



Pilot projects – COVID free airport

Output T2.1



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Introduction

The impact of the COVID-19 disease on air travel has been dramatic, making it the worst aviation crisis ever (ICAO, 2020a). The perspectives for recovery of air travel are bleak, with an estimated return to the 2019 traffic level to take 4 to 5 years (IATA, 2020a). The International Civil Aviation Organization (ICAO) was created in 1944, in article 14 of its convention stated: “Each contracting State agrees to take effective measures to prevent the spread by means of air navigation of cholera, typhus (epidemic), smallpox, yellow fever, plague, and such other communicable diseases ...” (ICAO, 1944). This intent was reinforced in the 2010 ICAO general assembly, urging all States to join and participate in the Cooperative Arrangement for the Prevention of Spread of Communicable Disease through Air Travel (CAPSCA) (ICAO, 2010). Just looking at the 21st century, prior to COVID-19, the occurrences of pandemics has been frequent: South Asian Respiratory Syndrome (SARS, 2002–2003), swine flu (2009–2010), Middle East respiratory syndrome (2012), Ebola (2014–2016) and Zika virus (2015–2016). All these health crises had a much lesser impact than the COVID-19. Further to SARS, the World Health Organisation (WHO) revised the International Health Regulations (IHR) in 2005 providing a legal framework “to prevent, protect against, control and provide a public health response to the international spread of disease ...” (WHO, 2005). There has been some research on the methods and screening strategies during a pandemic (Gaber et al, 2009; Gold, 2019). However, these outbreaks represented some early warnings that have not been fully acknowledged worldwide.

One of the reasons for air travel to be the safest transport means is to learn from past events. As an industry, resilience of air travel needs continuous improvement. First, preparing to restart and recover aviation to normal traffic levels; then, being ready for the next health crisis and secure passenger confidence in air travel (IATA, 2020b). The first objective for aviation remains to reach the highest possible safety level. The WHO defines infectious diseases as diseases “caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi; the diseases can be spread, directly or indirectly, from one person to another.” (WHO, 2020a).

The scope that PON CLOUD NINE project tries to achieve is related to any high contagious and life-threatening disease. Pandemic-free air travel will be reached when the following cases for an infectious disease are both reduced to a minimum reasonably practicable risk:

- Contamination between individuals (passenger, crews and workers at the airport) during the travel journey
- Transport of infected persons to different parts of the world.

Measures against COVID-19 at airports

The companies working at the airport terminal building premises (airports, airlines, ground handlers, national agencies, subcontracted personnel, retailers ...) are implementing the following measures to continue or resume operations (ACI-Europe, 2020; Changi airport, 2020; U.S. Department of Transportation, 2020), to prevent the spread of COVID-19:

- Cleaning and sanitizing: enhancing sanitation of floors, carpets, high-contact areas, also, providing hand sanitizers and wipes for facility users
- Information: communicating in advance the right information via their website and application, with posters, videos and audio announcements on site
- Process adaptation: promoting self-servicing, electronic ticketing and touchless kiosks for all airport processes (check-in, bag-drop, immigration, boarding gate)
- Limiting the number of people at the terminal to only passengers, with no companions
- Changing the security check to avoid pat-down and secondary search; adapting customs and immigration controls to avoid any document exchange
- Protecting employees working at the airport: use of polycarbonate partition wall panels to separate staff from passengers
- Social distancing (varying from 1 to 2 metres): using floor markers to materialize queues and waiting points, queue management, seat arrangement, controlling flows, avoiding crowding and using available equipment accordingly (e.g. by assigning to a baggage carousel only one flight, and using only one out of two available)
- Aircraft boarding and deplaning procedures: smaller groups with more sequencing, more shuttle buses if aircraft in remote stand, limitations to hand luggage on aircraft
- Terminal heating, ventilation and air conditioning: increasing the ratio of fresh air, minimizing air recirculation and changing filters regularly
- Wearing face masks: encouraged to everybody within the airport premises. Mandatory when imposed by the airport home country in public places or means of transport (AENA, 2020)

It is to be noted that many of these measures are only feasible with a very low traffic level. Specifically, social distancing related measures with pre-COVID-19 traffic levels are not possible as the airports do not have enough surface to implement them. Self-service and increased information availability at airports were a trend already present that will continue and increase (ACI, 2020b). Enhanced cleaning standards, touchless journey and less physical interaction between passengers and airport employees are most likely staying for

the long term as well. In principle, the remaining measures against COVID-19 are of interim nature, waiting for availability of a safe vaccine, effective treatment, herd immunity or virus disappearance to happen.

