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Decentralized Semantics WG Weekly Meeting

11 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. Pros and cons of adding a *reference type* attribute into the schema base metadata block (Group discussion led by: Mukundan Parthasarathy and John Walker from the *FHIR-OCA Object Transformation FG* —10 mins)
5. Defining an *architecture for file format* (Group discussion led by: Robert Mitwicki—10 mins)
6. OCA Specification document (Presented by: Robert Mitwicki—10 mins)
7. *Trust over IP Eleventy* demonstration (Presented by: Steven Milstein—10 mins)
8. 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)

Pros and cons of adding a *reference type* attribute into the schema base metadata block

(10 mins)

Group discussion led by: M.Parthasarathy / J.Walker

Reference type – context :

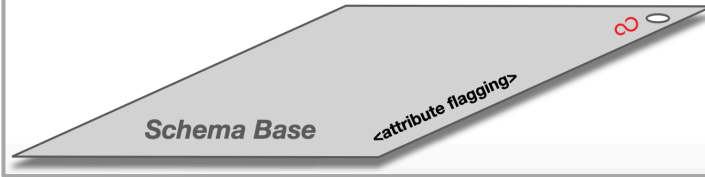
Adding “**reference type**” into the schema base metadata block, would allow for a 1:1 correspondence between a FHIR representation and its corresponding OCA schema base. The assumption would be that the entire graph of dependencies would have the same namespace/registry, each with it's own *hashlink*. Verification would be bottom-up, as would be any code generation.

Tools could be written to grok FHIR v4 json or ttl and output to an OCA schema base. By allowing *reference types* in the schema base, the generated OCA object hierarchy would reflect the corresponding FHIR hierarchy which would mean there being less onus on correctness verification etc. The tool could be re-run for every major FHIR release or schema update. This could save a lot of costs relating to runtime translation.

Reference type – options :

1

A stable base object that defines a single set of data in its purest form thus providing a standard base from which to decentralize data. A **Schema Base** facilitates a Blinding Identity schema object which allows the issuer to flag attributes that could potentially unblind the identity of a governed entity.

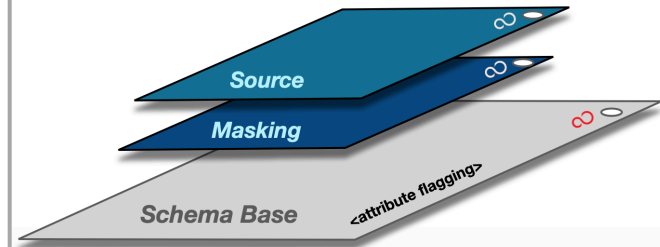


or 4

... a new overlay type?

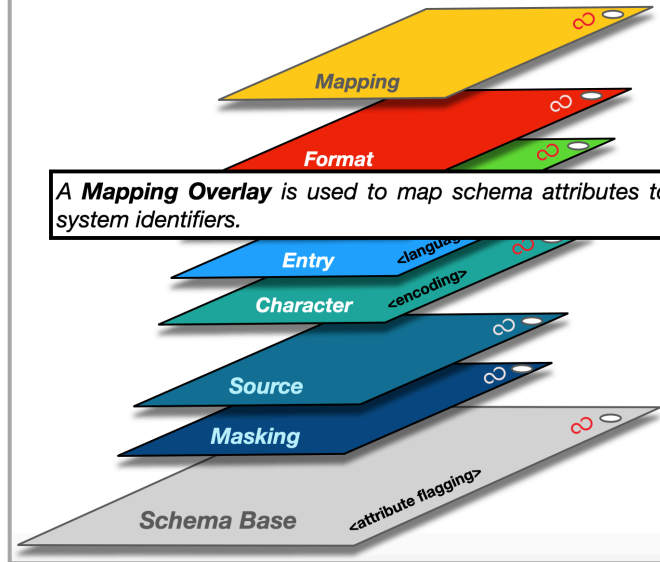
2

A **Source Overlay** is used to specify endpoints where dynamic data or linked attachments can be located.



3

A **Mapping Overlay** is used to map schema attributes to internal system identifiers.



