



# eHealth Network

Guidelines on

Value Sets for  
Digital Green Certificates

Version 1.0

2021-04-21

The eHealth Network is a voluntary network, set up under article 14 of Directive 2011/24/EU. It provides a platform of Member States' competent authorities dealing with eHealth.

These guidelines describe value sets to be used for coded values in the contents of Digital Green Certificates. The guidelines take into consideration the following documents:

- Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on a framework for the issuance, verification and acceptance of interoperable certificates on vaccination, testing and recovery to facilitate free movement during the COVID-19 pandemic (Digital Green Certificate): [link](#)
- EU health preparedness: A common list of COVID-19 rapid antigen tests, including those of which their test results are mutually recognised, and a common standardised set of data to be included in COVID-19 test result certificates: [link](#)
- WHO Core data set for the Smart Vaccination Certificate: [link](#)

Adopted by the eHealth Network on 21 April 2021.

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## 1 Introduction

Value Sets for the Digital Green Certificate are defined for the datasets provided in the Annex 2 of the proposed “REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on a framework for the issuance, verification and acceptance of interoperable certificates on vaccination, testing and recovery to facilitate free movement during the COVID-19 pandemic (Digital Green Certificate) COM/2021/130 final”<sup>1</sup>

### *Certificate datasets*

#### *1.Data fields to be included in the **vaccination certificate**:*

- (a) name: surname(s) and forename(s), in that order;*
- (b) date of birth;*
- (c) disease or agent targeted;*
- (d) vaccine/prophylaxis;*
- (e) vaccine medicinal product;*
- (f) vaccine marketing authorization holder or manufacturer;*
- (g) number in a series of vaccinations/doses;*
- (h) date of vaccination, indicating the date of the latest dose received;*
- (i) Member State of vaccination;*
- (j) certificate issuer;*
- (k) a unique certificate identifier.*

#### *2.Data fields to be included in the **test certificate**:*

- (a) name: surname(s) and forename(s), in that order;*
- (b) date of birth;*
- (c) disease or agent targeted;*
- (d) the type of test;*
- (e) test name (optional for NAAT test);*
- (f) test manufacturer (optional for NAAT test);*
- (g) date and time of the test sample collection;*
- (h) date and time of the test result production (optional for rapid antigen test);*
- (i) result of the test;*
- (j) testing centre or facility;*
- (k) Member State of test;*
- (l) certificate issuer;*
- (m) a unique certificate identifier.*

#### *3.Data fields to be included in the **certificate of recovery**:*

- (a) name: surname(s) and forename(s), in that order;*
- (b) date of birth;*
- (c) disease or agent the citizen has recovered from;*
- (d) date of first positive test result;*
- (e) Member State of test;*
- (f) certificate issuer;*
- (g) certificate valid from;*
- (h) certificate valid until (not more than 180 days after the date of first positive test result);*
- (i) a unique certificate identifier.*

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<sup>1</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0130>

In this document the data elements are defined in detail, which will be included in digital implementations in Europe. They serve to ensure interoperability on semantic level and will allow technical implementations for the DGC to address this issue uniformly.

Some elements are expected to be rapidly changing. To overcome this problem and allow for a timely update of implementations flexible lists are included in this section, which are defined here but the content will be presented at some other place (mainly list of RATs).

The elements are presented here in an overview. Elements can be used for the three different settings (Vaccination/Testing/Recovery) as stated in the regulation.

Not all elements of the regulation are listed here. Only elements with the necessity of semantic standardisation through coded value sets are listed.

If in national or other implementations other coded values are used (national code sets, other standards, etc.), the member state implementing a separate solutions must provide mapping to the value sets presented here to make them interoperable for the use of the realm of the EU regulation.

Translation of the coded elements into the national language are under the responsibility of the respective Member State.

For all data fields not mentioned in the following value set descriptions, encoding in UTF-8 is recommended (name, testing centre, certificate issuer). Data field containing calendar dates (date of birth, date of vaccination, date of first positive test result, certificate validity dates) are recommended to be encoded following the ISO 8601 (Complete date, without time for date of birth, date of vaccination, date of first positive test result, certificate validity dates; Complete date, with time for date fields for test sample collection and test result production in certificate 2).

## 2 Value Sets for the Digital Green Certificates

### 2.1 Disease or agent targeted / Disease or agent the citizen has recovered from

- Preferred Code System: SNOMED CT
- Name of the Value Set: Disease or agent
- Date: 19 Apr 2021
- URL:
- Version: 1.0
- To be used in certificate 1, 2 and 3

Code	Display	Code System name	Code System URL	Code System OID	Code System version
840539006	COVID-19	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	2021-01-31

To be extended as new concepts representing genetic variants of the SARS-CoV-2 are released and if the use case requires them to be used.

Countries using ICD coding in their systems should map the respective ICD-codes to this single SNOMED CT code. ICD-10 codes used might be such as U07.1, U07.2 or U11.9.

## 2.2 Vaccine/prophylaxis

- Preferred Code System: SNOMED CT or ATC Classification
- Name of the Value Set: Vaccine
- Date: 19 Apr 2021
- URL:
- Version: 1.0
- To be used in certificate 1

Code	Display	Code System name	Code System URL	Code System OID	Code System version
1119305005	SARS-CoV-2 antigen vaccine	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	2021-01-31
1119349007	SARS-CoV-2 mRNA vaccine	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	2021-01-31
J07BX03	covid-19 vaccines	Anatomical Therapeutic Chemical Classification System	<a href="http://www.whocc.no/atc">http://www.whocc.no/atc</a>	2.16.840.1.113883.6.73	2021-01

The code from the ATC can be used for vaccines that are neither an antigen nor an mRNA vaccine or in cases where this information is not known.

## 2.3 Vaccine medicinal product

(More info on COVID-19 vaccines [here](#))

- Preferred Code System: Union Register of medicinal products or [Vaccine medicinal products not centrally authorized in the EU](#)
- Name of the Value Set: Medicinal product
- Date: 19 Apr 2021
- URL:
- Version: 1.0
- To be used in certificate 1

Code	Display	Code System name	Code System URL	Code System OID	Code System version
EU/1/20/1528	Comirnaty	Union Register of medicinal products	<a href="https://ec.europa.eu/health/documents/community-register/html/">https://ec.europa.eu/health/documents/community-register/html/</a>	-	
EU/1/20/1507	COVID-19 Vaccine Moderna	Union Register of medicinal products	<a href="https://ec.europa.eu/health/documents/community-register/html/">https://ec.europa.eu/health/documents/community-register/html/</a>	-	

EU/1/21/1529	Vaxzevria	Union Register of medicinal products	<a href="https://ec.europa.eu/health/documents/community-register/html/">https://ec.europa.eu/health/documents/community-register/html/</a>	-	
EU/1/20/1525	COVID-19 Vaccine Janssen	Union Register of medicinal products	<a href="https://ec.europa.eu/health/documents/community-register/html/">https://ec.europa.eu/health/documents/community-register/html/</a>	-	
<i>CVnCoV</i>	CVnCoV	Vaccine medicinal products not centrally authorized in the EU in rolling review by EMA		-	1.0
<i>NVX-CoV2373</i>	NVX-CoV2373	Vaccine medicinal products not centrally authorized in the EU in rolling review by EMA		-	1.0
<i>Sputnik-V</i>	Sputnik V	Vaccine medicinal products not centrally authorized in the EU in rolling review by EMA		-	1.0
<i>Convidecia</i>	Convidecia	Vaccine medicinal products not centrally authorized in the EU		-	1.0
<i>EpiVacCorona</i>	EpiVacCorona	Vaccine medicinal products not centrally authorized in the EU		-	1.0
<i>BBIBP-CorV</i>	BBIBP-CorV	Vaccine medicinal products not centrally authorized in the EU		-	1.0
<i>Inactivated-SARS-CoV-2-Vero-Cell</i>	Inactivated SARS-CoV-2 (Vero Cell)	Vaccine medicinal products not centrally authorized in the EU		-	1.0
<i>CoronaVac</i>	CoronaVac	Vaccine medicinal products not centrally authorized in the EU		-	1.0
<i>Covaxin</i>	Covaxin (also known as BBV152 A, B, C)	Vaccine medicinal products not centrally authorized in the EU		-	1.0

To be extended as vaccines are approved. May be complemented by national registration codes for vaccines, which do not have EMA registration. In such case, include name of vaccine in QR-code

## 2.4 Vaccine marketing authorization holder or Vaccine manufacturer

- Preferred Code System: Organisation code from EMA (SPOR-system for ISO IDMP) or [Vaccine Manufacturers not in OMS](#)
- Name of the Value Set: Vaccine marketing authorization holder or manufacturer
- Date: 19 Apr 2021
- URL:
- Version: 1.0
- To be used in certificate 1

Code	Display	Code System name	Code System URL	Code System OID	Code System version
ORG-10001699	AstraZeneca AB	EMA SPOR-Organisations Management System	<a href="https://spor.ema.europa.eu/v1/organisation_s">https://spor.ema.europa.eu/v1/organisation_s</a>	2.16.840.1.113 883.3.6905.4	
ORG-100030215	Biontech Manufacturing GmbH	EMA SPOR-Organisations Management System	<a href="https://spor.ema.europa.eu/v1/organisation_s">https://spor.ema.europa.eu/v1/organisation_s</a>	2.16.840.1.113 883.3.6905.4	
ORG-10001417	Janssen-Cilag International	EMA SPOR-Organisations Management System	<a href="https://spor.ema.europa.eu/v1/organisation_s">https://spor.ema.europa.eu/v1/organisation_s</a>	2.16.840.1.113 883.3.6905.4	
ORG-100031184	Moderna Biotech Spain S.L.	EMA SPOR-Organisations Management System	<a href="https://spor.ema.europa.eu/v1/organisation_s">https://spor.ema.europa.eu/v1/organisation_s</a>	2.16.840.1.113 883.3.6905.4	
ORG-10006270	Curevac AG	EMA SPOR-Organisations Management System	<a href="https://spor.ema.europa.eu/v1/organisation_s">https://spor.ema.europa.eu/v1/organisation_s</a>	2.16.840.1.113 883.3.6905.4	
ORG-100013793	CanSino Biologics	EMA SPOR-Organisations Management System	<a href="https://spor.ema.europa.eu/v1/organisation_s">https://spor.ema.europa.eu/v1/organisation_s</a>	2.16.840.1.113 883.3.6905.4	
ORG-100020693	China Sinopharm International Corp. - Beijing location	EMA SPOR-Organisations Management System	<a href="https://spor.ema.europa.eu/v1/organisation_s">https://spor.ema.europa.eu/v1/organisation_s</a>	2.16.840.1.113 883.3.6905.4	
ORG-100010771	Sinopharm Weiqida Europe Pharmaceutical s.r.o. - Prague location	EMA SPOR-Organisations Management System	<a href="https://spor.ema.europa.eu/v1/organisation_s">https://spor.ema.europa.eu/v1/organisation_s</a>	2.16.840.1.113 883.3.6905.4	



ORG-100024420	Sinopharm Zhijun (Shenzhen) Pharmaceutical Co. Ltd. - Shenzhen location	EMA SPOR-Organisations Management System	<a href="https://spor.ema.europa.eu/v1/organisation">https://spor.ema.europa.eu/v1/organisation</a>	2.16.840.1.113 883.3.6905.4	
ORG-100032020	Novavax CZ AS	EMA SPOR-Organisations Management System	<a href="https://spor.ema.europa.eu/v1/organisation">https://spor.ema.europa.eu/v1/organisation</a>	2.16.840.1.113 883.3.6905.4	
Gamaleya-Research-Institute	Gamaleya Research Institute	Vaccine Manufacturers not in OMS		-	1.0
Vector-Institute	Vector Institute	Vaccine Manufacturers not in OMS		-	1.0
Sinovac-Biotech	Sinovac Biotech	Vaccine Manufacturers not in OMS		-	1.0
Bharat-Biotech	Bharat Biotech	Vaccine Manufacturers not in OMS		-	1.0

To be extended as vaccines are approved. May be complemented by national registration codes for vaccines, which do not have EMA registration. In such case, include name of vaccine in QR-code.

## 2.5 Number in a series of vaccinations / doses

To be used in certificate 1.

Two fields:

1. Number of dose administered in a cycle
2. Number of expected doses for a complete cycle (specific for a person at the time of administration)

e.g. 1/1, 2/2 will be presented as completed; including the option 1/1 for vaccines including two doses, but for which protocols recommend one dose in citizens that were diagnosed with COVID-19 in the last 6 months. Cycles might change in recommended number. They should be reflected at the time of the latest vaccination. E.g. if a specific vaccine will require a third shot (booster) at the time of the latest administered shot the second field number should reflect this (for example 2/3, 3/3 etc.).

