



# Integrated Arctic Observation System

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Project coordinator:  
Nansen Environmental and Remote Sensing Center, Norway


## Deliverable 7.5

### Dissemination Plan V2 (revised version after review of period 2)

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9	GEUS		32	IGPAN	
10	FMI		33	U SLASKI	
11	UNIS		34	BSC	
12	NORDECO		35	DNV GL	
13	SMHI		36	RIHMI-WDC	
14	USFD		37	NIERSC	
15	NUIM		38	WHOI	
16	IFREMER		39	SIO	
17	MPG		40	UAF	
18	EUROGOOS		41	U Laval	
19	EUROCEAN	x	42	ONC	
20	UPM		43	NMEFC	
21	UB		44	RADI	
22	UHAM		45	KOPRI	
23	NORUT		46	NIPR	
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DISSEMINATION LEVEL		
PU	Public, fully open	X
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### **EXECUTIVE SUMMARY**

This document is an updated version of the first dissemination plan, D7.3, delivered in June 2017. The document presents goals, target groups and methodologies for the dissemination work and how engagement with different groups takes place during the project period. The document describes planned as well as performed dissemination activities, including targeted stakeholder groups. About 60 papers have been published in referee journals (see list in Appendix A). About 250 dissemination activities have been performed through conferences, workshops, outreach and other events where INTAROS work has been presented to different target groups (see list in Appendix B).

The dissemination work towards stakeholder groups has been rather general, which has been pointed in the review reports. The review report from period 2 has recommended to improve the stakeholder engagement so that the roadmap for the future sustainable Arctic Observing System is designed to meet prioritized societal needs. It is also recommended to establish performance indicators for outreach and dissemination activities and to implement methodologies/procedures for their evaluation. The effect of the dissemination work can be assessed indirectly by the generation of new spin-off projects, contribution to scientific programmes, implementation of observing systems for the Arctic, membership of INTAROS partners in committees/panels. The dissemination effort will be enhanced in the last part of the project as more results will become available.

Data Management is addressed in two separate documents (deliverable D1.2, delivered May 2017) and Data Governance Framework (deliverable D1.6, due end of November 2019).

The Dissemination plan will be updated by the end of the project, in month 60.

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## 1. Introduction

The dissemination plan is implemented through WP 7 with the main objective to transfer results and knowledge from the project to users and stakeholders. The dissemination work aims to raise awareness of Arctic challenges and to inform and engage key user and stakeholder communities to improve their understanding of the Arctic environmental state and processes. The further aim is to build capacity in using the products and services originating from the INTAROS project. Dissemination activities in WP7 include the insertion of news, events and documents in the project website (D7.1), preparation of brochures, and other printer material (D7.2) and material for use in dissemination work (D7.4). Education materials for high-school students, teachers and the general public are presented in D7.7. Stakeholder interaction activities are also reported in the deliverables from WP1, WP4, and WP6.

The first version of the dissemination plan (D7.3) was delivered in June 2017 and presented the goals of activities, targeted audiences, methods, timing, and expected outcome. This document is an updated version of D7.3, showing the dissemination activities carried out in the last 18 months and plans for the next period. Publications in journals are listed in Appendix A and presentations at conferences, workshops and other events are listed in Appendix B.

The dissemination work requires contribution from all participants of the consortium, and in particular the WP leaders and Theme leaders. A special responsibility is to promote the project among colleagues and students.

## 2. Stakeholder involvement in INTAROS

It is a very important goal in INTAROS to engage stakeholders in establishing a sustainable Arctic Observation System, which is useful for them. The role of stakeholders is a “red thread” through the whole project. The high level requirements for the integrated Arctic Observation System were prepared in the Initial Requirement Report (D1.1) in June 2017. The Engagement Strategy document, D1.3, was prepared in November 2017, describing development of collaboration between actors in the INTAROS consortium and towards stakeholder groups. This work is performed through a series of measures including workshops, conferences, policy briefs, one-to-one meetings, cross-EU project activities, use of websites and social media, roadmap work, signing MoUs and implementation of various training events. The Data Management Plan (DMP), revised version, was provided in D1.2 in December 2018. The DMP describes how new datasets collected or generated by partners in the project, will be managed according to guidelines for FAIR data management in Horizon 2020. In May 2019, a report entitled “Collaboration establishment” (D1.4) was prepared, showing the ongoing process in INTAROS. The development of collaboration is a continuous process with other H2020 projects under the Arctic Cluster and other Arctic projects and programmes in Europe, North America and Asia. This process includes work with SAON, Arctic Science Summit Week, Arctic Observing Summit and the contributions to the Arctic Science Ministerial in 2018, with follow-up in 2020. In D1.5, stakeholder involvement work in the last two years is reported, where user requirements from other projects and recent surveys are included.

In Europe, collaboration with Copernicus programme and various research infrastructure programmes is in progress, because these programmes have long-term funding perspectives and build on research priorities where some are relevant for Arctic observing. Through Copernicus services and Polar programmes under the Space Agencies, the production and delivery of satellite data for Arctic observing is growing strongly. The connection with research groups, operational agencies and other actors who play a role in developing Arctic observing systems is an important pre-requisite for the Roadmap, which is under development and will be a major deliverable in INTAROS.

During WP6 a number of stakeholders will be engaged in demonstrations of applications in targets domains, including local communities. In WP4, specific actions are directed towards Indigenous peoples' organizations and other local communities in North America, Greenland, Russia and Svalbard. The actions include workshops, dialogue meetings and contribution to develop Community-Based Monitoring (CBM) programmes. The progress of this work is reported in D4.1 and D4.2 as well as in special workshop reports.

**Stakeholders in the Advisory Panel.** The two originally proposed advisory panels (Science and Technology Panel and the Stakeholder Innovation Panel) were merged into one panel, the Advisory Panel. This panel has representatives from various programmes, agencies and stakeholder groups. At the previous Advisory Panel meeting in January 2019, the following persons are members of the Panel.

<u>Name</u>	<u>Representing</u>	<u>E-mail</u>
Margareta Johansson	<u>INTERACT, terrestrial/atmospheric stations</u>	<a href="mailto:margareta.johansson@nateko.lu.se">margareta.johansson@nateko.lu.se</a>
Peter Pulsifer	<u>Arctic Data Committee under SAON/IASC, indigeneous organisations</u>	<a href="mailto:Peter.Pulsifer@colorado.edu">Peter.Pulsifer@colorado.edu</a>
Lars-Otto Reiersen	<u>Former AMAP, now he is consultant at Univ. Tromsø, extensive knowledge of the Arctic Council working groups</u>	<a href="mailto:lor@arcticknowledge.no">lor@arcticknowledge.no</a>
Claire Gourcuff	<u>EuroARGO Research Infrastructure, European contribution to the Argo programme</u>	<a href="mailto:claire.gourcuff@euro-argo.eu">claire.gourcuff@euro-argo.eu</a>
Georgios Haralabus	<u>CTBTO (Preparatory Commission for the comprehensive nuclear-test-ban treaty organisation)</u>	georgios.haralabus@ctbto.org
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**Decision makers and policy makers** are important for the long-term development and sustainability of the observing systems. Through workshops and meetings we will try to engage this important stakeholder group in the development of a roadmap for a sustainable Arctic Observation System. These activities will be coordinated and carried out in collaboration with other Arctic projects. INTAROS has established contact and collaboration with the EU-PolarNET, APPLICATE, BLUE ACTION and other EU projects, national and international agencies through a number of meetings and workshops (see Appendix A). INTAROS has been collaborating with SAON in the development of the Roadmap to Arctic Observing and Data Systems (ROADS), and in the work by the Arctic Data Committee. INTAROS is also collaborating with the Norwegian Environment Agency (NEA) regarding assessment of the present observing systems. A spin-off project at NERSC is supported by NEA to develop a web-based tool for surveying the status of various observing systems.

