UID (Unique Identification Number) with DNA Technique

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Abstract— Security is the major issue in India. UID is going to solve this problem.UID is used to secure India by terrorists. UID system is 16 digit unique identification number which helps the government to track individual person and also makes the life so easier to only submit UID card and not submit whole documents again and again. UID contain details like the name, sex, address, marital status, photo, identification mark, finger print and face biometrics. The security of the UID database system will be handled by the Biometric technology.

Index Terms— *UID, DNA, DNA Database, Biometric Technology, PCR, RPLF, Red-Tapism, e-governance, Digitalization, One stop crisis centre, UIDAI*

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1. INTRODUCTION

This essay attempts to comprehend the potential implications of the Unique Identification project (UID) or "Aadhaar" on non-citizen residents in India, specifically, refugees, asylum seekers, stateless persons and other "illegal" migrants who fall within the grey zones between citizens and non-citizens in India. The Aadhaar project poses a number of questions, including the constitutional right to privacy and issues of surveillance1, on identity, the costs of the project, and many others.

The unique identification number debate, it is argued needs to consider the possible impact it would have on non-citizen residents. They make up a small yet significant cross section of the resident population in India and find themselves in a society and polity that displays unique features in terms of how it regulates the presence and exit of foreigners in its territory.

At the same time, it would be worth thinking aloud whether; on the contrary, the UID project would benefit refugees in the Indian context given that their limited rights are not translated in reality in the existing social, economic and political institutional set up.

Questions of identity, surveillance and the citizenship of refugees/stateless/asylum seekers are all the more relevant given the anxieties displayed by the Indian state in relation to them.

A pan-India project to "identify" each resident was formally inaugurated in 2009, with the establishment of the Unique Identification Authority of India (UIDAI) as an office attached to the Planning Commission [3]. Headed by Mr. Nandan Nilekani, the Chairperson with powers equivalent to that of a Minister of a Cabinet Rank, the UIDAI has a mandate to ensure a "unique" number to every resident in India to facilitate easy access to government schemes, eliminate fraud such as duplication of identities resulting in significant savings to the state. The unique number would include an individual's demographic and personal information and biometric information – finger prints as well as the scan of the iris. The Unique Identity numbers are proposed to be issued between August 2010 and February 2011 and over the next 5 years, it is expected to reach 600 million residents [4].

Though now projected as aiming to ensure better access to services and benefits for the poor by assigning and authenticating identity, the origins of the project can be traced to a series of events in the 1990s and after and debates within the government on the question of national security, terrorism and illegal immigration in India [5]. The Kargil conflict

between India and Pakistan is considered to have triggered the idea of the need to ensure that "terrorists" are not allowed to enter the Indian Territory. The Kargil Review Committee [6] in its recommendations among others, noted the "gross inadequacies in the nation's surveillance capability…".[7] It further recommended that "…steps should be taken to issue ID Cards to border villagers in certain vulnerable areas on a priority basis, pending its extension to other or all parts of the State. Such a policy would also be relevant in the North-East, Sikkim and part of West Bengal".[8]

The National Identification Authority of India Bill, 2010 (hereafter called the UID Bill) which if passed, would regulate the UIDAI does not mention the government's national security concerns. Only a passing reference is made in the confidential document published by UIDAI titled 'Creating a Unique Identity Number for Every Resident in India"[9]

The term 'Aadhar' means 'Support' in English, aimed to give support to poor people. The UID number will be stored to a centralized database. The information gathered for demographic and biometric proof (it is linked to central database) are: name, address, gender, date of birth, name and address verification document, photo, 10 fingerprints, iris image.[10].

2.DNA

DNA is the acronym for 'Deoxyribonucleic acid'. It encodes the genetic instruction. It stores biological information. It is one of the essential macromolecule of life. It has a double helix structure. Genes are the sequences of pieces, it hold the information which is carried by DNA. DNA has genetic information by which all living things functions, grow, and reproduce.

DNA is unique for every living being on this earth. It is used for exploration of various physical laws and theories, and has various other uses. It can be used in nanotechnology, genetic engineering, forensics, bioinformatics, etc. DNA can be found in blood, skin, hair, or semen. [11].

