Project Title: Open Source Electronic Monitoring for Commercial Fisheries

Organization: Chordata LLC, Sea State Inc, F/V Bering Rose
Award Amount: N/A
Matching Contribution: N/A
Grant Period: N/A

Project Abstract:

Chordata LLC, Saltwater Inc., and Sea State Inc have been working on the development of open source software for electronic monitoring in commercial fisheries. Initial work on analysis components was also funded by United Catcher Boats and the Midwater Trawlers Cooperative. The F/V Bering Rose was contacted by Chordata regarding the installation and testing of a full suite of camera equipment running this software to see if it could withstand the conditions in the Bering Sea. https://pt.chrdta.com/em/

The F/V Bering Rose is a 124 ft. catcher vessel operating in the AFA Inshore pollock fishery. They fish roughly 180 days per year and require full observer coverage. During 2018, trips lasted 1-4 days, with towing time ranging from 3-55 hours. Four POE cameras were installed and linked to a small computer in the wheelhouse via a wireless/direct connection. Jennifer Watson was consulted on camera views/angles during the installation process. From our experience, four cameras would be the bare minimum to obtain complete coverage of the deck and codend. It may be beneficial to utilize 5-6 cameras to provide a measure of redundancy or overlap in the event one of the views is impaired.

The initial results of the trial have been positive in terms of the longevity and functioning of the equipment during both 2018 A and B seasons. Issues of concern include: salt spray on the cameras, vibration problems depending on camera placement, shifting of POV over time, and dead zones in satellite transmission. Cameras are turned on automatically when running at speeds of 5 knots or less and outside of their home port. Although this is one of the simpler methods to begin recording data, the issue of deck loads needs to be addressed since these will require full monitoring.

Another point of concern is estimation and species identification of discards, particularly during the B season. Discard events in the pollock fishery occur as a result of safety/stability issues, exceeding MRA limitations, and prohibited species requirements (i.e. halibut, herring, sablefish, etc.). All discard events are currently recoded in observer data and by the captain in NMFS logs and ADF&G fish tickets.

Chordata is working on the development of algorithms that can differentiate ‘deck activity’ by the crew versus inconsequential events such as cable vibrations and waves on deck. The primary use of this tool being to simplify and reduce time required for video review. Any work done up to this point has been used to help develop these algorithms and identify any potential hurdles to the use of EM on board the AFA inshore pollock fleet.