Development and Establishment of an Arctic Safety Center in Longyearbyen
# Mandate

The mandate is to establish an arctic safety center in Longyearbyen.

## Background

The natural environment in the high north is undergoing rapid change while at the same time the interest in presence and economic development in the region has never been greater. As a consequence the need to increased competence and sharing of experience in how to operate in a safe and environmental manner in the high arctic is acute and extremely relevant. Both location of UNIS and years of experience collection related to arctic safety makes Svalbard an excellent location for arctic safety competence center. There is already a demand from several national and international partners for an arctic safety center.

## Objectives

| The purpose is to contribute to as safe and sustainable human Activity in The High Arctic as possible |

## Success criteria

| Utilization of the natural science knowledge that is already fully or partly at UNIS. |
| "Best practice" in terms of experience and expertise UNIS has on completion of training of students; also expertise from other partners. |
| Ownership from academic and logistical environments. |
| Collaboration with stakeholders. |
| Safety and risk theory from our Norwegian partner institutions. |

## Expectations and frame

| Deliver according to agreed deliverables |
| Deliver a product of good quality |
| Establish the project within timeframe |
| Deliver according to agreed budget |

## Task owner

University Center in Svalbard

## Schedule

| Year One: Kick off, thematic workshops |
| Year two: Pilot courses Tailor made safety courses to residence of LYR |
| Year three: Development of safety training at field station in arctic How to use scientific observations to achieve increased Arctic safety |
| August 2019: Opening of the Arctic Safety Centre |

## Deliveries

Courses in a master program in Arctic Safety
Practical safety courses for industry, academia, residents of LYR
New knowledge, theory and models

## Users

Norwegian and international students, UNIS and other national institutions.
Local business and organizations
Industry
Residents in Svalbard particularly in Longyearbyen
**Mission/Objectives**

The mission of the Arctic Safety Centre is to contribute to as safe and sustainable human activity in the High Arctic. Our ambition is that the center shall share this knowledge through education, tailor made courses, guidance for students, industry and residents of Longyearbyen.

**Education and Experience transfer**

- One year master (bachelor) studies using natural sciences for improved risk and safety. (60 ECTS)
- PhD courses related to arctic safety
- Practical, tailor made field safety courses for both academia and industry.
- Practical safety courses for the inhabitants of Longyearbyen.
- Collect, communicate and use relevant field safety data applicable for the region of Svalbard. Give advise and share experience and competence in relation to safe and sustainable presence at Svalbard.
- Relevant content from all the UNIS departments within;
  - Biology, Geology, Geophysics, Technology

- Contribution from other institutions within relevant topics as (but not limited to):
  - Arctic Wildlife
  - Toxicology

- Use of existing data series and circumpolar observation networks (e.g. SIOS)

**Institutions listed as partners:**
- UNIS, Norwegian Polar Institute; NP, University of the Arctic; UArctic, Copenhagen University
Academic content
- Risk and safety theory

- Risk Management and safety theory
- Method and Tools for risk management
  - Qualitative and quantitative risk assessment methods.
- Societal Safety
  - Safety understanding & safety culture
  - Risk management strategies
- Emergency Preparedness
- Management and organization
  - The human factor; risk perception, understand and relate to risks involved. Physical and psychological stress reactions and countermeasures.

Institutions listed as partners:
NTNU, Sintef, University of Stavanger; UiS, University of Tromsø; UiT
Case studies from complex scientific operations in the Arctic and Antarctic.

- Lance freeze in

Lessons learned from planning and execution of field operations.

- Students in the field

Findings and experiences learned from accident scene management, SAR operations and accident investigations.

