ABSTRACT

TSUNAMI AUGMENTED REALITY :
INTERACTION BASED ON MARKER AS A
POINTER

By

Iwan Kustiawan

NIM : 23206320

ELECTRICAL ENGINEERING STUDY PROGRAM

Natural phenomenon such as tsunami can be interactively visualized as a game based on augmented reality (AR). Augmented reality is a field of computer research which overlays virtual objects on the real world. ARToolKit is a software library that is usually used to develop AR applications.

User interaction with fiduciary marker is used to change attribute of virtual objects. There are several user interaction methods with fiduciary marker, namely array marker, menu system, and marker as a switch toggle. Meanwhile, technique for doing selection and manipulation of 3D virtual objects can be done with magic pen, central pointing device, or marker as a pointer.

In this thesis, the development of various physical interactions such as grabbing, moving, and dropping of objects with natural and intuitive using marker as a pointer is done. In addition, user usability test on the use of interaction techniques for selection and manipulation in this AR system is done as well.

The usability test results show that the use of marker as a pointer on tsunami AR system gives the user an ease of having natural and intuitive interaction. The identified problems obtained from usability test need recommendation to improve future interface design.

Keywords : augmented reality, marker, pointer, selection and manipulation, usability test.