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Decentralized Semantics WG Weekly Meeting

4 August 2020

THE LINUX FOUNDATION

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Agenda

1. Welcome (Paul—5 mins)
2. Newcomer Introductions (5 mins)
3. Task Force Updates (10 mins)
4. Rich Schema Object integration using OCA (Group discussion - 30 mins)
5. Indy Interop-athon (Paul/Robert—10 mins)
6. Logistics (Paul—5 mins)
    a. Chairs
    b. Meeting schedule

Newcomer Introductions

(30 seconds!)

1. Name
2. Location / time zone
3. Affiliation(s)
4. One-sentence summary of your interest in Decentralized Semantics (or one particular semantics-related issue you personally want to see solved)

Task Force Updates
(10 mins)

- Imaging TF (Scott/Moira)
- Medical Information TF (Scott/Moira)
- Notice & Consent TF (Mark/Sal)

Rich Schema Object integration using OCA
(30 mins)

Group discussion – Presenter: P. Knowles

https://github.com/hyperledger/aries-rfcs/tree/master/concepts/0250-rich-schemas

Rich Schema *(Hyperledger Indy work):*

Definition -

The rich schemas and associated constructs are linked data objects that have an explicitly shared context. This allows for all entities in the ecosystem to operate with a shared vocabulary.

Because rich schemas are composable, the potential data types that may be used for field values are themselves specified in credential schemas that are linked to in the property definitions. The shared semantic meaning gives greater assurance that the meaning of the claims in a presentation is in harmony with the semantics the issuer intended to attest when they signed the credential.

Rich Schema *(Hyperledger Indy work):*

What do they offer? -

(i.) **Improved Predicate Proofs**

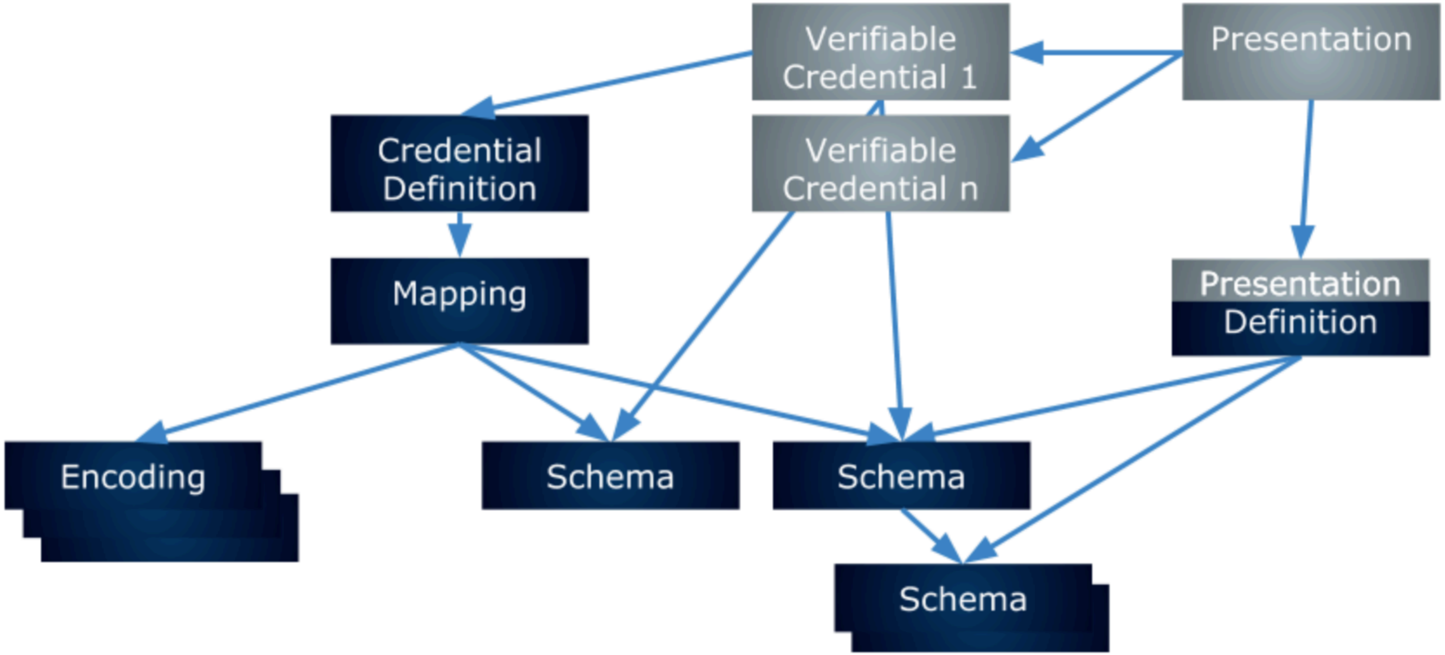
- Introducing standard binary-to-text encoding methods (e.g. Hyperledger Ursa) for most data types will enable predicate proof support. The Rich Schema work also introduces a mapping object that ties intended encoding methods to each credential schema attribute that may be signed so that an issuer will have the ability to canonically specify how the data they wish to sign maps to the signature they provide.

(ii.) **Use of JSON-LD**

- Each rich schema object will specify the extent to which it supports JSON-LD functionality, and the extent to which JSON-LD processing may be required.

Rich Schema *(Hyperledger Indy work):*

Object linkage -



Rich Schema *(Hyperledger Indy work):*

What new overlay types do we need? -

Rich Schema design includes a mapping object that ties intended binary-to-text encoding methods to each credential schema attribute that may be signed so that an issuer will have the ability to canonically specify how the data they wish to sign maps to the signature they provide.

