

Abstract

The invention provides a method and system for shortest route planning. The method comprises: based on AIS data of a target ship, preprocessing the AIS data; filtering the AIS data using a specific judgment methods; then, constructing a low-precision environmental model using a grid-based approach based on the preprocessed and filtered data, calculating a shortest path of the route in the low-precision environmental model using an ant colony algorithm and determining a grid range of the shortest path; reducing the unit grid width in the low-precision environmental model to construct a high-precision environmental model, and determining a grid range of the shortest path in the high-precision environmental model based on the grid range of the shortest path in the low-precision environmental model; and finally, calculating a shortest path within the grid range for the shortest in the high-precision environmental model using an A-star search algorithm, optimizing the shortest path of the route use a Bézier curve method, so as to obtain optimized shortest path for display. The method can significantly enhance the accuracy of the environmental model while keeping computational time costs low.

[Figure No. 1]