



HORIZON 2020

Research and Innovation action

Grant Agreement No. 730965



ARICE: Arctic Research Icebreaker Consortium:

**A strategy for meeting the needs for marine-based research
in the Arctic**

**Deliverable 7.5. Agreement on procedures for virtual
access to the ARICE cruises**

Submission of Deliverable

Work Package	WP7
Deliverable no. & title	D7.5. Agreement on procedures for virtual access to the ARICE cruises
Version	V1
Creation Date	01.11.2019
Last change	20.01.2020
Status	<input type="checkbox"/> Draft <input checked="" type="checkbox"/> WP lead accepted <input checked="" type="checkbox"/> Executive Board accepted
Dissemination level	<input checked="" type="checkbox"/> PU-Public <input type="checkbox"/> PP- Restricted to programme partners <input type="checkbox"/> RE- Restricted to a group specified by the consortium <input type="checkbox"/> CO- Confidential, only for members of the consortium
Lead Beneficiary	AWI
Contributors	<input checked="" type="checkbox"/> 1 – AWI, <input checked="" type="checkbox"/> 2 – SPRS, <input checked="" type="checkbox"/> 3 - NPI, <input checked="" type="checkbox"/> 4 - ULAAVAL, <input checked="" type="checkbox"/> 5 – UAF/CFOS, <input checked="" type="checkbox"/> 6 – AP, <input type="checkbox"/> 7 – CSIC-UTM, <input type="checkbox"/> 8 – CNR, <input type="checkbox"/> 9 - WOC, <input type="checkbox"/> 10 – IOPAN, <input type="checkbox"/> 11 – FMI, <input type="checkbox"/> 12 - CNRS, <input checked="" type="checkbox"/> 13 – NERC-BAS, <input type="checkbox"/> 14 – DTU-AQUA, <input checked="" type="checkbox"/> 15 – ARCTIA
Due date	31.12.2019
Delivery date	21.01.2020

1. Introduction

With their global capability and diverse array of sensors, research vessels are essential mobile observing platforms for ocean science. Data collected on every expedition are of high value, given the high cost and increasingly limited resources for ocean exploration.

Virtual access is the free of charge provision of access to widely used resources needed for research that are openly and freely available through communication networks. For non-commercial use, interested parties can have access to datasets and metadata collected by the ARICE icebreakers, when available, without visiting the research infrastructures. In this virtual data access, there is no need for a comparative selection of users and there is thus no selection procedure.

This deliverable provides detailed information on where cruise information and cruise data can be accessed publicly; and if this data is not publicly available, whether there is an agreement to access this data.

