

UVCDC 2021

Record of Employment and Hire

Trust Science Inc.

1. Score Thin-file & Credit invisibles: traditionally, with dynamic scores, explainable AI and alternative data

2. Sub-prime, auto, payday, installment lending

3. Leader in the next generation of credit scoring and automated loan underwriting services

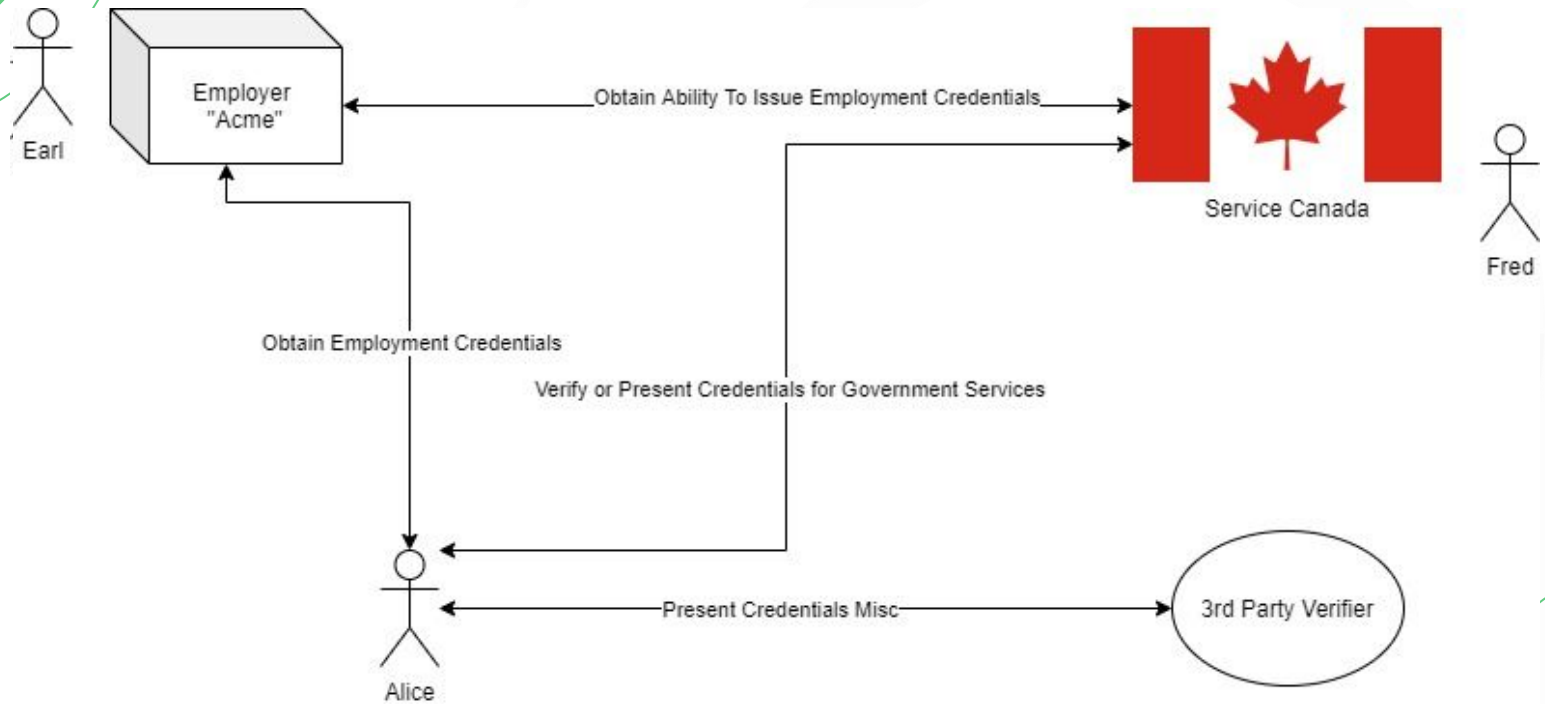
Introduce Team

- Chris Matichuk (CTO)
- Charles Lanahan
- Neil Bourgeois
- Ashley Snelgrove

Overview of Use Case

Proposal

- Simplify the process of enrolling in benefits for Canadian Citizens, Canadian Businesses and Service Canada
- Decentralized credentials for Citizenship, Business, Record of Hire (RoH) and Record of Employment (RoE)
- Citizens hold credentials in secure wallets on their mobile devices and can consent to sharing during benefit enrollment or for other general purposes



