



# U.S. Digital Immigration Credentials

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**Encouraging Innovation, Ensuring  
Diversity, and Enabling a Global Ecosystem**

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# Why Digital Credentials?



U.S. Citizenship  
and Immigration  
Services

- USCIS issues high-value, authoritative credentials to immigrants and non-immigrants in the United States
- This is where the world is going, where the agency is going, and what our Customers expect when it comes to ease and convenience
- Ability to issue, renew, extend and revoke digital credentials in a standardized manner
- Complements our physical credentials; does not replace them

# Why Now?



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- Existence and maturity of open, global standards that enable our Customers to have visibility into, and control of their interactions
  - As a benefit-granting agency with global reach, using open standards to ensure broad acceptability and usage of our credentials is critical for USCIS
  - We now have multi-year experience and expertise in contributing to, supporting and learning from the open, global standards development and implementations
- Global interoperability of solutions is an important consideration to prevent technology/vendor lock-in

# USCIS Implementation Priorities

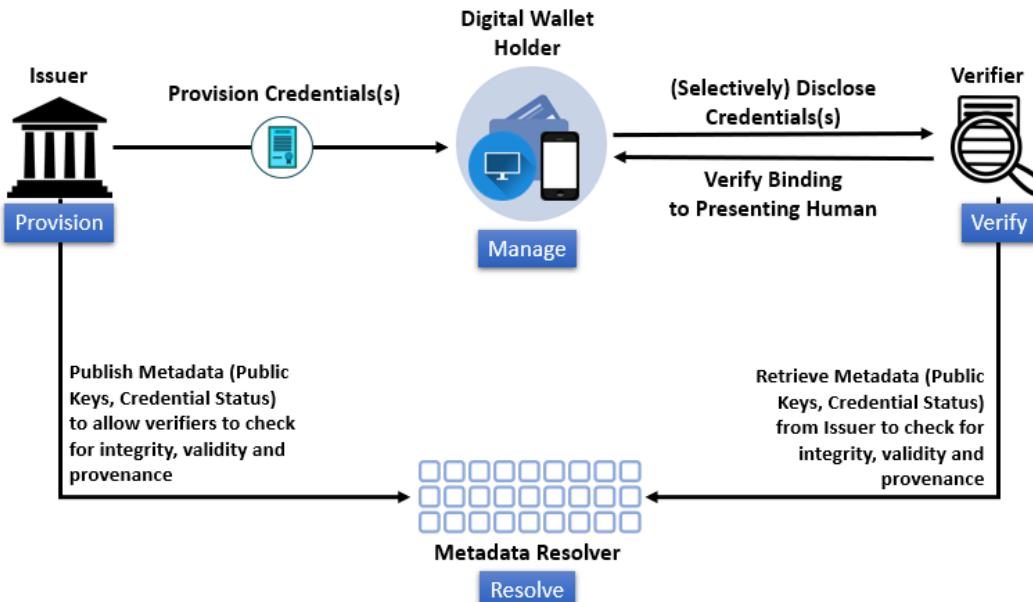
- Not a requirement; **a choice!**
  - Starting with the digital Permanent Resident Card (PRC), immigrants will be invited to request a digital version when they receive the physical credential
  - Immigrant can continue to conduct all Government transactions with their existing physical credential
- **Eliminate “phone home”** architecture/technology/implementations
- **Eliminate “back-channel” interactions** between verifiers of the credential and the issuer (USCIS) which are not visible to the credential holder
- **Support for selective disclosure** capabilities to provide the holder of the credential granular control over what information they can share and when
- Encourage and support a plurality of **independent, interoperable, standards-based implementations** to counter vendor/technology lock-in, and mitigate perverse incentives that accrue market power to entities that can result in a gatekeeper functionality between the Government and its customers



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# USCIS Implementation Standards

## W3C Verifiable Credentials & W3C Decentralized Identifiers



- The W3C VC Data Model Standard identifies an abstract component called a “Verifiable Data Registry” which in our implementation we refer to as a “Metadata (or Public Key) Resolver”
- USCIS supports and require a Bring-Your-Own-W3C-DID-in-Digital-Wallet in our implementation

