

February 3, 2025

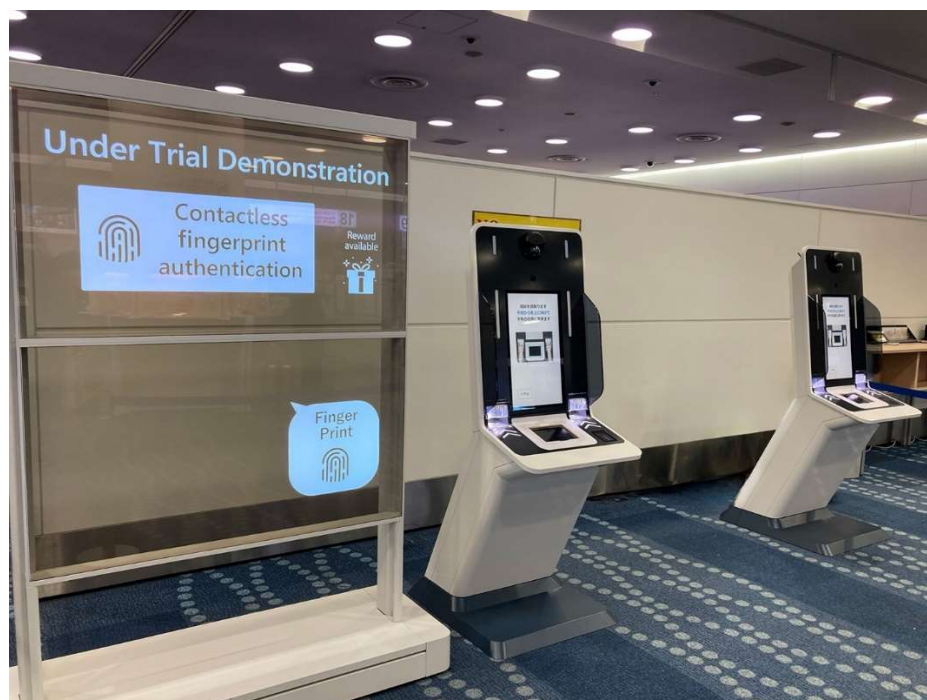
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**Immigration Services Agency of Japan Chooses Panasonic Connect's  
Contactless Fingerprint Authentication Trial Demonstration for Immigration  
Control at Tokyo International Airport (Haneda) Terminal 3, First of its Kind  
in Japan\*<sup>1</sup>**

*Aiming for smooth yet strict immigration inspections with new technology that enables  
comparison of data on pressed versus non-contact fingerprints*

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[Panasonic Connect Co., Ltd.](https://www.panasonic-connect.co.jp/) announced that its contactless fingerprint authentication technology has been selected for the "Contactless Fingerprint Authentication Accuracy Verification" Trial Demonstration to be conducted by the Immigration Services Agency of Japan at Tokyo International Airport (Haneda Airport) Terminal 3. This Trial Demonstration will be conducted from February 3 to February 28, 2025, with the aim of reducing the waiting time for screening at future airport immigration procedures. This is a unique new technology (patent under application) that enables the matching of fingerprint data that has been obtained using the current contact-type fingerprint authentication machine and causes finger deformation, with fingerprint data that has been obtained using the new contactless type and does not cause finger deformation. This makes it feasible to replace contact-type fingerprint authentication without having to rebuild the fingerprint database that has already been registered using the contact-type system.



## Background

The Japan National Tourism Organization (JNTO) has announced that the number of foreign visitors to Japan in 2024 reached 36.86 million (a 47.1% increase on the previous year, and a 15.6% increase on 2019), breaking the previous record<sup>\*2</sup>. In addition, the government has set a target of 60 million foreign visitors per year to Japan by 2030<sup>\*3</sup>, and it is expected that the number of foreign visitors to Japan will continue to increase in the future. For this reason, the Immigration Services Agency is taking various steps to shorten the time required for immigration inspections and to realize smooth yet strict immigration.

## Panasonic's unique contactless fingerprint authentication technology

Generally, fingerprint scanning involves pressing a finger against a fingerprint reader sensor to read the fingerprint, and this is used for strict personal identification. On the other hand, contactless fingerprints are acquired using a camera without pressing the finger, so there is no deformation of the finger when it is pressed, and the characteristics differ greatly from those of pressed fingerprints. For this reason, the error rate when matching with existing fingerprint databases is high, and there were issues with switching to contactless fingerprint authentication.

We have now developed a new proprietary deep learning technology that predicts the changes in characteristics that occur when a fingerprint is pressed, based on the fingerprint image acquired in a contactless manner, and have achieved a significant improvement in the matching accuracy of contactless fingerprints and pressed fingerprints. Specifically, the differences between pressed and contactless fingerprints that occur due to the distance between the finger and the sensor, the way the finger is illuminated, and whether or not the finger is deformed are corrected, and the contactless fingerprint image is converted to be equivalent to a pressed fingerprint. This technology reduces the error rate in matching with conventional compressed fingerprint databases to less than one-fifth (according to our evaluation) compared to matching with general uncompressed contactless fingerprints and compressed fingerprints. By using this technology, it becomes possible to perform contactless fingerprint authentication while making use of existing fingerprint databases. This trial demonstration will conduct Japan's first verification aimed at using the above technology in airport immigration screening, using a contactless fingerprint acquisition device (patent under application) that applies the above technology.

## Distinctions between Contact-type and Contactless

Points	Contact-type (Pressed Fingerprint)	Contactless
Finger – Center distance	Constant	Variable
Lighting	Constant	Variable
Size of fingerprint	Constant	Variable
Finger deformation caused by pressing	Found	Not Found

Contactless fingerprint Trial Demonstration Overview (patent under application):

- Period: Monday 3rd February to Friday 28th February 2025
- Location: Haneda Airport Terminal 3, near the passport control area
- Target: Foreigners leaving Japan who agree to the trial demonstration



Panasonic Connect will continue to pursue strictness and speed in personal identification by utilizing biometric authentication technologies such as facial recognition and contactless fingerprint authentication. The company will also integrate this technology with user experience (UX) design, which it has achieved through repeated verification experiments with customers and partner companies, to support further efficiency improvements at customer sites. In terms of immigration procedures at airports, with the arrival of the era of 60 million foreign visitors to Japan in sight, the company will contribute to further streamlining of operations and the realization of a comfortable and smooth passenger experience through the use of advanced sensing technology in addition to biometric authentication technology.

\*1 As of February 3, 2025, according to Panasonic Connect research

\*2 JNTO press release (January 15, 2025)

[https://www.jnto.go.jp/statistics/data/ files/20250115\\_1615-1.pdf](https://www.jnto.go.jp/statistics/data/ files/20250115_1615-1.pdf)

\*3 'Basic Plan for Establishing Japan as a Tourism Nation (4th Edition)' (March 2023)

<https://www.mlit.go.jp/policy/shingikai/content/001743148.pdf>

### About Panasonic Connect

[Panasonic Connect Co., Ltd.](#) was established on April 1, 2022 as part of the Panasonic Group's switch to an operating company system. With roughly 28,300 employees worldwide and annual sales of JPY1,202.8 billion the company plays a central role in the growth of the Panasonic Group's B2B solutions business and provides new value to its customers by combining advanced hardware, intelligent software solutions, and a wealth of knowledge in industrial engineering accumulated in its over 100-year history. The company's purpose is to "Change Work, Advance Society, Connect to Tomorrow." By driving innovation in the supply chain, public services, infrastructure, and entertainment sectors, Panasonic Connect aims to contribute to the realization of a sustainable society and to ensure well-being for all.