



International
Science Council

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SCAR Sub-Group	Bedmap3 AG
Person Responsible:	Peter Fretwell

SCAR Executive Committee Meeting 2023

Trieste, Italy, 15-16 September 2023

Bedmap3 Action Group 2022-23 Report

Report Author(s)

Peter Fretwell (UK)

Summary

It has been a productive year for the Bedmap3 Action Group. The major output of this year was the release of “Antarctic Bedmap data: Findable, Accessible, Interoperable, and Reusable (FAIR) sharing of 60 years of ice bed, surface, and thickness data”; the first of the two major outputs associated with the project. This paper highlights the release of all current geophysical data of the Antarctic bed (rock ice interface). The paper summarizes 60 years of data collection and describes the methods of processing to collate and make a consistent product. The dataset contains 82 million data points from RES and seismic surveys from 277 separate surveys from over 80 international partners. The FAIR data policy enshrined within the project could act as a template for future large collaborative SCAR projects. All the data has been made available on an open access webmap and data repository;

<https://bedmap.scar.org>

The second paper, which will release the associated gridded products constructed from the dataset is nearing completion and we aim to submit before the end of the year. This will include and a consistent new grounding line product and associated geo-statistics. It will include all data providers as co-authors.

Associated with the data and gridded product an number of subsidiary products will be produced, these include a hard copy double sided paper map, a 3d printed 3d model for touring display and other possible outreach products.

At the core group meeting in October 2023 there was discussion on taking the project beyond this. The general feeling of the group was that the success and goodwill of the Bedmap3 project was very valuable and should be continued. Suggestions included a community white paper on the future of geophysical and Bedmap survey in Antarctica, which could act as a coordination document for the community in future. Also possible attendance at COP and other events. The Chair, Peter Fretwell announced that he would step down as chair after the production of the gridding paper and maps in 2024.

Updates since 2022 Delegates Meeting

What has been achieved?

Date	Activity
April 2023	EGU showcase of Bedmap3
July 2023	Release of data paper
October 2022	Core Group Meeting

What lies ahead?

Date	Activity
Fall 2023	Submission of data paper
April 2024	Publication of new hardcopy map at EGU
Summer 2024	Subsidiary products

Budget

Changes to planned use of funds for 2023 and 2024

Year (YYYY)	Purpose/Activity	Amount (in USD)	Contact Name	Contact Email
Total				

Membership

Changes to Bedmap3 Leadership

Role	First Name	Last Name	Affiliation	Country	Email	Date Started	Date Term is to End
Chair	Peter	Fretwell	BAS	UK	ptf@bas.ac.uk	2018	2024

(Please identify early-career researchers with * in first column)

SCAR Fellowship Reviewers

(Please list **at least two people** (name and email address) volunteered by Bedmap3 who would be willing to serve as reviewers for the next few years, along with 1-3 keywords on their principal expertise.)

First Name	Last Name	E-mail	Principal Expertise

Additional Information (optional)

Outreach, communication and capacity-building activities

(Brief highlights of any activities undertaken since the SCAR Delegates Meeting in 2022.)

Updates for your group's SCAR web page

(If you do not update your SCAR web page yourself, please provide us with any additional information or changes that you would like us to make to it. If your group has a website external to SCAR, please provide the URL.)

Notable Papers

(Three most notable papers, if applicable – see the example below, which includes a brief statement (shaded) indicating the link to the group.)

1. Moore, K.A., Smythe, P.H. & Hui, C.W., et al. 2017. Remote sensing using remotely piloted aircraft systems in Antarctica. *Frontiers in Remote Sensing* **62**, 102-136.

This work provides a comprehensive overview of developments in remote sensing based on RPAS in the Antarctic region. It was the outcome of the AG-Remote Sensing's meeting in Kuala Lumpur, October 2016.

2. AC Frémand, P Fretwell, J Bodart, HD Pritchard, A Aitken, JL Bamber, ... 2023. Antarctic Bedmap data: Findable, Accessible, Interoperable, and Reusable (FAIR) sharing of 60 years of ice bed, surface and thickness data *Earth System Science Data* 15 (7)

This work is the paper that outlines the data release of Bedmap3, the first of the major outputs of the project.

Other information for publicity purposes

(Please add here details of, or links to any other information we may use for publicity purposes, such as photos, infographics, quotes and layperson's summaries of your research.)

Any other information or issues you would like to raise

(Please add here any additional information or issues you would like to raise with the SCAR Executive Committee or SCAR Secretariat.)