

**CODE-SWITCHING APPLIED BY AIR TRAFFIC  
CONTROLLER DURING OPERATION IN MAKASSAR AIR  
TRAFFIC SERVICE CENTER**

***PENERAPAN ALIH KODE OLEH PEMANDU LALU LINTAS  
UDARA SELAMA OPERASI DI PUSAT PELAYANAN LALU  
LINTAS UDARA MAKASSAR***

**THESIS**

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**ENGLISH LANGUAGE STUDIES  
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**A THESIS**  
**CODE-SWITCHING APPLIED BY AIR TRAFFIC CONTROLLER**  
**DURING OPERATION IN MAKASSAR AIR TRAFFIC SERVICE**  
**CENTER**

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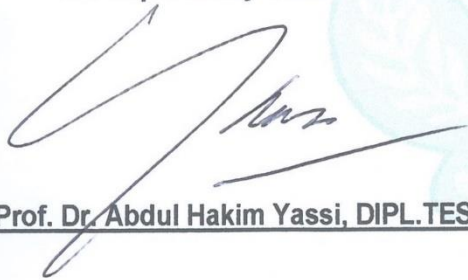
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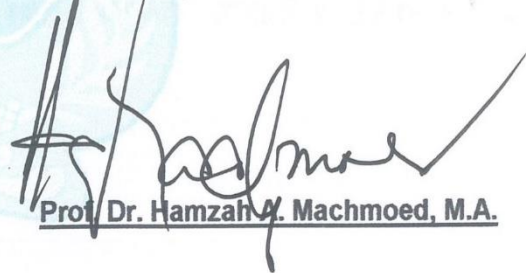
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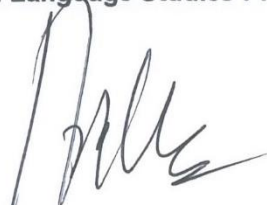
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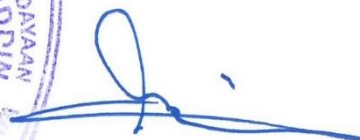
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States truthfully that this thesis was the result of my own work, and it is not the work of others. If it is proven later that either some or entire part of this thesis is the work of others, I am willing to accept any sanctions for my dishonesty.

Makassar, December 7<sup>th</sup> 2020



**MUHAMMAD DZIKRA YAZA PRATAMA**

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**Makassar, December 7<sup>th</sup> 2020**

**Muhammad Dzikra Yaza Pratama**

## ABSTRACT

**MUHAMMAD DZIKRA YAZA PRATAMA. 2020.** Code-Switching applied by Air Traffic Controller during operation in Makassar Air Traffic Service Center (Supervised by Abdul Hakim Yassi and Hamzah A. Machmoed).

This research is aimed to analyze how often code switching occurs in communication between Air Traffic Controller units while providing navigation services. This research was also aimed to find out word classes are used most frequently to switched, types of code switching, reasons and functions of application code switching in air navigation services communications. Ground to ground communications that occurs amongst ATC related units was one of the tasks performed by them in the interest of aviation safety.

This research is use mixed method design, consist of qualitative and quantitative method. Data were collected from MATSC's voice recording facility and interviews with ten populations of active air traffic controllers and another twenty four controllers as a respondent questionnaire and gathered it in a certain formula chart to get percentage value.

The research had found that code switching phenomenon occur in communications between ATC units is unconsciously has a positive impact on safety concern, especially to achieve the purpose of exchanging messages. In this research several words of classes were also found, which were often to switched to achieve conversation goals. Intraclausal, Intraphrasal, and Intralexical is the most dominant type of code switching occurred by ATC's in communicating with other ATC units.

***Keywords: Air Traffic Controller, Air Navigation, Code-Switching, Ground to Ground communications***

## ABSTRAK

**MUHAMMAD DZIKRA YAZA PRATAMA. 2020.** Penerapan alih bahasa oleh Pemandu Lalu Lintas Udara selama operasional di Pusat Pelayanan Lalu Lintas Udara Makassar (Dibimbing oleh Abdul Hakim Yassi dan Hamzah A. Machmoed).

