real time. To cover wider range of seafloor survey, FITS carries scanning sonar and side scan sonar for seabed feature mapping. In addition, an ultra short baseline (USBL) positioning system and inertial navigation system (INS) with Doppler velocity log (DVL) are mounted on the FITS for precisely underwater positioning.



## TECHNICAL SPECIFICATIONS

Physical Characteristics	
Depth rating	3000 m
Total system weight	400 kg in air, 330 kg in water
Dimension	2255 mm (L) x 815 mm (W) x 950 mm (H)
Viewing Systems	
Lights	6 LED Lights, 120,000 lm in total
Video camera	2 Full HD Network IP Camera, 1920 x 1080 resolution @60 fps
Still image camera	Canon 6D/Canon EF 16-35 mm f4L IS USM
Power/Communication	
Tether	2500 m armored electrical/fiber optic cable
Power source	Surface power supply 5 Kw@600 VDC
Communication	Ethernet
Sensors	
Altimeter/Depth sensor	Valeport VA500 with intelligent pressure sensor
Scanning sonar	Tritech Super SeaKing
Side scan sonar	Tritech SeaKing ROV/AUV side scan sonar
INS/DVL	iXBlue ROVINS with Teledyne RDI WHN600K3
USBL Transponder	iXBlue GAPS USBL system

In 2014 and 2015, several seafloor surveys have been conducted by using the FITS off southwest Taiwan. The FITS has performed lots of dives to a maximum depth of 1665 meters, in which there was up to 130 km of survey track completed and more than 50 hours of HD video have been shot on the seafloor. The survey results found various lives, shell tombs, gas seeps, and authigenic carbonates widely spread off southwest Taiwan.

