Celo Blockchain Identity Research

Who we are

Celo is a mobile first Blockchain with a focus on Climate and ReFi. The Global South have consistently leap frogged traditional technology through mobile, and that's where Celo's focus lies - local communities. We aim to run projects locally, with an impact that can grow globally.

The Topic

At the core of Celo technologies is the ability to map long wallet addresses to simple phone numbers. To this end, Celo developed ODIS to preserve phone number privacy after it has been submitted for processing and ASv1 which validators use to receive phone number mapping requests and confirm the validation. The validators then earned a reward for every successful validation. Celo has now developed ASv2 which allows anyone to be an issuer of these mappings, to perform what the validators did with ASv1. Another upgrade with ASv2 is that any type of personal identifier (ex. Twitter handle, email, etc.) can be mapped to account addresses. Issuers have the freedom to decide how to verify that the user actually has ownership of their identifier. After verification, issuers register the mapping as an attestation to the on-chain smart contract registry. Attestations are stored under the issuer that registered them. When looking up attestations, we then have to decide which issuers are trusted.

Your task is to research and propose a method by which the community can decide which issuers can be trusted. You can refer to some preliminary thinking on this topic here.

Research Milestones

1. Gain a thorough understanding of ASv2 theoretically and technically.
2. Understand the workflow of FederatedAttestations.sol
3. Research governance and trust methods for issuers
4. Create a MVP for your solution

Deliverables

Students may choose their deliverables as long as it is agreed upon with Celo. Deliverables may be in the form of a research paper or technical implementation. Students are also expected to provide a publicly available portion of their work to the Celo community in a written (most likely Blog) format or oral format.