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Sanitary and cyber precautions, a key challenge for hospitals

With one million Swiss francs budget and supported by the Innosuisse agency, the CANDY project will develop and patent a contact-less scanner allowing to identify people using the venous patterns of their hands. The project is a collaboration between the Global ID start-up and Idiap Research Institute.

Fingerprints identification is often a good security measure, but in hospitals this method creates some obvious sanitary issues. Vein recognition technology advantage is that it can be contact-less. The identification of a person is done by reading the pattern of her/his hand's vein network, which is also unique to each person. The imaging of the veins can be done from afar using the near infrared light domain. The challenge is to offer a device able to satisfy users being both fast and secure. The research and development project between the Global ID company and Idiap Research Institute will enhance this technology and allow them to share it with health professionals.

Faster, safer and cheaper

"Our ultimate goal is to ensure a high level of security and data confidentiality, while solving the main issues of existing biometrics technology, such as reliability, robustness and high costs", explains Lambert Sonna, Global ID CEO. He adds: "We have already created a device able to scan through a surgical glove, now the goal is to make it contact-less and fast." To achieve this, a multi spectral sensor, i.e. sensitive to various wavelengths, will be used.

To avoid intruders trying to cheat the system, the level of security of the device is higher not only due to the multi-spectral approach, but also thanks to the use of high definition images of the whole hand. "Even if venous identification is not very common, it is crucial to be able to detect potential presentation attack intrusions from the beginning," explains Sébastien Marcel, leader of Idiap's Biometrics security and privacy group.

Planned to last two years, the CANDY project will develop a pre-industrial prototype of a portable venous scanner and also seek to fill an international patent. This technology will provide a timely answer, once the pandemic behind us, when the moment comes to improve security technologies in the health sector.

More information

- Global ID : www.globalid.swiss
- Idiap's Biometrics Security and Privacy research group: www.idiap.ch/en/scientific-research/biometrics-security-and-privacy
- Swiss Center for Biometrics Research and Testing: www.biometrics-center.ch/

Idiap Research Institute is among the leaders in artificial and perceptive intelligence since 1991. Voice and visual recognition, human-machine interaction, robotics, language analysis or bio-imaging are among the numerous specialities developed by the institute. Based in Martigny, in the Swiss Alps, Idiap is involved in research projects at local, national and international levels. Established as a non-profit foundation, Idiap was founded by the City of Martigny, the Canton du Valais, the EPFL, the University of Geneva and Swisscom.

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