

# ATOMEX: Collaboration Complexity in Nuclear Emergency Preparedness in the Maritime Arctic

Natalia Andreassen, Rune Elvegaard, Emmi Ikonen, Andrey Kazakov NORDLAB innovation center for emergency preparedness collaboration, Nord University, Norway



# **Background**

The increased maritime transportation, flow of goods, and populations changes the risk picture in the Arctic. A recent sharp increase in nuclear-propelled vessels and ships transporting spent nuclear fuel and radioactive materials adds new uncertainties into risk assessments, risk perceptions, and challenges of inter-sectoral collaboration complexity in case of response to maritime radiation emergencies in the Arctic.

### **Objects**

The project objectives are:

- Building knowledge on collaboration competences, complexity and development of exercises
- Research studies on shared understanding of risk evaluation for safety and complexity in the Arctic;
- Managing and visualization of risk evaluation for better safety in the Arctic
- Designing an algorithm to support decision-making and risk awareness of nuclear emergencies

# **Expectation for a future partner**

- Network development with global research community working in the field of nuclear disasters
- Observation of collaboration exercises
- Knowledge exchange on case studies on disaster response and risk assessment, such as the Fukushima disaster and maritime nuclear accidents

#### **Seeds and Needs**

# **Interdisciplinary partnership**

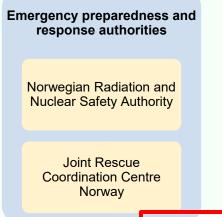


**Academic partners** 

Nord University (Norway)

Laurea UAS (Finland)

Fraunhofer CML (Germany)



Seeds!

# **Risk factors and consequences**

 Case studies on nuclear disaster management: risk assessment, emergency response, preparedness plans, expert assessment

Needs!

# Collaboration exercises and knowledge-exchange events

- Cooperation between nuclear and radiation, and search and rescue authorities in maritime RN rescue operations
- Exercise design studies and innovative exercise solutions
- Risk assessment and risk perception studies
- Simulation exercises
- Case database and algorithm modelling

Seeds!

# Observation and joint development of innovative exercise solutions

 Knowledge exchange and network development