3.DNA TESTING

3.1.METHODS OF DNA TESTING

1. PCR (polymerase chain reaction): It is mainly done in forensic field. It can be done to analyze very small amount of sample or old or degraded sample, and the rate of success is high. In this process, PCR amplification is done i.e. making millions of copies of the small amount of DNA from the biological evidence and then a DNA profile is generated.

2. RPLF (restriction fragment length polymorphism) : In this testing, a sample is taken in which there are 100,000 cell or more and also that sample should

contain the DNA which is not degraded or fragmented.

3. PCR testing on DNA from the mitochondria of the cell (mitochondrial DNA testing) : Samples which are not tested efficiently by RPLF or PCR Nuclear DNA testing, then those samples are tested effectively by Mitochondrial DNA testing. It takes a lot of time. [12].

4.PROPOSED WORK

The Biometric Technology has some limitations. The fingerprint testing can give errors and is not accurate due to people having poor quality of fingerprints or burnt or cut marks. These problems are seen mainly in farmers. The other test i.e. iris testing is also problematic for blind peoples or one can wear colored lens, giving false results.

So, in this case government can opt for DNA testing so as to give accurate results.

All over India, the DNA testing should be done on every citizen of India. The samples can be taken from hair or skin for testing but not from blood as it can cause some transmissions of diseases or may arise some other serious problems regarding health. Though, it would take a lot of time but is the most secure technique. The government hospitals all over India should collect the samples. After taking samples, each sample should be assigned a unique number. There should be some notations like H, S, Sa, etc., for samples of hair, skin, saliva respectively. And these notations should be encoded with that unique number to which the sample is assigned. The assigned number of the particular sample should be in encrypted form.

The collected samples and their assigned number should be then stored in the centralized database.

A huge DNA database can be made by going through the above mentioned process. There are many DNA databases around the world. United States maintains the largest DNA database with 'combined DNA index system'. Other countries, like Qatar, has adopted privately developed DNA database. Qatar has adopted bode dbSearch. Many countries collect the samples of new born babies so as to check for diseases. [11].

There are government databases in many countries, for instance, Canada has National DNA data bank, Denmark has Central DNA profile register, Switzerland has Swiss National DNA database. [11].

The applications of DNA databases are mainly for arrestees and familial searching. Countries having National DNA database is used by law enforcement agencies or to suspect the criminal and crime.[11].

So, in the similar fashion, our country can have DNA database for the UID and if needed for some other

applications also like population count, imposing new schemes and services etc. With the DNA database not only UID, many other problems and other thing can be sort out with an ease.

Collecting samples for DNA should begin from metropolitan cities. The people living at borders should be told first to give samples. Then the government employees should be told to get the testing done. This process should be tested in a small area in a city first so as to see the effectiveness of it. Then slowly it should be taken towards the rural areas and small cities as they are not having proper setup of laboratories.

For setting up of laboratories in hospitals, a large amount of expenditure is required. So, for that help can be taken from FDI (Foreign Direct Investment). FDI is investing directly in buisnessing or for production in a country.

Until, the process is being done in big cities, the setups of more government hospitals and laboratories should take place in rural areas. Once, the process results into success in big cities and areas it should be taken towards rural areas.

Softwares should be designed, for assigning unique numbers to DNA samples accurately an in encrypted form.

For refugees/stateless/asylum seekers, the DNA sample should be collected and again the unique number to be assigned to the samples with some notations for e.g. ref for refugees, stat for stateless, in encrypted form. The legal status of these categories should also be specified i.e. whether the particular refugee has legal status or not. The legal status of these people should also be stored in the database so that only legal refugees/stateless/asylum seekers/ can avail the services provided by the government. The refugees/stateless/asylum seekers should get the legal status from the Indian Government, and then only their DNA sample should be taken.

In e-governance, the main problem is proper identification. With this technique, this problem will get nullified.

Minimum age of making of UID card is 5. But with this technique whenever a new born comes into existence then his/her sample can be taken for DNA test and then UID can be made.

With the big database of DNA's and UID's, there will be an ease for counting of population all over India and government can save a lot of expenses which is being used for population count. Correct analysis will be done.

