SMRU Consulting
Europe

PAMGUARD Maintenance and Support Activities
Q3: 1ˢᵗ April 2015 – 30ᵗʰ June 2015

Tasks Completed:

Bug Fixing

<mark>The following bugs in PAMGuard were addressed in Q3 using JIP support funds:</mark>

The following bugs were fixed using JIP support funds in this period and included in release Version 1.13.04 Beta, June 2015.

1.   Bug 220 Sample counts were wrapping and causing PAMGuard to report incorrect times after 2^{31} samples.

2.   Bug 223. Click detector null clicks (This primarily only affected offline file analysis).

3.   Bug 225. Display of remaining recording time. Was only displaying hours, minutes and seconds. Now correctly displays the number of remaining days.

4.   Bug 226. Spectrogram Mark Observer list doesn't refresh when modules added or removed.

5.   Bug 227. Logger forms not working with MySQL. Several minor issues with the MySQL interface generally and in particular with the logger forms module have been resolved.

6.   Bug 228. Occasional crashing when training the whistle classifier.

8.   Bug 230. Click Bearing Display. With a two hydrophone system, clicks calculated to have a bearing of exactly 180 degrees would be displayed at 0 degrees on the bearing time display.

The following bugs were fixed using non JIP funds.

7.   Bug 229. Fixed bug in Viewer Mode which caused Rocca to crash when analyzing click event containing unclassified clicks (Fix by Michael Oswald)

<mark>The following bugs were reported in Q3, but have not yet been addressed:</mark>
1.   Bug 224. The popup dialog that allows users to easily change spectrogram display parameters does not always disappear again.

Code Maintenance
Release Version 1.13.04 Beta was made available on 4 June 2015 and had 159 downloads by the end of June 2015.

Website Administration and Maintenance
Updates to the supporters and contributors pages and additional information on the PAMGuard support mechanism.

Support to Developers
Support was provided to Michael Oswald who continues to upgrade the PAMGuard ROCCA classifier using funds from other non JIP sources, and also to Brian Miller of the Australian Antarctic Division who has been active in improving the DIFAR localisation module. A small amount of assistance has also been given to developers at Ocean Sonics who are integrating their icListen digital hydrophone into PAMGuard.

User Support
Sixty nine support emails were received in Q3, either by email to support@pamguard.org, via the contact form on the web site or by general email to the pamguard-user list. A small number of these were repeats, but all were answered within a day or two of receipt.

Self-sustaining Scoping Document
PAMGuard Maintenance Forum Meeting - Thursday 7th May 2015, 14:00
Attendees:
- Doug Gillespie (SMRU)
- Claire Eatock (SMRU Consulting)
- Rachael Plunkett (SMRU Consulting)
- David Hedgeland (IOGP - International Association of Oil & Gas Producers)
- Roy Wyatt (Seiche Ltd)
- Nick Robinson (Gardline)
- Mark Higginbottom (MSeis)
- James Scott (MSeis)
- David O'Hara (RPS)
- Simon Cole (Seiche Business Manager)

Apologies:
- Sarah Tsoflias (Chevron)
- Jeff Martin & Mary Jo Barkaszi (CSA Ocean Sciences)

Introduction:
As discussed at the last meeting, the maintenance of PAMGuard requires $100k per year. The current voluntary contribution system of $20 a day was considered too expensive in the current market and all agreed that $5 a day was more sensible. As such, people were asked to provide estimates of their annual PAMGuard usage in order to calculate how close to the target $100k we get under different voluntary contribution costs.

PAMGuard usage:

Thanks to Seiche and MSeis for contributing PAMGuard usage estimates. Taking a combined estimate of PAMGuard usage days from 3 companies: Seiche, MSeis and SMRU Consulting, a $5 a day voluntary contribution system would only provide approx. $30k.

We have received mixed feedback when approaching companies about the voluntary contribution stem and providing PAMGuard usage days:

1) Some companies have sponsored the development of particular modules in PAMGuard which they see as their investment into PAMGuard and would be unwilling to pay a voluntary contribution on top of this due to the Opensource nature of PG

2) Some companies have declined to provide estimated PAMGuard usage days due to perceived commercial conflicts with SMRU Consulting

3) Some companies are unwilling to participate in a voluntary contribution system at all.

