

SIEMENS

Siemens Biometrics Center

Real World Biometrics Applications



biometrics center

Who is Siemens Biometrics Center?

- Siemens Biometrics Center is part of Siemens AG Austria software development branch “**Program- and System Engineering PSE.**

PSE is Siemens’ largest engineering group with over of **7000 engineers** in over 20 places worldwide

- **PSE Biometrics Center** acts as a provider of **biometric products and solutions** for all Siemens groups worldwide.
- **Our customers** benefit from
 - our **long term, appreciated experience**
 - our **market proven products**
 - **State-of-the-art** biometric technology

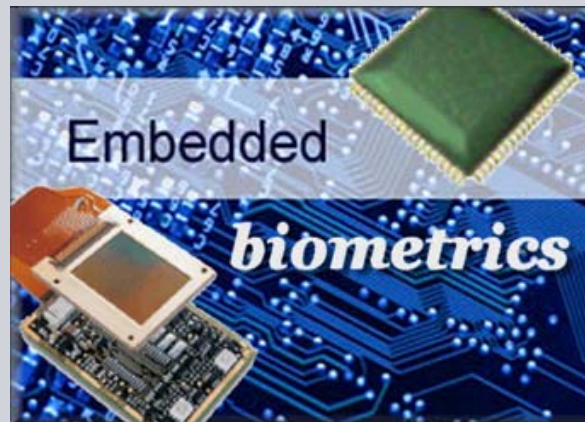


PSE. Intelligent Net Working

The Siemens biometrics portfolio

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One goal - four product lines



The Siemens biometrics portfolio

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One goal - four products



Homeland Security Suite

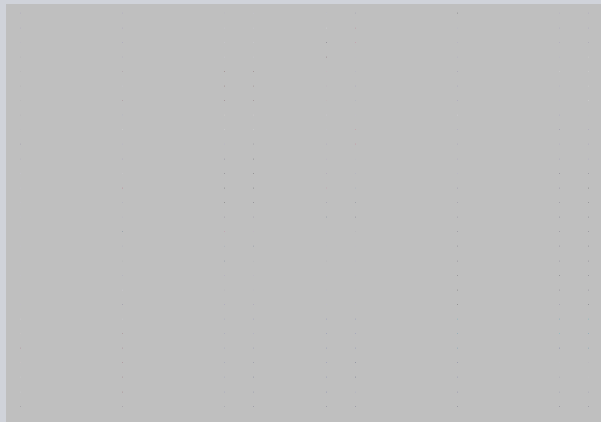
A system for the creation and verification of biometric travel documents.

Compliant with international standards.

The Siemens biometrics portfolio

One goal - four products

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Siemens ID Center

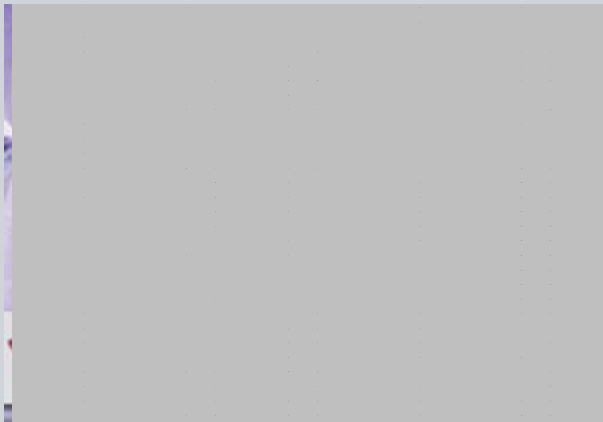
Powerful server-based biometric identification for high processing speed and volume.

Combines flexibly
with many
applications.

The Siemens biometrics portfolio

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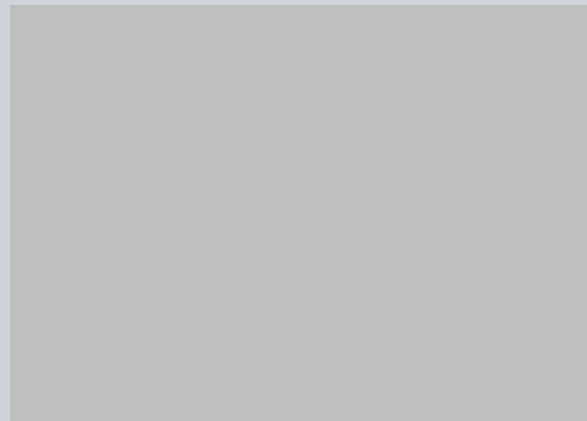
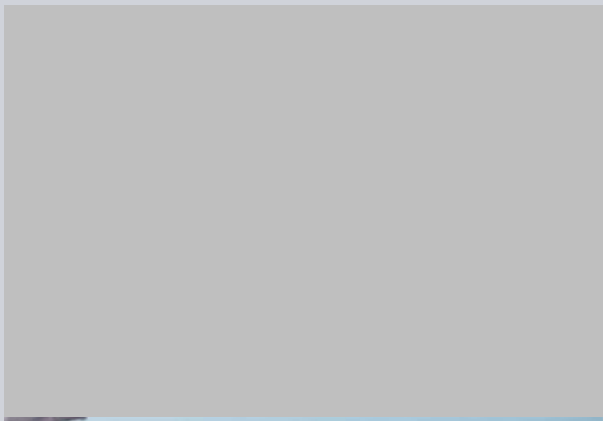
One goal - four products



SmartMatcher

Stores the fingerprint on its chip and matches it against the fingerprint scanned for verification.

