



airport consulting



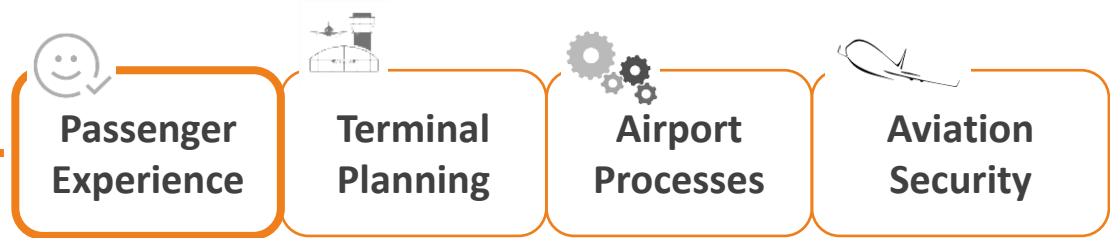
Airport Security and Facilitation Challenges in the New Normal ACI Africa Webinar

12 August 2020

Torsten Hentschel, TH Airport Consulting

TH Airport Consulting – Who we are

→ Independent Consultancy



→ International Engagement



- ACI World Business Partner
- Member of ACI Committees and Taskforces

→ Worldwide Experience



We enhance your airport!

Contributions to ACI Publications



airport consulting



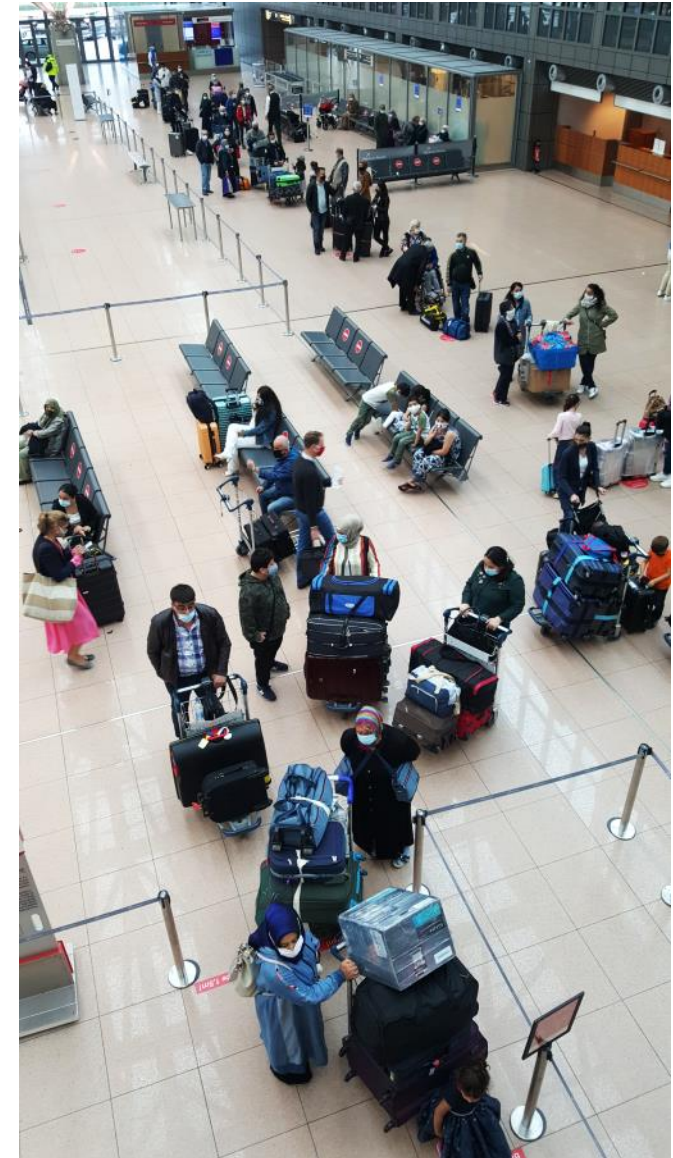
Challenge: Collaboration to improve Facilitation

Example:

Airlines ask passengers to arrive earlier at the airport

- ➔ Number of passengers inside terminal increases
- ➔ Check-in counters need to open earlier what often is not the case
- ➔ This could cause additional queues and crowded areas

Hence close collaboration between airlines and airports is needed to define suitable times for passengers to arrive at the airport and to allocate resources (check-in, security) accordingly.



Health Protection of Passengers and Staff



Source: Aeroporti di Roma

- Physical distancing
- Cleaning & disinfection
- Face masks, PPE
- Protective screens

Capacity Reductions for Processes and Spaces



Source: own picture

- Limited queuing space
- Increased process times
- Capacity reductions for departure, arrival and transfer processes

Additional Processes for Health Screening and Testing



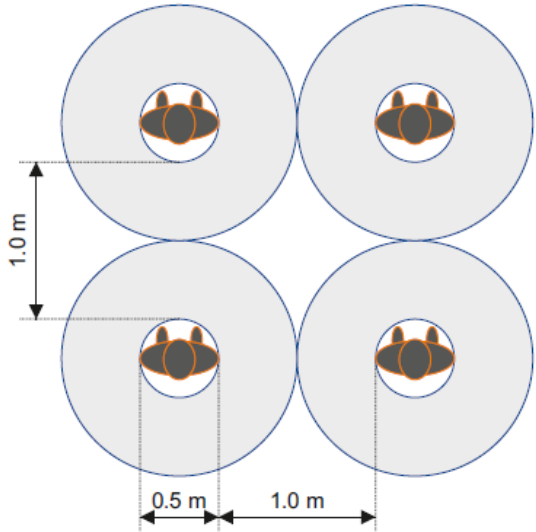
Source: ACI AFRICA

- Entry and exit screening
- Testing facilities
- Temporary or permanent
- Frequently changing national/local legislation

