GOOD HEALTH PASS

A Blueprint for Reopening International Travel

Over the last six months, countries have begun issuing certificates of **proof of COVID-19 health status** (e.g., a negative test or vaccination) to help restart international travel and local economies.

Global Monthly Passengers (COVID-19)

Losses to Travel & Tourism sector
- In 2020, the travel & tourism sector lost almost USD$4.5 trillion (down from almost USD$9.2 trillion in 2019)
- 62 million travel & tourism jobs were lost globally (- 18.5%), impacting primarily lower and middle income workers
- Domestic visitor spending decreased by 45%
- International visitor spending declined by an unprecedented 69.4%

Travel & Tourism contributions to Global GDP
- In 2019, the travel & tourism sector contributed 10.4% to global GDP
- 2020, the travel & tourism sector contributed 5.5% to global GDP, a net decrease of 49.1%
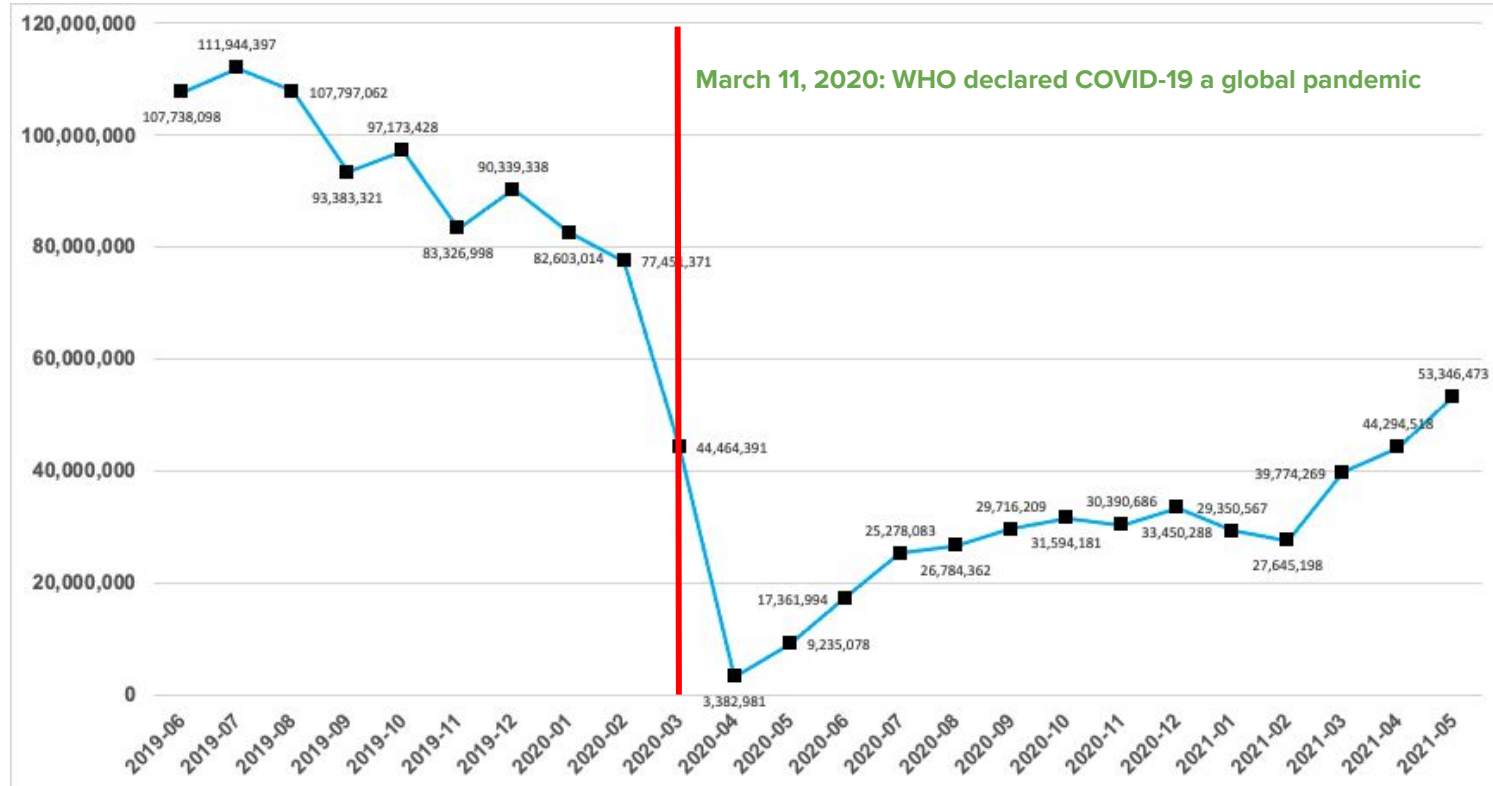- By comparison the net decrease in Global GDP in 2020 totally only 3.7%

