



Integrated Arctic Observation System

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Nansen Environmental and Remote Sensing Center, Norway


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Strategy for Intellectual Property exploitation, V1 (revised version V1.2 after review)

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14	USFD		37	NIERSC	
15	NUIM		38	WHOI	
16	IFREMER		39	SIO	
17	MPG		40	UAF	
18	EUROGOOS		41	U Laval	
19	EUROCEAN		42	ONC	
20	UPM		43	NMEFC	
21	UB		44	RADI	
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23	NORCE		46	NIPR	
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DISSEMINATION LEVEL		
PU	Public, fully open	X
CO	Confidential, restricted under conditions set out in Model Grant Agreement	
CI	Classified, information as referred to in Commission Decision 2001/844/EC	

EXECUTIVE SUMMARY

This document describes the general actions in the project related to management of intellectual property in knowledge transfer activities. The document is complementary to the Dissemination Plan (D7.3 and D7.5) and the Exploitation Plan (D8.4) which describe in detail activities to ensure that project results are made available and can be exploited.

Rules for ownership, access rights, transfer, dissemination and protection of project results follow Section 3 of the Grant Agreement articles 23 – 31: Rights and Obligations related to background and results. In the Consortium Agreement, the partners in INTAROS have specified the limitations and/or conditions for implementation and exploitation of project results. It is the task of the Executive Board to oversee and guide the consortium members to follow the rules set out in the consortium agreement.

There is a wide range of exploitable results from the ongoing INTAROS work. These include new collaboration between institutions in the Arctic, both research, education and other stakeholder groups. Furthermore, many exploitable results come from the evolving observing systems for atmosphere, ocean and terrestrial themes. These involve both new platforms, sensors and data produced from these platforms. Progress in data management includes standardization of metadata and data products, improved access to data from numerous data repositories, and capacity-building among the data producers as well as the data managers. Advancing interoperability between distributed data repositories will help to make data more findable and accessible, contributing to the FAIR principles. Finally, exploitable results will be used in a number of application studies, where examples of integrating various observations and models will be demonstrated to stakeholder groups.

There are potentially “innovation-related activities” in the project that can be implemented by companies or other organisations outside of the consortium. Most of the results from the project are related to delivery of data and development of new observing protocols. These are available to all users with minimum restrictions while taking necessary steps to protect the results. It is planned that public services (e.g. weather, ice and ocean services, climate services) and other third parties will exploit data, observing protocols and tools from the project through license agreements.

The Executive Board will oversee the knowledge management and protection process for the results generated in the project.

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1. Introduction

The European Commission has issued several documents with recommendations on the management of intellectual property in knowledge transfer activities and Code of Practice for universities and other public research organisations [1,2]. These documents emphasize the public organisations, including universities, need to more actively engage in the exploitation of publicly funded research, for instance through academia-industry collaborations, licensing and spin-offs. Management of intellectual property (IP) plays a crucial role in the success of these knowledge transfer activities and in building an effective European Research Area (ERA). IP in this context refers to knowledge in the broadest sense, encompassing any R&D results such as inventions, software, databases, etc., whether or not they are protected by legal instruments such as patents.

2. Consortium agreement

The rules for ownership, access rights, transfer, dissemination and protection of project results follow Section 3 of the Grant Agreement articles 23 – 31: Rights and Obligations related to background and results [3]. In addition to the Grant Agreement, the partners have signed the Consortium Agreement [4] at start of the project. Background is defined as “data, know-how or information (...) that is needed to implement the action or exploit the results”. Because of this need, Access Rights have to be granted in principle, but Parties have identified and agreed amongst them on the “Specific limitations and/or conditions for implementation” and “Specific limitations and/or conditions for exploitation”, as described in Attachment 1: “Background included”. It is the task of the Executive Board to oversee and guide the consortium members to follow the rules set out in the consortium agreement.

3. Definition of exploitable results from INTAROS

There is a wide range of exploitable results from the ongoing INTAROS work. Much of the new results come from synergies between the partners’ experiences, competences, capabilities, and scientific-technical network. The exploitable results from INTAROS can be grouped into the following classes:

- Collaborations: examples are establishment of networks, development of concrete collaboration, (including signing of agreements) and planning of joint work with new partners
- Observation Data: improve access to observational data from existing observing stations and platforms, prepare data for dissemination through distributed data repositories, provide new catalogues of data
- New observing technologies: demonstrate new platforms and sensors
- New observing protocols: establish protocols, standards and metadata for data that are not yet part of an operational network
- Interoperability of distributed data repositories

- Demonstration of useful application of an integrated observing system in the various thematic domains of the project

4. Innovation management

There is a large innovation potential in the development of integrated Arctic Observing systems. Innovation occurs in a wide range of activities from data transmission to unique combinations of multi-disciplinary data and from new products to use of cloud technology for massive data access. Platforms providing data for integrated observing systems include polar orbiting satellites, aircraft, drones, ships, moorings, and underwater vehicles. Data are provided from all these platforms, which are increasingly used in Arctic observing systems.

The Executive Board will help to guide the consortium and consult experts with expertise in innovation management that is relevant for INTAROS. The participation of stakeholders and companies in the project helps to bridge the gap between scientific research, technology, and the market, and this can foster development of new prototypes of services and products. Several work packages demonstrate the innovation potential of the project (Section 1.4.2 of INTAROS DoA).