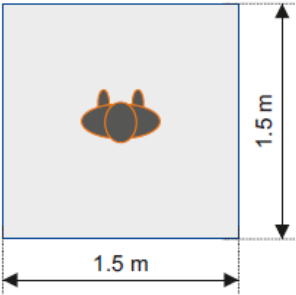
Physical Distancing – the Basics



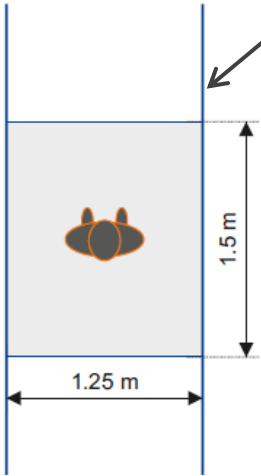
1.0 m minimum distance between passengers (WHO recommendation)



2.25 m²/pax



1.88 m²/pax

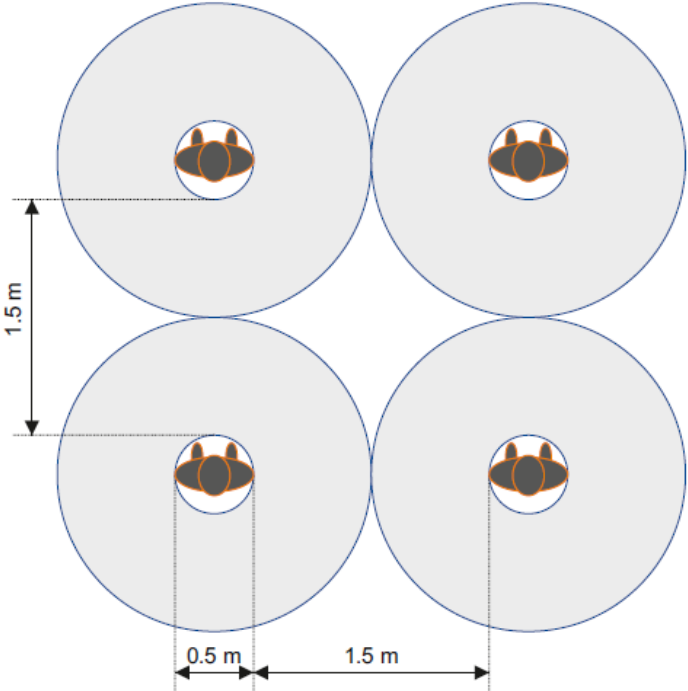


Protective screen divider

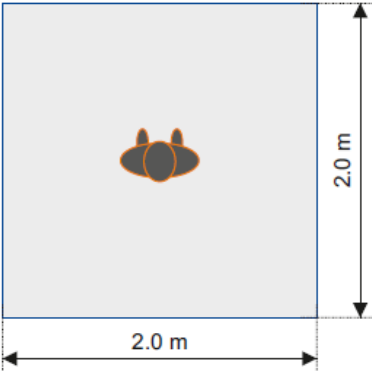
Physical Distancing – the Basics



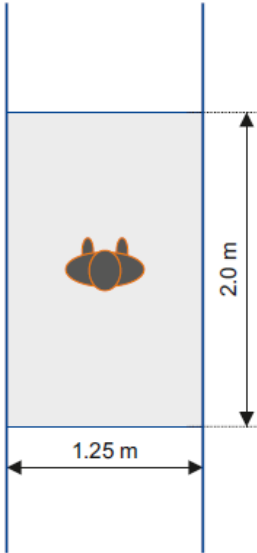
1.5 m minimum distance between passengers



