



# To EMBARC on success with new FSA-tool

**As the European Maritime Study for Baseline and Advanced Regional and Coastal Traffic Management (EMBARC) project comes to an end, Report outlines the role MARIN played.**

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Funded by the European Commission DG Transport and Energy, the three-year project involved 22 partners. One of the main objectives was to develop a Formal Safety Assessment (FSA) tool that can assess the risk and evaluate the consequences of strategic changes in traffic management.

EMBARC was specifically designed to provide a basis for sharing resources between administrations

such as those that coordinate helicopters, pollution response equipment, emergency towing vessels and Safe Havens. It should also be used in the assessment of potential damage to coastal areas of special interest and to develop a procedure for assessing traffic routing, primarily for special category vessels such as oil and chemical tankers. As well as this, the tool needs to examine the extent to which a balance can be struck between safety and the efficiency of maritime traffic.

The base of the FSA-tool is the Safety Assessment Model for Shipping and Offshore on the North sea<sup>1</sup> (SAMSON). This model is the result of 20 years of development under national projects for the Dutch Directorate Transport Safety (presently DGTL) and for the European Commission. The kernel of SAMSON is a traffic database including routes, links, volume of traffic, the characteristics of the sea and the ships in the area and traffic management measures.

The probability of casualties is calculated with the casualty models of SAMSON and validated where possible, with historical data. These probabilities are also calculated and presented on a geographical grid. Weather conditions, the quality of the crew, the flag state and the age and maintenance level of the vessel are all taken into account.

The SAMSON model results are used in subsequent calculations. For example, some results are presented in the Figure for the German Bight. Similar results are available for all European waters. The figure shows the results of SAMSON on ECDIS-charts using the ECDIS-kernel of SevenCs. It shows the traffic database and a number of black spots which represent oil spills in the surrounding area as a consequence of a casualty. It contains the probability and average size of an oil spill for eight spill-size classes. The abatement of the spill, for instance, is modelled and the fraction of the spill that reaches the coast can be determined.

With this type of calculation the effect of measures such as Safe Havens, VTS, stand-by vessels, on the probability of a spillage can be evaluated. **MARIN**

<sup>1</sup>) But can also be applied in other sea areas.