

TABLE OF CONTENT

UNDERGRADUATE THESIS REPORT.....	i
APPROVAL PAGE.....	v
PREFACE.....	vi
TABLE OF CONTENT.....	viii
LIST OF FIGURES.....	3
LIST OF TABLES.....	4
ABSTRACT.....	5
INTISARI.....	6
CHAPTER I INTRODUCTION.....	7
I.1. Background.....	7
I.2. Problem Statement.....	8
I.3. Research Objectives.....	9
I.4. Research Questions.....	9
I.5. Scope of Research.....	10
I.6. Research Benefits.....	10
I.7. Literature Review.....	10
CHAPTER II THEORETICAL BACKGROUND.....	13
II.1. Baselines.....	13
II.2. Maritime Zones Under UNCLOS.....	15
II.3. Maritime Features.....	18
II.4. Legal Status of Maritime Features.....	20
II.5. Maritime Delimitation Methods.....	21
II.5.1. Equidistant Line/Median Line Method.....	21
II.5.2. Three-Stage Approach Method.....	23
II.6. Concept of Equitability in Maritime Delimitation.....	24
II.7. Voronoi Diagram.....	25
CHAPTER III RESEARCH METHOD.....	27
III.1. Location of Research.....	27
III.2. Materials and Equipment.....	27
III.2.1. Materials.....	27
III.2.2. Equipment.....	28
III.3. Flowchart.....	28
III.4. Research Stages.....	31
III.4.1. Preparation Phase.....	31
III.4.1.1. Literature Review.....	31
III.4.1.2. Data Acquisition.....	31
III.4.1.3. Equipment Preparation.....	32
III.4.2. Implementation Phase.....	32
III.4.2.1. Georeferencing.....	32

III.4.2.2. Plotting the Administrative Regions of Indonesia and Malaysia.....	34
III.4.2.3. Plotting the Basepoint and Creating the Baseline of Indonesia and Malaysia.....	35
III.4.2.4. Plotting the Agreed Upon Continental Shelf Boundary Points Between Indonesia and Malaysia.....	35
III.4.2.5. Transforming the Coordinate System into WGS 84 and Mercator Projection System.....	35
III.4.2.6. Visualizing the Maritime Border Rights and Claims as well as Potential Overlap Between Indonesia and Malaysia.....	35
III.4.2.7. Determining the Center Line Between Indonesia and Malaysia using Voronoi Diagram.....	36
III.4.2.8. Calculating Relevant Coastline and Relevant Area of the Exclusive Economic Zone for Indonesia and Malaysia.....	36
III.4.2.9. Result Analysis.....	37
III.4.2.10. Designing the Maps.....	37
CHAPTER IV RESULTS AND DISCUSSIONS.....	38
IV.1. Simulation and Analysis of the Potential Overlap between Indonesia and Malaysia's EEZ.....	38
IV.1.1. Historical Relationship Between Indonesia and Malaysia.....	38
IV.1.2. Overlap Simulation.....	41
IV.2. Delimitation Between Indonesia and Malaysia's EEZ Border.....	43
IV.2.1. Voronoi Diagram Orientation.....	43
IV.2.2. Maritime Delimitation Options.....	44
IV.2.3. Median Line Construction with Equidistance Line and Voronoi Diagram.....	47
IV.2.4. Relevant Factors and Disproportionality Test.....	50
IV.3. Analysis of the Maritime Delimitation Options.....	56
CHAPTER V CONCLUSIONS AND RECOMMENDATIONS.....	58
V.1. Conclusion.....	58
V.2. Recommendation.....	58
REFERENCES.....	60
APPENDIX A	
Map Results of EEZ Delimitation.....	63

LIST OF FIGURES

Figure II.1 Normal Baseline.....	13
Figure II.2 Straight Baseline.....	14
Figure II.3 Archipelagic Baseline.....	15
Figure II.4 Maritime Zone Illustration.....	16
Figure II.5 Islands and Low Tide Elevations.....	18
Figure II.6 Legal Effects on a Maritime Feature.....	20
Figure II.7 Construction of Equidistant Line between Opposing States.....	22
Figure II.8 Construction of Equidistant Line between Adjacent States.....	22
Figure II.9 Illustration of Voronoi Diagram in Maritime Delimitation.....	26
Figure III.1 Location of Research.....	27
Figure III.2 Research Flowchart.....	30
Figure III.3 GCP distribution for British Admiralty Chart.....	33
Figure III.4 Research Flowchart.....	34
Figure III.5. Illustration of Voronoi Diagram to Create Median Line.....	36
Figure IV. 1 Map of Indonesia and Malaysia's basepoints.....	40
Figure IV.2 EEZ Overlap between Indonesia and Malaysia's Normal Baseline.....	41
Figure IV.3 EEZ Overlap between Indonesia and Malaysia's Straight Baseline.....	42
Figure IV.4 Visualization of the Voronoi Diagram Orientation.....	43
Figure IV.5 Visualization of Option II.....	45
Figure IV.6 Visualization of Option III.....	45
Figure IV.7 Visualization of Option IV.....	46
Figure IV.8 EEZ Median Line Construction for Option II.....	47
Figure IV.9 EEZ Median Line Construction for Option III.....	48
Figure IV.10 EEZ Median Line Construction for Option IV.....	49
Figure IV.11 EEZ Relevant Coast and Area for Option I.....	50
Figure IV.12 EEZ Relevant Coast and Area for Option II.....	51
Figure IV.13 EEZ Relevant Coast and Area for Option III.....	52
Figure IV.14 EEZ Relevant Coast and Area for Option IV.....	53
Figure V.1 EEZ Delimitation for Option I.....	63
Figure V.2 EEZ Delimitation for Option II.....	63
Figure V.3 EEZ Delimitation for Option III.....	64
Figure V.4 EEZ Delimitation for Option IV.....	64
Figure V.5 EEZ Boundary Line Delimitation Result for All Options	65



UNIVERSITAS
GADJAH MADA

Delimitation of the Maritime Boundaries of the Indonesia-Malaysia Exclusive Economic Zone in the South China Sea by Considering the 2022 Malaysian Basepoints

DAVID CLEO GULTOM, I Made Andi Arsana, S.T., ME., Ph.D

Universitas Gadjah Mada, 2025 | Diunduh dari <http://etd.repository.ugm.ac.id/>

LIST OF TABLES

Table III.1. Result of Map Registration.....	34
Table IV.1 Overlap Results.....	42
Table IV.2 Relevant Coast.....	55
Table IV.3 Relevant Area.....	55