GUIDELINES FOR WTTC'S SAFE & SEAMLESS TRAVELLER JOURNEY

TESTING, TRACING AND HEALTH CERTIFICATES

WORLD TRAVEL & TOURISM COUNCIL

#SSTJ

JUNE 2020

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PART 1: CONTEXT AND SITUATION

CONTEXT AND CURRENT ECONOMIC IMPACT FROM COVID-19

WTTC's annual research shows the Travel & Tourism sector experienced 3.5% growth in 2019, outpacing that of the global economy (2.5%) for the ninth consecutive year. Also, over the past five years, one in four new jobs were created by the sector, making Travel & Tourism the best partner for governments to generate employment.

In 2019, Travel & Tourism's direct, indirect and induced impact accounted for 10.3% of the global GDP (US$8.9 trillion) and 1 in 10 jobs worldwide (330 million jobs)[1].

With the COVID-19 crisis, the Travel & Tourism sector is in uncharted territory and is uniquely exposed. The research from WTTC June 2020 projects 121 million job losses and reveals a projected Travel & Tourism GDP loss of US$3,435 billion in 2020[1].

Through WTTC's Crisis-Readiness research, several best practices were gathered which support a swift recovery in Travel & Tourism. These best practices are enabled by public and private sectors collaboration and embracement of global standards and protocols to rebuild the trust and confidence of travellers.

WTTC defined four principles for recovery:

Coordinated approach, public and private collaboration
- Reopen borders: removal and replacement of any quarantine measures, with possible 'air corridors' to countries with similar circumstances (Medical, Tourism, Political)
- Remove barriers: eliminate travel advisories and banks on non-essential international travel, which prevent insurance protection cover for travellers

Enhance the Seamless experience
- Add health components in conjunction with the latest technology to the existing Seamless Traveller Journey initiative
- Breaking the initiative into:
  - **Before the vaccine:** integrate testing and contract tracing across the end-to-end traveller journey touchpoints including airports, airlines, hotels, tour operators, etc.
  - **After the vaccine:** integrate a possible digital health stamp to the traveller information before their trip begins

Protocols to rebuild the trust and confidence of the traveller
- Advocate for global health and safety protocols defined by Travel & Tourism stakeholders
  - Private sector
  - Health experts
  - Public sector
- Provide assurance to traveller that it is safe to travel again #SafeTravels

Support from governments
- Continue government support for the sector including:
  - Fiscal
  - Liquidity incentives
  - Worker protection
  - Promotion

Barriers to post-COVID-19 travel can lead to significant economic losses. In a recent Oliver Wyman Traveller survey, 60% of travellers indicated they are waiting for the World Health Organization (WHO) and governments to lift restrictions before they travel post-COVID-19[2]. These barriers include inadequate testing & tracing, quarantine measures, blanket anti-travel advisories, limited adoption of global health and safety protocols, limited coordination across governments and between public & private sectors.

CORE WTTC APPROACH

1. Provide governments who require testing, tracing, receipt of a traveller test/vaccine certificate with principles and recommendations from the private sector.
2. Create a consistent message across the Travel & Tourism sector through coordinated, collaborative, and transparent partnerships. Our foundation is supported by medical fact-based evidence, as provided by multiple state governments and public health authorities such as the World Health Organization (WHO) and the Centres for Disease Control and

Prevention (CDC).

3. Develop an aligned approach across the public and private sectors for testing, tracing and test/vaccine certification. These imperatives are based on risk assessments, outcome-driven actions and pragmatic initiatives for international travel.

4. Adjust WTTC's recommendation herein as additional/revised guidance is provided by the WHO, CDC and other authoritative agencies.

INTRODUCTION

To support the recovery of the Travel & Tourism sector, WTTC is advocating for swift action and enabling strong policies through the undertaking of several activities. A core initiative is the WTTC's Safe & Seamless Traveller Journey (SSTJ) which aims to enable a seamless, safe and secure end-to-end traveller journey, encompassing both air and non-air travel, through an approach for systematic biometric verified identification at each stage of the journey replacing manual verifications. The SSTJ initiative allows for a more secure and safe environment for travellers and employees, by creating a touchless environment through advances in technology.
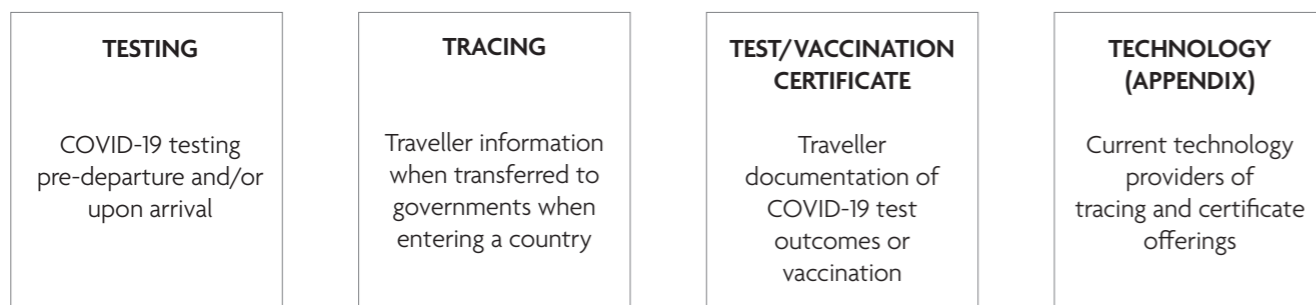
Significant technological advances in digital identities continue to enter the marketplace and can help overcome the COVID-19 crisis. Contactless technologies, biometrics, faster clearance for both inbound and outbound passengers, offsite processing, are a few examples of SSTJ capabilities, all of which help reduce the risk of pathogen transmission.

The SSTJ initiative brings together public and private sector stakeholders with technology providers to design models to facilitate a seamless travel experience. The programme advocates for a globally aligned approach in the implementation of biometrics and complimentary systems within the travel sector. Much work has already been done to drive interoperability, biometrics and touchless capabilities to the traveller journey and this initiative has become even more important given the current pandemic. [https://wttc.org/Initiatives/Security-Travel-Facilitation]

The safety component of the SSTJ initiative, the focus of this paper, immediately assists in the COVID-19 recovery. The primary objective is to allow for the identification and/or isolation of infected travellers. This is critical controlling the spread of the virus, based on WHO and other leading health authorities. Identifying those infected travellers and removing them from the travel ecosystem, reduces the risk of spreading the virus during the journey.

