

THE SOFTWARE FOR AUV MISSION PREPARATION AND SUPPORT

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ABSTRACT

The study reports on the complex of programs worked out in the Institute for Marine Technology Problems, Far Eastern Branch of the Russian Academy of Sciences, to develop and maintain the autonomous underwater vehicle (AUV) mission. What is peculiar about this complex, it combines functions of both operator's and navigator's posts of the AUV, thus permitting to use a single computer for mission development, pre-launch processing, underwater robot navigation support and remote control.

Autonomous underwater vehicles (AUVs) are used for aquatic areas patrolling, maritime infrastructure inspection, bottom targets search and survey. At pre-launch stage and in operation period the operator is responsible for onboard systems diagnostics, mission developing and control. In emergency situations (e.g. preset pattern error) or in case of operating failures the operator is to perform motion correction or to cancel the mission. All the data received are available for further processing and analysis. To solve this sort of problems we use productivity software. In the Institute for Marine Technology Problems, Far Eastern Branch of the Russian Academy of Sciences, we have developed a program complex called "Startup Wizard" that enables due to graphic interface to maintain the mission process and to save and structure data from onboard data storage media after the vehicle has been recovered. For the complex scalability one can extract common functions in the integrated interface as well as call subprograms specific for each vehicle. The study showed that such method enables to create a special workplace for an operator of any autonomous underwater vehicle no matter what systems are used. The complex operation algorithm involves the complete vehicle operation period from mission development to results memorization.

Key words: autonomous underwater vehicle, mission development, program task, navigational support.

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