(i.) **Order overlay**

- To be used for locking in a specific ordering sequence to credential schema attributes

(ii.) **Binary-to-text overlay**

- To be used to apply specific binary-to-text encoding definitions to credential schema attributes from pre-existing libraries (e.g. Hyperledger Ursa)

Rich Schema *(Hyperledger Indy work):*

What would this allow? -

... Zero-knowledge proof functionality

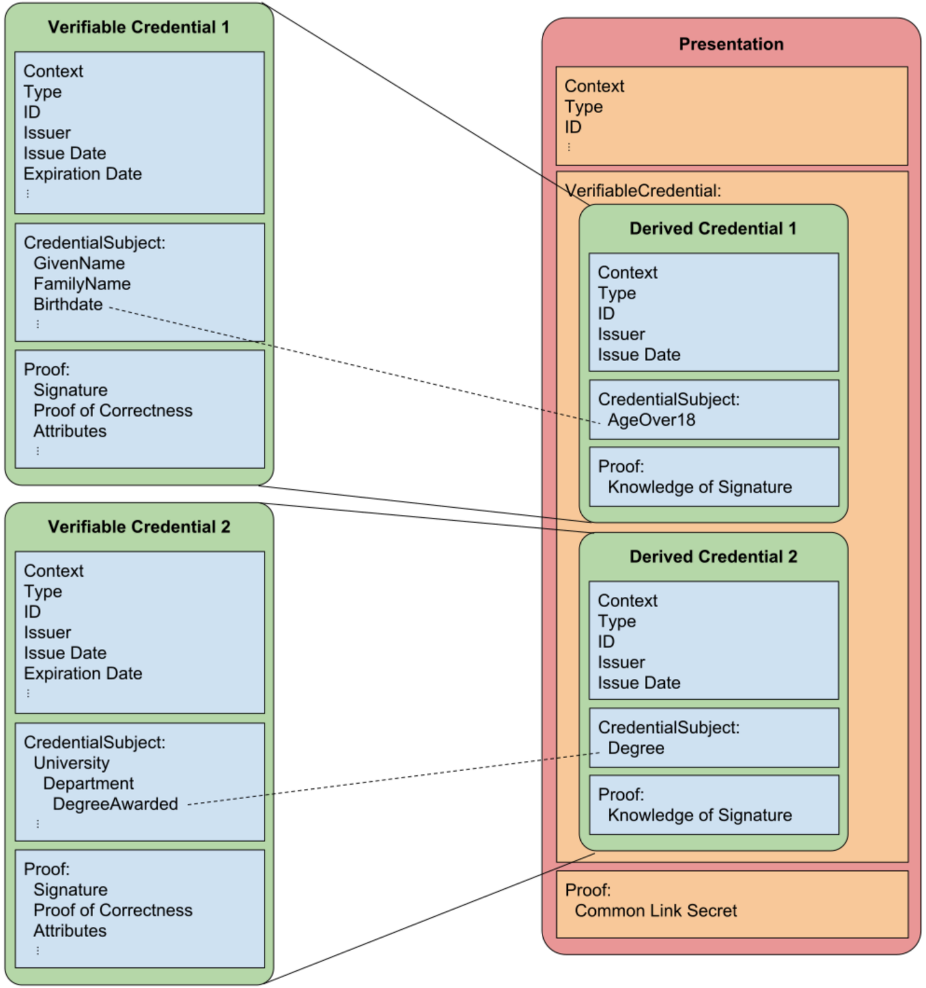
*In cryptography, a **zero-knowledge proof** or **zero-knowledge protocol** is a method by which one party (the prover) can prove to another party (the verifier) that they know a value x, without conveying any information apart from the fact that they know the value x.*

The essence of zero-knowledge proofs is that it is trivial to prove that one possesses knowledge of certain information by simply revealing it; the challenge is to prove such possession without revealing the information itself or any additional information.

Rich Schema

(Hyperledger Indy work):

Presentations -



Rich Schema *(Hyperledger Indy work):*

Links -

Aries RFC 0250: Rich Schema Objects -
https://github.com/hyperledger/aries-rfcs/tree/master/concepts/0250-rich-schemas

Verifiable Credentials Data Model 1.0 -
https://w3c.github.io/vc-data-model/

Anoncreds Protocol -
https://github.com/hyperledger/indy-hipe/pull/109

Indy Interop-athon

(Proposed dates: September 1st & 2nd)

Robert Mitwicki, Human Colossus Foundation (15 mins)

Indy Interop-athon - Description

Leading SSI networks will be organizing an Indy Interoperability Conference (code name “Indy Interop-athon”) which will focus on the work needed to be done to the Hyperledger Indy and Aries code bases to make the network of networks a reality.

In addition to the benefits of further decentralization, resilience and value creation through cooperative network effects, interoperability also brings the goal of *Identity for All* one step closer, a mission which cannot be achieved with one network alone.

Details about the conference and registration …
https://wiki.hyperledger.org/pages/viewpage.action?pageId=36734079

Chairs

- As a Working Group, we elect our own chairs
  - At least one, and up to three
  - Two or three is recommended to spread out the load
- We can periodically rotate chairs as needed
- Volunteers now?

Meeting schedule

- Call timing
  - **ToIP Decentralized Semantics WG**

    Every Tuesday starting

    09:00 PT, 12:00 ET, 17:00 UK, 18:00 CET
- Next meeting
  - August 11th, 2020

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Closing Q & A

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