

Please check our [wiki](#) for help on navigating the form.

Horizon 2020

Call: H2020-LC-CLA-2018-2019-2020

(Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement)

Topic: LC-CLA-20-2020

Type of action: RIA

Proposal number: SEP-210640103

Proposal acronym: iARCDEV

Deadline Id: H2020-LC-CLA-2020-2

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How to fill in the forms

The administrative forms must be filled in for each proposal using the templates available in the submission system. Some data fields in the administrative forms are pre-filled based on the steps in the submission wizard.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym **iARCDEV**

1 - General information

Topic LC-CLA-20-2020

Type of Action RIA

Call Identifier H2020-LC-CLA-2018-2019-2020

Deadline Id H2020-LC-CLA-2020-2

Acronym iARCDEV

Proposal title integrated Arctic change observations and services for sustainable Arctic development

Note that for technical reasons, the following characters are not accepted in the Proposal Title and will be removed: < > " &

Duration in months

48

Fixed keyword 1

Earth Observation / Services and applications

Fixed keyword 2

Earth and related environmental sciences

Fixed keyword 3

Environmental monitoring systems

Fixed keyword 4

Climatology and climate change

Fixed keyword 5

Environmental change and society

Fixed keyword 6

International cooperation

Free keywords

In-situ and satellite Earth Observations, pilot services, data interoperability, Arctic GEOSS

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym **iARCDEV**

Abstract

In the integrated ARcTic change observations and services for sustainable Arctic DEvelopment (iARCDEV) we will utilize pan-Arctic in-situ and satellite observations, community and citizen science-based monitoring and establish pilot services, that will enable the transition to a greener, resource efficient and climate-resilient economy, and support the UN's Sustainable Development Goals, the COP21 Paris Agreement and UNDRR Sendai Framework. The iARCDEV brings together 26 European beneficiaries (Finland, Estonia, Germany, Sweden, Norway, Switzerland, Italy, France, Greece, United Kingdom, Spain) including four international organisations (WMO, ECMWF, AMAP and ICOS) and 10 non-funded partners (USA, Russia, China) covering the key components pertinent to sustainable Arctic development, which will pave the way towards a coordinated future Arctic GEOSS. The iARCDEV research and innovation actions aim to help Arctic societies to affront and adapt to the impacts of climate change, including extreme events in urban, rural and marine environments. The iARCDEV will (1) improve and extend terrestrial, marine and cryospheric in-situ, satellite and community-based observations necessary for the monitoring of the Arctic in a harmonized manner; (2) develop, setup and maintain ten main pilot services in terrestrial, marine, cryosphere and integrated domains with a large variety of products obtained through a co-design process including both state-of-the-art observational capacities and crucial contributions from community-based observation systems, citizen science and indigenous knowledge; and (3) implement the coordinated network of those services necessary for adaptation to climate change, and for sustainable development in the region. The work builds upon a close collaboration between the European environmental research infrastructures, research organizations and the Arctic communities that will be brought together in our co-design framework for sustainable Arctic development.

Remaining characters

0

Has this proposal (or a very similar one) been submitted in the past 2 years in response to a call for proposals under Horizon 2020 or any other EU programme(s)?



Yes



No

Please give the proposal reference or contract number.

XXXXXX-X

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym **iARCDEV**

Declarations

1) The coordinator declares to have the explicit consent of all applicants on their participation and on the content of this proposal.	<input checked="" type="checkbox"/>
2) The information contained in this proposal is correct and complete.	<input checked="" type="checkbox"/>
3) This proposal complies with ethical principles (including the highest standards of research integrity — as set out, for instance, in the European Code of Conduct for Research Integrity — and including, in particular, avoiding fabrication, falsification, plagiarism or other research misconduct).	<input checked="" type="checkbox"/>
4) The coordinator confirms:	
- to have carried out the self-check of the financial capacity of the organisation on http://ec.europa.eu/research/participants/portal/desktop/en/organisations/lfv.html or to be covered by a financial viability check in an EU project for the last closed financial year. Where the result was “weak” or “insufficient”, the coordinator confirms being aware of the measures that may be imposed in accordance with the H2020 Grants Manual (Chapter on Financial capacity check); or	<input type="radio"/>
- is exempt from the financial capacity check being a public body including international organisations, higher or secondary education establishment or a legal entity, whose viability is guaranteed by a Member State or associated country, as defined in the H2020 Grants Manual (Chapter on Financial capacity check); or	<input checked="" type="radio"/>
- as sole participant in the proposal is exempt from the financial capacity check.	<input type="radio"/>
5) The coordinator hereby declares that each applicant has confirmed:	
- they are fully eligible in accordance with the criteria set out in the specific call for proposals; and	<input checked="" type="checkbox"/>
- they have the financial and operational capacity to carry out the proposed action.	<input checked="" type="checkbox"/>
The coordinator is only responsible for the correctness of the information relating to his/her own organisation. Each applicant remains responsible for the correctness of the information related to him and declared above. Where the proposal to be retained for EU funding, the coordinator and each beneficiary applicant will be required to present a formal declaration in this respect.	

According to Article 131 of the Financial Regulation of 25 October 2012 on the financial rules applicable to the general budget of the Union (Official Journal L 298 of 26.10.2012, p. 1) and Article 145 of its Rules of Application (Official Journal L 362, 31.12.2012, p.1) applicants found guilty of misrepresentation may be subject to administrative and financial penalties under certain conditions.

Personal data protection

The assessment of your grant application will involve the collection and processing of personal data (such as your name, address and CV), which will be performed pursuant to Regulation (EC) No 45/2001 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data. Unless indicated otherwise, your replies to the questions in this form and any personal data requested are required to assess your grant application in accordance with the specifications of the call for proposals and will be processed solely for that purpose. Details concerning the purposes and means of the processing of your personal data as well as information on how to exercise your rights are available in the [privacy statement](#). Applicants may lodge a complaint about the processing of their personal data with the European Data Protection Supervisor at any time.

Your personal data may be registered in the Early Detection and Exclusion system of the European Commission (EDES), the new system established by the Commission to reinforce the protection of the Union's financial interests and to ensure sound financial management, in accordance with the provisions of articles 105a and 108 of the revised EU Financial Regulation (FR) (Regulation (EU, EURATOM) 2015/1929 of the European Parliament and of the Council of 28 October 2015 amending Regulation (EU, EURATOM) No 966/2012) and articles 143 - 144 of the corresponding Rules of Application (RAP) (COMMISSION DELEGATED REGULATION (EU) 2015/2462 of 30 October 2015 amending Delegated Regulation (EU) No 1268/2012) for more information see the [Privacy statement for the EDES Database](#).

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym **iARCDEV**

2 - Participants & contacts

#	Participant Legal Name	Country	Action
1	HELSINGIN YLIOPISTO	Finland	
2	EESTI MAAULIKOOL	EE	
3	ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FUR POLAR- UND MEERESFORSCHUNG	DE	
4	LEIBNIZ INSTITUT FUER TROPOSPHAERENFORSCHUNG e.V.	DE	
5	AARHUS UNIVERSITET	DK	
6	STOCKHOLMS UNIVERSITET	SE	
7	ILMATIETEEN LAITOS	FI	
8	UNIVERSITETET I TROMSOE - NORGES ARKTISKE UNIVERSITET	NO	
9	ORGANISATION METEOROLOGIQUE MONDIALE	CH	
10	HELMHOLTZ ZENTRUM POTSDAM DEUTSCHESGEOFORSCHUNGSZENTRUM GFZ	DE	
11	HELMHOLTZ-ZENTRUM GEESTHACHT ZENTRUM FUR MATERIAL- UND KUSTENFORSCHUNG GMBH	DE	
12	HELMHOLTZ-ZENTRUM FUR UMWELTFORSCHUNG GMBH - UFZ	DE	
13	PAUL SCHERRER INSTITUT	CH	
14	FORSCHUNGSVERBUND BERLIN EV	DE	
15	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	CH	
16	CONSIGLIO NAZIONALE DELLE RICERCHE	IT	
17	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	FR	
18	NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS"	EL	
19	INTEGRATED CARBON OBSERVATION SYSTEM EUROPEAN RESEARCH INFRASTRUCTURECONSORTIUM	FI	
20	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	FR	
21	OCEAN NEXT	FR	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym **iARCDEV**

22	MET OFFICE	UK	
23	BARCELONA SUPERCOMPUTING CENTER - CENTRO NACIONAL DE SUPERCOMPUTACION	ES	
24	EUROPEAN CENTRE FOR MEDIUM-RANGE WEATHER FORECASTS	UK	
25	Arctic Monitoring and Assessment Programme Secretariat	NO	
26	ESTELLUS SAS	FR	
27	M.V. LOMONOSOV MOSCOW STATE UNIVERSITY	RU	
28	V.E. ZUEV INSTITUTE OF ATMOSPHERIC OPTICS OF SIBERIAN BRANCH OF RUSSIAN ACADEMY OF SCIENCES	RU	
29	P.P. SHIRSHOV INSTITUTE OF OCEANOLOGY OF RUSSIAN ACADEMY OF SCIENCES	RU	
30	Federal State Budgetary Institution of Science Federal Research Centre Kola Science Centre of the Russian Academy of Sciences	RU	
31	INSTITUTE OF REMOTE SENSING AND DIGITAL EARTH - CHINESE ACADEMY OF SCIENCE	CN	
32	University of Alaska	US	
33	UT BATTELLE LLC	US	
34	BATTELLE MEMORIAL INSTITUTE NON PROFIT CORPORATION	US	

2 - Administrative data of participating organisations

PIC 999994535 **Legal name** HELSINGIN YLIOPISTO

Short name: UHEL

Address of the organisation

Street YLIOPISTONKATU 3

Town HELSINGIN YLIOPISTO

Postcode 00014

Country Finland

Webpage www.helsinki.fi

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Legal personyes

Non-profityes

International organisationno

International organisation of European interestno

Industry (private for profit).....no

Secondary or Higher education establishmentyes

Research organisationyes

Enterprise Data

SME self-declared status.....31/12/2018 - no

SME self-assessment31/12/2018 - no

SME validation sme.....09/02/2009 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UHEL**

Department(s) carrying out the proposed work

Department 1

Department name

Institute for Atmospheric and Earth System Research (INAR)

☐ not applicable

☐ Same as proposing organisation's address

Street

P.O. Box 64

Town

Helsinki

Postcode

FI-00014

Country

Finland

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UHEL**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Prof.

Sex

☒ Male

☐ Female

First name **Tuukka**

Last name **PETÄJÄ**

E-Mail **tuukka.petaja@helsinki.fi**

Position in org.

Professor, Head of Aerosol Laboratory & SMEAR-I&II research stations

Department

Institute for Atmospheric and Earth System Research (INAR)

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

P.O. Box 64

Town

Helsinki

Post code

FI-00014

Country

Finland

Website

<https://researchportal.helsinki.fi/en/persons/tuukka-petaja>

Phone

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Phone 2

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Other contact persons

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Hanna K.	Lappalainen	hanna.k.lappalainen@helsinki.fi	+358-504-341-710
Ulrika	Backman	ulrika.backman@helsinki.fi	+358-504-487-524
Satu	Väisänen	satu.vaisanen@helsinki.fi	+358-504-065-470
Ella-Maria	Duplissy	ella-maria.duplissy@helsinki.fi	+358-504-154-745
Ksenia	Tabakova	ksenia.tabakova@helsinki.fi	+358-452-094-422

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **EULS**

PIC

999857280

Legal name

EESTI MAAULIKOOL

Short name: *EULS*

Address of the organisation

Street KREUTZWALDI 1

Town TARTU

Postcode 51014

Country Estonia

Webpage www.emu.ee

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentyes

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....07/08/2008 - no

SME self-assessment07/08/2008 - no

SME validation sme.....07/08/2008 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **EULS**

Department(s) carrying out the proposed work

Department 1

Department name Institute for Agricultural and Environmental Sciences

☐ not applicable

☐ Same as proposing organisation's address

Street Kreutzwaldi 1

Town Tartu

Postcode EE-51006

Country Estonia

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **EULS**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Steffen**

Last name **Noe**

E-Mail **steffen.noe@emu.ee**

Position in org.

Senior Scientist

Department

Institute for Agricultural and Environmental Sciences

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

KREUTZWALDI 1

Town

TARTU

Post code

51014

Country

Estonia

Website

https://www.emu.ee/en/

Phone

+372 59192254

Phone 2

+XXX XXXXXXXXX

Fax

+XXX XXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Katri	Hellat	katri.hellat@emu.ee	+XXX XXXXXXXXX
Beate	Noe	beate.noe@emu.ee	+XXX XXXXXXXXX

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **AWI**

PIC

999497507

Legal name

ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FÜR POLAR- UND MEERESFORSCHUNG

Short name: *AWI*

Address of the organisation

Street AM HANDELSHAFEN 12

Town BREMERHAVEN

Postcode 27570

Country Germany

Webpage www.awi.de

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....31/12/2015 - no

SME self-assessment17/03/1986 - no

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **AWI**

Department(s) carrying out the proposed work

Department 1

Department name

Geoscience - Glaciology

☐ not applicable

☐ Same as proposing organisation's address

Street

Am Alten Hafen 26

Town

Bremerhaven

Postcode

27568

Country

Germany

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **AWI**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Prof.

