



Adding Biosecurity to the Common Departure Lounge process

Border control incorporating biosecurity screening

A photograph of an airport lounge with several tall, black, cylindrical security screening units. The units are arranged in a row, and the background is slightly blurred, showing the interior of the lounge with circular ceiling lights.

Intelligence in Aviation

For a long time the main topics of conversation in airport planning centred around managing a seemingly never ending increase in passenger numbers.

Now our challenges are completely different and new solutions are an imperative, not just nice to have. We believe there is an opportunity to build systems and processes for today and beyond the Covid crisis. Our approach should provide the solutions we need now, ensure we are ready for either another pandemic or the re-emergence of this one and also take into account the eventual rise in passenger numbers we were so focussed on.

A few months ago we released a White Paper entitled “[Using biometrics to manage increasing passenger numbers](#)”. In this we described how our customers such as Heathrow airport had used face recognition based biometrics to enable all passengers to share a common departure lounge (CDL), which led to a significant increase in capacity through removing the need to physically separate domestic and international passengers.





Here, we discuss how the business processes and physical infrastructure designed for the CDL concept can also be used to facilitate new biosecurity measures, by working in tandem with technology such as thermal imagers, and also how by their very nature these CDL processes make it easier for staff to intervene when required.

How does face recognition enable a CDL now?

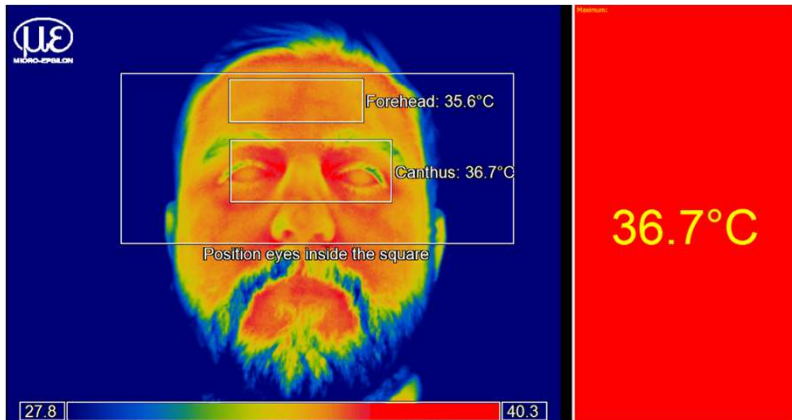


Let us take a moment to look at the current processes and technology before considering how they might be adapted to our new requirements. When transferring airside, all passengers are required to enrol into the facial recognition system when presenting their boarding pass at the automatic gate or self service kiosk; they can only proceed when their enrolment is complete.

Our systems use near IR cameras specifically designed for this application to ensure we can always capture a passengers face consistently, regardless of the ambient lighting conditions, which would not be possible using standard visible light CCTV type cameras.

Finally, at boarding, the passenger again presents their boarding pass and their face is checked to ensure the same person who enrolled with the boarding pass is the same person attempting to board.

What biosecurity measures could be introduced?



Output from Thermal Imager showing temperature reference and measurement at tear duct and forehead


Image courtesy of Micro-Epsilon www.micro-epsilon.co.uk

These interactions (or “touch points”; a term the industry may want to move away from) offer the opportunity to perform additional biosecurity checks on the passenger, without impeding their progress by subjecting them to a separate process. Moreover, if anything untoward is discovered the passenger is contained in the ideal location for staff to deal with the situation.

Many airports are now turning to the use of thermal imaging (TI) cameras, screening passengers to detect those with a raised temperature.

This task is not as simple as it may at first seem and just reading the highest temperature on a person's face is not the most accurate method.

This is because the temperature measurement that correlates most closely to the body's core temperature is derived from the tear duct (Medial Canthus) and readings should be taken from here.

The background image shows an airport security checkpoint. In the foreground, there are metal detectors and conveyor belts. In the background, there are thermal imaging cameras mounted on poles. A red semi-transparent box is overlaid on the image, containing white text.

The passenger interaction required for facial recognition and accurate assessment by a Thermal Imager are the same and could therefore be performed simultaneously. All the advantages of the CDL are further enhanced with a layer of biosecurity which does not change the passenger journey.

Further options to decrease physical contact for passengers

Other features supported by the CDL concept also lend themselves well to additional biosecurity considerations:

- Use of face recognition to identify a passenger can remove the need to present a boarding pass or passport at control points once they are enrolled. This is a feature already in use to manage passengers who have lost their boarding pass.
- At the initial enrolment stage, longer range, contactless bar code or QR code readers could also be considered.
- Another interesting option is the use of an app enabling a passenger to upload a selfie prior to arrival, which is then used as part of the initial enrolment.



Additional information & Resources

So far, our facial recognition systems have processed over 35 million passengers at Heathrow alone and our solution is approved by UK Border Force for unsupervised border control.

Key to this success has been pioneering the use of infrared cameras for face capture, so our systems can operate around the clock regardless of changes in ambient lighting conditions which adversely affect systems using standard visible light cameras. There is a short video about this concept [here](#)

Aurora-AI is a UK based research & development company delivering artificial intelligence and biometric solutions to the aviation and medical industries and is part of the William Demant Invest Group, whose revenues exceed \$3bn.



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For more information about adding Biosecurity to the Common Departure Lounge process, contact us now:

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