

Cherokee ROV “Genesis”

➤ **Type:** Sub-Atlantic Cherokee

- 2000 m depth rated
- fibre-optic data transmission
- 60 kg payload for extra instrumentation



➤ **2 Operation modes:** Live Boat operation or TMS

1. Live Boat operation

- ✓ with tether of 500 m
- ✓ for shallow-water or lake work
- ✓ no winch needed: possible to operate from small boats

2. TMS (Tether Management System)

- ✓ with tether of ~150 m and on-deck winch with 1600 m fibre-optic cable
- ✓ deep water
- ✓ winch with deck-container needed: only operatable from larger ships





ROV + TMS + control-units + winch in transport mode.

Everything is packed in one 20"-container. Total weight: 14 tons.

The ROV + TMS + control-units are stowed in the left, closed part. The winch with 1600 m cable is at the right.



Once the container is fixed on deck, the ROV + TMS are lifted from the closed part of the container through a roof lid and –in their turn– temporarily fixed on deck.



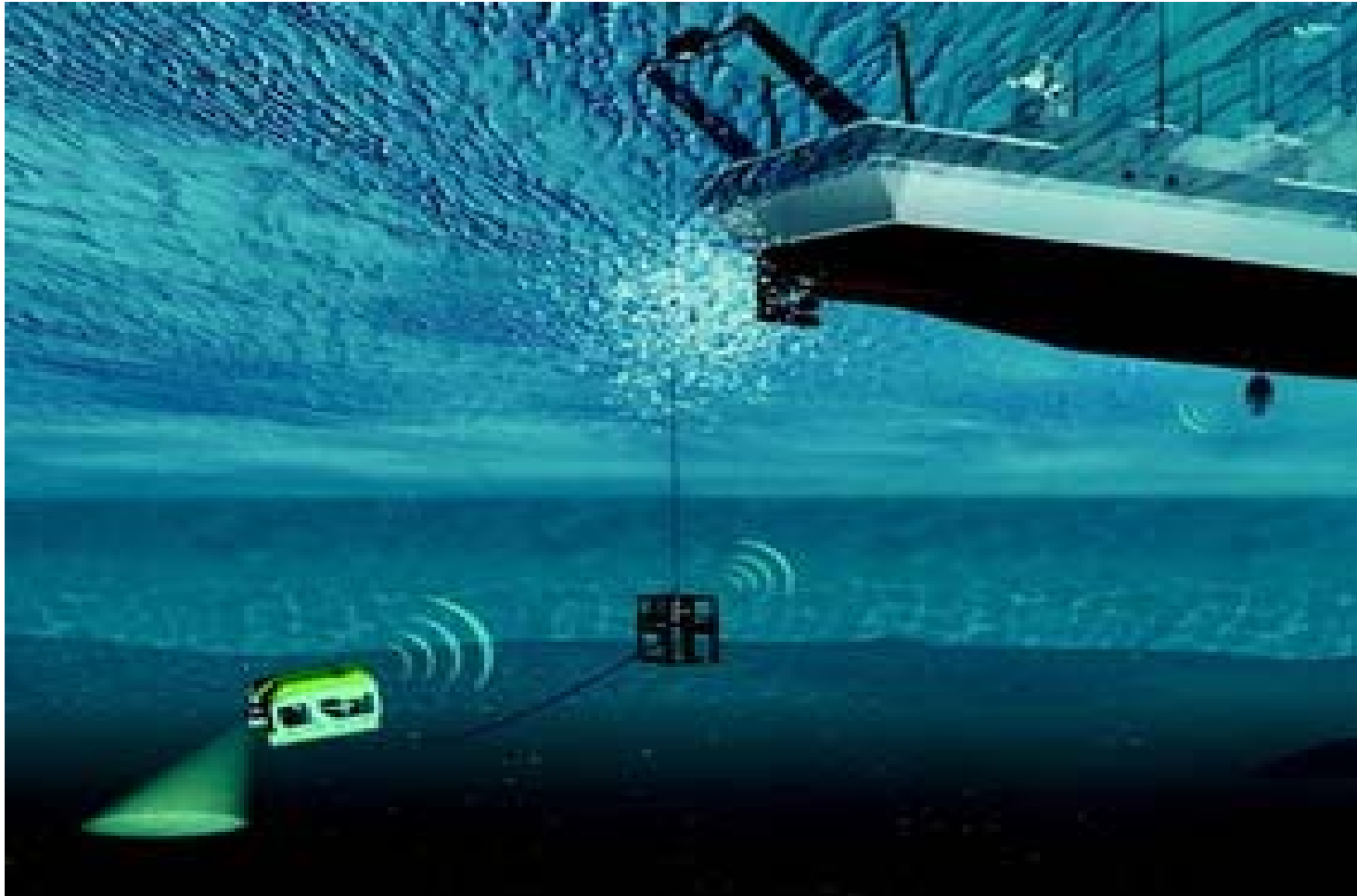
All other control and recording equipment is unpacked and installed in the now-vacated closed part of the container. This will function as control centre.



