



## AusSeabed Newsletter No. 4

June 2019

This newsletter is dedicated to Ian Halls who was a passionate hydrographer and supporter of AusSeabed. Vale Ian.



### Upcoming AusSeabed events

#### ***Open invitation: AusSeabed – NOAA OCS – UNH CCOM/JHC workshop at GA***

We are excited to welcome new international collaborators to AusSeabed: the University of New Hampshire Center for Coastal and Ocean Mapping (CCOM), and the National Oceanic and Atmospheric Administration (NOAA) Office of Coast Survey. Giuseppe Masetti (CCOM) and Tyanne Faulkes (NOAA)—who have done extensive work developing open-source bathymetry data management tools as part of the [HydrOffice](#) research framework—will be hosted at Geoscience Australia from 17 June to 8 July.

Tyanne and Giuseppe will run a workshop at Geoscience Australia from **Tuesday 18<sup>th</sup> June to Thursday 20<sup>th</sup> June**. They will provide training for the Pydro and HydrOffice frameworks, give live demonstrations, and get into the nuts and bolts of the software architecture. Based on learnings from the workshop and the expertise of all participants, the last session of the workshop will focus on planning the best way forward in developing the QA/QC component of the AusSeabed Data Hub.

The workshop is open to any interested parties and will be particularly aimed at expert seabed mappers and software developers. A (detailed) draft agenda is available [here](#). However, so Tyanne and Giuseppe can tailor the workshop to the specific interests and background of the AusSeabed community, can you please fill out this [quick survey](#) **prior to 10 June** and identify within if you will be participating in the workshop?

#### ***Open invitation: AMSA conference and AusSeabed Annual Workshop***

The Australian Marine Science Association 2019 conference will be held in Fremantle on the **7-11<sup>th</sup> July**. The conference features two very relevant sessions: a full-day symposium on seafloor mapping (**Thursday 11<sup>th</sup> July**), and the AusSeabed workshop and AGM (**Friday 12<sup>th</sup> July** after the conference). This will be a key meeting for AusSeabed as we will be finalising the Strategic Plan and the program theme roadmaps, and presenting on new tools and data (a draft agenda will be circulated by 15<sup>th</sup> June). If you would like learn about, contribute to, and provide input into

the future direction of AusSeabed, then you can register to attend both the [AMSA conference](#) and the [AusSeabed workshop](#). We look forward to seeing many of you in Fremantle!

The bi-annual meeting of the AusSeabed Steering Committee will also take place on **Wednesday 10<sup>th</sup> July**.

## Updates

### *AUSHYDROID Working Group*

One of the initiatives supported by the AusSeabed community is the Intergovernmental Committee on Spatial Mapping (ICSM) Working Group (WG) aiming to facilitate the development of the AUSHYDROID.

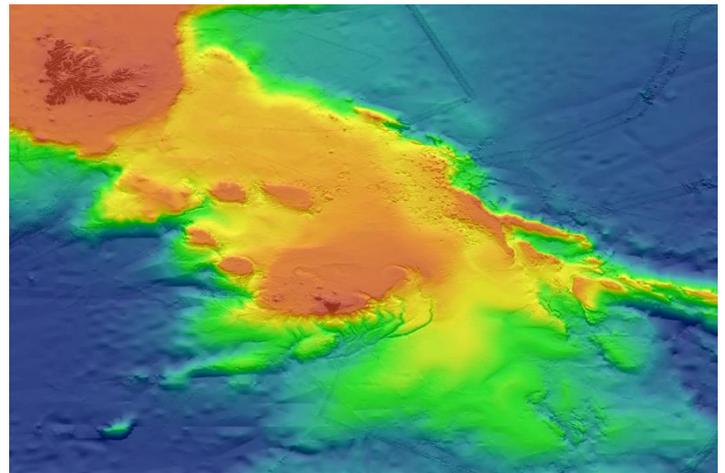
AUSHYDROID is the vertical separation model required to support surveying on the ellipsoid and the reduction of this data to a tidal datum (i.e. LAT (Chart Datum)). This model is important for the seamless linking of bathymetric and topographic data through a common reference frame, and will help to support the blue economy into the future. The development of small scale port hydroids have already seen economic benefit with the Port Hedland Hydroid resulting in the port's ability to support extra vessels each tide cycle and thus increase productivity. The development of AUSHYDROID will also be important for the scientific community, as it will support research into projects of national importance such as climate change, via the ability to monitor changes in the coastline and inter-tidal zones on a national scale.