Sex

☐

Male

☒

Female

First name **Angelika**

Last name **Humbert**

E-Mail **angelika.humbert@awi.de**

Position in org. Professor / Senior Researcher

Department Geoscience - Glaciology

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street Am Alten Hafen 26

Town Bremerhaven

Post code 27568

Country Germany

Website <https://www.awi.de/en/science/geosciences/glaciology.html>

Phone +49 471 4831 1834

Phone 2

+xxx xxxxxxxxx

Fax

+xxx xxxxxxxxx

Other contact persons

First Name	Last Name	E-mail	Phone
Maria	Eden	maria.eden@awi.de	+49 471 4831 2412
Ludwig	Schröder	ludwig.schroeder@awi.de	+49 471 4831 1194
EU	Grants	eu-grants@awi.de	+49 471 4831 2307

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **TROPOS**

PIC

999450850

Legal name

LEIBNIZ INSTITUT FUER TROPOSPHAERENFORSCHUNG e.V.

Short name: *TROPOS*

Address of the organisation

Street Permoserstrasse 15

Town LEIPZIG

Postcode 04318

Country Germany

Webpage www.tropos.de

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyno

Legal personyes

Non-profityes

International organisationno

International organisation of European interestno

Industry (private for profit).....no

Secondary or Higher education establishmentno

Research organisationyes

Enterprise Data

SME self-declared status.....19/05/2008 - no

SME self-assessment unknown

SME validation sme.....19/05/2008 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **TROPOS**

Department(s) carrying out the proposed work

Department 1

Department name

Department of Experimental Aerosol and Cloud Microphysics

☐ not applicable

☒ Same as proposing organisation's address

Street

Permoserstrasse 15

Town

LEIPZIG

Postcode

04318

Country

Germany

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **TROPOS**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☐ Male

☒ Female

First name **Birgit**

Last name **Wehner**

E-Mail **birgit@tropos.de**

Position in org.

Scientist

Department

Dept. for Experimental Aerosol and Cloud Microphysics

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

Permoserstr.15

Town

Leipzig

Post code

04229

Country

Germany

Website

www.tropos.de

Phone

+4934127177309

Phone 2

+xxx xxxxxxxxx

Fax

+493412717997309

Other contact persons

First Name	Last Name	E-mail	Phone
Ariane	Pohlenz	pohlenz@tropos.de	+xxx xxxxxxxxx

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **AU**

PIC

999997736

Legal name

AARHUS UNIVERSITET

Short name: AU

Address of the organisation

Street NORDRE RINGGADE 1

Town AARHUS C

Postcode 8000

Country Denmark

Webpage www.au.dk

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentyes

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....20/05/2016 - no

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **AU**

Department(s) carrying out the proposed work

Department 1

Department name

☐ not applicable

☐ Same as proposing organisation's address

Street

Town

Postcode

Country

Department 2

Department name

☐ not applicable

☐ Same as proposing organisation's address

Street

Town

Postcode

Country

Dependencies with other proposal participants

Character of dependence	Participant	
<input type="text"/>	<input type="text"/>	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **AU**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Andreas**

Last name **Massling**

E-Mail **anma@envs.au.dk**

Position in org.

Senior Scientist

Department

Department of Environmental Science

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

Frederiksborgvej 399

Town

Roskilde

Post code

4000

Country

Denmark

Website

https://envs.au.dk/en/

Phone

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Phone 2

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Other contact persons

First Name	Last Name	E-mail	Phone
Torben	Røjle Christensen	torben.christensen@bios.au.dk	+4593509049

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **SU**

PIC

999885022

Legal name

STOCKHOLMS UNIVERSITET

Short name: *SU*

Address of the organisation

Street UNIVERSITETSVAGEN 10

Town STOCKHOLM

Postcode 10691

Country Sweden

Webpage www.su.se

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentyes

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **SU**

Department(s) carrying out the proposed work

Department 1

Department name

Department of Environmental Science

☐ not applicable

☐ Same as proposing organisation's address

Street

Svante Arrhenius väg 8

Town

Stockholm

Postcode

11418

Country

Sweden

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **SU**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Prof.

Sex

☒ Male

☐ Female

First name **Matthew**

Last name **MacLeod**

E-Mail **matthew.macleod@aces.su.se**

Position in org.

Professor

Department

Department of Environmental Science

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

Carl Akrells Gata 4

Town

Stockholm

Post code

11418

Country

Sweden

Website

<https://www.aces.su.se/staff/matthew-macleod/>

Phone

+468 6747168

Phone 2

+xxx xxxxxxxxx

Fax

+xxx xxxxxxxxx

Other contact persons

First Name	Last Name	E-mail	Phone
Ilona	Riipinen	ilona.riipinen@aces.su.se	+468 6747284

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **FMI**

PIC

999591306

Legal name

ILMATIETEEN LAITOS

Short name: FMI

Address of the organisation

Street Erik Palmenin aukio 1

Town HELSINKI

Postcode 00560

Country Finland

Webpage www.fmi.fi

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **FMI**

Department(s) carrying out the proposed work

Department 1

Department name

Arctic Space Centre

☐ not applicable

☒ Same as proposing organisation's address

Street

Erik Palmenin aukio 1

Town

HELSINKI

Postcode

00560

Country

Finland

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **FMI**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Mr.

Sex

☒ Male

☐ Female

First name **Jyri**

Last name **Heilimo**

E-Mail **jyri.heilimo@fmi.fi**

Position in org.

Head of Unit

Department

Arctic Space Centre

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

Erik Palmenin aukio 1

Town

HELSINKI

Post code

00560

Country

Finland

Website

<https://en.ilmatieteenlaitos.fi/arctic-space-centre>

Phone

+358505680802

Phone 2

+358295394684

Fax

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Other contact persons

First Name	Last Name	E-mail	Phone
Miriam	Kosmale	miriam.kosmale@fmi.fi	+XXX XXXXXXXXX

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UiT**

PIC

999874643

Legal name

UNIVERSITETET I TROMSOE - NORGES ARKTISKE UNIVERSITET

Short name: *UiT*

Address of the organisation

Street HANSINE HANSENS VEG 14

Town TROMSO

Postcode 9019

Country Norway

Webpage <http://uit.no/>

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentyes

Research organisationno

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....12/03/1995 - no

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UiT**

Department(s) carrying out the proposed work

Department 1

Department name Department of Physics and Technology

☐ not applicable

☒ Same as proposing organisation's address

Street HANSINE HANSENS VEG 14

Town TROMSO

Postcode 9019

Country Norway

Department 2

Department name Department of Automation and Process engineering

☐ not applicable

☒ Same as proposing organisation's address

Street HANSINE HANSENS VEG 14

Town TROMSO

Postcode 9019

Country Norway

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UiT**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Prof.

Sex

☒ Male

☐ Female

First name **Rune**

Last name **Graversen**

E-Mail **rune.graversen@uit.no**

Position in org.

Professor

Department

Department of Physics and Technology

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

HANSINE HANSENS VEG 14

Town

TROMSO

Post code

9019

Country

Norway

Website

https://uit.no/om/enhet/ansatte/person?p_document_id=384288&p_dim

Phone

+47 77625242

Phone 2

+xxx xxxxxxxxx

Fax

+xxx xxxxxxxxx

Other contact persons

First Name	Last Name	E-mail	Phone
Alena	Dekhtyareva	alena.dekhtyareva@uit.no	+4740571003
Camilla	Brekke	camilla.brekke@uit.no	+47 91588660

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name

ORGANISATION METEOROLOGIQUE MON

PIC

999544940

Legal name

ORGANISATION METEOROLOGIQUE MONDIALE

Short name: ORGANISATION METEOROLOGIQUE MONDIALEOMM WMO

Address of the organisation

Street AVENUE DE LA PAIX 7 BIS

Town GENEVA 2

Postcode 1211

Country Switzerland

Webpage

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationyes

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationno

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name

ORGANISATION METEOROLOGIQUE MON

Department(s) carrying out the proposed work

Department 1

Department name

Science and Innovation Department

☐ not applicable

☒ Same as proposing organisation's address

Street

AVENUE DE LA PAIX 7 BIS

Town

GENEVA 2

Postcode

1211

Country

Switzerland

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name

ORGANISATION METEOROLOGIQUE MON

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Prof.

Sex

☒ Male

☐ Female

First name **Alexander**

Last name **Baklanov**

E-Mail **abaklanov@wmo.int**

Position in org.

Science Officer

Department

Science and Innovation Department

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

AVENUE DE LA PAIX 7 BIS

Town

GENEVA 2

Post code

1211

Country

Switzerland

Website

https://public.wmo.int/en

Phone

+41(0)227308095

Phone 2

+4553826357

Fax

+41(0)227308049

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **GFZ**

PIC

999994341

Legal name

HELMHOLTZ ZENTRUM POTSDAM DEUTSCHESGEOFORSCHUNGSZENTRUM GFZ

Short name: GFZ

Address of the organisation

Street TELEGRAFENBERG 17

Town POTSDAM

Postcode 14473

Country Germany

Webpage www.gfz-potsdam.de

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **GFZ**

Department(s) carrying out the proposed work

Department 1

Department name

Remote Sensing and Geoinformatics (1.4)

☐ not applicable

☒ Same as proposing organisation's address

Street

TELEGRAFENBERG 17

Town

POTSDAM

Postcode

14473

Country

Germany

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **GFZ**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☐ Male

☒ Female

First name **Sabine**

Last name **Chabrillat**

E-Mail **chabri@gfz-potsdam.de**

Position in org.

Group Leader

Department

Remote Sensing and Geoinformatics (1.4)

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

TELEGRAFENBERG 17

Town

POTSDAM

Post code

14473

Country

Germany

Website

www.gfz-potsdam.de

Phone

+49 331 288-1108

Phone 2

+xxx xxxxxxxxx

Fax

+49 331 288-1192

Other contact persons

First Name	Last Name	E-mail	Phone
Andreas	Kueppers	epo@gfz-potsdam.de	+49 331 288-1030

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **HZG**

PIC

999507401

Legal name

HELMHOLTZ-ZENTRUM GEESTHACHT ZENTRUM FUR MATERIAL- UND KUSTENFORSCHUNG G

Short name: *HZG*

Address of the organisation

Street MAX PLANCK STRASSE 1

Town GEESTHACHT

Postcode 21502

Country Germany

Webpage www.hzg.de

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyno

Legal personyes

Non-profityes

International organisationno

International organisation of European interestno

Industry (private for profit).....no

Secondary or Higher education establishmentno

Research organisationyes

Enterprise Data

SME self-declared status.....07/07/2008 - no

SME self-assessment unknown

SME validation sme.....07/07/2008 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **HZG**

Department(s) carrying out the proposed work

Department 1

Department name

Environmental Chemistry, Institute of Coastal Research

☐ not applicable

☒ Same as proposing organisation's address

Street

MAX PLANCK STRASSE 1

Town

GEESTHACHT

Postcode

21502

Country

Germany

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **HZG**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Zhiyong**

Last name **Xie**

E-Mail **zhiyong.xie@hzg.de**

Position in org.

Principal Investigator

Department

Institute of Coastal Research

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

Max-Planck Street 1

Town

Geesthacht

Post code

21502

Country

Germany

Website

https://www.hzg.de/environmental_chemistry

Phone

+49 4152 872330

Phone 2

+49 171 2371701

Fax

+49 4152 872332

Other contact persons

First Name	Last Name	E-mail	Phone
Hans-Jörg	Isemer	hans-joerg.isemer@hzg.de	+49 4152 871661
Silke	Köppen	silke.koeppen@hzg.de	+49 4152 871699
Laura	Schwabe	laura.schwabe@hzg.de	+49 4152 871670

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UFZ**

PIC

999994632

Legal name

HELMHOLTZ-ZENTRUM FÜR UMWELTFORSCHUNG GMBH - UFZ

Short name: **UFZ**

Address of the organisation

Street PERMOSERSTRASSE 15

Town LEIPZIG

Postcode 04318

Country Germany

Webpage www.ufz.de

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyno

Legal personyes

Non-profityes

International organisationno

International organisation of European interestno

Industry (private for profit).....no

Secondary or Higher education establishmentno

Research organisationyes

Enterprise Data

SME self-declared status.....29/09/2008 - no

SME self-assessment unknown

SME validation sme.....29/09/2008 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UFZ**

Department(s) carrying out the proposed work

Department 1

Department name Monitoring and Exploration Technologies

☐ not applicable

☒ Same as proposing organisation's address

Street PERMOSERSTRASSE 15

Town LEIPZIG

Postcode 04318

Country Germany

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UFZ**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Jan**

Last name **Bumberger**

E-Mail **jan.bumberger@ufz.de**

Position in org.

Head of the of scientific data management

Department

Monitoring and Exploration Technologies

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

PERMOSERSTRASSE 15

Town

LEIPZIG

Post code

04318

Country

Germany

Website

https://www.ufz.de/index.php?en=34217

Phone

+49 341 235 1802

Phone 2

+xxx xxxxxxxxx

Fax

+xxx xxxxxxxxx

Other contact persons

First Name	Last Name	E-mail	Phone
Annette	Schmidt	annette.schmidt@ufz.de	+49 341 235 1663
Steffen	Zacharias	steffen.zacharias@ufz.de	+49 341 235 1381
Michael	Mirtl	michael.mirtl@ufz.de	+43 1313043410

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **PSI**

PIC

999994923

Legal name

PAUL SCHERRER INSTITUT

Short name: *PSI*

Address of the organisation

Street FORSCHUNGSTRASSE 111

Town VILLIGEN PSI

Postcode 5232

Country Switzerland

Webpage www.psi.ch

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....10/05/2016 - no

SME self-assessment10/05/2016 - no

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **PSI**

Department(s) carrying out the proposed work

Department 1

Department name

Laboratory of Atmospheric Chemistry

☐ not applicable

☒ Same as proposing organisation's address

Street

FORSCHUNGSTRASSE 111

Town

VILLIGEN PSI

Postcode

5232

Country

Switzerland

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **PSI**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Imad**

Last name **El Haddad**

E-Mail **imad.el-haddad@psi.ch**

Position in org.

