FUJITSU

Case Study: PalmSecure^{TM}
Maximum access security for sensitive areas

"Highest degree of security with ease of handling and at the same time low costs and maintenance."

Thomas Bengs, Head of Security Solutions, SoBG, Fujitsu FTS

The Customer

Country: Germany
Industry: Security technology - Service provider
Sector: Building security - Data center
Web: www.pcs.com
Web: www.tds.fujitsu.com

PCS
TDS
a Fujitsu company

The project

PCS INTUS 1600PS (PS = PalmSecure) access control system with Fujitsu PalmSecure palm vein recognition, used in Fujitsu TDS data centers.

The solution

A biometric authentication procedure with maximum security, applied as a sensor in the INTUS 1600PS access control system together with our partner PCS.

General conditions

All rooms, in which information is archived or processed or in which the devices required for the former are operated, are rooms that are in need of protection. Data centers are an example of this, as well as archives, in which data media and files are processed and kept centrally. This also applies to include control centers.
These sensitive and security-relevant areas of buildings require special protection. In such rooms unauthorized persons can cause immense damage through negligent actions and also through unintentional misconduct.
Where possible, the periods of time that employees spend in these rooms should be limited to what is absolutely necessary for official business. Access itself must be granted, supervised and recorded. This not only contributes toward compliance with information security regulations (e.g. BSI basic protection and ISO 27001), but results - especially with IT service providers - from customer contracts that call for a high degree of security and proof of such security.

The challenge

The authentication of persons in security-critical zones requires procedures that are easy to use and at the same time offer a very high degree of protection against forgery.
The expenditure for effective and secure access protection may not result in any impairment to official proceedings or in too complex procedures that entail a great deal of effort and high costs.

The solution for access to security-relevant company areas may not be a stand-alone solution and should also be suitable for general use and for a time recording system, and it should harmonize or ideally cooperate with these. Such a time recording system can be installed as a supplementary security measure so that access is only granted to persons already registered in the time recording system.

The solution

The access control system with INTUS 1600PS palm vein recognition from our partners PCS combines these requirements for simplicity and high security. It is based on PalmSecure technology from Fujitsu. All data centers of Fujitsu TDS are generally equipped with this access system.

The human palm vein pattern is extremely complex and is in the body best protected against any misuse and manipulation. The position of the veins remains the same throughout your lifetime and is different for each and every individual. Dirt or superficial injuries to the skin have no impact. Handling with the MagicEye is performed intuitively by the user: The hand is held just in front of the sensor and the system decides precisely who is granted access or not.

When the persons are scanned into the system, the palm vein pattern is recorded, converted into a template and saved. To identify a person the INTUS 1600PS system compares the recorded vein pattern with all the saved vein templates (identification). During verification the template is saved on an RFID card (Template on card) and the recorded palm vein pattern is compared with the template on the card. The INTUS 1600PS can be operated in combination with traditional RFID access readers and thus becomes an access system for the high-security area.
It is also possible to connect the INTUS 1600PS as a reader to other access and time recording systems via an interface.

How palm vein detection works

Palm vein detection is based on the absorption of infrared rays (heat rays), which encounter the venous blood in the palm veins. The sensor transmits near-infrared rays toward the surface of the hand. The oxygen-reduced blood in the veins absorbs the infrared rays. The camera of the sensor makes a picture of the vein pattern, encrypts it and a special algorithm transforms it into a biometric template, which is then saved.

Palm vein recognition is practically impervious to environmental influences, is hygienic (contactless), only works with living tissue and according to the present state of technology cannot be manipulated. There is also considerably higher accuracy and security than with fingerprints or iris recognition. User handling is quick and easy.

The biometric palm vein sensor technology has proved to be successful in everyday use. The advantages of this technology are:

- Age-independent, highly individualized vein structure
- Biometric feature concealed in the body
- Impervious to dirt, moisture and superficial injuries to the hand
- Extremely exact and forgery-proof
- (Error rate of 0.00008% (access granted to an unauthorized person) or 0.01% (access denied to an authorized person being)
- Ergonomic, simple handling

The benefits are:

- Genuinely secure access control system,
- Easy to install and easy to operate system,
- Highly secure authentication through the palm vein recognition of a person – not a medium,
- Comprehensive application,
- Combination with time and attendance systems,
- Fast authentication procedure,
- Impervious to environmental influences,
- Relief of the burden on employees (they always have their identity with them and cannot forget/lose it ever),
- Extremely high user acceptance,
- Ease of implementation,
- Low administration and maintenance costs,
- Data security - no data storage in the sensor - two-fold system encryption,
- Uncomplicated, fast registration process
- Biometric data only has to be entered once in a lifetime

The benefits

The high degree of security has top priority. If required, the employee can also enter the room very quickly. The authentication process is quick and without any great handling effort. Access takes place on a personal basis and cannot be transferred to other persons (intentionally or unintentionally, card loss). The combination with the time recording system saves costs und ensures additional security. Administration expenditure is low.