EUROPEAN RESEARCH EXECUTIVE AGENCY (REA)

REA.C – Future Society
C.4 – Reforming European R&I and Research Infrastructures

AMENDMENT No AMD-101130949-7

Project: 101130949 — POLARIN

The parties agree to amend the Agreement as follows ('**Amendment**'):

1 . Addition of a new beneficiary

The following new beneficiaries are added as from:

- FL POLAR OPERATION GMBH (FLPO): 1 March 2024
- MINISTERIO DE RELACIONES EXTERIORES (INACH): 1 March 2024
- FAROE ISLANDS NATIONAL MUSEUM (Tjóðsavnið) (SAVN): 1 March 2024
- ACTRIS ERIC (ACTRIS): 1 March 2024

This implies the **following changes** to the Agreement:

- The new beneficiaries and the entry date are added to the list of participants in the **Data Sheet**.
- The new beneficiaries are added to the **Preamble**:
  - 48. **FL POLAR OPERATION GMBH (FLPO),** PIC 884667549, established in LANGE STRASSE 1A, ROSTOCK 18055, Germany
  - 49. **MINISTERIO DE RELACIONES EXTERIORES (INACH),** PIC 951329732, established in TEATINOS 180, SANTIAGO 8340650, Chile
  - 50. **FAROE ISLANDS NATIONAL MUSEUM (Tjóðsavnið) (SAVN),** PIC 881164879, established in KURDALSVEGUR 15, HOYVIK 188, Faroes
  - 51. **ACTRIS ERIC (ACTRIS),** PIC 881404372, established in ERIK PALMENIN AUKIO 1, HELSINKI 00560, Finland

2 . Change of Annex 1

Annex 1 is changed and replaced by the Annex 1 attached to this Amendment.

3. Change of Annex 2

The estimated budget in **Annex 2** is changed.

This implies the **following changes** to the Agreement:

- **Annex 2** is changed and replaced by the Annex 2 attached to this Amendment.
- The table on maximum grant amount and total estimated eligible costs and contributions in the **Data Sheet** is updated.

4. Change concerning customised unit costs/contributions (Annex 2b)

The customised unit calculation in **Annex 2b** is updated and the beneficiaries may charge units accordingly.

All other provisions of the Agreement and its Annexes remain unchanged.

This Amendment **enters into force** on the day of the last signature.

This Amendment **takes effect** on the date(s) mentioned in the amendment clause(s) (or — if no date was chosen — on the same date the Amendment enters into force).

Please inform the other members of your consortium (if any) of this Amendment.

SIGNATURES

For the coordinator

Nancy LANGE with ECAS id nlangnan signed in the Participant Portal on 30/10/2024 at 11:55:55 (transaction id SigId-53200-cXLsvzgOPFJL8YHbDov9AVTIcXXIFdDzyE1CKb0uG3WRxXISEdKYwgd32BhJuaNJ6mRWg3xlqIsfSFr8KMGRPA-yntOf97TTHqJ3VmlqYE9fO-DyqBDzQF9QWEQzTMwvLcRBTlgKlCunQWkUFHDK9cLke3Xkd2zymxvCRezxExq2i2s5AQx2izV4MJ5HdeuzXksJbW). Timestamp by third party at 2024.10.30 11:56:35 CET

For the granting authority

Signed by Sari VARTIAINEN-MATHIEU with ECAS id vartisi as an authorised representative on 13-11-2024 14:42:13 (transaction id SigId-197744-sHhFvgeIFALNEkKagRWvzSR1sV9p6vkeJhNrsvoRNVf9JYrqOuMRb26lb5bv3JxmxMnjzIhyJ0gKrT3zqSVu7BW-yntOf97TTHqJ3VmlqYE9fO-jgn4s2DTnG3pyiPxC2LYDzmZJy0hFR45Us5iOFL3dG7ANSXk7coC2xyVe6jtH7MraMwAQoeryZM23w7JKG9UHG) 2024.11.13 14:42:17 CET

Done in English

Enclosures: Grant Agreement Data Sheet
Grant Agreement Annex 1
Grant Agreement Annex 2
Grant Agreement Annex 2b

ANNEX 1

Horizon Europe (HORIZON)

Description of the action (DoA)

Part A

Part B

DESCRIPTION OF THE ACTION (PART A)

COVER PAGE

Part A of the Description of the Action (DoA) must be completed directly on the Portal Grant Preparation screens.

PROJECT *Grant Preparation (General Information screen) — Enter the info.*	
Project number:	101130949
Project name:	POLARIN: POLAR RESEARCH INFRASTRUCTURE NETWORK
Project acronym:	POLARIN
Call:	HORIZON-INFRA-2023-SERV-01
Topic:	HORIZON-INFRA-2023-SERV-01-01
Type of action:	HORIZON-RIA
Service:	REA/C/04
Project starting date:	fixed date: 1 March 2024
Project duration:	60 months

TABLE OF CONTENTS

PROJECT SUMMARY

Project summary

Grant Preparation (General Information screen) — Provide an overall description of your project (including context and overall objectives, planned activities and main achievements, and expected results and impacts (on target groups, change procedures, capacities, innovation etc)). This summary should give readers a clear idea of what your project is about.

Use the project summary from your proposal.

The polar regions play a key role in the Earth's system. They are essential for our climate and are sentinels of climate change, human expansion, and the hunt of new resources. The polar regions are losing ice, and their oceans and land are changing rapidly. The consequences of this polar transition extend to the whole planet and are affecting people in multiple ways. Evidence-based policy recommendations are needed, but the polar regions are difficult to reach, and research infrastructures able to operate in these regions are scarce. To understand and predict key processes in the polar regions and provide evidence-based information, the polar research community needs access to world-class research infrastructure operating in these regions.
POLARIN is an international network of polar research infrastructures and their services, aiming at addressing the scientific challenges of the polar regions. The network includes a wide array of complementary and interdisciplinary top level research infrastructures: Arctic and Antarctic research stations, research vessels and icebreakers operating at both poles, observatories, data infrastructures and ice and sediment core repositories. POLARIN will provide integrated, challenge-driven, and combined access to these infrastructures to facilitate interdisciplinary research on complex processes.
POLARIN will:
1. Provide challenge-driven transnational access to a large portfolio of research infrastructures.
2. Improve the access to data by improving data availability and interoperability between data infrastructures.
3. Provide virtual access to data and data services.
4. Provide data products for the scientific community and decision makers.
5. Train the young generation of polar researchers in optimally exploiting the infrastructures for their research.
6. Duly advertise the services offered by POLARIN and engage the infrastructure users to share their research outcomes with society.

LIST OF PARTICIPANTS

PARTICIPANTS

Grant Preparation (Beneficiaries screen) — Enter the info.

Number	Role	Short name	Legal name	Country	PIC
1	COO	AWI	ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FUR POLAR- UND MEERESFORSCHUNG	DE	999497507
2	BEN	UOULU	OULUN YLIOPISTO	FI	999844670
3	BEN	INPA	INTERACT-INTERNATIONAL NETWORK FORTERRESTRIAL RESEARCH AND MONITORING	SE	893223337
4	BEN	ULUND	LUNDS UNIVERSITET	SE	999901318
5	BEN	CNR	CONSIGLIO NAZIONALE DELLE RICERCHE	IT	999979500
6	BEN	OGS	ISTITUTO NAZIONALE DI OCEANOGRAFIA E DI GEOFISICA SPERIMENTALE	IT	999625644
7	BEN	INKODE	INKODE SOCIETA COOPERATIVA	IT	903762872

PARTICIPANTS

Grant Preparation (Beneficiaries screen) — Enter the info.

Number	Role	Short name	Legal name	Country	PIC
8	BEN	AU	AARHUS UNIVERSITET	DK	999997736
9	BEN	CNRS	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	FR	999997930
10	BEN	UCPH	KOBENHAVNS UNIVERSITET	DK	999991043
11	BEN	EPB	EUROPEAN POLAR BOARD	NL	918597470
12	BEN	ETT	ETT SPA	IT	991672808
13	BEN	UiT	UNIVERSITETET I TROMSOE - NORGES ARKTISKE UNIVERSITET	NO	999874643
14	BEN	CSIC	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES	999991722
15	BEN	SIOS	SIOS SVALBARD AS	NO	907144777
16	BEN	NILU	STIFTELSEN NILU	NO	999654162
17	BEN	NASC	NATIONAL ANTARCTIC SCIENTIFIC CENTER	UA	983358453
18	BEN	IGOT UL	INSTITUTO DE GEOGRAFIA E ORDENAMENTO DO TERRITORIO DA UNIVERSIDADE DELISBOA	PT	986958026
19	BEN	GFZ	HELMHOLTZ ZENTRUM POTSDAM DEUTSCHES GEOFORSCHUNGSZENTRUM GFZ	DE	999994341
20	BEN	DTU	DANMARKS TEKNISKE UNIVERSITET	DK	999990655
21	BEN	IPEV	INSTITUT POLAIRE FRANCAIS PAUL-EMILE-VICTOR GIP	FR	999450753
22	BEN	PONANT	COMPAGNIE DU PONANT	FR	885528909
23	BEN	MFRI	HAFRANNSOKNASTOFNUN, RANNSOKNA- OG RADGJAFARSTOFNUN HAFS OG VATNA	IS	909894145
24	BEN	GINR	GRONLANDS NATURINSTITUT	GL	998297908
25	BEN	MCIN	MINISTERIO DE CIENCIA, INNOVACION Y UNIVERSIDADES	ES	905411775
26	BEN	SPRS	POLARFORSKNINGSSEKRETARIATET	SE	984574348
27	BEN	SSLC	SUDURNES SCIENCE AND LEARNING CENTER	IS	924309412
28	BEN	DMI	DANMARKS METEOROLOGISKE INSTITUT	DK	999509438
29	BEN	ULAVAL	UNIVERSITE LAVAL	CA	998082180
30	BEN	UTU	TURUN YLIOPISTO	FI	999903064
31	BEN	NPI	NORSK POLARINSTITUTT	NO	998675432
32	BEN	UGRAZ	UNIVERSITAET GRAZ	AT	999873188
33	BEN	RIF	RANNSOKNARSTODIN RIF	IS	937536138
34	BEN	SU	STOCKHOLMS UNIVERSITET	SE	999885022

PARTICIPANTS

Grant Preparation (Beneficiaries screen) — Enter the info.

Number	Role	Short name	Legal name	Country	PIC
35	BEN	AMU	UNIWERSYTET IM. ADAMA MICKIEWICZA WPOZNANIU	PL	999886865
36	BEN	ARI	AURORA COLLEGE	CA	919704919
37	BEN	IGF PAS	Instytut Geofizyki Polskiej Akademii Nauk	PL	996625337
38	BEN	UMK	UNIWERSYTET MIKOLAJA KOPERNIKA W TORUNIU	PL	999836619
39	BEN	UAF	University of Alaska	US	987205958
40	BEN	MI	MARINE INSTITUTE	IE	999522824
41	BEN	UKRI	UNITED KINGDOM RESEARCH AND INNOVATION	UK	906446474
42	BEN	UH	HELSINGIN YLIOPISTO	FI	999994535
43	BEN	FMI	ILMATIETEEN LAITOS	FI	999591306
44	BEN	BAI	BULGARSKI ANTARKTICHESKI INSTITUT ASSOCIATION	BG	998835870
45	BEN	UICS	UIC SCIENCE LLC	US	919608889
46	BEN	CAFF	CAFF SKRIFSTOFAN A ISLANDI	IS	937088677
47	BEN	TARA	FONDATION TARA	FR	916064024
48	BEN	FLPO	FL POLAR OPERATION GMBH	DE	884667549
49	BEN	INACH	MINISTERIO DE RELACIONES EXTERIORES	CL	951329732
50	BEN	SAVN	FAROE ISLANDS NATIONAL MUSEUM (Tjóðsavnið)	FO	881164879
51	BEN	ACTRIS	ACTRIS ERIC	FI	881404372

LIST OF WORK PACKAGES

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
WP1	Enabling science for understanding and predicting key processes in polar regions	9 - CNRS	74.00	1	58	D1.1 – Implementation of the SLP with Terms of Reference D1.2 – Report on procedure for provision of TA D1.3 – Description of the evaluation process, evaluation criteria, code of conduct, and guidelines and templates for external reviewers D1.4 – Overview report of existing science priorities by major Arctic and Antarctic organisations and validation/calibration needs by in-situ observation, remote sensing and modelling communities D1.5 – Polar Knowledge gaps and potential of POLARIN RIs in addressing them D1.6 – Selection report of the first call for proposals D1.7 – Selection report of the second call for proposals D1.8 – Selection report of the third call for proposals D1.9 – Synthesis report on the scientific input, significance, and preliminary results of Transnational access and funded projects
WP2	TA Proposal management service	2 - UOULU	108.00	1	60	D2.1 – Report on requisites for access and description of the logistic evaluation procedure

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D2.2 – Quality Assurance Programme report for access provision D2.3 – Logistic evaluation report of the first call D2.4 – Logistic evaluation report of the second call D2.5 – Report on integrated access provision; planning and execution D2.6 – Logistic evaluation report of the third call D2.7 – Report on access provision (calls, volume, statistics) and lessons learned D2.8 – Report on plans forward for INTERACCESS
WP3	RIs offered for transnational access	1 - AWI	0.10	12	60	D3.1 – Synthetic report on TA provided to date
WP4	Improvement of data services and customised data products	5 - CNR	49.00	1	60	D4.1 – Data Management Plan for generated and collected data incl. ethical guidelines for data and derived data products D4.2 – POLARIN graphic products package for multiple audiences and gap analysis D4.3 – POLARIN web portal D4.4 – Guidance on dataset granularity D4.5 – Use case documents for data discovery processes D4.6 – General guidance material on FAIR data D4.7 – Guidance material for research infrastructures

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D4.8 – Dockerised open-source software components that cover architecture implementation requirements D4.9 – POLARIN Data services D4.10 – Usability report of POLARIN data access hub and data services
WP5	Provision of virtual access	15 - SIOS	52.00	1	60	D5.1 – A unified semantically consistent virtual data catalogue with machine interfaces D5.2 – A web portal providing guidance documentation and a graphical user interface to the virtual data catalogue D5.3 – VA Assessment Report (I) D5.4 – VA Assessment Report (II) D5.5 – VA Assessment Report (III)
WP6	RIs offered for virtual access	17 - NASC	115.00	12	60	D6.1 – Synthetic report on VA
WP7	Training for infrastructure users	10 - UCPH	72.00	1	60	D7.1 – Online material on data stewardship training D7.2 – Training material for in-the-field course on polar expedition safety and sustainability D7.3 – Online training material on optimal use POLARIN RIs D7.4 – Package of short information material on optimal use of POLARIN RIs D7.5 – Package of short information material on data stewardship D7.6 – Assessment of the training on

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						optimal use of POLARIN RI's and on data stewardship D7.7 – Assessment report of the in-the-field course on polar safety and sustainability
WP8	Outreach, Engagement and Impact	11 - EPB	49.00	1	60	D8.1 – Implement POLARIN website and social media channels D8.2 – Brand Identity and guidelines package (logos, general lay-out etc.) D8.3 – POLARIN promotional materials (press releases, promotion video, flyers, roll-ups etc.) D8.4 – POLARIN Communication, dissemination, and engagement plan D8.5 – Content Creation Guidelines (short video tutorials) for POLARIN service users to support outreach and engagement D8.6 – Assessment of communications, outreach and engagement activities to date, and update of the Communication, dissemination, and engagement plan D8.7 – Online seminar of POLARIN service users' stories call 1 D8.8 – Online seminar of POLARIN service users' call 2 D8.9 – Online Seminar of POLARIN service user stories call 3 D8.10 – "POLARIN Stories" a service users and ambassadors seminar series D8.11 – Final report on POLARIN communications, outreach, and

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						engagement activities, including POLARIN Ambassadors activities D8.12 – Report on POLARIN publication repository D8.13 – Impact evaluation report
WP9	Project Management	1 - AWI	99.00	1	60	D9.1 – Internal website of POLARIN implemented D9.2 – Organisation and minutes of the first POLARIN GA (in-person) D9.3 – Quality Assurance Plan, including guidelines, best practise, and project handbook D9.4 – Implementation of the project Advisory Board (AB) incl. Terms of Reference D9.5 – Organisation and minutes of the second POLARIN GA (virtual) D9.6 – Rreport on TA implemented to date D9.7 – Budget allocations for TA to date (I) D9.8 – First Policy briefing D9.9 – Organisation and minutes of the third POLARIN GA and mid-term retreat (inperson) D9.10 – Organisation and minutes of the fourth POLARIN GA (virtual) D9.11 – Budget allocations for TA to date (II) D9.12 – Second policy briefing D9.13 – Organisation and minutes of the final POLARIN GA (in-person)

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D9.14 – Report on the contribution of POLARIN to the EU Polar Cluster, international polar organisation, and the ESA – EC cooperation D9.15 – Organisation and minutes of the POLARIN final conference D9.16 – Budget allocations for TA to date (III) D9.17 – Third Policy briefing

Work package WP1 – Enabling science for understanding and predicting key processes in polar regions

Work Package Number	WP1	Lead Beneficiary	9 - CNRS
Work Package Name	Enabling science for understanding and predicting key processes in polar regions		
Start Month	1	End Month	58

Objectives

POLARIN will offer access to a large set of infrastructures to tackle the grand scientific challenges of the polar regions. TA1/WP1's main objective is to define the scientific needs and the framework that will guide the coordination, implementation, and evaluation of TA to POLARIN RIs. TA1/WP1 will promote excellence and interdisciplinarity in research, in combination with optimal use of resources based on multiplatform access (research stations, vessels, data infrastructures…). It will develop the scientific framework, define the evaluation criteria for selecting applications, perform the scientific evaluation of submitted proposals, and assess the contributions of POLARIN's funded projects towards the challenges, to adapt the subsequent calls for proposals accordingly.
The WP team will be assisted in its tasks by a Scientific Liaison Panel (SLP) which will advise TA1/WP1 in defining the themes for the calls, with particular attention to promoting interdisciplinarity and multi-platform operations (Task 1.1), assessing the performed work and suggesting themes for subsequent calls (Task 1.1 and Task 1.3), and implementing the scientific evaluation process and approving the report of funded projects (Task 1.2).
Relation with other WPs and International partners, organisations
• International partners and organisations (e.g., SCAR, IASC, SAON, SOOS, IPCC, IPBES) will be fully involved in POLARIN via participation of representatives in the SLP. Through their science plans and strategies, they will support the process of identifying scientific priorities for each of the TA calls.
• The work in TA1/WP1 will be carried out in strong connection with TA2/WP2 to complete the evaluation of proposals. TA1/WP1 implements the scientific evaluation, the first step of the two-step evaluation system in POLARIN, while TA2/WP2 implements the logistic/feasibility evaluation.
• Tools and data products used in Task 1.3 to depict knowledge gaps within the overarching POLARIN themes will be developed in collaboration with WP4. WP4 and WP8 will also benefit from information about the funded projects and the assessment of project outcomes in TA1/WP1.

Description

Task 1.1 Challenge driven call definition and integration (CNRS, IGOT-UL) (M1-M42)
The objective of Task 1.1 is to develop the scientific framework for regular TA calls to POLARIN RIs. Through a careful analysis of recommendations from international assessment reports, major polar projects and international science organisations and networks, Task 1.1 will evaluate, define, and update overarching science priorities as inputs to the call design. Such priorities will cover the six overarching science themes identified by POLARIN and identify knowledge gaps, uncertainties, and validation/calibration needs from the in-situ observing, Earth observation and modelling communities. Task 1.1 will contribute to the establishment of the evaluation criteria that will be developed in Task 1.2. The activities in Task 1.1will be supported by a Scientific Liaison Panel (SLP) which will be implemented as part of the task.
Task 1.1 will:
• Establish the SLP to assist in implementing the scientific framework and the priority topics of the calls for proposals. The panel will be composed of scientific experts and representatives from major polar science organisations expert groups (e.g., IASC, SCAR). The range of expertise of the SLP will cover the major domains and scientific disciplines contributing to the project overarching themes in both polar regions. The SLP, at least 50% external to the POLARIN consortium, will be nominated in consultation with Task 1.2.
• Describe the procedure for provision of access to services including eligibility criteria and terms and conditions.
• Review existing science priorities identified by major Arctic and Antarctic science organisations and networks (e.g., AMAP, IASC, SCAR, EU-PolarNet, EPB) and identify validation/calibration needs by the Earth Observation (e.g., ESA, Copernicus, EMODnet) and modelling (e.g., WCRP-ESMO/CMIP) communities.
• Provide annual updates of new science priorities identified by major science organisations and networks, to the extent that these changes are relevant to the design of subsequent calls.
• Update the scientific framework (priorities) for each of the subsequent calls for proposals.
Task 1.2 Scientific evaluation (OGS, UOULU) (M1-M48)
Task 1.2 will take care of the entire scientific evaluation and ranking of the proposals submitted in response to the access

calls and the follow up of selected projects after their implementation (e.g., approval of project reports). The evaluation process will ensure that only proposals that are developing excellent and innovative science addressing the challenges in polar regions will be considered for their logistic evaluation (process taking place in WP2) and TA implementation.
Task 1.2 will:
• Define and agree a shared evaluation system to access POLARIN RIs. This system will be based on the successful evaluation systems from ARICE and INTERACT and it will be adapted to address the diverse nature of POLARIN's RIs. This must take place very early on in the project life.
• Collaborate with Task 1.1 and the SLP, to ensure objectivity, transparency, equality of treatment, and confidentiality throughout the call procedure.
• Draft all call documentation related to the evaluation of proposals: Define, in collaboration with the SLP, the Code of Conduct on conflict of interest and confidentiality, the evaluation templates and criteria (with input from Task 1.1), and the guidelines for external reviewers to be integrated in the INTERACCESS online application system (TA2/WP2, Task 2.1)
• Coordinate the scientific evaluation of proposals submitted to POLARIN's access calls. Proposals will be evaluated by at least 2 external experts recommended by the SLP. After the proposal ranking by the SLP, the recommendations will be added to the INTERACCESS platform for the logistic evaluation (TA2/WP2, Task 2.2).
• Provide evaluation reports for each of the calls for proposals.
Task 1.3 Optimising the scientific outcome of the access programme (AU) (M7-M58)
Task 1.3 will focus on identifying knowledge gaps and evaluating the capacity of POLARIN RIs in addressing them. This task will cooperate with Task 4.3 to create graphic products (conceptual diagrams, maps, and time series) based on available datasets providing information on 'thematic gaps', 'geographical gaps' and 'validation/calibration gaps" to advise T1.1. in the call design process. This information will be merged with the results from POLARIN TA calls to identify potential gaps as soon as possible.
Task 1.3 will:
• Identify data products in cooperation with WP4, that will help to identify current knowledge gaps (thematic, geographical, and/or validation/calibration) based on existing data sets and by evaluating how representative these data are under current and future climate scenarios. Superimposed with POLARIN RIs, these data products can be used to identify infrastructures that potentially can fill geographical gaps and hence be key in addressing the challenges.
• Analyse how TA projects scheduled for implementation help addressing the POLARIN science themes, science priorities and gaps to determine the scientific focus of subsequent POLARIN calls for proposals.
• In collaboration with T1.1 and T1.2, review the granted access projects to report on how POLARIN TA has contributed to addressing the identified challenges.

Work package WP2 – TA Proposal management service

Work Package Number	WP2	**Lead Beneficiary**	2 - UOULU
Work Package Name	TA Proposal management service		
Start Month	1	**End Month**	60

Objectives
The main objective of this work package is to ensure the technical management of the calls for proposals, including the launch of calls, proposal submission, logistic evaluation, and follow-up (e.g., to ensure the reporting and answers to feedback questionnaires are provided). The INTERACCESS on-line application, evaluation and reporting system from INTERACT will be expanded to handle all kinds of research infrastructure offering access, and to include several new features for streamlined and efficient access provision across domains and geographical regions. TA2/WP2 will provide the online system (INTERACCESS) procedure (Task 2.1), the platform for consultation and co-design (Task 2.2) and the quality assurance programme (Task 2.3) for TA provision in POLARIN. Altogether these tasks ensure integration, efficiency, and high quality of access provision across POLARIN RIs, across access modalities, and across domains and geographical regions. This will enable the operation of TA as a coherent and streamlined instrument responding to the grand challenges in the polar regions and supporting cross-cutting world-class research on these RIs. Ultimately, the well-integrated, streamlined, and high-quality access provision system developed will carry on as legacy beyond POLARIN, paving the way and potentially serving as the foundation for an Integrated Polar Observing System (IPOS). TA2/WP2 brings together operators and managers from Arctic and Antarctic research stations, polar vessels, and core repositories.
Relation with other WPs, International partners and organisations
Relation with International partners and organisations: Access to polar terrestrial and marine infrastructures depends

on their national operators. However, there are international organisations that already carry out coordination and best practices tasks for polar operators (e.g., FARO, COMNAP, EPB, ERVO). POLARIN will collaborate with them throughout the duration of the project to be attentive to their initiatives, common procedures, and best practices.
Relation to TA1/WP1: TA2/WP2 provides the system for TA call implementation, with embedded functionality and a user interface for the scientific evaluation done by TA1/WP1. TA3/WP3 & VA2/WP6: TA2/WP2 provides the platform for consultations, development, implementation, coordination, quality assurance and reporting of TA (and partially also of VA) provided in TA3/WP3 and VA2/WP6. VA1/WP5: TA2/WP2 supports (via Tasks 2.1 and 2.2.) the consultation and integration of virtual access procedures and system development done in VA1/WP5 (e.g., INKODE is the system developer for both the INTERACCESS and the INTERACT VA platform).

Description

Task 2.1 Integration of access procedures and call implementation (INPA, INKODE, UOULU, ULUND) (M1-M60)
The objective of this task is to integrate TA access modes (in person and remote access) into an integrated access system that will handle the TA applications from call opening to proposal submission and reporting, with a quality assurance programme covering the whole chain of access provision. The INTERACCESS system will be developed further to integrate and manage the access to Arctic and Antarctic research stations, marine infrastructures, and core repositories, considering the different types of POLARIN RIs.
The INTERACCESS development activities will include:
• Access application system updates,
• Scientific evaluation interface updates according to the evaluation procedure and criteria defined in TA1/WP1 by the SLP,
• Updates in the logistic and feasibility evaluation and access decision section defined in Task 2.2 by the infrastructure operators,
• Modifications of feedback collection by adding of a section for feedback from infrastructure operators,
• An entry point to international infrastructure catalogues (e.g., INTERACT GIS and POLARDEX) for enhanced and optimised infrastructure selection by TA applicants,
• Project cost reporting updates, adding e.g., costs details and control and alert functionalities. For example, a specific alert will be developed to identify cross-invoicing between project partners.
This task will:
• Further develop the INTERACCESS system to give access to all POLARIN TA RIs,
• Upgrade all frameworks and libraries of INTERACCESS to ensure the optimal level of security and reliability of the system performance,
• Update the user interfaces and navigation flows to improve the usability and user experience of end users,
• Apply best practices and lessons learnt in the system development, based on the experience of INTERACT,
• Perform periodic security checks and constant monitoring of all software components.
Task 2.2 Logistic evaluation of proposals (UTM-CSIC, AWI) (M1-M48)
Task 2.2 will develop and coordinate the logistic evaluation of proposals recommended for implementation by the SLP. For this, the task will implement an “Infrastructure Operators Forum” (IOF) that will gather all POLARIN RI operators offering TA. Access decisions will be done by the infrastructure operators themselves in INTERACCESS, according to the guidelines, procedure and criteria developed in Task 2.1.
At the IOF meetings, the infrastructure operators will design the criteria and procedure for the logistic evaluation of access proposals to be fed into INTERACCESS developments by Task 2.1 and nominate among themselves representatives of the geographical regions and/or domains as a sort of “operational watchdog” to oversee the implementation of selected proposals and provide consultation and support when needed.
The IOF meetings will take place on-line at regular intervals to:
• Discuss the access procedures to POLARIN RIs,
• Define the procedure for logistic evaluation of access proposals for INTERACCESS developments,
• Provide guidance on logistic and feasibility evaluation for access decisions (done by each operator individually for their infrastructure).
• Provide feedback for the Quality Assurance and lessons learnt (Task 2.3).
The content of the meetings will be planned in consultation with Task 2.1 to ensure that the work is feeding into and is in synergy with the activities in Task 2.1
Task 2.2 will:
• Implement the “Infrastructure Operators Forum” (IOF),
• Develop the logistic evaluation procedure to be implemented in INTERACCESS (Task 2.1),
• Coordinate the logistic evaluation of proposals,
• Safeguard the logistic evaluation process done by POLARIN RIs,
• Support Quality Assurance and lessons learnt (Task 2.3)

The IOF will:
• Provide updated descriptions of their infrastructure, updated conditions of access, scientific equipment and availability.
• Do the beta-testing of the new features developed in INTERACCESS before the updates are applied to the production version. This will help to ensure the functionality and usability of the system developments in practice.
• Evaluate the logistical feasibility of proposals recommended by the SLP in the first step of the evaluation process (in T1.3) and provide a preliminary schedule for implementation of feasible proposals.
Task 2.3 Quality Assurance and follow-up implementation (UOULU, ULUND) (M9-M60)
The objective of Task 2.3 is to develop a Quality Assurance Programme (QAP) on access provision for POLARIN, covering the whole chain of access provision from call opening to proposal submission and reporting. The comprehensive QAP will ensure the integration, efficiency, and high quality of access provision services across the different POLARIN RIs, their access modalities, across the different domains and geographical regions, enabling the operation of TA as a coherent and streamlined instrument.
• This task will:
• Develop the Quality Assurance Programme with several Key Indicator parameters to monitor the quality of access provision and all related procedures.
• Collect feedback via INTERACCESS (by developing a feedback form for TA user groups and infrastructure operators) and via the IOF to create a synthesis on the lessons learned.
• Report the used access, e.g., by providing TA statistics to project management and for periodic reports.

Work package WP3 – RIs offered for transnational access

Work Package Number	WP3	**Lead Beneficiary**	1 - AWI
Work Package Name	RIs offered for transnational access		
Start Month	12	**End Month**	60

Objectives

The objective of TA3/WP3 is to inform about the access conditions for POLARIN's infrastructures offering TA. Access is either in-person, provided to selected users that visit the installation, or remote, through the provision of remote scientific services (e.g., reference materials, samples, or installation of sensors). TA will be free of charge – including logistical, technological, and scientific support and the specific training that is usually provided to external researchers using the infrastructure. POLARIN offers 2.538 units of TA to Arctic stations and observatories, and 1.290 units of TA to Antarctic stations and observatories. As most of the observatories are part of the research stations, access to them is offered via the respective station. The only exception is the deep-sea observatory FRAM which is an independent installation. In addition, the project offers 2087 units of TA to research vessels and research icebreakers and 210 units of TA to core repositories.
The RIs have been chosen because of their contribution to addressing the six major overarching scientific challenges. This is highlighted for each infrastructure by the following numbers:
1. Sea-ice and Polar Oceans
2. Sea level, glacier stability and melt
3. Carbon balance and permafrost
4. Polar ecosystems and biodiversity
5. Atmosphere dynamics
6. (Paleo)climate processes

Description

Support offered under this proposal
Successful user groups will benefit from access free of charge. Access will include logistical, technological, and scientific support and specific training that is usually provided to external researchers using the infrastructure. TA can be either in-person (hands-on), offered to selected users that visit the installation to use it, or remote, through remote scientific services (e.g., provision of reference materials or samples). Transport and shipping costs to and from the RI will be covered by the project as well. The users' proposed research will be embedded in the regular infrastructure schedules and users will benefit from "ad hoc" training.
Ukrainian researchers from government-controlled territories will be supported by extended ad-hoc training.
Outreach to new users

The outreach of TA/RA opportunities will be conducted in WP8. POLARIN, its call for proposals and the RIs offering access will be actively communicated and advertised on the project website, in workshops, conferences, regular newsletters and social media posts to attract potential users from the scientific community and SMEs, including new areas of research. The project will promote equal opportunities in advertising access. The participation of Ukrainian researchers from government-controlled territories will be facilitated with specific outreach activities in the official language(s).
Review procedure under this proposal
A single-entry portal for TA application will be implemented to submit proposals to access POLARIN's infrastructures at both poles (TA2/WP2). The portal will be based on the INTERACCESS portal developed by INTERACT, as it has been proved to be very useful in handling big volumes of applications.
The peer review procedure that will be used to select users among the applicants will be implemented in TA1/WP1 (Task 1.3). The user groups must request access by submitting a written description of the work through the POLARIN access portal. A selection panel (SLP, implemented in TA1/WP1) comprised of international experts in the field, at least half of whom will be independent from the consortium, will recommend external reviewers to evaluate the proposals according to evaluation criteria, templates, and guidelines for reviewers. The SLP will assess all proposals and reviews received and recommend a short-list of user groups that should benefit from access.
The selection panel will apply the principles of transparency, fairness, and impartiality and will base their selection on scientific merit, considering that priority should be given to user groups composed of users who: (i) have not previously used the installation, and (ii) are working in countries where no equivalent research infrastructure exists and (iii) Ukrainian researchers from government-controlled territories will get selection priority at equal scientific merit.
A logistic evaluation will follow to evaluate the feasibility of implementing the selected projects at the requested RIs. This second step in the evaluation system ensures that only excellent and feasible proposals are recommended for funding.
In addition, the following criteria will apply in the selection of users:
1. The majority of users must work in a country other than the country(ies) where the installation is located (unless access is provided by an international organisation, the Joint Research Centre (JRC), an ERIC or similar legal entity).
2. Only user groups that will disseminate the results they have generated under the action may benefit from access (unless users are working for SMEs).
3. If a visit to an installation will be planned to exceed 3 months, the coordinator of POLARIN will request written approval from the EC to implement this access.
The access for user groups with a majority of users not working in a EU Member State or Horizon Europe associated country is limited to 20% of the total amount of units of access provided under the grant.

Work package WP4 – Improvement of data services and customised data products

Work Package Number	WP4	**Lead Beneficiary**	5 - CNR
Work Package Name	Improvement of data services and customised data products		
Start Month	1	**End Month**	60

Objectives

Addressing the general data user as a stakeholder, WP4 aims at facilitating the discovery and consumption of data that is already available by ensuring that databases, datasets and/or data initiatives from polar regions are identifiable, and by facilitating access to them. It will improve workflows among data initiatives by reducing data fragmentation in support of data interoperability. In addition, tools will be developed to facilitate the access of data from multiple providers. These include tools that guide users (not necessarily data experts) towards the proper data queries in a stepwise/wizard-based approach. This approach helps the user to refine and better identify the fitfor-its-purpose datasets and data products.
Environmental data collected and stored in databases that very often consist of raw, unprocessed, collections. This limitation in the data value chain is hampering the capacity to develop knowledge from these valuable collections and their full potential may not reach some scientists, policy makers, local governments, or other organisations. POLARIN wants to make data products from existing databases available and to develop data products that can be directly used by a wide variety of stakeholders (for example to interpret atmospheric measurements).
• Establish a web portal with workflow-based access to data for various data consumer communities.
• Provide data products and tools integrating data across data repositories.
Relation with other WPs and International Partners, Organisations
• Utilising machine-to-machine interfaces for the unified virtual data catalogue established in VA1/WP5.
• A web portal solution that could serve both the access to data and the VA.

• Implementation of dedicated data products and services for the virtual catalogue in VA1/WP5 and for the challenge-driven call definition in TA1/WP1.

