SMRU Consulting
Europe

PAMGUARD Maintenance and Support Activities
1st January 2016 – 31st March 2016

Tasks Completed:

Bug Fixing

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

Bug 256. Map not updating. Graphics updating was only happening when new GPS data arrived and therefore didn't update when using static hydrophones. Fixed so that graphics update correctly.

Bug 260. Sound recorder missing a few samples between files. The sound recorder wav file output system has been rewritten in a much simpler form and now won't lose samples between consecutive files when new files are started automatically. It will also start new files on integer second or minute boundaries when file durations are set to a maximum fixed value.

Bug 262. Access to SQLite database conversion. This would fail when tables were present which were not created by PAMGuard. Fixes have been put in place for spaces in the table name or for not having an "Id" column. Fixes have not been implemented for spaces in a column name or use of a reserved word as a column name, however if either of these problems do exist it will no longer crash but issue a clear warning and carry onto the next table.

Bug 266. Clip generator crashed in viewer when the path for output files was not defined even if files were not being created. Fixed.

Bug 267. Click detector not calculating correct bearings when multiple hydrophone pairs with different separations were used. Fixed.

Bug 268. ROCCA module was not saving WAV file clips. Fixed.

Bug 269. Whistle and Moan detector paired bearing localiser was not working. This localizer searches for matching whistles on pairs of hydrophones. Bearings from each pair are crossed to create a localization. Fixed.

Bug 270. Improved file names display in Pamguard Viewer offline data map and datagram creation.

Other Minor Changes

The following changes were also made to the ROCCA Classification module using Non JIP funds. This work was conducted by Michael Oswald at Biowaves Inc in the US and was incorporated into release 1.15.00

1. Remove white spaces and parenthesis characters from RoccaContourStats header row

2. Report 'N/A' for min time between detections, if there is only 1 detection
3. Add ability to load standard notes and use in RoccaParameters dialog window
4. Fixed Rocca multi-threading problem which caused Click Detector to send same click multiple times

Code Maintenance

64 bit support

Native C libraries linking the PAMGuard Java code to external hardware (mostly sound input devices) were built for 64 bit Windows in this period enabling the first 64 bit release of PAMGuard in February 2016. The 64 bit release enables the Java virtual machine (JVM) to allocate more memory than the 32 bit version which was hard limited at 1 GByte. This is particularly important when sampling multiple channels at high frequencies but can also speed up operation with more basic configurations since the JVM can make less frequency calls to the Java garbage collector.

Release 1.15.00 February 2016

First release of 64 bit PAMGuard. 32 bit still available to support the use of MS Access Databases.

Release 1.15.02 March 2016

Updated release with bug fixes (32 and 64 bit versions)

Release 1.15.02 April 2016

Updated release with bug fixes (32 and 64 bit versions)

Website Administration and Maintenance

- Details of those companies that have signed up to the voluntary contribution Framework Agreement have been recognised on the website on a contributors page: http://www.pamguard.org/65_Contributors.html

Support to Developers

In response to Request for Proposals Number: JIP III-15-04 "Improvements for Towed Passive Acoustic Monitoring (PAM) Technology" time was spent helping and a number of potential developers or proposals under this call.

User Support

- 32 support emails were received in this quarter, from 11 different individuals.

Real time Target Motion Analysis

A programmer has been contracted to complete this work. The contract runs between 1st March and 31st May 2016. Details on the development of this module and the invoice for this work will be included in the next report (Q7).

Other Work

Douglas Gillespie attended a one week workshop at The SCRIPPS Research Institute to discuss improved standards for PAM monitoring. The meeting was organised jointly by Dr Aaron Thode of SCRIPPS and The UK's Joint Nature Conservation Committee which acts as an adviser to the UK government and develops guidelines tor mitigation monitoring for offshore activities. A number of

possible future PAMGuard activities came out of the meeting including improved ways of measuring noise so that rapid assessments of PAM operational efficiency can be derived, a calibration module to assist less expert users with system calibration and systems for improved reporting to the regulators.

Dr Marie Roch also presented the Tethys Database system (http://tethys.sdsu.edu/) developed for data management within the SCRIPPS Whale Acoustic Lab. In the coming months we will analyse whether or not this database system could be incorporated into PAMGuard, the additional functionality it would bring, how useful that would be and the cost of integration.

Gillespies flights and T&S were funded by JNCC.

Voluntary Contribution System

Rachael and Doug have submitted a poster abstract for the conference "Effects of noise on aquatic life" in Dublin, July 2016. This poster advertises the PAMGuard software and the maintenance and voluntary contribution system. We are awaiting to hear if this has been accepted.

There are now four companies that have signed up to the voluntary contribution Framework Agreement, a further three companies are reviewing the agreement but have yet to sign.

Downloads:

The web stats show a total of 3366 downloads of PAMGuard software between 1st January 2016 and 31st March 2016.

Activity Reports

Download Name	Downloads
Maintenance Report February 2012	92
Maintenance Report March - April 2012	35
Maintenance Report May - June 2012	44
Activity Report June to December 2012	240

General Configuration Files

Download Name	Downloads
DIFAR Configuration	51
Sperm Whale Click and Dolphin Whistle Detection	65
Sperm Whale Click Detection	67
Porpoise Click Detection	76

Likelihood Detector Configuration Files

Download Name	Downloads
Sperm Whale	49
Humpback	59
Bowhead Whales	42
Beaked Whale	50
Readme File	71

PAMGuard Software

Download Name	Total
1.15.02 Core 32 Bit	44
1.15.02 Beta 64 Bit	74
1.15.00 Beta 64 Bit	2,438
1.50.00 Core 32 Bit	190
1.14.00 Beta	364
1.13.05 Beta	22
1.13.04 Beta	3
1.13.03 Beta	3
1.13.02 Beta	3
1.13.01 Beta	3
1.13.00 Beta	28
1.12.06 Beta	0
1.12.05 Beta	181
1.06 Core	10
Beta 1.10.00	3
	3366

Publications

Download Name	Downloads
Free PAM software to improve marine mammal detection	85
A quick guide to PAMGuard	125
Free PAM software to improve marine mammal detection	75
PAMGUARD: Open Source Software For Real-time Acoustic Detection and Localisation of Cetaceans	213
Pamguard: Semiautomated, open source software for real-time acoustic detection and localisation of cetaceans	212

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	68
Civil Engineering	13
Offshore Wind	11
Tidal and Wave Energy	3
Academic Research	192
Other	54

Rather Not Say	18

Operation	Downloads
Real time mitigation	112
Abundance Estimation	58
Behavioural Research	67
Other	95
Rather Not Say	28

Geographic	Downloads
US	56
Europe	163
Africa	26
Australasia	15
Asia	25
Other	55
Rather Not Say	20

Location	Downloads
Global	76
US	47
Europe	115
Africa	23
Australasia	7
Asia	23
Other	49
Rather Not Say	20