Identity Ecosystem Map Proposal

Introduction

Identity is complex. There are many many different initiatives and efforts happening around the world getting a clear understanding of what was happening where was part of the motivation to create the Identity Ecosystem Map. The initial work was funded by DHS S&T Identity and Privacy Program lead by Anil John.

Kaliya Young worked under a subcontract via JHU/APL to develop an Identity Ecosystem Map. As of October 2016 the prototype map had around 500 nodes and likely reflected about 10% of the total number of nodes of the overall ecosystem.
https://www.kumu.io/IdentityFutures/idsystem
Node types included, Working groups, Open standards specifications, authors of those standards, members of working groups, Companies, Non-Governmental Organizations, Standards Development Organizations, Governments, Identity Services, Research Organizations, Universities, Documents, Events, Regulations and Laws. In October 2016 JHU/APL took over the map and developed a relational database taxonomy along with adding more data to the map particularly in the form of government funded projects.

Work began in January 2018 by Kaliya Young (Hamlin), Philip Pridmore-Brown and Christina Bowen with System of Systems Analytics, Inc. ("SoSA") to develop a plan for importing the data into their Knowledge Ecology Interface a sophisticated Graph Database originally developed to support understanding by the US Government of the complex network of related people, places, and events in the middle east. This document is a proposal is to implement this plan.

Project Scope

This project covers the development and recommendation for future maintenance of an implementation of a digital identity and privacy ecosystem map based on prior work by JHU/APL. The first step will be to put the existing data into SoSA's KEI database tool. From there the data can be pulled in to Kumu, a tool that makes the data publicly accessible, searchable and graphically compelling.

The KEI implementation and the Kumu implementation (together the "Tools") will include intuitive authoring forms for extending the map by adding nodes and edges to the network data, representing those seeking to solve complex challenges involved in getting identity ecosystems to work at scale.

Background

Kaliya Young Hamlin developed an identity ecosystem map while on a subcontract with JHU/APL between March of 2016 and October 2016. An early prototype of the map was built in Kumu with about 500 nodes and delivered to JHU/APL. They took the map data, developed a more formal taxonomy and created a relational database.

Several sets have been provided to SoSA. One is contained in two spreadsheets derived from the original Kumu visualization was based. The others come from JHU/APL and include a data set which is a superset of the first data set and a relational database taxonomy in a spreadsheet. This proposed project begins by refining taxonomy/meta-data and expanding the number of nodes in that database to reflect industry developments in the the last 18 months.

Many of the working groups who focus on identity in the standards bodies were identified in the initial map but no documentation about specific standards or who authored them was captured.

Open Data Norms

All the data entered into the map was publicly available. Any Kumu maps created from this dataset are publicly available. The KEI instance that holds all the data for this proposed project is accessible by project data curators.

Software Toolset

KEI and KUMU

Data and Map Functionalities

Phase	Task	Description
1	1	All current data added to an instance of the KEI software
1	1	All data team members will have login for KEI
1	1	Admin interface of the KEI allows tracking of all data changes
1	2	SoSA and team members will be able to pull JSON/ .csv files from the KEI and upload to a prepared Kumu template for public exploration and engagement
2	3	SoSA and team members will be able to generate embedded code for organizations within the community wanting to feature the map on their website

Technical Approach & Requirements

We divide the work into three concurrent Tasks, based upon agency. Task 1 focuses on the KEI development at SoSA, lead by Philip Pridmore-Brown; Task 2 focuses on the Kumu visualization and is lead by Christina Bowen; Task 3 focuses on the beta launch of the Identity Ecosystem Map and its KEI and Kumu implementations, lead by Kaliya Young

Task 1: Taking the Relational Database from JHU/APL and putting it into the KEI graph database

The first task establishes the infrastructure for holding and exploring data from this project. We will create the data model and ontology, extracting both the legacy data and workable structures from JHU/APL, and load data into the KEI, resulting in a functional KEI map with data structure and editing capability. At the end of this task, one will be able to explore the data, but it will not be ready for not yet for public consumption.

Approximate cost: ***$29,800***
Approximate duration: 3 months

Task 1 Subtasks:

A. Define the ontology (meta-data / taxonomy/ categories) for supporting KEI and Kumu initial implementations. The ontology will use the existing data collections as a reference and incorporate planning from KEI, Kumu, Kaliya and JHU/APL. Draft/Approved workflow states are supported in the ontology and old data will not break the map.
B. Set up an instance of the KEI for the identity map,
C. Map the JHU dataset to KEI with the new ontology (new meta-data structure) and import data records.
D. Document the ontology and meta-data structure, and deliver a KEI user manual.
E. Delivery of KEI implementation including operation of this version of KEI implementation.
F. Based on review with funder identify and document scope of further research.

Note: authoring or editing data in the KEI should require appropriate permissions, and these additions or edits should be traceable.

Option: Creation of Public Interface to Add Information to the Map.

Task 2: Creating Compelling Public Maps through Kumu

Approximate cost: ***$39,000***
Approximate duration: 2 months

Having all this data does no good if it is not used by the Identity tech community. After we have completed Task 1, we will make compelling, interactive public maps, allowing exploration of this data in an interface built for engagement. To engage the network and understand what views would be most useful, we will be sure that at 100 nodes on the map are current projects with complete datasets. This is essential to allowing the community to see itself on the map so that they have motivation to interact and learn from it. We will create an export from the KEI to Kumu.io, and document a way to keep this up-to-date. Kumu map(s) will include an instructional sidebar with calls to action, and decorations so that colors, images and views relevant to insights the initial data has to offer, as well as a form for feedback and suggested edits.

Task 2 Sub-Tasks:

Tying the KEI to KUMU:

A. Complete research on a small number of existing nodes in the Map to ensure enough completeness before Beta Launch.
B. Adding an additional set of nodes to the map to ensure standards projects and companies that have emerged in the last 18 months specifically in the Self-Sovereign space are on the map so it is current enough for the Beta Launch. The total of tasks A & B will not exceed 100 nodes.
C. Enable JSON export from the KEI, and link that JSON to a Kumu map
D. Prepare the map sidebar for engagement and easy navigation of the map
E. Decorate the Kumu map and enable relevant clusters/ filters/ views for community engagement

Prepare initial Kumu map(s) for community beta-testing

F. Assess community responses already gathered and decide which needs the pilot map can meet
G. Identify core network organizations and talking with them to get detailed feedback towards the development of a useful map and to explore their engagement in future iterations of the map.

Identity Community Engagement and Research:

Task 3: Beta Launch

Approximate cost: ***$38,000***
Approximate duration: 4 months

The map contains information reflective of many different technical, legal and business communities all working on solving identity challenges. One of the keys to long term success of the map is to engage with the people and organizations that have their work reflected in the map. In this Beta Launch of a Map that has 200-300 complete nodes we will outreach to key organizations and networks who may be interested in having their work reflected in the map. We will show them the section of them map with complete nodes. Our purpose in doing so will be to solicit interest in participating in the launch phase of the project which would include contributing funds, actively contributing data, having personnel getting editor privileges on the map and eventually (beyond the scope of this contract) being able to own their own nodes.

In this phase we will also begin sharing the beta map in one or two public and industry forums examples could include Identiverse, MyData, ID2020, Internet Identity Workshop, Digital Enlightenment Forum, Decentralized Web Conference, World Economic Forum Convenings including the Impact Summit. This will be key to expanding the audience for the information in the map and expanding its usefulness to industry and business decision makers, as well as citizen advocates.

The prototype map was shared with leaders at the 25th Internet Identity Workshop in the Fall of 2017, and there was excitement about the possibility of using it as a resource to document activity happening around the world with identity for development and other emerging efforts.

Option: Creating tools to allow the intake of ongoing information streams from blogs and other updates that occur via RSS or email. Creating a feed that is available to Industry Leaders who have expressed interest and willingness to have (and pay for) awareness of ongoing updates to the map.

Task 3 Subtasks:

A. Define initial external target audiences for the beta launch of the KEI and Kumu implementations.
B. Define the scope of an initial data set for display in beta launch. We will have at least 100 functional nodes. We recommend 500 nodes completed by the end of Task 3
C. Populate the initial data set.
D. Identify two conferences to present the Beta Map and presentation of the Map at them.
E. Optional task: creating the ability for customers to pull a stream of updates to the map.

Optional Task 4: Launch

Approximate cost: $146,950
Approximate duration: One Year

In task 1 the map will have 50 complete nodes that will be used to create the Kumu map visualizations based on the data. Before the Beta Launch 200 nodes will be complete. The Launch task is to grow the complete node set significantly in partnership with other organizations. They goal will be to have 1500 complete nodes by the end of the task and to have the project standing on its own without any further resourcing by the funder that initiated its creation.

