SAON Board Update
Report from the Arctic Data Committee and Partners

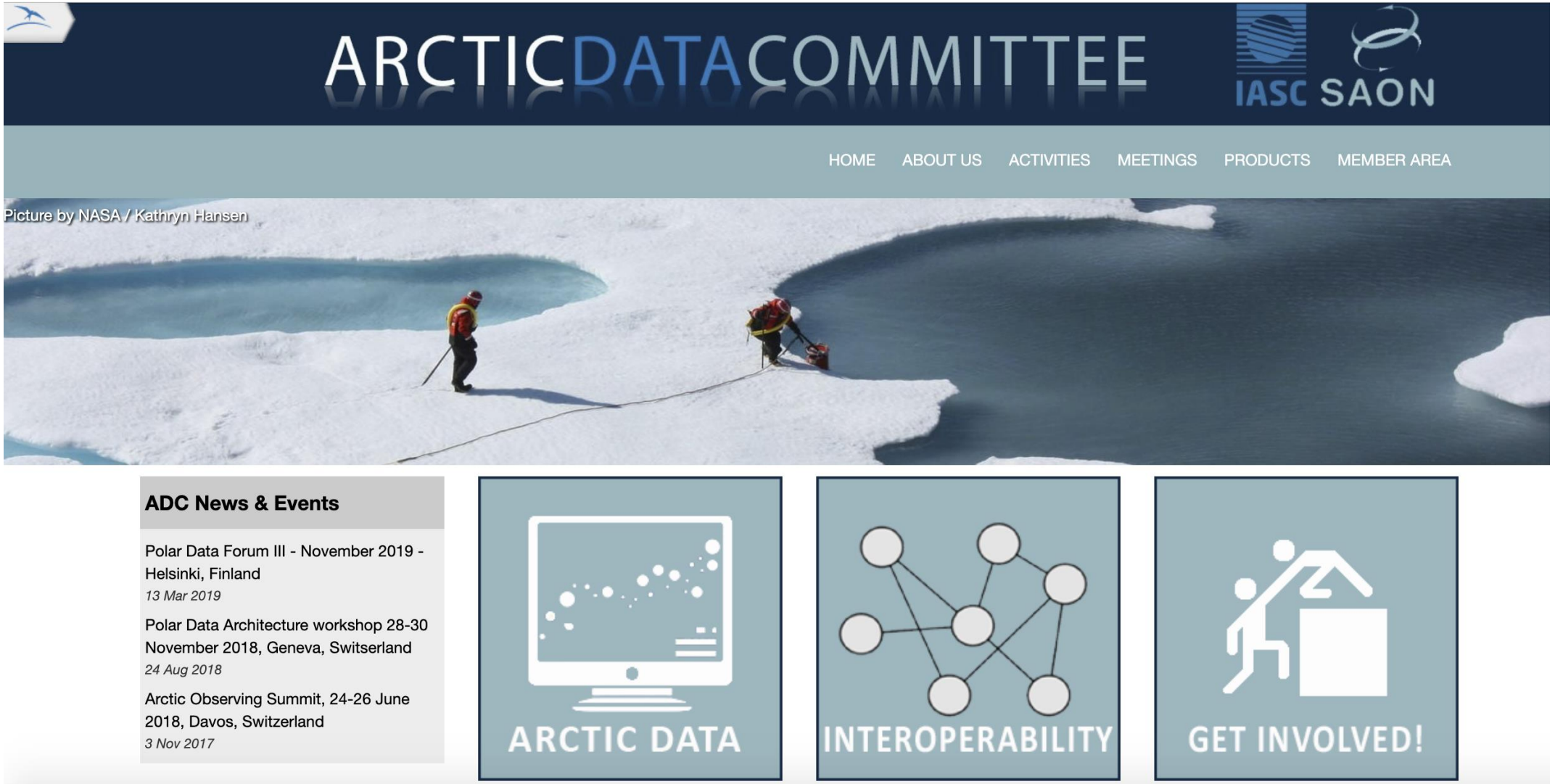
Peter L. Pulsifer (Carleton University, NSIDC U Colorado)
Chair, IASC-SAON Arctic Data Committee (ADC)
Co-Lead GEO Cold Regions Initiative

Marten Tacoma, Stein Tronstad (ADC Co-Chairs)

Pip Bricher, SOOS

Anton Van de Putte, SCADM

http://arcticdc.org



ASM2 Deliverable Statement

Sub-Theme 2: Implementing and Optimizing a Pan-Arctic Observing System

Arctic Observing Summit (A
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Working Group 4: Participants of this group will focus on the role o
system implementation.

