WINMOS & FAMOS

Year-round safe navigation on the Motorways of the Baltic Sea

Challenges and requirements

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Hydrographic Office, Swedish Maritime Administration

SWEDISH MARITIME ADMINISTRATION

EUSBSR
EU STRATEGY FOR THE BALTIC SEA REGION
PRIORITY AREA 'SAFE'

Co-financed by the European Union
Trans-European Transport Network (TEN-T)

Motorways of the Sea

Challenges:

- 15% of the world maritime transports
- 2000 ships > 50m at any given time
- Partly ice-covered in winter
- Rather shallow

FINNSTRAUM

Ice crush^^^breakers

ODEN
Displ ton 11800 Built 1988
Length 108m Breath 31,5m
18000 kW

TOR VIKING, BALDER VIKING & VIDAR VIKING
Grosstonnage 4000 Built 2000-01
Length 83,7m Breath 18m

ATLE, FREJ & YMER
Displ ton 8000 Built 1974-77
Length 104m Breath 23,8m
16200 kW

ALE
Displ ton 1500 Built 1973
Length 47m Breath 13m
3500 kW

Botnica 1998 Shaft output 10000 kW Telnr. +358 (0)49 203876

Fennica 1993 15000 kW Tel: +358(0)49 107159

Nordica 1994 15000 kW Tel: +358(0)49 246551

Otso 1986 15000 kW Tel: +358(0)49 219680

Kontio 1987 15000 KW Tel: +358(0)49 314492

Urho 1975 16200 kW Tel: +358(0)49 219681

Sisu 1976 16200 kW Tel: +358(0)49 219682

Apu 1970 10400 kW Tel: +358(0)49 314490

Voima 1954 10200 kW Tel: +358(0)49 318156

WINMOS
WINTER NAVIGATION
MOTORWAYS OF THE SEA

Activities related to icebreaking

- Study on future demand for icebreaking capacity
- Concept study on next generation icebreaker
- Improvement of environmental performance
- Upgrading and life extension of old icebreakers
- Building of a new icebreaker (Finland)

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Knowledge

IBPlott v 2.4.0 ISD Senaste data: 2011-02-22, 08:22 DB läsning 10 minuter sedan
Arkiv Editera Visa Verktyg Hjälp
Översiktskarta
Up-to-date ice and logistics info
IBPlott
• Satellite images
- RadarSat, NOAA, Envisat
• Traffic situation
- Icebreakers and ships
- Icebreaker planning
- AIS info
• Dir Ways
• Weather forecast and observations
• Ice drift prediction
Traffic Situation
IBNet (IceBreakerNet)
22 Feb 2011 08.35
Start

WINMOS
WINTER NAVIGATION
MOTORWAYS OF THE SEA

Activity related to ice information

- Deployment of next generation IB-Net

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WINMOS
WINTER NAVIGATION
MOTORWAYS OF THE SEA

Activity related to "human factors"

- Human element and training facilities

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Project budget

139 MEUR

~20% TEN-T

(120 MEUR for new icebreaker)

WINMOS
WINTER NAVIGATION
MOTORWAYS OF THE SEA

Time frame

2012 to 2015

EUSBSR
EU STRATEGY
FOR THE BALTIC
SEA REGION

PRIORITY AREA 'SAFE'

EUSBSR flagship project

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Motorways of the Sea

Challenges:

- **15% of the world maritime transports**
- **2000 ships > 50m at any given time**
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Area
0
10
20
30
40
50
60
70
80
90
100
%
0
1000
2000
3000
4000
5000
6000
km²
0
-50
-100
-150
-200
-250
-300
Depth / m
20% of area potential obstacle for navigation
Median depth 43m
70% of area relevant for fuel efficiency
Hypsometry of a shallow sea

What is this based on?

Modern measurements
"Historic" measurements
Industry data
Modern measurements
80
Cy
94
S Cy
55
26
28
67
35
28
G
60
23
89
19
18
25
S Cy
fS
S
18
16
S Cy
St
26
S
21
21

Yes, some of it *is* that old.

Modern measurements
"Historic" measurements
Industry data
Modern measurements
200m ship
Single sounding shoal
80
Cy
94
S Cy
55
26
28
67
35
28
G
60
23
89
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26
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21
21
S Cy
S Cy

How it often looks today

- Safety of navigation: < ca. 15m
- Fuel efficiency of marine transports: < ca. 70m

- Marine spatial planning
- Environmental concerns
- Science
- …

Solution:
BSHC/HELCOM
re-survey plan

Comparison:
Size of
Denmark

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HELCOM Copenhagen Ministerial Declaration

Taking Further Action to Implement the Baltic Sea Action Plan
- Reaching Good Environmental Status
for a healthy Baltic Sea

14 (M). RECALLING the HELCOM Copenhagen 2001, Krakow 2007 and Moscow 2010 commitments on hydrographic re-survey and COMMENDING WITH APPRECIATION the subsequent substantial progress made in systematic re-surveying of major shipping routes and ports in the region according to the HELCOM-BSHC Re-survey Scheme aimed at ensuring that safety of navigation in the Baltic Sea region is not endangered by inadequate source information;

15 (M). WE AGREE to take actions to ensure the completion of the re-surveys for areas used by navigation (CAT I and II) within the time schedules estimated in the 2013 Re-survey Scheme, to promote wider use of accurate and reliable depth information by e.g. developing existing and/or new products including an enhanced and freely accessible Baltic Sea Depth Model, and to foster CAT III re-surveys of other areas not primarily for safety of navigation purposes, e.g. for environmental protection;

-- Baltic Sea environmental ministers, Oct 2013

Co-financed by the European Union
Trans-European Transport Network (TEN-T)

Speed up re-surveying of major shipping routes and ports

MonaLisa
- E-navigation
- Surveying
- …

MonaLisa 2.0
- E-navigation

FAMOS
- Surveying remaining HELCOM Cat I & II

2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

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The FAMOS project

Final Actions for the Motorways of the Sea
- Surveying the Baltic

- Sweden
- Finland
- Estonia
- Latvia
- Germany?
- Denmark?

Ambition:

Finish surveying the Baltic Sea for the needs of safety of navigation

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