



**XXXV SCAR Delegates Meeting  
Davos, Switzerland, 25-26 June 2018**

## **Southern Ocean Observing System (SOOS)**

### **Report Authors**

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### **Summary of activities from 2016-18 and other important issues**

For details of activities, please refer to the 2016 Annual Report (Attachment 1). For 2017: 1) delivered and enhanced the database of Upcoming Expeditions to the Southern Ocean (DueSouth), 2) developed and delivered SOOSmap, 3) held eight international workshops/meetings, 4) developed a Task Team on Observing System Design and 5) maintained strong, internationally diverse leadership and strategic direction in the Executive Committee, Steering Committee, Data Committee, and Working Group Co-chairs

2017 was a pivotal year in developing sponsorship for the SOOS International Project Office. We are excited to announce the sponsorship by the State Oceanic Administration (China), supporting a Project Officer Dr Yuhua Pei. Additionally, all previous sponsors (Attachment 2) have continued their support in 2017 and into 2018, and we have new service providers through EMODnet Physics, COMNAP and the ACE CRC (Australia). In 2018, we have another new service provider sponsor, the Istanbul Technical University Polar Research Center.

Hosting of the IPO in Hobart, Australia, has been extended until end-2019 (including both the Executive Officer and Data Officer salaries) through the Australian Research Council's Antarctic Gateway Partnership. SOOS is working with the University of Tasmania, Australian Antarctic Division, CSIRO, Integrated Marine Observing System, and the Tasmanian State Government to develop a partnership agreement for sponsorship over the coming years.

### **Recommendation**

- 1) SOOS requests continuation of the SCAR sponsorship of the annual SSC meeting (jointly with SCOR) for 2019 and 2020, to the value of 10,000 USD per year. This support is greatly appreciated by SOOS and is imperative to ensure participation of all international SSC members.
- 2) SOOS invites the SCAR Executive Director to attend the 2019 meeting (hosted by KOPRI, Korea)

### **Summary Budget 2017 to 2020**

	2017	2018	2019	2020
	Spent	Allocated	Request	Request
(US\$)	10,000	10,000	10,000	10,000



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## Progress and Plans

### Major Outcomes/Activities

- 1) **SOOSmap** (<http://soos.ag/data/soosmap>): An interactive data discovery tool that brings together internationally-curated datasets into an open-access, user-friendly web interface. SOOSmap enables users to quickly filter and sort datasets by a wide range of parameters, including time, observation type and geographic location. Unlike traditional metadata catalogues, it allows users to directly explore the data itself before downloading it. SOOSmap also provides “base layers” such as monthly sea-ice extent, CCAMLR boundaries and Sea Surface Temperature, to enable researchers to investigate data availability in different contexts. Currently delivering 22 layers, SOOS is working with the community to increase the data layers and the number of direct data downloads available from SOOSmap. SOOSmap is delivered by EMODnet Physics, with support of SCADM and JCOMMOPS.
- 2) **SOOS Regional Working Groups**: SOOS has now established 5 international Regional Working Groups to coordinate and implement the observing system. Three groups held their first workshops in 2017 (West Antarctic Peninsula, Southern Ocean Indian Sector, Ross Sea), while two others (Weddell/Dronning Maud Land, Amundsen/Bellingshausen) will hold their first meetings in 2018/2019. The success of these groups is integral to the success of SOOS. They will enable us to align national and international observing efforts within regions towards delivering an integrated, sustainable observing system that delivers the fundamental observations required by all end-users.
- 3) **DueSouth** (<https://data.aad.gov.au/duesouth/>): The Database of Upcoming Expeditions to the Southern Ocean is a free online database that provides a mechanism for people to share and discover national field plans for upcoming seasons. The system will foster greater collaboration and coordination between programs and will be an important tool for the Regional Working Groups. The need to know who is going where has been well-articulated to SOOS by many user-groups since 2011 and SOOS has worked with the Australian Antarctic Data Centre to deliver this product.

