PREFACE

Praise be to Allah SWT for His grace and guidance, which have enabled the author to complete this thesis entitled ”Design and Simulation of VPN-Based Private Network with QoS Monitoring, Regulatory Compliance, and Economic Feasibility Analysis in Government WAN Infrastructure”. This thesis is submitted as a part of the requirements for obtaining a Master’s degree in Electrical Engineering. May peace and blessings always be upon the Prophet Muhammad SAW, his family, companions, and all his followers. Aamiin.

The increasing need for secure, reliable, and efficient communication systems in public sector organizations has encouraged the author to explore Virtual Private Network (VPN) technology integrated with Quality of Service (QoS) management. This thesis aims to design and simulate a VPN-based private network for government Wide Area Network (WAN) infrastructure, with considerations not only on technical performance, but also on regulatory compliance and economic feasibility. It is expected that the outcomes of this research will contribute to the development of more robust and policy-aligned network solutions for digital transformation in government.

The author is aware that this thesis may still contain limitations and imperfections. Therefore, constructive suggestions and feedback from readers are sincerely appreciated for further improvement. Hopefully, this work can be useful and inspiring, especially for those who are interested in VPN-based networks and ICT infrastructure for public services.

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