Description
Task 4.1 Improving access to polar data (ETT, CNR) (M1-M60) The Arctic/polar data management "ecosystem" is fragmented if looked at from a multi-disciplinary perspective. End users are discouraged by such complexity and fail to reach all the information that is available. Mapping activities initiated by the SAON/IASC Arctic Data Committee, now continued as a polar activity in collaboration with SCADM, SOOS and IARPC and supported by the EU project Arctic PASSION, will provide the basis for a series of new interfaces/ tools for exploration/mining of data (developed in Task 4.2 and 4.3). Particular attention will be on user friendly interfaces for a wide range of users, including non-expert users. These interfaces, together with the capitalisation of previous efforts of RIs (e.g., SIOS, INTERACT, ISAFFIK, ACTRIS), should serve the needs of a VA interface for VA1/WP5 and end users of polar data, regardless of previous expertise. The current status of data availability and interoperability of POLARIN infrastructures offering VA will be addressed by VA1/WP5. This task will: • Establish a hub where experts as well as non-expert users/intermediaries are guided (e.g., by a wizard tool, visual data discovery tree) to find data and information necessary to match their specific needs. In a very fragmented data management "universe", this innovative approach will provide a significant improvement to the "findable" part of the FAIR principle. • Establish web browser access to data based on workflow patterns to provide a wider user community with selected higher order services on top of data. Task 4.2 Improving polar data availability and interoperability (CNR, AU) (M1-M60) Data interoperability relies on the FAIR guiding principles and in particular the adoption of standardised interfaces of metadata and data, file formats (including structures), semantic annotation (i.e., adding variables and use information to data) and core information like persistent identifiers, licenses and origin. State-of-the-art data discovery, data use and interoperability approaches, in combination with OGC API approaches, will be promoted using various tools. These also include the adoption of common open-source tools to search for and view data collections and data products. While the primary goal of this task is to assess and document the full framework of these interoperability approaches, a second goal is to provide the partners with tools and guidelines to improve interoperability in practice. Existing best practices and tools from partners will be evaluated along with e.g., ENVRI-FAIR recommendations and their use will be promoted. Because data availability and interoperability are highly dependent on data policy, following EC recommendations the project will promote the Creative Commons Attribution license (CC-BY-4.0 or higher) as much as possible. New non-sensitive data will be published CC-BY no later than 2 years after the collection. In case of sensitive data, a clear instruction on how to access, legal constraints and how to use this data will be provided. A dedicated effort will be focused on guidance documentation for dataset granularity. This task will: • Improve accessibility and interoperability of the data management landscape, with a specific focus on cross-platforms serving diverse disciplines. Current practices in data management are still using different formats, a wide diversity of datasets, and disparate data management structures. POLARIN will extend the current effort for harmonising data workflows from one domain to an ecosystemic and multidisciplinary approach. • Improve data interoperability through promotion of FAIR compliant community standards supported by provision of selected software components to data repositories. Task 4.3 Data products, tools and data services (SIOS, NILU) (M1-M60) A dedicated effort is put into the production of graphic products (conceptual diagrams, maps and time series) based on existing data sets to depict the state of key climate and ecosystem variables under current and future climate scenarios (using e.g., ESA CCI remote sensing products and CMIP6 Earth System Models) and targeted at key stakeholder groups (e.g., research community, policy makers and general public). In cooperation with Task 1.3, selected data products (maps with key climate and ecosystem variables from existing raw data) will be developed to contribute to the identification of gaps in geographical coverage and gaps in process understanding, and to identify POLARIN infrastructures that can potentially be used to fill such gaps. The following additional data products and data services have already been identified as outcomes of this Task: • In cooperation with the POSEDA network: Glacier tomography in Greenland and Antarctica derived from seismic networks, providing information on glacier dynamics. • In cooperation with the ESFRI Landmark ACTRIS: Footprint products of short-lived atmospheric species (e.g., black carbon) for analysis of measurement data. • In cooperation with SIOS, regional cryosphere datasets covering snow, glacier and permafrost aspects will be established. These datasets will address both calibration and validation (cal/val) and process understanding needs. This task will:

• Make data more usable for wider community and show the benefit of harmonised data documentation and access

Work package WP5 – Provision of virtual access

Work Package Number	WP5	**Lead Beneficiary**	15 - SIOS
Work Package Name	Provision of virtual access		
Start Month	1	**End Month**	60

Objectives

This WP will manage the VA to infrastructures (observatories, research stations, data infrastructures). A web portal (single entry point) accompanied by machine interfaces will be provided. This will allow monitoring and evaluating the VA provided by POLARIN RIs. The virtual access is permanently open for access and users are not selected. The budget provided to VA providers consists mainly of person months, to include new data from the projects carried out within POLARIN, to digitise old data, and/or to further develop open access.
VA1/WP5 will:
• Establish a unified virtual data catalogue giving access to data from all POLARIN RIs offering VA.
• Address the current status of data availability and interoperability of POLARIN RIs offering VA.
• Monitor the virtual access of connected infrastructures.
The VA provision will be monitored (with follow-up of user statistics by web-analytics tools), and periodically assessed (three times in the project lifetime) by an external board of experts in providing free online access to data.
Relation with other WPs and International Partners, Organisations
• Providing backend functionality for WP4
• Preferably sharing web portal solution with WP4
• Enabling brokering of regional European and Polar data management frameworks at discovery level

Description

Task 5.1 Development of a virtual access portal (SIOS, ETT, INKODE) (M1-M24)
Existing data catalogues of polar RIs will be connected by relying on regional and Arctic interoperability standards. This will provide a unified semantically consistent catalogue by federating data nodes. The data catalogue will be made available by machine readable end points which may be integrated into various decision support systems, including Virtual Research Environments (VRE). A graphical user interface to the catalogue will be established through the web portal. The web portal solution will be decided in WP4 to avoid duplication of efforts but implemented and integrated with the aggregated catalogue as well as operated in this task.
For the aggregated catalogue, existing discovery metadata brokering approaches available within the consortium (e.g., SIOS, INTERACT), in other European projects (e.g., Arctic PASSION, ENVRI-FAIR, EOSC) and in the polar data management community (e.g., POLDER) will be evaluated and reused whenever possible and cost efficient. The web services established, and data made accessible through the federated catalogue will provide the base for developing dedicated data products and services in WP4. Partners contributing to the VA activity with their data repositories (VA2/WP6) will provide the exchange protocols and semantics agreed upon in VA2/WP6.
This task will:
• Establish a unified virtual data catalogue with interactive and machine interfaces.
Task 5.2 Monitoring and evaluation of the virtual access (CNR, SIOS, INPA) (M13-M60)
The performance and progress of connected research infrastructures of offering VA will be monitored continuously and reported three times in the project lifetime. Elements of the progress report should identify the number of infrastructures that have connected their data repositories, the number of datasets shared from each repository and in total, as well as an estimate of the FAIRness compliance of web services and shared data. In this context, FAIRness is based on the principles identified in WP4 to establish sufficient interoperability at the discovery and data level and how this evolves over the project duration. Thus, for all contributions to VA there is a need to establish a reference evaluation at the very start of the project.
The provision of VA during the project lifetime will be measured through the units of access defined for each infrastructure and periodically assessed by an external board of experts in providing free online access to data.
This task will:
• Monitor the progress of connected infrastructures offering VA.

Work package WP6 – RIs offered for virtual access

Work Package Number	WP6	Lead Beneficiary	17 - NASC
Work Package Name	RIs offered for virtual access		
Start Month	12	End Month	60

Objectives
POLARIN is offering user-friendly, online access to scientific data, metadata, and data products from two observational networks, seven data infrastructures, ten Arctic and two Antarctic research stations. The objective of VA2/WP6 is to show the access conditions to POLARIN's infrastructures that are offering access as VA. Virtual Access is provided through online services to users complying with the RI's access policy, without selecting them. It includes the provision of access via a single-entry portal, and the access to data services. VA is permanently open and users are not selected.

Description
Support offered under this proposal The access includes the technological and scientific support researchers need to effectively use the services. VA1/WP5 will develop a virtual data catalogue and a single-entry portal accompanied by machine interfaces to allow user-friendly access to all VA services. The portal will also allow the monitoring and evaluation of how the VA is evolving for those infrastructures offering VA. The budget provided to the VA providers consists mainly of person months, to include new data from the projects carried out within POLARIN or to digitise old data or to further develop open access. Outreach to new users The dissemination and outreach of VA opportunities will be done through WP8. The VA portal will be actively communicated and advertised on the project website, in workshops, conferences, regular newsletters and social media to attract potential users from a wide spectrum of scientific fields, and SMEs, including new areas of research. Assessment of VA The provision of VA during the project lifetime will be measured through the units of access defined for each infrastructure and will be periodically assessed by an external board in VA1/WP5.

Work package WP7 – Training for infrastructure users

Work Package Number	WP7	Lead Beneficiary	10 - UCPH
Work Package Name	Training for infrastructure users		
Start Month	1	End Month	60

Objectives
Acquisition of scientific data in the polar regions is very expensive and logistically demanding in comparison with sampling of similar data anywhere else on Earth. It often includes the use of facilities (research stations, observatories, or vessels) with a working environment that is very different from what is usually experienced at a university or research institute. In addition, the work often takes place in vulnerable ecosystems and pristine environments that need to be preserved by reducing the impact of research activities as much as possible. WP7 will organise training programmes to ensure that the new generations of researchers and RI users are able to fully utilise polar infrastructures efficiently, safely, and with minimum impact on polar environments. In addition, a training programme on data acquisition and sharing (data stewardship) will also be implemented. The specific objectives of WP7 are: • Develop training material for polar RI users, focusing on the new generation of polar researchers. • Use this material in different online seminars/courses and information packages to secure that research expeditions supported by POLARIN are carried out in a safe, efficient, cost effective, ethical and as environmentally sustainable as possible. • Provide polar RI users with knowledge to manage the data acquired in expeditions to ensure compliance with FAIR principles, to benefit from the available data collections and products, and the digital tools provided by WP4 and VA1/WP5.

• Actively engage early career researchers in POLARIN overall, so its impact is carried forward with participants' careers, past the project period.
Relation with other WPs and International Partners, Organisations
As such, WP7 will have direct importance on the successful accomplishment of WP' 2, 4 and 5, and will be dependent on input from WP' 1, 2, 8 and 9.

Description

Task 7.1. Training for ECRs and technical personnel to optimally use leading-edge RIs (UiT (APECS), UCPH) (M1-M60)
Based on well-established best practices, Task 7.1 will prepare a new generation of researchers to optimally use leading edge RIs on land and at sea in the Arctic and Antarctica. The target groups for the training are PhD students, postdoctoral researchers, technicians, and engineers. The training programme will be connected to the three calls for TA grants and will educate the participants in the following topics of relevance for an efficient use of the RIs: (i) polar RIs and their environment, (ii) how to plan and accomplish a research expedition successfully, (iii) safety in polar environments and at sea, (iv) how to secure the highest possible level of environmental, ethical, and economic sustainability of work in polar regions, (v) how and where to obtain permits of relevance (Antarctic treaty, Arctic governance, national and international regulations of relevance to research in polar regions), (vi) how to get freight to/from polar RIs and/or install your equipment on marine RIs, and (vii) scientific instrumentation at polar RIs and how to obtain their data. Following each call, the beneficiaries of TA grants will be trained when they start planning their work. The researchers will be contacted immediately after receiving the grant to set up training sessions. The training package will be widely advertised and open to all interested users of polar RIs (not only POLARIN grantees), and will consist of:
• An e-learning package consisting of online training material and recorded online seminars to educate infrastructure users in the topics (i)-(vii) listed above.
• A four-hour online seminar to be held after each round of the TA grants, three times in total.
• Printed material (brochures or similar) on some of the important topics (i)-(vii) listed above e.g. 'How to plan a safe and sustainable stay at a polar research infrastructure'.
The training will be evaluated based on questionnaires filled in by the users after each of the three online seminars.
Task 7.2. Training on data stewardship (OGS, SIOS) (M1-M55)
Data value and data stewardship is largely depending on the quality checking and flagging procedures. This task is going to develop (digital and printed) training material to ensure that users become knowledgeable of various data-related topics including:
• Open Science requirements,
• Practical implications of the FAIR principles,
• Purpose and use of data management plans,
• Collaboration between scientists and data managers,
• Data centres that are curating data,
• Standardised semantic annotations for understanding by different communities,
• Tools and services developed within POLARIN.
The training will facilitate learning and learning-by-doing procedures to curate data as well as to make new data collections ready for and compliant with WP4 and VA1/WP5 data management and interoperability tools. POLARIN online courses will be open to all interested researchers but will specifically address the user groups awarded with TA access to prepare them to use the POLARIN data management infrastructure and data value chain procedures.
This task will use practical examples based on the WP4 and VA1/WP5 recommendations to provide training focused on the above-mentioned data stewardship topics by:
• Developing e-learning packages consisting of written material in the form of notebooks on GitHub, YouTube videos, and online training material on how to collect, curate, store and share the data.
• Publishing short guidelines in print on the handling of data collected on research expeditions.
• Organising online seminars after the results of each of the calls for proposals are published.
Task 7.3. Training to perform safe and sustainable polar expeditions (FLPO, UCPH) (M1-M55)
Polar regions are in general characterised by vulnerable ecosystems in a harsh and sometimes even potentially dangerous environment, and data acquisition at polar RIs often involves a much higher daily use of energy and other resources than what is normal at most other places on Earth. It is therefore important that users of polar RIs are considerate to a high level of safety and sustainability in relation to their work in these regions. A training concept (in the field) with experienced trainers and in compliance with the Polar Code will be implemented, to ensure that PIs of polar expeditions are able to deal with emergency situations and are trained in the use of group and personal survival equipment for survival on the ice, on water, and on remote shores for no less than five days. The training will further educate the PI's on how to reduce the environmental impacts of their work in the polar regions.
The task will:

• Produce training material on how to perform safe and sustainable polar expeditions and make it available online.
• Implement a safety training under Arctic conditions to train PI's of POLARIN expeditions according to the Polar Code
• Train participants in the field on how to reduce the environmental impacts of a polar expedition.
The experiences gained from the training will be gathered in a report to be used for future development of similar training.

Work package WP8 – Outreach, Engagement and Impact

Work Package Number	WP8	Lead Beneficiary	11 - EPB
Work Package Name	Outreach, Engagement and Impact		
Start Month	1	End Month	60

Objectives

The main objective of WP8 is the communication and outreach of POLARIN's services and outcomes to users and other target groups. Efficient communication is crucial to the success of engaging identified target groups with the services of POLARIN WP8 will To ensure that communication, outreach and engagement are efficient, WP8 will assess its activities throughout the POLARIN project. WP8 will assess the impact of POLARIN on multiple stakeholders.
WP8 will:
• Ensure there is efficient communication to POLARIN target groups by implementing communication tools developed in Task 8.1.
• Engage (potential) RI users with POLARIN services with several outreach methods (such as promotional materials developed in Task 8.1, online seminars (Task 8.2) and sustaining contact with RI users (Task 8.3).
• Assess the communication, outreach, and engagement activities, implement a POLARIN Publications Repository which contains publications linked to POLARIN services, and assess the impact of POLARIN on multiple stakeholders.
Relation with other WPs and International Partners, Organisations
Relation with International Partners and Organisations: There will be continued communication with project partners of POLARIN and other international organisations like SCAR, SOOS, IASC, FARO, COMNAP, and the EU Polar Cluster (in particular EU-PolarNet 2, their Catalyst Platform, and the upcoming EPCO), that work on polar regions and can aid with the efficient communication, outreach and visibility of POLARIN.
Relationship of WP8 with other Work Packages: Work in WP8 will be carried out in strong connection with: (i) TA2/WP2 to coordinate the outreach regarding POLARIN service calls, (ii) TA3/WP3 to reach new TA/RA users, (iii) WP4 to disseminate POLARIN products including the data discovery hub, (iv) VA1/WP5 to engage users with the virtual access portal, (v) WP7 to engage potential training-users (also design of flyers, brochures) and (vi) WP9 to reach the science community through the EU Polar Cluster.

Description

Task 8.1 Visibility and communication of POLARIN (EPB, INACH, IGOT-UL) (M1-M60)
The objective of Task 8.1 is to create a high visibility of the POLARIN project and to set up and implement channels for efficient communication of POLARIN. To achieve this, Task 8.1 will develop communication tools such as a website, social media channels, and dedicated groups on the Catalyst Platform and will map potential service users (in synergy with the development of the POLARIN Communication, Dissemination and Engagement Plan in Task 8.2). To ensure visibility for POLARIN from the beginning of the project, Task 8.1 will develop promotional materials such as press releases, a video, flyers, and roll-ups to share with POLARIN target groups. Task 8.1 will develop a professional lay-out for POLARIN communication, outreach, and engagement to ensure POLARIN communication is consistently recognisable. WP8 will continuously connect with other POLARIN WPs throughout the lifespan of the project to ensure all POLARIN services are communicated effectively with identified POLARIN target groups.
Task 8.1 will:
• Implement the tools for effective communication, develop promotional materials, set up media channels (website, social media, regular newsletters etc.), collect content updates and maintain them throughout the project.
• Develop consistent templates (for all media) and lay-outs for POLARIN communications activities (through a Brand Identity Package, including the logo, colour template, etc).
• Set up promotional materials (press releases, promotion video, flyers, roll-ups etc.) to communicate and promote the services of POLARIN.
Task 8.2 Engagement of Service Users and Ambassadors (EPB, IGOT-UL, INACH) (M1-M60)

The objective of Task 8.2 is to engage (potential) RI users with POLARIN services. This task will develop and implement Communication, Dissemination and Engagement Plan, that will:
• Specify the target groups for communicating about various POLARIN tools and services,
• Link communication tools to target groups, and to ensure that POLARIN RI users apply these tools to share their research most effectively,
• Outline when and how potential service users can be engaged with POLARIN tools and services.
Task 8.2 will organise an online seminar series to engage potential POLARIN users, with each seminar planned around the POLARIN calls. The online seminar series will start with an introductory seminar to introduce POLARIN and attract potential service users. Further seminars will be organised around each planned call for proposals and will highlight the stories of successful users. A final concluding online seminar will ensure all the achievements of POLARIN are showcased and highlighted, including those of the POLARIN Ambassadors.
Task 8.2 will work with POLARIN users to produce content that could be utilised for communication (e.g., blogs, videos or photos as relevant from research expeditions) in the second half of the project. The main aim of this content is to showcase experiences of past POLARIN users, and to attract potential applicants for using POLARIN services. To ensure material delivered by POLARIN users can be used for outreach and engagement, Task 8.2 will also set up clear instructive guidelines that will be disseminated to POLARIN users. This task will also set up "POLARIN Ambassadors", a selected subset of physical TA users. Contact with POLARIN Ambassadors will be maintained as required (using for example a Catalyst Platform group dedicated to POLARIN Ambassadors) to facilitate exchange of experiences of using POLARIN services.
Task 8.2 will:
• Develop and implement a communication, dissemination and engagement plan, ensuring the most effective communication to and engagement of service users.
• Organise an online seminar series highlighting POLARIN Service Users' (and Ambassadors') success stories: "POLARIN Stories",
• Provide guidelines and templates for the appropriate communication tools, to ensure that POLARIN participants can efficiently use and share their research,
• Set up and maintain continued contact with POLARIN Ambassadors as required to facilitate exchange of experiences of using POLARIN services, with each Ambassador producing one communication product (either blog, vlog, photo series, or any other communication product as chosen by the Ambassador).
Task 8.3 Evaluation of the communication and engagement activities and the impact of POLARIN (EPB, IGOT-UL) (M13-M60)
The main objective of Task 8.3 is to assess and evaluate the impact of all engagement, outreach, and communication activities from POLARIN, including those of users, and Ambassadors, in close cooperation with Task 8.1 and 8.2, and other WPs. The assessments will ensure that engagement, outreach, and communication will be conducted in a most effective manner throughout the project. Task 8.3 will also create the POLARIN Publication Repository (publications by POLARIN users). Task 8.3 will closely work with Task 8.2, and all WPs, connecting with POLARIN service users to ensure all publications associated with POLARIN service users will be added to the POLARIN Publication Repository. Task 8.3 will also develop a strategy to find a suitable location/host/place for the POLARIN repository after the project is completed.
Task 8.3 will:
• Assess and evaluate the impact of POLARIN engagement, dissemination and communication activities,
• Set up and maintain the POLARIN publications repository, ensuring open access to publications, and ensure availability after project is completed.

Work package WP9 – Project Management

Work Package Number	WP9	**Lead Beneficiary**	1 - AWI
Work Package Name	Project Management		
Start Month	1	**End Month**	60

Objectives
POLARIN will bring together the expertise and knowledge of 50 partners from 21 countries, forming an excellent network for achieving its objectives. Considering the size of the consortium, the organisational structure of POLARIN must be extremely efficient, allowing a fast and coherent decision-making process. WP9 will implement the necessary management routines to assure an effective and efficient project management of POLARIN. WP9 will guarantee

the effective, smooth, and high-quality performance of the POLARIN project, with respect to contractual, financial, operational, and strategic management. It will provide support to all other POLARIN WPs by organising the general assemblies and the meetings of the Steering Board consisting of all WP leads.
The objectives of this work package are to:
• Conduct the contractual and financial management of the project (T9.1).
• Guarantee effective operational and strategic management and integrate all consortium partners (T9.2).
• Ensure appropriate links with relevant European and international initiatives (T9.3).
Relation with other WPs and International Partners, Organisations
WP9 will support all the other WPs and therefore closely interacts with all of them.

Description

Task 9.1 Contractual and financial management (AWI) (M1-M60)
This task comprises the main financial and contractual management of POLARIN. AWI, as the coordinator, will hold functional responsibility for direct contacts with the European Commission (EC) project officer on behalf of the consortium and will manage and oversee the activities of the consortium. This includes the preparation of periodic reports with the input from all work package and task leaders and the Management Team (MT). As part of the project management, a quality assurance routine will be adopted. The quality assurance will be under the supervision of the project coordinator (PC) and POLARIN Steering Board (SB), with support of the MT. The quality assurance routine will be formally accepted by the consortium, as part of the consortium agreement. This task will be managed by AWI as the coordinator, and the WP and Task leaders will contribute to it.
Task 9.1 will:
• Develop and implement a Consortium Agreement which, at the outset of the project, will be signed by all project partners and will define the duties and deliverables of each partner.
• Develop and implement a quality assurance routine.
• Effectively manage the financial and contractual obligations of POLARIN, including the management of strategic changes and the direction of funding over the 60-month term of the project.
• Handle the legal requirements for the submission of audit certificates and financial reporting to the EC.
• Ensure the generation and submission of the POLARIN periodic reports.
Task 9.2 Operational management (AWI) (M1-M60)
Task 9.2 focusses on the daily management of the project, on the delivery of project reports and on ensuring an efficient workflow within the consortium. POLARIN will set up a Steering Board (SB), which consists of all WP leaders, and which will support the MT in the management of the project. Chaired by the PC, the SB will meet at least quarterly, or more often as required, throughout the course of the project. The executive management of POLARIN is the responsibility of the MT under guidance of an experienced Project Manager (PM) with support of the Steering Board (SB). The MT is the permanent contact for all partners regarding their participation in the project. The PC will support all partners in their decision-making processes and in resolving any potentially difficult situations. AWI, as the coordinator, will lead this task, and all project partners will be required to contribute.
Task 9.2 will
• Ensure the due release of project deliverables according to the work plan based on the inputs of WP leaders.
• Assist project partners by checking that the reports provided are in line with EC rules and requirements.
• Organise and conduct the General Assemblies (GA), Steering Board meetings, a mid-term retreat and other project meetings if needed.
• Ensure that the decisions made by the GA will be accomplished.
• Monitor gender equality and inclusiveness, and ensure gender balance in advisory bodies, expert groups and evaluation panels, with a target of 50% women.
• Implement and administer an interactive internal website that will enable the workflow between all partners by sharing and storing documents, following the work plan, organising meetings and discussing
special issues online.
• Closely monitor all activity that collects or uses personal data and ensure that it is in compliance with the GDPR72. By default, all project personal data will be handled with rigorous care.
• Promote interaction among the consortium partners and ensuring that all project partners are fully engaged; this will be achieved through regular contacts (e.g., Email, videoconferences).
• Organise POLARIN's final conference.
Task 9.3 Clustering with other initiatives (ULUND, EPB, AWI) (M1-M60)
The objective of Task 9.3 is to develop strong linkages between POLARIN and relevant international partners and programmes. Task 9.3 will seek close collaboration with non-governmental and international polar organisations such as FARO, COMNAP, IASC, and SCAR and organisations which have a more global approach such as the UNDOS, WMO and UNFCCC. In Europe, ESA and Copernicus services are prominent contributors in advancing polar research and will

be important cooperation partners. POLARIN will support ESA and DG RTD in implementing joint EC-ESA scientific activities and Copernicus observational priorities. Task 9.3 will also assist implementing the All-Atlantic Ocean Research and Innovation Alliance. It will ensure good cooperation with the EU Polar Cluster projects by actively contributing to the Cluster and by informing them regularly about the opportunities for RI access that POLARIN offers. Task 9.3 will closely cooperate with the AQUARIUS project (submitted under the same call) by sharing best practises and assuring complementarity and avoiding duplication. It will also initiate a collaboration with the projects addressing climate risks and sustainable aquaculture under the HORIZON-INFRA-2023-SERV-01-01call. Task 9.3 has already established a cooperation with the AMRIT project (submitted under the INFRA-2023-DEV-01-04) call and will benefit from the services AMRIT will develop for marine platforms.
Task 9.3 will:
• Develop strong linkages and identify areas of common interest between POLARIN and relevant international polar organisations and other Horizon Europe projects.
• Support the EC in implementing the ESA-EC RTD Earth science initiative.
• Actively engage in the EU Polar Cluster by contributing to action groups and by advertising POLARIN’s access programme intensively to the Cluster projects.

STAFF EFFORT

Staff effort per participant

Grant Preparation (Work packages - Effort screen) — Enter the info.

Participant	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total Person-Months
1 - AWI	2.00	2.00	0.10					5.00	81.00	90.10
2 - UOULU	12.00	30.00			6.00	4.00				52.00
3 - INPA		24.00			2.00	7.00				33.00
4 - ULUND		24.00						1.00	9.00	34.00
5 - CNR	6.00			15.00	15.00	14.00	6.00			56.00
6 - OGS	12.00						15.00			27.00
7 - INKODE		17.00			5.00					22.00
8 - AU	15.00			6.00		21.00	8.00	1.00		51.00
9 - CNRS	12.00									12.00
10 - UCPH							19.00			19.00
11 - EPB		5.00						21.00	6.00	32.00
12 - ETT				15.00	15.00	5.00	6.00			41.00
13 - UiT	2.00						8.00			10.00
14 - CSIC		6.00								6.00
15 - SIOS				6.00	9.00	12.00	6.00			33.00
16 - NILU				7.00						7.00
17 - NASC	3.00							2.00		5.00
18 - IGOT UL	6.00							9.00		15.00
19 - GFZ						12.00				12.00

Staff effort per participant

Grant Preparation (Work packages - Effort screen) — Enter the info.

Participant	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total Person-Months
26 - SPRS						6.00				6.00
29 - ULAVAL						4.00				4.00
30 - UTU						4.00				4.00
34 - SU						3.00				3.00
36 - ARI						5.00				5.00
42 - UH						4.00				4.00
43 - FMI	2.00					5.00			1.00	8.00
46 - CAFF						5.00				5.00
48 - FLPO							4.00			4.00
49 - INACH	2.00							10.00		12.00
50 - SAVN						4.00				4.00
51 - ACTRIS									2.00	2.00
Total Person-Months	74.00	108.00	0.10	49.00	52.00	115.00	72.00	49.00	99.00	618.10

LIST OF DELIVERABLES

Deliverables

Grant Preparation (Deliverables screen) — Enter the info.

The labels used mean:

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EU classified —RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision 2015/444

Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D1.1	Implementation of the SLP with Terms of Reference	WP1	9 - CNRS	R — Document, report	PU - Public	5
D1.2	Report on procedure for provision of TA	WP1	18 - IGOT UL	R — Document, report	PU - Public	6
D1.3	Description of the evaluation process, evaluation criteria, code of conduct, and guidelines and templates for external reviewers	WP1	6 - OGS	R — Document, report	PU - Public	7
D1.4	Overview report of existing science priorities by major Arctic and Antarctic organisations and validation/calibration needs by in-situ observation, remote sensing and modelling communities	WP1	9 - CNRS	R — Document, report	PU - Public	8
D1.5	Polar Knowledge gaps and potential of POLARIN RIs in addressing them	WP1	8 - AU	R — Document, report	PU - Public	12
D1.6	Selection report of the first call for proposals	WP1	6 - OGS	R — Document, report	PU - Public	18
D1.7	Selection report of the second call for proposals	WP1	6 - OGS	R — Document, report	PU - Public	30
D1.8	Selection report of the third call for proposals	WP1	2 - UOULU	R — Document, report	PU - Public	42

Deliverables

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D1.9	Synthesis report on the scientific input, significance, and preliminary results of Transnational access and funded projects	WP1	8 - AU	R — Document, report	PU - Public	58
D2.1	Report on requisites for access and description of the logistic evaluation procedure	WP2	14 - CSIC	R — Document, report	PU - Public	7
D2.2	Quality Assurance Programme report for access provision	WP2	2 - UOULU	R — Document, report	PU - Public	18
D2.3	Logistic evaluation report of the first call	WP2	2 - UOULU	R — Document, report	PU - Public	20
D2.4	Logistic evaluation report of the second call	WP2	2 - UOULU	R — Document, report	PU - Public	32
D2.5	Report on integrated access provision; planning and execution	WP2	4 - ULUND	R — Document, report	PU - Public	36
D2.6	Logistic evaluation report of the third call	WP2	2 - UOULU	R — Document, report	PU - Public	44
D2.7	Report on access provision (calls, volume, statistics) and lessons learned	WP2	2 - UOULU	R — Document, report	PU - Public	60
D2.8	Report on plans forward for INTERACCESS	WP2	7 - INKODE	R — Document, report	PU - Public	60
D3.1	Synthetic report on TA provided to date	WP3	2 - UOULU	R — Document, report	PU - Public	16
D4.1	Data Management Plan for generated and	WP4	12 - ETT	DMP — Data Management Plan	PU - Public	6

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
	collected data incl. ethical guidelines for data and derived data products					
D4.2	POLARIN graphic products package for multiple audiences and gap analysis	WP4	8 - AU	DEM — Demonstrator, pilot, prototype	PU - Public	10
D4.3	POLARIN web portal	WP4	12 - ETT	OTHER	PU - Public	12
D4.4	Guidance on dataset granularity	WP4	5 - CNR	R — Document, report	PU - Public	12
D4.5	Use case documents for data discovery processes	WP4	12 - ETT	R — Document, report	PU - Public	14
D4.6	General guidance material on FAIR data	WP4	8 - AU	R — Document, report	PU - Public	15
D4.7	Guidance material for research infrastructures	WP4	5 - CNR	R — Document, report	PU - Public	15
D4.8	Dockerised open-source software components that cover architecture implementation requirements	WP4	5 - CNR	OTHER	PU - Public	18
D4.9	POLARIN Data services	WP4	15 - SIOS	OTHER	PU - Public	24
D4.10	Usability report of POLARIN data access hub and data services	WP4	12 - ETT	R — Document, report	PU - Public	24
D5.1	A unified semantically consistent virtual data catalogue with machine interfaces	WP5	15 - SIOS	OTHER	PU - Public	12
D5.2	A web portal providing guidance	WP5	3 - INPA	OTHER	PU - Public	18

Deliverables

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
	documentation and a graphical user interface to the virtual data catalogue					
D5.3	VA Assessment Report (I)	WP5	5 - CNR	R — Document, report	PU - Public	24
D5.4	VA Assessment Report (II)	WP5	5 - CNR	R — Document, report	PU - Public	40
D5.5	VA Assessment Report (III)	WP5	5 - CNR	R — Document, report	PU - Public	55
D6.1	Synthetic report on VA	WP6	5 - CNR	R — Document, report	PU - Public	60
D7.1	Online material on data stewardship training	WP7	15 - SIOS	DEC —Websites, patent filings, videos, etc	PU - Public	14
D7.2	Training material for in-the-field course on polar expedition safety and sustainability	WP7	48 - FLPO	R — Document, report	PU - Public	28
D7.3	Online training material on optimal use POLARIN RIs	WP7	10 - UCPH	DEC —Websites, patent filings, videos, etc	PU - Public	23
D7.4	Package of short information material on optimal use of POLARIN RIs	WP7	8 - AU	R — Document, report	PU - Public	30
D7.5	Package of short information material on data stewardship	WP7	8 - AU	R — Document, report	PU - Public	35
D7.6	Assessment of the training on optimal use of POLARIN RI's and on data stewardship	WP7	6 - OGS	R — Document, report	PU - Public	53
D7.7	Assessment report of the in-the-field course on polar safety and sustainability	WP7	10 - UCPH	R — Document, report	PU - Public	53

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D8.1	Implement POLARIN website and social media channels	WP8	18 - IGOT UL	DEC —Websites, patent filings, videos, etc	PU - Public	2
D8.2	Brand Identity and guidelines package (logos, general lay-out etc.)	WP8	1 - AWI	OTHER	PU - Public	2
D8.3	POLARIN promotional materials (press releases, promotion video, flyers, roll-ups etc.)	WP8	1 - AWI	OTHER	PU - Public	3
D8.4	POLARIN Communication, dissemination, and engagement plan	WP8	11 - EPB	R — Document, report	PU - Public	4
D8.5	Content Creation Guidelines (short video tutorials) for POLARIN service users to support outreach and engagement	WP8	11 - EPB	DEC —Websites, patent filings, videos, etc	PU - Public	8
D8.6	Assessment of communications, outreach and engagement activities to date, and update of the Communication, dissemination, and engagement plan	WP8	11 - EPB	R — Document, report	PU - Public	24
D8.7	Online seminar of POLARIN service users' stories call 1	WP8	11 - EPB	DEC —Websites, patent filings, videos, etc	PU - Public	36
D8.8	Online seminar of POLARIN service users' call 2	WP8	11 - EPB	DEC —Websites, patent filings, videos, etc	PU - Public	48

Deliverables

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D8.9	Online Seminar of POLARIN service user stories call 3	WP8	11 - EPB	DEC —Websites, patent filings, videos, etc	PU - Public	56
D8.10	“POLARIN Stories” a service users and ambassadors seminar series	WP8	11 - EPB	R — Document, report	PU - Public	58
D8.11	Final report on POLARIN communications, outreach, and engagement activities, including POLARIN Ambassadors activities	WP8	11 - EPB	R — Document, report	PU - Public	60
D8.12	Report on POLARIN publication repository	WP8	18 - IGOT UL	R — Document, report	PU - Public	60
D8.13	Impact evaluation report	WP8	1 - AWI	R — Document, report	PU - Public	60
D9.1	Internal website of POLARIN implemented	WP9	1 - AWI	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	2
D9.2	Organisation and minutes of the first POLARIN GA (in-person)	WP9	1 - AWI	R — Document, report	SEN - Sensitive	3
D9.3	Quality Assurance Plan, including guidelines, best practise, and project handbook	WP9	1 - AWI	R — Document, report	PU - Public	4
D9.4	Implementation of the project Advisory Board (AB) incl. Terms of Reference	WP9	1 - AWI	OTHER	PU - Public	6
D9.5	Organisation and minutes of the second POLARIN GA (virtual)	WP9	1 - AWI	R — Document, report	SEN - Sensitive	14

Deliverables

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D9.6	Rreport on TA implemented to date	WP9	1 - AWI	R — Document, report	PU - Public	16
D9.7	Budget allocations for TA to date (I)	WP9	1 - AWI	R — Document, report	PU - Public	16
D9.8	First Policy briefing	WP9	11 - EPB	R — Document, report	PU - Public	18
D9.9	Organisation and minutes of the third POLARIN GA and mid-term retreat (inperson)	WP9	1 - AWI	R — Document, report	SEN - Sensitive	26
D9.10	Organisation and minutes of the fourth POLARIN GA (virtual)	WP9	1 - AWI	R — Document, report	SEN - Sensitive	38
D9.11	Budget allocations for TA to date (II)	WP9	1 - AWI	R — Document, report	PU - Public	40
D9.12	Second policy briefing	WP9	1 - AWI	R — Document, report	PU - Public	42
D9.13	Organisation and minutes of the final POLARIN GA (in-person)	WP9	1 - AWI	R — Document, report	SEN - Sensitive	50
D9.14	Report on the contribution of POLARIN to the EU Polar Cluster, international polar organisation, and the ESA – EC cooperation	WP9	11 - EPB	R — Document, report	PU - Public	55
D9.15	Organisation and minutes of the POLARIN final conference	WP9	1 - AWI	R — Document, report	PU - Public	57
D9.16	Budget allocations for TA to date (III)	WP9	1 - AWI	R — Document, report	PU - Public	58
D9.17	Third Policy briefing	WP9	11 - EPB	R — Document, report	PU - Public	60

Deliverable D1.1 – Implementation of the SLP with Terms of Reference

Deliverable Number	D1.1	Lead Beneficiary	9 - CNRS
Deliverable Name	Implementation of the SLP with Terms of Reference		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	5	Work Package No	WP1

Description
Implementation of the SLP with Terms of Reference

Deliverable D1.2 – Report on procedure for provision of TA

Deliverable Number	D1.2	Lead Beneficiary	18 - IGOT UL
Deliverable Name	Report on procedure for provision of TA		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	6	Work Package No	WP1

Description
Report on procedure for provision of TA

Deliverable D1.3 – Description of the evaluation process, evaluation criteria, code of conduct, and guidelines and templates for external reviewers

Deliverable Number	D1.3	Lead Beneficiary	6 - OGS
Deliverable Name	Description of the evaluation process, evaluation criteria, code of conduct, and guidelines and templates for external reviewers		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	7	Work Package No	WP1

Description
Description of the evaluation process, evaluation criteria, code of conduct, and guidelines and templates for external reviewers

Deliverable D1.4 – Overview report of existing science priorities by major Arctic and Antarctic organisations and validation/calibration needs by in-situ observation, remote sensing and modelling communities

Deliverable Number	D1.4	Lead Beneficiary	9 - CNRS
Deliverable Name	Overview report of existing science priorities by major Arctic and Antarctic organisations and validation/calibration needs by in-situ observation, remote sensing and modelling communities		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	8	Work Package No	WP1

Description
Overview report of existing science priorities by major Arctic and Antarctic organisations and validation/calibration needs by in-situ observation, remote sensing and modelling communities. This deliverable will be updated in the course of the project when needed at M22 and M33.

Deliverable D1.5 – Polar Knowledge gaps and potential of POLARIN RIs in addressing them

Deliverable Number	D1.5	**Lead Beneficiary**	8 - AU
Deliverable Name	Polar Knowledge gaps and potential of POLARIN RIs in addressing them		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	12	**Work Package No**	WP1

Description
Polar Knowledge gaps and potential of POLARIN RIs in addressing them. This deliverable will be updated in the course of the project when needed at M21 and M32.

Deliverable D1.6 – Selection report of the first call for proposals

Deliverable Number	D1.6	**Lead Beneficiary**	6 - OGS
Deliverable Name	Selection report of the first call for proposals		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	18	**Work Package No**	WP1

Description
Selection report of the first call for proposals

Deliverable D1.7 – Selection report of the second call for proposals

Deliverable Number	D1.7	**Lead Beneficiary**	6 - OGS
Deliverable Name	Selection report of the second call for proposals		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	30	**Work Package No**	WP1

Description
Selection report of the second call for proposals

Deliverable D1.8 – Selection report of the third call for proposals

Deliverable Number	D1.8	**Lead Beneficiary**	2 - UOULU
Deliverable Name	Selection report of the third call for proposals		
Type	R — Document, report	**Dissemination Level**	PU - Public

Due Date (month)	42	Work Package No	WP1

Description
Selection report of the third call for proposals

Deliverable D1.9 – Synthesis report on the scientific input, significance, and preliminary results of Transnational access and funded projects

Deliverable Number	D1.9	Lead Beneficiary	8 - AU
Deliverable Name	Synthesis report on the scientific input, significance, and preliminary results of Transnational access and funded projects		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	58	Work Package No	WP1

Description
Synthesis report on the scientific input, significance, and preliminary results of Transnational access and funded projects

Deliverable D2.1 – Report on requisites for access and description of the logistic evaluation procedure

Deliverable Number	D2.1	Lead Beneficiary	14 - CSIC
Deliverable Name	Report on requisites for access and description of the logistic evaluation procedure		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	7	Work Package No	WP2

Description
Report on requisites for access and description of the logistic evaluation procedure

Deliverable D2.2 – Quality Assurance Programme report for access provision

Deliverable Number	D2.2	Lead Beneficiary	2 - UOULU
Deliverable Name	Quality Assurance Programme report for access provision		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	18	Work Package No	WP2

Description
Quality Assurance Programme report for access provision

Deliverable D2.3 – Logistic evaluation report of the first call

Deliverable Number	D2.3	Lead Beneficiary	2 - UOULU
Deliverable Name	Logistic evaluation report of the first call		

Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	20	**Work Package No**	WP2

Description
Logistic evaluation report of the first call

Deliverable D2.4 – Logistic evaluation report of the second call

Deliverable Number	D2.4	**Lead Beneficiary**	2 - UOULU
Deliverable Name	Logistic evaluation report of the second call		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	32	**Work Package No**	WP2

Description
Logistic evaluation report of the second call

Deliverable D2.5 – Report on integrated access provision; planning and execution

Deliverable Number	D2.5	**Lead Beneficiary**	4 - ULUND
Deliverable Name	Report on integrated access provision; planning and execution		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	36	**Work Package No**	WP2

Description
Report on integrated access provision; planning and execution

Deliverable D2.6 – Logistic evaluation report of the third call

Deliverable Number	D2.6	**Lead Beneficiary**	2 - UOULU
Deliverable Name	Logistic evaluation report of the third call		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	44	**Work Package No**	WP2

Description
Logistic evaluation report of the third call

Deliverable D2.7 – Report on access provision (calls, volume, statistics) and lessons learned

Deliverable Number	D2.7	**Lead Beneficiary**	2 - UOULU
Deliverable Name	Report on access provision (calls, volume, statistics) and lessons learned		
Type	R — Document, report	**Dissemination Level**	PU - Public

Due Date (month)	60	Work Package No	WP2

Description
Report on access provision (calls, volume, statistics) and lessons learned

Deliverable D2.8 – Report on plans forward for INTERACCESS

Deliverable Number	D2.8	Lead Beneficiary	7 - INKODE
Deliverable Name	Report on plans forward for INTERACCESS		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	60	Work Package No	WP2

Description
Report on plans forward for INTERACCESS

Deliverable D3.1 – Synthetic report on TA provided to date

Deliverable Number	D3.1	Lead Beneficiary	2 - UOULU
Deliverable Name	Synthetic report on TA provided to date		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	16	Work Package No	WP3

Description
This deliverable will be updated preceeding each reporting period.

