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(54) Title: SYSTEM WITH COMMAND LOOPING SATURATION AND AUTOPILOT HEADING

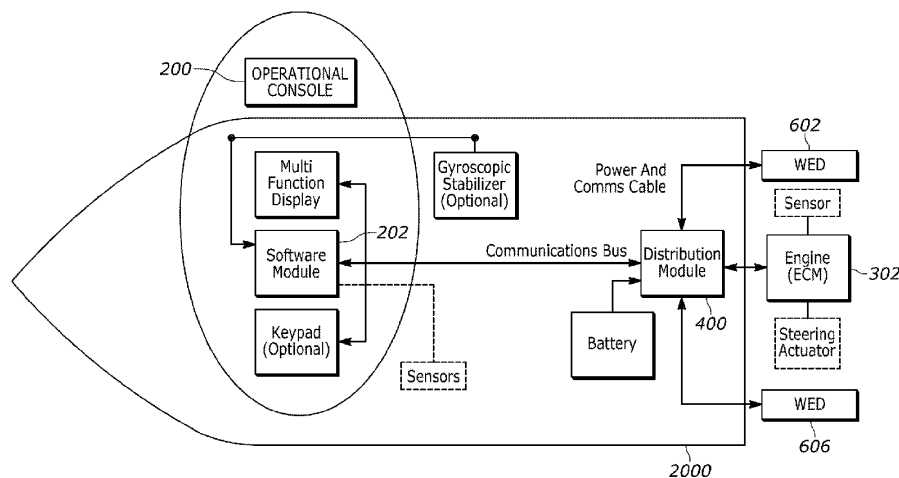


FIG. 1

(57) Abstract: A stability control system configured for total vessel pitch axis control by fast symmetric deployment of devices, coupled with engine trim adjustments and total roll and heading control by differentially deploying devices to counter rolling motions while simultaneously adjusting engine steering position to counter the steering moment associated with device delta position. The system includes a software control strategy comprising (1) a command looping saturation strategy to reduce drag and/or maximize roll performance and provide real-time ride stability to deliver a consistent device delta position even when one or more devices is at their minimum possible bias; and (2) an autopilot heading strategy comprising a feedback loop with means of actuation provided by the engine steering /rudder position and at least one pair of devices capable of producing a yaw moment.

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