### Sub-group Outcomes Summary

Sub-group	Activity/Outcome/Benefit/Achievement
SOOS	SOOSmap ( <a href="http://soos.ag/data/soosmap">http://soos.ag/data/soosmap</a> )
SOOS	SOOS Regional Working Groups
SOOS	DueSouth ( <a href="https://data.aad.gov.au/duesouth/">https://data.aad.gov.au/duesouth/</a> )

### Sub-group Cash Flow

Sub-group	Allocation	Amount spent		
		2016	2017	2018
SOOS	10,000 USD	10,000		
SOOS	10,000 USD		10,000	
SOOS	10,000 USD			10,000



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#### Notable Papers

1. Mazloff, M.R., Sallee, J.B., Menezes, V.V., Macdonald, A.M., Meredith, M.P., Newman, L., Pellichero, V., Roquet, F., Swart, S., and Wahlin, A., 2017: The Southern Ocean [in "State of the Climate in 2016"]. *Bull. Amer. Meteor. Soc.*, **98** (8), S166–S169, doi:10.1175/2017BAMSStateoftheClimate.1. *This work is a contribution to the Antarctic chapter in the State of the Climate report, which is the authoritative annual summary of the global climate. It provides an overview of key changes in and characteristics of the Southern Ocean system for 2016 based on field observations and modelling outputs. SOOS SSC members have been tasked with delivering this product since the first Southern Ocean section in 2015.*
2. Hendry, K., S. Henley, and O. Schofield (2017), Understanding a changing West Antarctic Peninsula, *Eos*, 98, <https://doi.org/10.1029/2017EO084155>. *This publication provides a report on the two meetings of the SOOS West Antarctic Peninsula Regional Working Group, hosted by BAS in May 2017. It highlights the key outcomes of the workshop and identifies priorities for observational activities in the region.*

#### Forthcoming Activities

SOOS will continue to focus on activities that deliver against the 5-Year Implementation Plan (<http://soos.aq/activities/implementation>). In particular, the following key actions:

- Development of the Observing System Design working group and delivery of "design" tools: This is core to SOOS Objective 1 and will provide the community with tools and expertise to design efficient observing systems (amongst other things). It will be a key contribution to the Regional Working Groups.
- Related to above action, work with greater Southern Ocean community to identify and prioritise Essential Ocean Variables for the Southern Ocean towards quantification of observational requirements.
- Maintenance and growth of SOOSmap: The community has identified a number of priority data layers for inclusion in SOOSmap over the coming years. SOOSmap is a key product for the community, and SOOS will continue to enhance it, and ensure connection to other online tools that serve related but different purposes (such as Quantarctica, CCAMLR GIS, etc)
- DueSouth: Automation of logistics data into DueSouth from interested National Antarctic Programs.
- Scope out objectives and delivery of 2 new capability working groups to 1) Enhance underway observations (with COMNAP, IAATO, CCAMLR), and 2) Articulate observational requirements for observations of the Antarctic Circumpolar Current.
- Federated Metadata Search Tool: Work with SCADM and the Arctic Data Council towards development of a polar federated search tool.
- Ensure stability and growth of sponsorship for the SOOS International Project Office
- Initiate review of Initial Science Plan (2012) and the current 5-Year Implementation Plan. Based on this review, begin to define scope of next 5-Year plan.



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## Budget

### Planned use of funds for 2018 to 2020

Year (YYYY)	Purpose/Activity	Amount (in USD)	Contact Name	Contact Email
2020	SOOS SSC Meeting – travel support for SSC	10,000	Louise Newman	newman@soos.aq
2019	SOOS SSC Meeting – travel support for SSC to Korea	10,000	Louise Newman	newman@soos.aq
2018	SOOS SSC Meeting – travel support for SSC to Hangzhou, China	10,000	Louise Newman	newman@soos.aq
Total		<b>30,000</b>		

### Briefly describe funds usage and the desired results

SCAR funds will be used to support the SOOS Scientific Steering Committee (SSC) members and Regional Working Group leads to attend the annual SSC meetings. As with previous years, this would be a joint sponsorship with the Scientific Committee of Oceanic Research (SCOR).

At the 2019 meeting (to be hosted by KOPRI, Korea), the funds will support participation of up to 20 representatives from up to 14 different nations (Australia, Argentina, China, Korea, USA, Turkey, France, Germany, South Africa, UK, Japan, Norway, Sweden, New Zealand), including up to 4 Early Career Researchers.

The desired result of using the SCAR funds for the SOOS SSC meeting are to ensure full representation of committee and working group members, ensuring diversity in expertise, geographic representation, career stage and gender.

### Percentage of the budget to be used for support of early career researchers

Agreement at present is that funds are to be used for SOOS SSC and Regional Working Group leads, which are by definition usually well-established leaders in their community. In 2017, the SSC had 2 ECR, and 2 ECR were regional working group leads. In 2018, the SSC has 3 ECR and 4 ECR as regional working group leads.