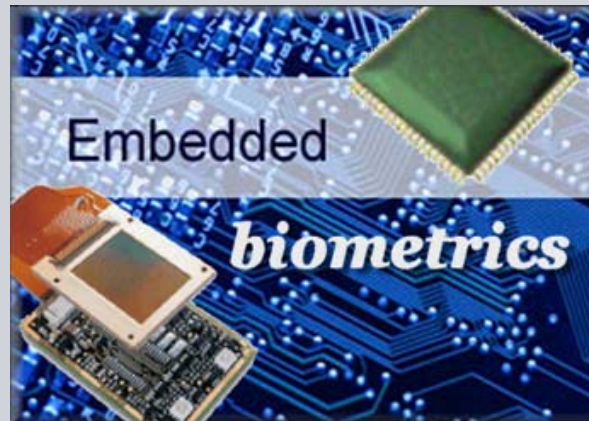
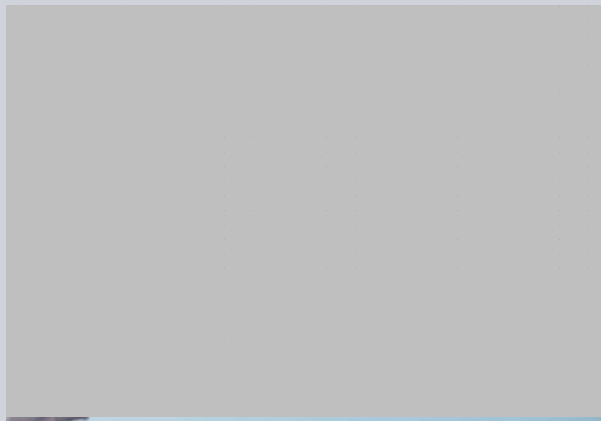
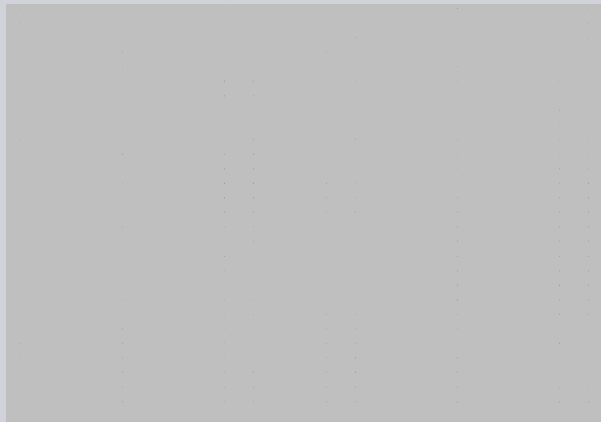
All the data remains on the chip!



The Siemens biometrics portfolio

One goal - four products

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**Embedded
biometrics
technology**

"Invisible"
biometrics in
many everyday
scenarios:
unlocks the door
for you, adjusts
the height of your
car seat, plays
your favorite
radio program,
and lots more...

