



COVID CREDENTIALS INITIATIVE

# Information Structure and Trust for Certificates

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## ***Kaliya “Identity Woman” Young - I am:***

- **Ecosystems Director at the [COVID Credentials Initiative](#) (“CCI”)**

CCI, hosted and sponsored by Linux Foundation Public Health, is an open global community collaborating to enable the use of open-standard-based privacy preserving credentials and other related technologies for public health purposes.

- **Staff at [Linux Foundation Public Health](#) (“LFPH”)**

LFPH, a project of the Linux Foundation, works with public health authorities, healthcare organizations, technology vendors, academia, industry associations, and the public to ensure that investments into public health technology meet common needs and have maximum impact.

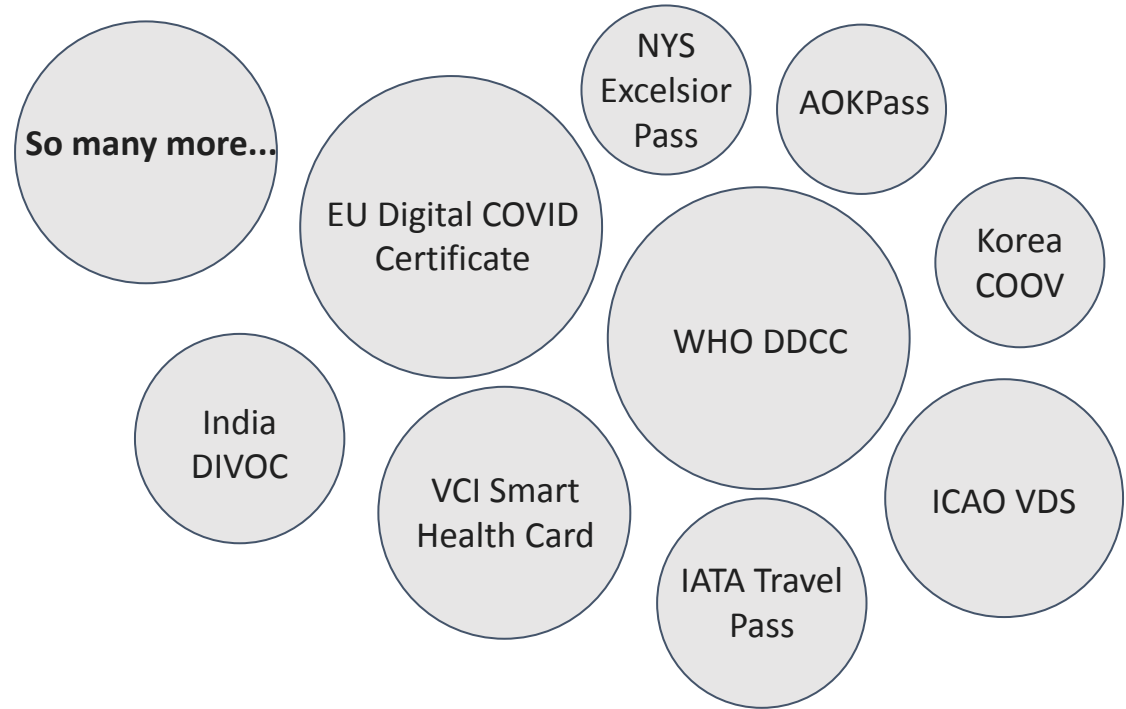
- **Chair of the Good Health Pass Interoperability Working Group at Trust Over IP Foundation (“[ToIP](#)”)**



## ***Today's Reality: Decentralized Centralizations***

**This is determined by the scale of COVID and driven by market forces:**

- No single ecosystem can include everyone.
- No single solution is suitable for all use cases.
- No single technical framework can rule the world.





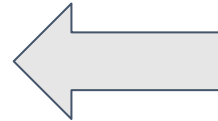
## *Interoperability: Decentralized Semantics*

Interoperability will require semantic alignment and harmonization.

