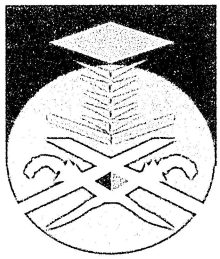

STUDY OF AERODYNAMICS ON THE ANALYSIS FOR BLENDED WING BODY (BWB) UNMANNED AERIAL VEHICLE (UAV) USING COMPUTATONAL FLUID DYNAMICS (CFD) FOR HIGH SUBSONIC FLOW

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"I declare that this thesis is the results of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree."

Signed: .....

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ABSTRACT

This thesis presents a study of Aerodynamic of a Blended Wing Body Unmanned Aircraft Vehicle (BWB UAV) within a UiTM project. A computational analysis is being carried out throughout the process through Computational Fluid Dynamics (CFD) software (FLUENT) which computed the steady, three-dimensional using the standard one-equation Spalart-Allmaras turbulence model. A comparison of meshing is being completed between the unrefined, refined, and adapted mesh sizes. The three-dimensional BWB Aerodynamic characteristics are validated using two-dimensional transonic airfoil at various angles of attack.

This thesis starts with literature overview then followed with mathematical model used in the analysis. Overview of Aerodynamics terminologies is presented in Chapter 3 and proceeds with the CFD general theory in the next chapter. Chapter 6 and 7 presents extensive discussions of numerical simulation and the outcome of simulation respectively throughout this project. This thesis is ended with conclusion and recommendation at the end of the chapter.

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