

ID ComBiom Communication Biometrics

Biometry as part of our modern life

Biometrics are measurable forms of the living body or its behaviour, both of which are highly individual for every single person. Crime and ter-

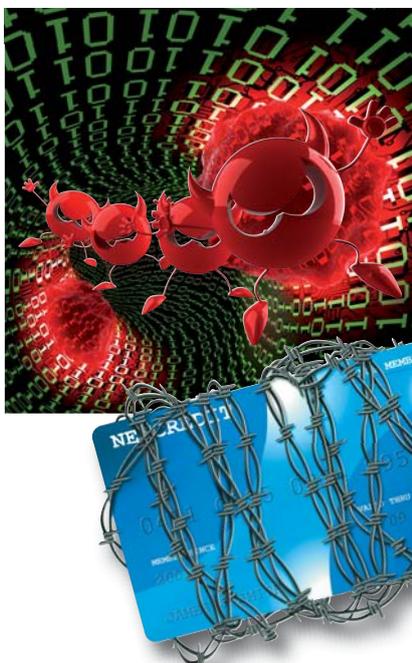
ror have risen to an all-time high while password, PIN- code and Smart Card security continues to decline. In countless situations it is necessary to be absolutely sure a person is truly who he or she purports to be. Biometric Authentication increases security and simplifies this process. Govern-

ments of 189 countries have therefore decided to implement biometrics in their official travel documents. Mankind will rapidly learn to use and trust biometrics. Gradually biometric authentication will become a common part of our modern life.

Biometric authentication can be used for various purposes:



Cyber Crime as a Main Source of Danger



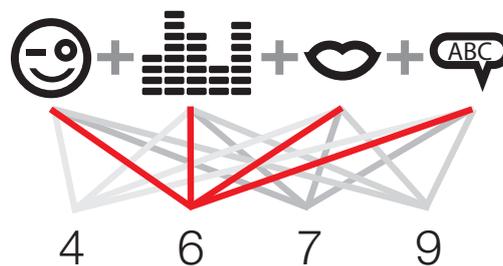
Credit Cards and eBanking are increasingly endangered by criminal activities on the internet, such as Phishing, Pharming, Skimming and modification Trojans (the so called «Man in the Middle»). Originally, PIN and passwords were spied out and later electronic payments were duplicated and rerouted. The latest crime, the «Man in the Middle» is a high risk for eBanking customers, because it changes the receivers IBAN and bypasses the money to another bank account. Usually, neither the bank nor the customers notice the incident until a lot of money is lost.



Enormous increase in cybercrime

ComBiom, the Swiss patent remedy

BIOMETRY.com AG has developed an innovative, unique, biometric authentication procedure with which **four authentication processes** – biometric face recognition, biometric voice recognition, recognition of biometric lip movement, and word recognition – with randomly generated numerals, that are simultaneously requested. This process is called **ComBiom** (Communication Biometrics) and is a patent-protected product for multimodal, simultaneous, biometric authentication with random challenge response.



ComBiom is a multimodal, simultaneous, biometric authentication process that queries biometric face, voice, lip movement, and word recognition with a randomly generated numerals.



0 1 0 0	0 1 1 0	0 1 1 1	1 0 0 1
0 1 0 0	0 1 1 0	0 1 1 1	1 0 0 1
0 1 0 0	0 1 1 0	0 1 1 1	1 0 0 1
0 1 0 0	0 1 1 0	0 1 1 1	1 0 0 1

= 16 processes

ComBiom, Highest Security and Easy Handling

The application of **ComBiom** is very easy for the user. In the beginning, he must learn the system by speaking the numerals 0,1,2,... to 9. The webcam registers a video and audio file for every numeral. The **ComBiom** software then calculates a file for every numeral (reference templates, c. 4 KB), which includes all four authentication processes. For a later login into his computer, the server, or an Internet platform, the user is asked randomly generated numerals that appear on the screen in succession. He speaks these numerals and the webcam records the

video and audio. The software in turn calculates the files, which are subsequently compared to the respective reference templates. If the values match, **ComBiom** grants the user access. Thanks to ComBiom, sensitive data is given the greatest possible protection: With every requested numeral, four simultaneous authentication processes run in the background in the shortest amount of time, which, with four randomly selected numerals, results in a total of 16 processes. Additional security is also offered by the random generation of the number series that is to be verbally repeated (so-called random challenge response or otp – one-time password). This procedure makes a replay attack impossible. Another great advantage is that the user no longer has to memorize codes or carry access cards. True to the principle of FreeHaM (Free Hands and Memory), the four authentication principles with randomly selected numerals serve as a personal key. The minimal costs of the required hardware, namely only a webcam with microphone (integrated into most laptops as standard), also speak for **ComBiom**.

