FAMOS
FINALISING SURVEYS FOR THE BALTIC MOTORWAYS OF THE SEA

FAMOS Odin
Status update Q3 2019

Caroline Johansson,

Project coordinator

SWEDISH MARITIME ADMINISTRATION

Co-financed by the European Union
Connecting Europe Facility

GFZ Helmholtz Centre Potsdam

NLS Finnish Geospatial Research Institute FGI

Tallinn University of Technology

Liikennevirasto

BSH Bundesamt für Seeschifffahrt und Hydrographie

Lantmäteriet

DTU

SMHI

Geodatastyrelsen Danish Geodata Agency

SSPA

Eesti Vabariik Veeteede Amet

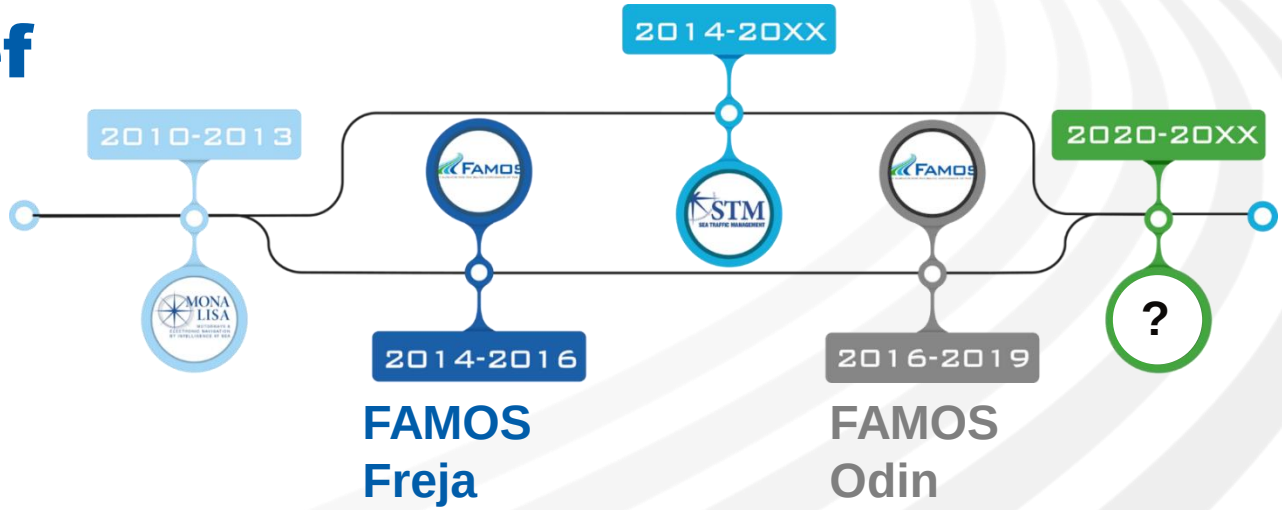
Bundesamt für Kartographie und Geodäsie

Lietuvos Saugios Laivybos Administracija

Swedish Maritime Administration

Co-financed by the European Union
Connecting Europe Facility

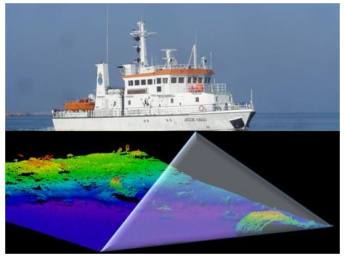
A very brief summary

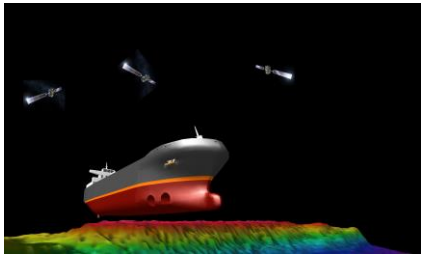


Concept

“FAMOS aims to enhance the prerequisites for safe, efficient and accurate navigation in the Baltic Sea. The cooperation between countries, working towards the same goal is unique, and the project covers the whole production chain of navigation: from collection of hydrographic data and production of navigational products, to ship’s position Optimization”

Activities (FAMOS Overall)





1. **Hydrographic surveying** **(61000 km2 in the Baltic sea. Quality assured Bathymetry lies the foundation for safe navigation and development of bathy products).**

2. **Harmonizing vertical datum** **(A common vertical reference level for hydrographical products within the Baltic Sea has been developed and established. This enables vertical positioning of ships with a much higher degree of accuracy than before).**

3. **Surveying infrastructure** **(Create possibilities for all partners to collect high-resolution bathymetry data. Upgrades to Surveying infrastructure in Latvia, Lithuania and Estonia. Multibeam Echo-sounders, ROV's and survey vessels).**

4. **Data workflow from sounding to chart** **(facilitate the collected data and make it available for the marine industry. New chart production systems have been procured and are being deployed)..**

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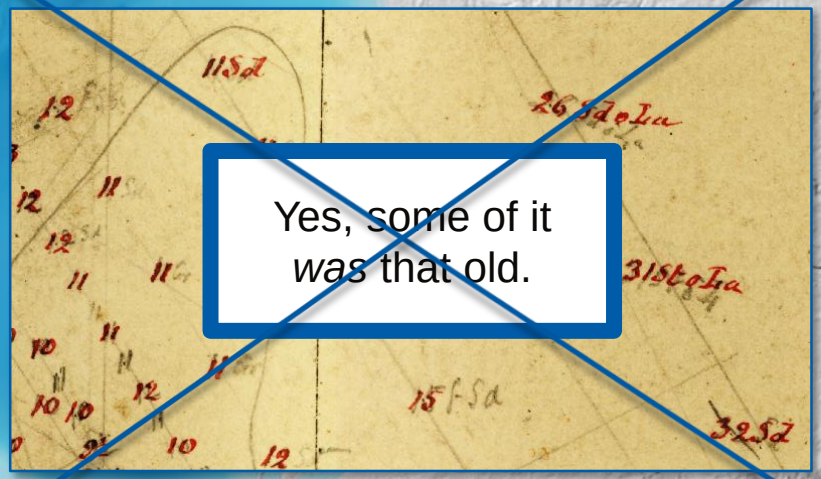
- **Digital Transport Days Helsinki, October 7-9.**
- **Final report work in progress. Deadline to INEA March 31 2020.**
- **Presentation held at the 5th IAG (International Association of Geodesy) Symposium on Terrestrial Gravimetry, October 1-4.**
- **Overall completion rate 98%**

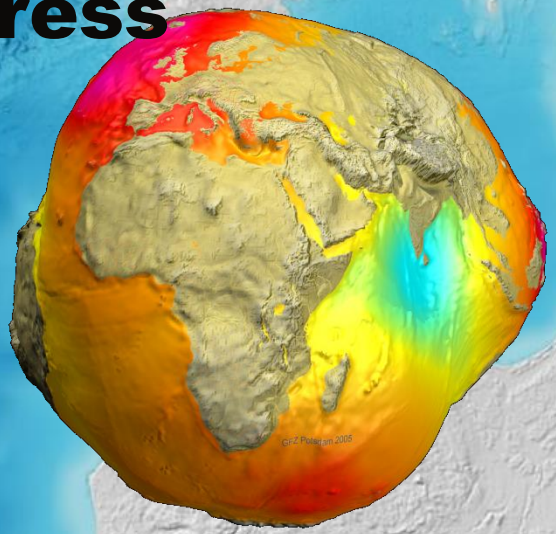
FAMOS Odin, Activity 1 progress

- 27700 of 26000 square kilometres surveyed
- 89% of the surveys updated in nautical charts. Some delays caused by new production systems.



Yes, some of it *was* that old.

FAMOS Odin, activity 2 progress



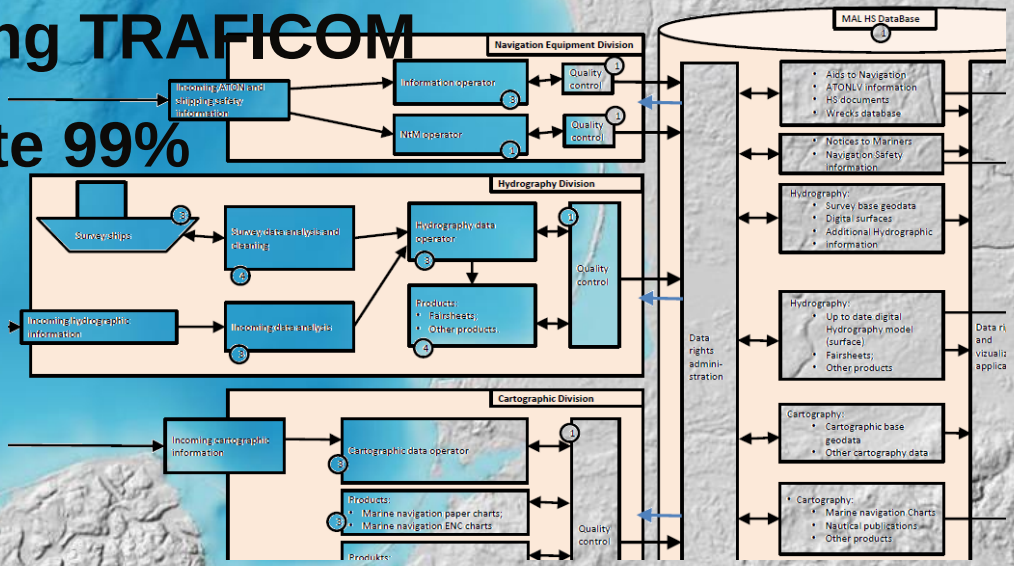
- All shipborne gravimetry campaigns have been performed (18 campaigns in the Baltic Sea).
- 100% of the data included in the FAMOS gravity database.
- 81% of new chart datum implemented. Dealys due to new chart production system and training of staff.
- S-102 gridded bathymetry data is ready for production. Version 2.0.0 of the S-102 product specification was adopted by HSSC in May 2019. Final approval by IHO member states will take place in December 2019.
- 33 tide gagues along the Swedish coast have been upgraded for more accurate information about the sea level.

FAMOS Odin, activity 3 progress

- All upgrades to survey vessels completed. March 21 2019 Remotely Operated Underwater Vehicle was delivered to Maritime Administration of Latvia.

FAMOS Odin, activity 4 progress

- SMA, GST, MAL, LTSA and TRAFICOM completed procurement of new production systems.
- Implementation completed SMA and MAL, GST and LTSA
- Implementation ongoing TRAFICOM
- Activity completion rate 99%



SWEDISH MARITIME ADMINISTRATION

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DIVE SMART BALTIC

Else Timms, Swedish Coast Guard

ACHIVEMENT & INNOVATIONS
DIVE SMART BALTIC

CHALLENGES & INITIAL QUESTIONS

Are we prepared for a large international accident at sea?

Which are our capacities and resources ?

Do we have the necessary cooperation?

FOCUS ON 5 AREAS

ALARMING

GETTING THERE

GETTING ACCESS

KEEP THE VICTIMS ALIVE

EVACUATION

Search and rescue divers help the victim out of the wreck.

ARE WE PREPARED?

What have we developed ?

Mobilization – Preparedness, training & exercises, transport

Alarming – Cooperation between RCC,s, SITREP document.

Methodology - Response units.

New rescue methods, new diving competences.
New and innovative equipment.
A ”Divemaster checklist”

WHICH ARE OUR CAPACITIES AND RESOURCES?

What have we developed ?

- **Inventory diving resources around the Baltic Sea**
- **Developed an ICT tool** – containing resources, equipment, geographical location, mobilization times, training & exercise schedule, ”lessons learned” documents, library.
- **Developed inventory routines**
- **Handed over information to RCC,s in the EU countries around the Baltic Sea.**

DO WE HAVE THE NECESSARY COOPERATION?

- *No country on their own, can handle an accident like "Costa Concordia".*
- *Cooperation between the diving organizations around the Baltic Sea is essential.*

What have we developed during Dive SMART Baltic?

- A common SOP (Standard Operative Procedure)
- A suggestion of a future management and coordinating group.
- An exercise training plan beyond 2021

NEXT STEP

Forming national coordinating groups, similar to Finlands model.

Forming an international coordinating group -
ResQU2 , policy papers

CHALLENGES

Project results – Who is responsible for their up-keep?

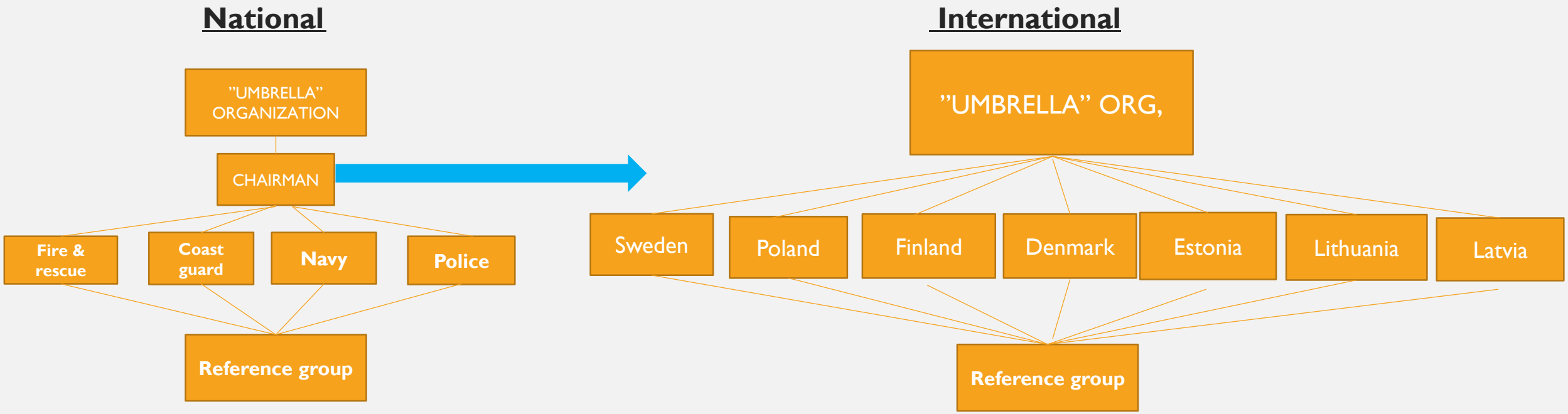
Finding right ”umbrella” organization for future management?

AQ – Adaptive intelligence. Changing attitudes?

Making and taking decisons?

NATIONAL & INTERNATIONAL **DIVING** COORDINATING GROUPS

SUGGESTION



SCOPE OF POLICY PAPERS

WHY?

National & International coordinating groups

Why?

- To maintain the cooperation we buildt during the project.
- To reach a long term and realistic management.
- To create and maintain an higher emergency prepardness in the EU countries around the Baltic Sea.

TASKS COULD BE….

International coordinating group

- Constists of the national chairmen from the different countries
- Annual meeting
- Standing agenda , (eg;Training/exercise, Resources, Research & Development etc.)
- Selected chairman

Tasks for the international coordinating group

Can be…..

- Plan and organize one international exercise every other year.
- Maintain an updated resource base and hand this information to end users (eg MRCC, decison makers etc)
- Encourage organized cooperation and exchanges
- Forum for diving releated questions

SOMETIMES LATER
BECOMES NEVER.
DO IT NOW.

THANK YOU FOR YOUR SUPPORT DURING THESE SEVEN YEARS!