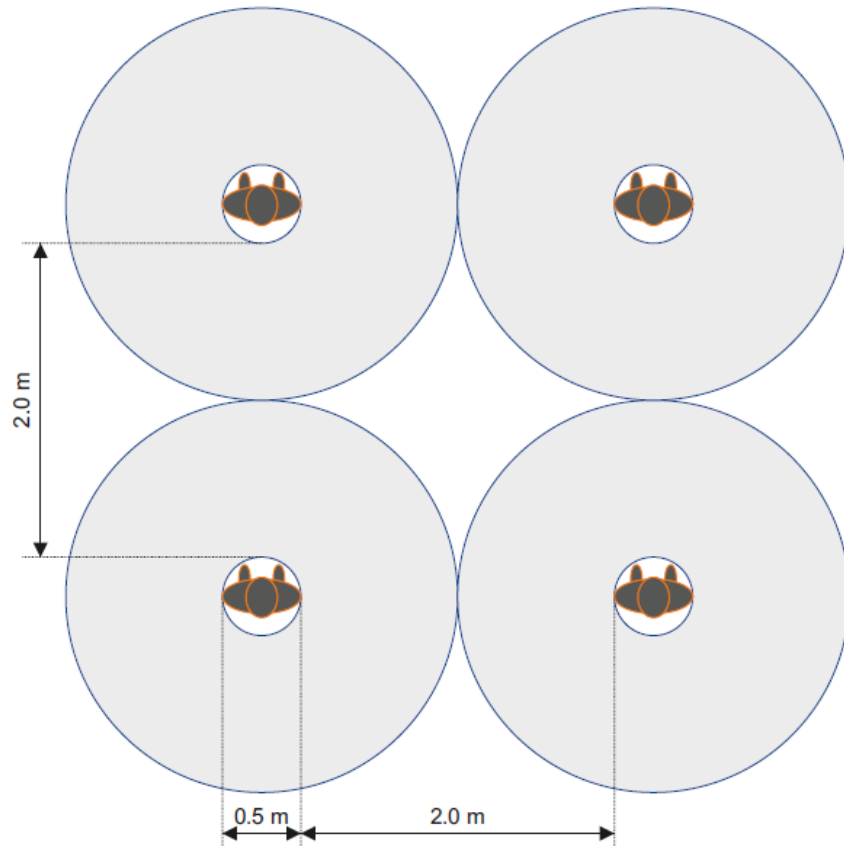
4.0 m²/pax



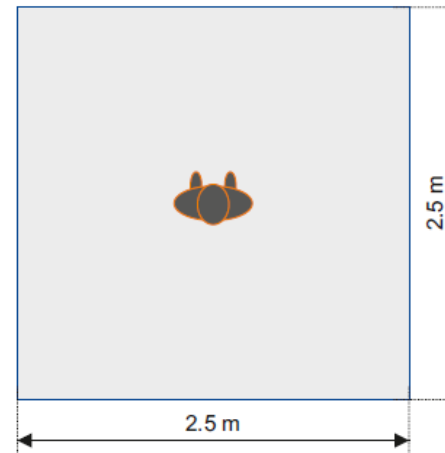
2.5 m²/pax



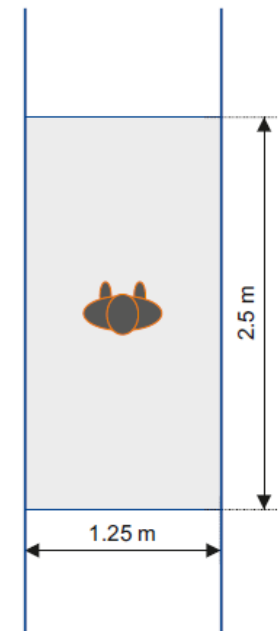
2.0 m minimum distance between passengers



$6.25 \text{ m}^2/\text{pax}$



$3.13 \text{ m}^2/\text{pax}$



IATA LoS and new Space Requirements

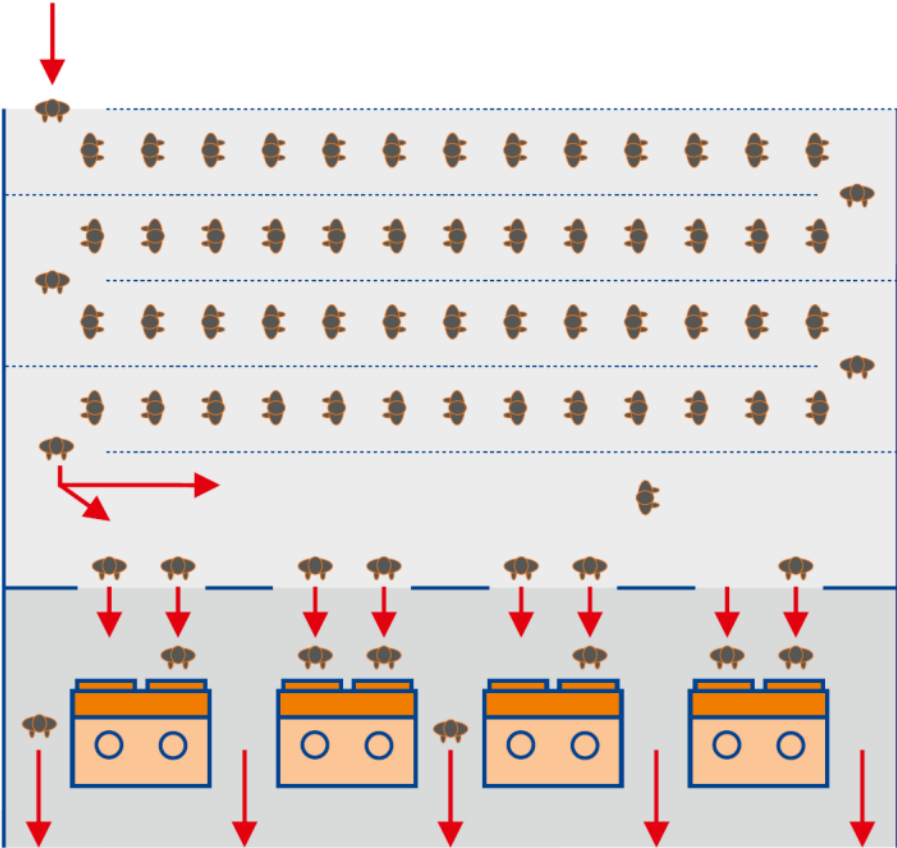
Processor	IATA Optimum LoS Space Guidelines [sqm/PAX]	Space Requirements [sqm/PAX] with Physical Distancing					
		1.0 m		1.5 m		2.0 m	
Public Departure/Arrival Hall	2.0 - 2.3	2.8	+30%	5.0	+133%	7.8	+263%
Check-In	1.3 - 1.8	2.25	+45%	4.0	+158%	6.25	+303%
Security Control	1.0 - 1.2	2.25	+105%	4.0	+264%	6.25	+468%
Border Control	1.0 - 1.2	2.25	+105%	4.0	+264%	6.25	+468%
Gate Holdrooms							
- Seating	1.8 - 2.2	2.8	+40%	5.0	+150%	7.8	+290%
- Standing	1.2 - 1.5	2.8	+107%	5.0	+270%	7.8	+478%
Baggage Reclaim	1.5 - 1.7	2.8	+75%	5.0	+213%	7.8	+388%
Customs Control	1.3 - 1.8	2.25	+45%	4.0	+158%	6.25	+303%

Assuming 80% space efficiency for public halls, gate holdrooms and baggage reclaim
Percent additional space per pax compared to IATA optimum (middle value)