## 2.6 Member State of vaccination/ Member State of Test

The term “Member State” should be understood in the sense of countries covered by the two regulations relevant for digital green certificates, as well as third countries with whom exchanges can be organized based on an adequacy decision.

- Preferred Code System: ISO 3166 Country Codes (2-letter codes)
- Name of the Value Set: Member State
- Date: 19 Apr 2021
- URI:
- Version: 4.0.1
- To be used in certificate 1, 2 and 3

Value Set content: the complete list of 2-letter codes, available as a value set defined in FHIR (<http://hl7.org/fhir/ValueSet/iso3166-1-2>)

Defining URL:	<a href="http://hl7.org/fhir/ValueSet/iso3166-1-2">http://hl7.org/fhir/ValueSet/iso3166-1-2</a>
Version:	4.0.1
Name:	ISO3166-1-2
Title:	ISO 3166 Part 1: 2 Letter Codes
Definition:	This value set defines the ISO 3166 Part 1 2-letter codes
OID:	(for OID based terminology systems)
Source Resource	<a href="#">XML</a> / <a href="#">JSON</a>

## 2.7 Type of test

- Preferred Code System: LOINC
- Name of the Value Set: Type of test
- Date: 19 Apr 2021
- URL:
- Version: 1.0
- To be used in certificate 2

Code	Display	Code System name	Code System URL	Code System OID	Code System version
<a href="#">LP6464-4</a>	Nucleic acid amplification with probe detection	LOINC	<a href="http://loinc.org">http://loinc.org</a>	2.16.840.1.113883.6.1	2.69
<a href="#">LP217198-3</a>	Rapid immunoassay	LOINC	<a href="http://loinc.org">http://loinc.org</a>	2.16.840.1.113883.6.1	2.69

The codes in this Value Set are selected to represent the NAAT and RAT test types as expressed in the regulation. The match between the current codes and the use case as

described in the regulation is not perfect. The eHealth Network is working with the standards development organizations to provide more exact codes in the future.

## 2.8 Manufacturer and commercial name of the test used (optional for NAAT test)

- Preferred Code System: List from the HSC of Rapid Antigen Tests as maintained by the JRC (COVID-19 In Vitro Diagnostic Devices and Test Methods Database)
- Name of the Value Set: Test name and manufacturer
- Date: 19 Apr 2021
- URL:
- Version: 1.0
- To be used in certificate 2

The content of the Value Set will include the selection of rapid antigen test as listed in the common and updated list of COVID-19 rapid antigen tests, established on the basis of Council Recommendation 2021/C 24/01 and agreed by the Health Security Committee. The list is maintained by the JRC in the COVID-19 In Vitro Diagnostic Devices and Test Methods Database at: <https://covid-19-diagnostics.jrc.ec.europa.eu/devices/hsc-common-recognition-rat>

For this code system, the following elements from the JSON file at shall be used: the code of the concept is provided in id\_device, the display name uses manufacturer.name and commercial\_name, the version of the code system uses extracted\_on. The URI to be included is <https://covid-19-diagnostics.jrc.ec.europa.eu/devices>

## 2.9 Result of the test

- Preferred Code System: SNOMED CT
- Name of the Value Set: Result
- Date: 14 Apr 2021
- URL:
- Version: 1.0
- To be used in certificate 2

Code	Display	Code System name	Code System URL	Code System OID	Code System version
260415000	Not detected	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	2021-01-31
260373001	Detected	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	2021-01-31

Additional values (like undetermined) might be added, if the use cases do require this in the future.


## Annex A Elements that might be relevant in the realm of vaccination and testing data set, but are not included in the DGC

This section lists elements that have been mentioned in Data sets for vaccination certificates in the use case of continuity of care or in other testing scenarios.

### A.1 Administrative gender

- Preferred Code System: HL7
- Name of the Value Set:
- Date:
- URL:
- Version:

Value Set content → the Value Set defined in FHIR (<http://hl7.org/fhir/ValueSet/administrative-gender>).


Defining URL:	<a href="http://hl7.org/fhir/ValueSet/administrative-gender">http://hl7.org/fhir/ValueSet/administrative-gender</a>	
Version:	4.0.1	
Name:	AdministrativeGender	
Title:	AdministrativeGender	
Definition:	The gender of a person used for administrative purposes.	
Committee:	<a href="#">Patient Administration</a>  Work Group	
OID:	2.16.840.1.113883.4.642.3.1 (for OID based terminology systems)	
Source Resource	<a href="#">XML</a> / <a href="#">JSON</a>	
<b>Code</b>	<b>Display</b>	<b>Definition</b>
<a href="#">male</a>	Male	Male.
<a href="#">female</a>	Female	Female.
<a href="#">other</a>	Other	Other.
<a href="#">unknown</a>	Unknown	Unknown.

### A.2 Type of Identifier

- Preferred Code System: HL7
- Name of the Value Set:
- Date:
- URL: <https://www.hl7.org/fhir/valueset-identifier-type.html>
- Version: 4.0.1

Value Set content → the Value Set defined in FHIR (extended)

Defining URL:	<a href="https://www.hl7.org/fhir/valueset-identifier-type.html">https://www.hl7.org/fhir/valueset-identifier-type.html</a>
Version:	4.0.1

Name:	Identifier Type Codes			
Title:	IdentifierType			
Definition:	A coded type for an identifier that can be used to determine which identifier to use for a specific purpose.			
Committee:	<a href="#">Vocabulary</a>  Work Group			
OID:	2.16.840.1.113883.4.642.3.45			
Source Resource				
Code	Display	Definition	Code System URL	Note
PPN	Passport	Passport number	<a href="http://terminology.hl7.org/CodeSystem/v2-0203">http://terminology.hl7.org/CodeSystem/v2-0203</a>	
NNxxx	National Person Identifier	National Person Identifier where the xxx is the ISO table 3166 3-character (alphabetic) country code.	<a href="http://terminology.hl7.org/CodeSystem/v2-0203">http://terminology.hl7.org/CodeSystem/v2-0203</a>	example: NNCZE (National ID number for the Czech Republic)
CZ	Citizenship Card	A number assigned by a person's country of residence to identify a person's citizenship.	<a href="http://terminology.hl7.org/CodeSystem/v2-0203">http://terminology.hl7.org/CodeSystem/v2-0203</a>	
HC	Health Card Number	Health Card Number	<a href="http://terminology.hl7.org/CodeSystem/v2-0203">http://terminology.hl7.org/CodeSystem/v2-0203</a>	EHIC Card number
NI	National unique individual identifier	National unique individual identifier	<a href="http://terminology.hl7.org/CodeSystem/v2-0203">http://terminology.hl7.org/CodeSystem/v2-0203</a>	Could be used for National insurance number
MB	Member Number	An identifier for the insured of an insurance policy (this insured always has a subscriber), usually assigned by the insurance carrier.	<a href="http://terminology.hl7.org/CodeSystem/v2-0203">http://terminology.hl7.org/CodeSystem/v2-0203</a>	Another possibility
NH	National Health Plan Identifier	National Health Plan Identifier	<a href="http://terminology.hl7.org/CodeSystem/v2-0203">http://terminology.hl7.org/CodeSystem/v2-0203</a>	Another candidate. Class: Insurance Used for the UK NHS national identifier.

### A.3 Sample origin

- Preferred Code System: SNOMED CT GPS
- Name of the Value Set:
- Date:
- URL:
- Version:

Code	Display	Code System name	Code System URL	Code System OID	Code System version
<a href="#">258500001</a>	Nasopharyngeal swab	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	
<a href="#">461911000124106</a>	Oropharyngeal swab	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	
<a href="#">472881004</a>	Pharyngeal swab	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	
<a href="#">472901003</a>	Swab from nasal sinus	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	
<a href="#">119342007</a>	Saliva specimen	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	
<a href="#">119297000</a>	Blood specimen	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	
<a href="#">119361006</a>	Plasma specimen	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	
<a href="#">119364003</a>	Serum specimen	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	
<a href="#">122592007</a>	Acellular blood (serum or plasma) specimen	SNOMED CT	<a href="http://snomed.info/sct">http://snomed.info/sct</a>	2.16.840.1.113883.6.96	

## Annex B JSON schema

DGC.Core.Types.schema.json

```
{
  "$schema": "https://json-schema.org/draft-07/schema",
  "$id": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json",
  "title": "EU DGC",
  "description": "EU Digital Green Certificate Core Data Types",
  "$defs": {
    "dob_valid_date_range": {
      "description": "Date type ISO 8601 - date part only, restricted to range 1900-2099",
      "type": "string",
      "pattern": "[19|20][0-9][0-9]-(0[1-9]|1[0-2])-([0-2][1-9]|3[0|1])"
    },
    "dose_posint": {
      "description": "Dose Number / Total doses in Series: positive integer, range : [1,9]",
      "type": "integer",
      "minimum": 1,
      "maximum": 9
    },
    "country_vt": {
      "description": "Country of Vaccination / Test, ISO 3166 where possible",
      "type": "string",
      "pattern": "[A-Z]{1,10}"
    },
    "issuer": {
      "description": "Certificate Issuer",
      "type": "string",
      "maxLength": 50
    },
    "person_name": {
      "description": "Person name: Surname(s), forename(s) - in that order",
      "required": [
        "_fn", "_gn"
      ],
      "type": "object",
      "properties": {
        "fn": {
          "title": "Family name",
          "description": "The family name(s) of the person addressed in the certificate",
          "type": "string",
          "maxLength": 50,
          "examples": [
            "Červenková Panklová"
          ]
        }
      }
    }
  }
}
```

```

    ]
  },
  "_fn": {
    "title": "Standardised family name",
    "description": "The family name(s) of the person transliterated",
    "type": "string",
    "maxLength": 50
  },
  "gn": {
    "title": "Given name",
    "description": "The given name(s) of the person addressed in the certificate",
    "type": "string",
    "maxLength": 50,
    "examples": [
      "Jiřina Alena"
    ]
  },
  "_gn": {
    "title": "Standardised given name",
    "description": "The given name(s) of the person transliterated",
    "type": "string",
    "maxLength": 50
  }
},
"certificate_id": {
  "description": "Certificate Identifier, UVCII",
  "type": "string",
  "maxLength": 50,
  "unique": true
}
}
}

```

## DGC.ValueSets.schema.json

```

{
  "$schema": "https://json-schema.org/draft-07/schema",
  "$id": "https://ec.europa.eu/dgc/DGC.ValueSets.schema.json",
  "title": "EU DGC",
  "description": "EU Digital Green Certificate Value Set Data Types",
  "$defs": {
    "disease-agent-targeted": {
      "description": "EU eHealthNetwork: Value Sets for Digital Green Certificates . version 1.0, 2021-04-16, section 2.1",
      "type": "object",
      "required": ["code", "system"],
      "oneOf": [

```



```

        {"code": { "const": "840539006"}, "system": { "const": "2.16.840.1.113883.
6.96" }}, "version": {"const": "2021-01-31"}}
    ]
},
"vaccine-prophylaxis": {
    "description": "EU eHealthNetwork: Value Sets for Digital Green Certificates
. version 1.0, 2021-04-16, section 2.2",
    "type": "object",
    "required": ["code"],
    "oneOf": [
        { "code": { "const": "1119305005"}},
        { "code": { "const": "1119349007"}},
        { "code": { "const": "J07BX03"}}
    ]
},
"vaccine-medicinal-product": {
    "description": "EU eHealthNetwork: Value Sets for Digital Green Certificates
. version 1.0, 2021-04-16, section 2.3",
    "type": "object",
    "required": ["code"],
    "oneOf": [
        { "code": { "const": "EU/1/20/1528"}},
        { "code": { "const": "EU/1/20/1507"}},
        { "code": { "const": "EU/1/21/1529"}},
        { "code": { "const": "EU/1/20/1525"}},
        { "code": { "const": "CVnCoV"}},
        { "code": { "const": "NVX-CoV2373"}},
        { "code": { "const": "Sputnik-V"}},
        { "code": { "const": "Convidecia"}},
        { "code": { "const": "EpiVacCorona"}},
        { "code": { "const": "BBIBP-CorV"}},
        { "code": { "const": "Inactivated-SARS-CoV-2-Vero-Cell"}},
        { "code": { "const": "CoronaVac"}},
        { "code": { "const": "Covaxin"}}
    ]
},
"vaccine-mah-manf": {
    "description": "EU eHealthNetwork: Value Sets for Digital Green Certificates
. version 1.0, 2021-04-16, section 2.4",
    "type": "object",
    "required": ["code"],
    "oneOf": [
        { "code": { "const": "ORG-100001699"}},
        { "code": { "const": "ORG-100030215"}},
        { "code": { "const": "ORG-100001417"}},
        { "code": { "const": "ORG-100031184"}},
        { "code": { "const": "ORG-100006270"}},
        { "code": { "const": "ORG-100013793"}},
        { "code": { "const": "ORG-100020693"}}
    ]
}

```

```

    { "code": { "const": "ORG-100020693" }},
    { "code": { "const": "ORG-100010771" }},
    { "code": { "const": "ORG-100024420" }},
    { "code": { "const": "ORG-100032020" }},
    { "code": { "const": "Gamaleya-Research-Institute" }},
    { "code": { "const": "Vector-Institute" }},
    { "code": { "const": "Sinovac-Biotech" }},
    { "code": { "const": "Bharat-Biotech" }}
  ]
},
"test-manf" : {
  "description": "EU eHealthNetwork: Value Sets for Digital Green Certificates
. version 1.0, 2021-04-16, section 2.8",
  "type": "object",
  "required": ["code"],
  "oneOf": [
    { "code": {"const": "1232" }},
    { "code": {"const": "1304" }},
    { "code": {"const": "1065" }},
    { "code": {"const": "1331" }},
    { "code": {"const": "1484" }},
    { "code": {"const": "1242" }},
    { "code": {"const": "1223" }},
    { "code": {"const": "1173" }},
    { "code": {"const": "1244" }},
    { "code": {"const": "1360" }},
    { "code": {"const": "1363" }},
    { "code": {"const": "1767" }},
    { "code": {"const": "1333" }},
    { "code": {"const": "1268" }},
    { "code": {"const": "1180" }},
    { "code": {"const": "1481" }},
    { "code": {"const": "1162" }},
    { "code": {"const": "1271" }},
    { "code": {"const": "1341" }},
    { "code": {"const": "1097" }},
    { "code": {"const": "1489" }},
    { "code": {"const": "344" }},
    { "code": {"const": "345" }},
    { "code": {"const": "1218" }},
    { "code": {"const": "1278" }},
    { "code": {"const": "1343" }}
  ]
},
"test-result": {
  "description": "EU eHealthNetwork: Value Sets for Digital Green Certificates
. version 1.0, 2021-04-16, section 2.9",
  "type": "object",
  "required": ["code"],

```

```
    "oneOf": [  
      { "code": { "const": "260415000"}},  
      { "code": { "const": "260373001"}}  
    ]  
  }  
}  
}
```

### DGC.Types.schema.json

```
{  
  "$schema": "https://json-schema.org/draft-07/schema",  
  "$id": "https://ec.europa.eu/dgc/DGC.Types.schema.json",  
  "title": "EU DGC",  
  "description": "EU Digital Green Certificate Composite Data Types",  
  "$defs": {  
    "dsc": {  
      "type": "string",  
      "maxLength": 16,  
      "contentType": "text/plain"  
    },  
    "vaccination-entry": {  
      "description": "Vaccination Entry",  
      "required": [  
        "tg",  
        "vp",  
        "mp",  
        "ma",  
        "dn",  
        "sd",  
        "dt",  
        "co",  
        "is",  
        "ci"  
      ],  
      "type": "object",  
      "properties": {  
        "tg": {  
          "description": "disease or agent targeted",  
          "$ref": "https://ec.europa.eu/dgc/DGC.ValueSets.schema.json#/$defs/disease-agent-targeted"  
        },  
        "vp": {  
          "description": "vaccine or prophylaxis",  
          "$ref": "https://ec.europa.eu/dgc/DGC.ValueSets.schema.json#/$defs/vaccine-prophylaxis"  
        },  
        "mp": {
```

```

        "description": "vaccine medicinal product",
        "$ref": "https://ec.europa.eu/dgc/DGC.ValueSets.schema.json#/$defs/vaccine-medicinal-product"
    },
    "ma": {
        "description": "Marketing Authorization Holder - if no MAH present, then manufacturer",
        "$ref": "https://ec.europa.eu/dgc/DGC.ValueSets.schema.json#/$defs/vaccine-mah-manf"
    },
    "dn": {
        "description": "Dose Number",
        "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#dose_posint"
    },
    "sd": {
        "description": "Total Series of Doses",
        "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#dose_posint"
    },
    "dt": {
        "description": "Date of Vaccination",
        "type": "string",
        "format": "date",
        "$comment": "SemanticSG: constrain to specific date range?"
    },
    "co": {
        "description": "Country of Vaccination",
        "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#country_vt"
    },
    "is": {
        "description": "Certificate Issuer",
        "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#issuer"
    },
    "ci": {
        "description": "Unique Certificate Identifier: UVCID",
        "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#/certificate_id"
    }
},
"test_entry": {
    "description": "Test Entry",
    "required": [
        "tg",
        "tt",
        "sc",
        "tr",
        "tc",

```

```

    "co",
    "is",
    "ci"
  ],
  "type": "object",
  "properties": {
    "tg": {
      "$ref": "https://ec.europa.eu/dgc/DGC.ValueSets.schema.json#/$defs/disease-agent-targeted"
    },
    "tt": {
      "description": "Type of Test",
      "type": "string"
    },
    "nm": {
      "description": "Test Name",
      "type": "string"
    },
    "ma": {
      "description": "Test Manufacturer",
      "$ref": "https://ec.europa.eu/dgc/DGC.ValueSets.schema.json#/$defs/test-manf"
    },
    "sc": {
      "description": "Date/Time of Sample Collection",
      "type": "string",
      "format": "date-time"
    },
    "dr": {
      "description": "Date/Time of Test Result",
      "type": "string",
      "format": "date-time"
    },
    "tr": {
      "description": "Test Result",
      "$ref": "https://ec.europa.eu/dgc/DGC.ValueSets.schema.json#/$defs/test-result"
    },
    "tc": {
      "description": "Testing Centre",
      "type": "string",
      "maxLength": 50
    },
    "co": {
      "description": "Country of Test",
      "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#country_vt"
    },
    "is": {
      "description": "Certificate Issuer",

```

```

        "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#issuer"
    },
    "ci": {
        "description": "Unique Certificate Identifier, UVCID",
        "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#/certificate_id"
    }
},
"recovery_entry": {
    "description": "Recovery Entry",
    "required": [
        "tg",
        "fr",
        "co",
        "is",
        "df",
        "du",
        "ci"
    ],
    "type": "object",
    "properties": {
        "tg": {
            "$ref": "https://ec.europa.eu/dgc/DGC.ValueSets.schema.json#/$defs/disease-agent-targeted"
        },
        "fr": {
            "description": "ISO 8601 Date of First Positive Test Result",
            "type": "string",
            "format": "date"
        },
        "co": {
            "description": "Country of Test",
            "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#country_vt"
        },
        "is": {
            "description": "Certificate Issuer",
            "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#issuer"
        },
        "df": {
            "description": "ISO 8601 Date: Certificate Valid From",
            "type": "string",
            "format": "date-time",
        },
        "du": {
            "description": "Certificate Valid Until",
            "type": "string",
            "format": "date-time",
        },
    },
}

```

```

        "ci": {
            "description": "Unique Certificate Identifier, UVCI",
            "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#/certificat
e_id"
        }
    }
}
}
}
}

```

### DGC.schema.json

```

{
  "$schema": "https://json-schema.org/draft-07/schema",
  "$id": "https://ec.europa.eu/dgc/DGC.schema.json",
  "title": "EU DGC",
  "description": "EU Digital Green Certificate",
  "required": [
    "nam",
    "dob",
    "dsc"
  ],
  "type": "object",
  "properties": {
    "nam": {
      "description": "Surname(s), forename(s) - in that order",
      "type": "array",
      "entry": {
        "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#/$defs/person
_name"
      },
      "minNam": 1
    },
    "dob": {
      "description": "Date of Birth, ISO 8601",
      "$ref": "https://ec.europa.eu/dgc/DGC.Core.Types.schema.json#/$defs/dob_vali
d_date_range"
    },
    "dsc": {
      "description": "Document Signing Certificate: 8 bytes",
      "$ref": "https://ec.europa.eu/dgc/DGC.Types.schema.json#/$defs/dsc"
    },
    "v": {
      "description": "Vaccination Group",
      "type": "array",
      "entry": {
        "$ref": "https://ec.europa.eu/dgc/DGC.Types.schema.json#/$defs/vaccination
_entry"
      },
    },
  },
}

```

```
    "minEntry": 1
  },
  "t": {
    "description": "Test Group",
    "type": "array",
    "entry": {
      "$ref": "https://ec.europa.eu/dgc/DGC.Types.schema.json#/$defs/test_entry"
    },
    "minEntry": 1
  },
  "r": {
    "description": "Recovery Group",
    "type": "array",
    "entry": {
      "$ref": "https://ec.europa.eu/dgc/DGC.Types.schema.json#/$defs/recovery_en
try"
    },
    "minEntry": 1
  }
}
```