Smart Banking Machine Embedded With HBC and IRIS Biometric Controlled

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Abstract- This paper proposes a electronic system that serves as an alternative for ATM card and PIN via the physiological human body communication device called Red Tacton and Iris recognition. Instead of the magnetic stripe card used for money transaction Red tacton module is utilized in the teller machine sector, it transmits the details of the account holder stored inside the Red Tacton transmitter through human body. The control circuit will verifies the received data of the Red-tacton module and waits for the user to match the IRIS details. In this proposed system during enrollment the genuine user's Iris samples are contained in the database. The technique of transaction starts by capturing the Iris patterns. The machine will obviously find the difference between actual reliable trait and fake samples. Moreover, the function of cryptographic key used for logging in net banking impacts privacy to the user and relieves him/her from remembering PINs. Once the iris pattern gets matched a secret password will be generated with by the GSM module. After the valid pin is entered the user can either withdraw or deposit money or enquire his/her balance. The bankers will collect the customer account details using Red Tacton, IRIS and pin during opening the accounts then automated teller machine can be activated.

I. INTRODUCTION

For the conventional automated teller machine system customer recognition systems depend only on electronic cards and passwords. For overcoming the inherent demerits traditional teller machine, the designs propose money transaction a new system. By using biometric teller machine and red - Tacton system we can ensure the secure, safe, and improved system for banking. The iris recognition and red - Tacton systems have recently proved to be very accurate in confirming individual's identity. Red Tacton system uses new path which has been developed for communication of signals called HAN. This method is entirely unique from other signal communication technologies. For Iris detection involves four main image processing technique.

II. BASIC HBC AND IRIS OPERATION

This proposed system utilizes Red-Tacton module instead of the debit card used in the ATM sector, it transmits a details of the account holder stored inside the Red-TACTON transmitter through human body. The controller will checks the received data of the Red-tacton and waits for the user to match the IRIS details. Now the User will perform IRIS recognition. During the enrollment stage, we store the details of the user for the respected Red-Tacton device. Now the user's IRIS is detected by the MATLAB software and MATLAB provides the data to the controller indicating the result of the user's IRIS detection process. If the matching of iris recognition is done, then MATLAB gives data to controller. Then the System prompts the user with an OTP through GSM module to the user and the user can only enter the OTP on keypad. Now the ATM mechanism starts working. The ATM working is indicated with the help of Motor. Once all the Matching is performed the motor is activated.

2.1 Red Tacton

The RED Tacton module transmits the user account details to a controller through human body as shown in fig 1.. The controller checks whether the user's iris is matched with one existing in the data base. The user accounts are burnt into the red tacton module by means of matlab software. Once the iris match is found to be successful. The controller sends an OTP to the user by means of the GSM module. Once the pin is entered a motor is activated for performing the required financial transaction.

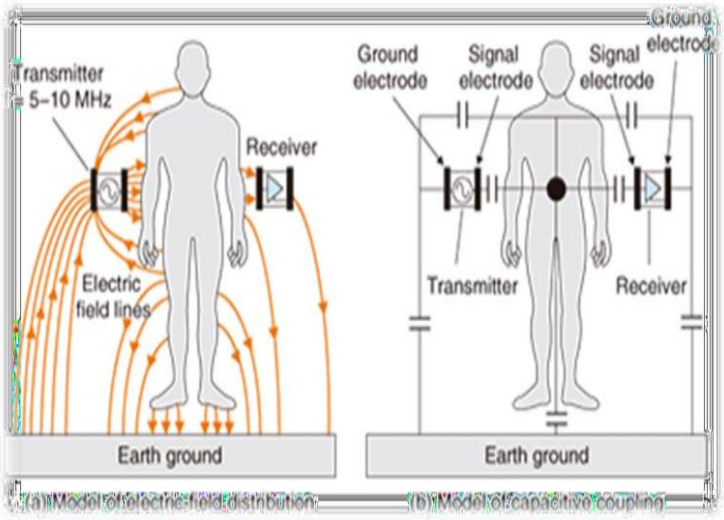

Fig: 1 RED Tacton module

2.2 Transmitter and Receiver

In figure 2 represents the Red Tacton module makes use of the electric field present at the surface of human body for high speed transmission and reception of signals.Such a networking infrastructure is called HAND. The various channels through which the communication occur is hands ,fingers,face,legs etc.The transmission and reception occurs as long as module is in contact any of these indicated surfaces.

