

Pacific Heads of Health

Réunion des directeurs de la santé du Pacifique



Digital Documentation of COVID-19 Certificates for Cross Border Travel

Public Health Division, SPC/ WHO Division of Pacific Technical Support (DPS)



What are the issues we are addressing with COVID-19 certificates?



Governments are exploring how documents (primarily digital COVID-19 certificates) could help reopen borders by identifying those who are protected against the virus and eligible for entry, exit and transit.

- ✓ Governments are requiring health proofs (vaccination, laboratory test, recovery from COVID-19 disease certificates) from international passengers.
- ✓ These health proofs will often be issued in one government but will need to be verified
 - ✓ in another government on arrival or by a portal;
 - ✓ and/or by the aircraft operator before departure.

The idea of adopting COVID-19 certificates to facilitate cross border travel in the Pacific has been supported by the Pacific Island Forum (PIF). (The Fifty First Pacific Island Forum on 6th August 2021)

Advice to WHO IHR Secretariat - Health Measures in Relation to International Traffic



6th IHR EC advice – Jan 15th 2021

Coordinate with relevant stakeholders the **development of standards for digital documentation** of COVID-19 travel-related risk reduction measures, that can be implemented on **interoperable digital platforms**. This should include **vaccination status** in preparation for widespread vaccine access.

7th IHR EC advice – Apr 19th 2021

Continue to update the WHO interim position on the considerations regarding requirements of proof of vaccination and to produce interim **guidance and tools** related to **standardization of paper and digital documentation of COVID-19 travel-related risk reduction measures (vaccination status, SARS-COV-2 testing and COVID-19 recovery status)** in the context of **international travel**.

8th IHR EC advice – July 15th 2021

Expedite the work to establish updated means for documenting COVID-19 status of travelers, including vaccination, history of SARS-CoV-2 infection, and SARS-CoV-2 test results. This includes both an interim update to the WHO booklet containing the International Certificate of Vaccination and Prophylaxis and **digital solutions which allow for verification of relevant information**.

Context and challenges driving digital certificate guidance

Global level challenges

- **Potential for incompatibility, absence of common trust architecture**
 - One vaccine certificate issued by one country cannot be easily read or verified in another
 - Patchwork bilateral data exchanges/sharing agreements exacerbates equity and access challenges

Challenges faced by governments

- **Numerous competing products** for digitally documenting vaccination status;
- **Lack of interoperability standards** for certificates increases complexity and costs for governments
- **Lack of criteria** for assessment of solutions or **specs for product** development
- **Lack of guidance** on digital certificate functions, privacy of data, governance, procedures to mitigate misuse – undermining confidence

Individual-level challenges

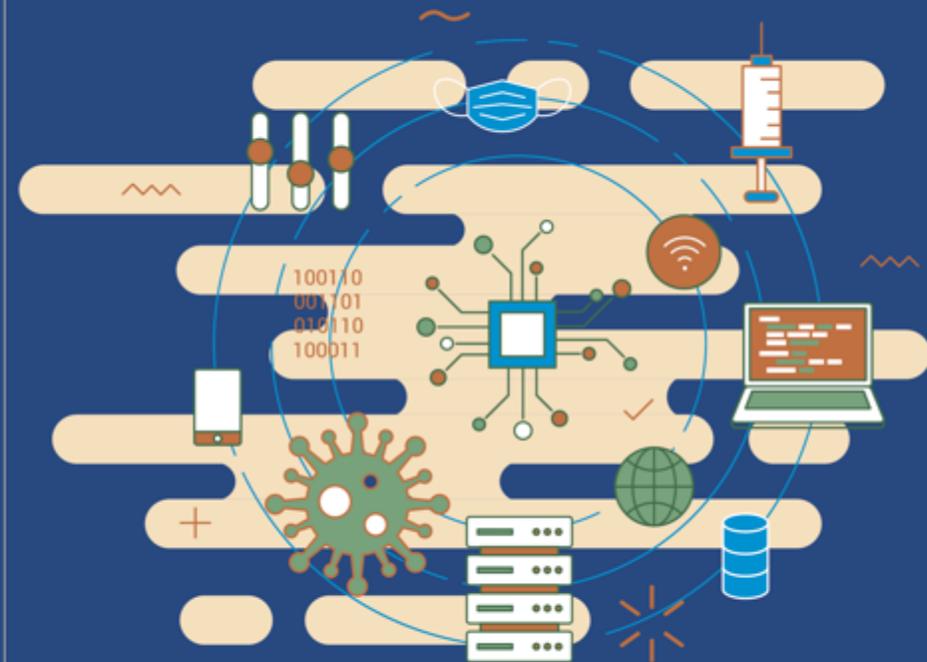
- Guidance on **ethical use needed** – to avoid misuse, and undue barriers to travel, private and public venues
- Verification approaches needed to minimize **fraudulent paper and digital certificates** that undermine trust
- **Guidance** to ensure awareness of availability of certificates from authorized authorities to reduce public confusion

