Software Design and Implementation “ITS Touring View” Using Location Based Augmented Reality on Android Based Mobile Device.

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ABSTRACT

Institut Teknologi Sepuluh Nopember (ITS), as one of the excellent institutions of technology, continuous to improve their facilities for the future generation to gain better knowledge. The increasing number of ITS infrastructure facilities encourages the needs of information, such as location, of those facilities, which are considered important as each facility has its own function. Meanwhile, there’s a new technology named location-based service to provide information related to current location, which is really useful in many areas of society. This technology has been well implemented in some mobile devices. On the other hand, the modern mobile device has some advantages in displaying richer information, for example: augmented reality, which utilizes the camera of mobile device to get some information within its environment and allows the user to get better visualization of the information by the mobile devices, along with the technology of sounds, videos, images and Global Positioning System (GPS) sensors embedded in it. Using the advantages in displaying information through the simplicity of the modern mobile devices, the problems of information needs in ITS that relates to location can be solved nicely using those integration of technology, which considered the existence of this research.

ITS Touring View is a mobile devices application that provides information of existing facilities on ITS campus. It combines the location-based service and augmented reality technology to enrich the information presentation by visualizing the information of ITS facilities through the screen of mobile device and adding the interactive objects within the
environment of current position, and probably some destination desired. To search the facilities of ITS, ITS Touring View supports also the voice input and output, using the integration of Google Voice API, in extension of conventional input by text. The response of the application is a recommendation to the location of destination facility in voice of Bahasa Indonesia. Information on the location of the user is obtained from the GPS signal and the destination location information obtained from input which used as query for database that has been integrated with web service.

ITS Touring View is able to provide information to access facilities on ITS which is needed by society. The recommendation of route information can help society to make time to go to the destination more efficient.

**Keyword:** Android, Mobile Application, Augmented Reality, Institut Teknologi Sepuluh Nopember, Location Based Service, Route