[CCI Schema Task Force](#) (within the Use Case Implementation Workstream):

- **Semantic Harmonization:** between data models and data representation formats
- **Internationalization:** standardized credential issuance in multiple languages

Work Product: [Data Capture Global](#)



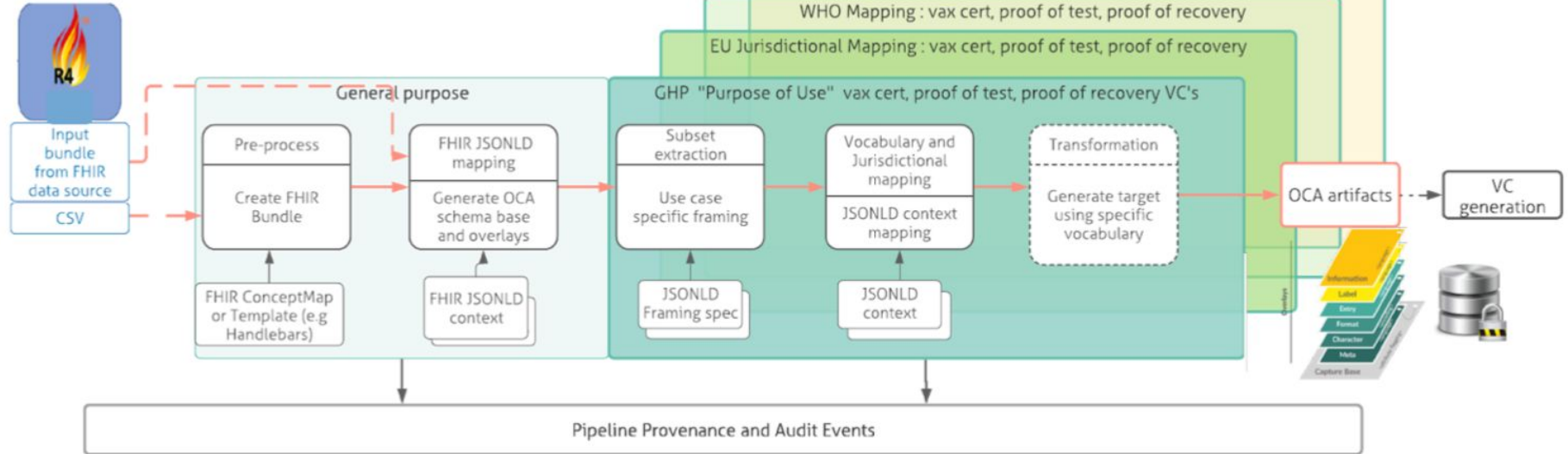
Standard Data Models and Elements Drafting Group and recommendations