Deliverable D4.1 – Data Management Plan for generated and collected data incl. ethical guidelines for data and derived data products

Deliverable Number	D4.1	Lead Beneficiary	12 - ETT
Deliverable Name	Data Management Plan for generated and collected data incl. ethical guidelines for data and derived data products		
Type	DMP — Data Management Plan	Dissemination Level	PU - Public
Due Date (month)	6	Work Package No	WP4

Description
Data Management Plan for generated and collected data incl. ethical guidelines for data and derived data products This deliverable will be updated before each periodic report.

Deliverable D4.2 – POLARIN graphic products package for multiple audiences and gap analysis

Deliverable Number	D4.2	Lead Beneficiary	8 - AU
Deliverable Name	POLARIN graphic products package for multiple audiences and gap analysis		
Type	DEM — Demonstrator, pilot, prototype	Dissemination Level	PU - Public
Due Date (month)	10	Work Package No	WP4

Description
POLARIN graphic products package for multiple audiences and gap analysis. This deliverable will be updated at M24 and M33 if needed.

Deliverable D4.3 – POLARIN web portal

Deliverable Number	D4.3	Lead Beneficiary	12 - ETT
Deliverable Name	POLARIN web portal		
Type	OTHER	Dissemination Level	PU - Public
Due Date (month)	12	Work Package No	WP4

Description
POLARIN web portal

Deliverable D4.4 – Guidance on dataset granularity

Deliverable Number	D4.4	Lead Beneficiary	5 - CNR
Deliverable Name	Guidance on dataset granularity		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	12	Work Package No	WP4

Description
Guidance on dataset granularity

Deliverable D4.5 – Use case documents for data discovery processes

Deliverable Number	D4.5	Lead Beneficiary	12 - ETT
Deliverable Name	Use case documents for data discovery processes		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	14	Work Package No	WP4

Description
Use case documents for data discovery processes

Deliverable D4.6 – General guidance material on FAIR data

Deliverable Number	D4.6	Lead Beneficiary	8 - AU
Deliverable Name	General guidance material on FAIR data		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	15	Work Package No	WP4

Description
General guidance material on FAIR data

Deliverable D4.7 – Guidance material for research infrastructures

Deliverable Number	D4.7	Lead Beneficiary	5 - CNR
Deliverable Name	Guidance material for research infrastructures		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	15	Work Package No	WP4

Description
Guidance material for research infrastructures

Deliverable D4.8 – Dockerised open-source software components that cover architecture implementation requirements

Deliverable Number	D4.8	Lead Beneficiary	5 - CNR
Deliverable Name	Dockerised open-source software components that cover architecture implementation requirements		
Type	OTHER	Dissemination Level	PU - Public
Due Date (month)	18	Work Package No	WP4

Description
Dockerised open-source software components that cover architecture implementation requirements

Deliverable D4.9 – POLARIN Data services

Deliverable Number	D4.9	Lead Beneficiary	15 - SIOS
Deliverable Name	POLARIN Data services		
Type	OTHER	Dissemination Level	PU - Public
Due Date (month)	24	Work Package No	WP4

Description
POLARIN Data services

Deliverable D4.10 – Usability report of POLARIN data access hub and data services

Deliverable Number	D4.10	Lead Beneficiary	12 - ETT
Deliverable Name	Usability report of POLARIN data access hub and data services		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	24	Work Package No	WP4

Description
Usability report of POLARIN data access hub and data services. this deliverable will be updated at M36 and M55

Deliverable D5.1 – A unified semantically consistent virtual data catalogue with machine interfaces

Deliverable Number	D5.1	Lead Beneficiary	15 - SIOS
Deliverable Name	A unified semantically consistent virtual data catalogue with machine interfaces		
Type	OTHER	Dissemination Level	PU - Public
Due Date (month)	12	Work Package No	WP5

Description
A unified semantically consistent virtual data catalogue with machine interfaces

Deliverable D5.2 – A web portal providing guidance documentation and a graphical user interface to the virtual data catalogue

Deliverable Number	D5.2	Lead Beneficiary	3 - INPA
Deliverable Name	A web portal providing guidance documentation and a graphical user interface to the virtual data catalogue		
Type	OTHER	Dissemination Level	PU - Public
Due Date (month)	18	Work Package No	WP5

Description
A web portal providing guidance documentation and a graphical user interface to the virtual data catalogue

Deliverable D5.3 – VA Assessment Report (I)

Deliverable Number	D5.3	Lead Beneficiary	5 - CNR
Deliverable Name	VA Assessment Report (I)		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	24	Work Package No	WP5

Description

VA Assessment Report

Deliverable D5.4 – VA Assessment Report (II)

Deliverable Number	D5.4	**Lead Beneficiary**	5 - CNR
Deliverable Name	VA Assessment Report (II)		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	40	**Work Package No**	WP5

Description
VA Assessment Report

Deliverable D5.5 – VA Assessment Report (III)

Deliverable Number	D5.5	**Lead Beneficiary**	5 - CNR
Deliverable Name	VA Assessment Report (III)		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	55	**Work Package No**	WP5

Description
VA Assessment Report

Deliverable D6.1 – Synthetic report on VA

Deliverable Number	D6.1	**Lead Beneficiary**	5 - CNR
Deliverable Name	Synthetic report on VA		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	60	**Work Package No**	WP6

Description
Synthetic report on VA.

Deliverable D7.1 – Online material on data stewardship training

Deliverable Number	D7.1	**Lead Beneficiary**	15 - SIOS
Deliverable Name	Online material on data stewardship training		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	PU - Public
Due Date (month)	14	**Work Package No**	WP7

Description

Online material on data stewardship training

Deliverable D7.2 – Training material for in-the-field course on polar expedition safety and sustainability

Deliverable Number	D7.2	**Lead Beneficiary**	48 - FLPO
Deliverable Name	Training material for in-the-field course on polar expedition safety and sustainability		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	28	**Work Package No**	WP7

Description
Training material for in-the-field course on polar expedition safety and sustainability

Deliverable D7.3 – Online training material on optimal use POLARIN RIs

Deliverable Number	D7.3	**Lead Beneficiary**	10 - UCPH
Deliverable Name	Online training material on optimal use POLARIN RIs		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	PU - Public
Due Date (month)	23	**Work Package No**	WP7

Description
Online training material on optimal use POLARIN RIs

Deliverable D7.4 – Package of short information material on optimal use of POLARIN RIs

Deliverable Number	D7.4	**Lead Beneficiary**	8 - AU
Deliverable Name	Package of short information material on optimal use of POLARIN RIs		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	30	**Work Package No**	WP7

Description
Package of short information material on optimal use of POLARIN RIs

Deliverable D7.5 – Package of short information material on data stewardship

Deliverable Number	D7.5	**Lead Beneficiary**	8 - AU
Deliverable Name	Package of short information material on data stewardship		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	35	**Work Package No**	WP7

Description

Package of short information material on data stewardship

Deliverable D7.6 – Assessment of the training on optimal use of POLARIN RI's and on data stewardship

Deliverable Number	D7.6	**Lead Beneficiary**	6 - OGS
Deliverable Name	Assessment of the training on optimal use of POLARIN RI's and on data stewardship		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	53	**Work Package No**	WP7

Description
Assessment of the training on optimal use of POLARIN RI's and on data stewardship

Deliverable D7.7 – Assessment report of the in-the-field course on polar safety and sustainability

Deliverable Number	D7.7	**Lead Beneficiary**	10 - UCPH
Deliverable Name	Assessment report of the in-the-field course on polar safety and sustainability		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	53	**Work Package No**	WP7

Description
Assessment report of the in-the-field course on polar safety and sustainability

Deliverable D8.1 – Implement POLARIN website and social media channels

Deliverable Number	D8.1	**Lead Beneficiary**	18 - IGOT UL
Deliverable Name	Implement POLARIN website and social media channels		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	PU - Public
Due Date (month)	2	**Work Package No**	WP8

Description
Implement POLARIN website and social media channels

Deliverable D8.2 – Brand Identity and guidelines package (logos, general lay-out etc.)

Deliverable Number	D8.2	**Lead Beneficiary**	1 - AWI
Deliverable Name	Brand Identity and guidelines package (logos, general lay-out etc.)		
Type	OTHER	**Dissemination Level**	PU - Public
Due Date (month)	2	**Work Package No**	WP8

Description
Brand Identity and guidelines package (logos, general lay-out etc.)

Deliverable D8.3 – POLARIN promotional materials (press releases, promotion video, flyers, roll-ups etc.)

Deliverable Number	D8.3	**Lead Beneficiary**	1 - AWI
Deliverable Name	POLARIN promotional materials (press releases, promotion video, flyers, roll-ups etc.)		
Type	OTHER	**Dissemination Level**	PU - Public
Due Date (month)	3	**Work Package No**	WP8

Description
POLARIN promotional materials (press releases, promotion video, flyers, roll-ups etc.)

Deliverable D8.4 – POLARIN Communication, dissemination, and engagement plan

Deliverable Number	D8.4	**Lead Beneficiary**	11 - EPB
Deliverable Name	POLARIN Communication, dissemination, and engagement plan		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	4	**Work Package No**	WP8

Description
POLARIN Communication, dissemination, and engagement plan

Deliverable D8.5 – Content Creation Guidelines (short video tutorials) for POLARIN service users to support outreach and engagement

Deliverable Number	D8.5	**Lead Beneficiary**	11 - EPB
Deliverable Name	Content Creation Guidelines (short video tutorials) for POLARIN service users to support outreach and engagement		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	PU - Public
Due Date (month)	8	**Work Package No**	WP8

Description
Content Creation Guidelines (short video tutorials) for POLARIN service users to support outreach and engagement

Deliverable D8.6 – Assessment of communications, outreach and engagement activities to date, and update of the Communication, dissemination, and engagement plan

Deliverable Number	D8.6	**Lead Beneficiary**	11 - EPB

Deliverable Name	Assessment of communications, outreach and engagement activities to date, and update of the Communication, dissemination, and engagement plan		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	24	**Work Package No**	WP8

Description
Assessment of communications, outreach and engagement activities to date, and update of the Communication, dissemination, and engagement plan. This deliverable will be updated at M49.

Deliverable D8.7 – Online seminar of POLARIN service users' stories call 1

Deliverable Number	D8.7	Lead Beneficiary	11 - EPB
Deliverable Name	Online seminar of POLARIN service users' stories call 1		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	PU - Public
Due Date (month)	36	**Work Package No**	WP8

Description
Online seminar of POLARIN service users' stories call 1

Deliverable D8.8 – Online seminar of POLARIN service users' call 2

Deliverable Number	D8.8	Lead Beneficiary	11 - EPB
Deliverable Name	Online seminar of POLARIN service users' call 2		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	PU - Public
Due Date (month)	48	**Work Package No**	WP8

Description
Online seminar of POLARIN service users' call 2

Deliverable D8.9 – Online Seminar of POLARIN service user stories call 3

Deliverable Number	D8.9	Lead Beneficiary	11 - EPB
Deliverable Name	Online Seminar of POLARIN service user stories call 3		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	PU - Public
Due Date (month)	56	**Work Package No**	WP8

Description
Online Seminar of POLARIN service user stories call 3

Deliverable D8.10 – “POLARIN Stories” a service users and ambassadors seminar series

Deliverable Number	D8.10	Lead Beneficiary	11 - EPB
Deliverable Name	“POLARIN Stories” a service users and ambassadors seminar series		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	58	Work Package No	WP8

Description
“POLARIN Stories” a service users and ambassadors seminar series

Deliverable D8.11 – Final report on POLARIN communications, outreach, and engagement activities, including POLARIN Ambassadors activities

Deliverable Number	D8.11	Lead Beneficiary	11 - EPB
Deliverable Name	Final report on POLARIN communications, outreach, and engagement activities, including POLARIN Ambassadors activities		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	60	Work Package No	WP8

Description
Final report on POLARIN communications, outreach, and engagement activities

Deliverable D8.12 – Report on POLARIN publication repository

Deliverable Number	D8.12	Lead Beneficiary	18 - IGOT UL
Deliverable Name	Report on POLARIN publication repository		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	60	Work Package No	WP8

Description
Report on POLARIN publication repository

Deliverable D8.13 – Impact evaluation report

Deliverable Number	D8.13	Lead Beneficiary	1 - AWI
Deliverable Name	Impact evaluation report		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	60	Work Package No	WP8

Description
Impact evaluation report

Deliverable D9.1 – Internal website of POLARIN implemented

Deliverable Number	D9.1	Lead Beneficiary	1 - AWI
Deliverable Name	Internal website of POLARIN implemented		
Type	DEC —Websites, patent filings, videos, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	2	Work Package No	WP9

Description
Internal website of POLARIN implemented

Deliverable D9.2 – Organisation and minutes of the first POLARIN GA (in-person)

Deliverable Number	D9.2	Lead Beneficiary	1 - AWI
Deliverable Name	Organisation and minutes of the first POLARIN GA (in-person)		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	3	Work Package No	WP9

Description
Organisation and minutes of the first POLARIN GA (in-person)

Deliverable D9.3 – Quality Assurance Plan, including guidelines, best practise, and project handbook

Deliverable Number	D9.3	Lead Beneficiary	1 - AWI
Deliverable Name	Quality Assurance Plan, including guidelines, best practise, and project handbook		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	4	Work Package No	WP9

Description
Quality Assurance Plan, including guidelines, best practise, and project handbook

Deliverable D9.4 – Implementation of the project Advisory Board (AB) incl. Terms of Reference

Deliverable Number	D9.4	Lead Beneficiary	1 - AWI
Deliverable Name	Implementation of the project Advisory Board (AB) incl. Terms of Reference		
Type	OTHER	Dissemination Level	PU - Public
Due Date (month)	6	Work Package No	WP9

Description
Implementation of the project Advisory Board (AB) incl. Terms of Reference

Deliverable D9.5 – Organisation and minutes of the second POLARIN GA (virtual)

Deliverable Number	D9.5	**Lead Beneficiary**	1 - AWI
Deliverable Name	Organisation and minutes of the second POLARIN GA (virtual)		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	14	**Work Package No**	WP9

Description
Organisation and minutes of the second POLARIN GA (virtual)

Deliverable D9.6 – Rreport on TA implemented to date

Deliverable Number	D9.6	**Lead Beneficiary**	1 - AWI
Deliverable Name	Rreport on TA implemented to date		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	16	**Work Package No**	WP9

Description
Report on TA implemented to date. This deliverable will collect details of the proejcts implemented to date: infrastructure, dates , title , abstract, topic, particicipants). It will be updated before each reporting period.

Deliverable D9.7 – Budget allocations for TA to date (I)

Deliverable Number	D9.7	**Lead Beneficiary**	1 - AWI
Deliverable Name	Budget allocations for TA to date (I)		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	16	**Work Package No**	WP9

Description
Budget allocations for TA to date

Deliverable D9.8 – First Policy briefing

Deliverable Number	D9.8	**Lead Beneficiary**	11 - EPB
Deliverable Name	First Policy briefing		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	18	**Work Package No**	WP9

Description
First Policy briefing

Deliverable D9.9 – Organisation and minutes of the third POLARIN GA and mid-term retreat (inperson)

Deliverable Number	D9.9	Lead Beneficiary	1 - AWI
Deliverable Name	Organisation and minutes of the third POLARIN GA and mid-term retreat (inperson)		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	26	Work Package No	WP9

Description
Organisation and minutes of the third POLARIN GA and mid-term retreat (inperson)

Deliverable D9.10 – Organisation and minutes of the fourth POLARIN GA (virtual)

Deliverable Number	D9.10	Lead Beneficiary	1 - AWI
Deliverable Name	Organisation and minutes of the fourth POLARIN GA (virtual)		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	38	Work Package No	WP9

Description
Organisation and minutes of the fourth POLARIN GA (virtual

Deliverable D9.11 – Budget allocations for TA to date (II)

Deliverable Number	D9.11	Lead Beneficiary	1 - AWI
Deliverable Name	Budget allocations for TA to date (II)		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	40	Work Package No	WP9

Description
Budget allocations for TA to date

Deliverable D9.12 – Second policy briefing

Deliverable Number	D9.12	Lead Beneficiary	1 - AWI
Deliverable Name	Second policy briefing		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	42	Work Package No	WP9

Description
Second policy briefing

Deliverable D9.13 – Organisation and minutes of the final POLARIN GA (in-person)

Deliverable Number	D9.13	Lead Beneficiary	1 - AWI
Deliverable Name	Organisation and minutes of the final POLARIN GA (in-person)		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	50	Work Package No	WP9

Description
Organisation and minutes of the final POLARIN GA (in-person)

Deliverable D9.14 – Report on the contribution of POLARIN to the EU Polar Cluster, international polar organisation, and the ESA – EC cooperation

Deliverable Number	D9.14	Lead Beneficiary	11 - EPB
Deliverable Name	Report on the contribution of POLARIN to the EU Polar Cluster, international polar organisation, and the ESA – EC cooperation		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	55	Work Package No	WP9

Description
Report on the contribution of POLARIN to the EU Polar Cluster, international polar organisation, and the ESA – EC cooperation

Deliverable D9.15 – Organisation and minutes of the POLARIN final conference

Deliverable Number	D9.15	Lead Beneficiary	1 - AWI
Deliverable Name	Organisation and minutes of the POLARIN final conference		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	57	Work Package No	WP9

Description
Organisation and minutes of the POLARIN final conference

Deliverable D9.16 – Budget allocations for TA to date (III)

Deliverable Number	D9.16	Lead Beneficiary	1 - AWI
Deliverable Name	Budget allocations for TA to date (III)		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	58	Work Package No	WP9

Description
Budget allocations for TA to date

Deliverable D9.17 – Third Policy briefing

Deliverable Number	D9.17	Lead Beneficiary	11 - EPB
Deliverable Name	Third Policy briefing		
Type	R — Document, report	Dissemination Level	PU - Public
Due Date (month)	60	Work Package No	WP9

Description
Third Policy briefing

LIST OF MILESTONES

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
1	Scientific evaluation procedure provided for INTERACCESS updates	WP1	9 - CNRS	D1.4	7
2	Initial definition of scientific priorities	WP1	6 - OGS	D1.3	8
3	Scientific evaluation of first call	WP1	6 - OGS	D1.6	18
4	Logistic evaluation procedure provided for INTERACCESS updates	WP2	14 - CSIC	D2.1	7
5	Beta testing of INTERACCESS	WP2	7 - INKODE	INTERACCESS portal up and running	10
6	Launching of the first call for proposals	WP2	2 - UOULU	Calls open on website	12
7	Launching of the second call for proposals	WP2	2 - UOULU	Calls open on website	24
8	Launching of the third call for proposals	WP2	2 - UOULU	Calls open on website	36
9	POLARIN web data portal implemented	WP4	12 - ETT	D4.3	12
10	Machine interfaces to catalogue established	WP5	15 - SIOS	D5.1	14
11	VA portal established	WP5	3 - INPA	D5.2	18
12	First guidelines on the handling of data collected on research expeditions published	WP7	15 - SIOS	D7.1	24
13	First training course for POLARIN TA-users on optimal use of POLARIN RI's accomplished	WP7	10 - UCPH	Training course performed	30
14	Field course on safe and sustainable polar expeditions accomplished	WP7	48 - FLPO	Training course performed	45

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
15	Introductory online seminar to POLARIN call 1	WP8	11 - EPB	Recordings of seminar	10
16	Online photo exhibition on POLARIN website	WP8	11 - EPB	Compilation of photo exhibition	40
17	Mid-term retreat and internal evaluation of POLARIN's achievements and progress	WP9	1 - AWI	D9.6	26

LIST OF CRITICAL RISKS

Critical risks & risk management strategy

Grant Preparation (Critical Risks screen) — Enter the info.

Risk number	Description	Work Package No(s)	Proposed Mitigation Measures
1	A partner is not collaborating, leaves the consortium, or is unable to fulfil his task -Low/ Medium	WP1, WP9, WP6, WP2, WP3, WP7, WP8, WP4, WP5	Even though the risk of one partner not collaborating is very low, the organisations involved have the sufficient experience to overcome this and, in that case, an experienced alternative partner can take over.
2	Coordination and communication between the interlinked tasks are insufficient – Low/Low	WP1, WP9, WP6, WP7, WP3, WP2, WP8, WP4, WP5	The Project Coordinator and Management Team will regularly monitor and coordinate interlinked activities.
3	Basic deliverables necessary to progress in following tasks are delivered late or incomplete - Low	WP1, WP9, WP6, WP7, WP3, WP2, WP8, WP4, WP5	The management structure of the project is designed with several levels of responsibility and coordination to avoid this. The Management Team is experienced in managing large consortiums and will closely follow the work plan.

Critical risks & risk management strategy

Grant Preparation (Critical Risks screen) — Enter the info.

Risk number	Description	Work Package No(s)	Proposed Mitigation Measures
			The WP leaders and Task leaders will continuously monitor WP and Task progression until the deliverable submission. WP leaders will report to the Steering Board regularly to monitor the project progress.
4	Quality of deliverables is unsatisfying – Low/high	WP1, WP6, WP9, WP2, WP3, WP7, WP8, WP4, WP5	A quality management routine will be implemented to ensure the structure and quality of deliverables. The Steering Board will review all deliverables before submission.
5	TA cancellations due to "force majeure" or inaccessible working area – Low/Medium	WP2, WP3	The COVID-19 crisis has taught us that travel restrictions (associated with a pandemic in the recent case, but also due to other natural phenomena) can take place even at global scale. The duration of this project will be set to five years to ensure that the implementation of TA can take place as expected within the duration of the project. This will allow the infrastructures to reorganise their schedules in case of "force majeure" without major implications for the project.
6	Proposal submission platform not ready in time to integrate all infrastructures simultaneously – Low/ Medium	WP2	The submission platform will be based on the INTERACCESS system developed by INTERACT to handle very large volumes of proposals. Its modification to allow the submission of proposals to very different RIs will start right at the beginning of the project to ensure it is ready in time.
7	Few applications are received to apply for POLARIN infrastructure access – Low/Medium	WP1, WP2, WP8	As shown in the communication and engagement plan, POLARIN will apply effective measures to reach the research community. POLARIN will actively advertise its services, i.e.: TA to RIs, VA to data, data tools, data services and data products, training opportunities and project results to relevant target audiences, also engaging different target audiences in certain project activities. The communication activities will involve various communication channels and tools (see section 2.2.1 in Part B). They will start at the onset of the project and will continue throughout the full project's lifetime.

Critical risks & risk management strategy

Grant Preparation (Critical Risks screen) — Enter the info.

Risk number	Description	Work Package No(s)	Proposed Mitigation Measures
8	External reviewers are difficult to engage – Medium/ Medium	WP1	This is a problem infrastructure projects face regularly. POLARIN will encourage researchers to review proposals by implementing a pool of reviewers and by providing certificates of contribution to project evaluations.

PROJECT REVIEWS

Project Reviews

Grant Preparation (Reviews screen) — Enter the info.

Review No	Timing (month)	Location	Comments
RV1	21	TBD	
RV2	45	TBD	
RV3	63	TBD	

RESEARCH INFRASTRUCTURE

Transnational/virtual access to research infrastructure

Grant Preparation (Research Infrastructure screen) — Enter the info.
The labels used mean:

Access provider short name — Short name of the beneficiary, affiliated entity or associated partner. It can be the infrastructure owner or, if the owner of the infrastructure is another third party contributing resources, the beneficiary/affiliated entity who they are provided to (and who coordinates access to them).
Installation number — Number progressively the installations of a same infrastructure. An installation is a part or a service of an infrastructure that can be used independently from the rest.
Country — Enter the code of the country where the installation is located (or INT if access is provided by an international organisation, ERIC, or similar legal entity with international membership. For mobile installations (e.g. a research vessel), give the country of its usual location (e.g. the homeport).
Type of access — Use the following access codes:

- *'TA-UC' or 'VA-UC' for transnational/virtual access with access costs declared on the basis of unit cost*
- *'TA-AC' or 'VA-AC' for transnational/virtual access with access costs declared as actual costs*
- *'TA-CB' or 'VA-CB' for transnational/virtual access with access costs declared as a combination of actual costs and unit cost.*

Associated partners must indicate actual cost (TA-AC or VA-AC) and put 0 in the actual cost column.
Amount per unit — To be filled in only if you have installations for which you use unit costs (or a combination of actual costs and unit costs) (VA-UC,TA-UC, TA-CB or VA-CB).
Access costs — Cost of the access provided under the project. For access costs on the basis of unit costs, multiply the amount per unit by the quantity of access to be provided.
*Columns with * should be filled only for transnational access, not for virtual access.*

Access Provider Short Name	Infrastructure Short Name	Installation		Country	Type of Access	Unit of Access	Estimated Quantity of Access	Amount per Unit (€)	Access Costs		Estimated Number of Users	Estimated Number of User Projects *
		Number	Short Name						as Unit Costs	as Actual Costs		
1 - AWI	AWI-ICE	1	52_AWI-ICE	DE	TA - UC	days	60.0	471.25	28 275.00		5	5
1 - AWI	AWI-SED	1	53_AWI-SED	DE	TA - UC	days	60.0	305.00	18 300.00		5	5
1 - AWI	AWIPEV	1	05_AWIPEV_AWI	NO	TA - UC	days	60.0	693.00	41 580.00		4	2
1 - AWI	FRAM	1	28_FRAM	GL	TA - AC	sensor	8.0			112 500.00	1	1
1 - AWI	NEUMAYER	1	36_NEUMAYER	AQ	TA - UC	days	90.0	3 047.00	274 230.00		2	1
1 - AWI	POLARSTERN	1	50_POLARSTERN	DE	TA - UC	days	168.0	1 867.00	313 656.00		4	1
2 - UOULU	OULANKA	1	15_OULANKA_TA	FI	TA - UC	days	60.0	346.00	20 760.00		4	2
2 - UOULU	OULANKA	2	15_OULANKA_VA	FI	VA - AC	User login and downloads	1.0			25 907.50	1	
3 - INPA	IDP	1	61_IDP_VA	SE	VA - AC	User login and downloads	1.0			52 500.00	1	
5 - CNR	CONCORDIA	1	31_CONCORDIA_CNR	AQ	TA - UC	days	50.0	2 950.56	147 528.00		1	1
5 - CNR	DIR-ITA	1	08_DIR-ITA_TA	NO	TA - UC	days	80.0	206.70	16 536.00		5	2
5 - CNR	DIR-ITA	2	08_DIR-ITA_VA	NO	VA - AC	User login and downloads	1.0			28 000.00	1	
5 - CNR	IADC	1	60_IADC_VA	IT	VA - AC	User login and downloads	1.0			35 000.00	1	
5 - CNR	MZS	1	35_MZS	AQ	TA - UC	days	120.0	916.20	109 944.00		4	2
5 - CNR	NADC	1	62_NADC_VA	AQ	VA - AC	User login and downloads	1.0			35 000.00	1	

Access Provider Short Name	Infrastructure Short Name	Installation		Country	Type of Access	Unit of Access	Estimated Quantity of Access	Amount per Unit (€)	Access Costs		Estimated Number of Users	Estimated Number of User Projects *
		Number	Short Name						as Unit Costs	as Actual Costs		
6 - OGS	LAURA	1	48_LAURA	AQ	TA - UC	days	6.0	46 371.76	278 231.00		4	1
8 - AU	ARC-MO	1	56_ARC-MO_VA	GL	VA - AC	User login and downloads	1.0			105 000.00	1	
8 - AU	GEM	1	57_GEM_VA	GL	VA - AC	User login and downloads	1.0			105 487.50	1	
8 - AU	VRS	1	25_VRS	GL	TA - UC	days	100.0	620.00	62 000.00		7	3
8 - AU	ZAC	1	27_ZAC	GL	TA - UC	days	120.0	685.00	82 200.00		8	4
10 - UCPH	ARCST	1	04_ARCST	DK	TA - UC	days	120.0	296.00	35 520.00		8	4
10 - UCPH	SER	1	19_SER_UCPH	GL	TA - UC	days	60.0	178.80	10 728.00		4	2
12 - ETT	ADI	1	59_ADI_VA	IT	VA - AC	User login and downloads	1.0			37 500.00	1	
13 - UiT	UIT-CORES	1	55_UIT-CORES	NO	TA - AC	days	60.0			32 500.00	5	5
14 - CSIC	JCI	1	34_JCI	AQ	TA - UC	days	150.0	654.00	98 100.00		5	2
15 - SIOS	SDMS	1	64_SDMS_VA	NO	VA - AC	User login and downloads	1.0			123 000.00	1	
17 - NASC	AVS	1	29_AVS	AR	TA - UC	days	120.0	1 000.00	120 000.00		4	2
17 - NASC	NOOSHERE	1	49_NOOSPHERE	AQ	TA - UC	days	8.0	55 491.80	443 935.00		6	1
19 - GFZ	POSEDA	1	63_POSEDA_VA	DE	VA - AC	User login and downloads	1.0			88 145.00	1	
20 - DTU	ARC-DTU	1	03_ARC-DTU	DK	TA - UC	days	100.0	81.00	8 100.00		7	3

Access Provider Short Name	Infrastructure Short Name	Installation		Country	Type of Access	Unit of Access	Estimated Quantity of Access	Amount per Unit (€)	Access Costs		Estimated Number of Users	Estimated Number of User Projects *
		Number	Short Name						as Unit Costs	as Actual Costs		
20 - DTU	DANA	1	44_DANA	DK	TA - UC	days	8.0	27 215.00	217 720.00		8	1
21 - IPEV	AWIPEV	2	05_AWIPEV_IPEV	NO	TA - UC	days	60.0	693.00	41 580.00		4	2
21 - IPEV	CONCORDIA	2	31_CONCORDIA_IPEV	FR	TA - UC	days	50.0	2 950.56	147 528.00		1	1
22 - PONANT	CHARCOT	1	43_CHARCOT	FR	TA - UC	days	1400.0	0.00	0.00		100	20
23 - MFRI	ARNI	1	41_ARNI	IS	TA - UC	days	8.0	35 000.00	280 000.00		6	1
24 - GINR	GINR	1	09_GINR	DK	TA - UC	days	120.0	280.00	33 600.00		8	4
25 - MCIN	GABRIEL	1	33_GABRIEL	AQ	TA - UC	days	150.0	344.30	51 645.00		5	2
25 - MCIN	HESPERIDES	1	46_HESPERIDES	ES	TA - UC	days	180.0	946.16	170 309.00		6	1
26 - SPRS	ABISKO	1	01_ABISKO_TA	SE	TA - UC	days	100.0	162.00	16 200.00		7	3
26 - SPRS	ABISKO	2	01_ABISKO_VA	SE	VA - AC	User login and downloads	1.0			37 748.00	1	
26 - SPRS	WASA	1	39_WASA	AQ	TA - UC	days	50.0	600.00	30 000.00		1	5
27 - SSLC	SUDURNES	1	20_SUDURNES	IS	TA - UC	days	60.0	659.73	39 584.00		4	2
28 - DMI	QAANAAQ	1	17_QAANAAQ	GL	TA - UC	days	100.0	315.00	31 500.00		7	3
29 - ULAVAL	AMUNDSEN	1	40_AMUNDSEN	CA	TA - UC	days	6.0	72 107.55	432 646.00		6	1
29 - ULAVAL	CEN WK	1	07_CEN WK_TA	CA	TA - UC	days	75.0	409.00	30 675.00		5	2
29 - ULAVAL	CEN WK	2	07_CEN WK_VA	CA	VA - AC	User login and downloads	1.0			26 697.00	1	
30 - UTU	KEVO	1	11_KEVO_TA	FI	TA - UC	days	80.0	185.17	14 814.00		5	2
30 - UTU	KEVO	2	11_KEVO_VA	FI	VA - AC	User login and downloads	1.0			17 834.00	1	

Access Provider Short Name	Infrastructure Short Name	Installation		Country	Type of Access	Unit of Access	Estimated Quantity of Access	Amount per Unit (€)	Access Costs		Estimated Number of Users	Estimated Number of User Projects *
		Number	Short Name						as Unit Costs	as Actual Costs		
31 - NPI	HAAKON	1	45_HAAKON	NO	TA - UC	days	150.0	2 191.00	328 650.00		6	1
31 - NPI	SVERDRUP	1	21_SVERDRUP	NO	TA - UC	days	100.0	289.00	28 900.00		7	3
31 - NPI	TROLL	1	38_TROLL	AQ	TA - UC	days	105.0	600.00	63 000.00		4	2
32 - UGRAZ	SER	2	19_SER_UGRAZ	GL	TA - UC	days	60.0	178.80	10 728.00		4	2
33 - RIF	RIF	1	18_RIF	IS	TA - UC	days	80.0	500.00	40 000.00		5	2
34 - SU	TRS	1	22_TRS_TA	SE	TA - UC	days	100.0	291.25	29 125.00		7	3
34 - SU	TRS	2	22_TRS_VA	SE	VA - AC	User login and downloads	1.0			20 000.00	1	
35 - AMU	AMUPS	1	02_AMUPS	NO	TA - UC	days	100.0	60.00	6 000.00		7	3
36 - ARI	WARC	1	26_WARC_TA	CA	TA - UC	days	60.0	244.63	14 678.00		4	2
36 - ARI	WARC	2	26_WARC_VA	CA	VA - AC	User login and downloads	1.0			31 897.00	1	
37 - IGF PAS	HORNSUND	1	10_HORNSUND	NO	TA - UC	days	120.0	202.00	24 240.00		8	4
38 - UMK	NCUPS	1	14_NCUPS	NO	TA - AC	days	120.0			22 800.00	7	3
39 - UAF	TOOLIK	1	23_TOOLIK	US	TA - UC	days	80.0	109.00	8 720.00		5	2
40 - MI	CELTIC	1	42_CELTIC	IE	TA - UC	days	8.0	28 000.00	224 000.00		8	1
41 - UKRI	PSCF	1	54_PSCF	AQ	TA - AC	days	30.0			14 718.00	5	5
41 - UKRI	UK-AS	1	24_UK-AS	NO	TA - UC	days	80.0	564.60	45 168.00		5	2
42 - UH	KILPIS	1	12_KILPIS_TA	FI	TA - AC	days	80.0			20 724.80	5	2
42 - UH	KILPIS	2	12_KILPIS_VA	FI	VA - AC	User login and downloads	1.0			28 500.00	1	

Access Provider Short Name	Infrastructure Short Name	Installation		Country	Type of Access	Unit of Access	Estimated Quantity of Access	Amount per Unit (€)	Access Costs		Estimated Number of Users	Estimated Number of User Projects *
		Number	Short Name						as Unit Costs	as Actual Costs		
43 - FMI	PAL-SOD	1	16_PAL-SOD_TA	FI	TA - UC	days	60.0	446.00	26 760.00		4	2
43 - FMI	PAL-SOD	2	16_PAL-SOD_VA	FI	VA - AC	User login and downloads	1.0			33 258.00	1	
44 - BAI	BAB	1	30_BAB	AQ	TA - UC	days	120.0	468.96	56 276.00		6	3
45 - UICS	BARC	1	06_BARC	US	TA - AC	days	120.0			55 920.00	8	4
46 - CAFF	ABDS	1	58_ABDS_VA	IS	VA - AC	User login and downloads	1.0			50 000.00	1	
47 - TARA	TARA	1	51_TARA	FR	TA - UC	days	100.0	1 000.00	100 000.00		2	1
49 - INACH	ESCUDERO	1	32_ESCUDERO	CL	TA - UC	days	180.0	221.56	39 881.00		6	1
49 - INACH	KARPUJ	1	47_KARPUJ	CL	TA - UC	RI/day	15.0	11 705.88	175 589.00		5	1
49 - INACH	PRAT	1	37_PRAT	CL	TA - UC	days	90.0	144.83	13 035.00		3	1
50 - SAVN	KOLTUR	1	13_KOLTUR	FO	TA - CB	user/day	60.0	769.00	46 140.00	37 632.00	5	1