## The first workshop with Stakeholders

The first stakeholder workshop was organized in Brussels on 5 May 2017 with relative high-level requirements across the various scientific disciplines and high-level stakeholder groups and organizations. The workshop was part of preparing the first requirement document (D1.1). About 25 key persons were invited to attend the workshop. The invited persons were selected based on their good knowledge of state-of-the art and as representatives for research projects and infrastructures, organizations, agencies and networks within the thematic areas of INTAROS.

Follow-up activities with stakeholders in 2018-2019

The original plan was to organize a second stakeholder workshop in 2019, but we decided to organize the work in an alternative and more efficient way. It is difficult to gather representatives from industry and other stakeholders to attend a workshop because people are busy. The stakeholder interaction has therefore been performed through the following activities:

- (a) Use of a questionnaire targeted to the maritime industry sector
- (b) Compile results from requirement documents produced in other EU projects (in particular from the Arctic Cluster), ESA user consultations documents, WMO, GCOS and other requirement documents
- (c) Workshops and dialogue meetings where INTAROS has been presented to different stakeholder groups (see list in Appendix B)

The results of these stakeholder activities are reported in D1.5.

## Stakeholder groups in each of the thematic areas of INTAROS

Representatives from stakeholders or end users are involved in the project directly as partners and have been working actively in all the WPs. The task leaders in WP6 have included other specific stakeholders who will work in each WP6 task until the end of the project. There will be workshops/meetings with thematic focus (e.g. marine, atmosphere, terrestrial, natural hazards, local communities, etc.) where relevant stakeholder will be invited.

The following specific stakeholder groups are identified for the INTAROS themes:

*Atmosphere:* Climate modelling and monitoring, weather forecasting services, Year of Polar Prediction Programme under WMO (YOPP) and local communities.

*Ocean:* Monitoring and forecasting services under Copernicus (CMEMS), climate modelling and monitoring, environmental monitoring, marine and maritime industries, safety of marine operations. DnV GL is a partner with the main role to develop marine safety.

*Sea ice:* same as for atmosphere and ocean, plus sea ice navigation, oil and gas exploration, arctic tourism and local communities

*Marine ecosystems:* environmental monitoring, fisheries, aqua culture, marine pollution. IMR in Norway is a governmental agency with responsibility for fishery management.

*Terrestrial themes:* hydrological monitoring and modelling, greenhouse gas monitoring and modelling, snow monitoring for climate research and water resource management, Arctic industries, transportation and local communities

*Glaciology:* climate monitoring and modelling of glaciers, local communities

*Natural hazards:* earthquakes (EPOS), extreme weather and ice conditions and snow/ice avalanches (local communities, industries, tourism)

*Community-based monitoring:* local communities in Greenland (Disko) and in Svalbard (Longyearbyen), and organisations representing local communities in large areas in Canada (ELOKA), Alaska/Yukon (YRITWC), Russia (CSIPN). ELOKA, YRITWC and CSIPN are involved in INTAROS through subcontracts to organise workshops and other dialogue meetings.

### 3. Dissemination activities

This section provides description and over all goals of dissemination activities, targeted audiences, methods, timing, and expected outcome.

#### Dissemination goal

The warming of the Arctic will improve access to the Arctic and its resources, offering new opportunities for communities and for economic development related to exploration of natural resources, transport, and other industries. This presents extraordinary requirements for planning and decision-making based on scientific and economic assessments and predictions. To meet these challenges we need improved dissemination of state of the art knowledge to enable better-informed decisions and better-documented processes within key sectors (e.g. local communities, shipping, tourism, fishing), to strengthen the societal and economic role of the Arctic region and support the EU strategy for the Arctic and related maritime and environmental policies. To this end, it is of paramount importance to provide understandable and targeted information to the different stakeholder groups.

#### Dissemination target groups

The main target groups for INTAROS dissemination include: (1) science research groups, (2) public services, (3) national and international agencies and authorities, (4) commercial operators, (5) environmental organizations, (6) policy makers, (7) local and indigenous Arctic communities, (8) educational institutions, (9) other stakeholders such as investment and insurance companies and (10) general public. There are different ways of classifying stakeholder groups, depending on what products, services, high—level policy documents or other material the target groups will receive.

In the H2020 funded EU-PolarNet project, an inventory of polar stakeholders has been prepared<sup>1</sup>, using the following classification of stakeholder groups, reflecting the view of the European Commission: (1) Research communities, (2) Parliamentary and policy bodies, (3) European public, (4) Local communities including indigenous communities, (5) Polar organisations, (5) NGOs, (6) International networks and agencies, (7) Media, and (8) Business and industry sectors.

INTAROS will have a broad dialogue with many stakeholder groups encompassing those mentioned above as the main target groups, and we therefore use a more general classification into four broad groups

**Private sector:** maritime industry, oil and gas companies, shipping, tourism, fisheries, mining, construction, transport and logistics providers, environment technology, risk assessment, and consultancy companies.

**Public sector:** Political bodies, regulatory and Implementing bodies, agencies and organizations responsible for the implementation of legislation, emergency services, environmental protection, monitoring and forecasting services and other public services

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<sup>1</sup> EU-PolarNet Deliverable 4.5: Connecting Science with Society (available at [www.eu-polarnet.eu/](http://www.eu-polarnet.eu/))

**Science and education:** natural science, engineering, economy, law, social science and other cross-disciplinary disciplines

**Civil Society:** indigenous and local communities, high school students, NGOs, media, general public

Representatives from these groups will be connected with the project through stakeholder workshops (WP1), community based observing programmes (WP4), application-specific workshops (WP6), and capacity building and dissemination/outreach (WP7).

### Dissemination measures, targeted audiences, timing, and expected outcome

The following activities will be performed:

#### *Web portal & social media*

These will be used for

- 1) preparing tailored information for different stakeholder groups (policy makers, business sectors etc.),
- 2) providing information on current and future observing products and services;
- 3) demonstrate results of case studies for specific stakeholders (WP6);
- 4) announcing project news and events, main results, and stakeholder involvement
- 5) supporting training and education activities
- 7) informing about the challenges of carrying out observations in the arctic

The public web portal link is [www.intaros.eu](http://www.intaros.eu). The page is designed to target the general public as well as scientists.