Defining an *architecture for file format* (10 mins)

Group discussion led by: R.Mitwicki

File formats



OCA Specification document (10 mins)

Presented by: R.Mitwicky

<https://the-human-colossus-foundation.github.io/oca-spec/>

OCA Specification

A specification template for collaborative input to enable a roadmap for OCA requirements

Unofficial Draft

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- 1. **Introduction**
 - 1.1 Overview
 - 1.2 Benefits
 - 1.3 Example of similar construct
- A. **Security Considerations**
- B. **Privacy Considerations**
- C. **Resources**

OCA Specification

Overlays Capture Architecture

Unofficial Draft 11 August 2020

Latest editor's draft:
<https://github.com/the-human-colossus-foundation/oca-spec>

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Participate:
[GitHub the-human-colossus-foundation/oca-spec](#)
[File a bug](#)
[Commit history](#)
[Pull requests](#)

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Abstract

The post millennial generation has witnessed an explosion of captured data points which has sparked profound possibilities in both Artificial Intelligence (AI) and Internet of Things (IoT) solutions. This has spawned the collective realization that society's current technological infrastructure is simply not equipped to fully protect personally identifiable information (PII) or to entice corporations to break down internal data silos, streamline data harmonization processes and ultimately resolve worldwide data duplication and storage resource issues.

The FAIR Data Principles are a set of guiding principles in order to make data findable, accessible, interoperable and reusable (Wilkinson et al., 2016). These principles provide guidance for scientific data management and stewardship and are relevant to all stakeholders in the current digital ecosystem.

In line with the FAIR principles, data harmonization and interoperability processes between internal departments and functions is a high priority for corporate organizations but the current cognitive framework available for data

Ref.: <https://the-human-colossus-foundation.github.io/oca-spec/>

Trust over IP on *Eleventy* demonstration (10 mins)

Presented by: S.Milstein

<https://priceless-dubinsky-57bc51.netlify.app/deliverables/covid-trust-triangle/>

Trust over IP on *Eleventy*

The *Eleventy* tool can be utilised as a static site generator for document intra -interoperability & potential reusability between Task Forces

Home

COVID-19 Credentials Initiative ("CCI") Governance Framework V2

Brief

We are at a rare turning point in human history, where a pathogen, SAR-CoV-2, the virus that causes a range of illnesses generally called COVID-19, has significantly and negatively impacted global economies and societies. To facilitate a return to fully functional societies, Verifiable Credentials (a "VC" or "VCs") have been identified as a valuable tool. VCs provide a secure, privacy-protecting method for saving valuable and sensitive information as trusted digital data, that can be used to enable individuals and societies to manage and recover from the social and economic impacts of the COVID-19 pandemic.

Introduction

We are at a rare turning point in human history, where a pathogen, SAR-CoV-2, the virus that causes a range of illnesses generally called COVID-19, has significantly and negatively impacted global economies and societies. To facilitate a return to fully functional societies, *Verifiable Credentials* (a "VC" or "VCs") have been identified as a valuable tool. VCs provide a secure, privacy-protecting method for saving valuable and sensitive information as trusted digital data, that can be used to enable individuals and societies to manage and recover from the social and economic impacts of the COVID-19 pandemic.

For example, a COVID-19 test result (e.g. virus test, antibody test, etc.) for an individual can be recorded as a VC, and that VC would enable said individual- the VC *Holder* to privately and securely prove (a *Digital Proof*) to any other person (a VC *Verifiers*) the result of the Holder's COVID-19 test. The VC Proof can be cryptographically linked directly back to the COVID-19 test administrator and VC issuer *Issuer*; for example, a trusted medical professional). In this way, the Verifier is able to place trust in a known or otherwise trusted Issuer of a VC, via secure, open-source, cryptographic protocols. This process is represented by the following diagram:

```
graph TD; Issuer((Issuer)) -- "Verifiable Credential" --> Holder((Holder/Prover)); Holder -- "Proof" --> Verifier((Verifier)); Verifier -.-> Issuer;
```

Ref.: <https://priceless-dubinsky-57bc51.netlify.app/deliverables/covid-trust-triangle/>

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 18th, 2020



Closing Q & A

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