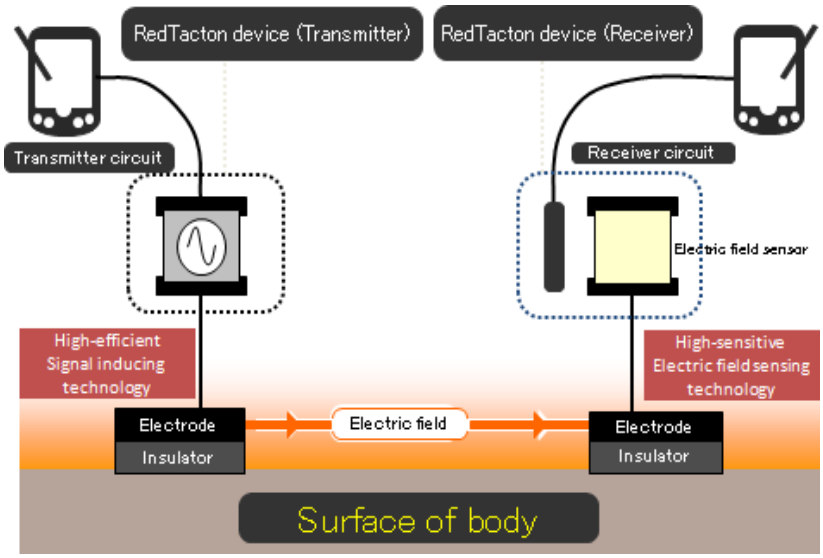

Fig: 2 Transmitter and Receiver module

2.3 Transceiver

The Receiver side of the red tacton module receives the data. From a transistorized electric field sensor embedded with it. The Red Tacton module serves as a medium of communication through the sense of touch exchanged between two human beings. The various methods that would triggered the operation of human area networking are by voluntary actions such as grasping, sitting,walking or standing.

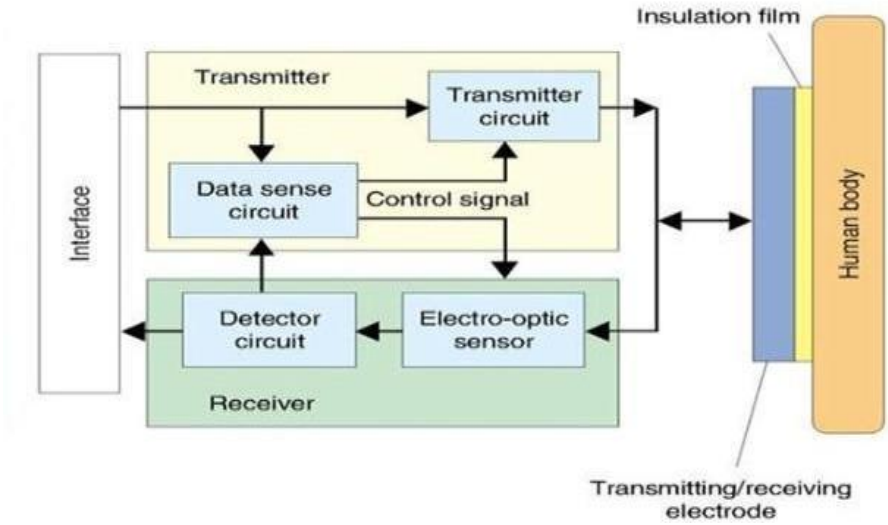

Fig:3 Block Diagram of Transmitter module

2.4 Features

The maximum communication speed support by the red tacton module is of the order of 10mbps. One of the major advantages of the module is signal transmitted from or received is cannot be shielded by any of the apparels worn by human beings. Another meritorious feature worth mentioning about this technology is the communication throughput does not drop significantly even in the presence of large surrounding population.

2.5 Iris Technology

The major parts of the interior and exterior boundaries as for the IRIS detection concerned .Specific engineered subroutines detect and exclude eyelids, eyelashes , specular reflections that often service as hindrance for iris detection. The set of picture elements containing iris based parameter normalized by a rubber sheet model to compensate for pupil dilation. A bit pattern is extracted from the pixilated image for performing image comparison between the one stored and presented to the system..

