SMRU Consulting
Europe

PAMGUARD Maintenance and Support Activities
Q5: 1st October 2015 – 31st December 2015

Tasks Completed:

Bug Fixing

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

Bug #253. Database import fails when Access database contains queries. The Database Import module has been modified to ignore database queries.

Bug #254. Lookup tables drop down lists stopped working for imported databases. The data import system was adding trailing blanks to database fields. The Lookup system has been modified to remove these.

The following bugs were fixed using non JIP funds:

Bug #255. PAMGuard watchdog system (PAMDog) not working. Problem traced to inaccurate reporting of sample acquired numbers in the Acquisition module. Fixed during the installation of PAMGuard on a wet renewables installation.

Bug #256. Map not updating detection overlay data. Problem only occurred when there was no GPS movement on the map. Changed code to updates occur when new data arrive and old data are removed using a timer function. Fixed during the installation of PAMGuard on a wet renewables installation.

No bugs were reported in Q4, that have not yet been addressed

The above bug fixes will be released in Q1 2016.

Code Maintenance
Started to investigate options for building 64 bit libraries for National Instruments Devices.

Website Administration and Maintenance
Dealt with one request to link to a MMO provider and declined request to link to a truck tracking company ! Also deleted multiple messages offering discount watches sent to the pamguard-user mail list

Support to Developers
In this quarter we answered questions concerning interfacing PAMGuard to Labview and Digital hydrophones.

User Support
Support requests were received concerning the Seismic Veto, use on Linux and Mac platforms, Java 7/8 issues, noise measurement, analysis of wav file data and memory errors.

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Self-sustaining Scoping Document
A forum was held on Wednesday 4th November 2015, the minutes of which are outlined below:

Attendees
- Doug Gillespie (SMRU)
- Carol Sparling & Rachael Plunkett (SMRU Consulting)
- David Hedgeland (IOGP - International Association of Oil & Gas Producers)
- Simon Cole & Phil Johnston (Seiche Ltd)
- Mark Higginbottom & James Scott (MSeis)
- Sarah Tsoflias (Chevron)
- Jeff Martin (CSA Ocean Sciences)

Apologies
- Laura Morse (Shell)
- Stephanie Milne, Ross Compton & David O'Hara (RPS)
- Nick Robinson (Gardline)

Recap
- PAMGuard maintenance funding from IOGP is coming to an end
- Historically and currently operating on ~ $100,000 a year for maintenance (with additional critical development activities)
  - Old voluntary contribution system hasn't worked ($20 per PAMG day – based on 5000 PAMGuard days/yr estimate)
- Without basic maintenance support – PAMGuard would gradually become outdated
  - Estimated 6-12 months from end of current JIP funding before serious issues begin to occur
    - Example: Recent update to Java 8 wasn't compatible with the PAMGuard access database interface. Caused lots of problems for PAMGuard modules and for users
    - IOGP PAMGuard maintenance funding was used to address this problem

Discussion
- Statement: Old voluntary contribution system hasn't work
- Question: Have any contributions been made with the old system?
- Answer: Yes. Seiche has made 2 payments, one in 2013 and one in 2015. Both examples included high level of engagement with 'client' representative. No other contributions have been made by any other company.

Forum previously agreed
- $5 per PAMGuard day is acceptable (given current level of activity and 2016/17 outlook)
- Equipment/user interface owner anticipated to make contributions directly to the University of St Andrews. Owner decision whether or not to recoup through transparent invoices to their Clients.

- Voluntary contributions for maintenance activities only not development
  - Development discussion parked for now.
- Need a better system to make contributions
- Need transparency on who is making contributions – recognition of individual equipment owner companies supporting maintenance
- Need transparency on how & when the money is used
- Need an information pack, explaining what the voluntary contribution is and why it's needed.