Possible future economic impacts
- Airline bankruptcies and call for bailouts ("too big to fail", especially national carriers)
- Continued hit to GDP's especially in smaller, tourism dependent countries

Global Monthly Passengers (Post-September 11)
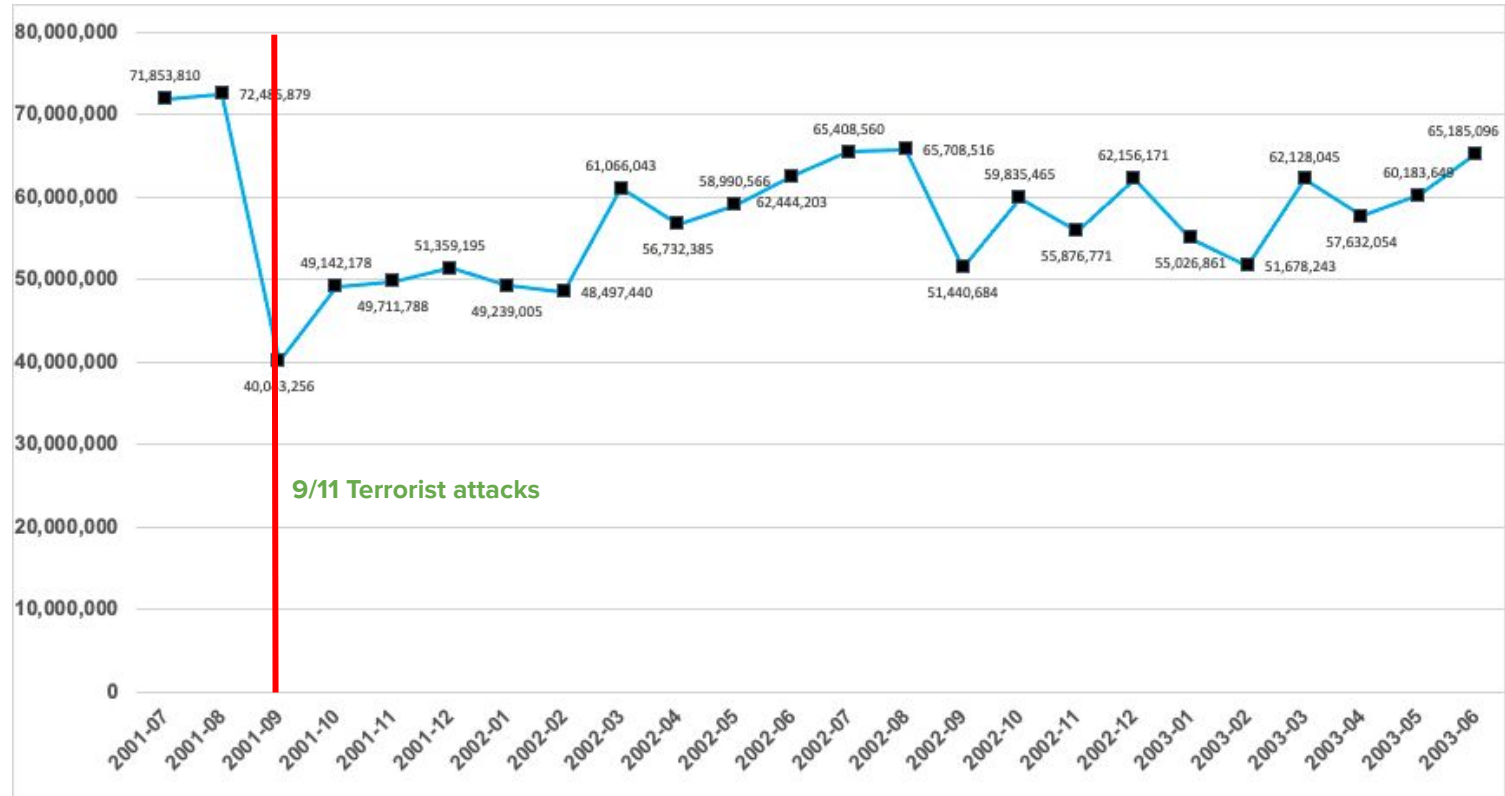
Global Monthly Passengers (COVID-19)