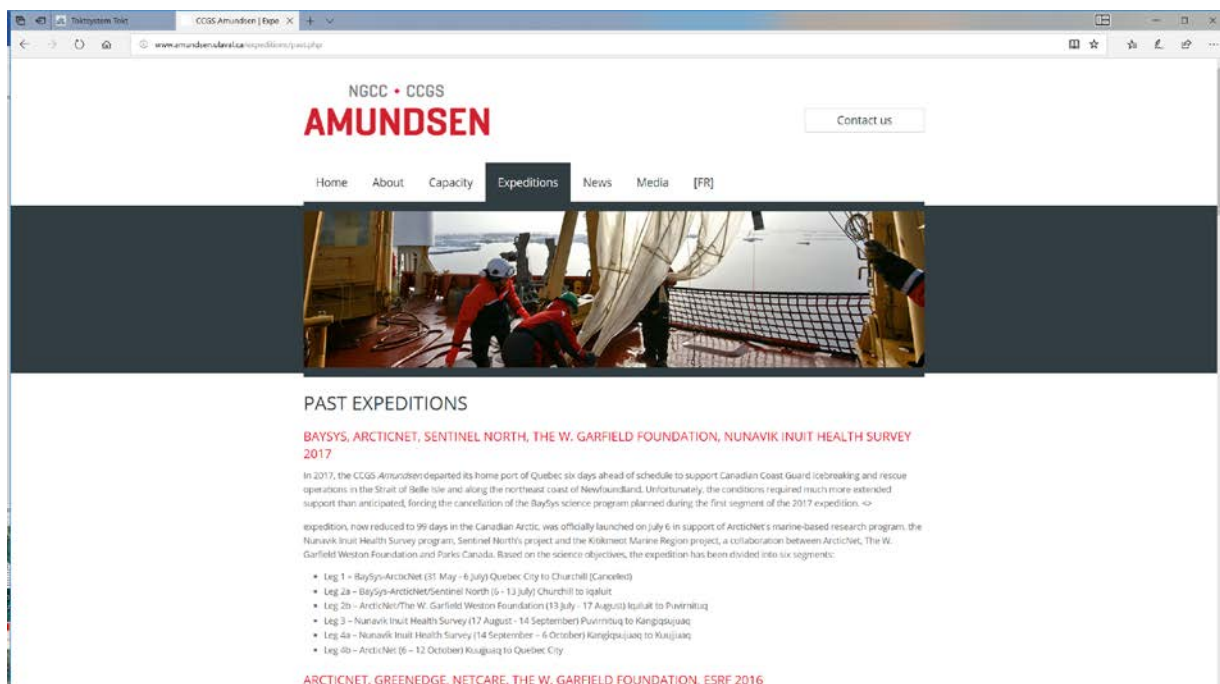
2. Cruise data from ARICE icebreakers

CCGS Amundsen (Canada)

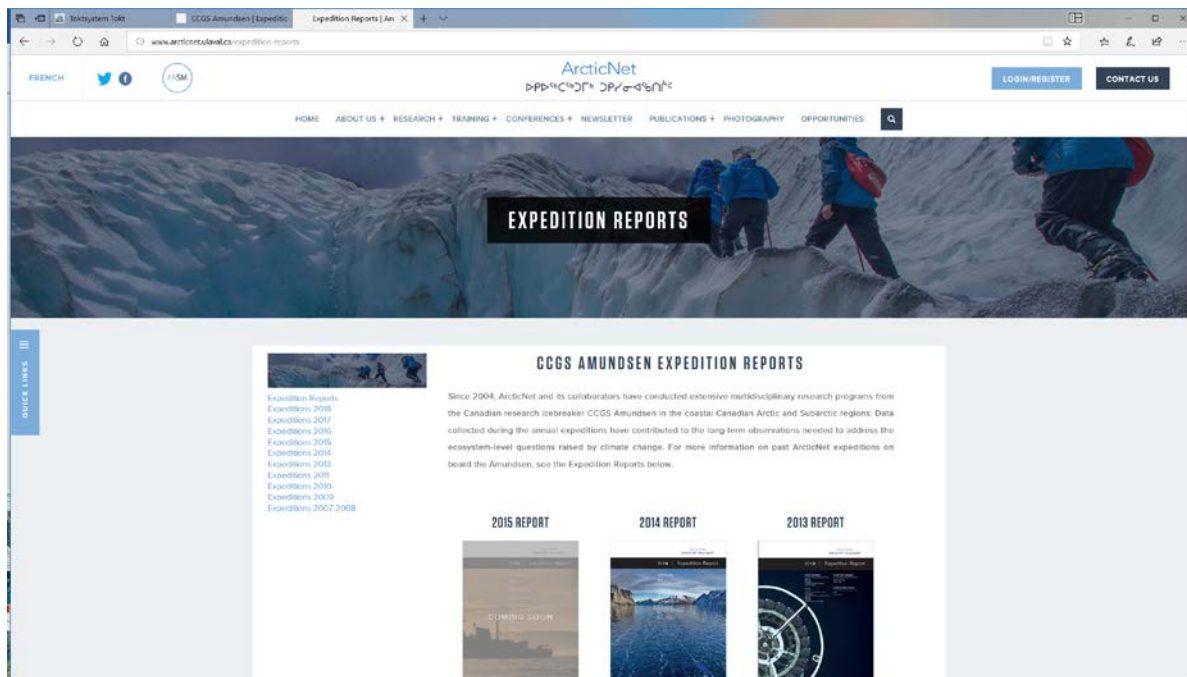
Cruise database:

All CCGS Amundsen's past and current expeditions are listed on the Amundsen website at the following link:

<http://www.amundsen.ulaval.ca/expeditions/past-fr.php>.



From winter 2020, the annual cruise reports will also be uploaded on <http://www.amundsen.ulaval.ca/>. In the meantime, these reports are also available on the ArcticNet Website, an important user program of the facility: <http://www.arcticnet.ulaval.ca/fr/rapports-dexpedition-damundsen>.



Datasets collected by the vessel:

There are two “types of data collected on board the ship”: the core data from the central pool of equipment, managed by Amundsen Science, and the data collected directly by the scientists and user programs mobilizing the ship.