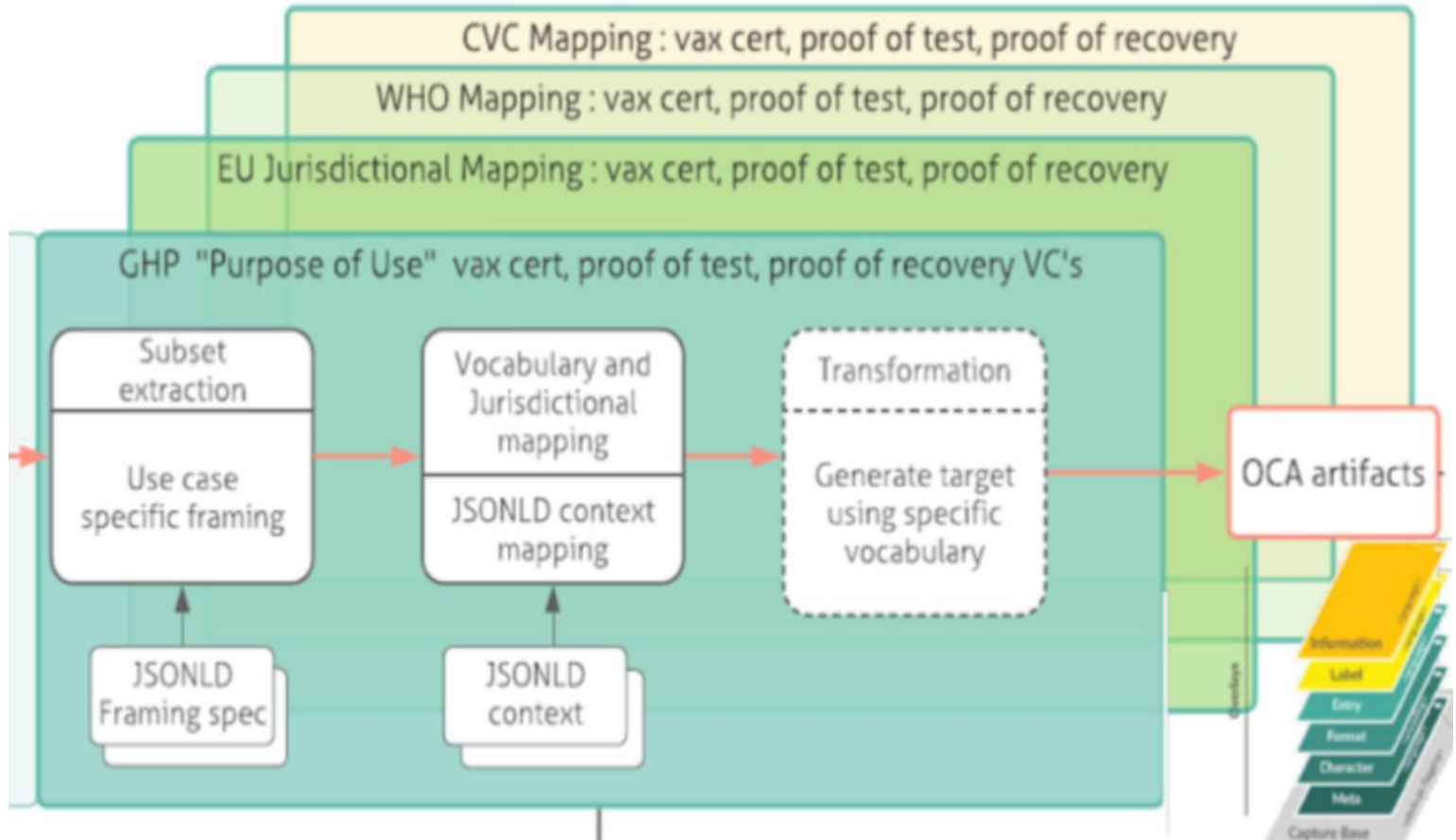


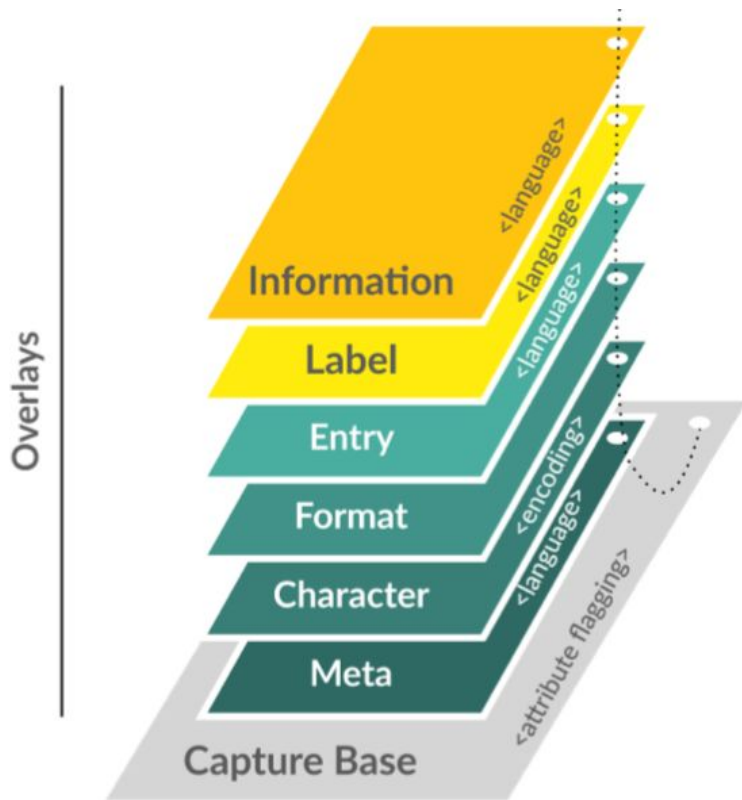
# Interoperability: Decentralized Semantics

