Biometric 3D high-resolution imaging technology for the contactless capture and processing of fingerprints - access control, biometric identification, forensic or election procedures, compatible with existing databases and systems.

Summary

Profile type	Company's country	POD reference
Technology offer	**Germany**	**TODE20250710019**

Profile status	Type of partnership	Targeted countries
PUBLISHED	**Commercial agreement with technical assistance**	**• World**

Contact Person	Term of validity	Last update
Enrico FRANZIN	**10 Jul 2025** **10 Jul 2026**	**10 Jul 2025**

General Information

Short summary

A German SME seeks partners for its newly developed innovative 3D biometric technology that enables contactless, high-resolution fingerprint capture, simultaneously imaging four fingers. It generates real-time 2D images compatible with existing databases, improving accuracy and forgery detection through detailed depth data. The compact device is unaffected by lighting, skin colour, or moisture, making it secure, hygienic, and efficient, ideal for identification, security and access control tasks

Full description

More than three billion people are currently registered in official fingerprint databases. All this data was and still is captured by touching scanner surfaces and until now, can only be compared in this format. These data are important for identification and security measures, such as access and border controls, applying for and comparing biometric identification documents as well as forensic or election procedures.
This contact-based capture and verification of fingerprints is time-consuming, inconvenient and unhygienic. Already existing contactless scanners are not secure, and the data formats are often not compatible with existing databases.
A young German company, specialised in advanced optical solutions, has developed a novel biometric 3D high-

resolution imaging technology that allows the contactless capture, processing and transformation of 3D fingerprints, making authentication and verification of identities very efficient, safe and hygienic.

A 3D image is taken by holding the hand over the optical scanning device. The scanner simultaneously captures four flat fingerprints significantly faster than contact-based devices (where good contact with the scanning surface is required). The system uses this 3D data to generate 2D greyscale images in real time, i.e. 'classic' fingerprint images. This makes the contactless fingerprint images compatible with existing fingerprint databases for the first time. In addition, the unrivalled level of detail of the new 3D recording technology increases accuracy when comparing databases and detecting forgeries.

This 3D scanner captures highly detailed fingerprints in micron-scale depth resolution under 100 ms, and outputs data in the government standard fingerprint quality (e.g. 500ppi resolution).

Capture and processing are fast and reliable, independent of ambient lighting, motion, skin colour variation or skin moisture levels.

Using high-performance graphics processors and software based on artificial intelligence, this complex issue is managed in an easy-to-use device measuring just 15 x 15 x 15 cm.

The company is looking for public entities or private companies with a demand for fast and hygienic personal identification or access control.

Advantages and innovations

Advantages: Very efficient, safe and hygienic technology for the authentication and verification of identities as an alternative to touch-based methods

simultaneously capture of four flat fingerprints significantly faster than contact-based devices (where good contact with the scanning surface is required).

captures of highly detailed fingerprints in micron-scale depth resolution under 100 ms

image transformation into data in the government standard fingerprint quality (e.g. 500ppi resolution), thus, compatible with existing fingerprint databases

fast and reliable image capture and processing, independent of ambient conditions such as lighting, motion, skin colour variation or skin moisture levels

Innovations: Fast microscopic 3D-imaging, 3D-to-2D conversion for compatibility with existing contact-based data, embedded system
-     Certified by FBI in US
-     CE, UL, ISO9001
-     4-Finger-Capture, compatible with existing standards and certification for governmental use-case
-     SDK, API

Technical specification or expertise sought

Stage of development

Already on the market

Sustainable Development goals

• Not relevant

IPR Status

IPR granted

IPR Notes

IPR is granted as well as applied for

Partner Sought

Expected role of the partner

The company is looking for public / authority entities involved in access / border control, security, forensic etc. or private companies with a demand for fast and hygienic personal identification or access control.
The envisaged partner will integrate the new biometric 3D high-resolution imaging technology into its personal identification or access control systems. The company provides technical advice as well as support in connection and adaptation to existing databases and systems.

Type of partnership

Commercial agreement with technical assistance

Type and size of the partner

• Other

Dissemination

Technology keywords

• 01003012 - Imaging, Image Processing, Pattern Recognition

• 09001007 - Optical Technology related to measurements

• 05003002 - Optics

• 09001008 - Other Non Destructive Testing

Market keywords

• 02007016 - Artificial intelligence related software

• 02004001 - OCR (optical character recognition)

• 02006004 - Data processing, analysis and input services

• 03007003 - Other analytical and scientific instrumentation

Targeted countries

• World

Sector groups involved

• Electronics