Group Leader

Department

Laboratory of Atmospheric Chemistry

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

FORSCHUNGSTRASSE 111

Town

VILLIGEN PSI

Post code

5232

Country

Switzerland

Website

Phone

+41 56 310 29 95

Phone 2

+XXX XXXXXXXXX

Fax

+XXX XXXXXXXXX

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **FVB-IGB**

PIC

999927120

Legal name

FORSCHUNGSVERBUND BERLIN EV

Short name: FVB-IGB

Address of the organisation

Street **RUDOWER CHAUSSEE 17**

Town **BERLIN**

Postcode **12489**

Country **Germany**

Webpage **www.fv-berlin.de**

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyno

Legal personyes

Non-profityes

International organisationno

International organisation of European interestno

Industry (private for profit).....no

Secondary or Higher education establishmentno

Research organisationyes

Enterprise Data

SME self-declared status.....20/08/2008 - no

SME self-assessment unknown

SME validation sme.....20/08/2008 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **FVB-IGB**

Department(s) carrying out the proposed work

Department 1

Department name

Leibniz-Institut für Gewässerökologie und Binnenfischerei (IGB)

☐ not applicable

☐ Same as proposing organisation's address

Street

Müggelseedamm 310

Town

Berlin

Postcode

12587

Country

Germany

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **FVB-IGB**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Andreas**

Last name **Jechow**

E-Mail **jechow@igb-berlin.de**

Position in org.

Scientist

Department

Leibniz-Institut für Gewässerökologie und Binnenfischerei (IGB)

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

Müggelseedamm 310

Town

Berlin

Post code

12587

Country

Germany

Website

igb-berlin.de

Phone

+49 30 64181909

Phone 2

+xxx xxxxxxxxx

Fax

+49 30 64181663

Other contact persons

First Name	Last Name	E-mail	Phone
Anne	Höner	hoener@fv-berlin.de	+49 30 63923481

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **EPFL**

PIC 999973971 **Legal name** ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE

Short name: EPFL

Address of the organisation

Street BATIMENT CE 3316 STATION 1

Town LAUSANNE

Postcode 1015

Country Switzerland

Webpage www.epfl.ch

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentyes

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....17/05/2016 - no

SME self-assessment04/10/1991 - no

SME validation sme.....04/10/1991 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **EPFL**

Department(s) carrying out the proposed work

Department 1

Department name

ENAC IIE EERL

☐ not applicable

☐ Same as proposing organisation's address

Street

Rue de l'Industrie 17, Case Postale 440

Town

Sion

Postcode

CH 1951

Country

Switzerland

Dependencies with other proposal participants

Character of dependence	Participant	
Same Group	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **EPFL**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Prof.

Sex

☐

Male

☒

Female

First name **Julia**

Last name **Schmale**

E-Mail **julia.schmale@epfl.ch**

Position in org. Assistant Professor

Department ENAC IIE EERL

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street Rue de l'Industrie 17, Case Postale 440

Town Sion

Post code

1951

Country Switzerland

Website <https://www.epfl.ch/labs/eerl/>

Phone + 41 21 6958269

Phone 2

+xxx xxxxxxxxx

Fax

+xxx xxxxxxxxx

Other contact persons

First Name	Last Name	E-mail	Phone
Andreas	Mortensen	research.office@epfl.ch	+41 21 6934161

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **CNR**

PIC

999979500

Legal name

CONSIGLIO NAZIONALE DELLE RICERCHE

Short name: **CNR**

Address of the organisation

Street **PIAZZALE ALDO MORO 7**

Town **ROMA**

Postcode **00185**

Country **Italy**

Webpage **www.cnr.it**

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....18/05/2016 - no

SME self-assessment unknown

SME validation sme.....05/12/2008 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **CNR**

Department(s) carrying out the proposed work

Department 1

Department name

Istituto di Scienze Polari

☐ not applicable

☐ Same as proposing organisation's address

Street

Via Torino 155

Town

Mestre Venezia

Postcode

30172

Country

Italy

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **CNR**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Warren**

Last name **Cairns**

E-Mail **warrenraymondlee.cairns@cnr.it**

Position in org.

Researcher

Department

Istituto di Scienze Polari

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

Via Torino 155

Town

Mestre Venezia

Post code

30172

Country

Italy

Website

Phone

+39041 2348992

Phone 2

+393299750012

Fax

+XXX XXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Carlo	Barbante	barbante@unive.it	+XXX XXXXXXXXX
Roberto	Salzano	roberto.salzano@cnr.it	+XXX XXXXXXXXX
Andrea	Spolaor	andrea.spolaor@cnr.it	+XXX XXXXXXXXX
Chiara	Venier	chiara.venier@cnr.it	+XXX XXXXXXXXX
Valentina	Cester	valentina.cester@cnr.it	+XXX XXXXXXXXX

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **CNRS**

PIC

999997930

Legal name

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS

Short name: **CNRS**

Address of the organisation

Street RUE MICHEL ANGE 3

Town PARIS

Postcode 75794

Country France

Webpage www.cnrs.fr

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....18/11/2008 - no

SME self-assessment unknown

SME validation sme.....18/11/2008 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **CNRS**

Department(s) carrying out the proposed work

Department 1

Department name

☐ not applicable

☐ Same as proposing organisation's address

Street

Town

Postcode

Country

Dependencies with other proposal participants

Character of dependence	Participant	
<input type="text"/>	<input type="text"/>	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **CNRS**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Jeroen**

Last name **Sonke**

E-Mail **jeroen.sonke@get.omp.eu**

Position in org.

Senior scientist

Department

Geosciences Environnement Toulouse

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

14 ave Edouard Belin

Town

Toulouse

Post code

31400

Country

France

Website

Phone

33651270885

Phone 2

+xxx xxxxxxxxx

Fax

+xxx xxxxxxxxx

Other contact persons

First Name	Last Name	E-mail	Phone
Aurelien	Dommergue	aurelien.dommergue@univ-grenoble-alpes.f	+xxx xxxxxxxxx
Christophe	Giraud	fp7@dr14.cnrs.fr	+xxx xxxxxxxxx
Sara	Fleury	sara.fleury@legos.obs-mip.fr	+xxx xxxxxxxxx
Laure	Gandois	laure.gandois@ensat.fr	+xxx xxxxxxxxx
Catherine	Larose	catherine.larose@ec-lyon.fr	+xxx xxxxxxxxx
Alexei	Kouraev	kouraev@legos.obs-mip.fr	+33 953633937

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **NCSR**

PIC

999978239

Legal name

NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS"

Short name: *NCSR*

Address of the organisation

Street END OF PATRIARCHOU GRIGORIOU E AND

Town AGIA PARASKEVI

Postcode 15341

Country Greece

Webpage www.demokritos.gr

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....12/05/2016 - no

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **NCSR**

Department(s) carrying out the proposed work

Department 1

Department name

Institute of Nuclear & Radiological Sci. & Tech., Energy & Safety

☐ not applicable

☒ Same as proposing organisation's address

Street

END OF PATRIARCHOU GRIGORIOU E AND 27 NE

Town

AGIA PARASKEVI

Postcode

15341

Country

Greece

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **NCSR**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Kostas**

Last name **Eleftheriadis**

E-Mail **elefther@ipta.demokritos.gr**

Position in org.

Research Director

Department

Institute of Nuclear & Radiological Sci. & Tech., Energy & Safety

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

END OF PATRIARCHOU GRIGORIOU E AND 27 NEAPOLEOS STREET

Town

AGIA PARASKEVI

Post code

15341

Country

Greece

Website

www.demokritos.gr

Phone

+306948535815

Phone 2

+306948535815

Fax

+302106503050

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ICOS ERIC**

PIC

922983713

Legal name

INTEGRATED CARBON OBSERVATION SYSTEM EUROPEAN RESEARCH INFRASTRUCTURE CO

Short name: *ICOS ERIC*

Address of the organisation

Street ERIK PALMENIN AUKIO 1

Town HELSINKI

Postcode 00560

Country Finland

Webpage www.icos-ri.eu

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ICOS ERIC**

Department(s) carrying out the proposed work

Department 1

Department name

Head Office

☐ not applicable

☒ Same as proposing organisation's address

Street

ERIK PALMENIN AUKIO 1

Town

HELSINKI

Postcode

00560

Country

Finland

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ICOS ERIC**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Werner**

Last name **Kutsch**

E-Mail **werner.kutsch@icos-ri.eu**

Position in org.

Director General

Department

Head Office

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

ERIK PALMENIN AUKIO 1

Town

HELSINKI

Post code

00560

Country

Finland

Website

https://www.icos-ri.eu

Phone

+358504484598

Phone 2

+XXX XXXXXXXXX

Fax

+XXX XXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Jouni	Heiskanen	jouni.heiskanen@icos-ri.eu	+XXX XXXXXXXXX
Elena	Saltikoff	elena.saltikoff@icos-ri.eu	+358 50 5933791
Leysan	Karimova	leysan.karimova@icos-ri.eu	+358442792400

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **CEA**

PIC

999992401

Legal name

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES

Short name: CEA

Address of the organisation

Street RUE LEBLANC 25

Town PARIS 15

Postcode 75015

Country France

Webpage www.cea.fr

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....17/05/2019 - no

SME self-assessment unknown

SME validation sme.....01/10/2008 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **CEA**

Department(s) carrying out the proposed work

Department 1

Department name

Laboratoire des Sciences du Climat et de l'Environnement

☐ not applicable

☐ Same as proposing organisation's address

Street

CEA Saclay, Orme des merisiers, bat 714

Town

Gif sur Yvette

Postcode

91190

Country

France

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **CEA**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Jean-Daniel**

Last name **Paris**

E-Mail **jean-daniel.paris@lsce.ipsl.fr**

Position in org.

Deputy Head of section, biogeochemical cycles and environmental transfers

Department

Laboratoire des Sciences du Climat et de l'Environnement

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

CEA Saclay, Orme des merisiers, bat 714

Town

Gif sur Yvette

Post code

91190

Country

France

Website

https://www.lsce.ipsl.fr

Phone

+33169081700

Phone 2

+33169087711

Fax

+33169087716

Other contact persons

First Name	Last Name	E-mail	Phone
Isabelle	Rault	isabelle.rault@cea.fr	+XXX XXXXXXXXX

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **OCEAN NEXT**

PIC

908203047

Legal name

OCEAN NEXT

Short name: OCEAN NEXT

Address of the organisation

Street 90 CHEMIN DU MOULIN

Town LA TERASSE

Postcode 38660

Country France

Webpage www.ocean-next.fr

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyno

Non-profitno

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationno

Legal personyes

Industry (private for profit).....yes

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **OCEAN NEXT**

Department(s) carrying out the proposed work

Department 1

Department name

Ocean Next

☐ not applicable

☐ Same as proposing organisation's address

Street

90 Chemin du Moulin

Town

La Terrasse

Postcode

38660

Country

France

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **OCEAN NEXT**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Mr.

Sex

☒ Male

☐ Female

First name **Jacques**

Last name **Verron**

E-Mail **jacques.verron@ocean-next.fr**

Position in org.

Head

Department

Ocean Next

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

90 Chemin du Moulin

Town

La Terrasse

Post code

38660

Country

France

Website

https://ocean-next.fr/

Phone

+33 675505125

Phone 2

+XXX XXXXXXXXX

Fax

+XXX XXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Elena	Zakharova	zavocado@gmail.com	+XXX XXXXXXXXX

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UK MetOffice**

PIC

999892685

Legal name

MET OFFICE

Short name: UK MetOffice

Address of the organisation

Street FITZROY ROAD

Town EXETER

Postcode EX1 3PB

Country United Kingdom

Webpage www.metoffice.gov.uk

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationno

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UK MetOffice**

Department(s) carrying out the proposed work

Department 1

Department name

Ocean Forecasting R&D

☐ not applicable

☒ Same as proposing organisation's address

Street

FITZROY ROAD

Town

EXETER

Postcode

EX1 3PB

Country

United Kingdom

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UK MetOffice**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Matthew**

Last name **Martin**

E-Mail **matthew.martin@metoffice.gov.uk**

Position in org.

Science Fellow

Department

Ocean Forecasting R&D

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

FITZROY ROAD

Town

EXETER

Post code

EX1 3PB

Country

United Kingdom

Website

https://www.metoffice.gov.uk/

Phone

+44 (0)3301351713

Phone 2

+XXX XXXXXXXXX

Fax

+44 (0)1392 885681

Other contact persons

First Name	Last Name	E-mail	Phone
Dom	Lethem	dom.lethem@metoffice.gov.uk	+XXX XXXXXXXXX

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **BSC**

PIC

999655520

Legal name

BARCELONA SUPERCOMPUTING CENTER - CENTRO NACIONAL DE SUPERCOMPUTACION

Short name: *BSC*

Address of the organisation

Street Calle Jordi Girona 31

Town BARCELONA

Postcode 08034

Country Spain

Webpage www.bsc.es

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....01/03/2005 - no

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **BSC**

Department(s) carrying out the proposed work

Department 1

Department name

Earth Sciences

☐ not applicable

☐ Same as proposing organisation's address

Street

Jordi Girona, 29

Town

Barcelona

Postcode

08034

Country

Spain

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **BSC**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Pablo**

Last name **Ortega**

E-Mail **portega@bsc.es**

Position in org.