5. SYSTEM DIAGRAM
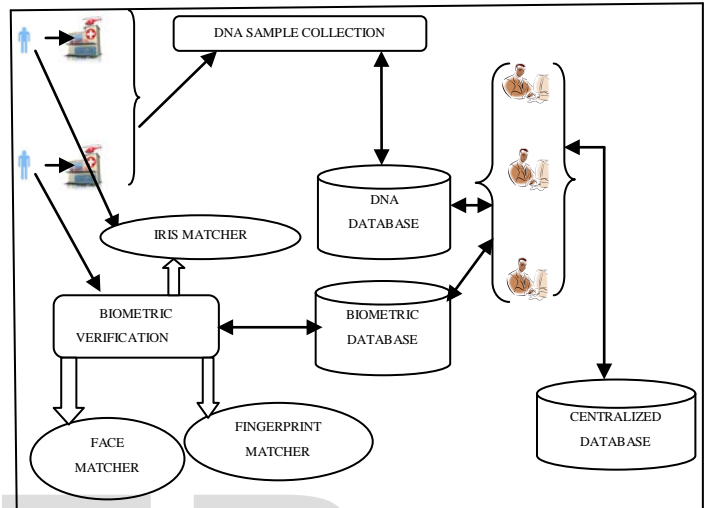
5.1. FLOW CHART
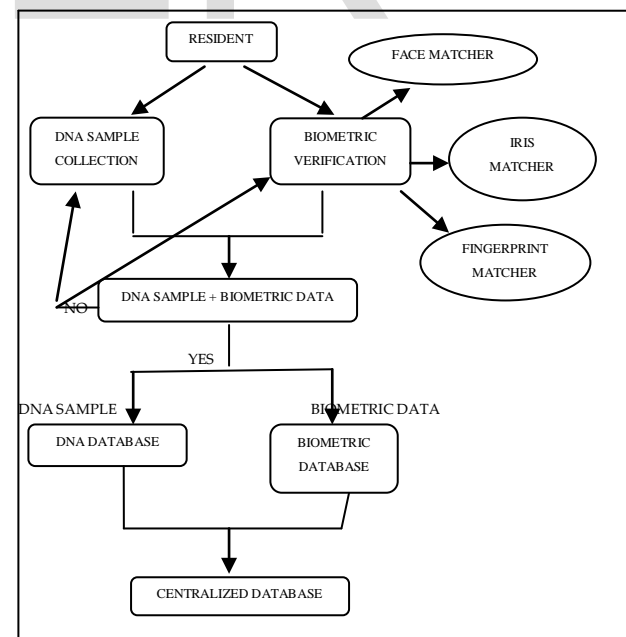
6. CONCLUSION

UID is for unique identification, so there should be something unique for identifying every person in India. DNA is something which is unique to every individual on this earth. So, the Government can opt for DNA technique for making the UID card making India more secure, increasing accessibility to services and rights.

With having the big database of UID, new scheme can be invented and developed more effectively and with ease.

Deceased/fake/ non-existence people can't draw pensions, salaries or other services as they will get eliminated. It also provides the assurance that only real person will get the facilities.

DNA technique is beneficial for various sectors, for instance, banking, medical, defense, education, welfare, etc. Other things can be availed easily for e.g. vehicle registration, voter card, medical services, etc., through only one UID card.

It also provides ease in Public Distribution System (PDS). Illegal immigration and migration is restricted. It will also overcome red-tapism.

It will give accurate results. Voting and elections can be done in more fair and effective manner. Enhance accessibility and financial exclusion will get rectified. It will remove redundancy. Below poverty line (BPL) people can avail services, schemes and subsidiaries with ease.It will curb terrorism and corruption to a good extent. It will save a lot of time and energy.

Some shortcomings of DNA technique are that it will take lot of time and costly. There are no proper laboratory setups in rural areas. There is some exception for identical twins.
" Digitalization should be done, instead of digitization."

7. FUTURE WORK

In future, this DNA Database can provide speedy justice to rape or sexual assaults victims.

In February 2013, a commission was set up to improve women's safety in India. This commission proposed setting up of "one-stop crisis centers" for the rape/sexual assault victims in designated hospitals. There is no effective development has taken place in most states.

If this recommendation gets successful, then the collected samples of victims can be matched with the DNA database and the criminal information can be gathered in one go. This will ensure speedy investigation and full proof evidence. There will be no more delay in giving justice to the victim.

Other crimes can be investigated easily with the help of this DNA Database.

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