

ROV *Lu'ukai*  
PISCES SUBMERSIBLES  
ALOHA Cabled Observatory

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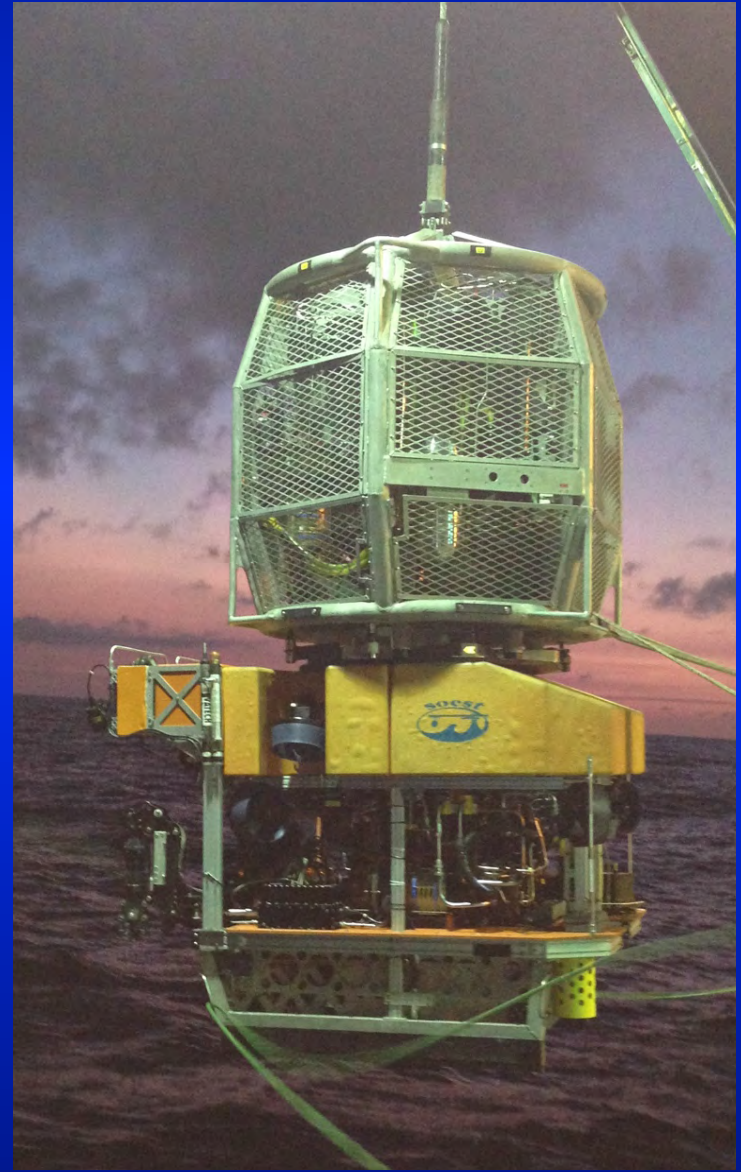
19 May 2016

