

taste, because the political systems in these countries advocate for social justice and equality. Another example of advertising campaign which failed to acquire global presence is General Foods Company's commercial of Maxwell House coffee in which product was claimed to be "the best American coffee". The pitfall was in the fact that in Germany where campaign was performed customers preferred to make coffee in different way and were skeptical about the American way of making coffee.

Therefore, the most common in international advertising is a global strategy with a partial adaptation of advertising campaigns to the conditions of local markets abroad. Even if the product is actively sold in local markets, it is not safe to assume that a standardized global advertising will be possible and will not require adaptation (at least in terms of language) of commercials in different states and regions. First of all, adaptation should cover meaning and interpretation of commercial, basic advertising ideas for a particular product, the image of a product, and less often advertising slogans itself should be changed. However, creative approach during advertising slogans translating often need to adjust the language or in some cases even concept of promotion sticking to local market characteristics, consumer preferences and demands and countries traditions.

To solve the problems of adaptation it is necessary to conduct a market research and test goods in foreign markets in order to identify most acceptable and effective to local consumers promotion techniques which will attract customers and provide high sales volume.

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## APPLICATION OF BIOLOID ROBOT FOR EDUCATIONAL PURPOSES

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As a result of technological progress many laborious tasks appear which require really sophisticated methods of solving. Some of these tasks are impossible for human to perform, for example, moving an object along the curve with adjusted precision. For solving these problems knowledge of automation and robotics is employed. Automation of routine and laborious processes has already reached quite high level of development and dissemination, so automation in other fields, such as services and welfare sectors, begins. For those robots which are going to work in these fields other requirements are established, for instance, amicable design, understandable interface, possibility to define commands which are assigned via human speech, and finally, an ability to react to changes and impacts of the environment. What's more, these robots must be safe for people.

To encourage children's interest in fast-developing field of technical study – robotics, and to acquaint them with knowledge of programming robots-androids, Korean robot manufacturer ROBOTIS created a hobbyist and educational robot kit, called Robotis Bioloid. Thus, the Bioloid system is comparable to the LEGO Mindstorms and VEXplorer kits. That means that children and teenagers will be inter-

ested in it for certain. The educational potential of this kit has already been recognized, for instance the platform is currently in use by the U.S. Naval Academy in their Mechanical Engineering courses, and is also popular in the RoboCup international robotics competition.

These robots are programmed with RoboPlus - C language based software and RoboMotion – specialized visualized language. The process of programming these robots will give children and teenagers basic knowledge in programming which is essential for them in the future.



Fig. 1. One possible modification of Robotis Bioloid

Unitized details allow assembling different robot types using only one robot kit. It is possible to construct a mechanism with 18 degrees of freedom. One possible modification of the robot is shown on the Fig. 1 [2].

The main goal of our scientific study is developing an accurate and understandable users guide for Robotis Bioloid in Russian language for the centre of children's creativity which is called "Fakel". These guides will be used by children and instructors. It is also planned to find out whether our user guide provides successful and efficient interaction.

For compilation of an understandable users guide it is necessary to construct at least one modification of the robot and analyze its parameters, ways of its management and its moving ability. This robot kit already has an electronic users guide and some examples of different models but it is rather complex and sophisticated. Moreover, this sophisticated instruction is written in foreign languages, such as Korean and English, which makes process of studying almost impossible for children.

The most complicated problem in our work is translating fragments written in Korean, because nobody in our group knows this language. This problem is to be solved by using electronic dictionaries and insight. Moreover, these instructions have many technical terms which are not understandable for children. To sum it up, we have to make clear instructions for children by translating the old instructions and optimizing the whole idea. We were informed that children, who deal with LEGO Mindstorm kits, have basic knowledge of programming with C++, which makes it easier for us to explain the issue.

Bioloid robot operation programming could be performed in 2 different ways: using the RoboTask program or the RoboMotion program.

RoboTask is a programming environment for text programming based on C-like language. This way of robot control consumes more energy and time than using the RoboMotion control program, but it is impossible to carry out a complex automation of robot's movements using only one program. RoboTask is necessary for execution ready programs, written by using RoboMotion, which are already downloaded to the Bioloids processor. Using RoboTask enables to code via pressing the buttons placed on the frame of the processor.

Visualized language RoboMotion is a really simple way of robots management. An example of a completed program is shown on Fig. 2. Although the working window looks complicated, it is really easy to work with it. Mostly, work consists of changing robot's motors manually and reading out the information of their current position. One changing of the position is called a step. After completing a fixed amount of steps it is possible to play all the motion. The robot will move according to the fixed steps. It is possible to keep only one RoboMotion program which contains 255 pages with 7 steps in each one in

the Bioloids processor. This amount of steps is more than enough to carry out the complex automation of the robot. RoboMotion also allows performing pauses and repeats of any step and it helps to store limited amount of pages and steps.

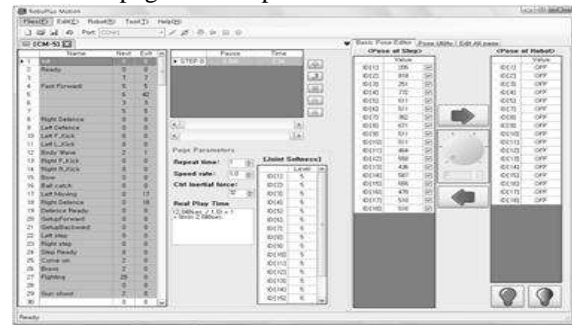


Fig. 2. Working window of RoboMotion program

Another program, RoboTask, is much harder to understand and to deal with. As it is more sophisticated, it allows to manage and control a robot in a more comfortable (convenient) way, for example, by using remote control or buttons on the frame. Fig. 3 shows one simple example of RoboTask code.

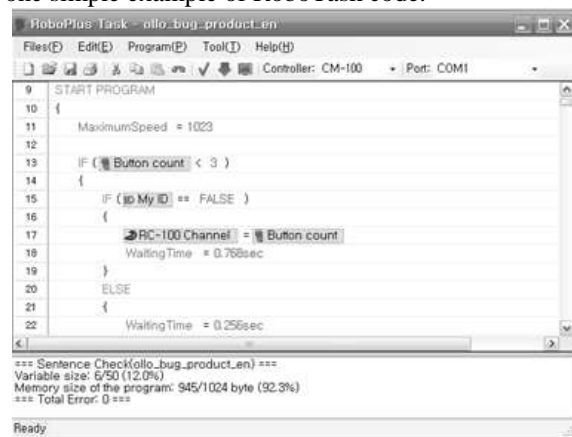


Fig. 3. Working window of RoboTask program

Two Bioloids have already been constructed and basic operations with RoboTask and RoboMotion have been accomplished. The analysis of both programs and performance has been realized by using experiments. In addition, an ability to integrate these programs has been studied. Some of the problems, discovered in the course of assembly work, have been solved.

## Literature

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