

TABLE OF CONTENTS

APPROVAL PAGE	ii
SELF-DECLARATION AGAINST PLAGIARISM	iii
ABSTRACT	iv
PREFACE	v
ACKNOWLEDGMENT	vi
TABLE OF CONTENTS	vii
LIST OF FIGURES.....	x
LIST OF TABLES.....	xi
CHAPTER I INTRODUCTION	1
1.1 Background	1
1.2 Previous Researches.....	2
1.3 Problem Identification.....	3
1.4 Research Hypothesis	3
1.5 Research Objectives	4
1.6 Research Limitation	4
1.7 Research Method.....	5
1.8 Thesis Structure.....	6
CHAPTER II LITERATURE REVIEW	7
2.1 Satellite Communications Systems	7
2.2 Satellite Communications Frequency Spectrum	9
2.3 High-Throughput Satellite	10
2.3.1 GSO HTS: Satria-1	10
2.3.2 non-GSO HTS: Starlink	13
2.4 Satellite Network Planning	16
2.4.1 Coverage Approach.....	16

2.4.2 Capacity Approach.....	21
2.5 Satellite Economic Aspect.....	22
2.5.1 CAPEX-OPEX Analysis	22
2.5.2 OPEX Analysis	23
2.5.3 Total Cost	23
2.6 Regulation Identification.....	23
2.6.1 International Regulations	23
2.6.2 Indonesian Regulations	24
2.7 Benefit-to-Cost Analysis	25
CHAPTER III RESEARCH DESIGN	26
3.1 Research Flow	26
3.2 Research Design.....	27
3.3 Technical Analysis.....	28
3.3.1 Link Budget.....	29
3.3.2 Coverage Approach.....	31
3.3.3 Capacity Approach.....	31
3.4 Economic Analysis.....	31
3.4.1 CAPEX-OPEX Analysis	32
3.4.2 Total Cost Required.....	32
3.5 Regulatory Analysis	33
3.6 Benefit-to-Cost Analysis	34
CHAPTER IV ANALYSIS AND RESULTS.....	35
4.1 Technical Analysis.....	35
4.1.1 Link Budget Calculations.....	35
4.1.2 Coverage Approach.....	39
4.1.3 Capacity Approach.....	40

4.2 Economic Analysis.....	42
4.2.1 Scenario 1: Satria-1 only	42
4.2.2 Scenario 2: Satria-1 with Starlink	44
4.3 Regulatory Analysis	47
4.3.1 Scenario 1	47
4.3.2 Scenario 2.....	48
4.4 Benefit-to-Cost Analysis	48
4.5 Government Considerations.....	49
CHAPTER V REVIEW	51
5.1 Summary	51
5.2 Recommendations	52
REFERENCES.....	53
APPENDICES	59