HISTORY OF CHANGES

PART A		
GAP Phase		
date	**Section**	**Nature of change and reason / justification of change proposed *(if applicable)***
20.07.23	Deliverables	**List of deliverables changed:** **Added D3.1** Access provision and lessons learned: WP3 needs a deliverable otherwise the system does not accept the WP description. D3.1 is compatible with D2.7 **Changed: D4.1:** Title changed into: Data Management Plan for generated and collected data incl. ethical guidelines for data and derived data products **Added: D4.9, D4.15 & D4.17** Update of the data management plan for generated and collected data **Added D6.1** Final VA Assessment Report. WP6 needs a deliverable otherwise the system does not accept the WP description. D6.1 is compatible with D5.5 **Added D9.6, D9.11, D9.17:** Synthetic report on implemented TA to date **Added D9.7, D9.12, D9.18**: Budget allocations for TA to date **Added D9.8, D9.13, D9.14:** Update on policy briefings
20.07.2023	Critical Risks	**Text changed for risk No. 7 into:** As shown in the communication and engagement plan, POLARIN will apply effective measures to reach the research community. POLARIN will actively advertise its services, i.e.: TA to RIs, VA to data, data tools, data services and data products, training opportunities and project results to relevant target audiences, also engaging different target audiences in certain project activities. The communication activities will involve various communication channels and tools (see section 2.2.1 in Part B). They will start at the onset of the project and will continue throughout the full project's lifetime.
11.09.23	Deliverables	**List of deliverables changed:** **Merged D1.4,** D1.8 and D1.11 to D1.4. Overview report of existing science priorities by major Arctic and Antarctic organisations and validation /calibration needs by in-situ observation, remote sensing and modelling communities. This deliverable will be updated in the course of the project when needed at M22 and M33. **Merged D1.5,** D1.7, D1.10 to D1.5 Polar knowledge gaps and potential of POLARIN RIs in addressing them. This deliverable will be updated in the course of the project when needed at M21 and M32. **Delivery month changed:** D3.1 Synthetic report on TA provided to date. From M60 to M16. Description: This deliverable will be updated preceding each reporting period. **Merged D4.9, D4.15 & D4.17 to D4.1:** Data Management Plan for generated and collected data incl. ethical guidelines for data and derived data products. Description: This deliverable will be updated preceding each reporting period. **Merged D4.2, 4.10 and 4.13** to D4.2 "POLARIN graphic products package for multiple audiences and gap analysis". Description: This deliverable will be updated at M24 and M33 if needed

		Merged D4.12, D.14 and D.16 Usability report of POLARIN data access hub and data services. Description: This deliverable will be updated at M36 and M55. **Changed title D6.1** from "Final VA assessment report" to "Synthetic report on VA". Changed delivery date to M60. **Merged** D8.6 and D8.9 to D8.6 Assessment of communications, outreach and engagement activities to date, and update of the Communication dissemination, and engagement plan. Description: This deliverable will be updated at M49. **Removed** "D8.12 Report on POLARIN Ambassador program activities", as this report will be included in "D8.11 Final report on POLARIN communications, outreach, and engagement activities, including POLARIN Ambassadors activities. " **Changed title of D8.13** from "Final report on POLARIN communications, outreach, and engagement activities" to " Final report on POLARIN communications, outreach, and engagement activities, including POLARIN Ambassadors activities". **Changed title of D9.6** from "Synthetic report on implemented TA to date" to "Report on TA implemented to date". Description: This deliverable will collect details of the projects implemented to date (infrastructure, dates, title, abstract, topic, participants). It will be updated before each reporting period. **Removed deliverables** D9.11 and 9.17 as this is redundant with D3.1 **Changed title of D9.8, 9.13 and 9.19 to First, second and third p**olicy briefing", respectively. **The deliverables have been renumbered according to their delivery date within the WPs.**
11.09.23	Infrastructures tab	Units of access marked with "1" have been changed to "User login and downloads"
20.09.2023	**Changes resulting from removing the partners FLPO, SAVN and INACH**	
	List of beneficiaries	Beneficiaries No. 19 (FLPO), No. 20 (INACH) and No. 35 (SAVN) removed Numbering of partners following FLPO was automatically rearranged.
	Financial information	Budget of partners FLPO, INACH and SAVN shifted to AWI (coordinator), who will take over the tasks
	Infrastructures	Installation of INACH (32 ESCUDERO, 37 PRAT, 47 KARPUL) and SAVN (No. 13 KOLTUR) removed. Budget shifted to AWI installations (28 FRAM, 50 POLARSTERN)
	List of researchers	Researchers from FLPO, SAVN and INACH removed
	Work Packages - Effort	WP1: PM of AWI changed from 2 to 4, INACH removed WP7: PM of AWI changed from 0 to 4, FLPO removed WP8: PM of AWI changed from 5 to 15, INACH removed
	List of deliverables	D7.2 Training material for in-the-field course on polar expedition safety and sustainability, from FLPO to AWI D8.2 Brand Identity and guidelines package (logos, general lay-out etc.), from INACH to AWI D8.3 POLARIN promotional materials (press releases, promotion video, flyers, roll-ups etc.), from INACH to AWI

	List of milestones	M14 Field course on safe and sustainable polar expeditions accomplished, from FLPO to AWI
		Numbering of partners has been changed automatically.
Project Amendment #1		
date	**Page/section**	**Nature of change and reason / justification of change proposed *(if applicable)***
16.05.2024	**Changes resulting from adding the partners FLPO, INACH and SAVN**	
	List of beneficiaries	Added Beneficiaries retroactively from 01.023.2024 on: - No. 48 FLPO (PIC No 884667549) and - No. 49 INACH (PIC No 951329732) - No. 50 SAVN (PIC No 881164879)
	Financial information	746,365.00 € EC contribution from coordinator 1 AWI shifted to partners: - 48 FLPO (226,670.00€) - 49 INACH (393,704.00€) - 50 SAVN (125,991.00 €) to take over again the task originally foreseen for them.
	Infrastructures	Added installation of - 49 INACH (32 ESCUDERO, 37 PRAT, 47 KARPUL) - 50 SAVN (13 KOLTUR) Budget shifted from AWI installations (28 FRAM and 50 POLARSTERN)
	Work Packages - Effort	WP1: PM of AWI changed from 4 to 2, INACH added with 2 PM WP7: PM of AWI changed from 4 to 0, FLPO added with 4 PM WP8: PM of AWI changed from 15 to 5, INACH included with 10 PM
	List of deliverables	D7.2 Training material for in-the-field course on polar expedition safety and sustainability, from AWI to FLPO D8.3 POLARIN promotional materials (press releases, promotion video, flyers, roll-ups etc.), from AWI to INACH
	List of milestones	M14 Field course on safe and sustainable polar expeditions accomplished, from AWI to FLPO
	Annex 2b	Infrastructures of 49 INACH (32 ESCUDERO, 37 PRAT, 47 KARPUL) and SAVN (13 KOLTUR) added. Budget of 1 AWI installations (28 FRAM, 50 POLARSTERN) reduced.
	Changes resulting from adding the partner ARCTRIS	
	List of beneficiaries	Added beneficiaries retroactively from 01.023.2024 on: - 51 ACTRIS (PIC 881404372)
	Financial information	23,303.37 € EC contribution from partner 43 FMI shifted to new partner 51 ACTRIS to take over parts of their tasks.
	Work Packages - Effort	2 PM in WP9 from 43 FMI shifted to 51 ACTRIS
	Other changes	
	WP7 description of tasks:	From: Task 7.3. Training to perform safe and sustainable polar expeditions (FLPO, UCPH, AU) (M1-M55)

		To: Task 7.3. Training to perform safe and sustainable polar expeditions (FLPO, UCPH) (M1-M55)
	Financial information	Personnel costs of 2 UOULU (320,180.00€) shifted from actual to unit costs, 50,000 € other goods and services shifted to subcontracting Costs of 31 NPI, 36 ARI and 45 UICS updated (changes to TA costs and shifts between unit and actual costs)
	Infrastructures	Unit costs and number of access of 31 NPI installations updated (45 HAAKON, 38 TROLL) Unit costs and number of access of 36 ARI installation (26 WARC) adapted Unit costs and number of access of 45 UICS installation (6 BARC) adapted
	Annex 2b	Budget of 31 NPI installations (45 HAAKON, 38 TROLL) adapted Budget of 36 ARI installation (26 WARC) adapted 45 UICS installation (6 BARC) deleted, because only actual costs, no unit costs

PART B		
GAP Phase		
date	**Page/section**	**Nature of change and reason / justification of change proposed *(if applicable)***
12.07.2023	Page 22/ Section 1.2.3 Interdisciplinarity and integration of expertise and methods	**Text added:** • Challenge driven calls will be opened by POLARIN and those challenges are multidisciplinary by nature and need to be addressed by an interdisciplinary approach. • To foster interdisciplinarity of funded projects, proposals addressing key challenges with an interdisciplinary approach, making full use of the requested RI, will be given priority in the evaluation process.
12.07.2023	Page 24/ Section 1.2.6 Research data management and management of other research outputs	**Text added: Ethical, legal and social aspects of data and derived research products** Even though no particularly sensitive data (e.g. health data, information on religion or sexual orientation) will be managed by the consortium, the consortium will ensure that ethical guidelines are followed in the course of data collection, processing, storage, archiving and subsequent use of data. In addition, to prevent the misuse of the data, the consortium will ensure that data protection and ethical as well as legal considerations are taken into account when sharing and publishing research data.
18.07.2023	Page 31/Section 2.2.1 Communication plan – other target groups – Maritime industry	**Text added:** This target group will be engaged with the support of the beneficiaries 24 PONANT (tourism) and 19 FLPO (shipping) and via presentations at dedicated industry events such as the SMM in Hamburg
20.07.2023	Page 38. 3.1.2 Gantt chart	New deliverables added to the Gantt chart
11.09.2023	Gantt chart	**New version**

11.09.2023	Page 59	The letter from ESA has been removed
18.09.2023	Page 43-48	Table 3.1h corrected: - CFS added for partner requesting EU contribution >430k€ - Ben 23. Total sum corrected from 27.300 to 34.600
20.09.2023	**Changes resulting from removing the partners FLPO, SAVN and INACH**	
	Page 7: Figure 1	Changed to accommodate the new number of RIs offered
	Page 31/Section 2.2.1 Communication plan – other target groups – Maritime industry	This target group will be engaged with the support of the beneficiary 24 PONANT (tourism) and via presentations at dedicated industry events such as the SMM in Hamburg.
	Page 44 / Table 3.1h	Budget of AWI revised, Budget of FLPO, INACH and SAVN deleted
	Page 51 / Table 3.1k	Renumbered / order changed Infrastructures of INACH and SAVN removed Cost for AWI infrastructure adapted
	Other changes	
	Page 53/Section 3.2 Capacity of participants and consortium as a whole	Text changed from: The project also includes **three business partners** (Ponant, FLPO and ETT) which offer free access to a unique and modern PC3 icebreaker operating as a cruise ship at both poles (Ponant), ensure that polar research is safe and sustainable by performing safety training according to the Polar Code (FLPO) and support the project in making polar data interoperable and available and link it to **EMODnet physics and Copernicus** (ETT). To: The project also includes **two business partners** (Ponant and ETT) which offer free access to a unique and modern PC3 icebreaker operating as a cruise ship at both poles (Ponant), and support the project in making polar data interoperable and available and link it to **EMODnet physics and Copernicus** (ETT).
	Page 53/Section 3.2 Capacity of participants and consortium as a whole	Text changed from: POLARIN comprises 7 **international partners** from Canada (ULAVAL, ARI); USA (UAF, UICS), UK (UKRI), Ukraine (NASC), and Chile (INACH) as full partners in the consortium. To: POLARIN comprises 6 **non EU partners** from Canada (ULAVAL, ARI); USA (UAF, UICS), UK (UKRI), and Ukraine (NASC) as full partners in the consortium.
		Numbering of partners has been changed accordingly
		The number of infrastructures offered has been changed throughout the text, from 64 to 61, as the withdrawal of three partners removes 1 Arctic station, 1 Antarctic station and 1 vessel operating in Antarctic waters.
Project Amendment #1		
date	**Page/section**	**Nature of change and reason / justification of change proposed *(if applicable)***
16.05.2024	**Changes resulting from adding the partners FLPO, INACH and SAVN**	
	Page 7: Figure 1	Changed to accommodate the new number of RIs offered, also elsewhere in the text, 64 RIs.
	Page 31/Section 2.2.1 Communication plan – other target groups – Maritime industry	From: This target group will be engaged with the support of the beneficiary 24 PONANT (tourism) and via presentations at dedicated industry events such as the SMM in Hamburg. To: This target group will be engaged with the support of the beneficiaries 24 PONANT (tourism) and 19 FLPO (shipping) and via presentations at dedicated industry events such as the SMM in Hamburg

	Page 44 / Table 3.1g	Subcontract for Partner 2 UOULU added (shifted from other costs to subcontract)
	Page 44 / Table 3.1h	Budget of 1 AWI revised, Budget of 2 UOULU revised Budget of 31 NPI revised Budget of 45 UICS revised Budget of 48 FLPO, 49 INACH, 50 SAVN and 51 ACTRIS added
	Page 51 / Table 3.1k	Infrastructures of 49 INACH and 50 SAVN added. Cost for 1 AWI infrastructure adapted Cost for 31 NPI infrastructure adapted Cost for 36 ARI infrastructure adapted Cost for 45 UICS infrastructure adapted
	Page 53/Section 3.2 Capacity of participants and consortium as a whole	Text changed from: The project also includes **two business partners** (Ponant and ETT) which offer free access to a unique and modern PC3 icebreaker operating as a cruise ship at both poles (Ponant), and support the project in making polar data interoperable and available and link it to **EMODnet physics and Copernicus** (ETT). To: The project also includes **three business partners** (Ponant, FLPO and ETT) which offer free access to a unique and modern PC3 icebreaker operating as a cruise ship at both poles (Ponant), ensure that polar research is safe and sustainable by performing safety training according to the Polar Code (FLPO) and support the project in making polar data interoperable and available and link it to **EMODnet physics and Copernicus** (ETT).
	Page 53/Section 3.2 Capacity of participants and consortium as a whole	Text changed from: POLARIN comprises 6 **non EU partners** from Canada (ULAVAL, ARI); USA (UAF, UICS), UK (UKRI), and Ukraine (NASC) as full partners in the consortium. To: POLARIN comprises 7 **non EU partners** from Canada (ULAVAL, ARI); USA (UAF, UICS), UK (UKRI), Ukraine (NASC), and Chile (INACH) as full partners in the consortium.
Project Amendment #1 - Revision		
date	**Page/section**	**Nature of change and reason / justification of change proposed *(if applicable)***
20.09.2024	**Changes according to PO's comments 06.09.2024 (Process Communication in portal)**	
	Page 42: 3.1.2	Deliverable D7.2: the due date in the Gantt Chart (Annex 1 Part B, page 42) is updated, changed to M28.
	Page 43 (was 44) / Table 3.1g	Subcontract for Partner 2 UOULU removed (budget shifted to other costs, see table 3.1h)
	Table 3.1h, Page 43	2/UOLO: €50,000 reshifted from subcontract to other direct costs
	Table 3.1h, Page 43	5/CNR: The amount is corrected from €75,800 to €78,500
	Table 3.1h, Page 46	31/NPI: total amount is corrected from €10,000 to €25,096.
	Other Changes	
	Table 3.1h, Page 43	2/UOLO: figures corrected according to the description

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1 EXCELLENCE #@REL-EVA-RE@#

Abstract
The polar regions play a key role in the Earth's system. They are essential for our climate and are sentinels of climate change, human expansion, and the hunt of new resources. The polar regions are losing ice, and their oceans and land are changing rapidly. The consequences of this polar transition extend to the whole planet and are affecting people in multiple ways. Evidence-based policy recommendations are needed to support a sustainable development of the Arctic and to effectively protect the Antarctic realm. However, the polar regions are remote, difficult to reach, and research infrastructures able to operate in these regions are scarce. Research data is fragmented and scattered in a variety of databases with little interoperability**. To understand and predict key processes in the polar regions and provide evidence-based information in support of the European Green Deal and the EU Arctic policy, the polar research community needs access to world-class research infrastructure operating in these regions.**
POLARIN is an international network of polar research infrastructures and their services, aiming at addressing the scientific challenges of the polar regions. The network includes a wide array of complementary and interdisciplinary top level research infrastructures: Arctic and Antarctic research stations, research vessels and icebreakers operating at both poles, observatories, data infrastructures and ice and sediment core repositories. POLARIN will provide integrated, challenge-driven, and combined access to these infrastructures to facilitate interdisciplinary research on complex processes.
POLARIN will:

1. Provide challenge-driven transnational access to a large portfolio of research infrastructures.
2. Improve the access to data by improving data availability and interoperability between data infrastructures.
3. Provide virtual access to data and data services.
4. Provide data products for the scientific community and decision makers.
5. Train the young generation of polar researchers in optimally exploiting the infrastructures for their research.
6. Duly advertise the services offered by POLARIN and engage the infrastructure users to share their research outcomes with society.

The polar regions

The polar regions are recognised as being geopolitically and economically important and extremely vulnerable to current and projected climate change. They are integral parts of the Earth climate system, interacting with the rest of the world through shared oceans, atmosphere, and ecological and societal systems (IPCC 2007, 2019, 2021 and references therein)[1]. Climate change is amplified in the polar regions, and the northern and southern reaches of the planet are warming faster than any area on Earth, with the Arctic warming twice as much as elsewhere. Greenland and the Antarctic ice sheets are both losing their ice mass to the ocean, through increased melting, impacting global sea level rise.
However, there are important differences in the physical setting of the two polar regions – the Arctic, an ocean surrounded by land, the Antarctic, a continent surrounded by an ocean – that structure the nature and magnitude of interactions of cryosphere and atmosphere, ocean, and ecosystems (both terrestrial and marine) and their global linkages. The different physical settings have also led to the evolution of unique marine and terrestrial biology in each polar region and shape effects, impacts and adaptation of polar ecosystems.
With **eleven out of sixteen identified climate tipping elements[2] lying in the polar regions** (McKay et al., 2022)[3], it is imperative to advance the understanding of the polar climate system, enhance data collection and facilitate the access to sustained comprehensive databases. Still, the polar regions are difficult to reach: the extreme weather conditions and the lack of infrastructures make research in these

1 https://www.ipcc.ch/reports/
2 A climate tipping element is a part of the climate system that can reach a climate tipping point, a condition beyond which changes become self-perpetuating.
3 McKay et al., Exceeding 1.5°C global warming could trigger multiple climate tipping points. Science. 2022 Sep 9; https://www.science.org/doi/10.1126/science.abn7950

regions logistically and financially very challenging. Access to and integration of research infrastructures (RIs) are key for strengthening European research, and increasing the observing and modelling capacities to address the grand challenges that these regions are facing.

POLARIN Research Infrastructures

POLARIN has assembled a unique set of **64** polar RIs (Figure 1.1) ranging from small research stations in the Arctic and Antarctic to large research icebreakers operating at both poles. In order to improve the understanding of the complex polar processes and systems and to better predict their change, POLARIN focuses on key regions that are particularly vulnerable to climate change. These key regions are Greenland **(9** RIs, some of which including several installations), Svalbard (**7** RIs) and the Atlantic sector of the Arctic Ocean (**4** RIs) in the northern hemisphere, and the Antarctic Peninsula (**8**RIs) and the Weddell Sea/Dronning Maud Land area (**4** RIs) in the southern hemisphere (Figure 1.2). These regions are not only the areas in which European polar programmes operate most of their RIs, but also the sentinels of climate change. This set of polar RIs is completed by ice- and sediment core repositories offering several thousand meters of cores from both poles and data infrastructures that offer virtual access to data that has been collected for nearly half a century at the poles. **Such a wide variety of RIs has never been offered for access before.**

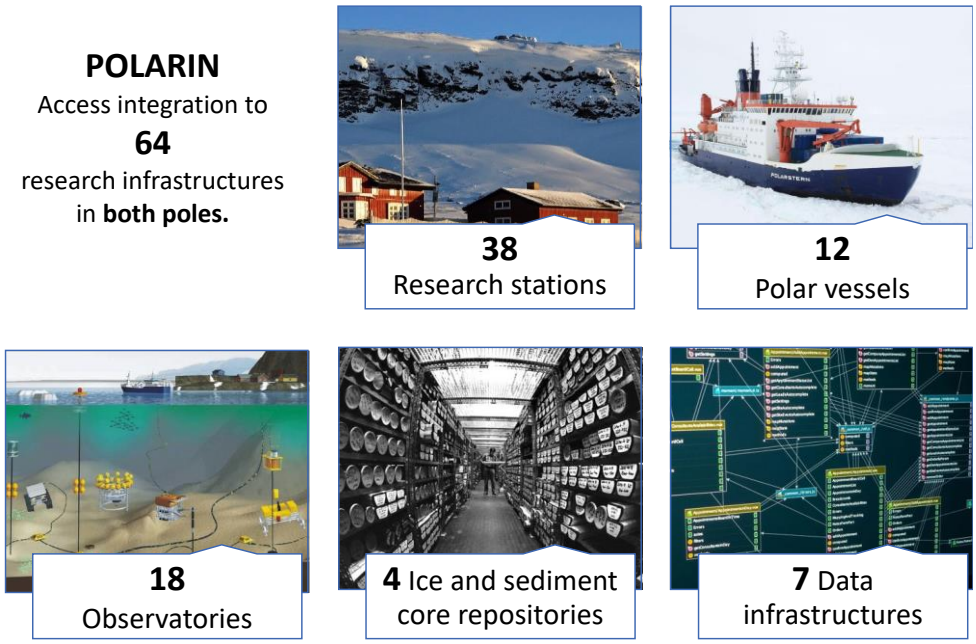

Figure 1.1. Suite of research infrastructures offered in POLARIN.

Transnational access (TA) to Arctic RIs is very well established thanks to the very successful INTERACT and ARICE projects but access to Antarctic RIs has never been offered before. Access to the Antarctic is, on the one hand, heavily regulated by the Antarctic Treaty to minimise the impact of human activities on the continent's pristine environment and, on the other hand, challenging and expensive due to very difficult logistics and time-consuming travel.

The POLARIN RIs are not only operated by national polar programmes but also by private foundations such as the Foundation Tara, which provides access to a sailing boat drifting through the Arctic Ocean or companies, and the French cruise ship company Ponant, providing 1400 units of access as in-kind contribution to the modern and state of the art icebreaking cruise ship Le Commandant Charcot.

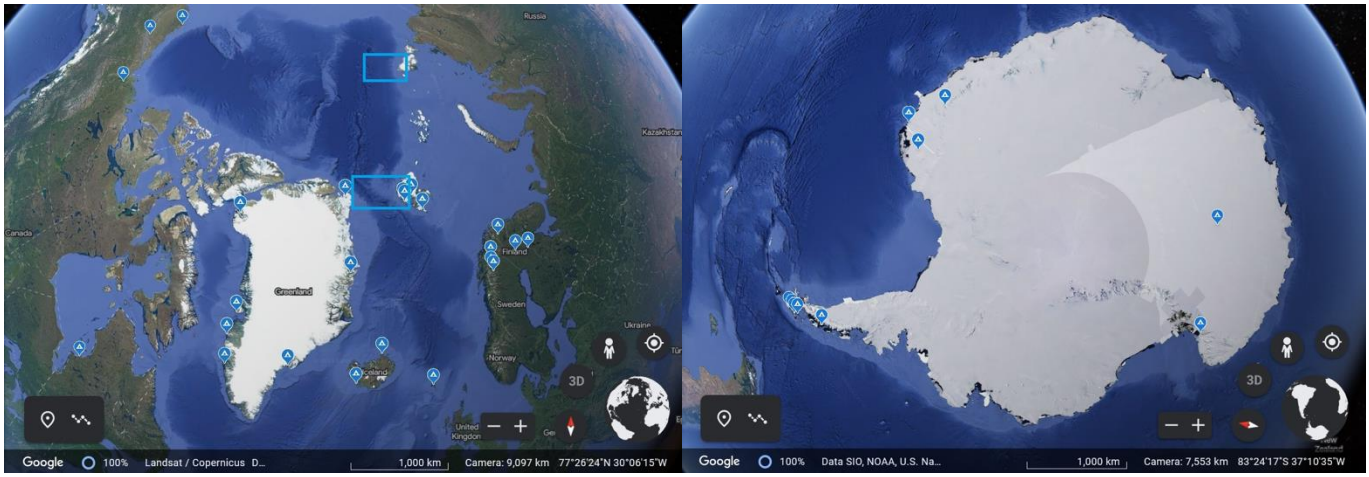

Figure 1.2. Location of research stations offered for Transnational Access (TA) (blue symbol). The FRAM observatory areas are marked with blue rectangles.

1.1 Objectives and ambition #@PRJ-OBJ-PO@#

1.1.1 Objectives and relation to the work programme

1.1.1.1 Objectives

POLARIN's overall aim is **to provide efficient and customised research infrastructure (RI) services to address the scientific challenges of the polar regions**, including access to a **wide portfolio of complementary and interdisciplinary top level RIs**. Building on past EU-funded projects that offered access to terrestrial research stations (INTERACT) and research icebreakers (ARICE) in the Arctic, POLARIN will further **integrate and combine the access to Arctic and Antarctic research stations, polar vessels including icebreakers, observatories (on land and at sea), data infrastructures and ice and sediment core repositories.** POLARIN will **improve online services, data access and interoperability** by enabling the connection between initiatives, improving workflows, and reducing data fragmentation. POLARIN will ensure that the **new generations** are trained to exploit the leading edge RIs.

POLARIN has the following **six specific objectives**, coherent with the work packages, each with measurable outcomes:

1. Enable science for understanding and predicting key processes in polar regions.
2. Provide efficient challenge-driven transnational access (TA) to top level RIs in the polar regions.
3. Improve data services and provide customised data products.
4. Provide virtual access (VA) to data and data services.
5. Provide training for infrastructure users.
6. Advertise RI services and engage RI users.

Objective 1: Enabling science for understanding and predicting key processes in polar regions (TA1/WP1)

The polar regions are complex systems that, despite improved observations, remain a challenge to understand due to their vastness, extreme environmental conditions, and low population density. Ongoing European and international observing and research efforts are thus not yet fully able to meet the demands for comprehensive and integrated information on polar environments and of their role in influencing climatic or other processes at lower latitudes. POLARIN will ensure that the research performed on its RIs will contribute to the specific challenges identified by international organisations and programmes

such as EU-PolarNet[4], ESA[5], SCAR[6], IASC[7], UNDOS[8], and past and ongoing EU Polar Cluster projects, by directing its calls for proposals towards addressing specific challenges and by monitoring key results and contributions of the funded projects towards solving them.
In doing so, POLARIN will enable and facilitate science for understanding and predicting key processes in polar regions in the context of climate change. The proposals granted for access through POLARIN should contribute at least to one of the following topics (for further information **see section 1.2.1.1.):**
Understanding and predicting the effects of the changing climate on:

1. Sea-ice and Polar Oceans
2. Sea level, glacier stability and melt
3. Carbon balance and permafrost
4. Polar ecosystems and biodiversity
5. Atmosphere dynamics
6. (Paleo)climate processes

Successive calls will be redirected to ensure that all challenges are fully addressed.
Measurable outcomes:

- ➔ Scientific framework for challenge-driven calls for proposals.
- ➔ Joint model of access to international polar RIs, incl. governance documents and access policies for researchers.
- ➔ Scientific evaluation of challenge driven calls.
- ➔ Identification of current knowledge gaps.
- ➔ Report on contribution of POLARIN funded access to addressing the scientific challenges in the polar regions.

Objective 2: Provide efficient challenge-driven transnational access (TA) to top level research infrastructures in the polar regions (TA2/WP2 & TA3/WP3)
European nations and their international partners operate world-class RIs in the Arctic and Antarctic, which result from a long history of polar research and significant investments made by national polar programmes. These infrastructures are of extreme scientific value, as they are either strategically located or their mobile capabilities provide them with unique capacities. These RIs are based over a large geographical breadth, providing a critical network and a valuable asset for the European Research Area. Access to these top-level RIs and their services is essential to support excellent research addressing the grand challenges induced by the changing climate and for providing evidence-based advice to decision-making.
For the first time ever, POLARIN will provide TA to a set of complementary and multidisciplinary European and International RIs covering both poles including:

- 26 Arctic stations,
- 11 Antarctic stations
- 12 Research vessels including icebreakers
- 1 deep-sea observatory, 2 observational networks and 15 key observatories associated to research stations
- 4 Ice and sediment core repositories

The RIs offered in POLARIN have been carefully selected to address the key challenges in polar regions. They show not only a wide geographic distribution but cover the whole polar environment from the top of

4 EU-PolarNet, https://eu-polarnet.eu
5 European Space Agency, https://www.esa.int
6 Scientific Committee on Antarctic, Research https://www.scar.org
7 International Arctic Science Committee, https://iasc.info
8 United Nations Decade of Ocean Science for Sustainable Development, https://oceandecade.org

the glaciers to the deep sea. They are described in detail in **Section 3.1.3 Work Packages "TA3/WP3 Infrastructures offered for Transnational Access"**.
A web-based single-stop shop will be implemented to apply for TA to all RIs offered in POLARIN, integrating the full proposal management process from application to reporting. Access to these RIs will be granted as TA either in person or remote. Challenge-driven access calls will be launched to allow access provision to integrated and customised RI and RI services. Multi-platform access to different kinds of infrastructures will ensure that multidisciplinary research projects can integrate results from multiple realms. The large portfolio of POLARIN RIs will allow for example the integration of land-based with marine studies, or recent observations with paleo-data from ice-and/or sediment cores samples. TA will be provided free of charge to selected users or user groups.
Measurable outcomes:

- ➔ Integrated proposal management platform for POLARIN RIs.
- ➔ Amount of TA to polar RIs.

Objective 3: Improvement of data services and data products (WP4)
There is an increasing demand from the scientific community, public, politicians and other stakeholders for information on the status of the polar regions and for associated products describing future scenarios. Our ability to manage, sustain and understand the polar regions will depend on the collected data and the information and knowledge derived from it. POLARIN will facilitate the discovery and consumption of data that is already available by ensuring that databases, datasets and/or data initiatives from the polar regions are identifiable, and by facilitating the access to them. It will improve workflows among data initiatives by reducing data fragmentation in support of data interoperability. In addition, it will create tools to facilitate the access of data from multiple providers.
Environmental data collected and stored in databases is very often raw, unprocessed, and the knowledge that can be derived from it does not reach potential users that are not able to process the data, such as policy makers, local governments, or other organisations. POLARIN will create data products from existing databases that can directly be used by a wide variety of stakeholders. It will also develop customised products to improve the services the RIs offer. In particular, it will implement a calibration/validation service for Earth Observation (EO) data.
Measurable outcomes:

- ➔ Inventory of databases from polar regions.
- ➔ Identification of workflows to improve interoperability among databases.
- ➔ Creation of tools to facilitate the consumption of data.
- ➔ Customised data products (e.g., atmospheric distribution of black carbon).
- ➔ Customised data services (e.g., calibration/validation service for earth observation data).

Objective 4: Provide virtual access (VA) to research infrastructures (VA1/WP5 & VA2/WP6)
High quality data from the polar regions is becoming increasingly valuable in contributing to a global framework of scientific knowledge. Such a reliable framework is indispensable to effectively address pressing issues, such as the impact of climate change or the effects of human activity on the polar regions. Moreover, due to the harsh environmental conditions that characterise the polar regions, such as extreme cold, limited accessibility of remote places, or polar night, the collection of data is often logistically difficult and expensive. Europe has a long tradition of scientific interest in both the Arctic and the Antarctic, and data records can sometimes date back to the 19th century. These provide irreplaceable benchmarks that are essential to understand the current rates of environmental change. POLARIN will offer user friendly free online access to scientific data and metadata via virtual access (VA) through a single-entry portal to 7 data infrastructures, 2 observational networks and 10 research stations and their associated observatories in both polar regions. VA will be permanently open during the project lifetime. The RIs offering VA are described in detail in **Section 3.1.3 Work Packages "VA2/WP6 Infrastructures offered for Virtual Access".**
Measurable outcomes:

- ➔ A unified semantically consistent virtual data catalogue with machine interfaces.
- ➔ A web portal providing guidance documentation and a graphical user interface to the virtual data catalogue.
- ➔ Amount of VA to polar RIs, data infrastructures and data services.
- ➔ Amount of data downloaded from the POLARIN data hub.

Objective 5: Training for infrastructure users (WP7)

The rapidly changing climate results in complex interactions between the physical and biological spheres, involving both small- and large-scale processes. While these interactions are cross-disciplinary, science and education are to a large degree disciplinary. To progress in polar research, there is a need for transferring competences to the new generations. Effective training of early career researchers (ECRs) and professionals will not only help them to optimally use the RIs in polar regions and exploit their data, but it will also contribute to consolidating their careers. In turn, they may transfer the knowledge acquired to many students they mentor at their home institutions.

To meet this challenge, POLARIN will develop training programmes to ensure that early career researchers, professionals and RI users are able to fully exploit the services that the RIs are offering. It will implement a series of online seminars and other training resources to teach current and futures users of RIs on how to plan their field work campaigns/cruises, to optimally use the scientific equipment and to act in a sustainable way. A dedicated training programme on data management and data processing (data stewardship) will complement this training. In addition, POLARIN will implement a safety training under polar conditions compliant with the Polar Code, to ensure that PIs of polar expeditions are able to deal with emergency situations.

Measurable outcomes:

- ➔ Training resources, recordings of online seminars and other training materials on POLARIN website.
- ➔ Number of published training resources.
- ➔ Number of participants to the training sessions.
- ➔ Implementation of safety training on-site and online.

Objective 6: Advertise RI services and engage RI users (WP8)

POLARIN will offers a unique portfolio of polar RIs and their services allowing scientists to access RIs they might never be able to use without the support of this project or to work in areas which their national polar programmes do not cover. To ensure that the services offered by POLARIN are duly advertised and reach potential applicants (such as the research community, industry, and SMEs[9]) POLARIN will develop a sophisticated communication, outreach and engagement plan (see Section 2.2: Measures to maximise impact - Dissemination, exploitation, and communication). To help TA participants disseminate their research and research outcomes, POLARIN will implement a POLARIN Ambassadors programme and develop guidelines for expedition blogs and videos. Participants will be encouraged to share their research with multiple audiences including universities, schools, and work with national media channels. Publications derived from access funded through this project will be monitored and stored in a publication repository.

Measurable outcomes:

- ➔ Communication and engagement plan.
- ➔ POLARIN website, social media, newsletters, regular updates on project progress.
- ➔ Summary report of the engagement of the POLARIN Ambassadors (videos, blogs, photo exhibitions etc.).
- ➔ POLARIN publications repository.

9 SME: Small and Medium Enterprise

1.1.1.2 Relation to the work programme

POLARIN contributes to the topic HORIZON-INFRAIA-2023-SERV-01-01 "Research infrastructure services to enable RI addressing main challenges and EU priorities" and the subtopic RI services for sustainable Arctic /polar regions in the following way:

Provide access to a wide portfolio of complementary research infrastructures and their services needed to address the scientific challenges of polar regions.

TA3/WP3, VA2/WP6: POLARIN has assembled a wide portfolio of 64 complementary polar RIs, including Arctic and Antarctic research stations, polar vessels, observatories, data infrastructures, and ice and sediment core repositories.
TA1/WP1: POLARIN will define challenge driven calls for TA proposals to ensure that the access to RIs will contribute to addressing the most-pressing scientific questions in polar regions. Progress will be monitored, and successive calls for access will be adapted to fill knowledge gaps.

Provide transnational access (on-site or remote) and/or virtual access to terrestrial stations, fixed and mobile observing platforms, research vessels operating in Polar Regions including icebreakers, core repositories and data infrastructures building on past integration.

TA3/WP3, VA2/WP6: POLARIN will provide both TA and VA to all types of complementary European and International polar RIs listed under the topic (see Figure 1.1).
TA2/WP2, VA1/WP5: POLARIN will build on EU funded projects such as INTERACT[10], ARICE[11], EUROFLEETS[12], SIOS[13], FixO3[14] and will integrate these into one joint activity. Representatives of all these projects are beneficiaries of POLARIN.

Provide training courses and ad hoc user's training to prepare the new generations of researchers to properly exploit leading edge RIs and provide them with appropriate skills for data stewardship.

WP7: POLARIN will organise training programmes to ensure that new generations of researchers and RI users are able to fully exploit the RIs' services. This includes training on data management and data processing (data stewardship), sustainability and the use of scientific equipment. POLARIN will implement a safety training in Arctic conditions in compliance with the Polar Code.

Integrate, customise or combine services and adapt modalities of access to facilitate interdisciplinary research on complex processes in polar regions.

TA2/WP2, VA1/WP5: To facilitate and integrate the access procedure, a single-entry portal to apply for access to all types of European and International RIs in both polar regions will be implemented. The application, proposal management and evaluation system of previous RI projects will be integrated and customised to facilitate the combination of services and interdisciplinary/multiplatform research.

Provision of existing services and limited development of new services relevant to the challenges.

WP4, VA1/WP5: While POLARIN focuses its access provision on existing services, a limited development of new (data) services will be implemented. This is needed to adopt, adapt and update current services, and it includes a front-end data portal to access data from multiple databases, VA to data and data services, and products generated from raw data.

Further develop the remote or virtual provision of services.

TA2/WP2, TA3/WP3, VA1/WP5, VA2/WP6: POLARIN will implement remote access (RA) to research vessels, research stations, observatories, and core repositories to collect data, samples and to install

10 International Network for Terrestrial Research and Monitoring in the Arctic, https://eu-interact.org
11 Arctic Research Icebreaker Consortium, https://arice-h2020.eu
12 https://www.eurofleets.eu
13 Svalbard Integrated Arctic Earth Observing System, https://sios-svalbard.org
14 Fixed Point Open Ocean Observatories Network, https://cordis.europa.eu/project/id/312463

sensors (TA2/WP2, TA3/WP3). The RA will be performed by technical personnel or staff scientists on site. VA to data and data services will be offered by data infrastructures, observatories and research stations in the Arctic and Antarctic. A web-based single-entry portal will be developed via which all VA will be performed (VA1/WP5, VA2/WP6).

To improve, customise and harmonise the services the infrastructures offer, including for better serving the needs of open EU industrial research and innovation.

WP4: POLARIN will improve the RI services by facilitating the discovery and consumption of data (reuse) by ensuring that databases, datasets and/or data initiatives from the polar regions are identifiable, and by facilitating the access to them. It will improve workflows among data initiatives by reducing data fragmentation and supporting of data interoperability. It will create data products and customise data services to be used by a wide variety of stakeholders.

To adhere to the guidelines and principles of the European Charter for Access to RIs.

TA1/WP1, TA2/WP2: POLARIN will use the "European Charter for Access to RIs" when defining access policies to its RIs by following the principles and the guidelines defined by the Charter. POLARIN will promote the Charter's provisions among the RI providers.

To address data management (and related ethics issues), interoperability, as well as the connection of digital services (e.g., data services) to the European Open Science Cloud

WP4: POLARIN data management builds on existing initiatives and FAIR principles. It aims at improving workflows among data initiatives, to reduce data fragmentation and support data interoperability. POLARIN will adopt and extend (open) tools to facilitate the access of data from multiple providers (e.g., ERDDAP[15], GeoNetWork[16], etc.).

