

Role of POLARIS



Competence of judging ice conditions Strategical, tactical and operational

POLARIS

...is planning tool

- Strategic level
 - New routes
 - New trades
- Tactical level
 - Voyage planning
- Proper usage requires understanding of inbuild factors and uncertainties
- Operational level requires competence to execute plan,or divert

Usage of POLARIS at strategic and tactical level

- Makes possible in general level to judge feasibility of safe operations in a standardized manner
- Takes account the combination of vessel ice class and expected ice conditions
- Foundation of chartering and insurance decisions
- Proper usage requires good understanding of the inbuild uncertainties and limits of POLARIS

Limits of POLARIS

- Coarse and typically historical ice information
- Vessel ice class describes mainly structural strength, not her ice going capability or maneuverability
- Icebreaker assistance effect considered only in principal manner
- Expects onboard operational competence to be adequate to judge actual conditions and execute safe operations

https://pame.is/images/03_Projects/Forum/4th_meeting/Presentations/Session_4_-_POLARIS.pdf



Onboard competence to execute ...POLARIS was only for planning

Competence need at execution

- Good knowledge of actual safe limits of vessel ice class and performance
- Ability to interpret available ice and Metocean information and foresee the development of ice-conditions
- Ability to read ice and make/adjust "Dynamic Route Plan"
- Ability to very precisely and even aggressively maneuver to execute dynamic route plan

- POLARIS was only an early prediction of actual ice-conditions

Polar region ice info is not at Baltic Sea level

IBNet

- User groups
 - Winter navigation authorities
 - Icebreakers
 - VTS, Pilot services, Meteorologists
- Administrative planning, operative coordination and reporting (statistics)