Co-chairs: Dr. Peter Pulsifer (National Snow and Ice Data Center); [
Meteorological Institute)

Rapporteur: Dr. Anja Rosel (Norwegian Polar Institute); Ms. Shannon Christoffersen (University of Calgary).

Thematic Working Group members: Dr. Paul Berkman (Tufts University); Dr. Maribeth Murray (University of Calgary); Dr. Roberta Pirazzini (Finnish Metorological Institute); Ms. Sarah Marie Strand (The University Centre in Svalbard); Mr. Mikko Strahlendorff (Finnish Meteorological Institute); Dr. Taneil Uttal (National Oceanic and Atmospheric Administration).

Title: Developing an architecture for an international, interconnected arctic data system

Funding Programme and/or Organisation

Sustaining Arctic Observing Networks (SAON)

Coordinating organisations and main contact person

- The Arctic Data Committee
- Standing Committee on Antarctic
- Southern Ocean Observing Syste

Main contact person: Peter L. Pulsife
Colorado, Boulder, USA; e-mail: pete

Description of the deliverable

Arctic societies, science and services are entering a new era that increasingly require cross-cultural, interdisciplinary integration of data to provide critical understanding and products. These needs require an integrated Arctic data system that is not only part of the global system, but which also allows exchange and usage of data between disparate data systems. Such a data system will allow enhanced understanding that is critical for mitigating risk to humans and infrastructure, reducing costs of adaptation and development, and supporting much needed research that spans disciplines and knowledge systems, including science and Indigenous Knowledge.

Data are an integral element in the observing system value chain. Without a data system that makes well documented data accessible, many kinds of observations are ephemeral and their value is limited. As such, we must ensure that the overarching observing

https://polar-data-forum.org/

Policy, Broader Context and Scenarios

For more information on this workshop please contact Peter Pulsifer
Convening bodies: Arctic Data Committee, Southern Ocean Observing System, Standing Committee on Antarctic Data Management

Duration: one day

Background

A number of recent conferences, workshops and meetings have confirmed that there are many national, regional and local projects and programs that are active in polar data management and stewardship and that also have a mandate or desire to contribute to regional or international coordination of efforts and activities. Many of those initiatives have resources available and are making progress towards an envisioned connected, interoperable polar data system. The international polar data community is eager to improve cooperation and coordination of their efforts.

At the 3rd Polar Data Forum, representatives from a wide range of different active programs and

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Paper, White Paper, Manuscript

- At Third Polar Data Forum, Pulsifer, McCubbin et al. will present a paper that will report on a synthesis of the content and outcomes of key Arctic and Polar data meetings and events dating to 2006

Reports Analyzed to Date

- Report 1: IPY Data Management Workshop (2006)
- Report 2: SAON Data Management Workshop Report (2010)
- Report 3: IPY Arctic Data Coordination Network Workshop minutes (2012)
- Report 4: Report on Workshop on Cyberinfrastructure for Polar Sciences (2013)
- Report 5: International Forum on Polar Data Activities in Global Data Systems Communique (2013)
- Report 6: Second Polar Data Forum Communique (2015)
- Report 7: Data Management for Arctic Observing: A Community White Paper (2013)
- Report 8: Response to the Open Geospatial Consortium Request for Information on Arctic Spatial Data by the Polar Data Community (2016)
- Report 9: OGC Arctic Spatial Data Pilot Phase 1 Report (2016)
- Report 10: Polar Data and Platform Interoperability Requirements (2017)
- Report 11: Developing an architecture for an international, interconnected arctic data system, SAON (2018)
- Report 12: Report of the 2nd Canadian Polar Data Workshop (2017)
- Report 13: Summary Report: Polar Data and Systems Architecture Workshop (2018)
- Report 14: Polar Data Planning Summit - Context and Scenarios Minutes (2018)