Queuing Challenges with Physical Distancing

Example: Border Control - single line queuing

➤ Original layout with 1.1 sqm per pax in queue

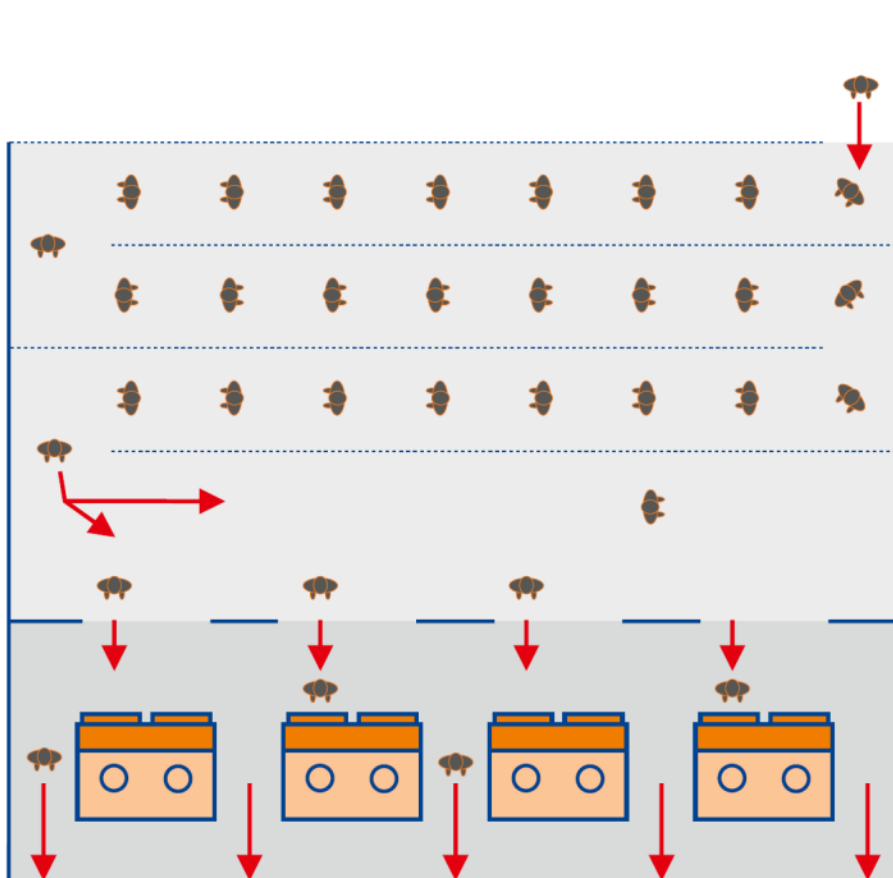


Number of pax: approx. 73
Number of desks: 8

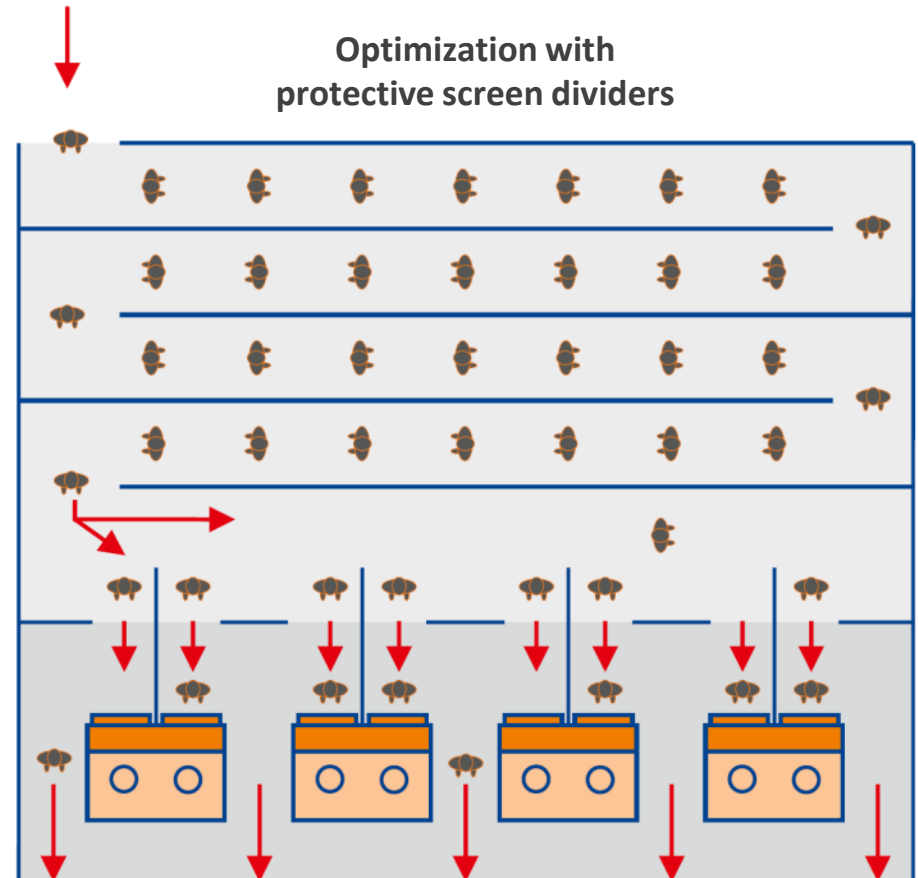
Queuing Challenges with Physical Distancing

Example: Border Control - single line queuing

- 1.0 m physical distance with adapted layout



Number of pax: approx. 34 (space capacity 47%)
Number of usable desks: 4 (processor capacity 50%)