- PA SAFE
- Interreg Baltic Sea
- Swedish Institute
- Swedish Civil Contingencies Agency (MSB)
- Swedish Maritime Authority (Sjöfartsverket)
- Tillväxtverket – our FLC
- ResQU2

-- AKT 557773 -- BILAG 3 -- [Presentation Speed up Re surveys] --

TRAFICOM
Liikenne- ja viestintävirasto

Speed up re-surveys – Re-Survey Scheme Assessment Report

EU SBSR PA Safe 21th steering comminttee meeting 14.11.2019

Seppo Mäkinen

"Players"

HELCOM MINISTERIAL MEETING COPENHAGEN 3 OCTOBER 2013

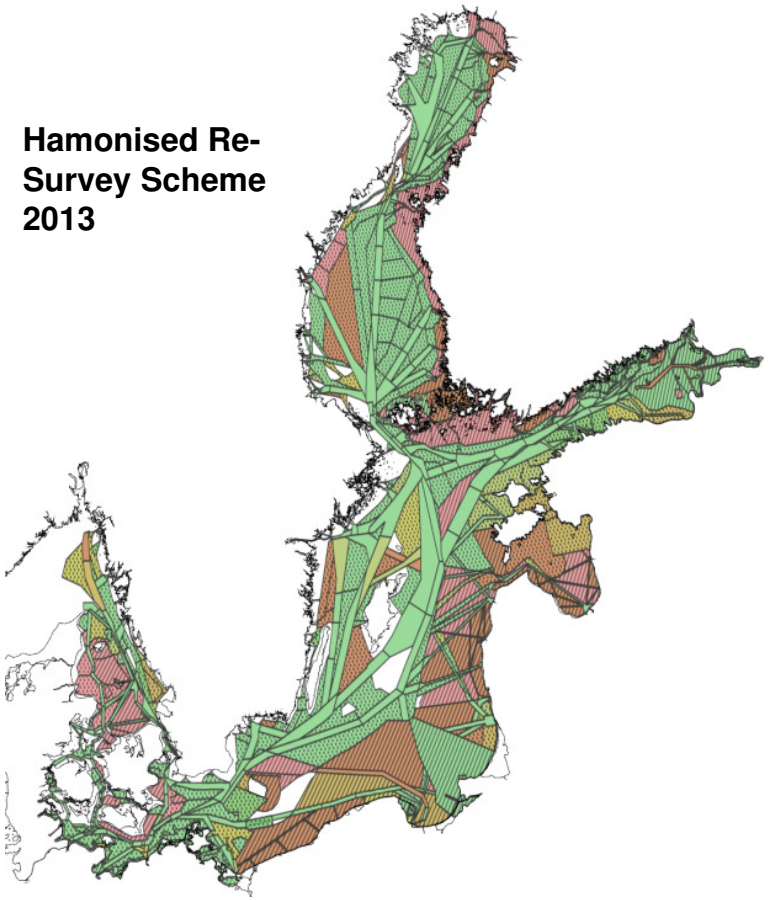
Declaration

HELCOM MARITIME

INTERNATIONAL MARITIME ORGANIZATION

SOLAS V

Hamonised Re-Survey Scheme 2013



EUSBSR
EU STRATEGY FOR THE BALTIC SEA REGION

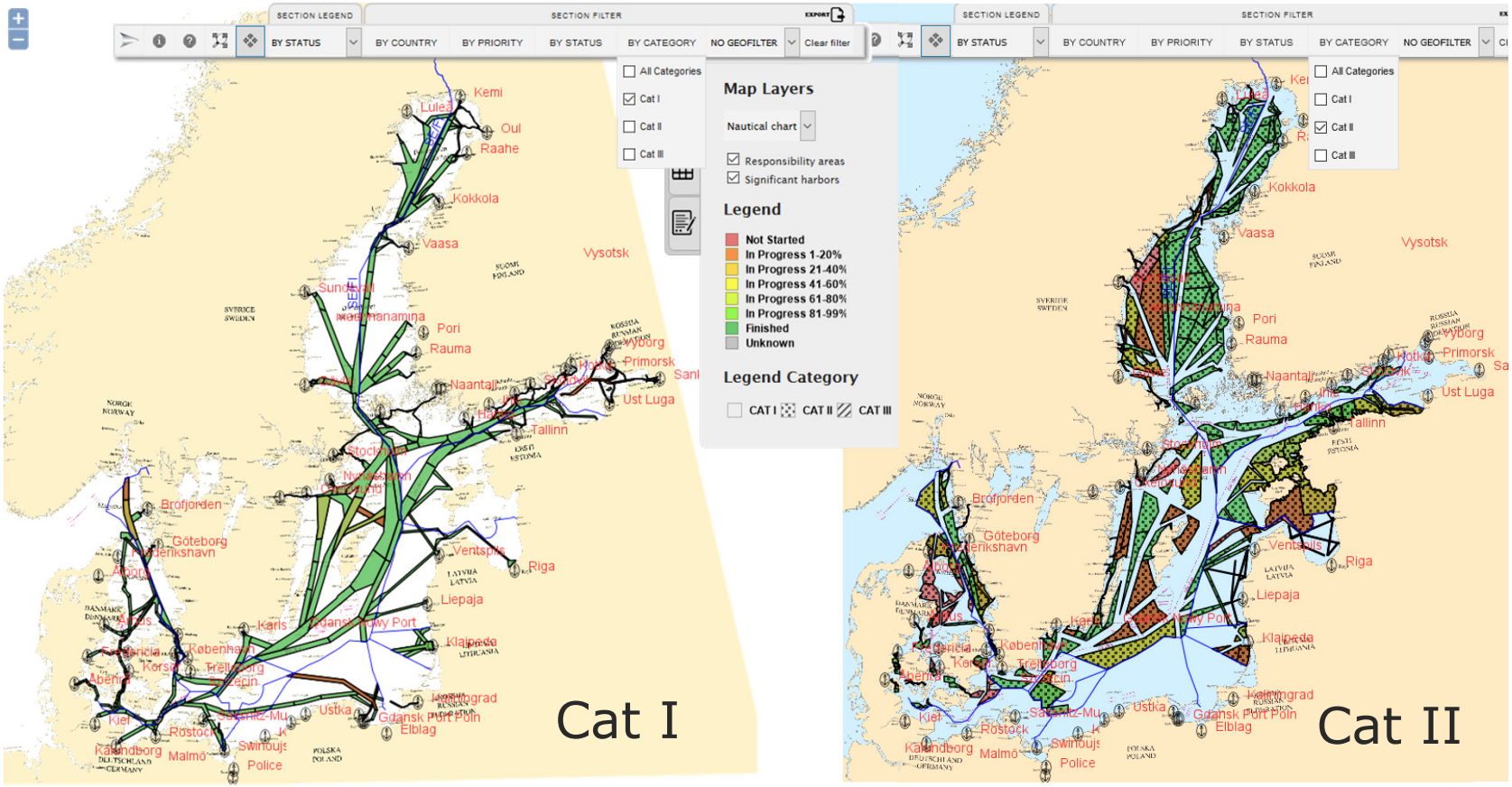
POLICY AREA 'SAFE'

BALTIC SEA HYDROGRAPHIC COMMISSION
BSHC

FAMOS

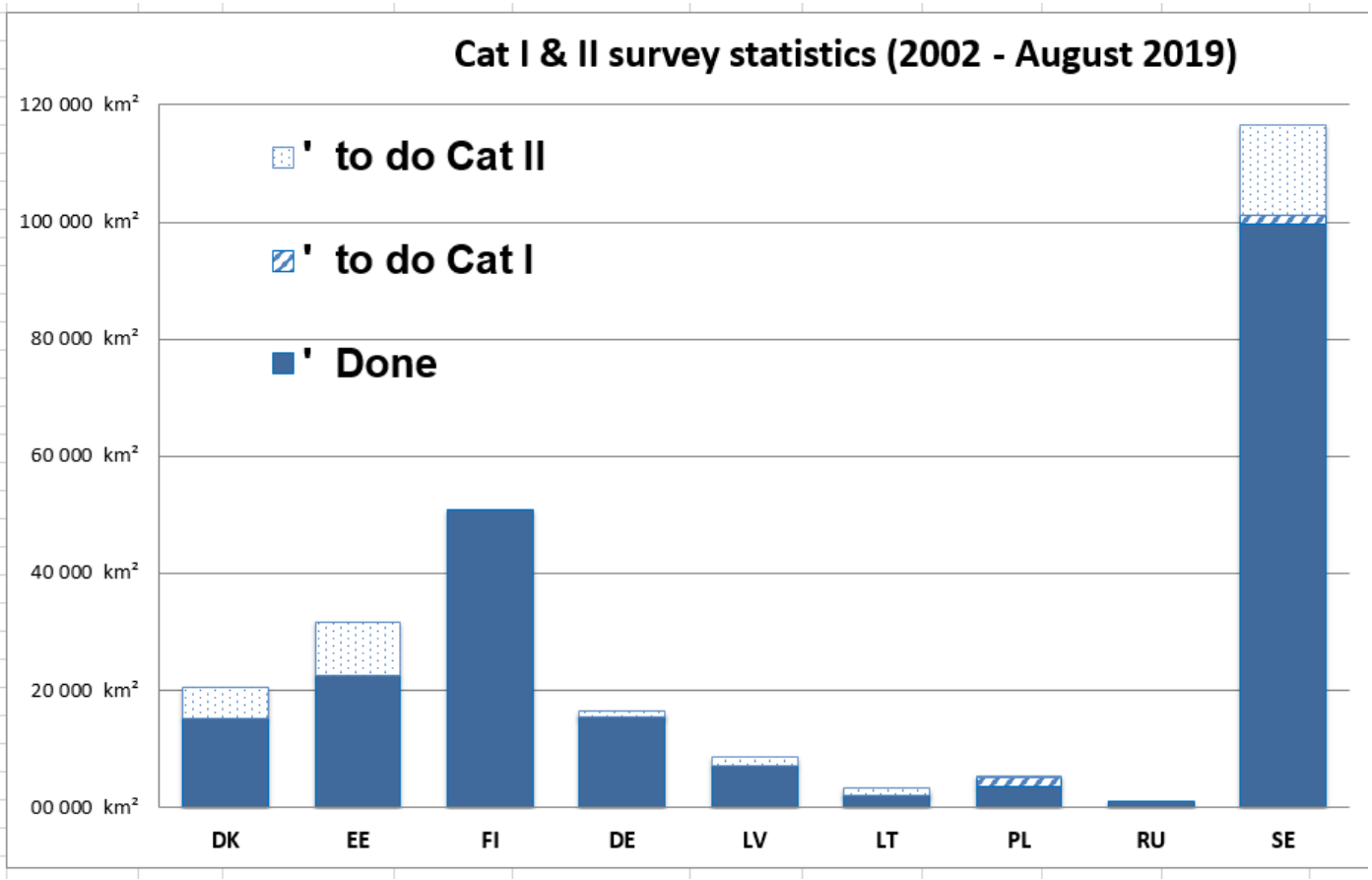
BSHC Monitoring Working Group

Database maintained at SMA, Cat I & II status



https://helcomresurvey.sjofartsverket.se/

HELCOM Cat I & II areas remaining to be surveyed (based on the Copenhagen 2013 decision)

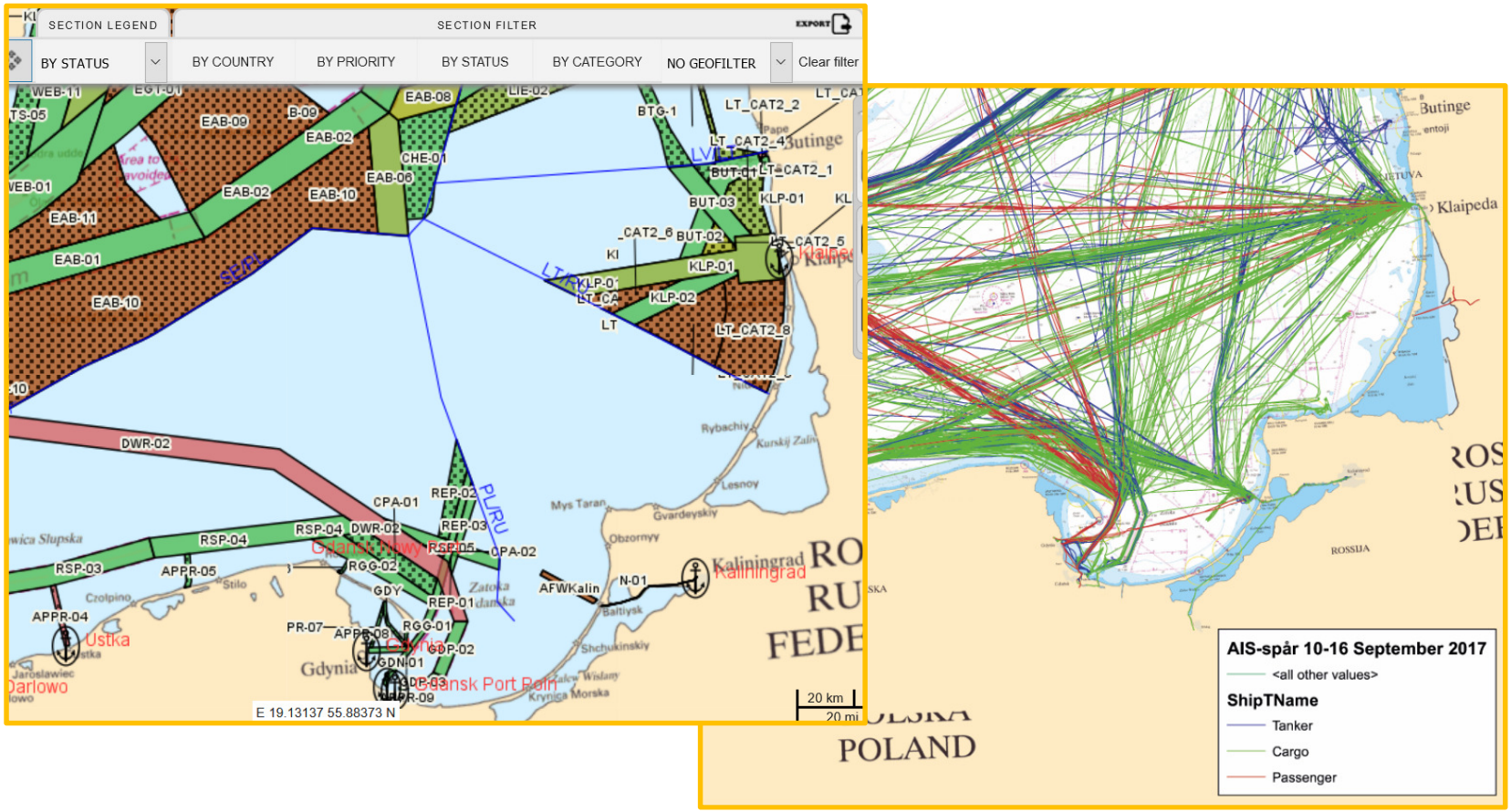


HELCOM Cat I / II / III statistics (figures)

Country	CAT I [year]	Cat I area total / remaining [~km²]	CAT II [year]	Cat II area total / remaining [~km²]	CAT I & II total [~km²]	CAT III [year]	Cat III area remaining [~km²]	Cat III area total [~km²]
Denmark	2013	3 073 / 0	2030	12 085 / 5 457	21300	not specif		
Estonia	2015	5 960 / 0	2035	25 651 / 9 065	31611	2026	4 060	4320
Finland	2016	22 321 / 0	2016	28 678 / 0	51000	2040	21 000	31042
Germany	2019	XXX / 230	2025	XXX / 950	15400	not applic	0	0
Latvia	2015	2 500 / 0	2022	6109 / 1376	8609	2045	20 500	20500
Lithuania	2019	1 569 / 1	2025	1 823 / 1 141	3400	2039	2 736	3041
Poland	2021	4 343 / 1 403	2020	906 / 153	5249	2039	19964	24180
Russia	2018		2018		1200	2017		
Sweden	2022	48 568 / 1 491	2022	69 538 / 15 421	118 106	not specif	39 000	

An informal goal is to have Cat I & II areas relevant for commercial shipping completed by end of 2020. Full first coverage on 2030. Continuous re-surveying needed in some routes and areas due to environmental and sea bottom changes.