Top-Level, Key Themes Identified

Social and Organizational

- Community Building and Coordination (includes sub-themes, e.g. Data Managers, Mediators, Coordinators)
- Engaging Arctic Indigenous Peoples
- Education, Outreach, Culture Change
- Funding
- …

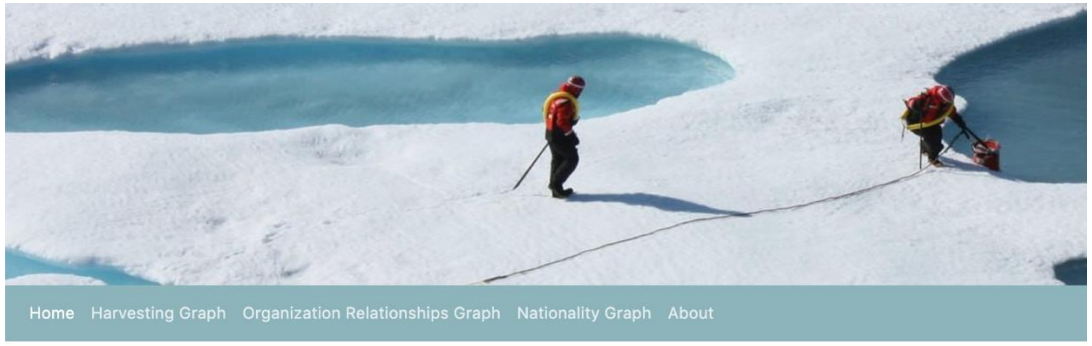
Technical

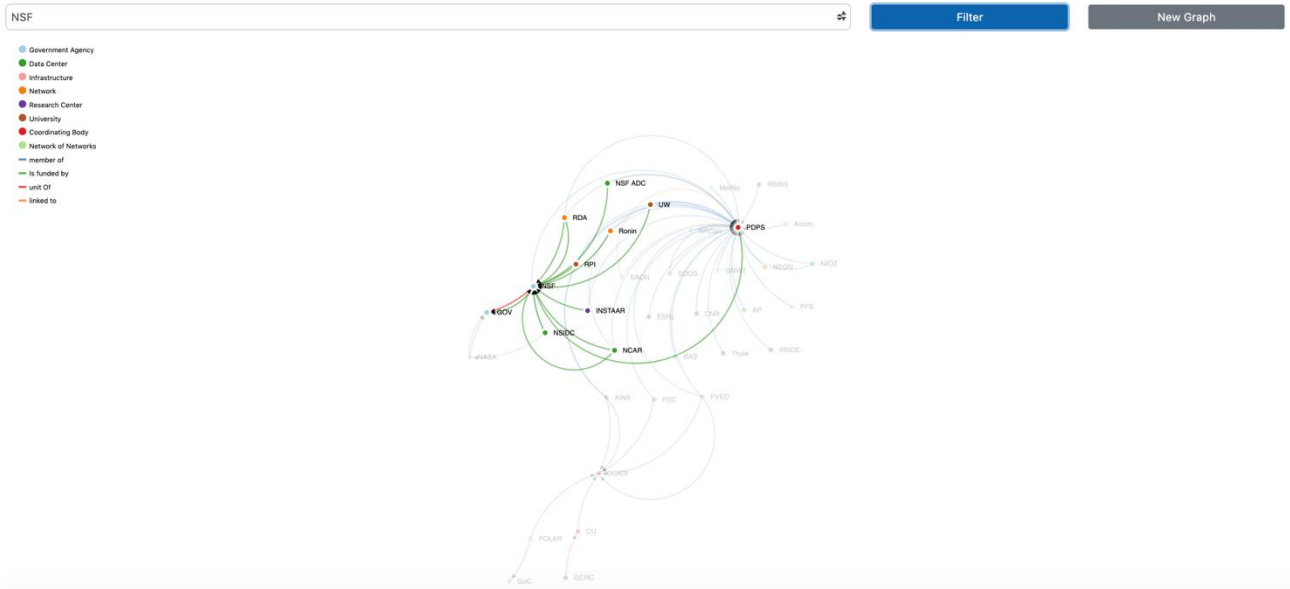
- Interoperability
- Data Discovery
- Data Archiving

