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COMMITTEE ON HOMELAND SECURITY
SUBCOMMITTEE ON BORDER SECURITY, FACILITATION, & OPERATIONS

"Assessing CBP's Use of Facial Recognition Technology"

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Prepared Statement for Daniel P. Tanciar

Chairwoman Barragán, Ranking Member Higgins, and distinguished Members of the Subcommittee, thank you for the opportunity to appear today to discuss U.S. Customs and Border Protection's (CBP) use of facial recognition technology.

My name is Daniel Tanciar and since March 2020 I have been serving as the Chief Innovation Officer at Pangiam, a company that applies computer vision and face recognition technology to define the future of trusted movement of people and goods.

Prior to joining Pangiam, I was a U.S. CBP Officer in the Office of Field Operations (OFO) for 16 years. I spent 12 of those years assigned to CBP, OFO headquarters in Washington DC. During my tenure at CBP, I worked on programs such as NEXUS, Global Entry, the Model Ports Initiative, the Immigration Advisory Program, and the CBP Mobile Program. From 2016 until my departure from CBP in March 2020, I was the Deputy Executive Director for Planning, Program Analysis, and Evaluation, the office, at that time, responsible for Biometric Entry/Exit Transformation. In that role, I was part of the leadership team that implemented the use of facial recognition for biometric exit and entry.

I am here today, in my personal capacity, to share with the subcommittee my views and experience on how CBP's use of facial recognition technology at ports of entry strengthens security, improves the international arrivals experience, and increases operational efficiency in a manner that is consistent with privacy, civil liberties, and data protection principles.

Background

In 2013, the biometric exit mission was transferred from DHS Headquarters to CBP through the *Consolidated and Further Continuing Appropriations Act of 2013* (Public Law 113-6). In 2017, CBP developed a process to use facial recognition as the means to implement biometric exit which has been mandated by Congress in multiple statutes over several decades.

The face recognition process for both entry and exit utilize existing advance passenger information (mandatory since the early 2000's) and photographs from passports, visas, other federal documents, or previous border entries (which travelers have already submitted to the government for the purposes of international travel) to build flight-specific galleries of photo templates for those travelers on that flight. Upon boarding the aircraft or arriving in the United States, a live photograph is taken of the traveler, securely transmitted to CBP's TVS, where it is matched against the gallery of templates. If the live photo is matched to the photo template of a U.S. citizen or another exempt category of traveler for biometric exit or entry the photo is deleted by CBP within 12 hours. If a photo is matched to the template of an

individual in scope for biometric entry or exit the photo is retained and recorded as a biometric entry or exit record.

Civil Liberties and Privacy

When the biometric exit entry process was designed, civil liberties and privacy protections were built into the program at the forefront and not as an afterthought. The program included opt-out provisions, photos were only taken in places where travel documents are required to be shown (e.g. security checkpoint, boarding gate, CBP primary inspection), and photos are taken with the traveler's knowledge with a camera in plain sight. CBP engaged with privacy advocates on several occasions, published multiple privacy impact assessments, engaged with the DHS's Data Privacy and Integrity Advisory Committee (DPIAC) and the U.S. Privacy and Civil Liberties Oversight Board (PCLOB).

Additionally, CBP developed business requirements to govern how airports, airlines, vendors, and other partners may interact with CBP TVS and outlines their responsibilities to safeguard data, participate in audits, and post notice to travelers about biometric processing.

CBP's facial recognition technology does not determine identity. CBP officers make the final determination of Identity. The technology is just one tool that CBP officers can use to make admissibility or enforcement decisions. The results of a face recognition match or no match in and of itself is not used as a sole means to make these decisions. Likewise, for biometric exit, If there is no match or when a traveler opts out, then airlines simply revert to scanning boarding passes and reviewing travel documents to permit boarding.

