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[54] SYSTEM AND METHOD FOR STOCHASTIC CHARACTERIZATION OF A SIGNAL WITH FOUR EMBEDDED ORTHOGONAL MEASUREMENT DATA ITEMS

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[57] ABSTRACT

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A signal processing system provides and processes a digital signal, generated in response to an analog signal, which includes a noise component and possibly also an information component representing four mutually orthogonal items of measurement information representable as a sample point in a symbolic four-dimensional hyperspatial reference system. An information processing and decision sub-system receives said digital signal and processes it to extract the information component. A noise likelihood determination sub-system receives the digital signal and generates a random noise assessment of whether or not the digital signal comprises solely random noise, and if not, generates an assessment of degree-of-randomness. The noise likelihood determination system controls whether or not the information processing and decision sub-system is used, in response to one or both of these generated outputs. One prospective practical application of the invention is the performance of a triage function upon signals from sonar receivers aboard naval submarines, to determine suitability of the signal for feeding to a subsequent contact localization and motion analysis (CLMA) stage.

[73] Assignee: The United States of America as represented by the Secretary of the Navy, Washington, D.C.

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[52] U.S. Cl. 375/227; 375/346; 370/208

[58] Field of Search 375/227, 259, 375/346; 370/203, 206-208, 241

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6 Claims, 4 Drawing Sheets

