FUJITSU

White Paper
FUJITSU PalmSecure ID Match
Biometric multi-factor authentication

FUJITSU PalmSecure ID Match is a biometric authentication solution which increases the security of ID badges and cards. The solution is based on a compact multi-function device that supports very secure, ergonomic and convenient multi-factor and single-factor authentication. PalmSecure ID Match is suited for implementation in a wide range of application scenarios and environments.

Contents

FUJITSU PalmSecure
Security always at hand

FUJITSU PalmSecure ID Match
The digital handshake

PalmSecure offers simple and reliable personal identification
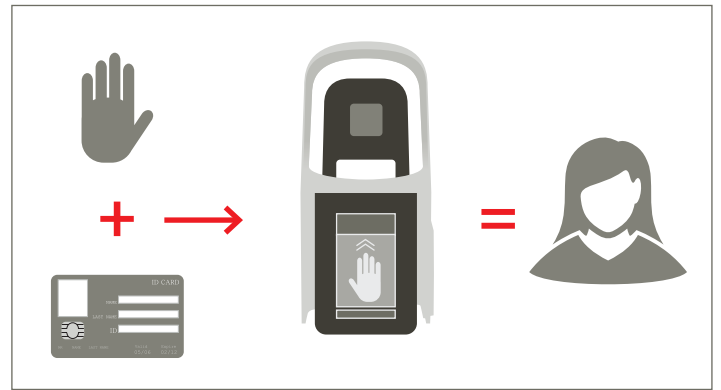
The only reliable forms of personal authentication are based on biometric characteristics, and the veins in the palm of the human hand are especially well-suited for biometric authentication. Palm vein patterns are unique for each person – even twins have different patterns. FUJITSU PalmSecure is the most precise, versatile and convenient biometric technology of its kind on the market:

- Maximum security: Veins are concealed under the skin, and the identification is literally "live" and forgery-proof, because the process functions only when hemoglobin is flowing through a person's veins.
- Maximum accuracy: With a false acceptance rate of less than 0.00008 percent, FUJITSU PalmSecure is the most precise authentication system in the world.
- Maximum performance: The registration process is complete in just ten seconds, and identification is complete in just one or two seconds – faster than any password solution.
- Highly accepted by users: The technology is touch-free and thus completely hygienic. The hand is simply held over the sensor – that makes PalmSecure easy to use.
- Quite versatile: The technology can be used for site access control, time recording and mobile applications, in the web and at the workplace.
- Used worldwide by airports, banks, business enterprises, data centers, governments, in the healthcare sector and in the retail sector.

And PalmSecure technology has an additional advantage: It can be combined with other authentication methods. **FUJITSU PalmSecure ID Match** offers a type of two-factor authentication that combines the unique PalmSecure technology with ID cards and badges. The solution is based on a compact multi-function device. The device is comprised of a touch screen, the latest generation embedded ARM processor board, a multi-card reader and Fujitsu's high security PalmSecure technology for personal identification and verification based on palm vein patterns. Fujitsu also provides a Software Developer Kit (SDK) with PalmSecure ID Match to enable fast integration in Identity Access Management applications performed by OEMs and integrators.

FUJITSU PalmSecure ID Match adds a new dimension of security to badges and cards – regardless of whether access, data or payment transactions need to be safeguarded. This is done by comparing the palm of a person's hand with the biometric identity stored on the chip of a smart card. This ID match ensures that the card holder is actually the legitimate owner. This authentication solution does not require the storage of personal biometric data on a server or in the cloud. The comparison of the biometric template on the card – which is just 1 KB to 2 KB in size – with the user's palm takes place directly in the FUJITSU PalmSecure ID Match terminal (match on device).

FUJITSU PalmSecure ID Match supports very secure, ergonomic and convenient multi-factor authentication. The solution can also be used instead of passwords for all processes in critical infrastructures that require stringent identification control procedures.

FUJITSU PalmSecure ID Match prevents misuse stemming from card theft or the disclosure of the PIN. Unauthorized access to buildings or the use of services can be prevented, not to mention the theft and manipulation of official, business or personal data and documents. The solution is also effective in preventing fraud in connection with the manipulation of automatic teller machines, electronic bank transactions and ID cards.

Fujitsu offers a complete solution platform comprised of hardware, software and services for optimizing existing security solutions:

- The hardware, namely the ID Match terminal, includes highly effective ARM technology, advanced security features and all the interfaces needed for security applications. The high-quality, tamper-proof device housing with integrated PalmSecure sensor allows for intuitive, touch-free two-factor authentication, with ample flexibility for various types of installation or mounting.
- The software is based on Linux. An SDK enables partners and customers to implement the application as part of their complete security solution. Demo applications are also provided as a means of support.
- Fujitsu supports partners and customers with consulting and training programs when it comes to developing and realizing individual, customized security solutions.

FUJITSU PalmSecure ID Match
Functions and highlights

Secure platform for customized applications

FUJITSU PalmSecure ID Match is a platform comprised of a precisely harmonized hardware and software stack that provides a secure environment for running the application. The business logic is defined by the application. Depending on the customer's concept, the logic of the solution architecture can run on the ID Match terminal or, either partially or completely, on the host system.

