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CỤC LÃNH SỰ
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Phòng xử lý: PLS
Phòng phối hợp:
Cán bộ xử lý:

The Embassy of Malaysia in Hanoi presents its compliments to the Consular Department, Ministry of Foreign Affairs of the Socialist Republic of Vietnam and has the honour to refer to the latter's Note No. 539/CH-LS-PL dated 30 July 2021 requesting for information on the Covid-19 Vaccination Certificate and Recovery Certificate of foreign countries.

The Embassy has further the honour to attach herewith Covid-19 Vaccination Certificate Technical Specification and Vaccine Certificate Verifier issued by Malaysia. The Embassy would also like to seek the Department's kind assistance to disseminate this certificate to the relevant authorities in Vietnam for their kind reference and to facilitate entry of Malaysian citizens who are holding the above vaccination certificate into Vietnam.

Furthermore, the Embassy kindly requests the Consular Department to provide a model of vaccination certificate against Covid-19, issued by the Socialist Republic of Vietnam for the Embassy's kind information and onward action.

The Embassy of Malaysia in Hanoi avails itself of this opportunity to renew to the Consular Department, Ministry of Foreign Affairs of the Socialist Republic of Vietnam the assurances of its highest consideration.



**CONSULAR DEPARTMENT
MINISTRY OF FOREIGN AFFAIRS
SOCIALIST REPUBLIC OF VIETNAM
HANOI**

c.c. **DEPARTMENT OF SOUTH EAST ASIA, SOUTH ASIA & SOUTH PACIFIC
MINISTRY OF FOREIGN AFFAIRS
SOCIALIST REPUBLIC OF VIETNAM
HANOI**

23 August 2021



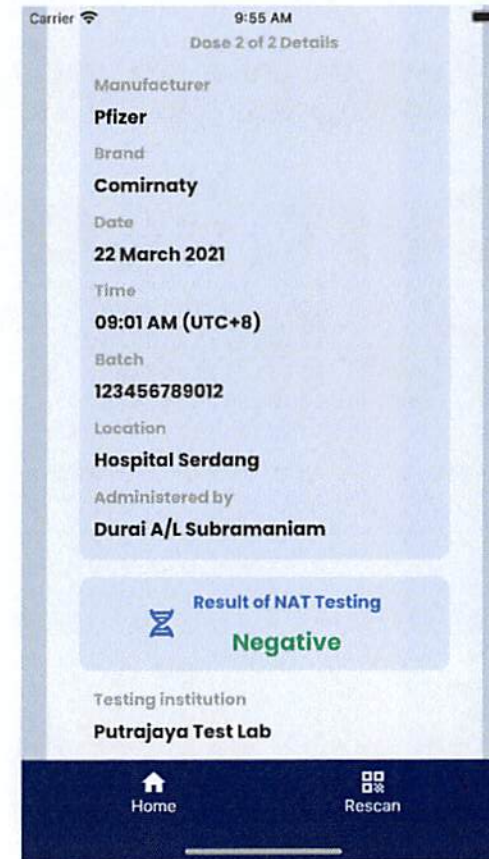
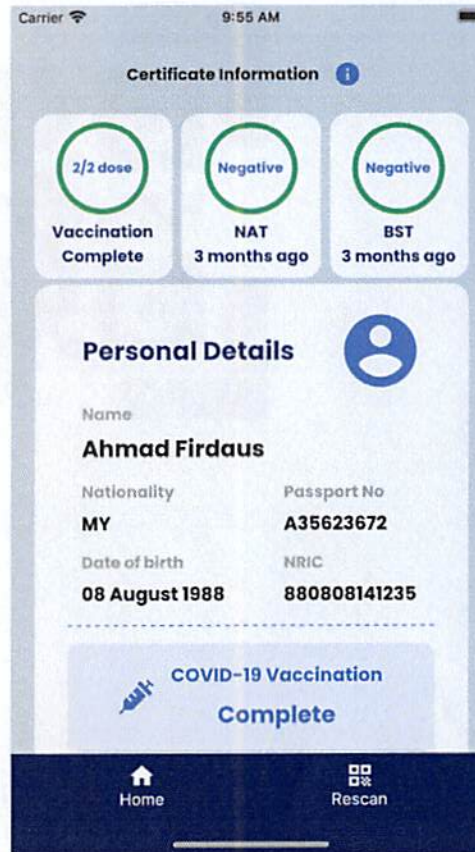
Vaccine Certificate Verifier





Vaccine Certificate Verifier

Vaccine Certificate Verifier is a mobile application that is able to verify the authenticity and integrity of a digitally signed vaccine certificate issued by Ministry of Health Malaysia, as well as those issued by mutually recognised countries.





How It Works

Vaccine Certificate Issuance



A person gets vaccination

Vaccination information sent to the authority and recorded in blockchain.

A digitally signed vaccine certificate is issued to the vaccinated person.

The signed vaccine certificate will then be made available to the vaccinated person MySejahtera app, or retrieved from a portal.

Vaccine Certificate Verification



User presents vaccination certificate in form of QR, either in MySejahtera app or on a printed paper

Officer scans using verifier app to verify the authenticity and integrity of the digitally signed vaccine certificate



Malaysia Vaccine Certificate

Technical Specification

(July 2021 rev 7)

Overview

This document outlines the technical specification of Malaysia vaccination certificate and test certificate for Covid-19. This document is provided for discussion to enable mutual recognition of vaccine certificate.

The vaccination and test certificates refer to the trust framework outlined in W.H.O. Interim guidance for developing a Smart Vaccination Certificate document and comply with the technical specifications of EU Digital Covid Certificates.

The digitally signed vaccination and test certificate will be presented in QR code format, which can be printed on the paper vaccination card, or on a PDF version of vaccination card, or on a smart phone application.

Data Structure

The health certificate information is stored in the following general JSON format:

```
"JSON": {
  "ver": ,
  "nam": {},
  "dob": ,
  "pn": ,
  "ic": ,
  "v" or "t": [{}]
}
```

Version

Field id	Field name	Data Type	Instruction
ver	Schema version	String	EUDCC schema version used. Currently using "ver": "1.3.0"

Person

Field id	Field name	Data Type	Instruction
fn	Surname	String	Surname(s), such as family name(s), of the holder. Exactly 1 (one) non-empty field MUST be provided, with all surnames included in it. In case of multiple surnames, these MUST be separated by a space. Combination names including hyphens or similar characters must however stay the same. Examples: "fn": "Ahmad Firdaus"
fnt	Standardise surname	String	Surname(s) of the holder transliterated using the same convention as the one used in the

```
ZBgNVBAoMEk1pbmlzdHJ5IG9mIEhlYWx0aDBZMBMGByqGSM49AgEGCCqGSM49AwEHA0IABGz+c2YZfzX735PTnJo+JFc+gZzHrMX
scjzB1vr273gs0MAo+DDpEGKHAvd91t/n+fxVdtPNRCpads4S/ZLNKi2jwjBYMB0GA1UdDgQWBRRSScGTNGjwxcx2767gEJTwy8Ws
xmTAFBgNVHSMEGDAWgBQasvKd0Jd21rfiMp7I6hnr1kd68jAJBgNVHRMEAjAAMA5GA1UdDwQEAwIHgDAKBggqhkJOPQQDAgNIADB
FAiAG6+Vyp8zn28t6tLUF3rCu0B37pC3w/USvKEBWOACn6AIhALCOW3BRdRYNh1jX0NOS81mtBfbY/aiPHcu1BjJw6zC/ ",
    "kid": "FQyLctAwMZA=",
    "active": true
  }]
}
```

Note: The kid is defined as the first 8 bytes of the SHA256 hash of the certificate.

References

1. [World Health Organisation \(2021\). Interim guidance for developing a Smart Vaccination Certificate](#)
2. [Guidelines on Technical Specifications for EU Digital COVID Certificates](#)
3. [Technical Specifications for Digital Green Certificates Volume 3](#)

			holder's machine readable travel documents (such as the rules defined in ICAO Doc 9303 Part 3). Exactly 1 (one) non-empty field MUST be provided, only including characters A-Z and <. Maximum length: 80 characters (as per ICAO 9303 specification). Examples: "fnt": "AHMAD<FIRDAUS"
dob	Date of birth	String	Date of birth of the DCC holder. Complete or partial date without time restricted to the range from 1900-01-01 to 2099-12-31. Exactly 1 (one) non-empty field MUST be provided if the complete or partial date of birth is known. If the date of birth is not known even partially, the field MUST be set to an empty string "". This should match the information as provided on travel documents. One of the following ISO 8601 formats MUST be used if information on date of birth is available. Other options are not supported. YYYY-MM-DD
pn	Passport number (Optional)	String	Passport number as per passport document
ic	National Identity card (Optional)	String	Malaysia National Registration Identity Card number (For Malaysian used only)

Group of Certificate Types

Malaysia will only support vaccination and test certificate at the moment. Each certificate will only contain 1 dose or 1 test result. A vaccinated person who had received 2 doses should have 2 vaccination certificates.

Group id	Group name	Data Type	Instruction
v	Vaccination Group	String	If present, MUST contain exactly 1 (one) entry describing exactly 1 (one) vaccination dose.
T	Test Group	String	If present, MUST contain exactly 1 (one) entry describing exactly 1 (one) test result.

Certificate type specific information

Vaccination certificate

Vaccination group, if present, MUST contain exactly 1 (one) entry describing exactly one vaccination event. All elements of the vaccination group are mandatory, empty values are not supported.