The core datasets consist of physical data from the CTD rosette, Moving Vessel Profiler, Imagery (ROV, Multibeam, Subbottom, 360 cameras around the ship, EK80 and SX90 sonars), Current meters (punctual and continuous), meteorology AVOS, TSG or thermosalinograph (continuous surface sampling), and moorings.

Metadata and data from the central pool of equipment are, for the majority archived, on the Polar Data Catalogue (www.polardata.ca). Besides, the new Amundsen Science website (available in January 2020) will display a page on our data policy, data management principles and the access links to the datasets of Amundsen Science Data Collection, on the PDC or elsewhere.

Our new website will also display a list of all available data (or soon to be available) not directly available online. The contact information to access these data is Amundsen.data@as.ulaval.ca.

Metadata and data under the responsibility of the scientists and user programs should follow the policies of their funding agencies.

Amundsen Science core datasets are open and freely available on the PDC or by contacting us at amundsen.data@as.ulaval.ca

Planning/schedules

Not available for security issues.

Real time data:

CCGS Amundsen is broadcasting real-time data on the expedition page: <https://data.amundsen.ulaval.ca/>. The list of variables is below.

Navigation Data

. Time (UTC)

. Position

. Speed

. Track

Atmospheric Data

. Wind speed (knt)

. Wind direction (deg)

. Pressure (hPa)

. Temperature (deg C)

. Humidity (%)

Sea Water Surface Data (7 meter-depth)

. Temperature (deg C)

. Salinity (psu)

. Fluorescence (ug/L)

. Sound velocity (m/s)

For an example of the displaying page, please see our demo from the 2018 cruise at: https://data.amundsen.ulaval.ca/simu_360.html. Transmittance is not available anymore.

Agreement on data accessibility:

No special agreement is needed, as data is publicly available.

RV Sir David Attenborough (United Kingdom)

Although the RRS Sir David Attenborough vessel is not operational yet, it is likely that the future RRS Sir David Attenborough data workflow will operate in a similar way to the existing RRS James Clark Ross data workflow.

Cruise database:

A cruise inventory of cruise reports from UK fleet voyages is established at the British Oceanographic Data Centre (BODC). In order to avoid duplication of efforts full cruise reports from BAS vessels are being submitted to the BODC inventory

(https://www.bodc.ac.uk/resources/inventories/cruise_inventory/search/) either directly by the cruise Principle Scientific Officer (PSO) or the UK Polar Data Centre (UK PDC) at BAS submit the cruise report on behalf of the PSO. The same holds also for the Cruise Summary Reports that form the content of the web-based records in the inventory.

Example:

https://www.bodc.ac.uk/resources/inventories/cruise_inventory/report/16402/

Datasets collected by the vessel:

All raw cruise data recorded by instrumentation linked to the ship's data network is at the end of each cruise archived at BAS in a UNIX file system.

All metadata from BAS-operated marine platforms is processed and stored in an oracle database at UK PDC. At the moment the database is not publicly available but PDC is developing an end-user interface that will enable to search BAS vessels metadata of cruises from 1965 onwards.

Agreement on data accessibility:

Usually, cruise data are under embargo for two years from the end of data collection. Upon request, PSO can grant access to some cruise data during this time. Raw cruise data can be requested at UK PDC at polardatacentre@bas.ac.uk. Increasingly data are available via the UK PDC Discovery Metadata Catalogue (<https://www.bas.ac.uk/project/dms/>).

Real time data:

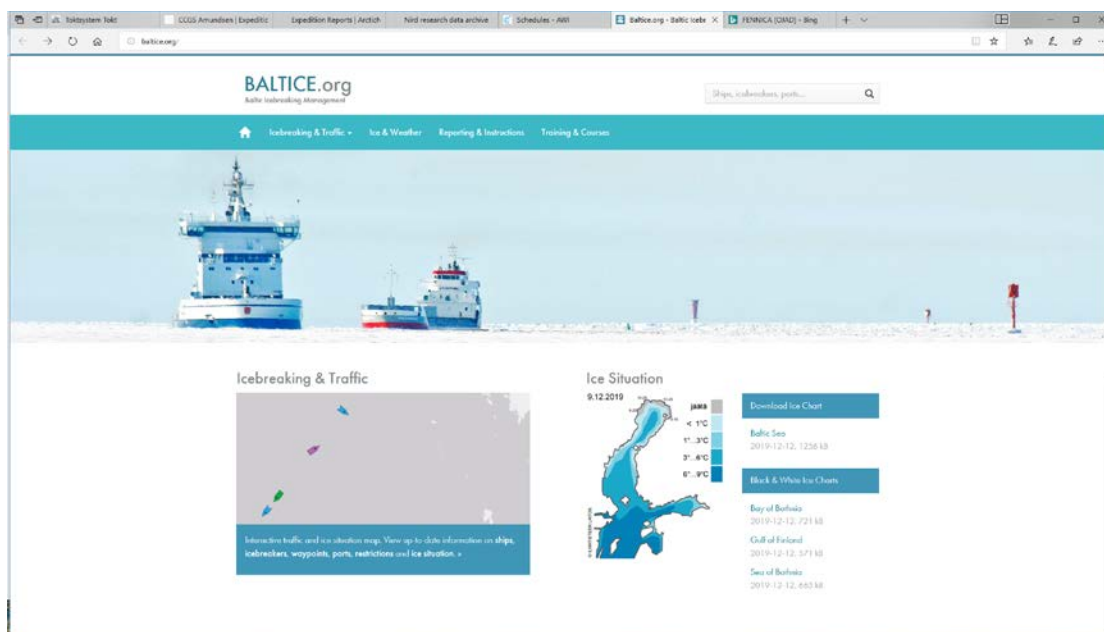
The RRS Sir David Attenborough will likely have the capability to broadcast real-time data but details cannot be provided yet since the RRS Sir David Attenborough data acquisition systems are currently being developed.

MSV Fennica (Finland)

Although MSV Fennica sometimes performs research activities, it is actually not a research vessel and cruise data is property of the private companies hiring the vessel.

When performing ice management in the Baltic Sea, the position of the vessel can be seen at:

<http://baltice.org/>



Agreement on data accessibility:

No special agreement is available, as data collected is property of the private companies hiring the vessel.

RV Kronprins Haakon (Norway)

Cruise database:

Applications and cruises operated by the Institute of Marine Research use a platform for application, approval, planning and staffing of cruises. This is managed through the following address. Access to the list of cruises is open, but applicants need a validated email address