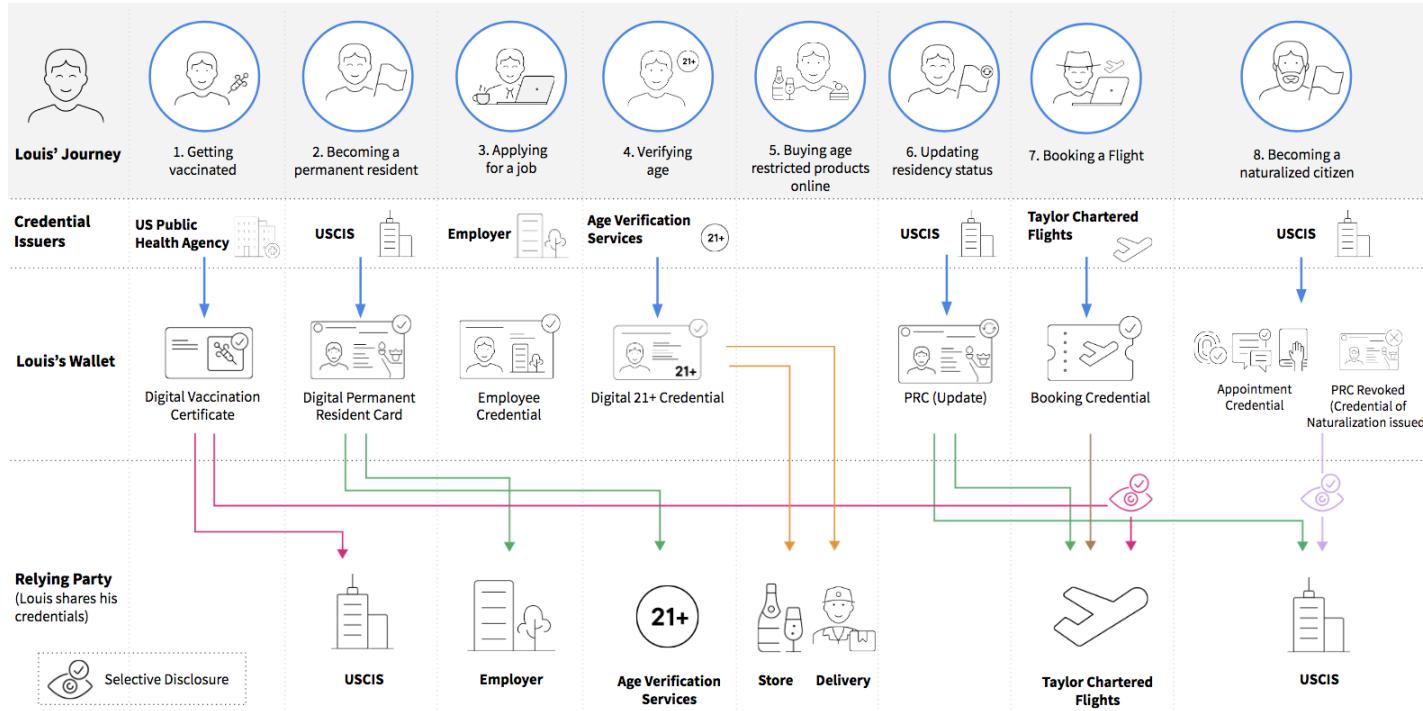
**W3C VC/DID architecture is an evolution of existing models that:**

- Enables an individual to have control over their data
- Addresses the “phone home” problem
- Provides selective disclosure capability with informed consent
- Solves the issue where an identifier serves as both entity identifier and an authenticator (i.e. Social Security Number)
- Supports global resolution of an Issuer’s identifier to its public key(s) & their retrieval
- Encourages an open ecosystem with multiple implementations to foster competition

# US Immigration Credential Ecosystem



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- Interactions between the Immigrant and Government
- Interactions between the Immigrant and the private sector

# Online or In-Person Presentation Digital Permanent Resident Card



Three screenshots of a mobile application interface. The first screenshot shows a "Privacy enhancing credential" message. The second screenshot shows a "U.S. Permanent Resident" card with details: Given name - Claude Marcelline, Birth date - 4/12/1989. The third screenshot shows a "Privacy enhancing credential" message with sections for Sex, Country of birth, USCIS #, Category, and Resident since.