- **2018:** In 2018, the joint SCAR/SCOR funds supported 16 members to attend the SSC meeting (Hangzhou, China) and of those 16, 3 were ECR (10% of budget).
- **2019 and 2020:** The use of the funds by individual SSC members varies from year-to-year depending on their ability to obtain other funding in support of their SSC meeting participation. We cannot, at this stage, predict which SSC members will be requesting support for the 2019/2020 meetings.



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#### Percentage of the budget to be used for support of scientists from countries with developing Antarctic programmes

In 2017 and 2018, the SSC had 2 members from initial-Stage and Associate member programs (Sweden, Turkey).

- **2018:** None of the funds were required to support attendance of our members from Turkey or Sweden.
- **2019 and 2020:** The use of the funds by individual SSC members varies from year-to-year depending on their ability to obtain other funding in support of their SSC meeting participation. We cannot, at this stage, predict which SSC members will be requesting support for the 2019/2020 meetings.

## Linkages

#### Direct support from outside organisations

#### Sponsorship of SOOS Working Group and Committee 2017 Activities:

Sponsor	Activity	Amount/Type
British Antarctic Survey	West Antarctic Peninsula Working Group workshop (May 2017)	Hosting of workshop
SCAR	West Antarctic Peninsula Working Group workshop (May 2017)	Support for icebreaker at BAS
Royal Society	Biogeochemistry of the West Antarctic Peninsula	Full hosting of workshop
Alfred Wegener Institute	SOOS Executive Committee Meeting (June 2017)	Hosting of meeting
	SOOS Scientific Steering Committee Meeting (June 2017)	Full hosting of meeting
	SOOS Data Management sub-Committee meeting (June 2017)	Hosting of meeting
	SOOS-AWI Weddell Symposium (June 2017)	Full hosting of symposium
	SOOS-POGO Observing Under Ice (OASIIS) workshop (June 2017)	Hosting of workshop
ARC Antarctic Gateway Partnership	SOOS-POGO Observing Under Ice (OASIIS) workshop (June 2017)	Support for workshop
Partnership for Observation of the Global Oceans (POGO)	SOOS-POGO Observing Under Ice (OASIIS) workshop (June 2017)	Support for workshop
National Institute of Polar Research (NIPR Japan)	SOOS Indian Sector workshop (August 2017)	Hosting of workshop
Australian Antarctic Division	SOOS Indian Sector workshop (August 2017)	Support for workshop





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Shanghai Jiao Tong University	SOOS Ross Sea Working Group workshop (Sept 2017)	Host for workshop
Ocean Carbon and Biogeochem. Office USA		Support for workshop
2 <sup>nd</sup> Institute Oceanography, China		Support for workshop
National Lab for Marine Sci and Tech, Qingdao China		Support for workshop

### Major collaborations

#### Within SCAR

1. SCADM – Strong collaboration on efforts of mutual interest; collaboration on SOOSmap, DueSouth and development of the Federated Data Search Tool and related working group POLDER.
2. Southern Ocean Regional Panel (SORP) – joint membership; representation at respective meetings
3. BEPSII – Jointly supported effort for delivery of sea-ice chlorophyll data into SOOSmap
4. Quantarctica: engagement in development of tools
5. Physical Sciences Lead – engagement with Bromwich towards Southern Ocean YOPP
6. ICED – Involvement in the ICED-CCAMLR collaborative workshop; co-involvement in MEASO
7. ASPeCt – collaboration on remote sensing publications; identification of sea ice EOVS; selection of Burcu Ozsoy as co-representative; collaboration on DueSouth
8. AntClim21 – Involvement in SOOS SSC meeting and OASIIS workshop
9. AntEco – representatives attending SOOS Regional Working Group workshops; co-involvement in MEASO
10. FRISP – Endorsement and significant data management support of key FRISP program “NECKLACE”; involvement in OASIIS workshop
11. AnT-ERA – representatives attending SOOS Regional Working Group workshops; co-involvement in MEASO
12. SO-CPR – support for delivery of CPR data through SOOSmap

#### Outside SCAR

1. Scientific Committee of Oceanic Research (SCOR): Governing body; represented at AGM; official annual report; regular email reporting/engagement
2. CCAMLR: Involvement in SC-CAMLR; annual report; joint SOOS-CCAMLR workshop; joint report; contribution to CCAMLR MPA; regular meetings with CCAMLR Secretariat
3. Partnership for Observation of the Global Oceans (POGO): Joint sponsorship of OASIIS workshop and working group