Factors Limiting International Travel

- **Travel Restrictions**
    - Outright travel bans

- **Fear**
    - Delta (and other new variants of concern)
    - Breakthrough cases, fear of onward transmission
    - No vaccines for children
   - Vaccine hesitancy

- **Cost**
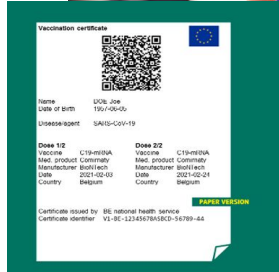   - Fewer flights = higher ticket prices
    - Testing
    - Mandatory hotel quarantines

- **Inconvenience**
    - Mandatory quarantines
    - Airport wait times
    - Testing
    - Proof of vaccination

Dozens of solutions have rushed to market. These vary greatly in terms of **privacy, security,** and **user control over personal data** — and in the absence of standards, **none are interoperable.**
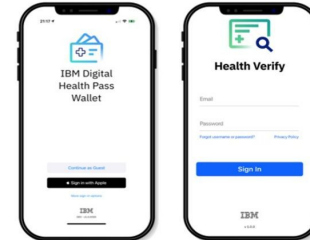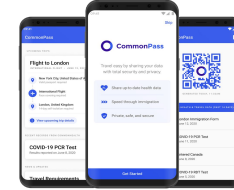
Countries, airlines, and businesses began rolling out programs. But with **concerning new variants**, and **inequitable vaccine rollout**, and the fact that **vaccination does not prevent transmission**, these systems are likely to be with us <u>**longer than anticipated**</u>.

The New York Times

Seven European Countries Begin Issuing Covid Travel Certificates

A digital Covid certificate system intended to ease travel within the European Union became operational in seven countries on Tuesday...

10 hours ago

Simple Flying

British Airways Begins Trialling IATA's Travel Pass Health Passport

Health passports are being lauded as a solution to enabling widescale travel following the vast impact of the COVID-19 pandemic. Currently, the ...

8 hours ago

The Washington Post

E.U. agrees on covid certificates to sweep away barriers on travel between countries

The deal will eliminate quarantine requirements by July 1 for travelers who can prove they're a low risk to spread infection.

2 weeks ago

India Today

How to download Covid-19 vaccine certificate online: Step-by-step guide

The second phase of the Covid-19 vaccination drive began in India on March 1, and it includes people who are above the age of 60 years and ...

1 month ago

How do we ensure these solutions are "**good**"?

How do we create **standards** that promote **privacy** and **inclusivity**?

And how do we ensure solutions are **interoperable** with one another?

The Good Health Pass Collaborative is a multi-sector global initiative to establish **principles and standards for digital health passes** for international travel.

GOOD HEALTH PASS

125+ endorsing organizations

GOOD HEALTH PASS

Commitment to Principles

Privacy & Data Security	Trust	Inclusivity
User Control	Interoperability	Social Responsibility
Choice & Consent	Open Standards	Urgency

W3C VCs

Trust Over IP

COVID-19 Credentialing Initiative

ACI

ICAO

IATA

Identity Technology

Geographic Initiatives

Health Data & Systems

Aviation Industry

International Initiatives

DIVOC (India)

VCI (USA)