ID Center

Real World Biometrics Applications

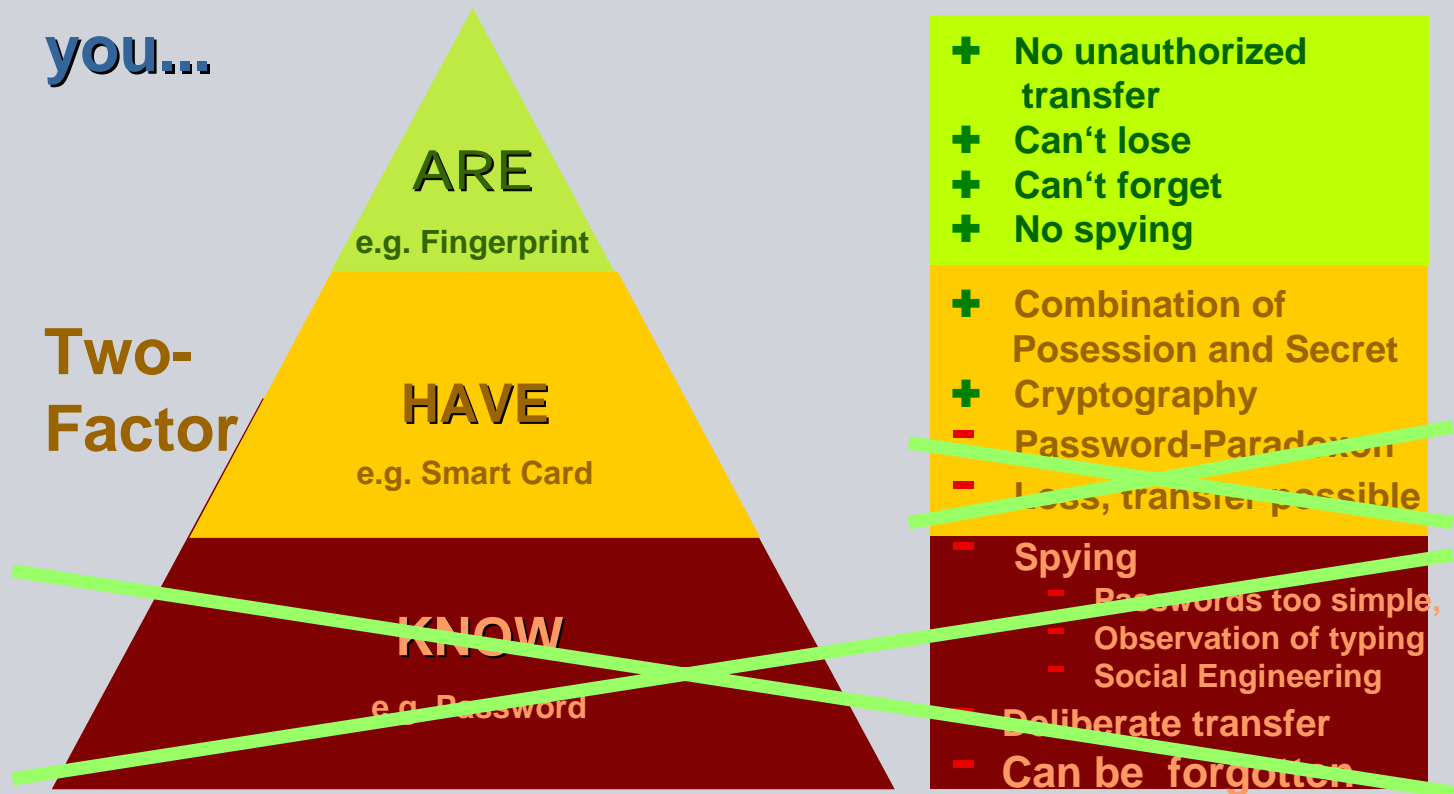


biometrics center

Identifying people & User authentication

What you...

Two-Factor



The password / PIN problem...

*“Password reset represents a call volume range of **10 percent to 30 percent** at the IT service desk. In a non-automated support model, **password reset costs range from \$51 (best case) to \$147 (worst case)** for the labor alone. **Gartner Group (Technology, T-15-6454)**”*

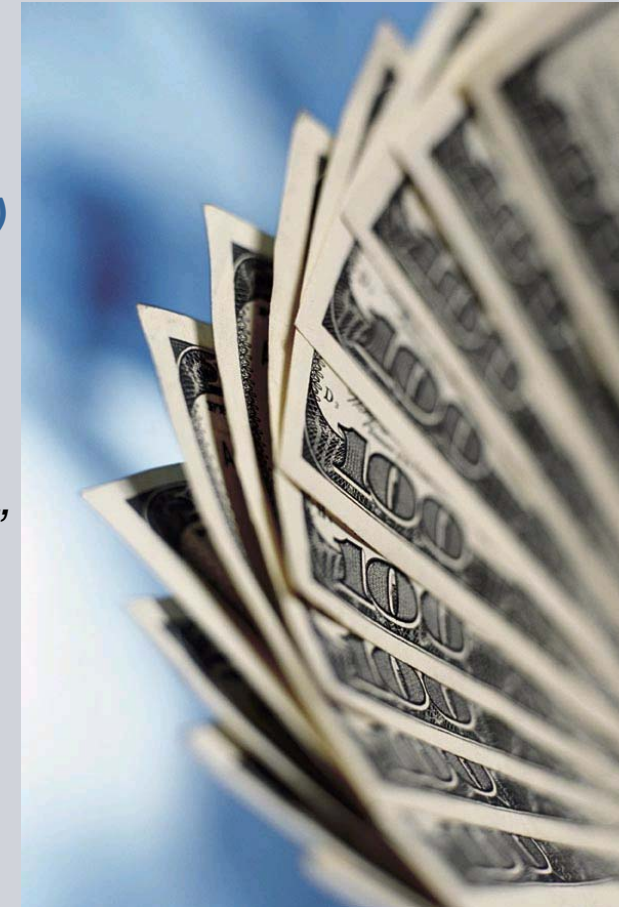
*„**One password reset action per user per quarter. Costs of reset action \$75**“ **A.Sasse / Dept. Computer Science / UC London /UK***

*“**40% of all help desk calls are for forgotten passwords.**”
Gartner Group*

*“The Meta Group estimates that **Help Desks receive 1.75 calls per user per month**, and **30% of those calls are for password resets.**”*

Meta Group

Combined Token + PIN based technology causes due to token management (blacklisting, lifespan, invalidation, registration processes) a heavy additional cost factor



Not all are equal ...

Genotypical

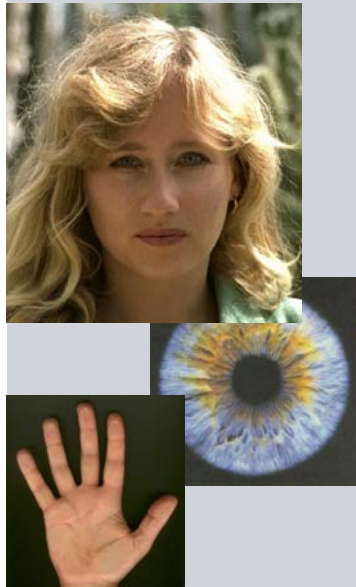
- Feature mostly defined by genetic parameters