WTTC does not suggest governments implement specific mandates for testing, tracing, receipt of a traveller test/vaccine certificate before re-opening their borders. However, according to medical experts, WHO and lessons learned from the past, governments must consider all the available tools. These tools include wearing a mask when interacting with people in all modes of transports, washing and sanitizing hands often and thoroughly and maintaining physical distancing to the best of one's ability. It also include testing and tracing to protect its citizens against COVID-19 until a vaccine or treatment is developed.

If governments deem it necessary to implement testing and tracing, WTTC outlines recommendations and best practices for governments in the areas of:

TESTING	**TRACING**	**TEST/VACCINATION CERTIFICATE**	**TECHNOLOGY (APPENDIX)**
COVID-19 testing pre-departure and/or upon arrival	Traveller information when transferred to governments when entering a country	Traveller documentation of COVID-19 test outcomes or vaccination	Current technology providers of tracing and certificate offerings

Additionally, as countries begin to open their borders, situations may exist where travellers will be required to have additional proof of insurance before being allowed to enter a country, and travellers may demand coverage before they travel as an integral part of feeling safe to travel. Governments will need to determine if travellers are required to have proof of insurance. Where governments require proof of insurance, it is WTTC's belief this should be limited to international travel and where required coverage must include COVID-19. Example of countries requiring international travellers to have health insurance are the United Arab Emirates and Thailand.

In domestic travel situations, citizens will already adhere to local health insurance laws. Traveller health insurance coverage requirements as it pertains to COVID-19 should be defined by the government to allow a traveller to cross their border, and schemes should be developed to underwrite new travel health insurance where commercial products covering COVID-19 are not available.

Note (1): Recommendations for operational considerations, cleanliness and disinfection measures are covered by the WTTC 'Safe Travels': Global Protocols & Stamp for the New Normal.
Note (2): In parallel and in coordination with WTTC, the cruise industry is continuing to work with global regulatory agencies and prevailing health authorities to develop the appropriate public health measures necessary to resume operations. Appropriate measures will be incorporated into this report once they are finalized.

PART 2: TESTING, TRACING AND TEST/VACCINE CERTIFICATES

OVERVIEW

WTTC identified three core components governments may require for international travel.

Testing
- Where required, WTTC recommends virologic COVID-19 tests
- WTTC does not recommend antibody testing at this time in accordance with WHO's recommendation
- In-line with ICAO's protocols published on May 27th, 2020, WTTC recommends that rapid tests should be used when they become reliable
- Tests used should be validated by a reputable agency, reliable, scalable to hundreds of tests per hour and allow for results within an hour
- If/when rapid testing is available, it is not advised for testing to take place at the time of departure due to operational viability unless real-time, rapid and reliable tests become available

Test/vaccine certificate
- Where required, test result certificates should be provided by the traveller directly to the government who provides travel clearance and in an electronic form using technologies which attach and authenticate a traveller's identity to their test result
- Due to the sensitivity of the data, Privacy by Design principles should be used and only information required by the government or travel stakeholder should be shared
- Self-declaration symptom questionnaires may be required until electronic forms are available. Questionnaires will include health-related questions for the shared with the departing and/or arriving government
- Self-declaration health forms may be used but are not recommended due to fraudulent concerns
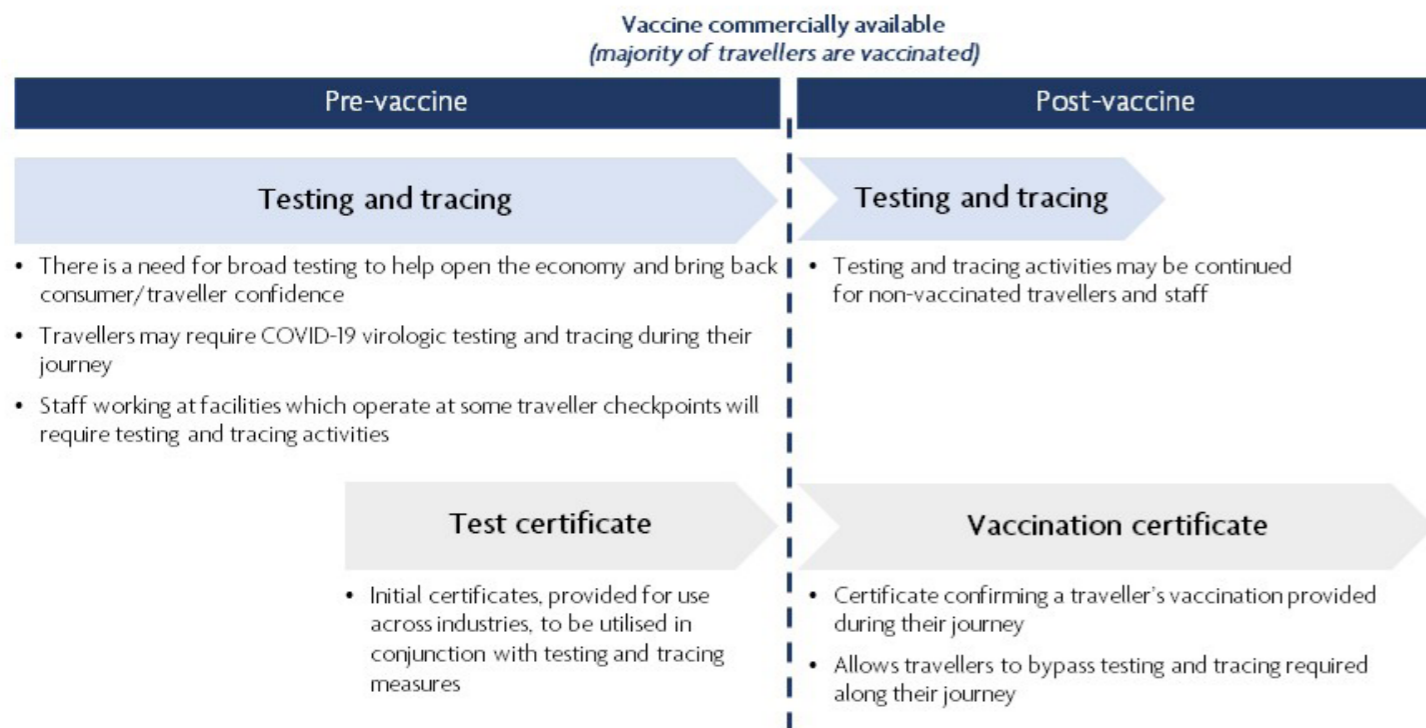
Tracing
- Government and health authorities' collection of a traveller's contact information and with the checkpoints (e.g. a flight) encountered during their journey. Information should be collected in electronic form (e.g. Government App/ portal)
- In-line with ICAO's recent point of view, WTTC believes tracing information should be used to support public health authorities in contact tracing
Note: This should be in line with applicable data privacy protection rules per local regulations

When a vaccine is available, governments may require travellers to prove their vaccination status when crossing borders. As the vaccine is adopted by the general public, there will be a period where both testing and vaccines are required.

