#3 Informal specifications for DGO main service submission

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Summary

This submission is developed to support work towards technical implementation of a Decentralized Governance Organization (DGO) in accordance with project's roadmap[1]. The proposed solution describes high-level governance mechanisms for Free TON with the context of various situations. The proposed management system is based on the principles listed below:

1. fixation neither on financial mechanisms of management, nor also not on specific sets of rules of conduct. The main governance tools are: the availability of data, high public awareness of decision-making, decentralization of execution processes - based mainly on a technical factor, and not on the concept of game theory;
2. this system initially takes into account the uneven distribution of power within the community, takes into account that the behavior of the participants, on whom depends a lot, may not be useful, and can be malicious enough (on the other hand, the proposed control mechanisms are aimed at proving this and protesting the decision, if needed).

Contents

    A. Overview

DGO goals of implementation

Goals in accordance with which DGO Free TON created and developed - are (following the initial proposal by magictop30):

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[1]https://forum.freeton.org/t/establishing-of-free-ton-dgo-governance-system-aka-dgo-g2-0-or-dgo-sub-governance-proposal/2932

- facilitate the development of the Free TON governance (G2.0) platform:
- discuss governance principles;
- discuss governance policies;
- community's requests/concerns gathering;
- design, implementation of community management (also in a technical sense);
- effective work with community contribution.[2]

B. Choiced governance system

There is no pure financial mechanism or a democratic mechanism implemented technically that could prevent proxy voting, bribery, false statements, incompetence, sabotage and the like. What a technical system can do is to provide evidence of certain actions (for example, that one can consider harmful), to preserve this information, to provide access to such information, to provide access to collective discussion, and also - to create maximum amount of pre-build rules governing the work of decision makers - as much formalized as possible. Example of information about the constituent part of such a contract (here - in the context of evaluating submissions within the framework of Contest Proposal; but, this technical system for evidence assembling can be universal and used (with a specific setting of a smart contract) for any types of processes).
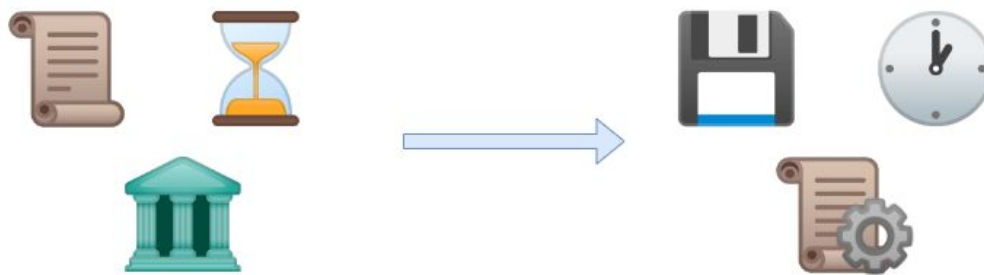
C. Discussion

Contest Proposal governance example

Let's consider the Contest Proposal example.

The jury is an entity with a variety of properties important for a decentralized ecosystem, inheriting the context of existing "real-life" entities. The need for control gives rise to the need, for example, to establish control institutions. In the case of the work of such an education as a jury, the task of making decisions (more specifically, a judicial assessment) is solved. The existence of entities, or persons who are responsible for decision-making (DM) proven by the need for decision-making (regulation of behavior) by the community. In the context of Free TON DGO, we are faced with the following questions: the functioning of the institutions for working with the power (as with the power of the community's voice, for example), the functioning of the control institutions, the functioning of the assessment system. (This description of the jury in the DGO is contextual in relation to our existing knowledge, that is, it is based on knowledge about existing institutions (but not "new", such as decentralized organizations)).

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[2]https://forum.freeton.org/t/establishing-of-free-ton-dgo-governance-system-aka-dgo-g2-0-or-dgo-sub-governance-proposal/2932

the created DGO is a "new" institution that contextually
inherits the properties of "old" institutions

The opportunity to discuss the jury's work, implemented in this submission, is based on the implementation of the opportunity to manage the creation and operation of the governance activity by the members of the Free TON community. This part of the discussion, in a general sense, is the same process of finding an answer to the question "who audits the auditors?", "who judges the judges?". How to control the work of the jury and what rules for the jury to create?

Let's turn to the experience of existing systems and the related discussion. Often, we can meet the solution aimed to create additional supervisory bodies ("jury to evaluate the work of the jury"). But it gives rise to new entities that also need verification. This is avoided by the rule of independence of courts[3] (also the basis for our decision). Thus, the very rules of the jury "control" the work of the jury, and if the jury is independent, then it will do its job useful for the community. Intuitively, we can have a slightly easier solution to this issue, since Free TON is a technological system that provides smart contracts, the very function of which is "creating rules before the game starts".

