Update on Arctic Data Committee Activities

IASC Council, SAON Board, ASSW, May 2019

Peter L. Pulsifer (NSIDC, CIRES, U Colorado)

Co-Lead, **IARPC** Arctic Data Sub-Team

Chair, IASC-SAON Arctic Data Committee (ADC)

Co-Lead GEO Cold Regions Initiative

Marten Tacoma, Stein Tronstad (ADC Co-Chairs)

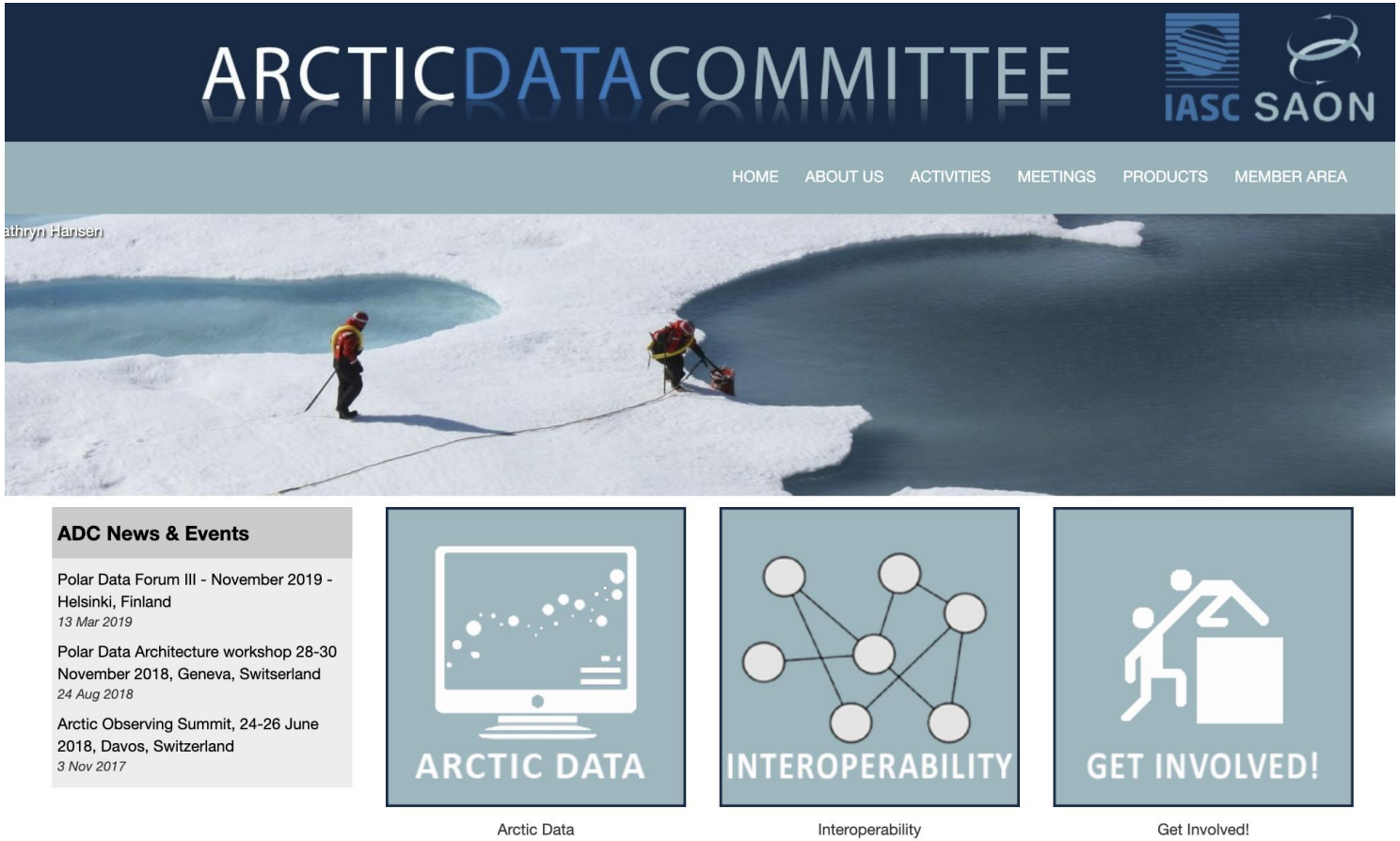
Pip Bricher, SOOS

Anton Van de Putte, SCADM

ARCTIC DATA COMMITTEE

IASC SAON

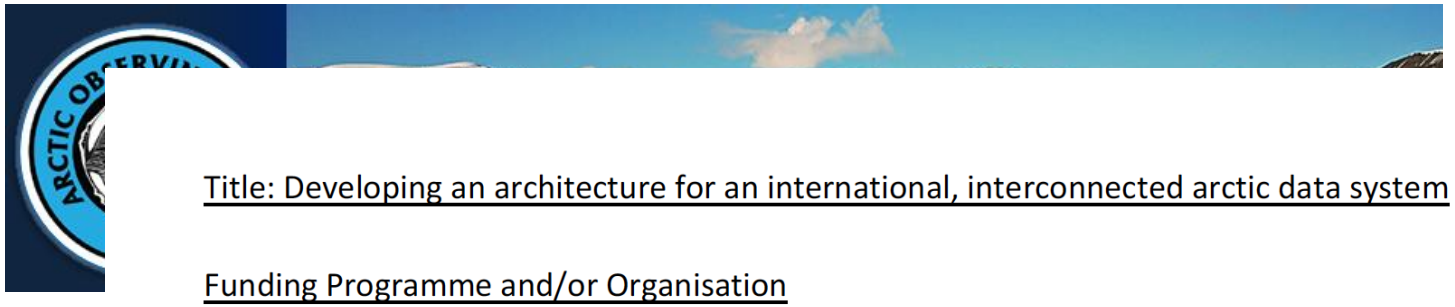
IASC – SAON Arctic Data Committee



https://arcticdc.org/

ASM2 Deliverable Statement

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



Arctic

Working Group 4: Participants of this group will f
system implementation.

Co-chairs: Dr. Peter Pulsifer (National Snow and I
Meteorological Institute)

Rapporteur: Dr. Anja Rosel (Norwegian Polar Inst

Thematic Working Group members: Dr. Paul Berkman (Tufts University); Dr. Maribet
Calgary); Dr. Roberta Pirazzini (Finnish Metorological Institute); Ms. Sarah Marie Strar