TESTING RECOMMENDATIONS

Overview of testing

To support the re-opening of the world economy, which support the return of demand to the Travel & Tourism sector, broad COVID-19 virologic testing is an important factor led by government health authorities. In a recent survey conducted by Global Rescue, over 90% of respondents indicated they are willing to subject themselves COVID-19 screening and testing when they travel[3].

Currently, there is a mix of testing being considered or in practice before departure and upon arrival around the globe. Some examples have included:
- The UAE and Emirates Airline testing travellers departing from their country
- Greece and Hong Kong S.A.R. testing all international passengers upon arrival
- Austria and Iceland offering optional testing to arriving passengers to limit the number of time travellers are required to stay in quarantine
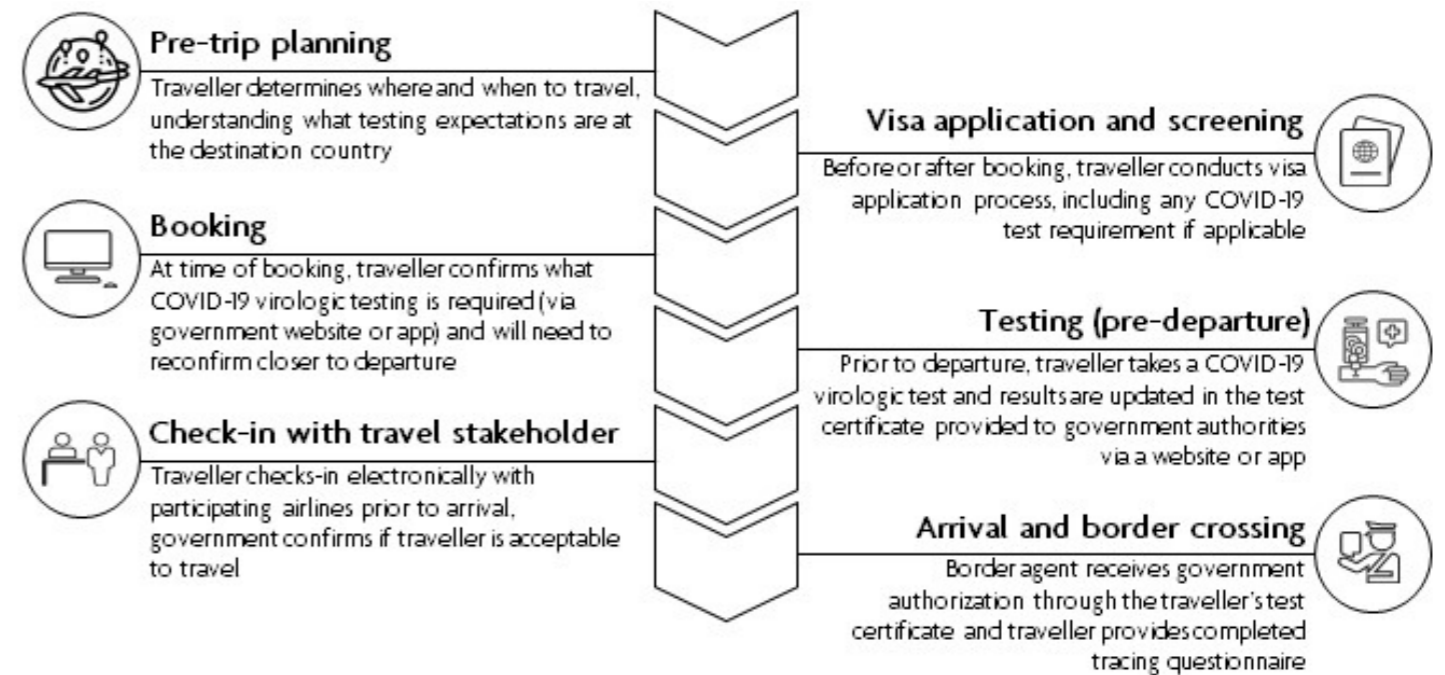
WTTC identified four testing scenarios governments may impose on travellers during the COVID-19 recovery. Based on a traveller's journey, any of these scenarios could be applicable depending on a government's requirements.
Note: further definition and considerations of each scenario can be found in the Appendix.

Scenario 1 – No testing: Governments determine testing is not required for a traveller on departure or arrival, based criteria such as risk assessment of the traveller's origin.