Climate Prediction Group co-Leader

Department

Earth Sciences Department

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

Jordi Girona, 29

Town

Barcelona

Post code

08034

Country

Spain

Website

https://www.bsc.es/ortega-montilla-pablo

Phone

+34 934137679

Phone 2

+xxx xxxxxxxxx

Fax

+xxx xxxxxxxxx

Other contact persons

First Name	Last Name	E-mail	Phone
Dorota	Jouet	dorota.jouet@bsc.es	+34 934134082
Mar	Rodriguez	mar.rodriguez@bsc.es	+34 934137566

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ECMWF**

PIC

999916741

Legal name

EUROPEAN CENTRE FOR MEDIUM-RANGE WEATHER FORECASTS

Short name: *ECMWF*

Address of the organisation

Street SHINFIELD PARK

Town READING

Postcode RG2 9AX

Country United Kingdom

Webpage www.ecmwf.int

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationyes

International organisation of European interestyes

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ECMWF**

Department(s) carrying out the proposed work

Department 1

Department name

Research Department

☐ not applicable

☒ Same as proposing organisation's address

Street

SHINFIELD PARK

Town

READING

Postcode

RG2 9AX

Country

United Kingdom

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ECMWF**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☐ Male

☒ Female

First name **Patricia**

Last name **de Rosnay**

E-Mail **patricia.rosnay@ecmwf.int**

Position in org.

Senior Scientisst

Department

Research Department

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

SHINFIELD PARK

Town

READING

Post code

RG2 9AX

Country

United Kingdom

Website

www.ecmwf.int

Phone

+441189499625

Phone 2

+XXX XXXXXXXXX

Fax

+XXX XXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Daniel	Thiemert	daniel.thiemert@ecmwf.int	+441189499024
Hao	Zuo	hao.zuo@ecmwf.int	+XXX XXXXXXXXX
Steffen	Tietsche	steffen.tietsche@ecmwf.int	+XXX XXXXXXXXX

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **AMAP**

PIC 998180053 **Legal name** Arctic Monitoring and Assessment Programme Secretariat

Short name: AMAP

Address of the organisation

Street HJALMAR JOHANSENS GATE 14

Town TROMSO

Postcode 9296

Country Norway

Webpage www.amap.no

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationno

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....09/05/2017 - no

SME self-assessment09/05/2017 - no

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **AMAP**

Department(s) carrying out the proposed work

No department involved

Department name

Name of the department/institute carrying out the work.

☒ not applicable

☐ Same as proposing organisation's address

Street

Please enter street name and number.

Town

Please enter the name of the town.

Postcode

Area code.

Country

Please select a country

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **AMAP**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Sex ☒ Male ☐ Female

First name **Jan Rene**

Last name **Larsen**

E-Mail **jan.rene.larsen@amap.no**

Position in org.

Department



Same as
organisation name

☒ Same as proposing organisation's address

Street

Town

Post code

Country

Website

Phone

Phone 2

Fax

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ESTELLUS**

PIC

990821827

Legal name

ESTELLUS SAS

Short name: *ESTELLUS*

Address of the organisation

Street BOULEVARD DE SEBASTOPOL 93

Town PARIS

Postcode 75002

Country France

Webpage

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyno

Legal personyes

Non-profitno

International organisationno

International organisation of European interestno

Industry (private for profit).....yes

Secondary or Higher education establishmentno

Research organisationno

Enterprise Data

SME self-declared status.....31/07/2009 - yes

SME self-assessment unknown

SME validation sme.....31/07/2009 - yes

Based on the above details of the Beneficiary Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ESTELLUS**

Department(s) carrying out the proposed work

No department involved

Department name

Name of the department/institute carrying out the work.

☒ not applicable

☐ Same as proposing organisation's address

Street

Please enter street name and number.

Town

Please enter the name of the town.

Postcode

Area code.

Country

Please select a country

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ESTELLUS**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☐

Male

☒

Female

First name **Catherine**

Last name **Prigent**

E-Mail **catherine.prigent@obspm.fr**

Position in org.

Expert

Department

ESTELLUS SAS

☒

Same as
organisation name

☒ Same as proposing organisation's address

Street

BOULEVARD DE SEBASTOPOL 93

Town

PARIS

Post code

75002

Country

France

Website

http://www.estellus.fr

Phone

+33 1 40 51 20 18

Phone 2

+XXX XXXXXXXXX

Fax

+XXX XXXXXXXXX

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **MSU**

PIC

999872315

Legal name

M.V. LOMONOSOV MOSCOW STATE UNIVERSITY

Short name: *MSU*

Address of the organisation

Street LENINSKIE GORY

Town MOSCOW

Postcode 119992

Country Russian Federation

Webpage www.msu.ru

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentyes

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....30/12/1998 - no

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **MSU**

Department(s) carrying out the proposed work

Department 1

Department name

Faculty of Geography

☐ not applicable

☐ Same as proposing organisation's address

Street

Leninskiye Gory 1

Town

Moscow

Postcode

119991

Country

Russian Federation

Department 2

Department name

Research Computing Center

☐ not applicable

☐ Same as proposing organisation's address

Street

Leninskiye Gory 1/4

Town

Moscow

Postcode

119234

Country

Russian Federation

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **MSU**

Department 3

Department name

Skobeltsyn Institute of Nuclear Physics

☐ not applicable

☐ Same as proposing organisation's address

Street

Leninskie Gory, 1,b.2

Town

Moscow

Postcode

119991

Country

Russian Federation

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **MSU**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☒ Male

☐ Female

First name **Pavel**

Last name **Konstantinov**

E-Mail **kostadini@mail.ru**

Position in org.

Assistant Professor

Department

Faculty of Geography

☐

Same as
organisation name

☐ Same as proposing organisation's address

Street

Leninskye Gory d.1

Town

Moscow

Post code

119991

Country

Russian Federation

Website

http://www.eng.geogr.msu.ru/

Phone

+74959392942

Phone 2

+79161663960

Fax

+xxx xxxxxxxxx

Other contact persons

First Name	Last Name	E-mail	Phone
Mikhail	Varentsov	mvar91@gmail.com	+79175333506
Olga	Popovicheva	olga.popovicheva@gmail.com	+79099497138

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **IAO SB RAS**

PIC

896681290

Legal name

V.E. ZUEV INSTITUTE OF ATMOSPHERIC OPTICS OF SIBERIAN BRANCH OF RUSSIAN ACADEM

Short name: *IAO SB RAS*

Address of the organisation

Street Academician Zuev square, 1

Town Tomsk

Postcode 634055

Country Russian Federation

Webpage www.iao.ru

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....29/11/2017 - no

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **IAO SB RAS**

Department(s) carrying out the proposed work

Department 1

Department name Laboratory of Atmospheric Composition Climatology

☐ not applicable

☒ Same as proposing organisation's address

Street Academician Zuev square, 1

Town Tomsk

Postcode 634055

Country Russian Federation

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **IAO SB RAS**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Prof.

Sex

☒ Male

☐ Female

First name **Boris**

Last name **Belan**

E-Mail **bbd@iao.ru**

Position in org.

Deputy Director

Department

Institute of Atmospheric Optics, Siberian Branch, Russian Academy of Science

☐

Same as
organisation name

☒ Same as proposing organisation's address

Street

Academician Zuev square, 1

Town

Tomsk

Post code

634055

Country

Russian Federation

Website

www.iao.ru

Phone

+7 3822 491406

Phone 2

+7 3822 491202

Fax

+7 3822 491202

Other contact persons

First Name	Last Name	E-mail	Phone
Mikhail	Arshinov	michael@iao.ru	+7 3822 492894

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **SIO RAS**

PIC

998671552

Legal name

P.P. SHIRSHOV INSTITUTE OF OCEANOLOGY OF RUSSIAN ACADEMY OF SCIENCES

Short name: SIO RAS

Address of the organisation

Street NAKHIMOVSKY PROSPECT 36

Town MOSKVA

Postcode 117997

Country Russian Federation

Webpage www.ocean.ru

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....27/06/2008 - no

SME self-assessment unknown

SME validation sme.....27/06/2008 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **SIO RAS**

Department(s) carrying out the proposed work

Department 1

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Geological

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117997

Country

Russian Federation

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **SIO RAS**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

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☐ Female

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Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

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Short name: KSC RAS

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Webpage ksc.ru

Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **KSC RAS**

Department(s) carrying out the proposed work

Department 1

Department name

KSC RAS

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☒ Same as proposing organisation's address

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Country

Russian Federation

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **KSC RAS**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

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☐ Female

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Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

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Legal Status of your organisation

Research and Innovation legal statuses

Public bodyyes

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentno

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status.....30/08/2006 - no

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **RADI CAS**

Department(s) carrying out the proposed work

Department 1

Department name

Key Laboratory of Digital Earth Sciences

☐ not applicable

☒ Same as proposing organisation's address

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Town

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Postcode

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Country

China (People's Republic of)

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **RADI CAS**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Dr.

Sex

☐ Male

☒ Female

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Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UAF**

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Legal Status of your organisation

Research and Innovation legal statuses

Public bodyno

Non-profityes

International organisationno

International organisation of European interestno

Secondary or Higher education establishmentyes

Research organisationyes

Legal personyes

Industry (private for profit).....no

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UAF**

Department(s) carrying out the proposed work

Department 1

Department name

Geophysical Institute and Department of Chemistry and Biochemistr

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Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **UAF**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

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Sex

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☐ Female

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Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ORNL**

PIC

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Short name: ORNL

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Legal Status of your organisation

Research and Innovation legal statuses

Public bodyno

Legal personyes

Non-profityes

International organisationno

International organisation of European interestno

Industry (private for profit).....no

Secondary or Higher education establishmentno

Research organisationno

Enterprise Data

SME self-declared status.....21/05/1999 - no

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ORNL**

Department(s) carrying out the proposed work

Department 1

Department name

Oak Ridge National Laboratory, Environmental Sciences Division

☐ not applicable

☐ Same as proposing organisation's address

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Town

Oak Ridge, TN

Postcode

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Country

United States

Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **ORNL**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

Mr.

Sex

☒ Male

☐ Female

First name **Giri**

Last name **Prakash**

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Department ARM Data Center, Environmental Sciences Division

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Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

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Legal Status of your organisation

Research and Innovation legal statuses

Public bodyno

Legal personyes

Non-profityes

International organisationno

International organisation of European interestno

Industry (private for profit).....no

Secondary or Higher education establishmentno

Research organisationyes

Enterprise Data

SME self-declared status..... unknown

SME self-assessment unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

iARCDEV

Short name **PNNL**

Department(s) carrying out the proposed work

Department 1

Department name Pacific Northwest National Laboratory (PNNL)

☐ not applicable

☐ Same as proposing organisation's address

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Country United States

Department 2

Department name Environment & Infrastructure Business Unit

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Dependencies with other proposal participants

Character of dependence	Participant	

Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym

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Short name **PNNL**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title

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Sex

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☒ Female

First name **Jennifer**

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E-Mail **jennifer.comstock@pnnl.gov**

Position in org.

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☐

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☐ Same as proposing organisation's address

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Country

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Other contact persons

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Proposal Submission Forms

Proposal ID **SEP-210640103**

Acronym **iARCDEV**

3 - Budget

Total requested EU contribution for the proposal/ €	15 000 000
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IARCDEV: INTEGRATED ARCTIC CHANGE OBSERVATIONS AND SERVICES FOR SUSTAINABLE ARCTIC DEVELOPMENT

1. Excellence

The project iARCDEV is motivated by the increasing role of the Arctic in megatrends induced by climate change such as new transport routes, demography changes and use of natural resources. These megatrends have substantial impacts on the terrestrial, marine and cryosphere domains which are undergoing unprecedented environmental change (Overland et al. 2019). Local, regional, national and international decision-making bodies require fact-based services to tackle challenges of rapid environmental change.

The project brings together 26 European beneficiaries and 10 non-funded partners covering the key components pertinent to sustainable Arctic development, which will pave the way towards a coordinated Arctic GEOSS. The European investment in Environmental Research Infrastructures (RIs), namely Integrated Carbon Observation System (ICOS), Aerosols, Clouds and TRace Gases Research InfraStructure (ACTRIS, represented by UHEL) and Long-Term Ecosystem Research (eLTER, represented by UFZ), contribute to iARCDEV by providing expertise in domain-specific environmental observations and linkages to European-wide activities in Arctic data interoperability. The scientific beneficiaries will develop targeted pilot services from current state-of-the-art observations following recommendations from International Panel on Climate Change (IPCC, 2019). The process is steered by a co-design process, where information from the Arctic communities, indigenous knowledge and community-based observations are integrated with the comprehensive environmental observations. The non-funded partners from USA, Russia and China complement our expertise and expand our scale from European Arctic to circumpolar context. The close collaboration with Copernicus and GEOSS partners ensures sustainability and build towards Arctic GEOSS.

We integrate across cryosphere, marine and terrestrial domains and develop both domain specific and integrative pilot services. The work builds on the “integrative and Comprehensive Understanding on Polar Environments (iCUPE; www.atm.helsinki.fi/icupe) project (Petäjä et al. 2020), which provides targeted comprehensive datasets pertinent to the Arctic environment. The project supports European leadership and collaboration in Arctic observations by relying on the European RIs, fills relevant gaps and improves coordination, interoperability and validation of Arctic in-situ, and satellite Earth Observations (EO), works towards integration of data streams, and fosters interoperability and data sharing from GEOSS and Copernicus perspectives.