Raising awareness on Southeast Baltic Sea



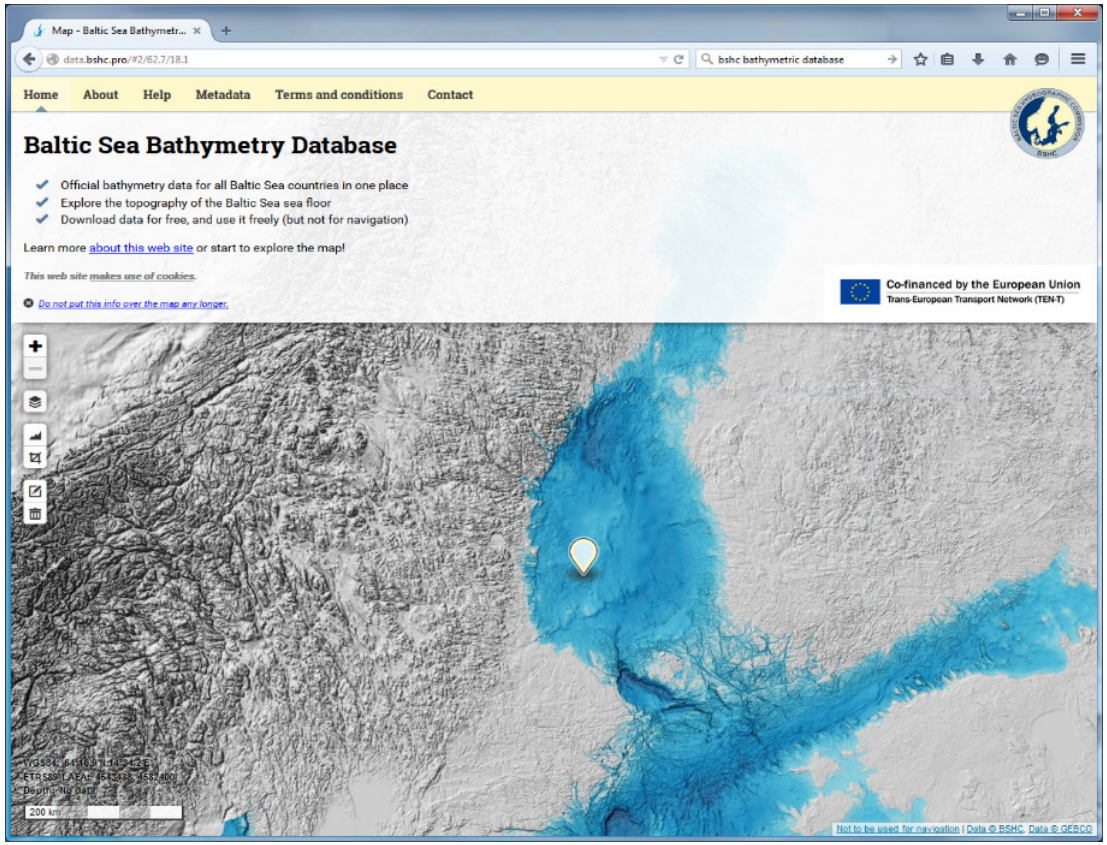
BSHC Baltic Sea Bathymetric Database

Open data

The BSHC database is updated about 1-2 times annually by the Member States, as new data has been surveyed and verified.

Data is an averaged depth model for various scientific free use with Creative Commons License.

http://data.bshc.pro



HELCOM Re-Survey Scheme Assessment Report

An Assessment Report on Baltic Sea Re-Survey Scheme was drafted for the BSHC24 and HELCOM Maritime 19 meetings, covering the timeframe from 2002 to August 2019.

BSHC MWG discussed the Scheme at its' meeting 19 in Tallinn of an update to the Re-Survey Scheme to include CAT III areas and therefore a possibility to include the updated Scheme to the new HELCOM Baltic Sea Action Plan (2021). This would give the Re-Survey work necessary political backbone in the Baltic Sea area strategy.

BSHC24 decided in Gdansk on 11.9.2019 to update the Re-Survey Scheme with Cat III areas and the Member States were encouraged to inform their HELCOM Maritime HODs of a proposal and to support to include updated Re-Survey Scheme into the new BS Action Plan 2021;

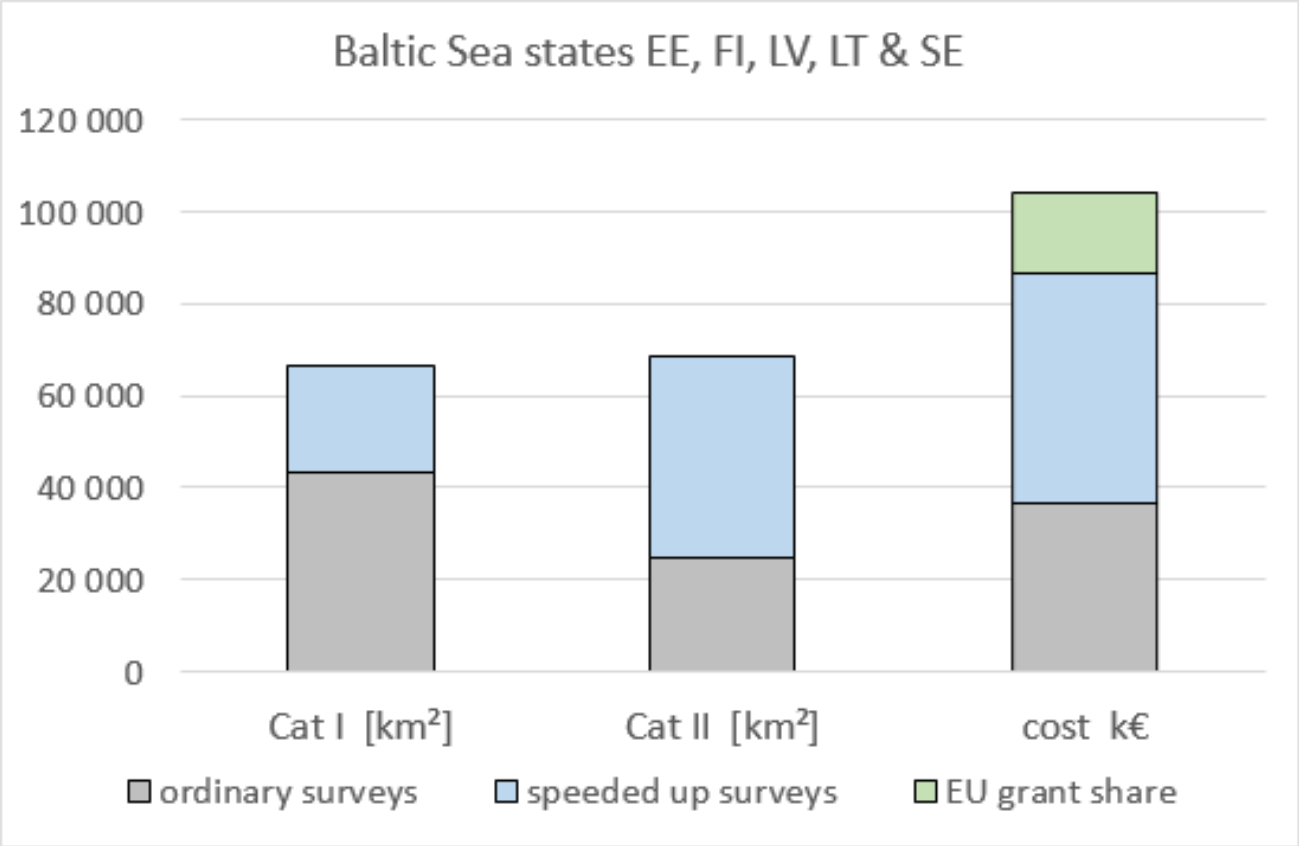
BSHC MWG was tasked to prepare an updated Re-Survey Scheme for BSHC25 meeting (in September 2020 in Sweden). This will contain the Cat III areas, surface area and timetable.

Re-Survey Scheme Assessment Report findings

- ~96% of Cat I areas and ~77% of Cat II areas are completed by end of 2018, having 2 more field seasons to complete the informal goal of 99% of areas relevant for commercial shipping;
  - The ordinary Baltic Sea Member States surveys have covered about 55.000 km²;
  - EU Grants have speeded up the surveys so far with extra 66.000 km² completed (EE, FI, LV, LT, SE) with **48 M€** of Member States own national financing and **17,7 M€** extra on top from EU INEA / TEN-T Grants;
- Work processes efficiency has increased and more co-operation between MSs has taken place (also benchmarking);
- Benefits have been largely e.g. in commercial shipping safety, efficient route planing, Maritime Spatial Information (for Baltic Sea Bathymetric Model, STM and Maritime Spatial Planning), SAR activites and oil recovery contingency;
- In some areas continuous re-surveying is needed due to changing environmental and sea bottom conditions;
- This data provides base for S-102 depth models;

HELCOM Re-Survey Scheme progress 2002-2018

HELCOM Cat I & II surveys during 2002-2018 in EU TEN-T / INEA CEF program participating Member State. The significance in **speeding up** re-surveys and **EU grant** financing.

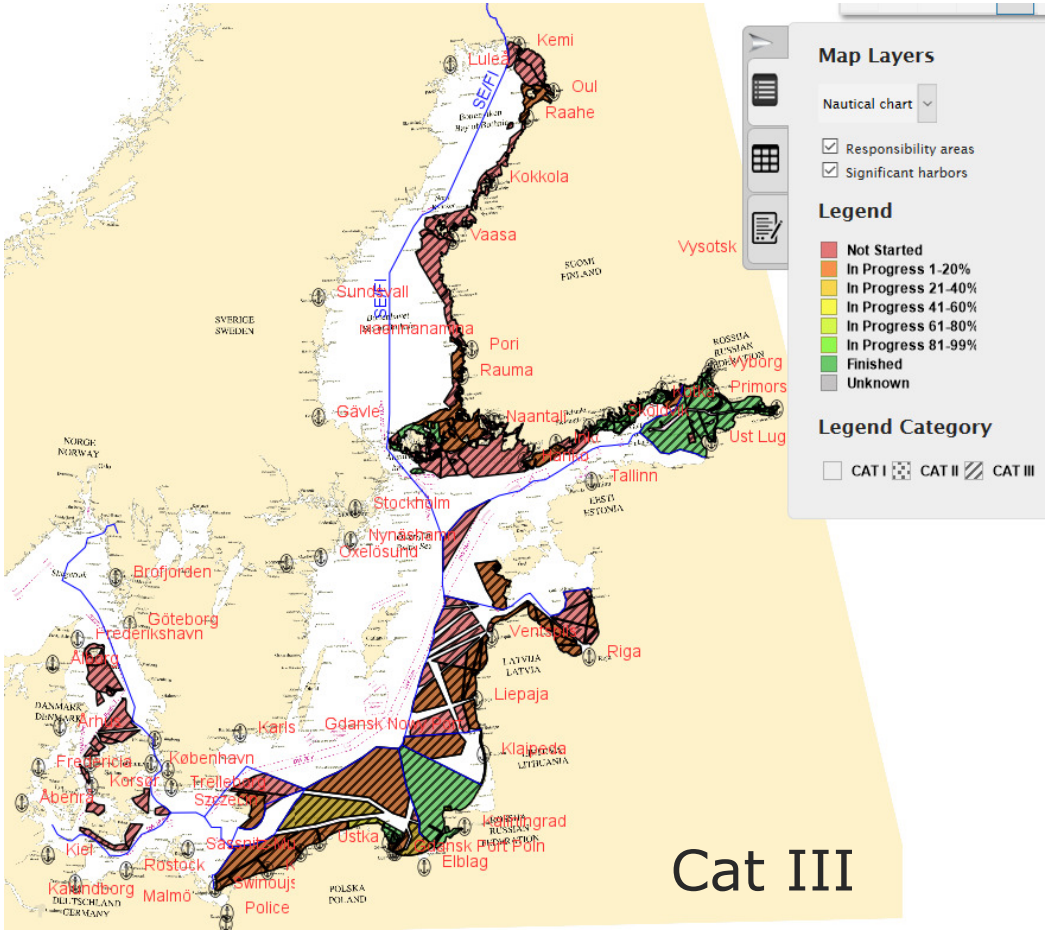


Cat III areas at https://helcomresurvey.sjofartsverket.se/

BSHC24 has decided on the update of HELCOM Re-Survey Scheme to include Cat III areas and the respective timetable.

HELCOM Maritime 19 was asked to consider this updated Re-Survey Scheme as part of the new Baltic Sea Action Plan 2021. Some Member States supported this strongly, also as the current scheme is not yet completed.

SE to define Cat III areas during 2019.



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EU SBRS PA SAFE 21 meeting is invited to

- Note the BSHC24 report on Re-Survey progress
- Approve BSHC24 plan to update the Re-Survey Scheme to include HELCOM Cat III areas and the timetable for speed up re-surveys during 2020
  - plan expected to be ready in June 2020 -> BSHC25 -> EU SBSR PA SAFE 23 (fall 2020?)
- Consider supporting updated Re-Survey Scheme to be included into new Baltic Sea Action Plan (2021)

TRAFICOM
Liikenne- ja viestintävirasto

Thank You

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ResQU2 Project Platform

PA SAFE Steering Committee meeting, 13-14 November 2019, Hamburg, Germany

Kirsi Laitio

Photo: The Finnish Border Guard

EU STRATEGY FOR THE BALTIC SEA REGION FLAGSHIP

Interreg Baltic Sea Region

EUROPEAN UNION EUROPEAN REGIONAL DEVELOPMENT FUND

ChemSAR

DIVE SMART BALTIC

HAZARD

MIRG EU Maritime Incident Response Groups

MIRGEX Maritime Incident Response Groups

ResQU2 stands for

Enhancing the durability of learning experiences *gained in ChemSAR, HAZARD, DiveSmart Baltic and Mirg-Ex projects* ***on guidelines, operational plans and procedures and exercises related to incidents at sea and in ports.***

ResQU2 was granted a Flagship status in May 2019 under PA Secure

ResQU2 Project Platform

- Brings rescue authorities and services, seaport and other relevant authorities, and knowledge partners together
- Enables better emergency preparedness, co-ordination, and co-operation
- Leading to more safe and efficient operations to reduce harm and loss of life in emergency situations

ResQU2 improves

- the use of safety and security guidelines and procedures
- transnational cooperation and more efficient use of existing resources
- communication between key actors and towards the public, and
- abilities to engage new technology

ResQU2 dissemination events, e.g.,

- Workshop on *How to build maritime incident response capacity, Jan 2019, Hamburg*
- Arctic Coast Guard Seminar, Apr 2019, Turku
- Workshop *Maritime emergency preparedness* at Interreg Programme Conference, April 2019, Lübeck
- Joint Workshop on *Hybrid Scenarios in the Baltic Sea* with the European Centre of Excellence for Countering Hybrid Threats, May 2019, Velkua
- Europe Forum, Aug 2019, Turku
- Joint Workshop on *Hybrid Threats and Harbour Protection* with HybridCoE*, Oct 2019, Helsinki*
- Workshop on *Developments and the Relation in Maritime Incident Control – Are They Strictly Technological?*, Oct 2019, Riga

Other activities

- Development of Policy papers and recommendations to improve maritime safety by sharing and transferring knowledge of competences and resources
- Enhancing utilization of technological innovations in maritime rescue operations
- Peer-to-peer dissemination