<https://toktsystem.imr.no/cruises>

ID	Toktnummer	Toktshavn	Tokttype	Skip	Område	Degn	Avgangshavn	Ankomsthavn	Periode	A	Leid	Toktplan	Status	Handlinger
3037	2020801	Referansefåre	HI tokt	Leifetorøy Ikke tildekt	Der Norge driver fiske	366			01.01.31.12	Ja				
2047	2020201	Nordsjøsett: Overvåking av...	HI tokt	Johan Hjort	Nordsjøen	10	Bergen	Bergen	07.01-16.01	Nei				
2898	2020801	Riketoktet i sør	HI tokt	Kristine Bonnevie	Skagerak	25	Bergen	Bergen	07.01-01.02	Nei				
2848	2020202	Srinøy og Fugløya-Ejermøya	HI tokt	Johan Hjort	Norskehavet	9	Bergen	Tromsø	17.01-25.01	Nei				
2018	2020301	Miljøovervåking Skagerrak 1	HI tokt	G.M. Dønnevig	Norskekysten: Sydligel...	7	Flødevigen	Flødevigen	10.01-25.01	Nei				
2879	2020842	Vinteroktet	HI tokt	Helmer Hanssen	Barentshavet	38	Tromsø	Tromsø	21.01-27.02	Nei				
3016	2020001	Plavetaking av bunnfisk på...	HI tokt	Leifetorøy Ikke tildekt	Norskekysten: Annet	79	Svolvær	Andenes	21.01-08.04	Ja				
2849	2020203	Vinteroktet	HI tokt	Johan Hjort	Barentshavet	62	Tromsø	Tromsø	27.01-18.03	Nei				
2506	2020901	Innsamling av Appendicularia	LIB tokt	Hans Brattstrøm	Norskekysten: Vestlandet	1	HB	HB	28.01-28.01	Nei				
2835	2020401	Leg 1 i Botton habitat stud...	HI tokt	Dr. Fridtjof Nansen	Nordvest Afrika	23	Las Palmas	Casablanca	29.01-29.02	Nei				
2890	2020807	Studies of Antarctic krill	HI tokt	Leifetorøy Ikke tildekt	Øjant	24	Montevideo	Montevideo	30.01-22.02	Ja				
2881	2020101	GEOY231 Felt- og laborator...	LIB tokt	G.O. Sars	Norskekysten: Vestlandet	5	Bergen	Bergen	01.02-06.02	Nei				
2919	2020302	Miljøovervåking Skagerrak 2	HI tokt	G.M. Dønnevig	Norskekysten: Sydligel...	7	Flødevigen	Flødevigen	01.02-07.02	Nei				
3039	2020809	Uttesting av undervannsbøye...	HI tokt	Leifetorøy Ikke tildekt	Barentshavet	18	Tromsø	Tromsø	01.02-18.02	Ja				
2899	2020902	Seiskulett Nordsjøen Q1	HI tokt	Kristine Bonnevie	Nordsjøen	29	Bergen	Bergen	02.02-01.03	Nei				
2937	2020602	Hardangerfjorden 1	HI tokt	Hans Brattstrøm	Norskekysten: Vestlandet	5	Bergen	Bergen	03.02-07.02	Nei				
2882	2020102	IBTS Q1	HI tokt	G.O. Sars	Nordsjøen	28	Bergen	Bergen	06.02-04.03	Nei				
2938	2020903	Innsamling av Appendicularia	LIB tokt	Hans Brattstrøm	Norskekysten: Vestlandet	1	HB	HB	10.02-10.02	Nei				
2873	2020830	SpavnSeis - seismikkolepene...	HI tokt	Leifetorøy Johan Sverdrup	Norskekysten: Vestlandet	5	Bergen	Bergen	10.02-14.02	Ja				
2939	2020904	Havforsuring i fjord	LIB tokt	Hans Brattstrøm	Norskekysten: Vestlandet	1	Bergen	Bergen	11.02-11.02	Nei				
2940	2020905	Test av metode og utstyr f...	HI tokt	Hans Brattstrøm	Norskekysten: Vestlandet	2	Bergen	Bergen	12.02-13.02	Nei				
2941	2020906	Parasitized pandanus shrimps	LIB tokt	Hans Brattstrøm	Norskekysten: Vestlandet	1	Nyirikekaiaen	Nyirikekaiaen	14.02-14.02	Nei				
2696	2020818	Gydetokt norsk vårgyrtende s...	HI tokt	Leifetorøy Eros	Norskekysten: Annet	13	Ålesund	Tromsø	14.02-26.02	Ja				
2865	2020817	Gydetokt Norskvårgyrtende s...	HI tokt	Leifetorøy Kings Bay	Norskekysten: Annet	13	Ålesund	Tromsø	14.02-26.02	Ja				
2867	2020819	Gydetokt Norskvårgyrtende s...	HI tokt	Leifetorøy Venda	Norskekysten: Annet	13	Ålesund	Tromsø	14.02-26.02	Ja				
2042	2020007	Overvåking utsløpp av fremm...	HI tokt	Hans Brattstrøm	Norskekysten: Vestlandet	6	Bergen	Bergen	17.02-22.02	Nei				
2859	2020802	Testtokt for mengdebestimeri...	HI tokt	Leifetorøy Ikke tildekt	Norskekysten: Troms/Fi...	15	Tromsø	Kirkenes	26.02-11.03	Ja				
2890	2020803	Testtokt for mengdebestimeri...	HI tokt	Leifetorøy Ikke tildekt	Norskekysten: Troms/Fi...	15	Tromsø	Tromsø	26.02-11.03	Ja				
2836	2020402	Leg 2 i Transboundary demer...	HI tokt	Dr. Fridtjof Nansen	Nordvest Afrika	34	Casablanca	Las Palmas	27.02-31.03	Nei				
3041	2020822	Fangstkontroll, fiskeveffe...	HI tokt	Leifetorøy Ikke tildekt	Norskehavet	14	Bergen eller...	Bergen eller...	01.03-14.03	Ja				
2943	2020908	NaturLUM	LIB tokt	Hans Brattstrøm	Norskekysten: Vestlandet	2	Bergen	Bergen	02.03-03.03	Nei				
2900	2020903	Undervannsgest-ikt GEOF337	LIB tokt	Kristine Bonnevie	Norskekysten: Vestlandet	7	Bergen	Bergen	02.03-08.03	Nei				
2044	2020609	VIRCVAC_2020	LIB tokt	Hans Brattstrøm	Norskekysten: Vestlandet	2	Nyirikekaiaen	Nyirikekaiaen	04.03-06.03	Nei				
3002	2020701	Arven etter Nansen sesongto...	NP tokt	Kronprins Haakon	Barentshavet	25	Tromsø	Longyearbyen	05.03-29.03	Nei				
2945	2020910	Disipolst fjord1	HI tokt	Hans Brattstrøm	Norskekysten: Vestlandet	5	Bergen	Bergen	06.03-10.03	Nei				
2883	2020103	Egga SDR	HI tokt	G.O. Sars	Norskehavet	25	Bergen	Tromsø	06.03-31.03	Nei				
2920	2020303	Miljøovervåking Skagerrak 3	HI tokt	G.M. Dønnevig	Norskekysten: Sydligel...	7	Flødevigen	Flødevigen	07.03-13.03	Nei				

