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ADAPTIVE FINGERPRINT IMAGE ENHANCEMENT BASED ON PREPROCESSING OF DATA

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***Abstract*— This article proposes an adaptive fingerprint image enhancement method.the term adaptive implies that the parameteres of the method can be automatically adjusted based on input fingerprint image.it consists of 5 processing blocks.**

Keywords—Smqt,Image Processing,Spectral Features,Fourier Transform

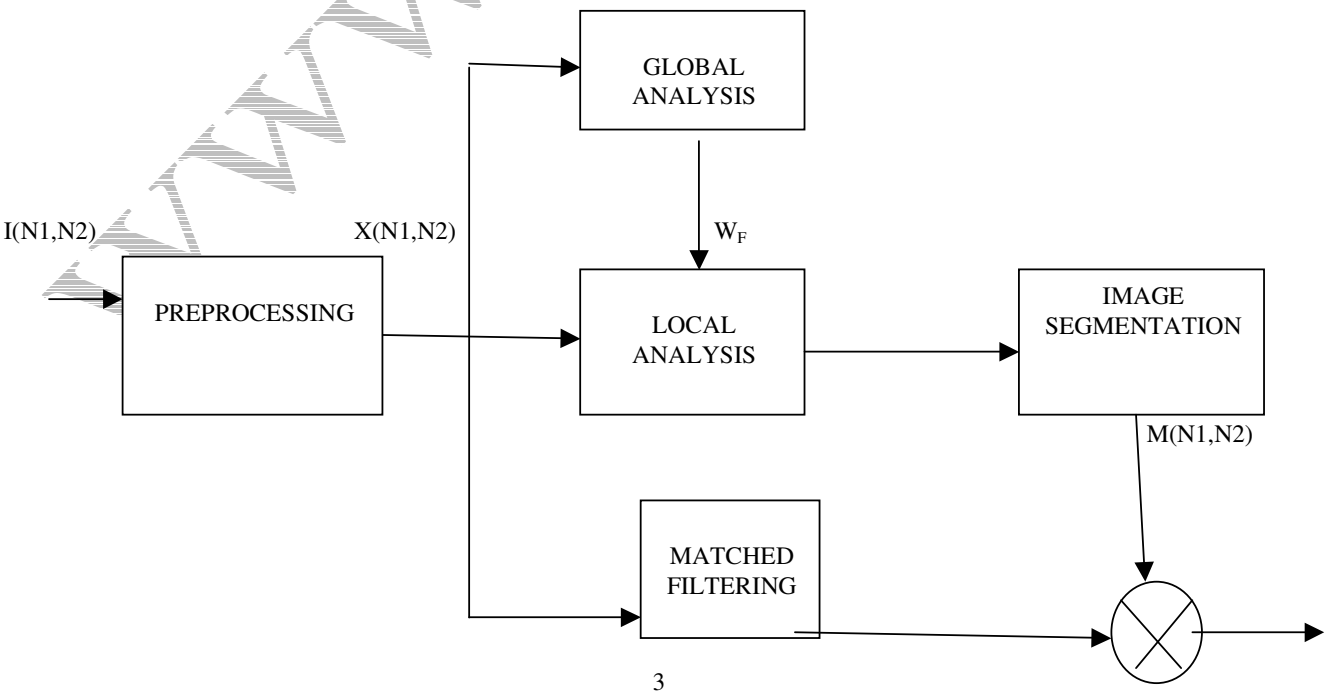
I. INTRODUCTION

Until 1960 fingerprint image was solely used for forensic porposes.Research has been conducted the last 50 years to develop an automatic fingerprint identification system.contextual filtering is apopular technique for fingerprint image enhancement where topological features are aligned with the local orientation frequency of ridges of fingerprint images.the method consist of 5 processing blocks 1)preprocesssing2)global analysis3)local analysis4)image segmentation5)matched filtering.each block has its own function.fter enhancing the fingerprint verification is

II. LITERATURE SURVEY

Several methods are adopted for fingerprint image enhancement. Some method used a main filter having a horizontally directed pattern designed based on four manually identified parameters for each fingerprint Another method that stands out from the classical directional filter design approaches was proposed ,instead of requiring tuned parameters for each fingerprint image.

III. BLOCK DIAGRAM



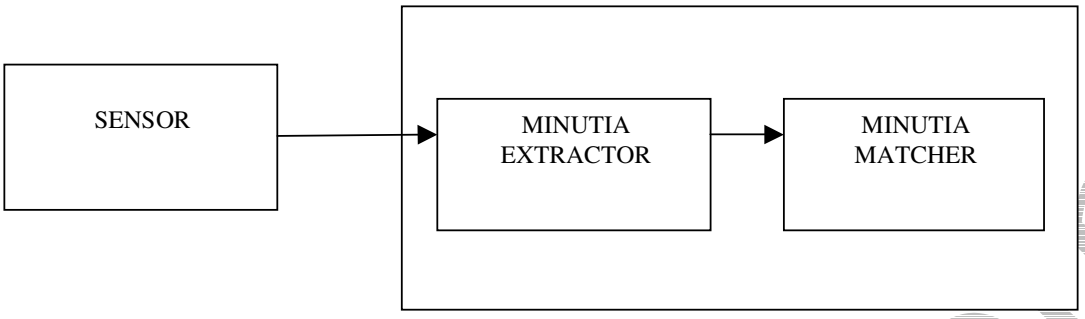


Fig a) block diagram of adaptive fingerprint enhancement b)block diagram of fingerprint recognition

IV. WORKING

In the fingerprint enhancement diagram the preprocessing block adjusts the dynamic range of the image.Global analuysis is conducted to find the fundamental frequency of fingerprint image.Local analysis is conducted to match the local area with fundamental frequency.Image segmentation block separate the image from background.In fingerprint recognition system the verification process either accepts or rejects the users identity by matching against an existing fingerprint image in database.It consists of 3 blocks.1)fingerprint capturing device2)minutia extractor3)minutia matcher.The sensor may be an optical or semiconduct sensor having high accuracy and efficiency.

Future work is to perform a detailed and systematic analysis of the impact of the different chosen design parameters. Also various optimizations of the implemented processing steps could reduce,the number of instructions required by the proposed method

V. CONCLUTION

Adaptive fingerprint enhancement method has several advantages.it does not depend upon the charecteristics of fingerprint sensors.Parameters of the method can be automatically adjusted based on the input fingerprint image.So an optimal system performance can be achieved. The updated processing blocks lead to a drastically increased method performance where the EER is improved by a factor two, and the AAC is improved by a factor12.

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