говля, дипломатия, начались междинастические браки. Всё это способствовало взаимопроникновению как культур, так и их языков. В итоге, наш лексикон обогащался, а порой заимствованные слова вытесняли даже устаревшие собственные. Уже невозможно представить себе наш язык без таких слов, как логос, метод (греч.), ярмарка (нем.), алгоритм (арабск.), юбилей (евр.), бульон (франц.) и тысяч прочих терминов из разных языков, включая имена. Таким образом, процесс заимствования слов совершенно объективный. С ним нельзя бороться, хотя можно и ограничивать, корректировать, ведь потеря собственного языка приводит к угасанию национального мировоззрения.

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### ПРОБЛЕМЫ ПРОЕКТИРОВАНИЯ ОТЕЧЕСТВЕННЫХ КОНТЕЙНЕРОВОЗОВ

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In nowadays economy the world's container fleet, with the glance of new vessels construction is characterized by an excess of container capacity. This factor increases competition in the freight market. The only way to gain positions in the container transportation market is to improve existing designs and build new ships. Research is intensively conducted in this area abroad and now container ships with a capacity of 18,000 twenty-foot equivalent units (TEU − Triple-E Class) are being built already. Such ships will be constructed between 2013 and 2014. In our country there is a lack in the scientific and engineering investigations on the subject.

The design process of the ship is multi-stage, and is characterized by its complexity. Currently, however, modern computer-aided design (CAD) system helps designers; it enables to develop new vessels with high quality and in a short time. Basis for the development of technical designs are the results obtained in the early stages of research design using CAD system, which are designed to provide a multivariate research of the vessel design concept and then select an option in a contract specification or suggestions. The usage of research system allows producing optimum performance options of vessels. But it should be noted that these systems are 'proprietary' instruments and are not intended to replicate.

To compete with foreign design companies effectively, it is necessary for domestic research to develop CAD systems for various types of vessels and, above all, long-term concepts. It is especially important for container ships, because there is no domestic design experience in the past two decades. This requires, first of all, the development of the initial design methodology and the corresponding mathematical model of the design of modern container ships designed for using in CAD system vessels of this type.

### БИОНИЧЕСКАЯ МЕДИЦИНА

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There are a lot of people who lose any limb and live on it. In spite of using prosthetics, these men are limited in their day-to-day life. But science brought us new branch of science – Brain Controlled Prosthetic Limbs.

The first bionic prosthetic hand has been set by scientists Rehabilitation Institute of Chicago in 2002 to electric from Tennessee, Jesse Sullivan. As an electrician, he accidentally touched an active cable that contained 7,000-7,500 volts of electricity. In May 2001, he had to have both his arms amputated at the shoulder. Seven weeks after the amputation, Jesse Sullivan received matching bionic prostheses from Dr. Todd Kuiken of the Institute. Originally, they were operated from neural signals at the amputation sites, but Jesse Sullivan developed hyper-sensitivity from his skin grafts, causing great discomfort in those areas. Jesse Sullivan underwent neural surgery to graft nerves, which originally led to his arm, to his chest. The sensors for his bionic arms have been moved to the left side of his chest to receive signals from the newly grafted nerve endings. Scientists at the Johns Hopkins University Applied Physics Laboratory (APL) were awarded no less than $34.5 million by the DARPA (Defense Advanced Research Projects Agency − the Pentagon's research division) to continue their outstanding work in the field of prosthetic limb testing.

Six years later their new Modular Prosthetic Limb (MPL) system was just about ready to be tested on human subjects, as it has proved successful with monkeys. In order for a robotic prosthetic limb to work, it must have several components to integrate it into the body's function: Biosensors detect signals from the user's nervous or muscular systems. It then relays this information to a controller located inside the device, and processes feedback from the limb and actuator (e.g., position, force) and sends it to the controller. Examples include wires that detect electrical activity on the skin, needle electrodes implanted in muscle, or solid-state electrode arrays with nerves growing through them. Mechanical sensors process aspects affecting the device (e.g., limb position, applied force, load) and relay this information to the biosensor or controller. Examples include force meters and accelerometers. The controller is connected to the user's nerve and muscular systems and the device itself. It sends intention commands from the user to the actuators of the device, and interprets feedback from the mechanical and biosensors to the user. The controller is also responsible for the monitoring and control of the movements of the device. An actuator mimics the actions of a muscle in producing force and movement. Examples include a motor that aids or replaces original muscle tissue.

The robotic arm itself weighs nine pounds, which is about as much as a real limb, and provides just as much dexterity too. Besides tasks like moving each individual finger and rotating the wrist, it is capable of 22 degrees of freedom, and reacts with speed and agility to the user's commands and can allow patients a level of freedom they never thought they'd have again. The arm allows movement in five axes and allows the arm to be programmed for a more customized feel.

Recently, robotic limbs have improved in their ability to take signals from the human brain and translate those signals into motion in the artificial limb. DARPA is