Eventlabel	JUB2010_sel_a_m_03
Campaign	King George Island 2010
Species	Southern elephant seal (*Mirounga leonina*)
Age	Adult; >6 years
Sex	Male
Number	
Length	381 cm
Girth	
Weight [estimated]	2000
Weight [calculated]	1325 kg http://doi.pangaea.de/10.1594/PANGAEA.737046
Weight [measured]	
ARGOS PTT ID	96498
Transmitter type	SMRU/Series 9000 SRDL/CTD
Manufacturer	SMRU
PTT Serial Number	11288
PTT Software	Software specification for CTD_GEN_07B deployment (MEOP: Temp+Salinity share 2 tx)
Setting protocol	Transmitting via ARGOS Page transmission sequences: Until day 1464: 0 0 1 0 0 2 3 0 0 4 5 using 1 PTT numbers Satellite availability (UTC): 00: -- on -- 01: -- on -- 02: -- on -- 03: -- on -- 04: -- on -- 05: -- on -- 06: -- on -- 07: -- on -- 08: -- on -- 09: -- on -- 10: -- on -- 11: -- on -- 12: -- on -- 13: -- on -- 14: -- on -- 15: -- on -- 16: -- on -- 17: -- on -- 18: -- on -- 19: -- on -- 20: -- on -- 21: -- on -- 22: -- on -- 23: -- on -- Transmission targets: 56000 transmissions after 365 days In Haulouts: ON (one tx every 1 min 20 secs) for first 5 hours then cycling OFF for 6 hours, ON for 1 hour

| | Check sensors every 4 secs
When near surface (shallower than 10m), check wet/dry every 1 sec
Consider wet/dry sensor failed if wet for 7 days or dry for 99 days
Dives start when wet and below 6m for 8 secs
  and end when above 6m for 0, or dry at any time
No separation of 'Deep' dives
A cruise begins if there has been no dive for 9 mins
A haulout begins when dry for 10 mins
  and ends when wet for 40 secs

Dive shape (normal dives):
       4 points per dive using broken-stick algorithm

Dive shape (deep dives):
     none

CTD upcasts: max 2000 dbar up to 6 dbar in 2 dbar bins.
      17 cut points per profile
       Send the deepest 1 upcasts in each 6-hour period.
       Minimum depth to trigger collection of cast:
             1000m in hour 1
             600m in hour 2
             300m in hour 3
             100m in hour 4
             50m in hour 5
             25m in hour 6
     or 20% greater than current maximum.

      Sample CTD sensor every 1 seconds.
      Temperature: Collected, Stored. Valid range: -2.5 to 30.2 degC
      Conductivity: Collected, Not stored.
      Salinity: Calculated, Stored. Valid range: 28.9 to 37.1

No GPS data

TRANSMISSION BUFFERS (in RAM):
Dive in groups of 3 (6.25 days @ 10mins/dive): 300 = 1200 bytes
No 'deep' dives
Haulout: 30 = 120 bytes
6-hour summaries in groups of 3 (7.5 days): 10 = 40 bytes
No berniegrams
No timelines
Cruise: 30 = 120 bytes
No diving periods
No spot depths
No emergence records
No Duration histograms
No Max depth histograms
CTD casts (7.5 days): 30 = 120 bytes
No GPS fixes

 TOTAL 1600 bytes (of about 21000 available)

MAIN BUFFERS (in 6.2 Mb Flash):
Dive in groups of 3 (416.667 days @ 10mins/dive): 20000 x 100 bytes = 2000000 bytes
No 'deep' dives
Haulout: 3000 x 16 bytes = 48000 bytes
6-hour summaries in groups of 3 (450 days): 600 x 68 bytes = 40800 bytes
No berniegrams
No timelines
Cruise: 3000 x 16 bytes = 48000 bytes
No diving periods
No spot depths
No emergence records
No Duration histograms
No Max depth histograms |

CTD casts (500 days): 2000 x 164 bytes = 328000 bytes
No GPS fixes

 TOTAL 2407 kb (from 6333 kb available)

PAGE CONTENTS (256 bits - 9 overhead):

PAGE 0:
          PTT NUMBER OVERHEAD (28-bit code)
          -----------[8 bits: 0 - 7]

          PAGE NUMBER
          -----------[3 bits: 8 - 10]

          DIAGNOSTICS in format 0:

           TX number: wraparound 11 bits in units of 32 (range: 0 to 65504)
          -----------[11 bits: 11 - 21]

