Journal of Research Objects

Flow Charts Ledger-Frontend-IPFS

Business Network, bforosv3.bna (Scholarly Wallet)

Researcher 1 id

Researcher 2 id

Institution

Smart Contracts

Claim/ CreateRO (create assets in the registry)

Collect/Create DISCO?

Enrich/ new Claim? Do we need more **Smart Contracts**

Wallet of the researcher

Ledger:

- Transaction Log
- 2. State data

ReseachObject (asset 1) Id Description URL(s) Publisher(s) Contributors(s)

DISCO (asset 2) Collection of Ros Type (FaBiO-classes)

Pluggable registry for science

exiting archive

| Blockchain Business

Network

- 1. User log-in.
- 2. Queries and displays www DB's for RO under user name.
- 3. Claim RO

- Create participant (if 1st time). Instantiate wallet.
- Create an asset (Capture metadata).
- 3. Claim asset
 - a) Assign ownership (with and without approval)
 - b) Update wallet (event)
- Count asset use (Wrapper)
 - h) Undate wallet (event)

Business Network, jro.bna (New Journal Infrastructure)

Ledger: **Transaction Smart Contracts** Log 2. State data Add Researcher 1 Id **Enrich Email** Name **ROJ ipfsPK** Do we need more (asset 1) **Affiliation Smart Contracts** roild (ipfs hash) corrAuth Type (FaBiO-classes) wallet node description reward/cost access# DISCO (asset 2) Contributors(s) Collection of Ros Researcher 2 hash id Wallet of the researcher

New Journal Infrastructure Ledger | Frontend | IPFS node

- Create

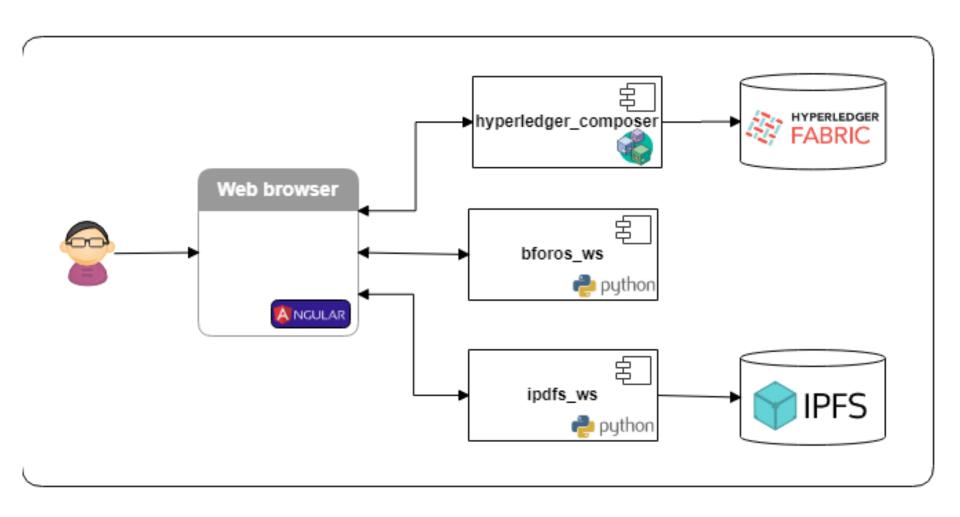
 participant
 (if 1st time).

 Instantiate
 wallet.
- Create/AddRO
- 3. Enrich Asset
- Wallet Activity

- 1. User log-in.
- 2. Create node?
- 3. Add RO
- Enrich RO with metadata

- 1. Create node
- 2. Add object(s)

Arquitecture



Merging JRO.bna and bforos.bna (Participant)

```
participant Researcher identified by researcherId {
o String researcherId
o String email
o String name
o String ipfsId
o afiliation institution
o Boolean correspAuth default = true
o Integer wallet default = 10
participant Researcher identified by researcherId {
o String researcherId
o String email
o String firstName
o String lastName
o Integer wallet default = 10
```

Keep participant from jro.bna, make ipfsId optional; researchId is ORCID ID

Merging JRO.bna and bforos.bna (Assets)

```
asset ROJ identified by rojld {
 o String roild //ipfs hash
 o TypeRO typeRO default = "other"
 o String node
 o String description optional
 o Integer reward default = 1
 o Integer cost default = 1
 o Integer countAccess default = 0
 --> Researcher[] contributors
 o String hash optional //registry hash to verify against
asset ResearchOJ identified by researchObjId {
 o String researchObjId
 o TypeRO typeRO default = "OTHER"
 o String uri
 o Integer reward default = 1
 o Integer cost default = 1
 o Integer countAccess default = 0
 --> Researcher[] collectors
 --> Researcher[] contributors
```

- 1. rojld ipfs hash? / researchObjld hash(url)
- 2. node / uri-url, the node you create makes it findable as long as it is working.
- 3. Eliminate collector
- 4. Hash JSON content to make it verifiable

Merging JRO.bna and bforos.bna (Transactions)

All Transactions generate wallet events

- 1. Basic functionalities
 - 1. Claim (a RO that is already findable in a repository <Github, figshare, slideshare>) / Add (a RO that will be made findable through IPFS).
 - 2. Enrich (add new or modify metadata)
- 2. Usage
 - 1. Count (for code)
 - 2. Download
- 3. Aggregate and relationships
 - 1. Disco
 - 2. Create relationship (type of enrich)