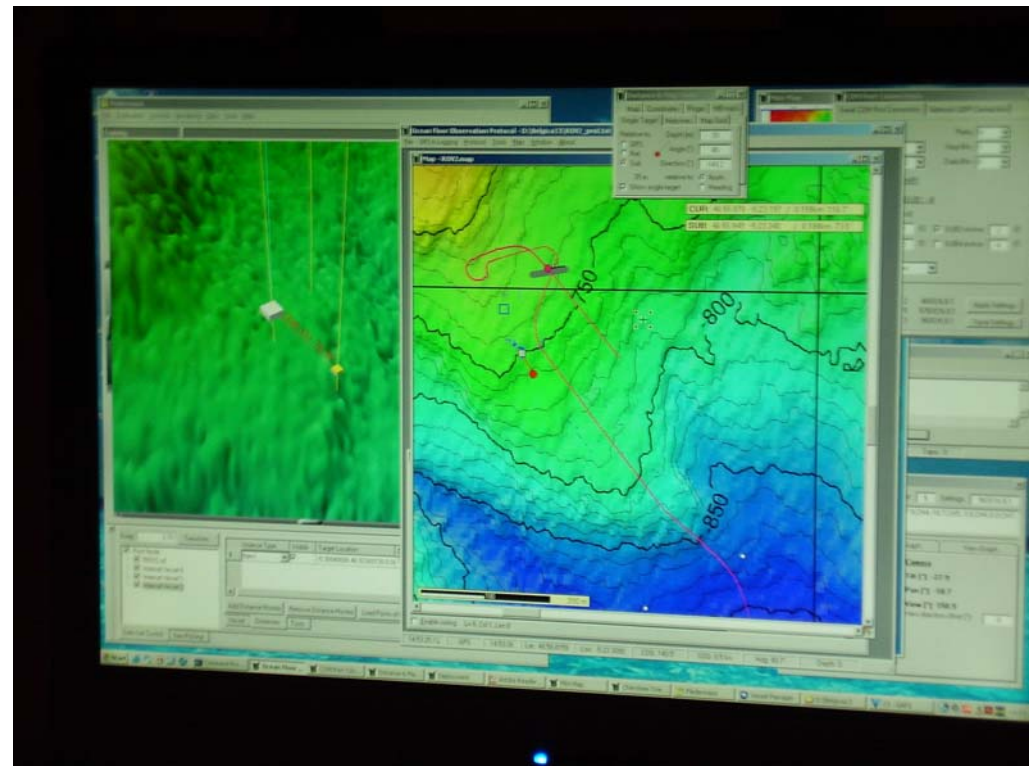
The ROV + TMS on deck. On these pictures, the ROV has been moved out of the TMS slot for maintenance and control purposes.



In normal deployment mode, the ROV is inside the TMS when the system is put in the water and lowered to the sea floor.



Once at the sea floor, the ROV moves out of the TMS and can navigate and explore freely within a range of ~100-150 m (= length of tether cable on the TMS winch).