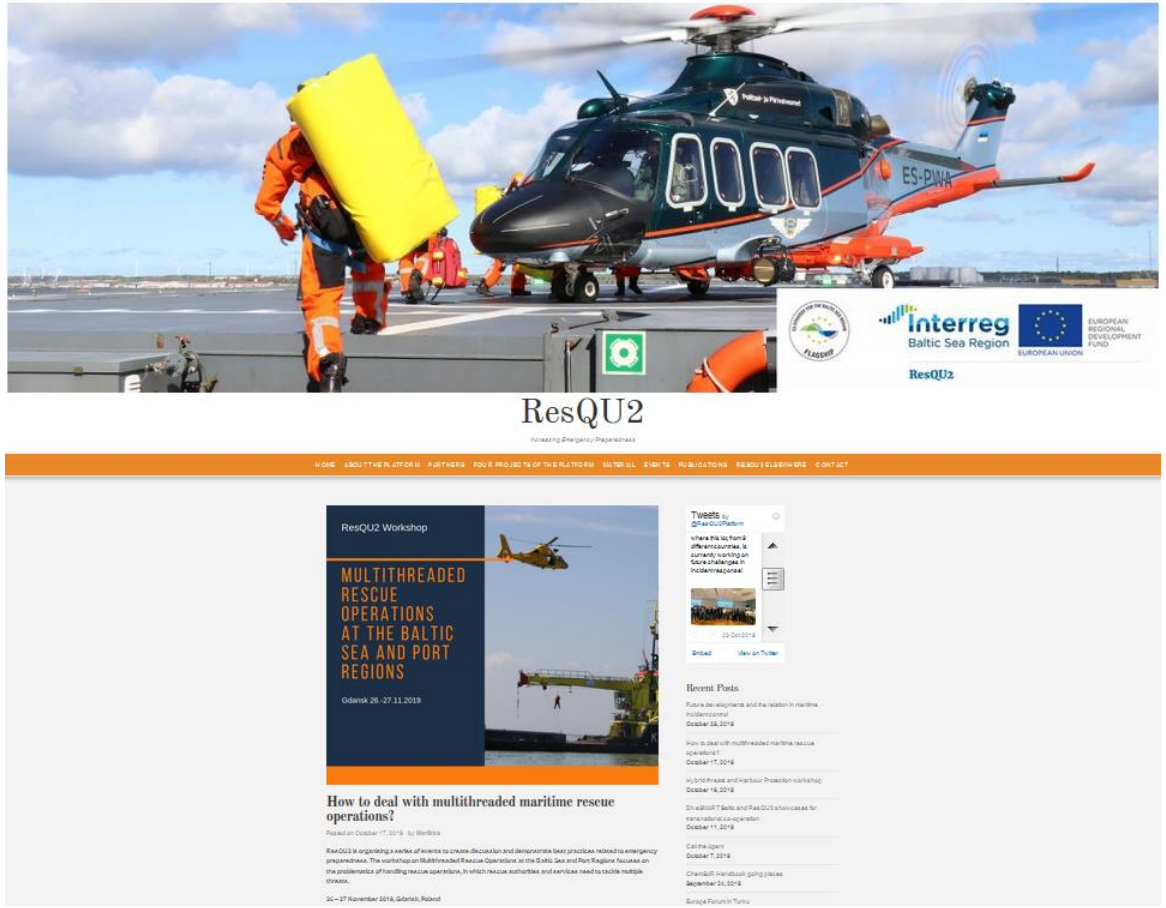
Next

- Workshop on Multithreaded Rescue Operations at the Baltic Sea and Port Regions, Nov 2019, Gdansk
- ResQU2 Best-Practice Seminar, Feb 2020, Lithuania
- Tabletop exercise demonstrating regular projects' achievements, Mar 2020, Turku
- Communication Seminar, Apr 2020, Helsinki

Challenges

- Four platform projects have similar target groups, yet it has sometimes been difficult to find the common thread when planning, e.g. dissemination events.
- Different partners, different countries, different capacities, different interests
- Reaching the correct authorities and services in different regions; the (hierarchical) level varies between countries

Find ResQU2



Blogit.utu.fi/resqu2

@ResQU2Platform

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Activities

WP1: Project management and administration

WP2: Disseminating lessons learned

- GoA 1: ResQU2 Seamap and disseminating lessons learned in high-level event(s)
- GoA 2: Demonstrating regular projects' outputs to target groups
- GoA 3: Reaching ResQU2 end-users
- GoA 4: Peer-to-peer dissemination and benchmarking

WP3: Regulatory, technological and organizational developments

- GoA 1: Improving compliance of the regulatory framework on maritime and seaport safety and security and enhanced risk management practices
- GoA 2: Enhancing utilization of technological innovations in maritime incidents and rescue operations
- GoA 3: Policy paper(s) and future recommendations

ResQU2 Project Platform

R-Mode Baltic

Project status and results: November 2019

Stefan Gewies, German Aerospace Center (DLR)
EUSBSR PA Safe 21th Steering Committee Meeting

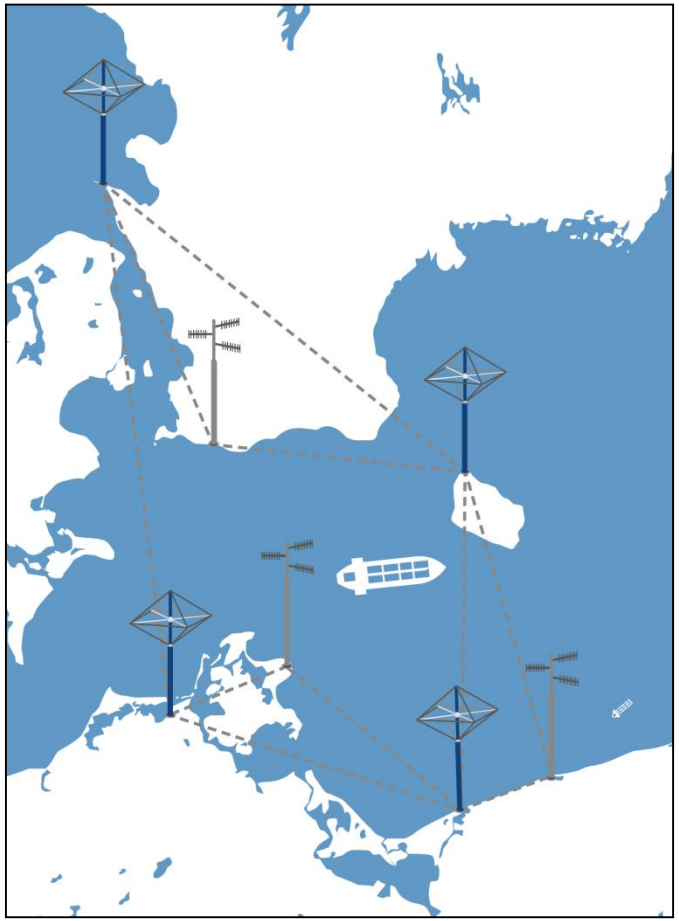
14 November 2019

R-Mode Baltic project goal

The main goal of the project R-Mode Baltic is the development and demonstration of a new maritime backup system for position, navigation and time (PNT) purposes.

- R(anging)-Mode is a terrestrial positioning system that
  - transmits timely synchronised ranging signals
  - using the communication channel of existing maritime radio infrastructure

- Project utilises signals of marine radio beacons and VDES base stations

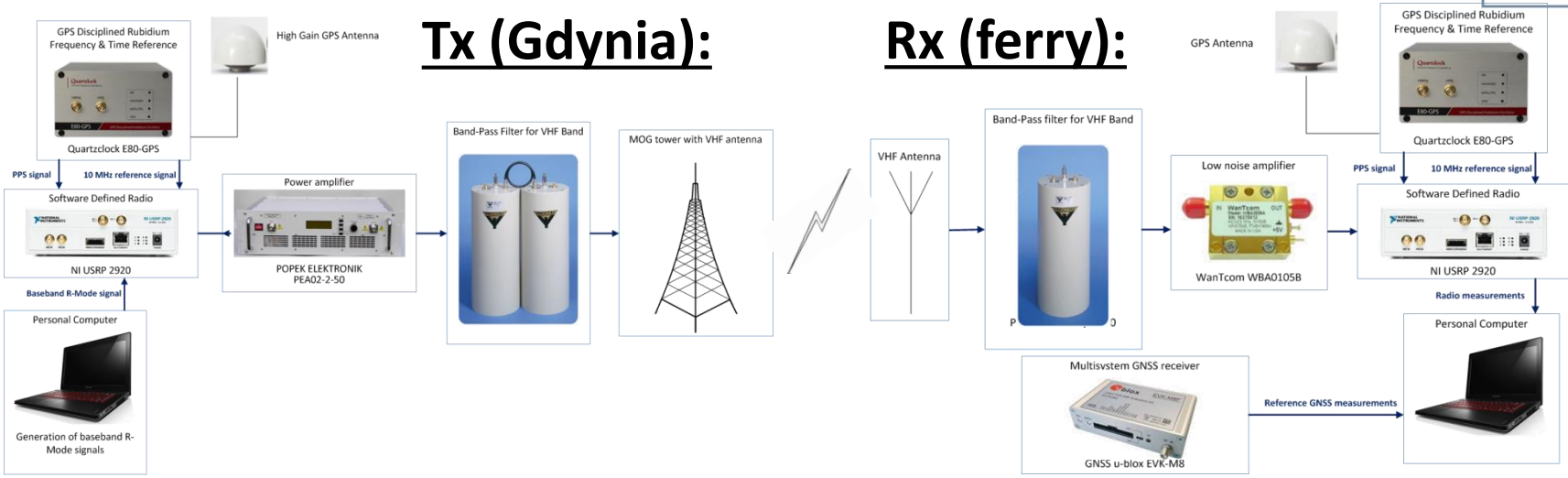


First VHF R-Mode measurement in port of Gdynia

17-18 June 2019

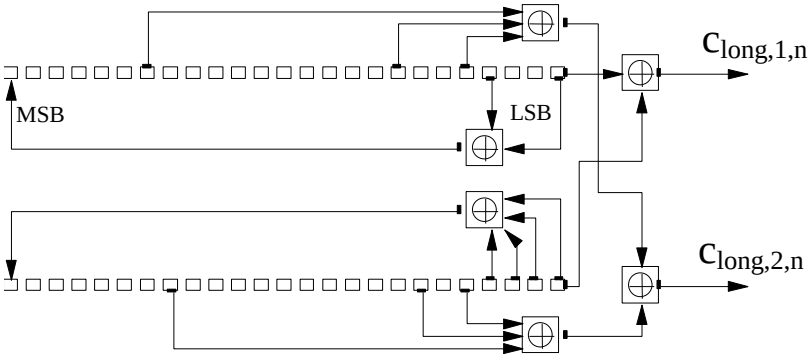
- For the purpose of the measurements, the Maritime Office in Gdynia (MOG) provided its VHF antenna installation located on the tower near the entrance to the port in Gdynia. This specific location was used for the R-Mode testbed's transmitter (Tx) installation.
- The main goal of the measurements is the analysis of the impact of the maritime radio VHF channel on the ranging accuracy when using time-based methods (this analysis will be performed for different weather conditions).
- In order to eliminate some sources of errors, the rubidium oscillators were installed on both ends of the radio link. Additionally, the exact locations of the transmitting/receiving stations were determined via RTK measurements and using GNSS+EGNOS.
- During the tests 4 neighbouring 25 kHz channels, intended for the VDES system (VHF Data Exchange System), were utilised with centre frequencies from 161.800 MHz to 161.875 MHz).
- The receiving (Rx) station was installed on the Stena Line ferryboat running between Gdynia and Karlskrona

First VHF R-Mode measurement in Gdynia



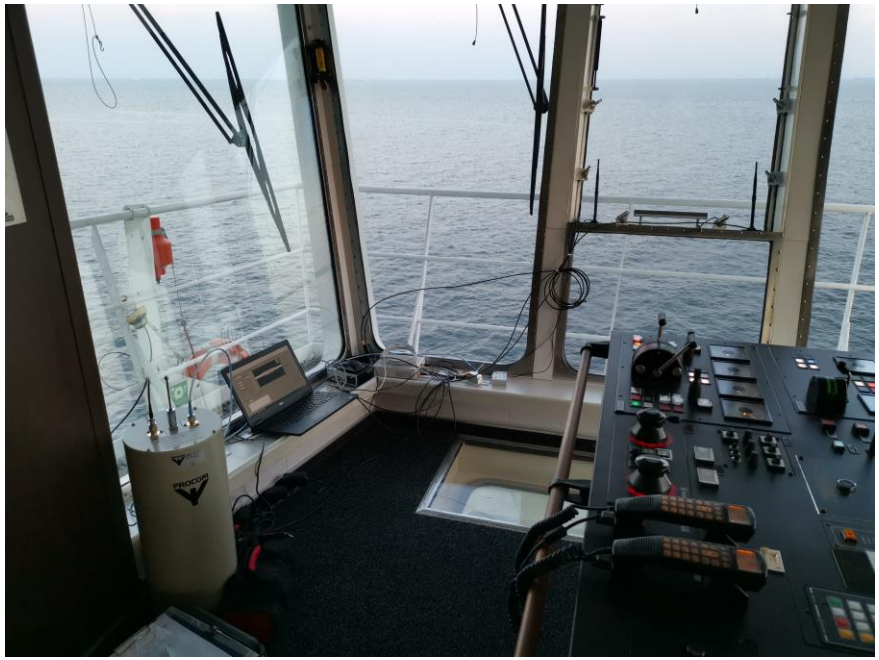
- AIS Message #26 structure (5 slots)
- Length of the code: 968 bits
- The EIRP power of the transmitter at the location in Gdynia was **41.25 dBm**; the antenna was mounted at the height of **28 m a.s.l.**