3 USPs

In summary, three central USPs distinguish **ComBiom**:

1. Highest security
2. Easy operation
3. Minimal hardware investment

Individual biometry

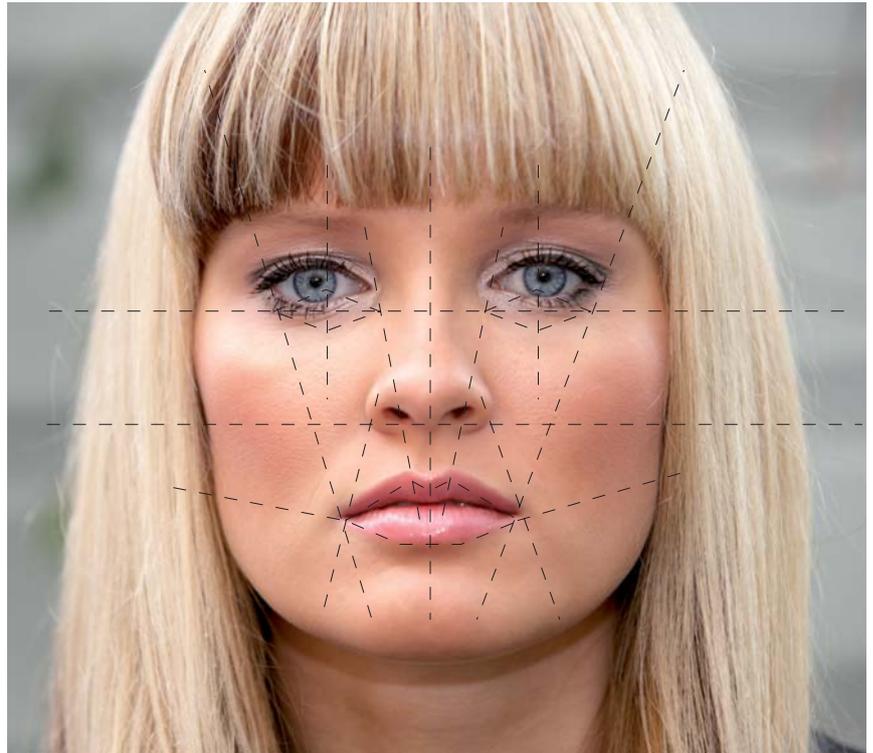
PermaFace

PermaVoice

Another advantage of **ComBiom** is that the biometric face recognition and the biometric voice recognition can also be used separately, in other words, not in combination with the other biometrics. From these possible couplings, BIOMETRY.com AG has developed two other products: **PermaFace** and **PermaVoice**.

PermaFace stands for **permanent biometric face recognition**.

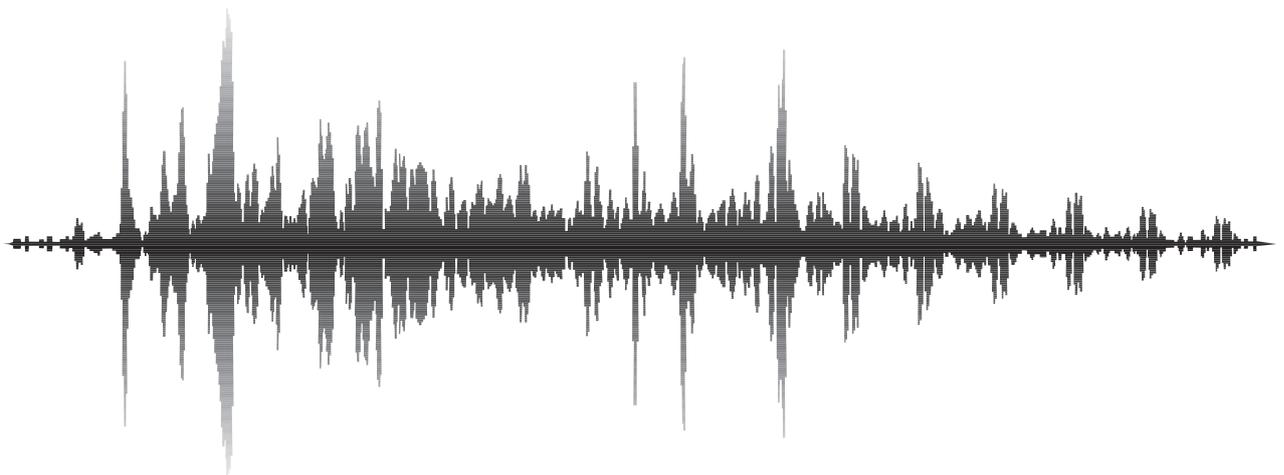
If a computer is equipped with it, the face of its user is verified at regular intervals. If it is determined that someone else is operating the PC, the authentication fails, i.e., the computer closes all programs and shuts itself down. Face recognition thereby functions as follows: There are various points in the face that can be uniquely detected. These are virtually connected with lines that are defined in two-dimensional



space using complex mathematical algorithms (e.g., connection of the corner of the right eye with the corner of the right mouth or the connection of the corner of the left eye with the corner of the right mouth, etc.). The more such lines are constructed, the more secure is the authentication process.