          DIVE group in format 0:
          Normal dives transmitted in groups of 3
           Time of start of last dive: max 5 days 12 hours @ 30 secs= 15840
                 tx as raw 14 bits in units of 1 (range: 0 to 16383)
                 (recommended sell-by 5 days 11 hours)
          Sell-by range: 5 days
          Number of records: raw 2 bits in units of 1 (range: 0 to 3)
          Reason for end: -- not transmitted --
          Group number: wraparound 8 bits in units of 1 (range: 0 to 255)
          Max depth: -- not transmitted --
          Dive duration: odlog 1/6 in units of 30 s (range: 0 to 5715 s)
          Mean speed: -- not transmitted --
               Profile data (4 depths/times, 0 speeds):
             Depth profile: odlog 2/6 in units of 25 dm (range: 0 to 23887.5 dm)
             Profile times: raw 5 bits in units of 32.2581 permille (range: 0 to 1000 permille)
              Speed profile: -- not transmitted --
              Residual: raw 2 bits in units of 60 (range: 0 to 180)
              Calculation time: -- not transmitted --
          Surface duration: odlog 2/4 in units of 2.5 s (range: 0 to 588.75 s)
              cf. cruise starts after 9 mins (540 secs)
          Dive area: -- not transmitted --
          -----------[225 bits: 22 - 246]

          Available bits used exactly
 === End of page 0 ===

PAGE 1:
          PTT NUMBER OVERHEAD (28-bit code)
          -----------[8 bits: 0 - 7]

          PAGE NUMBER
          -----------[3 bits: 8 - 10]

          DIAGNOSTICS in format 1:

           Max depth ever: odlog 1/4 in units of 500 dm (range: 0 to 23250 dm)
          -----------[5 bits: 11 - 15]

	CRUISE group in format 0:
	Number of records: raw 1 bits in units of 1 (range: 0 to 1)
	Cruise number: wraparound 4 bits in units of 1 (range: 0 to 15)
	Start time: -- not transmitted --
	End time: max 5 days 12 hours @ 2 mins= 3960
	        tx as raw 12 bits in units of 1 (range: 0 to 4095)
	        (recommended sell-by 5 days 11 hours)
	Sell-by range: 5 days 4 hours
	Duration: raw 9 bits in units of 120 s (range: 0 to 61320 s)
	        cf. Max duration is 16 hours
	Speed: -- not transmitted --
	Reason for end: -- not transmitted --
	-----------[26 bits: 16 - 41]
	
	HAULOUT in format 0:
	Number of records: raw 1 bits in units of 1 (range: 0 to 1)
	Haulout number: wraparound 3 bits in units of 1 (range: 0 to 7)
	Start time: -- not transmitted --
	End time: max 5 days 12 hours @ 2 mins= 3960
	        tx as raw 12 bits in units of 1 (range: 0 to 4095)
	        (recommended sell-by 5 days 11 hours)
	Sell-by range: 5 days 4 hours
	Duration: raw 9 bits in units of 120 s (range: 0 to 61320 s)
	        cf. Max duration is 16 hours
	Reason for end: -- not transmitted --
	Contiguous: -- not transmitted --
	-----------[25 bits: 42 - 66]
	
