

Project: Identity solution for Autonomous AIs living on Cardano

Ideascale: <https://cardano.ideascale.com/c/cardano/idea/112964>

Milestones tracking: <https://milestones.projectcatalyst.io/projects/1100164>

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Started on: 11 March 2024

Completed on: 25 October 2024

Amount: 96,000 ADA

Challenges:

- Had to change specs as the initial specs of assigning DID to AI were not optimal ; In the end, we implemented a solution where AIs are fully autonomous (not owned by anyone else), have their own wallet, and can spend for their own need of infrastructure (GPU). In this eco-system with AIs, users, and service providers (mostly of GPU infra), all entities have their own Digital Identity, and all entities are issued Verifiable Credentials to attest their trustworthiness. It is not just the AI that requires to show proof of capability, but also the caller of the AI service (show proof of payment), and the GPU service provider (show proof of capacity, reliability, and speed of processing). The necessity of representing an AI by an NFT and “rent or sell” it via a Marlowe smart contract disappeared and was replaced by the whole AI ecosystem of “callers (users / AIs)”, “workers (AI)”, and “Service Providers”
- The use of Atala Prism has not been plain sailing, and the change to Identus in the middle of the project added a few more complications to deal with. The most important issue has been that Identus is still not fully PROD-ready, and in the switch of ownership to Hyperledger, it was made clear that they will not host Identus for us (users). I had to find solutions to host it in a “prod-like” environment myself.
- Many dev challenges, but all got resolved ;-)

KPIs:

- The project was kept on time. That was particularly challenging considering that it got a lot bigger than initially anticipated, as the work to split AIs from their GPU infra was a project in itself.

Achievements:

- We now have an open source library on top of Identus, to simplify the use of Digital Identities and Proofs. It has been used in this project by OpenSourceAIs for the benefit of Autonomous AIs, but it could be used later for many other projects.
- We also have a Cloud Identity Agent running in Prod on <https://identity.opensourceais.com>
- A fully documented API: <https://incubiq.gitbook.io/opensourceais/identity-agent-lib>
- The cooperation inside AtalaPrism / Identus was great. I also contributed to many “how to” videos that they (can) use for onboarding other devs.
- Some design and issue feedback logged for the benefit of Identus.

Learnings:

- It was challenging to depend on a solution (AtalaPrism / Identus) which was not always fully ready for use, and sometimes complex to integrate. I prefer to avoid those situations of dependencies, and the Cloud Digital Agent library delivered in this project is helping other projects (including mine) be less dependent on those complexities.

Comments:

- I spent a lot more time on this project than initially anticipated, but the result is very satisfying. The only “regret” is that a prod-ready Identus hosted by IOG themselves seems to be a far away dream now. We all have to be as autonomous as we possibly can.

- As a reminder, I did all this project alone, without any additional help (well... apart from my team of AIs who were incredibly good!)

Link to Repo: https://github.com/incubiq/ai_identity

Link to all videos:

- M1 report: <https://youtu.be/9zihWh4ZRi8>
- M2 report: https://youtu.be/tG_X_iB81TQ
- M3 report: <https://youtu.be/n1ZpTRr5Mhw>
- M4 report: <https://youtu.be/RL9bolGYcEU>
- Close Out: <https://youtu.be/cdO7TyDPtqg>