ABSTRACT

A process for reproducing hand and/or finger lines with a camera works without skin contact with the recording device. By using linearly or circularly polarized light in the paths of the illuminating and the reproducing light rays it is possible to obtain separate representations of the pattern of the epidermis and the one of the hypodermis. An image of the relief of the skin that is rich in contrast is obtained in this way, on the one hand, and it is possible to acquire information from the deeper disposed layers of the skin already supplied with blood. An algorithm searches the skin patterns of the palm of the hand for line elements of different strengths and directions (vectors). The computed numerical identification contains overall frequencies of vectors as well as amplitudes and phases of frequency components of projections of the vector images of both patterns. The process permits controlling people from a distance, complete protection of the measuring system and enhanced security against fraud.