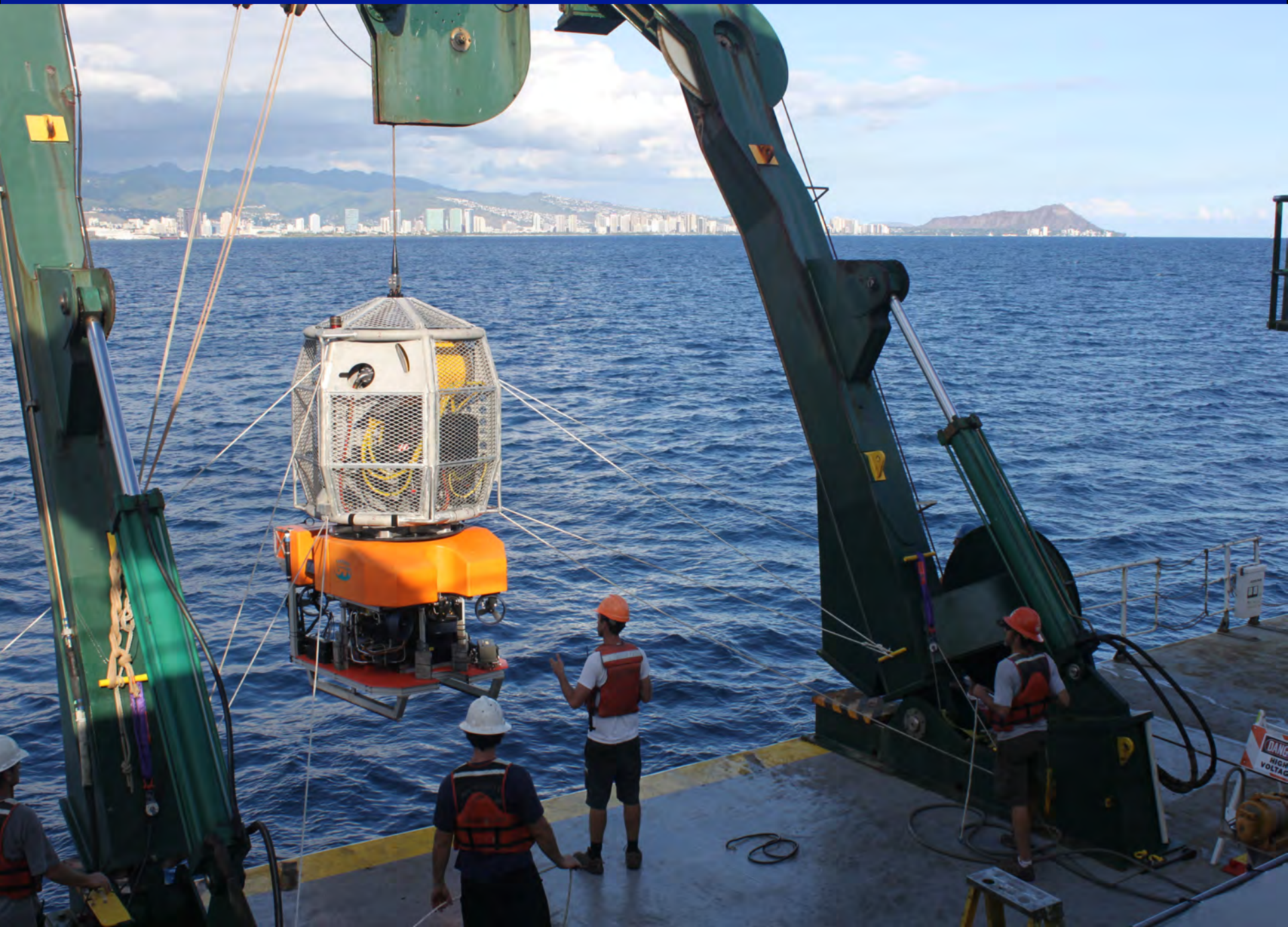




# UH ROV *Lu'ukai* - Sea Diver

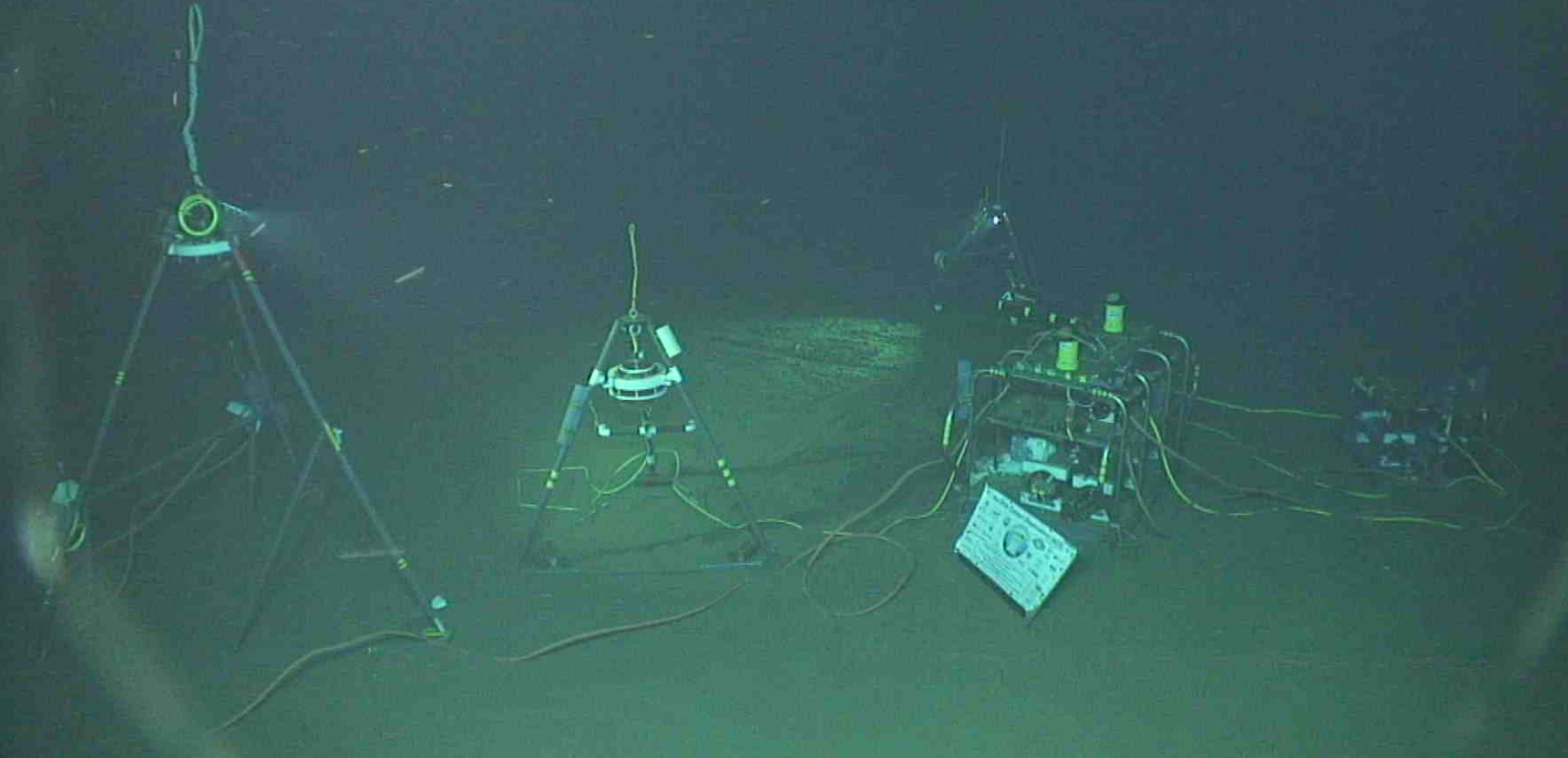
- Main focus is servicing Aloha Cabled Observatory
- Slack tensioner + lead improved dynamics (albeit calm seas)
- Continuing improvements