Scenario 2 – Testing pre-departure: Traveller is required to take a COVID-19 test before departure in a timeframe as mandated by either the country of origin and/or country of arrival. Where possible, countries of arrival should accept testing done on departure. From the traveller's perspective, departure is best as it reduces the risk. It supports bringing traveller confidence back versus scenario three where testing is only upon arrival. This becomes increasingly important when a traveller is embarking on an international trip where, if infected, may require quarantine.
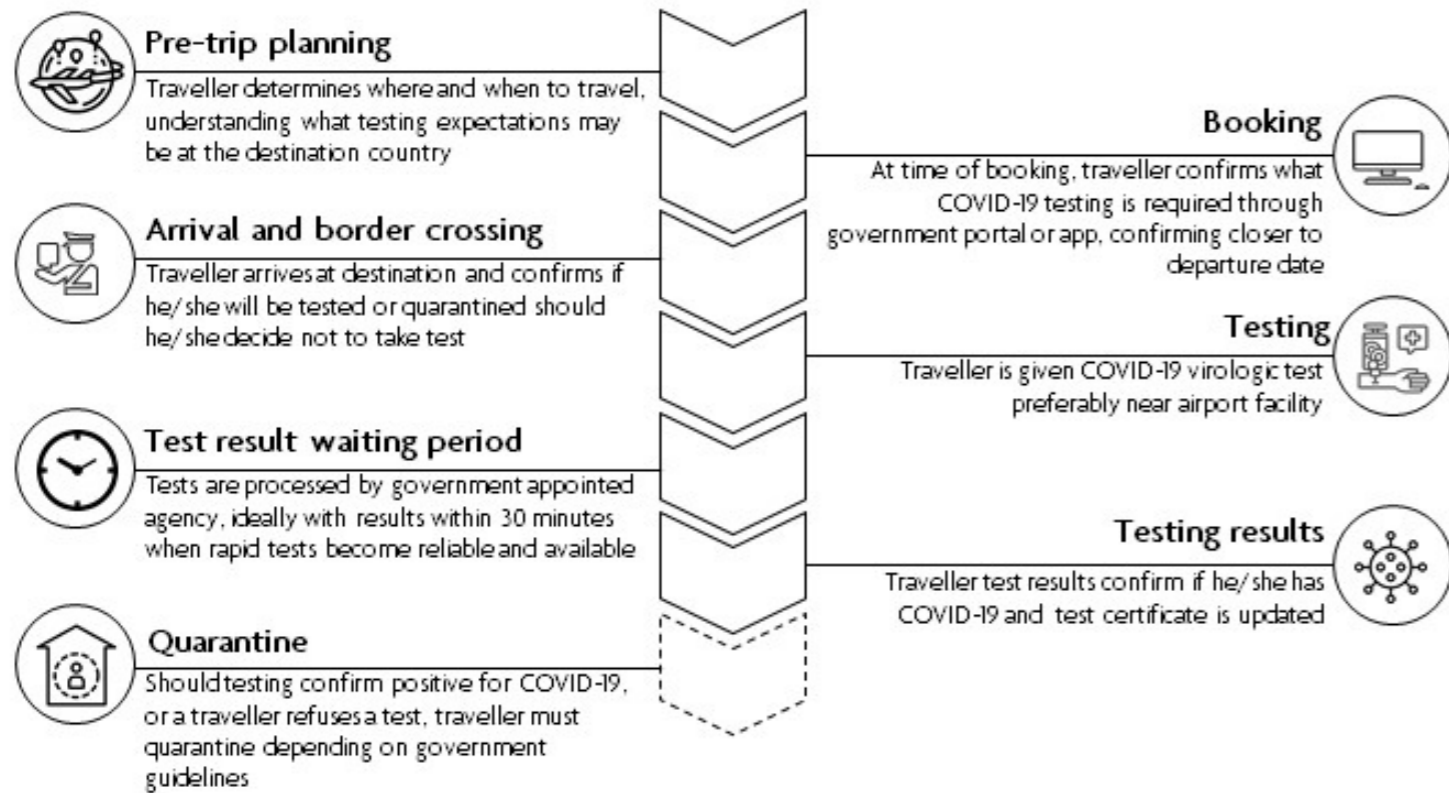
Example of pre-departure testing flow

<u>Scenario 3 – Testing upon arrival:</u> Traveller is required to take a test upon arrival in the destination country, either mandated by the government or optional for the traveller to reduce a quarantine period.

Example of testing upon arrival flow

Pre-trip planning
Traveller determines where and when to travel, understanding what testing expectations may be at the destination country

Booking
At time of booking, traveller confirms what COVID-19 testing is required through government portal or app, confirming closer to departure date

Arrival and border crossing
Traveller arrives at destination and confirms if he/she will be tested or quarantined should he/she decide not to take test

Testing
Traveller is given COVID-19 virologic test preferably near airport facility

Test result waiting period
Tests are processed by government appointed agency, ideally with results within 30 minutes when rapid tests become reliable and available

Testing results
Traveller test results confirm if he/she has COVID-19 and test certificate is updated

Quarantine
Should testing confirm positive for COVID-19, or a traveller refuses a test, traveller must quarantine depending on government guidelines

<u>Scenario 4 – Hybrid (testing pre-departure and upon arrival):</u> Traveller is required to take a COVID-19 test before departure and upon arrival at the destination as mandated by the departing and arriving governments.

Testing imperatives

WTTC advocates for minimising the number of tests mandated on the traveller during their journey and encourages multi-lateral and bi-lateral agreements to support such measures.

All testing requirements, regardless of traveller or crew, should follow the same government requirements.

WTTC advocates for the following:

Global health organisation and government-led	• An authoritative body such as the WHO, and/or local country health authorities must certify acceptable tests • Governments must take leadership in implementing a rapid test, rapid results, and robust COVID-19 testing, and approve test kit manufacturers and facilitators administering tests as per WHO guidelines or other health authorities • Health authorities must define testing requirements for children
Availability	• Must be readily available for use to the broader community • Accredited testing facilities should be widely accessible to limit the burden on travellers and make test results available to travellers • Until widely available, testing should be focused on high-risk locations (e.g. country or regional-based high infection rates) • Families living in the same household should be considered to use the same test to reduce the impact of test availability
Cost, speed, sensitivity and specificity	• Governments who make testing mandatory should be responsible for testing costs • Must be affordable to support uptake (should the traveller need to bear the cost of testing) • Must be hygienic, painless (e.g. saliva base) and quick to administer, and results should be delivered within one hour • Should be administered at a rate of hundreds of tests per hour • Sensitivity (true infection rate as detected by a positive test result) should be at least 95% (meaning up to 5% missed cases) • Specificity (proportion of positive test results which represent a true infection) should be 99% (meaning up to 1% false positives)
Standardisation	• A set of globally accepted tests or tests accepted by multiple countries to facilitate the implementation within the traveller journey (multi-laterally/bilaterally accepted) • The ability for a test result to be shared between countries
Minimise disruption and operations	• Where mandated or implemented, testing should minimise interruptions to operations • Where possible minimise the number of times a traveller must be tested through the journey

Minimise disruption and operations (Transportation)	**Testing pre-departure**
	• Timeframe before departure is a defined period before departure per health authorities
	• Should take place preferably away from airport buildings (off-airport) or in dedicated locations to minimise airport facility constraints, following adequate risk assessments
	• Pre-departure (origin and return trip) tests are preferred based on
	  o reduce the likelihood of an infected person going to the departure terminal or boarding an aircraft or other mode of transportation and infecting others
	  o facilitate the flow through the arrivals process without the need for further delay or contact with officials in the destination country
	Testing upon arrival
	• Replace mandatory quarantine upon arrival with effective testing
	• Once tested, travellers should be able to proceed and follow local regulations while waiting for test results

Documentation	• Governments must make it known to travellers in advance what testing is required and make this information easily accessible • Results or the outcome of results should be available where required during the traveller journey and where possible, leverage existing processes • Travellers should be in control of their health data and data should be handled following GDPR (General Data Protection Regulation 2016/679), HIPAA (Health Insurance Portability and Accountability Act), international PHI (Protected Health Information) guidelines, and any other relevant security, privacy-related policies • As with passport and visa status, airlines and transportation companies should have access to any government authorisation of health status to better understand whether to board a traveller • Where governments require test/vaccine certificates, they should facilitate electronic receipt of certificates before departure
Operational protocols	• If a traveller refuses testing or testing is not available, there should be standard protocols in place on the handling of the traveller, including quarantine upon arrival as per government requirements
Employee testing	• Transportation employees must, at a minimum, follow testing protocols required for travellers

TEST/VACCINE CERTIFICATE RECOMMENDATIONS

Definition

Contents of test and vaccine certificates, if required, should be defined by governments. In principle, there will be two types of certificates required during the COVID-19 recovery.

