



Blockchains & Namespaces

2018-10-16 · Alexander Mayrhofer · Head of Research & Development

Agenda & Motivation

- **Agenda**

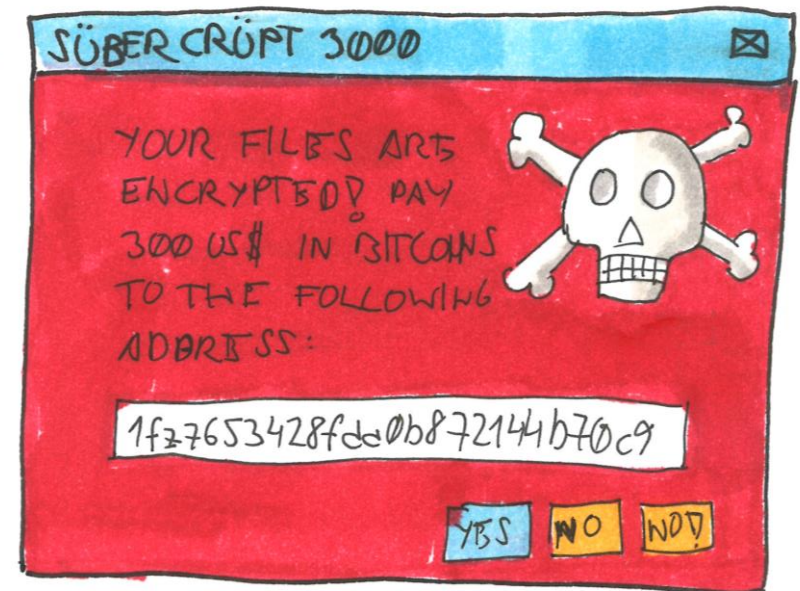
- Addressing in Blockchains
- A brief glance at Namespaces in Blockchains
- The connection to the DNS

- **Motivation:**

- We're managing a part of the global DNS namespace
- When a new namespace comes up, we're looking at it
- Can we connect the two worlds?

Addressing in Blockchains

- Ressourcen in Blockchain Systems use „Addresses“ (Hashes)
 - Wallets, Smart Contracts, etc.
- Adressen are „ugly“ and non-human-friendly
 - Humans want names
 - Usability problem!
 - Similar to IP addresses



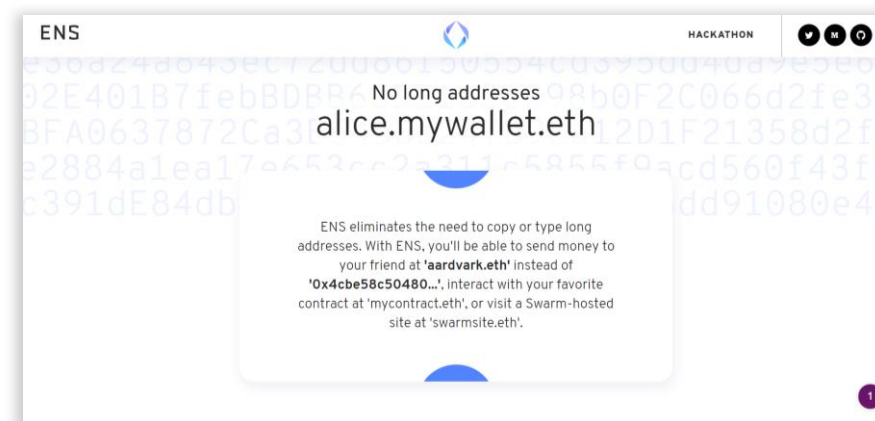
Namespaces in Blockchains



- Therefore: Name spaces on the blockchain itself („on chain“)
- Surprise: Syntax often follows the DNS
 - Predisposition by developers / users?
 - look similar, but are not reachable from the global DNS – confusion!
- Pioneer: Ethereum Name Service (ENS) using „.eth“
 - (namecoin – didn't address blockchain resources..)

Ethereum Nameservice (ENS) ens.domains

- Allocation of Names for ethereum Addresses
 - „.eth“: Auction
 - „.xyz“: Grandfathering with DNSSEC based on the DNS
- Top Level Management?
 - 7 Keyholders (actual people)
- Dedicated company in Singapore since 2018
 - 5 employees, 1M\$+ budget



Quelle: <https://ens.domains/>

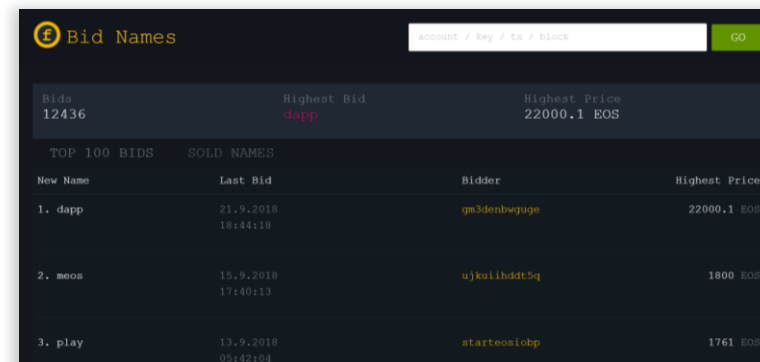
167.321

Names registered

Source: <https://ens.codetract.io/>

EOS eos.io

- 13-character „Account“-Names
 - alex5463juhui
- Short „Premium Names“ – Allocation of „sub accounts“
 - eg. premium-Name „eos“
 - allocate „account.eos“
- Premium Names are auctioned off
 - What happens if my brand name appears there?