To ensure appropriate links with relevant European and international initiatives and with projects developing under Horizon Europe and ongoing coordination efforts such as in the EU Polar Cluster.

WP9: POLARIN will contribute to the research themes prioritised by EU-PolarNet for both poles in the European Polar Research Programme[17], by IASC, SAON[18] and AMAP[19] for the Arctic and SCAR and SOOS[20] for the Antarctic as well as UNDOS for both poles. POLARIN will cooperate with ESA Earth Observation Programmes[21] (ESA-EOP) to support validation and calibration of earth observation data by ground-truthing investigations. POLARIN will actively contribute to the EU Polar Cluster and will support the Cluster projects with access to RIs and their data.

Involve as beneficiaries, affiliated entities, third parties, or external providers of purchased services, the necessary interdisciplinary set of research infrastructures of European interest that provide such services.

With 64 RIs in both polar regions, across multiple (geographic and disciplinary) domains, the inclusiveness and interdisciplinarity of the RI portfolio is extensive. POLARIN involves several RIs of European interest as e.g., the ESFRI[22] landmark ACTRIS[23] and the former ESFRI project SIOS. PRV Polarstern and Neumayer Station III are large scale infrastructures of the German Helmholtz Association,

15 Environmental Research Division's Data Access Program, https://coastwatch.pfeg.noaa.gov/erddap/index.html
16 https://geonetwork-opensource.org
17 Integrated European Polar Research Programme, https://eu-polarnet.eu/wp-content/uploads/2020/11/EPRP_final_version-1.pdf
18 Sustaining Arctic Observing Networks, https://arcticobserving.org/
19 Arctic Monitoring and Assessment Programme, https://www.amap.no
20 Southern Ocean Observing System, https://soos.aq/
21 European Space Agency - Earth Observation Programmes, https://www.esa.int/About_Us/Business_with_ESA/Business_Opportunities/Earth_Observation_Programmes
22 European Strategy Forum on Research Infrastructures, https://www.esfri.eu/about
23 Aerosol, Clouds and Trace Gases Research Infrastructure, https://www.actris.eu

which means that they must host more than 50 % external users per year, most of these are Europeans. The majority of the POLARIN RIs frequently host scientists from other European countries as these assets are rare and polar research can only be successfully performed in close international cooperation.

Research infrastructures from third countries offering complementary or more advanced services than those available in Europe.

The RI portfolio of POLARIN includes infrastructures from third countries that complement the services available in Europe.
Canada: Access to CCGS Amundsen and research stations in the Canadian Arctic.
USA: Access to research stations in the US Arctic.
UK: Access to core repository and research station on Svalbard
Ukraine: Access to RV NOOSFERA and research station on the Antarctic Peninsula
Chile: Access to two research stations on the Antarctic Peninsula, with access to a research vessel on site.

Include an outreach and engagement plan to actively advertise their services to targeted research communities and, if applicable, to relevant industries including SMEs.

WP8: The outreach and engagement plan of POLARIN will ensure that the potential RI users are aware of the opportunities offered by the project. RI users will be engaged to communicate their results efficiently to ensure that the data gathered through the project contributes not only to addressing the scientific challenges, but also to evidence-based decision making.

To exploit synergies and to ensure complementarity and coherence with other EU grants supporting access provision.

POLARIN includes beneficiaries from the following EU grants which provide(d) access to RIs, and by that ensures complementary and coherence with them:
ARICE (Access to research icebreakers in the high Arctic).
EUROFLEETS (Access to research vessels in open waters).
INTERACT (Access to Arctic research stations).
FixO3 (Access to fixed-point open ocean observatories).
SIOS (Access to research stations, observatories, and data from Svalbard).
EMODnet[24] Physics (access to in situ observations from international programmes).
In addition, POLARIN will ensure cooperation with EU Polar Cluster projects and other Horizon Europe funded projects supporting access provision to complementary research infrastructures or developing tools that could improve the use of POLARIN's infrastructures (WP9).

Research infrastructure services should benefit from Copernicus, GEOSS and EMODNET initiatives. Similarly, relevant data generated by the projects should be made available to these initiatives.

POLARIN has a close relation to EMODnet Physics and Copernicus via POLARIN's beneficiary ETT. ETT is the EMODnet Physics coordinator and Copernicus[25] Marine Service MDS/DU deputy coordinator and will assure that the polar RIs will benefit from these initiatives. Relevant data generated by the project will be made available to Copernicus, GEOSS[26] and EMODnet initiatives. ETT is also developing the SOOSmap[27] data portal and the data management infrastructures for the H2020 project SO-CHIC[28] and the Horizon Europe project OCEAN:ICE[29]. These three initiatives will largely benefit from POLARIN and ETT will guarantee a smooth collaboration and interoperability among each other.

24 European Marine Observation and Data Network, https://emodnet.ec.europa.eu/en
25 Earth observation component of the European Union's Space programme, https://www.copernicus.eu/en
26 Global Earth Observation System of Systems https://www.earthobservations.org/geoss.php
27 https://soos.aq/data/soosmap
28 Southern Ocean Carbon and Heat Impact on Climate, http://www.sochic-h2020.eu
29 Ocean-Cryosphere Exchanges in ANtarctica: Impacts on Climate and the Earth System, https://ocean-ice.eu

Complementarity and synergies with relevant other areas under this topic should be considered.

POLARIN will ensure synergies and complementarity with proposals submitted to relevant subtopics in this call such as:
"RI services for healthy ocean and waters" by ensuring the connection between the polar oceans without overlapping the services offered with the submitted proposal AQUARIUS.
"RI services for climate change risks" by addressing relevant challenges related to climate change.
"RI services for sustainable agriculture, fisheries and blue economy" by addressing sustainability and ecosystems in polar regions.

1.1.2 Ambition: Beyond the state of the art

Access to polar RIs

POLARIN will integrate a pioneer, free of charge, access provision programme. **European and international researchers will benefit for the first time from an overarching, excellence driven, and simplified access to key international polar RIs and their associated services. The provision of challenge driven access to a large set of different types of RIs from different research fields all contributing to the grand scientific challenges goes far beyond the state of the art.** POLARIN will also assure that its access programme contributes to international programmes and initiatives. The project has established a unique cooperation with the ESA-EOP (see the letter of support from ESA at the end of this document) to ensure that data generated by POLARIN projects will contribute to the calibration and validation of Earth observation data. On the other hand, ESA will support POLARIN by fostering the cooperation between the "ground-based" and EO community in its call for tenders, by training scientists in the use of EO data and by linking their Open Science Data Portal to the portal POLARIN will establish.

Transnational access (TA)

Access to RIs in the Antarctic, or combined access to so many different polar RIs, has never been offered before. Very successful examples of TA and VA provision are the EU funded projects INTERACT (I, II and III) providing access to terrestrial research stations and ARICE to research icebreakers in the Arctic Ocean; as well as EUROFLEETS (1, 2 and +) offering access to research vessels in open waters including the margins of the Arctic and the Southern Ocean (not-ice covered), and FixO3 to fixed open ocean observatories. All these projects worked in the Arctic or the northern margins of the Southern Ocean. POLARIN builds on their experiences and will expand the access to a polar RI network in a very ambitious way, including **a wide array of multidisciplinary, international, complementary, state of the art infrastructures at both poles.** It will offer access to **63** RIs including:

- 37 Arctic and Antarctic research stations
- 12 Research vessels and research icebreakers operating in the Arctic and the Southern Ocean
- 18 Atmospheric, terrestrial, and marine observatories at both poles
- 4 Ice and sediment core repositories with material from both poles
- 7 Data infrastructures

The POLARIN infrastructure network has been carefully selected to address the scientific challenges identified in the polar regions and has a comprehensive geographic coverage. It integrates most service providers from both poles, and includes not only RIs belonging to EU countries, but also key international research infrastructures from Canada, USA, Chile, UK, and Ukraine.

POLARIN offers European scientists a unique opportunity to access RIs from different domains proposal-based and through a single-entry system. In most countries access to polar RIs is regulated through their national polar programmes. It is difficult for a scientist to access RIs belonging to a different country if there is not an already established cooperation or if the scientist wants to perform independent research. Until now, there is no mechanism (beyond EU funding) supporting TA to RIs. Scientists must rely on personal contacts and private networks to complement multidisciplinary research already planned by nationals. For a researcher to gain access to the RIs as Principal Investigator (PI) as in POLARIN is rare and only possible under very special circumstances.

Virtual access (VA)

VA to metadata, data and data services will be offered user-friendly and free of charge to users complying with the RI's access policy, through a single-entry portal and without selecting them. With that, **data that is currently not publicly available will be made available through the project.** POLARIN will build **a single-entry portal** harvesting data from different RIs and making it available via the web portal. To achieve widespread open access data, a variety of significant activities are required such as data interoperability, data quality control, standardisation and harmonisation, data analyses in case of derived process data, data visualisation, data provision to users, publicising of accessibility and monitoring of the use of data.

Improving data services

POLARIN will significantly improve access to polar data by harmonising data management standards and workflows covering the complete life cycle of data from acquisition to long-term archiving. High-quality observational data and information are crucial to empower decision makers with evidence-based information for sustainable management of the environment in response to climate change. However, data collected by the different RIs is still fragmented and there is a lack of workflows between data initiatives. The sources of information are diverse, and it is difficult to find and retrieve relevant data even for experts. **POLARIN will concentrate its efforts on improving the data landscape and the consumption of data.** It will address legal and data policy aspects aiming to identify transnational barriers. The goal is to improve standardisation, interoperability, and compliance with major international initiatives. All collected data and metadata will be harmonised with EMODnet, Copernicus and SeaDataNet[30], among others.

Data is generally stored in raw format and there is a **lack of ready-to-consume data products that** can be applied to multidisciplinary research. Therefore, **POLARIN will coordinate, harmonise, and optimise the implementation and integration of data services and products**. It will create data products from environmental databases that can be directly used by researchers and decision makers.

Training services

POLARIN will create a source for multidisciplinary and multi-platform training dedicated to optimally use polar RIs which is not available to date. The training will be specially designed for early career researchers, technicians, and engineers. Educating the young generations of polar scientists and professionals is key to ensure that modern RIs are used best, and technical developments are continuously implemented. Training will include regular open-access online seminars that will address topics ranging from cruise or field work planning, freight handling, legal prerequisites (e.g., Antarctic Treaty regulations), sustainable use of RIs, to implementing new technological developments of RIs and communicating results.

POLARIN will organise dedicated training **for data stewardship,** to ensure that data sets are not only collected, but also curated and able to deliver accurate, reliable environmental data sets.

The polar regions are pristine and remote, and the environmental conditions are harsh and partially life threating but to date, **specific safety training for polar regions in compliance with the Polar Code has not been widely implemented**. Researchers working in these areas need to learn to react correctly in dangerous situations. POLARIN will implement a safety training under Arctic conditions, with experienced trainers and in compliance with the Polar Code.

1.1.3 Integration of research infrastructures

Optimising the use of existing RIs requires that all European users can access them effectively. Thus, TA to all polar RIs will be provided through **a single-entry portal** to maximise the use of the services offered. Multidisciplinary, integrating, and overarching research will clearly benefit from this process, **as access to multiple kinds of polar RIs from different domains in a single application has never been offered before.** The access, proposal management and evaluation system of previous TA projects will be combined, integrated, and customised to allow interdisciplinary and multiplatform research. Challenge driven access calls will be launched to ensure that the implemented projects contribute to the most pressing scientific challenges, of global interest and with societal impact.

30 Pan-European Infrastructure for Ocean and Marine Data Management, https://www.seadatanet.org

For the first time, applicants will be able to apply not only for one kind of RI, but to several RIs simultaneously to address the grand scientific challenges appropriately. For example, land to sea expeditions, including stations and coastal vessels, or cruises associated with previously collected sediment or ice cores or data, could be combined if requested by the scientific community.

1.1.4 R&I maturity

POLARIN's work is ready for application. Past experiences in coordinating major TA and VA in EU projects by members of this consortium (e.g., INTERACT, ARICE etc.) make this consortium able to expand the network of RIs to different domains and geographic settings. The project's maturity can be considered as a TRL[31] 7 (TRL 7 – system prototype demonstration in operational environment) as TA and VA to most of the infrastructures has been proven very successful in operational environments.
#§PRJ-OBJ-PO§#

1.2 Methodology #@CON-MET-CM@# #@COM-PLE-CP@#

1.2.1 Concepts, models and assumptions that underpin the project, overall methodology, and challenges in the methodology

1.2.1.1. Concepts, models and assumptions that underpin the project

Scientific challenges of polar regions

The poles are subject to multiple stressors, including environmental, economic, political, cultural, and societal changes, which have regional impacts but also affect the entire globe through multiple, complex connections. While the changes, and especially climate change, are particularly evident at the poles compared to other regions of the globe, there are many aspects which are poorly understood in terms of driving processes, their interconnections, and the actual impacts on the socio-ecological systems and their potential to shape or constrain the future of the society at local, regional, and global scale. Several international initiatives have defined key research challenges to be addressed in both polar regions (e.g., IPCC[32], EU-PolarNet, UNDOS), or in the Arctic (e.g., IASC) and the Antarctic (e.g., SCAR) separately. All the initiatives point towards a similar set of challenges whose consequences are of high societal relevance. POLARIN, through its infrastructure network and access to samples and data, will contribute to advance in understanding and predicting the effects of the changing climate on:

1. Sea-ice and Polar Oceans
2. Sea level, glacier stability and melt
3. Carbon balance and permafrost
4. Polar ecosystems and biodiversity
5. Atmosphere dynamics
6. (Paleo)climate processes

The overarching challenges identified above will be narrowed down to achievable challenges that can be addressed with the suit of infrastructures that POLARIN has gathered. TA to RIs offered by POLARIN will be granted to users or user-groups addressing challenges of high societal relevance and of international (and European) interest. This will enhance and increase our knowledge and prediction capability, support evidence-based decision making and our long-term problem-solving capacity.

1.2.1.2 Overall methodology

The overall objective of POLARIN is to provide **efficient and customised RI services** including the access to a wide portfolio of complementary and interdisciplinary top level RIs needed to address the scientific challenges of the polar regions.

To fulfil this goal, POLARIN has assembled a consortium consisting of 51 partners from all over Europe and beyond offering access to 63 infrastructures from multiple domains. By that, POLARIN represents a joint international cooperation network which ensures excellent research contributing to identified research challenges in polar regions. The uniqueness of this set of complementary polar RIs, both on land

31 Technology Readiness Level

32 The Intergovernmental Panel on Climate Change, https://www.ipcc.ch

and at sea, will open new research opportunities for European and international scientists. The overall methodology explains how POLARIN will work to fulfil its objectives.

POLARIN will offer four kinds of services to infrastructure users (Figure 1.3):

1) Challenge driven TA to research infrastructures
2) Improvement of data services and data products
3) VA to research infrastructures
4) Training for research infrastructure users

In addition to the WPs directly related to the services, a WP on outreach, engagement and impact will ensure that the services offered by POLARIN and the outcomes of the project reach the relevant audiences: from infrastructure users to policy makers and society.

Figure 1.3. Services offered by POLARIN.

A WP on project management will facilitate the scientific and financial coordination of the project, the internal communication, and the linkage with international initiatives.
The project methodology aims at ensuring that:

a) The integration of RIs and multidisciplinary science are achieved.
b) The services are implemented efficiently and improve the current landscape.
c) The project services contribute significantly beyond the lifetime of the project.

The project activities are organised in three pillars (integration, implementation, and assessment) to ensure a smooth service provision (Figure 1.4):

	POLAR RI SERVICES		
	Integration	**Implementation**	**Assessment**
WP1. TA1: Enabling science for understanding and predicting key processes in polar regions	Scientific framework: Challenge driven approach (T1.1); Redirecting the access in the lifetime of the project (T1.1)	Scientific evaluation of proposals (T1.3)	Assessment of the access provided in relation to the polar challenges (Task 1.2)
WP2. TA2: Proposal management service	Development of joint access portal for all RIs in TA (T2.1)	Launch of calls for proposals (T2.1); Logistic evaluation (T.2.2)	Follow up implementation (T2.3); Access reports (T2.3); Quality assurance (T2.3)
WP3. TA3: RIs offered for Transnational Access	Description of infrastructures offering TA		
WP4. Improvement of data services and customised data products	Standarisation and harmonisation of polar data (T4.1); Development of data access portal (T4.1); Improvement of access to polar data data (T4.1)	Improving polar data availability and interoperability (T4.2), Data tools, products and services (T4.3)	Usability of POLARIN data portals (T4.3)
WP5. VA1: Provision of Virtual Access	Development of joint access portal for VA (T5.1)	Development of joint access portal for VA (T5.1)	Monitoring and evaluation of VA with an external Board (T5.1)
WP6. VA2: RIs offered for Virtual Access	Description of infrastructures offering VA		
WP7. Training for infrastructure users	Planning of training activities for multidisciplinary/multiplatform RI users (T7.1, T7.2, T7.3)	Implementation of the training activities for RI users (T7.1, T7.2, T7.3)	Assessment of the training activities (T7.1, T7.2; T7.3)
WP8. Outreach, engagement and impact	Visibility, communication and outreach plan (T8.1)	Communication of activities and engagement of service users (T8.1, T8.2)	Assessment of communication and engagement activities and impact of POLARIN (T8.3)
WP9. Project management	Contractual and financial management (T9.1)	Operational management (T9.2)	Clustering with other initiatives (T9.3)

Figure 1.4. Relation between work packages, tasks, and methodology.

Service 1: Challenge driven transnational access to research infrastructures (TA1/WP1, TA2/WP2 & TA3/WP3)

- Integration

TA1/WP1: POLARIN will ensure that the research performed on its RIs will contribute to the specific challenges identified by international organisations and programmes. A Scientific Liaison Panel (SLP) composed of experts (more than 50 % external) covering all relevant scientific disciplines will develop the scientific framework of the calls for proposals. It will revise the scientific challenges during the project and will recommend the prioritisation of scientific topics to be addressed by RI users. **TA2/WP2**: An easy access portal (single stop shop) will allow researchers to apply for access to any RI (or a combination of several RIs) offered in the project**.** For that, the INTERACCESS proposal management system developed and implemented in the EU-funded project INTERACT will be modified to allow the management of multiple infrastructures that, due to their nature, require specific information in the application. INTERACCESS is a platform that allows the handling of big volumes of proposals and thus it will be very efficient in the management of POLARIN calls for access. The project will implement a joint model of access to the participating infrastructures by creating governance documents and access policies for researchers.
POLARIN will:
Implement a Scientific Liaison Panel.
Settle the scientific framework to ensure that the proposals selected for funding actively contribute to addressing the most pressing scientific challenges in polar regions.
Develop a joint access portal to apply for TA to all POLARIN RIs.

- Implementation

TA1/WP1 & TA2/WP2: Challenge driven calls for proposals will be launched to invite researchers to apply for TA. POLARIN will implement an internationally accepted review system for proposals to access EU and non-EU infrastructures under the same call for proposals. It will build on the evaluation system implemented in the EU-project ARICE which ensures that only excellent proposals are recommended for implementation. The **evaluation** will follow a **"two-step"** process to ensure that only proposals ranked as "Excellent" in the scientific evaluation will be forwarded to the logistic evaluation to be considered for access.
Step 1: Scientific evaluation of proposals **(TA1/WP1)**
Independent and international external experts will evaluate the proposals. In addition, the SLP will determine the evaluation criteria, give advice on the selection of external referees for the evaluation of proposals, and will rank and recommend proposals for funding based on the evaluation by the external experts.
Step 2: Logistic evaluation of excellent proposals **(TA2/WP2)**
Proposals ranked as "Excellent" in the scientific evaluation will proceed to the logistic evaluation. The infrastructure managers will evaluate the logistic feasibility of each of the proposals and integrate the highest scientifically ranked / logistically feasible project in their infrastructure schedules.
POLARIN will:
Open regular calls for proposals to access RI either in person or remotely (yearly, starting in M12)
Evaluate, rank, and implement in person or remote TA on POLARIN RIs in the polar regions.

- Assessment

TA1/WP1: The outcomes of the TA projects will be monitored to assess their contribution towards the identified scientific challenges**. TA2/WP2:** To justify the access provided, a record will be kept on the names, nationalities, and home institutions of the user teams, as well as the nature and quantity of access provided to them. Dedicated logistic watchdogs from the project will oversee the implementation of TA on the different infrastructures. To monitor the effectiveness and quality of TA, feedback will be collected from applicants and RI operators to judge and improve the service provision, from the management of the calls for proposals to the project implementation.
POLARIN will:
Monitor and report the access provided.
Assess the quality of the service provision.
Report on scientific contributions towards addressing the challenges in polar regions by the POLARIN

TA programme.

Service 2: Improvement of data services and data products (WP4)

a) Integration

POLARIN aims at improving the RI services by ensuring that databases and the data generated by the project contribute to the FAIR principles (findable, accessible, interoperable, and reusable). As previously mentioned, the actual data landscape is not optimal to ensure that available data is ready to consume.
POLARIN will:
Contribute to reduce data fragmentation by connecting and implementing workflows between data initiatives and by developing tools to facilitate the consumption of data.
Build on data tools implemented in previously funded EU projects (ARICE, INTERACT) and data initiatives and benefit from the integration with EMODnet and Copernicus.
Improve accessibility and interoperability of the data management landscape, with a specific focus on cross-platforms serving diverse disciplines. Current practices in data management are still using different formats, a wide diversity of datasets, and disparate data management structures. POLARIN will extend the current effort for harmonising data workflows from one domain to an ecosystemic and multidisciplinary approach.

b) Implementation

A front-end data portal will be implemented to find polar data matching user needs.
POLARIN will:
Establish a hub where experts as well as non-experts/intermediaries are guided (e.g., by a wizard tool, visual data discovery tree) to find data and information necessary to match their specific needs. In a very fragmented data management "universe", this innovative approach will provide a significant improvement to the "findable" part of the FAIR principle.
To further develop the online services, the RIs offer, POLARIN will implement and/or further develop tools and services for intermediaries and end-users (both experts and non-experts). It will create ready to consume data products from raw data to visualise relevant parameters monitored by data repositories and data infrastructures for the research community, policy makers and the public. Examples of data products to be generated by the project will include:
In cooperation with POSEDA (GLISN[33] network): Ice tomography in Greenland and Antarctica derived from seismic networks, providing information on glacier dynamics.
In cooperation with the ESFRI Landmark ACTRIS: Distribution maps of short-lived atmospheric species (e.g., black carbon).
In cooperation with selected databases, distribution maps of ecological variables.

c) Assessment

To assess the activities related to data services and data access, POLARIN will:
Report on the usability of the data hub, data services and data products generated in the project.

Service 3: Virtual access to research infrastructures (VA1/WP5 & VA2/WP6)

a) Integration

A single-entry portal will be created to make the data offered by POLARIN's RIs accessible for VA. This will include the access to metadata and new data made available through the project via internet and data deposition services.
POLARIN will:
Create a VA single-entry portal for data from POLARIN's RIs.

b) Implementation

POLARIN will provide VA to data free of charge to users complying with the RI's access policy, without selecting them. In total, 21 infrastructures will be providing VA by extending the currently available datasets and by implementing new services. This will include the provision of new data, digitalisation of

33 Greenland Ice Sheet Monitoring Network, http://www.glisn.info

old data and maintaining the flow of freely available data. The VA will be permanently open as soon as the single-entry portal is established.

c) Assessment

The VA provision will be monitored (with follow-up of the user statistics by web-analytical tools), and periodically assessed (three times in the project lifetime) by an external board comprising experts in providing free online access data.
POLARIN will:
Report on the statistics of VA and its evaluation by an external board.

Service 4: Training for research infrastructure users (WP7)

a) Integration

POLARIN will develop a training programme that addresses the needs of multidisciplinary polar RI users. It will ensure that RI users are able to optimally benefit from the services the RIs offer.

b) Implementation

POLARIN will implement three types of training activities for infrastructure users:
Training for early career scientists and professionals to ensure that the new generations are able to fully exploit the services of the diverse RIs. It will include a series of online seminars dedicated to scientific equipment and tools, expedition planning and legal, safety and sustainability requirements to work in the polar regions. Target groups will be PhD students and postdoctoral researchers, technicians, and engineers.
Training on data stewardship to ensure that data sets are adequately preserved and documented, and that they remain accessible and usable to end users. The usefulness of data sets depends also on the ability of data providers and stewards to assess, demonstrate, and describe the quality of the information, and their ability to adopt community best practices and standards. POLARIN will organise a dedicated training on data stewardship as a series of online seminars and workshops to ensure that data sets are not only collected, but also curated and able to deliver accurate, reliable environmental data sets.
Safety training to ensure that infrastructure users are prepared to deal with emergency conditions on land and at sea. POLARIN will organise a safety training under Arctic conditions in compliance with the Polar Code for a group of users. The safety training will prepare for marine and land expeditions. It will be accompanied by online and written training material.
Recordings of training activities will be available for visualisation/download at the POLARIN website.

c) Assessment

POLARIN will evaluate the effectiveness/success of the training activities by monitoring the attendance, collecting participants opinions and by monitoring the visualisation/download of recorded webinars and training materials.

Support to services: Outreach and engagement (WP8)

a) Integration

POLARIN will ensure that the most efficient outreach and engagement strategies are adopted:

- A dedicated project website will host all resources generated by the project, including training resources, information on TA activities, VA, and access to data in general. Newsletters and dedicated outreach activities will ensure that all interested parties are informed of planned activities and project progress.

b) Implementation

- The services offered by POLARIN will be publicised widely and across domains, to ensure that researchers interested in accessing the RIs and/or use the services are aware of the possibilities opened by the project.
- Training activities will be publicised widely to ensure they reach all potential candidates.

- A set of publications generated by the project will address common topics in polar areas, highlight project results and TA activities.
- TA users will be engaged as POLARIN Ambassadors to share their experiences and the results of their research work at the POLARIN RIs. A communication and outreach plan will be mandatory for all TA proposals and will be evaluated. Possible outreach activities of TA users are short videos, blogs, and storytelling publications.

c) *Assessment* The outreach and engagement activities will be monitored periodically to evaluate their effectiveness. Correction measures will be applied throughout the project to ensure a smooth and effective outreach and engagement activity.

1.2.1.3 Risks and challenges identified in the methodology and how to overcome them.

POLARIN brings together a well-skilled team that builds on past experiences of TA projects such as ARICE, INTERACT and EUROFLEETS. The consortium includes infrastructure operators, users, and industry with extensive knowledge in collaborative projects, including both scientific and infrastructure projects. Nevertheless, critical risks have been identified in the project methodology, for which the following mitigating actions apply:

Description of risk (level of likelihood: Low/Medium/High)	WP(s) involved	Risk mitigation measures
The project does not contribute to addressing the scientific challenges – **Very low**	TA1/WP 1	POLARIN's RIs have been carefully selected to represent different environments, from deep sea to glaciers, all range of vegetation cover, permafrost, etc. TA1/WP1 will ensure that proposals selected for funding address the key scientific challenges when accessing the infrastructures.
The joint TA access portal does not allow the inclusion of all RIs – **Very low**	TA2/WP 2	POLARIN relies on the functionality of the INTERACCESS portal to manage the TA application process. The portal is very flexible and by opening the first call for proposals 12 months after the project begins, there will be sufficient time to further develop and improve the portal. The developers and operators of this portal are consortium partners and members of TA2/WP2.
RIs are dropping out or are inaccessible - **Low**	TA3/WP 3	With 64 RIs, POLARIN offers a large suite of RIs. It offers several RIs in the key investigation areas so that other RIs can take over if one RI drops out.
Data products are not needed – **Very low**	WP4 & WP8	Databases store raw/unprocessed data which is difficult to process/ understand/visualise for non-experts in that very specific field. POLARIN will generate data products of interest ready to use by scientists, policy makers and society and will widely advertise them.
Single-entry portal does not allow to reach all VA providers – **Very low**	WP4 & VA1/WP 5	POLARIN will provide VA to different kinds of RIs (data infrastructures, observatories, research stations) through one portal. This can be challenging for the developers of the portal but the partners working in WP4 & VA1/WP5 are very experienced and have successfully developed such single-entry portals before in other projects (SIOS, INKODE, ETT). In addition, the five years duration of POLARIN allows sufficient time to prepare the portal and continuously improve it.
Training is insufficient - **Low**	WP7	Training will be implemented by experienced partners and professionals in multiple ways to ensure an efficient knowledge

		transfer. Each training module will be assessed by the audience to ensure it fulfils the expectations generated. All training material will be available on POLARIN's website.
The right audiences are not reached - **Low**	WP8	POLARIN has developed a clear outreach plan addressing the pre-defined targeted audiences. It will adapt its outreach to each audience. It will also provide outreach in different languages, e.g., in Ukrainian to reach Ukrainian researchers more easily.

1.2.1.3 Compliance with the "do no significant harm" principle as per Article 17 of Regulation (EU) No 2020/852 on the establishment of a framework to facilitate sustainable investment.

The project methodology complies with the "do not significant harm" principle. The objectives of the project contribute and have the ultimate goal to safeguarding the environment, and the methodology is designed no to harm any of the six environmental objectives. The six environmental objectives that this Regulation covers are: climate change mitigation; climate change adaptation; the sustainable use and protection of water and marine resources; the transition to a circular economy; pollution prevention and control; and the protection and restoration of biodiversity and ecosystems.

1.2.2 National and international research and innovation activities that feed into the project.

This proposal gathers the legacies of the EU projects **INTERACT I, II and III, and ARICE**, by integrating the access to research stations with the access to research icebreakers in the Arctic region. POLARIN will directly build on the results of these two projects as a large part of the POLARIN consortium are part of the two networks. Both projects serve as an example for further expanding TA to RIs for the Antarctic region, as well as to observatories, sediment and ice core repositories and polar data infrastructures and services. POLARIN will benefit from successful data tools and management tools (e.g., the proposal management platform INTERACCESS) to effectively manage a big volume of proposals. The tools will be integrated and modified to help POLARIN in addressing both poles with multidisciplinary and multi-platform research and research projects.

POLARIN will further benefit from established collaborations with the EU projects **EUROFLEETS** for research vessel TA and **FixO3** for TA and VA to observatories.

POLARIN has a very close relation to **EU-PolarNet 1 and 2**. The coordinator of POLARIN is also coordinating EU-PolarNet, which in its first phase compiled the European Polar Infrastructure Catalogue[34], developed the European Polar Research Programme and published white papers on European polar infrastructure access and interoperability[35], and on Polar data Accessibility[36]. POLARIN will directly benefit from all these achievements, the vast network, and the experience of EU-PolarNet in interacting with the European polar community and decision makers. As EU-PolarNet 2 is also coordinating the **EU Polar Cluster**, POLARIN will be immediately integrated in this network of polar EU projects, and it is self-evident that it will contribute intensively to all activities of the Cluster.

Due to the hard conditions and remoteness of the polar regions, strong and extensive international cooperation is a prerequisite for successful polar research. POLARIN complements and goes well beyond current national polar capacities. It will leverage the links with European and international initiatives through its consortium partners. The European Polar Board[37] (**EPB)**, especially, brings together almost all European national polar programmes and polar operators. POLARIN will strongly benefit from this network and its experience in operating RIs at both poles.

POLARIN will cooperate as well with international organisations playing a key role in the polar regions, such as **SCAR and COMNAP[38]** for the Antarctic, and **IASC and FARO**[39] for the Arctic, as consortium members are well represented in the governance of all these organisations or even acting as their chairs (MICIN for COMNAP and UKRI for IASC). POLARIN will contribute to relevant polar data initiatives

34 https://eu-polarnet.eu/wp-content/uploads/2020/11/D3_2__European_Polar_Infrastructure_Catalogue.pdf
35 https://eu-polarnet.eu/wp-content/uploads/2020/11/EU_PolarNet_Infrastructure-final_version-1.pdf
36 https://eu-polarnet.eu/wp-content/uploads/2020/11/EU-PolarNet_D3_8_White_paper_on_Polar_data_accessibility.pdf
37 https://www.europeanpolarboard.org
38 Council of Managers of National Antarctic Programs, http://comnap.aq
39 Forum of Arctic Research Operators, http://faro-arctic.org

such as the Arctic Data Committee **(ADC[40]) of SAON and IASC**, and the Standing Committee on Antarctic Data Management **(SCADM[41]) of SCAR and SOOS**. It will collaborate and contribute to programmes such as **EMODnet, Copernicus and GEOSS** and will ensure that relevant data is shared with these initiatives.

1.2.3 Interdisciplinarity and integration of expertise and methods

Since the key challenges in polar regions are multidisciplinary by nature, research in these areas must be implemented by cooperative multinational and interdisciplinary users or user teams that integrate expertise and methods. Although there is this strong scientific need for interdisciplinary collaboration, polar research is still to a large degree disciplinary. The marine research community does not interact a lot with the terrestrial one, and Arctic researchers not with the Antarctic ones. POLARIN aims at changing that by fostering interdisciplinary and multi-national research teams at its RIs. The following measures will be applied to achieve that:

- POLARIN will integrate and facilitate access to a diverse array of key infrastructure and their services, from the Arctic to the Antarctic, marine and terrestrial-based, data infrastructures and ice and sediment core repositories from both poles.
- The access to all kinds of POLARIN research infrastructures will be offered simultaneously, to allow user teams to build their research project integrating one or multiple infrastructures or to study and compare processes at both poles.
- Challenge driven calls will be opened by POLARIN and those challenges are multidisciplinary by nature and need to be addressed by an interdisciplinary approach.
- To foster interdisciplinarity of funded projects, proposals addressing key challenges with an interdisciplinary approach, making full use of the requested RI, will be given priority in the evaluation process.
- Since TA and VA has not been offered in the Antarctic before, expertise in TA and VA from the Arctic RIs will be transferred to the Antarctic.

This approach shall help to avoid duplication, minimise fragmentation, and foster cooperation between partners that are currently not used to working closely together such as land based, marine communities, and data scientists. Users and user teams will be asked to judge if this approach has been successful, so that the RI capacities and access procedure can be optimised.

1.2.4 Gender equality and inclusiveness

The integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement in the HORIZON-INFRA-2023-SERV-01-01 call.

The EU has made significant progress in gender equality over the last decades. It has implemented equal treatment legislation, gender mainstreaming and specific measures for the advancement of women. However, gender gaps still occur, also in polar science, a research field that historically has been largely male dominated. By promoting gender equality, POLARIN will contribute to the EU Gender Equality Strategy 2020-2025[42]. POLARIN will take measures to ensure equal opportunities of infrastructure users and user groups, independently of gender and socio-cultural factors. Users and user teams will be encouraged to respect and promote gender equality starting at the proposal stage by encouraging women's participation in field research and training programmes. Particular attention will be paid to ensuring **gender balance**, with a target of 50% women in advisory bodies such as boards and expert groups, as well as in evaluation panels. The gender equality and inclusiveness will be monitored by WP9.

1.2.5 Open science practices in the project methodology

POLARIN's WP8 "Outreach, engagement and impact" will oversee the implementation and monitoring of open science practices within the project and project outcomes. Publications and conference proceedings arising from the project will be published according to open access principles, either through

40 Arctic Data Committee, https://arcticdc.org

41 Standing Committee on Antarctic Data Management of SCAR, https://www.scar.org/resources/scadm/overview/

42 https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en

external service (Gold or hybrid Open Access) or by self-archiving to a current research information system (Green Open Access). If full Open Access is not possible, a parallel repository (arXiv.org, OpenDOAR, OpenAIRE or Zenodo) will be used. POLARIN users will be prompted to use the platform Open Research Europe (ORE), an open access publishing platform with no publishing fees, for their publications. In addition, all training materials, such as online seminars, will be made public and accessible on the POLARIN website. Project data will be available at the European Open Science Cloud, the European Open Data Portal.

1.2.6 Research data management and management of other research outputs

All digital research data or research outputs generated or supported by POLARIN will be managed in line with the FAIR principles. Applying the FAIR principles means making the research data Findable, Accessible, Interoperable and Reusable throughout the entire data lifecycle. The first version of the POLARIN Data Management Plan (DMP) will be submitted in M6 (D4.1), and later updated in M30 (D4.12). The DMP will ensure that data and research outputs comply with the FAIR[43] principles. The DMP will describe the adopted tools/methods concerning data repository backend, frontend, catalogues, and how to create a reliable, free, open, and easily searchable service that are natively integrated with the regional datacentres and global polar initiatives. This will guarantee POLARIN data being interoperable, discoverable, and persistent across both the project interface and these networks, avoiding duplication of effort/storage.

POLARIN open access to research data via trusted repositories will be ensured under the principle 'as open as possible, as closed as necessary'. Deposition of (meta)data will take place as soon as possible after the data generation/processing/quality control has taken place.

Types of data/research outputs: Research teams funded by POLARIN will generate large volumes of *in situ* data. POLARIN will produce products and data processing outputs in the form of raw data (e.g., text, CSV, shapefile), metadata, postprocessed data for the scientific community (e.g., NetCDF), processing code (e.g., Jupyter notebooks) and end-products (e.g., journal articles, animations).

Findability of data/research outputs: POLARIN adopts all necessary measure to ensure data traceability. This applies to data and data products that are going to be (re)used in the project and is achieved by documenting the sources and methods (references, DOI, or any other identifier whenever available/applicable). It also applies data products that are collected and produced by POLARIN by properly documenting and assigning a DOI to each of them.

Accessibility of data/research outputs: The POLARIN data management policy is committed to open science practices, following the European Commission requirements and the European Research Council best practices. Nevertheless, data usability strongly depends on the data policy license. There is an increasing push for adopting the Common Creative framework. Whenever possible, the most permissive CC-BY (with the only limitation that credit must be given to creator)[44] should be preferred. An Embargo period may also be applied. The Embargo is the period during which access to a dataset is temporarily restricted. Usually, embargoes are applied while researchers are awaiting publication or pursuing a patent. Typical embargo periods range from 6 to 24 months from the data collection time. Open access to research data via trusted repositories will be ensured under the principle 'as open as possible, as closed as necessary'. Deposition of (meta)data will take place as soon as possible after the data generation/processing/quality control has taken place.

Interoperability of research outputs: POLARIN will contribute to the development of needed extensions and will share these outcomes via open repositories (e.g., GitHub, StackOverflow) (WP4 and VA1/WP5) and educational materials to use them (WP7).

