Change request

Date: 28 June 2024

Project: 1100164 (split over 4 milestones, M2 being reviewed and approved now)

Change: most content of M3 will need to change, as a consequence the M4 will also change slightly.

Need for change:
- Detailed explanation of why we need to change the specs: https://www.youtube.com/watch?v=u_ufSn_7UR8, from 13:00 to 20:00

- Detailed explanation of what should be changed: same video, from 20:00 to 23:00

- Quick summary: we will implement differently from initially planned: (i) no smart contract for running each transaction, but a private orchestrator for cost settlements at end of each month ; (ii) no need for an NFT ; (iii) AIs are autonomous entities (not owned by anyone else ; (iv) AIs use service providers for their needs ; (v) All actors in the eco-system have a Digital Identity and can receive Verifiable Credentials

Actual change request:

Initial plan (M3)
- M3 output
  * Represent an AI on-chain (likely as a NFT, but could change based on Milestone 1 research)
  * Execute an AI's service (where the AI takes input, processes, and gives output)
  * Process the cost of the transaction and attributes earnings to the AI
- M3 acceptance
  * An AI's service can be called
  * The cost of the service is billed to the caller and produces income for the AI
  * Additional milestone 1 outcomes are satisfied
- M3 evidence of completion
  * Github repo is updated
  * Video demo proof that a smart contract can be called to request an AI to execute a task that it is designed to deliver
  * Video demo proof of the creation of a Verified Credential at the end of the execution of AI service.
  * Video demo proof that the AI received an amount in ADA for the use of its service

New plan (M3)
- M3 output
  * the onchain representation of the AI is its Identus identity wallet (not an NFT)
  * our identity open source node will issue and verify VCs
  * OSAIS to decompose an AI's attribute to resurface service providers (of GPU, of models, etc...)
  * OSAIS to display in UI the status of an AI from its VCs (identity, performance, cost)
  * OSAIS to make use of the identity open source APIs to execute an AI's transaction and generate VCs
- M3 acceptance
  * An AI is independent (not owned / has its own wallet) and uses independent service providers

* An AI's service can be called
    * Each entity in the eco-system (caller, worker AI, service provider) receives a VC at execution of request
(VC will also contain proof of transaction cost for each entity)
- M3 evidence of completion
    * Github repo is updated
    * Video demo proof that an AI uses service providers
    * Video demo proof of VCs issued to entities (caller, worker, service provider) after executing a transaction.

As a consequence of those changes, the project has become larger, and will likely require more time to deliver
M3. I would prefer to request that M3 be delivered 7 Oct (one month later than initially planned).

Initial plan (M4)
- M4 output
    * Open source GitHub repo containing all code to:
            Attribute an identity to an AI
            Establish Verified Credentials to the AI at certain key points (at creation, then either at each call, or
            every pack of x calls)
            Run the AI's service via a smart contract call
            Deal with monetary transaction between the caller of the service and the AI providing the service.
    * A video showcasing the entire process
    * A full documented example (from end to end)
- M4 acceptance
    * An AI can be called from a smart contract, and can execute a task it has been programmed to do.
- M4 evidence of completion
    * The GitHub repo is accessible and documented.
    * A hosted web page runs the code in the GitHub repo ; it can list all available AIs which reside on-chain
and allows an end-user to call those AIs via a smart contract
    * A video demonstration is produced, showcasing a call to an AI via smart contract.

New plan (M4)
- M4 output
    * Open source GitHub repo containing all code to:
            Attribute an identity to an AI
            Issue Verified Credentials to the all entities in the eco-system (callers, workers, service providers) at
            certain key points (at least: when a transaction is executed ; when the entity is created)
            Deal with monetary transaction between the caller of the service, the AI executing the service, and the
            service providers.
    * A video showcasing the entire process
    * A full documented example (from end to end)
- M4 acceptance
    * An AI can be called and can execute a task it has been programmed to do. The costs associated to the
transaction are captured in VCs and are settled at end of each month
- M4 evidence of completion
    * The GitHub repo is accessible and documented.
    * A hosted web page runs the code in the GitHub repo ; it can list all available AIs which reside on-chain
and allows an end-user to see their capabilities (all those stored in Verifiable Credentials)
    * A video demonstration is produced, showcasing a call to an AI and the issuance of VCs.

As a consequence of pushing back M3 by one month, M4 should be delivered 11 Nov (one month later than
initially planned).

<u>Reviewers approval</u>:

This change was already put forward to reviewers, and I believe they fully support the need for the change, and understand the good reasons for it, so that we deliver a better system.