

Project Title Goes Here



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March 16, 2024

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March 16, 2024

Name Surname

Date

Acknowledgements

No man is an island entire of itself; every man is a piece of the continent,
a part of the main.

—*John Donne*

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Abstract

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Contents

List of Figures	vi
Abbreviations	vii
1 Introduction	1
1.1 Background	1
1.1.1 Problem Statment	1
1.2 Objectives	1
1.3 System Requirements	1
1.4 Scope & Limitations	1
1.5 Report Outline	1
2 Literature Review	2
2.1 Data Transmission and User Interface	2
3 Conclusions	4
4 Recommendations	5
Bibliography	6

List of Figures

2.1 Overall Performance of each Protocol 2

Abbreviations

Chapter 1

Introduction

Philosophers have hitherto only interpreted the world in various ways;
the point is to change it.

—*Karl Marx*

1.1 Background

1.1.1 Problem Statment

Sally, a researcher at the FitzPatrick Institute, needs a way to weigh the red-winged starlings without scaring them because interestingly they record their weight manually.

1.2 Objectives

1.3 System Requirements

1.4 Scope & Limitations

1.5 Report Outline

Chapter 2

Literature Review

If you wish to make an apple pie from scratch, you must first invent the universe.

—*Carl Sagan*

2.1 Data Transmission and User Interface

The client requires the weight data to be retrieved remotely. We need to figure out two things: where do we want the data to be sent, and how do we want it to be sent. This section investigates different options for transmitting data from a microprocessor. In a comparative performance study by Eridani et al., three protocols were compared: Bluetooth, Wi-Fi direct, and ESP-NOW (‘a new protocol that allows multiple devices to communicate with each other without the use of Wi-Fi, with low power consumption’ [1]). 5 metrics were used in the tests: maximum range, transmission speed, latency, power usage, and signal resistance to obstructions [1]. A brief summary of the performance of each protocol is shown below in Figure 2.1.

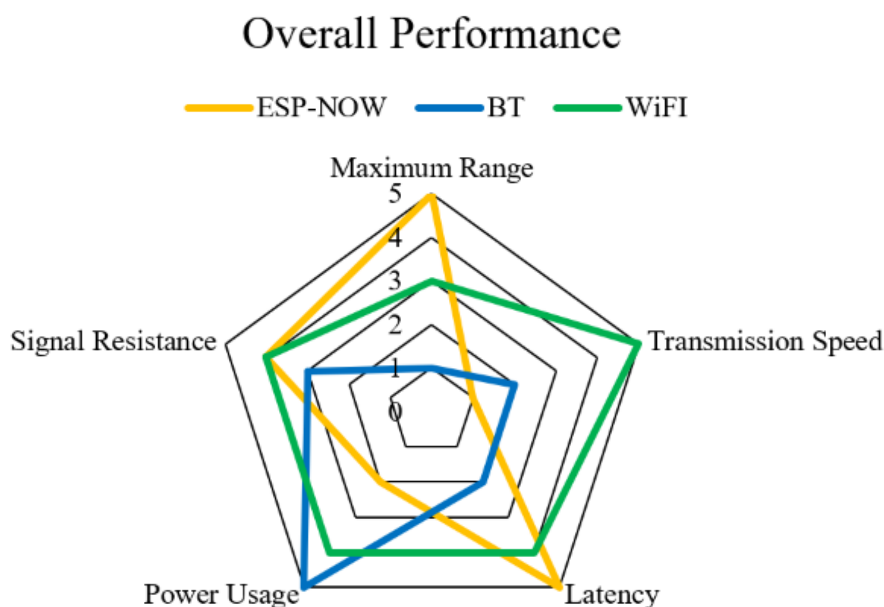


Figure 2.1: Overall Performance of each Protocol

ESP-NOW performs best in range and latency. Bluetooth in power usage. And Wi-Fi in transmission

speed. In our context, power usage would be most important. Bluetooth seems to provide sufficient range and speed. In addition, Bluetooth is easier to setup than Wi-Fi [2]. In the context of capturing weight data of birds, there is not a large amount of data being captured; therefore, high data transfer speed is not needed. In light of this, Bluetooth was further investigated.

Chapter 3

Conclusions

The same rule holds for us now, of course: we choose our next world through what we learn in this one. Learn nothing, and the next world is the same as this one.

—*Richard Bach, Jonathan Livingston Seagull*

The purpose of this project was to...

This report began with...

The literature review was followed in Chapter...

The bulk of the work for this project followed next, in Chapter...

In Chapter...

Finally, Chapter... attempted to...

In summary, the project achieved the goals that were set out, by designing and demonstrating...

Chapter 4

Recommendations

It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced.

—*Abraham Lincoln*

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Bibliography

- [1] D. Eridani, A. F. Rochim, and F. N. Cesara, “Comparative performance study of esp-now, wi-fi, bluetooth protocols based on range, transmission speed, latency, energy usage and barrier resistance,” in *2021 International Seminar on Application for Technology of Information and Communication (iSemantic)*, 2021, pp. 322–328.
- [2] G. Khadse and N. Adhav, “‘comparative study of data transfers using wi-fi modules’,” *International Journal of Engineering and Technical Research (IJETR)*, 2016.