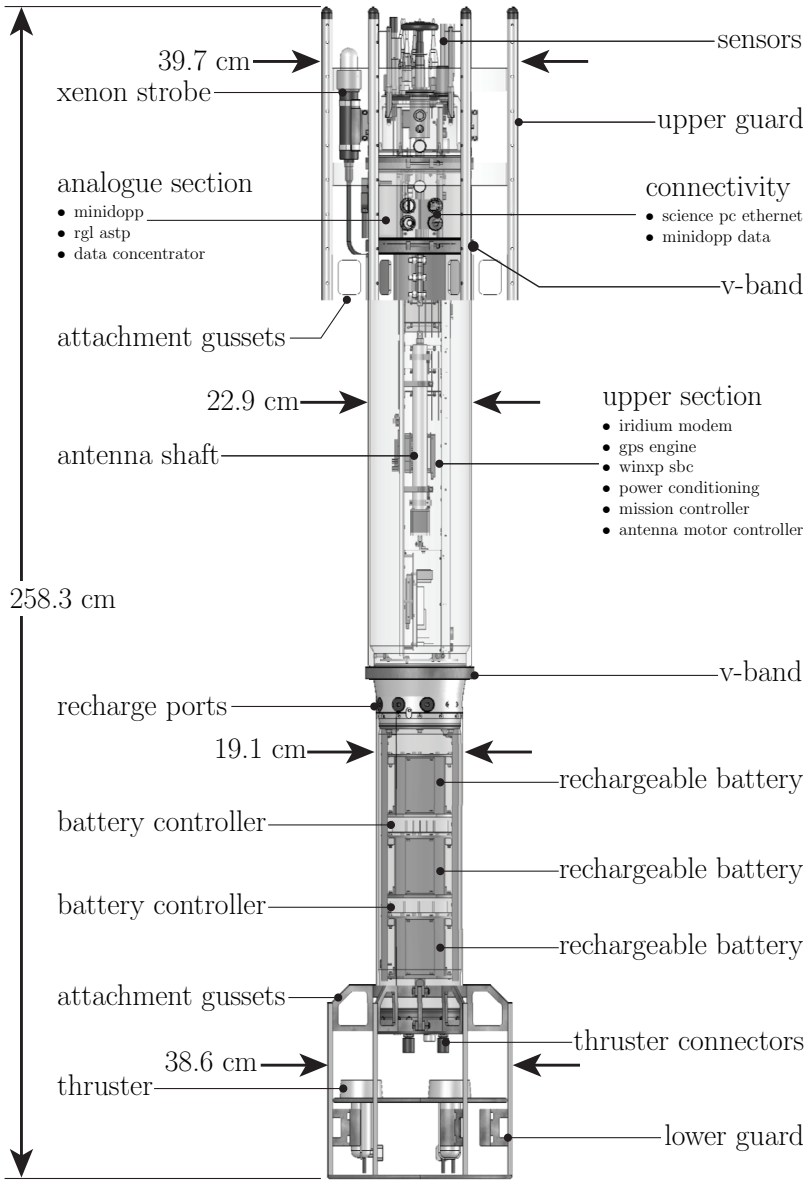
ASIP Description

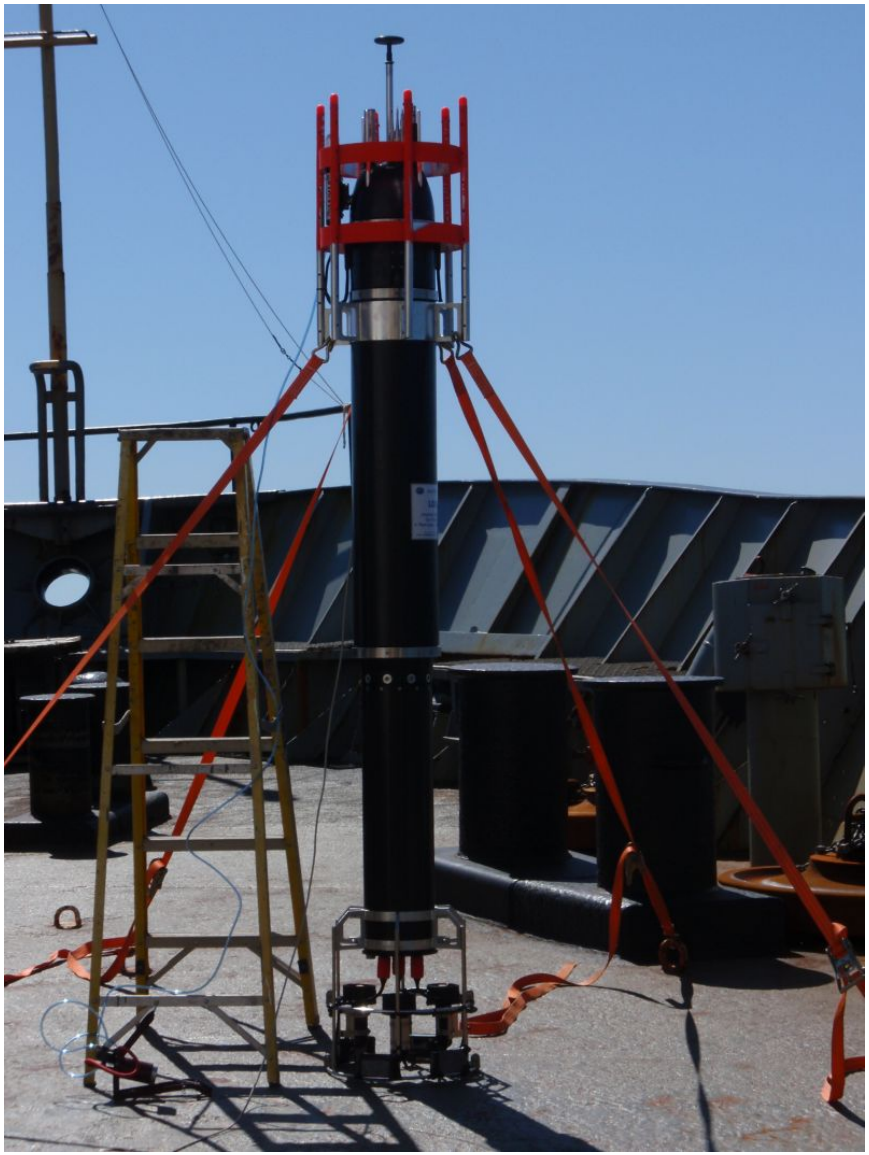
- ASIP is an autonomous vertically-moving profiling platform that is equipped with a suite of senors that make measurements of the physical properties of the ocean from a maximum depth of 100m up to the air-sea interface.
- ASIP is equipped to measure pressure, temperature, conductivity, shear, noise, photosynthetically active radiation (PAR), oxygen concentration and saturation, and fluorescence.
- ASIP is $\sim$2.5m in length and weighs approximately 100kg. The sensors are located at the top of ASIP and are protected by a guard.