Datasets collected by the vessel:

Datasets collected by RV Kronprins Haakon are stored at The Research Data Archive. The Research Data Archive is a repository that provides long-term storage for research data and is compliant with the Open Archival Information System (OAIS) reference model.

The aim of the archive is to provide (public) access to published research data and to promote cross-disciplinary studies. Published datasets are accessible at: <https://archive.norstore.no/>

The screenshot shows the NIRD Research Data Archive search interface. The page is titled "Search Archive" and features a search form with various filters. The form includes fields for Title, Project, Label, and Description, along with dropdown menus for Phase, Category, Domain, Field, and Sub-fold. There are also date range selectors for "Created on", "Submitted on", and "Published on". The interface is clean and professional, with a dark blue header and a light blue search bar.

Real time data:

The ship's position originate from the LRIT system, AIS satellites and coastal stations - which means that there is global coverage for this vessel.

Agreement on data accessibility:

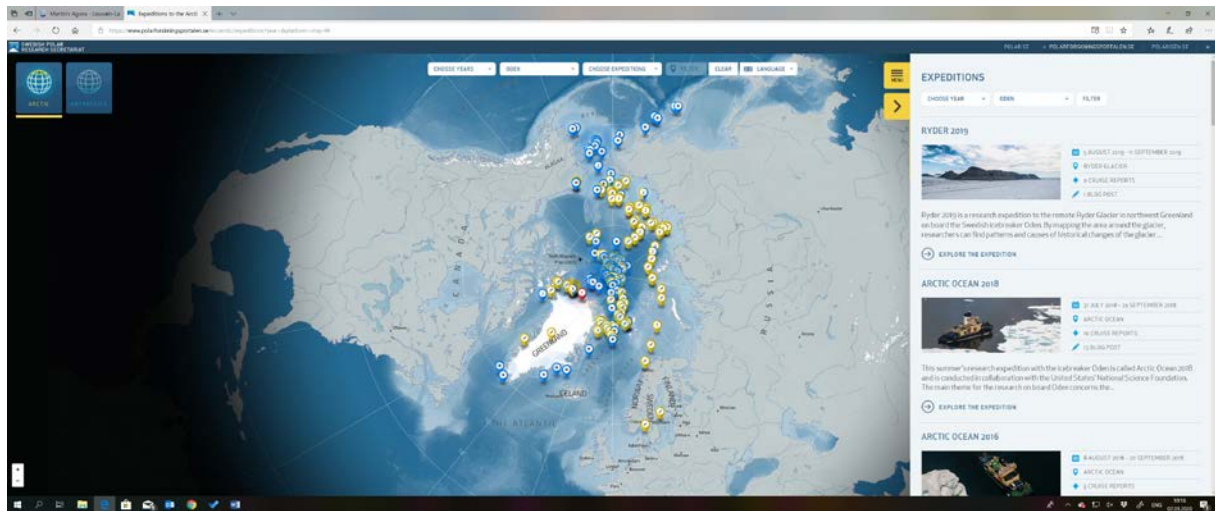
Real time data access agreement: The real time data is currently under migration and access will be changed from JSON object from out ftp server to a token based API. As of February 2020 any system willing to retrieve the JSON object will need to issue a https request.

IB Oden (Sweden)

Cruise database:

The Polar Research Portal presents information about Swedish polar research expeditions from 1999 onwards. Photos, cruise reports and expedition blogs by polar researchers gives a unique insight into work and everyday life during research expeditions in the Arctic and Antarctica.

The portal can be accessed here www.polarforskningsportalen.se



Datasets collected by the vessel:

The data continuously measured via SPRS are uploaded on the Swedish National Data Service:

<https://snd.gu.se/sv>

The data from each science project on board is uploaded in servers identified well in advance of each expedition.

