DESIGNING AVIATION COMMUNICATION PERSONNEL BASE ON WEBSITE

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ABSTRACT

Aeronautical Communication Officer (ACO) have 2 Ratings, namely Flight Information (FI) Rating and Aeronautical Fixed (AF) Rating. The aviation communication guide personnel rating is valid for 1 year from the date of issuance of the rating and is required to carry out a rating extension test once every 1 year, the exam includes a theory exam and a practical exam. In order to provide guidance and standardization in the implementation of the Aeronautical Communication Officer (ACO) personnel rating extension test, an E-Module Design was created for the dissemination of the Performance Check En-Route Flight Information Rating as well as the Question Bank for Theory Exams and Practical Exams. This e-module was created to provide a variety of appearances to make it easier to understand the material before taking the exam. This research refers to the 4D research and development model which consists of 4 stages namely Define, Design, Develop, Disseminate. This program is tested using the blackbox testing method, which means the system is tested in terms of the functionality of the website system without testing the design and program code. The results of this study are the Website-based Rating Extension Exam Preparation E-Module which is used for the Aviation Communication Personnel Rating extension exam, which contains an E-Module in the form of a video and a Question Bank in the form of multiple choice, essay, and true false whose question weights have been adjusted with the Aviation Communications Personnel Rating Testing Guidelines.

Keywords: *Website, E-Module, License, Rating*

1. INTRODUCTION

Online learning is an idea technological development that is created and improved according to technology with the present educational conteks. [1] There are 2 services provided at Perum LPPNPI Balikpapan Branch, namely Aeronautical Fixed Service (AFS) and Aeronautical Mobile Service (AMS). Aeronautical Fixed Service (AFS) is a service that ensures the smooth distribution of flight news (Flight Plan) which includes the Aeronautical Reporting Office (ARO) & Subcomm Center. [2] [3] [4] [5] [6]. Meanwhile, in the Aeronautical Mobile Service (AMS) there is Ujung Pandang FIC Balikpapan Sector, point to point. Where the unit is supervised by Aeronautical Communication Officers (ACO). [7] [8] [9] [10] [11]. Aeronautical Communication Officer (ACO) personnel have 2 ratings, namely Flight Information (FI) Rating

and Aeronautical Fixed (AF) Rating. The authority of the holder of an aviation navigation personnel license in the field of flight communication guidance is in accordance with the rating below:

Flight Information (FI) Ratings.

Serving and/or supervising the provision of Air Traffic Advisory, Flight Information and Alerting Service to aircraft and/or helicopters flying at airports with Aerodrome Flight Information Service (AFIS) status in accordance with their rating.

Serving and/or overseeing the provision of Air Traffic Advisory, Flight Information and Alerting Service both voice and Data Controller Pilot Data Link Communication (CPDLC) to aircraft carrying out domestic and international enroute flights outside Controlled Airspace according to their service area.

Aeronautical Fixed (AF) Rating.

Has the authority to carry out administration system services and operational control of flight data/information using Aeronautical Fixed Service (AFS) communication devices. The aviation communication guide personnel rating is valid for 1 year from the date of issuance of the rating and is required to carry out a rating extension test once every 1 year to improve the performance of the Aeronautical

Communication Officer (ACO) personnel, the exam includes a theory exam and a practical exam. The test for extending the Rating of Aviation Communication guide personnel is carried out by checker personnel appointed by the Director General of Civil Aviation. In order to provide guidance and standardization in the implementation of the Aviation Communications guide personnel rating extension test, an AirNav Indonesia Manual was created regarding Guidelines for Testing the Aviation Communications Guides Personnel Rating.

The flight communication guide personnel rating is valid for 1 year from the date of issuance of the rating and is required to take a rating extension test once every 1 year to improve the performance of the Aeronautical Communication Officer (ACO). The exam includes a theory exam and a practical exam. While the researcher was carrying out the On the Job Training (OJT) at the Balikpapan Branch of Perum LPPNPI, the researcher found a problem, namely that currently there is no E-Module used as material provision test for extending the rating of Aviation Communications personnel and creating a Question Bank for exams that can facilitate ACO checkers in compiling questions to be used for the exam because there are already questions and answers. several updates related to the implementation of tests and the extension of the Aviation Communications personnel rating.

Design is a process of defining something to be done using a variety of techniques and it involves a description of the architecture and component details as well as the limitations that will be experienced in the process. [12] [13] [14] [15].

The exam is an activity that is absolutely carried out in order to measure mastery of the material that has been given within a certain period of time. [16] [17] [18].

Based on PM 87 of 2021 concerning Civil Aviation Safety Regulations Part 69 concerning Licenses, Ratings, Training and Proficiency of Aviation Navigation Personnel point 69.115 concerning Types of Aviation Communications Personnel Ratings. It was explained that the flight communication guide personnel rating is a limitation of the authority of a guide license holder aviation communication in an air traffic service unit (Air Traffic Services / ATS Unit). [19] Flight communication guide personnel rating, including: Flight Information (FI) Rating and Aeronautical Fixed Rating.