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4. Global Ocean Observing System: Attendance at GOOS Panel meeting; Collaboration with GOOS Bio Panel; Regular communication regarding EOVS
5. COMNAP: Support for development of DueSouth; connection with COMNAP secretariat
6. IMOS: Quarterly meetings
7. WMO-IOC Joint Technical Commission for Oceanography and Marine Meteorology in-situ Observing Programmes Support Centre (JCOMMOPS): Regular engagement with JCOMMOPS team for delivery of DueSouth and SOOS Map
8. Southern Ocean Carbon and Climate Observation and Modelling (SOCCOM): updates to community; collaboration on SOOSMap data layers
9. European Marine Observation and Data Network (EMODnet): Collaboration on delivery, maintenance and growth of SOOSmap
10. Arctic Data Committee: Joint development of Federated Data Search Tool working group POLDER (with SCADM)
11. WMO Year of Polar Prediction (YOPP): SSC member attending all YOPP meetings; Communication of YOPP requirements through SOOS newsletter; engagement with YOPP at annual SSC meeting
12. MEOP: Delivery of MEOP data through SOOSmap

### Outreach and Capacity Building

1. **SOOS Update** – quarterly newsletter. Only one issue produced during 2017 due to lack of capacity in the IPO. Newsletter production is now outsourced.
2. **Website**
3. **Community Conference/Meetings presentations** (e.g., EGU, AOGS, CliC SSG, EPB, EuroGOOS, GRC, IAPSO, ICSHMO, IICWG, IOC, POGO, Research Data Alliance, UN Oceans, SCAR Biology, WCRP JSC, YOPP, Force11, AFOPS)
4. **Publications and reports** (see Resources database on website)

### SCAR Fellowship Reviewers

First Name	Last Name	E-mail	Principal Expertise
Sebastian	Moreau	<a href="mailto:Sebastien.Moreau@npolar.no">Sebastien.Moreau@npolar.no</a>	carbon cycle, primary production, sea-ice biogeochemistry
Parli	Bhaskar	<a href="mailto:bhaskar@ncaor.gov.in">bhaskar@ncaor.gov.in</a> <a href="mailto:pbhaskar23@gmail.com">pbhaskar23@gmail.com</a>	Microbial ecology, microbial loop, carbon biogeochemistry
Irene	Schloss	<a href="mailto:ireschloss@gmail.com">ireschloss@gmail.com</a>	Plankton, ecosystem modelling, coastal processes

## Membership

**Leadership** – (Dates in grey indicate the period of 2 x 3-year terms, pending SCAR/SCOR approval, \*Early Career Scientists)

Role	First Name	Last Name	Affiliation	Country	Email	Date Started	Date Term is to End
EXCOM	Andrew	Constable	AAD	Aus	<a href="mailto:Andrew.Constable@aad.gov.au">Andrew.Constable@aad.gov.au</a>	2014	2020
*EXCOM	Sebastiaan	Swart	Uni of Gothenburg	Sweden	<a href="mailto:seb.swart@gmail.com">seb.swart@gmail.com</a>	2014	2020
EXCOM	Mike	Williams	NIWA,	New Zealand	<a href="mailto:Mike.Williams@niwa.co.nz">Mike.Williams@niwa.co.nz</a>	2015	2021
EXCOM	Louise	Newman	SOOS IPO IMAS-UTAS	Aus	<a href="mailto:newman@soos.aq">newman@soos.aq</a>	-	-
SSC	Sang Hoon	Lee	KOPRI	Korea	<a href="mailto:hoonenator@icloud.com">hoonenator@icloud.com</a>	2015	2019
SSC	Matthew	Mazloff	Scripps	USA	<a href="mailto:mmazloff@ucsd.edu">mmazloff@ucsd.edu</a>	2015	2021
*SSC	Jean-Baptiste	Sallee	L'OCEAN	France	<a href="mailto:jbsallee@gmail.com">jbsallee@gmail.com</a>	2015	2021
SSC	Dake	Chen	2 <sup>nd</sup> Inst. Oceanography	China	<a href="mailto:dchen@sio.org.cn">dchen@sio.org.cn</a>	2017	2023
SSC	Burcu	Ozsoy	Istanbul Tech Uni	Turkey	<a href="mailto:ozsoybu@gmail.com">ozsoybu@gmail.com</a>	2017	2023
SSC	Anya	Waite	AWI	Germany	<a href="mailto:anya.waite@awi.de">anya.waite@awi.de</a>	2017	2023
SSC	Eileen	Hofmann	Old Dominion Uni	USA	<a href="mailto:hofmann@ccpo.odu.edu">hofmann@ccpo.odu.edu</a>	2018	2024
SSC	Irene	Schloss	Argent. Antarctic Inst.	Argentina	<a href="mailto:ireschloss@gmail.com">ireschloss@gmail.com</a>	2018	2024
*SSC	Andrew	Meijers	BAS	UK	<a href="mailto:andmei@bas.ac.uk">andmei@bas.ac.uk</a>	2018	2024
*SSC	Sarah	Fawcett	Uni Cape Town	S. Africa	<a href="mailto:sarah.fawcett@uct.ac.za">sarah.fawcett@uct.ac.za</a>	2018	2024
DMSC Chair	Steve	Diggs	Scripps	USA	<a href="mailto:sdiggs@ucsd.edu">sdiggs@ucsd.edu</a>	2013	2019
DMSC Chair	Joana	Beja	BODC	UK	<a href="mailto:joja@bodc.ac.uk">joja@bodc.ac.uk</a>	2016	2021