Core Problems

- Centralized authorities that require constant network connection.
- Semi-secret information (PII) that has to be protected at great cost.
- No single standard credential model that can be used across a variety of data security contexts

Industry Standards and Technologies

JSON-LD W3C VC

- W3C VC data model
- JSON-LD
- did:sov (future did:indy) method
- Ed25519Signature2018
- Future: BBS+ ([BBS+ Signatures 2020](#))

Hyperledger Indy Blockchain (Von Network)

Indy Anoncred

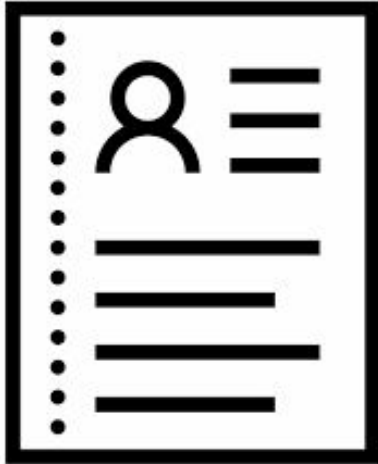
- W3C VC data model
- did:sov (future did:indy)
- Signed using keys held in wallet or represented by public dids on Hyperledger Indy ledger instance
- ZKP using CL-Signatures (future: BBS+)

Agent Issuing and Verifying Standards

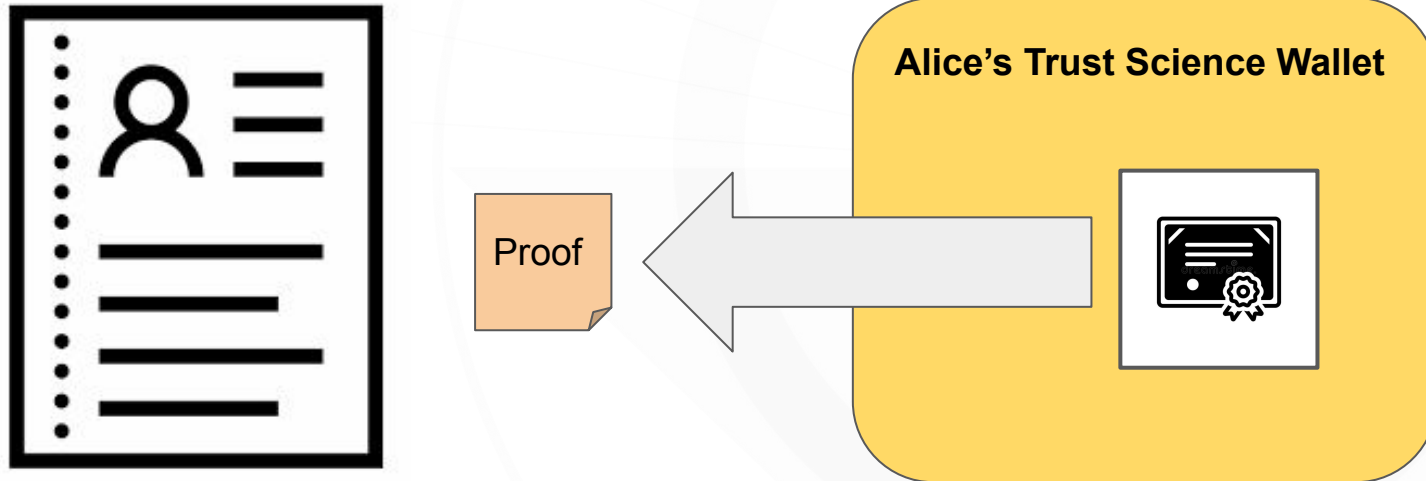
- Didcomm v1
- VC-HTTP-API issuer and verifier interfaces
- Hyperledger Aries Interop Profile v1

