

AUTONOMOUS SONAR STATION WITH AUTOMATIC ADAPTATION TO THE DEPTH OF INSTALLATION

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The use of autonomous and cable sonar stations quickly deployed to the position makes it possible to solve a wide range of tasks for monitoring marine areas, monitoring large marine mammals, and monitoring the technical condition of underwater production complexes. The dimensions of the controlled zone of hydroacoustic stations depend on the hydrological conditions in the area of application and the depth of installation of the station. Determination of the optimal position of the station at a given hydrology or determination of the controlled zone at a given depth of the station position is performed using a system of hydroacoustic calculations. Hydrology change and changeThe position of the station in depth significantly affects the size of the monitored area. The inclusion of a sound velocity sensor, a special winch for changing the position of the station in depth, as well as a system of hydroacoustic calculations in the hardware and software module of the station can significantly increase the efficiency of the underwater monitoring system in a changing hydrological environment. The design of the sonar station, adaptive to changes in hydrology, provides the maximum controlled area during its operating cycle. The paper considers the algorithm of operation and design solutions of an autonomous hydroacoustic station with automatic installation to the optimal depth according to the criterion of achieving maximum efficiency.

Keywords: autonomous sonar station, marine zone control system, vertical distribution of sound velocity, probability of detection, anomaly of sound propagation in the sea.

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