Finnish Transport Agency
Safeguarding year-round waterborne transportation

- Responsible authority to safeguard winternavigation for Finish ports both at the coasts of Baltic Sea and Lake Saimaa. Procurement and coordination of icebreaker resources. Setting of ice-restrictions. Developing the winternavigation system and information channels.

- At the moment 9 icebreakers in contract for sea icebreaking and 3-4 for Lake Saimaa. Deep co-operation with Swedish icebreaker authorities.

- Average cost of icebreaking 50 M€, varies between winters from 45M€ to 65M€ at present cost level

- Over 100 years of Finnish icebreaking history, starting from 1889.
- From 1971 even all Bay of Bothnia ports have been kept open for year-round maritime transport.
Winter is a natural barrier – increases logistical costs

- Icebreaking costs
- Increased fuel costs
- Transport delays
- Damages to merchant vessels

Co-operation between countries very efficient way to overcome these challenges

Started in 1960’s. Extended state agreement between Finland and Sweden in force 2013.

MoU for further development of co-operation between Sweden, Finland and Estonia signed 2015
"Of all the world's countries, relative to GNP, Finland's national economy and competitiveness are most negatively effected by winter navigation!"

Finnish-Swedish winter navigation system
Ice-information and Assessment of conditions
Managing risk and allocating resources
Securing Maritime Transport

"Over 85% of Finnish GNP comes from goods transported to and/or from Finland via sea. All Finnish seaports freeze during normal winter!"
All winters are not the same

Mild

Normal

Severe
Statistical Facts
Length of assistances vs. number of ports, first one is critical
Volatility due to varying winters
Number of assistances to Finland

Avustetut Suomenlahti
Avustetut Selkämeri
Avustetut Perämeri
Components of winternavigation system

- Accurate ice-condition information
- Ice restrictions and shore coordination
- Merchant vessels ice class and icegoing capacity
- Icebreaker capacity
- Human skills

Efficient ship movements

Safe and efficient transport system

Co-financed by the European Union
Trans-European Transport Network (TEN-T)
Principals of co-operation

Management of icebreaking activities

- Both reserve required capacity
- Common management via IBnet
- Common principals of setting restrictions and issuing dispenses based on HELCOM recommendations
- Common prioritization
- Cost sharing principles

Finnish and Swedish icebreaker management authorities

Strategy and tactics, regulation

Meteorological institutes

Ice situation and prognosis

VTS, Web-pages

Information to and from merchant vessels and agents etc

Area coordinator
IB master
Other IB in sea area

Area coordinator
IB master
Other IB in sea area

Area coordinator
IB master
Other IB in sea area

Co-financed by the European Union
Trans-European Transport Network (TEN-T)
Icebreaker and general on-line management, IBnet, in future IBNext co-funded by EU

- Allocating icebreaker resources
- Setting ice-restrictions
Baltic Icebreaker Management authorities BIM
Distribution of information via www.baltice.org

Baltic states icebreaker management authorities organization for co-operation

- Authorities experience available for chartering and even for long term system development decisions
- Long history of operations and performance of vessels in Baltic waters

www.baltice.org
Primary information source for operators onshore and offshore
Winternavigation system change factors

- Traffic flows
  - Changes in transport volumes
  - New ship sizes

- Merchant vessels independent ice going capabilities
  - SOX > Fuel prize > no incentive to use extra power
  - EEDI > focus on open water performance

- Operator competence
  - Modern manning practices reduce possibilities to assure long term experience base onboard

- Climate change
  - Time span, variation between winters

- Renewal of icebreaker capacity
  - Scale of investment
  - Availability from possible commercial sector of icebreaking
EEDI and SOX will increase need of assistance due to weaker merchant vessels of the future

Assisted vessels, development trends
Replacement of ageing infrastructure icebreaking capacity

- Worlds infrastructure icebreaker fleet is ageing, same applies to Baltic icebreakers
- Practically all icebreaking takes place on Northern Hemisphere > season at same time everywhere, no assurance of free available commercial capacity
- Reliable and cost efficient icebreaking capacity to infrastructure winternavigation, chartered from mature commercial icebreaking market, is still far in the future.
- Icebreakers differ, different locations and operations require different capabilities
- Real increase in utilisation rate for icebreakers which form the core of area specific icebreaking capacity, how intimidating it might sound, is economically very challenging. On the other hand, for additional capacity this concept could be efficient in the future.
- Co-operation between states is very efficient way to reduce icebreaking costs
Usage of icebreakers 1996-2012 Finland

- Suomalaiset perinteiset Perusmurtajakapasiteetti
- Frej ja Zeus Lisämurtajakapasiteetti
- Nordica ja Fennica Lisämurtajakapasiteetti

Viikot

- Murtajien määrä
- Viikot

2010-2011
2007-2008
2002-2003
KA
Med
WINMOS

- Activity 1 - Study on future need for ice breaking capacity
- Activity 2 - Concept study on next generation ice breakers
- Activity 3 - Improvement of environmental performance
- Activity 4 - Development of the Icebreaking Management Network IBNet
- Activity 5 - Human element and training
- Activity 6 - Technical upgrading and life extension of old icebreakers
- Activity 7 - Acquisition of a new Finnish icebreaker

**Partners:**
- Swedish Maritime Administration
- Estonian Maritime Administration
- Finnish Transport Agency
- Aker Arctic
- ILS
- Aboa Mare
- Finnish Meteorological Institute
- Aalto University
Baltic Sea is often difficult even for icebreakers. The “Keel” of an ice ridge is approximately 8-9 times the height of the “Sail.” Deepest measures ridges over 20m total height.

Harsh ice conditions:
- Under ice pressure
- Pure safety issue
Winternavigation is International Team Work
Thank You for Your attention!

Icebreaker capacity
Merchant vessels independent ice going capacity
Operator skills