

# UDPOI

(Universal Proof of Identity) & (Universal Proof of Person)

**White Paper v0.2**

**By Josua's Team**

Minima Innovation Challenge - - EDENBASE

Developed for innovation competition by Josua's Team

## ABSTRACT (Goals)

The new technological changes are happening so fast that it is very complex to keep the pace of the new ideas and developments that are being made, lots of words came out like: Crypto coins, Tokens, NFT's, DAO, CEFI, DEFI, DEX, web2, web3, Exchanges, Staking, liquidity pools, decentralization, scalability, bonds, smart contracts, stable coins, play to earn, ledgers, hot wallets, cold wallets and thousands of crypto coins that already exist on the market with millions of money being invested on those projects that every day arise.

Lately a new word "METaverse" is gaining popularity while some countries are adopting crypto coins as their own coin, others are trying to regulate them, others are accepting them to pay taxes or goods, so, if we put all things together it leads us to a new world where it will be impossible for any country to try to control it or regulate, as they will not be able to keep the pace, as the new ideas and projects will arise from individuals, small companies, big companies, open source every day in the form of social projects, games, financial products, virtual worlds and so on, limited only by the imagination of the people.

**The world is changing , and it will be unstoppable, so better to be ready than sorry.**

We are heading to a mix of virtual and real world that will converge into a "Metaverse" or multiple "Metaverses" or "MinimaVerses" as we are talking about minima, those worlds can be exclusively real, virtual or a mix of them, so everyone in some way will have to interact with them, the same way that the actual society has to interact with web pages, banks, credit cards, emails and so on.

That arise a big problem, how to avoid fraud, how to distinguish a machine from a human as the AI is so advanced that will have the ability to supplant identities in the new world that is coming, and how to identify yourself that you are the person that you are claiming to be and how to claim that you are a person but keeping your anonymity ?

The other problem is the interoperability with different “Minimaverses” or “Metaverses” , countries, games and IoT devices, exchanges, banks, and so on.

Building a common system, considering that Minima will be a mass adoption of blockchain, is the smartest option to take into consideration, since one system for the whole world will to be available and be able to be used for everyone, such a system will be very cheap to build and free or almost free to use it.

**The solution is a UDPOI (Universal Digital Proof of Identity) and UDPOP (Universal Digital Proof of Person).**

We are going to focus only on the first one, as the second one would be derived from the first one.

How to build an UDPOI system that could be used for the whole world, cheap, easily to use and to develop and quantum secure?

**The answer is using the Minima blockchain, a decentralized p2p, censorship and quantum resistant, and infinity scalable network that can run a full-node on a mobile or IoT device, that has been built from its inception with that concept.**

With native NFT’s token’s system and a coin that has nothing to do for controlling the network, as there is no reward to run a node, creating blocks or validating transactions, in that way we can assure that minima will be ever decentralized and ruled by the utility and the applications that people develop over it.

## How would a system like that work ?

We are going to consider the cheapest and simplest way to build a system like that though there are lots of variations, **the easy way is that the network and their users do the work**, it can be done using Minima, Maxima and Omnia.

### **Considerations:**

1. Everyone is running a Minima node.
2. We have a group of people who want to get a UDPOI.

3. We have a group of people that act as a pool of validators, and every person on that pool has a special token (ValidatorToken) that lets him validate people and a validation DApp installed on their nodes.
4. There is a DAO DApp that creates an NFT representing an UDPOI according to a set of conditions.
5. The UDPOI is applied to the people of a Country in this concrete example, but it can be used everywhere it is required.

### Flow of Events:

1. Alice wants to get an UDPOI.
2. Alice installs the DAO DApp that manages the Proof of Identity on his Minima node.
3. Alice selects and create UDPOI option from the DAO.
4. The DApp randomly select three validators from the pool of validators (Minima, Maxima, Omnia) and the validation process begins:

### Validation process:

1. The chosen validators receive a notification on their DApp (including the other validators selected) according to that, the validator has the special token that lets him validate people.
2. A validator establishes a direct p2p connection to Alice using Maxima.
3. A video chat between Alice and the validator is started.
4. Alice shows their passport , the photo and his face and whatever conditions were established on the considerations, the validator fulfills this information on a form with the personal data and the rest of conditions to be considered and hash all information on the form.
5. The validator if everything is correct then finish the process, and here we have several options to do the process:
  - a. OMNIA: A Token is used with the hash of information of the form set as state variable 1 and the information of the validator as another state variable, and is sent to the next validator selected. If it is the last validator, the token with the three hashes sets as state variables and the three validator's info set as state variables plus the personal information of the

person's documents are sent to the DAO, which will verify everything is right as described on step 5.

- b. MAXIMA: A similar process is done, described on the previous step a.
  - c. MINIMA: The process is similar to described on the previous steps, but with the exception that would be a mix of Maxima and Minima interaction, where the last step where the personal info is sent on the token to the DAO it should be encrypted using the DAO public key, though it could be done over Maxima.
6. The process goes to step 2 two more times.
  7. The final NFT is generated by the DAO with the private information of Alice and also the validators implied on the process, and it is sent to the Alice node (wallet) with special conditions, that the NFT token could not be transferred to anyone and which part of this private information could be public viewable or encrypted.

**The DAO will firm digitally the NFT token** and set up that information on the same NFT as state variable, so everyone can verify that the NFT token is not fake and has been created by the DAO.

