Enhanced Situational Awareness to Improve Maritime Safety in the Baltic

BONUS ESABALT

www.ESABALT.org
Enhanced Situational Awareness to Improve Maritime Safety in the Baltic

BONUS ESABALT

What is BONUS ESABALT
- autonomous systems
- enhanced situational awareness
- maritime surveillance
- integrated command and control
- enhanced decision support

Participating Countries and Entities

Networking of Entities

Reaching Out to the Maritime Community

Application Scenarios for Autonomous Data Collection

Involving Leisure Boats
- enhanced situational awareness
- improved decision support

Project Impact
- enhanced situational awareness
- improved decision support

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What is BONUS ESABALT

• ...is a **feasibility study**

• ... is a **open mechanism** for the **crowdsourcing** of maritime information for the benefit of **all** maritime stakeholders in the **Baltic Sea Region**

• ... ships, maritime personnel (seamen, coast guard, search & rescue, VTS, etc.) and sensor stations are the **primary sources and beneficiaries** of the information

• ... information which is critical for enhancing (1) **maritime safety & security**, (2) **intelligent navigation**, and (3) **environmental monitoring**

• ... Spring 2014 – Spring 2016, ~650,000 € **EU BONUS** funding programme
Participating Countries and Entities
Reaching Out to the Maritime Community

Viking Line M/S Amorella
ESABALT
System Description

Deployable Sensor Station
Ext. Database (AIS, EO, etc.)

ESABALT DATA SERVER (CLOUD)
Data Fusion and Analysis Algorithms

Data Oversight

Maritime Information CrowdSharing

Value-added Information and Services

Advisory Partners (Project Steering Committee)
- Maritime Office of Szczecin, Gdynia
- Finnish Traffic Safety Agency
- Latvian Coast Guard
- Danish Maritime Administration, PA SAFE

Operational Oversight

Main-Users
- Commercial Vessels
  - Cargo Ship or Tanker
  - Cruise Ship or Ferry
- Pleasure Craft
  - Sail Boat
  - Motor Boat
- Authority Vessels
  - Coast Guard
  - Ice-Breaker

Ship-System Platforms: Furuno, NAVDEC, SeaPilot

Ship Sensors & Situational Awareness Data Aggregation & Reduction

ESABALT II Validation Scenarios
- Intelligent Navigation
- Maritime Safety and Security
- Environmental Monitoring
Application Scenario: Autonomous Data Crowdsourcing
SONAR
RADAR
images

Engine power

Weather

Weather sensors

Dash-webcam

Water-level

Wind

Wind sensors

Engine sensors

Water-level sensors
Involving Leisure Boats

• .... offering ESABALT as a tablet/smartphone application

• .... Citizen Reporting, and Citizen Science

• .... authorities can concentrate their efforts on small areas
Project Impact

- Economic:
  - Fuel-efficient & safe shipping, reduce costs, insurance fees
  - Efficient use of authority resources
  - Information infrastructure - to be exploited by SMEs for innovative maritime applications

- Scientific:
  - 5 publications (1 ISI indexed Journal article), 2 paper awards
  - Website (free download of deliverables & publications)

- Policy:
  - Cross-border, cross-sector data sharing in BSR
  - Supports EU BONUS and EU Strategy for BSR action plans
Enhanced Situational Awareness to Improve Maritime Safety in the Baltic

BONUS ESABALT

What is BONUS ESABALT
- an initiative led by the European Union
- aiming to enhance maritime safety in the Baltic Sea
- through the development and deployment of advanced technologies

Participating Countries and Entities

Reaching Out to the Maritime Community

ESABALT System Description

Application Scenario: Autonomous Data Collection

Involving Leisure Boats

Project Impact
- Scientific
- Improved safety
- Economic benefits
- Environmental protection

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