SECURING IMAGE BASE OF IRIS SECURITY SYSTEM USING CRYPTOGRAPHIC TECHNIQUES

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Abstract: Iris recognition is an automated method of biometric identification that uses mathematical pattern-recognition techniques on video images of one or both of the irises of an individual's eyes, whose complex random patterns are unique, stable, and can be seen from some distance. Databases of enrolled templates are searched by matcher engines at speeds measured in the millions of templates per second per CPU, and with remarkably low false match rates. But here issue is that stored biometric sample is stolen by hacker than they can be missing used. The objective of our research is to secure the biometric samples taken during scanning using encryption mechanism. So if hacker does steal any information then he will not be able to understand it. Biometric security is nothing if the biometric samples are not secure.

[I] IRIS RECOGNITION SYSTEMS

Several hundred millions of persons in several countries around the world have been enrolled in iris recognition systems, for convenience purposes such as passport-free automated border-crossings, and some national ID systems based on this technology are being deployed. The iris-scan process begins with a photograph. A specialized camera, typically very close to the subject, not more than three feet, uses an infrared imager to illuminate the eye and capture a very high-resolution photograph. This process takes 1 to 2 seconds. A key advantage of iris recognition, besides its speed of matching and its extreme resistance to false matches is the stability of the iris as an internal and protected, yet externally visible organ of the eye.
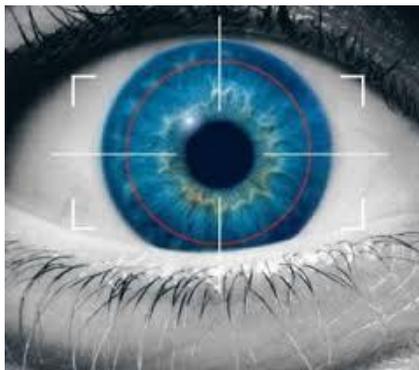
password because of its unique, random features. It is always with you and cannot be stolen or faked. The iris of each eye is absolutely unique. Probability that any two irises could be alike is one in 10 to 78th power the entire human population of the earth is roughly 5.8 billion. So no two irises are alike in their details, even among identical twins. Even the left and right irises of a single person seem to be highly distinct. Every iris has a highly detailed and unique texture that remains stable over decades of life. Because of the texture, physiological nature and random generation of an iris artificial duplication is virtually impossible.

Fig:1 Human eye

[II] Iris as a powerful identifier

Iris is the focus of a relatively new means of biometric identification. The iris is called the living

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