Several global, regional and national initiatives

- WHO: Digital Documentation of COVID-19 Certificates (**DDCC**) specification
- International Civil Aviation Organization (ICAO) Guidelines on Visible Digital Seals (**VDS**) for travel-related health proofs
- EU Digital COVID Certificate (**DCC**)
- Some countries have already started the development and implementation of their own COVID-19 cross border travel solution such as India and the United States.

Digital Documentation of COVID-19 Certificates: Vaccination Status

TECHNICAL SPECIFICATIONS AND IMPLEMENTATION GUIDANCE



WHO: Digital Documentation of COVID-19 Certificates (DDCC) initiative

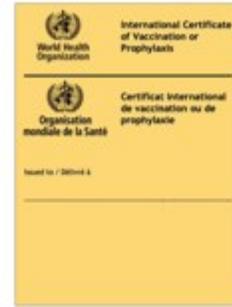
- To **publish specifications and standards** for data representation, functionality, privacy, and national trust architecture for use cases;
- To **develop guidance** detailing governance, ethics, and implementation best practices, and links to trust architecture.
- To **identify and curate multiple digital solutions** that conform to specifications; and
- To **document and learn from successes and challenges** via reference implementations and community of practice;
- Supports support two key scenarios: Continuity of Care + Personal Health Records and Proof of Vaccination for National and Cross-border Uses
- **DDCC:VS core data set guidance may be leveraged to generate DDCC:VS compatible with other initiatives**
- **Note: It is not policy document**

DDCC Specifications support paper-first, augmented by digital

- According to WHO guidance, a digital certificate should never require individuals to have a smartphone or computer

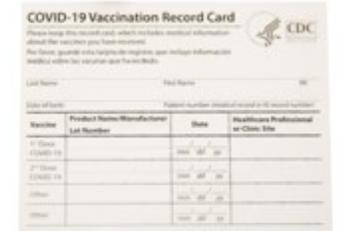
1

International Certificate of Vaccination or Prophylaxis (i.e. yellow card)



2

National Immunization Home-based Record



DIFFERENT ILLUSTRATIVE FORMATS OF DIGITAL DOCUMENTATION OF COVID-19 CERTIFICATES: VACCINATION STATUS

3

A handwritten paper certificate with only a HCID, which links to a DDCC:VS

OR

A handwritten paper certificate with a 2D barcode containing the full DDCC:VS core data set

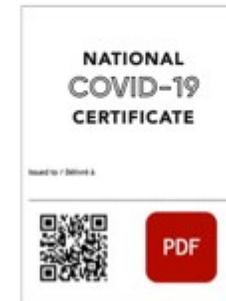


4

A PDF print-out certificate with only a HCID which links to a DDCC:VS

OR

A PDF print-out with a 2D barcode containing the full DDCC:VS core data set



5

A DDCC:VS held on a smartphone



The EU Digital COVID Certificate



Digital proof that a person has either

- been vaccinated against COVID-19
- received a negative test result
- recovered from COVID-19

What does it entail?

