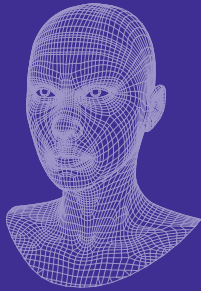


IDEMIA 3D Face



Connected
Objects

The best 3D Face technology for mobile devices.
Ever.



Keeping up with the ever-rising expectations of today's consumers pushes mobile phone makers/developers to stretch their innovative muscles and rollout **The Next Big Thing**. Today, that's **3D facial recognition technology**. It improves the user journey, enhances security and simplifies usability — all the while being increasingly innate.

Mobile devices house almost the entirety of one's digital life, everyday storing more and more data and providing access to an ever-growing range of services. All this information in one very portable device is a thief's dream and that's why IDEMIA promises to protect what people value most with the most advanced security in the world: **IDEMIA 3D Face**. Our 3D face recognition solution unlocks devices with the only key that exists, the user's face. The best thing about this spoof-proof technology? It provides the ultimate security, yet demands zero effort.

Our offer

Think about the difference between a standard map and a 3D scale model. With the latter, you're able to see the height of a mountain, the depth of a valley and the razor-sharp edge of a cliff — giving you a much more accurate view. This is the idea behind IDEMIA 3D Face.

Our 3D technology uses near infrared technology to create a scale model of

the face, recording the height of the nose, the depth of the eyes, the edge of the jawline and every measurement in between. With this data, a unique biometric template is created to verify the user's identity from any angle, in the daylight or pitch black, at a quick glance — unlocking mobile devices and applications with total ease. And while the process is simple and effortless, this heightened security also ensures that a user's 2D photo or video image cannot be used to hack into their device.

Why IDEMIA?

As technology evolves, IDEMIA is committed to advancing our solutions and bringing Augmented Identity to life. For decades we have honed our expertise in biometrics, becoming masters of our craft. And while the application of 3D facial

recognition technology generates buzz in the smartphone industry, we have been using and perfecting its application in the fields of forensic analysis and access control for nearly a decade. Moreover, IDEMIA's global presence guarantees true end-to-end support everywhere OEMs operate.

Benefits



Improved user experience

Users are drawn to the latest, most sought after technology that promises to simplify their experience, proving who they are with their own body.



Ironclad security

Our spoof-proof technology ensures that only the user's real, live, open-eyed face can be used to unlock their smartphone.



Fast and secure

With artificial intelligence at the heart of the system, IDEMIA 3D Face provides the fastest biometric facial verification in the world at sub-second speed.

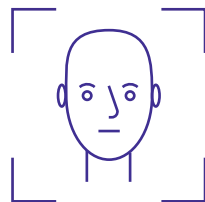
How it works?

IDEMIA 3D Face supports the two major technologies behind 3D facial recognition: Structure Light Technology and Time of Flight Technology.

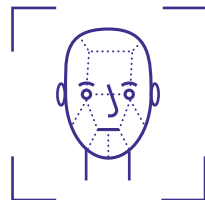
- **Structure Light Technology:** an infrared laser is projected and diffracted to cast a grid or a pattern onto the user's face. The 3D shape distortion of the grid induced by each of the thousand grid points is recorded to create a high-resolution 3D depth map.
- **Time of Flight Technology:** casting a near infrared light signal that is captured using a near infrared camera, a single point measures the distance between the camera and every pixel in the user's face to create a high-resolution 3D depth map.

Both technologies collect a tremendous amount of "depth data" — or the dimensions of every feature of the user's face.

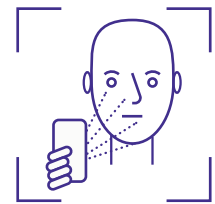
This data can be combined with a 2D near infrared image to create a biometric template, unique to the user.



State of the Art
2D technology



State of the Art
3D technology



**Augmented face
recognition for
smartphone**

Cutting-edge technology

- Provides a higher level of unhackable biometric security
- Supports both Structure Light and Time of Flight technology
- Meets Trusted Execution Environment (TEE) requirements
- Meets and exceeds industry standards
- Leading technology, by the National Institute of Standards and Technology (NIST) in face verification benchmark
- Features extremely fast throughput in terms of execution time (less than 100 milliseconds)
- Uses less than 20MB of memory



And tomorrow?

- Increasing accuracy of recognition and speed of authentication and robustness in terms of angle and convenience
- Using 3D technology to entertain users with fun applications
- Currently exploring potential application of 3D technology inside vehicles to
 - Verify the identity of the driver or passengers
 - Recognize the proper head position and send an alert if the driver is falling asleep