A. Problem

Nowadays people often have to control a computer in situations when standard mouse or keyboard are not convenient to use , for example during a PowerPoint presentation. The hardware market offers a wide range of devices designated to fulfill all the possible needs. But no one could guarantee that such a device could be found in the proper place in the proper moment, that it would provide an easy and fast initialization and that it will satisfy all the user needs.

B. Proposed solution

Today one of the most popular hardware devices is the mobile phone. It is hard to imagine someone's life without it. The proposed solution is a software package that allows using any mobile phone running Android OS equipped with a touch screen and Bluetooth, as a peripheral device (mouse, keyboard, gamepad) that will interact with a computer (host machine), giving the user the opportunity to satisfy all the needs normally fulfilled by a standard mouse or keyboard that usually require a static surface.

The software package should provide:

- The possibilities to position the mouse cursor, provide right, left mouse button clicks and wheel scrolls.
- The possibility to input arbitrary text.
- The possibility to interact with gaming software.
- No bindings to a specific operating system.
- No bindings to any software installed on the host machine.

C. Description in detail of methods.

The software package is developed for Android OS. This is a widely-spread platform, which steadily increases its presence in the mobile market. It is also worth mentioning that this platform is mostly open-source, and based on Linux. The latter simplifies the development process.

The development process could be easily divided into two steps:

1. The development of the project should start with the creation of a program that meets all the requirements mentioned above, but runs on a GNU/Linux desktop distribution and provides only a simple command-line interface. This step is important since the process of program development for desktop systems is simpler and faster in comparison with mobile system software development.
2. The last step of the development process is the porting of the developed software to Android OS and the creation of an intuitive graphical user interface, oriented for touch-screen interaction. To accomplish this task Google Android SDK and GNU arm cross-compiler should be used.

During the development of the software package some risks could be encountered:

- The lack of a compatible ARM cross compiler. A suitable cross-compiler could be built from scratch, in case of this risk forthcoming.
- The incompatibility of desktop code with the mobile platform due to differences in the Android OS Bluetooth C API. Forthcoming of this risk would lead to a search for suitable documentation and a redesign the ported program.

The project would be considered completed if by the means of this program set running on an Android phone with a touch screen and Bluetooth, it would be possible to:

- remotely control a computer mouse cursor;
- input arbitrary text;
- interact with a gaming-program;

The software package should work in a stable, cross-platform manner and for an unlimited time.

D. Bibliography:

•Bluetooth specifications - https://www.bluetooth.org/
•Bluetooth non official documentation - http://www.palowireless.com/infotooth
•HID specifications - http://www.usb.org/developers/hidpage/
•Android API documentation - http://developer.android.com/
•Helper web sites - https://en.wikipedia.org