Engineers unleash car-seat identifier that reads your rear end

December 25 2011, by Nancy Owano

(PhysOrg.com) -- Cars of the future may use the driver's rear end as identity protection, through a system developed at Japan's Advanced Institute of Industrial Technology. A report surfaced earlier this month that researchers there developed a system that can recognize a person by the backside when the person takes a seat. The system performs a precise measurement of the person's posterior, its contours and the way the person applies pressure on the seat. The developers say that in lab tests, the system was able to recognize people with 98 percent accuracy.

The car-seat team led by Associate Professor Shigeomi Koshimizu wants to commercialize their work as an anti-theft product in two to three years if automakers agree to collaborate. The Institute began working on

the seat idea last year.

The bucket seat's lower section is lined with pressure sensors. Pressure is measured on a scale from 0 to 256. A total of 360 sensors in the seat send their information to a laptop, which aggregates the information, generates the key data and produces a precise map of the seated person.

As the process suggests, the device is targeted for use as a personal identifier and is being promoted as a useful option to having to use more familiar biometric techniques. The researchers have discussed advantages to this seat identifier.

They say that traditional biometric techniques such as iris scanners and fingerprint readers cause stress to people undergoing identity checks, while the simple act of getting seated carries less psychological baggage. Their other point is that other technologies such as fingerprint scanning can be compromised when sensor surfaces are unclean, or when there is poor lighting as in iris scanning, contaminating results.

Koshimizu sees the possibilities of this device being used beyond auto-theft identity protection to a device for security identification in office settings, where users log on to their PCs as they sit down.

Their work at the institute is yet another indicator that sensors are in focus in many areas of today's research. Sensor vendors are quick to remind everyone that sensors will be around us everywhere, in the home to remind residents to take medicine and turn things on and off, to parking meters transmitting data, to sensors in transport.

Car sensor technologies are being developed that bridge varied car scenarios from driver only to vehicles providing dual driver/self-driving modes to self-driving cars. Research efforts are resulting in sensors that tell the driver there are obstacles ahead along with a range of

sophisticated sensors envisioned for robotic cars on tomorrow's highways.