



7 February 2019

To whom it may concern,

iBeta Quality Assurance conducted Presentation Attack Detection (PAD) testing in accordance with ISO/IEC 30107-3. iBeta is accredited by NIST/NVLAP (NVLAP Lab Code: 200962) to test and provide results to this PAD standard ([certificate and scope](#) may be downloaded from the NVLAP website).

This testing was conducted with the FaceTec ZoOm® v6.9.11 modified from the production version currently available for iOS and Android to remove 2 anti-reverse-engineering mechanisms that would have caused a 5 minute-plus wait time for every 6 spoof attempts. Testing was conducted from 26 November, 2018 - 15 January, 2019 on a smartphone considered mid-level (Samsung Galaxy Note 5 Android, Version 7).

The test method was designed to simulate user enrollment into a biometric authentication system. This test did not perform matching and was purely a test of liveness detection effectiveness.

The test method was to apply one bona fide subject presentation that alternated with 3 presentations of each species resulting in 300 Presentation Attacks (PAs) and 100 bona fide presentations per artefact. The application displayed messages "Liveness Confirmed" or "Liveness Could Not Be Determined".

The 6 artefacts or species used in the test effort were two life-like dolls, two realistic latex masks, one custom-made resin mask and one realistic silicone mask with a cost of up to \$300 each. To validate the artefacts for the test effort, each artefact was presented to modern smartphones with Facial Recognition Unlock features and were successfully enrolled.

On the smartphone used in the test, iBeta was not able to gain unauthorized access (simulated enrollment) with a presentation attack 300 times with each of 6 species of attacks. With 300 transaction attempts for each species, the total number of attacks were 1,800 and the Presentation Attack (PA) success rate was 0%. This is considered a Level 2 PAD test effort, the second of three levels. It should be noted that ZoOm 6.6.0 passed the iBeta Level 1 PAD test effort in August of 2018.

The Bona Fide Non-Response Rate (BPNRR) and the Bona Fide Presentation Classification Error Rate (BPCER) were also calculated and may be found in the final report.

Best regards,

A handwritten signature in blue ink that reads "Gail Audette".

Gail Audette
iBeta Quality Assurance Biometric Program Manager
(303) 627-1110 ext. 182
GAudette@ibeta.com