Randotypical

- Feature created by random process in embryonic state

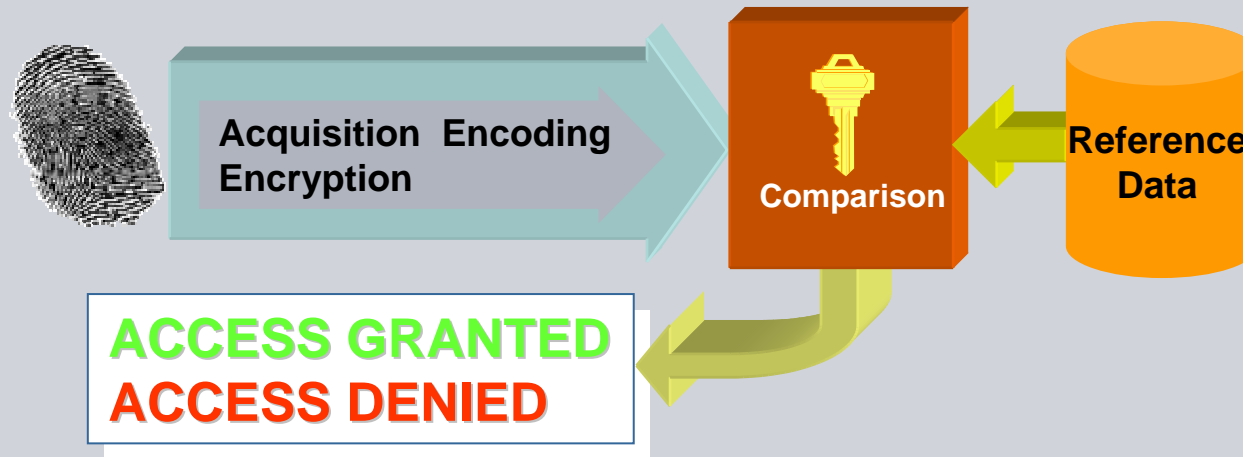
Conditioning

- Feature defined by behavior

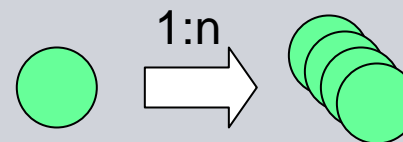


<i>Biometric</i>	<i>Comfort</i>	<i>Accuracy</i>	<i>Coverage</i>	<i>Investment Cost</i>
<i>Fingerprint</i>	0000000	0000000	00000	000
<i>Signature (dyn.)</i>	000	0000	0000	0000
<i>Face</i>	00000000	0000	0000000	00000
<i>Iris</i>	00000000	00000000	0000000	00000000
<i>Retina</i>	000000	00000000	00000	0000000
<i>Hand Geometry</i>	000000	00000	000000	00000
<i>Voice</i>	0000	00	000	00
<i>DNA</i>	0	0000000	000000000	

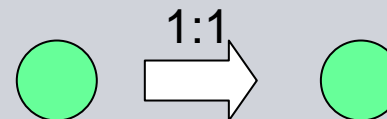
How does it work ?



