An Iris ID White Paper

Getting back to Normal with Vaccine Passports

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IRIS ID
Advanced Identity Authentication™

Travel-related businesses, and the public they serve, eagerly seek a return to pre-pandemic days as the world heads into the second year of the deadly COVID- 19 virus. There are some optimistic signs that "normal" life is near. There are fewer virus-related hospitalizations and deaths as vaccine programs expand. More people are flying than a few months ago and U.S. hotels, recovering from their lowest occupancy levels since the 1930s, reported a late-March business surge as tourists flocked to Florida and Texas beaches for spring break.

The travel industry and government officials hope vaccines provide the confidence required to get more people back into airplanes, hotels, restaurants and visiting attractions in time for summer vacation.

However, business travel, which accounts for about 50% of airline revenue, is still nowhere near its 2019 numbers.[1] And despite the recent regional surge, a U.S. hotel trade group estimates full recovery for the lodging industry may be two years away.

Knowing with certainty which travelers are inoculated and which are not may be critical to a sustained recovery. What is needed is a vaccine passport, a smartphone-based app or a paper document clearly showing that the carrier is fully inoculated. Dozens of passports going by names such as Health Pass, Travel Pass, Veri-Fly and CommonPass are already in use or under development.[2]

Yellow Cards

Vaccine passports are not a new concept. In 1933, the now-defunct International Sanitary Convention for Aerial Navigation established an International Certificate of Inoculation and Vaccination for international travelers. These paper documents, known as yellow cards due to their color, remain a requirement to enter more than 130 countries requiring proof of vaccination against yellow fever and other contagious diseases.

Today, all people have to prove they received a COVID-19 vaccine is a paper card given with their injection creating tremendous potential for fraud and lost and stolen cards. And different formats among countries leave them unworkable as an international travel document. Also, not all states and countries maintain an immunization information system that tracks which of its citizens are vaccinated, only adding possible confusion. Authorities recommend safeguarding the paper cards but urge they not be laminated to prevent the recording of future vaccines and booster shots.

Beyond the Card

This June, the European Union will initiate its Digital Green Certificate, or vaccination passport, available in paper form that includes a digital QR code. The passport is available to vaccinated EU citizens or those with antibodies proving they had the virus.

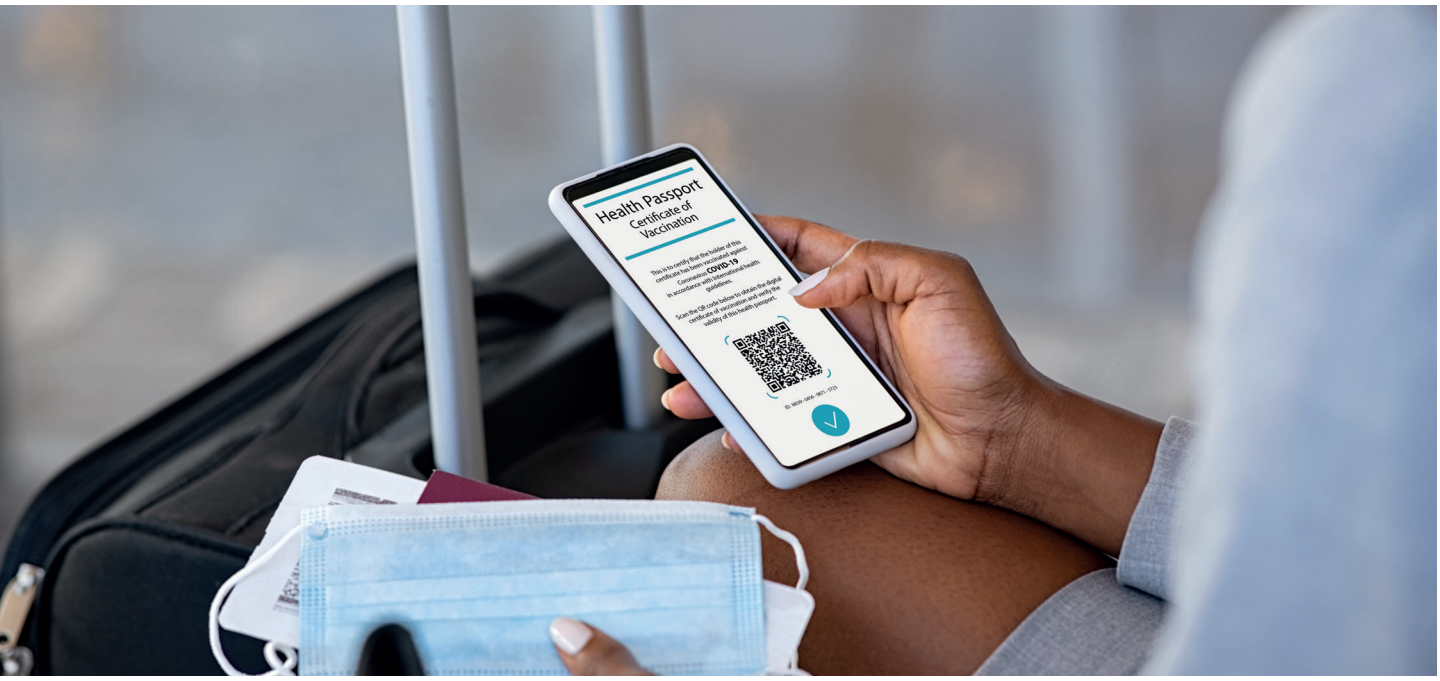
China recently eased travel restrictions on foreigners able to certify they were inoculated. However, only Chinese vaccines are acceptable despite being hard to find in Western countries.[3]