Social media accounts have been created for Facebook, twitter, LinkedIN and Youtube:

<https://www.facebook.com/intaros>

Facebook posts will be aimed at a general audience, there will be at least two updates per week with news of project activities and results as well as key general issues regarding the Arctic from other projects and developments

<https://twitter.com/intarosproject>

Twitter posts will be aimed at decision makers scientists and other stakeholders, with at least two updates per month with news on major project activities, results and impacts. Relevant retweets of other policy-science interface issues will also be carried out.

<https://www.instagram.com/intaros.project/>

Instagram posts will be aimed at a general audience, there will be at least two updates per month with news and images of project activities and results as well as key general issues regarding the Arctic from other projects and developments.

[https://www.youtube.com/channel/UCoegF3QSQe17mmGvj8oNs\\_g](https://www.youtube.com/channel/UCoegF3QSQe17mmGvj8oNs_g)

Youtube videos will be aimed at a general audience. At least two videos will be developed during the project lifetime. Relevant videos from partners within the INTAROS consortium will also form part of the YouTube channel. We will also include other relevant materials in the channel's playlists

**Target Groups:** all

**Expected outcome:** Increased awareness in all stakeholder groups of the importance of establishing iAOS and the sustainable development of the Arctic.



### *Presentation of INTAROS at conferences, workshops and meetings*

INTAROS is a project with high international profile and strong links to many projects, programmes and organisations dealing with Arctic issues. Presentation of INTAROS at various Arctic events has been a major activity in the first months of the project and will continue to be so throughout the project. A list of events where INTAROS has been presented and plans for further participation is presented in Appendix B. This list is updated and disseminated on the project website during the project.

**Target Groups:** Private Sector, Public Sector, Scientific and Education

**Expected outcome:** To build up engagement and long-term collaboration in the Pan-Arctic region, as a pre-requisite for establishing the Pan-Arctic Observing Forum, which is one of the objectives of INTAROS.

### *Joint dissemination activities with the Commission and other EU-projects*

INTAROS will run in parallel with several other Arctic projects, which plan dissemination activities towards the same stakeholder groups and at the same events. These projects are primarily EU-PolarNet, BLUE ACTION, APPLICATE and INTERACT, but also other research and infrastructure projects dealing with Arctic observations (e.g. YOPP, MOSAIC, SIOS KC). In many cases joint dissemination by several projects addressing the same stakeholders will be more efficient and have greater impact than if each project should do it separately. Planning of joint dissemination between these projects has started and will address selected high-level conferences such as Arctic Circle, Arctic Science Summit Week and GEO workshops.

**Target Groups:** Private Sector, Public Sector

**Expected outcome:** Improved collaboration and coordination of dissemination of EU projects towards stakeholders.

### *Web-based tools*

Web-based visualization tools to present data products from the integrated data repositories and data products generated by the INTAROS processing services will be provided (WP5). Results from the application studies (WP6) will be presented in the INTAROS portal, provided the data are available through a standards compliant data repository. As part of WP6, an Arctic Risk Map web application will also be further developed and used to demonstrate project results towards stakeholders with an interest in risk analysis in the Arctic region.

**Target Groups:** Private Sector, Public Sector, Scientific and Education

**Expected outcome:** Stakeholders informed about new capabilities provided by iAOS. Increased interest in using new integrated data products to develop new services.

### *Science-Policy Briefing papers & documents*

The key project results from WPs 2-6 will be compiled and presented to policy-makers for supporting the decision-making. Dissemination material for use towards decision makers and other stakeholders will be prepared in WP7. A Roadmap for a future integrated Arctic Observing System will be prepared in WP1 as a reference document to national and EU policy makers, aiming to place the iAOS (Integrated Arctic Observing System) on the ESFRI Roadmap.

**Target Groups:** Public Sector

**Expected outcome:** Increased awareness among policy-makers at the local, regional and EU level of the importance of sustained observation systems in Arctic regions for better informed decisions affecting economy, environment and society at large.

### *Strategic events*

INTAROS will participate in strategic events where policy makers, science leaders, funding agencies, are present, such as Arctic Circle, Arctic Science Summit Week, Arctic Frontier,

including policy sessions and for the Arctic Council secretariat and the working groups and indigenous peoples' organizations.

**Target Groups:** Private Sector, Public Sector, Civil society.

**Expected outcome:** Increase awareness among decision-makers within industry, authorities and local communities of the possibilities for sustainable development of industry and society through systematic monitoring in the Arctic environment and climate.

### *Thematic stakeholder events*

The ambition of WP6 is to demonstrate application of iAOS by delivering a suite of products targeted at issues of societal importance for indigenous and local communities in the Arctic, for Europe and on global scale. These pilot applications will demonstrate services towards selected, but diverse groups of end-users.

Task 6.1: INTAROS partners (BSC, NERSC, SMHI) will promote INTAROS data in relevant climate modeling communities including the parallel H2020-BG-10-2016 projects APPLICATE and BLUE-ACTION and the on-going "Year of Polar Prediction" initiative, YOPP and assess the resulting impact on prediction skill. The Theme leader for climate modelling (Ralf Döscher) will coordinate the modelling activities in INTAROS and with the external projects. Collaboration will be supported by joint workshops and meetings.

Task 6.2: This task will produce ecosystem model results targeting specific stakeholder groups through especially 6.8 (Fisheries and environment management), 6.6 and 6.7.

Task 6.3: Better ice-ocean state estimates, including long- and short-term statistics, and model predictions will provide background knowledge and constraints important for (1) design and development of new technologies and installations in the Arctic, (2) risk assessment (e.g. sea-ice information combined with weather and wave forecasts), (3) environmental monitoring and (4) weather and ice services. Through DNV GL we will target key stakeholders within Arctic shipping, insurance, and offshore industry in Task 6.7.

Task 6.4 aims to demonstrate how iAOS data can be exploited to better understand natural hazards in the Arctic and how these are affected by climatic changes. Hazard information will be targeted based on stakeholder needs through Tasks 6.6, 6.7 and 6.8.

Task 6.5 specifically targets the Earth System modelling community, ecosystem management and fisheries, with improved assessments of spatiotemporal patterns, e.g. in ocean acidity in the region. This will improve prediction of pelagic/benthic ecosystem response to changes in carbonate chemistry, thereby contributing towards assessing the sustainability of fisheries in Arctic waters.

Task 6.6 targets two focal communities of community-based observing in INTAROS, Longyearbyen, Svalbard and Disko Bay in Greenland with tailored workshops and meetings on topics of high priority to the local communities.

Task 6.7 aims to demonstrate the value and benefits of an upgraded Arctic Observing System in support of Blue Growth in the Arctic to foster business development, increase safety and protect the environment. Three stakeholder workshops are planned in collaboration with WP1.

Task 6.8 will demonstrate the use of iAOS products based on both in situ (incl. CBM) and space-based systems for managers, in particular those responsible for the management of the environment and living marine resources. The demonstrations will be given in the form of software available through the INTAROS Portal (WP5), reports and direct interaction at workshops and one-to-one meetings.

**Target groups:** Private Sector, Public Sector, Civil society, Science, Education.

**Expected outcome:** A scientific basis for better- informed decisions and better-documented processes for managers and policy-makers on local, regional and pan-arctic scales (including but not limited to ICES, NAFO, NAMMCO, IWC and CITES).

