



Facilitation developments during the COVID-19 pandemic

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Air transport Facilitation challenges

- Covid-19 has had wide ranging impact on air transport
- It has forced States to close borders for public health purposes
- It has led to heightened entry requirements and created a myriad of different requirements
- Created more work for immigration authorities and aircraft operators
- It has led to the development of numerous different health proof solutions

FAL-related CART Recommendations

Rec.6 – Member States that have not done so should immediately establish a National Air Transport Facilitation Committee (or equivalent) as required by Annex 9 to increase national level cross-sectoral coordination.

Rec.7 Member States should systematically use a Passenger Health Locator Form to ensure identification and traceability of passengers to help limit the spread of the disease and resurgence of the pandemic.

Rec.9 – States should take measures to ensure that personnel are provided training to identify and manage unruly passenger situations related to non-respect of essential aviation public health and safety measures.

Rec.17 – Testing, vaccination and recovery certificates: Member States should implement testing certificates based on the protocol and implementation approaches outlined in the Doc 10152 to facilitate air travel.

Outcomes of the HLCC FAL stream

**FIVE
AGENDA
ITEMS**

79

Recommendations



Facilitation operational measures - the pandemic and beyond



Enhancing national coordination and international cooperation



Enhancing digital data sharing for seamless/contactless processes



Future approaches – management of sustainable health-related FAL measures and implementation monitoring



Other Facilitation-related issues



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ICAO'S HIGH-LEVEL CONFERENCE ON COVID-19



- ❖ Facilitation operational measures
- ❖ Enhancing National Coordination & International Cooperation
- ❖ Enhancing digital data sharing for seamless & contactless processes
- ❖ Future approaches - health-related measures
- ❖ Other Facilitation related issues

Recs. FOR STATES	Recs. FOR ICAO
17	5
16	6
13	
8	4
8	2

Facilitation operational measures – the pandemic & beyond

Comprehensive and frequent risk assessments critical with a view to easing measures

CART recommendations as an underpinning element

Harmonization where feasible, enhancing mutual recognition and trust

Usefulness of PHCs currently and in future



Enhancing National Coordination and International Cooperation

Multidisciplinary cooperation within unified frameworks - NATFP/NATFC, tactical task forces, CAPSCA,...

Continuous monitoring of compliance with Annex 9 provisions with clear assignment of responsibility

Use of passenger data for health purposes, sharing according to clear legal basis

On-going enhancement of international capacity building structures and capabilities

Enhancing digital data sharing

For seamless
and
contactless
processes



Digital health proofs -> issuance aligned with WHO recommendations, interoperable with ICAO VDS-NC



Integration of health proof validation in border inspection systems



Possible use of platforms to enrol passenger health data in advance, use of iAPI



Following ICAO SARPs and guidance on digitalization to assure sustainability moving forward, including biometrics



Share experiences and knowledge to enhance global capabilities



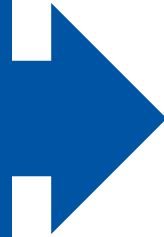
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Future approaches - management of sustainable health-related FAL measures

IMPORTANCE OF
IMPLEMENTING
RELEVANT ANNEX
9 SARPS



SUPPORT FOR THIS
WORK THROUGH
FUNDING AND
ALLOCATION OF
CORRESPONDING
HUMAN RESOURCES

INCREASED
IMPORTANCE FOR
ASSISTING TRANSPORT
OF PERSONS WITH
DISABILITIES
ESPECIALLY IN
ABNORMAL TIMES



Development of a strategic framework for implementation of mitigation measures to deal with public health emergencies at borders

Other Facilitation related issues

Need to establish legislation, regulations, policies and/or plans related to support of assistance to aircraft accident victims and their families

Reinforcement of efforts to deal with unruly and disruptive passengers

Encouragement of ratification of the Montréal Protocol 2014 and consideration of the ICAO Doc 10117

need to respect and maintain existing agreed bilateral & regional air transport agreements in future crises,



CART Phase III : Health proofs Recommendations

Recommendation 13 – Testing

*States should apply the COVID-19 risk management strategy approach outlined in the **ICAO Testing and Cross-Border Risk Management Measures Manual**.*



Recommendation 17 – Testing certificates

States are encouraged to request evidence of testing that is secure, trustworthy, verifiable, convenient to use, compliant with data protection legislation and internationally/globally interoperable.

This may be applicable to vaccination certificates.

Recommendation 19 – *Vaccination should not be a prerequisite for international travel.*





Requirements for health proof certificates

Integrity



Could the data have been altered after issuance?

Authenticity



Can issuance by a trusted authority be confirmed?

Trustworthy/Verifiable



Are my systems capable of verifying integrity and authenticity?

Convenient to use



Will the certificate be efficiently read within existing processes and infrastructure?

Data protection



Compliant with legislation in State of use and State of nationality of the traveler

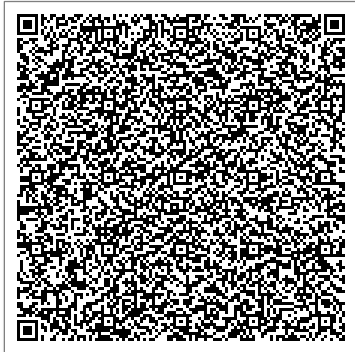
Interoperability



Will cross-border verification be possible?



ICAO Visible Digital Seal for Non-Constrained Environments (VDS-NC)



- Encodes minimum dataset for tests, vaccinations and recovery certificates
- Machine readable using standard barcode scanners (e.g. at check-in, bag drop, boarding gates)
- Digitally signed (optional for testing certificates), using the same infrastructure as used by more than 145 States issuing ePassports

Technical Report published

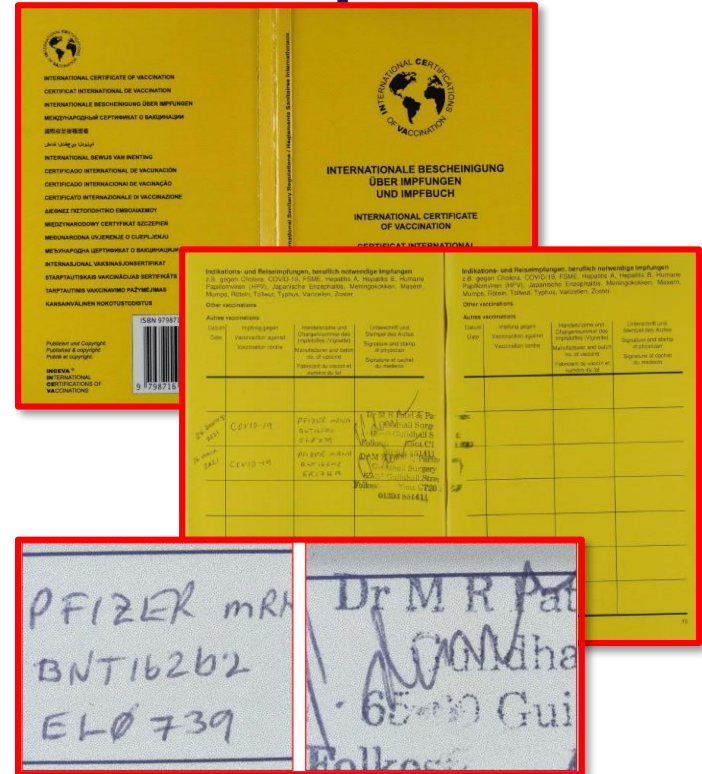
<https://www.icao.int/Security/FAL/TRIP/PublishingImages/Pages/Publications/Visible%20Digital%20Seal%20for%20non-constrained%20environments.pdf>



VDS-NC Security of health related proofs

Health proofs as target of fraud

- The counterfeit of vaccination certificates and COVID-test reports have become a mass phenomenon. Blank “yellow books” with complete vaccination entries are sold on Telegram channels for 80 – 150 €.
- The vaccination certification was never intended to be a secure travel document and hence carries no security features.
- The VDS-NC is designed as an accompanying document carrying digitally signed health information – making fraud easily detectable.



Case example: Blank fraudulent yellow book sent from London to Frankfurt carrying vaccination entries, May 2021
 (Source: BPOL FRA)



Importance of Digital signatures



Digital signature prevents tampering post-issuance



Only government-approved entities can digitally sign the VDS



Read using existing scanners in airports and at borders, without modification



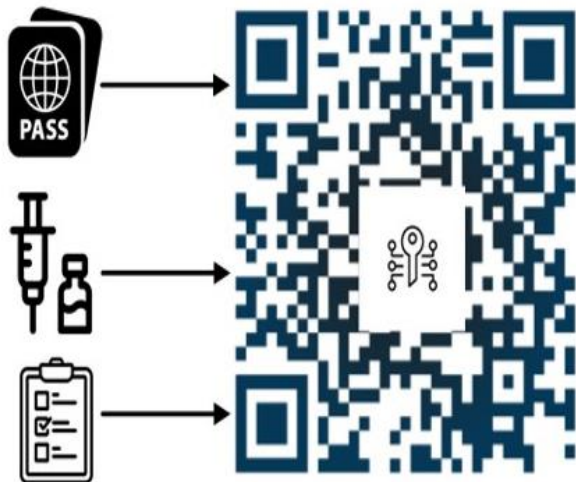
Instantaneous data capture, criteria fulfilment check by machine



