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[54] NEURAL NETWORK BASED THREE DIMENSIONAL OCEAN MODELER

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[56] **References Cited**

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[57] **ABSTRACT**

A method is described for providing an estimate of the state of a moving contact in a three dimensional ocean. The method comprises the steps of providing a device for estimating the state of the contact, inputting into the device information about a location of an observer during a sequence of time, information from at least one sensor about the position of the contact relative to the observer during the time sequence, and a knowledge vector, transforming the inputted information into a series of three dimensional geographical grids, and analyzing the geographical grids to produce an estimate of the state of the contact with respect to the location of the observer. The device for providing the estimate of the state of the moving contact is a neurally inspired contact estimation device. The device includes a grid stimulation block for transforming the inputted information into the three dimensional geographical grids, a fusion block where grids corresponding to similar time intervals are combined or fused, a correlation block for providing constraints such as constant speed and heading and for producing a path likelihood vector, and an estimate block for providing the estimate of the state of the moving contact. The device further includes a controller for providing knowledge to the aforementioned blocks.

21 Claims, 4 Drawing Sheets