Need a better system to make contributions
- Previously the forum had highlighted that the contribution system is not easily completed.
- Too much paperwork and back and forth of emails.
- Needed to be made simpler

New system in place
- Framework agreement between equipment owner and St Andrews University will be made available on the website
- Companies download, complete, sign and return the Framework Agreement contract with University
  - No actual money value on the framework agreement
  - University must have a signed hard copy - required by Scottish law
- Quarterly email from University to supporting equipment owner companies requesting PAMGuard usage/contribution details
- Company replies with quarterly usage/contribution in arrears
- University creates and sends invoice
- Contributions made to St Andrews University
- Website – page recognising all contributors to PAMGuard maintenance funding.

Discussion
- Website should list contributing company names NOT £$ amounts
- Concern that a company can pay anything and appear on the list. No way to differentiate the main contributors. A company contributing $5 will appear the same way as a company that contributes $1000.
- DH suggested: Could use a Bronze, Silver, Gold list for contributors?
  - MH – acceptable
  - SC – against this (confidential and commercial issues)
- Best to have an alphabetical list to contributors

Contribution Details
- Level of detail in the provision of information
- Require some basic auditing, but also respect for confidentiality.

Level of Info	Why needed	Example

PAMGuard Days	Calculate contribution based on $5 per PG day	1500 PG days = $5,000
PAMGuard Days per Client/Entity	Auditing purposes	1000 PG days Client BP 500 PG days Client Shell

Discussion

WHAT LEVEL OF INFORMATION IS ACCEPTABLE ON INVOICES FOR AUDITING?

* DG: worry if a client pays the money to the provider but this is not then passed to the Uni. Need some form of audit trail.
* MH: Equipment owner may not pass costs to client. No need for audit trail between client and equipment owner.
* DH/ST: If contributions are passed on to clients. Clients have option to go back to the equipment owner to ensure the PAMGuard contribution has been made rather than go directly to the University
* Decision: optional to insert the Client if equipment owner wants to with client permission.

Need transparency on what maintenance activities and associated funding levels are needed

* Previously the Forum had requested greater transparency regarding the calculation of required annual funding level and breakdown of maintenance activities.
* SMRUC provided a breakdown of costs for this current contract with IOGP:
* Completed Java 8 issues (new release) and currently working on Win 64 maintenance - remove from future annual costs = **$77,000 per year**
* Other similar maintenance tasks may come up in the future which will increase the annual maintenance costs.

Discussion

* Previously the forum had specified that the voluntary contributions should cover core maintenance only. Whilst some level of advice would be available for those interested in developing 'plug-in' functionality to PAMGuard. Specific module of function development itself was not included
* SMRUC confirmed that the $77,000 covers only maintenance activities shown in the table above.
* Developments to PAMGuard could be funded through other potential routes, which include:
  * individual companies can develop modules for themselves and seek advice regarding PAMGuard 'plug-in' compatibility,
  * Doug Gillespie can be contracted through the University to develop a module.
* Could there be a developers fund and forum?
* Could development be managed by a consortium for the industry – money pot for development and prioritisation of development needs?

Voluntary Contribution Amount

* Minimum requirement for maintenance = **$77,000 per year**

- Asked for estimated PAMGuard usage to calculate the expected contribution amounts.
- Thanks to Seiche, Mseis, Gardline and SMRUC for contributing

Estimated PG Usage	$5 per PAMGuard day	$10 per PAMGuard day
Mseis, Seiche, Gardline & SMRU C **Total ~6,300 days per year**	~$31k **~41% of target**	~$63k **~82% of target**

- $77,000 at $5 per PAMGuard day = <u>**15,400 PAMGuard days**</u> (much higher than the estimated ~6,300 days)
- $77,000 for 6,300 days = <u>**$12 per PAMGuard day**</u> (much higher than the agreed $5 per day)

Discussion

CAN THE CONTRIBUTION BE SET HIGHER THAN $5 PER PG DAY?

