# COMPUTATIONAL FLUID DYNAMIC (CFD) ANALYSIS OF BLENDED WING BODY (BWB) BASELINE-II UNMANNED AERIAL VEffICLE (UAV) WITH CANARD SETTING ANGLE OF 10° AT 0.1MACH NUMBER

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ABSTRACT


This study investigates the effect of canard on the aerodynamic characteristics of MARA University of Technology's (UiTM) Blended Wing Body (BWB) Baseline-II of Unmanned Aerial Vehicle (UAV) aircraft design. Canard is a small lifting wing located in front of the main wing which is used to improve lift and provide adequate flight stability of the BWB Baseline-II. The implementations of Computational Fluids Dynamics (CFD) have accelerated the aerodynamics predictions of the BWB Baseline-II design conducted at the same conditions with actual flying BWB size at various angles of attack. Lift coefficient *(CL)*, drag coefficient *(Co)* and pitching moment coefficient *(CM)* are studied at flight condition of 0.1 Mach number with respect to canard deflection angle of 10°. This project begins with some modification of canard deflection angle of the BWB's CAD model to 10°. The modified model is then imported into CFD software for meshing and simulation processes. The relationship between *CL, CD,* and *CM,* visualization of pressure contours, Mach number contours, and airflow, around the aircraft being investigated and analyzed.

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