

## THE APPLICATION OF UNMANNED UNDERWATER VEHICLES IN MARINE OIL&GAS INDUSTRY

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### ABSTRACT

Unmanned underwater vehicles are widely used for offshore hydrocarbon production. Alongside with application in oil & gas industry they are involved in transoceanic cable networks installation and exploitation though they do not account for a large part of work there. As for operating process in the offshore zone, the unmanned underwater vehicles are responsible for facilities construction and underwater geodesic survey. In the foreseeable future the unmanned underwater vehicles will apply geophysical technique such as non-seismic detection of hydrocarbons. Remotely operated cable vehicles are nowadays the main underwater workforce where full-scale diving operations cannot be conducted. The AUV as the instrument of underwater survey in the offshore zone obtained its shape in 2002-2003. Marine geologic exploration in the Russian offshore zone and probe boring in particular are being developed. Ecologic monitoring of wells may become an important typical mission for the remotely operated vehicle use in underwater navigation, data transfer, etc. High-scale automation and reliability of marine and underwater technologies provide the special aspect of offshore commercial exploitation. High sophisticated technology and equipment are required to avoid any economically inconvenient repair works at sea.

Russia is the largest world manufacturer of hydrocarbons. Judging by different estimations, much of resources are located in continental shelf. The article reports on the retrospective analysis of working techniques in the shelf area. We also give two examples of unmanned underwater vehicles operation. The ecologic monitoring of abandoned wells in Kirinskoye field (Sakhalin-3 project) was done with the remotely operated vehicle and the "South Stream" gas pipeline route was surveyed by the autonomous underwater vehicle.

**Key words:** continental shelf, unmanned underwater vehicle, hydrocarbons, survey.

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