

PREFACE

Praise be to Allah SWT for His grace and blessings, which have enabled the author to complete this thesis entitled "On the Design of Practical Quantum-Based Security for RAN Fronthaul in 6G", submitted in partial fulfillment of the requirements for obtaining a Master's degree in Electrical Engineering. May prayers and peace always be upon the Prophet Muhammad SAW, his family, companions, and followers. Aamiin.

As the telecommunications industry advances toward the sixth generation (6G) of mobile networks, ensuring robust and future-proof security mechanisms becomes increasingly critical. This thesis explores Quantum Key Distribution (QKD) as a practical solution for enhancing the security of 6G Radio Access Network (RAN) fronthaul systems. The study analyzes international standards and proposes models tailored for the Indonesian context.

The author acknowledges that this work is an early step into a complex and evolving field. Feedback, constructive criticism, and suggestions are warmly welcomed to improve this work. May this thesis provide useful insights for researchers, practitioners, and anyone interested in quantum-secured next-generation communication systems.

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