4) There is a concern expressed by all that capturing the required information (PG usage) would be very difficult to both administer and then charge for due to the myriad of ways in which the programme is currently utilised e.g. some users download it once and then clone if onto all computers, some users download a version for use each time.

Discussions:
Money breakdown:
Explanation of the $100k costs: ½ a skilled programmer's time plus Doug Gillespie's time plus University overheads comes to $100k. Any less time and they would not be able to keep up with the ongoing maintenance. This price has not increased in the last 4 years due to concerted negotiation efforts from all parties and an acknowledgement of the market situation. The money is used for:

- Code administration
- Website administration
- User support
- Bug fixing
- Java 8 compatibility issue solving
- Win 64 compatibility
- Real time target motion analysis improvements to module
- Restructure PAMGuard code to make it easier for distribution of the code (distribute by module)

The last contract for 3 years was to maintain PAMGuard and bug fix – funded by JIP. The intent was always to continue this support independent of JIP. The current contract is for 2 years, funded by JIP under Phase 3. It is funded by: 13 O&G companies and the IAGC as representatives of the seismic industry. Contributions are based on the size of the company: E&P, renewables, research O&G – dominated by E&P.

Models for sustainable funding:
Model 1: daily voluntary contribution charge
Model 2: annual estimates of PAMGuard usage (MSeis and Seiche prefer this system)
Model 3: consortium within the trade association in order to minimise administration and help ensure fairness of contribution. Transparent invoicing could be used to recoop the voluntary contribution payments?

Need to draw a line between development and maintenance. Voluntary contribution system should cover core maintenance only, not development. There could be a consortium for development that votes on the highest priority developments that need to occur with funding money.

Discussion on competition and conflict:
Comment that there are commercial conflicts in paying a voluntary contribution system directly to SMRU Consulting. DG response comments: DG is an employee of St Andrews University and SMRU Consulting acts as a facilitator for this project thus he is subcontracted as he would be for any other contract. The wider team expressed a wish to access more of DG time/expertise for particular pieces of work. DG said that he is trying to employ a member of staff to help with the PAMGuard maintenance and development and thus free up some of his availability. If DG isn't available to help then the system is open source so anyone can modify, adapt and develop it. SMRU Consulting stated that we are actively supporting Doug to get a second employee to work on the maintenance tasks thereby freeing up some of DG time for development work. As an independent employee of St Andrew's University not SMRU Consulting then DG controls this aspect.

We have PAMGuard already so why do we need to pay a voluntary contribution?
DG Comments: Core maintenance tasks need to be performed. ie: when Java 8 came out, PAMGuard stopped working, A new release forces it to use Java 7, but there are security issues with Java 7 and many companies and Universities are not happy with using Java 7 instead of 8. The software needs to be made compatible with Java 8. Without the core maintenance tasks, the software would quickly become outdated and people would need to keep old outdated software in order to run it. Estimated 6-12 months before serious issues would occur to PG if a maintenance programme was not continued thus putting at risk any further use of the programme.

Payment:
Seiche commented that they have been trying to make a voluntary contribution payment but have had no response. SMRU Consulting will chase this and sort out any payment issues. The payments are made through the University and so SMRU Consulting has no part in this. We were unaware that payments were trying to be made. The contact for payments through the University is: Dr David Stevenson ds50@st-andrews.ac.uk. A report on progress on this issue will be given to the group at the next meeting.

Voluntary contribution /Maintenance Education of the wider marketplace:

Companies need to understand why they are paying the money: education is vital. There is a need to educate and encourage companies – DH and BG need to discuss how this could be managed and progressed.

Need to be able to educate companies/contractors to explain why the voluntary contribution system is needed. There is information on the website but it is a bit wordy – could do with cleaning up and streamlining. DG to review and amend with RP. SMRU Consulting to make education slides/fliers –branded Uni of St Andrews to ensure independence and rigor.

Who uses PAMGuard?
Concern that there are many small companies and providers that wouldn't be included in the voluntary contribution system which makes it unfair. How do we catch all? How much information do we have on providers and who uses PAMGuard? DG input: very little information on who actually downloads PAMGuard – most people don't fill in info when downloading and random google email addresses are often used for support emails so don't know where they come from. Review of figures for next meeting to be undertaken.