	SUMMARY group in format 0:
	Transmitted in groups of 3
	Record could be in buffer for 7 days 12 hours
	End time: max 7 days @ 6 hours= 28
	        tx as raw 5 bits in units of 1 (range: 0 to 31)
	        (recommended sell-by 6 days 17 hours)
	Sell-by range: 7 days
	Number of records: raw 1 bits in units of 1 (range: 0 to 1)
	Cruising time: -- not transmitted --
	Haulout time: raw 6 bits in units of 15.873 permille (range: 0 to 1000 permille)
	Dive time: raw 6 bits in units of 15.873 permille (range: 0 to 1000 permille)
	Deep Dive time: -- not transmitted --
	Normal dives:
	        Avg max dive depth: odlog 2/6 in units of 25 dm (range: 0 to 23887.5 dm)
	        SD max dive depth: odlog 2/4 in units of 50 dm (range: 0 to 11775 dm)
	        Max max dive depth: odlog 2/6 in units of 25 dm (range: 0 to 23887.5 dm)
	        Avg dive duration: odlog 1/6 in units of 30 s (range: 0 to 5715 s)
	        SD dive duration: odlog 1/4 in units of 60 s (range: 0 to 2790 s)
	        Max dive duration: odlog 1/6 in units of 30 s (range: 0 to 5715 s)
	        Avg speed in dive: -- not transmitted --
	        Number of dives: odlog 1/4 in units of 2 (range: 0 to 93)
	Deep dives:
	        Avg max dive depth: -- not transmitted --
	        SD max dive depth: -- not transmitted --
	        Max max dive depth: -- not transmitted --
	        Avg dive duration: -- not transmitted --
	        SD dive duration: -- not transmitted --
	        Max dive duration: -- not transmitted --
	        Avg speed in dive: -- not transmitted --
	        Number of dives: -- not transmitted --
	Avg SST: -- not transmitted --
	-----------[180 bits: 67 - 246]

```
                    Available bits used exactly
 === End of page 1 ===


PAGE 2:
            PTT NUMBER OVERHEAD (28-bit code)
            ----------[8 bits: 0 - 7]

            PAGE NUMBER
            ----------[3 bits: 8 - 10]

            CTD in format 0:

            End time:  max 7 days @ 10 mins= 1008
                        tx as raw 10 bits in units of 1  (range: 0 to 1023 )
                        (recommended sell-by 6 days 23 hours)
            Sell-by range:  6 days 18 hours
            CTD cast number:  -- not transmitted --
            Min pressure:  -- not transmitted --
            Max pressure:  raw 10 bits in units of 2 dbar (range: 6 to
2052 dbar)
            Min temperature:  raw 15 bits in units of 1  (range: 2500 to
35267  = -2.5 to 30.267 °C in steps of 0.001 °C)
            Max temperature:  raw 15 bits in units of 1  (range: 2500 to
35267  = -2.5 to 30.267 °C in steps of 0.001 °C)
                        cf. Valid temperatures: -2.5 to 30.2 degC
            Min salinity:  raw 12 bits in units of 2 mPSU (range: 28900
to 37090 mPSU)
            Max salinity:  raw 12 bits in units of 2 mPSU (range: 28900
to 37090 mPSU)
                        cf. Valid salinity: 28.9 to 37.1
            Number of samples:  -- not transmitted --
            9 profile points 0 to 8 (from total of 17 cut points):
                        First 8 pressures are fixed
                        Min pressure is fixed
                        Temperature:  raw 10 bits in units of 0.977517
permille (range: 0 to 1000 permille)
            Temperature residual:  -- not transmitted --
                        Salinity:  raw 8 bits in units of 3.92157 permille
(range: 0 to 1000 permille)
            Salinity residual:  -- not transmitted --
            Temperature bounds :  -- not transmitted --
            Conductivity bounds :  -- not transmitted --
            Salinity bounds :  -- not transmitted --
            ----------[236 bits: 11 - 246]

            Available bits used exactly
 === End of page 2 ===


PAGE 3:
            PTT NUMBER OVERHEAD (28-bit code)
            ----------[8 bits: 0 - 7]

            PAGE NUMBER
            ----------[3 bits: 8 - 10]

            CTD in format 1:

            End time:  max 7 days @ 10 mins= 1008
                        tx as raw 10 bits in units of 1  (range: 0 to 1023 )
                        (recommended sell-by 6 days 23 hours)
            Sell-by range:  6 days 18 hours
            CTD cast number:  -- not transmitted --
            Min pressure:  -- not transmitted --
            Max pressure:  -- not transmitted --
            Min temperature:  -- not transmitted --
            Max temperature:  -- not transmitted --
                        cf. Valid temperatures: -2.5 to 30.2 degC
            Min salinity:  -- not transmitted --
```

Max salinity: -- not transmitted --
                    cf. Valid salinity: 28.9 to 37.1
            Number of samples: -- not transmitted --
            8 profile points 9 to 16 (from total of 17 cut points):
                    Max pressure is sent separately
                    7 pressure bins: raw 9 bits in units of 1 bin
(range: 0 to 511 bin)
                    Temperature: raw 10 bits in units of 0.977517
permille (range: 0 to 1000 permille)
            Temperature residual: raw 7 bits in units of 1 mdegC per
sample (range: 0 to 127 mdegC per sample)
                    Pressure already sent
                    Salinity: raw 8 bits in units of 3.92157 permille
(range: 0 to 1000 permille)
            Salinity residual: raw 7 bits in units of 1 mPSU per sample
(range: 0 to 127 mPSU per sample)
            Temperature bounds : raw 2 bits in units of 1 lo/hi (range:
0 to 3 lo/hi)
            Conductivity bounds : -- not transmitted --
            Salinity bounds : raw 2 bits in units of 1 lo/hi (range: 0 to 3
lo/hi)
            ----------[235 bits: 11 - 245]

            UNUSED
            ----------[1 bits: 246 - 246]

 === End of page 3 ===

PAGE 4:
            PTT NUMBER OVERHEAD (28-bit code)
            ----------[8 bits: 0 - 7]

            PAGE NUMBER
            ----------[3 bits: 8 - 10]