If there is sufficient industry interest organization in the map to continue its development we will move beyond beta into Launch phase. In this phase we will soliciting the contribution of funds from contributing organizations who have significant interest in clearly understanding identity ecosystem. We will also invite them to actively contribute data, and for large partners with significant activity in the area we will work with them to get personnel as official editors in the KEI version of the map so they can update and add nodes relevant to the work at their organization.

Task 4 Subtasks:
A: Find an independent home for the map that can accept contributions by funders.
B: Get organizations who are interested in contributing funds what they need to make that investment.
C: Work to onboard personnel from contributing organizations to begin inputting to the map.
D: Complete more nodes that are incomplete with a focus on the existing standards that have been identified by have no information about their specifications or authors.
E: Add more nodes. *It should be noted that E&D were budgeted differently as a weekly allotment of hours for the internal budget for a weekly number of hours. This can be scoped to meet the sponsors needs/expectations.*
F: Presentation of the Map at least three events and up to 6

Deliverables and Schedule

Deliverables:

In the following table, Task indicates the leading party responsible for this deliverable. Task 1 is SoSA, Task 2 is Christina, and Task 3 is Kaliya. This indicates the *leading* responsible party and in no way limits participation in developing the deliverable. A deliverable is met when the documentation or artifact is delivered to all parties, including UW/APL.

Note also that the deliverables mark the end of some scope of work and that intermediate reports or communications are not reflected in this table. Funding will be committed incrementally.

Week	Task	Milestone / Deliverable
1	1	**Current ontology & plan for refinement.** Deliver a description of the current ontology and a plan for identifying a refinement of the ontology needed for this project.
2	3A	**Target audience for beta launch.** Deliver a spreadsheet describing the specific target audiences for the beta launch of both the KEI implementation and the Kumu implementation.
4	1	**Ontology.** Deliver a description of the ontology needed to support the beta launch of both the KEI and Kumu implementations.
4	3B	**Definition of beta data set.** Based on the target audiences, deliver a scope of the data set needed to support the beta launch.
6	1	**Confirm first working data set.** Written confirmation that a first internal data set in the new ontology is available to support KEI development.
6	2	**Target stories.** Written preliminary narratives that would appeal to the target audiences for the Kumu implementation.
8	1	**Data authoring tool.** Deliver access and instructions for an internal tool that enables authoring and editing of data, to expand data set.
8	3	**Progress report – data set.** Progress and plans for expanding the internal working data set, en route to the beta data set.
9	2	**Definition of Kumu interface.** Definition of the transfer of data to (and from ?) the Kumu visualization.
10	1	**KEI alpha version.** Demonstration of alpha version of KEI implementation, using internal working data set; initial draft of documentation on use.

12	2	**Kumu alpha version.** Demonstration of alpha version of Kumu implementation, including the transfer of data from KEI implementation. Updated narratives for the target audiences.
12	3	**Progress report – data set & beta launch.** Progress and plans for expanding the internal working data set, en route to the beta data set, and written plan for specific demonstrations to be included in beta launch (dates, audience, location)
14	1	**KEI beta version.** Demonstration of beta version of KEI implementation, using internal working data set; updated draft of documentation on use.
15-16	3	Continue to input Data for Beta Launch
17	2	**Kumu beta version.** Demonstration of alpha version of Kumu implementation, including the transfer of data from KEI implementation. Updated narratives for the target audiences.
17	3	**Progress report – data set & beta launch.** Progress toward beta data set, progress report on plans for beta launch, scripts for demonstrations of KEI implementation and Kumu implementation.
18	*	**Final review**. Final internal review before beta launch.

Progress Reporting

Systems will be created with funders to communicate about progress during development.

Budget Summary

COST SUMMARY:	
TASK 1 bare import existing data	*$24,600*
TASK 2 build kumu interface + polish data for beta launch	*$39,000*
TASK 3 Beta Launch & 18 weeks or less	*$38,000*
TASK 4 w/o D&E get home for map and work with partners to begin their input of data	*$16,000*
Total	**$117,600**
TASK4 D&E 1yr of work adding new nodes	*$130,950*
Complete Total	$248,550