Ain Shams University
Faculty of Engineering

MAP REVISION AND MONITORING URBAN EXPANSION USING AERIAL AND SPACE PHOTOGRAPHY

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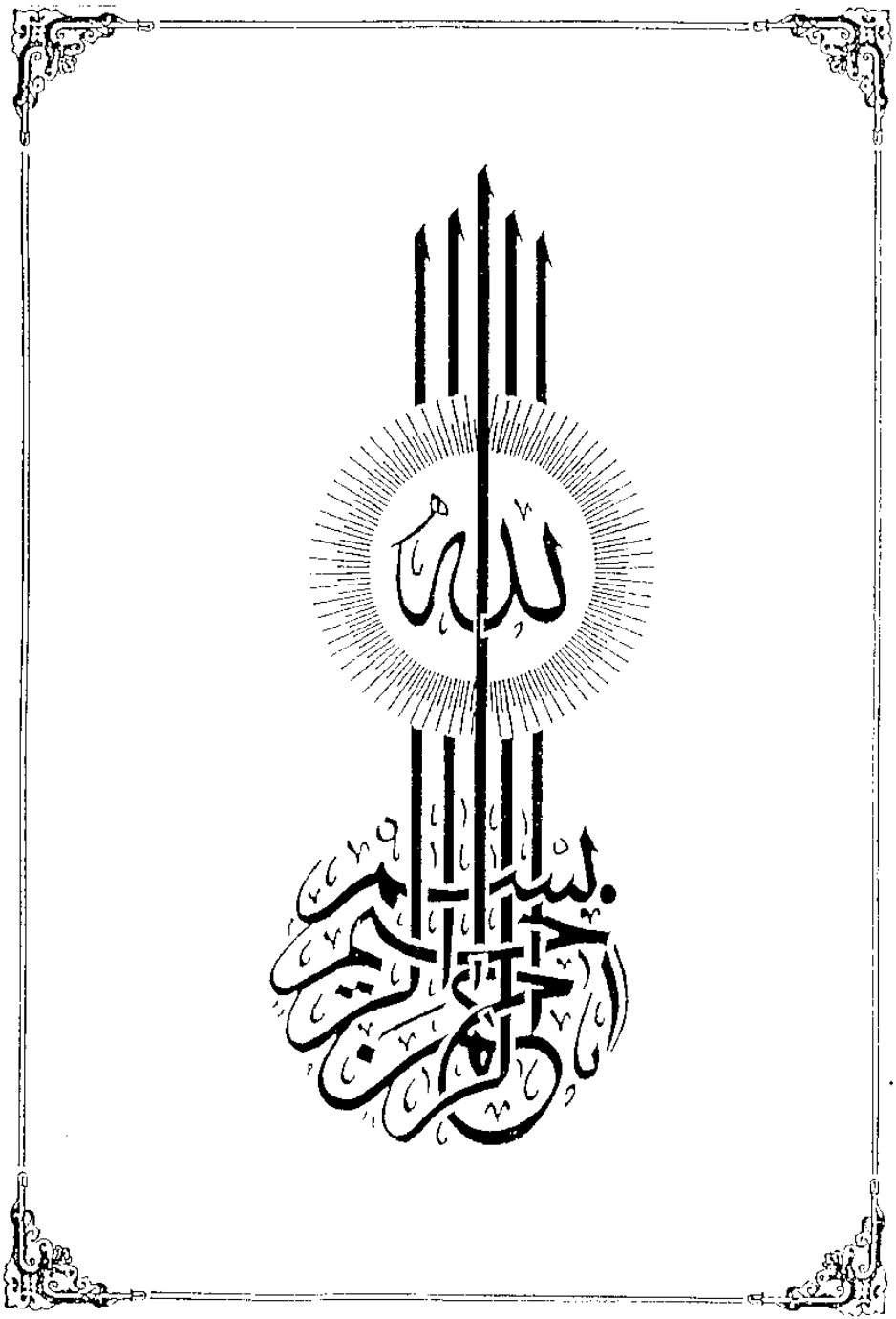
بسم الله الرحمن الرحيم

وجعلنا من الماء كل شيء حي

صدق الله العظيم



STATEMENT

This dissertation is submitted to Ain Shams University for the degree of **MASTER OF SCIENCE** in Civil Engineering.

The work included in this thesis was carried out by the author in the department of Civil Engineering (Public Works Division), Ain Shams University, from 1986 to 1990.

No part of this thesis has been submitted for a degreee or a qulification at any other University or Institution.

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١ ـ دبلومـــه المساحه التصويريـة والخرائط الرقميـة من هولنـدا (ITC)

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٢ ـ دبلومـــه الاستشعـار عن البعـــد من هولنـــدا (ITC)

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ملخـص سابـق الخبـــرة :

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الوظيفـة الحالية : معيد بكلية الهندسـة ـ جـامعة عيـن شمـــس

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ABSTRACT

The need of up-to-date maps nowdays becomes a nececcity. In many countries, topographic and thematic maps have been produced already a long period ago and the producing agencies have to think about the problem of updating or revising these maps.

The rapid changes in the content of topographic maps as well as the continuous change in the user requirement push mapping agencies in the direction of the development of revision methods.

In this thesis, updating of medium scale maps (1:50 000) using satellite data (particularly from SPOT) and photogrammetric data are analyzed from time, accuracy and cost points of view. And also wheter Satellite data can be used in updating the topographic data base (TDB).

The investigation has been done using a real data for a region in the Netherlands.

The results indicate that satellite data are advantageous for updating medium scale maps (1:50 000) as compared to the traditional photogrammetric techniques especially from the points of view of time and cost.

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TO MY MOTHER

CHAPTER 1

INTRODUCTION

1.1 General:

In the present time, mapping agencies, worldwide, are under pressure to reconsider the problem of map revision where if (topographic) maps are to be of any value they must be as up to date as possible, that is, they must also be changed in accordance with changes in the landscape.

The dynamics of the urban and land development, the changes of land use and the increasing demand of precise geographic information for planning purposes, make map production a permanent task.

To keep maps and charts up to date is only possible to a certain extent. Even if the concept of the classical map is changed as a consequence of the technology and the generation of geographic information system (G.I.S), the core of the problem remains: idealy, data collection has to be continuous, identification of changes should be reliable; storage and output must be updated.

So, map revision is necessary to maintain an up to date archive, or in other words a map needs revision when it is NO LONGER SUITABLE for its intended purpose [Crane, 1986].

The key words **"NO LONGER SUITABLE"** are subjective and largely dependent on user requirement, which may vary widely for the same map. The criterion for map revision can be stated as [Baldwin, 1986]:

IF MAP WORLD ≠ REAL WORLD THEN REVISE