            CTD in format 2:

            End time: max 3 days 6 hours @ 10 mins= 468
                    tx as raw 9 bits in units of 1 (range: 0 to 511)
                    (recommended sell-by 3 days 5 hours)
            Sell-by range: 3 days
            CTD cast number: -- not transmitted --
            Min pressure: -- not transmitted --
            Max pressure: raw 10 bits in units of 2 dbar (range: 6 to
2052 dbar)
            Min temperature: raw 15 bits in units of 1 (range: 2500 to
35267 = -2.5 to 30.267 °C in steps of 0.001 °C)
            Max temperature: raw 15 bits in units of 1 (range: 2500 to
35267 = -2.5 to 30.267 °C in steps of 0.001 °C)
                    cf. Valid temperatures: -2.5 to 30.2 degC
            Min salinity: raw 12 bits in units of 2 mPSU (range: 28900
to 37090 mPSU)
            Max salinity: raw 12 bits in units of 2 mPSU (range: 28900
to 37090 mPSU)
                    cf. Valid salinity: 28.9 to 37.1
            Number of samples: -- not transmitted --
            9 profile points 0 to 8 (from total of 17 cut points):
                    First 8 pressures are fixed
                    Min pressure is fixed
                    Temperature: raw 10 bits in units of 0.977517
permille (range: 0 to 1000 permille)
            Temperature residual: -- not transmitted --
                    Salinity: raw 8 bits in units of 3.92157 permille
(range: 0 to 1000 permille)
            Salinity residual: -- not transmitted --
            Temperature bounds : -- not transmitted --
            Conductivity bounds : -- not transmitted --
            Salinity bounds : -- not transmitted --
            ----------[235 bits: 11 - 245]

UNUSED
----------[1 bits: 246 - 246]

 === End of page 4 ===

PAGE 5:
            PTT NUMBER OVERHEAD (28-bit code)
            ----------[8 bits: 0 - 7]

            PAGE NUMBER
            ----------[3 bits: 8 - 10]

            DIAGNOSTICS in format 2:

             Number of resets: wraparound 2 bits in units of 1 (range: 0
to 3)
            ----------[2 bits: 11 - 12]

            CTD in format 3:

             End time: max 3 days 6 hours @ 10 mins= 468
                        tx as raw 9 bits in units of 1 (range: 0 to 511)
                        (recommended sell-by 3 days 5 hours)
            Sell-by range: 3 days
            CTD cast number: -- not transmitted --
            Min pressure: -- not transmitted --
            Max pressure: -- not transmitted --
            Min temperature: -- not transmitted --
            Max temperature: -- not transmitted --
                        cf. Valid temperatures: -2.5 to 30.2 degC
            Min salinity: -- not transmitted --
            Max salinity: -- not transmitted --
                        cf. Valid salinity: 28.9 to 37.1
            Number of samples: -- not transmitted --
            8 profile points 9 to 16 (from total of 17 cut points):
                        Max pressure is sent separately
                        7 pressure bins: raw 9 bits in units of 1 bin
(range: 0 to 511 bin)
                        Temperature: raw 10 bits in units of 0.977517
permille (range: 0 to 1000 permille)
            Temperature residual: raw 7 bits in units of 1 mdegC per
sample (range: 0 to 127 mdegC per sample)
                        Pressure already sent
                        Salinity: raw 8 bits in units of 3.92157 permille
(range: 0 to 1000 permille)
            Salinity residual: raw 7 bits in units of 1 mPSU per sample
(range: 0 to 127 mPSU per sample)
            Temperature bounds : raw 2 bits in units of 1 lo/hi (range:
0 to 3 lo/hi)
             Conductivity bounds : -- not transmitted --
             Salinity bounds : raw 2 bits in units of 1 lo/hi (range: 0 to 3
lo/hi)
            ----------[234 bits: 13 - 246]

            Available bits used exactly
 === End of page 5 ===

Deployment	
Immobilisation	Application Blowpipe dart 15ml, 80/2mm needle Induction dose 15:38 12.5ml Zoletil IM@100mg/ml Top-up dose --- Induction complete 15:58 Follow-up dose --- Deployment 16:10 Onset of recovery 16:55 End of recovery 17:30 Anesthesia level 4 http://doi.pangaea.de/10.1594/PANGAEA.737045
Comment	Seal tag: none Deployment site: Refugio Elephante Prev. deployment: none
Tag deployed	2010-03-19T15:38:00 -62.2559 -59.2286
Tag retrieved	
First transmission	2010-03-21T16:53:34 -62.261 -58.630
Last transmission	2010-12-09T04:32:26 -61.496 -44.879