Overview of Zero Knowledge Proofs

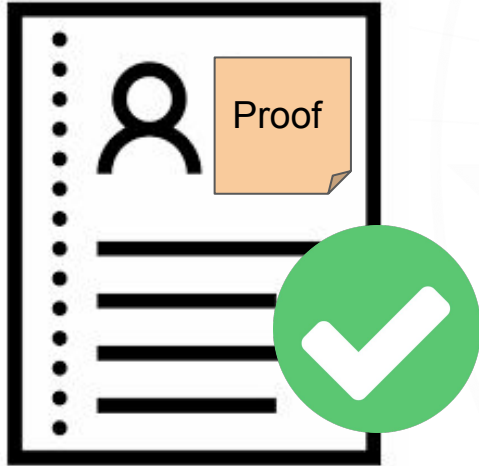
- Alice can apply for benefits that require specific information about her employment **without revealing that information**



Overview of Zero Knowledge Proofs



Overview of Zero Knowledge Proofs



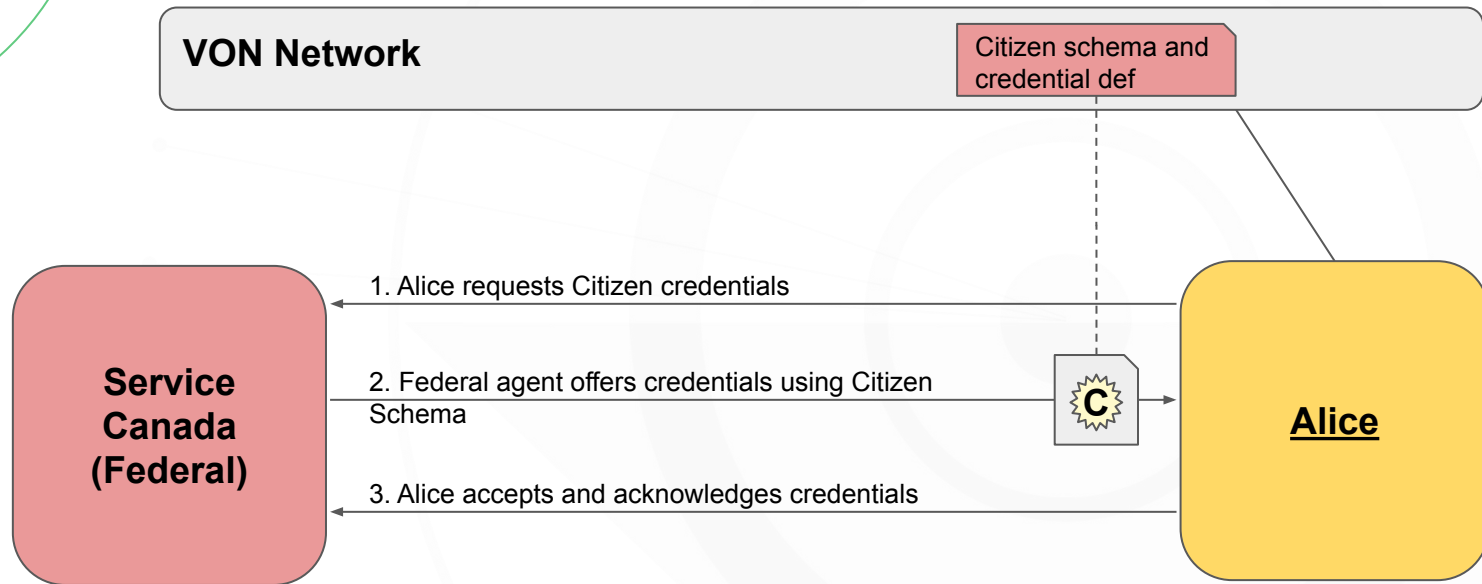
Alice's Trust Science Wallet