### *Community-based observing workshops*

People living in the Arctic depend on the region for their livelihoods. The better the information and the knowledge they have, the more ready they will be for the challenges being brought about by the changes in their environment. INTAROS will implement two dedicated workshops to support the resilience of these communities. Their organisation will be a collaborative effort between ELOKA and Yukon River Inter Tribal Watershed Council (North America), and NORDECO, NERSC and the Centre for Support of Indigenous Peoples of the North (CSIPN).

**Target Groups:** Civil society

**Expected outcome:** Increased exchange of experience and capacity building in community-based observing in the Arctic. Increased professional and cross-disciplinary skills and competences of young people to help ensure the sustainability of community-based observing into the future.

### *Capacity building and training*

A key objective of INTAROS is to develop the professional skills of younger scientists in improving their knowledge on the uniqueness of the Arctic and in working with observational data collected during the project. A number of targeted activities are taking place including:

- **Summer Schools:** In 2020 a summer school will be developed and organised by the project at the University Centre of Svalbard (Norway) in collaboration with NERSC and FMI. The theme will cover observing systems, with a special focus on existing and emerging technologies and solutions for Arctic waters, atmosphere and land, including space-based, *in-situ* and community-based observations.
- The **teaching materials** developed will be compiled into an educational package openly available to schools and universities, interested in observation-based research in the Arctic, e.g. the annual *Hyytiälä* (Finland) Winter/Summer schools/courses organized by U-Helsinki and the courses organized by the University of the Arctic.
- **Scientific Exchanges:** Short-term scientific exchange and training of 2-6 weeks for PhD students and early-stage researchers will be organized by the project. Project partners will provide details of laboratory projects, or ship-based activities where they can offer training and these will be announced widely.
- **Spin-off projects:** CAPARDUS (Capacity Building in Arctic Standard Development) is H2020 coordination and support action which will start in 2020 and continue for three years. The project will organise a series of research schools, workshops and dialogue meetings with local communities, industry actors and decision makers related to Arctic Observing.

**Target Groups:** Science and Education

**Expected outcome:** Enlarged skill set in multiple scientific and technological disciplines among PhD students and young scientists studying and working across the Arctic.

### *Publication and academic conference plan*

A number of scientific publications will be made on different aspects of the results of the project. The specific topics and journals targeted will be driven by the scientists themselves and the quality of the science. Nonetheless, one special issue in a high-profile journal will be initiated and populated jointly with international partners with a focus on interdisciplinary research (e.g. the ARCTIC Journal).

In addition, in order to reach a wider audience, relevant material will be published in popular science publications e.g. iLEAPS (Integrated Land Ecosystem Atmosphere Process Study) Highlights PDF series, the IGBP Global Change Magazine, the Future Earth Newsletter, and the Future Earth blog, and Arctic Council news.

Dedicated EGU and/or AGU sessions will continue to be organized during the project to present its outcome to the academic community. A side-event was organized at OceanObs 2019, and others will be held during the annual Arctic Science Summit Weeks.

There was also a contribution to the white papers prepared for the Arctic Observing Summit 2018.

**Target Groups:** Scientific and Education, Civil society

**Expected outcome:** Advanced state-of-the-art of Arctic observing systems.

### *Arctic Literacy*

INTAROS has planned a number of targeted initiatives to improve knowledge of the Arctic among young people and society in general. These include:

**Teaching Packs:** Contribution to the development and delivery of modules within climate change teaching packs for high school students and teachers in Greenland

In addition two packages of educational materials for teachers and students of lower and upper secondary schools will be prepared to enhance literacy of Arctic Observations among teachers and students.

Teachers will be prepared for using packages during workshops conducted within cooperation with other European projects e.g. Scientix (community for science education in Europe), ERIS (project from ERASMUS+) and EDU-ARCTIC (a H2020 project).

**Classroom workshops:** INTAROS is has made connections with the 'Arctic in a Classroom (ARCUS)' programme coordinated by the Arctic Research Consortium of the United States. Participation in the "Make an Impact" workshop to explore opportunities for discussing best practice and sharing teaching materials and approaches is also planned.

**Exhibitions:** The project is bringing the uniqueness of the Arctic to citizens across Europe by preparing informational and exhibition material, including photos and videos from field work in the Arctic, for use in Science Centres across Europe (e.g. Arktikum Science Centre in Finland or VilVite in Norway).

**Target Groups:** Civil society

**Expected outcome:** Sparked interest for Arctic climate and environmental change and their impact on society, primarily among students of lower and upper secondary schools and teachers.

### *Engagement strategy document*

The dissemination of INTAROS through the results, tools, and knowledge from the project aims to target a range of stakeholders within service industries, businesses, science, students and the general public. The dissemination shall contribute to the development of relevant national, European, and Pan-Arctic policies. The dissemination will also share knowledge about the Arctic with academia and with the general public at large. The dissemination and exploitation activities are closely linked with communication and stakeholder engagement, which is described in the Engagement Strategy, D1.3, delivered in November 2017.

**Target Groups:** All

**Expected outcome:** The Engagement Strategy contributed to the Roadmap for Arctic Observing System, to be delivered by month 60.

### *INTAROS Legacy – after the end of the project*

A Roadmap for the further development of iAOS will be prepared in close collaboration with SAON, GEOCRI and research infrastructure projects (RIs) such as ENVRI FAIR, and with other actors working with observing systems in the Arctic. The Roadmap will be presented as a reference document to national and EU policy makers aiming to place the iAOS on the ESFRI Roadmap.

*Dissemination measures in the closing phase of the project:* The final report of the project will include a plan for the use and dissemination of foreground, to demonstrate the added value and positive impact of the project on the European Union. A final publishable summary of the results will be made available to the Commission for dissemination in the public domain. This will include information on results, and their wider societal implications. The text will be drafted in a way to be understandable for a lay audience. A final project booklet collecting all project publications will be produced at the end of the project. The booklet will be made available for download on the website.

*Dissemination measures after the closure of the project:* After the official end of the project, the foreground of the project will be available as a web-based archive for all interested actors. The domain name of the project website will be assigned to the Arctic Portal (the main portal for the Arctic Council and many arctic projects). The website archives all documentation related to the project, including publications, and will be accessible for 5 years after the end of the project.

#### **Target Groups:** All

**Expected outcome:** Roadmap forms a sound basis for policy and decision makers in the planning and funding of a future sustained Arctic observing system.

## 4. Conclusion and recommendations

Dissemination work has continued during the three first years of INTAROS with a broad range of activities, including publications in referee journals, presentations at conferences, workshops, outreach activities and meetings with other projects and various stakeholder groups. Updated information shows that the total number of dissemination events over the three-year period is about 250 and number of publications is about 60 (by 31 January 2020). In order to strengthen the impact of the dissemination work, some event are organised in collaboration with other Arctic projects, such as the EU Arctic Cluster, that contribute to research and knowledge about Arctic climate, environment and society. Dissemination activities will be strengthened in the last two years of the project as more results become available.