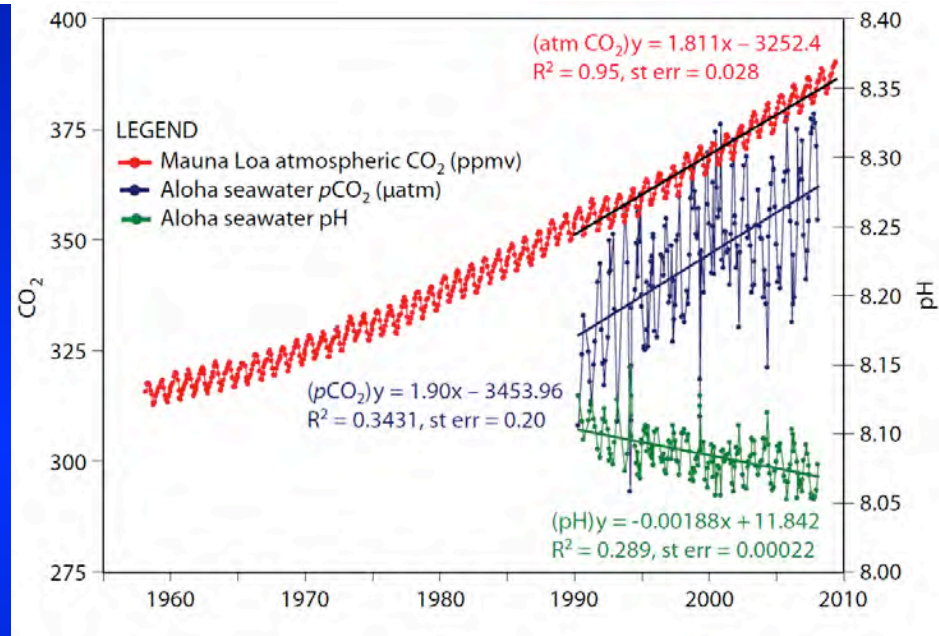
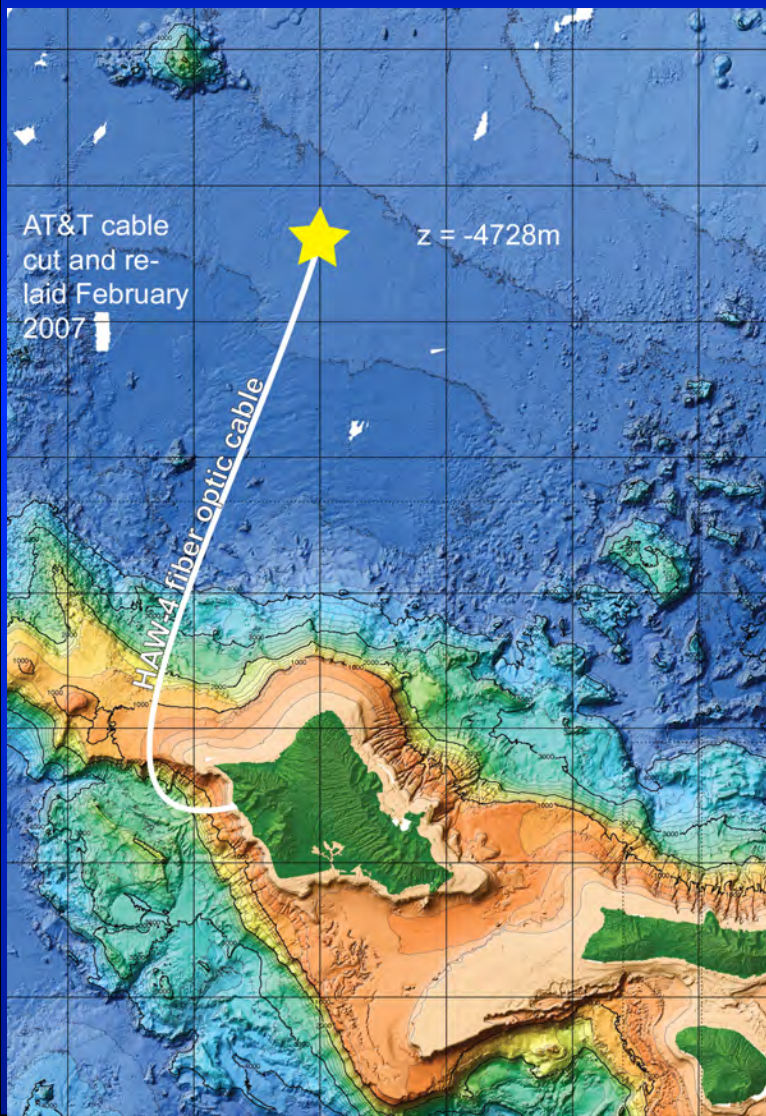
# ALOHA Cabled Observatory