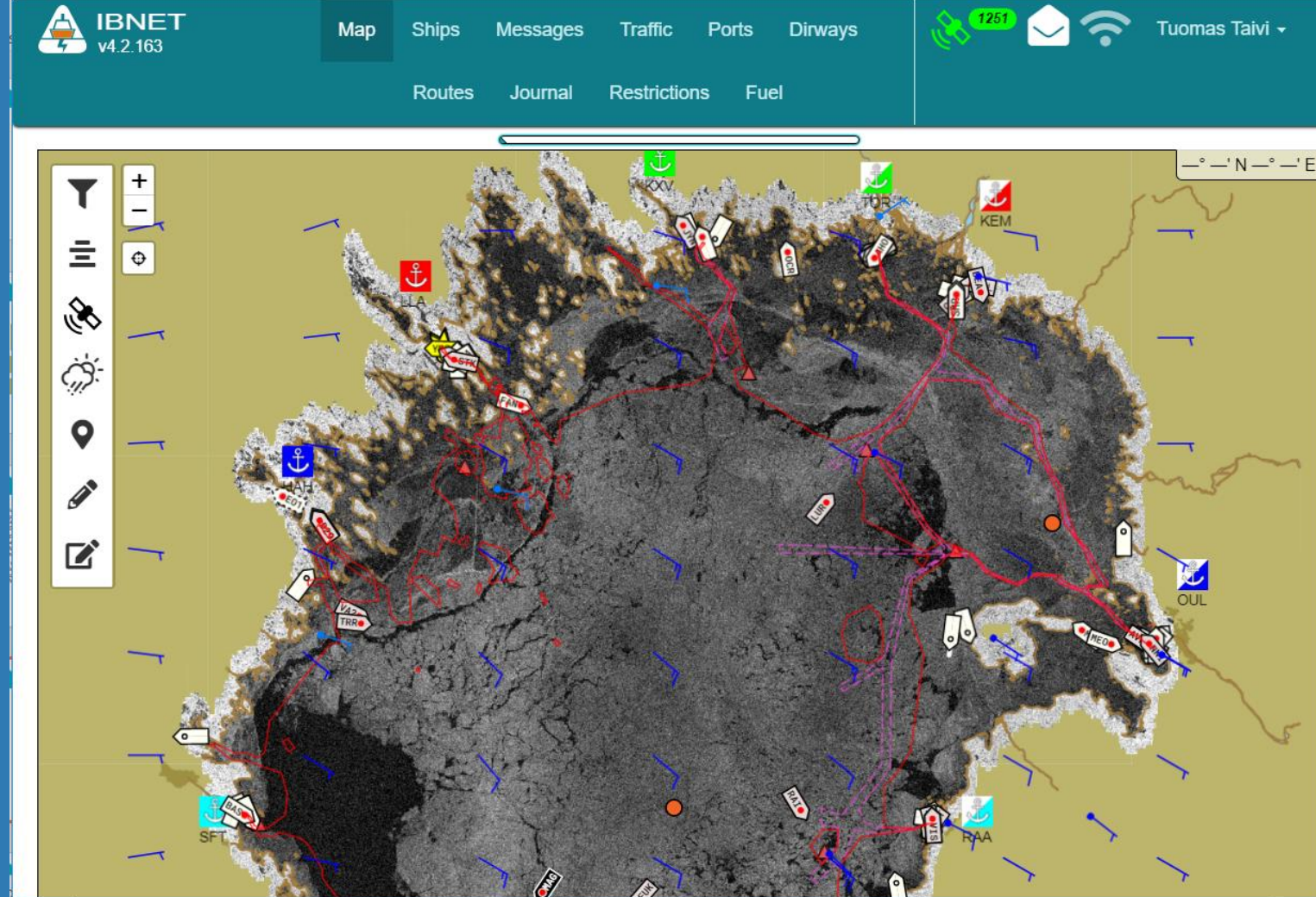


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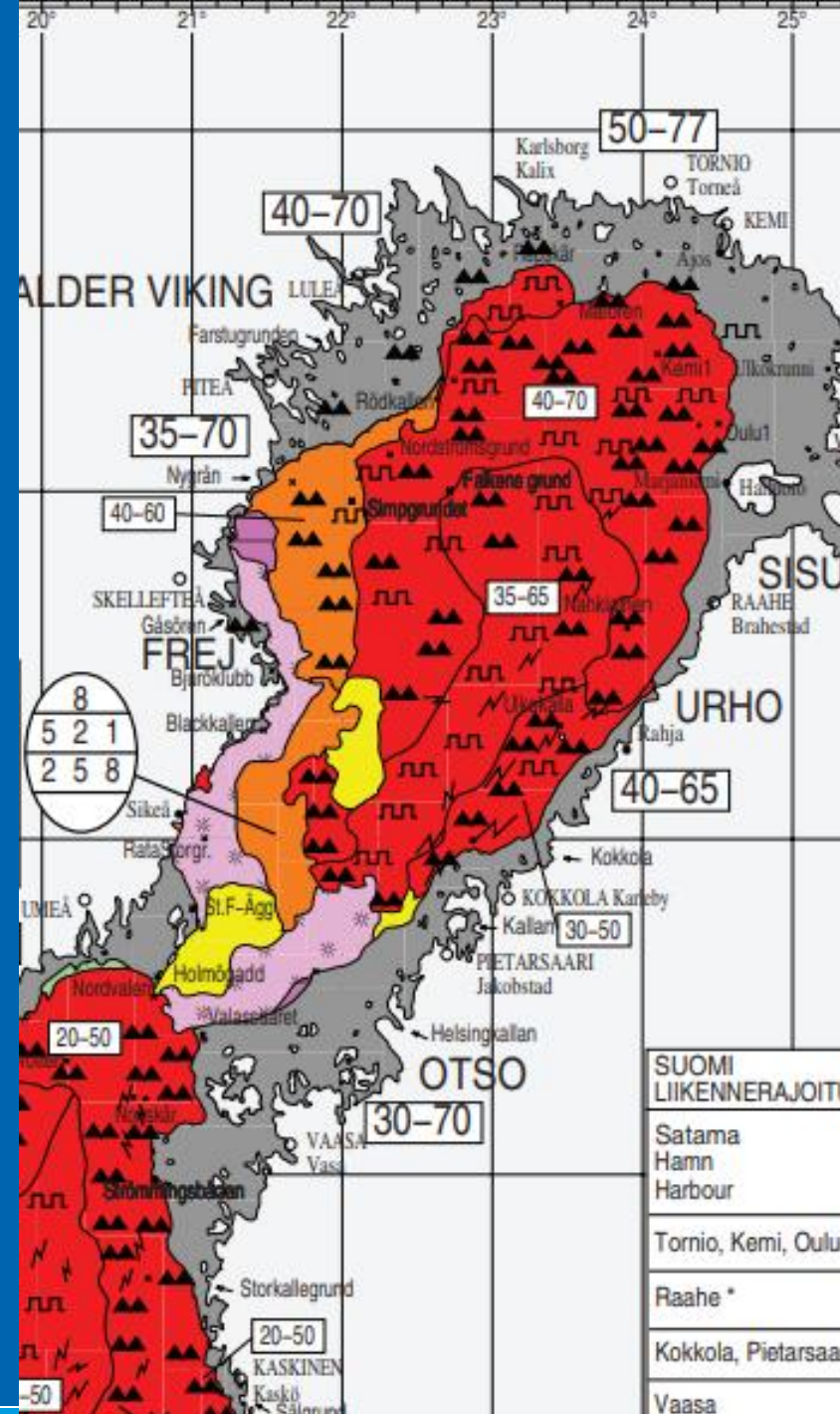
