What is Linnia?

* ConsenSys protocol on the Ethereum network which will be used to connect digital self-sovereignty to decentralized storage with access controls protecting data
* Linnia plans to handle both data and metadata and also handle the permissions and policies granted to third-parties to view the data
  + How long they can hold the data, who else can they share the data with, etc.

Decentralized Identity Providers:

* MetaMask
  + Browser add-on which allows you to go on web3 (Ethereum nodes) without having your own node
  + MetaMask integrates Ethereum-enabled web pages with your MetaMask wallet and can “see” Ethereum addresses on the web page, allowing you, for example to send a payment to an online shop displaying an Ethereum address.
  + MetaMask can also populate the web page with your own wallet’s address as a recipient address if the web page requests it. i.e. Faucet application
  + **Use this to populate the respective pages in the app with the appropriate keys and addresses**
  + [**https://github.com/ethereumbook/ethereumbook/blob/develop/02intro.asciidoc**](https://github.com/ethereumbook/ethereumbook/blob/develop/02intro.asciidoc)
* uPort

Decentralized Storage:

* IPFS -
* Possibly Swarm and BlueZala
* IPLD?????

API:

* Infura – Easy to use API and developer tools which provide the infrastructure for decentralized applications on the Ethereum network
  + Used to easily bootstrap into the Ethereum network
  + The focus is improving scalability by creating cloud-based nodes so that you don’t have to run your own node
  + This allows you to get the current block information and then write to the block with the documents you need to add

Research & under explorations

Contextual Attestation:

* Need to develop some system to attest to the validity of the data

Quality Scoring (IRIS):

* Information integrity score – will measure completeness, use-cases to come with a quality exchange metric

Data Computation:

* Distrubted computation
* Do machine learning on the data
* Determine if it is actually the data you want to receive

Languages:

JS

React

* What is React?
  + React is a declarative, efficient, and flexible JS library for building user interfaces. It lets you compose complex UIs for small and isolated pieces of code called “component”
  + We use components to tell React what we want to see on the screen. When our data changes, React will efficiently update and re-enter our components
  + JSX comes with the full power of JS. You can put any JS expressions within braces inside JSX. Each React element is a JS object that you can store in a variable or pass around in your program

WorkFlow:

1. Register a User (using MetaMask)
   1. The user needs an Ethereum wallet to be able to sign transactions and add them
   2. The Linnia Protocol needs two pairs of keys to work
      1. Ethereum Keys
         1. Ethereum Private Key – No one should have access to this except for the user. With this key you can sign transactions and add them to the blockchain. This is the authentication key which proves your identity
         2. Ethereum Address – This is public and is how external users refer to you. If someone wants to share data with you using the Linnia Protocol, they will need your Ethereum Address
      2. Encryption Keys
         1. Encryption Private Key – Similar to the Ethereum Private key - You need this key in order to decrypt the data. After you retrieve the hidden random looking data, this key allows you to be able to convert that into readable original content
         2. Encryption Public Key – This is public and is how external users can share data with you. i.e. If you want to share your documents with BOB, the loan provider, you can encrypt the data using BOB’s public encryption key and then he will be the only one who can view the data