4728 m – Deepest Internet and power on the planet

# Station ALOHA

Hawaii Ocean Time-series (HOT)  
28+ years, 275+ cruises, and continuing  
M. Church, R. Lukas, D. Karl  
and many others

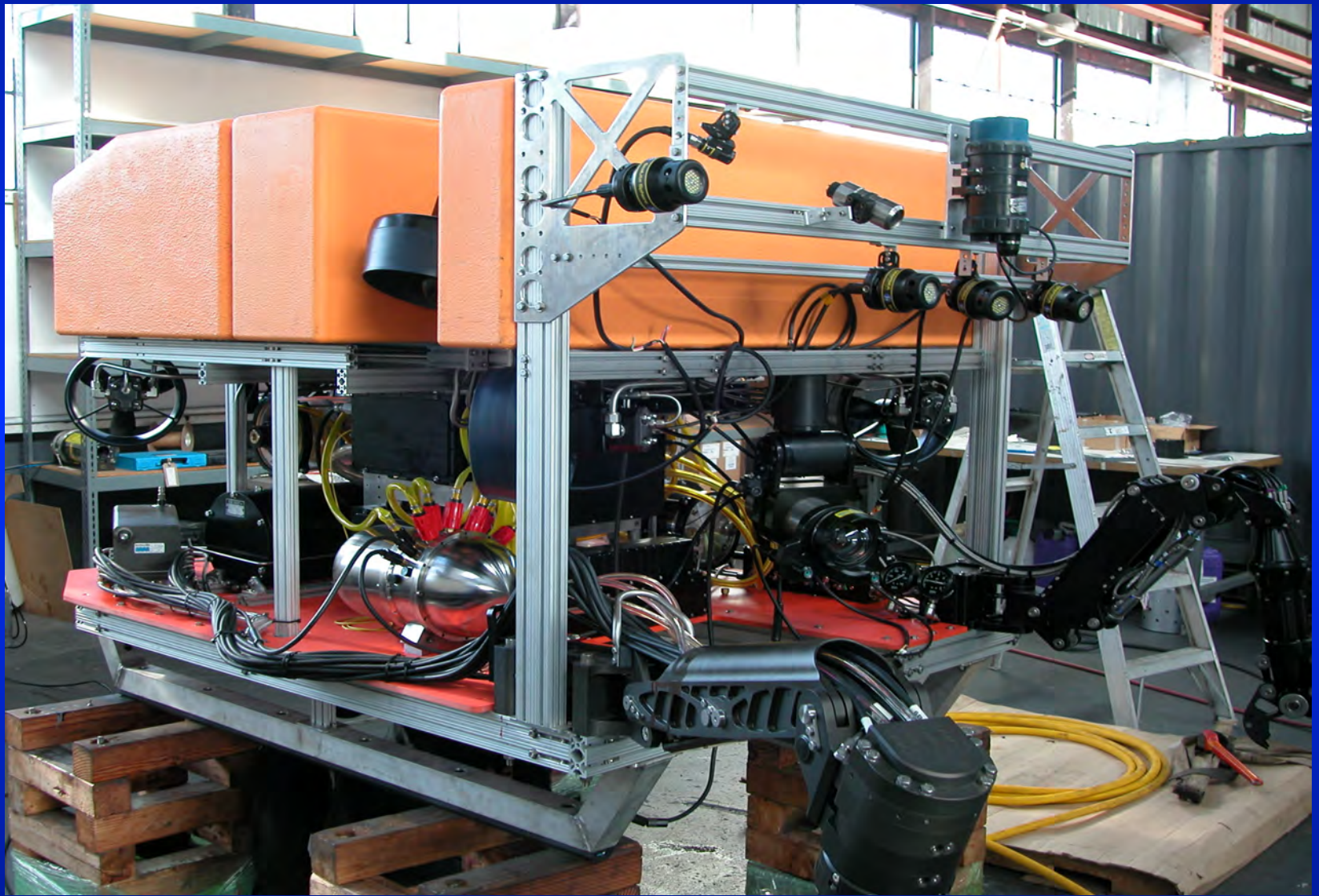


## ALOHA Cabled Observatory (ACO)

# SOEST ROV - 6000 m





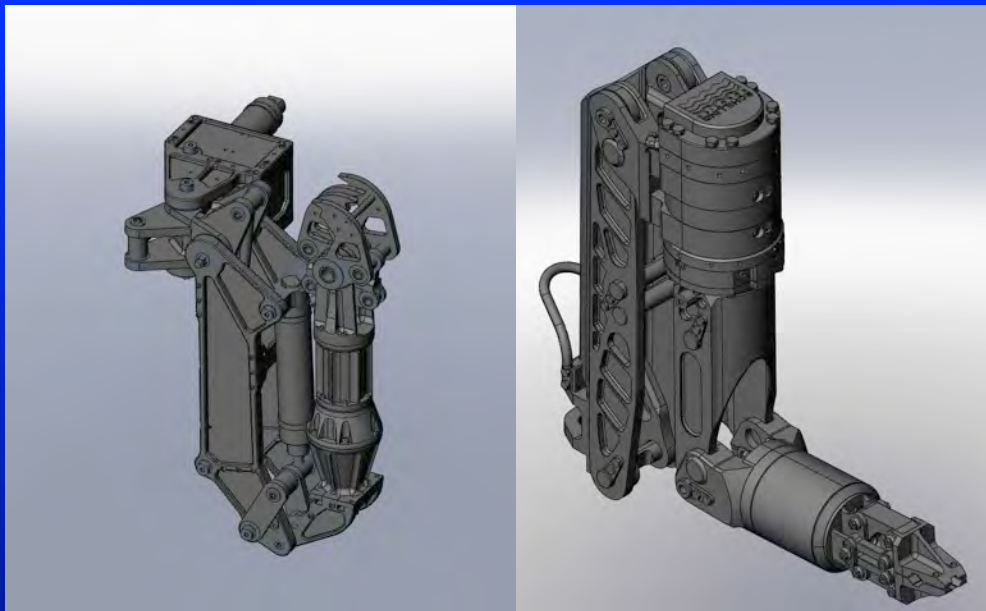


# ROV and tether management

