

**PAMGUARD Maintenance and Support Activities**  
**1<sup>st</sup> October 2016 – 31<sup>st</sup> December 2016**

## Tasks Completed:

### Bug Fixing

**The following bugs were fixed using JIP support funds in this period:**

Many of these were associated with the new improved target motion tracking module released in September 2016. Bug 303 was of particular interest. A user reported having trouble acquiring data from a high end sound card his company had purchased. That user sent the sound card to St Andrews in order that we could trace the bug since it seemed unique to that particular device!

Bug 291. Click Detector Click Classifier: If this is set to "none" the click detector will freeze / crash and will put the psf file into a state where it will never load again. Incredibly, this bug seems to have been in place for several years and no one has come across it until now. It's fixed.

Bug 292. Incorrect labels on Target Motion panel in viewer - 3D algorithm was labelled as 2D. Fixed

Bug 293. Errors displayed in the click detector target motion panel were wrong in the graphics for the Simplex localisers and wrong in the tabulated data for the least square model. Both fixed.

Bug 294. Click classifier was crashing when the "min amplitude" option was used. This is fixed.

Bug 295. If a click has a total length of a single sample, the code attempting to estimate the time delay between channels would crash. This is now fixed. This could only occur if both pre sample and post sample were set to 0 in the click detector, which is generally not a good idea, so this bug may have been there for some time, it's just that no one noticed before. Fixed

Bug 296. Context menu popping up in click detector when marking clicks in Viewer mode. This has been fixed so that in viewer mode, the menu will only appear when you right click on the display.

Bug 297. Airgun display was not correctly showing itself at fixed locations, but always following the vessel track. This is now fixed.

Bug 299. Threading Hydrophone locator. Bug found in hydrophone heading calculation has been fixed.

Bug 300. GUI Tab panel selections were not being restored correctly when PAMGuard displays were split across multiple frames. Fixed.

Bug 301. Multiple errors in the target motion module have been fixed.

Bug 302. Target motion calculations taking too long when many clicks are included in a track. Mostly a problem when using automatic click train id. Fixed by setting an optional maximum number of clicks to use in a track.

Bug 303. Some ASIO sound cards not working with either ASIO system in PAMGuard. For the PAMGuard ASIO system, this was due to a data format used by some sound cards never being

properly implemented. For the “New ASIO system” which is based on JAsioHost, the unpacking of that format contained a bug which returned incorrect numbers, so data were swamped with noise. Both systems are now fixed. By preference, users should use the PAMGuard ASIO system since the JAsioHost based system seems to drop samples when many channels are running at high sample rate.

Bug 305. Date and Time not being correctly extracted from wav files created using SoundTrap recorders. Fixed by correctly finding and unpacking information in the accompanying xml log files that come with SoundTrap files.

## Plugins.

Work was undertaken during this quarter to implement the plugins system described in our proposal for this section of work. This work is now complete and a plug in system is now fully functional. Subject to some further testing in St Andrews, a new release will be built and made publically available in February.

## Releases

V 1.15.046 and 1.15.07 were released in November containing the above bug fixes. These releases have been downloaded 627 and 1576 times respectively.

## Other funding

We reported last quarter that funds were received from NOAA fisheries to make a number of changes to PAMGuard which will be of benefit to many users. In particular we will implement a system for improved data identification through a system of unique data identifiers added to every data record.

- Develop improved ways of linking data into groups, (similar to how clicks in the click detector can be grouped into click trains, but applicable to multiple data types).
- Selection, labelling and grouping of detections on the PAMGuard map
- Expansion of Detector Displays to include multiple detectors, for example so that you could view a bearing time like display for whistles and clicks together.

This work is well under way and we look forward to releasing it later this spring.

## User Support

- 50 genuine support emails were exchanged with users in this quarter in 18 different conversations, these varied from users who wanted to integrate their own acquisition system into PAMGuard, to people who couldn't find the download site. There were also several dozen junk mails, most of which came through the panguard website.

## Downloads:

The web stats show a total of 2719 downloads of PAMGuard software between 1<sup>st</sup> October 2016 and 31<sup>st</sup> December 2016.

### Activity Reports

Download Name	Downloads
Activity Report April to June 2016	23
Activity Report January to March 2016	34
Activity Report June 2012 to January 2013	15
Activity Report October to December 2015	43
Activity Report July to September 2015	41
Activity Report April to June 2015	19
Activity Report January to March 2015	12
Activity Report October to December 2014	6
Activity Report February 2012	15
Activity Report March - April 2012	12
Activity Report May - June 2012	17
Activity Report June to December 2012	69

### General Configuration Files

Download Name	Downloads
DIFAR Configuration	52
Sperm Whale Click and Dolphin Whistle Detection	59
Sperm Whale Click Detection	55
Porpoise Click Detection	69

### Likelihood Detector Configuration Files

Download Name	Downloads
Sperm Whale	37
Humpback	49
Bowhead Whales	39
Beaked Whale	48
Readme File	39

### PAMGuard Software

Download Name	Total
1.15.07 32 and 64 Bit	1567
1.15.07 32 and 64 Bit	627
1.15.06 32 and 64 Bit	46
1.15.05 32 and 64 Bit	361
1.15.04 32 and 64 Bit	9
1.15.03 Core 32 Bit	697
1.15.03 Beta 64 Bit	4

1.15.02 Core 32 Bit	0
1.15.02 Beta 64 Bit	1
1.15.00 Beta 64 Bit	33
1.50.00 Core 32 Bit	14
1.14.00 Beta	4
1.13.05 Beta	14
1.13.04 Beta	0
1.13.03 Beta	1
1.13.02 Beta	14
1.13.01 Beta	0
1.13.00 Beta	32
1.12.06 Beta	0
1.12.05 Beta	156
1.06 Core	10
Beta 1.10.00	1

#### Publications

Download Name	Downloads
Consultancy: Modification to Data Identification	21
Free PAM software to improve marine mammal detection	24
A quick guide to PAMGuard	36
Free PAM software to improve marine mammal detection	31
PAMGUARD: Open Source Software For Real-time Acoustic Detection and Localisation of Cetaceans	55
Pamguard: Semiautomated, open source software for real-time acoustic detection and localisation of cetaceans	78

#### ROCCA Configuration Files

Download Name	Downloads
ETP Species Classifier	36

Details of registration information from the download pages are as follows:

Industry	Downloads
Oil & Gas	69
Civil Engineering	9
Offshore Wind	12
Tidal and Wave Energy	0
Academic Research	160
Other	90
Rather Not Say	20

Operation	Downloads
Real time mitigation	109
Abundance Estimation	58
Behavioural Research	79
Other	91
Rather Not Say	21

Geographic	Downloads
US	61
Europe	164
Africa	11
Australasia	18
Asia	18
Other	69
Rather Not Say	20

Location	Downloads
Global	74
US	49
Europe	110
Africa	8
Australasia	18
Asia	20
Other	65
Rather Not Say	17