



U.S. Citizenship
and Immigration
Services



U.S. Digital Immigration Credentials

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

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U.S. Citizenship and Immigration Services

Management Directorate, Office of Intake and Document Production

Why Digital Credentials?



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- 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



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- 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

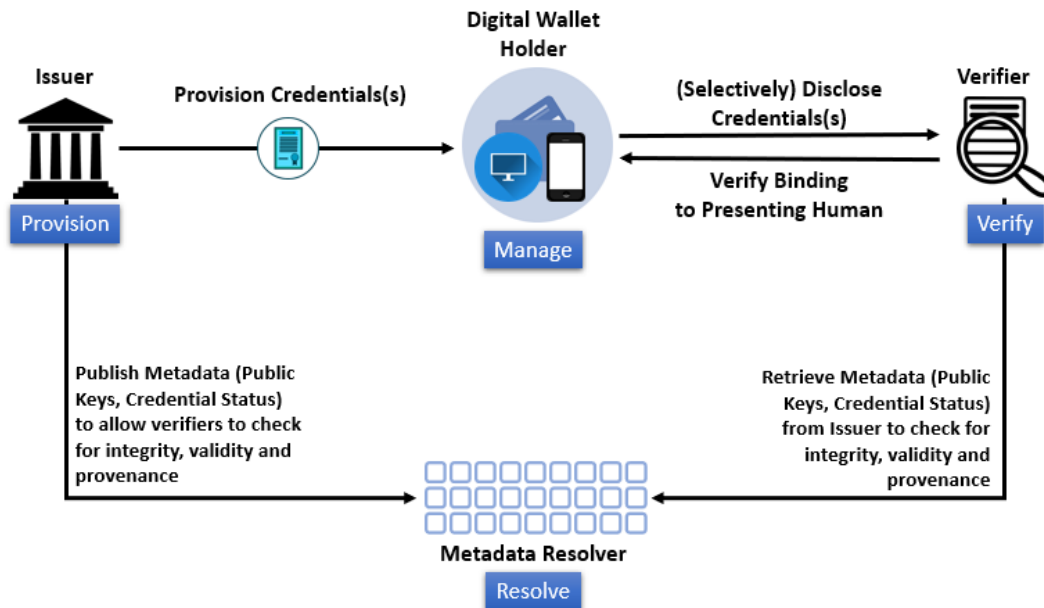


USCIS Implementation Standards

W3C Verifiable Credentials & W3C Decentralized Identifiers



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

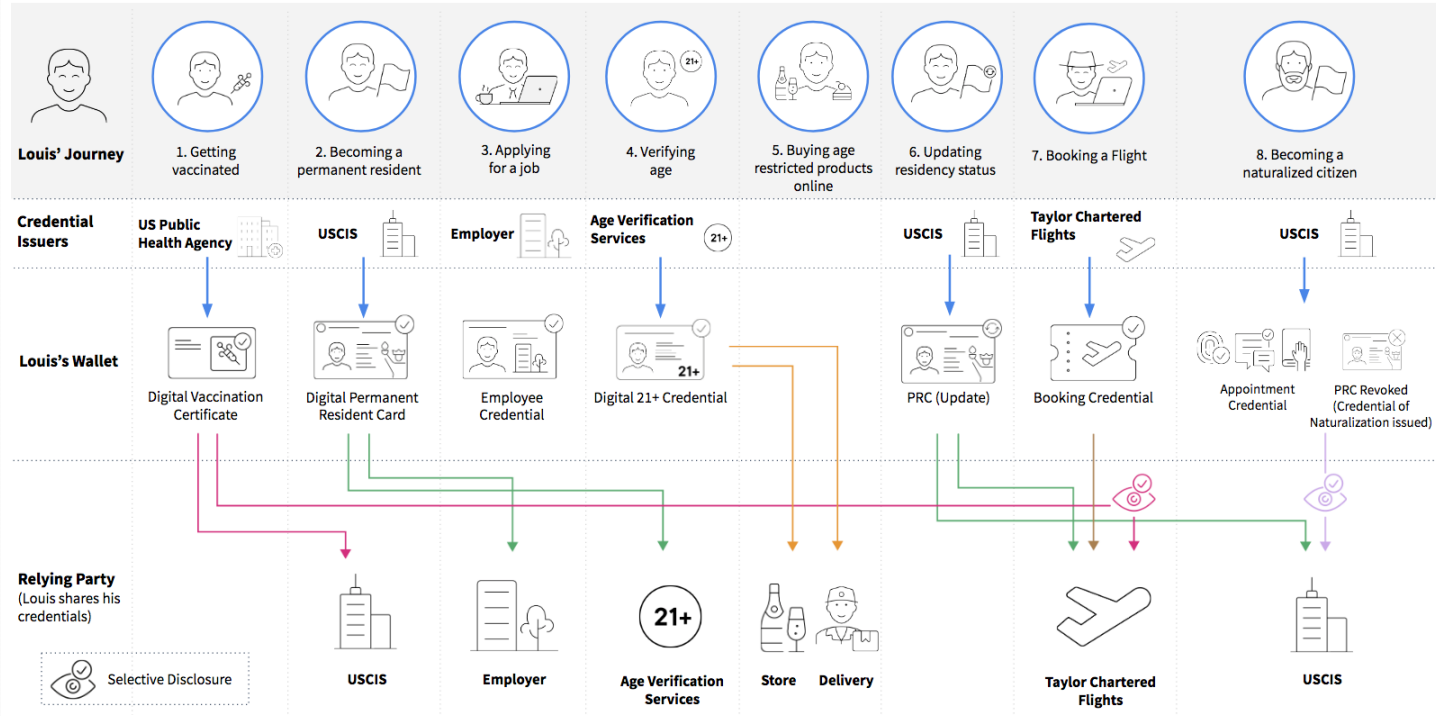
- The W3C VC Data Model Standard identifies an abstract component called a “Verifiable Data Registry” which in our implementation we refer to as a “Metadata (or Public Key) Resolver”
- USCIS supports and require a Bring-Your-Own-W3C-DID-in-Digital-Wallet in our implementation

- 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



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Privacy enhancing credential
This credential is able to selectively disclose claims.
[Learn more.](#)

U.S. Permanent Resident
Verified

Given name
Claude Marcelline

Birth date
4/12/1989

NAME
Claude Marcelline

DATE OF BIRTH
4/12/1989

SEX
F

COUNTRY OF BIRTH
Utopia

CATEGORY
IR1

USCIS #
000-000-000

RESIDENT SINCE
5/20/2018

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U.S. Permanent Resident
Verified

Given name
Claude Marcelline

Birth date
4/12/1989

The following information will not be disclosed

Sex

Country of birth

USCIS #

Category

Resident since

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U.S. Permanent Resident
Verified

Given name
Claude Marcelline

Birth date
4/12/1989

Privacy enhancing credential
This credential supports privacy preserving requests, allowing you to control the information you want to share.

Selective disclosure
Share only the required information.

Close

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Citizenship Vocabulary v0.3

A Linked Data vocabulary for expressing attributes related to citizenship



```
{
  "@context": {
    "https://www.w3.org/2018/credentials/v1",
    "https://did.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"],
  // the entity that issued 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 expires
  "expirationDate": "2028-02-26T00:00:00Z",
  // 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": "did:approved-did-method:b34ca6d37bbf723",
    // assertions about the only subject of the credential
    "type": ["PermanentResident", "Person"],
    "givenName": "TEST",
    "familyName": "SPECIMEN",
    "gender": "M",
    "image": "data:image/png;base64,iVBORw0KGgo...k3ggg==",
    "residentSince": "2015-01-01",
    "lprCategory": "C09",
    "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": "RsaSignature2018",
    // 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": "eyJhbGciOiJIUzR1bzI1NiIsInR5bGEiOiJ1b3R0eXN0aXZlIiwiaWF0Ijoi"
  }
}
```

<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



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European Self Sovereign Identity Framework Laboratory

Fact Sheet Reporting Results News & Multimedia

Periodic
Sovereign

Reporting pe Send a Tip

Summary

The core id...
1. promote...
(for request...
of existing...
2. to develo...
processes...
electronic...
3. For devei...
other's solu

It will achiev...
information...
and reprod...
or any proje...
individual bi

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Decentralized Identity: Cultivating a Tokenized Future

Decentralized identity is an emerging ideology that suggests identity should be an asset only held by the individual it represents.