## Other members

(Ex-Officio SSC members due to leadership on Regional Working Groups)

First Name	Last Name	Affiliation	County	Email
<b>Tsuneo</b>	Odate	NIPR	Japan	<a href="mailto:odate@nipr.ac.jp">odate@nipr.ac.jp</a>
<b>Phillippe</b>	Koubbi	UPMC	France	<a href="mailto:philippe.koubbi@upmc.fr">philippe.koubbi@upmc.fr</a>
<b>Oscar</b>	Schofield	Rutgers Uni	USA	<a href="mailto:oscar@marine.rutgers.edu">oscar@marine.rutgers.edu</a>
<b>*Kate</b>	Hendry		UK	<a href="mailto:glzkh@bristol.ac.uk">glzkh@bristol.ac.uk</a>
<b>*Sian</b>	Henley		UK	<a href="mailto:s.f.henley@ed.ac.uk">s.f.henley@ed.ac.uk</a>
<b>Julian</b>	Gutt		Germany	<a href="mailto:Julian.Gutt@awi.de">Julian.Gutt@awi.de</a>
<b>Torsten</b>	Kanzow		Germany	<a href="mailto:torsten.kanzow@awi.de">torsten.kanzow@awi.de</a>
<b>*Sebastian</b>	Moreau	NPI	Norway	<a href="mailto:Sebastien.Moreau@npolar.no">Sebastien.Moreau@npolar.no</a>
<b>*Laura</b>	De Steur	NPI	Norway	<a href="mailto:laura.de.steur@npolar.no">laura.de.steur@npolar.no</a>
<b>Walker</b>	Smith	VIMS	USA	<a href="mailto:wos@vims.edu">wos@vims.edu</a>
<b>Anna</b>	Wahlin	Uni Got	Sweden	<a href="mailto:anna.wahlin@marine.gu.se">anna.wahlin@marine.gu.se</a>

*\*Early Career Scientists*

## Requests to the Secretariat

- SOOS would like to work with the SCAR Executive Director to identify a reporting structure that both provides SCAR with the information required, and streamlines reporting overhead and duplication for the SOOS project office.
- SOOS would like both DueSouth and SOOSmap to be viewed as key SCAR data products and included on the SCAR website.



**SDM**

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Agenda Item:

4.4.3

Person Responsible:

L Newman  
et al.

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## **Attachment 1.**

# **Southern Ocean Observing System 2016 Annual Report**



## **THE SOUTHERN OCEAN OBSERVING SYSTEM**

### **2016 ANNUAL REPORT**

#### ***SOOS Activities and Milestones for 2016***

All milestones and activities herein are reported against SOOS' four key objectives as defined in the *interim 5-Year Implementation Plan*.