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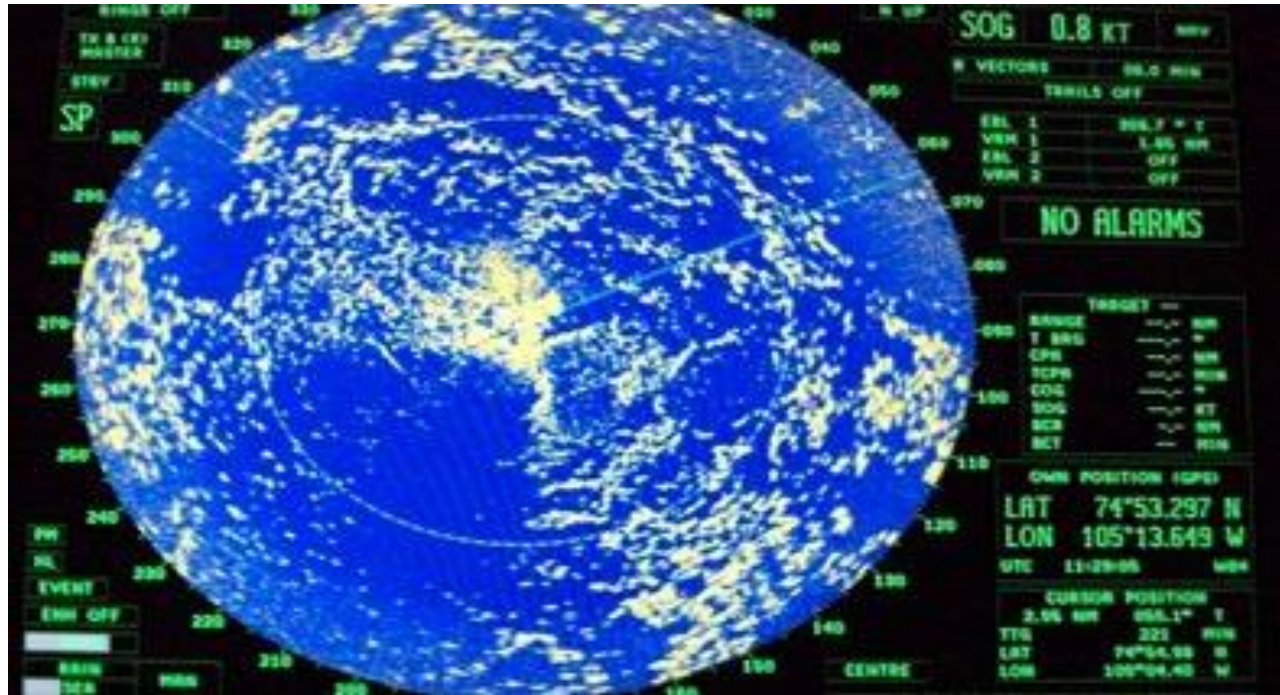
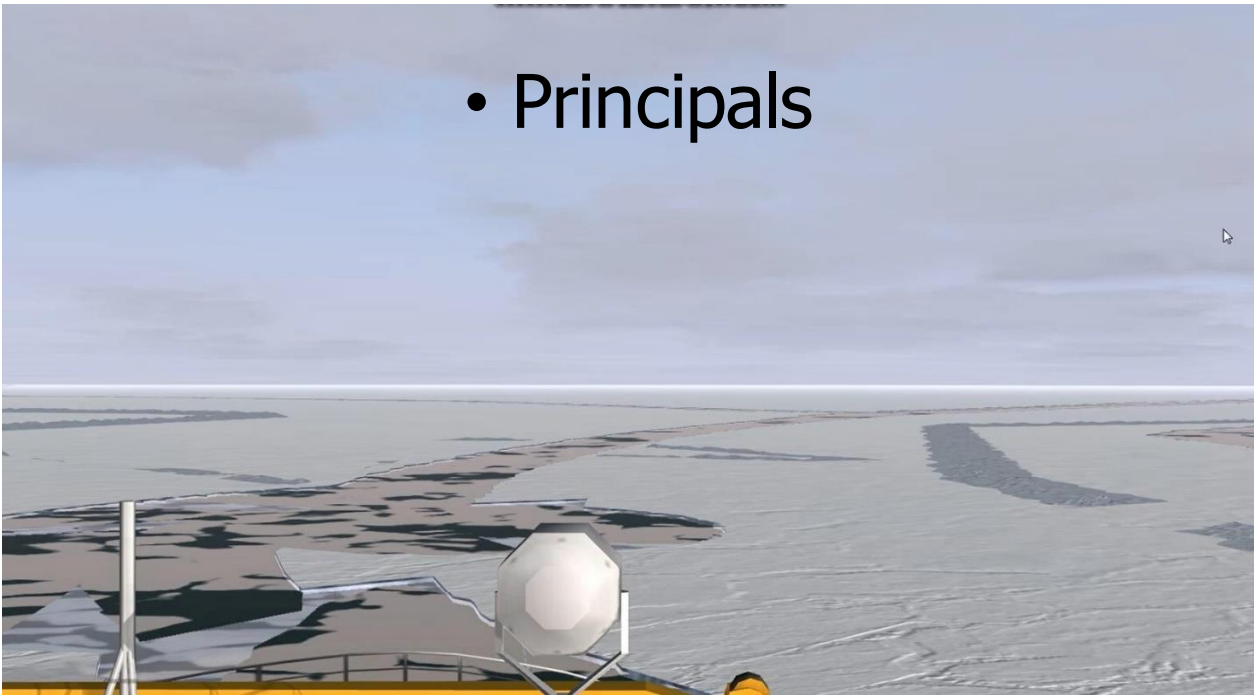
Connecting Europe Facility