Reusability of data/research outputs: Metadata will be open under CC 0 or equivalent (to the extent legitimate interests or constraints are safeguarded), in line with the FAIR principles and provide information about the licensing terms and persistent identifiers, amongst others. Besides adopting open data management software tools (e.g., ERDDAP, GeoNetwork), POLARIN will move beyond open access in implementing open science practices while following FAIR principles and whenever possible a link to data.europe.eu will be established. Authors will be encouraged to make pre-prints available via repositories such as Zenodo and ArXiv and publish in journals offering an open peer review process.

43 The FAIR Data Principles (Findable, Accessible, Interoperable, and Reusable)

44 CC BY-NC/CC BY-ND are allowed for long-text formats

Curation and storage/preservation costs: POLARIN's consortium includes experts in the data management team that are closely linked with EU data repositories initiatives (e.g., SIOS, EMODnet, Copernicus Marine Service, EOSC[45], GEOSS) to ensure maximum international data visibility and coordination in data management workflow and best practices. These are also key stakeholders for POLARIN's reuse of data as well as POLARIN's long term preservation of data.
Publication in open access journals will be encouraged, but if authors choose non-open access platforms, they will be required to pay the extra fees for gold, or at minimum, green level open access. They will be required to modify copyright agreements such that articles may be made available via institutional repositories and the POLARIN website.
Personal data: Personal data is needed to contact the applicants that submit a proposal to POLARIN or apply for any of its services. The data will be the minimal necessary for contact information and EC reporting (name, address, email, institution, country, nationality). POLARIN will request the explicit consent of applicants to store their data for the duration of the project and will inform which consortium members will have access to this personal data. Contact data from applicants to POLARIN services will be treated with rigorous care. POLARIN will use GDPR-compliant tools to collect, process and store research subjects' personal data; The project coordinator will ensure that all treatment of personal data will be according to GDPR regulations.

Ethical, legal and social aspects of data and derived research products

Even though no particularly sensitive data (e.g. health data, information on religion or sexual orientation) will be managed by the consortium, the consortium will ensure that ethical guidelines are followed in the course of data collection, processing, storage, archiving and subsequent use of data. In addition, to prevent the misuse of the data, the consortium will ensure that data protection and ethical as well as legal considerations are taken into account when sharing and publishing research data.

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45 European Open Science Cloud, https://eosc-portal.eu

2 IMPACT #@IMP-ACT-IA@#

2.1 Project's pathways towards impact

2.1.1 Expected outcomes

Project results are expected to contribute to all the following **expected outcomes (EO):**

EO1: To provide innovative, customised and efficient RI services enhancing and increasing society's long-term and consistent problem-solving capacity and evidence-based policy making.
POLARIN will increase society's long-term and consistent problem-solving capacity and supports evidence-based policy making by integrating and combining the access to a large portfolio of RIs from both poles in one single project. VA to data and data services will significantly improve the access to different databases hosting polar records from diverse scientific realms. Custom-made data products derived from a combination of raw data will provide scientists but also other users including decision makers with the appropriate tools to increase their problem-solving capacity. By extension, all the generated knowledge and products will allow evidence-based policy making.
Scale and significance: The consortium includes a comprehensive set of polar RIs from the EU, and international RIs from USA, Canada, UK, Chile and Ukraine at key sites in the polar regions. In total, access will be provided **to 64 RIs operating at both poles**. We estimate that **at least 1000 users will benefit from the access** to infrastructures through this project in any of the access modalities.
Target groups: Infrastructure users (researchers, data experts, international climate initiatives and programmes, the private sector), and policy makers.

EO2: Enabling/facilitating science for understanding and predicting key processes in polar regions in the context of climate change.
The RIs offered in POLARIN have been carefully chosen according to their ability to address the grand challenges in the polar regions. They present a wide geographical coverage allowing comprehensive process studies. They are located at key sites to investigate specific topics. For example, some stations and vessels on the Antarctic Peninsula are located or operate in areas where glacier melt is highest in Antarctica.
Challenge driven calls for proposals will ensure that the funded projects address the understanding and predicting of key processes in polar regions, contribute to larger European and international initiatives and support policy making. The collaboration with the Earth Observation community via the cooperation with ESA-EOP will extend the observations performed in POLARIN in an unprecedented way.
An external evaluation of the submitted proposals by internationally well-known experts will assure that only scientifically excellent projects will be funded and that these add new and highly valuable knowledge to our understanding of the changing polar regions.
The inclusiveness of the polar infrastructure portfolio in POLARIN, and the integration of RI capacities in polar regions, will for the first time, provide researchers with an exceptional opportunity to access all assets and tools needed to tackle the grand challenges in polar research.
Scale and significance: 6125 units of infrastructure use will be provided for TA, either in person or as remote access. VA to data will be provided continuously throughout the five years of project duration.
Target groups: Infrastructure users (data experts, researchers, international climate initiatives and programmes).

EO3: Enhanced and further integrated RI capacities in polar regions in support of EU Arctic Policy, European Green Deal and international climate initiatives.
The new **Integrated European Union policy for the Arctic** highlights the importance of a safe, stable, and prosperous Arctic for the EU and recommends that all EU actions shall put science, research, innovation, and technology at the heart of their action. The EU has identified the following priorities for its engagement in the Arctic to which POLARIN will directly contribute with new knowledge:
Promote research and collection of data on the long-term implications of thawing permafrost.
Support the designation of Marine Protected Areas in the Arctic Ocean.
Boost Earth and ocean observation, forecasting and climate prediction through greater capacity for Copernicus and EMODnet to better anticipate the effects of global warming and extreme weather events.

Support the possible implementation of a Copernicus Arctic thematic hub to present as a one-stop shop all relevant services to monitor the poles, both inland and at sea.
With the **European Green Deal** communication, the EU committed to implement the Paris Agreement and the United Nations (UN) 2030 Agenda for Sustainable Development, and therefore EU activities taking place in, and relating to, the polar regions shall contribute to the success of these important protocols. POLARIN will provide background information for the implementation of the European Green Deal, as e.g., on the drivers of biodiversity loss and the effects of climate change in the polar regions. It will also improve the scientific information for increasing the coverage of protected biodiversity-rich land and sea areas in the polar regions. POLARIN will directly contribute to the availability of FAIR data with its WP4 and VA1/WP5 and to the establishment of the digital twins of Antarctica, the ocean and our climate system as requested in the European Green Deal.
The **IPCC Special Report on the Ocean and Cryosphere** in a Changing Climate clearly shows the dramatic effects of the ongoing climate change on the polar regions and its inhabitants, but also how the changing climate in the polar regions is significantly influencing the climate and weather patterns of the lower latitudes. The IPCC has observed several critical knowledge gaps in the understanding of the functioning of the polar regions and has recommended future assessments to increase confidence in models and predictions. **The scientific challenges that POLARIN will address in its call will be based on the knowledge gaps which the IPCC has identified and POLARIN will contribute to close these gaps.**
POLARIN will improve international cooperation with the Arctic States and major players in the Arctic, as they are all (except Russia) partners in the consortium and offer their infrastructures for joint research. On an international level, the **Arctic Science Ministerial (ASM)** also puts emphasis on improved and better coordinated international scientific cooperation in research and observations to advance our understanding of Arctic Change, of its impacts on other regions of the world, and on our ability to respond by providing appropriate and evidence-based information for decision-making processes. It especially encourages multinational participation in field station and ship-based research.
Scale and significance: Coordinated access to 64 infrastructures will be offered to the polar research community. This will support challenge driven research contributing to international climate initiatives and policy-making.
Target groups: Infrastructure users (researchers, data experts, international climate initiatives and programmes), infrastructure operators, policy makers.

2.1.2 Wider impacts

Project results are expected to contribute to all the following expected **wider impacts (WI):**

WI1: Reinforced research infrastructures capacity to provide at scale and across the EU services to support excellent research to address societal challenges, and Horizon Europe missions and partnerships' objectives.
The polar regions lie at the epicentre of climate change, facing rapid changes and new challenges due to biodiversity loss and increased economic interest. Access to RIs in the polar regions is not easy as they are very difficult to reach. Only few countries operate RIs at the poles, as these are very expensive to operate. Building on previous achievements, POLARIN will further develop the services that the polar RIs currently offer. It will implement targeted data services in support of challenge driven research. With that, POLARIN will provide the scientific community with the tools and assets needed for tackling the most pressing **societal challenges** in the polar regions. POLARIN will support the Pillar II Clusters addressing "Global Challenges" in Horizon Europe by contributing to Cluster 5 "Climate, Energy and Mobility" in aspects related to climate change in polar regions; and to Cluster 6 "Food, Bioeconomy, Natural Resources, Agriculture and Environment" addressing the natural resources and environment challenges. POLARIN will collaborate and engage with other projects under the EU Polar Cluster. International cooperation will be reinforced ensuring a better use of RIs through improved coordinated operations.
The EU has implemented dedicated **Horizon Europe missions** to implement the European Green Deal. "Lighthouses" within the Mission "Restore our Oceans and Waters by 2030" shall support regional engagement and cooperation for major sea/river basins. One of these lighthouses addresses the Atlantic-

Arctic and aims at protecting and restoring ecosystems and marine biodiversity. POLARIN will contribute to the mission through its lighthouse Atlantic-Arctic, by enabling and supporting research that investigates the status of polar ecosystems and marine biodiversity. **P**OLARIN will also contribute to the Mission "Adaptation to climate change" by providing baselines and scientific evidence to prepare for and adjust to both the current and the predicted impacts and effects of climate change. POLARIN will provide reinforced RI capacity and data from the polar regions in support of at least the following partnerships' objectives:
Rescuing Biodiversity to Safeguard Life on Earth: by providing access to observatories for biodiversity monitoring, and by providing an evidence base for the development and deployment of nature-based solutions.
Climate neutral, sustainable, and productive Blue Economy: by supporting evidence-based policy making.
European Open Science Cloud (EOSC):by ensuring maximum international data visibility and coordination in data management workflow and best practices.
Additionally, POLARIN will contribute to the following political agreements of the EU by closing eminent data gaps, improving knowledge and knowledge transfer and by supporting cooperation between European and International polar researchers on its RIs:
the **All-Atlantic Ocean Research and Innovation Alliance (AAORIA)** which brings together and systematically connects all relevant actors across the Atlantic Ocean from Pole to Pole. AAORIA aim is to identify concrete research and innovation activities with a long-lasting potential and impact across a range of six key areas one of which is polar research.
the **ESA-EOP and EC-RTD joint Earth System Science Initiative** signed in 2020, which is aiming at joining forces to advance Earth System Science in the collective response to the global challenges that society is facing. One of its flagship actions on "*Polar changes and global impacts*" shall advance observation capabilities, basic understanding and prediction capacity of changes taking place in polar regions, its interactions and feedbacks with the Earth and climate systems and its expected impacts on society and ecosystems from regional to global scales.
Scale and significance: The research work funded in POLARIN will significantly increase the knowledge gained. International initiatives and international cooperation will benefit from that and will be reinforced.
Target groups: Infrastructure users (data experts, researchers, international climate initiatives and programmes), infrastructure operators, decision makers.

WI2: Enhanced and increased society's long-term and consistent problem-solving capacity and evidence-based policy making in areas linked to health, and the green and digital transition, including a better understanding of socio-economic implications, through the provision of innovative, customised and efficient RI services.
Problem solving involves determining the cause of the problem, identifying, prioritising, and selecting alternatives for a solution and, in the end, implementing a solution. But this is only possible if high quality information is available. As generators of knowledge and drivers of scientific excellence, RIs are key in enabling research and innovation. The provision of access will accelerate addressing the key challenges in the polar regions and the provision of solutions. POLARIN will foster data collection in an international and multidisciplinary approach. It will reinforce and shorten the bridge between the research community and policy makers by providing data products ready to consume in support of evidence-based policy-making. POLARIN will ensure that research activities at both poles are addressing the most pressing challenges in the polar regions. In turn, the increase in data recovered from the polar regions and improved access to databases will foster better and improved climate models and future predictions. Ready to use data products will serve not only the research community in different fields, but also the policy makers in sustaining the decisions made by governments.
Scale and significance: As society is the ultimate beneficiary of this action, the scale of this impact is enormous. It has major implications for climate modelling, sea level rise estimations and future predictions as well as for our understanding of the polar regions and their changes and for society readiness and adaptation measures.

Target groups: Policy makers, society, infrastructure users (data experts, researchers, international climate initiatives and programmes).

WI3: New discoveries and knowledge breakthroughs enabled by access provision to the best and in some cases unique state-of-the-art RIs.

Access to the polar regions through state-of-the-art RIs is needed to ensure that the most pressing challenges in the polar regions are addressed. New discoveries and knowledge breakthroughs enabled by POLARIN are expected in several natural sciences disciplines. Understanding the processes and interactions among sea ice, ocean, and atmosphere, the thawing of permafrost, the fate of glaciers and ice sheets (and its implications on sea level rise), and biodiversity changes are only a few examples of critical knowledge gaps that projects funded through POLARIN will address. Those challenges are multidisciplinary by nature and can only be tackled by accessing state-of-the art polar RIs. POLARIN will ensure that researchers can access the best infrastructure according to their needs and do not depend only on the RIs available through their national pools. POLARIN's set of RI comprises unique state-of-the-art RIs. It includes RIs located or operating in key geographic/environmental areas crucial for addressing the scientific challenges. It comprises new cutting-edge research icebreakers (e.g., RV Kronprins Haakon), key research stations in the Arctic and Antarctic, unique observatories such as FRAM in the deep Arctic Ocean, access to main sediment and ice core repositories, and data infrastructures.

Scale and significance: The increase in data collection and the improvement of databases and data infrastructure online services will positively impact the research environment, accelerating the development of discoveries and knowledge breakthroughs. The increase in data collection will be reflected in scientific publications arising from the TA activities and number of datasets created through the project.

Target groups: Infrastructure users (data experts, researchers, international climate initiatives and programmes), policy makers.

WI4: A new generation of researchers trained to optimally exploit all the essential and advanced tools for their research.

The Association of Polar Early Scientists (APECS) will implement a training programme in POLARIN which focusses especially on the demands of Early Career Researchers (ECR) as RI users. APECS is very experienced in organising training through its wide network of mentors and e.g., provided the training for ECRs in the very successful MOSAiC school[46] within ARICE. The training for the new generation of researchers will include all skills necessary to do field work or cruises in the polar regions. It will range from the use of scientific equipment, expedition planning and research tools, to training of safe and sustainable behaviour and the information on legal frameworks (Antarctic Treaty) that need to be respected in the polar regions. In addition, POLARIN will ensure that ECRs are educated on how to collect, curate, store and share their data to ensure that the data they collect throughout their career is accessible, trustworthy, usable, and secure. POLARIN will promote the inclusion of ECRs in research cruises or field expeditions by requesting it in the calls for proposals and by evaluating the training concept of the applicants. The training programme of POLARIN will include an in-person survival training course in accordance with the Polar Code and targeted at expedition leaders.

Scale and significance: As most of the training in POLARIN will be online, and training materials (video recordings and other training materials) will be uploaded to the project's website, they have the potential to impact thousands of early careers and senior researchers worldwide.

Target groups: Early career researchers and experienced researchers.

WI5: Cross-fertilisation and a wider sharing of knowledge and technologies across disciplines and between academia and industry and businesses.

Polar challenges are multidisciplinary by nature. To address them, POLARIN will foster multidisciplinary research expeditions through its diverse pool of RIs and through providing easy access to them via its single-entry portal. Selected proposals will be implemented in the RI regular schedules, thus ensuring that

46 https://arice-h2020.eu/training/mosaic-school-2019/

the teams will benefit from cross fertilisation and an even wider multidisciplinary environment. The integration of land-sea studies, together with existing samples from core repositories and analysis of data from data infrastructures will promote cross-fertilisation and the sharing of knowledge, technologies, and best practices among scientific disciplines. Industry and business will also benefit from the access to RI, and from the data, data products, and tools generated in POLARIN.
Scale and significance: All access offered in POLARIN will be multidisciplinary and open to participants from science, academia, and industry.
Target groups: Infrastructure users (researchers, data experts, international climate initiatives and programmes), industry, business.

Potential negative environmental outcome/ impact
The polar regions remain pristine and fragile areas that need to be protected. But due to the retreat of sea ice (commercial) traffic in the polar regions (and especially in the Arctic) has increased significantly in the last decade. On the one hand, any access to the polar regions encompasses risks for the fragile environment, for expedition participants and for the RIs that cannot be neglected. On the other hand, it is imperative to investigate these remote regions to establish (ecologic/knowledge) baselines, to understand the processes occurring there and to monitor their changes. Data from the polar regions is necessary to better forecast weather and sea ice to reduce human and infrastructure risk, and the risk of commercial operations in those regions and elsewhere. Adaptation and mitigation strategies also depend to a large degree on the data collected in the polar regions.

2.1.3 Potential barriers beyond the scope and duration of the project

Description of risk (level of likelihood: Low/Medium/High)	WP(s) involved	Risk mitigation measures
Expedition cancellations due to "force majeure" or inaccessible working area - **Medium**	TA2/WP2, TA3/WP3	The COVID-19 crisis has taught us that travel restrictions (associated with a pandemic in the recent case, but also due to natural phenomena) can take place even at a global scale. **The duration of POLARIN has been set to five years** to ensure that the implementation of TA can take place as expected within the duration of the project. This will allow the infrastructures to reorganise their schedules in case of "force majeure" without major implications for the project.
Escalating prices (e.g., energy) within the project duration - **Medium**	TA2/WP2, TA3/WP3	Escalating energy prices have a major impact on the RI operation. The Unit costs of the POLARIN RIs will be significantly affected by this if the prices continue to escalate. Since the project budget is fixed and in case the unit price varies considerably, the consortium will have to adjust the number of units offered by the different RIs. On the contrary, should the energy prices decrease considerably, the RIs will be able to offer additional days in compensation.
International conflicts of political nature among partner countries impede cooperation in the project - **Low**	All WPs	The consortium is broad enough to compensate a missing partner or a missing RI by offering additional TA to similar RIs.

2.2 Measures to maximise impact - Dissemination, exploitation, and communication
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Proposals submitted to this call are not required to include a plan for the exploitation and dissemination of the results as the main objective of these actions is the service provision.

POLARIN's measures to maximise the impact rely on an effective communication of the services offered by the project, ranging from TA and VA to RIs, data services, tools, products, and training. To maximise the impact, the project results will be disseminated through different channels.

2.2.1 Communication plan

The communication activities will start at the onset of the project and will continue throughout the project's entire lifetime. The overall objectives of the communication activities are:

CO1: To promote the project throughout the full lifespan of the project,

CO2: To actively advertise POLARIN's services: TA to RIs, VA to data, data tools, data services and data products, and training opportunities.

CO3: To inform and reach out to society and show the activities performed, and the use and benefits the project will have for citizens.

CO4: To contribute to evidence-based policy-making.

CO5: To support internal communication.

POLARINs communication activities will be directed to relevant target audiences, with the aim of informing and engaging them in the project activities. These activities will rely on the corporate design (branding) of POLARIN, which will support the consortium members to communicate the project in a consistent and uniform manner. Communication channels and tools will include a logo, website, social media platforms, templates for presenting and reporting, a project presentation video, and a project description. Internal communication tools will be developed to ensure a smooth flow of information among the project members, including mailing lists for internal communication purposes, a document sharing platform (intranet/document storage and communication platforms) and in-person and online meetings. The communication activities are strategically planned to ensure a comprehensive communication plan with clear objectives and for different target audiences.

Target audiences

End users of POLARIN's services	
Specific target group	**Description of target group in relation to POLARIN**
Scientific community	POLARIN will provide the scientific community with access to polar RIs and further opportunities/services opened by the project.
Early career researchers	POLARIN will actively inform the ECR community of the specific opportunities to access the POLARIN RIs and of training activities dedicated to this community. By actively reaching out, POLARIN can engage ECR's with their services. Examples: APECS, national APECS divisions, universities (see higher education institutions)
National polar programmes and research institutions	POLARIN will provide research institutions with an overview of the opportunities/services offered by the project.
Funded (polar) projects or projects that need polar data	POLARIN will provide other Horizon Europe projects with an overview of its services. Utilising entities such as the EU Polar Cluster can help POLARIN to effectively address a large part of the polar science community. Examples: EU Polar Cluster, ESA Polar Science Cluster
Technicians and engineers	Training for use of state-of-the-art technical equipment and data stewardship will be organised by POLARIN. In addition, technicians and engineers will benefit from better capacities for research in the polar regions and TA to RIs when they are part of user groups.
Multilateral and international organisations	International and multilateral organisations which either represent polar research institutes or are involved in/engaged with polar science will benefit from the services offered through POLARIN. Examples: European Polar Board (EPB), Asian Forum of Polar Sciences (AFoPS), Managers of the Latin American Antarctic Programs (RAPAL), Arctic Research Consortium of the United States (ARCUS)

Other target groups	
Specific target group	**Description of target group in relation to POLARIN**
POLARIN consortium members	POLARIN consortium members will receive internal communication for an efficient coordination of the project and to be made aware of project related news.
User groups	Once their proposals for TA have been approved, successful call participants will receive support from WP8 to follow their own outreach and engagement plan.
Research infrastructure operators	Research infrastructure operators are key partners in discussing, planning, and implementing a better scientific and logistic coordination of RI access. They will benefit from a coherent and more efficient process of granting access to RIs and an optimised and cost-effective use of these.
International agreements and international partnerships	An integrated and harmonised access to polar RIs will increase the understanding of the polar regions and thus ease the task of developing evidence-based policy recommendations for a sustainable usage of the polar regions that are subjected to international agreements or partnerships. Examples: Arctic Council (Enhancement of International Cooperation of Arctic Science), Antarctic Treaty System
Policy and decision makers	An integrated and harmonised access to the polar RIs will increase the understanding of the polar regions and thus ease the task of developing evidence-based policy recommendations for a sustainable usage of the polar regions and their resources. This will be beneficial to support the EU Arctic Policy, the European Green Deal and other policy-based climate initiatives. Providing TA to international infrastructures moreover supports science diplomacy efforts by building bridges between countries and promoting scientific cooperation as an essential element of foreign policy. Examples: EC, local, regional, national decision makers
Maritime industry	Maritime industry partners have a critical need for better polar information in support of safe, responsible, and effective industry operations and of the European policy for cleaner and better oceans. Furthermore, commercial vessels and structures could serve to host or deploy instruments for environmental data collection and provide possibilities to increase monitoring capabilities. Logistics, suppliers, IAATO, AECO. This target group will be engaged with the support of the beneficiary 22 PONANT (tourism) and FPLO (shipping) and via presentations at dedicated industry events such as the SMM in Hamburg.
News outlets	Media can contribute to underlining the importance of polar science, by reflecting on expeditions, expedition results, data tools and products. Example: National newspapers, dedicated journals for science news.
Civil society, public at large	POLARIN will regularly inform the public about the project to show the activities performed and the use and benefits the project has for citizens.
Educators	The recordings of online seminars, and other training materials will be available for education and training. Examples: Universities, schools, Polar Educators International (PEI).

Communication channels and tools

POLARIN will develop and use various communication channels and tools to effectively communicate both internally and externally and to effectively engage the defined target groups. It is important to note that many of the following channels and tools will be used for both outreach and engagement activities.

Channel/tool	Purpose/objective	Target group(s)	KPIs	WP/Month
Corporate identity (logo, templates)	To identify the project and project activities through branding.	All	Not applicable	WP8/M1

Website	A regularly updated website will serve as a reference platform for all target groups to find relevant information about the project – including the opportunities offered by POLARIN (call for proposals, data tools and services), its objectives, achievements, the consortium, news, events, how to get involved, etc.	All	Continuous evaluation of global visitors (list top 10 visiting countries)	WP9, WP8/ set up in M1, ongoing
Internal website	An internal website will enable project members to download current working materials, such as reports, deliverables, and presentations.	POLARIN consortium members	Not applicable	WP9, WP8 / Set up in M1, ongoing
Social Media	Regularly used social media accounts will raise awareness for the project and engage the defined target groups. Accounts will be set up for: Facebook, Instagram, YouTube or Vimeo, LinkedIn, Twitter/Mastodon. A social media strategy following EC guidelines will include the initial launch combined with a main event and be further developed at the start of the project.	All target groups	Continuous evaluation of engagement (clicked links/ reposts)	WP8/Set up in M1, ongoing
Newsletter	Quarterly newsletters will be sent to newsletter subscribers providing project updates, highlights, achievements, upcoming events, etc.	All	Number of readers	WP8/Subscription set up in M1 (on website), ongoing
Flyers, brochures, posters, roll-ups	POLARIN will create a diverse set of brochures and project material developed for training, data products and project results. All print material will be made available as e-files.	Target groups depend on outreach material	Number of downloads / printed material	WP8/ On demand
Press releases	Timely press releases will be issued for specific project activities and events to create credibility and impact.	Media	Number of news items stemming from press release	WP8/ On demand
Videos	Short videos will be produced to introduce the POLARIN project, its aims, and objectives. Videos will be published online on POLARIN's YouTube or Vimeo channel.	All	Number of visitors on YouTube /Vimeo channels	WP8/ M6
Email	Formal email communication channels to target specific target groups for e.g., policy briefings etc.	Depends on content	Not applicable	WP8/ On demand
Guidelines for content creation of RI users	Create a set of broad guidelines to ensure usable content being developed by access users of POLARIN Ris	Scientific community, RI users	Not applicable	WP8/ M8

Publications resulting from service users	POLARIN will gather the scientific achievements/ publications from RI users that were granted access through POLARIN	Scientific community, policy and decision makers, POLARIN Consortium Members, Media	Number of publications	WP8/ Ongoing

Communication activities and events

POLARIN's communication activities and events will actively advertise its services to and effectively inform and engage the defined target groups, specifically the scientific community. The table below is a starting point of the planned communication activities and events and will be updated during the project.

Activity/event	Purpose/objective	Target group(s)	KPIs	WP/Month
Consortium meetings	Consortium meetings, i.e., general assemblies, will be organised during the project. These include a kick-off meeting at the beginning of the project, annual meetings, and a closing meeting at the end of project.	Project Members, (invited external representatives if necessary)	Number of meetings	WP9/ M1, then annually
Clustering with other initiatives	The project will connect and work with other active initiatives such as the EU Polar Cluster to maximise knowledge sharing and better distribution and communication among the target audience.	Scientific Community, POLARIN Consortium Partners	Number of partnerships / joint activities	WP8, WP9/ Ongoing
Scientific and non-scientific events	Partners will attend scientific and non-scientific events to disseminate project results	All	Number of visited events	All WPs/ On demand
International fora	Promotion of established cooperation efforts of POLARIN	Depends on forum	Number of fora participated in	All WPs/ On demand
Promotion of project results	Promotion of research expeditions funded through the project, data access, tools and data products, training, and materials generated by the project.	All	Number of participants to the events	WP8/ On demand
Outreach beyond Europe	Translations of outreach activities (e.g., social media posts) into native languages of consortium partners to ensure that many researchers are made aware of relevant opportunities and services.	Scientific community	Number of translated posts / # non-European followers	WP8/ Ongoing
Dedicated outreach to Ukraine	Outreach in national language(s) to Ukrainian researchers and scientists.	Scientific community in Ukraine	Number of activities (e.g., posts, press releases)	WP8/ Ongoing

2.2.2 Strategy for the management of intellectual property

The access to Ris has, in most of the cases, the objective of collecting environmental data to better understand the processes, the status, and the evolution of the natural environment. However, in some

cases, there might be a need to manage intellectual property if the outcomes of the access can be valorised, for example if the recovery of data or samples leads to the discovery of natural resources, or chemical compounds that can be commercialised by e.g. pharmaceutical companies. Depending on the context, IP rights results might belong to the researcher or to her/his employing organisation or is shared by both. A common situation is that the author keeps the moral rights on his production, while the economic rights are owned by the employing organisation. This must be checked carefully by the researcher before applying for specific protection rights and before deploying any exploitation initiative. In most cases, the end user institutions have their own "technology transfer/exploitation" units that manage intellectual property cases. In other cases, POLARIN will refer to the European IP Helpdesk (http://www.iprhelpdesk.eu/), a service funded by the EC and managed by EASME[47]. It provides free-of-charge, first-line advice and information on Intellectual Property (IP).
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2.3 Summary

SPECIFIC NEEDS: The polar regions are facing rapid changes and new challenges due to climate change, biodiversity loss and increasing economic interest. There is a need to: understand and predict these changes including their impact in other regions, identify solutions and provide evidenced-based information in support of the European Green deal and EU Arctic Policy.
Inclusive access to services provided by state-of-the-art RIs in the polar regions is essential to address key challenges, EU priorities, and the training of researchers.

D&E&C MEASURES: The overall objective of the communication strategy is to actively advertise POLARIN's services, i.e.,: TA to RIs, VA to data, data tools, data services and data products, training opportunities and project results to relevant target audiences, as well as to engage different target audiences in project activities. The communication activities will start at the onset of the project and will continue throughout the full project's lifetime. They will involve various communication channels, tools, and activities to effectively communicate both internally and externally and to effectively engage the defined target groups.

TARGET GROUPS:
Scientific community (including early career researchers, research institutions, science projects, user groups); Skilled staff (technicians and engineers, Research infrastructure operators); International organisations; Governmental bodies; Industry; Civil society; Educators; Media.

EXPECTED RESULTS: POLARIN will efficiently integrate and combine access to a wide portfolio of Arctic and Antarctic RIs services: research vessels including icebreakers, research stations, fixed and mobile observatories, and ice and sediment core repositories. The inclusiveness of the polar infrastructure portfolio in POLARIN, together with VA to data and improved data services, will provide the polar research community with the appropriate tools and problem-solving capacity to address multidisciplinary challenges in polar research. It will significantly increase the data collection in the polar regions.
POLARIN will train researchers to optimally exploit state-of-the-art polar RIs, to manage their data according to FAIR principles, and to survive under extreme conditions.

OUTCOMES: POLARIN will accelerate the research cycle by providing a coordinated and inclusive TA to a wide array of RIs to support multidisciplinary research. Results from expeditions funded through the project will boost the knowledge progress on understanding the processes governing polar regions. Relevant key data products will be generated to facilitate the integration into ongoing research and policy-making. POLARIN will contribute to increasing international cooperation. The improvement of online services will allow the use of data currently hidden and the publication of homeless data. POLARIN will improve data access and interoperability by enabling the connection between initiatives, improving workflows, and reducing data fragmentation. New generations of researchers will be ready to take over modern polar research in multidisciplinary contexts, to comply with the Polar Code regulations and to properly exploit the RIs and their tools, including their data.

IMPACT: By providing coordinated and integrated challenge driven access to RIs, POLARIN will contribute to wider impacts in the following domains:
Societal: Key challenges in polar regions have strong societal implications: from sea level rise to ecosystem (and fisheries) changes, weather forecast and climate predictions. By enabling access to RIs services, POLARIN will accelerate the delivery of solutions.
Institutional: POLARIN will contribute to consolidating international cooperation and cooperation between RI operators. It will provide the tools for evidence-based policy-making.
Scientific: POLARIN's access to RI services will boost data collection, and it will accelerate the research capacity of Europe.
Economic: The coordinated access to RIs and their services, together with an improvement of data-bases access and interoperability, will contribute to a more efficient use of resources and to less duplication of efforts.
Environmental: Projects funded within POLARIN will contribute to establishing baselines in polar ecosystems, needed to evaluate measures to protect biodiversity, for the conservation of species, to identify threats from climate change and to understand processes governing sea-ice, ocean, and atmosphere.

#§IMP-ACT-IA§#

3 QUALITY AND EFFICIENCY OF THE IMPLEMENTATION #@QUA-LIT-QL@# #@WRK-PLA-WP@#

3.1 Work plan and resources

3.1.1 Overall structure of the work plan

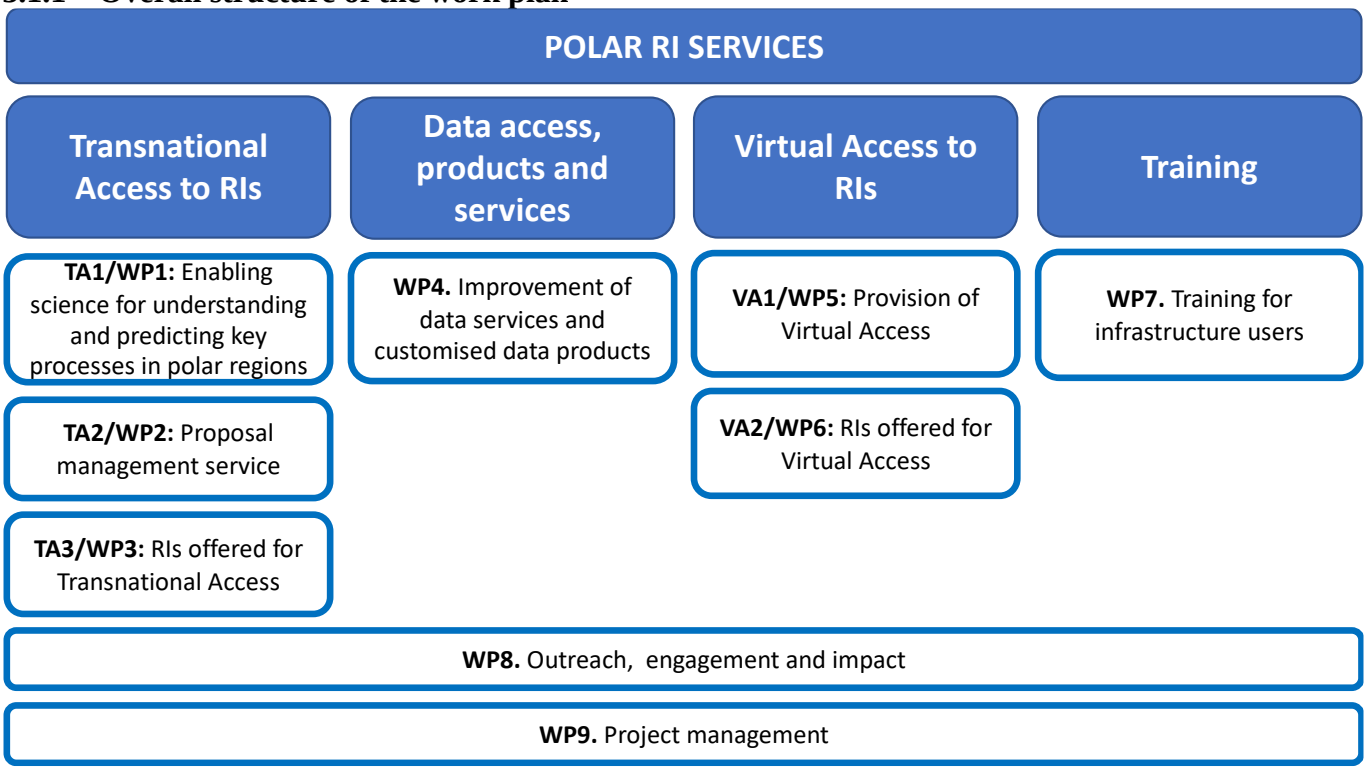


Figure 3.1: Overall structure of the work packages.

POLARIN will integrate polar RI capacities to facilitate science for understanding and predicting key processes in polar regions in the context of climate change, to enhance the society's problem-solving capacity and to support evidence-based policy making. The services offered by POLARIN are:

1. Challenge driven TA (in person and remote) to selected polar RIs of European interest,
2. Data access, data products and data services
3. VA to multidisciplinary polar data
4. Training for infrastructure users

TA1/WP1 will establish the background of research challenges to ensure that access to POLARIN RIs contributes to the specific challenges identified by international organisations and programmes such as ESA[48], SCAR[49], IASC[50], UNDOS, and past and ongoing EU Polar Cluster projects. This WP will oversee the scientific evaluation of proposals (by an external board) and will assess the contribution of the projects and the infrastructure capability towards addressing the challenges.
TA2/WP2 will implement an easy access portal (one-stop shop) to POLARIN RIs to allow researchers to apply for any (or a combination of several) RI(s) in support of excellent multidisciplinary research. For that, the INTERACCESS proposal management system developed and implemented in the EU-funded project INTERACT, will be modified to allow the management of multiple infrastructures that, due to their nature, require specific information in the application. Challenge-driven calls for proposals will be launched to invite researchers to apply for TA. This WP is the link between the scientific frame (challenges, evaluation in TA1/WP1) and the RI operators. It will perform the logistic evaluation of proposals recommended by TA1/WP1.

48 European Space Agency, https://www.esa.int
49 Scientific Committee on Antarctic, Research https://www.scar.org
50 International Arctic Science Committee, https://iasc.info

TA3/WP3 describes all infrastructures offered for TA (either in-person or remote), including their description of work, outreach to new users and review procedure.
WP4 is dedicated to improving the access to data, development of online services and data products. It will improve the accessibility and interoperability of the data management landscape and it will establish a hub to find data suiting the user's needs. This WP will also create data products from raw data to facilitate the consumption of data generated by the RIs.
VA1/WP5 will create a gate to the VA of data offered within POLARIN, periodically monitoring the access through an external assessment board.
VA2/WP6 describes all infrastructures offering VA of data, including their description of work and outreach to new users.
WP7 will implement training for infrastructure users in different formats. It will implement 1) online seminars for a broad audience on scientific tools and equipment, land and sea expedition planning, and safety and sustainability. 2) online training on data stewardship, and 3) an in-person safety training in compliance with the Polar Code, to ensure selected expedition leaders are trained to guide their team to survive at least 5 days in extreme conditions.
WP8 will support all services as the Outreach, Engagement, and Impact work package to ensure that the services offered by POLARIN reach and engage a large audience. It will create the project website, regular newsletters and will advertise the opportunities opened by POLARIN. It will engage the community of users in an Ambassador programme and evaluate the communication and engagement activities and the impact of POLARIN on multiple stakeholders.
WP9 will ensure a smooth project management and implementation of the project. It will enable synergies across the consortium, managing the information and communication flow, and with other projects and entities such as the EU Polar Cluster and ESA. It will implement an Advisory Board with relevant stakeholders to enhance the connection with international partners and organisations as well as with other European initiatives and projects.