Gold code generator

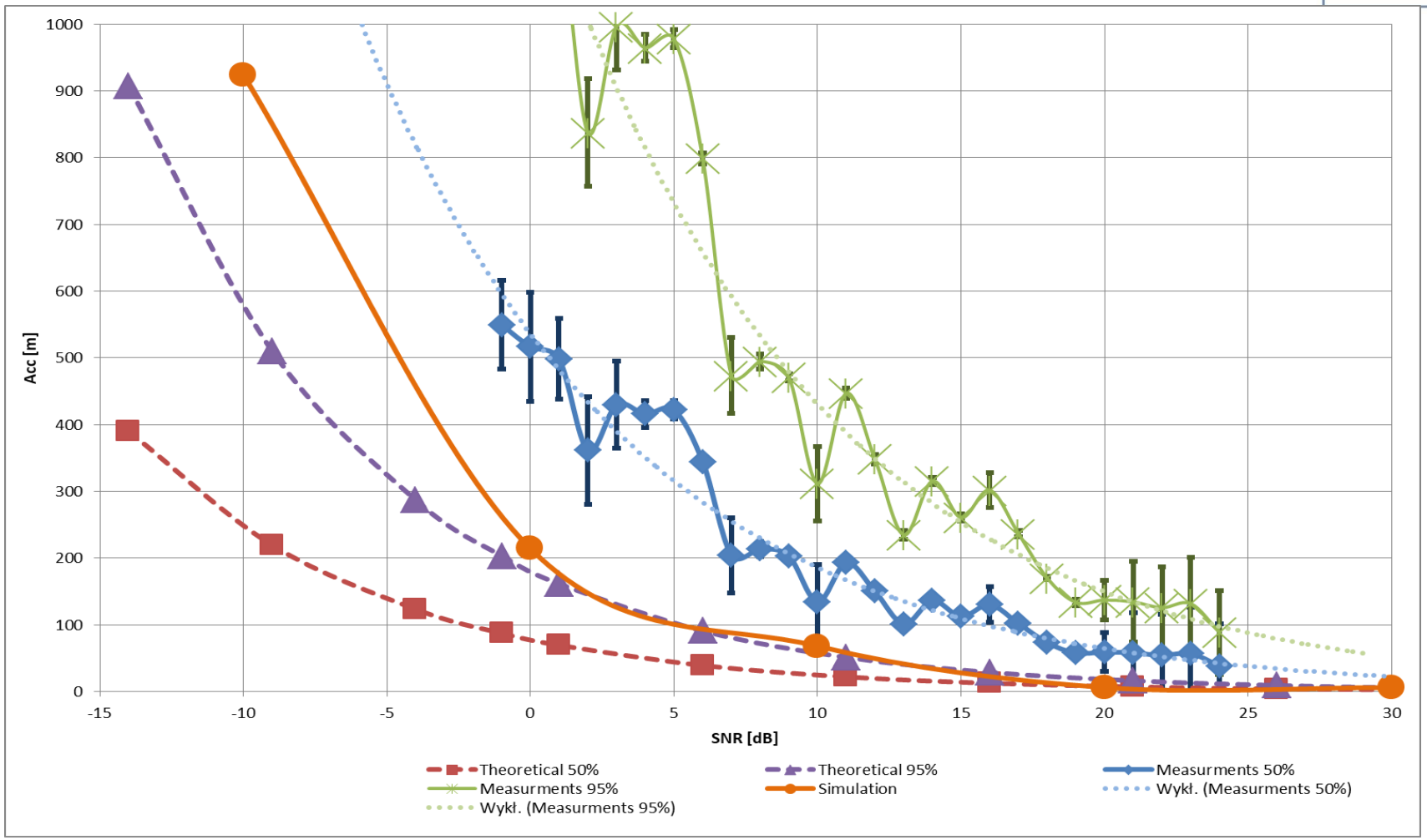


VHF R-Mode Tx and calibration

VHF R-Mode Rx

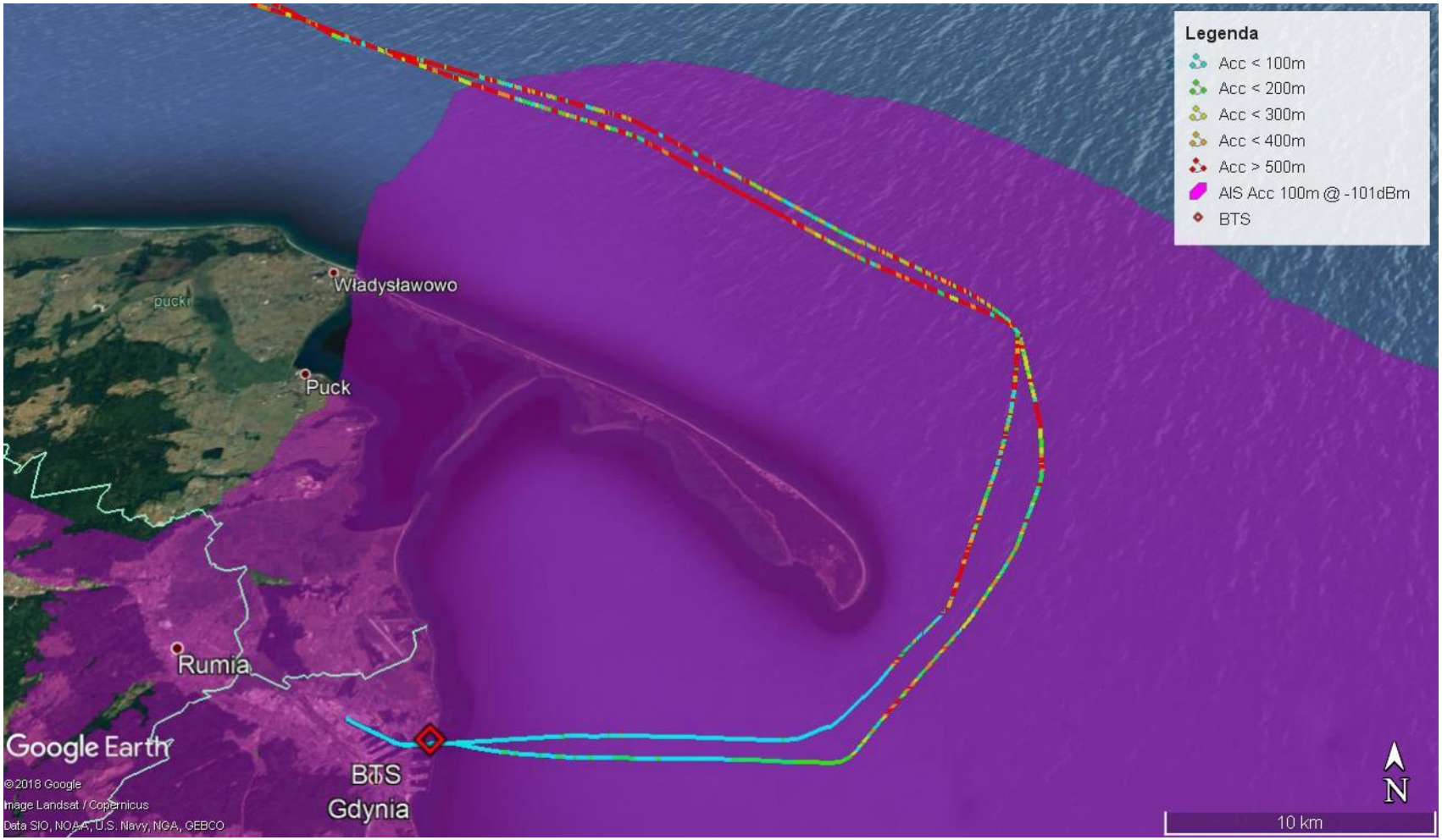


Obtained ranging accuracy



First VHF R-Mode measurement in Gdynia

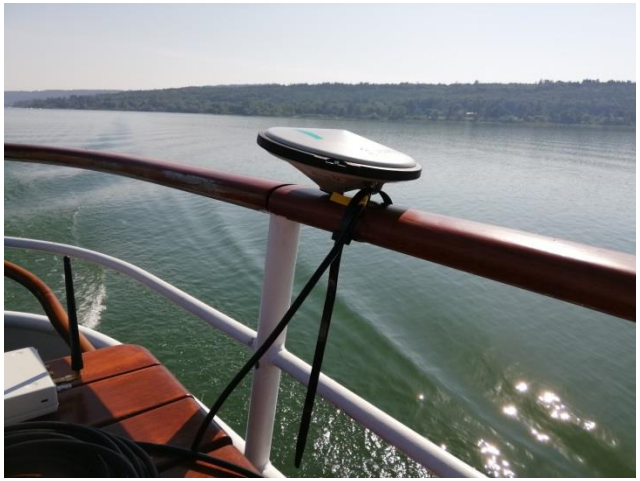
R-Mode range measurements result

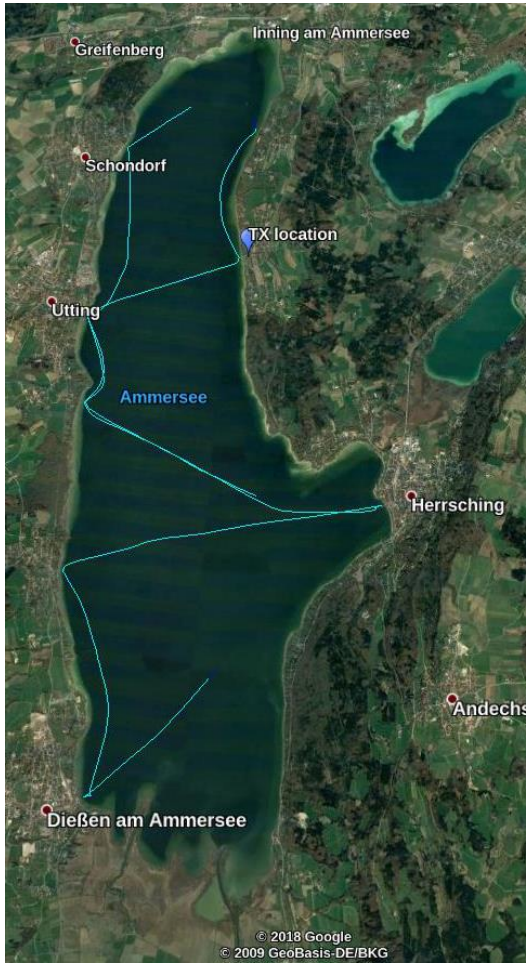


First VHF R-Mode measurement on the Ammersee

Setup and ship route

- Measurements were performed on the Ammersee
- Static transmitter located at the shore
- Receiver on a ship on the lake
- Focus on different possible signals

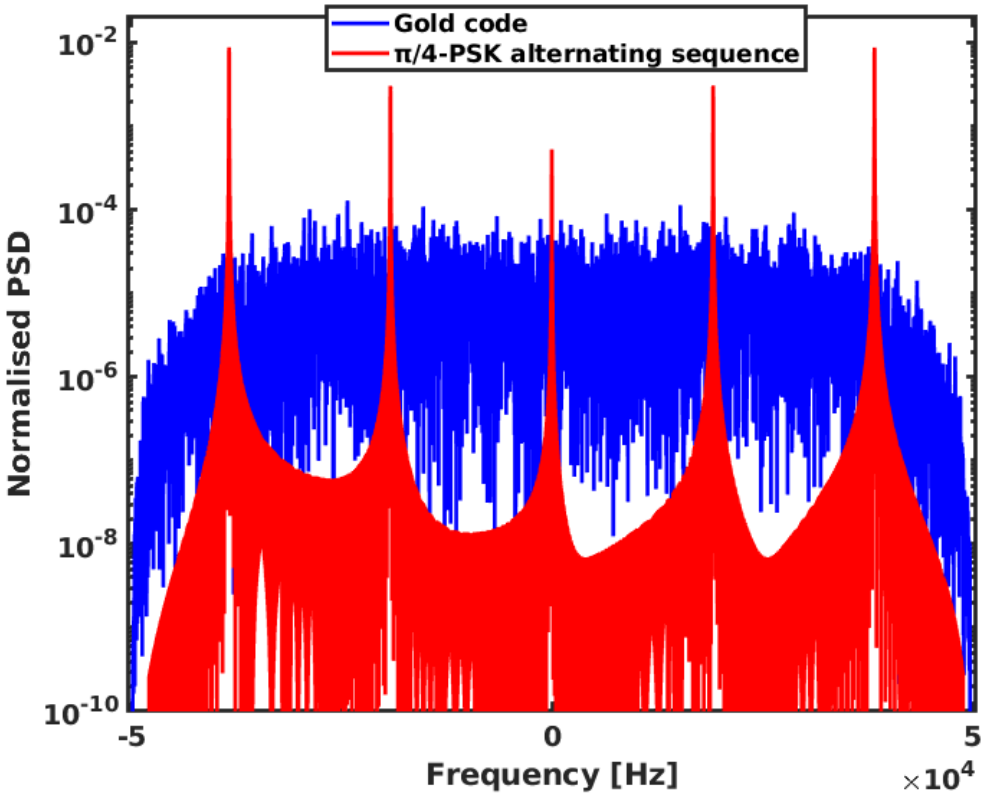




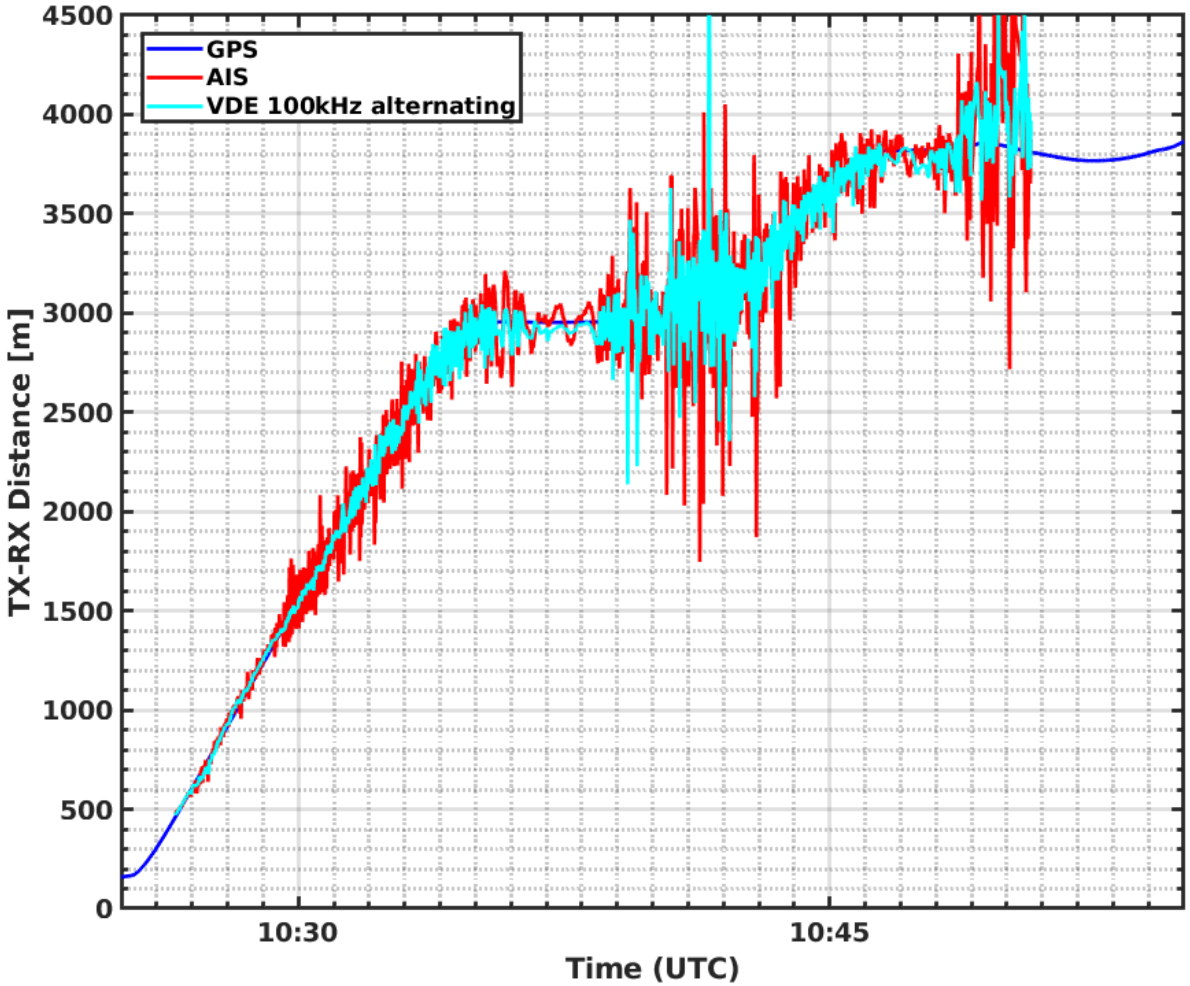
First VHF R-Mode measurement on the Ammersee