All this and just one "Egg code"

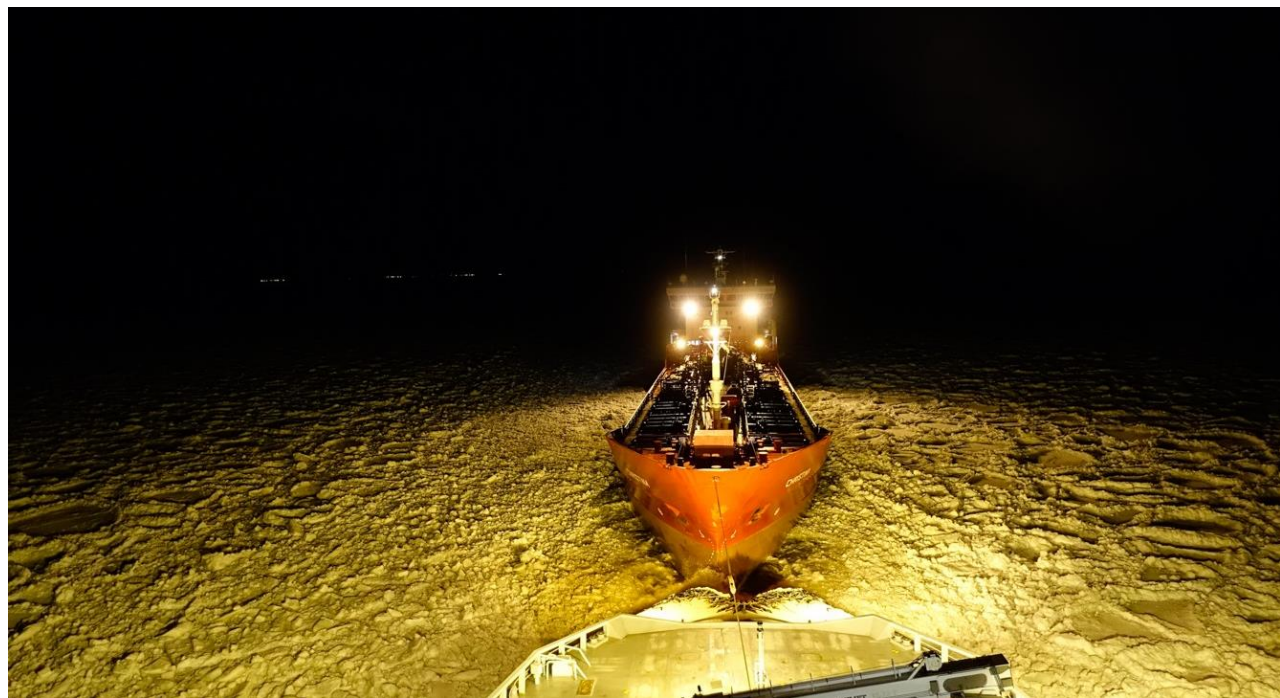
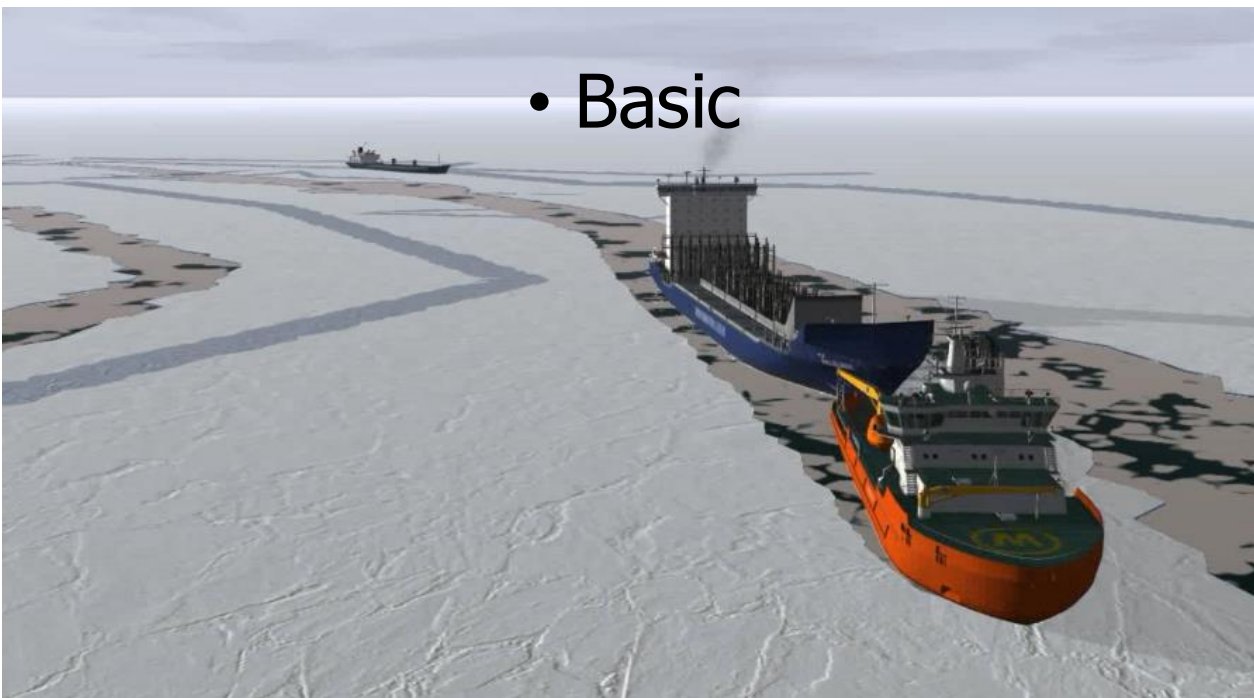