Real time data:

Weather data from the icebreaker Oden:

The icebreaker Oden operates mainly in the Arctic and The Gulf of Bottnia. Through a collaboration between SMHI, the Swedish Maritime Administration and the Polar Research Secretariat, real time weather data is accessible here:

<http://www.smhi.se/data/2.1090>

Meteorological parameters represent 30 meters above sea level.

Water temperatures:

The water temperature is measured at 4 meters below the surface. Temperature and relative humidity is measured from both starboard and port side, but is somewhat affected by heating from the ship.

<http://www.smhi.se/data/oceanografi/ladda-ner-oceanografiska-observationer#param=seatemperature,stations=all,stationid=38006>

Agreement on data accessibility:

No special agreement is needed, as data is publicly available.

PRV Polarstern (Germany)

Cruise database:

PRV Polarstern information on cruises/data is stored at the information system PANGAEA

<https://www.pangaea.de/expeditions/cr.php/Polarstern>

Cruise reports - Polarstern

Homepage of RV Polarstern

Please note: the links to 'station list', 'data' and 'map' are always shown, even if there is no list or data to be shown. This is a technical constraint of this page (exception: Aikor).

Cruise label	Additional name	Area	Start	End	Chief scientist(s)	Expedition program	Cruise reports	Cruise summary	Weekly reports	Expedition maps	Google Earth	Station list	Master track	Data	Map layer
PS122/4	ARIK	* MOSAIC *	2020-04-19	2020-04-15	Rex, M	No. 128	Planned route								
PS122/3	ARIK	* MOSAIC *	2020-02-19	2020-04-15	Kanzow, T	No. 128	Planned route								
PS122/2	ARIK	* MOSAIC *	2019-12-15	2020-02-15	Haas, C	No. 128	Planned route								
PS122/1	ARIK	* MOSAIC *	2019-09-20	2019-12-15	Rex, M	No. 128	Planned route	Cruise summary report	Where is Polarstern						
PS121	ARIK	Fram Strait/Neugarten	2019-09-10	2019-09-13	Metfies, K	No. 127		Cruise summary report			Google Earth	View	Master track	Data	Map
PS120	ANT	Atlantic, transit cruise	2019-06-02	2019-06-28	Wiltshire, K	No. 126		Cruise summary report			Google Earth	View	Master track	Data	Map
PS119	ANT	Scotia Sea	2019-04-13	2019-05-31	Bohmann, G	No. 123		Cruise summary report			Google Earth	View	Master track	Data	Map
PS118	ANT	Western Weddell Sea	2019-02-02	2019-04-08	Dorschel, B	No. 124	Cruise report	Cruise summary report			Google Earth	View	Master track	Data	Map
PS117	ANT	Weddell Sea	2018-12-15	2019-02-07	Roedel, O	No. 123	Cruise report	Cruise summary report			Google Earth	View	Master track	Data	Map
PS116	ANT	Atlantic Ocean	2018-11-11	2018-12-11	Hanfandl, C	No. 122	Cruise report	Cruise summary report			Google Earth	View	Master track	Data	Map
PS115/2	ARIK	Southern Lomonosov Ridge	2018-09-05	2018-10-16	Stein, R	No. 121	Cruise report	Cruise summary report	Weekly reports		Google Earth	View	Master track	Data	Map
PS115/1	ARIK	Northeast Greenland	2018-09-05	2018-09-03	Damm, V	No. 120	Cruise report	Cruise summary report	Weekly reports		Google Earth	View	Master track	Data	Map
PS114	ARIK	Fram Strait, East Greenland	2018-07-10	2018-08-03	von Appen, WJ	No. 119	Cruise report	Cruise summary report	Weekly reports		Google Earth	View	Master track	Data	Map
PS113	ANT	Atlantic, transit cruise	2018-05-08	2018-06-11	Stross, VH	No. 118	Cruise report	Cruise summary report	Weekly reports		Google Earth	View	Master track	Data	Map
PS112	ANT	Scotia Sea	2018-03-17	2018-05-06	Meyer, B	No. 117	Cruise report	Cruise summary report	Weekly reports		Google Earth	View	Master track	Data	Map
PS111	ANT	Weddell Sea	2018-01-19	2018-03-14	Schröder, M	No. 116	Cruise report	Cruise summary report	Weekly reports		Google Earth	View	Master track	Data	Map

The information system PANGAEA is an Open Access library aiming at archiving, publishing and distributing georeferenced data from earth system research. The system guarantees long-term availability of its content through a commitment of the hosting institutions.