1. Test certificate – contents may include test result, date of the test, test type and test administering organisation.
2. Vaccine certificate – contains proof of COVID-19 vaccination for a traveller. Details contained on the certification may include vaccine name, date of vaccination and administering organisation. Where electronic visas are available, vaccine certificates may be included in the electronic process.

In the immediate term, before broad testing and electronic certificates are available, a self-declaration symptom questionnaire may be required. Once tests are widely available and reliable, self-declarations should be minimised to reduce the risk of potential fraud.

Governments, not the travel stakeholders, are responsible to receive the test/vaccine certificate and make decisions based on their country requirements.

Test/vaccine certificates imperatives

WTTC advocates for the following:

Government-authorised and defined	• Must be generated by government authorised agencies, following WHO/ICAO standards (e.g. FDA approved diagnostics lab)
Cross-industry usage	• Required certificates should be internationally recognized. If a traveller has a test certificate from one country it should apply across industries and usages (e.g. events, return to work) *Note: cases may exist where national and international requirements differ requiring a traveller to obtain an internationally recognized test certificate*
Leverage current processes	• The basis for certificates should make use of existing international processes, where available (e.g. yellow fever vaccine, dedicated government portal)
Information sharing and data privacy	• The information shared must only be what is required by the checkpoint stake-holder, inclusive of government authorities. This will ensure information is shared in a privacy by design manner • Broad standards must exist to enable applications to practice minimal disclosure • Data privacy laws must be followed as per country regulations
Digitization and traceability	• Must be electronic, where possible, leveraging existing and new tools and digital apps • Test results should be linked to a traveller's identity to reduce fraudulent activity • Full traceability of the use of the test/vaccine certificate must be executed per agreed standards

TRACING RECOMMENDATIONS

Tracing within the SSTJ

Tracing is the registration by the traveller at a specific checkpoint at a single point in time during their journey. For example, traveller's details are captured with data such as mode of transport, contact information, and residence. WTTC believes traveller tracing will generally occur at border crossings, but should be supported at other checkpoints if required.
Note: WTTC does not advocate for full contract tracing (e.g. capturing all movements of a person).

Tracing imperatives

Tracing should not be burdensome to the traveller and should be administered by government authorities in international travel scenarios.

WTTC advocates the following:

Government defined and facilitated	• Must be defined by government authorities • The private sector does not mandate tracing at their checkpoints except for certain cases where operators and employers need to meet Duty of Care requirements • Traveller tracing information should be shared between the traveller and the government or health authority directly
Tracing occurrence location	• Data should be collected at border crossings, modes of transportation, and other checkpoints as deemed necessary by the government • Tracing is to be used within the traveller journey should a traveller or travel employee be identified as COVID-19 positive during their journey
Standardization	• Questionnaires should be simple and consistent between countries
Ease of use	• Where possible, the data is collected in electronic form, and in advance of the traveller arriving at the airport/port including through dedicated government portals • To support the ease of use, governments and technology providers should strive for international interoperability and leverage existing government and API processes where possible
Data privacy	• GDPR, labour laws and other data privacy requirements must be followed • Travellers must control access to their data and maintain full transparency of how their data is used to the maximum extent possible • Communications to travellers should be clear and concise and include the value proposition/benefits for providing their data (such as being able to meet country travel requirements and allowing more ease of travel) • Data must not be shared with any third party without the explicit consent of the traveller
Protocols	• Exception management must be clear and understandable should the traveller not adhere to tracing requirements • Public and private sector communication and coordination is required to notify travellers who may have come into account with a traveller who tests positive or becomes ill following a particular point in their journey

PART 3: CALL TO ACTION

A set of global standard rules and processes must be established to guide governments who require testing, tracing, and test/vaccine certificates.

In addition to the foregoing recommendations, WTTC calls on governments to act on the following in-collaboration with international organizations (e.g. United Nations (UN), international standard-setting bodies, and industry leaders (e.g. travel stakeholders and technology companies):

- Testing
  o Support test availability and reliability as a critical path to ensure population health, including development and availability of rapid testing and tracing strategies to help contain the spread of the virus
- Quarantine
  o Apply quarantines only during lockdown procedures
  o Consider the urgent removal of blanket quarantine measures, by implementing countermeasures such as 'tourism corridors' to countries based on real-time risk assessments and similar circumstances
- Multilateral and public/private sector collaboration
  o Support travel 'bubbles' or 'corridors' between low-risk COVID-19 areas/zones or countries based on recognised criteria on what constitutes low, medium and high risk and where the origin and destination governments agree
  o Multilateral collaboration for a standard set of international baselines for approved passengers travelling to multiple destinations using a single process and risk assessment framework
  o Collaboration between the public & private sectors to ensure a standardised global approach.
- Consider the removal of blanket travel advisories and recommendations against non-essential international travel as this prevents insurance protection for travellers
- Support a global standard of traveller health insurance, or at least minimum requirements, defined with private sector insurance companies

PART 4: APPENDIX

COVID-19 TESTING TYPES

To track, prevent, and slow COVID-19 transmission, the World Health Organization (WHO) calls for ample diagnostic testing to inform case management and management the spread of the disease. In the United States, the Center for Disease Control and Prevention (CDC)[4] provides guidance for who should be tested, while final testing decisions are made by local health authorities and/or healthcare providers. Based on CDC information, two kinds of tests are currently available for COVID-19[5]:

1) Virologic tests: The virologic test indicates if a person has a current infection (in this case COVID-19). Some tests are point-of-care tests, meaning results may be available at the testing site in less than an hour. Other tests must be sent to a laboratory to analyse - a process which can take several days. There are several subcategories of virologic COVID-19 tests. As government determine which, if any, are required WTTC recommends consulting WHO and other leading health authorities on key considerations.
- Ribonucleic Acid (RNA)
- Polymerase Chain Reaction (PCR)
- Antigen

2) Serologic (Antibody) tests: The antibody test indicates if a person was previously infected with COVID-19. Depending on when someone was infected and the timing of the test, the test may not find antibodies in someone with a current COVID-19 infection. Antibodies appear in virtually all COVID-19 patients by 28 days after the appearance of the virus. However, the length of time antibodies persist is not yet known. This is in line with current WHO recommendations.

At the time of writing, there is no COVID-19 vaccine available. It is important to note; both the viral and antibody test are only an indicator that a person has/had the virus at a single point in time.