- Avalanche LYR, Maxim Gorkey, Moseldal incident, Mining incident

Operational procedures and HSE manuals developed over time

- Oden Expeditions

Institutions listed as partners:

- UNIS, NP, The Governor on Svalbard, Lufttransport AS, Copenhagen University, INTERACT, Forum of Arctic Research Operators; FARO.
## Partners

### National Partners:
- NTNU
- Sintef
- Norwegian Polar Institute
- Governor of Svalbard
- Pole Position Logistics (Longyearbyen)
- SvalSat
- Longyearbyen Council
- Lufttransport AS (Longyearbyen)
- Visit Svalbard
- University of Stavanger
- University of Tromsø
- Reed Cross

### International Partners:
- University of the Arctic; UArctic
- Copenhagen Universitet
- INTERACT
- Forum of Arctic Research Operators; FARO

### Possible Partners:
- Local Hospital
- Coast guard
- Telenor Svalbard
- Hurtigruta
- Store Norske Coal Company
- Joint Rescue Center
- Aeco

## Secure:
- ✓ Common understanding of mandate, risk and requirements before execution
- ✓ Secure flow of information and cooperation regarding deliverables
Barrier Approach

Before: Prevention
- Potential Causes
  - Cause
  - Cause
  - Cause

Control Barriers

After: Recovery
- Potential Outcomes
  - Consequence
  - Consequence
  - Consequence

Defence Barriers

ASC Project Presentation
Project Structure

Start of study program

0
Develop risk and safety theory

1
Development of best practice cases and content

2
Development of academic content from natural sciences and observations

3
Field safety at field station

Development of a risk and safety study

Local safety training and advice

Safety courses for industry and academia circumpolar

ASC Project Presentation
Steering Committee
UNIS (Chair), NPI, Sintef / NTNU, Interact, UArctic. (Opening for 1 – 2 local partners)

Reference Group
Important stakeholders not part of the workgroups

Project Manager

Stud. Adm.
Support related to development of master program

Admin. support
Support from HR/Cost/HSE

Scientific Departments
Geology, Arctic Technology, Geo Physics, Biology

Work Groups:

1) Risk- and Safety theory
   1) Safety courses for industry, tourism and academia
2) Field safety at Arctic field stations
   1) Pilot Course
3) Integration of natural science observation for improved field safety also using SIOS (Svalbard Integrated Observation System)
   1) Pilot Course
4) Develop Longyearbyen to become a ‘High Arctic Safety Awareness Society’
   1) Pilot Course
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<th>Risks:</th>
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<td>• Lack of cooperation regarding developing of the arctic safety center from stakeholders</td>
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<td>• Lack of internal resources for supervision</td>
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<td>• Quality of pilot course</td>
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<td>• Lack of applicants to courses</td>
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<td>• Cost overruns and lack of project control</td>
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<td>• Lack of funding after end project period</td>
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<td>• Lack of ownership in the academic environment</td>
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<td>• Lack of co-supervisors for master theses</td>
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<td>• Lack of transparency from LYR settlements</td>
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<td>• Lack of knowledge due to high turnover of population</td>
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<th>Advantages:</th>
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<td>• Longyearbyen position in the Arctic</td>
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<td>• Unique access to experience due to students in the field</td>
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<td>• Due to UNIS location there is a unique opportunity for building of competence</td>
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<td>• Use of local resources</td>
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<td>• Cooperation between industry, tourism, academia and residence of LYR</td>
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<td>• Increased reputation for UNIS regarding arctic safety</td>
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<td>• Positive reputation to UNIS due to large portion of international students.</td>
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<td>• Increased collaboration between UNIS and mainland universities</td>
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<td>• Utilize the settlements as foundation for research</td>
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Plan and Status

Year One
- Project kick-off
- Hiring of adjunct positions
- Work shops
- Meetings
- Position Paper
- Establish a project organization and structure

Year two
- Hiring of adjunct positions
- Development of safety training at Arctic field stations
- Further development of safety theory
- Hosting a conference in Artic Safety
- Pilot courses:
  - Practical safety courses for the residents
  - Development of tailor made safety courses for industry

Year three
- Run Pilot course
- How to obtain the best use of scientific observations for increased Arctic field Safety
- Suggestion to UNIS board for opening of arctic safety center

Year four
- Opening of Arctic Safety Center
- One year program at Master (bachelor) level
- Practical safety courses for the industry
- Competence center for local settlements at LYR.