- If the ID Match terminal is used as an intelligent system, improved security is delivered without the need for a database and without having to store the users' personal biometric data.
- If the business logic runs on a host, the ID Match terminal serves as the control device, but the match process does not necessarily need to be performed by the terminal itself. This concept is helpful when the scenario requires that the user authenticates himself just one time to gain access to various services. The coupling of a time/attendance system, physical access control, PC log-in, etc. is an example of this in a business environment.

The logic of the solution architecture can run on the ID Match terminal or, either partially or completely, on the host system.
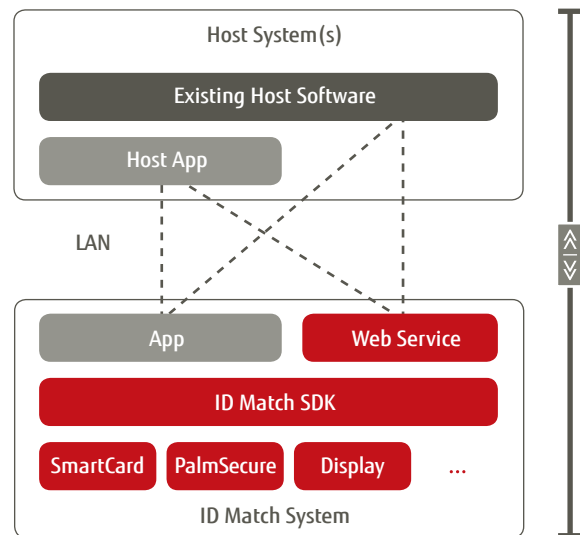
The ID Match terminal: Convenient. Effective. Vandal-proof.

For two-factor authentication scenarios, FUJITSU offers PalmSecure ID Match with the ID Match terminal as a very efficient device equipped with an ARM Cortex-A8 CPU and a secure crypto coprocessor, plenty of RAM and fast flash memory.

The elegant ID Match terminal features intuitive usage with a 4.3-inch touch screen made of acrylic glass. The display guides the user through all input tasks. The matching of the palm with the biometric identity stored on the smart card is performed smoothly and within just seconds by the extremely precise FUJITSU PalmSecure sensor integrated in the terminal.

The ID Match terminal is vandal-proof and wear-resistant thanks to the premium materials from which it is manufactured. The terminal can be used as a stand-alone or wall-mounted device, and can even be integrated in a POS system. Customers having tailor-made device housings also receive assemblies that ensure a perfect fit.

FUJITSU PalmSecure ID Match supports various types of cards. The multi-card reader module of the ID Match terminal features both touch-free and contact modes, as well as the swipe function. External and internal SAM slots, plus LAN and USB ports, are also provided. The device operates with Power over Ethernet (PoE) or with external power via USB.

FUJITSU PALMSECURE ID MATCH TERMINAL
FOR INTUITIVE MULTI-FACTOR-AUTHENTICATION

1) 4.3-inch touch display
2) Ergonomic acrylic glass hand guide
3) FUJITSU PalmSecure sensor
4) RFID (antenna) reader
5) Magstripe reader
6) Smartcard reader (contact)

FUJITSU PalmSecure ID Match
Functions and highlights

High-capacity software architecture

The software stack of FUJITSU PalmSecure ID Match is based on Linux and harmonized with the hardware so that all interfaces and devices are supported at operating system level. Security can be implemented at the logical level, for example, in response to requirements for constant event logs, a secure administration interface or a self-test function. A secure recovery mechanism is also provided, as is a mechanism for the secure execution of code. The device firmware can be securely updated with packetized repositories; this also applies to firmware for internal components such as card and magnetic stripe readers.

Furthermore, an SDK is provided for access to system functions and administrative tasks. The SDK enables flexible solution integration and minimizes the work involved in developing the end application. A demo application is included in the SDK that demonstrates how the basic functionality for the registration of data on smart cards and the matching process work. This provides developers with valuable support when writing programs that deliver an optimal user experience. Other application development support features include a template for writing card-specific plug-ins, sample code and implementations for contact and contact-free smart cards.

Comprehensive support

Fujitsu leads the way toward secure electronic identities with PalmSecure – at the physical, logical and functional level – to ensure that a user is indeed the person authorized to gain access to specific tasks and functions. Partners and customers receive complete support for this technology through consulting services and training programs. At the same time, Fujitsu is making considerable investments in the expansion of the PalmSecure concept and the development of solutions, such as reciprocal authentication based on OpenLimit truedentity® – this software enables secure authentication as well as secure data communication via a secure data channel. The range of partner solutions available for PalmSecure ID Match, such as identity management that is easily integrated in any IT infrastructure, will also be expanded.

More information about FUJITSU PalmSecure ID Match
Internet: http://www.fujitsu.com/PalmSecure

FUJITSU PalmSecure ID Match. Reliable verification of personal identities

- **Maximum security** thanks to the unique precision of FUJITSU PalmSecure technology
- **Extraordinary ease of use** thanks to intuitive, hygienic and touch-free operation
- **Customizable** thanks to flexible software that addresses specific needs
- **Universal utilization** to improve security at the physical, logical and functional level
- Option for usage as a **match-on-device solution** – without a database – for the highest levels of data privacy
- **Integration-enabled** for overarching security solutions
- **Future-proof** thanks to consistent further development

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