

Biometric Authentication Technology

World First Contactless Palm Vein Pattern Biometric Authentication System

Overview

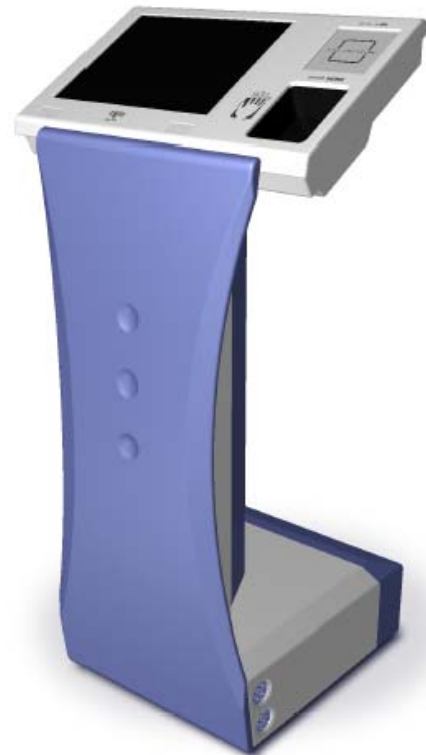
[Fujitsu Advanced Technology](#)
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Fujitsu Laboratories Limited has announced its newly developed and the most advanced technology for the **world's first contactless biometric authentication*** system that can verify a person's identity by recognizing the pattern of blood veins in the palm.

Fujitsu's new technology is a combination of a device that can read the pattern of blood vein patterns in the palm without making physical contact (see photo) and software that can authenticate an individual's identity based on these patterns. Infrared light is used to capture an image of the palm as the hand is held over the sensor device. The software then extracts the vein pattern and compares it against patterns already stored in the database.



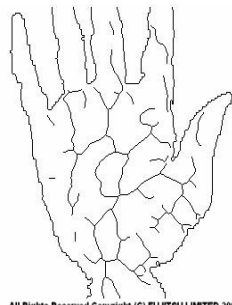
Contactless palm vein recognition unit



**Door security prototype system
(by PFU)**



Infrared image



Vein and hand contour image

*Biometric authentication is a technology for recognizing an individual based on the human physiological or behavioral characteristics to verify that person's identity. (Applications for International Patents, Sept. 3, 2002)

Technical Highlights

High Reliability & Contactless Authentication Technology

The palm vein pattern is unique to every individual even in twins, and apart from size, this pattern will not vary over the course of person's lifetime after setting while still in the mother's womb. This pattern lies under the skin makes it that much harder for others to read.

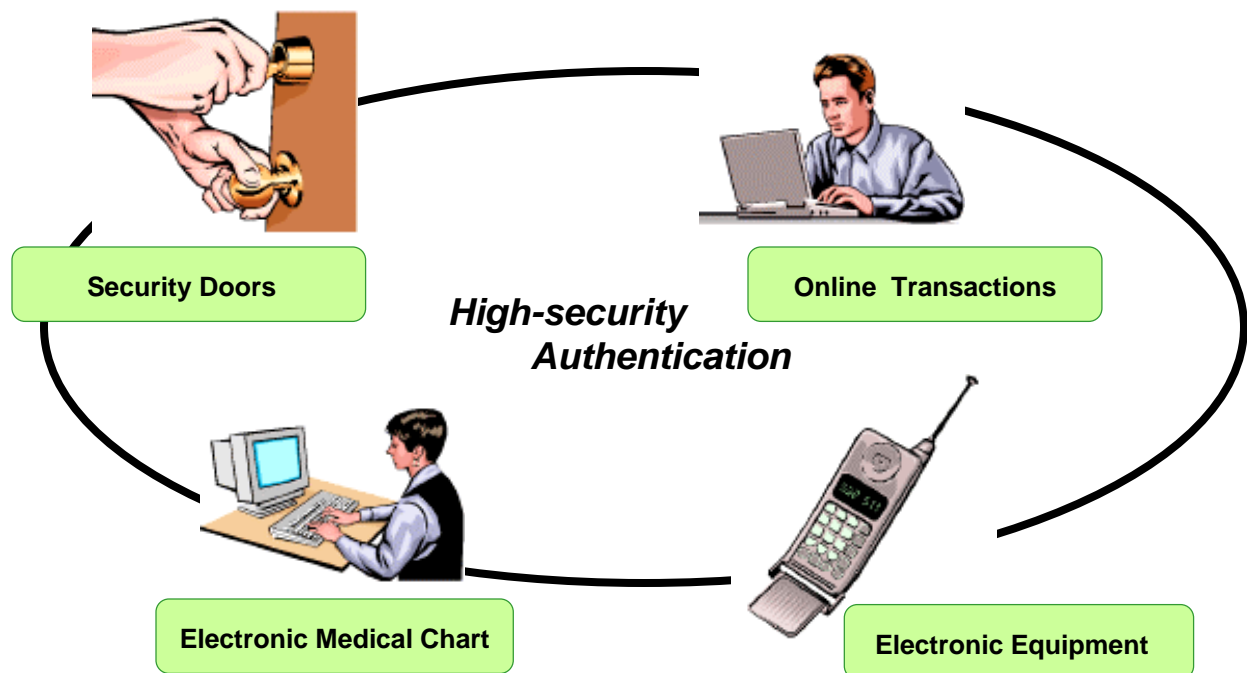
High Precision of Individual's Identification

Tested with the cooperation of 700 people aged 10 to 70 from different walks of life, a total of 1,400 palm profiles were collected. In terms of authentication precision, the system had a false rejection rate of 1% and a false acceptance rate of 0.5%, in case that two vein patterns are used in registration.

Practical Applications

Embedded and Application in a Variety of Equipment & Solutions

In public spaces or medical facilities where hygiene is a particular concern, the contactless feature of this system makes it especially appropriate. Biometric identification has uses other than security: it can be used to authenticate an individual's identity to provide services customized for that user.



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NOVEMBER, 2003