FIT TO FLY

IS IT TIME TO DEVELOP A GLOBAL HEALTH SCREENING STANDARD AT AIRPORTS?

Going touchless
How Covid-19 has accelerated the development of contactless passenger journeys

Social distancing
The measures airports can put in place to keep people safely apart

Interview: ACI World
Outgoing DG Angela Gittens provides guidance on the restart of the aviation sector
A new approach to disinfection at airports is needed as a result of Covid-19

Over the past 25 years airports have become more crowded and the personalized experience that passengers used to receive when traveling through terminals has diminished. Increased security measures for checking passengers and baggage, which are of course essential for travel, have played a role in this.

But another safety measure has often been overlooked. As airports become more crowded, hygiene is often compromised, as management focuses on efficiency and throughput. In none of the aviation meetings, conference or seminars that I have attended over the past 20 years has safety from a healthcare point of view been a main topic. Covid-19 has, however, highlighted the need for a new approach and increased focus on hygiene and disinfection.

Safer ways to disinfect

There are alternative methods to carry out disinfection, which are safer and less polluting. One solution is UV-C lighting. UV-C is a known disinfectant that kills viruses and bacteria. It has been used for decades and is currently widely used in food and beverage production facilities and in hospitals to fight bacteria, germs, mold and viruses. The main benefit of UV-C is that pathogens do not develop a natural resistance to it.

For airports, the latest UV-C technology can be combined with an industrial-based autonomous robot platform to provide a great tool to disinfect terminals in an environmentally friendly way, which also offers low cost of ownership. All that is required for this type of solution to be successful in an airport is an open mind by airport operators and facility management companies.

The disinfection robots can disinfect the air and all surfaces at the same time. Designed according to global health and safety compliance requirements for disinfection, they can disinfect up to heights of 220cm (87in) in 360°. These robots are already available and have been validated by medical institutions, hospitals, virologists and the European Commission.

BY Martin Sembach, director of strategic business development, GoGaS Ecothermal Engineering

RIGHT
The GoGaS Caretaker UV-C air and surface disinfection robot Model B, UVD

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UV-C buy-in
Another benefit of the disinfection robot is that users can easily monitor its work. This is especially important in the area of hygiene as companies want cleaning solutions that they can trust. All of the robot’s tasks are monitored and protocolled, and the results are documented, analyzed and reported. This provides all users and customers with the confidence that the disinfection process is being carried out properly. This will also instill confidence in the passenger at an airport. If a passenger is confident that the airport is taking hygiene and disinfection very seriously and is not compromising on anything in the fight against Covid-19, then they are more likely to fly from that facility.

The digital solutions linked to the UV-C disinfection robots also enable airports to actively communicate with customers and passengers. They can share what has been done, which could result in increased revenues. For example, in a meeting we had recently with a large hotel group, the general manager spoke about integrating the robot’s work with its guest communication and relationship management loyalty system. The robot digitally informs guests when their room is ready and that it has been UV-C disinfected. The general manager said, “Guests feel more comfortable, as we provide them with a safe and transparent process for checking in.”

Aviation experts around the world are talking about a paradigm shift in air travel due to Covid-19. But for the airport industry to be successful in the future it has to firstly think about the main needs and requirements of the customer. The customer must feel that they are being taken care of and that they are safe, and hygiene plays a major role here. If they feel safe they are likely to return and be willing to spend more at the airport.

Guests feel more comfortable, as we provide them with a safe and transparent process for checking in.

General Manager, hotel group

UV-C disinfection
UV-C technology also goes beyond just disinfection. It destroys the DNA of pathogens and is environmentally friendly as it is free of emissions. It can disinfect all surfaces including textiles and has no negative effect on their quality. It is also extremely efficient compared with manual disinfection and as no poisoning particles or aerosols are emitted, it doesn’t affect the water system.

It is very important to understand, however, the correct formula for UV-C. UV lamps used on their own, for example, do not disinfect. For UV-C light to destroy the DNA of pathogens, some key parameters are required.

First, users need to consider the wavelength of the UV light. The sweet spot for a UV-C bandwidth is 254nm. Tuning the light and hitting this sweet spot is fundamental in destroying DNA. Second is energy density. This defines the energy and power applied to the target by the UV-C light during the entire lifetime of the UV tube. As a rule of thumb the minimum requirement is >85% energy density. Less than 85%, simply speaking, generates a lot of UV light, but has no guaranteed disinfecting impact. And finally, it is also important to consider the right balance of the distance and the application duration of the UV-C light.

