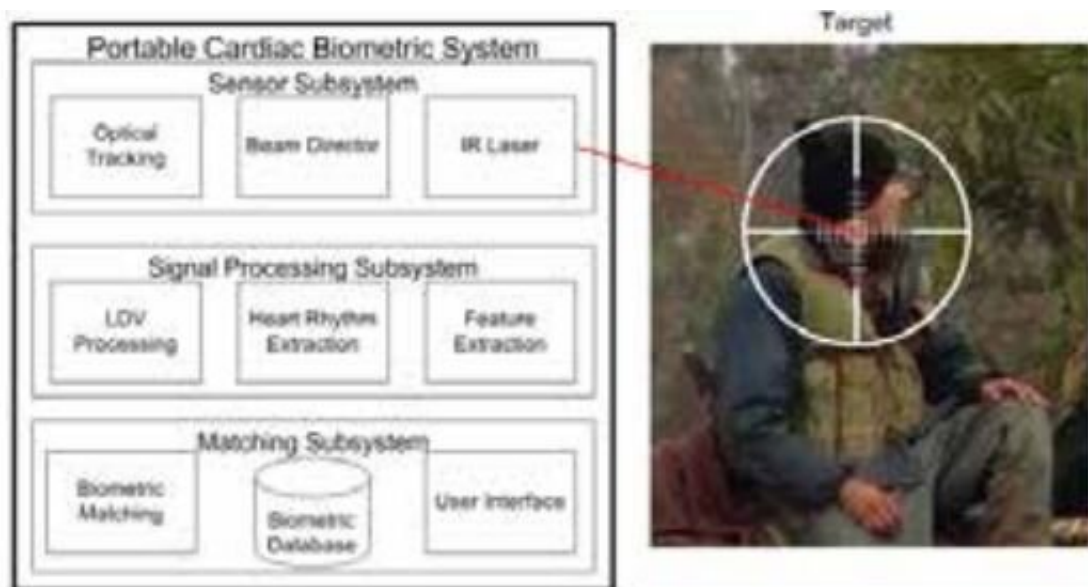


Identification technology swings to focus on heartbeat

June 28 2019, by Nancy Cohen



Credit: tswg.gov

A laser from a distance can identify people by their heartbeat. The Pentagon has the technology in a new device, which was developed for the Pentagon after US Special Forces requested it. The prototype can pick up on a unique cardiac signature from 200 meters (219 yards) away, even through clothes, said *MIT Technology Review*.

Scientists' curiosity is beyond the fingerprint as a way of telling people apart but gaits, and faces, are not always adequate for [distinction](#).

(Facial identification needs frontal view of the face, which, especially from a drone, may be hard to obtain, said David Hambling. Not only that, but recognition may be confused by beards, sunglasses or headscarves.)

An individual's cardiac signature is unique, though, and unlike faces or gait, it remains constant and cannot be altered or disguised, said Hambling.

Say hello to Jetson.

The device is intended to capture cardiac signatures. It's an aid for positive identification of an individual (at the distance of up to 200 meters). "Being able to measure unique cardiac signatures obtained from an individual at a distance provides additional biometric identification when [environmental conditions](#) and changes in [facial appearance](#) hinder the use of more common [facial recognition](#) systems," according to a review describing projects.

How Jetson works: It uses a laser vibrometry technique to detect the surface movement caused by the heartbeat. This works with clothing such as shirt and jacket though not with thicker clothing such as winter coat.

An invisible, quarter-size laser spot kept on a target takes about 30 seconds to get a good return. At present, said Hambling, the device is effective only where the subject is sitting or standing. The other limitation for the time being is how long it takes to get a result—it takes around half a minute, which limits its effectiveness to subjects that are sitting or otherwise standing in one place.

Nonetheless, said Paul Lilly in *HotHardware*, "when it works, it works well. The team that developed it claims it is over 95 percent accurate in

[good](#) conditions, and could further improve over time."

Zak Doffman in *Forbes* said, "Cardiac identification joins gait recognition, voiceprint, facial recognition and fingerprinting as biometrics become ever more commonplace in identity [assurance](#)."

Rachel England, *Engadget*, said that " it could have other applications as well. As *MIT* notes, doctors could check [heartbeats](#) without having to touch the patient, while hospitals could wirelessly monitor a patient's vitals."

In *TechSpot*, Cal Jeffrey, meanwhile, said, outside of the Pentagon, the heartbeat as a marker for discovery has been around. Jeffrey quoted Wen Yao Xu of the State University of New York at Buffalo, who developed a cardiac sensor that uses radar. "Compared with face, cardiac biometrics are more stable and can reach more than 98% accuracy,"

Jeffrey, too, shared some thoughts about applications. "Wireless heart monitors are a possibility as are stethoscope-free [checkups](#) with your doctor. Badge-less entry systems for secured buildings would be another use case."

More information: Combating Terrorism Technical Support Office: [www.tswg.gov/Documents/ReviewB ... 18ReviewBook web.pdf](http://www.tswg.gov/Documents/ReviewB...18ReviewBook_web.pdf)

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