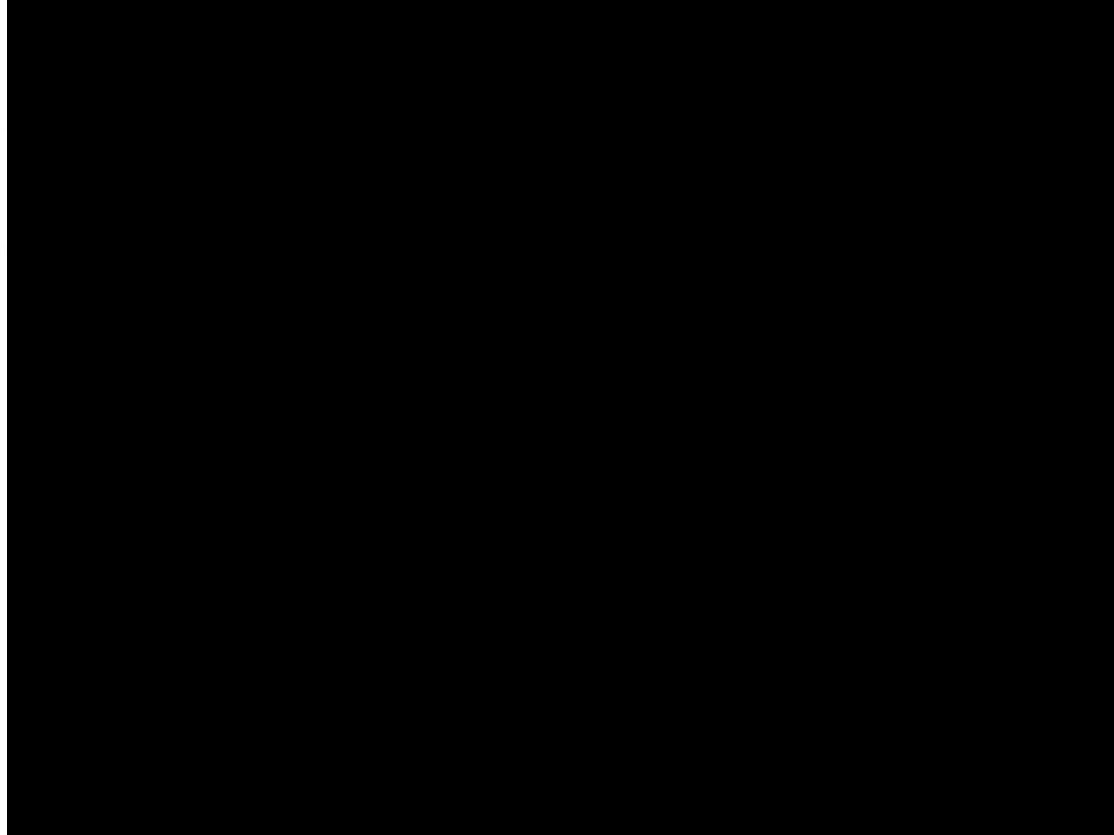
The background is a solid green color. It features several concentric circles of varying shades of green, centered on the right side. From the left edge, three thin white lines extend towards the center, each ending in a small white dot. The word "Demo" is written in white, bold, sans-serif font, positioned to the left of the concentric circles.