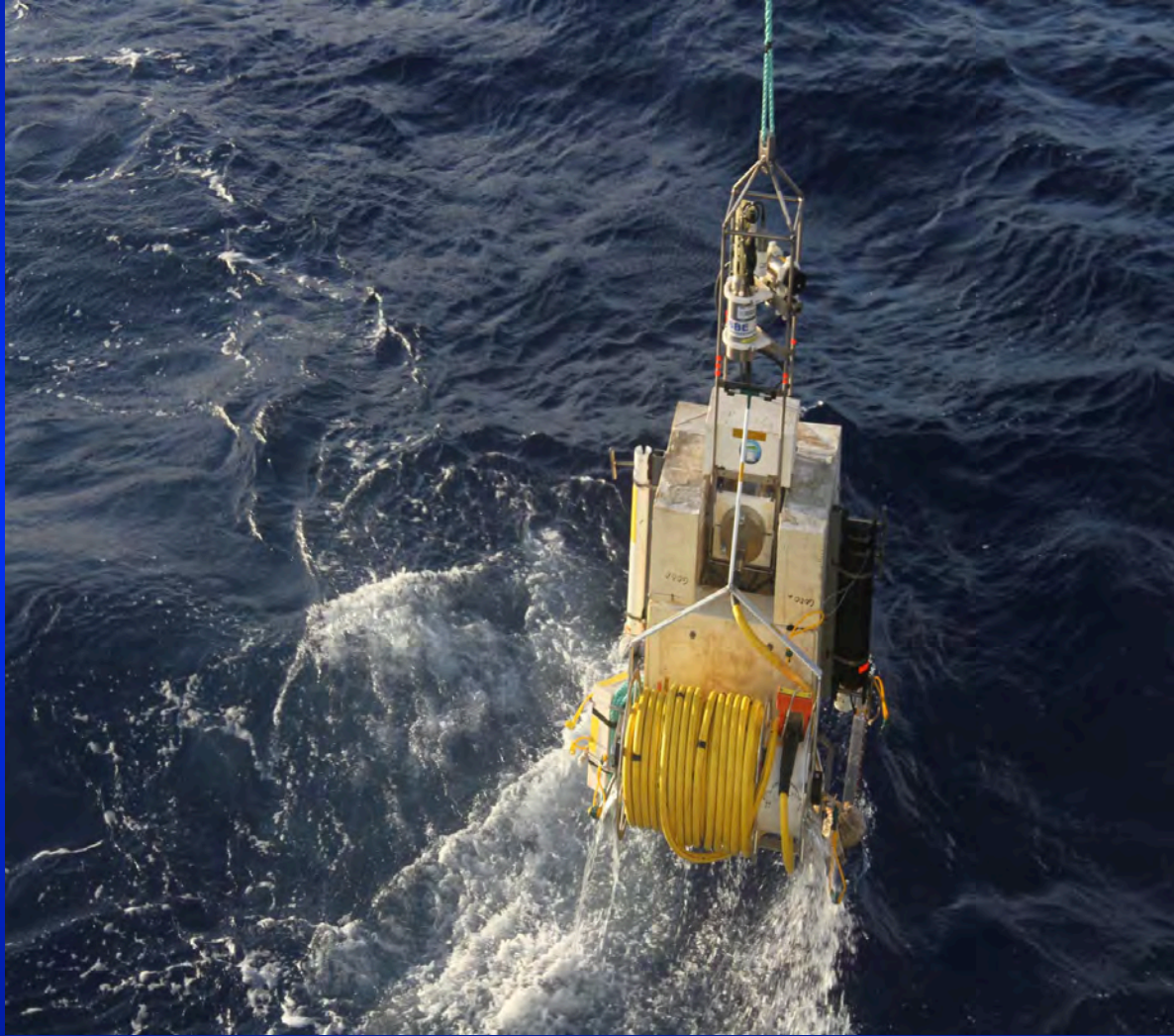


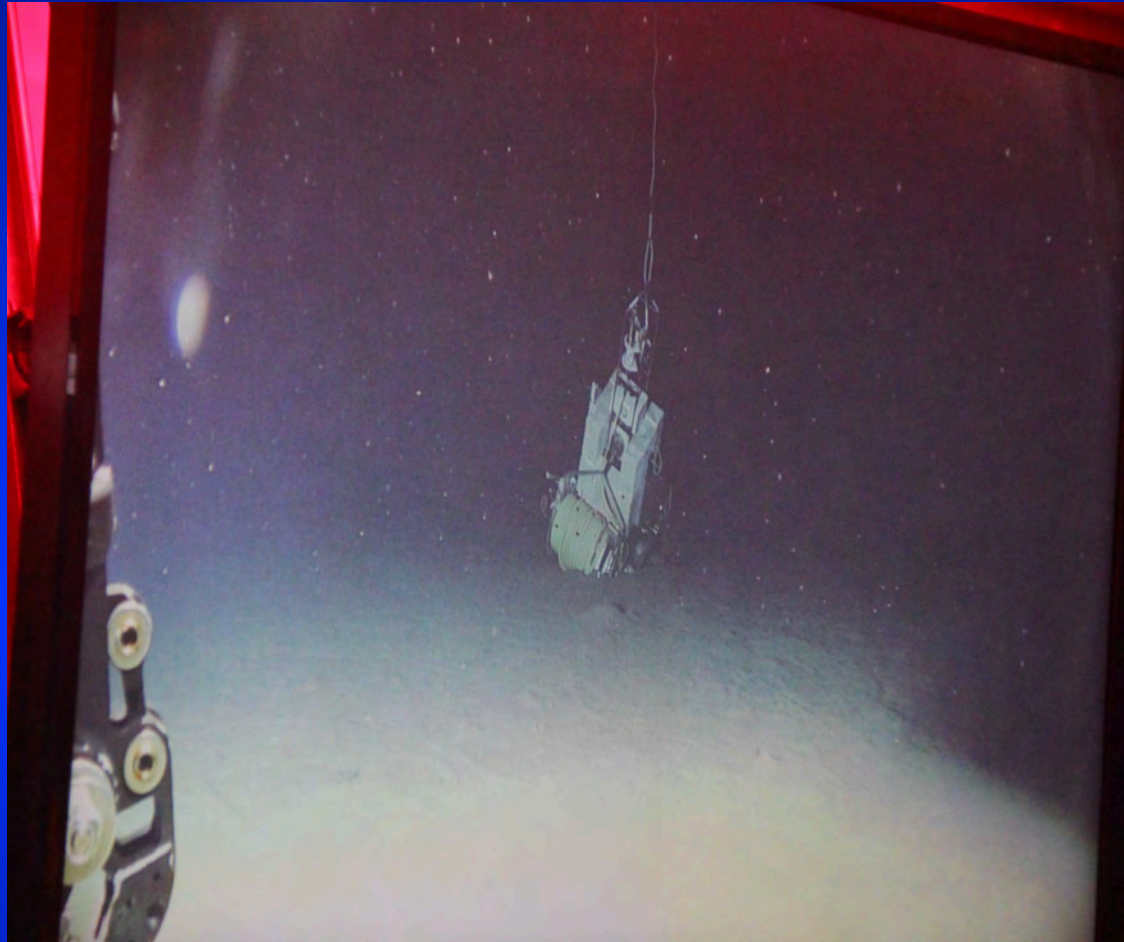
# ROV science capabilities

- Manipulators
  - Schilling Orion 7P, seven-function
  - DOER SeaMantis, five-function