Based on Law Number 1 of 2009 concerning Aviation Article 292 paragraph 1: "every flight navigation personnel MUST have a license or competency certificate". [20]

In the AirNav Indonesia Manual, the Rating Testing Guide discusses the Rating Testing Guidelines,

Flight Communication Guide Personnel explain the extension testing procedures rating personel pemandu Aviation Communications starting from the planning stage, providing material socialization, theory exams, practical exams, validation, to reporting and documentation. [21]

To fulfill the objectives of this study, the following questions were asked:

1. The author limits the scope to include only website-based E-Modules and only for theoretical and practical questions.
2. The author limits the design of the E-Module to being applied to the website at Perum LPPNPI AirNav Balikpapan Branch, where the website is used by the Aeronatical Communication Officer (ACO) checkers to provide material before the exam and there are questions and answers for the rating exam.
3. The author limits the implementation of the E-Module to contain the information to be discussed, namely a general explanation regarding the Aeronautical Communication Officer (ACO) personnel rating, socialization of Performance Check En-Route Flight Information, and the implementation of Theory Exams and Practical Exams.

2. METHOD
2.1 Research Methods
2.1.1 *Define* (Pendefinisian)

This defining stage analyzes the needs for developing an E-Module design that contains debriefing material and question banks used for the Aviation Communication personnel rating extension exam. The analysis conducted by the author discusses the needs and what products are developed, namely the E-Module for the Aviation Communication personnel rating extension exam.

2.1.2 *Design* (Perencanaan)

At this stage of the research, planning is carried out with the aim of designing an E-Module for the Aviation Communication personnel rating extension exam at Perum LPPNPI Balikpapan Branch.

2.1.3 *Develope* (Pengembangan)

At the development stage, the final product can be developed through expert judgment and product design trials followed by revisions or improvements to products

that have been made and tested previously. Validation is carried out to determine the feasibility of the product that has been developed and to find out whether or not there are revisions to the product.

2.1.4 *Desseminate* (Penyebarluasan)

The dissemination stage is the final stage in the 4D development research model. Dissemination in this research will be conducted to Aeronatical Communication Officer (ACO) checker and On the Job Training Instructor (OJTI) related to the Draft E-Module of Aviation Communication personnel extension exam at Perum LPPNPI Balikpapan Branch.

2.2 Instrument Design

The design of this instrument explains the initial appearance of the cover of the ACO Performance Check Rating Socialization E-Module used at the Balikpapan Branch of Perum LPPNPI.
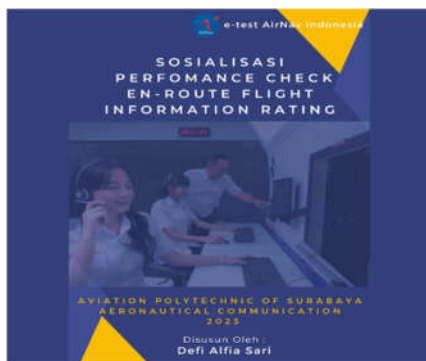

Picture 3.1 Cover E-Module Performance Check Rating Examination

2.3 How the Instrument Works

This flowchart explains the flow of the E-Module which is implemented on the rating test website at the Balikpapan Branch of Perum LPPNPI. . First the admin or user is allowed to register first then log in through the existing website link. Then on the E-Module menu, the debriefing material will be discussed regarding a general explanation of the Aviation Communication personnel rating and the debriefing material that will be tested, in this debriefing material that will be discussed is only focused on Aeronautical Fixed (AF) Rating and Flight Information (FI) Rating. In the Problem Bank sub menu contains a collection of exam questions whose number and weight of questions have been adjusted to each rating and have been adjusted to the type of knowledge possessed by each rating, the admin can input the questions in the Problem Bank menu into the Problem

menu which later the inputted questions are used for the exam. In the theoretical exam questions there are models of questions that will be tested which include multiple choice and essay questions. As for the Practical Examination menu, the exam model that will be tested is in the form of a practical exam directly then will be assessed directly by the Aeronatical Communication Officer (ACO) checker.
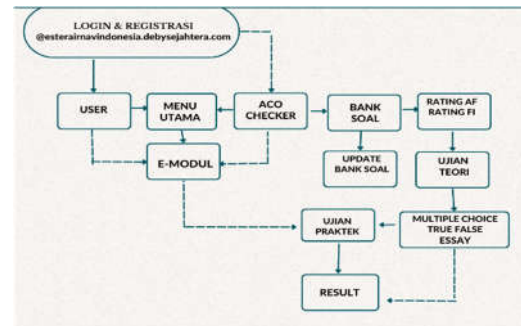
Picture 3. 3 Flowchart Website

2.4 Testing Techniques

In this study the authors conducted trials using the black box testing method, meaning that this program was tested only based on software that focused on functionality. Product trials were carried out 2 times so that the results obtained were more accurate**.**

1) *Define* (Pendefinisian)

In this defining stage, a needs analysis is carried out for the development of an E-Module design which contains material counseling and a question bank used for the rating extension exam. The analysis carried out by the author discusses the needs and what products are being developed, namely the E-Module test for extending the Aviation Communications personnel rating.

