



## Application of Augmented Reality for Introduction Of The Unit Ted (Technical Record & Configuration Management) Structure In PT. GMF Aeroasia.Tbk Based On Android

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### ABSTRACT

Utilization of augmented reality technology is now more widespread. At present many companies have used the technology to introduce the company and their products to the public. Augmented reality is a picture of a real virtual object in 3D. Augmented reality can be applied to an android smartphone. Here i will make an application to introduce the organizational structure of the TE (Technical Engineering) service especially in the TED (Technical Record & Configuration Management) unit which is divided into 5 sub units within the PT.GMF (Garuda Maintenance Facility) AeroAsia Tbk. company where i work. In making this Augmented Reality based application, i used Unity and Vuforia. Which later this application will be compiled into an "apk" file that can be installed on our android smartphone.

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## 1. Introduction

Augmented Reality is the result of thoughts aimed at displaying digital content to the real world, be it two dimensions or three dimensions. This technology can be used for a variety of purposes, from learning to entertainment.

In technical terms, this AR is transformative technology. Where is the way AR can make an interesting transformation in a process of interaction between an Android smartphone or computer, so that the enthusiasm of users will be higher.

And from a strategic point of view, the use of the introduction of TED unit structure applications based on AR technology will be more practical and simple compared to organizational structures that still use paper, board or wood media that are usually affixed to office walls. And in general it will look more attractive, simple and more adaptable to current technological developments, because it will be represented by a 3-dimensional visual by involving user interaction.

## 2. Research methods

In building an application must consider several things related to the needs, development and application of the application. In making an augmented reality application for the introduction of the structure of the TED (Technical Record Configuration Management) unit in Android-based PT.GMF AeroAsia.Tbk, the author uses the waterfall method. The selection of this model is because in making this application it takes several stages, beginning with system planning, system analysis, system design and application testing (testing).

The stages of the waterfall model in this application are as follows:

- a. System Planning



At this stage contains the initial steps that will be carried out by the author before starting the making of the application, including determining the type of research that will be used and collecting data that will be used in making this application. Data collected in this stage are the names and photos of each TED personnel.

b. System analysis

At this stage, a system needs analysis and structure analysis of the TED unit will be carried out. Ranging from managers and personnel from TED-1 to TED-5 which will later be used to output the applications made.

c. System planning

At this stage the design of the augmented reality application will be carried out along with the appearance or design when the application is run using the unity application.

d. Application Testing (Testing)

This stage is where the augmented reality application for the introduction of the structure of the TED (Technical Record Configuration Management) unit in Android-based PT.GMF AeroAsia.Tbk has been completed and tested to find out whether the application is functioning properly and correctly as expected.

### 3. System Analysis and Design

In making this application, the user interface is designed first. Following the design of the user interface in this application:

a. User Interface - Main Menu

The page that first appears when the application is run is the main menu. The user will select the button available on the main menu page. The interface between the main menu is as follows:



Fig 1. User Interface - Main Menu

b. User Interface - TED Menu

The TED menu is a menu of TED sub-units namely TED-1, TED-2, TED-3, TED-4 and TED-5. When the menu button is selected, it will then display each of the 5 sub-unit's personnel.

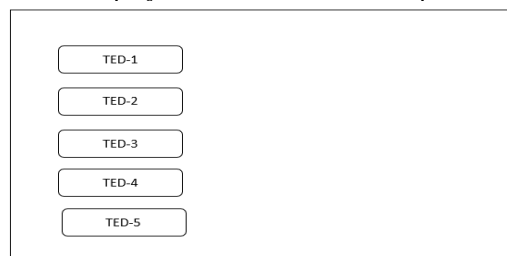


Fig 2. User Interface - TED Menu

c. User Interface - TED-1 Unit

On this TED-1 page, a photo and name of the personnel in the TED-1 unit will be displayed. And there is an additional "back" button to return to the previous TED menu.

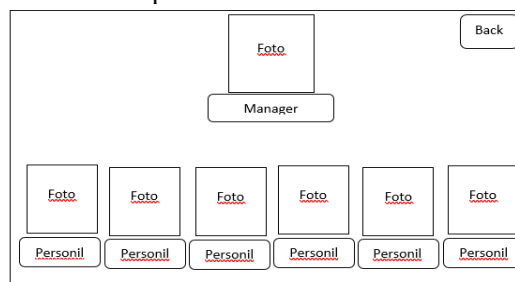


Fig 3. User Interface - TED-1 Unit

d. User Interface - TED-2 Unit

On the TED-2 page, it will also display a photo and the name of the personnel. And there is an additional "back" button to return to the previous TED menu.

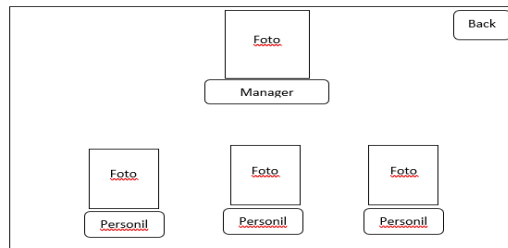


Fig 4. User Interface - TED-2 Unit

e. User Interface - TED-3 Unit

Likewise on the TED-3 page, it will display a photo and the name of its personnel. And there is an additional "back" button to return to the previous TED menu.

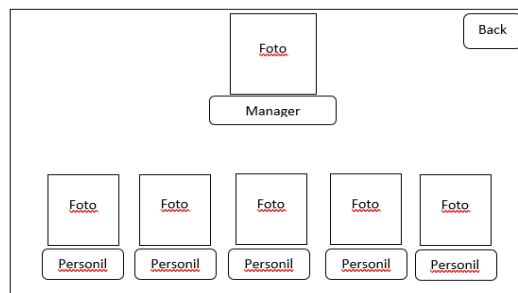


Fig 5. User Interface - TED-3 Unit

f. User Interface - TED-4 Unit

Likewise on the TED-4 page, it will display a photo and the name of its personnel. And there is an additional "back" button to return to the previous TED menu.

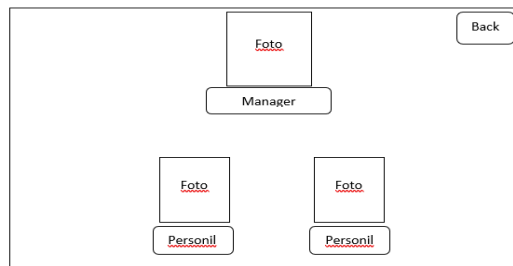


Fig 6. User Interface - TED-4 Unit

g. User Interface - TED-5 Unit

Likewise on the TED-5 page, it will display a photo and the name of its personnel. And there is an additional "back" button to return to the previous TED menu. And each unit has a different number of employees.

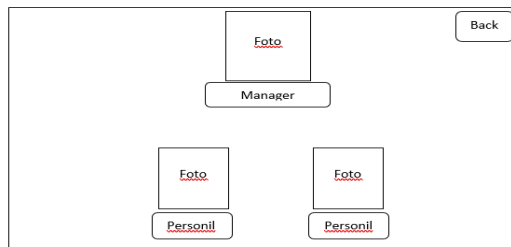


Fig 7. User Interface - TED-5 Unit

#### 4. Results and Discussion

In this chapter discusses the series of trials and evaluations of applications as they run. And here is the appearance of this application:

a. Main Menu Design



Fig 8. Main Menu Display

Main menu is the earliest appearance in the application after it is run. And there is a button to go to the next menu.

b. TED Menu Design



Fig 9. TED Menu Display

In the "TED Menu" this is part of the main menu in the application. Divided into 5 menus that identify each sub unit in the TED unit. Each menu will function to display each personnel in the sub unit.

c. TED-1 Menu Design



Fig 10. TED-1 Menu Display

In the TED-1 menu, a photo and name of the personnel and manager who leads the TED-1 unit will be displayed.

d. TED-2 Menu Design



Fig 11. TED-2 Menu Display

In the TED-2 menu, it is the same as the TED-1 menu that displays photos and names of each person and the TED-2 manager.

e. TED-3 Menu Design



Fig 12. TED-3 Menu Display

In the TED-3 menu, it is still the same as the TED-1 menu that displays photos and names of each person and the TED-3 manager.

f. TED-4 Menu Design



Fig 13. TED-4 Menu Display

In the TED-4 menu, it is the same as the TED-1 menu that displays photos and names of each person and the TED-3 manager. Here the difference is the number of personnel of each unit.

g. TED-5 Menu Design



Fig 14. TED-5 Menu Display

In the TED-5 menu, the same as the previous menu that displays photos and names of each of its personnel and the TED-5 manager. And the number of personnel is also different.

## 5. Conclusion

Judging from the results of the study, it can be concluded that the augmented reality application for the introduction of the structure of the TED (Technical Record Configuration Management) unit in Android-based PT.GMF Aero Asia.Tbk can also be run on mobile devices with android operating system with the latest and previous versions.

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