Field id	Field name	Data Type	Instruction
v/tg	Disease or agent targeted:	String	This value set has a single entry 840539006, which is the code for COVID19 from SNOMED CT

	COVID-19 (SARS-CoV or one of its variants)		(GPS). Exactly 1 (one) non-empty field MUST be provided. Example: "tg": "840539006"
v/vp	COVID-19 vaccine or prophylaxis	String	Type of the vaccine or prophylaxis used. Exactly 1 (one) non-empty field MUST be provided. Example: "vp": "1119349007" (a SARS-CoV-2 mRNA vaccine)
v/ma	COVID-19 vaccine marketing authorisation holder or manufacturer	String	Medicinal product used for this specific dose of vaccination. Exactly 1 (one) non-empty field MUST be provided. Example: "mp": "EU/1/20/1528" (Comirnaty)
v/cn	COVID-19 vaccine common name	String	A common name of vaccine
v/bn	COVID-19 vaccine batch number	String	Batch number of vaccine. If provided, MUST NOT be empty
v/dn	Number in a series of doses	Integer	Sequence number (positive integer) of the dose given during this vaccination event. 1 for the first dose, 2 for the second dose etc. Exactly 1 (one) non-empty field MUST be provided. Examples: "dn": 1 (first dose in a series) "dn": 2 (second dose in a series) "dn": 3 (third dose in a series, such as in case of a booster)
v/sd	The overall number of doses in the series	Integer	Total number of doses (positive integer) in a complete vaccination series according to the used vaccination protocol. The protocol is not in all cases directly defined by the vaccine product, as in some countries only one dose of normally two-dose vaccines is delivered to people recovered from COVID19. In these cases, the value of the field should be set to 1. Exactly 1 (one) non-empty field MUST be provided. Examples: "sd": 1 (for all 1-dose vaccination schedules) "sd": 2 (for 2-dose vaccination schedules) "sd": 3 (in case of a booster)
v/dt	Date of vaccination	String	The date when the described dose was received, in the format YYYY-MM-DD (full date without time). Example: "dt": "2021-03-28"
v/co	Member State or third country in which the vaccine was administered	String	Country expressed as a 2-letter ISO3166 code (RECOMMENDED) or a reference to an international organisation responsible for the vaccination event (such as UNHCR or WHO). Exactly 1 (one) field MUST be provided. Example: "co": "MY"

v/is	Certificate issuer	String	Name of the organisation that issued the certificate. Malaysian vaccination certificate will be issued by "Ministry of Health"
v/ci	Certificate identifier	String	Unique certificate identifier (UVCI) as specified in the vaccinationproof_interoperability-guidelines_en.pdf (europa.eu) The inclusion of the checksum is optional. The prefix "URN:UVCI:" may be added. Exactly 1 (one) non-empty field MUST be provided. Examples: "ci": "URN:UVCI:01:MY:10807843F94AEE0EE5093FBC254BD813B"

Test certificate

Test group, if present, MUST contain exactly 1 (one) entry describing exactly one test result.

Field id	Field name	Data Type	Instruction
t/tg	Disease or agent targeted: COVID-19 (SARS-CoV or one of its variants)	String	This value set has a single entry 840539006, which is the code for COVID19 from SNOMED CT (GPS). Exactly 1 (one) non-empty field MUST be provided. Example: "tg": "840539006"
t/tt	The type of test	String	The type of the test used, based on the material targeted by the test. Nucleic acid amplification with probe detection - LP6464-4 Rapid immunoassay - LP217198-3 Example: "tt": "LP6464-4" "tt": "LP217198-3"
t/nm	Test name (nucleic acid amplification tests only)	String	The name of the nucleic acid amplification test (NAAT) used. The name should include the name of the test manufacturer and the commercial name of the test, separated by a comma. For NAAT: the field is optional. Example: "nm": "ELITechGroup, SARS-CoV-2 ELITe MGB® Kit"
t/ma	Test device identifier (rapid antigen tests only)	String	Rapid antigen test (RAT) device identifier from the JRC database. Value set (HSC common list): • All Rapid antigen tests in HSC common list (human readable). • https://covid-19-diagnostics.jrc.ec.europa.eu/devices/hsc-commonrecognition-rat (machine-readable,

			<p>values of the field id_device included on the list form the value set).</p> <p>For RAT: exactly 1 (one) non-empty field MUST be provided.</p> <p>For NAAT: the field MUST NOT be used, even if the NAA test identifier is available in the JRC database.</p> <p>Example: "ma": "344" (SD BIOSENSOR Inc, STANDARD F COVID-19 Ag FIA)</p>
t/sc	Date and time of the test sample collection	String	<p>The date and time when the test sample was collected in the following ISO 8601 formats</p> <p>YYYY-MM-DDThh:mm:ss[+-]hh:mm</p> <p>"sc": "2021-08-20T12:03:12+08:00" (MY time)</p>
t/tr	Result of the test	String	<p>The result of the test. A coded value based on SNOMED CT, GPS.</p> <p>260415000 – Not detected 260373001 - Detected</p> <p>Example: "tr": "260415000" (Not detected)</p>
t/tc	Testing centre or facility	String	<p>Name of the test centre or facility that conducted the test.</p> <p>For NAAT tests: exactly 1 (one) non-empty field MUST be provided. For RAT tests: the field is optional. If provided, MUST NOT be empty.</p> <p>Example: "tc": "Putrajaya Test Lab"</p>
t/co	Member State or third country in which the vaccine was administered	String	<p>Country expressed as a 2-letter ISO3166 code (RECOMMENDED) or a reference to an international organisation responsible for the vaccination event (such as UNHCR or WHO). Exactly 1 (one) field MUST be provided.</p> <p>Example: "co": "MY"</p>
t/is	Certificate issuer	String	<p>Name of the organisation that issued the certificate. Malaysian vaccination certificate will be issued by "Ministry of Health"</p>
t/ci	Certificate identifier	String	<p>Unique certificate identifier (UVCI) as specified in the vaccinationproof_interoperability-guidelines_en.pdf (europa.eu) The inclusion of the checksum is optional. The prefix "URN:UVCI:" may be added. Exactly 1 (one) non-empty field MUST be provided.</p> <p>Examples: "ci": "URN:UVCI:01:MY:10807843F94AEE0EE5093FBC254BD813B"</p>

Value-Set Mapping

The values to be coded into the certificate refers to the value set as per defined in the following document.

https://ec.europa.eu/health/sites/default/files/ehealth/docs/digital-green-value-sets_en.pdf

<https://github.com/ehn-dcc-development/ehn-dcc-schema/blob/release/1.3.0/valuesets/>

Process Flow

The process flow to create digital signature for the health certificate is outlined in Figure 1 below.

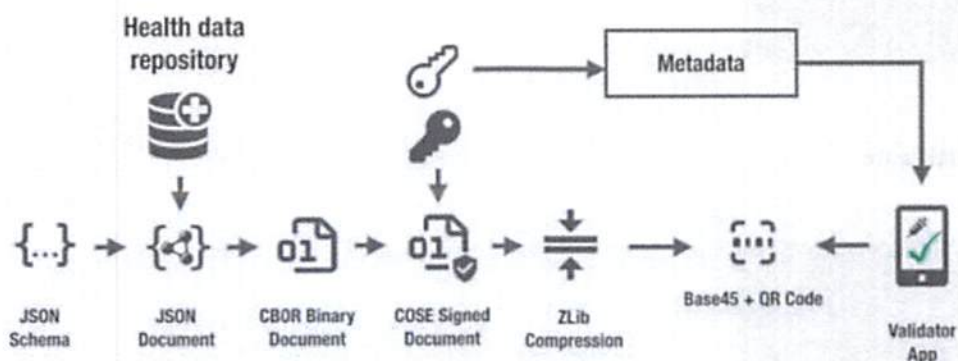


Figure 1: Process flow of signing

The diagram above shows the process flow of signing a health certificate.

The verifier app needs to perform the reverse operations to verify a digitally signed certificate:

- Scanning of QR Code
- Base45 Decoding
- Decompress the decoded value with ZLib
- COSE Signature Extraction
- CBOR-to-JSON Decoding
- Fetching the Signature's Public Key

- Verification of COSE Signature with Public Key

For details of how to process and verify the signed certificate, kindly refer to https://ec.europa.eu/health/sites/default/files/ehealth/docs/digital-green-certificates_v3_en.pdf

Sample QR

Vaccination Certificate



Test Certificate



Public Key Directory

Malaysia Public Key Directory will be published at the following URL.

URL: <https://vxcert.moh.gov.my/pkd/my/v1>

HTTP Method: GET

```
{
  "country": "MY",
  "keyInfo": [{
    "x509":
    "MIICAzCCAamgAwIBAgIUETi1B6JMLHwCx1Skw0Z0Z4ILYDUwCgYIKoZIzj0EAwIwWzELMAkGA1UEBhMCTVxLzAtBgNVBAMMjk1
    hbGF5c2lhIENvdm1kMTkgQ291bnRyeSBTaWduaW5nIENBIDAxMRswGQYDVQQKDBJNaW5pc3RyeSBvZiBIZWZsdGgwHhcNMjEwMzE1
    wMDkzOTU1WhcNMjEwMzE1wMDkzOTU1WjBMMQswCQYDVQQGEwJNWTEgMB4GA1UEAwwXTWFsYX1zaWZlZGQ292aWQxOSBEU0gMDExGzA"
```