5. Knowledge management and protection

Management of knowledge and innovation is an integral part of the project. The Executive Board has the responsibility to oversee synergies between partners' experiences, competences, capabilities, and on how partners will protect, share, manage IPR capital. Access to Background Intellectual Property and protection and exploitation of Foreground IP will follow the Grant Agreement signed by the beneficiaries. Background means any data, know-how or information (tangible or intangible) including any rights such as intellectual property right that is *(a) held by the beneficiaries before acceded to the Grant Agreement, and (b) needed to implement the action or exploit the results*. Results means any output of the action such as data, knowledge or information – whatever its form or nature, whether it can be protected or not – that is *generated in the action, as well as any right attached to it, including intellectual property rights*. The management of the IPR, generated by the project, will be monitored by the Executive Board, via the project coordinator, to ensure that it complies with the Grant Agreement.

Knowledge management will address the following points:

5.1 Protection of new results

Procedures for protecting new results and agreeing on dissemination and publishing of information are as follows:

- (1) New observing technologies including platforms, sensors and experimental set-up. Platforms and sensors used in the project are protected by the companies and institutes that produce the technology. Experimental set-up procedures are normally published on open journals with copyright. Licensing of experimental set-up can be used if required by the providers.
- (2) New observing protocols are usually published in open journals, possibly with licensing if required by the providers. The protocols include specification of standards,

- metadata and data processing chain. This applies to observing systems that are not part of an operational network where protocols are specified
- (3) Observational data. Many partners deliver observational data as the main results from the project. The data are openly available after the provider has done processing and quality-control. Data are protected by assigning ownership, copyright or other conditions to the data before they are made available through the INTAROS data catalogue. The conditions are described in the metadata for each data set. Publication of data sets is usually done in scientific journals or specific data journals, where the data sets are given a doi number. More detailed description is provided in the Data Governance Framework and Data Management plan (D1.6).
 - (4) Interoperability of distributed data repositories requires that metadata information is open and follows certain standards. This is described in D1.6.
 - (5) Demonstration of useful applications using an integrate observing system is based on scientific analysis and publication of results in the open literature.
 - (6) Collaboration and networks: It is a central activity in the project to expand the network with more actors involved in Arctic observing. The process of developing collaboration needs to be fully open. Agreement documents specify the conditions for collaboration. In case new partners are included in the INTAROS consortium, they need to sign the Grant Agreement and the Collaboration Agreement.

5.2 Ownership and agreements on access rights

- (1) Ownership to new observing technologies including platforms and sensors belong to companies and institutes that produce technology. In most cases these are commercial activities where access to and usage of the technology is regulated between provider and customer.
- (2) New observing protocols: this is usually accessible via published information or directly with the providers through bilateral agreements.
- (3) Observational data provided in the project are owned by the data producer, and access right is secured through the Grant Agreement and the Collaboration Agreement. The main task of the Executive Board is to guide and oversee that the project partners follow the agreements.
- (4) Interoperability of distributed data repositories is a requirement for the implementation of the FAIR principles. Access rights to data repositories is not necessarily provided without agreement with the owner of the repository. There might be legal barriers to get access to certain repositories, but it is the responsibility of data provider sin INTAROS to make their data available via open repositories.
- (5) Demonstration of useful applications: results are provided openly via published papers and digital media
- (6) Collaboration and network development: conditions are specified in agreement documents

5.3 Implementation of “innovation-related activities”:

There are potentially “innovation-related activities” in the project that can be implemented by companies or other organisations outside of the consortium. Most of the results from the project are related to delivery of data and development of new observing protocols. These are available to all users with minimum restrictions while protecting the results as described

in section 5.1. It is planned that public services (e.g. weather, ice and ocean services, climate services) will exploit data, observing protocols and tools from the project. In cases where services are developed (for example online tool for registration and assessment of observing systems from WP2, or tools for integrating data and models from WP6) the providers can grant licenses to third parties. It is not expected that the project will produce any patents.

5.4 Collaboration with users

INTAROS develops collaboration with many user groups, both thematic groups and high-level organisations. The following thematic stakeholder groups are included:

- *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.
- *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.

Collaboration with high-level programmes and organisations include SAON and the ROADS process, the Arctic Data Committee under SAON/IASC, Arctic Council working groups such as CAFF and AMAP, Copernicus programme, European Environment Agency, Norwegian Environment Agency, GOOS/EuroGOOS/Arctic ROOS, NAMMCO, Year of Polar Prediction, GEO/EuroGEO. Last but not least, INTAROS collaborates with the European Commission Services dealing with Arctic and marine research topics.

At the end of the project a Strategy for the Intellectual Property exploitation (WP8) will be drafted providing best practices in capturing and assessing the Intellectual Property and providing measures for exploitation after the end of the project.

6. References

1. Commission Recommendation including Code of Practice (2008), ISBN 978-92-79-09850-5, DOI 10.2777/13162
2. European IPR Helpdesk. Your Guide to IP in Horizon 2020 (www.ipr.helpdesk.eu)
3. Grant Agreement for INTAROS
(https://intaros.nersc.no/sites/intaros.nersc.no/files/Grant%20Agreement-727890-INTAROS_0.pdf)
4. Consortium Agreement for INTAROS:
<https://intaros.nersc.no/sites/intaros.nersc.no/files/INTAROS-CA-V1.7-signed-Print28June2017.pdf>

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INTAROS

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Project partners:

