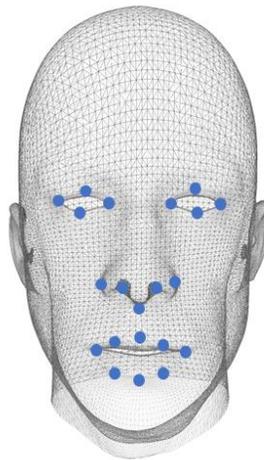# Bellus3D showcases 3D face recognition for smartphone unlocking

Bellus3D's highly accurate, fast, and robust 3D face recognition allows you to unlock a 3D camera-equipped smartphone with your face

MWC Americas, San Francisco, CA, September 6th, 2017: Bellus3D, a Silicon Valley startup formed by leading computer vision experts to develop advanced 3D face scanning technology for mobile devices today announced that it will demonstrate a highly accurate, fast, and robust mobile 3D face recognition technology in MWCA (Mobile World Congress Americas) 2017, to be held in San Francisco, CA, September 12-14. The 3D face recognition can be used to unlock an Android smartphone equipped with a 3D camera, which Bellus3D is developing with its hardware partners. In addition to unlocking a phone, the face recognition can detect the identity of a person by searching a database of 3D face models in a server.

Face recognition is a convenient and secure way to unlock a phone, and offers an attractive alternative to fingerprint scanning, which requires a touch contact and takes up valuable space on a phone. Traditional 2D face recognitions are vulnerable to the change of illumination, face orientations, makeup, eyewear, or spoofing with a photo or video, and are not reliable enough to replace a fingerprint scanner. Bellus3D's face recognition uses IR sensors and Laser pattern emitters to capture and compare tens of thousands of 3D points on a face. It works in low light or even total darkness, is not affected by color or makeup,

supports a wide range of head poses, and cannot be spoofed with a 2D photo. In lab tests, Bellus3D face recognition can achieve FAR (False Acceptance Rate) of 0.001% (1 in 100K), secure enough for financial transactions, with 10% FRR (False Rejection Rate) in single verification and 1% FRR in continuous verification.

Bellus3D's face recognition leverages 3D face models captured by Bellus3D Face Camera, a high-resolution face scanner attached to a mobile device. Bellus3D is working with leading 3D imaging hardware companies to develop an embedded version of the 3D camera to replace the front-facing camera in new smartphones. A user with the new smartphone registers their 3D face model similar to fingerprint enrollment, and may register multiple facial expressions if desired. The phone is unlocked by simply picking it up and looking at it, and the 3D camera can automatically activate and detect the nearest face to match against the registered 3D face models. The verification takes a few hundred milliseconds each time and can run continuously until a match is found. The 3D face model is highly compact and can be stored in a phone's secure memory to avoid tampering.

"Face unlocking a phone will be the catalyst for the widespread adoption of 3D cameras in smartphones," said Eric Chen, co-founder & CEO at Bellus3D. "We are excited to be developing leading edge technologies to accelerate the trend."

Bellus3D face recognition can also be performed in the cloud to determine the identity of a person and, for instance, to allow entrance to a secure facility or customize an environment. The face data from a 3D camera can be securely sent to a cloud server that contains a database of 3D face models for identification. The face recognition can compare dozens of 3D face models per second on a single server and can run in parallel on multiple servers to search hundreds of face models in a few seconds. The solution may be less intrusive and more convenient than using other biometric recognition methods, such as iris scanning.

Bellus3D face recognition is available as a technology demo on supported Android devices equipped with a Bellus3D Face Camera. A detailed report of the 3D face recognition validation results, including FAR and FRR, is also available. Interested parties should contact Bellus3D at www.bellus3d.com to get a demo and/or a copy of the report. Bellus3D will also be showcasing their latest Face Camera, which is scheduled to be released in Q4 2017. Visit Bellus3D at MWCA, Hall South, 4YFN Startup Area.

About Bellus3D

Bellus3D (www.bellus3d.com) is a Silicon Valley company founded in March 2015 to develop state-of-the-art 3D face scanning and recognition technology. Bellus3D Face Camera is an easy-to-use, high-quality, and affordable 3D face scanning camera for mobile devices. Using proprietary and patent-pending technology, the Face Camera measures up to 500K 3D face points and can capture facial details such as skin pores and wrinkles in seconds. Bellus3D's Android SDK allows third-party develops to create compelling face-related applications, such as digital makeup, facial surgery, 3D avatars, virtual glasses try-ons, video game character customization, and face recognition.

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