The dissemination work towards stakeholder groups has been rather general, which has been pointed in the review reports. It is recommended to improve the stakeholder engagement so that the roadmap for the future sustainable Arctic Observing System is designed to meet prioritized societal needs. It is also recommended to establish performance indicators for outreach and dissemination activities and to implement solid methodologies/procedures for their evaluation. The INTROS consortium does not have any specific performance indicators except that the efforts will be registered and quantified, as shown in section 6.1 and 6.2 of the periodic report. A more useful indicator is to describe the impact of the project after three years, which is reported in section 1.3 of the periodic report Part B. The impact includes generation of new spin-off projects, membership in committees/panels, contribution to scientific programmes and implementatooon of observing systems for the Arctic. Impact is also obtained through active participation in Arctic Council working groups, SAON working groups (ADC and CON), European and national agencies, collaboration with stakeholder groups (fisheries, shipping, climate services, operational monitoring and forecasting services).

## 5. Appendices

### Appendix A: Publications in journals (updated by May 2019)

<u>Publication Title</u>	<u>Date Published</u>	<u>Authors</u>	<u>DOI</u>
Quality Assessment and Glaciological Applications of Digital Elevation Models Derived from Space-Borne and Aerial Images over Two Tidewater Glaciers of Southern Spitsbergen	2019-05-10	Malgorzata Blaszczyk et al.,	10.3390/rs11091121
A participatory scenario method to explore the future of marine social-ecological systems	2019-04-29	Planque, B., et al.,	<a href="https://doi.org/10.1111/faf.12356">https://doi.org/10.1111/faf.12356</a>
Freshwater input to the Arctic fjord Hornsund (Svalbard)	2019-04-16	Malgorzata Blaszczyk et al.,	10.33265/polar.v38.3506
Quantifying the impact of emission outbursts and non-stationary flow on eddy covariance CH <sub>4</sub> flux measurements using wavelet techniques	2019-03-19	Mathias Göckede et al	10.5194/bg-2019-92
Role of discrete water recharge from supraglacial drainage systems in modeling patterns of subglacial conduits in Svalbard glaciers	2019-03-04	Léo Decaux et al.,	10.5194/tc-13-735-2019
<a href="#">Combined SMAP–SMOS thin sea ice thickness retrieval</a>	2019-02-28	C. Pařileu et al.	10.5194/tc-13-675-2019
Ocean Data Product Integration Through Innovation-The Next Level of Data Interoperability	2019-02-28	Justin J. H. Buck, et al	10.3389/fmars.2019.00032
Drainage enhances modern soil carbon contribution but reduces old soil carbon contribution to ecosystem respiration in tundra ecosystems	2019-02-25	Min Jung Kwon, et al.	10.1111/gcb.14578
Correcting atmospheric CO <sub>2</sub> and CH <sub>4</sub> mole fractions obtained with Picarro analyzers for sensitivity of cavity pressure to water vapor	2019-02-15	Friedmann Reum et al.	10.5194/amt-12-1013-2019
The Role of Winter Rain in the Glacial System on Svalbard	2019-02-15	Ewa B. Lupikasza, et al.	10.3390/w11020334
<a href="#">Towards an advanced observation system for the marine Arctic in the framework of the Pan-Eurasian Experiment (PEEX)</a>	2019-02-13	T. Vihma et al.	<a href="#">10.5194/acp-19-1941-2019</a>
Accelerating changes in ice mass within Greenland, and the ice sheet's sensitivity to atmospheric forcing	2019-02-05	Michael Bevis et al.	doi.org/10.1073/pnas.1806562116
Coastal waters freshening and extreme seasonality affect organic matter sources, quality, and transfers in a High Arctic fjord (Young Sound, Greenland)	2019-02-01	G Bridier et al	doi.org/10.3354/meps12857
Cold season emissions dominate the Arctic tundra methane budget	2019-01-05	Donatella Zona, et. al	doi/10.1073/pnas.1516017113
<a href="#">Routine uncertainty propagation for the marine carbon dioxide system</a>	2018-11-20	J.C. Orr et al.	<a href="#">10.1016/j.marchem.2018.10.006</a>
<a href="#">A two-dimensional glacier–fjord coupled model applied to estimate submarine melt rates and front position changes of Hansbreen, Svalbard</a>	2018-09-26	E. DE ANDRÉS et al.,	<a href="#">10.1017/jog.2018.61</a>
<a href="#">Dynamique de l'apport d'eau Atlantique vers l'Arctique a partir de drones sous-marins</a>	2018-09-03	P. Roland	Thesis / Dissertation

<u>Publication Title</u>	<u>Date Published</u>	<u>Authors</u>	<u>DOI</u>
<a href="#">Toward Understanding the Contribution of Waterbodies to the Methane Emissions of a Permafrost Landscape on a Regional Scale – A Case Study from the Mackenzie Delta, Canada</a>	2018-09-01	K. Kohnert et al.	<a href="https://doi.org/10.1111/gcb.14289">10.1111/gcb.14289</a>
<a href="#">New calibration procedures for airborne turbulence measurements and accuracy of the methane fluxes during the AirMeth campaigns</a>	2018-07-31	J. Hartmann et al.	<a href="https://doi.org/10.5194/amt-11-4567-2018">10.5194/amt-11-4567-2018</a>
<a href="#">Upscaling surface energy fluxes over the North Slope of Alaska using airborne eddy-covariance measurements and environmental response functions</a>	2018-07-13	A. Serafimovich et al.	
<a href="#">FIRST UNDER-ICE BGC PROFILES IN BAFFIN BAY (ARCTIC OCEAN)</a>	2018-07-02	C. Marec; M. Babin	
<a href="#">Ice discharge error estimates using different cross-sectional area approaches: a case study for the Canadian High Arctic, 2016/17</a>	2018-06-14	P. Sánchez-Gómez and F. Navarro	<a href="https://doi.org/10.1017/jog.2018.48">10.1017/jog.2018.48</a>
<a href="#">Lake-atmosphere heat flux dynamics of a thermokarst lake in arctic Siberia</a>	2018-05-31	A. Serafimovich et al.	<a href="https://doi.org/10.1029/2017JD027751">10.1029/2017JD027751</a>
<a href="#">Sea-ice detection for autonomous underwater vehicles and oceanographic lagrangian platforms by continuous-wave laser polarimetry</a>	2018-05-25	J. Lagunas et al.	<a href="https://doi.org/10.1117/12.2309571">10.1117/12.2309571</a>
<a href="#">Comparison of Lyman-alpha and LI-COR infrared hygrometers for airborne measurement of turbulent fluctuations of water vapour</a>	2018-05-18	A. Lampert et al.	<a href="https://doi.org/10.5194/amt-11-2523-2018">10.5194/amt-11-2523-2018</a>
<a href="#">Year-round simulated methane emissions from a permafrost ecosystem in Northeast Siberia</a>	2018-05-04	K. Castro-Morales et al.	<a href="https://doi.org/10.5194/bg-15-2691-2018">10.5194/bg-15-2691-2018</a>
<a href="#">ORCHIDEE-PEAT (revision 4596), a model for northern peatland CO<sub>2</sub>, water, and energy fluxes on daily to annual scales</a>	2018-02-05	C. Qiu	
<a href="#">An analysis of the errors in the calculation of ice discharge through flux gates. Application to Nunavut tidewater glaciers, Canada</a>	2018-01-24	P. Sánchez-Gómez; F. Navarro	ISBN: 978-90-393-6974-6
<a href="#">High geothermal heat flux in close proximity to the Northeast Greenland Ice Stream</a>	2018-01-22	S. Rysgaard et al.	<a href="https://doi.org/10.1038/s41598-018-19244-x">10.1038/s41598-018-19244-x</a>
<a href="#">A vision for global biodiversity monitoring with citizen science</a>	2018-01-03	M.J.O. Pocock and F. Danielsen	
<a href="#">Evidence of local and regional freshening of Northeast Greenland coastal waters</a>	2017-10-13	M.K. Sejr et al.	<a href="https://doi.org/10.1038/s41598-017-10610-9">10.1038/s41598-017-10610-9</a>
<a href="#">Taiga deployment (EGO glider : tintin)</a>	2017-09-20	M.N. Houssais et al.	<a href="https://doi.org/10.17882/51473">10.17882/51473</a>
<a href="#">Microbial community structure and soil pH correspond to methane production in Arctic Alaska soils</a>	2017-07-24	R. Wagner et al.	<a href="https://doi.org/10.1111/1462-2920.13854">10.1111/1462-2920.13854</a>
<a href="#">Strong geologic methane emissions from discontinuous terrestrial permafrost in the Mackenzie Delta, Canada</a>	2017-07-19	K. Kohnert	
<a href="#">Weaving knowledge systems in IPBES, CBD and beyond - lessons learned for sustainability</a>	2017-06-15	M. Tengö	<a href="https://doi.org/10.1016/j.cosust.2016.12.005">10.1016/j.cosust.2016.12.005</a>
<a href="#">An improved water correction function for Picarro greenhouse gas analyzers</a>	2017-06-06	F. Reum et al.	<a href="https://doi.org/10.5194/amt-2017-174">10.5194/amt-2017-174</a>