ASIP Description



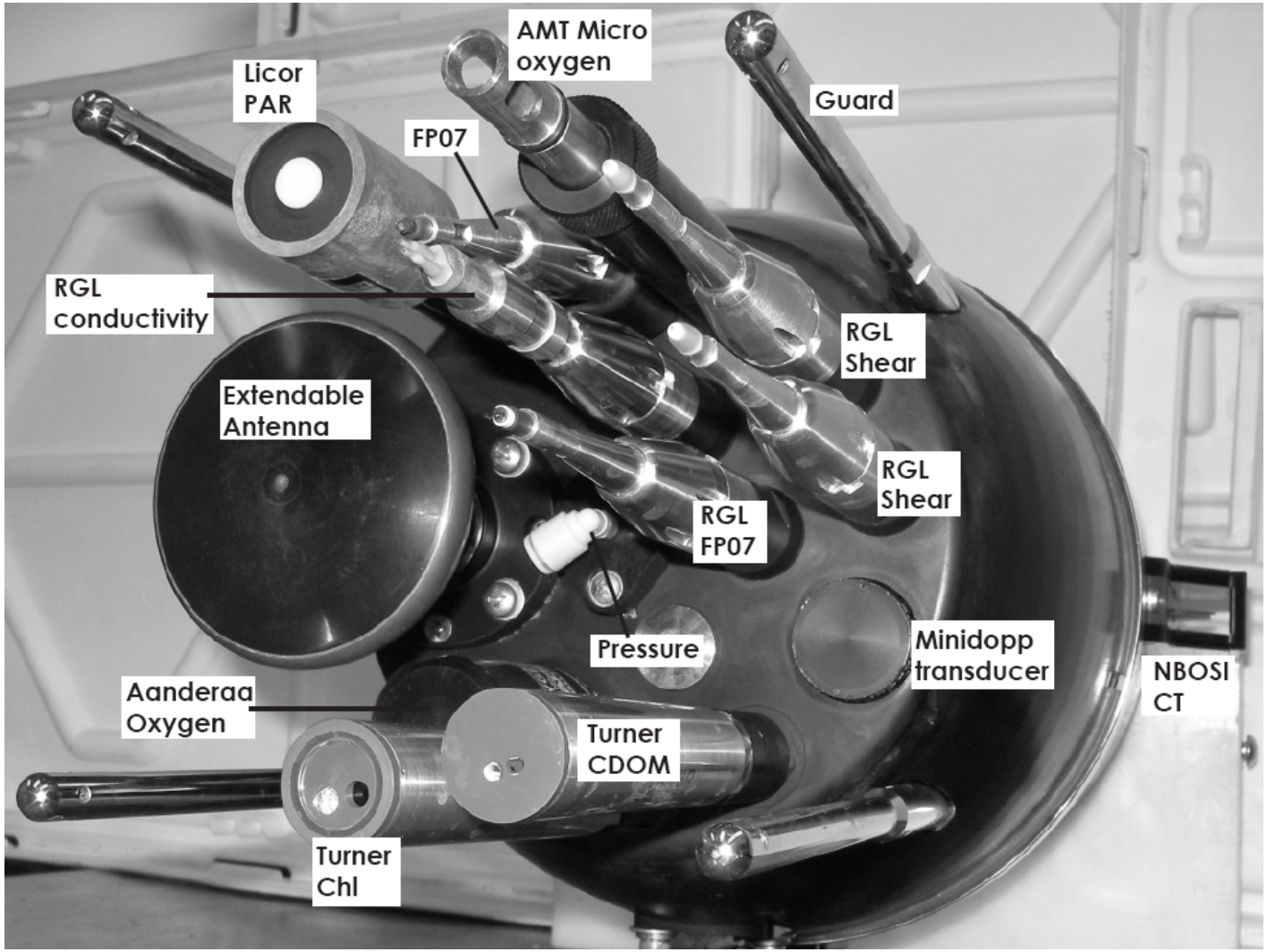
- Profiling is accomplished with three thrusters that submerges the positively buoyant instrument to a maximum depth of 100 m.
- Once the pre-programmed depth is reached, the thrusters turn off and ASIP ascends to the surface at about 0.5 ms^{-1} acquiring data along this path.
- Once the surface is reached, ASIP gets its location with the GPS engine and transmits this with the iridium modem.

