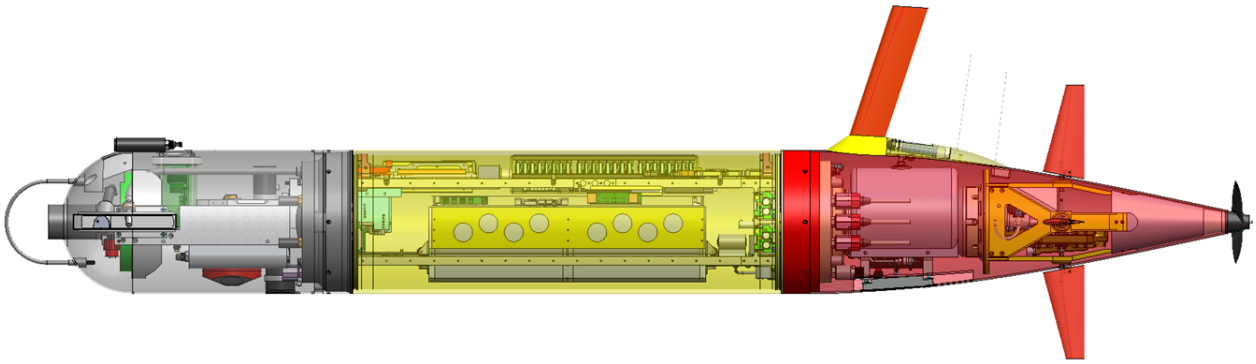
Flux #	Description	Approach	Result
1	Transport rate between euphotic zone and 25.5 kg m^{-3} isopycnal, property budgets	AUVs with misc. sensors & rhodamine detectors	Estimate of physical advection rates of nutrients from the pycnocline
2	Consumption of advected nutrients by phytoplankton	^{15}N uptake, O_2:Ar, triple O_2 isotopes	Rate of new primary production
3	Quantity of new vs. total primary production that escapes the euphotic zone (C, N, Si)	Sediment traps	Export ratio
4	Decomposition & remineralization rates of sinking or suspended organic materials	DIN/DON & DIC/DOC standing stocks, ^{15}N & ^{13}C tracers and sediment traps	Export-linked remineralization rates
5	Flux of PC/POC/PN and Si to depths below the 25.5 kg m^{-3} isopycnal	Sediment traps	Quantity of export flux attenuated in upper pycnocline
6,7	Nitrate production rates	^{15}N tracer	Rate of NO_3^- (and NO_2^-, N_2O) production
8	Transport rate between 25.5 kg m-3 isopycanl and the density layers immediately below	AUVs with turbulence sensors & rhodamine detectors	Physical transport of dissolved materials between upper and lower pycnocline

2014 LRAUV Configurations for CANON

1. Daphne



a. Mission: Circles Makai, or CPF using USBL collecting contextual bio/geo data. Position tracked by Tiny (WaveGlider), responds to a-comms command to continue mission

b. Instruments:

i. Linquest DVL Serial #013245, LCB B5 (5A)
ii. Benthos DAT Serial # XXXX, LCB B6
iii. Wetlabs Puck Serial # XXXX, LCB B3
iv. NBOSI CTD Serial # XXXX, LCB B4
v. Turner Cyclops Rhodamine , Serial # XXXX ,LCB B0 (A/D)
vi. Sparton Compass, Serial # XXXX , LCB B7
vii. Aanderra Optode Serial # XXXX **not currently used, can this be moved to Microstrain LCB? (nope. Used by DAT)
viii. MBARI ISUS Serial # XXXX, LCB B1
ix. MBARI SCIPI, Serial # XXXX, LCB B2
x. OPEN LCB: none

c. Comms

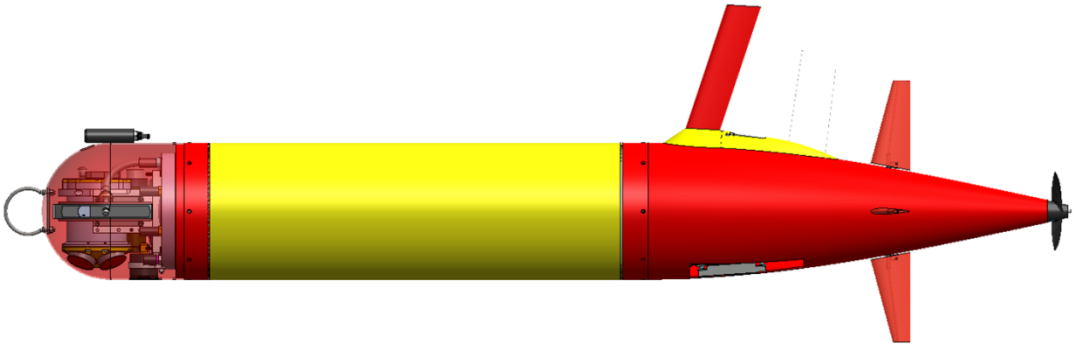
i. Freewave, Serial # XXXX LCB A2
ii. NAL 9602, Serial # XXXX, LCB A1