2) *Design* (Perencanaan)

At this research stage, planning was carried out with the aim of carrying out the design of the E-Module for the preparation of the Aviation Communication personnel rating extension test at Perum LPPNPI Balikpapan Branch. In the planning stage the author uses several programming languages used to create E-Modul websites, including Hypertext Markup Language (HTML), Hypertext Preprocessor (PHP), Cascading Style Sheets (CSS), JavaScript, Structured Query Language (SQL).

3) *Develope* (Pengembangan)

At the development stage, the final product can be developed through expert assessment and product design trials followed by revisions or product improvements that have been made and tested before. At the development stage, the final product can be developed through expert assessment and product design trials followed by revisions or product improvements that have been made and tested before. Validation is carried out to determine the feasibility of the product that has been developed and to find out whether there is a revision or not for the product. This development resulted in a product in the form of a Website that can be used for Performance Check Socialization and can be used for the Aviation Communications Personnel Rating Examination.
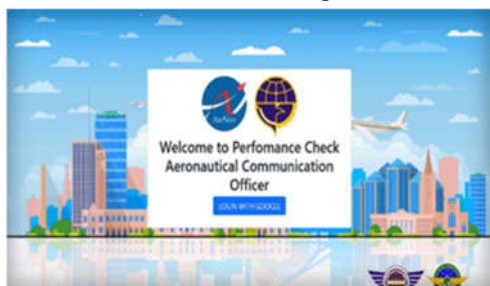
Picture 4. 1 Login Menu Display

Picture 4. *2* Display of the Question Bank
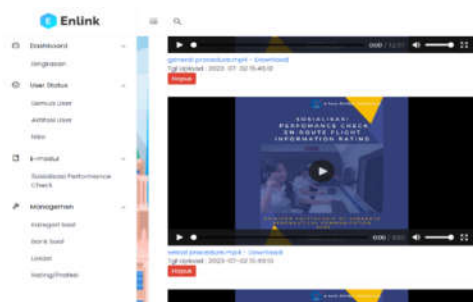
Picture 4. 3 E-Module Menu Display [22]

Picture 4. 4 Display of the Question Category Menu

Picture 4. 5 Value Menu Display

4) *Desseminate* (Penyebarluasan)

The last stage in this research is dissemination. Dissemination in this research, will be dissemination of Aeronatical Communication Officer (ACO) checkers and On the Job Training Instructor (OJTI) related to the E-
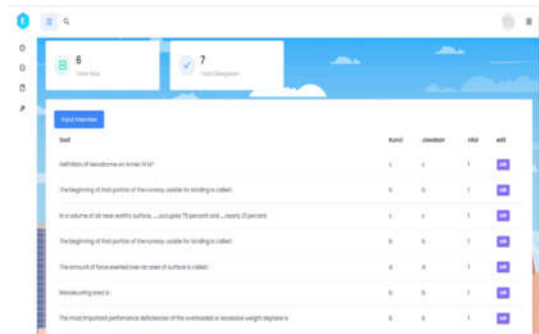
Module Design for the preparation of [3] the Aviation Communication Personnel Rating extension extension at Perum LPPNPI Balikpapan Branch.

3. Result and Discussion

Based on the results of the research above, to solve the problem of implementing the Aviation Communications Personnel Rating Examination, the authors provide a solution to this problem, namely by creating a Question Bank and a website-based E-Module that is used for socialization of Performance Check En-Route Flight Information (EFI) to facilitate Aeronautical Communication Officer (ACO) Checker and makes it easier for the Aeronautical Communication Officer (ACO) to review exam material by studying the E-Module which can be accessed on the website. In addition, the question bank that is created already has answers so that the checker can choose questions based on existing question categories, with With the Question Bank, each user gets different questions because the theoretical exam is based on a computerized based test (CBT). The implementation of the E-Module contains material which includes the E-Module, Dissemination of Material, Implementation of Theory Exams and Practical Examinations. The website was implemented in Balikpapan for the implementation of the rating extension exam, then the website is equipped with a question update feature so that if there is a question update later, the Aeronautical Communication Officer (ACO) Checker can input new questions into the website.

4. CONCLUSION

Based on the results of the website design that has been done, several conclusions can be drawn as follows:

1. In this study, a website-based E-Module design was produced which was used as a preparation for the Rating Examination which produced a product in the form of a website that could be used for the Socialization of Performance Checks and could be used for the preparation of the Aviation Communications Personnel Rating Exam.
2. The design of the Website-based Extended Rating Exam Preparation E-Module can be applied to make it easier to understand the material before carrying out theoretical and practical exams and to help ACO to prepare by studying the material through the E-Module.
3. On this website ACO Checker can update exam questions or add exam questions to the Question Bank by accessing the Add Question menu on the Question Bank.

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