WEF + Common Pass

European Union Digital COVID Pass

World Health Organization
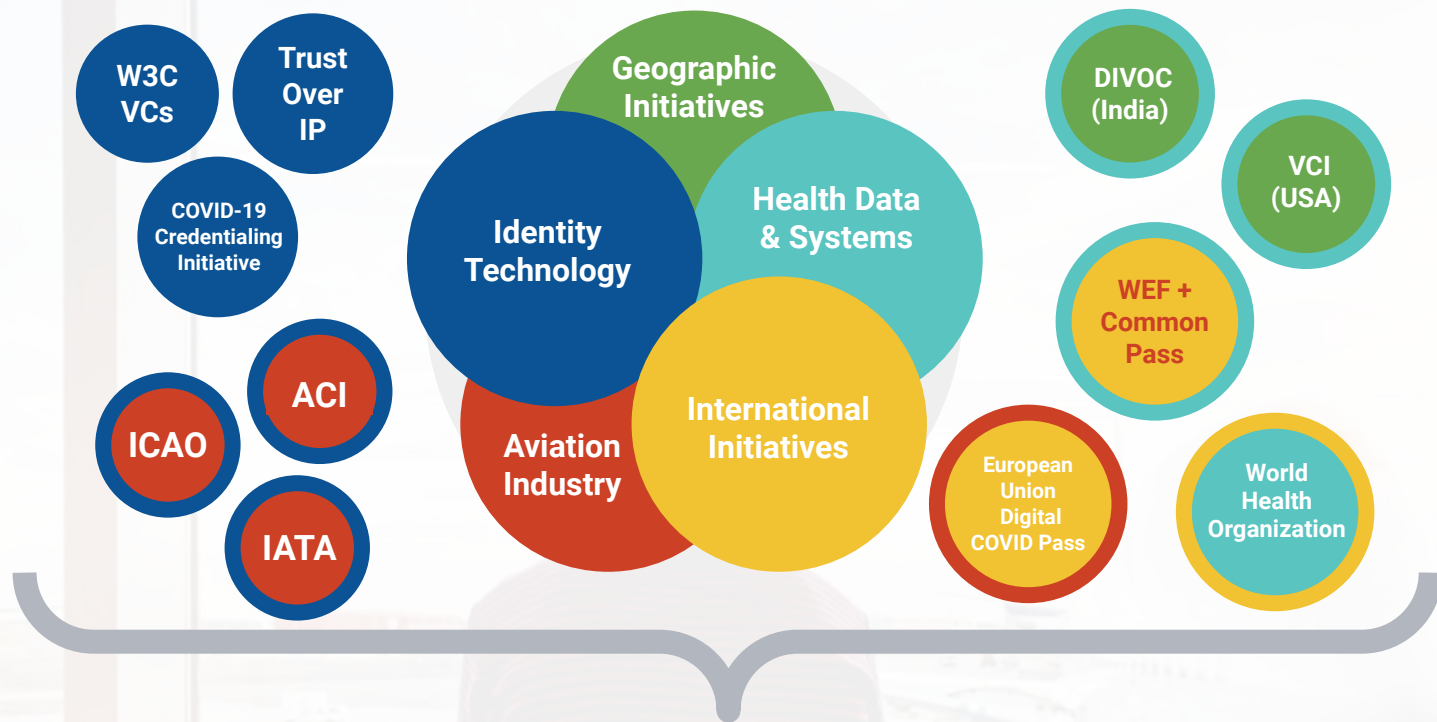
GOOD HEALTH PASS

Establishing Common Terminology: What is a "Good Health Pass"?

Almost a dozen different terms have been used publicly to describe what a person needs to present to prove their **COVID-19 health status**

We focus on **four primary terms**

Health certificate

Health credential

- Contain the full set of health data necessary to prove health status to **any** verifier
- Not context-specific
- Does not include other data

Purpose-specific selective disclosure

GOOD HEALTH PASS

Health pass

Travel pass

- Contains only the minimum data necessary to prove health status to **one verifier**
- May contain other context-specific data (e.g., travel)

Health certificate
Health credential

Examples

- WHO Digital Documentation of COVID-19 Certificates
- EU Digital COVID Certificate
- ICAO CAPSCA
- VCI Smart Health Card
- Many others...

Health pass
Travel pass

Examples

- IATA Travel Pass
- ICC AOKpass
- IBM Digital Health Pass
- CommonPass
- Many others...