Identification



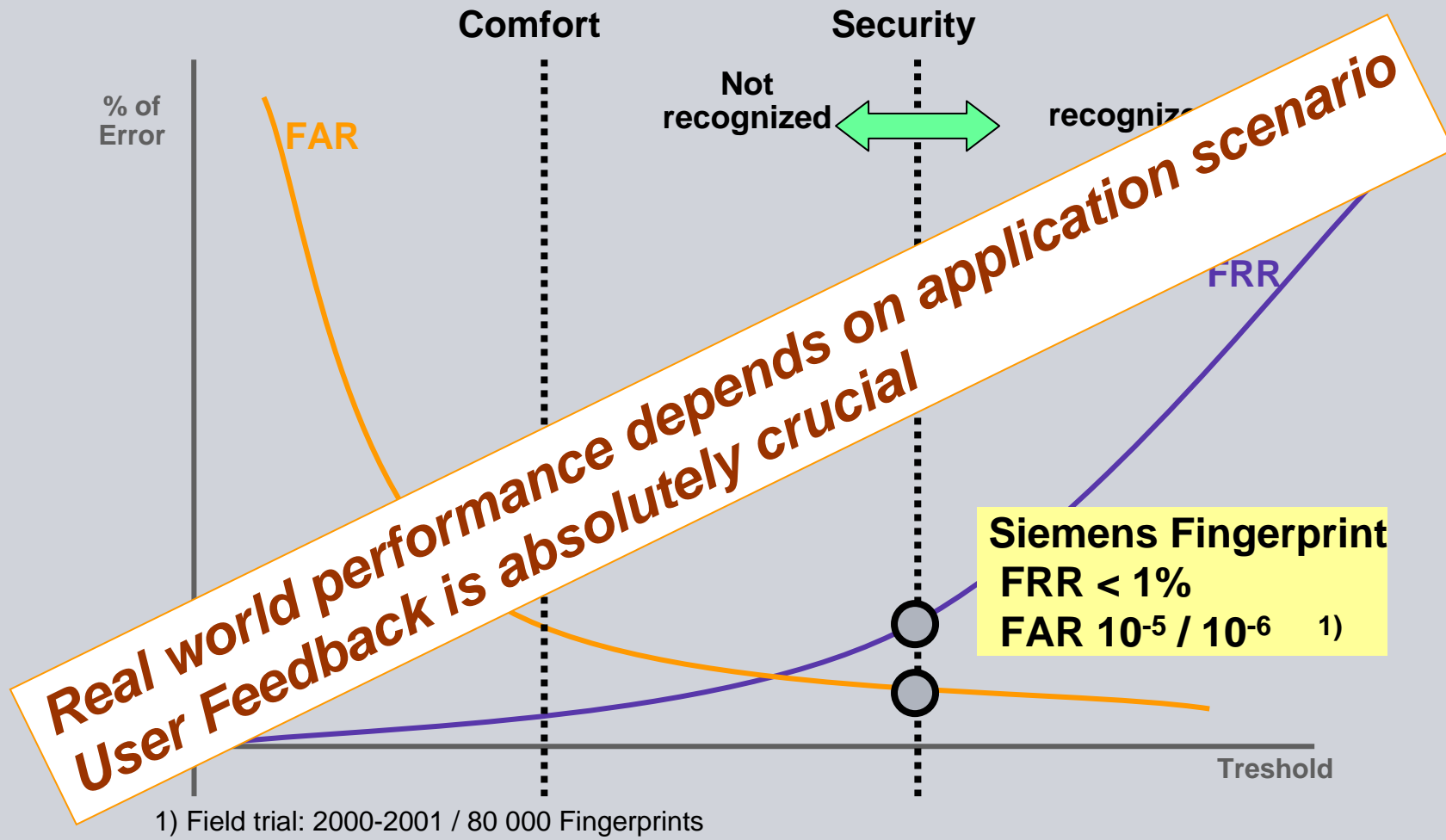
Verification



Enrollment



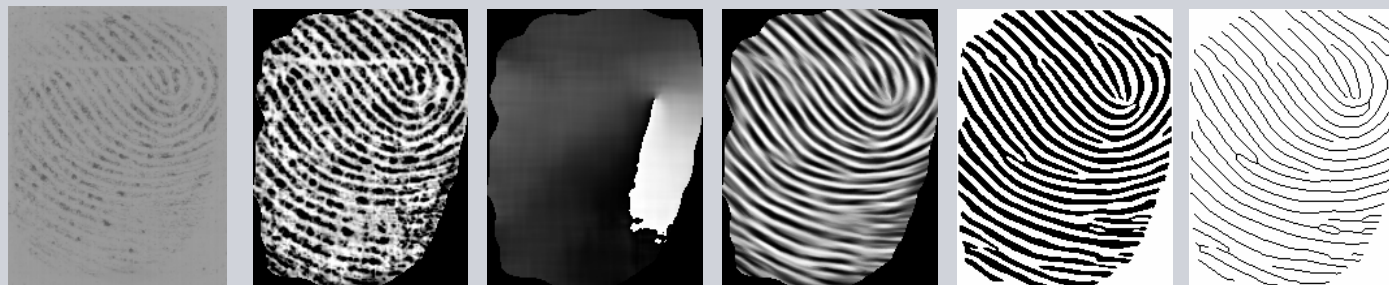
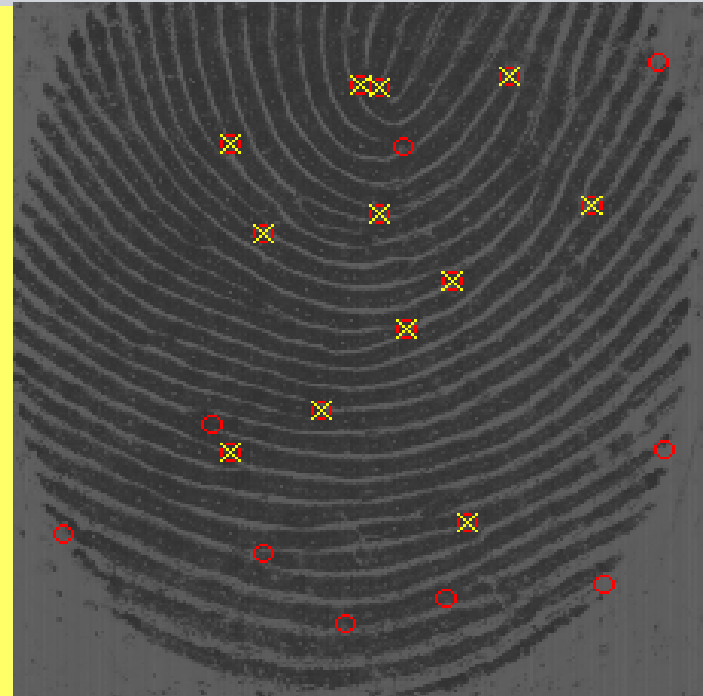
Performance of Biometric Systems