- | | | | |
|--|--|--|---|
| | Yhteenjäätynyt, yhteenajautunut tai hyvin tiheä ajojää
Consolidated, compact or very close ice (9-10/10)
Sammanfrusen, kompakt eller mycket tät drivis | | Avovesi <1/10
Open water
Öppet vatten |
| | Ahtaunut tai rökkiöitynyt jää (f=ahtautumia/mpk)
Ridged or hummocked ice (f=number of ridges/naut.m.)
Vallar och upptomad is (f=vallar/naut.m.) | | Päällekkäin ajautunut jää
Rafed ice (C=concentr.)
Hopskjuten is |
| | Tiheä ajojää
Close ice (7-8/10)
Tät drivis | | Uusi jää
New ice
Nyis |
| | Harva ajojää
Open ice (4-6/10)
Spridd drivis | | Tasainen jää
Level ice
Rimn is |
| | Hyvin harva ajojää
Very open ice (1-3/10)
Mycket spridd drivis | | Kiintojää
Fast ice
Fastis |
| | Jään reuna tai jään raja
Ice edge or ice boundary
Iskant eller isgräns | | Sohjovyö
Windrow
Stampvall |
| | Arvioitu jään reuna tai jään raja
Estimated ice edge or -boundary
Uppskattad isgräns eller iskant | | Halkeama
Fracture
Spricka |
| | Veden lämpötilan tasa-arvokäyrä
Watertemperature isotherm, °C
Vattentemperatur isotherm, °C | | Railo
Lead
Räk |
| | Mitattu jään paksuus
Thickness measured in cm
Uppmätt isjocklek i cm | | Haurasta jäätä =
Rutten is =
Rotten ice |

- Principals



- Basic



**In less than 2 hours this was
10/10, high compression situation**



Väylävirasto
Trafikledsverket



Väylävirasto
Trafikledsverket