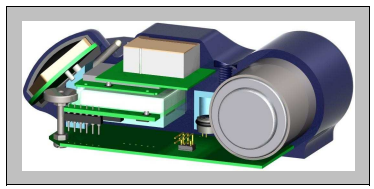
GPS/GSM Relay Data Logger

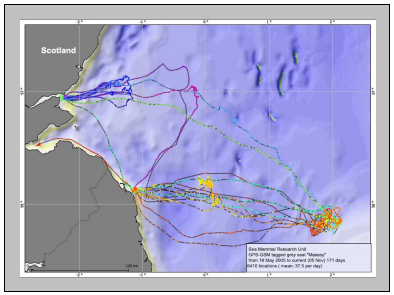
Mobile Phone GSM permits the efficient relay of megabytes of data and is thus ideally suited for studying seals species that, perhaps infrequently, come within coastal GSM coverage.

The use of conventional GPS to track marine mammals is very limited due to their short surfacing periods. This restriction has been overcome by the incorporating the **Fastloc** GPS system (Wildtrack Telemetry Systems, UK) that collects the data required for a GPS location within a fraction of second. The rate at which locations are calculated is at the control of the user, offering the possibility of attempting a location at every surfacing. The tag also uses detailed data from wet/dry, pressure and temperature sensors to form detailed ***individual*** dive (max depth, shape, time at depth, etc) and haulout records along with temperature profiles and more synoptic summary records as in standard SMRU SRDLs. Both location and behavioural data are then stored in memory.



For species that come near shore – within GSM coverage – the entire set of data records stored in memory are relayed via the GSM mobile phone system. Visits ashore may be infrequent – up to a year of data can be stored onboard the tag – and these data may also be downloaded if the tag is retrieved. GSM data-relay offers very high data bandwidth and is over one hundred times more energy efficient than Argos – all for the cost of a couple of hours of phone calls!

The current GSM version works on the European GSM frequencies. We plan to extend this to US GSM frequencies by early 2006. Please tell us about your application and we can discuss how the Series 9000 GPS Fastloc /GSM tag can be configured to your needs.



A prototype tag was deployed on a grey seal in Scotland. It relayed ashore an average of 37 GPS location quality locations per day over 171 days.

Specification

GSM Transmitter:

* GSM version - Siemens TC35i/MC55 GSM modem

Sensors:

* *Location*
  Wildtrack Telemetry Systems' Fastloc system
* *Depth*
  - 2000m range, 0.5m accuracy
* *Temperature*
  - accuracy 0.1ºC
* *Longevity*
  Determined primarily by the sampling strategy used. GSM version trails: an average of 37 GPS locations per day over five months

Tag Dimensions and Weight:

* 450 g (prototype)

We Offer:

* **Software customisation to suit the scientific species of interest**
* **Dedicated MAMVIS 3D visuali sation system available foc**
* **Data decoding carried out at SMRU and available within 24 hr**
* **Advice based on knowledge gathered over the last 20 years on the collection and interpretation of track and behaviour data.**

Species tracked

SMRU's telemetry tags have been used on 30 species of marine animals world-wide including seals (20 species of both phocids and Otarids), walrus, whales, polar bears, turtles and sharks.

What is SMRU?

The NERC Sea Mammal Research Unit is an academic unit made up of over 60 scientists, students and technical staff working across a wide range of biological questions related to marine mammals. A small group of engineers and biologists within SMRU are involved in developing generally useful methodology for the study of larger marine animals which is made available to the wider research communicty as soon as it is sufficiently well devel-

Sea Mammal Research Unit

Primary contact for sales:

Amanda Pomeroy
Head of Administration
Tel: +44 (0)1334 462631
E-mail: ajp7@st-andrews.ac.uk

Sea Mammal Research Unit
University of St Andrews
Gatty Marine Laboratory
St Andrews, Fife
KY16 8LB, Scotland, UK
Tel: +44(0)1334 462630
Fax: +44 (0)1334 462632
Web: www.smru.st-and..ac.uk
* *click on instrumentation*

GPS (Fastloc) GSM Relay Data Logger

Fastloc GPS is a revolutionary GPS system that can provide locations of GPS quality in brief periods at the surface, at a rate determined by the user. Location and detailed behavioural data can be routed ashore using the ubiquitous GSM MOBILE PHONE network

Sea Mammal Research Unit