<u>Publication Title</u>	<u>Date Published</u>	<u>Authors</u>	<u>DOI</u>
<a href="#">Managing consequences of climate-driven species redistribution requires integration of ecology, conservation and social science</a>	2017-06-01	T. Bonebrake et al.	<a href="https://doi.org/10.1111/brv.12344">10.1111/brv.12344</a>
<a href="#">Tundra water budget and implications of precipitation underestimation</a>	2017-04-18	A.K. Liljedahl et al.	<a href="https://doi.org/10.1002/2016wr020001">10.1002/2016wr020001</a>
<a href="#">Biodiversity redistribution under climate change: impacts on ecosystems and human well-being</a>	2017-03-31	G.T. Pecl	<a href="https://doi.org/10.1126/science-aai9214">10.1126/science-aai9214</a>
<a href="#">Tundra photosynthesis captured by satellite-observed solar-induced chlorophyll fluorescence</a>	2017-02-04	K.A. Luus et al.	<a href="https://doi.org/10.1002/2016GL070842">10.1002/2016GL070842</a>
<a href="#">A synthesis of the arctic terrestrial and marine carbon cycles under pressure from a dwindling cryosphere</a>	2017-01-23	F.J.W. Parmentier et al.	<a href="https://doi.org/10.1007/s13280-016-0872-8">10.1007/s13280-016-0872-8</a>
<a href="#">Mapping Arctic Tundra Vegetation Communities Using Field Spectroscopy and Multispectral Satellite Data in North Alaska, USA</a>	2016-11-26	S. Davidson et al.	<a href="https://doi.org/10.3390/rs8120978">10.3390/rs8120978</a>
<a href="#">Biogeochemistry: Long-term effects of permafrost thaw</a>	2016-09-29	D. Zona et al.	<a href="https://doi.org/10.1038/537625a">10.1038/537625a</a>

## Appendix B: INTAROS presentations at conferences, etc. (01 June 2018 – 30 Nov 2019)

**Period 01 June 2018 – 30 Nov 2018**

Date	Type of activity		Event	Place	Audience	No. of attendees	Country, region
09/06/2018	Exhibition	GFZ	Long night of sciences	Potsdam	Scientific community, Civil society, Policy makers, Media, General Public	1000	Germany
18/06/2018	Participation to a conference	USFD	Understanding Variability of Arctic Methane Fluxes and addressing knowledge gaps	ASSW 2018, Davos	Scientific community, Media, General Public	-	
19/06/2018	Participation to a conference	CNRS	Arctic and Antarctic sound-scapes: contributors and acoustic levels	ASSW 2018, Davos	Scientific community	-	International, all countries
19/06/2018	Participation to a conference	U Slaski	Importance of snow cover for changes in glacier geometry, Hansbreen, Svalbard	ASSW 2018, Davos	Scientific community	1500	community of polar researches around the world
20/06/2018	Participation to a conference	CNRS	The West Spitsbergen Current in summer 2017	ASSW 2018, Davos	Scientific community	-	International, all countries
22/06/2018	Participation to a conference	IO PAN	Enhancement of in situ observing systems in the Arctic under the INTAROS project	ASSW 2018, Davos	Scientific community, Industry, Civil society, Policy makers, Media, General Public	500	European, North American and Asian countries
25/06/2018	Flyers	EUR-OCEAN	European Maritime Day 2018	Burgas, Bulgaria	Scientific community, Industry, Civil society, Policy makers, Media, Investors	300	
25/06/2018	Participation to a conference	IO PAN	Enhancement of in situ observing systems in the Arctic under the INTAROS project	AOS 2018 Davos	Scientific community, Industry, Policy makers, Media, General Public	200	Multiple European, North American and Asian countries
30/08/2018	Participation to a workshop	DTU	Introduction to INTAROS. Danish Agency for Data Supply and Efficiency	Copenhagen	Civil society, Policy makers	60	
05/09/2018	Invited oral presentation at scientific symposium	UPM	Estimating the frontal ablation of tidewater glaciers and its partitioning between iceberg calving and submarine melting (XI Simposio Estudios Polares)	Madrid, Spain	Scientific community, Policy makers, Media	163	
05/09/2018	Conference presentation	UiB, GEUS	EARTHQUAKE MONITORING IN THE ARCTIC REGION - THE SEISMOLOGICAL COMPONENT OF INTAROS. The 36th General Assembly of the European Seismological Commission,	Valetta, Malta	Scientific community	750	Global
13/09/2018	Participation to a workshop	CNRS	Flotteurs biogéochimiques en Arctique	Paris	Scientific community	40	France,
13/09/2018	Participation to a workshop	CNRS	Premiers résultats scientifiques en Arctique, NAOS annual meeting	Paris	Scientific community	40	France,
13/09/2018	Participation to a conference	GFZ	Presentation "Towards understanding the contribution of permafrost waterbodies to methane emissions on a regional scale using aircraft measurements and remote sensing data". 15th International Circumpolar Remote Sensing Symposium	Potsdam, Germany	Scientific community	100	International
20/09/2018	Participation to a conference	U Slaski	Accuracy assessment of digital elevation model produced from very	Koszalin-Mielno	Scientific community	60	Poland

