

Informācijas  
Sistēmu  
Menedžmenta  
Augstskola



Information  
Systems  
Management  
University

---

## ***Information Technologies, Management and Society***

The 10<sup>th</sup> International Conference  
***Information Technologies and  
Management.***

2012 April 12 – 13,

Information Systems Management University,  
Riga, Latvia



May 10-11, 2012

**International IT University,**  
Almaty, Kazakhstan  
**Theses**

**Riga, 2012**

## ANALYSIS OF CONSTRUCTION OF UNDERWATER VEHICLE

A.URBAHS, K. CARJOVA, P. VULANS, M.URBĀNS

Riga Technical University  
Institute of Aeronautics  
1 Kaļķu str., LV-1658, Riga, Latvia,  
e-mail: kristine.carjova@inbox.lv

### ABSTRACT

The end of last century can be characterized by the development of technical means for the researches of different purposes in the seas and oceans. These vehicles can be divided in two basic forms – those which float on water and those which operate under water. The leading role producing underwater vehicles in the end of last century was taken by USA, nowadays also France, Germany and other European countries contributes [1,2].

In the beginning of new century with rise in variety of new high strength materials and modern radio equipment underwater vehicles have new expanded space for development.

Underwater vehicles take us closer to still unknown Ocean, develops research for oil and gas industry, help in underwater cable laying operation etc.

[Keywords: underwater vehicle, parameters, construction, hull forms.]

### GENERAL

When modeling underwater vehicle there are many aspects to take into account: type of underwater vehicle, displacement, and main dimensions. After main characteristics are selected, details are precised. It is important to know all precautions to exploit vehicle safe and reliable. In comparison with ship it is difficult to provide damage stability for underwater vehicle even if small amount of water have entered hull. The paper deals with different forms of underwater vehicle and its characteristics, (see Fig.1) and flow simulations during developing vehicle model. Parameters of underwater vehicle are: depth, basic equipment, autonomy, speed, special characteristics and equipment.

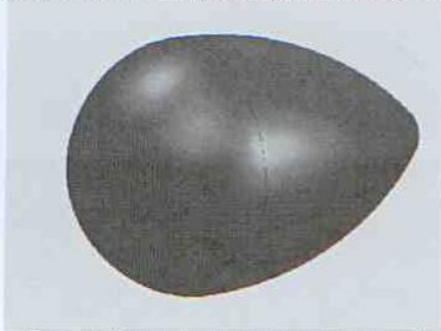


FIGURE 1. UNDERWATER VEHICLE FORM "DROP"

Authors are developing virtual model of unmanned underwater vehicle, which for the first stage of research will be remotely operated and carry only basic equipment consisting of batteries, thrusters, controllers and radio controlling equipment. Prototype of remotely operated vehicle to be constructed and tested in Riga port where different researches on monitoring ship's hull and port structures will be carried.

### REFERENCES

- [1] Aleksandrov V.L., Gluzman M.K., Rostovcev D.M. Sivers N.L. (1994) *Modelling of underwater vehicle hull.* (in Russian) St.Petersburg, 3;
- [2] Wang W.H., Engelaar R.C., Chenl X.Q., Chase J.G (2009) *The State-of-Art of Underwater Vehicles. Theories and Applications, Tech Education and Publishing University of Canterbury. Mechanical Engineering*, p.129 - 152.