2014-March Update for Oceanetic Drifter Buoy Data Format

Source: Chris Paynter (painter@oceanetic.com)

The output format has changed quite a bit so that it always has the same number of space-separated values (there may be multiple spaces for readability).

The main data message from the buoy is in the format:

26/04/2013 23:10:00 48.654607 -123.429013 14 3 9.8 88 20 -0.57 -44.06 -27.00 62.99 99.00 -99.00 LEAK OLD

which has 17 fields, as described below

Field	Description
DATE	mm/dd/yyy format
TIME	hh:mm:ss format, in UTC
LATITUDE	negative latitudes are in the Southern hemisphere
LONGITUDE	negative longitudes are West longitude
SECONDS TO GET GPS FIX	last GPS lock time
GPS HORIZONTAL DILUTION OF PRECISION (HDOP)	expressed as integer
BATTERY VOLTS	0.1 Volt precision
TILT ANGLE	angle the instrument is leaning over, in degrees
BOARD TEMPERATURE	in integer degrees, not calibrated
CH0 TEMPERATURE (-2 metres depth)	degrees C
CH1 TEMPERATURE (-1.5 metres depth)	degrees C
CH1 TEMPERATURE (-1.0 metres depth)	degrees C
CH1 TEMPERATURE (-0.5 metres depth)	degrees C
CH1 TEMPERATURE (0 metres depth)	degrees C
CH1 TEMPERATURE (air temperature, +0.5 above surface)	degrees C
LEAK STATUS	can be 0 or LEAK
POSITION LOCK	0 for current, OLD if GPS not locked at sample time (will use last position within GPS wake period)

The buoy also sends a status message upon power up and when requested remotely, in the format:

    01/01/0213 14:22:04 Status 9.7 21 87 10 60 120 300 120 60 3 9 0040 0 0 0 0 LEAK

This message has 20 space-separated fields according to the table below:

Field	Description
DATE	mm/dd/yyy format
TIME	hh:mm:ss format, in UTC
STATUS MESSAGE NOTIFIER	always set to "Status"
BATTERY VOLTS	0.1 Volts resolution
BOARD TEMPERATURE	in degrees C
TILT ANGLE	angle the instrument is leaning over, in degrees
SAMPLE RATE, MINUTES	how often the instrument samples temperature & position
TRANSMIT RATE, MINUTES	how often the instrument transmits data (will be the same as sample rate for the 908 instruments)
GPS WAKE, SHORT, SECONDS	how long before a sample to wake the GPS so that it is locked when the sample time arrives (for SHORT sample rates)
GPS WAKE, LONG, SECONDS	how long before a sample to wake the GPS so that it is locked when the sample time arrives (for LONG sample rates)
GPS WAKE THRESHOLD, SECONDS	at what point does the sample rate become so long that the GPS needs longer to lock before taking a sample
SLEEP INTERVAL, SECS	how often the instrument wakes up to check for leaks
GPS LONGEST LOCK, SECS	longest time for the GPS to lock since resetting statistics
NUMBER OF RESETS	total number of processor resets
PROCESSOR RESET REGISTERS	hexadecimal number which shows the contents of the processor's reset registers at the last reset
LOSS OF CLOCK RESETS	number of resets due to loss of processor clock since resetting statistics
LOSS OF LOCK RESETS	number of resets due to loss of processor clock lock since resetting statistics
LOCKUP RESETS	number of resets due to processor core lockup since resetting statistics
WATCHDOG RESETS	number of resets due to watchdog timeout
LEAK STATUS	can be 0 or LEAK