In 2018, ICSM instigated the AUSHYDROID WG to commence development of the business processes, use cases, minimum standards and specifications for the storage, management and access to the data. The inaugural meeting of this WG took place at the Australian Hydrographic Office on the 2<sup>nd</sup> May 2019. Further meetings will be organised over the next few months and the WG is seeking involvement from interested partners.

More information and request to join the WG can be found on the [ICSM Website](#). A link will also soon be available from the AusSeabed website [here](#).

## ***New data - Kerguelen Plateau grid***

A revised 100 m resolution bathymetry grid has been released for the Kerguelen Plateau region. The grid incorporates new singlebeam data provided by Austral Fisheries vessels, as well as additional multibeam data from the RV Investigator and RV Roger Revelle, and was created as a collaboration between Geoscience Australia and James Cook University. This work demonstrates the value of partnerships between industry, government and the research community for acquiring and releasing new data.



*Figure 1 View of the new Kerguelen Plateau dataset*

This product provides a substantial improvement for understanding the seafloor features of this important part of Australia's marine jurisdiction and will be a key component for planning an RV Investigator voyage to William's Ridge and Shell Bank in early 2020. The dataset will also be released via the [AusSeabed Marine Data Discovery Portal](#).

## ***Program themes***

### ***Data Hub***

#### ***Data Standard Workshop, 22-23 May***

Over 30 representatives from all sectors of the AusSeabed community attended the Data Standards workshop, which aimed to inform the development of the processing pipeline and data storage requirements for the Data Hub. The workshop had a number of main outcomes including an agreed vision for the data hub and a list of preferred data formats and storage options.

The preliminary version of the Data Hub vision is: 'A centralised server with links to data contributors that is governed by the data providers, owned by the community, and delivers a standards suite of open source products and tools'. It was also discussed that the hub would be initially developed as a distributed system, but in the long-term would likely be centralised, depending on factors, such as governance, funding, technology advancement.

In terms of formats and storage options, it was agreed that the Data Hub should:

- support all data levels, i.e. from raw data formats to cleaned products, such as CUBE gridded products.
- support and promote open source formats (e.g. GSF, XTF, BAG), including where file datagram was publically available (e.g. \*.all, 7k).

- adopt an 80:20 rule for its initial release, i.e. it would be able to support 80% of current data formats.
- adopt the ISO 19115 (v3) metadata standard supplemented with the AHO extended fields as the minimum set of attributes.

A robust discussion, which still needs to be refined and endorsed, was had about product delivery. The main delivery product suggested would be a gridded format (i.e. NETCDF) supporting both non-expert end users and expert users to various degrees. This product would be a simple grid created from the compilation of all data within the region of interest and would be accompanied by simple statistics (e.g. mean, minimum and maximum values, count, and range). The more advanced delivery pathway would contain a number of modifier APIs that could be chained and configured as required by the expert users. For the novice users, the APIs would contain default values and a number of use cases that would provide guidance on how to correctly chain these API's to produce the desired trusted product. This pathway would allow the system to be upgradable and remain flexible for future advances in the field. To support this pathway, it was agreed that in-depth requirements are needed before the AusSeabed group start looking for or developing tools.

The complete minutes of the workshop will be posted [here](#) shortly.



*Figure 2 Left to right: Shereen Sharma, Fugro; David Crossman, IIC; Wendy Stewart, AHO; David Watts, CSIRO; Paul Kennedy, Guardian Geomatics; Simon Harries, AIMS; Mark Case, AIMS; Stuart Edwards, CSIRO; Kim Picard, Geoscience Australia (GA); Brad Cooper, LINZ; Daniel Ierodiaconou, Deakin University; Geoff Lawes, IXBlue; Matt Boyd, CSIRO; Peter Locke, IXBlue; Guillaume Galibert, AODN; Kevin Mackay, NIWA; Neal Hewitt, Precision Hydrographic; Simon Oliver, GA; Maggie Tran, GA, Nicholas Dando, GA; Wenjun Wu, GA; Owen Cantrill, Maritime Safety Qld.; Michele Spinoccia, GA; Tim Ingleton, Office of Environment Heritage NSW; Justy Siwabessy, GA; Magnus Wettle, EOMAP; Anna Meissner, LINZ; Ralph Talbot-Smith, WA Department of Transport; Aero Leplastrier, GA; Natalia Lennard, GA.*

## *Outreach, Education, and Training (OET)*

AusSeabed was actively promoted at several events over the past month – read on for some highlights.

