# Pan-Arctic Observing System of Systems: Implementing Observations for Societal needs

*Pacific Arctic Group Fall meeting 2022, Victoria B.C., Canada*

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on behalf of

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ARCTIC PASSION

*'The lack of consistent and holistic mechanisms to assess observing system priorities and link independently funded efforts across the Arctic can be viewed as a systematic short-coming that has hindered adaptation strategies and limited funding responses for an expanded and improved observing system.'*

*(Roadmap for Arctic Observing and Data Systems - ROADS, Starkweather et al., 2021)*

- European Commission H2020 Program
- Project period: July 2021 – June 2025
- Project Coordination: Alfred Wegener Institute for Polar and Marine Research; *Michael Karcher, Luisa Cristini and Tordis Hellmann*
- Total budget: €15M
- 17 countries, 43 partner organizations and 6 Indigenous communities
- Project website: www.arcticpassion.eu

# General Objectives

- Co-create a **coherent, integrated and sustainable pan-Arctic Observing System of Systems**
- Meaningful collaboration with **Arctic communities, Indigenous Peoples and organisations**
- Expand the monitoring capabilities to **support predictions and risk assessments,** through **broad inclusion of Indigenous Knowledge and Local Knowledge**;
- Improve **data interoperability** and simplify access to 'application-ready' environmental data for the benefit of all users

