

TESTING

Frankfurt Airport's BioP II trial unveils unexpected results

The final report from Frankfurt Airport's BioP II trial has just been released with fingerprint technology coming out on top followed by facial recognition. Surprisingly the iris recognition system was bottom in the study – predominantly because of the difficulties people had in using the system. Another shock statistic revealed by the report was the small, but significant, false accept rate noted for iris recognition, which is usually quoted as being virtually non-existent. The trial noted a false accept rate of 0.0023% at a false reject rate of 5.17%. This would indicate that for every 100,000 comparisons made in the study's offline comparison tests there were 2.3 false matches.

The trial was run by the Bundesamt für Sicherheit in der Informationstechnik (BSI) together with the Bundeskriminalamt. More than 2000 people took part in the trial, and were unsupervised each time they used the systems. The test candidates were employees of the airline Lufthansa and Frankfurt Airport's carrier Fraport.

An industry insider confirmed the false accept rate figures for the iris system, saying: "The frequently published 'non-existent' FAR is not true, and needs to be reworked."

When contacted, BSI verified it was able (although not necessarily willing) to highlight examples of irises from different people that were accepted as the same by the iris recognition system (provided by SD Industries – now called Take ID).

Numerous parameters were used in the team's evaluation of the technologies, including false accept rate, false reject rate, failure to enrol rate, user acceptance and system stability. The Dermalog fingerprint system just edged out the combined entry from Bundesdruckerei and NEC. The facial recognition technology (provided by Cognitec Systems) and iris recognition system achieved lower scores – with ergonomic issues being a factor affecting the iris system and matching accuracy impacting the facial recognition system.

According to BSI, it was necessary to create different 'user classes' because performance varied so heavily depending upon how frequently the users used the systems. The technology most affected by this phenomenon was the iris system; the less the user used it, the worse the performance. The researchers said that performance might improve significantly if training could be given and if alternative cameras were used – the camera used in the BioP II trial was from LG, which is widely seen as a good camera, especially for detecting fakes, but has manual rather than automatic eye detection, which might have added to the usability issues.

Acceptance by the users was seen to be very high, although it was not mandatory to use the system. Nevertheless, it was noted that there was still many questions asked of the biometric systems, demonstrating the need for education initiatives and full transparency wherever biometrics are used.

Another trend seen was that increased security levels (with the FAR set to less than 0.1) the performance of the face and iris systems decreased more markedly than the two-finger systems.

The tests also showed that when ICAO-standard images, rather than proprietary templates, were used, performance decreased, albeit only slightly. The BSI said that the new international standards should help improve this situation.

Contact: BSI,
www.bsi.de

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