One key advantage of using autonomous UV-C disinfection robots is that they cannot be manipulated – the disinfection process is always the same, every single time, and it is not subject to human interpretations and execution of the disinfection task itself.
Can the entire passenger journey through an airport be contactless? *Passenger Terminal World* speaks to the airports and suppliers working toward making this a reality.
Going touchless: The Bangalore experience

When it comes to managing the transition to touchless, Kempegowda International in Bangalore provides a useful case study. The Indian hub ramped up the digital route in the public in late May with a roll-out of measures to combat the spread of coronavirus and reassure the travelling public. Bangalore's "contactless airport experience", as airport authority Bangalore International Airport Limited (BIAL) has named the new measures, may be one of the most comprehensive efforts to ensure contact-free travel within the industry.

The new regimen covers all aspects of a traveler's journey through the airport starting with arrival at the terminal, where mats and carpets are soaked in bleach to disinfect shoes and travelers are required to wear masks and present a self-printed or e-boarding pass before they can be allowed inside.

Once inside the terminal they must scan their boarding pass at a contactless self-service kiosk, then self-tag their baggage before proceeding to the active counter to drop it off. To reduce the risk of human transmission the airline bag-drop counters have been fitted with transparent partitions, and travelers facing up to the machines must stand at safe distance markers on the floor.

"The aim is to use as much facial recognition and mobile technology as possible, to make the passenger experience frictionless and low-touch at every step of the journey," explains O'Connor.

But while most of these solutions limit contact, few of them offer the traveler to make selections on a touchscreen. But airports recognize that for some travelers even this limited contact will be too much of a perceived risk. Because of this they have been reaching out to airport tech companies such as Germany-based Materna for solutions that will make their automated systems entirely touchless. According to Dylan Austin, Materna senior manager for air travel solutions, demand has been unprecedented.

"Normally when we're designing something new we tend to work in relatively long timescales," says Austin. "But that has gone out of the window and we now have airports ringing us up saying, 'We want to start flying again but we have a challenge – we've got all this self-service automation but passengers will be reluctant to touch it.'"

In response to these requests Materna began looking at ways it could adapt its automated solutions – which include self-service check-in and bag drop, secure access e-gates and self-bagging e-gates – to be entirely touchless.

At first it considered using a voice-activated solution or a system controlled by gesture – either head or hand movements. But both of these solutions would have required retrofitting its technology with new hardware, an approach that the company wanted to avoid for two main reasons. "The first problem is that you have to physically go and take the thing apart and fit something new," says Austin – a time-consuming measure in a period when airports are desperate to resume operations as quickly as possible. Fitting new hardware may also have led to regulatory or certification hurdles because of the implications for electrical safety, according to Austin.

After rejecting those two options the company finally arrived at a smartphone-enabled solution that Austin says offers the airports 'level of providing a touchless solution that involved 'as few changes as possible for the passengers'.

"We came up with the concept of exactly replicating what you see on the touchscreen at check-in or bag drop on the passenger's phone," he adds. "The smartphone-enabled solution is activated via a barcode on the touchscreen that the traveler scans with their phone. Once the bag drop screen shows up on their phone screen, travelers can navigate the entire process on their own device. The solution is easy to implement, notes Austin, as it only involves a software update that can be uploaded remotely.

Low-touch tech

Materna smartphone-enabled solution is by no means the first of its kind. Aviation technology company SITA has a well-established cloud-based product known as SITA Pass, which enables airports to build their own smartphone apps that travelers can use to enable touchless use of their air travel technology. SITA's file is in place at San Francisco International, where smartphone-enabled bag drops and self-bagging are already a feature of the traveler experience.

"We have long seen the importance of automating the passenger process using biometrics and mobile," says Andrew O'Connor, SITA vice president of air travel solutions. "Covid-19 has only accelerated that process. Besides its smartphone-enabled, SITA's other touchless - or 'low-touch' technology as O'Connor prefers to call it - SITA Path, its facial recognition system.

SITA Path can be integrated with nearly every aspect of the airport journey: check-in, bag drop, border control and boarding, meaning that the traveler should theoretically be able to move from the terminal to the airplane with their face as their only identifying marker.

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Identity management and screening

According to NEC Corporation of America’s vice president of aviation, Jason Van Sice, touchless processing is now more important than ever. "Airports, governments and airlines alike see biometric technology as the way forward now and post-Covid-19," he says. "But in order for biometrics to be successful, all stakeholders must work closely together to create new standards and processes that will encourage faster adoption."

NEC Corporation, which has been deploying identity management platforms and biometrics for the past 40 years, has recently bolstered its offering through the addition of the NeoFace Thermal Express solution. The solution uses NEC’s AI-driven video and thermal analytics and opt-in face recognition technologies with infrared (IR) thermal imaging sensors to simultaneously verify identity, detect body temperatures and monitor social distancing, without contact. According to the company, the solution can also identify people even while they are wearing PPE.

