# Using human factors and a social graph to bootstrap ID

## Section 1: Summary

| Use Case Summary | | | |
|---|---|---|---|
| **Use Case ID:** | IDM-004 | **Use Case Type:** | *Vertical/Horizontal* |
| **Submission Date:** | January 4, 2019 | **Is Use Case supporting SDGs** | *Yes/no* |
| **Use Case Title:** | Decentral Identification – Using human factors and a social graph to bootstrap ID. | **Domain:** | *4-B* |
| **Status of Case** | *PoC, to be improved with use of Quorum* | **Sub-Domain** | *1* |
| **Contact information of person submitting/ managing the use-case** | Full Name: Christopher Hughes<br>Job Title: CTO<br>E-mail address: Christopher.hughes@gmail.com<br>Telephone number: +13104083731<br>Social media: twitter.com/chews<br>Web site: www.relateid.com | | |
| **Proposing Organization** | JPMorgan Quorum Developers - New York | | |
| **Short Description** | A human biometric system for creating a public/private keypair in a private blockchain. | | |
| **Long description** | **Self-sovereign ID.**<br>Using a social bootstrapping mechanism (using a plurality of attestations) allow humans to self-initialize identification.<br>This aids in identification of displaced people/refugees.<br>Once ID layer is initialized; allow additional attestations for education, professional certifications, or other relevant social data points. | | |
| **SDG in Focus (when applicable)** | 3. Improve health, attesting immunization records to RelateID<br>4. Improve education, attesting educational records to RelateID<br>5. Reduce gender inequality, using genderless ZKSnark matching.<br>10 Reduce race inequality, by using ZKSnark matching.<br>16 Improve voting, attesting educational records to RelateID | | |
| **Value Transfer:** | | **Number of Users:** | |
| **Types of Users:** | *Government actors, NGOs, aid organizations, health professionals, educators.* | | |
| **Stakeholders** | *Displaced humans, new immigrants* | | |
| **Data:** | RelateID acts as the tool to create the identity via a mobile app, that ID is stored on a quorum based chain, this application collects some biological data and hashes it with the local blockchains seed to create a localized | | |

| | |
|---|---|
| | identity. This IDs "trueness" is improved with attestations from humans within the social graph.<br>Public/Private key's that cannot be lost because they are tied to human factors that don't change (Iris, heartbeat, and possibly DNA)<br>Basic attestations (Name, Height, Weight, Eye color, Country of Origin)<br>Immunization / Health attestations<br>Professional attestations (education) |
| **Identification:** | This is a fundamental ID mechanism, we would use human factors to establish them, and save those factors via a public/private key mechanism that is recoverable using those human factors. |
| **Predicted Outcomes:** | A simple and robust, yet non-central identification system can be "popped-up" as needed. These decentralized ID networks can but don't have to be interlinked. |

| **Overview of the Business Problem or Opportunity** |
|---|
| *A robust and fair identification system that can be deployed quickly and interact with localized governments via APIs and reports. The hope here is to create an identification standard by which humans can self-initiate and benefit from.* |
| **Why Distributed Ledger Technology?** |
| Decentralized generation of Private/Public key, this system can rely on the participants to provide public keys (IDs) these IDs are portable, meaning they can be moved to future chains without needing to be re-established.<br>Chains make use of attestations, that are basically transactions to establish further truth.<br>These transactions act like a wallet of facts that exist within a temporary context but can me moved to public networks. |

## Section 2: Current process

| **Current Solutions** |
|---|
| *We are unaware of systems to do this at present.* |

| **Existing Flow (as-is)** | | |
|---|---|---|
| **Step** | **User Actions** | **System Actions** |
| 1. | | |
| 2. | | |

| **Process scheme (as-is)** |
|---|
| |

| Data and information (as-is) | | |
|---|---|---|
| **Data** | **Type** | **Description** |
| **1** | *Documents* | |
| **2** | *Payment transactions* | |

| Participants and their roles (as-is) | | |
|---|---|---|
| **Actor** | **Type/Role** | **Description** |
| **1** | *Lawyers* | |
| **2** | *Bank* | |

| Other Notes |
|---|
| *Any assumptions, issues* |

## Section 3: Expected process

| Expected Flow (to-be) | | |
|---|---|---|
| **Step** | **User Actions** | **System Actions** |
| 1. | User who wants to be ID'd submits bio-factors | Saves them to the quorum chain. |
| 2. | Once bootstrapped, human asks social graph (who've also established IDs) to attest to related truths | Truths are saved to chain, confidence of truth improves. |
| 3. | User goes for a health checkup, aid organizations add truths to human wallet, by providing some aid, the organization logs their work | Those transactions that collected immunization/health records attest to further truth |
| 4. | User attends schools | Educational attestations are added to chain. |

| Process scheme (to-be) |
|---|
| A mobile app to collect the data, a mobile/web application to collect additional truths, and a set of easy to deploy quorum servers to collect this data. |

| Participants and their roles | | |
|---|---|---|
| **Actor** | **Type/Role** | **Description** |
| **1** | *Users* | Humans who want to be IDd |
| **2** | *Educators* | Participants in system, who can attest to truth |
| **3** | *Aid Organizations* | Participants in system, who can attest to truth |

| Data and information | | |
|---|---|---|
| **Data** | **Type** | **Description** |
| **1** | *Documents* | Health records, immunization records, human-factors |

| Security and privacy |
|---|
| 1. *Use of best of breed cloud hosted, but also locally available hardware.* |

| Main Success Scenario + expected time line |
|---|
| *A easy to bootup identification mechanism for displaced humans. Using a template on a cloud provider to establish the infrastructure, the mobile application can easily pair with the network* |

*and provide the means to collect attestations. The moble app acts as a wallet for truths, and as a means to create truth proofs for others.*

**Conditions (pre- or post-)**

*1.*

**Performance needs**

*Basic cellular coverage and yes, the internet is required.*

**Legal considerations**

*For each issue, please describe the name of the legal act containing the identified barrier, what is the negative impact and a proposal to overcome this negative impact.*

**Risks**

*Centralized ID scares people, by using mobile devices, localized truth, and permissioned sidechains, these concerns can be overcome.*

**Special Requirements**

*none*

**External References and Miscellaneous**

*Checkout the work done by the RelateID foundation.*

*http://www.relateid.com*

**Other Notes**

*Any assumptions, issues*