UpScale Funding Proposal

Project Name: Fractal Governance Product Suite

Project Overview

This project consists of two separate applications enabling communities to conduct the political playoff processes of “Fractal Governance” as invented by Daniel Larimer. The first application implements the “Eden Upvote” process which is currently used by the UpScale community to determine their community delegates. The second application implements the “Fractally” process which is the improved version of Eden’s Upvote process. In contrast to all existing “Fractal Governance” implementations the applications of this product suite are fully on-chain, free of dependencies of third-party applications and thus completely “trustless”, meaning no single entity is able to prevent the transfer of power (i.e. the formation of a new owner multi-signature) from one set of delegates to another.

Ecosystem Fit

Since its inception the Eden/UpScale community uses the process of “Fractal Governance” in order to elect their representatives. However, in all those years no one has ever built an all-in-one blockchain application that facilitates the election process fully on-chain – despite several communities within the EOSIO/AntelopeIO ecosystem having adopted this election process. This Fractal Governance Product Suite will make it as easy as possible for communities to adopt Fractal Governance. It could become an essential part of the “DAO Creator” application which is currently being developed by the UpScale community as well as being used by the UpScale community itself to conduct their own elections.

Project Details

This product suite consists of the following two applications:

Eden Upvote: The first iteration of Larimer’s concept of “Fractal Governance” known as “Eden” in which community members “upvote” a single delegate of their breakout-rooms. Depending on the size of the community (effectively the number of participants in a single election event) there are multiple rounds that take place until a new set of delegates is elected. The chief delegate is determined randomly from the top set of delegates. In order for new members to join the community at least two existing community members must induct the new member in a video ceremony.

Features include (but not limited to):

- Breakout video rooms for induction ceremony as well as political playoffs based on WebRTC
- Trustless on-chain randomization of event participants into breakout rooms
- On-chain voting for delegates
- Fully automated creation of ownership multi-signature of corresponding governance smart contract

- Fully automated distribution of funds which are allocated to a particular election event
- Fully automated recording & video post-processing of breakout-rooms & induction ceremony
- Audio-Level detection for “Talking Timer”

Deliverables:

- Upvote Application Smart Contract (including source code) for on-chain Governance
- Upvote Web User Interface (Desktop & Mobile including source code) & Server Application to conduct political playoffs & induction ceremony
- Install script and/or Docker file for easy setup of Server Application & Janus WebRTC Server
- Pseudo-RNG Smart Contract (including source code) for trustless on-chain randomization
- FFMPEG video post-processing bash script

Fractally: The second iteration of Larimer’s concept of “Fractal Governance” known as “Fractally” in which community members rank each others contributions inside the breakout rooms. Regardless of the community size (effectively the number of participants of a single election event) there is only one round that takes place to determine the community delegates. A non-transferable “respect” token is issued to event participants based on the Fibonacci sequence according to which reward tokens are being distributed. The members receiving the highest amount of “respect” (total & average over the past twelve election events) automatically become the community delegates. In order for new members to join the community they have to get approval of a certain number (configurable) of existing community members.

Features include (but not limited to):

- Breakout video rooms for political playoffs in which participants rank each others contributions based on WebRTC
- Trustless on-chain randomization of event participants into breakout rooms
- On-chain ranking of contributions
- Fully automated creation of ownership multi-signature of corresponding governance smart contract
- Fully automated distribution of “respect” and funds which are allocated to a particular election event
- Fully configurable in regards to “council” size (i.e. number of delegates in ownership multi-signature), approvals required for new members and the amount of total & average respect required to unlock abilities for community members to become delegates and to approve new members
- Fully automated recording & video post-processing of breakout-rooms
- Audio-Level detection for “Talking Timer”

Deliverables (in addition to Eden Upvote deliverables):

- Fractally Application Smart Contract (including source code) for on-chain Governance
- Fractally Web User Interface (Desktop & Mobile, including source code) & Server Application to conduct political playoffs

Development Roadmap

Because of similarities between the Upvote Eden and Fractally applications some parts of the Eden Upvote application can be reused in order to build the Fractally application, thus reducing the overall amount of work required in order to build the second application.

Overview

- Total Estimated Duration: 3.5 months
- Full-Time Equivalent (FTE): 5
- Total Costs: $65,000 USD

Milestone 1 – Eden Upvote Application

- Estimated Duration: 2 months
- FTE: 3
- Costs: $40,000 USD

Deliverables:

- Upvote Application Smart Contract
- Upvote User Interface & Server Application
- Pseudo-RNG Smart Contract

Milestone 2 – WebRTC Setup & Video Post-Processing

- Estimated Duration: 0.5 months
- FTE: 0.5
- Costs: $5,000 USD

Deliverables:

- Install script and/or Docker file for easy setup of Server Application Janus WebRTC Server
- FFMPEG video post-processing bash script
- Integration of Upvote Smart Contract logic into existing genesis.eden conract

Milestone 3 – Fractally Application

- Estimated Duration: 1 month

- FTE: 1.5
- Costs: $20,000 USD

Deliverables:

- Fractally Application Smart Contract
- Fractally User Interface & Server Application

In addition to the above deliverables of both applications the total cost includes one year of free hosting of the required WebRTC infrastructure plus server application including setup.