- Data is encoded, compressed and digitally signed in interoperable barcode
- Paper or digital format, easy to read
- Free of charge
- Bound to an EU citizen: 1 certificate, 1 holder
- Europe-wide validity
- Signature validation key exchange is done via an EU Gateway

Key success factors and challenges

Overall, the EU Digital Covid Certificate has been a big success

- **Success factors:** political will, clear objectives, teamwork and trust, funding, early implementation of EU DCC Gateway
- Challenges:
 - Time constraints
 - Heterogeneity of EU Member State healthcare systems
 - Initial agreement on use purpose
 - Data protection
 - Public expectations

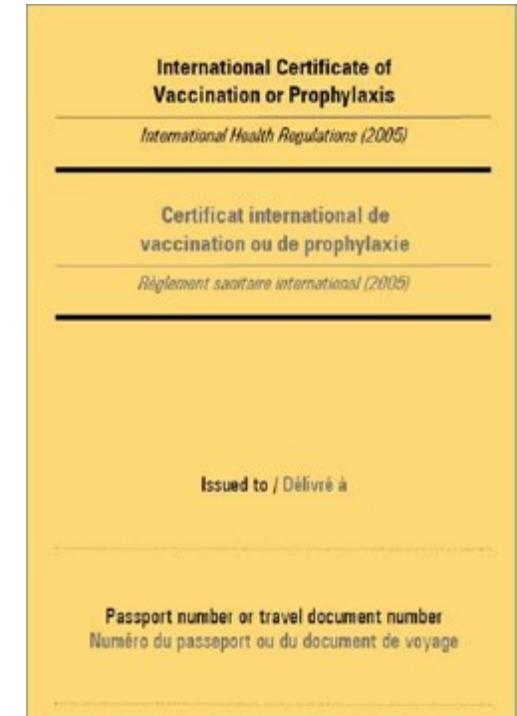
**These challenges
show-stoppers,
making the EU
Digital Covid
Certificate system
a success story**



ICAO Visible Seals

1. The VDS-NC is **not the primary medical vaccination document**. This function stays within the health-related environment: vaccination certificates will be treated and governed as health documents.
2. The VDS-NC **is not intended to replace any national/multilateral vaccination document**.
3. ICAO seeks to provide specifications to achieve global **interoperability among solutions** – thereby assuring common performance and security standards.

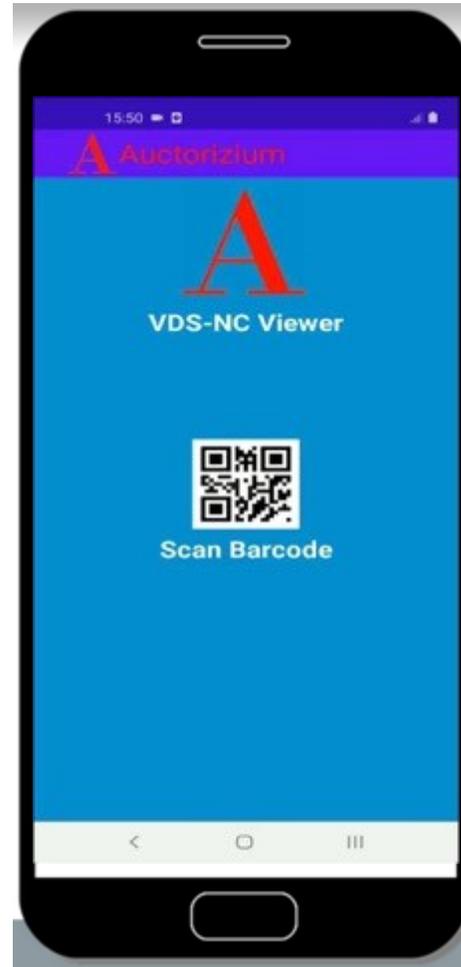
ICAO is **not** proposing a solution to replace existing tools. **Technical specifications should enhance the tools**, just as eMRTD specifications enhance the travel document landscape globally.

