

Press Release

UIDAI's biometric technology ready to achieve scale and high accuracy for country's 1.2 billion population

The UIDAI released a report titled “The Role of Biometric technology in Aadhaar Enrollment” which confirms the high degree of accuracy of biometrics used in the UID project in the context of large scale enrolments across India. This lays to rest the fear that the use of biometric technology in the Indian context would be unreliable and flawed. It has been affirmed that UIDAI's biometric capability for enrolments is ready to handle high throughput (10 lakh Aadhaars per day), accuracy (99.965% on duplication detection) and scale (database can be of 1.2 billion people). The UIDAI since issuing the first Aadhaar number on September 29th 2010 in Tembhali, Maharashtra has issued over 10 crore Aadhaar numbers as of Dec 31st 2011, making it one of the largest biometric systems in the world.

The primary design decisions that have enabled achievement of this high degree of accuracy and scale are:

- a.. Combining both 10 Finger Prints and 2 Iris has greatly improved accuracy of de-duplication. The multi-modal 'Fusion' approach of biometrics has been validated.
- b. The multi-ABIS solution architecture (three biometric service providers) has contributed to lowering costs, increasing throughput and fine-tuning accuracy.
- c. The combining of demographic and biometric de-duplication has further helped in eliminating trivial duplicates and increasing accuracy.
- d. The highly scalable architecture based on open components and commodity hardware has made this ramp-up possible

The UIDAI conducted a detailed analysis of the biometric accuracy and performance based on 8.4 crore Aadhaar enrollments. This analysis has resulted in the UIDAI releasing this paper “The Role of Biometric Technology in Aadhaar Enrollment”.

Some of the key findings of this paper include:

- Since both fingerprints and irises are being captured using high quality sensors, as well as the use of 3 different biometric service providers at the UID's CIDR (Central ID Repository), high levels of accuracy are being achieved in enrolling residents.
- On the effectiveness of biometric technology in Indian context with large number of rural/agricultural workers, the analysis has shown that the 'Failure to Enroll' (FTE) rate of the UIDAI Biometric system is at: 0.14%. This implies that 99.86% of the population can be uniquely identified by the biometric system. Even the exceptions (0.14%) are checked manually and processed. The False Negative Identification Rate (FNIR) of the UIDAI system is computed to be as low as 0.035%. This implies that 99.965% of all duplicates submitted to the biometric de-duplication system are correctly caught by the system as duplicates.
- The amount of hardware processing power needed by the UIDAI system is well within the design and expectations and has not increased in a non-linear fashion.

Based on the analysis, the UIDAI confirms that the enrollment system has proven to be reliable, accurate and scalable to meet the nation's need of providing unique Aadhaar numbers to the entire population. It is asserted that the system will be able to scale to handle the entire population. The analysis resulting from such a large data set (8.4 crore enrollments) is empirically repeatable and statistically accurate.

Shri.Nandan Nilekani,Chairman, UIDAI said "The UIDAI biometric system is processing over 100 trillion biometric person matches with a high degree of accuracy each day capable of issuing 10 lakh Aadhaars daily. This makes it not only one of the most accurate but soon to be the largest biometric system in the world."

Shri.R.S.Sharma, Director General, UIDAI said "This certainly gives us a high degree of confidence in executing this project of national importance with scale and accuracy."