## Citizenship Vocabulary v0.3

A Linked Data vocabulary for expressing attributes related to citizenship

```
"@context": [
  "https://www.w3.org/2018/credentials/v1",
  "https://w3id.org/vc-revocation-list-2020/v1",
  "https://w3id.org/citizenship/v1",
  "https://www.uscis.gov/prc/digital/v1"
],
// specify the identifier for the credential
"id": "https://vc-issuer.uscis.gov/credential/prc/83627465",
// the credential type which declares what data to expect in the credential
"type": ["VerifiableCredential", "PermanentResidentCard"],
// claims about the issuer of the credential
"issuer": "did:web:www.uscis.gov:green-card",
// alternate identifier used by the Issuer of the credential
"identifier": "83627465",
// when the credential was issued
"issuanceDate": "2019-12-03T12:19:52Z",
// when the credential will expire
"expirationDate": "2029-02-26T00:00:00Z",
// discover current status of the credential
"credentialStatus": {
  "id": "https://vc-issuer.uscis.gov/credential/prc/status/3#94567",
  "type": "RevocationList2020Status",
  "revocationListIndex": "94567",
  "revocationListCredential": "https://vc-issuer.uscis.gov/credential/prc/status/3"
},
// claims about the subject of the credential
"credentialSubject": {
  // identifier for the only subject of the credential
  "id": "https://vc-issuer.uscis.gov/did:web:d34cadc37bfef23",
  // assertions about the only subject of the credential
  "type": ["PermanentResident", "Person"],
  "givenName": "TEST",
  "familyName": "SPECIMEN",
  "gender": "M",
  "image": "data:image/png;base64,iVBORw0KGgo...kjggg==",
  "residentSince": "2015-01-01",
  "lprCategory": "C99",
  "lprNumber": "000-000-204",
  "computerClassification": "C1",
  "birthCountry": "Bahamas",
  "birthDate": "1958-08-17"
},
// digital proof to make the credential tamper-evident
"proof": {
  // the cryptographic signature suite used to generate signature
  "type": "Ed25519Signature2020",
  // the date the signature was created
  "created": "2020-01-30T03:32:15Z",
  // purpose of the proof
  "proofPurpose": "assertionMethod",
  // the identifier of the public key that can verify the signature
  "verificationMethod": "did:web:www.uscis.gov:green-card/public-key-1",
  // the digital signature value
  "jws": "eyJhbGciOiIzFZERQ51...wR2fNmAx60V14Ag"
}
```

<https://www.w3.org/TR/did-core/>

<https://www.w3.org/TR/vc-data-model/>

<https://w3c-ccg.github.io/citizenship-vocab/>

# Global Support for W3C VCs & DIDs



A screenshot of the CORDIS EU research results website. The header includes the European Commission logo and the word "CORDIS". There are tabs for "HOME", "RESULTS PACKS", "RESEARCH/EU MAGAZINES", "NEWS &amp; MEDIA", "PROJECTS &amp; RESULTS", and "ABOUT US". Below the header, there's a section titled "European Self Sovereign Identity Framework Laboratory" with tabs for "Fact Sheet", "Reporting" (which is selected), "Results", and "News &amp; Multimedia".

A screenshot of the Ministry of Health New Zealand website. The header features the MoH logo and the text "MINISTRY OF HEALTH" and "MANATŪ HĀRURU". There are navigation links for "COVID-19", "Your health", "NZ health system", "Our work", "Health statistics", and "Publications". Below the header, a breadcrumb trail shows "Home &gt; News &gt; Media releases". On the left, there's a sidebar with links for "News", "Media centre", "Media releases", "News items", and "Grey Matter newsletter". A main article is titled "Technical information published to support COVID-19 Vaccine Pass and verifiers".

Global acceptance and usage of W3C VC and DID Standards ...

- by Governments (Canada, EU, Germany, New Zealand etc.) and
- the Private Sector (Microsoft, NACS, Square/Block etc.) of ...

... interoperability standards, technologies and approaches funded, refined, used and championed by DHS over the last 7+ years

A screenshot of a Rolling Stone Culture Council article titled "Decentralized Identity: Cultivating a Tokenized Future". The article discusses the concept of decentralized identity and its potential impact. It includes a quote from Solo Ceesay: "Decentralized identity is an emerging ideology that suggests identity should be an asset only held by the individual it represents." Below the quote, there are social media sharing buttons for Facebook, Twitter, LinkedIn, Email, and a plus sign.