All four can be produced in either paper or digital versions

Health certificate

Health credential

Health pass

Travel pass

Paper version

Digital version
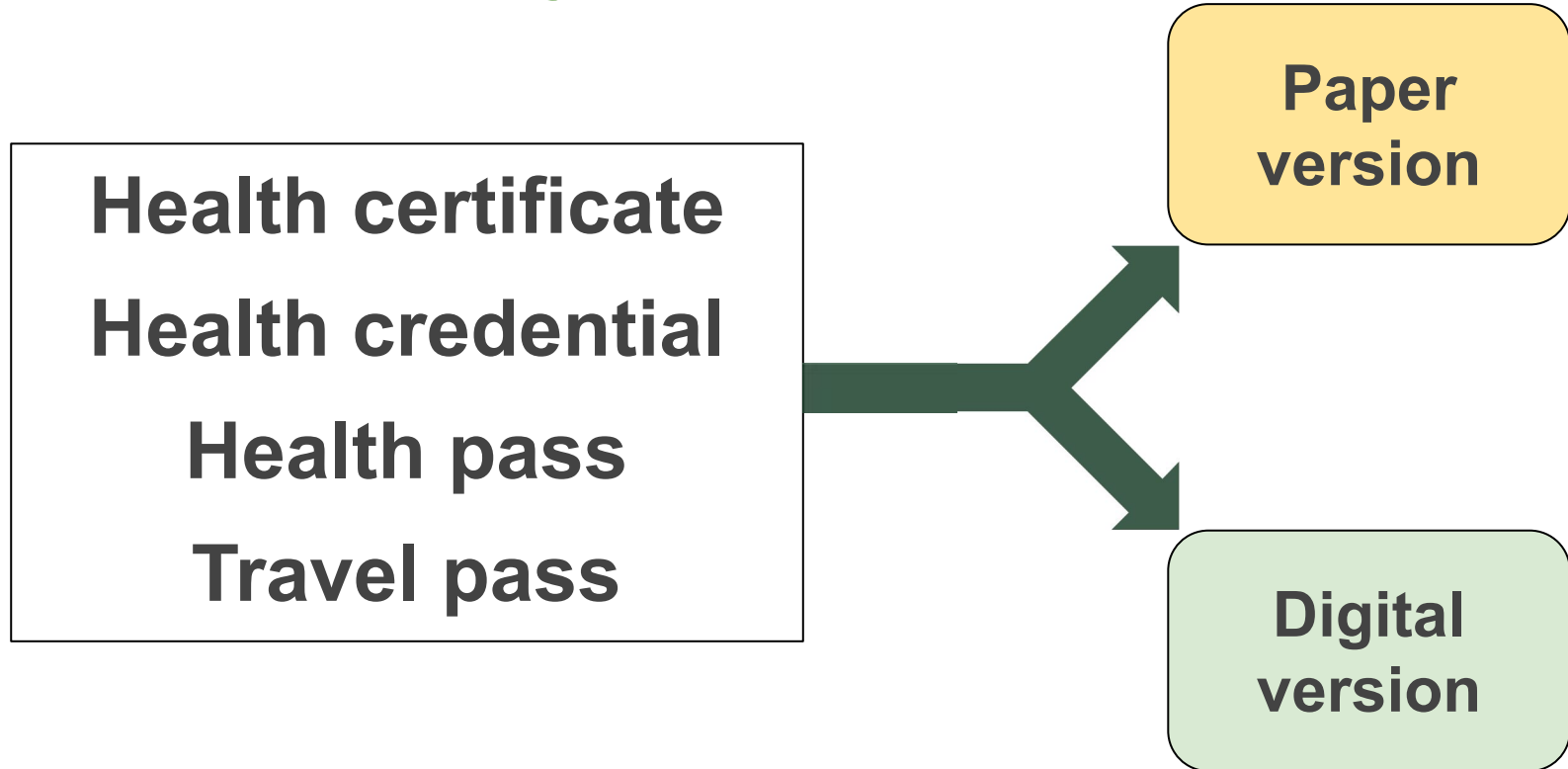
Guide to the
GHPC Interoperability Blueprint

The GHP Blueprint articulates recommendations on how to design a **globally interoperable digital pass and trust ecosystem**

Overview of GHP Blueprint

#1	**Consistent User Experience**
#2	**Security, Privacy, and Data Protection**
#3	**Identity Binding**
#4	**Standard Data Models and Elements**
#5	**Credential Formats, Signatures, and Protocols**
#6	**Paper Credentials**
#7	**Rules Engines**
#8	**Trust Registries**
#9	**Governance and Trust Frameworks**

✓ Problem description & context

✓ Good Health Pass design requirements & considerations

✓ Normative & phased recommendations

GHP Blueprint Design Considerations

A "GHP-compliant" health or travel pass follows the Good Health Pass Principles by:

Digital Signatures

Being **digitally signed**, so it is **verifiable** as originating from an authorized issuer