Data held by traveler, consent-based sharing, no central data storage



Leverages the existing capabilities used for ePassport verification globally





ICAO VDS-NC: Main Distinctions

What it is NOT:

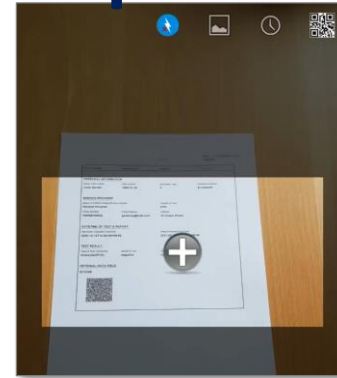
1. The VDS-NC is **not the primary medical vaccination document**. This function stays within the health-related environment: vaccination certificates will be treated and governed as health documents.
2. The VDS-NC **is not intended to replace any national/ multilateral vaccination document**.






VDS-NC Design Principles

- Uses a structure which makes it readable using any scanner
- Globally Interoperable
- „Human“ Readable
 - “Payload” is human readable
- Offline Verifiable
 - Certificate and Signature contained in the barcode
- Able to leverage the eMRTD Trust Model
- Flexible



Issued by UTO		Version 1		UTD GENOS	
PERSONAL INFORMATION					
Name of the Holder	Date of Birth	Document Type	Document Number		
Cook Gerald	1990-01-29	P	E1234567P		
SERVICE PROVIDER					
Name of Testing Facility/Service Provider:			Country of Test:		
General Hospital			UTO		
Phone Number:	Email Address:	Address:			
+000676432	genhosp@gmail.com	12 Utopia Street			
DATE/TIME OF TEST & REPORT					
Specimen Collection Date/Time:			Report Issuance Date/Time:		
2020-12-12T12:00:00+08:00			2021-02-11T14:00:00+08:00		
TEST RESULT					
Type of Test Conducted:	Result of Test:	Sampling Method:			
molecular(PCR)	negative	nasopharyngeal			
OPTIONAL DATA FIELD					
ID12345					
					

```

{"data":{"hdr":{"t":"icao.test","v":1,"is":"UTO"},"msg":{"utd":{"id":"001932","rid":{"p":"Cook Gerald","dob":"1990-01-29","dt":"P","dn":"E1234567P"},"sp":{"spn":"General Hospital","ctr":"UTO","cd":{"p":"0006765432"},"e":"genhosp@gmail.com"},"a":{"l2 Utopia Street"},"dat":{"ac":"2020-12-12T12:00:00+08:00","ri":{"021-02-11T14:00:00+08:00"},"t":{"sc":"molecular (PCR)","r":"negative","m":{"nasopharyngeal"},"opt":{"ID12345"},"sig":{"alg":"ES256","ces":{"MIITBeTCCAR2qAwI8AgI8zAMBggqhkJOPQDAGUAMB0xCzAUBgNVBAYTAUVUHQ4WDAVDVQDDAVVVCBDQTAEFw0yMTA0MDcWNDI2MTVhFw0yNjEwMDcwNDI2MTVhMB0xCzAUBgNVBAYTAUVUHQ4WDAVDVQDDAVVVCBDQDEwIwNTBzMBMGBByqGSM49AgEGCCGqGSM49AwEHA0IABBBzop6IWxg_Qo8JV1G-r9FzjoAocXKsSUskuHCTK2TY-b5atMF8jDtjJaChal_2VvrNbz7WDGsWf-7MqgFzxsS6ejTzBNMBIGAlUdJQQLMAkGB2eBCAEBBg1wHwYDVR0jBBgwFoADymyksnX8rywn0RH7nDq-Bs2Q0qowFgYH24EIAQEGAGQLMAkCAQAxBBMCT1QwDAYIKoZlZjOEAwIFAANIADBFAlAce9uX8UOpdsOteKAtkDu2GFyzy_S8vQF4qhzrGbooa8gIhAO_SORo2bsTor6CXHngG1d4NntUGsXNg9l-SqEfVcsqb","sigv":{"v":"v2sdmvgjNkg0g0wHw0cBE_S8vQF4qhzrGbooa8gIhAO_SORo2bsTor6CXHngG1d4NntUGsXNg9l-SqEfVcsqb"},"opt":{"ID12345}}}}
  
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The Health Credential Situation

South African COVID-19 Vaccine Certificate System

health
Department of Health
South Africa

COVID-19 Vaccination Certificate

Document used
ID number
Surname
Subj ID name

Vaccine received
Vaccine date
Proof of vaccination code

Vaccine received
Vaccine date
Proof of vaccination code

*Congratulations, you have successfully received your vaccination Certificate (green)!
The design of the vaccination Certificate system selected by users from countries in close with our international partners. This tool features faster and essential your update vaccination certificate to ensure that it is correct and safe. The Department of Health will assist in the connectivity of these systems through its vaccination infrastructure by various methods.

*The QR code presented is not intended to be used by the general public. It is subject to be used to verify vaccination certificate validity using a Vaccine Certificate System mobile QR scanner which will be available for free later.

COVID-19 VACCINATION - Please visit our website at <https://www.health.gov.za>

COVID-19 Proof of Vaccination / Preuve de vaccination contre la COVID-19

Issuing Province / Territory
Province / Territoire de destination
Yukon

Country of residence / Pays d'habitation
Canada

Name / Nom : Doe, Jane Liz
Date of birth / Date de naissance : 02 JUL / JUIL 1985

SMART Health Cards QR Code / Code QR de la carte Santé SMART

Vaccinations administered (Vaccins reçus) : 2

Date : 05 FEB / FÉV 2021
Product / Produit : Pfizer-BioNTech Comirnaty COVID-19
Lot : 010264
Date : 05 JAN / JAN 2021

Vaccination example

Name: DOE Joe
Date of Birth: 1987-06-05
Passport number: PF12345678
Certificate issued: 2021-08-02

Dose 1/2

Date: 2021-02-03
Brand: Pfizer-Cy
Batch: AB12300
Adm. centre: Hospital 1

Country: Belgium
Issued by: National health service

VI-88-12345678
0100-10700-04

Name: Doe, Jane
Date of Birth: 1987-06-05
Passport number: PF12345678
Certificate issued: 2021-08-02

Dose 1/2

Date: 2021-02-03
Brand: Pfizer-Cy
Batch: AB12300
Adm. centre: Hospital 1

Country: Belgium
Issued by: National health service

Australian Government

COVID-19 digital certificate

This individual has received all required COVID-19 vaccines.

Name: JOHN CITIZEN
Date of birth: 01 Jan 1950
Individual Healthcare Identifier (IHI): 8003 6012 3458 7890
Document number: 100000000449
Valid from: 20 Feb 2021

REPUBLIC OF UGANDA
MINISTRY OF HEALTH

COVID-19 VACCINATION CERTIFICATE

This is to Certify that [redacted] was vaccinated against COVID-19 as shown below

DOSE 01		DOSE 02	
Date:	29/04/2021	Date:	30/06/2021
Batch No:	4722006	Batch No:	ABX8352
Vaccine:	AstraZeneca	Vaccine:	AstraZeneca
MFG:	Serum Institute of India	MFG:	Novartis
Facility:	International Medical Centre, KPC Wakiso HC	Facility:	City Hall Clinic HC II
District:	Kampala District	District:	Kampala District

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The Health Credential Situation

Numerous formats - > Work towards Mutual Recognition (i.e. global verifiability)

Persistent use in international travel - > Consider the specificities of border management and international travel

Leverage knowledge and capabilities gained from experience to achieve these goals



DIVOC (India)

No defined
trust registry



VDS-IC (ICAO)

ICAO PKD



Common
Formats of
Health Proofs
used in Travel

Smart Health Card (VCI)

The
CommonTrust
Network



Digital COVID Certificate
(EU)

EU Gateway





Enhancing verifiability of Health Proofs

Collect certificates needed for verification of health proofs

Share the public certificates in a trusted manner

Ensure wide capacities to utilize the certificates to verify international health proofs



The ICAO Health Master List

A Common International Trust Registry



- Health Public Key Cert 1
- Health Public Key Cert 2
- Health Public Key Cert 3
- Health Public Key Cert n.

- **Open** - No certificate format requirements
- **Accessible** - No dependency on PKD participation status
- **Trustworthy** - Validation based on same requirements as for the ICAO PKD

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ICAO Health Master List provides trusted information necessary for verification

- Health Public Key Cert 1
- Health Public Key Cert n..



Software with multi-format processing logic



Scan a health proof barcode, e.g. a VDS-NC barcode



Automatic indication of authenticity, integrity and compliance with rules



The ICAO Health Master List

- Available from the ICAO public webpage, first version 31.01.2022
- Certificate collection leveraging ICAO's unique network position, list digitally signed by ICAO for trust
- Published in known, trusted, established format, easing use (especially in restricted border environments)

Leverage knowledge and capabilities gained from experience to achieve these goals

For ICAO:

- Knowledge in PKI and certificate sharing underpinning global trust
- Capabilities in trustworthy certificate collection based on in-house network
- Experience in delivering public key certificates trusted for international travel

For States:

- Knowledge in use of public key certificate-based verification
- Capabilities to use Master List data to verify digitally-signed credentials at borders
- Experience in incorporating digital credentials into processes to facilitate safe and seamless travel



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States are encouraged to provide all public key certificates necessary to validate their digital health proofs to ICAO for inclusion in the ICAO Health Master List

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Thank you!



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