Date	Type of activity		Event	Place	Audience	No. of attendees	Country, region
			high resolution images over southern Spitsbergen				
25/09/2018	Conference poster	UiB, GEUS	The status of the seismological component of INTAROS project, 49th Nordic Seismology Seminar,	Kjeller, Norway	Scientific community	50	Nordic countries
25/09/2018	Conference presentation	UiB, GEUS	Seismological monitoring in the Arctic: A brief introduction to INTAROS. 49th Nordic Seismology Seminar	Kjeller, Norway	Scientific community	50	Nordic countries
17/10/2018	Participation to a conference	GFZ	Talk "Airborne measurements of greenhouse gas and energy fluxes in the Lena River Delta" at the International Symposium 20 Years of Lena Expeditions	St. Petersburg, Russia	Scientific community	100	international
29/10/2018	Web-site	GFZ	Interview "To gain a comprehensive understanding of arctic emissions" posted and promoted on GFZ Website		Scientific community, Civil society, Policy makers, Media, General Public	-	international

### Period 01 Dec 2018 – 31 May 2019

Date	Type of activity		Event	Place	Audience	No. of attendees	Country, region
03/12/2018	Training	UiB	Visualization and Interpretation of Natural Hazard Data. UAK research school	Longyearbyen	Scientific community	30	
03/12/2018	Workshop presentation	UiB	Seismological Observation in the Arctic: Examples of Combining Seismometer and Hydrophone Observations. UAK research school	Longyearbyen	Scientific community	30	
03/12/2018	Workshop presentation	UiB	Natural Hazards in the Arctic. UAK research school	Longyearbyen	Scientific community	30	
06/12/2018	Public lecture, community café	UiB	Natural Hazards in the Arctic. UAK research school	Longyearbyen	Scientific community, Civil society, Policy makers, General Public	55	
11/12/2018	Organisation of a Conference	DTU	E-lightning: Arctic Sea Level: Satellite and In-Situ observations	AGU Washington	Scientific community	25000	
11/12/2018	Participation to a conference	CNRS	Laboratory results on the dependence of dark current upon environmental temperature variability for Satlantic's OCR504 radiometers	China	Scientific community	300	
11/12/2018	Participation to a conference	MPG	Past and Current State of the Arctic Eddy Covariance Network	Washington, DC	Scientific community	50	
12/12/2018	Participation to a conference	DTU	Contributions to Arctic Sea Level	Washington AGU	Scientific community	25000	
	<b>2019</b>						

Date	Type of activity		Event	Place	Audience	No. of attendees	Country, region
09/01/2019		MISU	A process-based climatological evaluation of AIRS tropospheric thermodynamics over the high-latitude Arctic	Phoenix, AZ	Scientific community	30	international
14-16/01/2019	Conference	NERSC	YOPP science conference	Helsinki	YOPP scientific community	40-50	international
21/01/2019	Participation to a conference	U Slaski	The role of winter rains in glacial system on Svalbard	Geilo, Norway	Scientific community	60	international
22/01/2019	Participation to a workshop	UPM	Dynamic discharge and mass balance of the Academy of Sciences Ice Cap, Severnaya Zemlya, Russian Arctic (IASC Workshop on the dynamics and mass budget of Arctic glaciers & proglacial marine ecosystems)	Geilo, Norway	Scientific community	60	international
23/01/2019	Organisation of a Conference	IMR	Arctic Frontiers 2019 G Ottersen co-lead of Session on State of the Arctic	Tromsø, Norway	Scientific community	100	international
23/01/2019	Participation to a conference	IMR	Arctic Frontiers 2019 G Ottersen talk on Integrating Arctic Observations – the INTAROS project	Tromsø, Norway	Scientific community	100	international
23/01/2019	Organisation of session at a Conference	IMR	Arctic Frontiers 2019 G van der Meeren on Sci Com for session on The future of governance and handling vulnerability in Arctic ecosystems	Tromsø, Norway	Scientific community	50	international
23/01/2019	Organisation of session at a Conference	NERSC	Side meeting: “Improved safety and environmentally sound operations in the Arctic Ocean”	Tromsø, Norway	operation weather and ice services, EPPR, DnV GL	25	international
23/01/2019	Workshop presentation	UiB	Seismological Monitoring in the Arctic through the INTAROS project. EPOS-N annual workshop,	Bergen	Scientific community	50	Mostly Norway
28-29/01 2019	Project meeting	NERSC	Participation in KEPLER KO-meeting	Oslo	KEPLER consortium, mostly Sea ice services	30	International
29/01/2019	Participation in Arctic cluster	BSC	Presentation of WP6.1 plans in the GA of APPLICATE 2019	Reading	Scientific community	0	
7-8/03 2019	Organised a workshop	NORD-ECO, NERSC	A workshop was organised with expedition operators and members of the local community in Longyearbyen	Longyear-byen	Cruise operators (AECO), invited companies and local community	25	International
09/03/2019	Participation to a conference	CNRS	BGC-Argo activities in Canada	Canada	Scientific community	0	Mostly Canada
25-26/03 2019	Participation in project meeting	NERSC	EuPolarNet General Assembly	Lisbon	EU PolarNet members	40-50	International
02/04/2019	Participation to a conference	IMR	Geir Ottersen Talk for ConocoPhillips April Seminar	Tananger, Norway	Scientific community, Industry, Policy makers	35	International
08/04/2019	Participation to a conference	UiB, GEUS	Seismological monitoring in the Arctic: An introduction to INTAROS	Vienna, Austria	Scientific community	10000	International
10/04/2019	Participation to a conference	MPG	An atmospheric perspective on the magnitude of and controls on methane emissions from the East Siberian Arctic Shelf to the atmosphere	Vienna, Austria	Scientific community	120	International

Date	Type of activity		Event	Place	Audience	No. of attendees	Country, region
11/04/2019	Organised session	FMI, NERSC, ++	Session: "Evaluation, exploitation and enhancement of Arctic observing systems across disciplines"	Vienna, Austria	Scientific community	30-40	International
11/04/2019	Participation to a conference	MISU	A process-based climatological evaluation of AIRS tropospheric thermodynamics over the high-latitude Arctic	Vienna	Scientific community	30	International
18/04/2019	Organisation of a Conference	TDUE, ARMINE S	Gamme d'outils collaboratifs "Ellip" et cas d'utilisation INTAROS RGeostats	Fontainebleau, France	Scientific community	20	International
25/04/2019	Training	UiB	Visualization and interpretation of natural hazards at Svalbard, EPOS-N SESF Workshop,	Bergen	Scientific community	33	Mostly Norway
29-30/04/2019	Organised workshop	NERSC	Workshop: Platforms and technologies for Arctic Ocean Observing Systems in Bergen	Bergen	Scientific community, Industry, technology developers	40-50	International
10-11/05/2019	Organised session		Arctic Circle Forum in China. Session "Arctic sea ice changes" organized by NERSC and PRIC	Shanghai	Scientific community, policy makers	30-40	International, mostly China
13/05/2019	Participation to a workshop	IMR	G. Ottersen talk at a Nordic Ocean and Climate workshop - IPCC's Special Report on the Ocean and Cryosphere in a Changing Climate and examples of earlier key finding	Oslo, Norway	Scientific community, Policy makers	20	Nordic
13/05/2019	Participation to a conference	NERSC	Arctic Safety Conference 2019 at UNIS, presentation by L. Iversen	Longyearbyen	Scientific community, Arctic safety community	30	Mostly Norway
15/05/2019	Participation to a conference	Terradue	Living Planet Symposium, session Polar Science Challenges and future activities, INTAROS Presentation	Milan	Scientific community, ESA and EU representatives		International
16-17/05/2019	Promotion material	EUR-OCEAN	INTAROS brochure was presented in the EUROCEAN booth at European Maritime Days	Lisbon	Ocean science and policy makers		International
21/05/2019	Co-organised workshop	NERSC	NorDataNet workshop, presented for educators and students at Univ. Oslo	Oslo	Scientific data people, university lecturers, students	25	Mostly Norway
25/05/2019	Participation to a conference	IOPAN	INTAROS presentation by W. Walkowski	Arkhangelsk	Scientific community		International
25/05/2019	Participation to a conference	CNRS	The West Spitsbergen Current in Fram Strait: insight from a model-observation analysis	Arkhangelsk (Russia)	Scientific community	0	International

