



## WP6 DYNAMIC RISK MANAGEMENT

There is concern regarding the increase in maritime traffic in the Baltic Sea. Heavy traffic needs accurate control measures in order to prevent accidents. The challenge lies in the fact that sea traffic is very complicated, more so than air traffic. There is more traffic at sea, and the human factor plays a greater role at sea than in an aeroplane steered by a captain and a co-pilot.

But traffic control and accident prevention cost a lot of money. The Finnish Transport Agency leads W6, Dynamic Risk Management, where we create a simulation of all vessel traffic in the Baltic Sea, so vessel movements can be anticipated half an hour or an hour in advance. This is achieved via electronic communication between the vessel and the ground operator. The idea is that the electronic system alerts the Vessel Traffic Service Operator to possible collision risks in advance, and the operator then alerts the vessels concerned to a hazardous situation.

As part of risk management, we need to analyze the cost of accidents as well as the cost-benefit in risk reduction measures like pilotage and VTS operations.

The results of dynamic risk management research can be used for planning purposes, for example in positioning aids to navigation or monitoring influence on vessel traffic patterns. The aim of this kind of research and tool development is to help authorities to plan for safer fairways, in the Baltic Sea or anywhere else.

## WE ARE

16 partners from six countries around the Baltic Sea. The lead partner is the Danish Maritime Safety Administration, [www.frv.dk](http://www.frv.dk).

## THE TIMELINE IS

three years, from January 2009 to January 2012, with possible extension until 2014.

## WE HAVE

been granted a budget of 8 million euros, partly from the European Union (ERDF) within the Baltic Sea Region Programme 2007-2013, partly from Norway, and partly from project partners.

Learn more about EfficienSea and how we work for efficient, safe and sustainable traffic at sea at

[www.ufficiensea.org](http://www.ufficiensea.org)

THE SEA BELONGS TO EVERYONE  
INCLUDING YOU





For most people, sea traffic is not something we think about on a daily basis. Sometimes we may even take it for granted. Maritime society is responsible for ensuring that everything works smoothly while transporting the goods we consume and the people we meet, every day and night. Did you know that at this very moment, two thousand ships are sailing on the Baltic Sea?

EfficienSea gathers experts from the region, all aiming to make a difference to maritime safety. The tools developed will help to make sure that our children and our children's children will continue to enjoy the sea: live by it, swim in it and eat the fish from it. After all, the sea belongs to everyone, now and in the future.

EfficienSea is an international EU-funded project within the Baltic Sea Region Programme 2007-2013. The Danish Maritime Safety Administration is the leading partner of the project and there are 16 participating partners from the Baltic Sea region.

## THE OVERALL AIM

is to contribute to efficient, safe and sustainable traffic at sea. All the activities within EfficienSea are aimed at improved maritime safety and accident prevention. The project is a manifestation of the joint efforts of public organisations in the Baltic Sea region; we work together for the future of our waters and our joint efforts will result in a cleaner and safer Baltic Sea, to the benefit of us all.

## WP3 COMPETENCE AND RECRUITMENT CHALLENGES

EfficienSea organised in four themed work packages. One of these, WP3, covers skills and recruitment challenges. The aim of WP3, which is led by the Swedish Maritime Administration, is to enhance the profile of the maritime sector as a career choice and increase awareness of the opportunities within it. The gender imbalance in maritime clusters calls for an increase in the number of women employed within the business.

The maritime business is seeking committed individuals who will heed the call and carve out a rewarding career in this field. It's a call as much as a challenge; one where your actions can have an effect for generations to come. Raising skills levels will ultimately enhance the safety, efficiency and environmental sustainability of maritime operations. This sector of the economy also encompasses a comprehensive network of port and terminal operations, ship ownership, ship management, ship brokerage and chartering, marine insurance, maritime law and arbitration, finance, sales and marketing, offshore and marine engineering and much more. Besides marketing activities, WP3 includes the design and launch of a trainee programme.

## WP4 e-NAVIGATION

Imagine you are driving a car on a dark winter's night with heavy snow falling. Your systems keep giving you information you need to ignore so that you can concentrate on driving, but sometimes there is information that could be crucial to your safety. How long can you stay focused for? e-Navigation provides a new standard for organising information, allowing for better means of navigation. A single system integrates all the necessary information to give the right information at the right time, filtering out everything that is irrelevant to safe navigation.

Modern technology on the vessel bridge provides lots of information intended to help the navigator - but some of the information is disorganised and there is a lack of standardisation. This may lead to confusion, as an overflow of information on the bridge could lead to accidents.

EfficienSea provides a level playing field where components of the e Navigation concept can be demonstrated and evaluated prior to full-scale implementation. EfficienSea will provide a comprehensive best practice demonstration of the e Navigation concept to facilitate further development and full-scale implementation of it for the benefit of the Baltic Sea region and the international maritime community.

The Danish Maritime Safety Administration leads WP4 e Navigation, as well as WP5 Vessel Traffic Data and Maritime Planning.

## WP5 VESSEL TRAFFIC DATA AND MARITIME PLANNING

When it comes to vessel traffic data, there's a lot of communication going on: fleet location, reporting, etc. However, current technology doesn't allow everybody (ships and authorities) to talk at the same time. There is a risk of important information not getting through, which could be a safety risk.

Just like at a busy road junction, we need traffic lights or even a policeman to give priority and direct the traffic. Creating a digital policeman is of course a matter of computing. Danish Maritime Safety Administration leads the work in providing a software system, ensuring relevant, reliable exchange of information and ultimately preventing accidents. Both HELCOM and European Maritime Safety Agency are supporting this work.

For activities within maritime planning, the primary goal is to develop and test new tools for integrated coastal zone management: the dynamic sensitivity map. Sensitivity mapping provides a concise picture of a region's vulnerability, often referring to what happens in the event of a maritime accident such as an oil spill. If an accident occurs, actions need to be planned and coordinated. There are often many different parties involved, including the local community. A dynamic sensitivity map helps these parties make priorities and take decisions.

The dynamic-sensitivity map is digital, and will have a certain level of temporal resolution in order to focus simultaneously on EfficienSea's key descriptors – safe, sustainable, efficient – with regard to both humans and the environment. For example, during the breeding season in an ecologically-vulnerable area the authorities could redirect traffic as a preventive environmental measure.