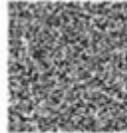


VDS Demonstration

Vaccination

- Same Vaccine – two doses
- What you see
 - Details of the person
 - Barcode Signature verification status
 - Barcode Signer verification using CSCA
 - The vaccination event with two doses
 - Date of next dose on dose 1
 - Date of dose 2



Proof of Testing	Issued by UTO	Version 1	UTC: 001932
PERSONAL INFORMATION			
Name of the Holder: Cook Gerald	Date of Birth: 1990-01-29	Document Type: P	Document Number: E1234567P
SERVICE PROVIDER			
Name of Testing Facility/Service Provider: General Hospital		Country of Test: UTO	
Phone Number: +00068765432	Email Address: genhosp@mail.com	Address: 12 Utopia Street	
DATETIME OF TEST & REPORT			
Specimen Collection DateTime: 2020-12-12T12:00:00+08:00		Report Issuance DateTime: 2021-02-11T14:00:00+08:00	
TEST RESULT			
Type of Test Conducted: molecular(PCR)	Result of Test: negative	Sampling Method: nasopharyngeal	
OPTIONAL DATA FIELD			
ID12345			
			



ICAO

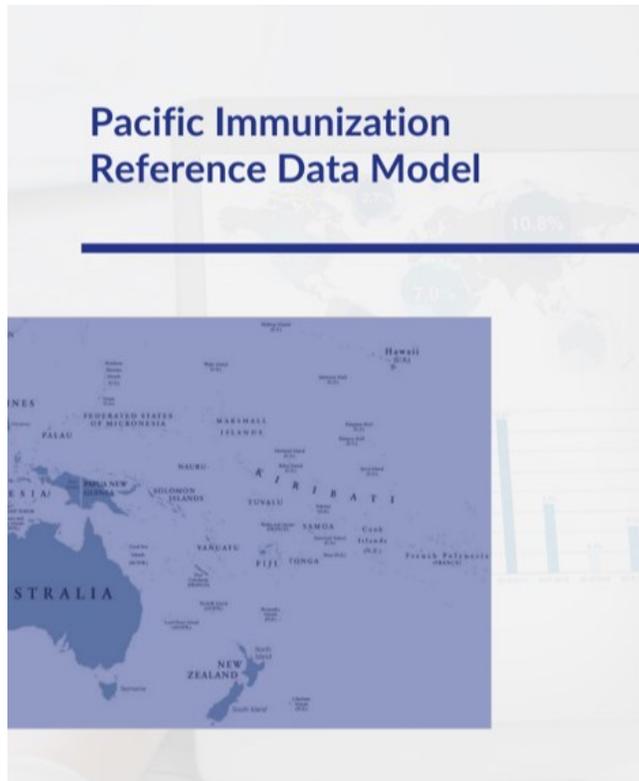
UNITING AVIATION

How are these initiatives related

- All initiatives have the same objective: facilitate traveling with health proofs (i.e. vaccination, laboratory test, recovery certificates)
- ICAO and the EU are currently working together to ensure compatibility between the ICAO VDS and European Digital COVID Certificates and looking alignment with WHO guidance.
- The technical specifications laid out in the documents can help inform other private sector initiatives on best practice & establish alignment on data collection and interoperability.
- Countries can use these guidance to guide their technology partners on minimum requirements for their certificates

Current Status of Digital Health Maturity and Vaccination Data

- Quality and integrity of immunization data currently unknown across all Pacific countries
- Prior pandemic Immunization data usually paper –based records and aggregated data
- Current vaccination certificate: paper card noting key details about the vaccinated individual, vaccine administered, date administered



Country	Digital Tools Adopted	EIR/ IIS	WHO Pacific Immunization Data Model Compliance
American Samoa	Webiz	Yes	CDC minimum data
CNMI	WebIz	Yes	CDC minimum data
Cook Islands	Medtech32	No	?
FSM	Webiz	Yes	CDC minimum data
Fiji	?	?	?
French Polynesia	?	?	EU?
Guam	WebIz	Yes	CDC minimum data
Kiribati	mSupply COVID-19	No	Yes?
Marshall Islands	Webiz	Yes	CDC minimum data
Nauru	Ink Aviation	No	?
New Caledonia	?	?	EU
Niue	Medtech32	?	?
Palau	Webiz	Yes	CDC minim data
Papua New Guinea	?	?	?
Pitcairn Islands	?	?	?
Samoa	Tamanu EMR	No	No
Solomon Islands	DHIS 2	Yes	?
Tokelau	Medtech32	?	?
Tonga	mSupply COVID-19	No	No
Tuvalu	Paper/ Spreadsheet	No	No
Vanuatu	DHIS 2	Yes	?
Wallis and Futuna	?	?	?