Modulation and data sequence

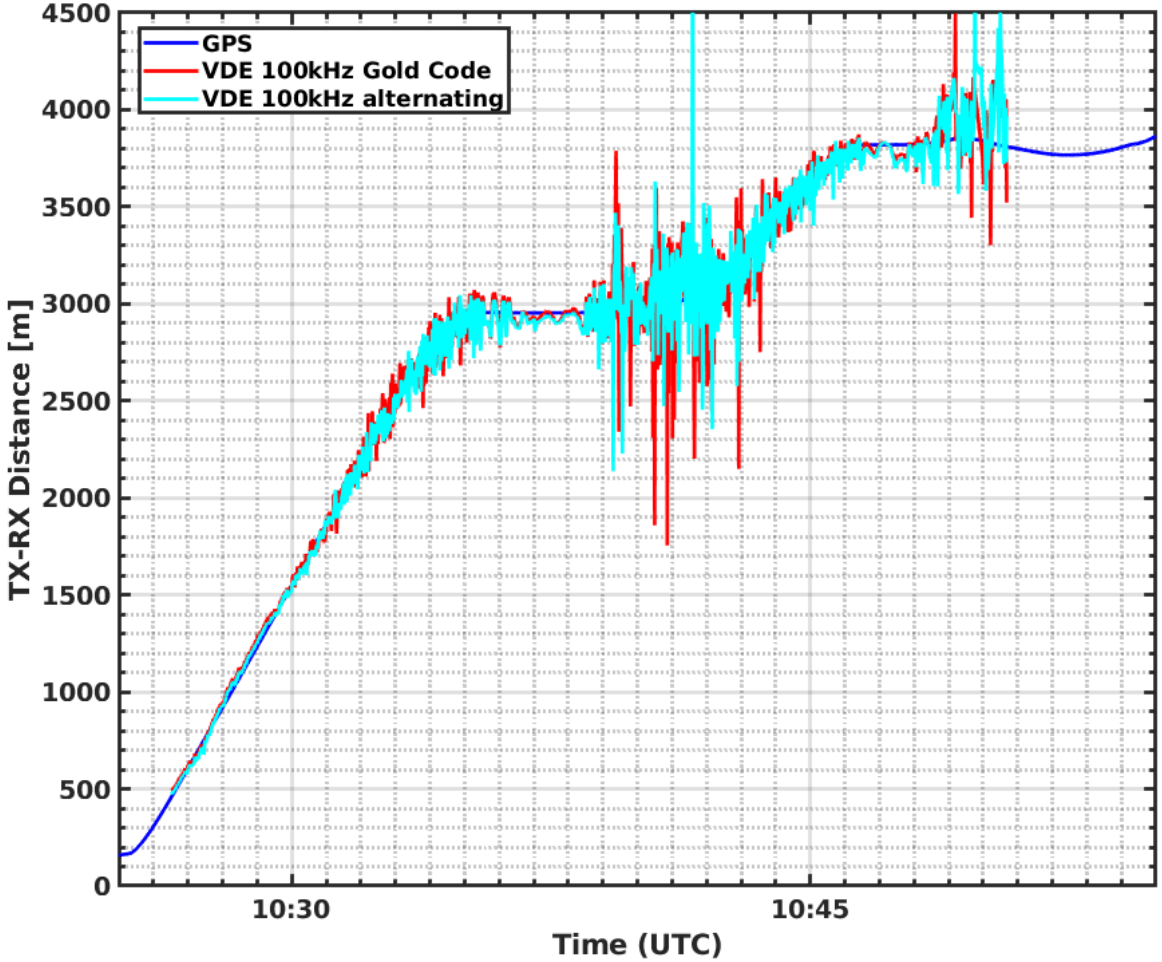
- Signal spectrum can be shaped by using a specific data sequence.
- By alternating between opposite constellation points, bandwidth can be improved.
- $\frac{\pi}{4}$-QPSK doesn‘t allow alternating, only an approximation



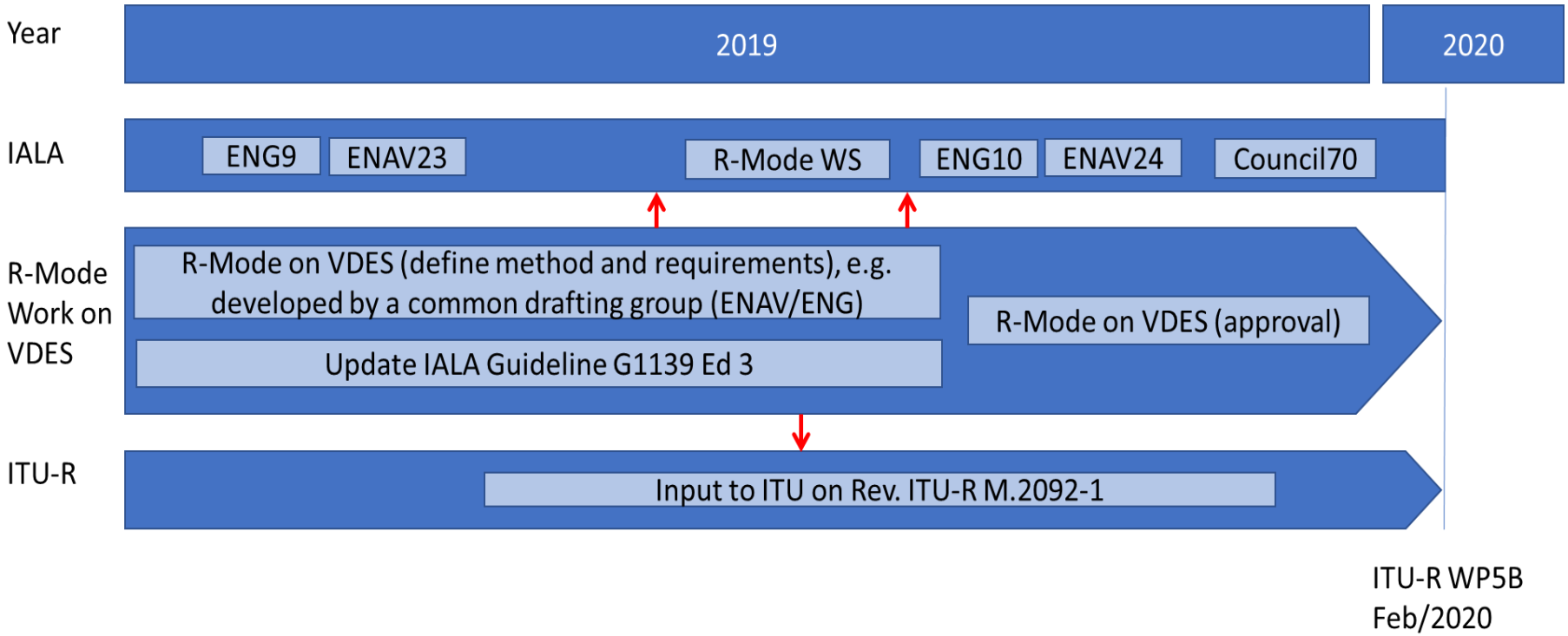
First VHF R-Mode measurement on the Ammersee



First VHF R-Mode measurement on the Ammersee



Roadmap for VDES R-Mode in 2019

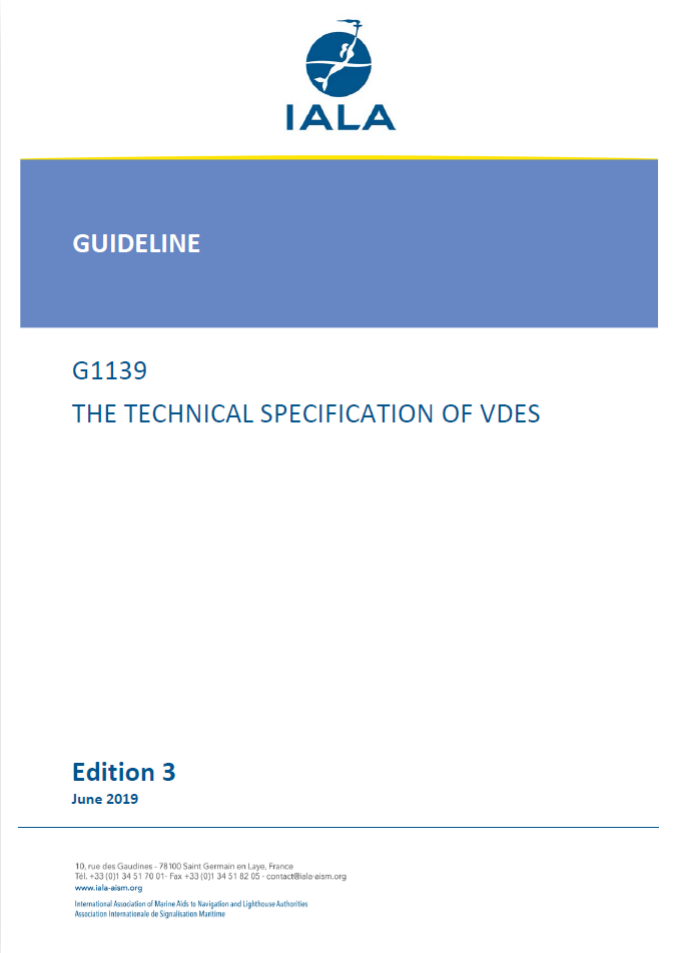


Status VDES R-Mode standardization

- 3 meetings and 1 workshop
- R-Mode Baltic delivered proposal based on R-Mode Baltic research results for VDES R-Mode
- Proposal obtained approval by IALA ENAV committee
- Will go into IALA Guideline 1139 on “The Technical Specification of VDES”

- Planned completion March 2020

- R-Mode aspects not relevant for ITU will be further developed in IALA ENG committee


IALA

GUIDELINE

G1139

THE TECHNICAL SPECIFICATION OF VDES

Edition 3

June 2019

10, rue des Gaudines - 78100 Saint Germain en Laye, France
Tél. +33 (0)1 34 51 70 01- Fax +33 (0)1 34 51 82 05 - contact@iala-aism.org
www.iala-aism.org
International Association of Marine Aids to Navigation and Lighthouse Authorities
Association Internationale de Signalisation Maritime

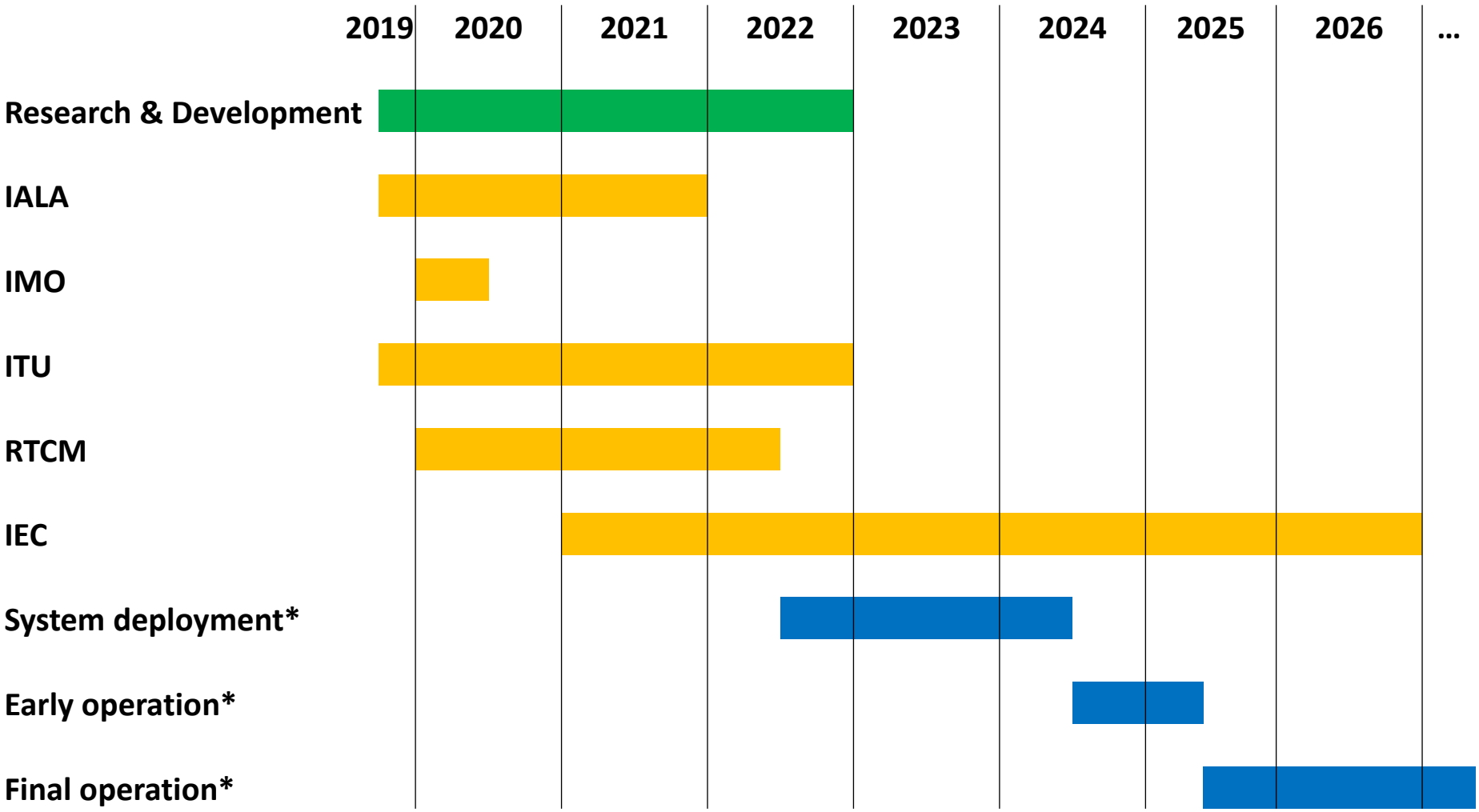
IALA Workshop on Ranging Mode (R-Mode)

9 – 12 September 2019

- 47 participants from 19 countries discussed about current status of R-Mode development
- DLR organised workshop on behalf of IALA
- R-Mode Baltic project delivered major contribution

- Workshop results
  - Informed people about world-wide R-Mode activities
  - Proposal for VDES R-Mode
  - Reviewed draft for R-Mode Guideline
  - Reviewed stakeholder requirements

R-Mode roadmap



* Regional implementation

10/2019

Conclusions

- First measurements in Poland and Germany show that VDES R-Mode is feasible.
- With Gold-Code and alternating $\frac{\pi}{4}$-QPSK bit sequence two sequences with different performances are available for R-Mode. The complete VDES-TER channel with 100 kHz bandwidth should be used for R-Mode.
- R-Mode is supported by IALA and its members.
- R-Mode service might be available in first regions in 2025.

Next steps

Preparation 9 month extension of the project

- Aims were defined 13 November 2019 in Koblenz

Contact

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Institute of Communications and Navigation
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www.r-mode-baltic.eu

Project partner

Presentation content

- Status **since the last** PA Safe Steering Committee meeting
  - Latest, most important activities
- Which plans do you have for ensuring the dissemination of the results, conveying the results to the policy level, is there a possible continuation of the Flagship in the pipeline?
- Any challenges?
- Any changes in expected final results?
- What kind of assistance and support you would like have from the PACs and the Steering Committee?

- VDES measurements and implementation
- VDES standardization
- IALA Workshop and ENG/ENAV meetings, ENAV Intersessional
  - R-Mode Roadmap
- Testbed deployment

- Extension

STM BALT SAFE

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

STM BALT SAFE – OVERVIEW

650 million reasons for STM BALT SAFE

The Finnish National Audit Office: tanker accident could result in an oil spill between 50 000 and 60 000 tonnes.

