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FREQUENTIS Know-how for the North Sea - Baltic Sea Channel

The company is general contractor and responsible for the modernisation of the traffic safety system of the North Sea – Baltic Sea Channel.

The channel is the busiest man-made waterway in the world. Around 41,000 ships and 80 million tons of cargo passed through the North Sea—Baltic Sea channel in 2004. The traffic safety system of the channel is currently being modernised, and Frequentis, as general contractor, supplies an innovative positioning and traffic planning system. The client thus chose to go with a company that provides solutions that not only provide an AIS-infrastructure, but also knows how to process AIS-position data. This technology offers the customer a technology with added value and a professional and customer-oriented realisation. Frequentis delivers a technology that points the way for the currently ongoing modernisation trend at all European coasts.

More than 100 years after its inauguration in the year 1895, the North Sea – Baltic Sea Channel is the main artery of Northern Europe, the gate that connects Baltic Sea Scandinavia and the Baltic states to global sea traffic. The channel shortens the distance for ships by 250 nautical miles: if the channel did not exist, the ships would have to pass by Skagen, a natural strait connecting the North Sea and the Baltic Sea. With its two entry points, Brunsbüttel and Kiel, the man-made channel connects the North Sea with the Baltic Sea. The channel is thus of special importance to merchant shipping.

More than 110 ships pass each day – this figure excludes the passages of sports- and other small boats – and make high demands on humans and technology. With the modernisation of the existing system, the channel's management is looking to improve the surveillance of shipping traffic. The centralisation of the traffic control should decrease co-ordination efforts and simplify the co-ordination of shipping related services at the channel.

Centralisation of Traffic Control at the North Sea – Baltic Sea Channel

The modernisation focuses on the replacement of visual insight into the passing points (wide areas in the channel that allow for large ships or groups of ships to pass one another) for the purpose of positioning on the channel by a modern communication system. After detailed tests and studies, the client selected a modern AIS (Automatic Identification System), a system for traffic positioning, made

by Frequentis. In certain designated sections, radar installations are to be used that allow a representation of AIS-targets.

Ships identify themselves with AIS and announce relevant static, travel and dynamic data, which is important to others. In accordance with a SOLAS (Safety of Life at Sea) resolution, all ships that go out on the open sea are currently being equipped with AIS-devices.

This means that most of the ships travelling the channel are going to be equipped according to standard in the near future. Portable AIS-systems are going to allow the recording and position logging by the modern traffic safety system of ships that do not carry the system on board at all times. The standardised AIS-technology thus offers an extremely future-oriented solution.

Automatic Identification System – a New International Standard to Increase Safety in Shipping

The positioning system Frequentis is going to deliver by 1 July 2006 comprises 16 AIS-base stations that are to be installed at five sites along the channel. In addition to that, Frequentis provides 116 portable AIS-transponders for the flexible instrumentation of ships.

The data collected for the entire channel is going to be transmitted by the positioning system and merged at the traffic control centre in charge, the Water and Shipping authority in Brunsbüttel. The data is going to be visually represented as an electronic traffic planning picture. On the basis of this visual representation of information, relevant guiding decisions will be taken, signals in the channel passing points are going to be sent out automatically. A data collection system for meteorological data will transmit important weather data (visibility, wind speed) to the traffic control centre.

Frequentis is backed by comprehensive solution competence and wide-ranging experience in the maritime business and thus in a perfect position for handling such a critical project. Frequentis is proud to look back at a series of successful reference projects, such as Lyngby Radio (Danish Coastal Radio), Norwegian Coastal Radio or the AIS-project DoRIS (Donau River Information System). In April 2004 the company received an order from the Water and Shipping Authority Bremen. Frequentis delivered a large communication system, which marked the first large maritime contract in Germany. Now Frequentis is general contractor and responsible for delivering a state-of-the-art positioning system for the technical modernisation of the traffic safety system of the North Sea – Baltic Sea Channel.

Position Logging System and Electronic Traffic Diagram

As Basis for the New North Sea – Baltic Sea Channel Traffic Safety System

Frequentis realises this project, which will run over a period of 18 months, in co-operation with two German partners: Werum Software and Systems AG supplies the software for the electronic traffic diagram and DFS, the German air traffic control authority, runs a risk analysis. In order to ensure ongoing customer care, the Frequentis subsidiary in Langen, Germany, will stand by.

The positioning system and the electronic traffic diagram form the basis for the traffic safety system of the North Sea – Baltic Sea Channel. In the unlikely event of a failure of one of the two systems or of individual functions, the traffic control centre has to be able to immediately react with countermeasures. The project management of the traffic control system of the channel thus focuses on high availability and maximum risk prevention.

As early as June 2005 the planning of this complex project should be concluded. Trial runs on the North Sea – Baltic Sea Channel are scheduled to begin on 1 July 2006.

Background Information on Frequentis

For additional information on Frequentis, please go to www.frequentis.com.