- Response: No scope to increase the contribution amount
- Concern that not all PAM providing companies are not involved in the forum.
  - Response: they have been contacted and invited. SMRUC continues to reach out to them. Cannot be forced to contribute to forum or voluntary contribution system.
  - Unrealistic to assume all companies will engage in Forum discussion
- Limited engagement in Forum discussions by E&P and Geophysical service companies.
  - IOGP and IAGC continue to encourage member 'end client' organisations to engage in the Forum discussion.
- List of contributors on the website will highlight those that do not contribute

Actions

All: consider the use of bronze, silver and gold contributor status on website

ASAP	SMRUC send copy of framework agreement to forum SMRUC to draft and circulate an information pack
ASAP	Comments on framework agreement
December	SMRUC put framework agreement system into place (if forum agreed with framework agreement) first email to companies requesting contributions for 2015

Post Forum

SMRU Consulting finalised a pdf and ppt to be used as an information pack to explain the voluntary contribution system. We are awaiting feedback from David Hedgeland on these.

The Framework Agreement was sent to all members of the forum. Only two responses have come back:

1) Gardline: we will not be signing the funding letter. We do have a contracts department and I've forwarded it but I'm afraid they will take one look and reject it. All our contracts need to be mutual and based on 'knock-for-knock,' they need to

have assurities that the product we are buying / paying for has a certain warranty and, should be governed Under the Laws of England.   Which this isn't.

2) MSeis: the framework is fine. It seems strange that you would be signing a legally binding (under Scottish Law) agreement to pay, although not committing to a value. We are OK with it though; in effect a Gentleman's agreement of 5USD per day while in production mode. Have provided details to complete the Framework Agreement.

3) No response from Seiche

A new page on the PAMGuard website has been drafted for the voluntary contribution system. This needs to checked and finalised by Doug before it is posted live.

Downloads:

The web stats show a total of 879 downloads of PAMGuard software between 1st October 2015 and 31st December 2015.

Activity Reports

Download Name	Downloads
Maintenance Report February 2012	246
Maintenance Report March - April 2012	78
Maintenance Report May - June 2012	51
Activity Report June to December 2012	277

General Configuration Files

Download Name	Downloads
DIFAR Configuration	74
Sperm Whale Click and Dolphin Whistle Detection	94
Sperm Whale Click Detection	76
Porpoise Click Detection	87

Likelihood Detector Configuration Files

Download Name	Downloads
Sperm Whale	48
Humpback	42
Bowhead Whales	41
Beaked Whale	47
Readme File	131

PAMGuard Software

Download Name	Total
Beta 1.14.00	769
Beta 1.13.05	22
Beta 1.13.04	0
Beta 1.13.03	4
Beta 1.13.02	0
Beta 1.13.01	0
Beta 1.13.00	49
Beta 1.12.06	3
Beta 1.12.05	0
Core 1.6	22
Beta 1.10.00	10
	879

Publications

Download Name	Downloads
Free PAM software to improve marine mammal detection	117
A quick guide to PAMGuard	206
Free PAM software to improve marine mammal detection	94
PAMGUARD: Open Source Software For Real-time Acoustic Detection and Localisation of Cetaceans	404
Pamguard: Semiautomated, open source software for real-time acoustic detection and localisation of cetaceans	145

ROCCA Configuration Files

Download Name	Downloads
ETP Species Classifier	51

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

Industry	Downloads
Oil & Gas	123
Civil Engineering	6
Offshore Wind	10
Tidal and Wave Energy	1
Academic Research	183
Other	88
Rather Not Say	21

Operation	Downloads
Real time mitigation	143
Abundance Estimation	61
Behavioural Research	71
Other	117
Rather Not Say	36

Geographic	Downloads
US	75
Europe	192
Africa	10
Australasia	38
Asia	12
Other	84
Rather Not Say	22

Location	Downloads
Global	103
US	61
Europe	125
Africa	10
Australasia	31
Asia	12
Other	66
Rather Not Say	25