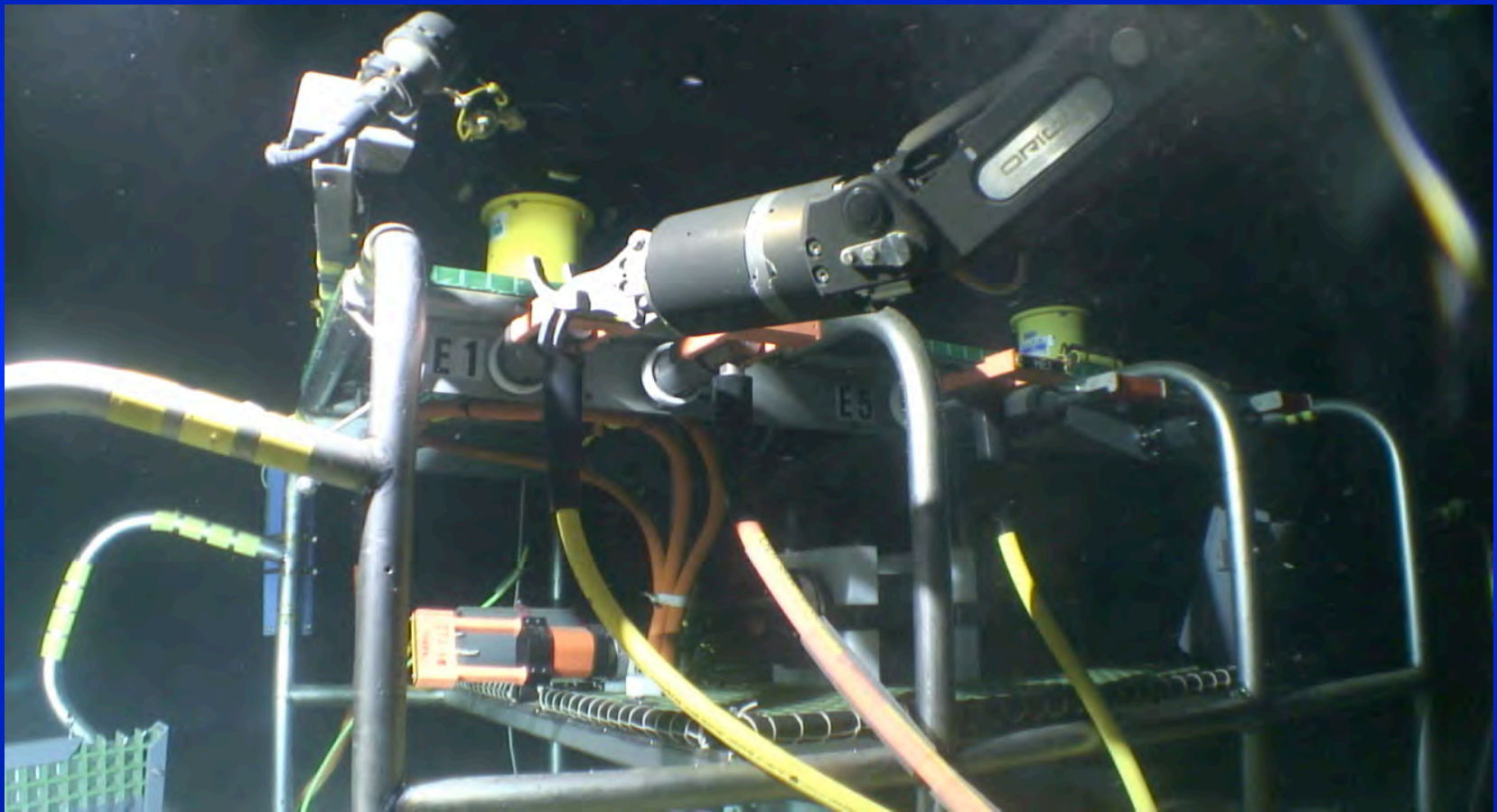




## BPS Subsea Mated Connector

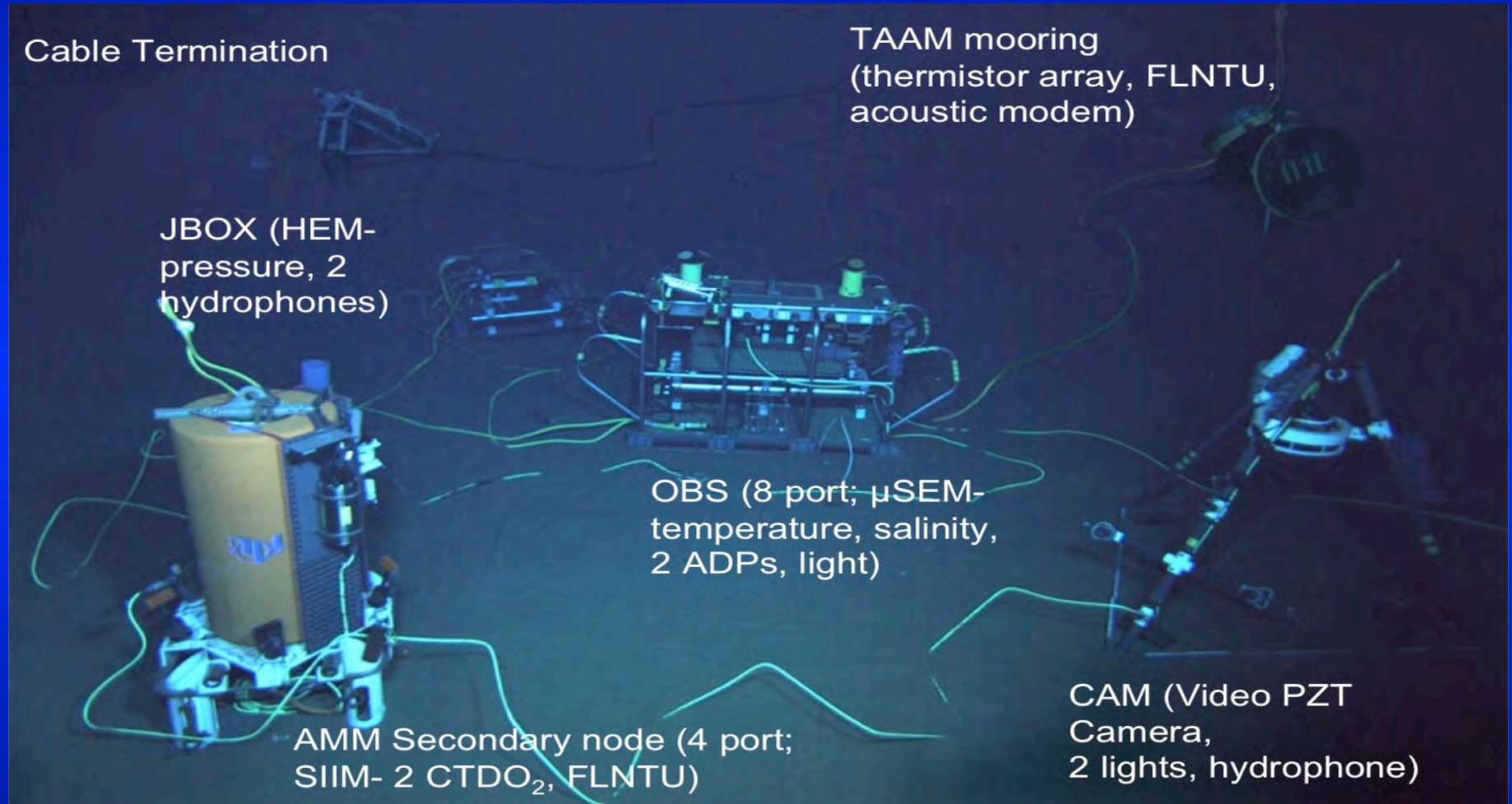


## Final Push on Connector from ROV





# ACO bottom configuration



# Current ACO Status

- Observatory infrastructure still working flawlessly, with hydrophone, CT, ADCP (lights failed after 6 weeks)
  - Previously installed Basic Sensor Package 1 (BSP1, CTDO<sub>2</sub>, fluorometer, ADCP, pressure, acoustic modem), CAM2 (video/PZT, two lights, hydrophone), LIGHT1
  - Recovered AMM secondary node (cracked SS pressure case) – had 2 CTDO<sub>2</sub>'s and fluorometer
  - Of these, now functional - CTDO<sub>2</sub>, acoustic modem
- Next Cruise August 2016, service cruise using *Lu'ukai*
  - BSP2 – pressure, fluorometer, CTDO<sub>2</sub>
  - LIGHT4
  - Recover BSP1, CAM2, LIGHT1 to repair

# ACO 4728 m – a new opportunity