Centre in Svalbard); Mr. Mikko Strahlendorff (Finnish Meteorological Institute); Dr. Tan
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

- The Arctic Data Commit
- Standing Committee on
- Southern Ocean Observi

Main contact person: Peter
Colorado, Boulder, USA; e-n

Description of the deliverable

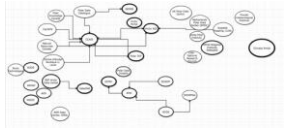
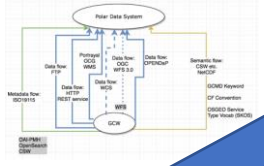
Arctic societies, science and services are entering a new era that increasingly require cross-cultural, interdisciplinary integration of data to provide critical understanding and products. These needs require an integrated Arctic data system that is not only part of the global system, but which also 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

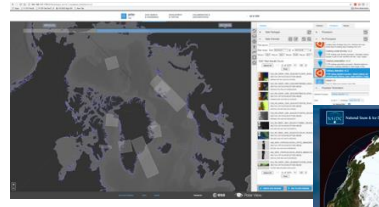
Components of the Data System

Components of the Data System

Infrastructure
(technology, standards, network)

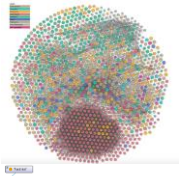




Applications
(mediators,
specific, identified users)



