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EXPERIENCE OF PYTHON LANGUAGE USAGE FOR AUV CONTROL SYSTEM DEVELOPMENT

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Developing software for underwater vehicle control systems requires both the adaptation of existing solutions and the development of new ones. Various programming tools can be involved in the process, the range of which is currently quite wide. This article describes the experience of using Python language to develop control systems «from scratch» for unmanned underwater vehicles (autonomous underwater vehicle (AUV) and remote operated vehicle (ROV)), using the example of developing a small-sized Geek vehicle. The feature of this vehicle lies in its purpose — teaching students and postgraduates the basics of designing AUV, as well as involving student teams in underwater robotics competitions. Various aspects of using the Python are considered, including inter-process communication, data processing from sensors and systems of AUV, autonomous management, and interaction with operators, as well as integration with other technologies necessary for the successful completion of missions by the vehicle underwater. The results of using the underwater robot Geek in the modes of AUV and ROV are discussed.

Keywords: control system, unmanned underwater vehicle, software, inter-process communication, Python language, UUV, AUV, ROV.

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