

# PAMGUARD

Open Source Software For Real-time Acoustic Detection and Localisation of Cetaceans



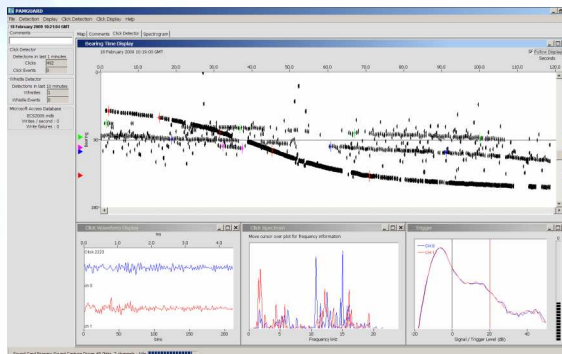
Doug Gillespie

D. Gillespie<sup>1</sup>, C. Blight<sup>1</sup>, M. Caillat<sup>1</sup>, P. White<sup>2</sup>, J. Gordon<sup>1</sup>, P. Trinder<sup>3</sup> R. McHugh<sup>4</sup>

1. Sea Mammal Research Unit, University of St Andrews, Scotland; 2. Institute of Sound and Vibration Research, University Road, Highfield, Southampton UK. 3. School of Mathematical and Computer Sciences Heriot-Watt University Edinburgh 4. Ocean Systems Laboratory, Heriot-Watt University, Edinburgh,

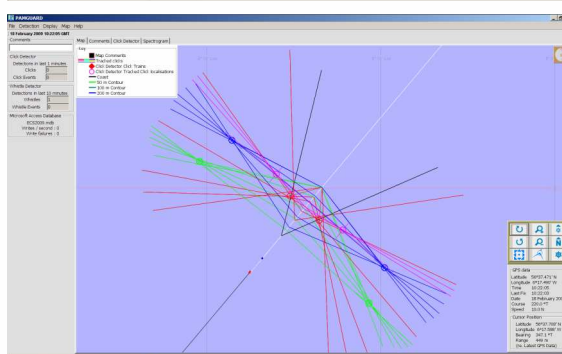
## What is PAMGUARD ?

- Software for detecting and localising marine mammal vocalisations.
- Optimised for real time use in field conditions, for example during mitigation monitoring and acoustic surveys.
- Support for both towed and static arrays.
- On or offline data analysis.
- High levels of automation, and simple intuitive GUI.
- Designed for use by non-specialist operators.
- Flexible modular framework including:
  - Detection and localisation modules.
  - Sound processing modules (acquisition, filters, sound recording, decimators, etc).
  - Support modules for GPS, maps, databases, user data entry, etc.
- Free, open source, cross platform Java software.
- New modules for click and whistle species classification under development.



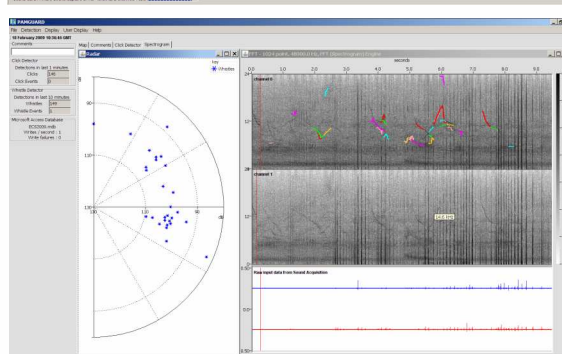
Tracking sperm whales. The click detector mimics the functionality of the IFAW RainbowClick software.

Ishmael detectors are also incorporated.



The PAMGUARD Map shows vessel position and overlays of detector information.

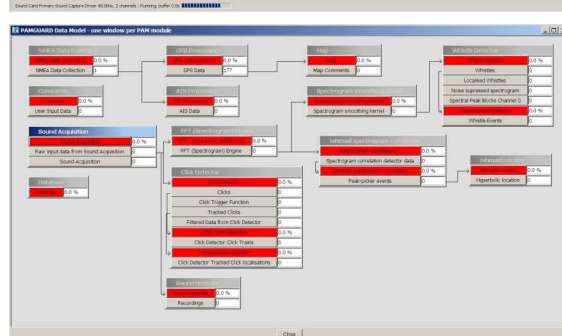
Map showing locations of the four sperm whales tracked above.



Flexible Displays Spectrograms, 'Radar' and Waveform displays with overlays of detected dolphin whistles.

One spectrogram not enough ? Make many !

Build your own system. Interactively link mapping, sound processing, detection and localisation modules together in the PAMGUARD GUI.



[www.pamguard.org](http://www.pamguard.org) Find out more, download the software, and join our mail lists.

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