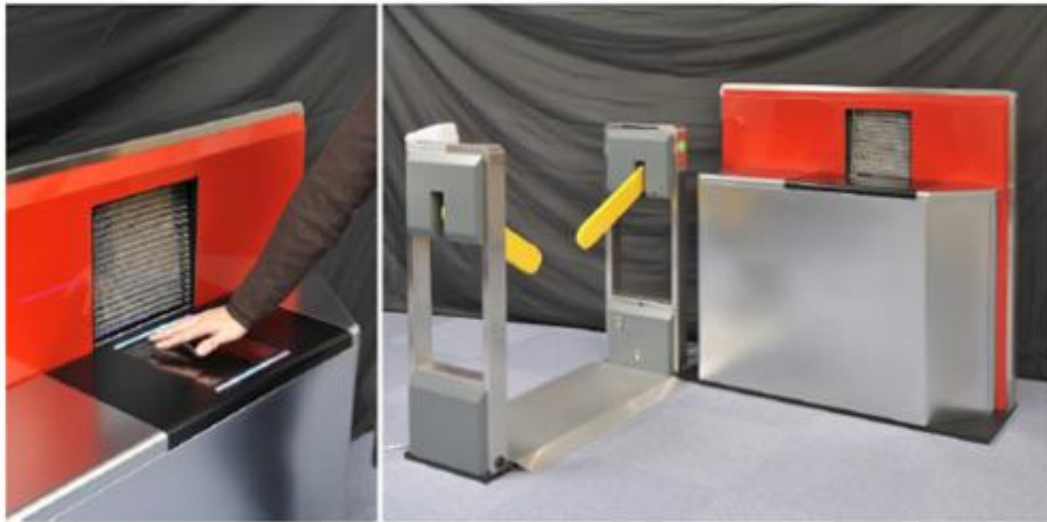


# Finger vein authentication technology for smooth and accurate walkthrough-style personal verification

December 8 2014

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Walkthrough style finger vein authentication gate developed

Hitachi today announced the development of walkthrough-style finger vein authentication technology for security gates in large-scale facilities where people congregate. The technology developed overcomes issues which have previously hindered the application of high precision finger vein technology to walkthrough-style gates, and now enables accurate verification preventing identity fraud just by scanning the fingers as individuals walk through a gate.

Convention centers or sports stadiums, etc., where a large number of people congregate, can easily become the target of criminal activity, and greater security is called for to ensure the safety of the facility. In particular, personal identification is critical to preventing suspicious persons from entering a premise, and therefore interest is growing in biometric identification methods which are relatively difficult to forge. Currently, biometric methods such as fingerprint and facial recognition are being used in airport immigration and other places, however, these methods currently require the person stand still for recognition, leading to congestion when a large number of people arrive. Walkthrough methods on the other hand, which would provide high throughput, have not been able to provide high verification accuracy.

To resolve these issues, Hitachi has advanced its original [finger vein](#) authentication technology to enable instant detection of the finger veins in various positions and orientations. Through this development, it is now possible to realize high-throughput and high verification accuracy in large-scale facilities where people congregate, simply by having individuals' scan their [fingers](#) as they walk through a security gate. Features of the technology developed are as described below:

### **(1) Technology to instantaneously detect the position and orientation of several fingers scanned while walking through a gate**

A high-degree of user-friendliness was realized which enables the instantaneous detection and matching of finger vein patterns even if the number of fingers, position or orientation changes. Previous forms of [finger vein authentication](#) required the finger to be placed in a fixed position, thus requiring the individual to standstill. To enable greater flexibility, Hitachi expanded the finger detection space to encompass the whole hand so if fingers are placed in that space, regardless of number,

position or orientation, finger [vein patterns](#) are detected instantaneously. As a result, the user need not be concerned with the position of the finger, and can quickly pass through a gate.

## **(2) Technology to capture a clear finger vein image in relation to finger position or orientation**

Technology was developed to capture a clear finger vein image by automatically controlling the lighting to illuminate the fingers from optimal positions regardless of the position or orientation of fingers presented. Further, by combining the vein pattern from several fingers, an even higher level of verification accuracy was obtained compared to illuminating just one finger.

This walkthrough-style finger [vein authentication](#) technology is expected to find wide application as a new and useful security technology. Hitachi will seek to further expand its security solution business with this core technology.

Provided by Hitachi

Citation: Finger vein authentication technology for smooth and accurate walkthrough-style personal verification (2014, December 8) retrieved 23 June 2024 from <https://phys.org/news/2014-12-finger-vein-authentication-technology-smooth.html>

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