

ACKNOWLEDGE

This thesis represents the culmination of my journey as a student of the Master's Program in Telecommunication Electrical Engineering. Throughout the writing of this thesis and my studies, I have faced many challenges and obstacles. However, with the help, guidance, and support from numerous individuals, I have been able to overcome them all. Therefore, I would like to extend my deepest gratitude to the following:

1. **Allah S.W.T.**, for all the blessings bestowed upon all living beings in this world.
2. **Prophet Muhammad S.A.W.**, for providing the ultimate guidance for life through the magnificent miracles of the Qur'an and Hadith.
3. **Lydia Martasuta, S.H., Sp1.**, my beloved mother, for her unwavering love, care, and patience in raising me from childhood until now.
4. **Angga Qodri Prawira, S.Ab.**, my brother, for his constant encouragement and support throughout my journey.
5. **Sandy Martasuta, S.E.**, my aunt, for her unwavering support and kindness during my studies.
6. **IS-IoT Squad**, for their companionship and shared perseverance in completing this thesis.
7. **Prof. Aloysius Adya Pramudita**, my first supervisor and my mentor, for his invaluable advice and continuous support, not only in my academic journey but also in much bigger picture.
8. **Assoc. Prof. Bambang Setia N, S.T., M.T.**, my second supervisor, for his enthusiasm and dedicated guidance.

9. **Dr. Koredianto Usman, S.T., M.Sc.**, my academic advisor, for his constant guidance in addressing my academic challenges.
10. **Dr. Leanna Vidya Y, S.T., M.T.**, Head of the Telecommunication Electrical Engineering Program, for her excellent leadership.
11. **All the member of the University Center of Excellence for Intelligent Sensing IoT and lecturer from Telecommunication Electrical Engineering Program at Telkom University**, for sharing their valuable knowledge with me and other students.
12. **Susibiyanto Prasetya, M.T. and Lukman Hakim, A.Md. Kom.**, my partner, for our discussion throughout the progress of this thesis.
13. **Fildha Ridhia, M.T., Queen Hesti Ramadhamy, M.T., and Wahyu Primadia Kusumaningrum, S.T.**, my mentor, for providing direction and support throughout this thesis.
14. **Adam Monhardi and Dini Fitria**, as drone experts, for your help in collecting data using drones.
15. **Farahani Kurnianisa A.Md. Farm.**, for his continuous encouragement, help, and laughter.
16. **Kindow Squad especially Yosaputra Akbar Ibrahim**, my friends, for always being there and for all the unforgettable moments and challenges we have shared.
17. **Insthing**, for providing a platform where I gained numerous lessons and experiences.
18. **All the staff of Telkom University**, for their excellent service to the students.
19. **All my friends and colleagues**, whom I cannot mention individually, for the positive impact they have had on my life.

These acknowledgements are just a small token of my appreciation for the extraordinary contributions and support I have received. I also wish to apologize for any mistakes I may have made, intentional or otherwise, and for any kindness I have yet to repay. May success follow all those who have been a part of this journey.

Bandung, 17 September 2024

Aldi Rivaldi Dwinanda

2101221050