## Semantic Data Pipeline

FHIR Validation,  
Security Labels and  
Consent obligations  
are applied







## Overlay Capture Architecture (OCA)

OCA represents a schema as a multi-dimensional object consisting of a stable capture base and linked overlays, data objects that provide colouration to the base object.

It offers multiple benefits:

- Simplified data pooling
- Stable capture bases
- Flagged attributes for encryption
- Data decentralization
- **Internationalization**



## ***Interoperability: Decentralized Trust Building***

### **Why many want centralized trust architecture?**

It makes trust decisions simple and straightforward.

### **Example: the EU Gateway**

- A centralized repository for public keys, a system designed to be the root of trust between EU member states.
- Provides a flexible framework for member states to decide how to create their own trust registry of authorized issuers and verifiers while enabling them to verify certificates issued from other member states.





## ***Interoperability: Decentralized Trust Building***

**But remember, there won't be just one centralized ecosystem?**

So we are lacking of a global trust architecture, a framework that enables verifiers from one ecosystem to make a decision about whether or not to accept a certificate signed by another ecosystem.



### **Global COVID Certificate Network (GCCN)**

An LFPH's new initiative to enable interoperable and trustworthy verification of COVID certificates between jurisdictions for safe border reopening.



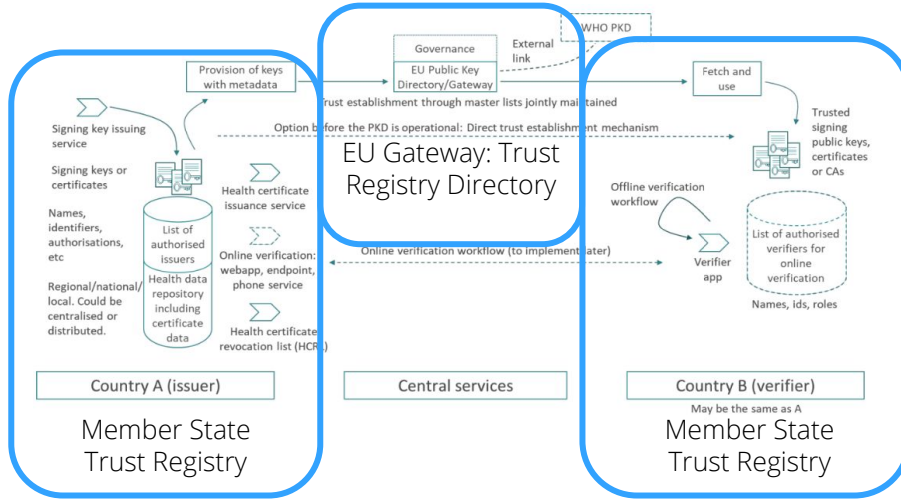
## ***Interoperability: Decentralized Trust Building***

Global COVID Certificate Network (GCCN) has three key components:

- **Trust Registry Network**
  - A way for the various trust registries in every jurisdiction to find each other and decide whether to accept each other's certificates
  - A way to look up data on who is doing what and how to contact each other
- **A Complete Toolkit to Build Certificate Ecosystems:** Governance framework template, schema definitions and minimum datasets, technical specifications, implementation guides and open source reference implementations
- **Vendor Network:** a directory of vendors who can competently work on these kinds of projects, so that governments and institutions can more easily get running.