The average response and clean-up costs resulting from such an accident could grow up to **650 million euros.**

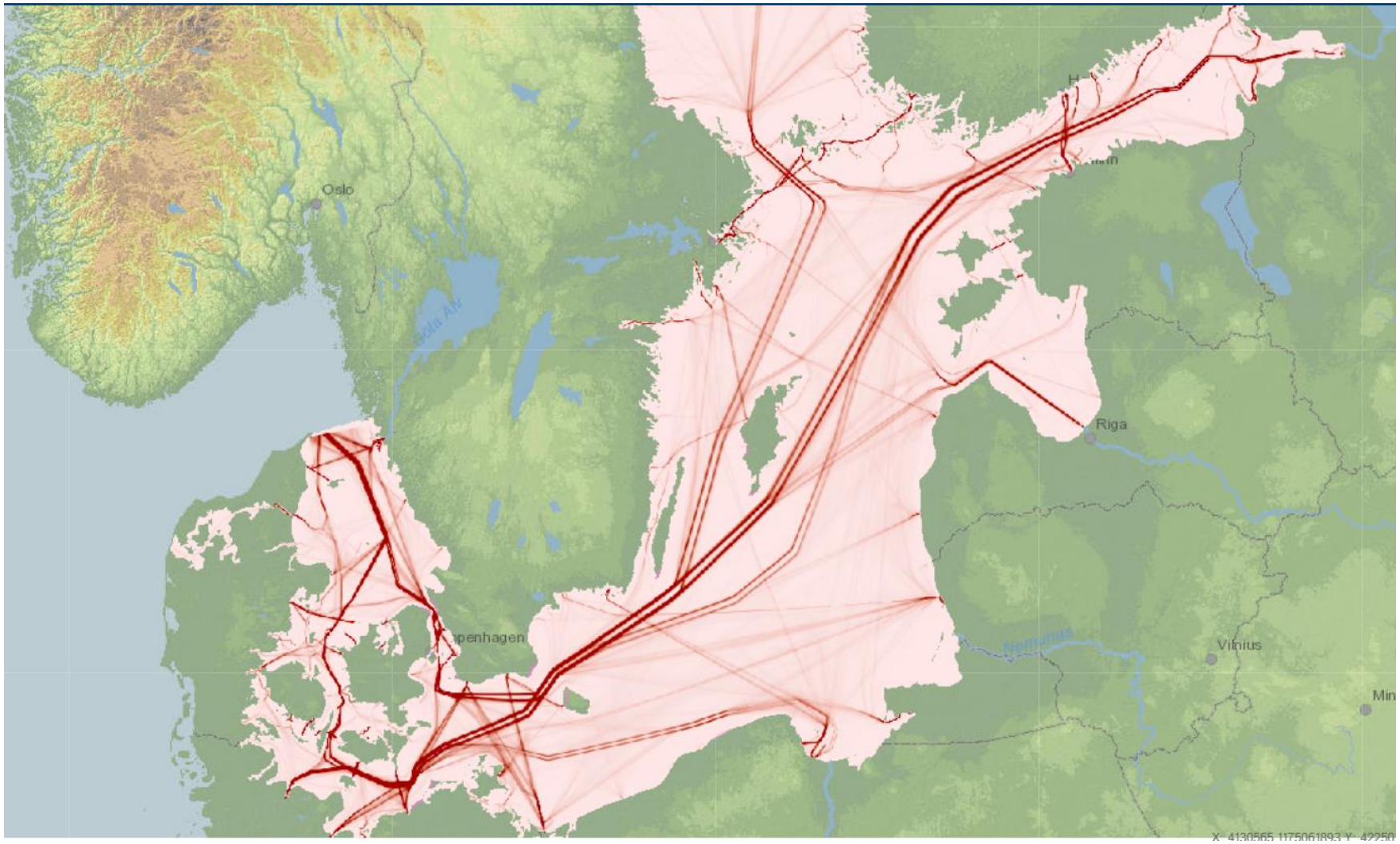
GOFREP two main suggestions to improve the safety and fluency of the maritime are:

- electronic route plan exchange service both between ships and between ships and GOFREP centres
- improved e-navigation services in general

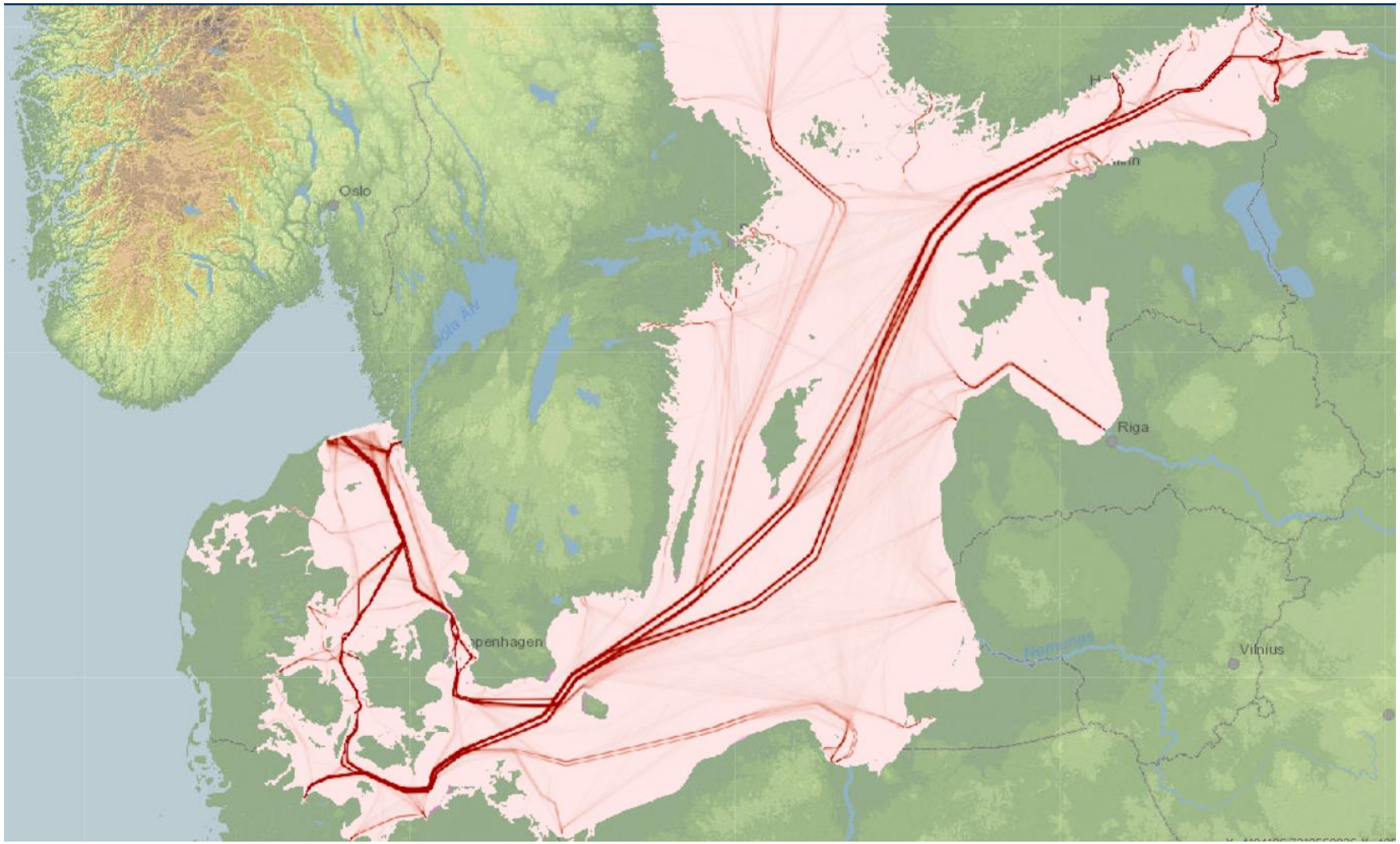
Objectives of STM BALT SAFE

- To improve the safety of navigation of the tanker shipping segment through STM
- Offer the existing STM fleet, ships from RTF and EfficientFlow as well as other STM compliant ships an STM environment to operate in
- To improve maritime safety, efficiency and environmental performance by providing added value services
- To provide ships and VTS centres with improved situational awareness
- To develop and test new digital VTS services improving speed and accuracy of ship-shore information exchange

All traffic in the Baltic Sea



Tanker traffic in the Baltic Sea



”Promised” Results of STM BALT SAFE

- Increase the institutional capacity in VTS centres and onboard
- Develop a concrete use case for large-scale testing of STM on tanker shipping in the Baltic Sea.
- Develop the digital Maritime Infrastructure
- Increase maritime traffic monitoring from VTS centres. Build prototypes for various automated reporting. Reduce administrative burden.
- Test the new STM clause in BIMCO standard contracts
- Develop operational, commercially viable and sustainable services

Facts and figures

Lead partner:	Swedish Maritime Administration
Partnership:	SE, NO, FI, EE
Total budget:	4,376,658.65 euro
EC contribution:	75-85% from Interreg Baltic Sea Programme, 50% Norway
Time frame:	30 months (Jan 2019 – Jun 2021)
Associate orgs:	DK, LV, PL, RU, International

Partners & Associate partners

Partners

Swedish Maritime Administration

Norwegian Coastal Administration

Finnish Transport Agency

Estonian Maritime Administration

RISE

DNV GL

Associate partners

IALA, INTERTANKO, CIRM

Saab, Kongsberg Seatex & Norcontrol, Wärtsilä Voyage, Vissim, The Swedish Club, Kronstadt Technologies, Dimecc

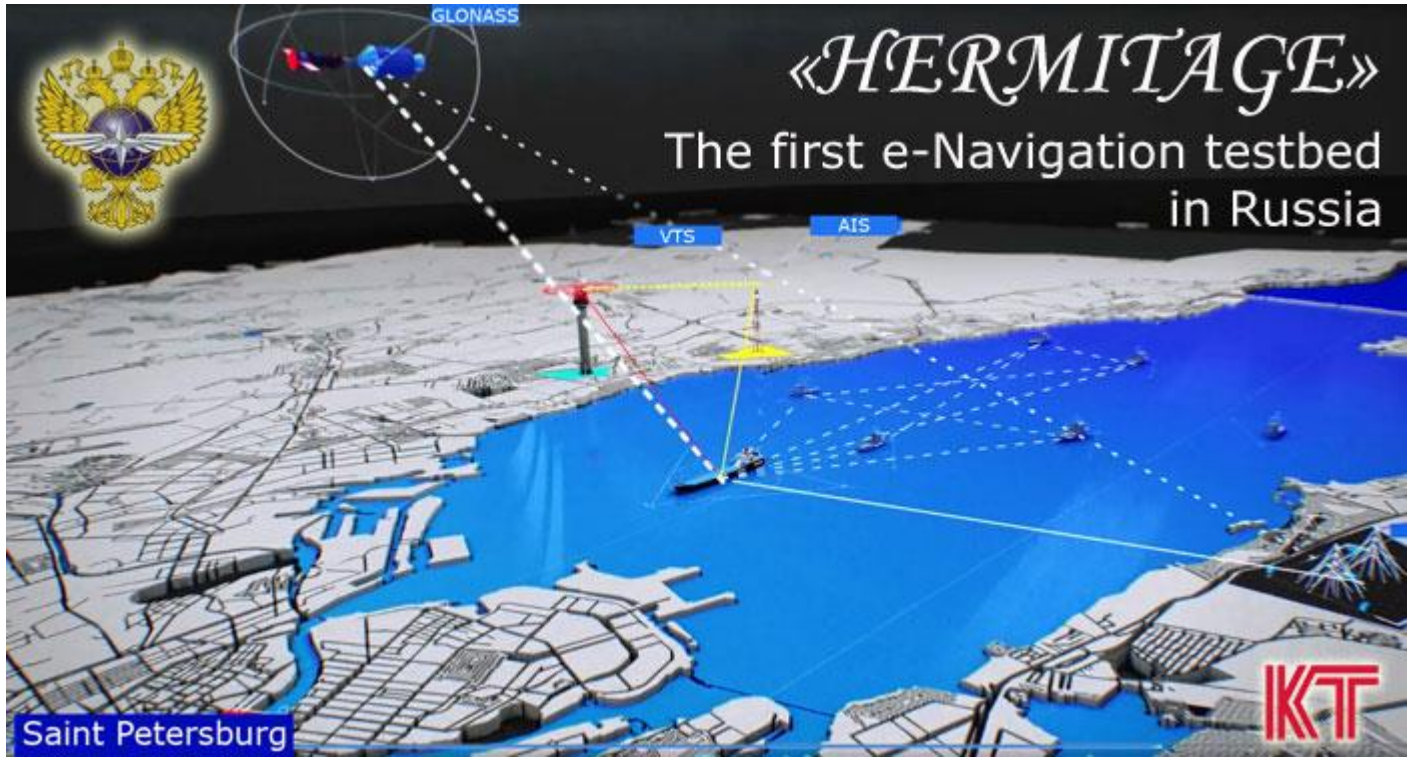
Maritime Office in Szczecin, Danish Maritime Authority, Freeport of Riga Authority

Finnish Transport Infrastructure Agency

Working with Russia

- Parallel project

- Associate partner Kronstadt Technologies
- Rosmorport blessing



Future associate organisations

- Shipping lines participating in the test bed
- Baltic VTS authorities not yet involved
- International and regional organisations, e.g. HELCOM
- Suppliers of services and solutions

Project set up – Work Packages & Leaders

- WP 1 Project Management and administration (SMA)
- WP 2 Digital Maritime Service Infrastructure (SMA)
- WP 3 STM capability onboard ships (SMA)
- WP 4 STM capability in VTS (VTS Finland)
- WP 5 Ship Reporting Services (NCA)
- WP 6 Analysis, Validation and Verification (RISE)

Operational vs *Supporting* work packages

- *WP 1 Project Management and administration (SMA)*
- *WP 2 Digital Maritime Service Infrastructure (SMA)*
- **WP 3 STM capability onboard ships (SMA)**
- **WP 4 STM capability in VTS (VTS Finland)**
- **WP 5 Ship Reporting Services (NCA)**
- *WP 6 Analysis, Validation and Verification (RISE)*

STM BALT SAFE

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

www.stmbaltsafe.eu

13 CLIMATE ACTION

14 LIFE BELOW WATER

-- AKT 557773 -- BILAG 7 -- [Presentation WINMOS_II] --

EUSBSR PA SAFE Steering Group Meeting Hamburg 14 November 2019

Emmi Huvitus

Finnish Transport Inftrastructure Agency

WINMOS II

WINMOS II

Winter Navigation Motorways of the Sea

Co-financed by the Connecting Europe Facility of the European Union

EU STRATEGY FOR THE BALTIC SEA REGION
FLAGSHIP

WINMOS II – Basics.

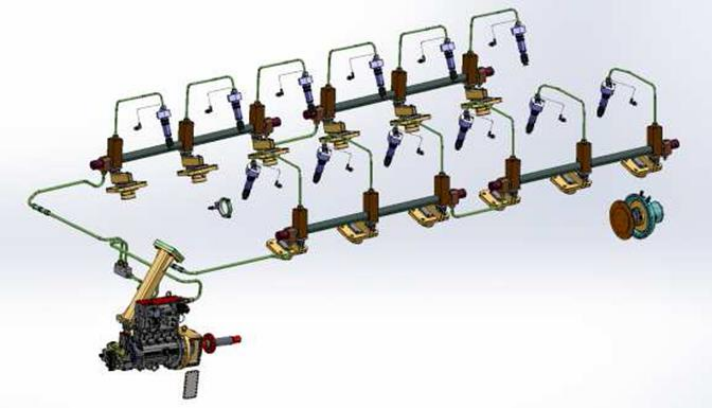
- Aims to:
  - further develop and enhance the winter navigation system and its safety,
  - safeguard required icebreaking resources in the future by developing new options and improving old capacity .
- Budget ~19M€; CEF (MoS) funding 6,6M€
- Implementation period: Feb 2016 – Oct 2019
- Partners: Finnish Transport Infrastructure Agency (coordinator), Swedish Maritime Administration, Arctia Icebreaking Ltd, Novia University of Applied Sciences, Aalto University, Estonian Maritime Administration and ILS Oy.

WINMOS II – Activities.

- Environmental benefits, reduction of fuel and emissions
  - Battery hybrid for safer and more environmentally friendly operation
  - Further development of the Common Rail system
- Life extensions and alternative options
  - Life extension of Finnish icebreakers (IB Voima and IB Sisu)
  - Study on life extension of Estonian icebreakers
  - Study on removable-bow concept
- More efficient use of resources
  - Implementation and further development of IBNext
  - Development of icebreaker training
  - Study on adequacy of icebreaking capacity and level of service in Baltic Sea during severe winters

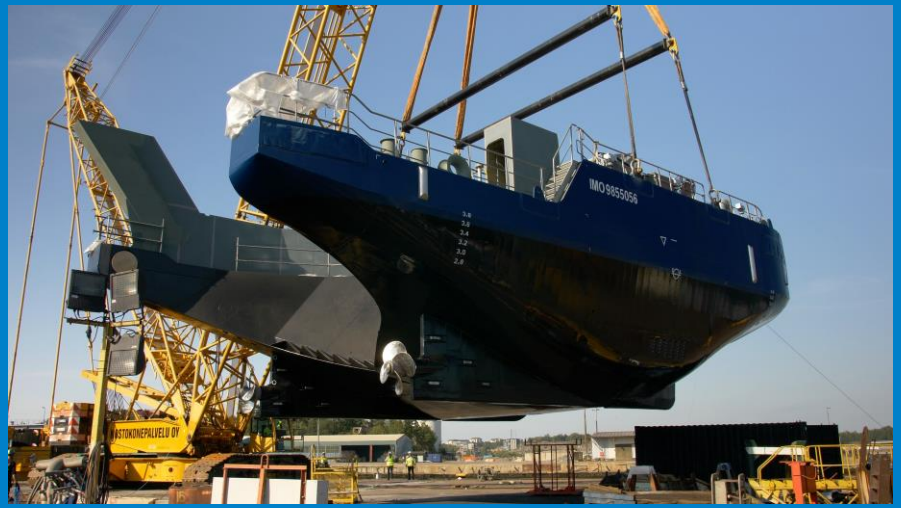
MAIN RESULTS.

