AADHAAR BASES TICKET VERIFICATION

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ABSTRACT: *At every airport authentication of passenger is necessary for security as well as customer relationship. A biometric authentication system is designed for efficient real-time monitoring as well as to maintain transparency in authentication of passenger(s) which will be connected to any information system at the airport. In this proposed system can be deployed at any airport. Each individual has a unique pattern of fingerprint which he can be recognised easily and can be used for biometric authentication which shows presence of each passenger in flight. In this paper we discuss about an important approach to capture and authenticate fingerprint in verification process. We can achieve this approach using CENTRAL AADHAAR IDENTIFICATION RESPOSITORY (CIDR).This service can be easily availed by anyone requesting to authenticate their customer employee or any other associate [1]. Information system will generate a ticket with regarding to PNR number using fingerprints.*

KEYWORDS - *Biometric authentication, authentication system, CIDR, fingerprint.*

I. INTRODUCTION

Now a days maintaining of passenger information is very complex and important task. Number of passenger per flight shows the performance of the flight. In current scenario the authentication is done manually at airports. When the passenger arrives at airport he shows his ticket on which PNR of flight is printed. The original photo identity of the respected passenger is verified. This process contains manual verification of document as well as ticket which tedious. To overcome this the possible solution is to replace all the entry which is done manually to aadhaar based authentication system.

Aadhaar based authentication of passenger is done on basis of biometric stored on particular aadhaar number. Fingerprints play an important role in this aadhaar based authentication. Every individual contain a unique set of fingerprint which help to differentiate from one another. Fingerprint consist of different sets of valleys and ridges on fingertip which make it unique from other. Fingerprints are also used in many application which is very reliable and unique. It provides security because only person with respected fingerprint can access the security. However the passenger does not need to carry any valid photo identity for verification. Verification can be done on aadhaar number provided while booking the ticket.

After the aadhaar implementation there is growth in demand for biometric IN MANY applications. Each aadhaar consist of UNIQUE IDENTITY NUMBER (UID) to every citizen of India. This unique data stores the biometric information of respected person. This UID can be used for airport verification process to authenticate the passengers. This UID can be used to track frequently flying passenger and giving additional benefits as per

company. The main objective of this paper is to verify the passenger digitally without.

II. Related work

As aadhaar is the centre point of this model hence it is necessary. Now a days reliance industries launched a new company called as jio. Reliance jio is a telecom service provider company for which the user have to give its identity proof for registration. Instead jio used aadhaar verification which makes the details of user store digitally and verifies the user on their fingerprint. This was one of the strong implementation of aadhaar.

Aadhaar based election is also a proposed model. Where the vote of the citizen can be given on the basis of Aadhaar card there is no need to election identity proof. This model secure dummy and bogus vote and maintains transparency in the system.

III. Objectives

- The main objective of this paper is to automate the verification process using Aadhaar which can reduce the human effort or can be controlled remotely.
- No need to carry original photo identity proof.
- Use e ticket rather than printing the ticket which is ecological.

IV. Architecture

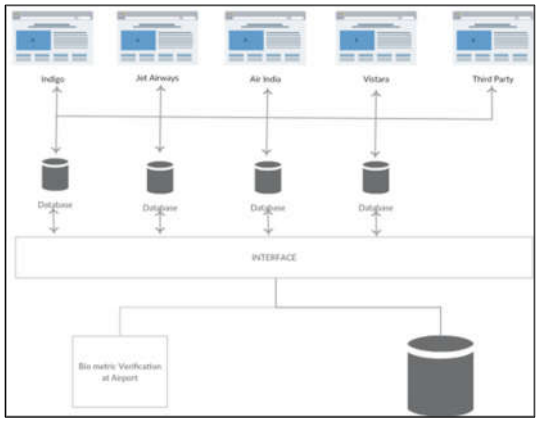

Fig 1.S Fig 1.System architecture

In this section we will see about detailed idea of aadhaar based authentication architecture. There will be 3 tier used in this architecture. Passenger should have a aadhaar card for this process because aadhaar card contains the details of the passenger such as biometric detail, eye scan details, address, name, date of birth and a unique aadhaar number(UID) with which the user can be verified.so while booking the airline ticket the passenger should provide his aadhaar details too. Passenger can book his ticket directly via airline or through various third party dealers. In both the cases the user have to provide valid details of aadhaar card.

In the 2nd tier user details will be stored in the database of respective airlines. If the ticket is book by any third party dealers then also the details will be stored in the database of preferred airlines.

3rd tier consist of the interface at airport where passenger will come to verify his details and check in the flight. Passenger will provide the details of the flight with whom the ticket is booked. Passenger doesn't need to provide any copy of ticket neither any original photo identity only flight

number is needed with which passenger will travel. The passenger name will be checked after receiving the flight number. If the ticket found booked then user will have to verify himself with the details provide with him at the time booking the ticket. User can verify through the fingerprint because each individual have a unique set of finger prints. The passenger's finger prints will be matched with the fingerprint stored in aadhaar database and the user will be verified. Hence the user will not have to carry and photo identity neither the ticket copy which will be ecological. By using this architecture we can know full details of the passenger hence enhanced security won't be needed at the airport. Less human efforts will be required at the airport.

Instruments	Use of Instruments
Aadhaar Card	It contains the unique aadhaar number.
Finger Print Scanner	Uses to scan the Finger Prints

Instruments:

V. Reliability

When it comes to security very few things are as secure as fingerprint. Locks and safes can be broken or picked; your password can be obtained by guessing or using a brute force attack or by other techniques by hackers. Using of biometrics such as fingerprint, iris scans, and retina scans is a more secure and modern way to provide security and also to identify a person.

Our fingerprints have thin lines called ridges on the ends of our finger and thumb which helps us to grip objects. These ridges make our fingers rougher and create a frictional force between our fingers and the object when we hold them hence making it difficult to drop. We have fingerprints even before we are born. Fingerprints start to develop when we are in the womb of our mother. Also fingerprints of a person remain same throughout the life unless he has an accident. Fingerprints are virtually unique because they are developed through a random process according to the code in our DNA. Also the environment in the womb affects the fingerprint that is why even identical twins have slightly different fingerprints. The chances of two people having identical fingerprint is so small that it is virtually negligible.

A fingerprint has attributes such as:

Ridges: Thin lines on our thumb and fingers.

Valley: Space between the ridges.

Core: It is the centre of the fingerprint.

Delta: Point where ridges coming from three directions meet forming a triangle.

A fingerprint scanner uses these attributes in a fingerprint and creates a map of these attributes. Since a person's fingerprint is virtually unique, this map of points will also be unique for every person. When a person tries to authenticate himself, the scanner takes his fingerprint and creates a map of attributes that were mentioned above. It then checks if it matches with the fingerprint of authorized user.

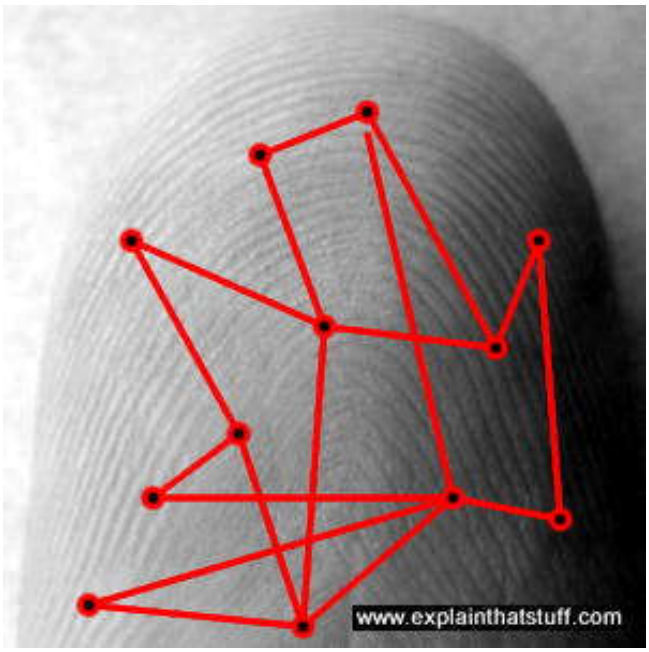

Fig 1.2: Map of attributes of a fingerprint

Source: www.explainthatstuff.com

Pseudo code:

```
Program scan_fingerprint:
    Input: fingerprint
    try:
        create DB connection
        open DB connection
        do:
            if fingerprint in airline DB and fingerprint in aadhaar DB:
                print: boarding pass
            else:
                if fingerprint not in aadhaar DB:
                    throw: identity error
            else:
                throw: ticket error
    catch identity error:
        do: action
    catch ticket error:
        do: action
    finally:
        close DB connection
```

Fig 1.3 A sample image of biometric verification hardware.

Source: google images

- First of all, the passenger will arrive at the airline counter where he will give his details. Then the system will require his biometric details to authenticate the user. The passenger will scan his fingerprint which will be stored in airline database.

- The system will establish a connection with aadhaar database and airline database.
- Then the system will access the aadhaar database where with the help of UID number the details of passenger will be fetched and the fingerprints will be verified.
- At the same time the system will check the passenger details in airline database to check if he has booked a ticket or not.
- If the finger print is verified, then the boarding pass will be automatically generated or else an error will be thrown regarding the authentication of the passenger.
- Finally the connection is closed with aadhaar and airline database.

VI. Findings

The main purpose of this proposed paper aadhaar is to provide a universal identity to an Indian resident. This provides various benefits to citizens as well as organization to improve security and to provide better service to customers. It will also provide faster response time to people as compared to other verification techniques that are used nowadays. The model is easy to implement as we only need to link the interface with the aadhaar database for real time verification. The only drawback is that when there is a connection problem or server is down but that can be resolved by having multiple servers so that data is always available.

VII. Conclusion

This proposed paper shows the model proposed for digital authentication at Indian airport. This proposed model is very secure, easy and efficient than the current authentication system. There cannot be any manipulation of fingerprints, hence more security can be maintained. Aadhaar is unique and the center point of model. This leads to easy verification as well as the security of the passenger.

In this proposed model we can avoid unauthorized access of passenger into the flight. The server is expected to be available all the time for this system. Hence it is expected that proposed model will increase transparency in details provided by the passengers. Number of people which travel by flight can also be tracked by the authority. The installation cost of this process is very cheap.

References:

[1] https://uidai.gov.in/authentication/authentication-overview.html
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