VISUAL MODELING OF ENERGETIC SIMULATORS

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INTRODUCTION.

Numerous technologies allowing the use of virtual and augmented realities for portable and desktop devices are available. Yet we continue using paper and Power Point for presenting architectural designs, oil deposits, development plans, geological exploration results, different device prototypes and so on. Today it is possible to display such objects in three dimensions using smartphones, laptops, tablets and special glasses with webcams for augmented reality and with gyroscopes for virtual reality.

Despite a large number of existing solutions, these technologies are still rarely used due to the lack of programming and 3D modeling skills of end users. The main goal of this project is to make technology of augmented reality available for an unskilled person.

RESULTS AND DISCUSSION.

One project objective was to create the system with AR glasses and a depth camera. At the beginning we planned to use LEAP sensor as a depth camera, because of its high quality of recognition. Release of LEAP sensor was planned for August, 2013; however, it was delayed until an uncertain date. Therefore we considered the use of two alternative sensors, SoftKinetic DS325 and Creative Interactive Gesture Camera. Since the second sensor uses a kernel of the first, we selected SoftKinetic DS325 sensor, which we tried to link with Wrap 920AR glasses. Merging AR glasses with depth camera experiment showed that the usage of Wrap 920AR is not effective, because of its heavy weight, especially on the front part, and small displays. For further development of testing we used Unity3d Pro 4.x and wrapper for Vuzix glasses iWear. We met difficulties with synchronization of displays to achieve clear vision.

We see further development of the project in combining the Virtual glasses and MYO sensor. We were more focused on virtual glasses Oculus rift and vrAse, which is promising for the use of smartphones in glasses rather than looking through glasses. All these devices will come to the market in early 2014, which, as experts say, will revolutionize human-computer interaction. We selected these devices not only because of their popularity, but also for their low price.

CONCLUSION.

As a conclusion, we could say that usage of Wrap 920AR and other Vuzix AR glasses with less than 8 inches display will not be effective for the construction of an augmented reality application, especially with full immersion. As an alternative we suggest to use Oculus rift – virtual reality glasses, because of their wide view and low weight.

There is no doubt that this approach has a future. The only question is how soon and in what way we will see the implementation of the combination of augmented reality glasses and a depth sensor or it will be something like MYO, which can be embedded in our watches.