1.1 Objectives

We integrate and expand the observational capacities in the marine, terrestrial and cryosphere domains in the Arctic, in order to better understand ongoing environmental changes and their impacts. Our goal is to provide interoperable services for science-based policy making at regional to (inter-) national levels, in support of Arctic sustainable development. To do this, we utilize the full capacity of integrative in-situ observations, satellite remote sensing, community-based observations and supporting modeling frameworks. The objectives are:

Obj-1: To improve and extend terrestrial, marine and cryosphere in-situ and satellite observations and to monitor changes in the Arctic comprehensively and in a harmonized manner; specifically: to identify new variables to better survey the changing Arctic; to provide new data products and improve operationalization of Arctic observations; to synergize with community-based observation systems; to streamline data management and interoperability.

Obj-2: To deliver novel pilot services relevant to stakeholders assisting Arctic people's and nations' adaptation to climate change, specifically: based on co-design processes to incorporate crucial contributions from established community-based observation systems, participatory citizen science, and indigenous knowledge of e.g. reindeer herders; to translate scientific data products into accessible and understandable knowledge and information.

Obj-3: To design a future Arctic GEOSS, based on enhanced cooperation with Copernicus Services and ESA projects to explore the EO requirements for data assimilation projections and Arctic change predictions; to assess the contributions of the High Priority Copernicus Missions (HPCM) dedicated to polar regions; and to provide a roadmap for comprehensive satellite and in-situ EO in the Arctic.

1.2 Relation to the work programme

iARCDEV global objectives will enable the transition to a greener, resource efficient and climate-resilient economy, and support the UN's Sustainable Development Goals (SDGs), the COP21 Paris Agreement and UNDRR Sendai Framework. Our actions will help Arctic societies to address and adapt to the impacts of climate change, including extreme events in urban, rural and marine environments. Climate change is intertwined with environmental degradation, pollution, and social and health issues. We will integrate existing and new Copernicus in-situ and satellite observations across the Arctic to develop, test and validate sustainable solutions to address these challenges.

(i) Advancing the operationalization of an integrated pan-Arctic Observing System in preparation for a future Arctic GEOSS initiative. iARCDEV works towards advancing and facilitating access to observational data and state-of-the-art knowledge in the Arctic. We follow guiding principles outlined by the Sustaining Arctic Observing Networks (SAON) to build an Arctic GEOSS framework with common goals. We design services that support activities in several Arctic Societal Benefit Areas (disasters, ecosystems, energy, health, water). The modelling efforts

will be linked to EO data and in-situ observations so that they can be operationalized and updated. We will also prepare post-project contributions to two HPCM projects CRISTAL and CIMR dedicated to polar observations.

(ii) Improving and extending the terrestrial, marine and cryosphere in-situ measurements and the community-based monitoring systems necessary for the monitoring of the Arctic. We will fill critical observational data gaps in the Arctic land-air-ocean continuum (COMPERM-BGC, MERCURY, ARCPop, ArcSEA). We will contribute to upgrading and modernizing existing observational networks to increase the longevity of these data services. We integrate community-based and citizen science monitoring systems with in-situ measurements, EO and modelling to address the impacts on sea ice dynamics and marine ecosystems, on air and snow pollution on terrestrial ecosystems, permafrost stability and vulnerability, dynamic biogeochemical cycles in changing permafrost terrain, pan-Arctic mercury cycling, on persistent organic pollutants (POPs) and emerging organic contaminants (EOCs) and human exposure. A novel Copernicus EO based snow information service (REINDEER) to reindeer herding communities will be developed. MELT-WATCH pilot service designed to survey melting glaciers in the Greenland and Svalbard will complement existing services and transform scientific datasets into relevant societal information. Most of the services contribute to more than one of the domains (terrestrial, marine, cryosphere).

(iii) Setting up pilot services and implementing the coordinated network of services necessary for adaptation to Arctic climate change. iARCDEV will co-design pilot services with local stakeholders and end users to maximize benefits of services for planning and adaptation strategies (SArcUD, COMPERM-SOC, ARCPop, APROVE-ARC, ArcSEA, MERCURY, ARCNITE). Pilot services are designed to be scaled further to the Arctic domain and continue to support climate change adaptation beyond the iARCDEV timeline.

(iv) Contributing to the interoperability of Arctic Data systems. iARCDEV will pledge compliance to GEOSS and Copernicus data sharing principles and GCI interoperability testbeds and will implement interoperability interfaces based on international and community-based standards.

(v) Contributing to national, regional and international decision-making processes and science strategies. iARCDEV will work towards effective tailored data dissemination to the end users and support decision-making processes. Several apps and web services planned within iARCDEV will enable easy, fast and accessible flow of novel knowledge (REINDEER, COMPERM-BGC & -SOC, MELT-WATCH, ArcSEA, ARCNITE, SArcUD). iARCDEV will facilitate an increase in awareness of authorities and communities in the Arctic and beyond on changing environment. We will cooperate with high-schools to ensure that this process starts with the next generation (APROVE-ARC, MELT-WATCH, ARCNITE), and we will work with the Gender Equality in the Arctic initiative to emphasize how Arctic change affects women (MERCURY, ARCPop). We connect to national initiatives and activities and to European RIs performing long-term observations in the polar environments. Our work is directly connected to the Arctic Council and its working groups (e.g. Arctic Monitoring and Assessment Programme (AMAP) and Conservation of Arctic Flora and Fauna (CAFF) Working Groups, WG). We will provide improved data and models relevant to Coupled Model Intercomparison Project (CMIP) of IPCC.

1.3 Concept and methodology

(a) Concept. The motivations behind iARCDEV stem from the need to address challenges of global change in the Arctic context. The concept of iARCDEV is to deliver stakeholder-relevant pilot services for the Arctic marine, cryosphere and terrestrial environment, by utilizing the full capacity of comprehensive in-situ and state-of-the-art satellite observations in a co-design and capacity building working strategy (Fig 1). iARCDEV is trans-disciplinary utilizing expertise in in-situ observations, satellite remote sensing, modeling frameworks and the social dimension. The work is closely connected to ongoing Earth observations (EO) in the Arctic by the consortium members enabling facilitation and coordination between the national and international activities with a circumpolar capacity.

The wide spectrum of developing and new observational parameters, data products and pilot services produced enables the delivery of integrated data required for science-based decision making related to the Arctic sustainable development. The demands of the decision makers, Arctic citizens, local and regional authorities, and transport and industrial companies will be taken into account by co-designing the pilot services.

Pilot summaries

ArcSEA (Pan-Arctic SEA water circulation and sea ice extent, thickness and volume: survey, forecast and tendencies) combines improved sea level, sea ice thickness and snow depth satellite observations over the Arctic Ocean to provide innovative short term and long-term sea ice extent and concentration estimates for operational forecasting purposes and climatic studies. We will use passive and active radar satellites in synergy with 3 models: ECMWF for sub-seasonal forecasting (meteorological applications), HadGEM for short-range and seasonal forecasts (sea water and sea ice activities) and EC-Earth for decadal climate forecasting (IPCC projections). Sea ice is a major source of phytoplankton of the upper food chain that we will survey from optical satellites with Artificial Intelligence (AI). We will evaluate the potential of the polar HPCM projects, mainly CRISTAL and CIMR.

MELT-WATCH combines optical and radar satellite data and integrates ground-based observations for a service on melting glaciers and snow. The visualization of time-series on glacier melt characteristics, supraglacial lakes, ice/snow albedo and sea water/ice parameters will provide a crucial tool for investigating the melt cycle and the

seasonal variability of coastal areas in relation to climate change. We will provide gap-filling services that complete existing knowledge and transform scientific datasets into societal relevant information. The pilot will feed to modelling community (incl. MERCURY and ARCPop), will raise awareness concerning climate change to the public and will support decision makers on actions that can adapt human activities to environmental changes.

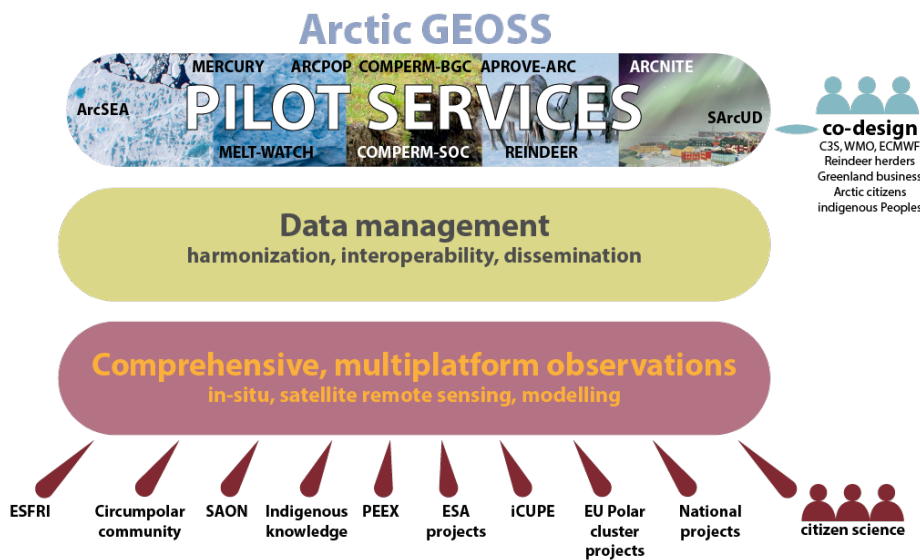


Fig. 1. The concept of iARCDEV. The comprehensive observations are developed and harmonized with European RIs and integrated across marine, cryosphere, and terrestrial domains. The spatial coverage is expanded with circumpolar collaboration. The stakeholder-relevant, scientifically driven interoperable pilot services are targeted for the benefit of the Arctic environment and the local population, incl. indigenous peoples. The thematic RI beneficiaries and the scientific community active in GEOSS and Copernicus ensure sustainability beyond iARCDEV.

MERCURY (Pan-Arctic MERCURY cycling and human exposure) aims to fill data gaps on Arctic mercury cycling in the land-air-ocean continuum, and to address human health risk. We will use the observations together with a state-of-the-art 3D model to predict how IPCC climate and UNEP Minamata emission trajectories will affect mercury cycling and marine food-web pollution. The model assimilates ArcSEA, MELT-WATCH and COMPERM products to provide pilot services that include ecosystem mercury predictions for Arctic national health and fishery agencies supporting sustainable fishing practices and human fish consumption advisories.

ARCPop (ARctic observations and modeling for legacy and emerging Persistent Organic Pollutants) integrates observations and creates a unique database for POPs and EOCs in the Arctic Ocean basin. The EOCs in the Arctic ecosystem will be identified and quantified. Multicompartment models using ArcSEA and MELT-WATCH products will elucidate biogeochemical cycling of POPs. Integrated assessments will provide a foundation for the development of European and global chemical management policies to protect human health and the environment in the Arctic.

APROVE-ARC (Aerosol in-situ PROperties, VErtical distribution, and source apportionment in the ARCtic) is based on the collection and combination of physico-chemical aerosol parameters from stations across the Arctic and focuses on filling gaps in datasets, especially where information with vertical resolution and seasonality of such parameters is missing. The data will be used for validation of Copernicus model and satellite products to provide local and global authorities and stakeholders with decision making and long-term environmental assessment tools regarding the extent of influence and impact of changing anthropogenic fossil fuel combustion and biomass burning emission sources with respect to climate changing variables and emerging risks in sensitive Arctic regions.

COMPERM-BGC (COMprehensive PERMafrast observations - BioGeoChemistry) integrates in-situ and Copernicus satellite observations of physical and biogeochemical properties of permafrost from long-term terrestrial monitoring programs (Greenland Ecosystem Monitoring (GEM), INTERACT sites). We deliver improved terrestrial monitoring and Earth system modelling of permafrost degradation, river run-off, flooding, carbon cycling and greenhouse gas emissions. Pilot services include observations and maintenance of fundamental climate and biogeochemical variables for academic and educational stakeholders, and permafrost stability, run-off and ice road forecasting for local communities, governments and industry.

COMPERM-SOC (COMprehensive PERMafrast observations - SOCiety) disseminates data on permafrost stability through community-based monitoring and a co-designed mobile app reporting system. We will employ citizen-science datasets drawing on existing protocols and observations from the Frost Tube Regional Campaign (Global Learning and Observations to Benefit the Environment - GLOBE) Program and the Local Environmental Observer (LEO) Network mobile app. The mobile app pilot service visualizes local permafrost disturbance hotspots for use by local community members, education, governments and industry.

REINDEER (Copernicus climate service to REINDEER herding community) will develop a one-stop-shop mobile web app that provides an easy access to Arctic weather data, Copernicus satellite and webcam-based remote sensed snow and soil products and hydrological forecasts using C3S data. We will enhance the previous services with novel cryosphere products via an easily accessible and user-friendly application. The development needs a direct feedback from the indigenous community to tailor visualization of the scientific variables. Optimized data handling, incl. Big Data satellite products, will be established to allow fast loading in the Arctic remote areas. Primary users and co-

designers will be Finnish reindeer husbandry communities (Paliskuntien yhdistys). It will support traditional reindeer herding by addressing e.g. increased necessity of supplementary feeding and corralling in difficult snow conditions. **ARCNITE** (ARCtict citizen-science to monNITor Effect of air and light pollution on aurora viewing) combines scientific and co-designed community-based measurements of air and light pollution with satellite observations of night-lights and will deliver mobile and web app(s) for impact assessment on Arctic ecosystems and aurora observations. Auroras are an integral part of indigenous heritage, a driver for the tourism industry and can leverage awareness of Arctic environmental pollution. Night light products can monitor urbanization and gas flaring in the Arctic. ARCNITE is connected to APROVE-ARC, SArcUD and REINDEER. It targets a broad public audience, but also aims to help decision makers in sustainable development and energy savings by reducing light pollution.

