

Minutes for the 2017 meeting of SCAR-SCAGI

Monday 12 June 2017, Alfred Wegener Institute, Bremerhaven, Germany.

Attendees:

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Peter Fretwell	British Antarctic Survey	ptf@bas.ac.uk
Antonie Haas (Germany)	Alfred Wegener Institute	Antonie.Haas@awi.de
Ursula Harris (Australia)	Australian Antarctic Division	Ursula.Harris@aad.gov.au
Brad Herried (USA)	Polar Geospatial Center	herr147@umn.edu
Lyubomir Ivanov (Bulgaria)	Antarctic Place-names Commission	apcbg@yahoo.com
Yngve Melvaer (Norway)	Norwegian Polar Institute	Yngve.Melvaer@npolar.no
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Jean-Yves Pirlot (Belgium)	Belgian National Geographic Institute	Jean-Yves.Pirlot@ngi.be
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Welcome and introductions

Adrian Fox and Jean-Yves Pirlot welcomed the SCAGI members who had not previously attended a SCAGI meeting and thanked Antonie Haas for hosting the meeting and excellent organisation. Prof. Karin Lochte (Director, AWI) welcomed the delegates to the meeting and highlighted the importance of geographic information for Antarctic science.

It was agreed to change the running order of items in the agenda from the previously circulated version to reduce time zone issues for Ursula Harris joining by skype from Australian Antarctic Division.

1) Review of minutes from last meeting, Kuala Lumpur, August 2016.

The 2016 minutes were accepted at the 2017 meeting. Good progress has been made with Actions from the 2016 meeting with most actions completed. See Section 10 for detailed information about progress with 2016 actions and new actions from the 2017 meeting.

2) SCAGI products:

Progress reports, future plans and discussion about SCAGI products:

2.1 Map Catalogue (Ursula Harris, Australian Antarctic Data Centre)

The Australian Antarctic Data Centre continues to host the SCAR map catalogue. In the year since June 2016 39 new maps have been added to the MapCat. Most (21) of these were from Australia and SCAGI member organised are encouraged to submit any new maps to the SCAR MapCat please. The contact is Ursula Harris (mapping@aad.gov.au) and templates for bulk upload and updating of entries will soon be available online.

Further developments include:

- Ability to export searches in HTML, CSV and KML formats

- Email updates about new maps added to the MapCat. Please email Ursula Harris to be added to the notification list for new maps.
- Definition of lists (for example aviation maps) to group related maps. Please send any suggestions for list types to Ursula Harris.

ACTION: SCAGI members to email Ursula if you wish to be included in the new map circulation list and with any suggestions for map list categories.

2.2 Antarctic Digital Database (Peter Fretwell and Adrian Fox)

Several updates and improvements to the ADD coastline:

Coastline data from the US PGC has been included for the NW Antarctic Peninsula between 64°S and 67°S. This is based on Digital Globe WorldView sub-metre resolution satellite imagery acquired between 2009-2014. This is now attributed as ice/ice-free and is much more detailed and accurate than the existing coastline data.

The ice shelf coastline from Ronne Entrance west to the Ross Sea has been re-digitized from up-to-date Sentinel-1 imagery. The ADD iceshelf coastline is now nearly all derived from 2016 or 2017 data. Ongoing checking of the topology of the coastline and for ice/ice-free coding errors.

The ADD was launched in 1993, so 2018 will be its 25th anniversary. Dr Fretwell noted that over the lifetime of the ADD the reliance on digital data and web-based data delivery has changed the usage and data requirements significantly, and the type of data incorporated into the ADD has changed. There are now fewer updates from national mapping agencies and requirements for more and faster revision cycles. New continent-wide data sets extracted from satellite imagery with automated methods that are potentially outside the long-established QA systems of national mapping agencies have highlighted the need for clear processes for quality control before inclusion in the ADD. Data derived from automated extraction methods should to be backed up by a published, reviewed paper describing the data acquisition methods and accuracy before inclusion.