# The Work Package structure of Arctic PASSION

## Strengthening core observing system elements

### Pillar A

**Core observing systems elements and Services**

**Work Package-1**
Establishing an adaptive and more complete Arctic observing system

**Work Package-2**
Bringing the Arctic Data System to action

**Work Package-3**
Supporting a smart Arctic Observing System by model-based impact assessments

**Work Package-4**
Innovating user-driven Arctic EuroGEO Pilot Services

## Decision-making support

### Pillar B

**Societal, science policy and decision-making support**

**Work Package-5**
Assessing Societal Benefits and Economic Impacts

**Work Package-6**
International Cooperation and Clustering for essential Arctic Integration

**Work Package-7**
Supporting coherent Policy and decision-making

## Synthesis and outreach

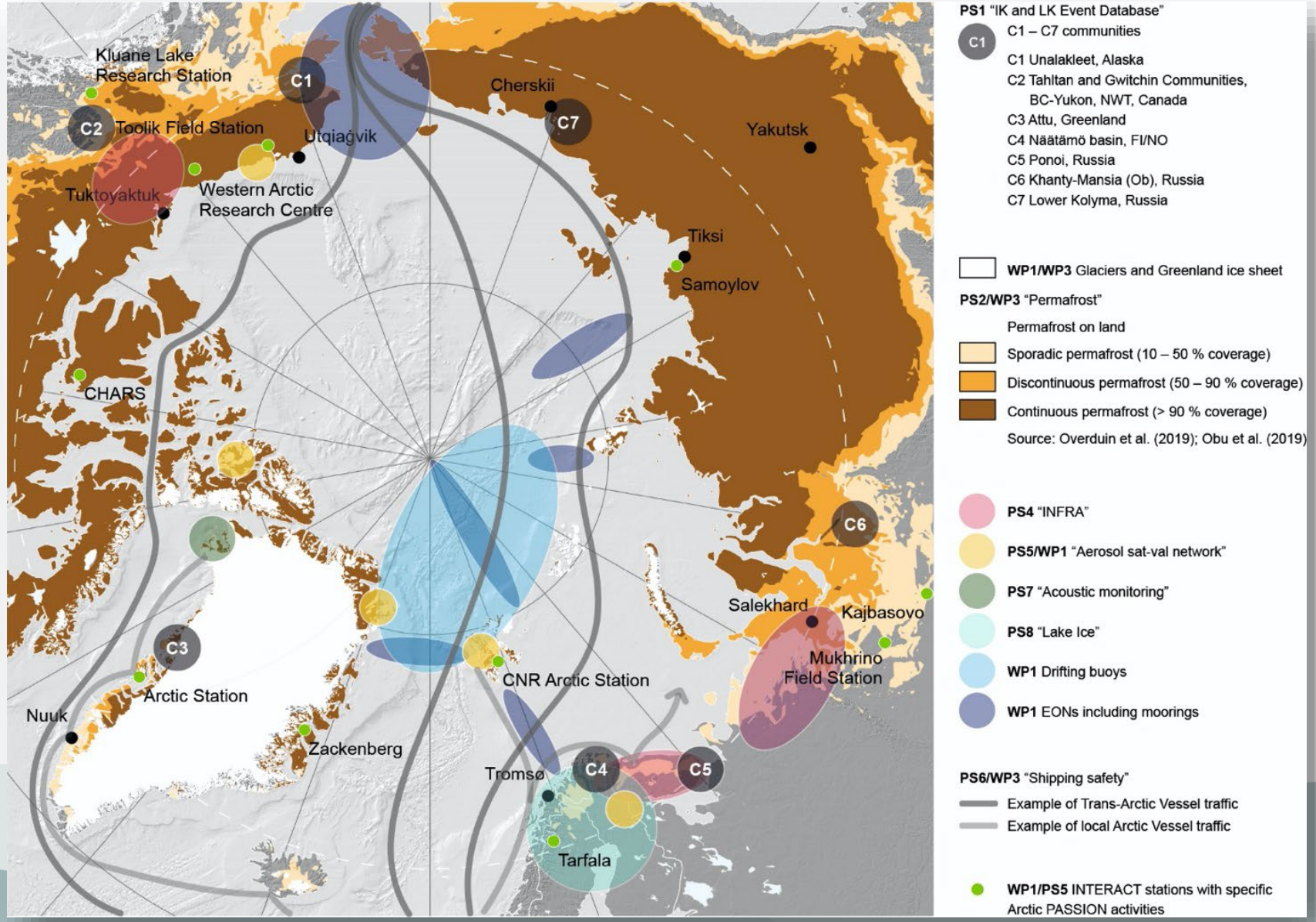
### Pillar C

**Synthesis, integration, and outreach**

**Work Package-8**
Co-developing an integrated and sustainable pan-AOSS

**Work Package-9**
Connecting the pan-AOSS with society through communication, dissemination, and engagement

# Geographical regions of Arctic PASSION activities



# Objectives connected to Work Packages

- WP1/O1 Enhance and integrate Arctic Observations → e.g. through the A-DBO!
- WP2/O2 Improve Arctic Data Management
- WP3/O3 Optimize Arctic Observing Networks through Modelling Techniques
- WP4/O4 Deliver New EuroGeo Pilot Services
- WP5/O5 Quantify the Societal and Economic Benefit of the pan-AOSS
- WP6/O6 Enhance International Collaboration and Clustering
- WP7/O7 Provide Support to Decision Making and Policy
- WP8/O8 Co-develop an integrated pan-AOSS and Upgrade an Arctic-GEOSS in GEO
- WP9/O9 Link Arctic Observations and Society

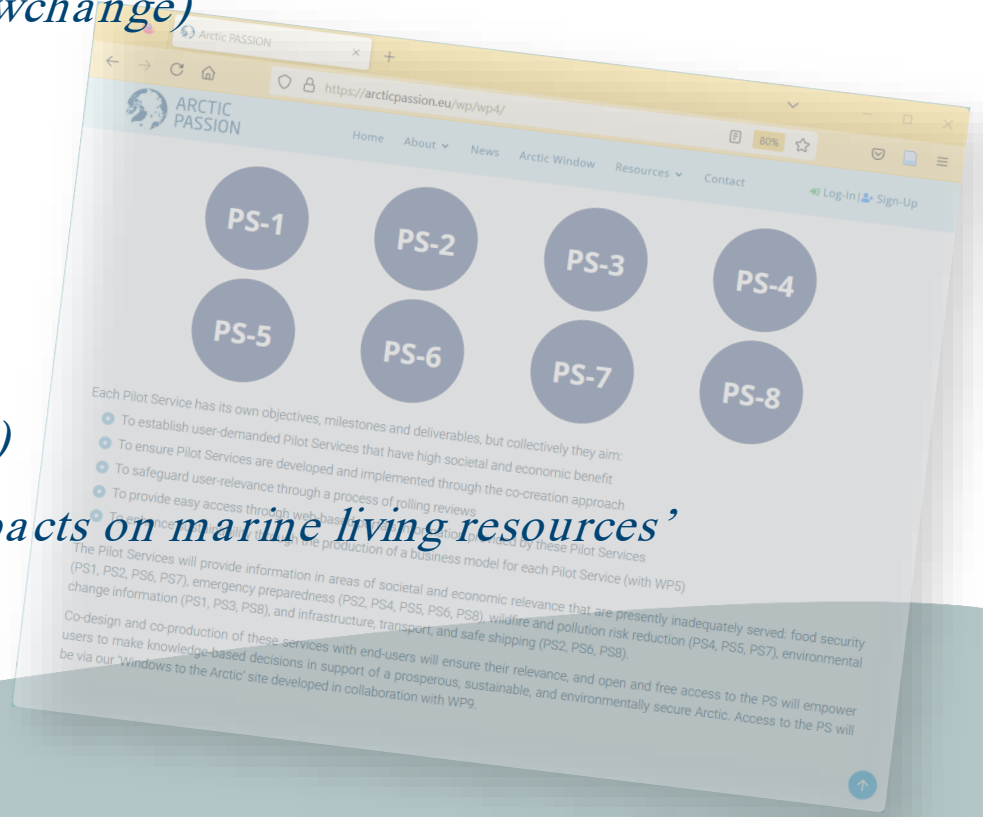
# Pilot Services, the core elements of ArcticPASSION (WP4/T. Mustonen/Snowchange and J.Rato&M.Simonsen/GINR)

Improve access to essential information services for communities, industry and governments.

Eight Pilot Services (PS) will be developed to **support emergency preparedness, food security, responses to climate and socio-economic changes**.

The PS are co-created in line with priorities established by Arctic Council, its Working Groups, the Arctic Science Ministerials, and the Arctic Observing Summit.

1. *'Event Database of CBM Using Oral Histories, IK and LK' (Snowchange)*
2. *'Pan-Arctic requirements-driven Permafrost Service' (AWI)*
3. *'State of the Arctic Environment' service (NPI)*
4. *'Integrated Fire Risk Management (INFRA) Service' (CNR)*
5. *'Local Atmospheric Pollutant Forecast Service' (JRC)*
6. *'Improving Safety for Shipping in the Polar Seas Service' (BAS)*
7. *'CBM for Arctic marine climate change, noise pollution & impacts on marine living resources' (GINR/DMI)*
8. *'Lake Ice Service for Arctic Climate and Safety' (SYKE)*



# Web-based map view interface of the Pilot Services

The Pilot Services will provide information in areas of societal and economic relevance that are presently inadequately served:

- *food security,*
- *emergency preparedness, wildfire and pollution risk reduction,*
- *environmental change information,*
- *infrastructure, transport, and safe shipping.*

Existing services, such as those from Copernicus and ESA services will also be integrated to AW.

# Please visit us!

www.arcticpassion.eu


Upcoming events:

- Arctic Frontiers, Tromsø, Jan/Feb 2023
- ASSW, Vienna, Feb 2023
- *..and many more*

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