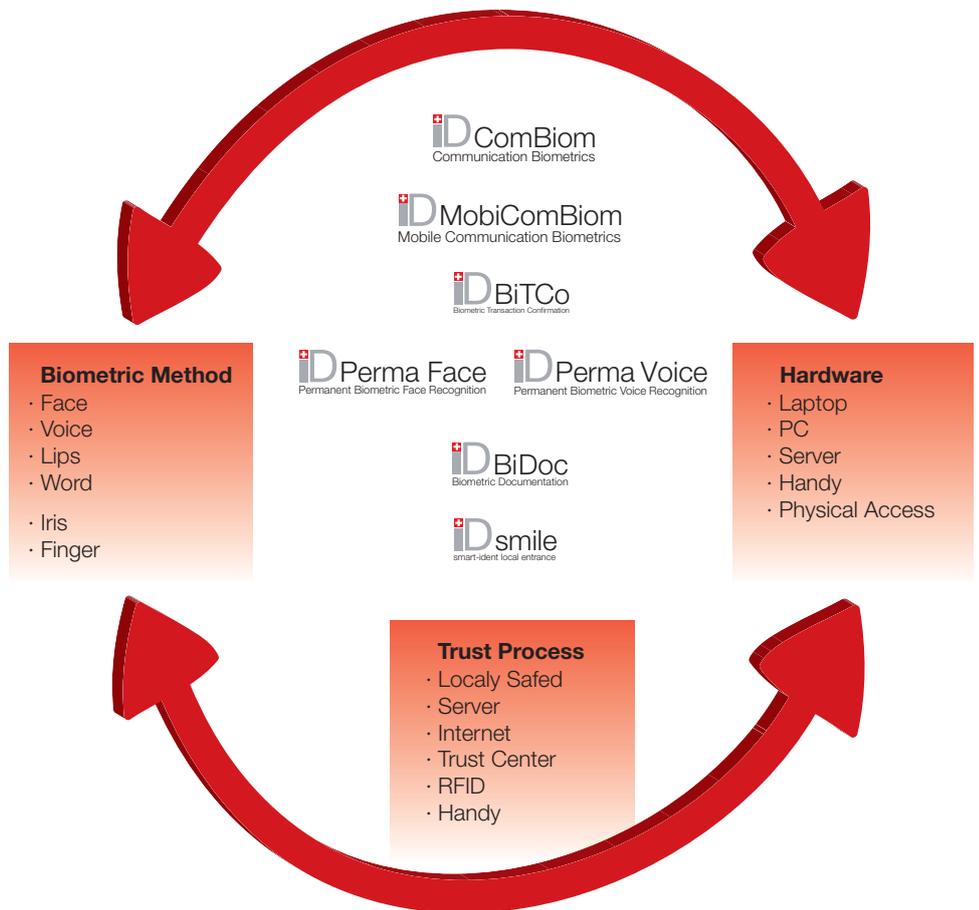
PermaVoice verifies **the user's voice**, whereby, for example, a reli-

able authentication on the telephone can be achieved. With voice recognition, a digital image of the voice is created that is then recognized by PermaVoice. It is not to be confused with word recognition, which in our case constitutes the fourth biometric. Voice and word recognition combined in turn provide an otp = one-time password.



All-in-one software

ComBiom is all-in-one software. In other words, the user can always select whether he wants to use **ComBiom** as a complete package or whether he only wants to use individual components. The advantage is that the omission or addition of individual biometrics, customized to individual security requirements, can be undertaken at any time.



BIOMETRY.com AG in brief

Biometry.com AG is a high-tech security company headquartered in Switzerland that secure and easily usable biometric authentications. A multi-modal product as well as the individual application of certain modes result in a all-in-one software. This enables the most varied applications to protect the personal identity of people and their property. The algorithms used are the worldwide known **BIOID***, which ensure highest Security and Comfort.

BIOMETRIC AUTHENTICATION FOR A SECURE WORLD!

BIOMETRY

SWISS IDENTITY SECURITY SYSTEMS

Other products from Biometry.com AG:

iD ComBiom
Communication Biometrics

iD MobiComBiom
Mobile Communication Biometrics

iD BiTCo
Biometric Transaction Confirmation

iD Perma Face
Permanent Biometric Face Recognition

iD Perma Voice
Permanent Biometric Voice Recognition

iD BiDoc
Biometric Documentation

iD smile
smart-ident local entrance

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