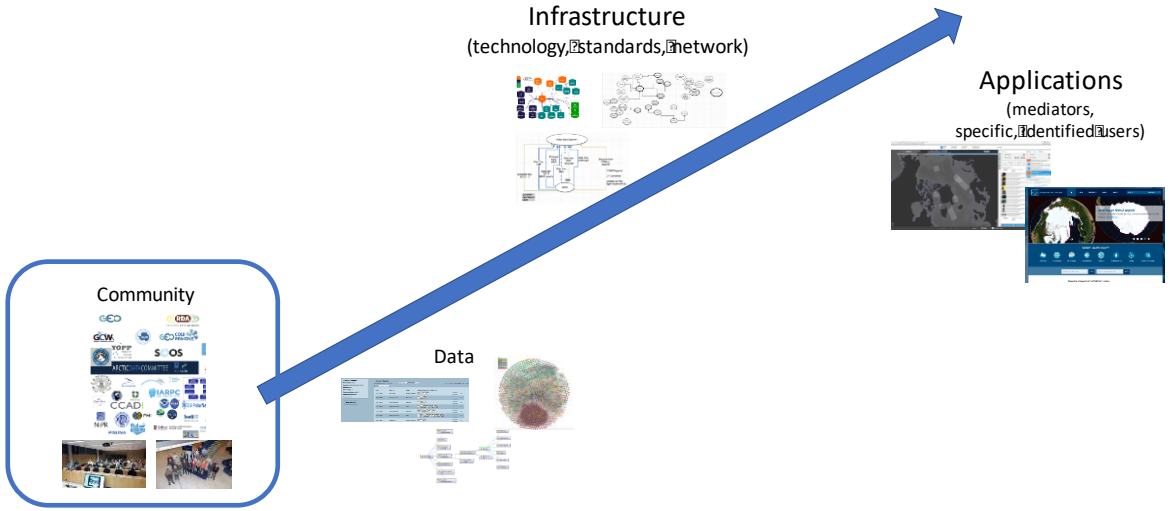

Community


Data

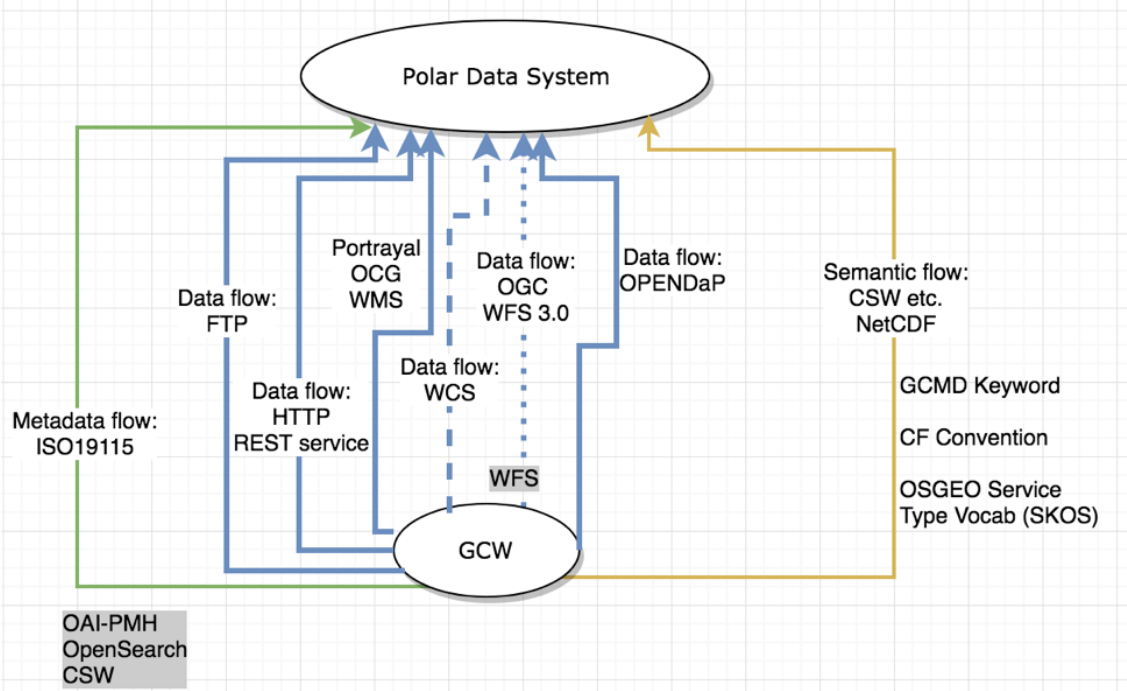

Recent Activities

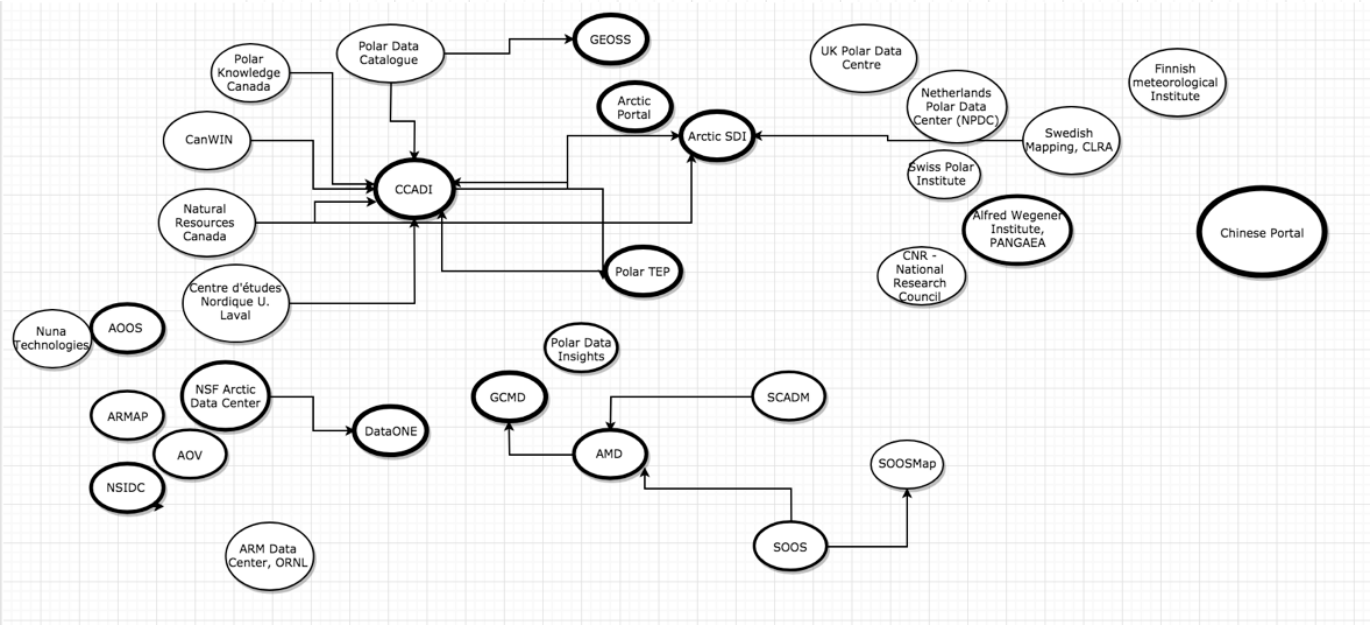
Community


Infrastructure
(technology, standards, network)
Applications
(mediators, specific, identified users)
Community
Data