Identity Binding

Being **securely bound to the traveler's identity,** just like an international passport, so that forgery becomes very difficult

Privacy By Design

Applying **data minimization** and **anti-correlation** so the pass transmits only the data a verifier absolutely needs to know

GHP Blueprint Design Considerations

DESIGN PRINCIPLE	ARCHITECTURE CHOICE
Individual must be at the center of the data exchange	**Decentralized identity architecture**, incorporating the **World Wide Web Consortium (W3C) Verifiable Credentials Standard** and **selective disclosure**
Equity and inclusion is essential	Recommendations reflect **minimum datasets** for COVID-19 tests and vaccines Considerations for **paper-based credentials and passes**
Decentralization for global security and scalability	Global ecosystem of decentralized trust registries using **W3C Decentralized Identifier Standard**
Open standards for interoperability and participation	**W3C Verifiable Credentials** (specifically the most privacy preserving type: JSON-LD ZKP BBS+)
Grounded in reality	**Phased recommendations (e.g., 30/90/180 days)** to support incremental improvements Recommendations for **ingesting existing or legacy approaches** into GHP ecosystem

Recap and Comparison

THANK YOU!

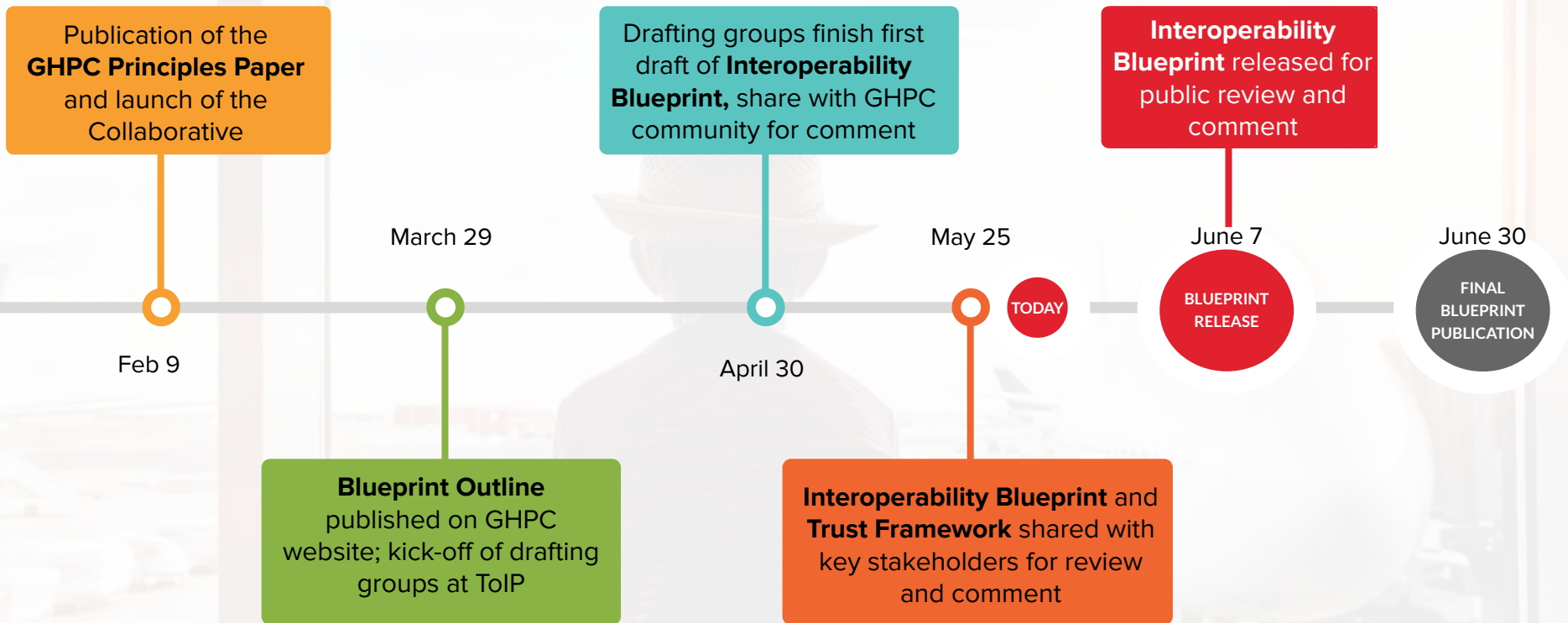|	**WHO Digital Documentation of COVID Certificate**	**GHPC Interoperability Blueprint**
Primary Focus	Guidance for countries on how to implement health certificates, primarily for continuity of care.	Guidance for developers and implementers of health passes, primarily focused on international travel.
Ethics of Processes	Public, transparent process, including civil society and privacy advocates.	Public, transparent process, including civil society and privacy advocates.
Equity and Inclusion	Obtaining and using should be as inclusive and fair as possible. Accessible digitally and using paper.	Obtaining and using should be as inclusive and fair as possible. Accessible digitally and using paper, with paper-based passes designed to be as privacy-preserving as the digital formats.
Data Models and Elements	Similar data elements and use of HL7 FHIR standards, but until recently, did not support proof of testing.	Recommendations reflect minimum datasets for COVID-19 tests and vaccines, based on the EU Digital COVID Certificate data set.
Selective Disclosure	Technical specification does not support selective disclosure	Technical specification natively supports selective disclosure
Issuer Registries / Trust Framework	WHO focuses on the steps necessary to set up a centralized, national PKI. No discussion of an international PKI given decision that international travel is out-of-scope.	GHPC a global ecosystem of decentralized trust registries using the W3C Decentralized Identifier Standard. This decentralized approach is seen as critical to scale, given the nearly infinite # of potential issuers and verifiers.