3.1.2 Gantt chart

		2024											
		J	F	M	A	M	J	J	A	S	O	N	D
		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
WP1	**Understanding key processes in polar regions**						**M1.1**	**M1.2**					
T1.1	Challenge driven call definition and integration					D1.1	D1.2		D1.4				
T1.2	Scientific evaluation							D1.3					
T1.3	Optimising the scientific outcome of the access programme												D1.5
WP2	**TA Proposal management service**							**M2.1**			**M2.2**		**M2.3**
T2.1	Integration of access procedures and call implementation												
T2.2	Logistic evaluation of proposals							D2.1					
T2.3	Quality assurance and follow-up implementation												
WP3	**RIs offered for TA**												
	TA access												
WP4	**Improve data services and provide data products**												**M4.1**
T4.1	Improving access to polar data						D4.1						D4.3
T4.2	Improving polar data availability and interoperability												D4.4
T4.3	Data products, tools and data services										D4.2		
WP5	**Implementation of VA and improving online services**												
T5.1	Development of a virtual access portal												D5.1
T5.2	Monitoring and evaluation of the access												
WP6	**RIs offerd for VA**												
	VA access												
WP7	**Training for infrastructure users**												
T7.1	Training for ECRs and technical personnel												
T7.2	Training on data steawrdship												
T7.3	Training for safe and sustainable polar expeditions												
WP8	**Outreach and engagement**										**M8.1**		
T8.1	Visibility and communication of POLARIN		D8.1 D8.2	D8.3									
T8.2	Engagement of service users and ambassadors				D8.4				D8.5				
T8.3	Evaluation of communication and engagement activities												
WP9	**Project management**												
T9.1	Contractual and financial management												
T9.2	Operational management		D9.1	D9.2	D9.3		D9.4						
T9.3	Clustering with other initiatives												

		2025											
		J	F	M	A	M	J	J	A	S	O	N	D
		M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24
WP1	**Understanding key processes in polar regions**						**M1.3**						
T1.1	Challenge driven call definition and integration												
T1.2	Scientific evaluation						D1.6						
T1.3	Optimising the scientific outcome of the access programme												
WP2	**TA Proposal management service**												**M2.4**
T2.1	Integration of access procedures and call implementation												
T2.2	Logistic evaluation of proposals								D2.3				
T2.3	Quality assurance and follow-up implementation						D2.2						
WP3	**RIs offered for TA**												
	TA access				D3.1								
WP4	**Improve data services and provide data products**												
T4.1	Improving access to polar data			D4.7									D4.9
T4.2	Improving polar data availability and interoperability		D4.5	D4.6			D4.8						
T4.3	Data products, tools and data services												4.10
WP5	**Implementation of VA and improving online services**		**M5.1**				**M5.2**						
T5.1	Development of a virtual access portal						D5.2						
T5.2	Monitoring and evaluation of the access												D5.3
WP6	**RIs offerd for VA**												
	VA access												
WP7	**Training for infrastructure users**												**M7.1**
T7.1	Training for ECRs and technical personnel											D7.3	
T7.2	Training on data steawrdship		D7.1										
T7.3	Training for safe and sustainable polar expeditions												
WP8	**Outreach and engagement**												
T8.1	Visibility and communication of POLARIN												
T8.2	Engagement of service users and ambassadors												
T8.3	Evaluation of communication and engagement activities												D8.6
WP9	**Project management**												
T9.1	Contractual and financial management												
T9.2	Operational management		D9.5		D9.6 D9.7	D9.8							
T9.3	Clustering with other initiatives												

		2026											
		J	F	M	A	M	J	J	A	S	O	N	D
		M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36
WP1	**Understanding key processes in polar regions**												
T1.1	Challenge driven call definition and integration												
T1.2	Scientific evaluation						D1.7						
T1.3	Optimising the scientific outcome of the access programme												
WP2	**TA Proposal management service**												**M2.5**
T2.1	Integration of access procedures and call implementation												D2.5
T2.2	Logistic evaluation of proposals								D2.4				
T2.3	Quality assurance and follow-up implementation												
WP3	**RIs offered for TA**												
	TA access												
WP4	**Improve data services and provide data products**												
T4.1	Improving access to polar data												
T4.2	Improving polar data availability and interoperability												
T4.3	Data products, tools and data services												
WP5	**Implementation of VA and improving online services**												
T5.1	Development of a virtual access portal												
T5.2	Monitoring and evaluation of the access												
WP6	**RIs offerd for VA**												
	VA access												
WP7	**Training for infrastructure users**						**M7.2**						
T7.1	Training for ECRs and technical personnel						D7.4						
T7.2	Training on data steawrdship											D7.5	
T7.3	Training for safe and sustainable polar expeditions				D7.2								
WP8	**Outreach and engagement**												
T8.1	Visibility and communication of POLARIN												
T8.2	Engagement of service users and ambassadors												D8.7
T8.3	Evaluation of communication and engagement activities												
WP9	**Project management**		**M9.1**										
T9.1	Contractual and financial management												
T9.2	Operational management		D9.9										
T9.3	Clustering with other initiatives												

		2027											
		J	F	M	A	M	J	J	A	S	O	N	D
		M37	M38	M39	M40	M41	M42	M43	M44	M45	M46	M47	M48
WP1	**Understanding key processes in polar regions**												
T1.1	Challenge driven call definition and integration												
T1.2	Scientific evaluation						D1.8						
T1.3	Optimising the scientific outcome of the access programme												
WP2	**TA Proposal management service**												
T2.1	Integration of access procedures and call implementation												
T2.2	Logistic evaluation of proposals								D2.6				
T2.3	Quality assurance and follow-up implementation												
WP3	**RIs offered for TA**												
	TA access												
WP4	**Improve data services and provide data products**												
T4.1	Improving access to polar data												
T4.2	Improving polar data availability and interoperability												
T4.3	Data products, tools and data services												
WP5	**Implementation of VA and improving online services**												
T5.1	Development of a virtual access portal												
T5.2	Monitoring and evaluation of the access				D5.4								
WP6	**RIs offerd for VA**												
	VA access												
WP7	**Training for infrastructure users**									**M7.3**			
T7.1	Training for ECRs and technical personnel												
T7.2	Training on data steawrdship												
T7.3	Training for safe and sustainable polar expeditions												
WP8	**Outreach and engagement**				**M8.2**								
T8.1	Visibility and communication of POLARIN												
T8.2	Engagement of service users and ambassadors												D8.8
T8.3	Evaluation of communication and engagement activities												
WP9	**Project management**												
T9.1	Contractual and financial management												
T9.2	Operational management		D9.10		D9.11	D9.12							
T9.3	Clustering with other initiatives												

		2028											
		J	F	M	A	M	J	J	A	S	O	N	D
		M49	M50	M51	M52	M53	M54	M55	M56	M57	M58	M59	M60
WP1	**Understanding key processes in polar regions**												
T1.1	Challenge driven call definition and integration												
T1.2	Scientific evaluation												
T1.3	Optimising the scientific outcome of the access programme										D1.9		
WP2	**TA Proposal management service**												
T2.1	Integration of access procedures and call implementation												D2.8
T2.2	Logistic evaluation of proposals												
T2.3	Quality assurance and follow-up implementation												D2.7
WP3	**RIs offered for TA**												
	TA access												
WP4	**Improve data services and provide data products**												
T4.1	Improving access to polar data												
T4.2	Improving polar data availability and interoperability												
T4.3	Data products, tools and data services												
WP5	**Implementation of VA and improving online services**												
T5.1	Development of a virtual access portal												
T5.2	Monitoring and evaluation of the access							D5.5					
WP6	**RIs offerd for VA**												
	VA access												D6.1
WP7	**Training for infrastructure users**												
T7.1	Training for ECRs and technical personnel												
T7.2	Training on data steawrdship					D7.6							
T7.3	Training for safe and sustainable polar expeditions					D7.7							
WP8	**Outreach and engagement**												
T8.1	Visibility and communication of POLARIN												D8.12
T8.2	Engagement of service users and ambassadors								D8.9		D8.10		
T8.3	Evaluation of communication and engagement activities												D8.11 D8.13
WP9	**Project management**												
T9.1	Contractual and financial management												
T9.2	Operational management		D9.13					D9.14			D9.16		D9.17
T9.3	Clustering with other initiatives									D9.15			

D Deliverables
M Milestones

Table 3.1g: 'Subcontracting costs' items

-	
-	-

Table 3.1h: 'Purchase costs' items (travel and subsistence, equipment and other goods, works and services)

1/AWI		
	Cost (€)	**Justification**
Travel and subsistence	132.600,00	50.000 for travel to GAs, retreat, final conference, and other project meetings, 82.600 for travel related to TA.
Other goods, works and services	282.000,00	90.000 for organisation of 3 GAs, 50.000 for travel and allowance for SLP and AB members, 55.000 organisation of retreat and final conference, 5.000 audit costs (CFS), 10.000 shipment related to TA, 72.000 purchase costs related to TA (FRAM)
Total	**414.600,00**	
2/UOULU		
Travel and subsistence	40.460,00	30.000 for travel to Gas, retreat, final conference, and other project meetings, 10.460 for travel related to TA.
Other goods, works and services	65.194,00	5.000 audit costs (CFS), 10.194 for purchase costs related to VA, 50.000 purchase costs foreseen for INTERACT GIS Services
Total	**105.654,00**	
3/INPA		
Travel and subsistence	30.000,00	30.000 for travel to Gas, retreat, final conference, and other project meetings.
Total	**30.000,00**	
4/ULUND		
Travel and subsistence	33.000,00	33.000 for travel to Gas, retreat, final conference, and other project meetings.
Total	**33.000,00**	
5/CNR		
Travel and subsistence	68.500,00	35.000 for travel to Gas, retreat, final conference, and other project meetings, 33.500 for travel related to TA.
Other goods, works and services	10.000,00	5.000 for shipment related to TA, 5.000 audit costs (CFS),
Total	**78.500,00**	
6/OGS		
Travel and subsistence	37.000,00	25.000 for travel to Gas, retreat, final conference, and other project meetings, 12.000 for travel related to TA.
Other goods, works and services	9.000,00	4.000 purchase costs related to TA, 5.000 audit costs (CFS),
Total	**46.000,00**	
7/INKODE		
Travel and subsistence	30.000,00	30.000 for travel to Gas, retreat, final conference, and other project meetings
Total	**30.000,00**	
8/AU		
Travel and subsistence	128.180,00	38.000 for travel to Gas, retreat, final conference, and other project meetings, 90.180 for travel related to TA.

Other goods, works and services	15.000,00	15.000 purchase costs related to VA.
Total	**143.180,00**	
9/CNRS		
Travel and subsistence	25.000,00	25.000 for travel to Gas, retreat, final conference, and other project meetings.
Total	**25.000,00**	
10/UCPH		
Travel and subsistence	51.000,00	25.000 for travel to Gas, retreat, final conference, and other project meetings, 26.000 for travel related to TA.
Total	**51.000,00**	
11/EPB		
Travel and subsistence	35.000,00	35.000 for travel to Gas, retreat, final conference, and other project meetings.
Other goods, works and services	50.000,00	50.000 for outreach material, videos, and printed brochures
Total	**85,000,00**	
12/ETT		
Travel and subsistence	35.000,00	35.000 for travel to Gas, retreat, final conference, and other project meetings.
Total	**35.000,00**	
13/UiT (incl. APECS)		
Travel and subsistence	35.000,00	30.000 for travel to Gas, retreat, final conference, and other project meetings, 5.000 for travel related to TA.
Other goods, works and services	6.000,00	6.000 purchase costs related to TA.
Total	**41.000,00**	
14/CSIC		
Travel and subsistence	62.250,00	25.000 for travel to Gas, retreat, final conference, and other project meetings, 37.250 for travel related to TA.
Other goods, works and services	5.000,00	5.000 purchase costs related to TA.
Total	**67.250,00**	
15/SIOS		
Travel and subsistence	35.000,00	35.000 for travel to Gas, retreat, final conference, and other project meetings.
Total	**35.000,00**	
16/NILU		
Travel and subsistence	25.000,00	25.000 for travel to Gas, retreat, final conference, and other project meetings.
Total	**25.000,00**	
17/NASC		
Travel and subsistence	84.520,00	25.000 for travel to Gas, retreat, final conference, and other project meetings, 59.520 related to TA.
Other goods, works and services	15.000,00	10.000 shipment related to TA, 5.000 audit costs (CFS),
Total	**99.520,00**	
18/IGOT-UL		
Travel and subsistence	30.000,00	30.000 for travel to Gas, retreat, final conference, and other project meetings.
Total	**30.000,00**	

19/GFZ		
Travel and subsistence	20.000,00	20.000 for travel to Gas, retreat, final conference, and other project meetings.
Total	**20.000,00**	
20/DTU		
	Cost (€)	**Justification**
Travel and subsistence	50.325,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 30.325 related to TA.
Other goods, works and services	8.000,00	8.000 shipment related to TA.
Total	**58.325,00**	
21/IPEV		
Travel and subsistence	33.600,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 13.600 related to TA.
Other goods, works and services	1.000,00	1.000 shipment related to TA.
Total	**34.600,00**	
22/PONANT		
Travel and subsistence	210.000,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 190.000 related to TA.
Other goods, works and services	100.000,00	100.000 shipment related to TA.
Total	**310.000,00**	
23/MFRI		
Travel and subsistence	32.450,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 12.450 related to TA.
Other goods, works and services	6.000,00	6.000 shipment related to TA.
Total	**38.450,00**	
24/GINR		
Travel and subsistence	41.540,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 21.540 related to TA.
Total	**41.540,00**	
25/MICN		
Travel and subsistence	72.850,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 52.850 related to TA.
Other goods, works and services	11.000,00	11.000 shipment related to TA.
Total	**83.850,00**	
26/SPRS		
Travel and subsistence	29.200,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 9.200 related to TA.
Other goods, works and services	1.638,00	1.638 purchase costs related to VA.
Total	**30.838,00**	
27/SSLC		
Travel and subsistence	24.700,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 4.700 related to TA.
Total	**24.700,00**	
28/DMI		
Travel and subsistence	53.325,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 33.325 related to TA.
Total	**53.325,00**	

29/ULAVAL		
Travel and subsistence	69.275,00	15.000 for travel to Gas, retreat, final conference, and other project meetings, , 54.275 related to TA.
Other goods, works and services	11.000,00	6.000 shipment related to TA, 5.000 audit costs (CFS)
Total	**80.275,00**	
30/UTU		
Travel and subsistence	34.500,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 14.500 related to TA.
Total	**34.500,00**	
31/NPI		
Travel and subsistence	127.350,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, , 107.350 related to TA.
Other goods, works and services	25.096,00	9.000 audit costs (CFS), 9.953 shipment related to TA, Other costs according to mandatory needs: Polar bear protection (course, weapons etc) (estimate 4 groups total 100 days): 2.811 EURO; Communication (radio etc) (estimate 4 groups total 100 days): 1.478 EURO; Shipment (estimate 4 groups total 100 days): 528 EURO; Use of lab facilities (depending on needs): 1.326 €
Total	**152.446,00**	
32/UGRAZ		
Travel and subsistence	30.000,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 10.000 related to TA.
Total	**30.000,00**	
33/RIF		
Travel and subsistence	29.000,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 9.000 related to TA.
Total	**29.000,00**	
34/SU		
Travel and subsistence	39.125,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 19.125 related to TA.
Total	**39.125,00**	
35/AMU		
Travel and subsistence	32.500,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 12.500 related to TA.
Total	**32.500,00**	
36/ARI		
Travel and subsistence	35.086,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 15.086 related to TA.
Total	**35.086,00**	
37/IGF PAS		
Travel and subsistence	50.000,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 30.000 related to TA.
Total	**50.000,00**	
38/UMK		
Travel and subsistence	66.000,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 46.000 related to TA.
Other goods, works and services	14.031,00	14.031 purchase costs related to TA.
Total	**80.031,00**	

39/UAF		
Travel and subsistence	43.720,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 23.720 related to TA.
Total	**43.720,00**	
40/MI		
Travel and subsistence	31.200,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 11.200 related to TA.
Other goods, works and services	8.000,00	8.000 shipment related to TA.
Total	**39.200,00**	
41/UKRI		
Travel and subsistence	48.910,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 28.910 related to TA.
Other goods, works and services	3.821,00	2.000 shipment related to TA, 1.821 for purchase costs related to TA.
Total	**52.731,00**	
42/UH		
Travel and subsistence	32.944,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 12.944 related to TA.
Other goods, works and services	7.688,00	7.688 purchase costs related to TA.
Total	**40.632,00**	
43/FMI		
Travel and subsistence	31.000,00	25.000 for travel to Gas, retreat, final conference, and other project meetings, 6.000 related to TA.
Other goods, works and services	833,00	833,00 purchase costs related to VA.
Total	**31.833,00**	
44/BAI		
Travel and subsistence	64.700,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 44.700 related to TA.
Other goods, works and services	6.000,00	6.000 shipment related to TA.
Total	**70.700,00**	
45/UICS		
Travel and subsistence	32.000,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 12.000 related to TA.
Other goods, works and services	34.979,00	Station costs (vehicle and facility rental, permits, lodging)
Total	**66.979,00**	
46/CAFF		
Travel and subsistence	20.000,00	20.000 for travel to Gas, retreat, final conference, and other project meetings.
Total	**20.000,00**	
47/TARA		
Travel and subsistence	24.200,00	20.000 for travel to Gas, retreat, final conference, and other project meetings, 4.200 related to TA.
Other goods, works and services	2.000,00	2.000 shipment related to TA.
Total	**26.200,00**	

48/FLPO		
Travel and subsistence	25.000,00	25.000 for travel to GAs, retreat, final conference, and other project meetings.
Other goods, works and services	120.000,00	120.000 for in-person safety training under Arctic conditions.
Total	**145.000,00**	
49/INACH		
Travel and subsistence	75.800,00	33.000 for travel to GAs, retreat, final conference, and other project meetings, 42.800 related to TA.
Other goods, works and services	14.000,00	14.000 purchase costs related to TA.
Total	**89.800,00**	
50/SAVN		
Travel and subsistence	26.250,00	20.000 for travel to GAs, retreat, final conference, and other project meetings, 6.250 related to TA.
Other goods, works and services	9.632,00	9.632 purchase costs related to VA.
Total	**35.882,00**	
51/ACTRIS		
Travel and subsistence	8.333,33	for travel to GAs, retreat, final conference, and other project meetings
Other goods, works and services	-	-
Total	**8.333,33**	

Table 3.1i: 'Other costs categories' items (e.g. internally invoiced goods and services)
Not applicable

Table 3.1j: 'In-kind contributions' provided by third parties

The following beneficiaries are offering their infrastructures at a reduced unit cost rate:

Participant Number/Short Name			
Third party name	**Category**	**Cost (€)**	**Justification**
PONANT	Infrastructure access	500.000	As a cruise ship company, PONANT wants to make sure that their regular tourist cruises contribute to excellent science. It offers participation, laboratory space and technical support for max. 4 users per cruise in-kind. Requested EC Contribution for PONANT TA = 0 EUR instead of 500k EUR.
CNR	Infrastructure access	60.000	CNR offers VA to its Antarctic stations as in-kind access, as it is a routine procedure. Requested EC Contribution for CNR VA Antarctic stations = 0 EUR instead of 60k EUR.
NPI	Infrastructure access	385.000	NPI offers TA to TROLL for a reduced rate. Requested EC contribution for Troll Station TA = 72k EUR instead of 385k EUR.

Table 3.1k: Summary of trans-national/virtual access provision

Access provider short name	*Short name of infrastructure*	*Installation Nr*	*Installation Short name*	*ICC [51]*	*Type of access*	*Unit of access*	*AQ [52]*	*Unit cost (UC) (€)*	*Access costs based on UC*	*Access costs as actual costs*	*TA user [53]*	*NA [54]*
01_AWI	AWI-ICE	52	AWI-ICE	DE	TA	Sampling day	60	471,25	28.275,00		5	5
01_AWI	AWIPEV	5	AWIPEV	NO	TA	User/day	60	693	41.580,00		4	2
01_AWI	AWI-SED	53	AWI-SED	DE	TA	Sampling day	60	305	18.300,00		5	5
01_AWI	FRAM	28	FRAM	GL	TA	Sensor deployed				112.500,00	1	1
01_AWI	NEUMAYER	36	NEUMAYER	AQ	TA	User/day	90	3.047,00	274.230,00		2	1
01_AWI	POLARSTERN	50	POLARSTERN	DE	TA	User/day	168	1.867,00	313.656,00		4	1
02_UOULU	OULANKA	15	OULANKA	FI	TA, VA	User/day¸ Downloads	60	346	20.760,00	25.907,50	4 (TA), 1 (VA)	2
03_INPA	IDP	61	IDP	SE	VA	Downloads	cont.			52.500,00	1	
05_CNR	CONCORDIA	31	CONCORDIA	AQ	TA, VA	User/day; Downloads	50	2950,56	147.528,00		1	1
05_CNR	DIR-ITA	8	DIR-ITA	NO	TA, VA	User/day¸ Downloads	80	206,7	16.536,00	28.000,00	5 (TA), 1 (VA)	2
05_CNR	IADC	60	IADC	IT	VA	Downloads	cont.			35.000,00	1	
05_CNR	MZS	35	MZS	AQ	TA, VA	User/day; Downloads	120	916,2	109.944,00		4	2
05_CNR	NADC	62	NADC	AQ	VA	Downloads	cont.			35.000,00	1	
06_OGS	LAURA	48	LAURA	AQ	TA	RI/day	6	46.371,76	278.231,00		4	1
08_AU	ARC-MO	56	ARC-MO	GL	VA	Downloads	cont.			105.000,00	1	
08_AU	GEM	57	GEM	GL	VA	Downloads	cont.			105.487,50	1	

08_AU	VRS	25	VRS	GL	TA	User/day	100	620	62.000,00		7	3
08_AU	ZAC	27	ZAC	GL	TA	User/day	120	685	82.200,00		8	4
10_UCPH	ARCST	4	ARCST	DK	TA	User/day	120	296	35.520,00		8	4
10_UCPH	SER	19	SER	GL	TA	User/day	60	178,8	10.728,00		4	2
12_ETT	ADI	59	ADI	IT	VA	Downloads	cont.			37.500,00	1	
13_UiT	UIT-CORES	55	UIT-CORES	NO	TA	Sampling day	60			32.500,00	5	5
14_CSIC	JC I	34	JC I	AQ	TA	User/day	150	654	98.100,00		5	2
15_SIOS	SDMS	64	SDMS	NO	VA	Downloads	cont.			123.000,00	1	
17_NASC	AVS	29	AVS	AR	TA	User/day	120	1.000,00	120.000,00		4	2
17_NASC	NOOSPHERE	49	NOOSPHERE	AQ	TA	RI/day	8	55.491,80	443.935,00		6	1
19_GFZ	POSEDA	63	POSEDA	DE	VA	Downloads	cont.			88.145,00	1	
20_DTU	ARC-DTU	3	ARC-DTU	DK	TA	User/day	100	81	8.100,00		7	3
20_DTU	DANA	44	DANA	DK	TA	RI/day	8	27.215,00	217.720,00		8	1
21_IPEV	AWIPEV	5	AWIPEV	NO	TA	User/day	60	693	41.580,00		4	2
21_IPEV	CONCORDIA	31	CONCORDIA	AQ	TA, VA	User/day; Downloads	50	2950,56	147.528,00		1	1
22_PONANT	CHARCOT	43	CHARCOT	FR	TA	User/day	1400	0	0		100	20
23_HAFRO	ARNI	41	ARNI	IS	TA	RI/day	8	35.000,00	280.000,00		6	1
24_GINR	GINR	9	GINR	DK	TA	User/day	120	280	33.600,00		8	4
25_MICIN	GABRIEL	33	GABRIEL	AQ	TA	User/day	150	344,3	51.645,00		5	2
25_MICIN	HESPERIDES	46	HESPERIDES	ES	TA	User/day	180	946,16	170.309,00		6	1
26_SPRS	ABISKO	1	ABISKO	SE	TA, VA	User/day¸ downloads	100	162	16.200,00	37.748,00	7 (TA), 1 (VA)	3
26_SPRS	WASA	39	WASA	AQ	TA	Sampling day	50	600	30.000,00		1	5
27_SSLC	SUDURNES	20	SUDURNES	IS	TA	User/day	60	659,73	39.584,00		4	2

28_DMI	QAANAAQ	17	QAANAAQ	GL	TA	User/day	100	315	31.500,00		7	3
29_ULAVAL	AMUNDSEN	40	AMUNDSEN	CA	TA	RI/day	6	72.107,55	432.646,00		6	1
29_ULAVAL	CEN WK	7	CEN WK	CA	TA, VA	User/day, Downloads	75	409	30.675,00	26.697,00	5 (TA), 1 (VA)	2
30_UTU	KEVO	11	KEVO	FI	TA, VA	User/day, Downloads	80	185,17	14.814,00	17.834,00	5 (TA), 1 (VA)	2
31_NPI	HAAKON	45	HAAKON	NO	TA	User/day	150	2.191	328.650,00		6	1
31_NPI	SVERDRUP	21	SVERDRUP	NO	TA	User/day	100	289	28.900,00		7	3
31_NPI	TROLL	38	TROLL	AQ	TA	User/day	105	600	63.000,00		4	2
32_UGRAZ	SER	19	SER	GL	TA	User/day	60	178,8	10.728,00		4	2
33_RIF	RIF	18	RIF	IS	TA	User/day	80	500	40.000,00		5	2
34_SU	TRS	22	TRS	SE	TA, VA	User/day, Downloads	100	291,25	29.125,00	20.000,00	7 (TA), 1 (VA)	3
35_AMU	AMUPS	2	AMUPS	NO	TA	User/day	100	60	6.000,00		7	3
36_ARI	WARC	26	WARC	CA	TA, VA	User/day, Downloads	60	244,63	14.678,00	31.897,00	4 (TA), 1 (VA)	2
37_IGFPAS	HORNSUND	10	HORNSUND	NO	TA	User/day	120	202	24.240,00		8	4
38_UMK	NCUPS	14	NCUPS	NO	TA	User/day	120			22.800,00	7	3
39_UAF	TOOLIK	23	TOOLIK	US	TA	User/day	80	109	8.720,00		5	2
40_MI	CELTIC	42	CELTIC	IE	TA	RI/day	8	28.000,00	224.000,00		8	1
41_UKRI	PSCF	54	PSCF	AQ	TA	Sampling day	30			14.718,00	5	5
41_UKRI	UK-AS	24	UK-AS	NO	TA	User/day	80	564,6	45.168,00		5	2

42_UH	KILPIS	12	KILPIS	FI	TA, VA	User/day¸ Downloads	80			49.225,00	5 (TA), 1 (VA)	2
43_FMI	PAL-SOD	16	PAL-SOD	FI	TA, VA	User/day¸ Downloads	60	446	26.760,00	33.258,00	4 (TA), 1 (VA)	2
44_BAI	BAB	30	BAB	AQ	TA	User/day	120	468,97	56.276,00		6	3
45_UICS	BARC	6	BARC	US	TA	User/day	120			55.920,00	8	4
46_CAFF	ABDS	58	ABDS	IS	VA	Downloads	cont.			50.000,00	1	
47_TARA	TARA	51	TARA	FR	TA	User/day	100	1.000	100.000,00		2	1
49_INACH	ESCUDERO	32	ESCUDERO	CL	TA	User/day	180	221,56	39.881,00		6	1
49_INACH	PRAT	37	PRAT	CL	TA	User/day	90	144,83	13.035,00		3	1
49_INACH	KARPUJ	47	KARPUJ	CL	TA	RI/day	15	11.705,88	175.589,00		5	1
50_SAVN	KOLTUR	13	KOLTUR	FO	TA, VA	User/day¸ Downloads	60	769	46.140,00	37.632,00	5	1

51 Installation Country code
52 Estimated quantity of access to be provided.
53 Estimated number of users
54 Estimated number of TA applications.

3.2 Capacity of participants and consortium as a whole #@CON-SOR-CS@# #@PRJ-MGT-PM@#

The **POLARIN consortium** brings together 50 partners representing **most of the** European Member States and Associated Countries (Iceland, Faroe Islands, Norway, and the EU overseas territory of Greenland) which are operating world-class infrastructures in the polar regions and have well-established Polar Programmes. POLARIN comprises European world-leading polar research institutions with strong experience in operating unique infrastructures in the Arctic and Antarctic (e.g., AWI, IPEV, CNR-ISP, NPI, SPRS) as well as polar research institutions and universities without their own infrastructures (CNRS, IGOT-UL,) but with unique scientific expertise guaranteeing that the infrastructure access is contributing to the high-priority scientific challenges in the polar regions. With APECS and the EPB, the consortium includes important international polar organisations, making sure that Early Career Scientists (APECS) and those European countries which are not members of the consortium (EPB) are engaged in POLARIN. The project also includes three **business partners** (Ponant, FLPO and ETT) which offer free access to a unique and modern PC3 icebreaker operating as a cruise ship at both poles (Ponant), ensure that polar research is safe and sustainable by performing safety training according to the Polar Code (FLPO), and support the project in making polar data interoperable and available and link it to **EMODnet physics and Copernicus** (ETT).

Most POLARIN partners have previously worked together successfully e.g., in INTERACT, ARICE, EUROFLEETS, EU-PolarNet 1 & 2 and the EU Polar Cluster. POLARIN can built on the expertise and the spirit of cooperation gathered in these projects. The project consortium includes a balance of Arctic and Antarctic experience and expertise. All partners are distinguished for their high levels of reliability, expertise and experience derived from previous joint projects and from their engagement in international polar organisations such as IASC, FARO, SCAR, COMNAP and SAON.

POLARIN assembles partners offering complementary **polar infrastructures** ranging from 27 research stations in the Arctic and 11 stations in the Antarctic to 10 research vessels operating in regional (polar) seas and 2 research icebreakers performing marine science at both poles (AWI, NPI). Important networks observing the atmospheric parameters (ACTRIS), ecological parameters (GEM), changing air, ice, land, and ocean conditions (GIOS) and glaciological parameters (POSEDA) are participating as well.

POLARIN will provide access to the FRAM observatory operated by AWI which allows synchronous year-round integrated observations from the sea-surface to the sea floor in Fram strait and the central Arctic Ocean and is the only deep-sea observatory in the polar oceans. Access will be provided to ice-cores from Greenland and Antarctica (AWI) including the currently oldest ice-core and a wide geographical coverage of sediment cores from the Arctic and Antarctic by AWI, UiT and UKRI. Finally, with the data infrastructures from SIOS, INPA, CNR and ETT virtual access to a major set of Arctic and Antarctic data is guaranteed. All these infrastructures provide unique services and fulfil specific scientific requirements or needs to allow POLARIN to progress in understanding the consequences of the changing polar regions.

POLARIN comprises 7 **non-EU partners** from Canada (ULAVAL, ARI); USA (UAF, UICS), UK (UKRI), Ukraine (NASC), and Chile (INACH) as full partners in the consortium. Their inclusion is essential because they are operating unique infrastructures in the Arctic, Antarctic or provide access to unique samples from these areas. They are often located in specific areas that are otherwise not accessible or provide services critical to addressing the scientific challenges in the polar regions. Access to these RIs allows European researchers to work in areas in which they are usually not working (e.g., CCGS Amundsen in the Canadian Arctic) or which they can only access via these international research stations (Canadian and US Arctic, selected islands in the Antarctic Peninsula).

POLARIN will be supported in its activities by the following boards:

Steering Board (SB)

The role of the SB is to ensure the successful execution of the project. The SB will report to and will be accountable to the General Assembly. The SB will consist of the project coordinator (PC) and the project manager (PM), and the WP leaders. The SB will oversee the delivery of the work plan, which includes the approval of project deliverables, and periodic and final reports to the EC. Chaired by the PC, the SB will meet at least quarterly, or more often as required, throughout the course of the project. Any member of the SB will have the right to call for an extraordinary meeting by a written request. The meetings will be

scheduled in conjunction with other meetings and videoconferencing will be used whenever possible to reduce travel costs and environmental impacts.

Advisory Board (AB)

An Advisory Board (AB) will be implemented at the onset of the project to provide recommendations and support to the strategic steering of the project, in close cooperation with the GA and SB. It will be fundamental in stimulating connections with international partners and organisations as well as with other European initiatives and projects. Its role will be also to ensure the transparency of the evaluation process for TA, avoid any conflicts of interest, and advise the Management Team (MT) in any disputes that may occur. The AB will be comprised of respected international representatives of Polar-related organisations (e.g., SCAR, IASC, COMNAP, FARO, ESA) and representatives from large-scale infrastructure projects. The chair of the AB will be elected from the board members and recommended to the GA for approval. Members of the AB will be invited to meetings of the GA but will have no voting rights. Meetings of the AB will take place adjacent to the annual GA to give the AB members the possibility to closely follow the project´s progress and to be directly involved in discussions leading to strategic decisions. All AB members serve as volunteers for the full project duration. The AB will provide independent advice to the GA and SB to support strategic decisions. It will also critically review the project progress to ensure its relevance and excellence and to provide important feedback to the POLARIN consortium. It will support the evaluation process for TA to make sure that the funding decisions are fair and transparent and that they follow the strategy of POLARIN.

Scientific Liaison Panel

The Scientific Liaison Panel (SLP) will be comprised of internationally recognised experts in the fields of polar research more of 50 % external to the POLARIN consortium. The members of the SLP are identified by TA1/WP1 and appointed by the GA. The role of the SLP is to assist POLARIN in the development of the scientific framework of the TA calls and the evaluation process. It will act as liaison of the POLARIN project and the scientific community, maintaining communication and coordinated actions with research and other marine organisations. The chair of the SLP will be elected from the board and recommended to the GA for approval. Meetings of the SLP will take place to perform a consensus evaluation of the proposals. The chair of the SLP will take part on the GA meetings and advise on scientific issues.

#§CON-SOR-CS§# #§PRJ-MGT-PM§#

#§QUA-LIT-QL§# #§WRK-PLA-WP§#

4 ETHICS SELF ASSESSMENT

4.1. Ethical dimension of the objectives, methodology and likely impact

1. Objectives: The main objective of this proposal is to offer access to research infrastructures (RIs) in polar regions. RI users will apply to POLARIN calls for proposals and the proposals will be evaluated, ranked and if successful, implemented. The ethics dimension of the proposals will be assessed after submission.

2. Methodology: Personal data will be collected from the applicants to contact them for evaluation results and implementation if necessary. A registration for newsletter will be implemented in the website to distribute news from the project.

3. Any activity performed in the polar regions has a risk. However, the operators of vessels and stations are very experienced and no participant will take any unnecessary risk.