Polar Data and Systems Architecture Workshop

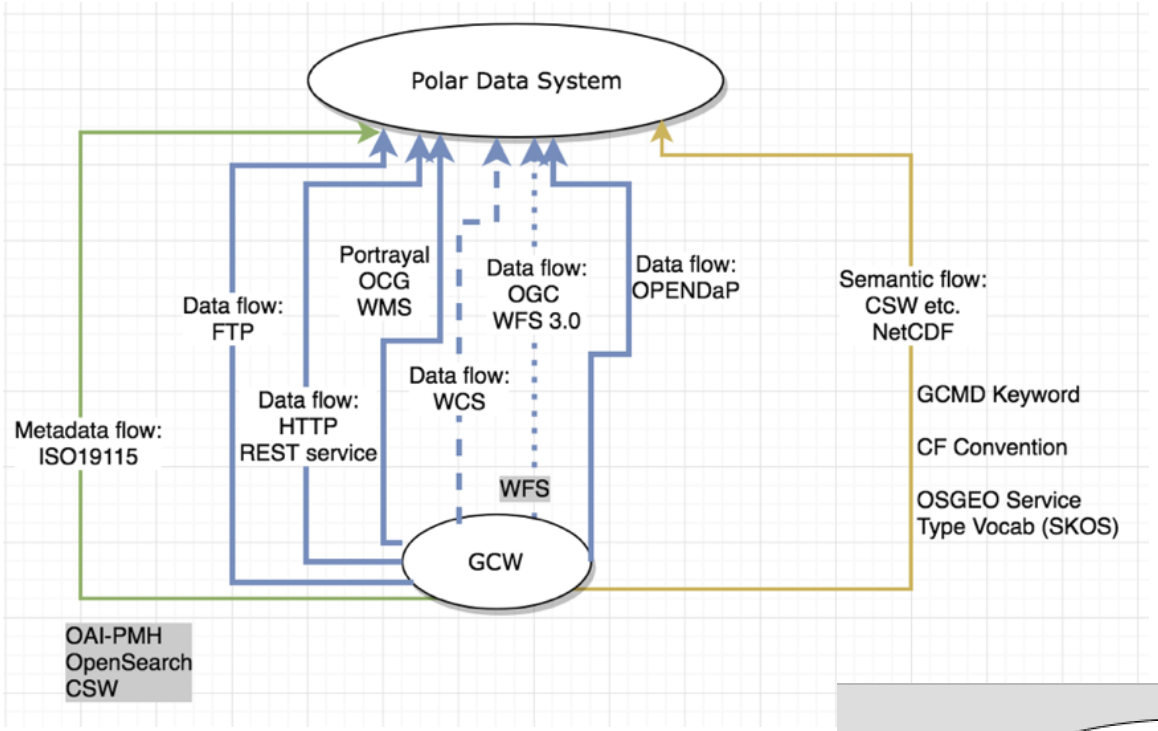
28 – 30 November 2018, Geneva

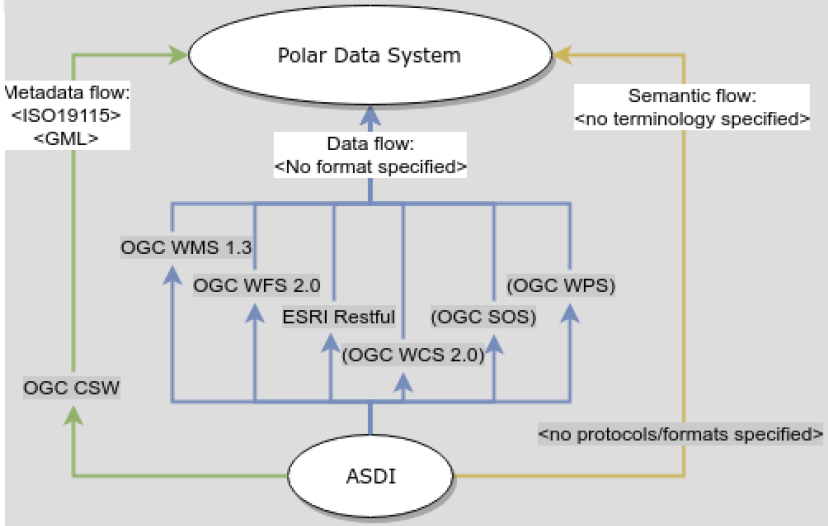




PDSAW Summary

- https://arcticdc.org/meetings/conferences/polar-data-architecture-workshop
- WMO Headquarters, Geneva, Switzerland
- 40 + experts, 20 Organizations, 17 nations
- Continuing work of Polar Data Planning Summit
- https://arcticdc.org/meetings/conferences/polar-data-planning-summit

