



19 October 2023

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 Amazon Development Center U.S., Inc.'s Amazon Rekognition Face Liveness application, used with backend cloud component RekognitionLivenessDetectionScience 3.4.15.0. Testing of the passive liveness detection solution was conducted from 6 October to 19 October 2023 on a Samsung Galaxy S21 running Android 12.

Testing was conducted in accordance with the contract for a level of spoofing technique that only utilized mid-level methods to create an artefact of the genuine biometric for use in the presentation attack. The subjects for the test effort were cooperative – meaning that they were willing and able to provide any and all biometric samples, including high quality biometric facial samples. The test time for each PAD test per Presentation Attack Instrument (PAI) was limited to 24 hours. This is considered a Level 2 PAD test effort (second of three levels).

The test method was to apply 1 bona fide subject presentation that alternated with 3 artefact presentations such that the presentation of each species consisted of 150 Presentation Attacks (PAs) and 50 bona fide presentations, or until 24 hours had passed. The results were displayed for the tester on the device as "Check Successful," with a liveness score equal to or over 50% for a successful attempt, or "Check Unsuccessful," with a liveness score under 50% for an unsuccessful attempt.

On the Samsung Galaxy S21 running Android 12, iBeta was not able to gain a liveness classification with the presentation attacks (PAs). With 150 PAs for each of 5 species, the total number of attacks was 750, and the Attack Presentation Classification Error Rate (APCER) was 0%. The Bona Fide Presentation Classification Error Rate (BPCER) was also calculated and may be found in the final report.

Amazon Development Center U.S., Inc.'s Amazon Rekognition Face Liveness v1.0 application, installed on a Samsung Galaxy S21 running Android 12 and used with backend component RekognitionLivenessDetectionScience 3.4.15.0, was tested by iBeta to the ISO 30107-3 Biometric Presentation Attack Detection Standard and was found to be in compliance with Level 2.

Best regards,

A handwritten signature in black ink, appearing to read "Ryan Borgstrom".

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