Datasets collected by the vessel:

Most of the data are freely available and can be used under the terms of the license mentioned on the data set description. A few password-protected data sets are under moratorium from ongoing projects. The description of each data set is always visible and includes the principle investigator (PI) who may be asked for access.

Each dataset can be identified, shared, published and cited by using a Digital Object Identifier (DOI Name). PANGAEA also allows data to be published as supplements to science articles (example) or as citable data collections in combination with data journals like ESSD, Geoscience Data Journal, Scientific Data, or others.

The PANGAEA data editorial ensures the integrity and authenticity as well as a high usability of your data. Archived data are machine readable and mirrored into our data warehouse, which allows efficient compilations of data.

PANGAEA is open to any project, institution, or individual scientist to use or to archive and publish data. Start a data submission here.

A team of data editors, project managers, and IT specialists operate PANGAEA. The editors are scientists with expertise in all fields of earth and environmental science and have a profound knowledge for the review and processing of scientific data.

The World Data Center PANGAEA is member of the World Data System (WDS) of the International Science Council (ISC). It is further hosting the World Radiation Monitoring Center (WRMC) of the Baseline Surface Radiation Network (BSRN) and as such accredited as a "Data Collection and

Processing Center" (DCPC) of the World Meteorological Organisation (WMO) Information System (WIS). PANGAEA is a CoreTrustSeal certified repository.

The Alfred Wegener Institute, Helmholtz Center for Polar and Marine Research (AWI) and the Center for Marine Environmental Sciences, University of Bremen (MARUM) are hosting PANGAEA.

Policies

Archiving follows the European Commission Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020 and the DFG recommendations for safeguarding good scientific practice. PANGAEA is further aligned with the OECD Principles and Guidelines for Access to Research Data from Public Funding as well as with the FAIR Guiding Principles for scientific data management and stewardship.

Interoperability / Services

PANGAEA is furnished with a well developed interoperability framework thus allowing to disseminate metadata and data to registries, data portals, and other service providers.

The search engine is powered by the open-source software Elasticsearch and metadata processing is provided by panFMP (PANGAEA Framework for Metadata Portals).

[Planning/schedules](#)

The cruise plan of PRV Polarstern is published at the AWI logistics site.

<https://www.awi.de/en/about-us/logistics/schedules.html>

[Real time data:](#)

Near real time data for air and water temperature can be accessed and is presented in hourly averages. No quality control is applied.

<https://data.awi.de/?site=home&qf=platforms.name/Polarstern>

[Agreement on data accessibility:](#)

No special agreement is needed, as data is publicly available.

[RV Sikuliaq \(United States of America\)](#)

All of Sikuliaq's cruise data are submitted to the Rolling Deck to Repository (R2R) program (<https://www.rvdata.us/>). The Rolling Deck to Repository (R2R) program provides fleet-wide management of underway data to ensure preservation of, and access to, the USA national oceanographic research assets.

R2R catalogs and submits the underway environmental sensor data routinely acquired on research expeditions to long-term public archives, including the NOAA National Centers for Environmental Information (NCEI). Data from each cruise are submitted directly to R2R by the vessel operator, rather than by the science party.

R2R provides essential documentation and standard products for each expedition, as well as tools to document shipboard data acquisition activities while underway. Post-cruise quality assessment of selected underway data types is provided, designed to evaluate the completeness of data and data

documentation and to provide measures of instrument operation. Assessment of underway meteorological data is implemented in near real time in partnership with the SAMOS program at FSU.

CRUISE ID	SUMMARY	START DATE	START PORT	END DATE	END PORT
SKQ2018231	Project: Ship Yard	2018-12-08	Seattle	2018-12-10	Portland
SKQ2018225	Project: Transition Layer Float Deploy and Recovery Chief: D'Alonso, Eric	2018-11-28	Seward	2018-12-08	Seattle
SKQ2018201	Project: STEMSEAS Transit	2018-10-03	Nome	2018-10-08	Seward

Cruise database:

<https://www.rvdata.us/search/vessel/Sikuliaq>

Planning/schedules

Not available for security issues.

Datasets collected by the vessel:

Datasets collected by RV Sikuliaq can also be accessed through the R2D repository:

<https://www.rvdata.us/search/vessel/Sikuliaq>

Real time data:

Sikuliaq participates in the World Wide Voluntary Observing Ship Program through the USA's National Weather Service (<https://www.vos.noaa.gov/>).

Agreement on data accessibility:

The VOS data can be accessed by requesting a username and password at the following email address

myvos@noaa.gov