SArcUD (Sustainable Arctic Urban Development) will deliver evidence-based decision-making tools and guidance to local and regional Arctic governments on the impacts of e.g. fuel choices, energy use and urban development on the terrestrial ecosystem and human health, and how these impacts can be sustainably mitigated under a range of climate change scenarios. The pilot uses local in-situ air quality and meteorological data, ship traffic data for coastal cities and ECMWF reanalysis data as an input for air quality, atmospheric chemistry and receptor modeling. Gap-filling in-situ measurements will be co-designed in cooperation with regional stakeholders. The results will be validated with satellite products (from TROPOMI, CALIPSO, MODIS) and in-situ observations. The short- and long-term decisions are evaluated with WMO Global Atmospheric Watch (GAW) Urban Research Meteorology and Environment (GURME) concept for sustainable cities.

iARCDEV connections. The project is extensively linked with a multitude of national and international activities. It will take into consideration national strategies and initiatives supporting collaborative work and facilitate working towards a joint European vision in the Arctic. We will acquire improved knowledge of the Arctic environment and promote cooperation among European countries and Russia, USA, Canada and China.

National. The work is fully in line with the Arctic strategies of countries of iARCDEV beneficiaries: Finland, Sweden, Denmark, Italy, France, Norway and Germany, which address the importance of local residents, education, research, economy, infrastructure, environment, stability and international cooperation in the Arctic, and promoting economically, socially and environmentally sustainable development in the Arctic. E.g., climate change adaptation, air pollution prevention, human and wildlife exposure to emerging pollutants are identified by the national strategies as environmental issues on which to concentrate efforts. iARCDEV will acquire a better knowledge on all these topics and will add to developing the 4D picture necessary to support sustainable politics for the Arctic and aid implementation of more stringent environmental standards in order to preserve this ecologically vulnerable region.

International. Our multi-domain data collection and integration is done in collaboration with the European RIs, observing systems and programs (ICOS, ACTRIS, eLTER, Svalbard Integrated Arctic Earth Observing System, SIOS, UHEL, UiT, AWI, SU are partners), Environmental Research Infrastructures (ENVRI), International Network for Terrestrial Research and Monitoring in the Arctic (INTERACT), European Global Ocean Observing System (EuroGOOS), MONitoring NETworks (MONET) and Global Atmospheric Passive Sampling (GAPS), European Monitoring and Evaluation Program (EMEP), Global SMEAR (Station for Measuring Earth surface-Atmosphere Relations), GEM, Copernicus Marine Environment Monitoring Service (CMEMS), Copernicus Climate Change Service (C3S), World Glacier Monitoring Service (WGMS), WMO GAW, WMO Global Cryosphere Watch (GCW). The collaborations are facilitated through Arctic Science Partnership (ASP), Arctic Research Center (ARC), Pan Eurasian Experiment (PEEX) and University of the Arctic (UArctic). We work towards coherent European Arctic actions in a cost-effective manner.

Our work is connected to the Arctic Council (e.g. AMAP, CAFF) and will contribute to International Arctic Science Committee (IASC) and air Pollution in the Arctic: Climate, Environment and Societies (PACES), Cryosphere and ATmospheric CHEmistry (CATCH), Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAIC), Year of Polar Prediction (YOPP) and Polar Prediction Project (PPP). We are involved in PEEX, FutureEarth, and International Conference on Arctic Research Planning (ICARP). The international projects include: WMO GURME, ALPACA (Alaskan Layered Pollution And Chemical Analysis), which is National Science Foundation Navigating the New Arctic -project, and Arctic+ ESA project. We connect to H2020 projects: iCUPE, Integrated Arctic Observation System (INTAROS), Advanced Prediction in Polar regions and beyond: modelling, observing system design and Linkages associated with a Changing Arctic climaTE (APPLICATE), EuroGEO Showcases: Applications Powered by Europe (E-SHAPE), Constrained aerosol forcing for improved climate projections (FORCES), ENVRI-FAIR and European Science Cloud (EOSC), European RO in International Landscape (RISCAPE). All include iARCDEV beneficiaries.

We participate in preparation and planning for future EO satellites for polar areas observation (Copernicus High Priority Candidate Missions CRISTAL (Copernicus Polar Ice and Snow Topography Altimeter), CIMR (Copernicus Imaging Microwave Radiometer), ROSE-L (L-band Synthetic Aperture Radar), CHIME (Copernicus Hyperspectral Imaging Mission for the Environment), Sentinel Next-Generation missions) and is connected to the ESA Climate Change Initiative (CCI+).

Table 1. Summary of iARCDEV pilot services, their products, connectivities, technological readiness levels (TRL).

Pilot and partners	Products	Connection to existing activities	Expansion beyond state-of-the-art	Services and their TRL before and after iARCDEV		
ArcSEA CNRS, UK MetOffice, BSC, UiT, ECMWF, Estel-lus	sea ice (SI) thickness (SIT), snow depth (SD), sea level anomaly (SLA), SI short/long-term forecast & reanalysis, plankton survey	CMEMS, C3S, SI-CCI, SL-CCI, CMIP5, SI-WMO, HPCMC Copernicus, APPLICATE, MOSAIC, ESA POLAR+, FDR4ALT, C3S, CIFRA, MAS-SIMAL, MetNo, FMI	impr. processing on phys. models, new tech by al-timetry and radiometers for SLA, SIT&SD obs., SIT & SD assimilation, new ocean color Chl-A survey	- SIT / SD / SLA observations - reanalysis - short-term forecast - long-term forecast - plankton	4 2 4 2 3	6 6 6 6 5
MERCURY CNRS, AU, CNR	Soil, snow, water, air Hg and microbial obs; 3D Earth System Hg Model	C3S, CGLS, iCUPE, GEM, Car-WetSib, GOS4M, INTERACT	new obs., updated marine, atmos, soil model parameterizations, permafrost Hg emission, marine ecosystem Hg level forecasts.	- new observations - ecosystem mercury model forecast	7 4 1 1	8 7 7 7
MELT-WATCH CNR, AWI, NCSR, FMI	time-series of melt cycle & seasonal variab of coastal areas in Greenland & Svalbard (glacier, snow cover, supraglacial lakes)	CCI Glacier, Cryoport, C3S Land, CGLS, WGMS, Cryo-clim, iCUPE, ESA RACZIW	new obs., updated marine, atmos, soil model parameterizations, permafrost Hg emission, and marine ecosystem Hg level forecasts.	- glacier surface hydrology features - surface melt and lakes occurrence - snow cover over mountainous areas - sea water colour in coastal areas - sea-ice extent in coastal areas - snow/ice chemistry and microphysics	2 4 4 4 3 5	5 7 7 7 5 7
REINDEER FMI, CNR, GFZ	fractional snow cover, snow water equivalent, snow extent, snow depth, soil condition, soil freeze/thaw	EU Life+ MONIMET, GlobSnow, SnowCCI, EU-METSAT H SAF, CGLS-Cryoshere, E-Shape, C3S, iCUPE	impr. processing for network of digital cameras, new web app, C3S seasonal forecast data, automated workflow	- mobile web app for snow/soil products - fractional snow cover from webcams - RT snow water equivalent, snow depth, soil freeze/thaw from satellite EO - seasonal forecast soil condition from model	4-5 4 8 6	9 9 9 9
COMPERM-BGC CNRS, OceanNext, AU, GFZ, ICOS, EULS, UHEL, CEA	in-situ soil/river/wetland obs of C and GHG, satellite vegetation, snow, ice cover, river discharge obs, permafrost degradation model, ice-road, flooding, permafrost degradation forecast	C3S, CGLS, iCUPE, GEM, Car-WetSib, INTERACT, eLTER, ICOS, NEON	new, critical obs.; novel HPC permafrost Earth system model; permafrost, flooding and C cycling forecasts	- new observations - HPC modelling - permafrost forecast - snowmelt, flooding, ice-road forecast	7 5 2 7	8 7 5 9
COMPERM-SOC CNRS, OceanNext, CNR, AU, GFZ	in-situ permafrost disturbance location, active layer depth, active layer temperature, permafrost disturbance glossary	LEO, GLOBE Frost Tube, Greenland Ecosystem Monitoring	new obs., workflow of integrating citizen science into model classification and validation, development of relevant curricula	- new observations - workflow of citizen science-permafrost model validation - curriculum	7 1 2	8 6 6
ARCPOP HZG, CNRS, CNR, AU, SU, NCSR	POPs in air (Svalbard, Greenland central Arctic), seawater snow & ice; integrated assess, air-sea /snow fluxes, POP lifecycle model	iCUPE, German ARP, EMEP, GOS4POPS, CAMS	New obs. on EOCs and POPs (Ny-Alesund & Greenland), link to obs from other Arctic locations & expeditions	- new observations - BETR-Global Modelling - CANMETOP Modelling	4 4 4	6 6 6
APROVE-ARC AU, NCSR, TROPOS, AMAP, UHEL, PSI, EPFL, SU, CNR	seasonality of particle number & size, aerosol absorption, scattering, chemical composition, BC in air & snow.	C3S, CAMS, SIOS	new obs. pollutant concentrations; link to obs. from Arctic; vertical distribution of pollution	- mapping tools for atmospheric climate variables measured at ground level - mapping tools for atmospheric climate variables measured with vertical resolution - dataset on climate-relevant parameters from in-snow analysis with spatial Arctic resolution	6 3 4	7 5 6
ARCNITE FVB-IGB, TROPOS, GFZ	Community based light pollution and air pollution, night lights	iCUPE, GEOessential	connecting air & light pollution impacts on ecosystems & aurora obs, night lights in the Arctic	- citizen science observations - air and light pollution - night lights web app - night light from gas flaring - night light impacts on Arctic ecosystems	6 2 3 2	8 6 8 7 6
SArCUD EPFL, UHEL, MSU, FMI, UiT, WMO, CNRS, TROPOS, AU, NCSR	impacts on terrest ecosystems & health from urban air quality under climate change, fuel & consumption, urban develop scenarios, short/long-term decision making in local/regional scale	WMO-GURME, WMO-IUS, WMO-GAW, PEEX, C3S, CAMS	air quality & climate change impact model in Arctic urban conditions, integrated meas in-situ & rm sens data; scenario development	- new observations in urban areas - WRF-Chem & Enviro-HIRLAM modelling - impact assessment on health and environment	5 4 1 1	7 7 7 7

(b) Methodology. The work in iARCDEV is organized in 5 Work packages (WPs), See Fig. 1 for the concept and Fig. 2 for the information flow. Fig 3 summarizes the contribution of beneficiaries in different WPs.

WP0: Management Coordinator: Prof. Tuukka Petäjä, UHEL; leads EU (iCUPE, ACTRIS-IMP) and nationally funded research and infrastructure projects; total acquired funding of 33 MEUR during the last 20 years; highly-cited scientist; h-factor 64 with >17 500 citations; he leads the aerosol thematic group (10 research teams: 70 scientists and 18 technicians) at UHEL & he will be supported by experienced financial, research coordination and communication staff. **T0.1: Project management** (T Petäjä, UHEL) ensures efficient financial and administrative management, incl. appropriate quality control and progress monitoring, optimization of information flow. The coordinator will be supported by a Steering Committee consisting of WP leaders with a balance between gender and career-stages. This will ensure efficient coordination of science activities and broad dissemination of results, promote mentoring of a new generation of leading scientists. We will establish two boards for guidance: (1) Infrastructure and scientific advisory board (J Mather, ARM; G Garric, Mercator Ocean; a representative from EUMETSAT); Role to keep the work scientifically relevant and in alignment with circumpolar long-term strategies. (2) Interaction and impact board (D Solatie, East. Lapland authority; E Parkkinen, Mayor of Salla; P Laiti, Sami youth; C Wennecke, Greenland Business A/S); Role to ensure relevance in line with the local and regional needs; to maximize societal impact and sustainable development in the Arctic and the development of Arctic GEOSS. The non-funded partners from China, Russia and USA contribute to Tasks T0.2, T1.2, T3.1, T4.1, T4.3, T4.5. **T0.2: Setting up and facilitating the co-design process** (A Jechow, FVB-IGB) will streamline the co-design process, will train all the partners in the co-designing and will monitor the progress. **T0.3: Impact assessment** (E-M Duplissy, UHEL) ensures unified pilot and data dissemination, and quantifies scientific and societal impacts of the pilot services based on the defined Key Performance Indicators (KPIs), see Sect. 1.3.