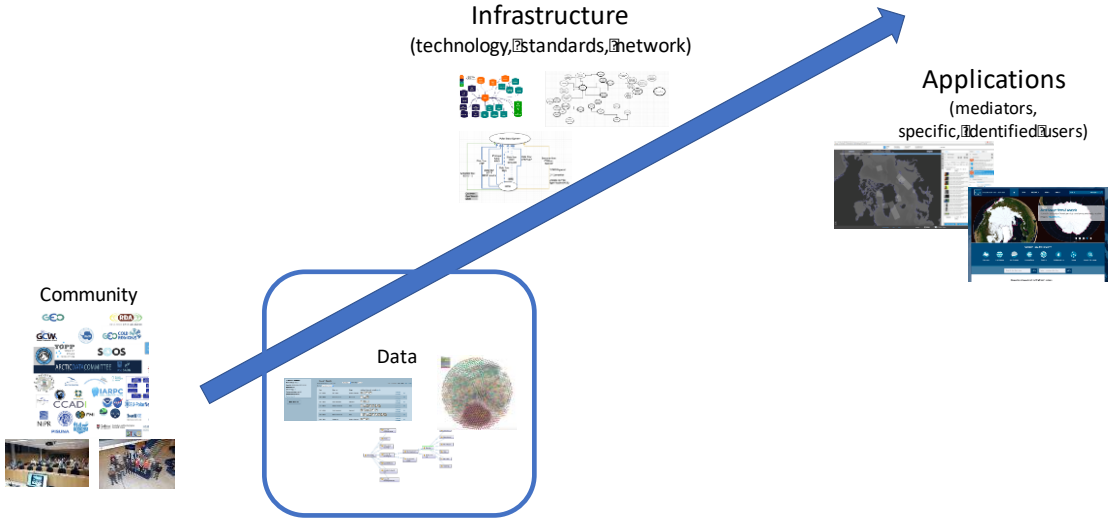




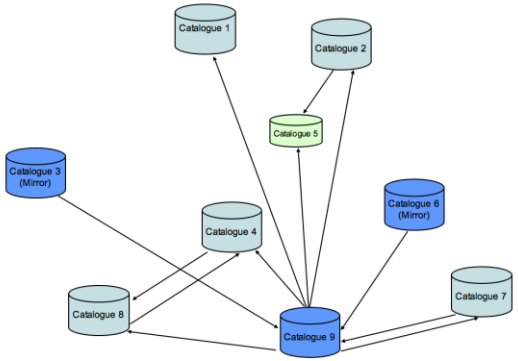
Notes

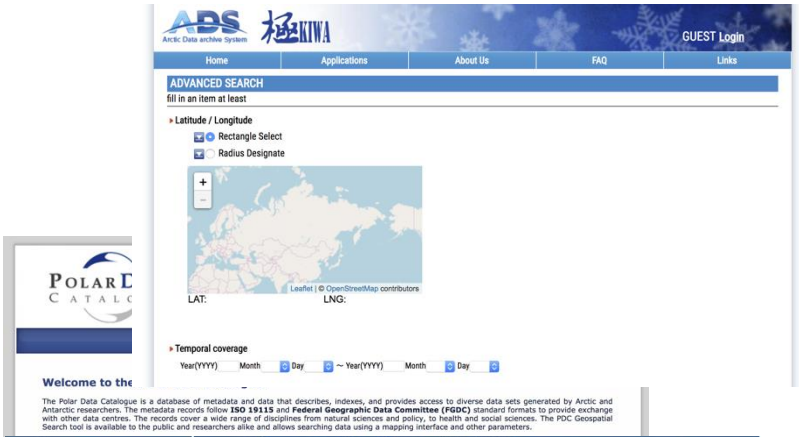
- No specific information on harvesting, but indication on relationships with USGS, SWEDEM, IHO, NRCAN, ... no explanation provided
- ASDI addresses governance, relationships and standards.
- Comment on ISO19115 keywords not readable in photo.
- Photo identifies GML for discovery metadata exchange, but no protocol.
- Comment on metadata and GML that is not put in context.
- For OGC WPS projection support is listed.
- SKART is listed for embedded maps in pages under data flow, but not references given.
- Protocols etc listed in parantheses are plans.
- Relations to INSPIRE and GMES are indicated in image, but not explained.
- Seems like ASDI hub services are offered through ASDI GeoPortal.

