## **GRATITUDE NOTE**

The author would like to express deepest gratitude to all those who have helped during the thesis process, either directly or secondarily.

- **1.** Allah SWT, for his love, guidance, and permission to write this thesis and to the Prophet Muhammad SAW as an example for his ummah who always inspires writers to always try sincerely and surrender to Allah SWT.
- 2 To both parents, My father Muhtadi and My mother Sriati who al- ways prayed provided support reminded us to keep submitting to Allah SWT, and dear lovely brother Fitra Dwi Cahyo who always gave prayers and encouragement.
- **3** Family (Aunt Ani, Aunt Ana, Uncle Ian, Uncle Adi, Brother Raffi, Sister Ara, Brother Sahmi, Sister Salwa) and all families who have provided prayer support, as well as motivation.
- 4 To Ir. Ahmad Tri Hanuranto, M.T. as mentor and Sevierda Raniprima, S.T., M.T. as the supervisor who always provides assistance, suggestions, and supports so that this thesis can be done well.
- **5** To Dr. Ir. Rendy Munadi, M.T. as the first examiner and Mr. Fardan as the second examiner, who has approved the au- thor's for pass the exam, provides support, give references, and helps improve the quality of this thesis.
- **6** To Raditiana Pramatasari S.T., M.T., as the guardian of the TT-41-INT class lecturer who always accompanied him during his studies at Telkom University.
- 7. To Arif Indra Irawan S.T., M.T., as the person in charge of the International Class of Telecommunication Engineering, for their guidance and assistance during their studies at Telkom University. Honorable designation for a lecturer who taught author while studying at Telkom University, especially lecturers who have taught classes TT-41-INT.
- 8 Best friends, especially Tiara Safitri and A.Annisa Chika P., a teammate to work on this thesis. Companions in arms (Deriel Laska Lubna, Mike, Utap, Oik, Icha, Ervina, Riska, Tegar, Nona, Nopal, Ivan, Holy, Jeremy, Fadel,

Raka, Vares, Aqila, Ahmad, Kiki, Yosa, Arya, Mimih, Ami, Ibu Dian, Abang Per, Khaliz, Ruly) and TT-41-INT classmates who have fought together for 3.5 years through all obstacles.

**♀** Last but not least, I wanna thank me, I wanna thank me for believing in me, I wanna thank me for doing all this hard work, I wanna thank me for having no days off, I wanna thank me for never quitting, for just being me at all times.