Japan is one of the latest countries to join Denmark to provide citizens with vaccine passports. Popular tourist destinations such as Greece, Iceland and Belize are welcoming fully vaccinated tourists this summer.

The travel industry is not alone in developing health passes. Israel's internal "green passport" incorporates QR codes to enable fully vaccinated citizens access to gyms and other recreational and cultural facilities. Los Angeles County residents may request their vaccine records for digital display using smartphones with the Apple Wallet or Google Pay app. Another vaccine app to help restart the live performance industry is in development by Ticketmaster, an international ticket sales and distribution company. Healthcare, education and other industries are exploring versions of vaccine passports.

A successful passport must meet a wide range of public and private organizations' requirements, ranging from airlines to international customs booths and hotel conference halls. An executive of the Star Alliance, a group of 26 airlines worldwide, recently called on an organization such as the Group of 7 leading industrial nations to set vaccine passports standards.[4] Without a widespread agreement, people may require multiple documents for various activities. There are currently at least 17 active passport initiatives in the U.S., Canada and the United Kingdom and that number is growing every day.

Non-governmental organizations are seeking common ground. The Vaccination Credential Initiative, which includes the Mayo Clinic, Microsoft, Oracle, Salesforce and more than 220 other organizations, is looking to verify COVID-19 and other vaccinations via a standardized smartphone app or paper document.[5]



How will vaccine passports work

In most cases, QR codes will store data needed as proof of vaccination. By incorporating the data in a smartphone app, people will always be near their passports. People without smartphones may request a printed version of the QR code. Readers installed at entry points to airports and other facilities will read the code to confirm a person's vaccination history. People must feel safe that the QR code's data is not readable by any unauthorized application. This will require the inclusion of various security technologies such as biometrics and blockchain.

Hospitals, doctor's offices, pharmacies and other sites administering vaccines will send the names and dates of those receiving shots to immunization registers, which in turn will share the data with a mix of standards-based smartphone apps.

For years, airlines have employed a similar QR-based system at boarding gates. Many airports added a biometric identifier to the code allowing enrolled frequent flyers to use self-service kiosks to skip lengthy security and customs lines. Privately owned CLEAR uses iris recognition readers in many U.S. airports, stadiums, arenas and other entertainment venues in the U.S.[6]

Organizations such as the U.S. Centers for Disease Control & Prevention and the World Health Organization will determine the expiration dates of physical or digital documents based on research into the length of immunity provided by vaccines or prior infection.