Timeline & Deliverables

GOOD HEALTH PASS

Publication of the **GHPC Principles Paper** and launch of the Collaborative

Drafting groups finish first draft of **Interoperability Blueprint,** share with GHPC community for comment

Interoperability Blueprint released for public review and comment

March 29

May 25

TODAY

June 7

June 30

BLUEPRINT RELEASE

FINAL BLUEPRINT PUBLICATION

Feb 9

April 30

Blueprint Outline published on GHPC website; kick-off of drafting groups at ToIP

Interoperability Blueprint and **Trust Framework** shared with key stakeholders for review and comment
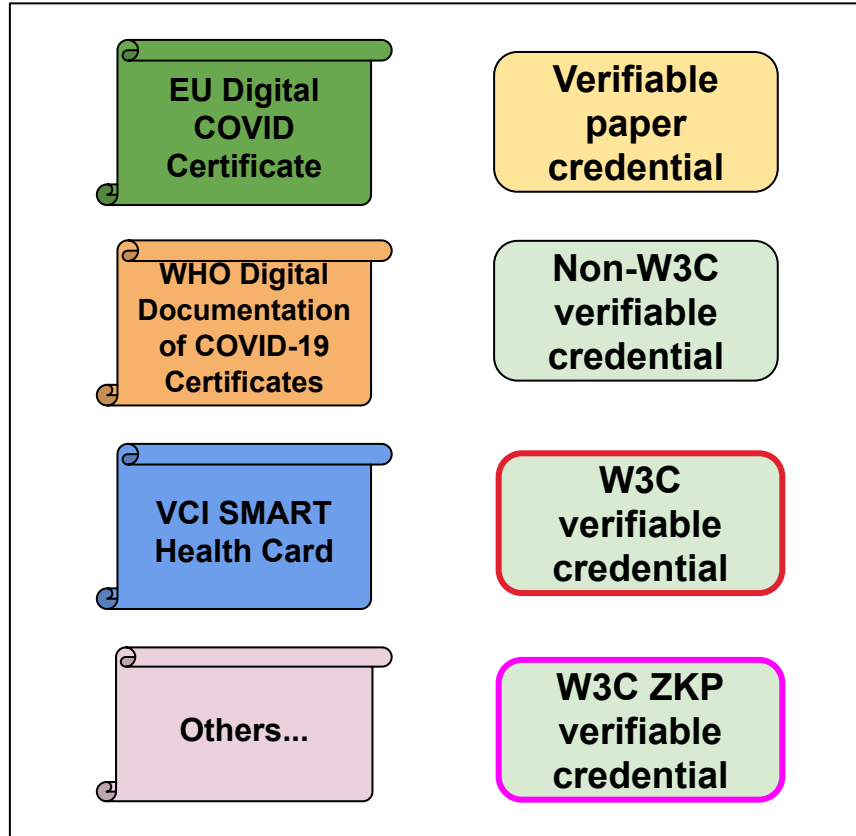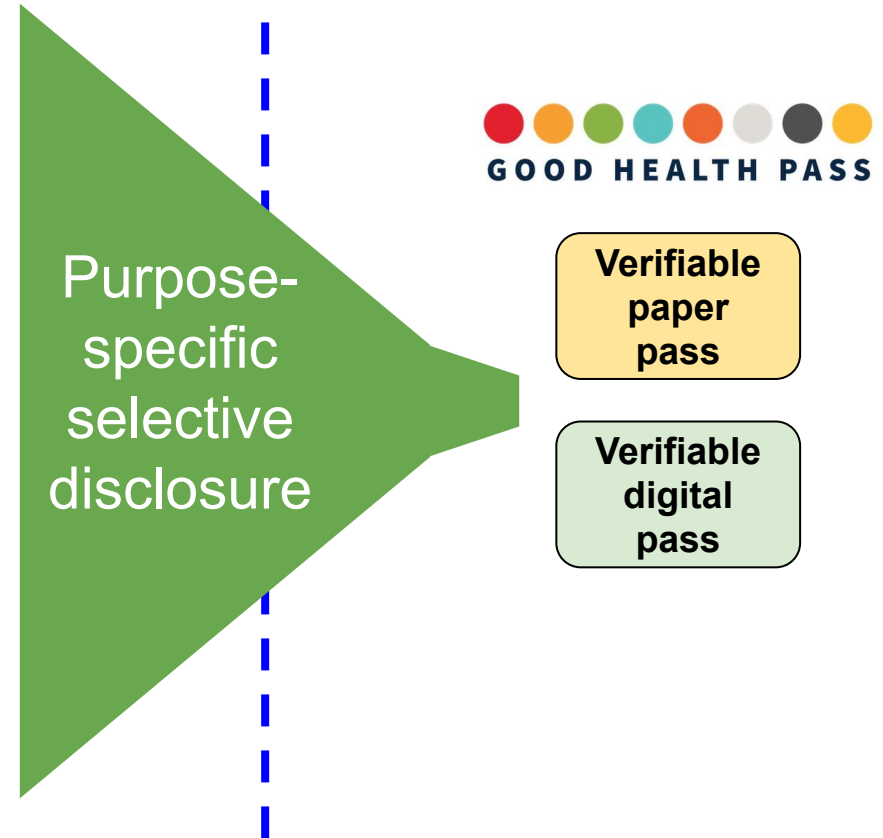
29

Calls to Action

ENDORSE	Endorse the GHP Blueprint and join GHPC to help drive technical discussion, communication, and education around the need for global interoperable health passes.
IMPLEMENT	Adopt the GHP blueprint and implement standards for an interoperable, privacy-centric, and principles-based approach to "good" health passes. Connect with implementers through the COVID-19 Credentials Initiative.
PROVE	Participate in a GHPC Compliant Interoperability Trial.
EXTEND	Support connectivity initiatives with the EU Digital Covid Certificate and other public and private sector initiatives.
