# PERSONAL IDENTIFICATION. FINGERPRINT RECOGNITION

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One of the most important problems of our time has become identification of a person on its individual parameters. To solve this problem helps biometric. Biometric is the most secure and convenient authentication tool. It can not be borrowed, stolen, or forgotten and forging one is practically impossible. Biometrics measure individual's unique physical or behavioral characteristics to recognize or authenticate their identity. Common physical biometrics include fingerprints, hand or palm geometry, retina, iris, and facial characteristics.

Let's consider the identification of the fingerprint - is the most common method of biometric identification, it is based on the uniqueness of each person drawing ridge patterns on fingers. Fingerprint image obtained by using a special scanner is converted into a digital code (convolution) and compared with the previously entered pattern (standard) or a set of templates (for identification).

One of the types of scanners is radio frequency. At the heart of their work is used the matrix elements, each of which works like a miniature antenna. Radio frequency module generates a low-intensity signal and sends it to the scanned surface of the finger. Each of the sensitive elements of the matrix receives the reflected signal from the papillary pattern. The magnitude of the induced in each miniature antenna electrical driving force depends on the presence or absence of the ridge near the papillary pattern. The resulting matrix thus voltage is converted to a digital fingerprint image.

Advantages: As analyzed by the physiological properties of the skin, the likelihood of deception of the scanner tends to zero, i.e. in case of use of the models made of silicone, rubber and other materials, the scanner will signal an attempt to deceive.

An interesting novelty is that manufacturers have started producing compact scanners - scanners that connect to a port USB. What used to be proud owners of business notebooks will soon become as commonplace as a conventional computer mouse. Scanners that allow, in conjunction with appropriate software, to facilitate the input of the password is already widely used in large corporations. And will soon be on the table and home users.

As we can see recognition of the fingerprint can help not only in apprehending the criminals and the protection of personal data, but also to reduce and simplify the work with your computer, freeing the user from entering passwords.

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