Note: WTTC does not comment on which party (government or traveller) should assume the cost of a test.

TESTING SCENARIO CONSIDERATIONS

In the event, a government requires testing pre-departure, upon arrival, or both, there are several key considerations:

	Considerations
Scenario 1: No testing	• Reduces the barrier to entry for travellers (both process and potential costs) • Strong risk assessment analysis protocols and processes are required • Increases the risk of a traveller entering one's country who has COVID-19 • If no testing means a required quarantine, there are impacts traveller demand generation
Scenario 2: Testing pre-departure	• May reduce the risk of contracting COVID-19 for other travellers and travel industry employees • Requires pre-departure test results to be accepted by the destination country or bi-lateral/multilateral agreements • Requires risk assessment protocols to be put into place to assess the risk of a traveller having COVID-19 • A negative COVID-19 virologic test result does not mean a passenger does not have COVID-19 at the time of departure. There is a chance the traveller could have contracted COVID-19 after taking the test • Testing should be done outside the current airport facilities due to challenges with space limitations, required medical staff needs and support areas • Challenges with the number of tests needed to implement in the near-term and governments may need to be pragmatic • If a passenger gets sick before, airlines should follow the path as applicable for any contagious disease for which there are internationally agreed rules. Unwell passengers should be managed through a risk assessment process to consider their suitability to fly. This is done for all types of "sickness" and if the passenger does not meet the requirements for safe travel, they are denied boarding or offloaded • Testing upon departure creates additional costs for the overall system

[4] https://www.who.int/news-room/commentaries/detail/immunity-passports-in-the-context-of-covid-19
[5] https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/testing.html

Scenario 3: Testing upon arrival	• Reduces quarantine requirements by governments if a negative test result • Governments control testing for all travellers coming into their country • Limited need for multi-country government involvement • If required at the airport (not the recommended option), challenges with space constraints to take the test and especially if the traveller must wait for test results before leaving the facility. • If the traveller is required to pay for an optional test to avoid quarantine, may hinder some individuals from travelling • Risk unexpected quarantine for traveller and companions if asymptomatic • Could require secure isolation facility • A negative test result does not necessarily mean that the individual does not have COVID-19 as the disease could have been contracted recently and not be enough spread to be detected. It is important to note that a negative test merely lowers the likelihood that they have the virus • A positive test result at this stage is a burden to the country health system • If a passenger gets sick before inbounding, airlines should follow the path as applicable for any contagious disease for which there are internationally agreed rules. Unwell passengers should be managed through a risk assessment process to consider their suitability to fly. This is done for all types of "sickness" and if the passenger does not meet the requirements for safe travel, they are denied boarding or offloaded • Testing upon arrival creates additional costs for the overall system
Scenario 4: Hybrid (testing pre-departure and upon arrival) *Note: Considerations related to Scenarios 1 and 2 listed above also apply to the Hybrid scenario*	• May provide greater certainty to the government that a traveller will not enter the country with Covid-19 • Might be a choice by governments seeking to allow travel from a high-risk country without quarantine • Multiple tests create additional barriers to the traveller • Testing at both departure and arrival creates additional costs for the overall system

TRACING

Tracing within Checkpoints along the Traveller Journey

	Pre-travel	Airport	Air travel	Border crossing	Hotel
Travellers	- Sharing information pre-travel should be collected where possible via government portals or apps	- Limited tracing within the airport	- Support government agencies on data collection as needed (e.g. questionnaire)	- Administered through the questionnaire provided by government agencies - Could be done through a mechanism such as advance passenger notifications or technology applications	- No tracing for travellers or non-staying guests - Travellers provide a place of stay during questionnaire at the border crossing
Travel employees	- N/A	- Each aviation stakeholder (airport, airlines, third party) is responsible for tracing their employees and other parties are responsible for their staff	- Traced through various mechanisms such as wristbands and apps, where applicable	- N/A	- Limited to no tracing for employees

TEST/VACCINE CERTIFICATES

Certificates within the SSTJ

Certificates, when required at border crossings, may also be leveraged at other points in the traveller journey.

	Pre-travel	Airport	Air travel	Border crossing	Hotel
Test certificate	- To be sent within a defined number of hours before arrival at the airport	- Assume confirmation of certificate details, supporting government requirements	- Will support government mandates on what is required at origin and destination	- Require proof of testing (virologic) before the entry or potentially test upon arrival	- No requirements unless government-mandated - Could collect data for meetings and events should it be required by hosts
Vaccine certificate	- To be sent before arriving at the airport with guidance from government health authorities depending on the duration for a vaccine to begin working	- Assume confirmation of certificate details, supporting government requirements	- Will support government mandates on what is required at origin and destination	- Require proof of vaccine before entry or potentially test upon arrival	- No requirements unless government-mandated - Could collect data for meetings and events should it be required by hosts

TECHNOLOGY PROVIDERS

Definition

Technology providers included are those which support tracing and certificate requirements (as defined herein). It is understood specific technology requirements will vary based on government mandates.

At the time of publishing, as an example, Google and Apple are working with several governments and health authorities to produce full contact tracing capabilities. While tracking all of a traveller's movements are out of scope for this paper, there are several governments which have identified these capabilities as a requirement to open their borders.

Technology recommendations

For technology to enable tracing and test/vaccine certificates, there are several key principles WTTC recommends enabling safe and seamless travel. To support ease of use by travellers, countries utilizing technology to facilitate a safe return to travel, should consolidate the number of required apps.

As it relates to technology, WTTC advocates for the following:

Platform readiness and operational flexibility	• Must be ready to be deployed or currently in the marketplace • Systems must be flexible given the evolving landscape
Establish and authenticate traveller identity	• Establish a traveller's identity using government-issued ID for biographic information (e.g. Passport for international travel or driver license for domestic travel) and biometrics • Certified Digital ID schemes/private identity providers with an adequate level of assurance may also be leveraged when possible • Traveller identity is authenticated to share personal information
Integration and interoperability	• Standards must be defined and/or open standards utilized, to avoid the dependency on one technology solution • Seamlessly integrates with other technologies • Interoperable across government and private sector, as well as across industries and countries (e.g. interactive APIs) • Destination-specific requirements may be added to Visas and other vaccination requirements in existing repositories e.g. IATA Timatic

Data privacy and security	• Personal data must be secure and adhere to data privacy regulations such as GDPR • Traveller controls access to their data, providing consent for their data to be captured and shared • Minimal Disclosure: Only the required information should be released to processors • Processors (relying parties) must not retain information beyond what is required for compliance and the specific purpose(s) • Travellers should not be tracked (e.g. Bluetooth tracking, DCS status updates, etc.) without a specific purpose and the traveller's knowledge • Traveller data should not be used for commercial purposes
Speed and usability	• When data is required by a stakeholder, it should be rapidly available • Technology must be easily usable for the traveller and stakeholder
Data integrity and auditing capabilities	• Certificates should demonstrate the authenticity of origin and include integrity protection measures • Activities are traced, with user permission, and include time stamping for adequate auditing • Purpose, time of exchange, identification of data processors should be included in an audit log • Audit logs include signatures of parties involved in an exchange

Technology vendors and capabilities

Through discussions with members and affiliates, WTTC collected a set of technology providers who can support the implementation of test certificates and tracing based on the above imperatives.
Note: Testing technology providers have not been included at this time.