ASIP Description



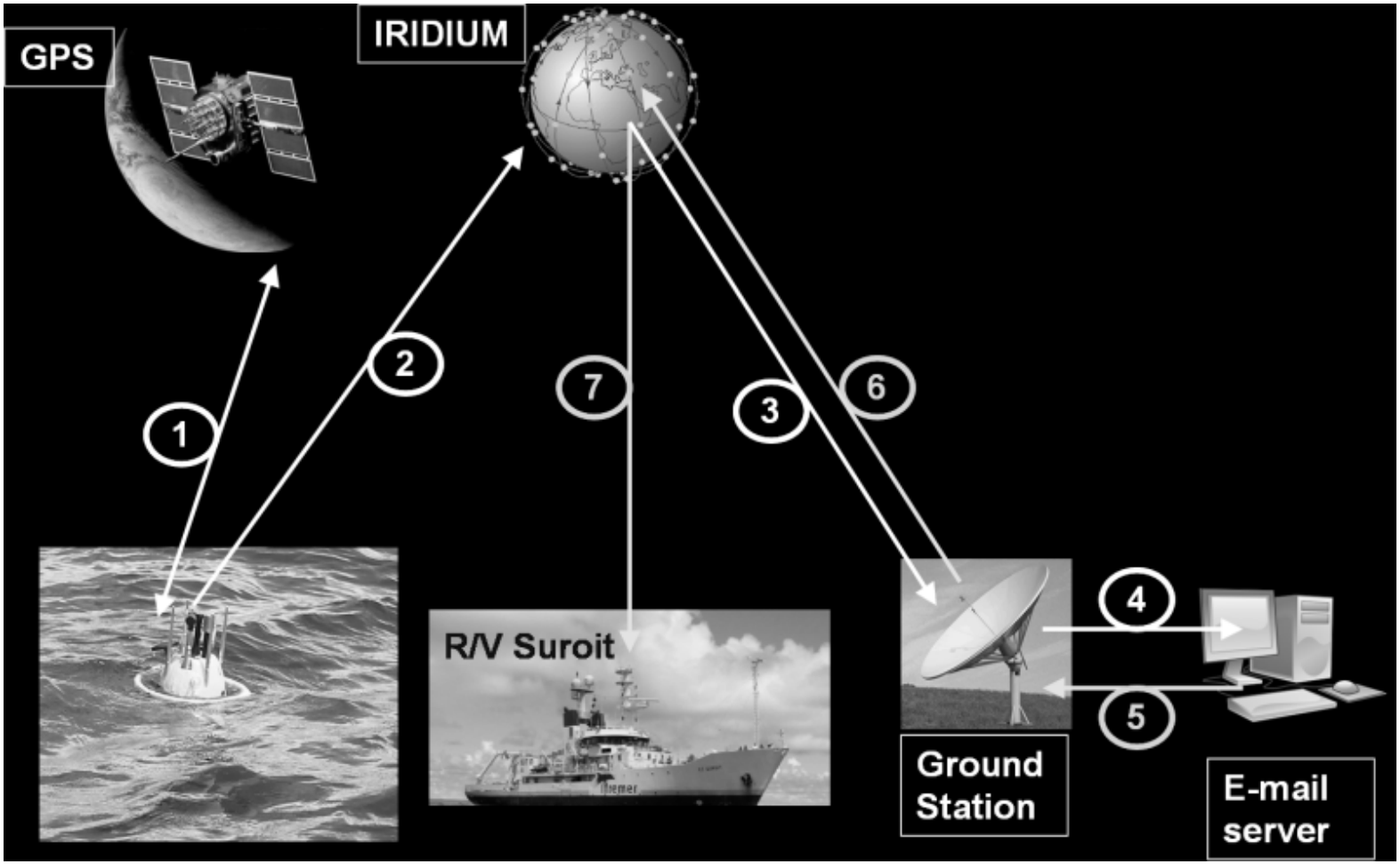
- ASIP is strapped to the deck to test the satellite communications
- Antenna extends to get it high enough to connect with the satellite

ASIP Sensors



A new hydrophone will be attached to quantify breaking waves and bubbles

ASIP Communications



Two way communication with ASIP is provided by iridium

ASIP Deployment

- ASIP is first lifted into the small boat (RHIB) along with the driver, crew member and two scientists
- The boat is launched and ASIP is lifted over the side
- The sensor cover is removed and a magnet is used to start the mission
- ASIP is then left in the water and the RHIB returns to the ship

ASIP Deployment

ASIP is lifted into the RHIB with an officer, crew member, and two scientists

ASIP Deployment

ASIP is lifted over the side of the RHIB and the sensor cover is removed before release

ASIP Deployment

ASIP begins to profile soon after being released from the RHIB

ASIP Deployment

- Waiting for ASIP to submerge after a profile:
  `http://www.youtube.com/watch?v=emxKl5beQkg`
- Deploying ASIP from the RHIB:
  `http://www.youtube.com/watch?v=3oxXLD5nJBk`
- Returning to ship after an ASIP deployment:
  `http://www.youtube.com/watch?v=O3QzI2xe5pM`

ASIP Recovery

- ASIP will provide periodic updates on its location via iridium SBD
- ASIP's mission can be stopped at any time by sending it the abort command
- This will put ASIP into a mode where it will remain at the surface and relay its position every 2 minutes
- The ship will move to the location of ASIP and the RHIB will be launched and ASIP recovered

ASIP Lab Space

- After recovery, the batteries on ASIP need to be recharged
- This will require space in a dry environment, as the instrument need to be partially opened for battery recharging
- ASIP can sit in a cradle on the floor during the recharge
- About 2m of bench space are required for the ancillary equipment