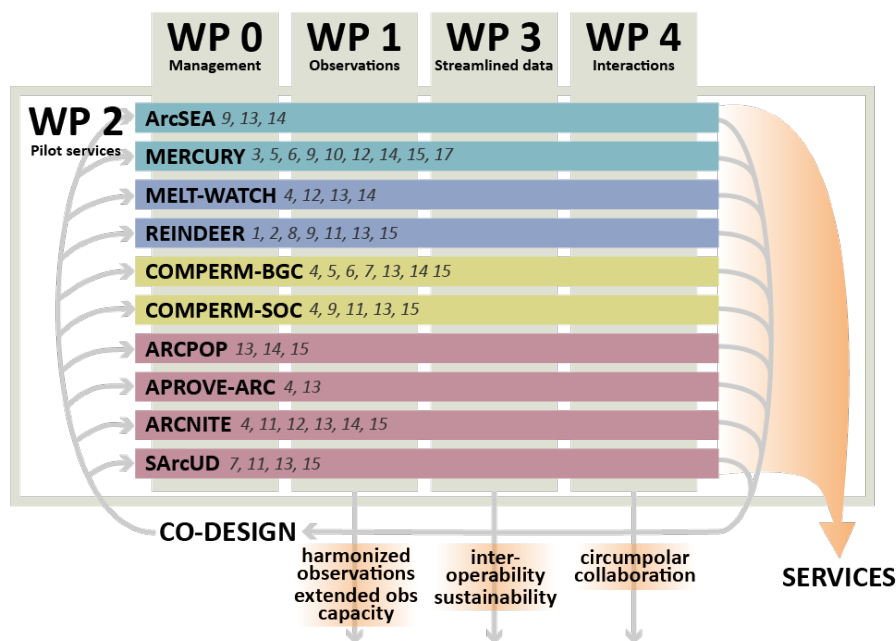


Fig. 2. The iARCDEV organization matrix. The terrestrial, marine, cryosphere and integrative pilots are co-designed with the stakeholders. The pilot services benefit the local communities, decision makers and the scientific community. The WPs support the pilot development and co-design. The WPs harmonize observations, extend the observation capacities and facilitate work towards sustainable Arctic GEOSS. The numbers connect to SDGs: 1 No poverty; 2 Zero hunger; 3 Health & well-being; 4 Education; 5 Gender equality; 6 Clean water; 7 Clean energy; 8 Work & economic growth; 9 Industry, Innovation, Infrastructures; 10 Reducing inequalities; 11 Sustainable cities; 12 Responsible consumption; 13 Climate action; 14 Life below water; 15 Life on land; 16 Peace; 17 Partnerships).

WP1: Observations (lead: TR Christensen, AU; S Fleury, CNRS) is focused on **Obj-1-2**. It aims to facilitate interactions between different thematic RIs with a particular Arctic focus to improve and extend their observational capacity and to connect terrestrial, marine and cryosphere in-situ and satellite measurements with community-based monitoring systems, which are required for monitoring of the Arctic in a harmonized manner. A more detailed description of connections between the pilot services, observation capacity requirements and expansion beyond state-of-the-art are summarized in Table 1. **T1.1: Identification of Arctic Essential (climate) variables** (J-R Larsen, AMAP) develops documentation framework necessary to identify, describe and evaluate critical variables (defined by their observing system requirements) for achieving Arctic societal benefits, and the use of such variables in a co-design process for implementation in pilot services. **T1.2: Capacity building and infrastructure integration within the Arctic** (E Saltikoff, ICOS) – links iCUPE, INTAROS, SAON, ENVRIplus, PEEEX specific observations and comprehensive analysis with European RIs (ICOS, ACTRIS, eLTER), Russian and North American activities for optimization observational capacities, reduction logistical costs for maintenance and facilitates implementation of data harmonization tools. **Expanding the observational capacities in the terrestrial (T1.3 A Beamish, GFZ), marine (T1.4 S Fleury, CNRS), cryosphere (T1.5 A Humbert, AWI) domains and T1.6 (K Eleftheriadis, NCSR)** integrate and provide necessary available and new in-situ, remote sensing, community-based observations as well as modelling tools (where applicable) for enhancing monitoring capacities and data provision. We expand interoperability for critical Essential Arctic Variables in collaboration with the European RIs and Atmospheric Radiation Measurement (ARM) research facilities. New observations and integrating modelling tools will improve the comprehensive understanding on the environment in the Arctic across the terrestrial, marine and cryosphere domains.

WP2: Pilot services (lead: A Humbert, AWI; J Sonke, CNRS), is focused on **Obj-1-2-3**. **T2.1 Pilot specific co-design** (H Skov, AU) will operate a continuous co-design process connecting the thematic data providers, pilot developers and the product end-users. It includes an equitable engagement of, and partnership with, Arctic Indigenous Peoples and local communities. We start from an establishment of a communal view of *societal benefit* and the intended user base of Arctic observations. A key tool is the International Arctic Observing Assessment Framework (IAOAF, IDA 2017), jointly created by SAON and the Science and Technology Policy Institute following the 2016 Arctic Science Ministerial and Essential Arctic Variables (T1.1) and identified 12 Arctic-specific Societal Benefit Areas (SBAs). The task will facilitate interaction between the end-users and the pre-identified pilots as well as initiate new pilot services during iARCDEV lifetime. **T2.2: Terrestrial pilot services** (A Beamish, GFZ), **T2.3 Marine pilot services** (S Fleury, CNRS), **T2.4 Cryosphere pilot services** (R Salzano, CNR) and **T2.5 Integrated pilot services** (J Schmale, EPFL) will develop and demonstrate domain specific pilot services. Table 1 outlines the pilot products, technical readiness levels (TRL) and connections to current, expanded, and future observational capacity in the Arctic. The pilots will be co-designed towards operationally supporting ArcticGEOSS.

WP3: Streamlined data and services: provision, interoperability and facilitation (lead: E Saltikoff, ICOS; S Noe, EULS) is focused on **Obj-3**. It implements best practices and data findable, accessible, interoperable and

reusable (FAIR) guidelines in data management to ensure interoperability for data and services. WP3 facilitates the development of the pilot services towards EU Polar Cluster, GEO and Copernicus. When applicable, the data produced in the pilots will be placed to domain specific EU-infrastructure or database for future use. Examples: ICOS Carbon portal and SMEAR database. **T3.1: iARCDEV data management plan** (E Ezhova, UHEL) implements best practices and FAIR guidelines on data management; assure usage of open international specifications on data sharing, delivery of high-quality data, coordination and interoperability between pilot services. **T3.2: Compliance with data management, sharing principles, and interoperability testbeds** (J Bumberger, UFZ) ensures compliance with GEOSS and Copernicus standards and GEOSS Common Interface (GCI) testbeds and their interoperability. **T3.3: Implementation of interoperability interfaces on international and community-based standards, GEOSS Data Management Principles and GEO Label** (C Venier, CNR) ensures interoperability and access to shared data, products, and services produced in the EU framework and international programs such as GCI/, ESA TEPs and Copernicus Data and Information Access Services (DIAS). **T3.4: Facilitating pilot service data streams** (A Mahura, UHEL) supports development of pilot services towards EU Polar cluster, GEO and Copernicus and develops dissemination strategies of datasets and services; contributes to data and services to GEOSS via GCI.

WP4: Interactions within the Arctic and strategic development (lead: T Petäjä, UHEL; J Schmale, EPFL) is focused on **Obj-1-2-3. T4.1: Targeted stakeholder engagement with ESA and Copernicus** (A Humbert, AWI; S Fleury, CNRS) focuses on connecting to ongoing ESA projects (e.g. Greenland CCI's) and upcoming (esaITT POLAR+, in particular 4D Greenland, Snow on sea ice and Surface mass balance). We initiate the installation of a permanent Polar Expert Group advising ESA on monitoring requirements and will provide user requirements from iARCDEV. **T4.2: Interaction with EuroGEOSS pilots in the Arctic context** (J Bäck, UHEL) connects pilots to E-SHAPE via the co-design process; and links to Minamata and Stockholm Conventions, air pollution effects on humans and ecosystems, flood hazard, extreme weather, carbon emissions, as well as forestry operations, hydro-electricity production, transportation safety, and tourism in Arctic regions. **T4.3: Circumpolar collaboration** (J Sonke, CNRS) focuses on collaboration with scientists, communities, and stakeholders from Arctic nations and beyond; and co-designing pilot services with Arctic nation stakeholders. **T4.4: Integration of research infrastructure strategies in the Arctic** (M Mirtl, UFZ) explores synergies and co-design opportunities for better streamlining and harmonizing observations on status, trends and impacts of pollution and climate change in the Arctic, covering the atmosphere, land, freshwater, ocean domains and interactions between Arctic ecosystems and societies. **T4.5: Community education and training, communication, dissemination** (L Riuttanen, UHEL) provides a coherent strategy for the communication and dissemination of activities and results, pilot services and products across research domains, while targeting several different target and stakeholder groups. **T4.6: Long-term strategy for pilot sustainability** (J Heilimo, FMI; J Bumberger, UFZ) explores and plans strategies for sustaining pilots and their data after the project; and connects to Copernicus services and to sustainable research data infrastructures (eg. EOSC, Pangaea). E.g. ArcSEA sea ice and sea level forecasting and MELT-WATCH products will become part of CMEMS and C3S; COMPERM permafrost evolution can be integrated in CLM; SArcUD air quality forecasting in CAMS; MERCURY marine ecosystem mercury forecasting in CMEMS; the operational pilots like REINDEER will find a sustainable way to maintain the service after the project.

Project organization. The coordinator is T. Petäjä (UHEL), supported by the local Project Office. The cross-cutting pilot services are managed by the pilot service leaders, who have the responsibility to steer the domain-specific observations via co-design with the end-users to services. The pilot services are supported by WPs (Fig. 3) and facilitates the development from observation, data management and interaction. The WPs develop iARCDEV towards Arctic GEOSS by bringing the scientific and circumpolar infrastructure operators into a close interaction.

Budget estimate in MEUR: WP0: 1.1 M; WP1: 3.9 M; WP2: 4.2 M; WP 3: 4.5 M; WP4: 1.3 M, a total 15 MEUR.

Gender dimension. Arctic climate change affects humans, regardless of gender. Nevertheless, the gap between male and female with regards to economic participation and political empowerment remains wide. We will support the Gender Equality in the Arctic project of the Arctic Council and co-organize events on how Arctic change impacts women in the Arctic; gender-specific products are developed in the MERCURY and ARCPop to support human fish consumption advisories, which include special recommendations for women of child-bearing age due to in utero developmental neurotoxicity of mercury. Mercury also affects childhood cognitive development and can be passed during breastfeeding. The iARCDEV management is gender balanced, both in the WPs and pilot services. We are committed to respecting gender balance in all interactions with the stakeholders.

Intellectual Property Rights (IPR). We will setup procedures e.g. on protecting the knowledge and confidentiality in the Consortium Agreement. This will include e.g. responsibilities, joint ownership, decision-making, membership, reporting and IPR rules. The work will be in line with the EC policy on Responsible Research and Innovation Policy for the H2020 Work Program. As a default, all background knowledge owned by a beneficiary shall remain the property of that partner. Project results shall be the property of the partner carrying out the work leading to those results and joint ownership is considered for the joint work. The innovations will initially be evaluated by the beneficiary owning the knowledge and innovations. The Coordinator may organize a further evaluation and set up

an advisory panel with expertise in IPR, market analyses, commercialization consisting of internal (Technology Transfer Offices of the contracting parties) and external experts. The Coordinator will be supported by the legal services of UHEL and Helsinki Innovation Services Ltd.

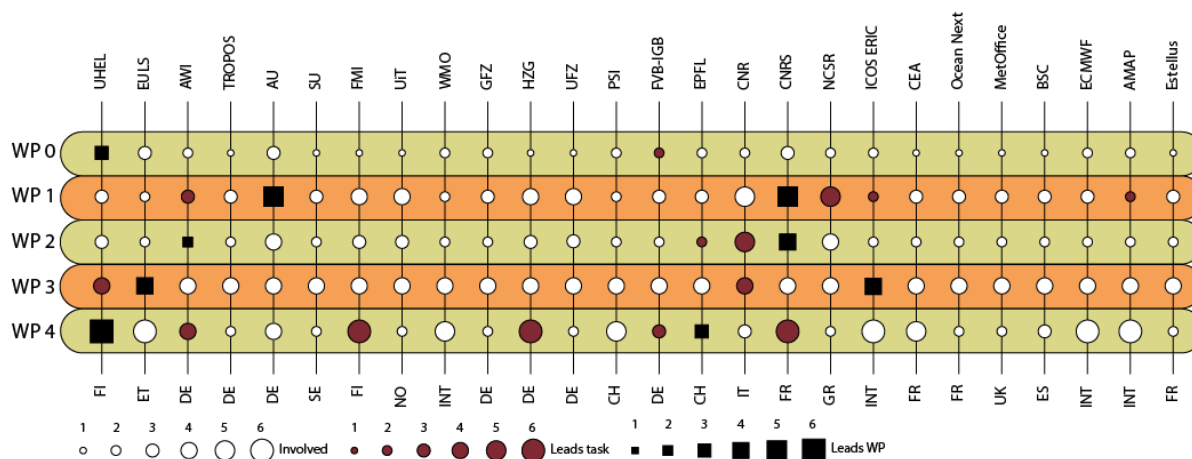


Fig. 3. Participation of iARCDEV beneficiaries in the WPs.

1.4 Ambition

Our ambition is to support European leadership in Arctic research and scientific, economic, environmental and political collaboration in support of SDG, the Paris Agreement and Sendai Framework. Our work in connection with non-EU Arctic Council countries, collaboration on Arctic environmental monitoring and circumpolar activities support a pan-Arctic vision of iARCDEV, where science-based policy making drives Arctic sustainable development. The work is planned to advance operationalization of pan-Arctic Observing System and contribute into preparation towards ArcticGEOS.