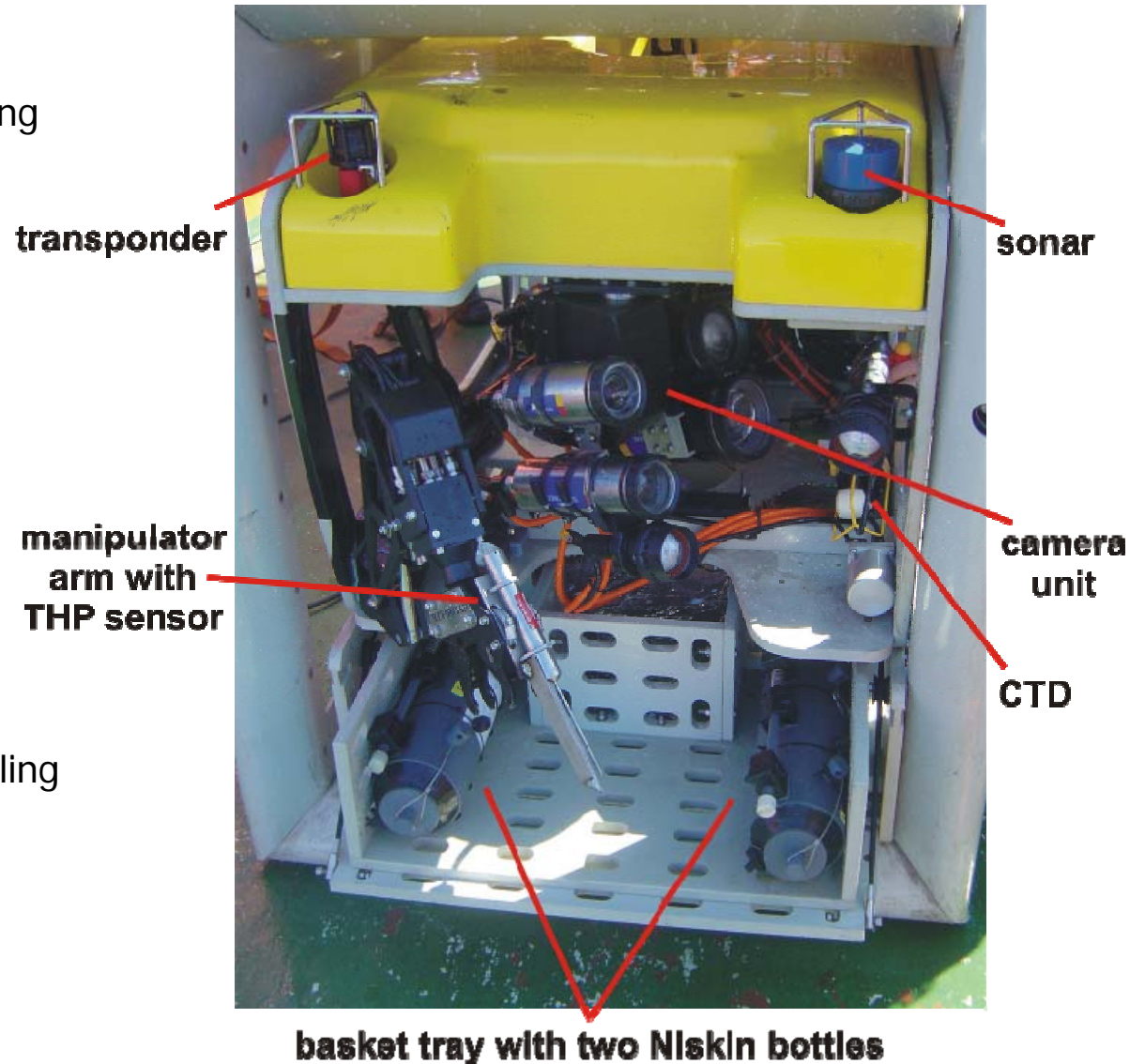
Meter-scale positioning and navigation with ship-mounted IXSEA GAPS (picture above) and 2 ROV-mounted and TMS-mounted transponders

Standard instrumentation

- Forward-looking b & w, still and colour camera
- Rear-looking b & w camera
- TMS-mounted b & w camera
- Altimeter and depth meter
- Super Seeking Sonar System (325 or 675 kHz) for object detection
- Manipulator arm for sampling and measuring
- Sample tray to store samples or additional instrumentation

Additional instrumentation

- THP thermistor for sediment temperature measurements
- CTD probe for measurement of bottom-water physical characteristics
- Niskin bottles (5 L) for bottom water sampling





THP thermistor mounted on the manipulator arm to conduct sea-floor temperature measurements at seep locations



2 Niskin water-sample bottles mounted in the sample tray.
They can be closed by the operator at any time and location by the manipulator arm.