Fingerprint Biometrics

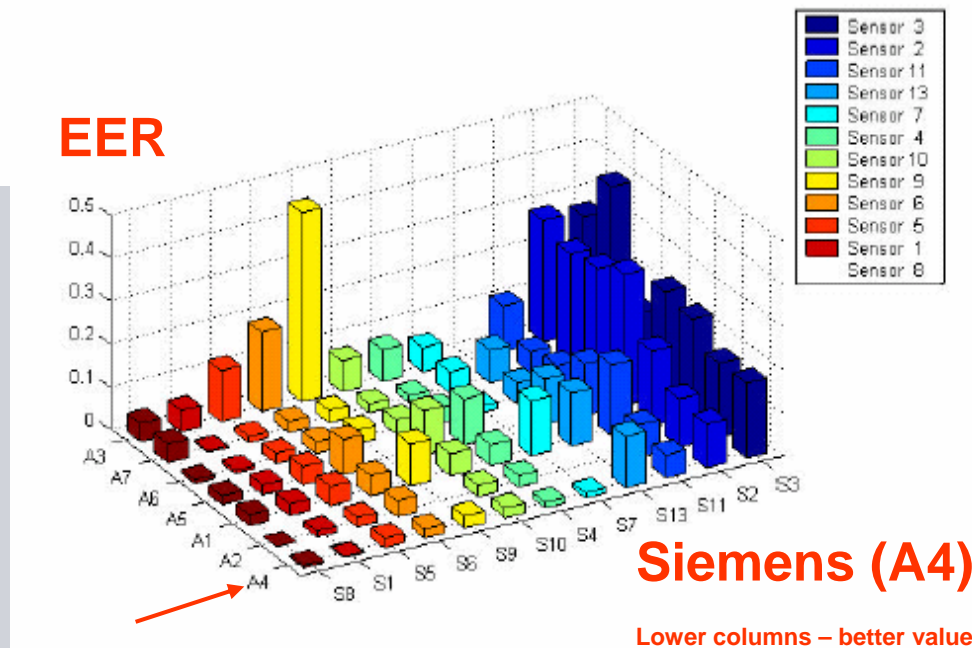
How does it work ?

Position / Direction of line ends, twists, branches and loops
Characteristic positions are extracted (Minutia)
List of „live“ minutia is compared to stored reference template



Bio Finger I Results

→ Siemens technology (A4) performs best in terms of absolute error rates (EER,FRR)



→ Siemens keeps up this best performance on a range of different sensors

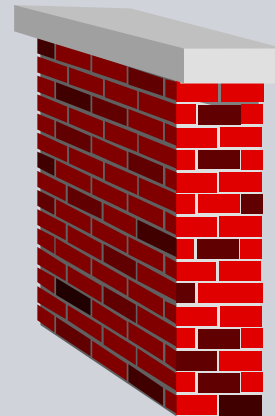
Source: <http://www.bsi.bund.de/literat/studien/BioFinger/index.htm>

What is (Biometric) Security ?

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Attacker



Prevention



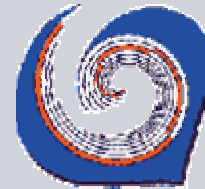
Value to protect

Something may be 100% secure because

- There is no attack
- The prevention is perfect (infinitely high and strong wall)
- There is nothing to protect

Security relates to a complete scenario regarding attack, prevention and value to protect

Siemens biometrics solutions score in different fields



Healthcare

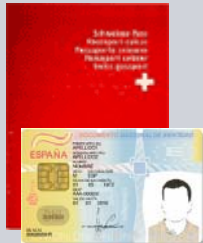
St Louis Ettelbruck Hospital,
Luxembourg, 50 more
hospitals

Finger-scan-based access to
medical network



Finance

Styrian health insurance fund
ONE system to provide
access control for premises
and PCs



Public safety and security

Swiss biometric passport
Spanish ID card



Travel and transport

Lufthansa check-in at
Frankfurt airport



Tourism&Leisure

Universal Studios
Orlando theme park
Control of multiple entrance
passes

Biometric Boarding PoC Lufthansa



Efficient & Safe Boarding of Aircrafts with Fingerprint

- 1:1 check of fingerprint vs. boarding pass with printed 2D barcode fingerprint data
- Convenient paperless boarding by fingerprint only (Biometric Identification)

- Trial included 400 Lufthansa employees
- Airport Frankfurt
- Field trial will extending to „Frequent Travellers“ in the near future



ID Center in Health Care Applications



- Access to all clinical applications on the tip of a finger tip
(One to many identification)
- 1100 PC work stations / tablet PCs
- 3000 Users (doctors and nurses)
- proven – in operation since October 2002
- Easy deployment – enrollment of 250 doctors in **one day**



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→ more than 50 hospitals world wide use ID Center !

Introduction Phase Susquehanna

Real world experience at Susquehanna

- Samples were taken on the **29th of July 2003 (Thursday)**
- Total of **2559 authentication requests from CAS**
- **Methods used:**
 - **64 % Biometric Identify**
 - **20 % Username & Password**
 - **16 % Biometric Verify**

People didn't know that they need to be enrolled !