#### **Milestones**

##### **Objective 1: Facilitate the design of a comprehensive and multi-disciplinary observing system for the Southern Ocean:**

- ecosystem Essential Ocean Variables (eEOVs) publication (<http://soos.aq/resources/recent?view=product&pid=38> )
- Outreach with the global ocean observing community on Southern Ocean EOVs
- Coordination of Southern Ocean contribution to the Global Ocean Observing System (GOOS) Biology Panel's survey of sustained biological monitoring towards identification of global eEOVs
- Discussion of OOPC-GCOS-GOOS EOv specification sheets for Southern Ocean requirements

##### **Objective 2: Unify and enhance current observation efforts and leverage further resources across disciplines, and between nations and programmes**

#### **Regional Working Groups (RWG):**

- West Antarctic Peninsula Working Group ([WAP WG](#)):
  - Leadership has been developed.
  - First workshop is organised for May 2017 (<http://soos.aq/calendar?view=event&cid=87> )
  - Workshop is hosted by BAS, sponsored by SCAR and SOOS
- Southern Ocean Indian Sector WG ([SOIS WG](#)):
  - WG has preliminary approval and is currently building membership.
  - First workshop is being planned for late 2017, likely to be held in Japan.

- Workshop in Japan to be sponsored by SOOS
- **Ross Sea WG ([Ross](#)):**
  - WG has preliminary approval and is currently building membership.
  - First workshop is planned for late 2017, likely to be held in China.
  - WG leaders are working with CCAMLR Ross Sea MPA planners to ensure alignment of efforts.
  - Workshop in China to be sponsored by SOOS

#### Capability Working Groups ([CWG](#)):

- **Southern Ocean Air-Sea Fluxes ([SO-FLUX](#)):**
  - Officially approved at the 2016 SSC meeting.
  - Leadership meeting was held alongside Ocean Science Meeting to discuss key requirements for the pilot study
  - A [workshop report](#) was published in EOS
  - 4 focussed Task Teams developed
- **Censusing Animal Populations from Space ([CAPS](#)):**
  - A [workshop](#) was held alongside SCAR OSC, producing the following [report](#).
- **Ecosystem Essential Ocean Variables ([eEOVs](#)):**
  - WG has preliminary approval and is currently building membership.
  - [Community paper](#) was published,
  - Community presentation was given (IMOS Planning, March 2016)
- **Observing and Understanding the Ocean below Antarctic Sea Ice and Ice Shelves WG ([OASIIS](#)):**
  - Successful proposal to Partnership for Observation of the Global Ocean (POGO) for workshop support of a working group.
  - Workshop to be held 14-17 June 2017, hosted by AWI and sponsored by Australian Research Council's Antarctic Gateway Partnership, POGO and SOOS.

#### Task Teams ([TT](#)):

- **Southern Ocean Satellite Data Task Team ([Satellite TT](#)):**
  - The community report has been [published](#) and made open access
  - Task Team now complete

#### Key Products:

- **Southern Ocean Community annual calendar**
  - Initial static version of calendar provided to community [here](#)
  - Scoping for automated, dynamic calendar has been initiated and will be implemented by end of Feb 2017.

- **Maps of observing system elements**
  - Initial static version of maps provided online [here](#)
  - Proposal for IMAS-UTas Professional Development award for P. Bricher (successful)
  - Completion of Penn State University course on Open Web Mapping
  - New dynamic, online maps currently in development
- **Field Projects Planning Database ([Here](#)):**
  - Information on current and planned national/international field campaigns listed in static [table](#) on website
  - Community consultation and stakeholder engagement for development of database
  - Beta version of online, interactive [Field Project Planning Database](#) developed by Australian Antarctic Division and SOOS DMSC
  - Currently being tested by community
- **Southern Ocean Mooring Network**
  - Initial static version of mooring locations provided to the community
  - Dynamic map of retrieved and currently deployed moorings developed and provided online [here](#)
  - Initial information on mooring data provided
  - Discussions ongoing with data owners to populate the map continuing
  - Mooring data rescue work continuing (David Pasquale writing code to standardise data formats and document files for global mooring data).
- **Focussed Working Group listservers**
  - Initial scoping of options to enable working group-specific email lists for two-way correspondence between working group leaders, and working group members and interested communities

### Meetings/Workshops:

In 2016, SOOS held the following meetings and workshops:

- **SOOS Executive Committee meeting** (May 2016, Scripps, USA)
- **Joint SOOS-SOCCOM [Workshop](#)** (May 2016, Scripps, USA)
- **2016 SOOS Scientific Steering Committee [meeting](#)** (May 2016, Scripps, USA)
- **2016 SOOS Data Management Sub-Committee [meeting](#)** (May 2016, Scripps, USA)
- **SCAR OSC Scientific Session** (Aug 2016, Malaysia)
- **International [workshop](#) for the SOOS-endorsed [NECKLACE project](#)** (Oct 2016, Sweden)