4.2. Compliance with ethical principles and relevant legislations

1) Personal data: Personal data is needed to contact the applicants that submit a proposal to POLARIN or apply for any of its services. Only data necessary to organise the TA, for contact information and EC reporting (name, address, email, institution, country, nationality) will be collected. POLARIN will request the explicit consent of applicants to store their data for the duration of the project, and will inform which consortium members will have access to this personal data.
2) POLARIN will use GDPR-compliant tools to collect, process and store research subjects' personal data. The project coordinator will ensure that all treatment of personal data will be according to GDPR regulations.
3) Research permits: all selected applications will be carefully checked to ensure that they comply with local/international regulations. All necessary permits will be requested by the applicants in order to be able to access the RIs.
4) POLARIN will assure that the Convention on Biological Diversity and Declaration of Helsinki and the Global code of conduct for research in resource-poor settings will be respected. Proposals to use POLARIN RIs will comply with the Nagoya Protocol on Access and Benefit Sharing and with EU Regulation 511/2014.
5) Next to that POLARIN will apply the highest ethical standards and all applicable international, EU and national law (in particular, the GDPR, national data protection laws and other relevant legislation). It will ensure fairness, transparency and accountability of the data processing, data quality and confidentiality

List of acronyms and abbreviations used in the text

Acronym/Abbreviation	Definition / link
a.s.l.	above sea level.
AB	Advisory Board
ACTRIS	Aerosol, Clouds and Trace Gases Research Infrastructure, https://www.actris.eu
ADC	Arctic Data Committee, https://arcticdc.org
AFoPS	Asian Forum of Polar Sciences, https://afops.org/home/about
AMAP	Arctic Monitoring and Assessment Programme, https://www.amap.no
AOC	Annual operating costs (excl. investment costs) of the infrastructure
AON	Arctic Observing Network, https://beta.nsf.gov/funding/opportunities/arctic-observing-network-aon
ARCUS	Arctic Research Consortium of the United States, https://www.arcus.org
ARICE	Arctic Research Icebreaker Consortium, https://arice-h2020.eu
CIMO Testbed,	https://community.wmo.int/en/activity-areas/imop/cimo-testbeds-and-lead-centres
COMNAP	[1] Council of Managers of National Antarctic Programs, http://comnap.aq
Copernicus	Earth observation component of the European Union's Space programme, https://www.copernicus.eu/en
DMP	Data Management Plan
EISCAT	Incoherent scatter radar system, operated by EISCAT Scientific Association, https://eiscat.se
eLTER	Integrated European Long-Term Ecosystem, critical zone and socio-ecological Research, https://elter-ri.eu
EMEPDEIMS(-SDR)	European Monitoring and Evaluation Programme (EMEP), https://deims.org/networks/a020d91b-500b-474e-948b-cf5856121cb2
EMODnet	European Marine Observation and Data Network, https://emodnet.ec.europa.eu/en
EO	Earth Observation
EOSC	European Open Science Cloud, https://eosc-portal.eu
EPB	European Polar Board, https://www.europeanpolarboard.org
EPOS	European Plate Observing System, https://www.epos-eu.org
EPRP	Integrated European Polar Research Programme, https://eu-polarnet.eu/wp-content/uploads/2020/11/EPRP_final_version-1.pdf
ERDDAP	Environmental Research Division's Data Access Program, https://coastwatch.pfeg.noaa.gov/erddap/index.html
ESA	European Space Agency, https://www.esa.int
ESA EOP	European Space Agency - Earth Observation Programmes
ESFRI	European Strategy Forum on Research Infrastructures, https://www.esfri.eu/about
EU-PolarNet	Eu-PolarNet, https://eu-polarnet.eu
EUBREWNET	Brewer Ozone Spectrophotometer Network, https://eubrewnet.aemet.es/eubrewnet
EUROFLEETS	https://www.eurofleets.eu
EUVDB	European UV Database, http://uv.fmi.fi/uvdb/
FAIR	Findable, Accessible, Interoperable, and Reusable
FARO	Forum of Arctic Research Operators, http://faro-arctic.org
FIX-O3	Fixed Point Open Ocean Observatories Network, https://cordis.europa.eu/project/id/312463
Fix-O3	Fixed Point Open Ocean Observatories Network, https://cordis.europa.eu/project/id/312463
FLUXNET	https://fluxnet.org

GAW, ,	Global Atmosphere Watch, https://community.wmo.int/en/activity-areas/gaw
GCW	Global Cryosphere Watch, https://globalcryospherewatch.org/cryonet/
GEM	Greenland Ecosystem Monitoring, https://g-e-m.dk
GeoNetWork	https://geonetwork-opensource.org
GEOSS	Global Earth Observation System of Systems https://www.earthobservations.org/geoss.php
GLISN	Greenland Ice Sheet Monitoring Network, http://www.glisn.info
GRUAN	Global Climate Observing System (GCOS) Reference Upper-Air Network, https://www.gruan.org/
IASC	International Arctic Science Committee http://iasc.info
ICOS	Integrated Carbon Observation System, https://www.icos-cp.eu
INTERACCESS	Proposal management system developed and implemented in the EU-funded project INTERACT
INTERACT	International Network for Terrestrial Research and Monitoring in the Arctic, https://eu-interact.org
IPCC	The Intergovernmental Panel on Climate Change, https://www.ipcc.ch
ISMN	International Soil Moisture Network, https://ismn.earth/en/networks/?id=METEROBS
MT	Management Team
NDACC	Network for the Detection of Atmospheric Composition Change, https://ndacc.larc.nasa.gov
NEON	National Ecological Observatory Network, https://www.neonscience.org
NetCDF	Network Common Data Form
OCEAN:ICE	Ocean-Cryosphere Exchanges in ANtarctica: Impacts on Climate and the Earth System, https://ocean-ice.eu
PC	Project Coordinator
PI	Principal Investigator
PM	Project Manager
PRV	Polar Research Vesssel
RA	Remote access
RAPAL	Managers of the Latin American Antarctic Programs
RI	Research Infrastructure
RV	Research Vessel
SAON	Sustaining Arctic Observing Networks, https://arcticobserving.org/
SAON ADC	Arctic Data Committee of SAON
SB	Steering Board
SCADM	Committee on Antarctic Data Management of SCAR
SCAR	Scientific Committee on Antarctic, Research https://www.scar.org
SeaDataNet	Pan-European Infrastructure for Ocean and Marine Data Management, https://www.seadatanet.org
SIOS	Svalbard Integrated Arctic Earth Observing System, https://sios-svalbard.org
SLP	Scientific Liaison Panel
SME	SME: Small and Medium Enterprise
SO-CHIC	Southern Ocean Carbon and Heat Impact on Climate, http://www.sochic-h2020.eu
SOOS	Southern Ocean Observing System, https://soos.aq/
SOOSmap	https://soos.aq/data/soosmap
TA	Transnational Access
TCCON	Total Carbon Column Observing Network, http://www.tccon.caltech.edu

TRL	Technology Readiness Level
UNDOS	United Nations Decade of Ocean Science for Sustainable Development, https://oceandecade.org
VA	Virtual access
WOUDC	World Ozone and Ultraviolet Radiation Data Centre, https://woudc.org

ANNEX 2

ESTIMATED BUDGET FOR THE ACTION

	Estimated eligible[1] costs (per budget category)												Estimated EU contribution[2]			
	Direct costs										Indirect costs	Total costs	EU contribution to eligible costs			Maximum grant amount[6]
	A. Personnel costs			B. Subcontracting costs	C. Purchase costs			D. Other cost categories			E. Indirect costs[3]		Funding rate %[4]	Maximum EU contribution[5]	Requested EU contribution	
	A.1 Employees (or equivalent) A.2 Natural persons under direct contract A.3 Seconded persons		A.4 SME owners and natural person beneficiaries	B. Subcontracting	C.1 Travel and subsistence	C.2 Equipment	C.3 Other goods, works and services	D.2 Internally invoiced goods and services	D.3 Transnational access to research infrastructure unit costs	D.4 Virtual access to research infrastructure unit costs	E. Indirect costs					
Forms of funding	Actual costs	Unit costs (usual accounting practices)	Unit costs[7]	Actual costs	Actual costs	Actual costs	Actual costs	Unit costs (usual accounting practices)	Unit costs[7]	Unit costs[7]	Flat-rate costs[8]					
	a1	a2	a3	b	c1	c2	c3	d2	d3	d4	e = 0,25 * (a1 + a2 + a3 + c1 + c2 + c3)	f = a+b+c+d+e	U	g = f * U%	h	m
1 - AWI	812 970.00	0.00	0.00	0.00	132 600.00	0.00	282 000.00	0.00	676 041.00	0.00	306 892.50	2 210 503.50	100	2 210 503.50	2 210 503.50	2 210 503.50
2 - UOULU	0.00	320 180.00	0.00	0.00	40 460.00	0.00	65 194.00	0.00	20 760.00	0.00	106 458.50	553 052.50	100	553 052.50	553 052.50	553 052.50
3 - INPA	198 000.00	0.00	0.00	0.00	30 000.00	0.00	0.00	0.00	0.00	0.00	57 000.00	285 000.00	100	285 000.00	285 000.00	285 000.00
4 - ULUND	237 388.00	0.00	0.00	0.00	33 000.00	0.00	0.00	0.00	0.00	0.00	67 597.00	337 985.00	100	337 985.00	337 985.00	337 985.00
5 - CNR	313 600.00	0.00	0.00	0.00	68 500.00	0.00	10 000.00	0.00	274 008.00	0.00	98 025.00	764 133.00	100	764 133.00	764 133.00	764 133.00
6 - OGS	175 500.00	0.00	0.00	0.00	37 000.00	0.00	9 000.00	0.00	278 231.00	0.00	55 375.00	555 106.00	100	555 106.00	555 106.00	555 106.00
7 - INKODE	132 000.00	0.00	0.00	0.00	30 000.00	0.00	0.00	0.00	0.00	0.00	40 500.00	202 500.00	100	202 500.00	202 500.00	202 500.00
8 - AU	407 940.00	0.00	0.00	0.00	123 180.00	0.00	20 000.00	0.00	144 200.00	0.00	137 780.00	833 100.00	100	833 100.00	833 100.00	833 100.00
9 - CNRS	130 800.00	0.00	0.00	0.00	25 000.00	0.00	0.00	0.00	0.00	0.00	38 950.00	194 750.00	100	194 750.00	194 750.00	194 750.00
10 - UCPH	181 640.00	0.00	0.00	0.00	51 000.00	0.00	0.00	0.00	46 248.00	0.00	58 160.00	337 048.00	100	337 048.00	337 048.00	337 048.00
11 - EPB	208 000.00	0.00	0.00	0.00	35 000.00	0.00	50 000.00	0.00	0.00	0.00	73 250.00	366 250.00	100	366 250.00	366 250.00	366 250.00
12 - ETT	246 000.00	0.00	0.00	0.00	35 000.00	0.00	0.00	0.00	0.00	0.00	70 250.00	351 250.00	100	351 250.00	351 250.00	351 250.00
13 - UiT	103 000.00	0.00	0.00	0.00	35 000.00	0.00	6 000.00	0.00	0.00	0.00	36 000.00	180 000.00	100	180 000.00	180 000.00	180 000.00
14 - CSIC	27 000.00	0.00	0.00	0.00	62 250.00	0.00	5 000.00	0.00	98 100.00	0.00	23 562.50	215 912.50	100	215 912.50	215 912.50	215 912.50
15 - SIOS	270 600.00	0.00	0.00	0.00	35 000.00	0.00	0.00	0.00	0.00	0.00	76 400.00	382 000.00	100	382 000.00	382 000.00	382 000.00
16 - NILU	0.00	77 455.00	0.00	0.00	25 000.00	0.00	0.00	0.00	0.00	0.00	25 613.75	128 068.75	100	128 068.75	128 068.75	128 068.75
17 - NASC	10 000.00	0.00	0.00	0.00	84 520.00	0.00	15 000.00	0.00	563 935.00	0.00	27 380.00	700 835.00	100	700 835.00	700 835.00	700 835.00
18 - IGOT UL	91 128.00	0.00	0.00	0.00	30 000.00	0.00	0.00	0.00	0.00	0.00	30 282.00	151 410.00	100	151 410.00	151 410.00	151 410.00
19 - GFZ	88 145.00	0.00	0.00	0.00	20 000.00	0.00	0.00	0.00	0.00	0.00	27 036.25	135 181.25	100	135 181.25	135 181.25	135 181.25
20 - DTU	0.00	0.00	0.00	0.00	50 325.00	0.00	8 000.00	0.00	225 820.00	0.00	14 581.25	298 726.25	100	298 726.25	298 726.25	298 726.25
21 - IPEV	0.00	0.00	0.00	0.00	33 600.00	0.00	1 000.00	0.00	189 108.00	0.00	8 650.00	232 358.00	100	232 358.00	232 358.00	232 358.00
22 - PONANT	0.00	0.00	0.00	0.00	210 000.00	0.00	100 000.00	0.00	0.00	0.00	77 500.00	387 500.00	100	387 500.00	387 500.00	387 500.00
23 - MFRI	0.00	0.00	0.00	0.00	32 450.00	0.00	6 000.00	0.00	280 000.00	0.00	9 612.50	328 062.50	100	328 062.50	328 062.50	328 062.50
24 - GINR	0.00	0.00	0.00	0.00	41 540.00	0.00	0.00	0.00	33 600.00	0.00	10 385.00	85 525.00	100	85 525.00	85 525.00	85 525.00
25 - MCIN	0.00	0.00	0.00	0.00	72 850.00	0.00	11 000.00	0.00	221 954.00	0.00	20 962.50	326 766.50	100	326 766.50	326 766.50	326 766.50
26 - SPRS	36 110.00	0.00	0.00	0.00	29 200.00	0.00	1 638.00	0.00	46 200.00	0.00	16 737.00	129 885.00	100	129 885.00	129 885.00	129 885.00
27 - SSLC	0.00	0.00	0.00	0.00	24 700.00	0.00	0.00	0.00	39 584.00	0.00	6 175.00	70 459.00	100	70 459.00	70 459.00	70 459.00
28 - DMI	0.00	0.00	0.00	0.00	53 325.00	0.00	0.00	0.00	31 500.00	0.00	13 331.25	98 156.25	100	98 156.25	98 156.25	98 156.25
29 - ULAVAL	26 697.00	0.00	0.00	0.00	69 275.00	0.00	11 000.00	0.00	463 321.00	0.00	26 743.00	597 036.00	100	597 036.00	597 036.00	597 036.00
30 - UTU	0.00	17 834.00	0.00	0.00	34 500.00	0.00	0.00	0.00	14 814.00	0.00	13 083.50	80 231.50	100	80 231.50	80 231.50	80 231.50

	Estimated eligible[1] costs (per budget category)											Estimated EU contribution[2]			
	Direct costs									Indirect costs	Total costs	EU contribution to eligible costs			Maximum grant amount[6]
	A. Personnel costs			B. Subcontracting costs	C. Purchase costs			D. Other cost categories			E. Indirect costs[3]		Funding rate %[4]	Maximum EU contribution[5]	Requested EU contribution	
	A.1 Employees (or equivalent) A.2 Natural persons under direct contract A.3 Seconded persons		A.4 SME owners and natural person beneficiaries	B. Subcontracting	C.1 Travel and subsistence	C.2 Equipment	C.3 Other goods, works and services	D.2 Internally invoiced goods and services	D.3 Transnational access to research infrastructure unit costs	D.4 Virtual access to research infrastructure unit costs	E. Indirect costs					
Forms of funding	Actual costs	Unit costs (usual accounting practices)	Unit costs[7]	Actual costs	Actual costs	Actual costs	Actual costs	Unit costs (usual accounting practices)	Unit costs[7]	Unit costs[7]	Flat-rate costs[8]					
	a1	a2	a3	b	c1	c2	c3	d2	d3	d4	e = 0,25 * (a1 + a2 + a3 + c1 + c2 + c3)	f = a+b+c+d+e	U	g = f * U%	h	m
31 - NPI	0.00	0.00	0.00	0.00	127 350.00	0.00	25 096.00	0.00	420 550.00	0.00	38 111.50	611 107.50	100	611 107.50	611 107.50	611 107.50
32 - UGRAZ	0.00	0.00	0.00	0.00	30 000.00	0.00	0.00	0.00	10 728.00	0.00	7 500.00	48 228.00	100	48 228.00	48 228.00	48 228.00
33 - RIF	0.00	0.00	0.00	0.00	29 000.00	0.00	0.00	0.00	40 000.00	0.00	7 250.00	76 250.00	100	76 250.00	76 250.00	76 250.00
34 - SU	20 000.00	0.00	0.00	0.00	39 125.00	0.00	0.00	0.00	29 125.00	0.00	14 781.25	103 031.25	100	103 031.25	103 031.25	103 031.25
35 - AMU	0.00	0.00	0.00	0.00	32 500.00	0.00	0.00	0.00	6 000.00	0.00	8 125.00	46 625.00	100	46 625.00	46 625.00	46 625.00
36 - ARI	31 898.00	0.00	0.00	0.00	35 086.00	0.00	0.00	0.00	14 678.00	0.00	16 746.00	98 408.00	100	98 408.00	98 407.75	98 407.75
37 - IGF PAS	0.00	0.00	0.00	0.00	50 000.00	0.00	0.00	0.00	24 240.00	0.00	12 500.00	86 740.00	100	86 740.00	86 740.00	86 740.00
38 - UMK	4 210.00	0.00	0.00	0.00	66 000.00	0.00	14 031.00	0.00	0.00	0.00	21 060.25	105 301.25	100	105 301.25	105 301.25	105 301.25
39 - UAF	0.00	0.00	0.00	0.00	43 720.00	0.00	0.00	0.00	8 720.00	0.00	10 930.00	63 370.00	100	63 370.00	63 370.00	63 370.00
40 - MI	0.00	0.00	0.00	0.00	31 200.00	0.00	8 000.00	0.00	224 000.00	0.00	9 800.00	273 000.00	100	273 000.00	273 000.00	273 000.00
41 - UKRI	12 897.00	0.00	0.00	0.00	48 910.00	0.00	3 821.00	0.00	45 168.00	0.00	16 407.00	127 203.00	100	127 203.00	127 203.00	127 203.00
42 - UH	0.00	31 693.00	0.00	0.00	32 944.00	0.00	7 688.00	0.00	0.00	0.00	18 081.25	90 406.25	100	90 406.25	90 406.25	90 406.25
43 - FMI	41 237.44	0.00	0.00	0.00	22 667.00	0.00	833.00	0.00	26 760.00	0.00	16 184.36	107 681.80	100	107 681.80	107 681.63	107 681.63
44 - BAI	0.00	0.00	0.00	0.00	64 700.00	0.00	6 000.00	0.00	56 276.00	0.00	17 675.00	144 651.00	100	144 651.00	144 651.00	144 651.00
45 - UICS	20 942.00	0.00	0.00	0.00	32 000.00	0.00	34 979.00	0.00	0.00	0.00	21 980.25	109 901.25	100	109 901.25	109 900.00	109 900.00
46 - CAFF	40 000.00	0.00	0.00	0.00	20 000.00	0.00	0.00	0.00	0.00	0.00	15 000.00	75 000.00	100	75 000.00	75 000.00	75 000.00
47 - TARA	0.00	0.00	0.00	0.00	24 200.00	0.00	2 000.00	0.00	100 000.00	0.00	6 550.00	132 750.00	100	132 750.00	132 750.00	132 750.00
48 - FLPO	36 336.00	0.00	0.00	0.00	25 000.00	0.00	120 000.00	0.00	0.00	0.00	45 334.00	226 670.00	100	226 670.00	226 670.00	226 670.00
49 - INACH	42 360.00	0.00	0.00	0.00	75 800.00	0.00	14 000.00	0.00	228 505.00	0.00	33 040.00	393 705.00	100	393 705.00	393 704.00	393 704.00
50 - SAVN	28 000.00	0.00	0.00	0.00	26 250.00	0.00	9 632.00	0.00	46 140.00	0.00	15 970.50	125 992.50	100	125 992.50	125 992.50	125 992.50
51 - ACTRIS	10 309.37	0.00	0.00	0.00	8 333.33	0.00	0.00	0.00	0.00	0.00	4 660.68	23 303.38	100	23 303.38	23 303.37	23 303.37
Total consortium	3 984 707.81	447 162.00	0.00	0.00	2 449 060.33	0.00	846 912.00	0.00	4 928 314.00	0.00	1 931 960.54	14 588 116.68		14 588 116.68	14 588 114.00	14 588 114.00

[1] See Article 6 for the eligibility conditions. All amounts must be expressed in EUR (see Article 21 for the conversion rules).
[2] The consortium remains free to decide on a different internal distribution of the EU funding (via the consortium agreement; see Article 7).
[3] Indirect costs already covered by an operating grant (received under any EU funding programme) are ineligible (see Article 6.3). Therefore, a beneficiary/affiliated entity that receives an operating grant during the action duration cannot declare indirect costs for the year(s)/reporting period(s) covered by the operating grant, unless they can demonstrate that the operating grant does not cover any costs of the action. This requires specific accounting tools. Please immediately contact us via the EU Funding & Tenders Portal for details.
[4] See Data Sheet for the funding rate(s).
[5] This is the theoretical amount of the EU contribution to costs, if the reimbursement rate is applied to all the budgeted costs. This theoretical amount is then capped by the 'maximum grant amount'.
[6] The 'maximum grant amount' is the maximum grant amount decided by the EU. It normally corresponds to the requested grant, but may be lower.
[7] See Annex 2a 'Additional information on the estimated budget' for the details (units, cost per unit).
[8] See Data Sheet for the flat-rate.

ANNEX 2b

ADDITIONAL INFORMATION ON CUSTOMISED UNIT COSTS AND CONTRIBUTIONS

HE and Euratom Research Infrastructure actions

Unit cost table (Transnational access to research infrastructure unit cost and virtual access to research infrastructure unit cost

Access provider short name	Short name of infrastructure	Installation Nr	Installation Short name	Unit of access	Amount per Unit	Estimated No of units	Total unit costs
01_AWI	AWIPEV	5	AWIPEV	User/day	693	60	41.580,00
01_AWI	NEUMAYER	36	NEUMAYER	User/day	3.047,00	90	274.230,00
01_AWI	POLARSTERN	50	POLARSTERN	User/day	1.867,00	168	313.656,00
01_AWI	AWI-ICE	52	AWI-ICE	Sampling day	471,25	60	28.275,00
01_AWI	AWI-SED	53	AWI-SED	Sampling day	305	60	18.300,00
02_UOULU	OULANKA	15	OULANKA	User/day, Downloads	346	60	20.760,00
05_CNR	DIR-ITA	8	DIR-ITA	User/day, Downloads	206,7	80	16.536,00
05_CNR	CONCORDIA	31	CONCORDIA	User/day; Downloads	2950,56	50	147.528,00
05_CNR	MZS	35	MZS	User/day; Downloads	916,2	120	109.944,00
06_OGS	LAURA	48	LAURA	RI/day	46.371,76	6	278.231,00
08_AU	VRS	25	VRS	User/day	620	100	62.000,00
08_AU	ZAC	27	ZAC	User/day	685	120	82.200,00
10_UCPH	ARCST	4	ARCST	User/day	296	120	35.520,00
10_UCPH	SER	19	SER	User/day	178,8	60	10.728,00
14_CSIC	JC I	34	JC I	User/day	654	150	98.100,00
17_NASC	AVS	29	AVS	User/day	1.000,00	120	120.000,00
17_NASC	NOOSPHERE	49	NOOSPHERE	RI/day	55.491,80	8	443.935,00
20_DTU	ARC-DTU	3	ARC-DTU	User/day	81	100	8.100,00
20_DTU	DANA	44	DANA	RI/day	27.215,00	8	217.720,00
21_IPEV	AWIPEV	5	AWIPEV	User/day	693	60	41.580,00
21_IPEV	CONCORDIA	31	CONCORDIA	User/day; Downloads	2950,56	50	147.528,00
23_HAFRO	ARNI	41	ARNI	RI/day	35.000,00	8	280.000,00
24_GINR	GINR	9	GINR	User/day	280	120	33.600,00
25_MICIN	GABRIEL	33	GABRIEL	User/day	344,3	150	51.645,00
25_MICIN	HESPERIDES	46	HESPERIDES	User/day	946,16	180	170.309,00
26_SPRS	ABISKO	1	ABISKO	User/day, downloads	162	100	16.200,00
26_SPRS	WASA	39	WASA	Sampling day	600	50	30.000,00
27_SSLC	SUDURNES	20	SUDURNES	User/day	659,73	60	39.584,00
28_DMI	QAANAAQ	17	QAANAAQ	User/day	315	100	31.500,00
29_ULAVAL	CEN WK	7	CEN WK	User/day, Downloads	409	75	30.675,00
29_ULAVAL	AMUNDSEN	40	AMUNDSEN	RI/day	72.107,55	6	432.646,00
30_UTU	KEVO	11	KEVO	User/day, Downloads	185,17	80	14.814,00
31_NPI	SVERDRUP	21	SVERDRUP	User/day	289	100	28.900,00
31_NPI	TROLL	38	TROLL	User/day	600	105	63.000,00
31_NPI	HAAKON	45	HAAKON	User/day	2.191	150	328.650,00
32_UGRAZ	SER	19	SER	User/day	178,8	60	10.728,00
33_RIF	RIF	18	RIF	User/day	500	80	40.000,00
34_SU	TRS	22	TRS	User/day, Downloads	291,25	100	29.125,00
35_AMU	AMUPS	2	AMUPS	User/day	60	100	6.000,00
36_ARI	WARC	26	WARC	User/day, Downloads	244,63	60	14.678,00
37_IGF PAS	HORNSUND	10	HORNSUND	User/day	202	120	24.240,00
39_UAF	TOOLIK	23	TOOLIK	User/day	109	80	8.720,00
40_MI	CELTIC	42	CELTIC	RI/day	28.000,00	8	224.000,00
41_UKRI	UK-AS	24	UK-AS	User/day	564,6	80	45.168,00
43_FMI	PAL-SOD	16	PAL-SOD	User/day, Downloads	446	60	26.760,00
44_BAI	BAB	30	BAB	User/day	468,97	120	56.276,00
47_TARA	TARA	51	TARA	User/day	1.000	100	100.000,00
49_INACH	ESCUDERO	32	ESCUDERO	User/day	221,56	180	39.881,00
49_INACH	PRAT	37	PRAT	User/day	144,83	90	13.0,35,00
49_INACH	KARPUJ	47	KARPUJ	RI/day	11.705,88	15	175.589,00
50_SAVN	KOLTUR	13	KOLTUR	User/day, Downloads	769	60	46.140,00

DATA SHEET

1. General data

Project summary:

Project summary
The polar regions play a key role in the Earth's system. They are essential for our climate and are sentinels of climate change, human expansion, and the hunt of new resources. The polar regions are losing ice, and their oceans and land are changing rapidly. The consequences of this polar transition extend to the whole planet and are affecting people in multiple ways. Evidence-based policy recommendations are needed, but the polar regions are difficult to reach, and research infrastructures able to operate in these regions are scarce. To understand and predict key processes in the polar regions and provide evidence-based information, the polar research community needs access to world-class research infrastructure operating in these regions. POLARIN is an international network of polar research infrastructures and their services, aiming at addressing the scientific challenges of the polar regions. The network includes a wide array of complementary and interdisciplinary top level research infrastructures: Arctic and Antarctic research stations, research vessels and icebreakers operating at both poles, observatories, data infrastructures and ice and sediment core repositories. POLARIN will provide integrated, challenge-driven, and combined access to these infrastructures to facilitate interdisciplinary research on complex processes. POLARIN will: 1. Provide challenge-driven transnational access to a large portfolio of research infrastructures. 2. Improve the access to data by improving data availability and interoperability between data infrastructures. 3. Provide virtual access to data and data services. 4. Provide data products for the scientific community and decision makers. 5. Train the young generation of polar researchers in optimally exploiting the infrastructures for their research. 6. Duly advertise the services offered by POLARIN and engage the infrastructure users to share their research outcomes with society.

Keywords:

- Polar research, Arctic, Antarctic, Challenges, Research Infrastructures, Services, Infrastructure Users, Transnational Access, Virtual Access, Training,

Project number: 101130949

Project name: POLARIN: POLAR RESEARCH INFRASTRUCTURE NETWORK

Project acronym: POLARIN

Call: HORIZON-INFRA-2023-SERV-01

Topic: HORIZON-INFRA-2023-SERV-01-01

Type of action: HORIZON Research and Innovation Actions

Granting authority: European Research Executive Agency

Grant managed through EU Funding & Tenders Portal: Yes (eGrants)

Project starting date: fixed date: 1 March 2024

Project end date: 28 February 2029

Project duration: 60 months

Consortium agreement: Yes

2. Participants

List of participants:

N°	Role	Short name	Legal name	Ctry	PIC	Total eligible costs (BEN and AE)	Max grant amount	Entry date	Exit date
1	COO	AWI	ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FUR POLAR- UND MEERESFORSCHUNG	DE	999497507	2 210 503.50	2 210 503.50		
2	BEN	UOULU	OULUN YLIOPISTO	FI	999844670	553 052.50	553 052.50		

N°	Role	Short name	Legal name	Ctry	PIC	Total eligible costs (BEN and AE)	Max grant amount	Entry date	Exit date
3	BEN	INPA	INTERACT-INTERNATIONAL NETWORK FORTERRESTRIAL RESEARCH AND MONITORING	SE	893223337	285 000.00	285 000.00		
4	BEN	ULUND	LUNDS UNIVERSITET	SE	999901318	337 985.00	337 985.00		
5	BEN	CNR	CONSIGLIO NAZIONALE DELLE RICERCHE	IT	999979500	764 133.00	764 133.00		
6	BEN	OGS	ISTITUTO NAZIONALE DI OCEANOGRAFIA E DI GEOFISICA SPERIMENTALE	IT	999625644	555 106.00	555 106.00		
7	BEN	INKODE	INKODE SOCIETA COOPERATIVA	IT	903762872	202 500.00	202 500.00		
8	BEN	AU	AARHUS UNIVERSITET	DK	999997736	833 100.00	833 100.00		
9	BEN	CNRS	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	FR	999997930	194 750.00	194 750.00		
10	BEN	UCPH	KOBENHAVNS UNIVERSITET	DK	999991043	337 048.00	337 048.00		
11	BEN	EPB	EUROPEAN POLAR BOARD	NL	918597470	366 250.00	366 250.00		
12	BEN	ETT	ETT SPA	IT	991672808	351 250.00	351 250.00		
13	BEN	UiT	UNIVERSITETET I TROMSOE - NORGES ARKTISKE UNIVERSITET	NO	999874643	180 000.00	180 000.00		
14	BEN	CSIC	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES	999991722	215 912.50	215 912.50		
15	BEN	SIOS	SIOS SVALBARD AS	NO	907144777	382 000.00	382 000.00		
16	BEN	NILU	STIFTELSEN NILU	NO	999654162	128 068.75	128 068.75		
17	BEN	NASC	NATIONAL ANTARCTIC SCIENTIFIC CENTER	UA	983358453	700 835.00	700 835.00		
18	BEN	IGOT UL	INSTITUTO DE GEOGRAFIA E ORDENAMENTO DO TERRITORIO DA UNIVERSIDADE DELISBOA	PT	986958026	151 410.00	151 410.00		
19	BEN	GFZ	HELMHOLTZ ZENTRUM POTSDAM DEUTSCHES GEOFORSCHUNGSZENTRUM GFZ	DE	999994341	135 181.25	135 181.25		
20	BEN	DTU	DANMARKS TEKNISKE UNIVERSITET	DK	999990655	298 726.25	298 726.25		
21	BEN	IPEV	INSTITUT POLAIRE FRANCAIS PAUL-EMILE-VICTOR GIP	FR	999450753	232 358.00	232 358.00		
22	BEN	PONANT	COMPAGNIE DU PONANT	FR	885528909	387 500.00	387 500.00		
23	BEN	MFRI	HAFRANNSOKNASTOFNUN, RANNSOKNA- OG RADGJAFARSTOFNUN HAFS OG VATNA	IS	909894145	328 062.50	328 062.50		
24	BEN	GINR	GRONLANDS NATURINSTITUT	GL	998297908	85 525.00	85 525.00		
25	BEN	MCIN	MINISTERIO DE CIENCIA, INNOVACION Y UNIVERSIDADES	ES	905411775	326 766.50	326 766.50		
26	BEN	SPRS	POLARFORSKNINGSSEKRETARIATET	SE	984574348	129 885.00	129 885.00		
27	BEN	SSLC	SUDURNES SCIENCE AND LEARNING CENTER	IS	924309412	70 459.00	70 459.00		
28	BEN	DMI	DANMARKS METEOROLOGISKE INSTITUT	DK	999509438	98 156.25	98 156.25		
29	BEN	ULAVAL	UNIVERSITE LAVAL	CA	998082180	597 036.00	597 036.00		
30	BEN	UTU	TURUN YLIOPISTO	FI	999903064	80 231.50	80 231.50		
31	BEN	NPI	NORSK POLARINSTITUTT	NO	998675432	611 107.50	611 107.50		
32	BEN	UGRAZ	UNIVERSITAET GRAZ	AT	999873188	48 228.00	48 228.00		
33	BEN	RIF	RANNSOKNARSTODIN RIF	IS	937536138	76 250.00	76 250.00		
34	BEN	SU	STOCKHOLMS UNIVERSITET	SE	999885022	103 031.25	103 031.25		
35	BEN	AMU	UNIWERSYTET IM. ADAMA MICKIEWICZA WPOZNANIU	PL	999886865	46 625.00	46 625.00		
36	BEN	ARI	AURORA COLLEGE	CA	919704919	98 408.00	98 407.75		
37	BEN	IGF PAS	Instytut Geofizyki Polskiej Akademii Nauk	PL	996625337	86 740.00	86 740.00		

N°	Role	Short name	Legal name	Ctry	PIC	Total eligible costs (BEN and AE)	Max grant amount	Entry date	Exit date
38	BEN	UMK	UNIWERSYTET MIKOLAJA KOPERNIKA W TORUNIU	PL	999836619	105 301.25	105 301.25		
39	BEN	UAF	University of Alaska	US	987205958	63 370.00	63 370.00		
40	BEN	MI	MARINE INSTITUTE	IE	999522824	273 000.00	273 000.00		
41	BEN	UKRI	UNITED KINGDOM RESEARCH AND INNOVATION	UK	906446474	127 203.00	127 203.00		
42	BEN	UH	HELSINGIN YLIOPISTO	FI	999994535	90 406.25	90 406.25		
43	BEN	FMI	ILMATIETEEN LAITOS	FI	999591306	107 681.80	107 681.63		
44	BEN	BAI	BULGARSKI ANTARKTICHESKI INSTITUT ASSOCIATION	BG	998835870	144 651.00	144 651.00		
45	BEN	UICS	UIC SCIENCE LLC	US	919608889	109 901.25	109 900.00		
46	BEN	CAFF	CAFF SKRIFSTOFAN A ISLANDI	IS	937088677	75 000.00	75 000.00		
47	BEN	TARA	FONDATION TARA	FR	916064024	132 750.00	132 750.00		
48	BEN	FLPO	FL POLAR OPERATION GMBH	DE	884667549	226 670.00	226 670.00	1/3/2024	
49	BEN	INACH	MINISTERIO DE RELACIONES EXTERIORES	CL	951329732	393 705.00	393 704.00	1/3/2024	
50	BEN	SAVN	FAROE ISLANDS NATIONAL MUSEUM (Tjóðsavnið)	FO	881164879	125 992.50	125 992.50	1/3/2024	
51	BEN	ACTRIS	ACTRIS ERIC	FI	881404372	23 303.38	23 303.37	1/3/2024	
Total						14 588 116.68	14 588 114.00		

Coordinator:

– ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FUR POLAR- UND MEERESFORSCHUNG (AWI): from 27 October 2023 to present

3. Grant

Maximum grant amount, total estimated eligible costs and contributions and funding rate:

Total eligible costs (BEN and AE)	Funding rate (%)	Maximum grant amount (Annex 2)	Maximum grant amount (award decision)
14 588 116.68	100	14 588 114.00	14 588 114.00

Grant form: Budget-based

Grant mode: Action grant

Budget categories/activity types:

- A. Personnel costs
  - A.1 Employees, A.2 Natural persons under direct contract, A.3 Seconded persons
  - A.4 SME owners and natural person beneficiaries
- B. Subcontracting costs
- C. Purchase costs
  - C.1 Travel and subsistence
  - C.2 Equipment
  - C.3 Other goods, works and services
- D. Other cost categories
  - D.2 Internally invoiced goods and services

- D.3 Transnational access to research infrastructure unit costs
- D.4 Virtual access to research infrastructure unit costs

- E. Indirect costs

Cost eligibility options:

- In-kind contributions eligible costs

- Parental leave

- Project-based supplementary payments

- Average personnel costs (unit cost according to usual cost accounting practices)

- Limitation for subcontracting

- Travel and subsistence:
  - Travel: Actual costs
  - Accommodation: Actual costs
  - Subsistence: Actual costs

- Equipment: depreciation only

- Indirect cost flat-rate: 25% of the eligible direct costs (categories A-D, except volunteers costs, subcontracting costs, financial support to third parties and exempted specific cost categories, if any)

- VAT: Yes

- Other ineligible costs

Budget flexibility: Yes (no flexibility cap)

4. Reporting, payments and recoveries

4.1 Continuous reporting (art 21)

Deliverables: see Funding & Tenders Portal Continuous Reporting tool

4.2 Periodic reporting and payments

Reporting and payment schedule (art 21, 22):

Reporting					Payments	
Reporting periods			Type	Deadline	Type	Deadline (time to pay)
RP No	Month from	Month to				
					Initial prefinancing	30 days from entry into force/10 days before starting date – whichever is the latest
1	1	18	Periodic report	60 days after end of reporting period	Interim payment	90 days from receiving periodic report
2	19	42	Periodic report	60 days after end of reporting period	Interim payment	90 days from receiving periodic report

Reporting					Payments	
Reporting periods			Type	Deadline	Type	Deadline (time to pay)
RP No	Month from	Month to				
3	43	60	Periodic report	60 days after end of reporting period	Final payment	90 days from receiving periodic report

Prefinancing payments and guarantees:

Prefinancing payment	
Type	Amount
Prefinancing 1 (initial)	7 779 841.20

Reporting and payment modalities (art 21, 22):

Mutual Insurance Mechanism (MIM): Yes

MIM contribution: 5% of the maximum grant amount (729 405.70), retained from the initial prefinancing

Restrictions on distribution of initial prefinancing: The prefinancing may be distributed only if the minimum number of beneficiaries set out in the call condititions (if any) have acceded to the Agreement and only to beneficiaries that have acceded.

Interim payment ceiling (if any): 90% of the maximum grant amount

Exception for revenues: Yes

No-profit rule: Yes

Late payment interest: ECB + 3.5%

Bank account for payments:

DE12292400240349192500

Conversion into euros: Double conversion

Reporting language: Language of the Agreement

4.3 Certificates (art 24):

Certificates on the financial statements (CFS):

Conditions:

Schedule: only at final payment, if threshold is reached

Standard threshold (beneficiary-level):

- financial statement: requested EU contribution to costs ≥ EUR 430 000.00

Special threshold for beneficiaries with a systems and process audit(see Article 24): financial statement: requested EU contribution to costs ≥ EUR 725 000.00

4.4 Recoveries (art 22)

First-line liability for recoveries:

Beneficiary termination: Beneficiary concerned

Final payment: Each beneficiary for their own debt

After final payment: Beneficiary concerned

Joint and several liability for enforced recoveries (in case of non-payment):

Individual financial responsibility: Each beneficiary is liable only for its own debts (and those of its affiliated entities, if any)

Joint and several liability of affiliated entities — n/a

5. Consequences of non-compliance, applicable law & dispute settlement forum

Suspension and termination:

Additional suspension grounds (art 31)

Additional termination grounds (art 32)

Applicable law (art 43):

Standard applicable law regime: EU law + law of Belgium

Dispute settlement forum (art 43):

Standard dispute settlement forum:

EU beneficiaries: EU General Court + EU Court of Justice (on appeal)

Non-EU beneficiaries: Courts of Brussels, Belgium (unless an international agreement provides for the enforceability of EU court judgements)

6. Other

Specific rules (Annex 5): Yes

Standard time-limits after project end:

Confidentiality (for X years after final payment): 5

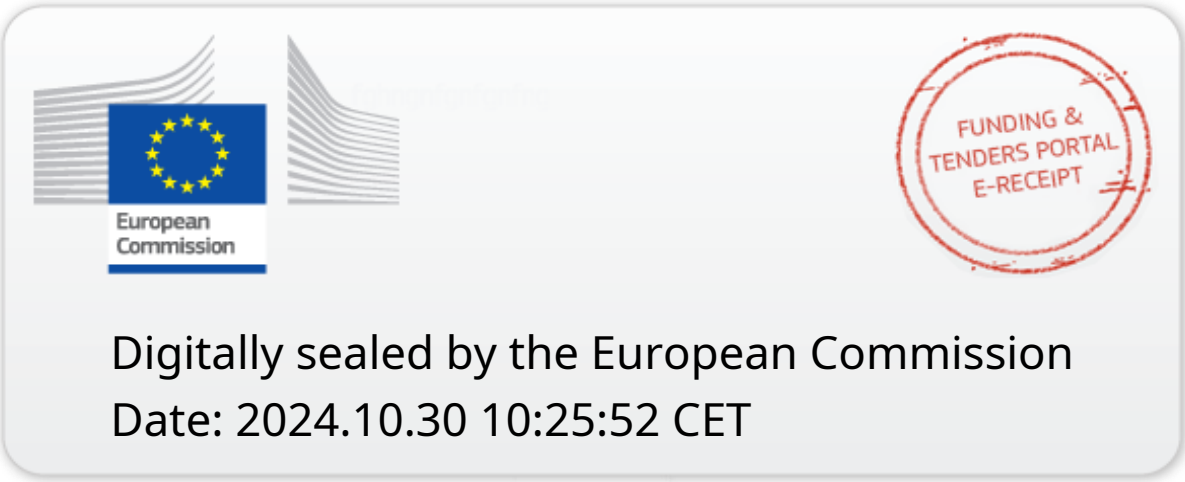
Record-keeping (for X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)

Reviews (up to X years after final payment): 2

Audits (up to X years after final payment): 2

Extension of findings from other grants to this grant (no later than X years after final payment): 2

Impact evaluation (up to X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)



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