2020-02-25 Special: Rich Schemas

Summary

Special meeting February 25

- Discuss progress on Rich Schemas, and next steps

Remember the Hyperledger Code of Conduct

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Introductions

Attendees

- Name (Organization) <email>
- Alexander Shcherbakov
- Ken Ebert
- Brent Zundel
- Adam Burdett
- Nikita Khateev
- Richard Esplin

Main Business

Rich Schemas Roadmap for Rich Schema MVP:

- HIPE / RFCs (50% done)
    - Mapping and CredDefs use a single Schema only
    - Update Schema, Context and Encoding HIPEs/RFCs to match the Common format of rich schema objects
    - Mapping (Alex)
    - Cred Def (Alex)
    - Presentation Def 0.5 version (Ken and Brent)
    - Presentation (Ken and Brent)
    - Verifiable Credential (Alex)
    - Update existing HIPEs (Alex)
    - HIPEs for new objects:
- Indy Node implementation (95% done) (Alex)
    - Make sure that @id == id (Alex)
    - json_ld validation for objects that must be json_lds
- Indy-vdr (Andrew N)
    - need estimates
    - Prerequisite: CI / CD for indy-vdr, and integration into Indy SDK
    - Requests for every Rich Schema request
- aries-credx / indy-credx (Andrew N. and Echo)
    - create_w3c_cred
    - sign_w3c_cred
    - verify_presentation
    - create_presentation
    - Need estimates for all items

Milestones:

1. Issuance of W3C credentials
2. Presentation and verification

Technical items:

1. State/search
    - Discussed the current logic of storing objects in ledger State (two entries: id and type:name:version)
    - type:name:version can be used for discovery functionality
    - We may consider supporting of discovery by schema attribute names (either on Ledger, on Observers or off-chain)

2. HIPEs / RFCs
    - Agreed to reference just a single schema by a Mapping object (and hence a CredDef). This will simplify processing and will always have an explicit schema for every credentials.
        - If a CredDef or Mapping needs to use attributes from multiple Schema, it needs to create a new Schema first combining all sub-schemas
    - Agreed to have a shared common format for Schemas, Mappings and credentials:
        - Schema defines a set of attribute (as a graph object potentially)
        - Mapping uses a subset of the same attributes (as a graph potentially) following the same structure.
        - Every value in the Mapping object is a list of encoding and rank pairs.
        - Credentials has the same attributes as in Mapping
    - Agreed to implement Presentation Definition by phases:
        - Version 0.5: the same workflow as the current proof request
        - Version 0.6: more advanced one with groupings and selections
        - Version 1.0: final Presentation Definition interoperable with the community
    - There will be a Delta in protocols for Issuance and Presentation.
        - The workflow is supposed to be the same
        - The only difference is in the format of objects (to not be linked to old schema approach)
3. JSON-LD
    - What objects supposed to be in json-ld format:
        - Context - Json / json_ld
        - Schema - json_ld
        - Encoding - json
        - Mapping - json_ld
        - CredDef - json
        - PresentationDef - json_ld
    - Every JSON-LD is supposed to have
        - @id
        - @type
    - @id must be equal to the Rich Schema's ID (DID).
    - The only thing that we currently expect from json-ld processing is substitution of attributes by a fully-qualified ones
    - Due to the proposed format of Schemas, Mappings and Credentials, it looks like we don't need to do any JSON-LD processing /substitution during issuance
    - We may need to do JSON-LD processing/substitution during presentation
    - If we do JSON-LD processing/substitution, then for MVP we may assume that we resolve the contexts (substitute the fields belonging to a context) belonging to the current ledger only. We are not going to resolve other Indy ledger's context, other blockchain's contexts, and Internet contexts.
4. DID as ID
    - We considered 6 options on how ID may look like:
        - UUID
        - did:sov:const_idstring?name=...;version=....
        - did:sov:issuer_idstr?name=...;version=....
        - did:sov:context-hash-based-idstring
        - sch:sov:idstring
        - dri:sov:idstring
    - We think that we should go with did:sov:context-hash-based-idstring and the proposed Draft for canonicalization
    - We agree to postpone DID_DOC resolving of Rich Schema object (we may decide not to do it at all)
    - The question whether it's OK to use a DID for Rich Schema objects identification is raised in Community
5. Old VS new credentials

	Anoncreds 1.0	Anoncreds 2.0
Old Schema == old credentials	0 (already done)	2? (second priority if there is a need from product point)
Rich Schema == W3C credentials	1 (first prioarity)	2 (second priority)

So, schema/credentials and Anoncreds version are two separate independent dimensions.

1. The list of tasks in Jira for the action items we defined:
    - HIPEs/RFCs:
        - INDY-2337: Design Schema, Context, Encoding, Mapping, CredDef [*Alex*]
        - INDY-2347: Design W3C Credential [*Alex*]
        - INDY-2346: Design Presention Definition [*Brent*]
        - INDY-2348: Design W3C Presentation [*Brent*]
    - Indy Node:
        - INDY-2350: Improvements in Rich Schema commion code [*Alex*]
    - indy-vdr:
        - IS-1505: Support submitting of Rich Schema txns in indy-vdr [*Andrew Nikitin*]
        - IS-1506: Support getting Rich Schema txns in indy-vdr [*Andrew Nikitin*]
    - indy-credx:
        - IS-1507: Support issuance of W3C credentils in indy-credx
        - IS-1508: Support presentation of W3C credentials in indy-credx