III. WORKING OF USER SECTION

In this section the human body communication transmitter (Red Tacton) will acts as a major role. The PIC16F877A micro controller will store the information about the user's unique identification in the form of alphabets or numeric characters. Red Tacton will transmit the information via human body with the help of electrode. Once the user forms the closed path Red Tacton transmitter transmits the data to the Red Tacton receiver.

3.1. Working of Atm Section

This section contains Red Tacton receiver which will receive the information from the user section. Two flat electrodes capacitive coupled to any of the aforementioned human surface serve as the terminal for transection. the capacitive coupling serves like modem for the surface electric fid. The near-body electric field is modulated and can be read and demodulated through these couplings. A feature of the technology is that, the signal is passed to and from the body's surface through this capacitive coupling; it can be transmitted between transmitter and receiver via the body's surface. Once the closed path is formed by holding the electrodes, Red Tacton receiver checks for the data with the transmitted data. The eye image of a person was once captured the use of a web PC digital camera or was once stored between 640×480 pixels in bitmap format. Matlab compares the captured iris image with the stored iris image in the database. After the valid iris recognition, an OTP was once obtained of the user's registered mobile number simultaneously a message "ENTER THE OTP" was once displayed on the LCD. After the valid code was entered the system proceeded towards the banking process

3.2. Algorithm for Smart Banking Machine

STEP 1: START

STEP 2: If the user wants to access their ATM. They should take their red tacton transmitter to ATM and starts accessing it by touching the electrode of both transmitter and receiver.

STEP 3: If the red tacton is ok to proceed then the user under goes an iris recognition process.

STEP 4: If the iris is matched then the GSM will send OTP to the user cell.
STEP 5: Then the user should enter the OTP in the keypad.
STEP 6: Finally the user is allowed to access their account.
STEP 7: STOP.