- Implementation and further development of IBNext
  - Browser based system which is more effective and user friendly, contains and collects more information
- Battery hybrid study for safer and more environmentally friendly operation
  - Higher performance, power and energy is instantly available
  - More efficient → will reduce fuel consumption, emissions and running hours and maintenance on diesel engines
- Further development of the Common Rail system
  - More efficient → it will reduce fuel consumption, emissions and also less wear on the engines
  - >11% fuel savings, 30% reduction of noise and vibration, 50% lube oil savings



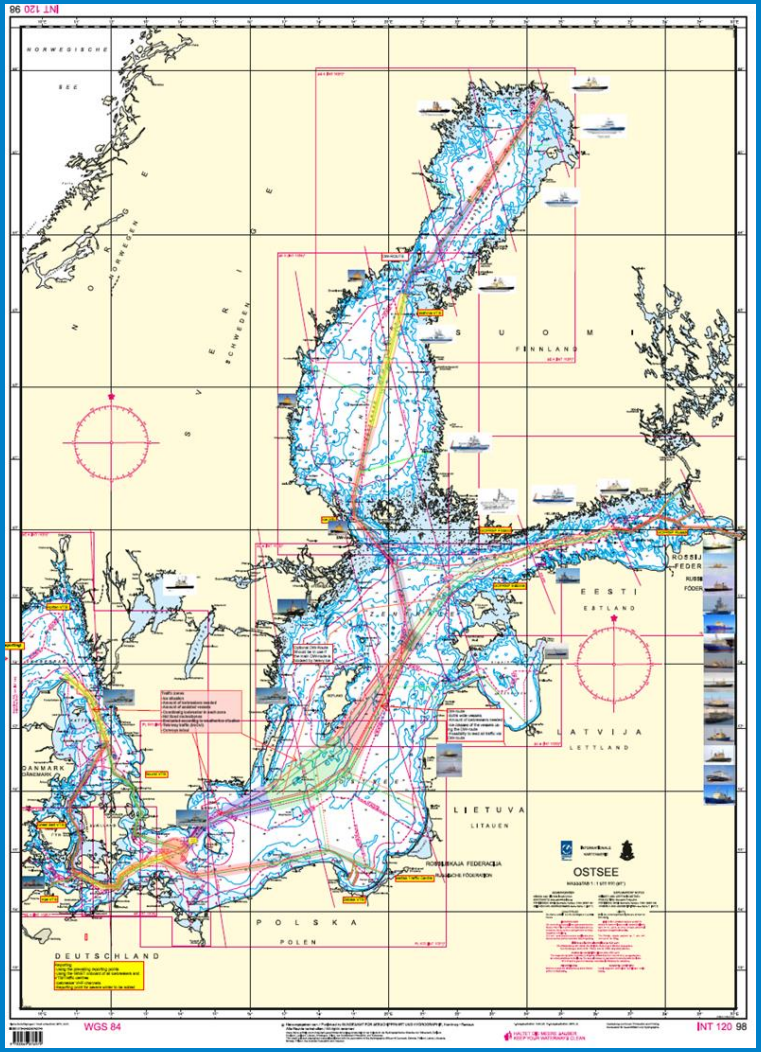
MAIN RESULTS.

- Life extension of Finnish icebreakers
  - 10-15 more years in operation
  - Safer, more efficient working
- Pilot study on the removable-bow concept
  - Not completed yet → expected date 30 Nov 19
  - More flexible capacity
- Development of icebreaker training
  - Training course
  - Enhanced simulator fuctions
- Study on life extension works of Estonian icebreakers
  - Results for decision making



MAIN RESULTS.

- Study on adequacy of icebreaking capacity and level of service in Baltic Sea during severe winters
  - Winter navigation model
  - Contingency plan for all Baltic Sea countries
    - To be approved at state level
- Project management
  - Final seminar 22 October in Turku
  - Trying to leave the final report by the end of the year.



www.winmos.eu

WINMOS II

Thank You.

Ms Emmi Huvitus
Chief Project Manager, WINMOS II
Finnish Transport Infrastucture Agency
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@EmmiHuvitus

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FLAGSHIP

STM
SEA TRAFFIC MANAGEMENT

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EU STRATEGY FOR THE BALTIC SEA REGION
FLAGSHIP

SEA TRAFFIC MANAGEMENT

SOON ON A SHIP NEAR YOU

ULF SIWE, SWEDISH MARITIME ADMINISTRATION @PASAFE2018

Recent Activities: In general

- Project ended June 30, 2019
- All deliverables, Final report and Brochure
- Grab your copy!!

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Recent Activities: standards

- Ongoing work in IEC on Route exchange version 2 – **S-421**
- Ongoing work in IEC on **SECOM** – the HOW to exchange S-100 data– the key to interoperability
- Ongoing work in MCC – the MCP consortium

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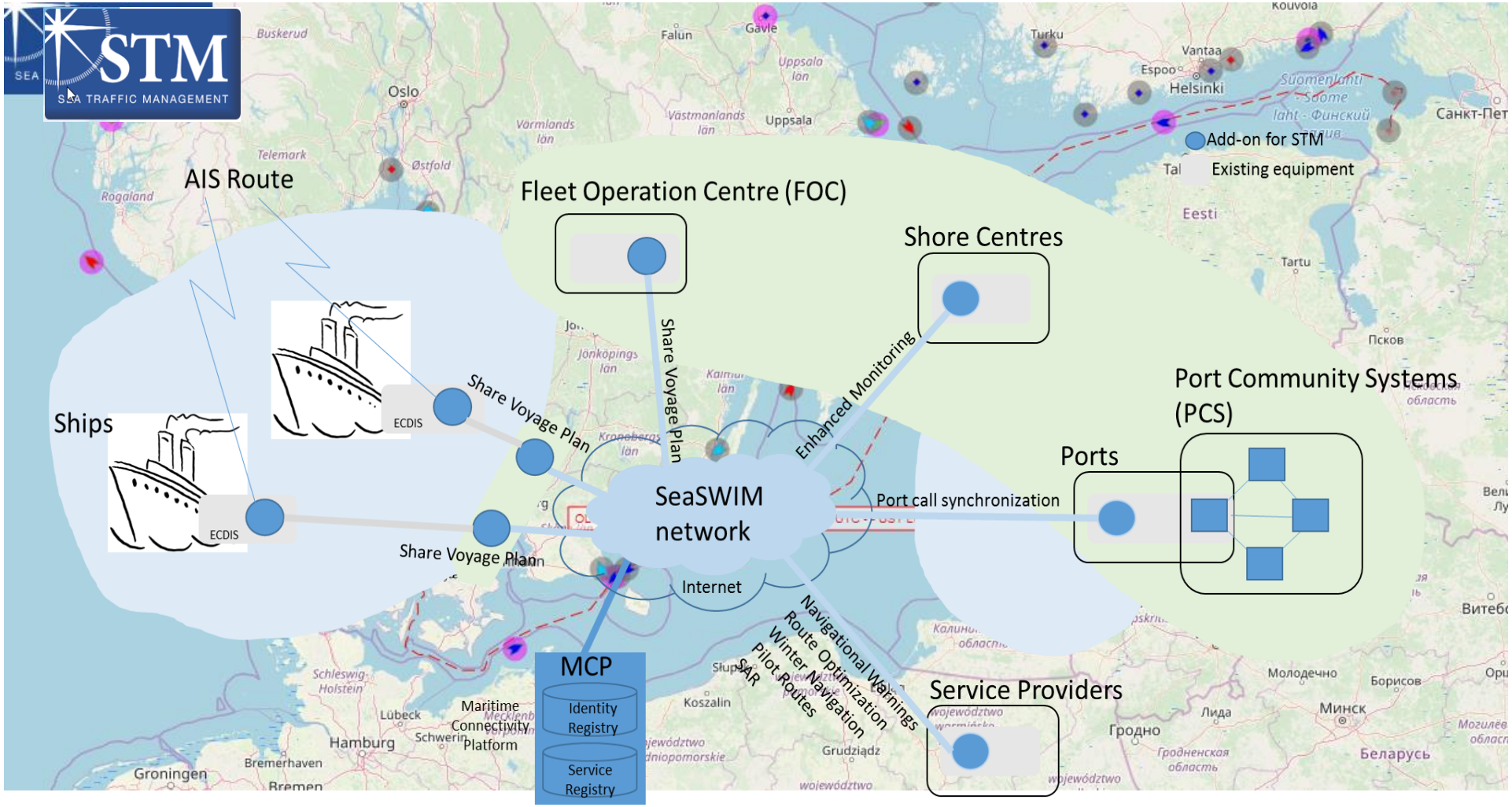
Future developments – Connection to Voyage Information Service (VIS)



Current status:

At the 2nd meeting of the pilot project that took place in Lisbon on 25 September, the project participants agreed to establish a connection with the STM Voyage Information Service (VIS) and to make **Voyage Plans available in EMSA's SafeSeaNet Ecosystem's Graphical user interface application (SEG).**

Ideal for knowing ship's intentions during MASS Trials

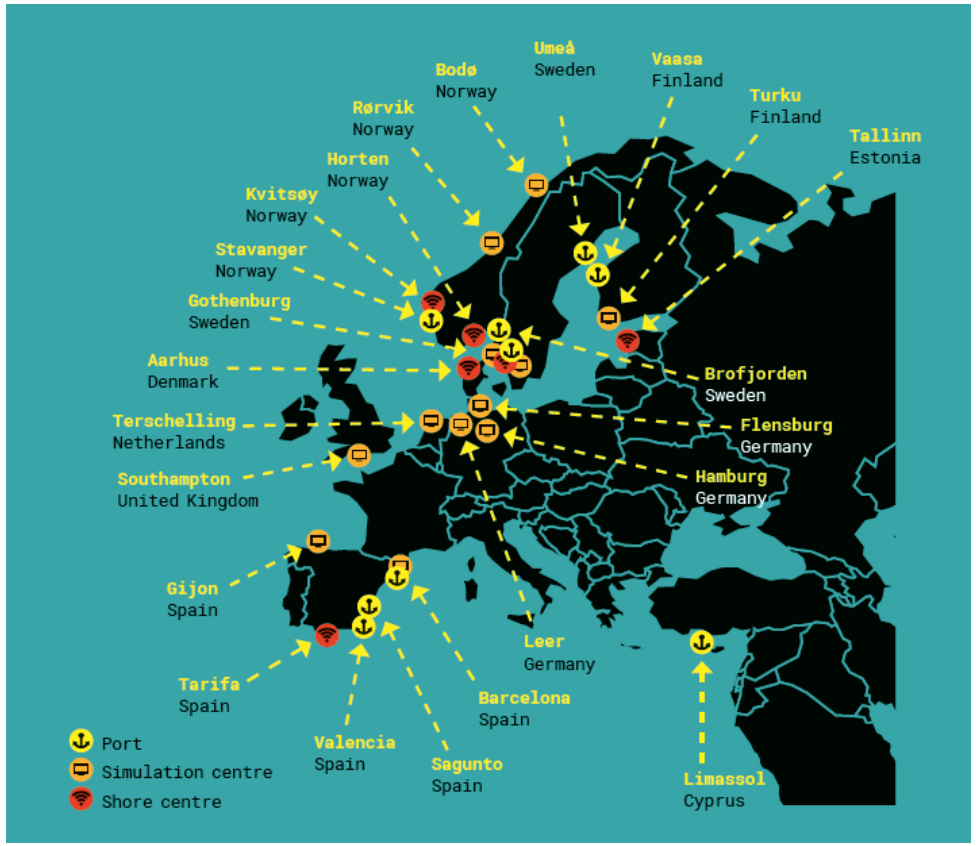
Testbed included

311 ships

9 ports

6 service centres
(VTS, JRCC, FOC)

12 simulator centres



STM
SEA TRAFFIC MANAGEMENT

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STM supports VTS

- Improved situational awareness for VTS operators
- “The biggest step for VTS since AIS”

- STM a requirement for Swedish VTS procurement
- Also happening in Finland, Estonia, Malaysia, Croatia and more

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Connecting Europe Facility

SJÖFARTSVERKET

STM – the basis for a more efficient ice navigation

- Ice routes to ships navigations system
- Procedures can be automated on board ice breakers and assisted ships

- We should recommend all ships using ice breaking services to use STM route exchange

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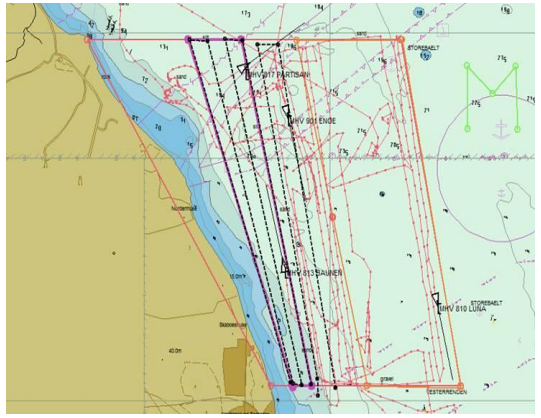
Connecting Europe Facility

SJÖFARTSVERKET

STM supports SAR



Route exchange can be used for Search and Rescue. The coordination centre can distribute search areas and search patterns to SAR units.

Soon operational in Swedish JRCC (sea and air)

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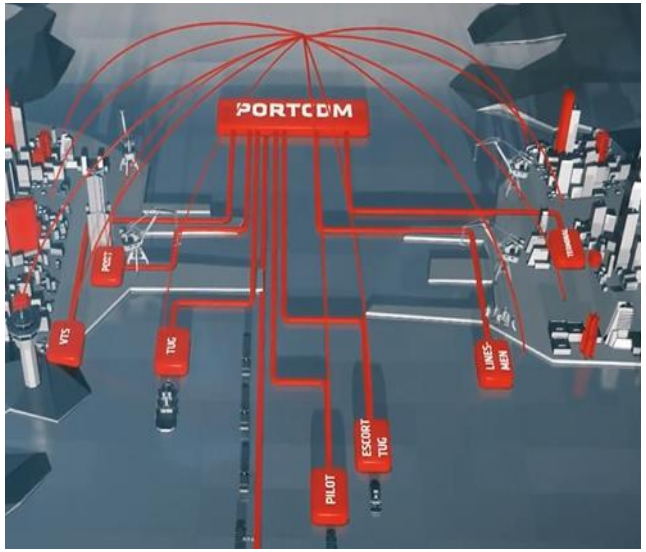
STM facilitates more efficient port calls



- Ports of Rauma and Gävle will get a new solution in the EfficientFlow project
- The solution is **Open Source** and can be reused by other ports
- SMA is also working close to the International Port Call Optimisation Taskforce, to secure common standards in the maritime transport chain.

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SJÖFARTSVERKET

PAC and SG support

- Turning STM into a Flagship program
  - Discussions with PA Transport
- STM BALT SAFE is a Flagship project
- SG members to push for country support for STM in EU, IALA and IMO
- New projects
  - Share ideas, e.g. Baltic SAR Innovation
  - Suggest possible partners to develop project ideas and participate

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EU STRATEGY FOR THE BALTIC SEA REGION
FLAGSHIP

Co-financed by the Connecting Europe Facility of the European Union

STM
SEA TRAFFIC MANAGEMENT

Kiitos ja hyvästi, Tak og farvel, Tack och adjö, Aitäh ja hüvasti, Paldies un ardievas, Ačiū ir atsisveikinom, Dziękuję i do widzenia, Danke und auf Wiedersehen!

8 GOOD JOBS AND ECONOMIC GROWTH

13 CLIMATE ACTION

14 LIFE BELOW WATER