DOI: 10.37102/1992-4429_2022_39_01_09

MARINE AUTONOMOUS MULTIFUNCTIONAL MEASURING PLATFORM

M.S. Kim, A.H. Pak

The paper explains the need to monitor the coastal water environment in the areas with port terminals and drilling platforms and presents a brief overview of the proposed marine autonomous multifunctional measuring platforms. Their main advantages lie in solving problems of collecting, processing and operational transmission of data on the vertical distribution of hydrophysical and hydrochemical parameters of the aquatic environment. The choice of the design of hermetic solid housings and material is carried out and supplemented with an example of the strength calculation of the instrument module durable housing using the program "APM FEM" of the three-dimensional design system "COMPASS-3D" by the finite element method. The operation algorithm of the autonomous platform control program when measuring hydrophysical and hydrochemical parameters at specified horizons and exchanging information with the control station is shown. The paper also presents technical solutions for the winch device for vertical movement of a mobile platform in the water column. Applying the considered solutions and the accumulated experience in creating such devices will speed up the development and manufacture of the proposed measuring platform for monitoring the coastal aquatic environment.

Keywords: monitoring of the aquatic environment of port terminals and drilling platforms, autonomous offshore measuring platform, control algorithm, calculation of strong hulls, finite element method, winch.

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About the authors

KIM Men Seb, junior research associate
Special Research Bureau for Automation of Marine Researches Far East Branch Russian Academy of Sciences (SRB AMR FEB RAS)
Address: 693023, Sakhalin region, Yuzhno-Sakhalinsk, Gorky str., 25
Research interests: Marine instrumentation, robotics
Phone: 8 (4242) 750-570 доб.407, fax: 8 (4242) 23-69-66
E-mail: v.kim@skbsami.ru

PAK Alexsander Khimunovich, junior research associate
Special Research Bureau for Automation of Marine Researches Far East Branch Russian Academy of Sciences (SRB AMR FEB RAS)
Address: 693023, Sakhalin region, Yuzhno-Sakhalinsk, Gorky str., 25
Research interests: Marine instrumentation, robotics
Phone: 8 (4242) 750-570 доб.404, fax: 8 (4242) 23-69-66
E-mail: a.pak@skbsami.ru

Recommended citation:

Kim M.S., Pak A.H. MARINE AUTONOMOUS MULTIFUNCTIONAL MEASURING PLATFORM. Underwater investigation and robotics. 2022. No. 1 (39). P. 86–90. DOI: 10.37102/1992-4429_2022_39_01_09.