Facial Recognition Performance

Early on, CBP recognized the need to work with outside biometric experts and organizations to help them test, validate, and ensure optimal system performance. In 2014, the DHS Science and Technology Directorate (S&T) and CBP opened the Maryland Test Facility (MdTF) to test and evaluate operational processes using biometric and non-biometric technologies. Since 2018, the MdTF has held biometric rallies that test and report on various biometric acquisition and matching technologies. The MdTF team has worked closely with CBP to identify best practices to measure and report on TVS performance. The MdTF team has also conducted and published research such as measuring demographic performance and race and gender impacts of identity (Maryland Test Facility , 2022).

CBP chose a high performing facial recognition algorithm for the TVS as measured by the National Institute of Standards and Technology Face Recognition Vendor Test (FRVT) 1:1 and 1:N evaluations. These ongoing face recognition evaluations are vital to monitoring continued algorithm performance and for monitoring for demographic differentials in facial recognition algorithms. The work that NIST and the MdTF are doing to test, measure, and report on algorithm performance is one of the key drivers of commercial facial recognition algorithm performance improvements over the last few years.

Security Benefits

CBP's use of facial recognition technology strengthens security by reducing the imposter threat at the border and provides a higher level of accuracy of matching travelers to their ID documents.

Imposters to genuine documents are a documented border security risk that CBP officers must be vigilant against every day.

"The use of documents by imposters, or look-alikes, is one of the simplest methods of passport fraud. An imposter will simply attempt to pass inspection at passport control by presenting a genuine, unaltered document issued to someone similar in facial appearance, and pretend to be that person to deceive the control officer… imposters are problematic for passport control because this type of fraud is difficult to detect and requires a high level of skill and professionalism in the examining officer." (Stevens, 2021).

While CBP officers must match unfamiliar travelers to the passports each day, studies suggest that border control officers, police, and banking employees who are relied upon to match IDs to live persons have the same error rates as novice reviewers (White, Towler, & and Kemp, 2021). The novice error rates in pairwise face matching tasks can be as high as 30% or 40% in challenging tests where images are captured in unconstrained environments (White, Towler, & and Kemp, 2021). These error rates occur even when they are comparing IDs to people standing directly in front of them (White, Towler, & and Kemp, 2021). When comparing the human error rate (30%-40%) for face matching to the error rate for face matching algorithms (<3%), face recognition technology is more accurate and not subject to fatigue and other factors which may further increase the human error rate.

Since 2018 through FY 2021 CBP's use of facial recognition technology has identified 46 imposters to genuine documents at U.S. airports and 916 imposters arriving at land ports of entry, and CBP has been able to biometrically confirm over 100,000 overstays (U.S. Customs and Border Protection, 2022).

Facilitation Benefits

CBP's use of facial recognition began with the biometric exit program in the air environment that was implemented in partnership with airlines and airports with the goal of deploying technology in a way that fit into their current operations and improved the travel process. One airline's biometric exit pilot demonstrated that facial recognition could save up to 9 minutes per flight and another airline was able to board an A380 aircraft in about 20 minutes (Genter, 2019).

As face recognition began expanding from exit to entry in a program called Simplified Arrival, the administrative processes of handling the passport, matching the passport photo to the person standing in front of the officer, scanning the machine-readable zone of the passport, and re-collecting fingerprints from returning visitors to the U.S. could be replaced by the officer simply taking a photo of the traveler. The benefits to the CBP officer are the elimination of administrative processes, reduced handling of documents, and more time to focus on the traveler interview. Travelers benefit from Simplified Arrival with reduced wait times and a simpler touch free arrivals experience.

Conclusion

From Fiscal Year 2018 through Fiscal Year 2021 CBP has processed over 100 million individuals using face recognition technology. The use of facial recognition has led to the identification of over 950 imposters, improved aircraft boarding times, and enabled touch free entry processing during the pandemic. While there are always improvements that can be made, CBP has made progress towards strengthening the program's privacy, civil liberties, and data security foundation. It is through the continued oversight of Congress, Government Accountability Office (GAO), the Inspector General, and CBP engagement with advocates that will continue to drive transparency about how the program is working and performing.

References

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