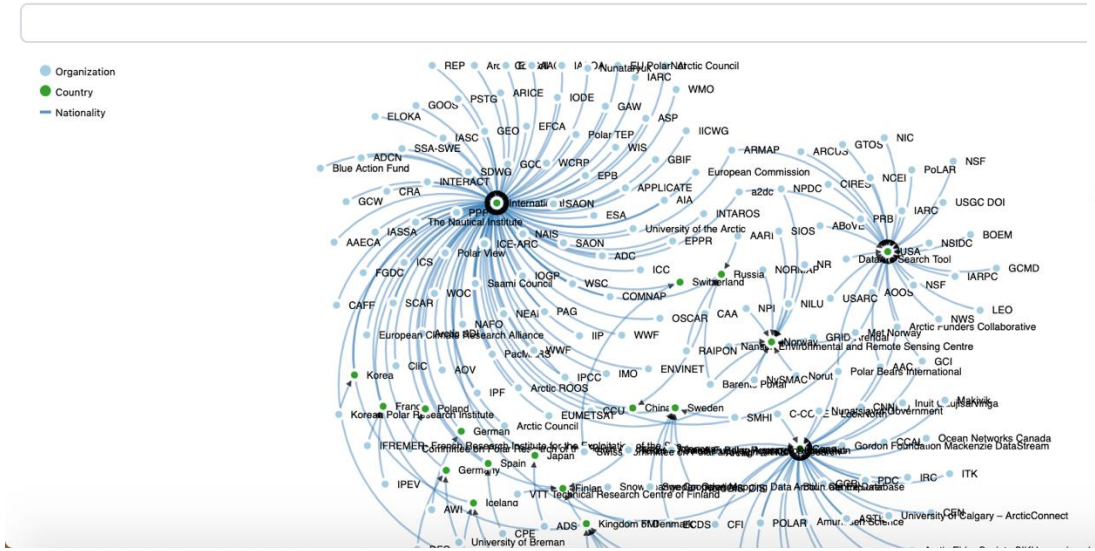
Matrix and Other Analyses Provide “weight” of Themes

			Report1	Report2	Report3	Report4	Report5	Report6	Report7	Report8	Report9	Report10	Report11	Report12	Report13	Report14
Non-Technical	**Themes**	**Subthemes**														
	Community Building		x	x	x	x	x	x	x	x	x	x	x	x	x	x
		Data Managers	x	x		x			x	x						x
		Inclusion	x	x	x							x				x
		Shared Terminology			x							x		x		
		CaaS								x	x					
	Education, Outreach, and Culture Change		x	x		x	x	x	x	x	x	x			x	x
	Funding		x	x		x	x	x	x	x	x	x		x		x
	Engaging Arctic Indigenous People				x			x	x	x	x	x	x	x	x	x
	Governance		x	x	x		x		x		x	x	x	x		x
	Best Practices		x	x		x	x		x						x	x
	Understanding Stakeholder Needs								x					x	x	
Technical	**Themes**	**Subthemes**														
	Interoperability		x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Standards		x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Data Access		x	x	x	x	x	x	x	x	x	x	x	x		x
	Data Archiving		x	x	x	x	x	x	x	x	x	x		x		
	Data Discovery		x	x		x	x		x	x	x	x	x		x	
		Metadata	x	x	x	x				x	x	x			x	x
	Data Publication and Attribution		x	x	x	x	x	x	x	x	x	x				
	Data Integration		x		x		x		x	x	x	x	x			
	Data Quality and Integrity		x	x		x	x			x		x				x
	Data Rescue		x	x				x		x	x	x				
	Controlled Semantics and Vocabularies		x		x				x	x					x	
	Architecture															
	Data Platforms									x	x	x				
		CaaS								x	x					
		DaaS				x				x	x	x				x
		InaaS				x				x	x					
		SaaS				x				x	x	x				
		IaaS								x	x					
		Data Visualization	x	x		x		x		x	x	x				
	Data Processing and Storage					x				x	x	x				

Combining Analysis with Mapping the Arctic Data Ecosystem project Visualization and Analysis Tool







Next Steps

- Summary paper presented at Third Polar Data Forum
- Using feedback from Forum, Arctic Observing Summit White Paper to be submitted
- Journal article manuscript submitted based on White Paper and other work
- These documents can be used to provide SAON guidance to ArcticGEOSS consortia developing their proposals

Thank you!

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