Applied Acoustic transducer, Serial 2093573, standalone with 9v batteries, HPR3 Channel 6 (24.038 interrogate, 27.173 kHz reply)

iii. Desert Star Argos, # 804, ID 136622
iv. Telonic VHF beacon

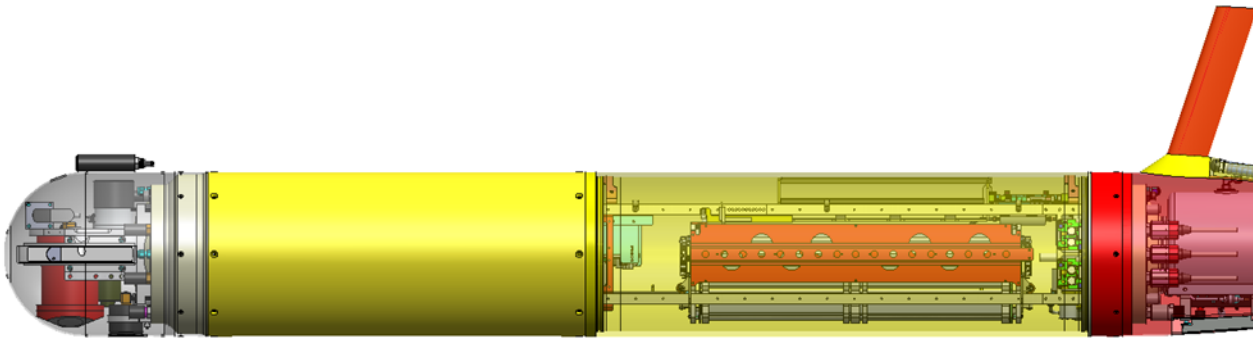
d. Notes:

2. Tethys



   a. Mission: Patch tracking with rhodamine sensor, area recon, high resolution data upload (including ADCP?) through hotspot
   b. Instruments:
      i. Rowe ADCP/DVL Serial #013245, LCB B5 (5A)
      ii. Wetlabs Puck Serial # XXXX, LCB B3
      iii. Turner Cyclops Rhodamine, Serial # XXXXXX, LCB B0, using PAR port and wiring
      iv. NBOSI CTD Serial #XXXXX, LCB B4
      v. PNI Compass (in Rowe), Serial #XXXXX, LCB B7
      vi. Aanderra Optode Serial # 241, LCB B2
      vii. MBARI ISUS Serial #XXXX , LCB B1
      viii. OPEN LCB: B6
   c. Comms
      i. CDMA radio, Serial #XXX LCB A2
      ii. NAL 9602, Serial #XXXLCB A1
      iii. Benthos transponder 26/29 kHz
      iv. Desert Star Argos, Serial # 1022, ID 136621
      v. Telonics VHF beacon, Serial #XXX, XXX MHz
   d. Notes:

3. Makai



a. Mission: Sampler/ Patch center marker Vehicle, holding at density 1025.5, or temperature
b. Instruments
    i. Linquest DVL Serial #,10089, LCB B5 (5A)
    ii. Benthos modem Serial #XXX, LCB B6
    iii. Wetlabs Puck Serial #XXX, LCB B3
    iv. NBOSI CTD Serial #XXX, LCB B4
    v. Turner Cyclops Rhodamine, Serial #XXX, LCB B0
    vi. Sparton Compass, Serial #XXX LCB B7
    vii. Aanderra Optode Serial #XXX, LCB B2
    viii. OPEN LCB: B1
c. Comms
    i. Cradlepoint radio, Serial #XXX LCB A2
    ii. NAL 9602, Serial #XXX, LCB A1
    iii. Benthos transponder Serial #XXX, 26/29 kHz
    iv. Desert Star Argos Serial # 939, Argos ID 136623
    v. Telonics VHF beacon, Serial #XXX, XXX MHz
d. Notes: Using MB 2.0, old LCB backplane, new battery pack, new umbilical/charger box, though no shore-power