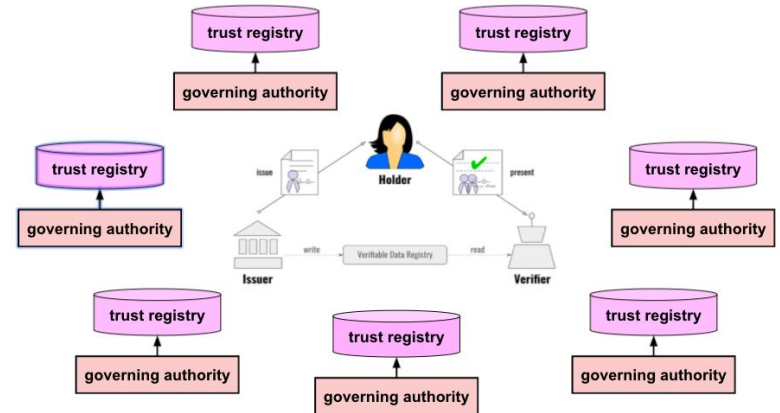


# Interoperability: Decentralized Trust Building



EU: Trust and interoperability through centralized key management

GCCN: decentralized key management and interoperable trust registry protocol





# ***Interoperability: Decentralized Trust Building***

## **GCCN Trust Registry Network Starting Definition**

An online resource that provides human and machine readable information pertaining to its directory entries (members). Its entries consist of public and private sector entities providing the issuance and/or verification of digital or digitized paper Certificates, Credentials or Passes required for use by jurisdictions to allow free and safe movement within or across locales.

It will provide users with qualitative information regarding the validity of any listed issuer

- a. Directory entity onboarding: Self registration capability
- b. Out of band - KYC GCCN vetting
- c. Human and machine readable attributed definitions
- d. Support Pre-operational discovery lookup - 'who should I trust?'
- e. Qualitative description of each entity listed



# ***Interoperability: Decentralized Trust Building***

## **GCCN Trust Registry Network Proposed Profile**

- A named legally visible entity
- Operating model for the entry - self described
- A description / qualification of the the onboarding and vetting processes
- Governance
- Security Profile / Compliance
- Network / Geographic footprint
- Types of identifiers / certification supported: PKD | DID | Signed credential
- Service Endpoint(s)
- GCCN status



# *Interoperability: Decentralized Trust Building*

## **GCCN Trust Registry Network Candidate Entries**

Trust Entity	Type	Trust Roles Supported
CommonTrustNetwork	A network of issuers and verifiers - common verification format	Issuer / Verifier
New York State	A jurisdictional authority listing Issuers and providing a verification format	Issuer / Verifier
EU eHealth Gateway	A directory of legally bound issuers and verifiers	Meta / Issuer / Verifier
AOKPass	A network of issuers and verifiers - common verification format	Issuer / Verifier
State of California	A jurisdictional authority listing Issuers and providing a verification format	Issuer / Verifier
IATA	A network of issuers and verifiers - common verification format	Issuer / Verifier



## ***Next Steps and Contact Info***

- **COVID Credential Initiative (CCI):** CCI participation and contribution requires membership, free for both organizations and individuals. Request an agreement [here](#).
  - [CCI Schema Task Force](#) will build on the recommendations Good Health Pass Interoperability Blueprint and extending its use to broader use cases.
  - There is a surge of implementation for domestic reopening, so the CCI community will discuss how to leverage the GCCN work for these implementations.
- **LFPH Global COVID Certificate Network (GCCN):** Will keep focusing on cross-border
  - Subscribe to the mailing list to: [gccn+subscribe@lists.lfph.io](mailto:gccn+subscribe@lists.lfph.io) (no subject or content)
  - GCCN Trust Registry Network: Current focus is to confirm with a few candidates what information realistically they can provide based on the proposed profile. Implementers meet bi-weekly: [meeting page](#), [working document](#).
- **Kaliya Young:** [kaliyay.cci@lfph.io](mailto:kaliyay.cci@lfph.io) Twitter handle [@IdentityWoman](#)