### Period 01 June 2019 – 30 Nov 2019

Date	Type of activity		Event	Place	Audience	No. of attendees	Country, region
04/06/2019	Participation in project cluster meeting	NERSC, Euro-GOOS	EU Arctic Cluster meeting organised by EU	Brussels	EU Arctic project partners	30	International
13/06/2019	Meeting with Coastal Directorate	NERSC	Meeting at Norwegian Coastal Directorate about preparation of the KV Svalbard cruise in August-September	Ålesund, Norway	Arctic operators, Coastal Authority, Coats Guard, sea ice services	25	Mostly Norway

Date	Type of activity		Event	Place	Audience	No. of attendees	Country, region
26-27/06/2019	Seminar and workshop	NERSC ++	Arctic seminar organized by Research Council of Norway (RCN) and representatives from the Commission	Brussel	Science communities, science administrators, funding agencies,	40-50	Mostly Norway and representatives from EC
03-05/07/2019	Participation in workshop	NERSC ++	EuroGEOSS workshop, poster presentations	Lisbon	Science community, GEO community, EuroGEOSS participants	80-100	International
27/08/2019	Meeting with EU DG RTD	NERSC	Meeting with Sigi Guber, G. LeBouler, At. Gambardella, F. Imler	Brussel	People in EU DG RTD	5	
28-29/08/2019	Advisory board for project	NERSC	S. Sandven participated in NorSOOP annual meeting as member of the advisory board	Oslo	Project partners and stakeholders from shipping industry	30	Mostly Norway
02-04/08/2019	Participation in workshop	FMI, RADI	Arctic and Northern Ocean Forum, presentation of INTAROS	Helsinki	Scientists and representatives from IEEE	20	Mostly Finland and IEEE people
08-13/09/2019	Research school	NERSC, FMI, DTU	Lectures on the topic Observing and modelling the Arctic Environment hosted by NIERSC	St. Petersburg	PhD students, postdocs, Scientists	30-40	International, mostly Russian
16-20/09/2019	Participation in conference	NERSC, IOPAN, ++	OceanObs19, Hawaii, several presentations related to INTAROS, contribution to papers	Honolulu, Hawaii	Science community		International
19-21/09/2019	Public outreach	NERSC	"Research days in Bergen", multimedia presentation of Sound in the Sea	Bergen	The public and school children	≈ 100	National
01-03/10/2019	Organised workshop under UAK project	NSIDC, NERSC, ++	Workshop topic: communicating Arctic research to stakeholders, organized under the project "Useful Arctic Knowledge – UAK" funded by INPART / Research Council of Norway	Boulder	UAK partners and science communication experts at University of Colorado	≈ 20	USA, Canada, Norway
04/10/2019	Workshop participation	Euro-GOOS	Workshop at European Environment Agency on Arctic In Situ data	Copenhagen	Participants from Copernicus and EEA		international
10-13/10/2019	Sessions at Arctic Circle	IMR, ++	Participation by INTAROS in sessions organised by SAON	Reykjavik	Arctic Circle participants		international
21-24/10/2019	Presentation at conference	NERSC	Nansen-Zhu annual meeting, presentation of INTAROS results	Nanjing	Partners in Nansen-Zhu center, including master and PhD students	150- 200	International, mostly China
22-24/10/2019	Organised Course on CBM	NORDECO	Course on CBM and collaborative management of natural resources	Nuuk	Scientists, managers and local community members in Greenland		
31/10/2019	Organised workshop with Chinese partn.	NERSC, RADI, NMEFC	Workshop with Chinese MARIS project, discussion of collaboration between MARIS and INTAROS	Bergen	Participants in the Chinese MARIS project and INTAROS	10-12	Norway and China
04/11/2019	Organised Side-meeting	NERSC ++	Side meeting on the Svalbard Social Science Initiative, led by L. Iversen	Oslo	Social scientists, anthropologists, architects and community members	Ca 25	International
05-06/11/2019	Presentation at conference	NERSC	Poster presentation at Svalbard Science Conference	Oslo	Multidisciplinary Arctic scientists, policy makers,	300 +	International
08/11/2019	Popular science lecture	NERSC	2 popular science lectures were given at Svalbard Folkehøgskole (college)	Longyearbyen	College students and teachers	50+	Norway
18-21/11/2019	Participation in conference and workshops	NERSC, FMI,	Polar Data Forum conference and connected workshop on data management.	Helsinki	Scientists, data managers	120	International

Date	Type of activity		Event	Place	Audience	No. of attendees	Country, region
		Euro-GOOS					
25-27/11/2019	Participation in project meeting	NERSC	Presentation of INTAROS in KEPLER Mid-term review	Barcelona	KEPLER partners and stakeholders	≈ 40	International

### Planned presentations after 01 December 2019 and through 2020 (preliminary list)

Date	Event	Comment
4 – 5 Dec	Arctic Shipping Summit, Hamburg	INTAROS is invited to give presentation
9-11 Dec	Arctic Partnership week in Busan, Korea	Follow-up collaboration that INTAROS has initiated
3-4 Feb	KO-meeting for CAPARDUS project	New spin-off project from INTAROS
5-6 February	Arctic workshop/conference hosted by the European Commission	INTAROS is invited to participate
17-18 Feb.	YOPP Science Workshop at AWI	INTAROS will give a presentation
17-21 Feb	Ocean Science Meeting in San Diego	INTAROS will give presentation
2-6 Mar	ISAR-6 Arctic Conference in Tokyo*	INTAROS will co-organise a session
27-30 Mar	ASSW in Akureyri*	INTAROS will participate and organize sidemeeting
31Mar-2Apr	AOS in Akureyri*	INTAROS will contribute
20-24 April	Workshop in Greenland with local communities*	CAPARDUS funded workshop, invite local community members
3-8 May	EGU, Vienna*	
		INTAROS will organize two sessions
3-5 June	Polar Science workshop in Copenhagen, jointly organized by ESA and EU DG RTD*	

\* These events were cancelled or postponed due to the corona virus situation and replaced by online session

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# INTAROS

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## Project partners:

