

“Aadhar” Management System

Ameer Ulla Siddiqui*
Mr. Hare Krishna Singh**

Abstract

The AADHAR Management System provides a 12-digit unique number for every Indian individual, including children and infants. The AADHAR number will be in the form of 12 digit alphanumeric number to provide more security. AADHAR Number which would not just help the government track down individuals, but would make life far easier for citizens as they would not have to submit multiple documents each time they want to avail a new public, private and government service. This system will contain personal details like name, sex, address, marital status, photo, identification mark, fingerprint biometric, iris (uniqueness of human eye patterns) and signature. AADHAR Management System helps to manage persons needs in his/her life span by using a single UID i.e. the number is used as Driving license number, Voter ID card number, registration number in any organization, bank account number, personal or professional details. AADHAR will provide a universal identity infrastructure which can be used by any identity-based application (like ration card, passport, etc.)

Keywords: AADHAR, Information security (IS), Unique Identification Numbers, UID, E-Government

Introduction

This system is to provide a unique ID to each and every citizen of India while providing him/her a birth certificate. Citizens after attaining age of 18 must register at the RTO office or Collector office or Tahsildar office and get a password to access the site. ID card will be provided to every user after registration. Later on they can change their password. Once they enter the site they can pay their electricity bill and telephone bill, book railway tickets and airline tickets and pay their taxes. During elections people can poll online. Government officials can verify details about a person from the database for issuing vehicle license, passport, visa, etc.

Unique Identification Authority of India (UIDAI):

The UIDAI is the government project and name for the project is “AADHAAR” means “support”.

Ameer Ulla Siddiqui*

Computer Assistant, UGC-HRDC,
Jamia Millia Islamia, New Delhi

Mr. Hare Krishna Singh**

Software Engineer,
HCL Infosystem, New Delhi

Unique Identification Management (UIDM):

The UIDM that creates a unique identification number to a particular citizens of state/country.

Background of the Aadhaar Management System

In India steps in this direction began with, ‘Kargil Review Committee Report’ submitted in January 2000. The committee recommended that ID cards be issued immediately to people in border districts to prevent infiltration and find out illegal immigrants. Based on this a Group of Ministers in a report titled Reforming the National Security System noted “All Citizens should be given a Multipurpose National Identity Card (MNIC) and noncitizens should be issued identity cards of a different color and design”. Acting upon the report Government of India initiated a process for the creation of the National Register of Citizens in 2003.

UIDAI

UIDAI is expected to provide a link across diverse identities as a citizen, so that once one has it, the Govt. needs nothing more from one, because it can find the links on its own. AADHAAR signifies ‘foundation’ or ‘support’ and communicates the fundamental role of UID initiative and its impact.

Applications of UIDAI

AADHAAR assurance of uniqueness and centralized online identity verification would be the basis of building multiple services and applications -

- It can substitute all other identified issues, including illegal migration, in banking and financial transactions, fraud, health related matters, in the education sector, welfare sector, in the election process, monitoring efficient law and order.
- It is easy to count country's population without any mistakes and take an action to control population which gradually increase in excess amount.
- It will provide support in providing proper identification to the individuals and this UID will be linked with a person's Passport Number, Driving License, PAN card, Bank Accounts, Voter ID etc. and all this information will be checked through a database.

Risks in the implementation of UIDAI

Risks that arise from this centralization include possible errors in the collection of information, recording of inaccurate data, corruption of data from anonymous sources, and unauthorized access to or disclosure of personal information.

The centralized nature of data collection also heightens the risk of misuse of personal information and therefore potentially violates privacy rights. The creation of a centralized database of personal information, it is imperative that such a programme not be established without the proper mechanisms to ensure the security of each individual's privacy rights. As we considered for India, The population of India is more than 5 million, so Network traffic has to be controlled but is it very tedious task .also we have to increase the bandwidth spectrum and connectivity.

UIDM

The UIDM system is to develop Unique-id management that creates a unique identification number of particular citizen of the country. As well as management of perspective data, information of that citizen. Secondary goal is that we provide his feature

in some project, which are trying to help people to achieve/reduces their stress of normal life. Basically the UIDM system which is handled by a moderator, according to recent work the "Aadhaar" management system which is developed for providing Unique-id. This system not provides different feature. This system can be accessed by the citizen, and different people related to governmental activity, so we try to achieve simple interface, and user friendly system.

Design and Architecture

We describe the Algorithm, which is used to explain how the system is going to work, i.e. the process logic behind it, the flowchart, which represents the pictorial representation of the process logic and finally the Data Flow Diagram (Context Level) of the UIDM system.

Algorithm:

Security mechanism in UID project - if there is no physical Identity card or electronic smart card, then how will UID system validate its citizens. For implementing this, two different processes have to follow, the first one being the recording process and the second one - the authentication process.