# US-Canada Collaboration

## USCIS & CBP <> TBS & ISED



PREVENTING FORGERY &  
COUNTERFEITING OF  
CERTIFICATES AND  
LICENSES

Other Transaction Solicitation Call  
70RSAT19R00000002

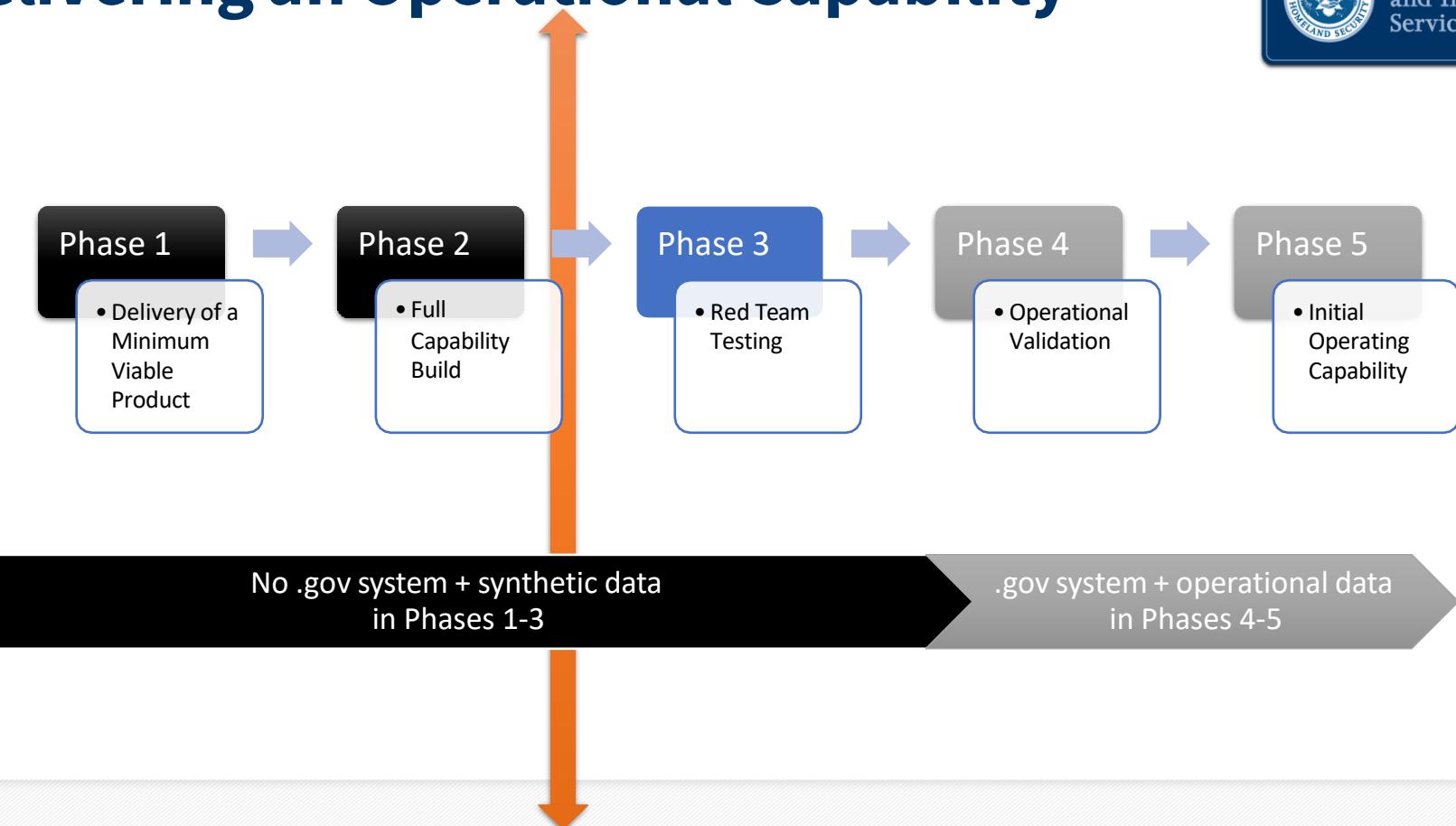


<https://canada-ca.github.io/ucvdcc/>

Opportunity to work together on:

- Approaches to accept digital credentials issued by other Countries for benefits adjudicated by USCIS
- Open and common security, privacy and interoperability baselines for digital wallets
- Enabling wallet choice and selection capabilities for individuals
- Enabling cryptographic agility in verifiable credential solutions

# Delivering an Operational Capability





*Thank  
You*