WTTC provides a set of technology providers for consideration of the government and private entities, but inclusion does not represent an endorsement. It is recommended that any party interested conduct further due diligence to understand which vendor is best suited to the needs of that party. Additional vendors may be available and not included at this time. Examples of providers:

WTTC Members

Provider	Product	Tracing	Certificates	Target audience
Accenture	Digital Identify for Travel	Yes	Yes	Governments, airlines, airports and travel providers
Amadeus	Traveller ID	Yes	Yes	Governments, airlines, airports, hotels and travel providers
Airside	Airside App; AirsideX API	Yes	Yes	All companies and governments that need a Digital ID, Health Passport, or public health information collection; Any individual that needs to share their information digitally
CLEAR	CLEAR Health Pass	No	Yes	Organisations looking to get employees, visitors, customers, etc. moving again
Global Rescue	GRID	Yes	Yes	All companies, governments and travellers who require tracking, tracing and intelligence on travel itineraries and destinations
Health Care Services International (o/a Novus Health)	Travel Navigator, Near Threat, Novus Health Platform	Yes	Yes	Organisations, groups, and industries that need an end-to-end integrative technology solution across the traveller journey, including travel & tourism, insurance, finance, health care, loyalty, immigration, educational institutions, business and leisure travellers, international students, NGOs, and IGOs

IBM	Various	Yes	Yes	Airlines, hospitality, travel distribution, cruise, car rental, immigration, CBP, security screening
SITA	Border Management & Smart Path	Yes	Yes, indirectly	Immigration, tourism, health and airports
Vision-Box	vb Orchestra	Yes	Yes	Governments, airports, airlines, hospitality, major events, retail

Additional examples of contributors in the area:

Provider	Product	Tracing	Certificates	Target audience
1Kosmos	BlockID	Yes	Yes	Governments & government agencies, public & private companies, travel and entertainment entities such as airports, airlines, hotels, stadiums
AOKpass Pte Ltd	AOKpass	No	Yes	Sovereign nations, public authorities, multilateral organisations, individual businesses, institutions and consumers

Technology company detail

We asked the above technology companies to self-assess against the technology requirements outlined. Below are their responses.

WTTC Members

Provider	Accenture	
Company Details	Founded: 1989	Headquarters: Dublin, Ireland
Platform(s)	Platform(s): Digital Identity for Travel	Description: Accenture is a leading global professional services company, providing a broad range of services in strategy and consulting, interactive, technology and operations, with digital capabilities across all these services. We combine unmatched experience and specialized capabilities across more than 40 industries – powered by the world's largest network of Advanced Technology and Intelligent Operations centres.
Scope:	Tracing: Yes	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usability	Auditing capabilities
	Yes	Yes	Yes	Yes	Yes	Yes

Contact details	Website: www.accenture.com/gb-en/services/security/digital-identity	Email: Christine.C.Leong@accenture.com

TESTING, TRACING AND HEALTH CERTIFICATES

Airside

Provider	Airside Mobile, Inc.	
Company Details	Founded: 2010	Headquarters: Arlington, Virginia, USA
Platform(s)	Platform(s): Airside App, Airside X, Mobile Passport	Description: Airside is the leading provider of privacy-based digital identity solutions, for businesses and individuals, that enable seamless and secure customer experiences across a broad range of industries (e.g. Seamless Travel) globally. More than eight million people use Airside digital identity apps including the award-winning Mobile Passport app.
Scope:	Tracing: Yes	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usability	Auditing capabilities
	Yes	Yes	Yes	Yes	Yes	Yes
Contact details	Website: www.airsidemobile.com		Email: Jessica.Patel@airsidemobile.com			

amadeus

Provider	Amadeus	
Company Details	Founded: 1987	Headquarters: Madrid, Spain
Platform(s)	Platform(s): Traveller ID	Description: Amadeus a leading Travel Tech company that operates critical airport, airline and hotel IT systems (PSS/DCS/AODB/CUPPS/PMS...). Amadeus Traveller ID platform connects eligible digital IDs with every journey, enabling end-to-end contactless travel and assuring the safe and proportional data sharing of advanced passenger information and any destination-specific requirements
Scope:	Tracing: Yes	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usability	Auditing capabilities
	Yes	Yes	Yes	Yes	Yes	Yes
Contact details	Website: www.amadeus.com		Email: vthrane@amadeus.com			

CLEAR

Provider	CLEAR	
Company Details	Founded: 2010	Headquarters: New York, USA
Platform(s)	Platform(s): CLEAR Health Pass	Description: CLEAR is a security identity company that uses biometrics to provide safe, touchless experiences in airports, sports venues, health facilities, rental car locations, offices and more.
Scope:	Tracing: No	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usability	Auditing capabilities
	Yes	Yes	Yes	Yes	Yes	Yes
Contact details	Website: www.clearme.com		Email: mitch.nadler@clearme.com			

GLOBAL rescue

Provider	The Global Rescue Companies	
Company Details	Founded: 2004	Headquarters: Lebanon, NH, USA
Platform(s)	Platform(s): GRID Global Rescue Intelligence Delivery Systems	Description: Global Rescue delivers integrated travel risk and crisis management solutions. GRID delivers travel tracking, tracing, configurable alerts, data storage, and intelligence on 215 countries and principalities. The system is supported by our worldwide network of operations centres staffed with physicians, nurses, paramedics and military special forces veterans
Scope:	Tracing: No	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usability	Auditing capabilities
	Yes - Pilot	Yes	Yes	Yes	Yes	Yes
Contact details	Website: www.globalrescue.com		Email: mholmes@globalrescue.com			

