بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

MONA MAGHRABY

شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

MONA MAGHRABY

ENHANCED UAV CONCEPTUAL SIZING METHOD FOR OPTIMUM DESIGN PARAMETERS SELECTION

By

Ahmad Sami Ahmad Ismail Al-Barawy

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Aerospace Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Title of Thesis:

ENHANCED UAV CONCEPTUAL SIZING METHOD FOR OPTIMUM DESIGN PARAMETERS SELECTION

Key Words:
Aircraft Design; Sizing; UAV; Weight Estimation; Matching Plot.

Summary:

This work aims at developing an enhanced conceptual design technique that uses available data to improve design parameters estimation and design point selection. The weight estimation is refined to get better estimate for take-off weight. The performance matching plot generation is based on the steady performance equations instead of empirical relations from regulations. Optimized performance criteria plots are added to the matching graph to help on the selection of the design. Finally, the wing and tail initial geometry are estimated using some guidelines for selecting the design parameters.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Ahmad Sami Ahmad Ismail Al-Barawy Date: ...... / ...... / ....

Signature:

Dedication

This work is dedicated to my family, my dear professors and all my fellow partners on the road seeking the rise of our Ummah again.

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