In 2016, SOOS was presented or represented at the following 21 meetings:

- **POGO** (M. Meredith, R. Coleman; Japan, Jan 2016)
- **Ocean Sciences** (L. Newman, P. Bricher, M. Mata, M. Mazloff, O. Schofield, M. Meredith, S. Ackley, S. Diggs, A.N. Garabato, JB Saltee, A. van de Putt, R. Proctor, S. Gille; USA, Feb 2016)

- **New Zealand Sea-Ice Symposium** (M. Williams; NZ, Feb 2016)
- **IMOS Planning Meeting** (L. Newman; Aus, March 2016)
- **Joint CEP and SC-CCAMLR Workshop** (A. Constable; Chile, May 2016)
- **South African Network for Coastal and Oceanic Research** (S. Swart; S. Africa, June 2016)
- **Antarctic Treaty Consultative Meeting and CEP** (J. Baeseman; Chile, June 2016)
- **SCAR OSC** (L. Newman, P. Bricher, A. Constable, A. Wåhlin, O. Schofield, D. Costa, M. Williams; Malaysia, Aug 2016)
- **SCADM** (P. Bricher, A. Van de Putte, T. de Bruin; Malaysia, Aug 2016)
- **SCAR Delegates** (L. Newman, A. Constable; Malaysia, Aug 2016)
- **Instituto Antartico Argentino** (M. Mata; Argentina, August 2016)
- **SciDataCon** (P. Bricher; USA, Sept 2016)
- **ICSU World Data System** (P. Bricher; USA, Sept 2016)
- **Co-Data Data at Risk workshop** (P. Bricher; USA, Sept 2016)
- **SCOR EXCOM** (A. Wåhlin; Poland, Sept 2016)
- **CLIVAR OSC** (M. Mata; China, Sept 2016)
- **CLIVAR-CLiC-SCAR SORP** (M. Mata; China, Sept 2016)
- **MESOPP** (A. Constable; Aus, Sept 2016)
- **FRISP** (A. Wåhlin, R. Coleman, P. Bricher (virtual attendance); Sweden, Oct 2016)
- **CCAMLR** (L. Newman, A. Constable; Aus, Oct 2016)
- **Polar Data Interoperability Workshop** (P. Bricher, Virtual attendance; Nov 2016)

**Objective 3: Facilitate linking of sustained long-term observations to provide a system of enhanced data discovery and delivery, utilising existing data centres and programmatic efforts combined with, as needed, purpose-built data management and storage systems**

- **NASA GCMD [SOOS Metadata portal](#)**
  - Engagement with administrators for improvements and negotiations for upgrade
  - Engagement with data providers and end users
  - Brokering discussions for improvement of translations between key word vocabularies of PANGAEA and DIF
  - Negotiations for improvements in understanding of ISO “flavours” or ways of use
  - Negotiations for development of ISO-DIF translation tools for key portals (AODN, SeaDataNet, PANGAEA, CCHDO)
- **Mooring Data Project**
  - BEDI funding application for mooring data rescue (successful)
  - Position advertised and filled for mooring data coder
  - Management of mooring data coder position



- Engagement with mooring data providers and other stakeholders (e.g., OceanSITES)
  - Outreach for mooring data product
- **NECKLACE data management**
  - Community consultation on requirements for NECKLACE data management
  - DMSC scoping of available infrastructure to meet NECKLACE needs
  - Development of data policy options for NECKLACE
- **Federated Data Search Tool**
  - Community consultation on requirements for federated search tool
  - Engagement with Arctic data community for joint effort on tool development
  - Development of product scoping document
- **Data Support and Advocacy**
  - Development of data policy for Australian Research Council's Antarctic Gateway Partnership
  - Negotiation for ICSU World Data System membership
  - Memorandum of Coordination with the Australian Antarctic Data Centre
  - Memorandum of Coordination with SCADM