Demo

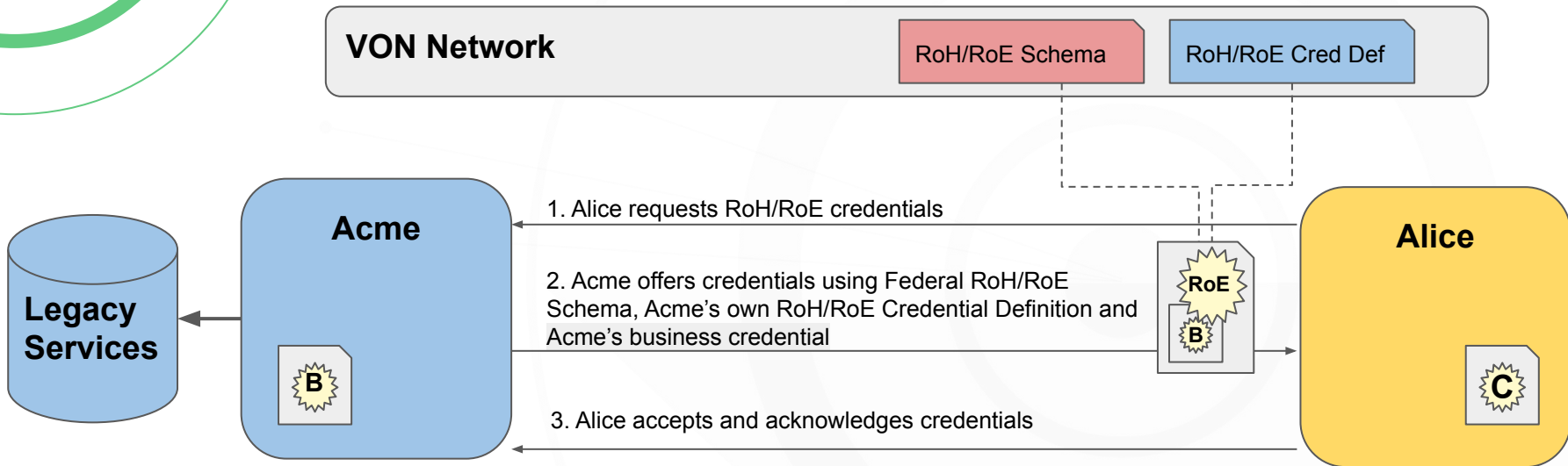
Alice Obtains Citizen Credentials



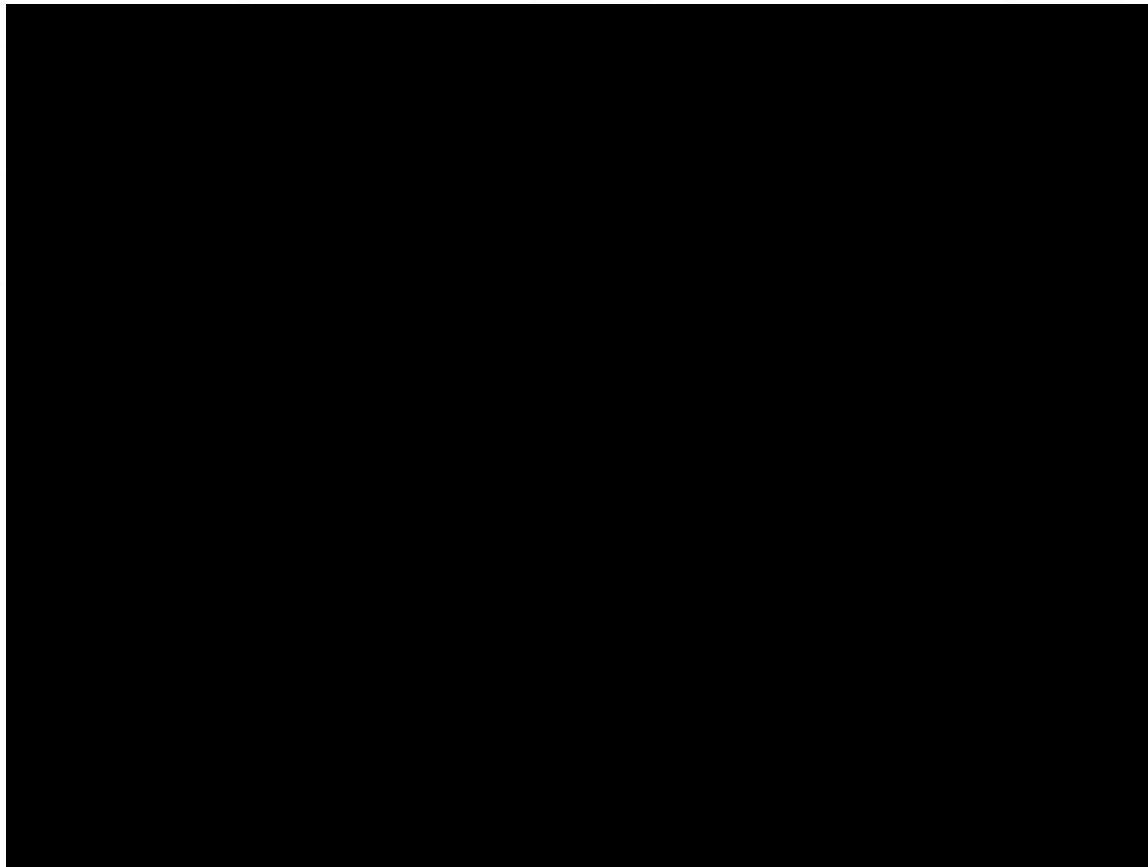
Demo: Alice Obtains Citizen Credentials



Alice Obtains RoH/RoE from Acme



Demo: Alice Obtains RoH/RoE from Acme



Alice Applies for Federal Benefits

VON Network

RoH/RoE Schema

RoH/RoE Cred Def

**Service
Canada
(Federal)**

1. Alice requests federal benefits

