

Safe Modes

Greensea uses a state-based architecture to manage how your system executes various commands and how it negotiates various autonomous modes. This state architecture uses a DORMANT state to provide several safe modes. Once safe mode monitors a heart-beat signal from the workspace. Should that workspace heartbeat fail, the vehicle provides a safe mode for actuators and payloads. Currently, only hydraulic functions are mapped to the DORMANT state. All thrusters default to 0 should communications with the topside fail and all valves default to a programmed default value as specified in the configuration file. Refer to the documentation in that configuration file for setting and configuring the default value for each valve.

Greensea also provides a safe mode for vehicle control should communications with the joybox fail. If communications with the joybox fail, openMNGR and openCMD enter their DORMANT states. The DORMANT states of the openSEA control applications secure all autopilots functions and set all commanded control efforts to null (0).

Each autopilot has their own independent safe modes based on the integrity of their feedback data. Should required feedback data fail or become unreliable, openCMD disables that autopilot until the sensor data returns reliably. This can most readily be seen when the DVL loses bottom-lock. If the system has station-keeping and auto altitude enabled when the DVL loses bottom-lock both of these autopilots will disengage. The operator will see clear indication of this by the button controls on the workspace turning from green (active) to yellow (disagreement with command and current status).

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