Detection of COVID-19

There has been the intent for COVID-19 detection with the use of passenger temperature checks and the collection of passenger health self-declaration forms both on departure and on arrivals (Paris airports, 2020). Sometimes it has also been combined with a visual inspection. However, given the available scientific evidence, the European Aviation Safety Agency (EASA) and European Centre for Disease Control (ECDC) state “that entry screening using temperature control is a high-cost, low-efficiency measure” and “ECDC does not support the widespread implementation of exit or entry screening” [based on temperature checks] (EASA, 2020; ECDC, 2020). Health self-declaration is only effective based on the good faith of passengers and acts more as a deterrent to travel for risk passengers. As such, it is prompt to fraud despite any potential sanctions and a huge challenge to trace back any contagions (ECDC, 2020). In addition, for most of the individuals their symptoms are mild or not even recognized, but they can still spread the virus. Even a person that will develop symptoms has a window of up to 3 days where can present no symptoms and still be infectious (Lau et al., 2020; Lessler et al., 2020).

There have been several airports where Polymerase Chain Reaction (PCR) tests have been used to detect infected passengers or airport workers. These PCR tests need a human body fluid sample extraction (swab from nose or throat) and generally while waiting for the result, isolation or quarantine measures are requested. The main purpose of these tests is to offer an alternative for the two weeks quarantine to arrival passengers. Most airports have limited PCR testing capacity (around 500 tests per day as quoted for JFK and 2000 for Frankfurt). PCR tests are also intended to be deployed progressively to main international German and French airports (Associated Press, 2020); in the short term, other airports around the world will be adding this capability (Brussels, Amsterdam, Istanbul, San Francisco ...).

Steps for a pandemic-free airport

The implementation of a pandemic-free airport concept has to be based on the development of several streams that are interconnected:

- Technical advances on infectious detection means.

The various methods need to continue their development, including medical validation and trials in an airport environment. Several detection methods may need to be combined to reach a screening with the required performance and automation is a must to meet airport facilitation requirements.

- Build of appropriate industry standards and State regulations.

The use of industry standards for process, methods and information exchanges is key for a wide adoption. These standards can be used as building bricks for States regulation. It is also a way to ease the start-up of regulations, their subsequent updates and mutual recognition between different States. The additional effort to generalize these regulations for future infectious diseases would be low if done at the same time with COVID-19 related updates.

- Adequate health screening responsibility management.

The implementation of health screening at the airport requires local health authorities to scale up resources at the airport or delegate to the airport, airline or other government agency already present.

- Public opinion demand and support.

The COVID-19 shock result in a worldwide public demand for more stringent control of communicable diseases, specifically for air travel. This may replicate at political level which would then lead to new health-related regulations impacting air travel. It is very likely that health aspects may need to be considered from now on by the aviation ecosystem and this may include airport health screening and permanent presence of health personnel at the airport. All these action could support public opinion being confident in air travel, keep aviation as the safest and also healthiest travel means and prepare for future pandemics.

- Backing of the air travel industry.

There are many stakeholders in the air travel industry worldwide. Health screening facilities at a given airport could be seen as a competitive advantage that may evolve into a pandemic-free airport network that would impact airline network and travel demand in general.

A tentative roadmap for the creation of a pandemic-free airport is presented:

- Within the airport: it may start from a specific zone in the terminal with a trial on a route. Then, it will grow to cover the boarding gate and later a dedicated zone within the terminal building with several gates, for some intercontinental traffic routes. Afterwards, generalization for intercontinental and international traffic. When interest on this implementation reaches domestic flights, the zone could go from boarding gate up to the multi-purpose security and health check in the terminal.
- Between airports: it may start like some bubbles with just a few airports. When starting to connect between them a safe corridor will be established. The selected airports may be triggered by the nomination by the State of their designated points of entry. If successful, these corridors may cover a geographical and political zone (e.g. Schengen countries). Each geographical zone will set-up their

own common ground, maybe with different levels of testing that need to be coherent with the others to connect seamlessly.

The pilot action of ON CLOUD NINE project

An area dedicated to rapid COVID - 19 tests has been set up at Bari airport for departing and arriving passengers and also for all those who request it. This is a rapid chromatographic immunological test for the qualitative detection of the SARS-CoV-2 antigen which requires preparation times of approximately 15 minutes. The area, located on the arrivals floor of the passenger terminal, has two stations capable of guaranteeing a total of 90 tests in one hour.

Booking of the service could be made every day from 9:00 to 18:00 via the toll-free number or by sending a request to a dedicated email. The passenger received a confirmation email or text message indicating the date and time of the booking. The service was active every day, including holidays. Once the test has been carried out, the paper report has been issued in Italian and English, certified by medical personnel and indicating the result.

The pilot action has been launched in concert with the Italian Ministry of Health, the Italian Ministry of Infrastructure and Transport and the Italian Ministry of Foreign Affairs and International Cooperation. The experimentation envisaged, in fact, the launch of Covid Free flights on the Bari-Tirana route, subject to authorization from the Italian Ministry of Health, in agreement with the Italian Ministry of Infrastructure and Transport and the Italian Ministry of Foreign Affairs and International Cooperation.

The pilot action has been implemented from April to October 2021 to a total number of passengers travelling from Bari to Tirana equal to 461.

The key step was the creation of health corridors between Italy and Albania that guarantee Covid-free flights, as well as with Montenegro thanks to purchase of specific equipment for rapid COVID - 19 tests.