By SOLO CEESEY



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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

US-Canada Collaboration

USCIS & CBP <=> TBS & ISED



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DHS S&T Silicon Valley Innovation Program (SVIP)



PREVENTING FORGERY &
COUNTERFEITING OF
CERTIFICATES AND
LICENSES

Other Transaction Solicitation Call
70RSAT19R00000002



User-Centric
Verifiable Digital
Credentials
Challenge

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

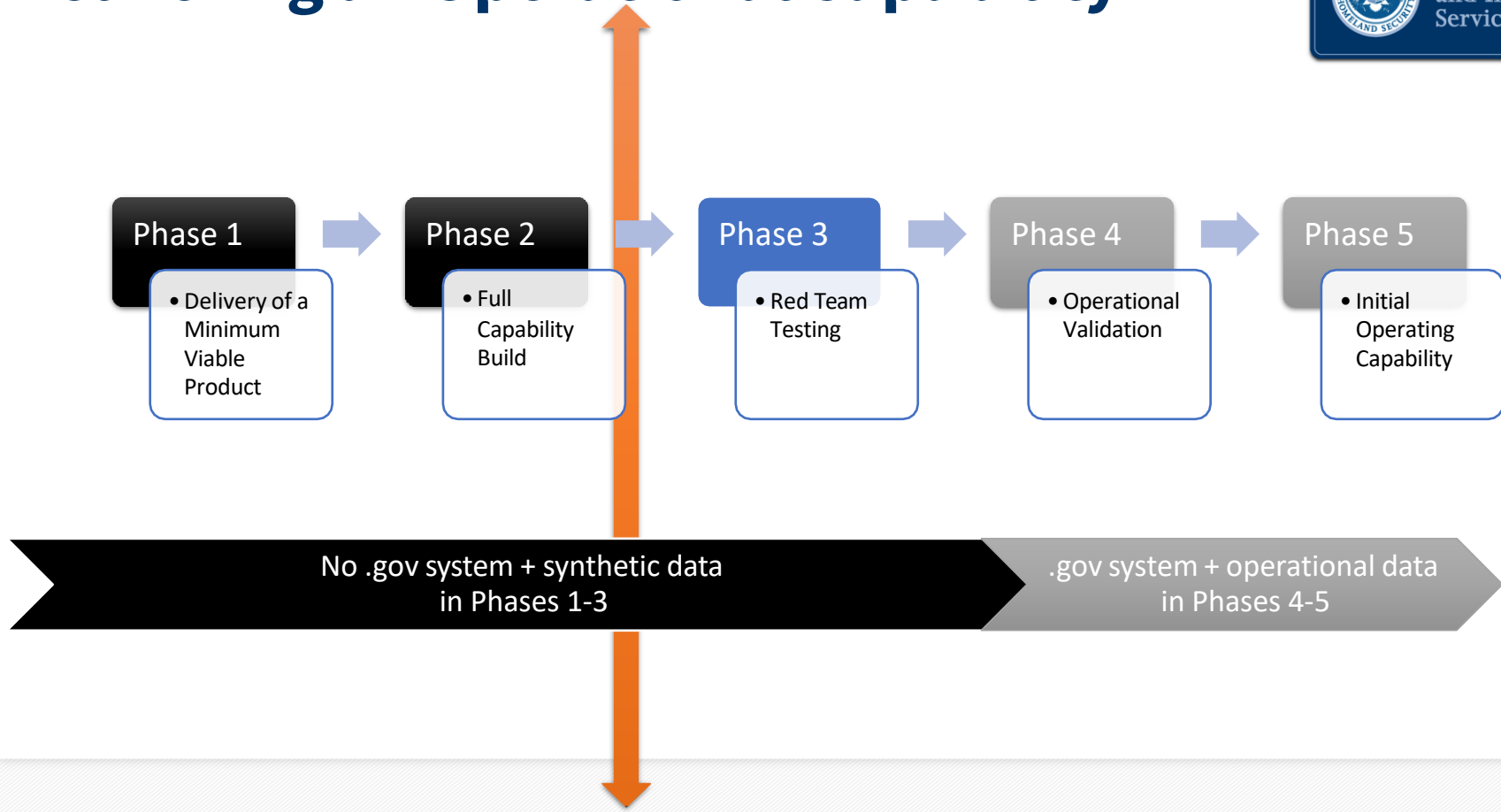
Opportunity to work together on:

- 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



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*Thank
You*