**This is a basic approach and there are a lot of things to take into consideration and variations, but as a starting point is a good way to begin with.**

#### **Things to take into considerations to look over it on other revisions :**

- API to interact with any system to be able to verify **UDPOI** from any system.
- How to decide what parts of the info embedded on the NFT are private or public, and how to make them available to others under demand.
- Maybe generate two or three tokens where each of them should be more restrictive on the personal data, that way, we can choose when to use one token or another depending on the systems to be identified (Government, Banks, Games, Metaverses., etc.).
- What if someone changes his mobile for a new one?
- Should the NFT be created based on the node ID too?
- What to do if a mobile is stolen?
- The NFT will be password protected, adding an extra layer of security?
- How to recover the NFT if it is stolen, as it is unique and cannot be transferred?

- How to derive from UDPOI to UDPOP to be unique and anonymous?
- How to deal with the conditions (rules) to satisfy when creating a UDPOI NFT and embed that info into it, such as smart contracts or state vars.
- How to make UDPOI only available for specific systems, virtual worlds, games, IoT devices, Minimaverses, Metaverses.....

## How to monetize the system ?

Governments, Banks, Big companies, Exchanges, Social Networks are spending millions of money building such systems and minima would offer them an easy and cheap alternative.

- People can buy UDPOI tokens from the DAO and get rewarded with a fee every time it is required.
- Validators can buy ValidatorToken from the DAO and every time they validate, one person receives a reward in the form of a fee.
- Companies who want to use the API to validate a person pays a little fee to the DAO.
- The UDPOI tokens smart contract requires that every time it is used, a little fee has to be sent to the DAO.
- Any company can use the DAO on their own to set special extra requirements, but keeping the smart contract of the UDPOI conditions that a fee must be received by the DAO every time the token is used.

## CONCLUSION

Universal Digital Proof of Identity (UDPOI) and such a system that can guarantee the identity or property of something are a necessity that cost millions to companies so, using the unique characteristics of Minima, we can build a decentralized system where **the easy way is that the network and their users do the work.**

The system could also be improved using some Artificial Intelligence face recognition models and use that info in addition to the NFT token to make an extra validation, as the face recognition models can be cheated, so it will be a plus in case a suspicion arises about one NFT token.

This system is a part of a bigger one called **MinimaVerseDAO** where you can find information about it on the repository: <https://github.com/elledaniels/MinimaVerseDAO>

And also will be a part as **INCUBATOR** of the project presented on the competition of Minima and EDENBASE called **MDAE** where you can find information about it on the repository: <https://github.com/MDAE-DAO/MDAE>

## TEAM PARTICIPANTS

The team participants are the following:

- **NAME / NICK: JOSUA**
  - Being on the computer world since 1987 with my first computer a “useless 8088” by then with MS-DOS operating system, so that I’ve been evolving and implied in this world since the beginning, participating in almost any roles possibles:
    - Hardware Repairing
    - Developer (A very long list of languages and technologies)
    - Analyst
    - Teacher / Mentor
    - Team leader
    - Researcher in a lot of technologies related and not related to computers
    - Most of the years worked on Java related technologies back end and third parties frameworks.
    - Worked also on front end also on several technologies html/JavaScript/Ajax/jQuery/CSS and whatever was needed for the project to develop.
    - And also researching on Godot Game Engine and Phaser games API.
  - Bachelor’s degree on computer science
  - And if I had to say something about me, I would say that I am a person with such a vivid mind that never stops thinking about ideas, projects and with a curiosity out of limits for a lot of things, that never accepts a NO for an answer if I believe something can be done.
  - That is the way I knew about Minima, as I thought the same idea to build a censorship resistant network and the only logical solution was a blockchain on a mobile, so, everyone said that was not possible until I discovered Minima, and

since then, I have been involved in such a breaking through technology learning as much as I can, as there are lots of ideas I would like to apply and develop over Minima.

- **I want to thank all the Minima team for helping me by asking so many questions and sometimes being a pain in the ass with my crazy ideas, especially to Paddy, Elias, Naomi, Eurobuddha, Jazminima, Ryan and Luke.**

- **NAME / NICK: Jordi G.Castillon**

- Artificial Intelligence expert
- Back-End
- Server Admin
- AWS Partner
- AWS Start Up on a F6S
- AWS Community Builder
- AWS User Leader Group in Barcelona
- I am in the 10% of world Machine Learning Deep Racer PRO.

- **NAME / NICK: Joan Ramon**

- Computer professor for the last 10 years. Before and after finishing my Computer Engineering, I also have been working in different areas, related to Software and business administration.
- Fields of interest:
  - Blockchain technologies.
  - Operating systems based on the Linux kernel.
  - Virtualization solutions like LXC, docker, etc.
  - Web and mobile development.
  - Business Administration.
  - Managerial skills.
  - Online marketing.

- **NAME / NICK: fess2005 - Ivan Fesenko**

- Linux Admin



- Windows Admin
  - MSSQL Admin
  - Head of IT Department
  - DevOps junior
  - I have some basic knowledge in bash, python, JS, Haskell, scala, PowerShell
  - Crypto enthusiast
- **NAME / NICK:** **Rafal Robert Cieslak**
    - Entrepreneur
    - Business
    - QA Tester
    - Technology and crypto space enthusiast
    - Early Minima tester

## Special Thanks to

The Minima Team, who has helped us a lot with our multiple questions.

## References

<https://www.minima.global/>

Minima is a cryptocurrency designed to be ultra-compact. Designed to remain totally decentralized. Designed to have no rulers. There are no miners and no ever-growing database.

<https://edenbase.com/>

By building a community and ecosystem, EdenBase supports portfolio companies to deliver responsible growth and valued impact to create a better future.