Recording Process:

In the first process, the UIDM builds up a centralized database consisting of UID, biometric record and various other details of the person. The UIDM allocates a unique 12 digit alpha numeric number (UID) which is randomly generated by the main computer to every citizen. Then a biometric data record is made by scanning the 10 fingerprints of a person. This biometric data is tagged to the person's unique 12 digit number (UID). The UID tagged to the biometric record of a citizen is later used in the authentication process.

Authentication Process

In the second process, whenever a person has been identified whether he/she is a genuine one, a fresh biometric scan is made and then the scanned image is sent to the centralized server. The server took the fresh scanned biometric image as an input and compares it with all the already stored biometric records in the database. If a relevant match found is found, then the person is designated to be a genuine citizen.

Advantages

Manage all the details related to the Bank account, Driving License, Vehicle registration, Voter ID card, Medical records, education and profession, passport, PAN card in one database. A single unique number is used therefore decreasing manual labour and increasing efficiency as every detail is available on the single click and reducing the efforts in maintaining different ID databases. The UID will reduce the duplication, an attempt to make fake documents.

The purpose of this UID system is to provide one unique number to all the citizens to increase the security and verification process by introducing the Biometric authentication technology, and thus identifying illegal immigrants and terrorists.

Along with UID various facilities provided in the system, like paying their electricity bill and telephone bill, book railway tickets and airline tickets and paying their taxes. During elections people can poll online. If a person commits a crime, his/her details will be added to the crime database. This will be useful for embassy, employment exchange and CBI officials.

Disadvantages

The disadvantage of this system is that the network has to be very quick and crash free which is not possible. As at a time there will be many citizens who will be working on the system.

Security is the biggest task in this system as each and every possible security measures will have to be taken.

Biometrics

Electronic scanning and matching technologies are not 100 percent error-free. Since biometrics is not an exact science, the problem is not only is the underlying data flawed, even the biometric technologies have some error rates. At the time of purchasing biometric scanning equipments, it is important to include a clause mentioning the calibration requirements.

While biometric data in digital format are the norm in the modern day authentication process, choosing the right type of scanning device is more important. While fingerprinting is the most straight forward biometric available in the market. The erosion of fingerprints of people who are involved in heavy

physical labour being affected over a period of time is one such challenge.

Iris Technology

Overview

While the benefits of using iris biometrics are important to consider, not much is known about how iris biometric systems function. Here, the paper provides an overview of iris biometrics and the technology that is used.

The iris of the eye is a protected organ, which controls the diameter of the pupils – the center part of the eye - and the amount of light entering the eye.

The front, pigmented layer of the iris, contains random patterns that are visible and highly stable. These patterns are also highly intricate, and unique to every individual. The iris, faces very little wear, and can consequently serve as a secure, always available passport that an individual can present for verification.

The field of iris biometrics has seen significant research and investment over the last decade, and at this point, iris capture has become a mainstream technology with wide acceptance. In India, over 50 million people have been enrolled using iris recognition systems in Andhra Pradesh and Orissa. Feedback on these systems has been positive both from enrolling agencies and state government officials. Mexico is also using iris for its version of Unique ID to deliver public benefits to its entire population.

De-duplication through iris has been carried out on a large scale – one implementation that de-duplicated the entry of immigrants into a country has carried out five trillion iris comparisons since 2001. In Andhra Pradesh, the government has carried out 6.26 quintillion matches in two months for its PDS programs in 2009.

According to one research firm, iris is the fastest growing segment of biometric market and will have the largest market share in next ten years. Responding to the increased demand, the technology has become rapidly cheaper, with a friendlier user experience.

How do we capture the iris image?

The capture of the iris image is identical to taking a regular photograph, except that it operates in the infrared region, nearly invisible to our eye. The camera

captures the image of the iris; the image generated is permanently stored in the database, and is used for matching while verifying the identity of the resident, as well as for de-duplication.

Devices used for iris capture

The devices that are used for capturing the iris image depends on the purpose - whether it is for enrolling a resident, or for identity authentication. There are two main types of devices that are commonly used: hand held and wall mounted.

Wall mounted devices, which are an older version of the iris device, are usually used for access control applications. Newer, hand held and mobile device is used for e-governance applications, and iris enrollment. The devices presently being tested by the UIDAI is mobile devices suitable for enrolling people in rural and remote areas.

Conclusions

AADHAR Management System will be beneficiary to the citizens as it is a unique number which contains

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basic information of every person. After the ID will be issued there is no need to carry driving license, voter cards, pan card, etc. for any government or private work. For example, for opening a new account one has to show his/her Unique ID only. But to some extent it is harmful to the general public as all the data related to them is stored on computers and can be misused by hackers if the multiple security strategies will not be adopted. Causal Productions has used its best efforts to ensure that the templates have the same appearance.

The role of this system envisions is to issue a unique identification number (UID) that can be verified and authenticated in an online, cost-effective manner, and that is robust enough to eliminate duplicate and fake identities.

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