Travel Navigator™

Provider	Health Care Services International Inc. o/a Novus Health	
Company Details	Founded: 2006	Headquarters: Toronto, Canada
Platform(s)	Platform(s): travelnavigator.io - travel risk management app, nearthreat.com - AI-based global threat monitoring interface, novushealth.com – health navigation platform	Description: For the past 14 years, Novus Health has helped clients and their employees, members, and customers navigate health, travel, and security complexities around the world with our technology solutions. Novus Health's wide range of secure, flexible, and integrative solutions offers organisations and individuals the tools needed to take control of their health and safety at home and while travelling.
Scope:	Tracing: Yes	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usability	Auditing capabilities
	Yes	Yes	Yes	Yes	Yes	Yes
Contact details	Website: www.360navigator.com		Email: mrideout@novushealth.com, ringle@novushealth.com			

IBM

Provider	IBM	
Company Details	Founded: 1911	Headquarters: Armonk, NY, USA
Platform(s)	Platform(s): Cloud, Cognitive, Blockchain, Enterprise Mobile, IBM Travel Platform, IBM Travel Retail, IBM Travel Operations, IBM Travel Maintenance, Cyber Security	Description: Cloud and Cognitive Solutions company; Travel & Transportation Industry vertical with solutions & services across private and public sector businesses
Scope:	Tracing: Yes	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usability	Auditing capabilities
	Yes	Yes	Yes	Yes	Yes	Yes
Contact details	Website: www.ibm.com		Email: Greg.Land@ibm.com			

Provider	SITA	
Company Details	Founded: 1949	Headquarters: Geneva, Switzerland
Platform(s)	Platform(s): Travel Authorisation, API/PNR Gateway, Advance Passenger Processing	Description: Owned and operated by the airline industry providing aviation, travel and border management solutions.
Scope:	Tracing: Yes	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usa-bility	Auditing capa-bilities
	Yes	Yes	Yes	Yes	Yes	Yes
Contact details	Website: www.sita.aero		Email: borders.enquiry@sita.aero			

Provider	Vision-Box	
Company Details	Founded: 2001	Headquarters: Lisbon, Portugal
Platform(s)	Platform(s): vb Orchestra, Traveller hardware touchpoints, biometrics enrolment and matching algorithms	Description: Vision-Box creates a world in which individuals choose to use their biometric identity to simplify their lives. Vision-Box is recognized as the innovative leading developer of identity-related technology solutions, meeting everyday challenges.
Scope:	Tracing: Yes	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usa-bility	Auditing capa-bilities
	Yes	Yes	Yes	Yes	Yes	Yes
Contact details	Website: www.vision-box.com		Email: sales@vision-box.com			

ADDITONAL EXAMPLES:

Provider	1Kosmos	
Company Details	Founded: 2017	Headquarters: New Jersey, USA
Platform(s)	Platform(s): BlockID	Description: 1Kosmos provides BlockID, a contact-free authentication solution that leverages Biometrics and Distributed Ledger technology to enrol and verify the identity of anyone who needs to access any systems and applications.
Scope:	Tracing: Yes	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usa-bility	Auditing capa-bilities
	Yes	Yes	Yes	Yes	Yes	Yes

Provider	AOKpass Pte Ltd, International Chamber of Commerce, International SOS and SGS	
Company Details	Founded: 2020	Headquarters: Singapore
Platform(s)	Platform(s): AOKpass	Description: AOKpass provides a digital COVID-19 Compliance Status pass on your mobile phone (or can be a printed QR code for those without phones).
Scope:	Tracing: No	Certificates: Yes

Requirements	Platform readiness & operational flexibility	Establish & authenticate identity	Integration & inter-opera-bility	Data privacy & security	Speed & usa-bility	Auditing capa-bilities
	Yes - Pilot	Yes	Yes	Yes	Yes	Yes

Countries/Regions using tracing technology (not comprehensive)

Several countries/regions have begun implementing various tracing technologies with varying degrees of capabilities. Below are a select set of countries who have done so as of the publication of this report:

Country/Region	Tracing Technology	Usage	Mandatory for traveller?
Australia	COVIDSafe App	The new COVIDSafe app is completely voluntary. COVIDSafe recognises other devices with the COVIDSafe app installed and Bluetooth enabled. When the app recognises another user, it notes the date, time, distance and duration of the contact and the other user's reference code. When an App user test positive a process kicks in to get contact information that is used to support tracing	No
Hong Kong S.A.R	StayHomeSafe App	At the airport, all arrivals are given a wristband, each with a unique QR code. The user will then download an app called StayHomeSafe on their phone, and scan the QR code to pair the wristband with the app. Once home or hotel, they are to walk around the apartment or hotel to calibrate the wristband	Yes, for all arrivals from overseas undergoing mandatory 14-day home quarantine
Iceland	Taking C-19 Tracing App (developed by Directorate of Health)	Travellers will be asked and encouraged to download and use the official tracing app, which is already in use by around 40% of Iceland's population and is free of charge. The app has proven useful in tracing paths of infections. The app helps to analyse individuals' travel and trace their movements against those of other people when cases of infection or suspected infection arise	No
South Korea	Government-mandated app	New arrivals have to download a government smartphone app that tracks their location and asks them to report any symptoms, according to Reuters. Even those without symptoms are forced to self-quarantine for two weeks, after which the app displays a message saying they're allowed to delete the app from their phone	Yes, for new arrivals into the country until out of 14-day quarantine period

New Zealand	NZ COVID Tracer App	NZ COVID Tracer is a Ministry of Health app that allows travellers to create a digital diary of places they visit by scanning the official QR codes. This will help contact tracers to quickly identify and isolate anyone who may have been exposed to COVID-19 if there is a further outbreak in New Zealand	No
Singapore	TraceTogether App	Using Bluetooth, TraceTogether identifies other nearby phones with the app installed. It then tracks when individuals are in close proximity with these other persons, including timestamps. If the need arises, this information can then be used to identify close contacts based on the proximity and duration of an encounter between the two users	No
UK	NHS COVID-19	The NHS COVID-19 app uses Bluetooth Low Energy handshakes to register proximity events (aka 'contacts') between smartphone users, with factors such as the duration of the 'contact event' and the distance between the devices feeding an NHS clinical algorithm that's being designed to estimate infection risk and trigger notifications if a user subsequently experiences COVID-19 symptoms. Currently in the testing phase with the Isle of Wight	No

Note: Information contained within the table is based on information publicly available at the time of publishing.

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The World Travel & Tourism Council is the global authority on the economic and social contribution of Travel & Tourism.

WTTC promotes sustainable growth for the Travel & Tourism sector, working with governments and international institutions to create jobs, to drive exports and to generate prosperity. Council Members are the Chairs, Presidents and Chief Executives of the world's leading private sector Travel & Tourism businesses.

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To download reports or data, please visit **www.wttc.org**

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