### ***APPEA Oil & Gas (Brisbane, 27-30 May)***

AusSeabed was on full display at the Australian Government booth during the Australian Petroleum Production & Exploration Association (APPEA) conference. The objective was to reach out to industry to promote the initiative, show the website and the data portal, and actively engage with potential data contributors. We were successful on all fronts and follow-ups are now underway. For more information, please contact Kim at [AusSeabed@ga.gov.au](mailto:AusSeabed@ga.gov.au).



*Figure 3 Any Carroll and Kim Picard presenting AusSeabed at the Australian Government booth at APPEA*

### ***The International Satellite-Derived Bathymetry Technology and User Forum (Sunshine Coast, 14-15 May)***

Kim Picard delivered a keynote talk presenting AusSeabed at the first SDB Day to be held in Australia. Discussions were also had about including satellite-derived bathymetry data in AusSeabed, and promoting open data at the inception of any SDB projects. Presentations from the event will shortly be made available on the [conference web page](#).



*Figure 4 Attendees at SDB Day on the Sunshine Coast (photo credit: [www.sdbday.org/news](http://www.sdbday.org/news))*

## *Tools, Standards, and Guidelines*

The TSG working group are meeting up on Friday 7<sup>th</sup> June, and will provide an update on the group's progress and activities at AMSA in July.

## Upcoming meetings

### ***AMSA 2019 & National AusSeabed Workshop (Perth, Australia)***

The 2019 AMSA conference will be held in Fremantle on the **7-11<sup>th</sup> July** and we hope to see many of you there! See the top of the newsletter for links and details.

### ***OceanObs'19—An Ocean of Opportunity (Honolulu, Hawaii)***

The [OceanObs'19 Decadal meeting](#) will take place **16-20 September 2019** in Honolulu, Hawaii, where members of the global seabed mapping community will join forces with experts from the OceanObs community and other marine environmental disciplines. Seabed mapping experts attending the meeting aim to underscore the importance of bathymetry as a baseline dataset, and to show the key role pan-disciplinary collaboration plays in furthering understanding of Earth system processes.

In the spirit of collaboration, the seabed mapping community—including several members of the AusSeabed community—have been invited to join a break-out session titled '*Integrating biological observations across the global ocean observing system to inform on ocean health: a roadmap to improve governance*'. This session will bring together global experts from various ocean observation disciplines, with the goal of providing recommendations to the ocean community on how to fully integrate biological observations into a multidisciplinary observing system from the coast to the open ocean. This is a fantastic opportunity for seabed mappers to demonstrate the importance of bathymetry data in providing a complete assessment of ocean health.

The conference is run as a mixed of plenaries, theme panels, session breakouts, and poster and exhibits sessions. The global seabed mapping community plans to be integrated in all of these. If interested (or indeed keen on a holiday in Hawaii), please [register](#) and we also recommend that you submit a poster abstract (**deadline 27 June**). If you have questions, don't hesitate to contact Kim at [ausseabed@ga.gov.au](mailto:ausseabed@ga.gov.au).

### ***SW Pacific Region World Hydrography Day Seminar (Suva, Fiji)***

The Australasian Hydrographic Society (AHS) SW Pacific Region will be holding a World Hydrography Day seminar in Suva, Fiji on **June 21**. The seminar is being held in conjunction with the Fiji Hydrographic Service. Seats are very limited and registration is essential. The organiser,

John Maschke, is seeking papers for presentation at the seminar. Anyone interested in assisting with sponsorship would also be appreciated. The theme of the event is: 'Hydrographic information driving marine knowledge'.

The seminar's aim is to inform those with influence in Fiji, and the SW Pacific region generally, of the fundamental importance of hydrography to the development and sustainability of the marine environment in the SW Pacific.

Preliminary details of the event can be found on the [seminar web page](#), or John can be contacted directly on +61 424 094 546.

## Share your work with the AusSeabed community

Finally, a reminder as always that anyone with an interest in AusSeabed can sign up to the newsletter mailing list on our [website](#), where you can also check out past newsletters. And please send any items for the next letter to [AusSeabedNews@ga.gov.au](mailto:AusSeabedNews@ga.gov.au). We are also aware that the newsletters are not displaying properly for recipients at Geoscience Australia (at least). For a fuller experience (with pictures!) please see the version of the newsletter on the website.