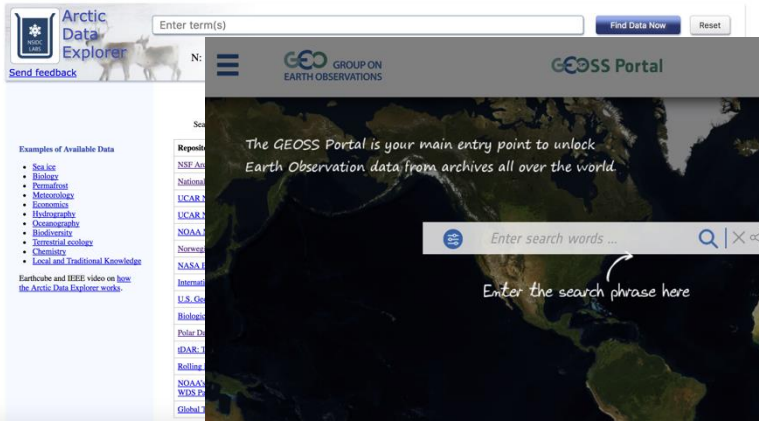
Data Discovery

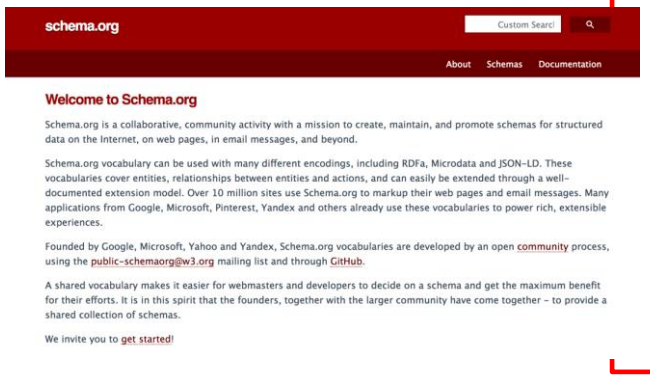


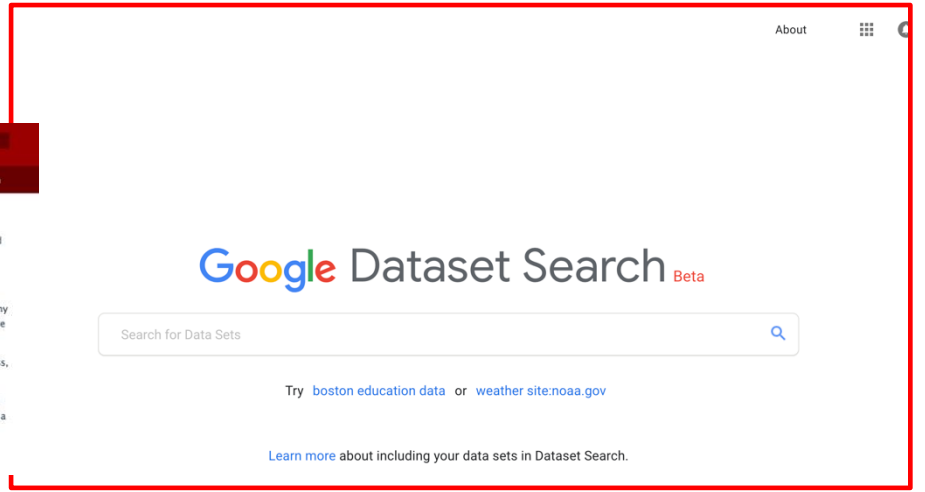
Data Discovery

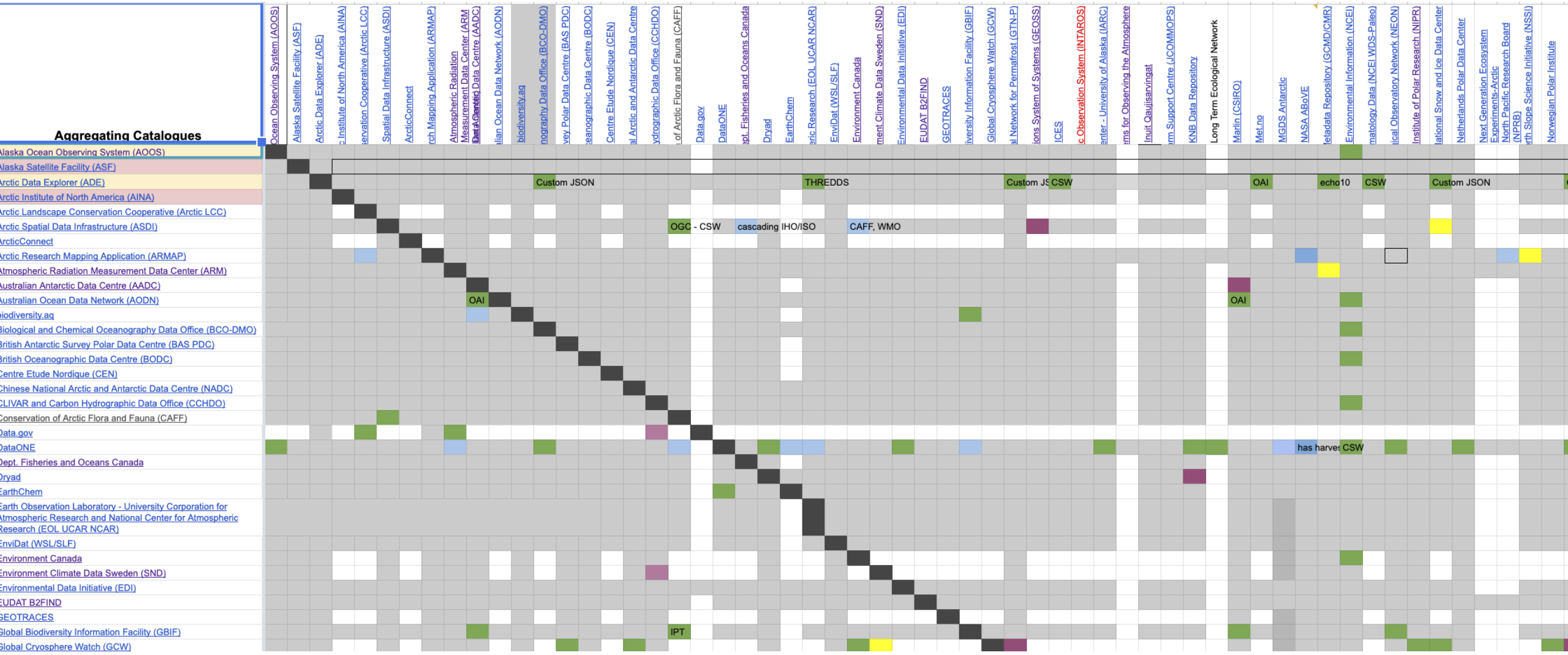











Aggregating Catalogues
Alaska Ocean Observing System (AOOS)
Alaska Satellite Facility (ASF)
Arctic Data Explorer (ADE)
Arctic Institute of North America (AINA)
Arctic Landscape Conservation Cooperative (Arctic LCC)
Arctic Spatial Data Infrastructure (ASDI)
ArcticConnect
Arctic Research Mapping Application (ARMAP)
Atmospheric Radiation Measurement Data Center (ARM)
Australian Antarctic Data Centre (AADC)
Australian Ocean Data Network (AODN)
biodiversity.aq
Biological and Chemical Oceanography Data Office (BCO-DMO)
British Antarctic Survey Polar Data Centre (BAS PDC)
British Oceanographic Data Centre (BODC)
Centre Etude Nordique (CEN)
Chinese National Arctic and Antarctic Data Centre (NADC)
CLIVAR and Carbon Hydrographic Data Office (CCHDO)
Conservation of Arctic Flora and Fauna (CAFF)
Data.gov
DataONE
Dept. Fisheries and Oceans Canada
Dryad
EarthChem
Earth Observation Laboratory - University Corporation for Atmospheric Research and National Center for Atmospheric Research (EOL UCAR NCAR)
EnviDat (WSL/SLF)
Environment Canada
Environment Climate Data Sweden (SND)
Environmental Data Initiative (EDI)
EUDAT B2FIND
GEOTRACES
Global Biodiversity Information Facility (GBIF)
Global Cryosphere Watch (GCW)
Custom JSON
THREDDS
Custom JS
CSW
OAI
echo10
CSW
Custom JSON
OGC - CSW
cascading IHO/ISO
CAFF, WMO
OAI
OAI
has harves
CSW
IPT