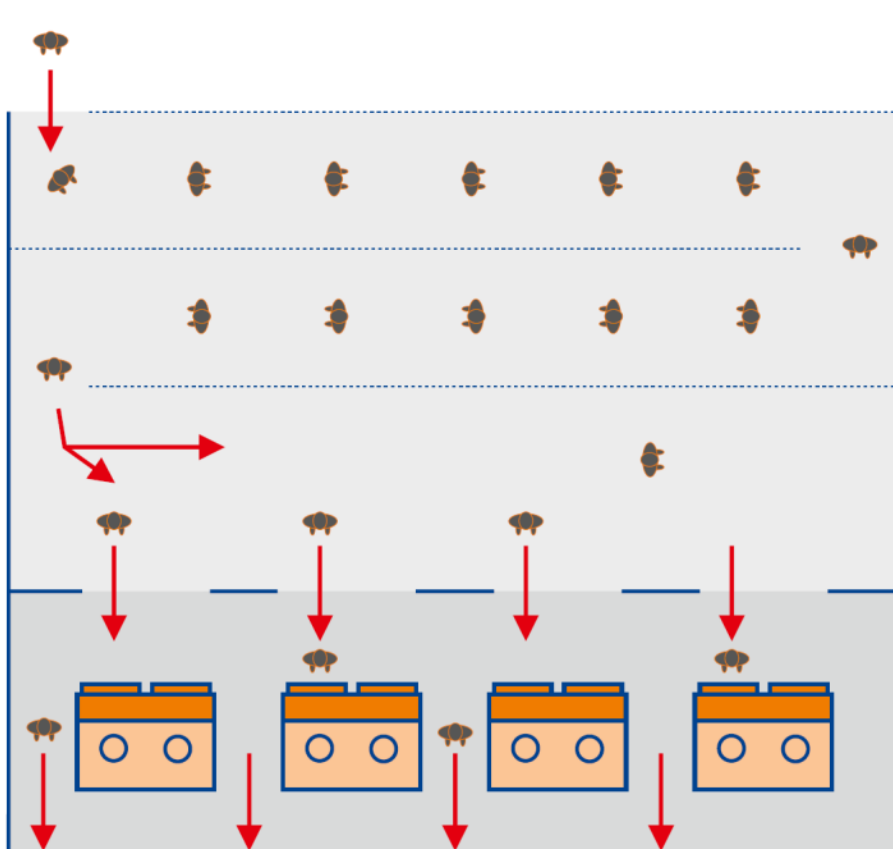


Number of pax: approx. 49 (space capacity 67%)
Number of usable desks: 8 (processor capacity 100%)

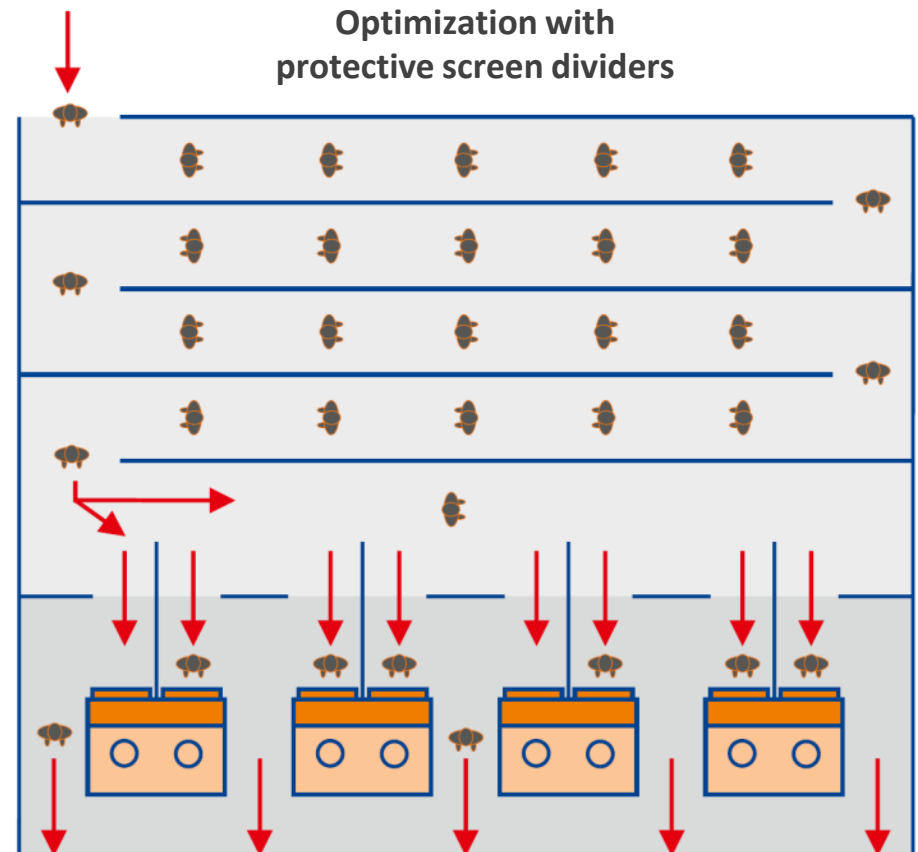
Queuing Challenges with Physical Distancing

Example: Border Control - single line queuing

- 1.5 m physical distance with adapted layout



Number of pax: approx. 21 (space capacity 29%)
Number of usable desks: 4 (processor capacity 50%)

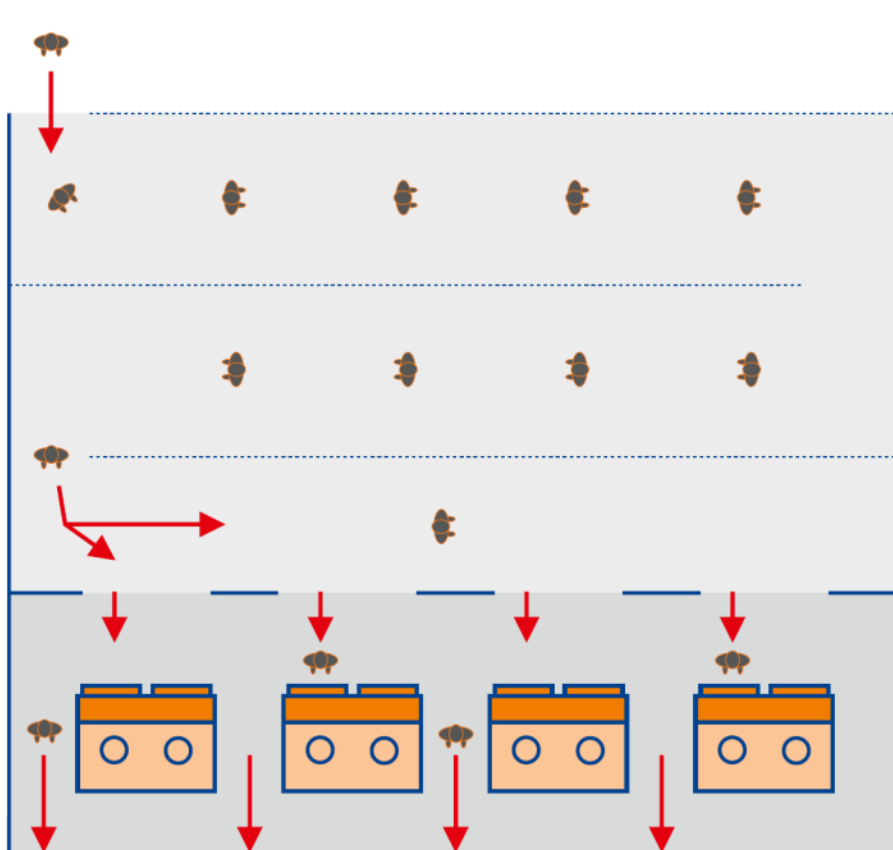


Number of pax: approx. 33 (space capacity 45%)
Number of usable desks: 8 (processor capacity 100%)

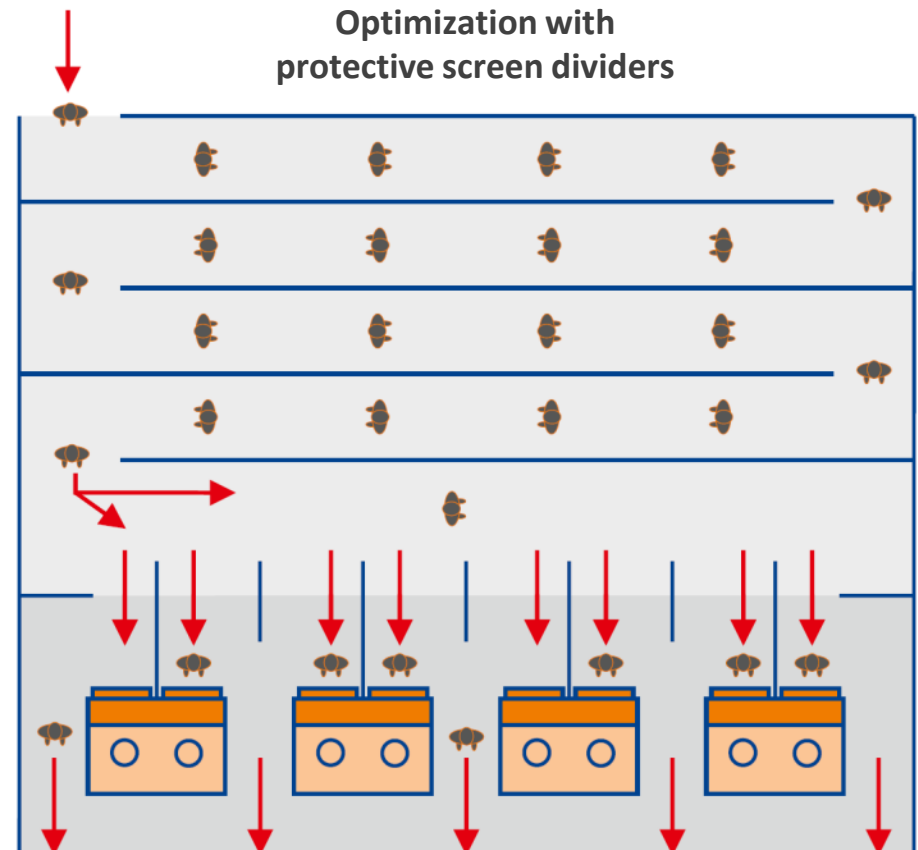
Queuing Challenges with Physical Distancing

Example: Border Control - single line queuing

- 2.0 m physical distance with adapted layout



Number of pax: approx. 14 (space capacity 19%)
Number of usable desks: 4 (processor capacity 50%)



Number of pax: approx. 29 (space capacity 40%)
Number of usable desks: 8 (processor capacity 100%)

How can Queues be reduced?

→ Active queue management

- ... to evenly distribute passengers to available lanes/counters
- ... to limit access and prevent crowded areas in case of spill over

→ Active resource management

- ... by opening of additional lanes/counters to reduce queues and waiting time

→ Security time slot allocation to pax (entrance in the checkpoint at pre-agreed timing)

Security time slot provided at check-in (online and/or at counter) or sent by SMS

To be controlled by boarding card scanning system

→ Reduction of process times through optimization and technologies (however, physical distancing and disinfection measures usually increase process times)



Source: ACI AFRICA




Source: ACI EUROPE, own picture

Existing Recommendations



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International Civil Aviation Organization

Council Aviation Recovery Task Force

Take-off: Guidance for Airports through the COVID-19 Public Health Crisis

Montréal, Canada, 27 May 2020

ATTACHMENT

Issue date: 30/06/2020
Issue no: 2

COVID-19


Disease caused by the SARS-CoV-2 virus

COVID-19 Aviation Handbook


Operational Guidelines of air passengers and in relation to the COVID-19



Aviation Operations During Business Restart




Guidance for African Airports Restart



Version 2 – 23 May 2020

COVID-19 Field Planning Guidance



Transportation Security Administration

Challenges for Throughput at Security Checkpoints

→ Reduction of throughput caused by

- ... physical distancing at checkpoint
- ... regular disinfection procedures (equipment and trays)
- ... avoidance of bag searches by hand (pax needs to open bag and show suspicious items to officer; bag to be x-rayed again)
- ... avoidance of body searches (pax needs to divest more thoroughly and might need to pass scanner again)
- ... rather difficult communication between staff and passenger (face masks, screens)