Penelitian ini bertujuan untuk menganalisa seberapa sering alih bahasa dilakukan dalam komunikasi antar unit Pemandu Lalu Lintas Udara ketika sedang memberikan pelayanan navigasi. Penelitian ini juga bertujuan untuk mencari tahu kelas kata apa yang paling sering dialihkan, tipe alih bahasa, alasan dan fungsi dari penggunaan alih bahasa dalam komunikasi pelayanan navigasi udara. Komunikasi dari darat ke darat yang terjadi antara unit ATC terkait adalah salah satu tugas yang dilakukan oleh mereka demi kepentingan keselamatan penerbangan.

Penelitian ini menggunakan pola metode campuran, yang terdiri dari kualitatif dan kuantitatif data. Data dikumpulkan dari fasilitas rekaman suara MATSC dan wawancara terhadap populasi sepuluh pemandu lalu lintas udara aktif dan dua puluh empat pemandu lainnya sebagai responden dalam kuisisioner dan dikumpulkan di dalam grafik tertentu untuk mendapatkan nilai persentasinya.

Penelitian ini telah menemukan bahwa fenomena terjadinya alih bahasa pada komunikasi antar unit ATC ialah secara tidak sadar telah memberikan dampak positif dalam kepentingan keselamatan, khususnya dalam pencapaian tujuan dari pertukaran pesan. Dalam penelitian ini ada beberapa kelas kata yang juga ditemukan, yang dimana sering di alihkan untuk mencapai tujuan percakapan. Intraklausal, intraprasal, dan intraleksikal merupakan tipe alih bahasa yang paling sering digunakan oleh ATC dalam berkomunikasi dengan unit lainnya.

***Kata kunci: Pemandu Lalu Lintas Udara, Navigasi udara, Alih Kode, komunikasi dari darat ke darat.***

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**LIST OF ABBREVIATION**

ACC	Area Control Center
ATS	Air Traffic Service
ATC	Air Traffic Controller
ADC	Aerodrome Control Tower
APP	Approach Control Office
CS	Code Switching
DGCA	Directorate General of Civil Aviation
ESP	English For Specific Purpose
FIR	Flight Information Region
FSO	Flight Service Officer
ICAO	International Civil Aviation Organization
IELP	ICAO English Language Proficiency
MATSC	Makassar Air Traffic Service Center
UAMN	Upper Ambon
UBLI	Upper Bali
UBPN	Upper Balikpapan
UMNO	Upper Manado
UMKS	Upper Makassar
UNSA	Upper Nusa Tenggara
UPUA	Upper Papua
UPKN	Upper Pangkalan Bun
USBY	Upper Surabaya

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# **CHAPTER I**

## **INTRODUCTION**

This chapter presents general information about the study. It consists of the subchapters are as follows: (A) Background of the research, (B) Research Focus (C) Research Questions, (D) The Objectives of the research, and (E) The Significant of the research.

### **A. Background of the research**

A language is a system of communicating with other people using sounds, symbols, and words in expressing a meaning, idea, or thought. We may often hear bilingual people switch their language into another language. This language can be used in many forms, primarily through oral and written communications, as well as using expressions through body language. Language is one of the communication tools used by humans to communicate or express ideas, thoughts, feelings, emotions, and others. In various communities in the world, there are some people who could use more than one language. Such events are known as bilingual or multilingual.

Code-switching means the use of two or more languages within the same utterance or conversation. Switching may occur between speaker turns, between utterances in a single turn, or within a single utterance or sentence. Code-switching speech is an utterance containing two or more

languages. Usually, the linguistic switching unit is in word, clause, and sentence levels.

Code-switching is a part of sociolinguistics. Sociolinguistics is a linguistic sub-discipline that studies language in terms of its use in society, place of use of language, grammar, various levels of contact between two languages or more, and the variety and timing of the use of different languages.

In the world of aviation, the language used is English. Where in the operational work of Air Traffic Controller (ATC) mostly uses the word order method or commonly called Phraseology or in linguistics, we call it English For Specific Purpose (ESP), which has been compiled and established as standard communication by International Civil Aviation Organization (ICAO). All the phraseologies are listed in Document 9432 (Manual of Radiotelephony), Document 4444 (Air Traffic Management), and Annex 10 (Aeronautical Communication).

In this research, the subject is an ATC, which is at the position of Assistant Executive Controller or “planner,” wherein carrying out their duty is more focused on coordination process to adjacent related units under Area Control Center jurisdiction. Where adjacent units were mostly is in scope, national or domestic, and the rest is from abroad bordered with Indonesia. And a focus here is only adjacent domestic units. From the early observation, the researcher has figured out there were 50 percent above code-switching occurs from total turns during operational in peak



hours of Air Traffic Services among adjacent units. This has become the main reason the researcher took this topic for his research. The switch that occurred is from English to Indonesian, which is English as host language and Indonesian as guest language.

Based on a glance explanation above regarding code-switching, therefore the researcher takes the title based on knowledge of the world of aviation in general and the subject of ATC work in particular; in the field or practice, code-switching is a common thing to happen while doing coordination's and conversations with the adjacent unit of Air Traffic Services. However, there is no in-depth study of this matter yet.

English language is more suitable than other languages to become the foundation of the standard phraseology, one of the reasons is because English speakers are spreading a lot more around the world compared with other language and has been valid internationally, the ICAO made a conscious decision after the Second World War. It became an international language of aviation when pilots and controllers spoke different languages (Crystal 1997). Thus, it was fulfilled the role of the 'lingua franca' which means a language used for communication between speakers of different languages of aviation. According to Jennifer Jenkins' book *World Englishes* (2009), 'English as a Lingua Franca' (ELF) is used as a contact language among speakers of different language speakers. A 'phraseology' is constructed for the specific purpose of air traffic communication, thus regarded as *English for Special Purposes* (Hyland 2002).

## **B. Research Focus**

This research studied ground-ground communication that occurs among air traffic controllers while providing their services. Code-switching that occurs and is done by Air Traffic Controller (ATC) in Makassar Air Traffic Services Centre with local or domestic adjacent ATC units at airports in Indonesia. The switch between English to Indonesia and Indonesia to English in phrase or statement be the focus of this research.

## **C. Research Question**

This research focuses on the phenomenon of code-switching that occurs in communication between the Air Traffic Controller (ATC) in Makassar Air Traffic Service Centre (MATSC) with Air Traffic Controller (ATC) adjacent at other airports in the coordination and communications process that is being established in the interest of flight safety, to answer this following question:

1. What type of word class is the most dominant to switch when communication occurs between ATC's MATSC and ATC Adjacent?
2. What types of code-switching is dominantly used in communication between ATC MATSC and ATC Adjacent?
3. How significant is the role of code-switching that occurs when communication is established between ATC MATSC and ATC Adjacent?
4. What is the reason of using code-switching by ATC?
5. What is the function of using code-switching by ATC?

#### **D. The Objectives of the Research**

By doing this research, it is expected that this research be able to:

1. To find out the word classes used for code-switching based on their use in the conversation between ATC's.
2. To find out and gather the conversations between ATC's in which code-switching occurs and formulating the conversation into what type of code-switching it is.
3. To find out the role of code-switching that occurs in the intended communication between ATC's and find out how big the role of code-switching in it.
4. To find out the reasons for the use of code-switching by ATC's.
5. To find out the functions of code switching for ATC's.

#### **E. The Significance of the Research**

Hopefully, this research contributes to the study linguistics in Indonesian aviation, especially for:

1. English students at English Language and Literature Program, Department of English Language Education, Indonesia Hasanuddin University, especially, and for linguistics students to further be able to deepen the science of linguistics that occurs in the world of International Aviation.
2. Air Traffic Controller is the most affected in this research. The ATC's will more understanding the linguistic value of the language

used during work, especially in the English language or in phraseology.

3. English aviation training provider, as a policy holder to train and test the English Language Proficiency skills of each ATC, this service provider will also benefit from being able to add theoretical material on aviation linguistics, and it is hoped that there will be further developed in terms of air navigation service provider.
4. In theory, this research can be used by the other or next researcher as a research reference on linguistics research especially in the interest of aviation world.

## **CHAPTER II**

### **REVIEW OF LITERATURE**

This chapter consists of several subchapters which are going to be explained. Those subchapters are as follows: (A) Previous studies, (B) Linguistic theories.

#### **A. Previous Studies**

The researcher has collected and gathered several studies results from previous studies that are quite related and have something to do with this research that will be carried out later, where the research is enough to provide an in-depth look at new perspectives relating to this research. Provided below are previous studies which have been conducted by some researcher as Paneeta Nitayaphorn with the title "Messages from the Sky: Radiotelephony in Air-Ground Communication," Walter Seiler with the title "Linguistics in Aviation," Ken Hyland with his title "English for Specific Purposes," Anna P. Borowska with "A Multilingual Speaker in Global Aviation Communication," and the latest research related to this study is from a journal written by Abdolaziz Rasouli and Shahla Simin with the title "Teachers and student's perceptions of code-switching in aviation language learning courses."

##### **1. Paneeta Nitayaphorn**

Messages from the Sky: Radiotelephony in Air-Ground Communication is her work research in 2013, which is where she focused discuss Air-

Ground Communication as a unique conversational discourse via specific technological equipment engaged by pilots and air traffic controllers. She also mentions in her studies that effective communication must be established between pilots, cabin crew, Air Traffic Controllers, Operator technicians, and ground staff, where communication between them there must be an agreement of the same understanding and relevant to the interests of operating procedures.

Unfortunately, in a study conducted by Paneta Nitayaphorn, researchers did not find a focused and in-depth discussion of Ground to Ground communications conducted between ATC and other ATCs at other airports that were closely related to flight operations. Therefore, the study that the researcher done can refine or add research and fill the gap that has been done by Paneeta so that research was more complex, which not only discusses Ground to Air Communication between ATC - Pilots but also Ground - Ground communication carried out by ATC - ATC, especially in this study ATC MATSC with adjacent ATC.

## **2. Walter Seiler**

Linguistics in Aviation is the title of a journal he composed in 2017, where he discusses in more depth how important the use of English as a plain language is done in-flight communication, especially those that occur between ATC and Pilots. He also discussed several cases of fatal aircraft accidents that occurred due to confusion of understanding in the communication established, thus requiring international aviation organizations or ICAO to compose a standard aviation language called

Phraseology or in linguistics called English for Specific Purposes and create international standards that must be obeyed by all ATCs and Pilots throughout the world through ICAO (International Civil Aviation Organization) English Language Proficiency (IELP). His research also discusses the demands of ICAO on ATC and Pilots in terms of general understanding of English, where the ability of each person must pass according to international standards made based on:

- a. Vocabulary,
- b. Structure,
- c. Fluency,
- d. Comprehension, and
- e. Interaction.

Like previous research, in his study, he did not specifically discuss the communication that exists between ATC – ATC and the risks that can be created if it is ambiguous in conversation.

### **3. Ken Hyland**

English for Specific Purposes or ESP is the title of a journal by Ken in 2007; understanding ESP was expressed in his study in the introduction part, language research and teaching section focus on specific communication needs and specific social practices group. He also explained about some influences and impact of the use of ESP profession or occupational groups. In his study, he did not explain in detail what professions could or should use ESP in carrying them out their duties.

In a part of his journal is about some influences on ESP, he explained about strong links between ESP and pragmatics, communicative language teaching, corporate communications, writing across the curriculum, rhetoric, critical literacy, socio-cognitive theory, and the sociology of scientific knowledge.

However, in his research, Ken Hyland did not describe separately what professional profession or communities could or should use ESP so that in this study, the researcher would only link that the aviation world was also very related to ESP and also needed to be intertwined in communication between ATCs, not just conversations that occur between ATC – Pilot.

#### **4. Anna P. Borowska**

In her studies, she has described the phenomenon of aviation communication that occurs globally in terms of multilingual use of code-switching in her journal in 2018. She also explained the threats that can occur if there are two or more languages used in communication or in the same frequency of radio communication that can cause differences in understanding.

On the other hand, she explained in detail the importance of understanding the use of phraseology in English in the world of aviation, especially communication that exists between pilots and ATC. In many cases of aviation accidents, she collected, there was a huge influence on the use of two different languages in communicating with fellow flight support personnel because operating personnel felt more comfortable in



using mother tongue ex, Spanish combined with English or other local languages with English.

However, in the journal she wrote only covers the danger or threat of multi-language use that occurs in communication between pilots and between ATC - pilots, while what the researchers discussed in this research is the use of multi-language or Code Switching that occurs between ATC and other ATC Adjacent unit while carrying out their duties to support air traffic services. It is quite important to discuss, considering this phenomenon is often and commonly occurs in the field.

##### **5. Abdolaziz Rasouli and Shahla Simin**

Teachers and student's perceptions of code switching in aviation language learning courses is the tittle that he wrote in 2015. The relation between this research with the research that researchers done do is that their research highlights the benefits of using code switching during aviation language courses, where teachers use a lot of code-switching when teaching and learning activities are running that they find difficult for some students to understand if using full English rather than using a mixture of Persian languages - English, they agreed that the course material that was delivered specifically about the language of aviation is phraseology.

But the use of code-switching remains within reasonable limits, in the sense that its application is only now to suppress the understanding of students or interaction from students to teachers. On the other hand, their

research also alludes to the use of code-switching to maximize the level of understanding of aviation language learning.

As explained above, the study only discusses the application of code-switching that occurs between teachers and students in aviation language courses. While the research that researchers done is the development or influence of the application of code-switching in that courses class to naturally influence and sustainably work in the real world of the aviation profession, especially Air Traffic Controller and Pilot.

## **B. Linguistic Theories**

Discussing or examining the application of code-switching that occurs in Ground to Ground communication carried out between ATCs, led us to several linguistic theories related to this research, specifically those related to code-switching and other descriptions, as follow:

### **1. Types of Code-switching**

Code-switching is a linguistic phenomenon that occurs in multilingual speech communities. The term describes the process in which a communicatively competent multilingual speaker alternates or usually switches between two languages or more language varieties or codes during the same conversation.

According to Poplack, S (1980) and quoted in the book "Code-Switching as Communication Strategy" by Yassi (2016), there are six types of code-switching, namely as follow:

- a. Intrasentential Switching, this switching within a clause or sentence boundary, for example: “Sepertinya hampir malam, BETTER saya mandi di BATHTUB dulu ya” (“it is almost dark, better I took a bath on the bathtub”). These statements contain Intrasentential switching because the speaker inserts two English words, “better” and “bathtub.”
- b. Intersentential Switching this switching involves a switch at a clause or sentence boundary, where each clause or sentence is in one language to another, for example: “Tolong ambilkan handuk saya, I FEEL HOT AND NEED A SHOWER” (“Please go get my towel, I fell hot and need a shower”). The first sentence is an utterance in Bahasa Indonesia, and the second sentence is in English or can also be made vice versa.
- c. Tag Switching, this switching involves the insertion of tag in one language into an utterance which is otherwise entirely in the other language, such as insert English interjection/exclamation, for example, “OH, MAN! saya lupa membawa uang, bagaimana ini?” (“Oh, Man! I forgot to bring the money, how is this?”).
- d. Intraclausal, the switch within a clause boundary, for example, “PT. Telkom Indonesia telah lama menjadi MARKET LEADER pada bidang komunikasi” (“PT. Telkom has long been a market leader in the communication sector”).
- e. Intraphrasal, the switch within a phrase boundary, for example, “Berdasarkan data, HUMAN RESOURCES di Indonesia tidak sebanding dengan SKILL yang dibutuhkan oleh lapangan kerja”

(“According to the data, human resources in Indonesia are not equal to the capabilities in the workplace”).

- f. Intralexical, the switch within a word boundary, for example, “Dengan dana yang tersedia kita akan MENSUPPORT setiap EVENT pada akhir tahun”. (“With the funds available we will support every event at the end of the year”)

In this research, there are a lot of code-switching occurred by Air Traffic Controller in term of English to Indonesian. The process of conversation among related ATCs, where communication or the main language used is mostly English in the form of phraseology or aviation English.

## 2. Word Classes

Word classes are a group of words that exist in a language. The class division of words is distinguished by several categories, such as word forms, functions, and meanings in the grammar system that applies in the language. Below are a word classes and examples in linguistics.

- a. Verbs : a word that describes what a person or thing does, such as run, hit, run, be, become, grow, etc.
- b. Nouns : a word that identifies a person, place, thing, idea, or quality, such as women, dog, building, USA, truth, birth, etc.
- c. Adjectives: a word that describes a noun, such as red, bad, giant, hairy, shy, etc.

- d. Adverbs : a word that gives more information about a verb adjective or another adverb, such as: lazily, easily, abroad, very, etc.
- e. Prepositions : a word that describes the position of something, the time it happened, or the way it is done, such as: under, between, on, after, by, etc.
- f. Conjunctions : a word that connects phrases or sentences, such as: and, because, but, for, or, etc.
- g. Determiners : a word that introduces a noun, such as an, a, every, this, those, the.
- h. Pronouns : a word that is used in place of a noun that is a specific person or thing, such as she, him, mine, we, he, I, us, me.

### **3. Phraseology**

Aguado de Cea (2007) stated that phraseology is the linguistic discipline that deals with the combination of words or the set of phraseological units or phrasemes of a certain specialized language. It means that phraseology defines as a group of phrases that combine word to word in building one meaning and become a new certain phrase. In contrast, Sinclair (1991) and Partington (2004) commented that phraseology had become a significant area of interest in corpus linguistics.

Based on some theories, phraseology can be commonly concluded that phraseology is a group of words that build a new meaning, and it can be called as a phrase. In other words, phraseology means words and phrases as they are used in speech or writing to convey a specific meaning. In line with the aviation field, phraseology becomes the main

language in communications between Air Traffic Controllers (ATC) and pilots, and it uses English as the natural language in phraseology itself. In Document 4444 of the International Civil Aviation Organization, there are six types of phraseology used by ATC:

- a. General Phraseology (GP) used in general situations, wherever the operations of flight were running.
- b. Aerodrome Control Phraseology (Aero CP) is used in the airport surroundings.
- c. Approach Control Phraseology (App CP) is used when flight operation is closer to the airport area. It is expected to use a navigation system such as ILS (Instrument Landing System), VOR (Very high Omni Range), and NDB (Non-Directional Beacon) to getting closer even leaving out the airport
- d. Area Control Phraseology (Area CP), which is used in the area that the aircraft has been close or reached a certain position in airspace (cruising level). It is commonly more than 25000 ft. which is called flight level 250, shortened as FL 250.
- e. Radar Control Phraseology (RCP) which used by using radar. This radar assists the controllers in getting down the aircraft for landing, avoiding an accident, and in the right way. The tools are used in Area Control Center (ACC) and Approach Control Office (APP). Most airports around the world use this facility and commonly international airport.
- f. Coordination Phraseology is used by ground to the ground station to coordinate the responsibility of air traffic controllers from one unit to

another. For example, is coordination among ACC and APP, APP, and ADC (Aerodrome Control Tower), ACC ad FSO (Flight Service Officer).