Assumptions for country responsibilities



1. Countries choose the **modalit(ies)** to implement COVID-19 certificates (e.g. paper, smart phone application, etc.)
2. Multiple point of service solutions operating, based on **what countries want** to implement
Choices on design and implementation should be guided by balancing various values and contextual considerations, such as the countries' digital health maturity and readiness
3. Countries responsible for implementing necessary **policies to support** the issuance and verification workflows
4. Countries **determine which mechanism for unique identification** (e.g. health ID, national ID number, passport number, etc.) and whether they wish to bind the certificate to identity
5. Countries determine **which trust frameworks** to use for validation of COVID-19 certificates & establish agreements with other countries that outline the governance process for establishing trust (e.g., equivalence)

Roadmap to the Pacific COVID-19 Certificate?

Task 1: Building consensus and reaching regional agreement

August

The Fifty First Pacific Island Forum on 6th August 2021: The idea of adopting COVID-19 certificates

October

Heads of Health meeting discussions on COVID-19 certificates

Oct/Nov

Technical Working Group established

February 2022
Technical specifications agreed

February 2022

Establish regional agreement and technical conditions at the Pacific Island Forum meeting



June 2022

Country feasibility assessments and national strategies

Task 2: Country Assessment and Readiness Strengthening

November 2022

Analysis, design and development of solution architecture

January 2023

Production / Go-Live
COVID-19 certificate development, configuration, pilot and production

January onwards

Training and onboarding



Task 3: Go ALIVE & Implementation

Pacific Heads of Health are invited to:

- 1) Acknowledge** the Leaders Communique of 6th August 2021 with regard to establishing “robust and practical processes for vaccine certification, including digital vaccination certificates”.
- 2) Recognise** the evolving landscape with regard to the demand and supply requirements to facilitate cross border travel through the development of COVID-19 certificates.
- 3) Note** the Roadmap and the work the secretariat endeavours to pursue on a regional and/or bilateral basis with regional organisations and partners to support PICTs develop COVID-19 certificates for cross border travel that meets international standards and best practices.
- 4) Facilitate** and coordinate as appropriate national consultations with key stakeholders such as immigration, customs, border control, aviation, tourism etc with regard to COVI-19 certificates for cross border travel.

Pacific Heads of Health are invited to:

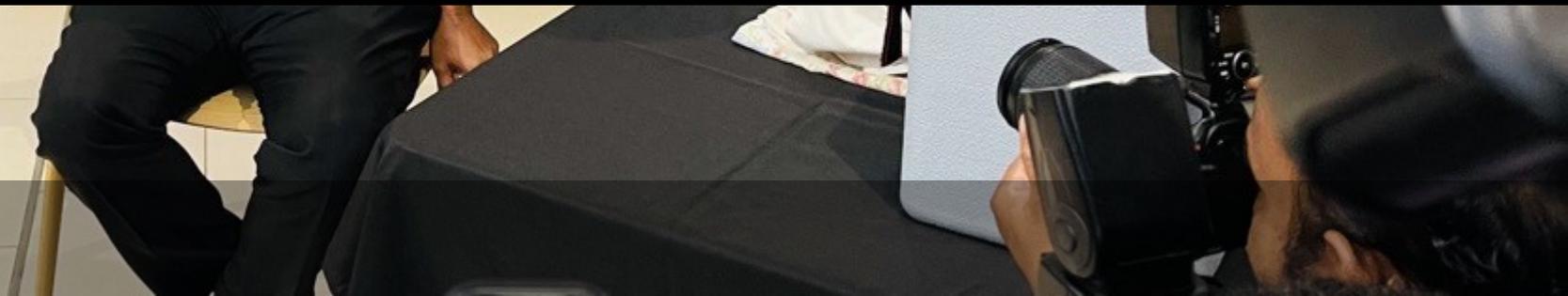
- 5) **Reflect** on,
 - a. Appointing a project champion
 - b. Setting up a multi-sectoral National Governance Structure
 - c. Identifying representatives to the Technical Working Group
- 6) **Ensure** country collection system complies to the WHO Pacific Immunization Data Model Blueprint
- 7) **Strengthen** integrity of population immunization data by ensuring they are complete, accurate and verifiable
- 8) **Request** the secretariat to provide the Heads of Health with periodic updates on the progress of the COVID-19 certificates for cross border travel initiative.

Development partners are invited to:

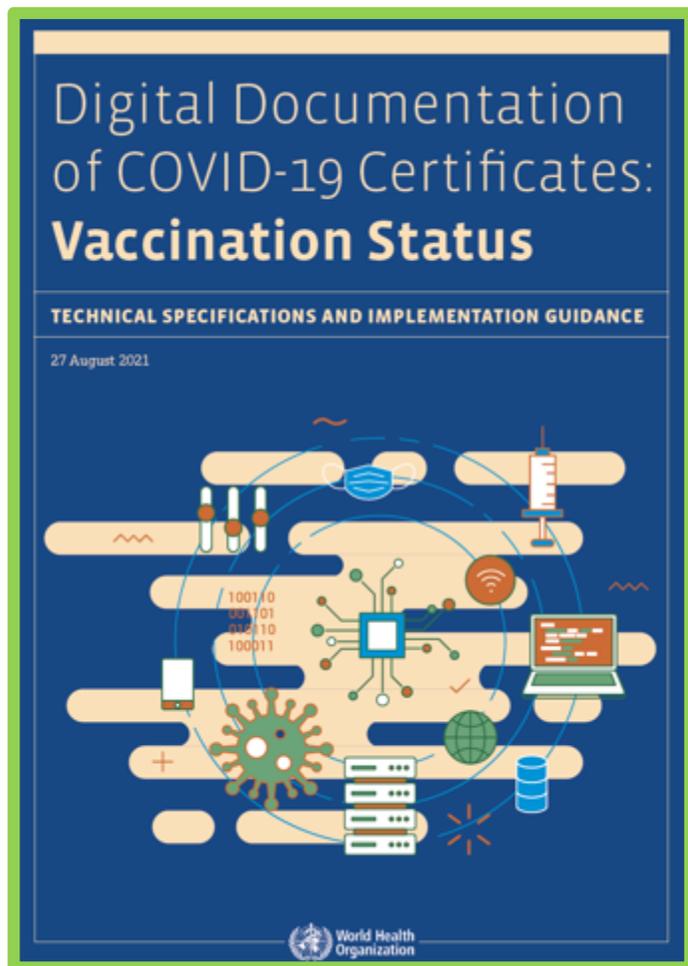
- 1) Support** the secretariat and PICTs with implementation of the Roadmap to develop COVID-19 certificates for cross border travel that meets international standards and best practices
- 2) Explore** opportunities to invest additional resources to support PICTs develop COVID-19 certificates for cross border travel; and
- 3) Strengthen** efforts to improve engagement and regional coordination amongst key stakeholders such as immigration, customs, border control, aviation, tourism etc with regard to COVID-19 certificates for cross border travel.



Vinaka!



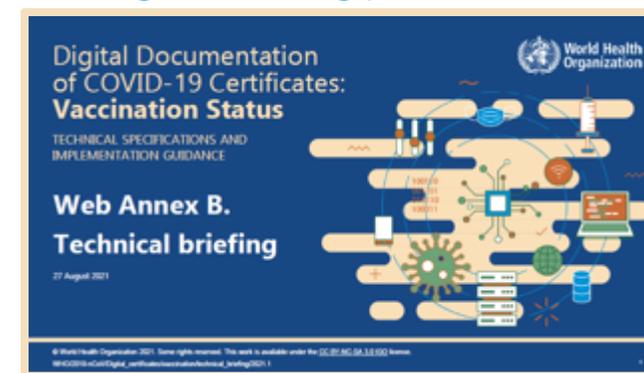
WHO Guidance is available here:



- ✓ **Digital Documentation of COVID-19 certificates: Vaccination status — Technical specifications and implementation guidance, 27 August 2021** (*main document*)
<https://apps.who.int/iris/bitstream/handle/10665/343361/WHO-2019-nCoV-Digital-certificates-vaccination-2021.1-eng.pdf>
- ✓ **Web annex A. DDCC:VS core data dictionary**
<https://apps.who.int/iris/bitstream/handle/10665/343264/WHO-2019-nCoV-Digital-certificates-vaccination-data-dictionary-2021.1-eng.xlsx>
- ✓ **Web annex B. Technical briefing**
<https://apps.who.int/iris/bitstream/handle/10665/344456/WHO-2019-nCoV-Digital-certificates-vaccination-technical-briefing-2021.1-eng.pdf>

The screenshot shows a spreadsheet with columns for 'Element', 'Standardized data element', and 'Description'. It lists various data elements related to vaccination status, such as 'Vaccination status for COVID-19' and 'Vaccination status for COVID-19 (by country)'. The 'Description' column provides detailed technical specifications for each element.

Element	Standardized data element	Description
Vaccination status for COVID-19	vs_vaccination_status	This element indicates the vaccination status of an individual for COVID-19. It is a required element and must be present in all certificates. The value of this element is conditional, depending on whether the certificate holder is a child or an adult. For children, the value is 'not vaccinated' or 'vaccinated'. For adults, the value is 'not vaccinated', 'vaccinated', or 'unknown'.
Vaccination status for COVID-19 (by country)	vs_vaccination_status_by_country	This element indicates the vaccination status of an individual for COVID-19, broken down by country. It is a required element and must be present in all certificates. The value of this element is conditional, depending on whether the certificate holder is a child or an adult. For children, the value is 'not vaccinated' or 'vaccinated'. For adults, the value is 'not vaccinated', 'vaccinated', or 'unknown'.



- Additional technical details can be found on the DDCC vaccination certificate implementation guide available at:
<https://worldhealthorganization.github.io/ddcc/>

Additional upcoming resources and Initiatives

- ✓ **Digital Documentation of COVID-19 Certificates: Lab Results Technical specifications and implementation guidance:**
 - ✓ Certificates for SARS-CoV-2 Negative Test Results
 - ✓ Certificates for History of SARS-CoV-2 infection
- ✓ **Open-source reference software for:**
 - ✓ Recording COVID-19 vaccinations in a digital format
 - ✓ Generating DDCC:VS in multiple compatible formats (e.g., ICAO VDS-NC, EU DCC, DIVOC)
- ✓ **Mechanisms to facilitate testing conformance** with DDCC specifications with connectathons with standards development organizations (e.g., HL7, IHE), curation in clearinghouse
- ✓ **Digitizing the Yellow Card** (ICVP + Other) conforming to DDCC specs, alongside design update to paper version to accommodate COVID and lab results
- ✓ **Technical assistance** to countries from WHO

EU Guidelines and technical specifications

All documents are available from: https://ec.europa.eu/health/ehealth/covid-19_en

Datasets and value sets

[JSON Schema for EU Digital COVID Certificates](#)

[eHealth Network guidelines on verifiable vaccination certificates - basic interoperability elements](#)

[Guidelines on COVID-19 citizen recovery interoperable certificates - minimum dataset](#)

[A common list of COVID-19 rapid antigen tests, and a common standardised set of data to be included in COVID-19 test result certificates](#)

Architecture

[Trust framework](#)

[Reference implementations for issuance, storage and verification apps](#)

Other

[Template for paper version for EU DCCs](#)

Technical specifications

[Volume 1: formats and trust management](#) [Volume](#)

[2: EU Digital COVID Certificate Gateway](#) [Volume](#)

[3: 2D Barcode Specifications](#)

[Volume 4: EU Digital COVID Certificate Applications](#)

[Volume 5: Public Key Certificate Governance](#)

[EU DCC Validation Rules](#)

[Validation of EU Digital COVID Certificates in the context of air transport](#)

Third countries

Third country DCC Equivalence Decision [checklist](#)

Annex 1: [Evaluation checklist](#)

Annex 2: [Technical procedure](#)

Annex 3: [Application form](#)