Source: ACI EUROPE, Rome-Fiumicino Airport



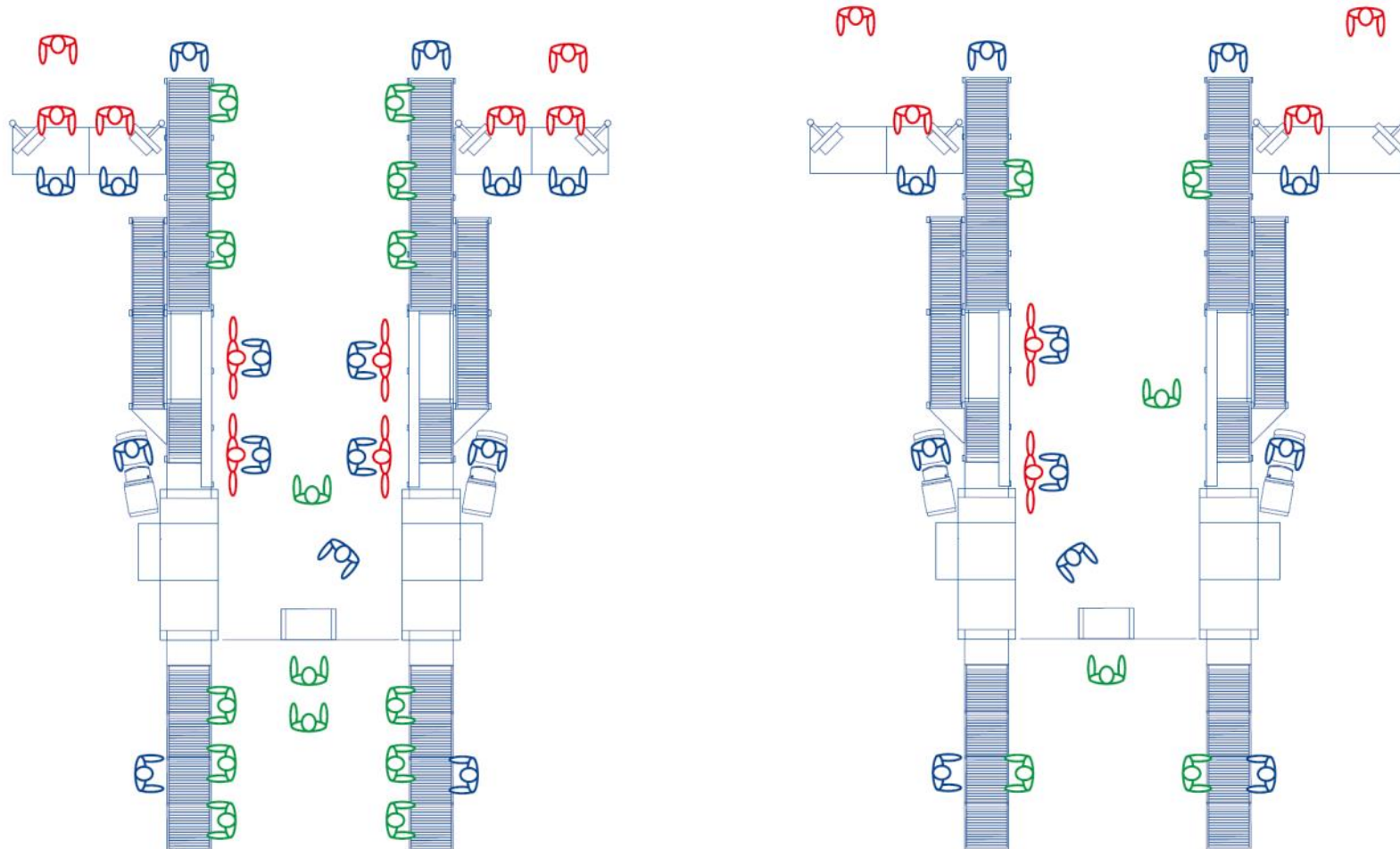
Source: ACI EUROPE, London City Airport



Source: ACI EUROPE, Rome-Fiumicino Airport

Challenge Physical Distancing at Security Checkpoints

Sample checkpoint with physical distancing 1.5m



Solutions to optimize Security Checkpoints

→ Layout optimization

- Additional space/tables for divesting and pick-up to spread pax

→ Protective Screen Dividers

- Reduction of physical distancing requirements by installation of protective screen dividers

→ Automation and technologies

- Advanced screening devices (eds, body scanners) to reduce required bag and body searches
- Smart security concepts
- UV-C based disinfection tunnels for trays

→ Limitation of carry on bags

- ... is often required by airlines or authorities
- ... could cause bottlenecks at check-in and baggage reclaim
- ... reduces the passenger experience



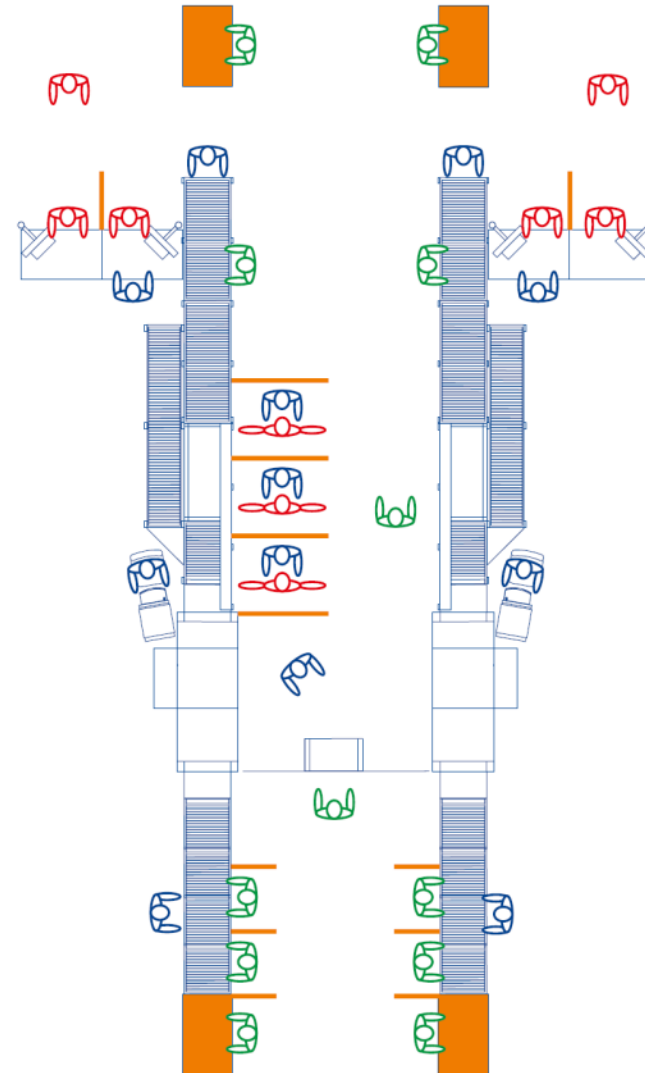
Source: ACI EUROPE, Rome-Fiumicino Airport