**Objective 4: Provide services to communicate, coordinate, advocate and facilitate SOOS objectives and activities**

- **Advocacy for Southern Ocean Observations**
  - 4 newly endorsed field campaigns
  - Plenary presentation at SCAR OSC
  - Development of document highlighting Southern Ocean observational requirements for submission to G7
  - Promotion of Southern Ocean contribution to WMO Year of Polar Prediction
- **Engagement with international stakeholders**
  - Of note in 2016: IMOS, GOOS Regional Alliances, POGO, OOPC, CCAMLR, CEP, EU-PolarNet, WMO YOPP, COLTO, SORP, SONA, MESOPP, MEOP, JCOMMOPS, APECS, SOCCOM
  - Engagement with national representatives and communities
- **Communication Strategy is implemented**
  - 3 Newsletter issues published
  - 6 peer-reviewed publications
  - 2 Workshop Reports
  - SOOS 2016 Posters and Presentations published online
  - Regular updates to social media channels
  - Website maintained with up-to-date information and products

- Draft design of new homepage with focus on key products
  - Advocacy and outreach of SOOS products and activities
- **Sustained funding for SOOS IPO**
  - Draft of SOOS Funding Strategy
  - Draft of SOOS 5-Year Business Plan
  - Agreement by all existing [IPO sponsors](#) (direct and in-kind) for continuation of existing level of sponsorship for 2016
  - Change in funders of Executive Officer salary from the Institute for Marine and Antarctic Studies at the University of Tasmania (ended August 2016) to the Australian Research Council's Special Research Initiative [Antarctic Gateway Partnership](#) (Project ID SR140300001), which now funds both the Executive Officer (until mid-2018) and Data Officer (until Oct 2017).
  - Agreement for University of Gothenburg co-sponsorship of SOOS Data Officer position for 2017
- **Governance**
  - SOOS network grown from 46 to 48 [Affiliated Organisations](#) and new [national representatives](#) from Japan and Argentina.
  - Organisation and running of SOOS monthly EXCOM meetings
  - 2016 SOOS Scientific Steering Committee meeting (May 2016, USA, Minutes available [here](#)).
  - 2016 SOOS Data Management Sub-Committee meeting (May 2015, USA, Minutes available [here](#)).
  - Changes to the SSC membership: 3 inaugural members rotated off at the end of 2016 (S. Ackley, J. Liu, A.N. Garabato). Three new SSC members selected from an open, international call for nominations. New members are Anya Waite (Germany), Burcu Ozsoy (Turkey), Dake Chen (China). Existing member, Andrew Constable, approved for his second 3-year term
  - Annual reports to Antarctic Treaty, SCAR, SCOR, IPO Sponsors
  - Management of Scientific Steering Committee, Executive Committee and Data Management Sub-Committee activities and communication
  - Organisation of annual SOOS 2017 meetings for EXCOM, SSC and DMSC (June 2017, AWI, Germany)
- **Strategic Activities**
  - SCAR/SCOR International review of 5-Year Implementation Plan: Development of document "SOOS Response to Review"
  - Modification of Implementation Plan
  - 5-Year Operating Plan
  - 5-Year Business Plan
- **IPO Support for Implementation Activities**
  - Support for Working Group workshops
  - Sourcing funding for Working Group activities/products

- Management of SOOS sponsorship and funding of SOOS activities
- **Efficient running of the IPO**
  - Management of IPO staff
  - Management of SOOS budget and finances
  - Fulfilment of IMAS-UTAS requirements
  - IPO Annual Workplan

## ***Sponsorship***

SOOS thanks the following sponsors for their support in 2016:

- SCOR
- SCAR
- Australian Research Council's Special Research Initiative [Antarctic Gateway Partnership](#) (Project ID SR140300001)
- IMAS, University of Tasmania,
- Australian Antarctic Division
- Antarctica New Zealand
- University of Gothenburg
- Integrated Marine Observing System
- Tasmania Partnership for Advanced Computing
- NASA Global Change Master Directory
- NSF - CLIVAR and Carbon Hydrographic Data Office

SOOS also acknowledges the support provided to our SSC and DMSC members by their institutions.

# Attachment 2. Southern Ocean Observing System (SOOS) Sponsors

## SOOS Governing Bodies



## Core Sponsors



## Service Providers



## IPO Operational Sponsors



Australian Government  
Department of the Environment  
Australian Antarctic Division



ANTARCTIC CLIMATE  
& ECOSYSTEMS CRC



Australian Government  
Department of the Environment  
Australian Antarctic Division



Antarctica New Zealand



ANTARCTIC  
GATEWAY PARTNERSHIP  
A Special Research Initiative of  
the Australian Research Council



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