COLLABORATE	Help establish a network of trust registries to address health pass provider (public and private) interoperability and certification, along with essential education and communication around GHP-compliant solutions for the air travel industry.

Over the past year, countries have debated requiring **proof of COVID-19 health status** (e.g., a negative test or vaccination) as a means to restart international travel and restore global economic activity.

Health Certificates & Credentials

EU Digital COVID Certificate

WHO Digital Documentation of COVID-19 Certificates

VCI SMART Health Card

Others...

Verifiable paper credential

Non-W3C verifiable credential

W3C verifiable credential

W3C ZKP verifiable credential

Health Passes

Purpose-specific selective disclosure

GOOD HEALTH PASS

Verifiable paper pass

Verifiable digital pass

Costs of Testing (US Travel to UK)

United States (California)
- Diagnostic COVID-19 PCR Test (results in 2+ days, not for travel): **No cost to patient**
- Expedited COVID-19 PCR Test (results in 1-2 days): **$150**
- Rapid COVID-19 PCT Test (results in 2 hours): **$299**

UK
- Minimum of three tests required
- Cost recently reduced by UK Government from $120 to **$92 per test (if administered by the NHS**
- Private clinics may be less expensive tests and some airlines offering discount codes

Minimum Testing Cost per Traveler: $520
Minimum Testing Cost (family of four): $2,080