Source: own picture

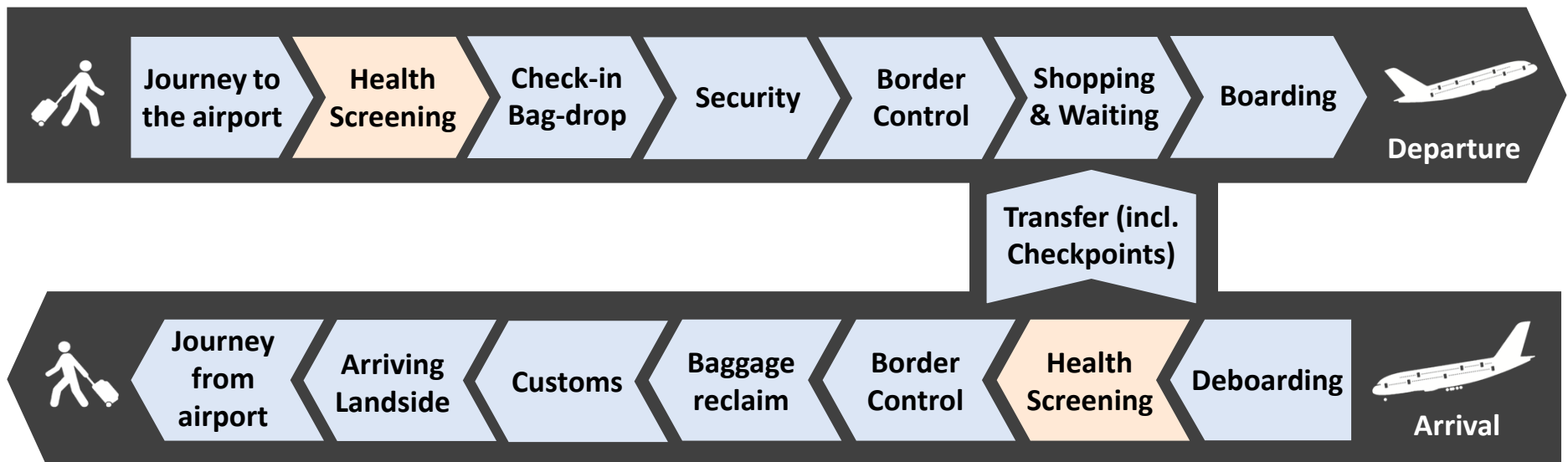
Sample checkpoint with physical distancing 1.5m

- **Optimized Layout (quick fix) with**
 - Extra tables
 - Protective screen dividers



Passenger Journey during and after the Covid-19 Crisis

- ➔ Health Screening on departure and arrival need to be catered for at Airports as required by Governments
- ➔ This adds an additional process to the Passenger Journey which needs to be provided in an efficient way and to make passengers feeling comfortable with the new situation
- ➔ All other parts of the journey need to be adapted and improved to regain Passenger Confidence in travelling again without the risk of getting infected and also to maintain smooth operation



Goals for Health Screening:

If Entry/Exit screening measures are required, they should...

- Provide confidence to passengers and generally improve health safety
- Keep end-to-end passenger journey disruptions to a minimum
- Be clearly communicated to passengers well in advance
- Occur only once during the passenger journey as early as possible (before departure)
- Be as reliable as possible and false results are kept to a minimum



Source: ACI EUROPE, Madrid-Barajas Airport

Screening processes and location:

- Primary Screening (e.g. temperature screening, self-declaration, observation)
- Secondary Screening by professional medical staff (e.g. in-depth interview, medical examination, second temperature measurement, test)
- All passengers or only passengers to/from certain destinations?
- Location exit screening (before arriving at the airport, at terminal entrance, before security, before border control, at point of boarding)
- Location entry screening (on-board, at point of deboarding, before immigration)



Source: ACI EUROPE, Manchester Airport

Technologies for Contactless Processes

✈ E-Gates, boarding pass scanners

- Contactless access to security, lounges, etc.
- Contactless boarding

✈ Automated border control

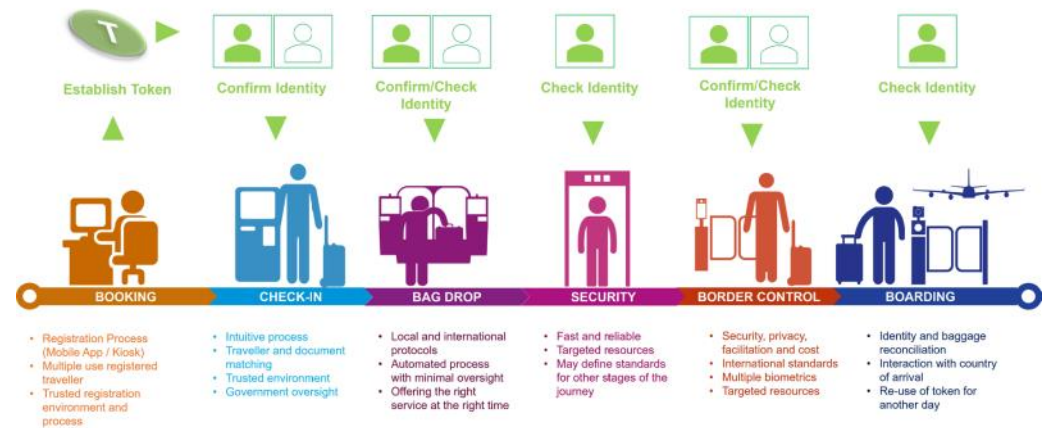
✈ Automated bag-drop, check-in kiosks

✈ Biometrics, single token

- Automation of the passenger journey without the need to present travel documents at check-in, access to security, border control and boarding



Source: own picture



Source: SITA

Recommendations

1. Comply with the national, regional, and local health legislation
2. Apply the ICAO and ACI guidelines and fulfill the recommendations
3. Measure your new process times and calculate capacities of each process
4. Forecast your new peak flight schedules
5. Calculate your demand for each process (no. of lanes/counters, queuing space)
6. Estimate the capacity shortages and possible bottleneck for your terminal
7. Develop and apply measure for optimization (improve capacity, limit peaks)
8. Control/assess the effectiveness of the measures and improve



Thank you very much for your attention!

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