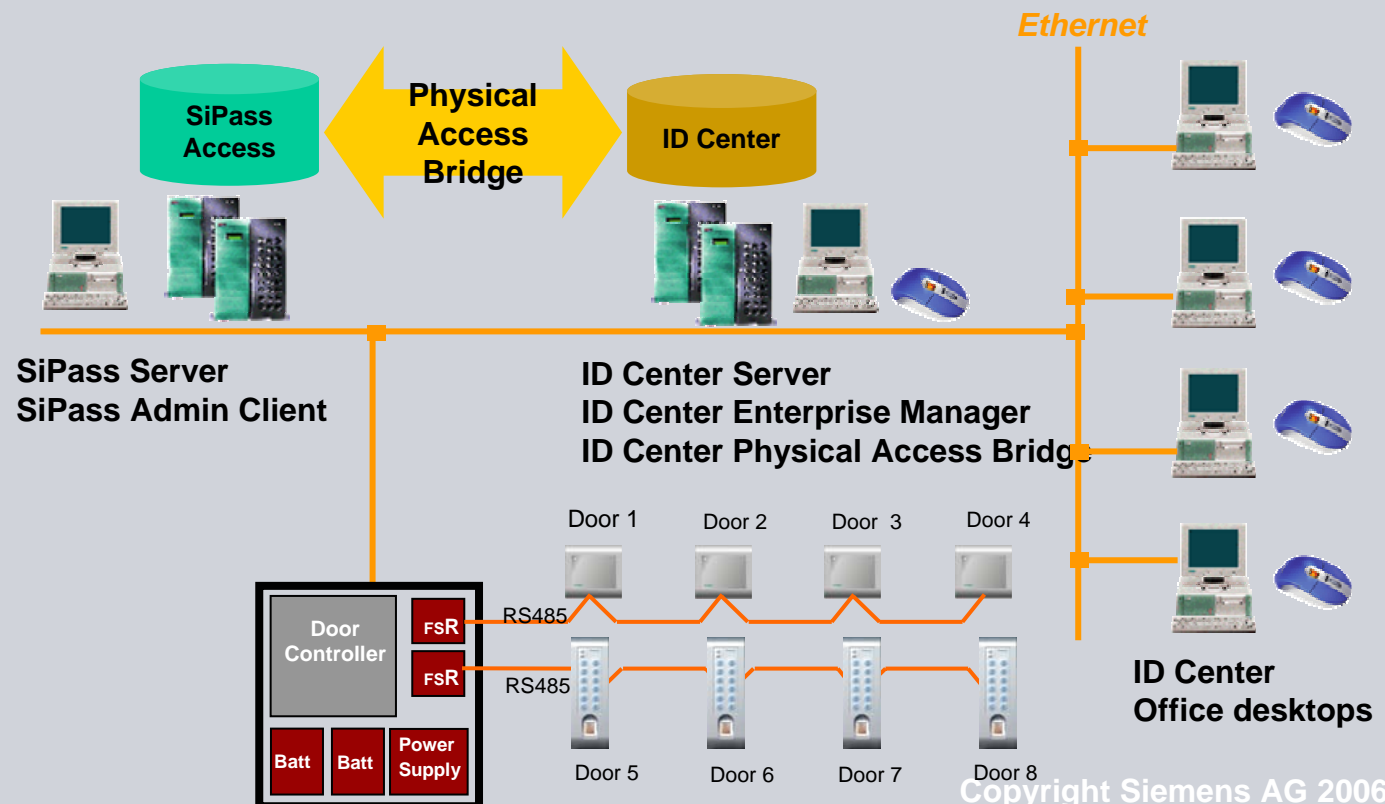
<i>Biometric Identify Success</i>	1472	90,5 %
<i>Biometric Identify Failure</i>	155	9,5 %
<i>Biometric Verify Success</i>	342	83,2 %
<i>Biometric Verify Failure</i>	69	16,8 %
<i>Username & Password Success</i>	463	88,9%
<i>Username & Password Failure</i>	58	11,1%

Steiermärkische Gebietskrankenkasse



Convergence of Physical and IT Security

- Integration between SiPass and ID Center
- Identity information exchange between ID Center and SiPass
- Single point of biometric enrollment at ID Center



Biometric Ticket Validation

Customer's Goal

- Reduce ticket fraud for multi-day passes
- Combining a ticket ID with a fingscan
- Personalized ticket

Solution

- **Siemens ID Center**
- Gateway Ticketing
- 42 new turnstiles *Islands of Adventure*
Universal Studios Florida
- **1.2 million visitors** in ID Center
- **30.000 visitors / day**
- in operation since **Oct. 2005**

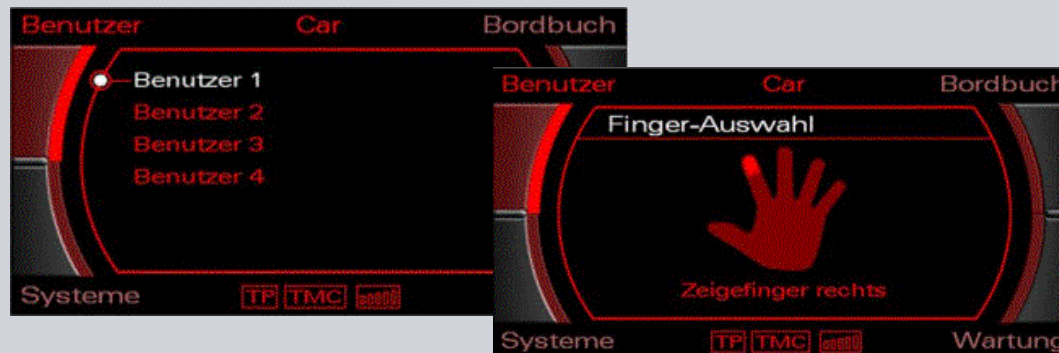


With a personal touch . . .

Siemens ID Module in cars

Audi One-Touch Memory, a still unique personalization system, allows storage and automated activation of individual vehicle settings via fingerprint recognition

-e.g. when vehicle is used by several drivers.



Biometrics – The Future of User Authentication is Now

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Simple and easy to use

**Saves money by cutting
password costs**

**Positive ROI within the first
year**

**Enhances security by
unmistakable identification of
users**

*Security is only as good as it's weakest link, and people are
the weakest link in the chain.”
[Bruce Schneier]*

Thank You !