It was suggested that a joint SCAGI paper summarising the evolution of mapping over the 25 years period, showing how our knowledge about the continent has improved and the key milestones in Antarctic topographic mapping would be a very good way to celebrate the 25th anniversary of the ADD.

Future developments:

- Further improvements to the coastline from new data eg. New James Ross Island coastline.
- Review of the contour dataset for inclusion of contours satellite-derived DEM data; BOADEM - a new DEM constructed for the 1:1 Million scale Air Ops planning maps and forthcoming US REMA dataset.
- Publish methodology and metadata on how the generalized datasets are made
- Aim for new datasets to have DOIs so that they are more citable and to acknowledge the source organisation.

ACTION: SCAGI members to contact Peter Fretwell with any new data for inclusion in the ADD.

ACTION: ADD team to prepare a draft paper about the key development in Antarctic mapping over the last 25 years for circulation and comment.

2.3 Composite Gazetteer of Antarctica (Carlo Baroni).

A total of 28 new names have been added to the gazetteer since June 2016, each of which are for new features, so that there are now 37,567 names for 19,810 features. There are further names from New Zealand and the UK which are pending inclusion in the gazetteer.

The CGA now flags relic features (eg Ice Shelves) that have since disappeared with the text 'relic' in a blue box.

Prof Baroni noted that engagement with Russia would be very useful because many of the Russian names in the CGA have coordinates that are based on early mapping and are now inaccurate when compared with modern geospatial data.

The technical contact for new entries for the CGA is Mrs Jaqueline Muller, jaqueline.muller@unisi.it +39 0577 233818

Brad Herried reported on further development by US PGC of a tool for place-name checking for the US Advisory Committee on Antarctic Names (ACAN). The purpose of the tool is to review and confirm the positioning of existing names against modern geospatial data. It is not openly available due to data licensing issues. Some progress has been made on developing a tool for SCAGI, and PGC will make a beta version available for comment, using the PGC REMA DEM (see 4.1 below).

ACTION: US PGC to develop beta version for place-name position checking for comment.

Ursula Harris (Australian Antarctic Data Centre) informed the group about an AADC utility *antanym* that provides direct access to the SCAR CGA in the software package 'R'. This is accessible through github (online resources for programmers) at: <https://github.com/AustralianAntarcticDataCentre/antanym>

2.4. Air Operations Planning Maps

A series of maps at 1:1M scale designed for Air Operations planning with contours and heights in feet and air operations specific features such as airfields from COMNAP. It is clearly stated that they are for planning and not an Air Navigation Chart. There is also a continent-wide overview map compiled by BAS that shows rays with distances between airfields and stations and magnetic declination isogons. The maps are all compiled to a defined specification which was developed in liaison with the Antarctic Air Operations community.

The series is an International collaborative project between the Belgian National Geographic Institute (in liaison with Australian Antarctic Division), British Antarctic Survey, Norwegian Polar Institute and US Polar Geospatial Center. The maps are badged for the compiling agency and SCAR. Sixteen 1:1M scale map sheets are now available, covering about 270 degrees of the continent. They have a SCAR ISBN, are listed in the SCAR Map Catalogue, and can be freely downloaded through the compiling agencies websites. They are available in geospatial PDF and geoTIFF formats for either printing, use in tablet display systems, or in a GIS with together with further, user-specific operations data.

Feedback from operational users in 2016-17 has been very positive, particularly that the maps work very well implemented in tablet systems already in use for other data by aviation users.

The maps were promoted at COMNAP in August 2017. Updated versions were available by the beginning of the Antarctic operations season 2017, and relevant organisations were contacted directly about access to the maps.

The SCAGI meeting was followed by a half-day planning meeting for the Air Operations Planning Maps Series on Tuesday 13 June, to review the specification following feedback from users, and plan publication of the maps for the 2017-18 Antarctic Operations season.