"NeoFace Thermal Express can operate as a standalone system or on NEC’s cloud-based Digital Services Platform – the secure foundation for all our digital identity management solutions," says Van Sice.

NEC has helped deploy biometric solutions at more than 25 airports around the globe. One of its most notable projects is its implementation of the NeoFace Express passenger validation technology at the world’s first curb-to-gate biometric terminal in the USA, with Delta Air Lines in partnership with the US Customs and Border Protection (CBP), the TSA and Hartsfield–Jackson Atlanta International.

"NEC is also working in partnership toward the launch of the Star Alliance biometric hub, which will allow millions of Star Alliance member-airline frequent flyers to use face recognition at their chosen airports," Van Sice adds.

The company has also developed the NEC I:Delight, which provides identity management services (IDMS). "The opt-in service provides passengers with the ability to take a selfie, validate their passport and enroll to use the airport biometric service, all from the comfort of their home using just a smartphone," explains Van Sice. "Once enrolled, the passenger can use their face to validate their identity at each of the airport touchpoints from check-in to boarding."

Funding issues

While the technological solutions already exist to make touchless travel possible, the economic uncertainty that the pandemic has also ushered in means that airports may not have the capital available to invest in these solutions. At Canada’s Edmonton International, where the impact of the pandemic saw passenger volumes drop by a staggering 98%, the airport authority has initiated a four-phase process for resuming operations, according to the airport’s vice president of technology, Tara Mulrooney.

The four phases are: starting up operations again, recovery, scaling-up passenger volumes, and adapting to the new normal. Mulrooney notes that any investment in new technology is unlikely to happen until the recovery and
Investment is needed in improved hygiene standards

According to Martin Sembach, director of strategic business development at ecothermal engineering company GoGaS Goch, airports will need to invest more in cleaning solutions in the near future if they want to tackle Covid-19. Sembach encourages the implementation of more automated cleaning solutions, such as touchless dispensers in washrooms and autonomous robots that use UV-C lighting to provide 360° disinfection coverage.

“UV-C technology has been used for years in other sectors, such as within hospitals, and has proved to reliably destroy pathogens. Airports have, however, been reluctant to invest in it due to its initial high cost,” Sembach says. “GoGaS develops automated UV-C disinfection robots, which can be used continuously to clean floors and other surfaces. When you compare the initial cost with operating costs, the UV-C robots actually save airports money in the long term.”

The robots can be used in areas such as check-in, security, restrooms, lounges, gates and baggage reclaim, according to Sembach. “We also provide portable desktop cleaning solutions for use throughout the airport, and sensor-controlled digital dispensers that track usage,” he adds.

scaling-up phase “simply because we don’t have the capital right now to really do that”. But while many airports are struggling financially at the moment, it’s also true that they can’t afford not to invest in touchless technology if they want travelers to come back. At Edmonton the need for investment may be less pressing as it already has some touchless solutions in place, having “invested in a fairly substantial e-gates capability” just last year, according to Mulrooney.

Elsewhere, particularly at smaller airports, this may not be the case. Materna, for example, held talks recently with what Austin describes as “a relatively small UK airport that currently has no self-service capabilities”.

Austin continues, “The airport had been planning a very large-scale investment in self-service technology and it has now come to us and said it doesn’t have the budget for a huge capital project like that but it wants self-service automation now for a much smaller footprint to provide passenger reassurance.”

For cash-strapped airports, O’Connor thinks that many touchless solutions may still be feasible as in many cases they “leverage existing common-use infrastructure, making implementation quick and cost-effective”.

As long as the airport already has the self-service hardware in place, the smartphone-enabled solutions are undoubtedly the cheapest as they can be implemented with nothing more than a software update. Smartphones can also be leveraged in other ways to help facilitate the touchless journey, according to Mulrooney.

“I think we’re spending too much time thinking about making individual checkpoints touchless,” she says, “whereas it’s really about the ability to disperse services.” According to Mulrooney, smartphones and online in general offer “a huge opportunity to disperse services outside of the terminal” and thereby reduce the risk of human contact.

She believes that services such as check-in, boarding pass printing and self bag drop (relocated to the parking area) could all be managed via smartphones and home computers before the passenger has even entered the terminal building.

For this to happen, she suggests that airports, airlines and other stakeholders stop investing in individual apps and instead invest in a harmonized platform. “If that was to happen, think of the benefits, not just for Covid-19 but for travel generally,” she concludes.
SOME THINK AIRPORT EFFICIENCY HAS REACHED ITS LIMITS. WE THINK DIFFERENT.

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