#### 4. Conceptual Framework

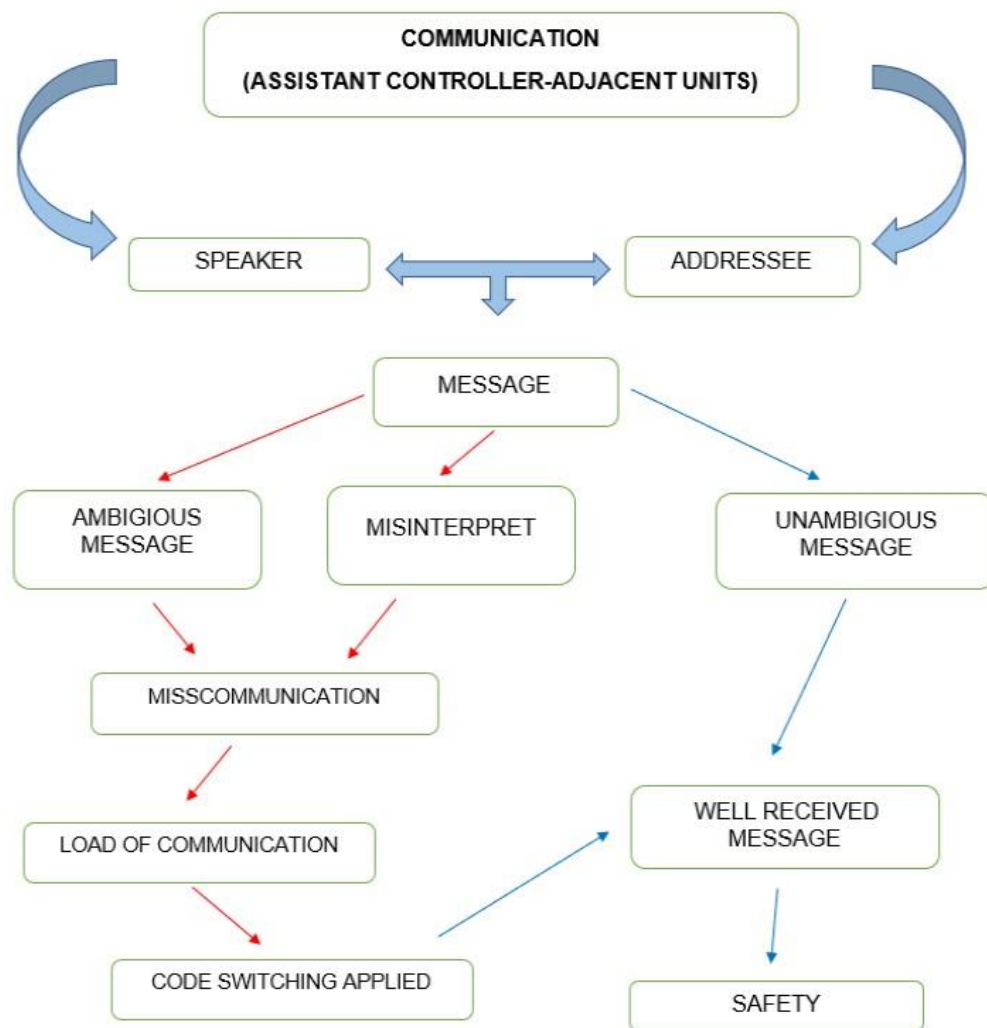


Figure 1. Conceptual Framework

Based on the theories above, the researcher has created a model of conceptual framework in communication among assistant

controllers with adjacent units during operation of Air Traffic Service, as seen in figure 1. This conceptual framework is used to understand the flow of communication that occurred among them and to identify in which part or phase of possibility problematic that would have an adverse effect on communication in general and coordination between ATC especially.

This conceptual framework shows that there are two different arrow colors; there is a red and blue arrow to represent the way flow of communication that occurs by speaker and addressee. In this research assistant controller as a speaker and adjacent units as an addressee. When the message was sent by the speaker, there were two possibilities of receiving condition by the addressee; there is an ambiguous message or misinterpret and unambiguous message. When the content of the message is ambiguous to understand by the addressee, it is going to create misinterpretation as well. A load of miscommunication between them will occur and takes more time than usual to communicate; following by the red arrow; code-switching might be applied by the assistant controller in the hope that the message would be well received and the safety in communication will occur.

Unlike ambiguous message, if an unambiguous message received very well by the addressee, there is no code-switching required and the assistant controller totally using English phraseology or aviation English than can create duration of communication between those two units are shorter and efficient, and finally, safety in aviation can occur very well.