



Operational Acceptance Test (OAT)

ACCS 0:2020 Technical Requirements for Age Estimation Technologies

Executive Summary

Yoti AI Services Age API 1.1.1

DATE OF REPORT

25/11/2020

EVALUATION TEAM

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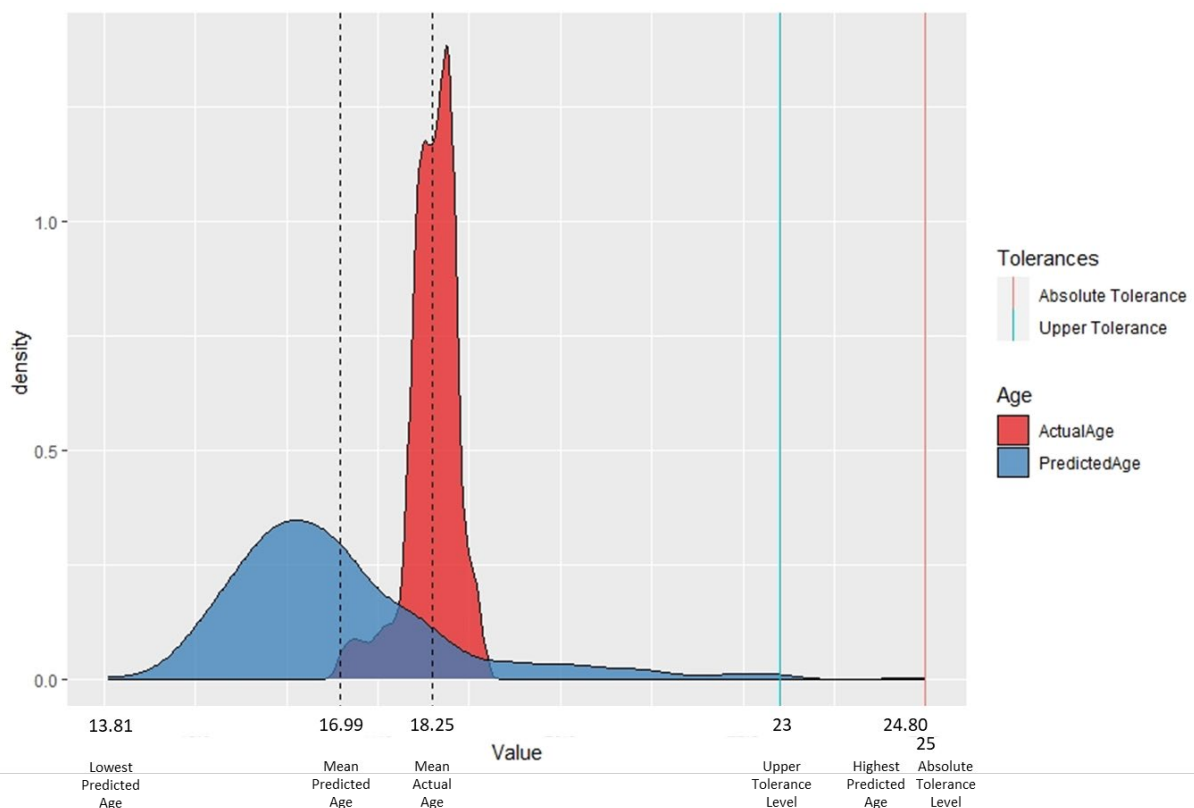
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Executive Summary

This is an Operational Acceptance Test of the Yoti Age Estimation System in accordance with the Technical Requirements for Age Estimation Technologies (ACCS 1:2020) as set out by the Age Check Certification Scheme.

The intention of the test is to assess whether or not the Yoti Age Estimation System is fit for deployment by determining if an 18 year-old (the nominal age) would be incorrectly estimated as being over 25 (the Challenge Age policy).



Headlines:

1. The System is fit for deployment in a Challenge 25 policy area and is at least 98.89% reliable.
2. This would indicate that the system may not work as intended for between zero and 11 out of every 1000 presentations.
3. The Mean Predicted Age for the whole test crew is 16.99 against a Mean Actual Age of 18.25. It is, therefore, on average, underestimating age by 1.26 years.
4. The Mean Absolute Error is 1.79 years which is within acceptable parameters.

5. The number of results above the upper tolerance level (Age 23) are within acceptable parameters indicating that the standard deviation of results is within acceptable parameters.
6. None of the results were above the absolute tolerance level (Age 25).
7. In order to achieve a conforming product, results presented by the Yoti Estimation System with an uncertainty exceeding 4.6 years need to be excluded. If all results without that performance throttling are taken into account, the product is only fit for deployment in a Challenge 28 policy.

The sample size for this test was insufficient to provide statistically valid analysis of gender and skin tone bias in the system, but with lower levels of reliability the following observations can be made:

1. Males are estimated as being older than females indicating a lack of outcome error parity; however the results for males were better calibrated (closer to the actual age) than they were for females.
2. The distribution of results for skin tone indicated a lack of outcome error parity, but with darker skin tones being better calibrated (closer to the actual age) than lighter skin tones. This indicates that lighter skin tones are more likely to be assessed as being younger than darker skin tones, but darker skin tones are closer to the actual age.

The Certification Officer's decision is that a Certificate of Conformity can be issued subject to the performance throttling at uncertainty level 4.6 years being set and subject to the exclusions related to the limitations of this test not covering inherent bias, data protection and privacy, age appropriate design, data interchange formats, vectors of trust, presentation attack detection, penetration testing or security protocols.