3) Website (Jean-Yves Pirlot, NGI Belgium)

After several delays the redesigned SCAR website is now launched and includes new pages for maps and SCAGI geographic information products (<https://www.scar.org/data-products/maps/>) and reformatted pages for SCAGI (<https://www.scar.org/data-products/scagi/overview/>)

These pages are a step forward but do need significant editing. This will be a priority for Adrian and Jean-Yves during the year.

ACTION: Adrian and Jean-Yves to edit SCAGI web-pages to make into a top-class resource, with inputs from other SCAGI members as required and comments welcome.

4) Horizon scan – if not already covered in the previous discussions

4.1: New sources of elevation data for Antarctica and requirement for access to geodetic survey details as check data.

Brad Herried (US PGC) reported that work was ongoing on the REMA (Reference Elevation Map of Antarctica) project. This will deliver a high accuracy, 2-8 m resolution DEM for all of Antarctica derived from sub-metre resolution stereo-satellite imagery collected by the Digital Globe Worldview satellite constellation. The final DEM will be freely available for use by the Antarctic community. The DEM is being georeferenced to and checked against Cryostat elevation data. Work is ongoing and at the date of the SCAGI meeting there was no defined date for release of the data.

4.2: Developments with UAV operations for mapping.

It was clear from the national reports that several SCAGI member organisations are beginning to use UAVs for geospatial activities. UAVs in Antarctica is clearly a fast developing field and there will be many talks on science applications at the Polar Sciences conference in Davos 2018, immediately after the SCAR Business Meetings. It was suggested that the 2018 SCAGI meeting includes an agenda item on UAV geospatial activities by SCAGI members to raise awareness of what has been achieved within the group and future plans.

ACTION: Include an item about progress with UAVs by SCAGI members in the 2018 SCAGI meeting agenda.

5) National reports

National reports are an important part of the SCAGI meeting – they are an opportunity to inform delegates from other organisations about current and planned activities, which can highlight opportunities for collaboration and sharing of resources.

Interesting and informative National Reports were presented by Australia, Belgium, Bulgaria, Czech Republic, Norway, UK, and USA. (The Italian National Report is covered by the CGA report above). The new reports from Bulgaria and Czech Republic were very welcome. Adrian Fox presented National Reports from China and New Zealand *in absentia*.

ACTION: Add the National reports to the SCAGI website.

6) Working Group on Antarctic Place-naming Guidelines (Jean-Yves Pirlot)

Jean-Yves Pirlot is chairing a new WG to review the existing SCAR guidelines for place-naming which were written by Dr Jorn Sievers from the German national mapping agency (BKG) in 1994. The WG was launched at the SCAGI meeting in June 2017. There was an initial meeting of the WG in the

margins of the 2017 UNGEGN (UN place-names group) meeting (because several of the WG members will already be at that meeting).

See the separate report and presentation from Jean-Yves Pirlot about meeting on 16 August 2017 held in liaison with UNGEGN, New York (emailed to SCAGI members 21 December 2017).

ACTION: Any SCAGI members who are aware of national place-name committee guidelines and procedures to send to JYP please.

ACTION: JYP to organise a meeting at UNGEGN 16 August 2017 and circulate a report to SCAGI members.

ACTION: JYP to organise follow-up telecom schedule.

7) Liaison with SCAR

Adrian and Jean-Yves prepared a report on SCAGI activity for the SCAR Executive Committee Meeting 2017 at Brno, Czech Republic, 31 July - 2 Aug 2017, which was presented by Jenny Baeseman (SCAR XO).

8) Date and location of next meeting

Davos, Switzerland, Monday 18 June 2018 – **this is a confirmed date.**

The meeting will be in association with the Polar 2018 Science conference 19-13 June, which is a joint initiative between SCAR and the International Arctic Science Committee.

<http://www.polar2018.org/>

Attendance at the SCAGI meeting and other business meetings is free. Registration for the science conference opened on 1 November 2017 and has an early bird rate until 31 March 2018.

