

## Future of Verifiable Health Credentials Beyond COVID-19

EU Digital COVID Certificate (EU DCC)

Joint ITU/WHO Workshop - 11 September 2023

## What is the EU DCC?

- A framework for the common issuance, verification and acceptance of interoperable vaccination, test and recovery certificates
- Verifiability: ensure authenticity, integrity and validity

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#### **Governing principles**

 Governed by the European Commission & Member States
 Equitable
 Data protection
 Privacy-preserving Secure
 Openness and transparency
 Flexible
 Actionable

## **GDPR: General Data Protection Regulation**

Regulation (EU) 2016/679, amended in 2018, lays down rules to process personal data

- Data protection = fundamental right of EU citizens
- Principles to process data  $\rightarrow$

#### Health data: special category of personal data (Art.9)

- Processing and transfer in principle prohibited; exceptions strictly regulated
- Impact on choice of technology for EU DCC and on implementation of revocation feature





#### EU DCC main components



QR code with data

Public Key Infrastructure to manage cryptographic certificates





#### EU DCC tech specs summary

Common data structure and agreement on the significance of each data field of the payload



# Common coordinated data structure is defined through the use of a **JSON schema**



Each QR code contains a **Key Identifier** 

**Aim**: harmonising representation, encoding and signing





Standardised signed **CBOR** data structure which is represented in a 2D Code





#### **Documents authentication in practice**



#### **Certificate request** The citizen requests a document from a document issuer/public entity

#### Data storage

The issuer draws the necessary information from a <u>national</u> (or regional/local) database



Storage

The citizen can store the digital document & QR code in their ewallet

#### Issuance

The document issuer/public entity issues a document (digital/paper) containing a QR code





#### **Presentation**

The citizen presents the document /certificate to a requesting entity



Verification The entity's verifier checks the authenticity, integrity and validity of the document/QR code



#### The equivalence decision process



#### Governance Framework – EU DCC

#### EU Institutions:

- Commission
- Council
- Parliament

EU/EEA experts of eHealth Network



EU Health Security Committee

Representatives of third countries

European Commission Technical experts - TSI



## Annex I – Evaluation Checklist

Available from: <a href="https://ec.europa.eu/health/ehealth/covid-19\_en">https://ec.europa.eu/health/ehealth/covid-19\_en</a>

- Collects information about a country's digital COVID certificate system, to evaluate the options for preparing an equivalence decision
- 6 chapters: country and entity, basic information, technical architecture, information included in certificates, vaccines and rapid antigen tests, interoperability options
- Send it back with sample QR codes and technical description of your system

Annex I - Evaluation checklist The gual of the checklist is to infer information aloues a digital COVD satillates system and an parameter is to avail by the country. The information is needed for realaring the systems for parameters are equivalence encounted materials (Self Checklist C	Basic information about     In Name of the system for abia's     intercorrentity with FUECC is     suggested     Countries in which the system is     used (if at a most 10 countries)     Total contained number of countries     using the same system     Gacege staggy of the system	the system	3 1  . T  -  -	3 Technical architecture 1 Technical architecture werfanding accounted in the Manage mean MV 2017 March 2020 March 2020 March 2020 March 2020 March 2020 March 2020 March 2020 March 2020 March 2020 March 2020 Mar	☐ Yes ☐ No ☐ No ☐ If selected No, <u>shertly</u> explain the main differences:
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Country submitting the	<ol> <li>Other standards used by your national system (og Smart Health Card, DIVDC, ICAO, etc)</li> </ol>		2. 0	ertificates supported by the system	Vaccination certificate Test certificate Recovery certificate
Personal (INDER)           3. Norer function           3. Norer function           4. Function           5. Provid address           5. Provid address		1		Inefficients contain a QR code encompansing elevant information (encrosed tasks, certificate tetashs, restantiat), digitally signed and suitable for <u>effine</u> workfacation. Signie workfacation means that a use of a sub- splication or octaine quarks to the workfacation splitter in not required. Verification is based on the heat of the digital signature included in the QR adde.	□ Yes ■ No If relected No, <u>shorthy</u> explain how verification is conducted;
Unariabilities     // Phone number			4. E c t S. C	incoding standard or specification used for constructing the QR code. Provide a link or include the description as an attachment. Zigital signature algorithms used by the system	



## The technical onboarding process (1)

#### **Initial contacts and self-evaluation**

- 1. Applicant Country submits the **Evaluation Checklist + sample QR codes**
- 2. Feedback of the EC + explanation of next steps **Technical Meeting**

#### **Technical screening**

- 1. Planning Call with SAP/T-Systems
- 2. Pre-requisites for onboarding: **provision of certificates** (NB-TLS (Authentication), NB-UP (upload), NB-CSCA (CSCA identification) for each screening environment)



## The technical onboarding process (2)

#### **DCC Environments: TST, ACC, PROD**

- Test environment (TST) → used to connect a test instance of country's National Backend to a test instance of the EU DCC gateway
  - Country provides certificates (TLS, UP, CSCA) via email, receives PKI certificates (DGCG-TLS (Authentication), DGCG-TA (signature for trust list), proceeds with connectivity test.
- Acceptance environment (ACC) → used for Integration Test + Quality Assurance (QR code validation)
  - Country provides and uploads certificates to circaBC, passes Integration Testing
  - Applicant Country submits Annex III Formal Request to connect to the EUDCC Gateway



## The technical onboarding process (3)

#### **DCC Environments: TST, ACC, PROD**

- 3. Production environment (PROD)  $\rightarrow$  used for operational check-up before going live
  - Exchange of certificates (as for ACC) and whitelisting, Production Readiness Questionnaire, operational check-up with TSI = upload, download and deletion of DSCs in PROD
- 4. Final onboarding confirmation: approval for Go-Live





#### **Current status**

- <u>Regulation (EU) 2021/953</u> (the EU Digital COVID Certificate regulation) expired on 30.6.2023
- On 27 June 2023, the Council of the EU adopted <u>Recommendation (EU)</u> <u>2023/1339</u> on joining the global digital health certification network established by the World Health Organization and on temporary arrangements to facilitate international travel in view of the expiry of Regulation (EU) 2021/953
- The EU DCC system will stay operational until 31 December 2023, to provide continuity while its participants are onboarding the WHO Global Digital Health Certification Network.



## **Questions?**



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