3.3 Functional Diagram User Section

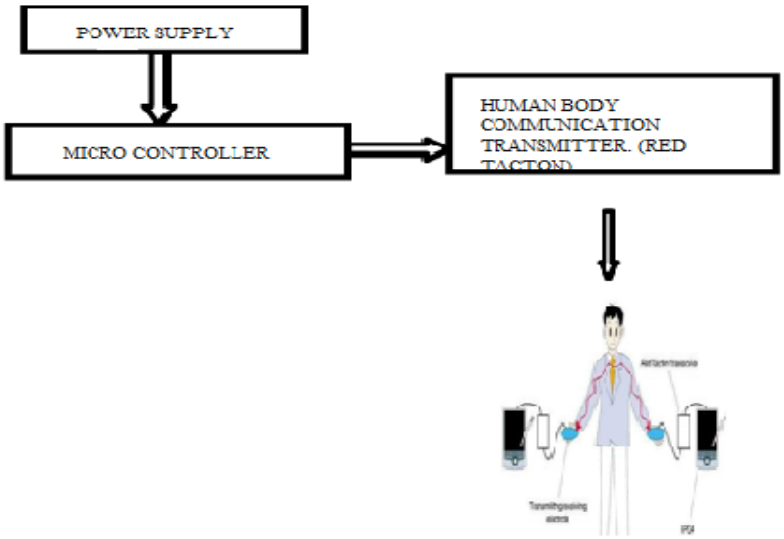

Fig:4 Functional Diagram User Section

3.4 Functional Diagram Atm Section

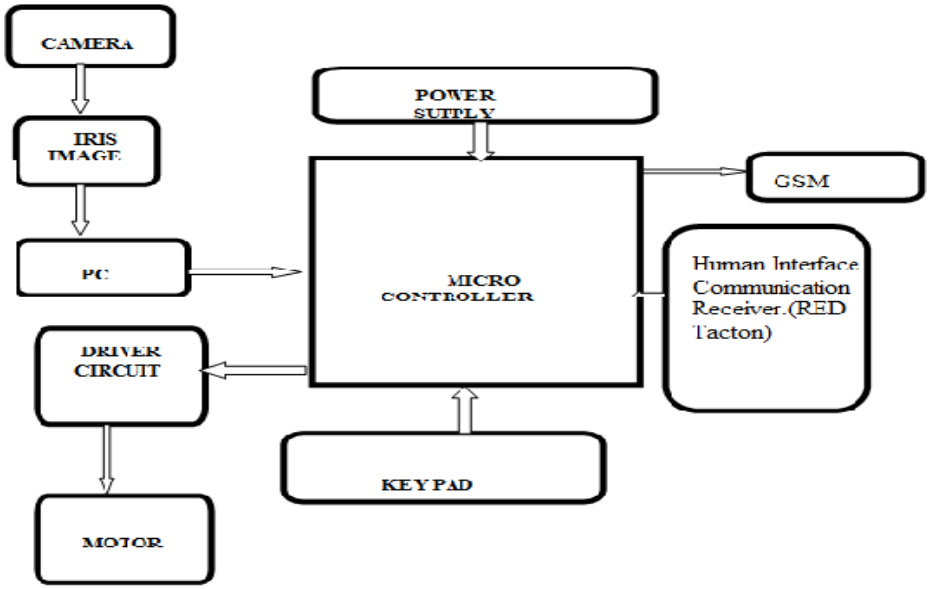

Fig:5 Functional Diagram ATM Section

IV. DESCRIPTION

4.1 Description of User Section

The PIC16F877A micro controller will store the information about the user's unique identification in the form of alphabets or numeric characters.
Red Tacton will transmit the information via human body with the help of electrode.
Once the user forms the closed path Red Tacton transmitter transmits the data to the Red Tacton receiver.

4.2 Description of Atm Section

The transmitter and receiver are capacitive coupled to the human body through flat electrodes that are equivalent to the antennas in regular wireless systems.

The near-body electric field is modulated and can be read and demodulated through these couplings.

Once the closed path is formed by holding the electrodes, Red Tacton receiver checks for the data with the transmitted data.

The eye image of a person was once captured the use of a web PC digital camera or was once stored between 640×480 pixels in bitmap format.

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4.3 Simulation

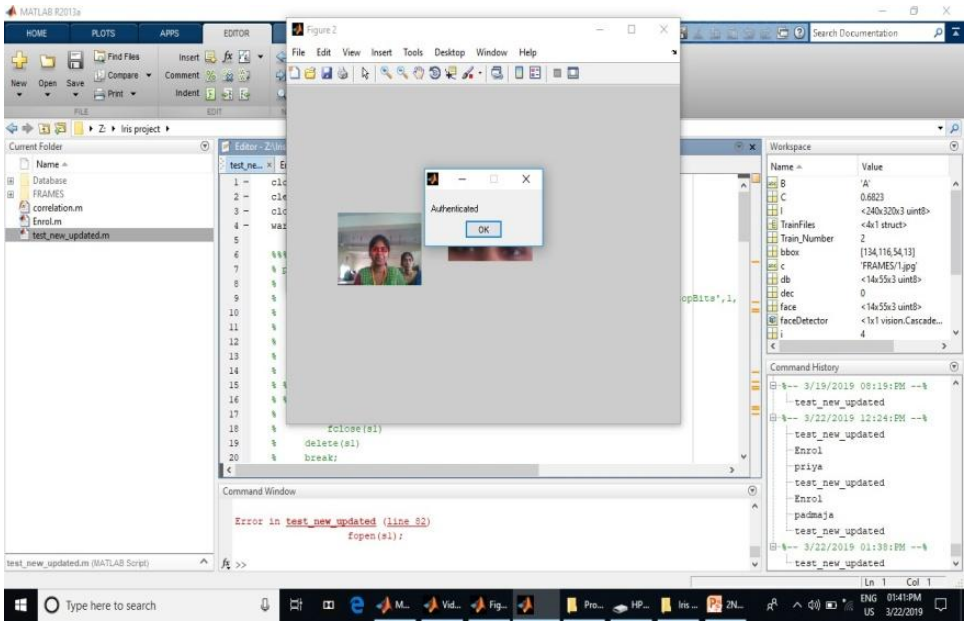

Fig:6 Simulation of Smart banking

V. CONCLUSIONS FOR SMART BANKING

This project is developed over the basis about more need of safety of ATM banking system. Now-a-day's ATM is getting much less secure along emerging methods to hack/crack ATM PIN then ATM card. The ATM user's money transaction is secured by adding the Iris recognition or OTP in imitation of the existing system along together with this ATM machine is secured. This project will be very much useful in providing advanced high end security and also problems such as carrying card etc will be avoided.

VI. REFERENCES

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