2018 is also the 60th Anniversary of SCAR and there will be special events at the conference to celebrate this.

9) Social Event

The meeting closed with an extremely interesting Guided Tour of the impressive facilities at AWI and was followed by a meeting dinner organised by Antonie Haas.

Adrian and Jean-Yves would like to thank Antonie Haas on behalf of all SCAGI members for organising and hosting this successful meeting and AWI for providing an excellent venue.

10) Action grids

10.1 Actions from 2017 meeting at AWI Bremerhaven, June 2017.

Number	Action	Owner	Due by	Status
1	Add 2017 National Reports to SCAGI website	JYP	In parallel with the minutes	Active
2	Liaise with the Russian Polar authorities to identify a SCAGI delegate/point of	Jenny Baeseman (SCAR)		Active (from 2016) Agreed with JB

	contact.			that JYP would explore this using contacts through Belgian ambassador.
3	SCAGI representatives to review their organisations' content in the MapCat and update as appropriate. Completed spreadsheets to be sent to Ursula Harris. Any duplicate map entries that are noticed are to be notified to Ursula Harris.	ALL	As practical	Active (from 2016)
4	Liaison over inclusion of hydrographic charts in the SCAR MapCat	Robert Ward and Ursula Harris	Ongoing, review progress at 2018 meeting.	Active (from 2016). Ursula is in contact with Robert Ward. SCAGI delegates are encouraged to contact their national Hydrographic Organisation for inclusion of charts in the SCAR MapCat.
5	Amend text on SCAGI website for MapCat as advised by Ursula Harris	JYP	When new SCAR website online	Active
6	Discuss creation of a catalogue of Antarctic aerial photography with organisations that hold material.	AJF	Before June 2017 meeting	Active (from 2016) for during year and report at 2018 meeting.
7	Update and improve the SCAGI website.	JYP/AJF and ALL	During year and report at 2018 meeting	Active
8	SCAGI members to email Ursula if you wish to be included in the new map circulation list and with any suggestions for map list categories.	ALL		Active
9	SCAGI members to contact Peter Fretwell with any new data for inclusion in the ADD.	ALL	Ongoing	Active

10	ADD team to prepare a draft paper about the key development in Antarctic mapping over the last 25 years for circulation and comment.	PTF and AJF	Before 2018 meeting	Active: [Presented at Davos Polar18 science conference].
11	Place name coordinate checking. US PGC to develop beta version for place-name position checking for comment.	US PGC	When practical for PGC	Active
12	Review and edit SCAGI web-pages with inputs from other SCAGI members as required and comments welcome.	AJF and JYP	During year to present at 2018 meeting	Active
13	Include an item about progress with UAVs by SCAGI members in the 2018 SCAGI meeting agenda.	AJF and JYP	For 2018 meeting	Active
14	Send national place-name committee guidelines and procedures to JYP.	All	As soon as possible	Active. Done – received by WG on place names.
15	JYP to: a) organise a meeting at UNGEGN, b) circulate a report to SCAGI members and c) organise follow-up telecom schedule.	JYP	To match UNGEGN timetable.	a) and b) Done

Completed Actions from 2016 meeting in Kuala Lumpur, August 2016.

Number	Action	Owner	Due by	Status
2	Delegates who have interest in joining the WG on place-names guidance to contact Jean-Yves Pirlot	ALL	Before June 2017 meeting	Meeting held at UNGEGN New York and follow-up telecom planned.
4	Research information on	AJF/AH	Before June	Closed

	ToRs for SCAR CGA or material about place-names from the SCAR WG on Geodesy and Cartography		2017 meeting	
9	Coordinate a communications campaign when the Air Operations Planning Maps series is considered finalized.	AJF and others	Summer 2017 for 2017-18 Air Operations season.	Organisations active in Antarctic Air Operations contacted directly. Poster, flyer and announcement at COMNAP by BAS COMNAP rep.