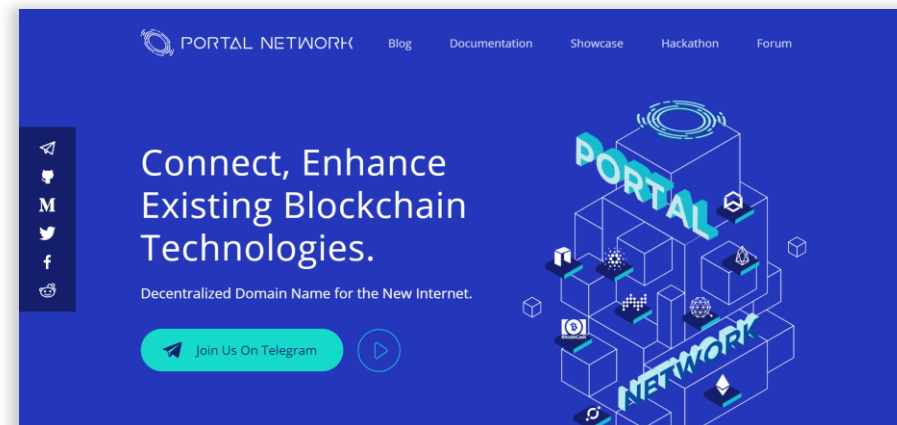
| Bid Names | | | |
|----------------------------|-----------------------|---------------|---------------|
| account / key / tx / block | | | |
| Bids | Highest Bid | Highest Price | |
| 12436 | dapp | 22000.1 EOS | |
| TOP 100 BIDS | | SOLD NAMES | |
| New Name | Last Bid | Bidder | Highest Price |
| 1. dapp | 21.9.2018 18:44:18 | gm3denbzqye | 22000.1 EOS |
| 2. meos | 15.9.2018 17:40:13 | ujkuihdt5q | 1800 EOS |
| 3. play | 13.9.2018 05:42:04 | starteosiohp | 1761 EOS |

Quelle: <https://eosflare.io/bidname>

Highest current bid:
 „.v“: 8.000 EOS
 (~39.000€)

Portal portal.network

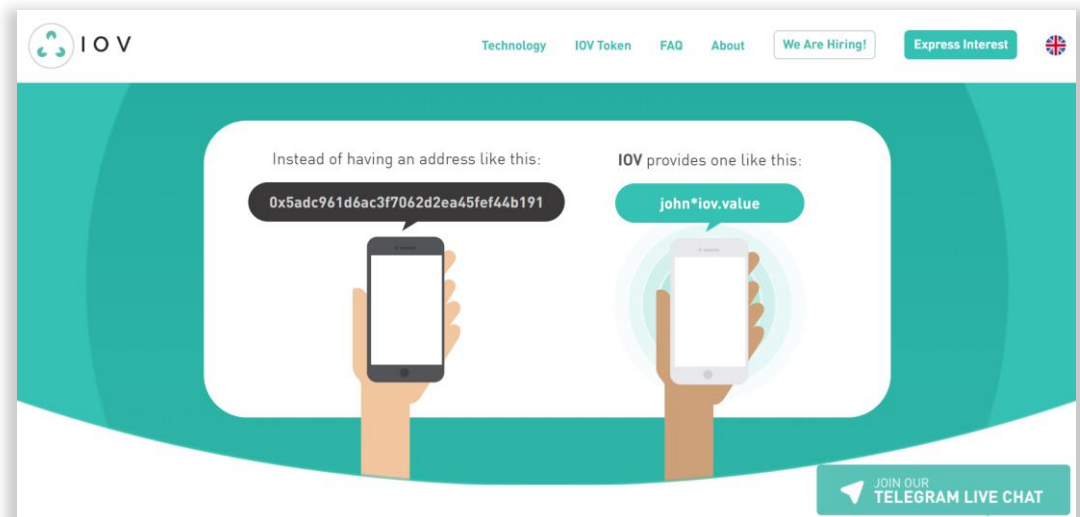
- „Decentralized Domain Name for the New Internet“
- Claim: „root“ for names in other block chains
- One top level name per Blockchain
 - Allocation of lower level names by smart contracts



Quelle: <https://portal.network>

IOV iov.one

- „Blockchain Name Service“
- „The first DNS for Blockchains“
- Address example „john*iov.value“
- ffs..



Quelle: <https://iov.one>

Let a thousand flowers bloom...

- Problem (a): **Ambiguity**

- 1f672afa0ae43690c0bf4e... is on which chain?
- Addresses themselves do not reveal on **which chain** the address resides

- Problem (b): **Overlapping namespaces**

- Project Foo: „Blockchain name service for all chains!“
- Project Bar: „The global blockchain name service!“
- Allocating identical names to different addresses?
- User confusion!

(a) Solve the Ambiguity

- by adding an identifier of the blockchain to the address
- **Decentralized Identifiers***
- contain the „Name“ of the Blockchain:
 - did:sov:stn:r1dwAJxcoG7EPiioGMz7h
- However, DIDs are still not „human friendly“

(b) Solve the Overlapping and the „Human friendly“ issue

- Requires creation of unique names
- There's one unified, globally available, overlap-free namespace of unique names on the internet – the **global Domain Name System**
 - „Let's put it into the DNS“ – a frequent quote

DIDs in the DNS

- Logical next step: „make DIDs discoverable from the DNS“

– <https://tools.ietf.org/html/draft-mayrhofer-did-dns>

```
_did.test  IN URI 10 1
„did:sov:stn:r1dwAJxcoG7EPiioGMz7h“
```

- Use your existing, well known DNS domain for referring to Blockchain resources
- Submitted to the Internet Engineering Task Force for consideration



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