The Way Forward

Build on Successful Model

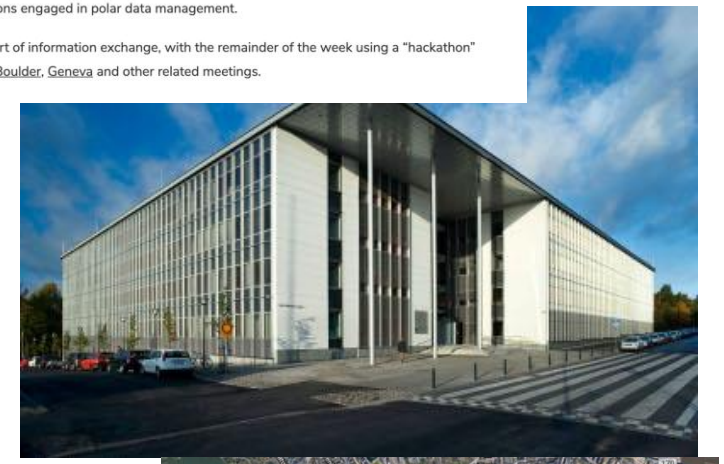
- Maintain community building momentum and productivity:
  - **Third Polar Data Forum - 18-22 November 2019, Helsinki, Finland**
  - Reporting on recent activities (publications, synthesis papers, data system “map”)
  - Report at AOS 2020, ASM3 etc.
  - Welcome and cultivate new partners

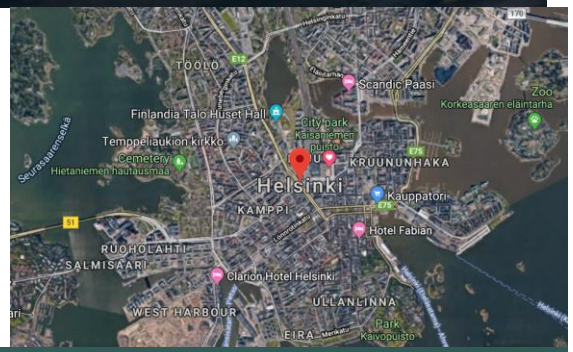
Third Polar Data Forum

Third Polar Data Forum

- Week of 18 November 2019, FMI HQ, Helsinki, Finland
- 2 days plenary ; 3 days ”hackathon”
- Convened by ADC, SOOS, SCADM, WDS, GCW, others
- Hosted by FMI, INTAROS, NIOZ, EPB, others
- General knowledge sharing +
- Concrete activity/progress on:
  - Federated search
  - Semantics
  - Data interoperability
- Several planning activities ; committees forming
- Aiming for detailed materials for ASSW

Temporary URL: http://bit.ly/PDFIIISite





How Can You Help?

1. Identify individuals and organizations in your country (or organization) who are responsible for data… encourage / assign / force engagement in the process! ☺
2. Identify individuals and organizations in your country (or organization) who are researchers, community members, decision maker… encourage / assign / force engagement in the process.
3. Generate resources to support the effort.

Arctic Data Committee Steering Group

Peter L. Pulsifer	USA	Chair
Stein Tronstad	Norway	Vice-Chair
Marten Tacoma	Netherlands	Vice-Chair

National and Organizational Members and Representatives

Oscar Bermudez	Spain
Gabrielle Alix	Canada
Øystein Godøy	WMO
Halldór Jóhannsson	Iceland
Matthew Jones	NSF Arctic Data Center (USA)
Max Petzold	Sweden
Siri-Jodha Singh Khalsa	IEEE
Hanna K. Lappalainen	Finland
Paolo Mazetti	Italy
B.K. Park	Korea
Neil Holdsworth	ICES
Stefanie Schumacher	Germany
Serge Scory	EU-PolarNet
Mikko Strahlendorff	Finland
Wang Dali	China
Hironori Yabuki	Japan
Zhang Beichen	China
Henrik Andersen	European Environment Agency

Thank you!

Questions: peter.Pulsifer@colorado.edu

This material is based in part upon work supported by the National Science Foundation under Grant Numbers PLR 1513438, ARC 0856634 and ARC 1231638