Renewables vs O&G:
Lots of renewables companies have contributed to PAMGuard development however the renewables industry is fragmented. Suggestion made: – would be good to show the voluntary contribution system working in the E&P sector then get Renewables to join. DH Commented that this meeting was O&G related and should focus on what they can do rather than focus on something this group has no control over.

Who pays the voluntary contribution?
The equipment/user interface OWNER.

Suggestions for other people to invite to the forum:
GeoGuide http://geoguide.co.uk/
Hydenlyne http://www.hydenlyne.com/
CSA Ocean Sciences https://www.csaocean.com/ (invited but they have not yet participated)
Vanishing Point (invited but they have not yet participated)

Actions:
David Hedgeland: speak to the IAGC re: funding and education/training ideas
Nick Robinson: investigate the possibility of providing PAMGuard usage days COMPLETED
SMRU Consulting: sort payment issues (link with Seiche to find out issues) COMPLETED
SMRU Consulting: educational slides, website tidy up and stream line voluntary contribution text, review of download information FINALISING
ALL: look at PAMGuard voluntary contribution voluntary contribution information on the website and feedback http://www.pamguard.org/38_VoluntaryContributions.html
ALL: send Rachael an email if there are companies you feel should be added to the forum
SMRU Consulting: arrange next forum meeting FINALISING

Post Meeting Notes:

Gardline have sent an estimate of their PAMGuard usage. Using the combined estimated PAMGuard usage days from MSeis, Seiche, SMRU Consulting and Gardline, a charge of $15 a day brings the total annually to $95,085 to meet the target. This cost exceeds what people are happy to pay. Using a cost of $5 per day (which people are happier with) this brings the total to only $31,695 which is approximately only 1/3 of the income needed to cover the maintenance annually.

SMRU Consulting and David Hedgeland discussed the level of transparency we are both happy to provide for the tasks and costings – these explanations of tasks are being finalised soon and will be circulated to the forum group and made available on the website.

SMRU Consulting have prepared a draft education brochure to explain to seismic companies why the voluntary contribution charge will appear on invoices – this is being finalised and will be circulated to the forum group before the next forum.

The next forum is expected in mid-August due to holidays/fieldwork and a lack of availability.

Downloads:

The web stats show a total of 794 downloads of PAMGuard software between 1st April 2015 and 30th June 2015.

Activity Reports

Download Name	Downloads
Maintenance Report February 2012	29
Maintenance Report March - April 2012	14
Maintenance Report May - June 2012	17
Activity Report June to December 2012	54

General Configuration Files

Download Name	Downloads
DIFAR Configuration	3
Sperm Whale Click and Dolphin Whistle Detection	43
Sperm Whale Click Detection	46
Porpoise Click Detection	50

Likelihood Detector Configuration Files

Download Name	Downloads
Sperm Whale	32
Humpback	25
Bowhead Whales	23
Beaked Whale	38
Readme File	31

PAMGuard Software

Download Name	Total	Windows	Linux	Mac
Beta 1.13.04	139	132	7	
Beta 1.13.03	311	287	21	
Beta 1.13.02	5	4	1	
Beta 1.13.01	2	2	0	
Beta 1.13.00	27	23	1	
Beta 1.12.06	2	2	0	
Beta 1.12.05	294	294	0	
Core 1.6	7			
Beta 1.10.00	7	3	0	4
	794			

Publications

Download Name	Downloads
Free PAM software to improve marine mammal detection	47

A quick guide to PAMGuard	138
Free PAM software to improve marine mammal detection	60
PAMGUARD: Open Source Software For Real-time Acoustic Detection and Localisation of Cetaceans	60
Pamguard: Semiautomated, open source software for real-time acoustic detection and localisation of cetaceans	102

ROCCA Configuration Files

Download Name	Downloads
ETP Species Classifier	37

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

Industry	Downloads
Oil & Gas	76
Civil Engineering	8
Offshore Wind	9
Tidal and Wave Energy	5
Academic Research	151
Other	76
Rather Not Say	18

Operation	Downloads
Real time mitigation	100
Abundance Estimation	40
Behavioural Research	81
Other	101
Rather Not Say	21

Geographic	Downloads
US	69
Europe	164
Africa	11
Australasia	25
Asia	17
Other	46
Rather Not Say	12

Location	Downloads
Global	77
US	50
Europe	114
Africa	11

Australasia	23
Asia	17
Other	39
Rather Not Say	12