2. Federal agent requests proof of **Citizenship** and **RoE**

3. Alice matches appropriate credentials from wallet, consents to sharing them and then sends

4. Federal agent responds with approval if credentials can be verified.
Alice is now enrolled.

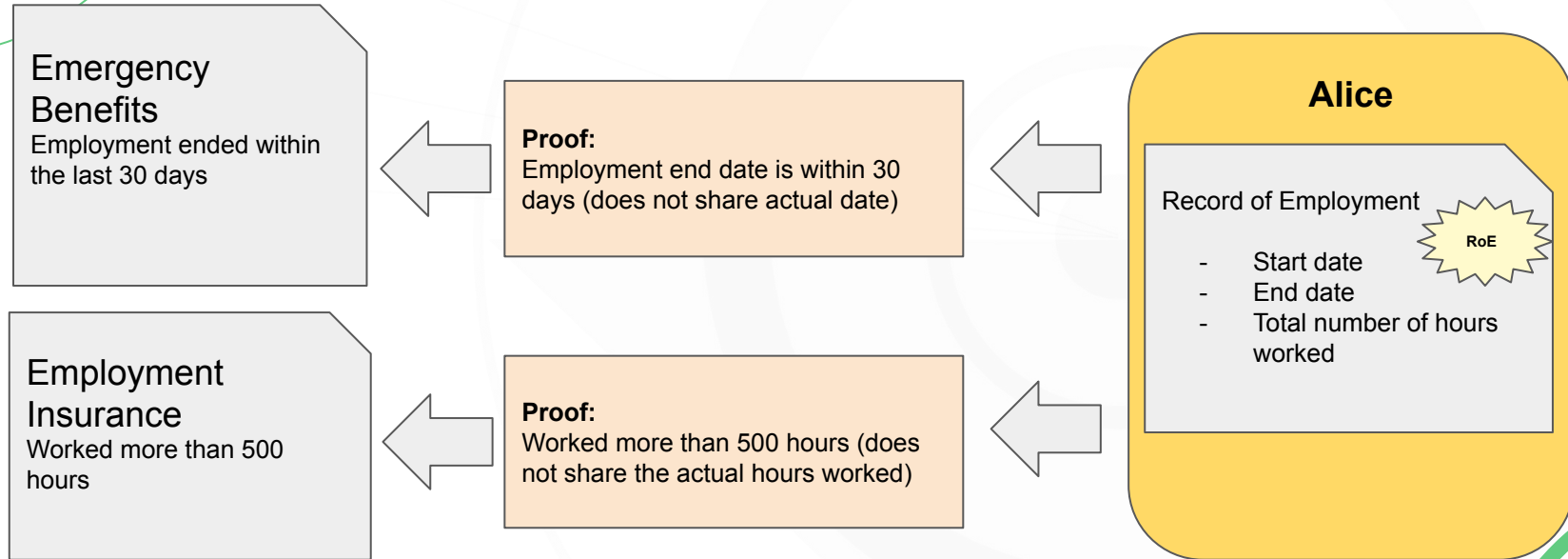
Alice

RoE

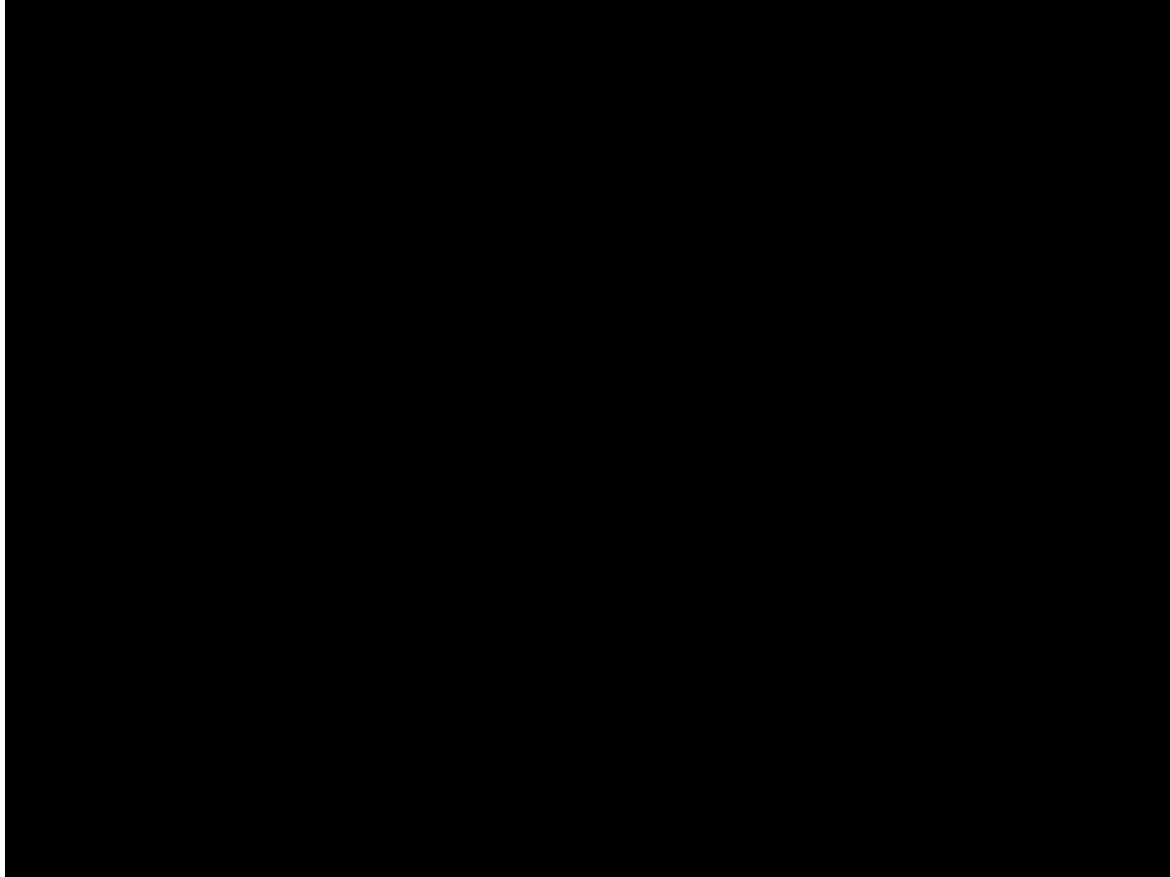
B

C

Application of Zero Knowledge Proof



Demo: Alice Applies for Federal Benefits



Interop

Through adherence to standards and technologies was able to achieve:

- 2Keys: Alice obtains digital birth certificate
- 2Keys: Acme Issued a Record of Hire that is stored in their wallet
- Aviary: Alice shares a Zero Knowledge Proof of her Record of Employment to be used in their permitting process

Questions?

THANK YOU

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