The pilot services draw on progress in technological development, innovation in observations, interoperability of data sources, digitalization of information as well as knowledge transfer within the scientific community and society. The iARCDEV endorses open data and FAIR principles, which will improve accessibility to WP1 environmental observations. WP3 implements GEOS and INSPIRE best practices and guidelines on data management and sharing to guarantee that our datasets and pilots remain findable, accessible, interoperable and reusable (FAIR), which is co-aligned with European RIs and on-going ENVRI-FAIR project. The iARCDEV beneficiaries are well represented in the UArctic cooperative network of universities stimulating implementation of iARCDEV results into education. UHEL coordinates Climate University project of Finnish Ministry of Education and Culture that develops free online courses in environmental sciences, sustainability and circular economy.

The pilot services will be implemented with a co-design approach and will operate in close connection with regional and local needs. There is a continuous feedback between RIs, scientific community, citizen science, local and regional decision-makers, general population and indigenous communities. This will facilitate iterative and perpetual improvement of pilot services, ensuring their longevity beyond iARCDEV lifetime. We highlight in our work the value of community knowledge and see its integration with traditional scientific methods as an irreplaceable tool to ensure sustainability of pilot services. Overall, our ambition is to be an integral part of resilient societies in the Arctic.

2. Impact

The impact of iARCDEV are (1) structural impacts arising from improved observational capacity, infrastructure development and data interoperability development in relation to comprehensive Arctic observations, (2) pilot-specific regional and circumpolar impacts from the utilization of the enhanced observational capacities (in-situ and satellite EO) hand-in-hand with community knowledge and citizen science, (3) project-wide integration between the terrestrial, marine and cryosphere domains in the pilot development, utilization, implementation and dissemination, (4) circumpolar collaboration and new opportunities arising from the trans-disciplinary and integrative research with an Arctic focus, (5) creating impact by delivering project activities and outcomes to a broad variety of stakeholders in a tailored fashion.

2.1 Expected impacts

iARCDEV impact objectives are: **(Imp-1)** to deliver new science-based data pertinent to the climate and environmental policy and legislation in the pan-Arctic at national and international scales, and for the well-being of the Arctic population; **(Imp-2)** to boost the use of Arctic environmental information and specific pilots, which provide a positive contribution towards sustainable Arctic development, by facilitating novel solutions and innovations; **(Imp-3)** to work towards the ArcticGEOS as a regional contribution of the global GEOS data system.

Structural impacts through the iARCDEV WPs:

The enhanced observation capacity (WP1) in the terrestrial, marine and cryosphere domains and their integration are conducted in synergy with the European RIs, which ensure their sustainability. WP4 links to the RIs

strategies in the capacity building. This is aligned with the EU H2020 Work Program (2018-2020; Climate Action, Environment, Resource Efficiency and Raw materials) that aims to deliver reliable and science-based EO and information for the effective decision-making in the pan-Arctic environment and to support the implementation of the 2030 Agenda for Sustainable Development, the Paris Agreement and the Sendai Framework for Disaster Risk Reduction 2015-2030 and to strengthen EO capacity focused on the European region with new data.

Pilot service impacts (WP2) support the aim of the EU H2020 Work Program to deliver tested pilot services that are co-aligned with the EuroGEOSS services for the Arctic. The iARCDEV pilot help the stakeholders mitigate and adapt to climate change in a sustainable way. The pilot services will disseminate product information to Arctic communities, decision makers, industries and academia on e.g. sea-ice forecasts, glacier melt, hydropower production, transport, tourism, industry, permafrost stability, flood risk, ice-road forecasts, fisheries, human health. Dissemination activities via web apps, educational and community outreach, and citizen science will increase climate change awareness of both local and non-resident communities.

Open data flow optimization (WP3). We will expand the interoperability and best practices as outlined by the GEOSS Data Management Principles and best practices (INSPIRE) and developed within ENVRI-FAIR. We will extensively use Copernicus data services, including CMEMS, C3S and Copernicus Atmosphere Monitoring Service (CAMS), as well as Copernicus DIAS platforms for pilot services (REINDEER) and selected DIAS that relies on renewable energy for their datacenter (e.g. WEkEO), as part of iARCDEV's commitment to sustainability. Data interoperability is a prerequisite in multidisciplinary pilot development. The active participation in ESA missions, Copernicus services and European RI data centers facilitate in-situ and satellite data integration and data interoperability. The interactions with ARM, RAD1 and Russian collaborators expand it into a circumpolar context.

Holistic system understanding and observation integration and impacts of the interaction and coordination (WP4). iARCDEV will build upon H2020 iCUPE project addressing the importance of a holistic system understanding and use of integrated observations (in-situ, satellite based remote sensing) and methods (data analyses together with modelling at different scales). We find synergies and involvement of the ongoing European (ICOS, ACTRIS, eLTER) and corresponding US (ARM, NEON) RIs in the domain specific activities. The EU-USA collaboration benefits from the IASC-PACES WG, where the iARCDEV beneficiaries are active in. The expertise and networks provided by the consortium members are the cornerstone of integration across the domains and the result synthesis. iARCDEV will connect to PEEX (which facilitates collaboration with Russia and China), developing Global Ecosystem Research Infrastructure (GERI) and to Global SMEAR. Our work is aligned with Navigating the New Arctic (NNA) program through a direct link through two unfunded partners (University of Alaska and NEON). Together we advance scientific knowledge in Arctic, promote well-being of humans and animals, preserve security of infrastructure and engage citizens and scientific communities. We pursue mission and goals of SAON initiative. Expertise and existing strong cooperation in iARCDEV inherited and expanded from iCUPE will be enhanced by the participation of Indigenous Peoples, local communities and citizens. This will improve sustainability of services developed in iARCDEV as envisioned in the SAON strategy.

The circumpolar initiatives bridge the Russian and Chinese research communities to the iARCDEV approach and help to develop towards the ArcticGEOSS. In addition to SAON, we connect our work with WMO-GAW and -GCW networks and the satellite based remote sensing orientated Digital Belt and Road (DBAR) – HiMAC (High Mountain & Cold Region) WG Programs. We support H2020 Work Programme goal aim to bring added value to the implementation of the GEO-Cold Region Initiative and facilitate work towards the Arctic GEOSS.

Impacts of iARCDEV co-design and citizen science. We take onboard 2nd Arctic Science Ministerial guidance for the assessment and definition of Arctic research priorities Indigenous Peoples organizations, and plans international collaboration with Russia, Canada, USA, Greenland, and Finland. Knowledge generated by Arctic peoples will be an essential part of co-designing of the pilot services. This work will build trust between the Arctic population, the scientific community and the decision makers. The improved communication and co-design process in the development will improve the relevance and impacts of the pilot services.

2.2 Justification and follow-up for the iARCDEV impact objectives and activities

Imp-1: Regional, climate, environmental policies and legislation; Paris Agreement & Sendai Framework

Justification: The Paris Agreement is a high-level worldwide agreement and process against which other international, national and sub-national policies are compared with. We will contribute to this process and improve the reliability of the climate science behind the Paris Agreement by enhancing observational capacity in the fragile Arctic environment. The project will support the knowledge-based climate policy leadership of the EU by identifying observational gaps and enhancing the observational capacity in the terrestrial, marine and cryosphere domains of the Arctic. This will enable mitigation and adaptation actions. iARCDEV results will also be synthesized and channeled into IPCC, Arctic Council and other science diplomacy processes. Our work supports the Sendai Framework for Disaster Risk Reduction (2015–2030), an international roadmap adopted by UN Member States in 2015. This framework targets four priorities: understanding disaster risk; strengthening disaster risk governance; implementing

disaster risk reduction; and enhancing disaster preparedness and response. Tackling climate change and support adaptation and SDGs is central to the iARCDEV pilot services. This is ensured by the co-design process.

Key stakeholders: local populations in the Arctic; national, regional, European and circumpolar decision makers, policy officers and scientists performing environmental analyses; EU institutions (Commission, Council, Parliament), DGs (ENV, CLIMA, AGRI, GROW, ENER, COMP, DEVCO, RTD), the Arctic Council and its observer countries, including China, IPCC, Academies of Science (Russia, China), Russian Geographical Society, Greenlandic government, Arctic nations, regional and local governments.

Follow-up and foreseen KPIs: number (#) of pilots established; # of direct interactions with decision makers; # of interactions in UN, EU, Arctic Council, Valdai Club, UNFCCC-COP, other high-level fora; # of interactions in local, regional, national, circumpolar levels; # of participants, stakeholder groups cross-cutting workshops (Sofia Earth Forum); # and quality of outreach materials; gender balance in pilot services.

Connection to iARCDEV: WPs1-4; Pilots: COMPERM, ArcSEA, APROVE-ARC, SArcUD, MELT-WATCH

Imp-2: Arctic environmental data benefitting Arctic population well-being, economy, sustainable development

Justification. The 2030 Agenda for Sustainable Development adopted by all UN Member States is the foundation for peace and prosperity for people and our planet as a whole. The 17 SDGs provide the target for sustainability, improve health and education, reduce inequality, and enhance economic growth in a sustainable manner. The added value of iARCDEV is to provide local communities and companies accurate, up-to-date environmental information and services through pilots for sustainable operations. This will also facilitate co-creation of future business plans based on the pilots established in iARCDEV.

Key stakeholders: Arctic population, indigenous people, decision makers, private-sector companies requiring EO applications for market development and application development, Arctic residents, indigenous communities, reindeer herders, Arctic land-owners, Arctic government officials, decision makers, companies in cleantech and environmental observation industry, data analysis and software developers.

Follow-up and foreseen KPIs: # of pilots established, # of pilot users, data downloads.

Connection to iARCDEV: WPs1-3; SArcUD, MELT-WATCH, REINDEER, ARCPop, APROVE-ARC, ARCNITE, MERCURY.

Imp-3: Work towards the Arctic GEOSS

Justification. SAON has developed the international Sustainable Arctic Observations Assessment Framework since 2017. The approach is based on the value tree analysis methodology, a comprehensive review of the Arctic strategies. SAON has ended up with 12 high-level Sustainable Benefit Areas (SBA), which should be the foundation for the future international efforts to assess the Arctic observations and to structure an Arctic observation system. The SAON approach addresses the challenge of Arctic's great size and remoteness, and the importance of understanding how processes at the Arctic are connected to other parts of the world. It further emphasizes the importance of the collection of social data and making them available for public use and the importance of local community feedback for decision-making. As a whole the decisions should rather be based on social, not economic values. We provide tools for this work and we co-align our activities with EuroGEOSS (E-Shape) to maximize the efforts towards the Arctic GEOSS.

Key stakeholders: European Commission, Group of Senior Officials, networks and organizations providing Arctic observations (in-situ, satellite EO), GEOSS, Copernicus, data developers, research community.

Follow-up and foreseen KPIs: # of pilot users, # of joint activities with EuroGEOSS (E-SHAPE).

Connection to iARCDEV: all WPs and the pilot services.

2.3. Outreach, dissemination, co-design, user engagement and training

User engagement and training are built into the fabric of iARCDEV through the two-way co-design process of the pilot services (T0.2 & T2.1). The iARCDEV beneficiaries are well represented in the UArctic cooperative network of universities (UArctic) stimulating implementation of iARCDEV results into education process. For example, UHEL coordinates the Climate University project that develops online education courses (freely available online) in environmental sciences, sustainability and circular economy. We build on experience acquired through ESA, EU H2020 and other national polar and cold region observation projects, C3S service, user requirement conferences, as well as sets of dedicated tools from the newly granted projects, where we engage the pilot service users. All these are examples and approaches in assessing the user requirements and advancing the user engagement.

Follow-up and foreseen KPIs: A series of face-to-face co-design events to develop the iARCDEV pilots.

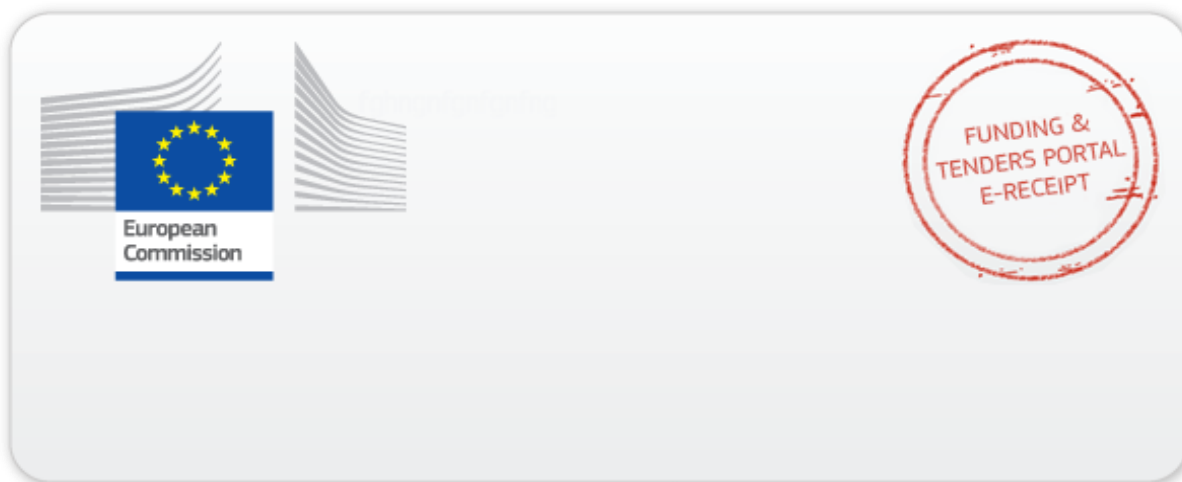
Connection to iARCDEV: all WPs and the pilot services.

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