US005153836A

United States Patent [19]

Fraughton et al.

[11] Patent Number: 5,153,836

[45] Date of Patent: Oct. 6, 1992

[54] **UNIVERSAL DYNAMIC NAVIGATION, SURVEILLANCE, EMERGENCY LOCATION, AND COLLISION AVOIDANCE SYSTEM AND METHOD**

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[21] Appl. No.: **571,514**

[22] Filed: **Aug. 22, 1990**

[51] **Int. Cl.**[5] **G06F 15/50**; G01S 3/02

[52] **U.S. Cl.** **364/461**; 364/452; 340/961; 342/30; 342/41; 342/455

[58] **Field of Search** 364/452, 459, 460, 461; 340/961; 342/29-32, 41, 450, 451, 455, 463

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[57] **ABSTRACT**

A craft tracking and collision avoidance system is disclosed. The system allows the positions of a plurality of craft, either on land, sea, or air, or space, to be monitored. Each craft determines its own position using an existing position determining system such as LORAN or GPS. Each craft then transmits a radio frequency signal into which position information, preferably identifying information, and other messages, have been encoded. Each craft broadcasts its position, identifying information and other messages on a regular basis without the need for any interrogation signal. The broadcast position and identification information can be received by other craft and, since each craft has determined its own position, can be used to determine the proximity and identity of other craft, and if the craft are on a collision course. Preferably, the position of all the craft within a predetermined range of a craft is represented on a display in order to give the craft operator a visual indication of traffic surrounding his craft.

79 Claims, 14 Drawing Sheets