Product Management Biometrics Center

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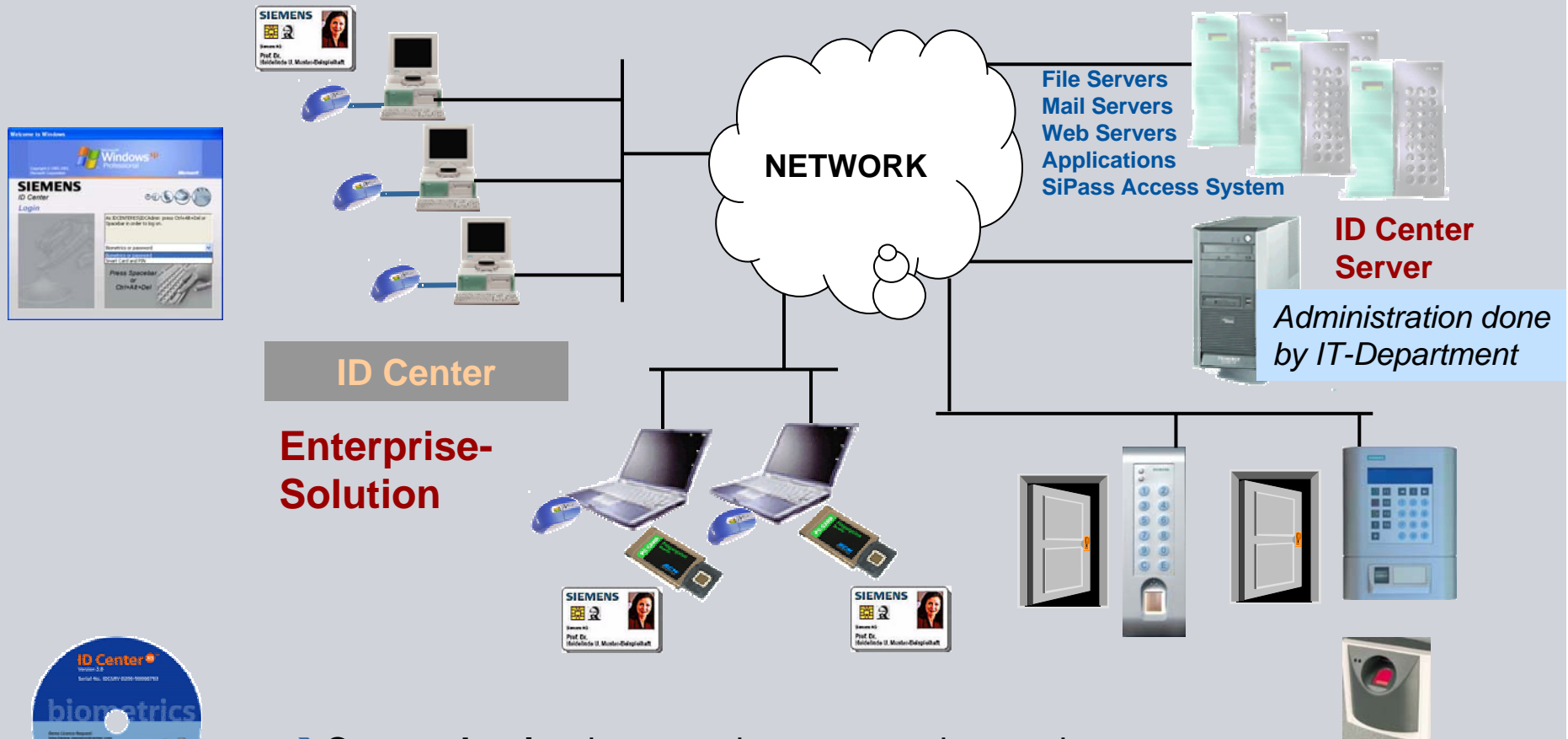
eMail: peter.weinzierl@siemens.com

www.siemens.com/biometrics

www.siemensidcenter.com

ID Center for Enterprises

No more passwords



- **Cost reduction** by removing password operation cost
- **True identification** of users
- **Converging IT access and physical access** through biometrics

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ID Center supports a number of different scanners for different environments



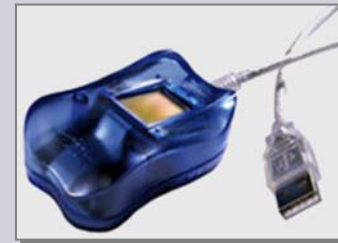
Finger scanner devices – office environment



Siemens ID Mouse Professional 5.0



Cherry FingerTIP ID Board G83-14000/14100



Upek touchchip reader



SCMicro PCMCIA SCR222

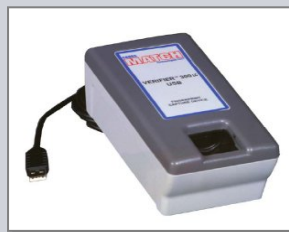


Motion Tablet PC with fingerprint swipe sensor



Fujitsu Siemens Tablet PC with swipe sensor

Scanners for access and mass identification



Cross Match Verifier 300 LC



Smith Heimann Biometrics LSCAN 100



Identix DFR-2080



Siemens AR6332 BI



PSE PRO SRT