The challenges

A growing number of approved vaccines poses a problem for passport developers. As of early April 2021, 11 vaccines are in use worldwide with none approved for use in all countries. And the process promises to become more complex as there are 23 vaccine candidates in final testing and 80 more in earlier human clinical trials.[7]

Privacy and security are other potential issues for vaccine passports. Cybersecurity experts are concerned passport apps could enable hackers to gain a person's name, address, place of birth, blood type and more details. Smartphone or paper apps must provide details related only to the COVID-19 vaccination. Biometrics further protect the privacy of the vaccine passport owner's data and eliminating the possibility of sharing credentials.

More than a billion people cannot prove their identity as they lack documents such as birth certificates, passports and driver's licenses and many more lack access to smartphones. Medical reasons prevent many people from being vaccinated. Combining biometrics with paper vaccine passports verify carriers to ensure no one is kept from traveling due to a place of birth, lack of money or medical conditions.

One healthcare provider in Ghana provides an excellent example of how biometrics combine to meet specific health and identity requirements. Ghana's Yonkofa Project links medical professionals and clinics to provide healthcare services in the vastly underserved western part of the African country. Many young citizens lack government identification, share similar names or have uncertain birthdays. Proper medical attention is complicated as these young people receive treatment/vaccinations at multiple clinics, leading to redundant, incomplete medical records.

The use of portable iris-based biometric systems allows patients to register at the most remote clinics. Creating a permanent identity record for each patient removes duplicates and enables healthcare providers to identify citizens accurately. Patient health is improved and the project saves money by eliminating repeat tests due to incomplete records. The system works equally well for young children as iris patterns form within the first year of life.

Why Iris-based biometrics

The highly accurate, contactless iris-based technology records the patterns in the colored ring surrounding the pupil to authenticate identity. Each person – including identical twins – has unique patterns that remain constant throughout life.
Industry experts consider iris recognition systems as the most accurate and one-time biometric enrollment system on the market. Enrolling a person in a database takes a few seconds, while authentication requires only a second to complete. The widely used technology adheres to international standards.

Iris-based biometric systems have the technological capacity to handle millions of enrolled iris templates. Each small, encrypted template cannot be re-engineered to create a useable image. Iris-based readers include a liveness feature that eliminates photos being used to spoof a system, while encryption safeguards personal data privacy.

The COVID-19 virus highlighted the need for security and identity authentication solutions. Iris-based biometric systems are contactless, enabling users to stand up to two feet (60 cm) away from readers. Iris technology is also unaffected by commonly worn personal protective equipment (PPE) such as masks, goggles and gloves.

What is next?

According to a U.S. government document, proof of vaccination "may be a critical driver for restoring baseline population health and promoting safe return to social, commercial and leisure activities." However, the rollout of vaccine passports will not immediately eliminate all social restrictions.

Public health officials urge continued caution, including mask-wearing and social distancing until the world reaches herd immunity, a point at which the population becomes immune to a virus through vaccination or prior infection. Experts estimate COVID-19 will require immunity among 80% to 90% of the population to stop the virus from spreading.[8] That may take months or years to achieve fully. Also, there is a concern many people will reject the vaccine; a poll taken in late March 2021 showed about one-quarter of Americans would not or are unlikely to accept immunization.[9]

Also, world decision-makers must settle on common vaccine passport standards. Not doing so could undermine public trust and confidence in the process and hamper economic recovery. Vaccine passports are the key, enabling organizations to verify who is safe to enter a country or a college campus. Combined with biometrics, the passports are accurate and convenient while protecting a person's privacy. Biometrics are essential in keeping people safe and hastening a return to normal life.

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For more information, visit www.irisid.com.

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Why Iris ID?

Iris ID is a pioneer and leader in commercializing iris recognition technology used for access control, time and attendance, border crossings and national ID programs. Since 1997, Iris ID solutions have been installed on six continents, authenticating more people's identities than¬ all other iris recognition products combined.

Iris ID solutions seamlessly integrate with leading providers of enterprise access control platforms and strengthen the bridge between physical and logical security. Together, the iris and access control systems provide an end-to-end solution for managing building and computer network access. With an Iris ID system, there is no need for employees to remember and frequently change passwords – often the weakest link in any security plan.

Iris ID continues to push the technology's boundaries, making its iris recognition systems the ideal choice for any access control application requiring fast, simple-to-use and highly accurate identity authentication.

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