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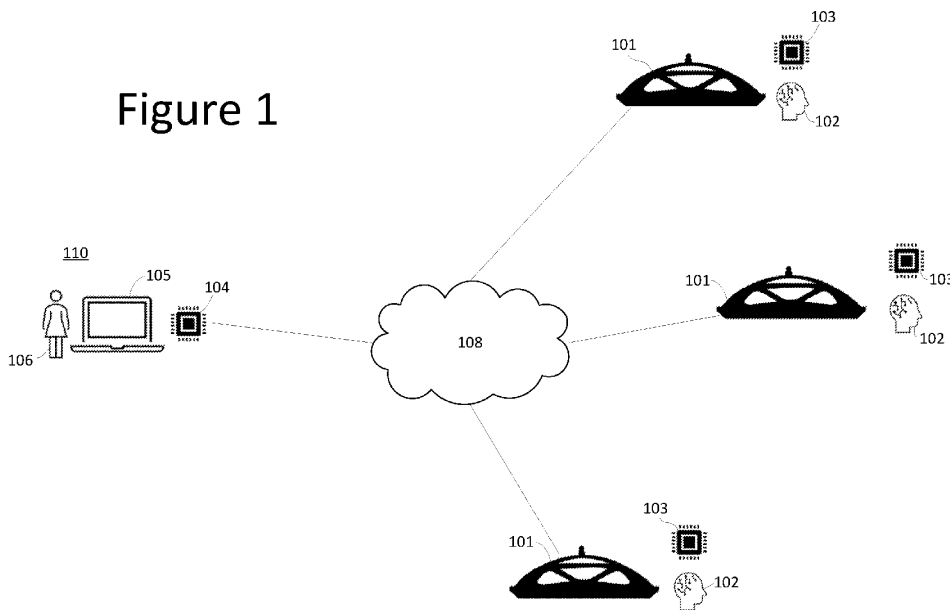
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(54) Title: SYSTEMS AND METHODS FOR OPERATING AUTONOMOUS VESSELS

Figure 1



(57) Abstract: A system for operating a plurality of autonomous vessels (101). Communication interfaces (108) enable communication between a remote-control center (110) and the respective autonomous vessels (101). A fleet coordination layer (201) implemented in the remote-control center (110) aggregates information relating to operation of the autonomous vessels (101), performs risk assessment, and issues operational mode transition instructions to the autonomous vessels (101) when appropriate. A vessel coordination layer (202) is implemented on the autonomous vessels (101) and controls transitions between operational modes of the autonomous vessels (101). A vessel execution layer (203) implemented on the autonomous vessels (101) includes sensors (301), a perception, planning, and execution module (302) and actuators (303), uses the actuators (303) to control the motion of the autonomous vessel (101) in accordance with a mission description, received sensor data, and operational mode instructions from the operational mode management module

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(402). A corresponding method is also disclosed.