However, a technical system cannot solve the entire discussed problem using only its functionality, and often it can only provide a tool for solving. Then, not only pre-build rules are used, but also public control (the basis for our decision) as a process with some outcome* (for example, a vote) (the basis for our decision).

* game theory aspect hasn't been discussed here.

In total, the Free TON system which will use DGO software should:

- make the most of the technical capabilities of the system to implement the rules of management proposed by people (from human language -> to machine code);

comment: therefore and by virtue of the above, it is proposed to avoid creating documents like the "Jury Code", etc., at least as a "supporting document";
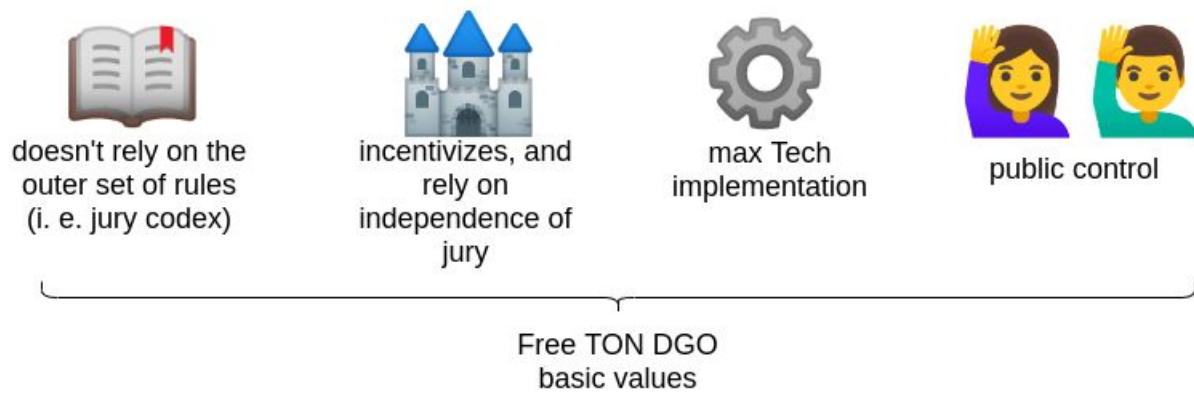
- stimulate the independence of the jury;

comment: and not the good faith and not the honesty of the jury, although these can be consequences (but not direct goals);

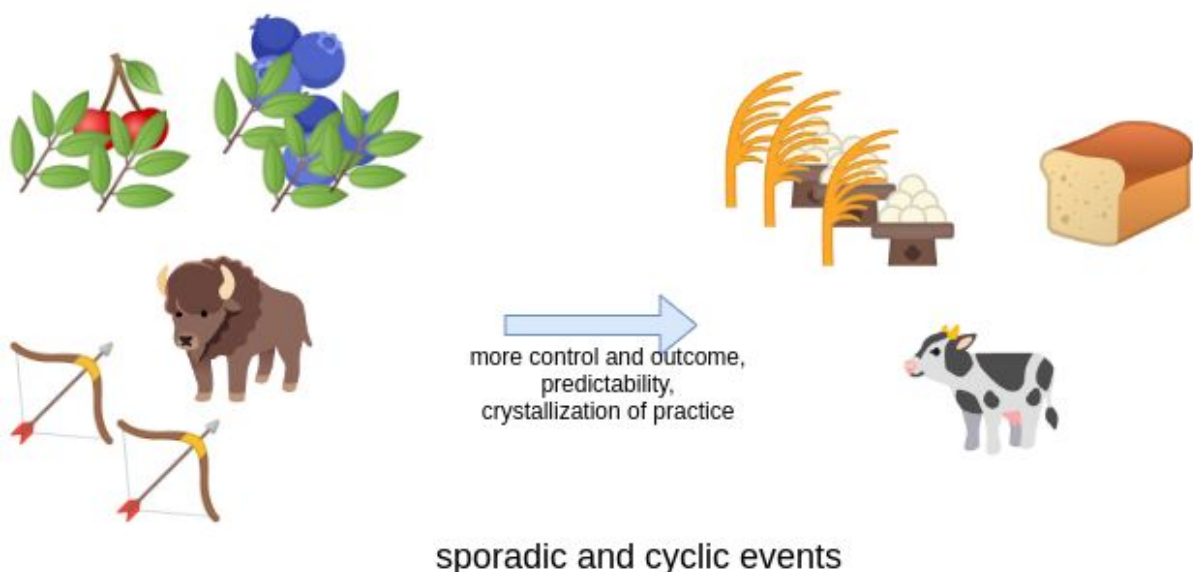[3]https://www.fjc.gov/content/judicial-independence

- include methods of public control;

comment: not contradicting the above two points, i.e. the smart contract must know that some kind of public control function (for example, some kind of voting option to control the jury) can be added.


doesn't rely on the outer set of rules (i. e. jury codex)   incentivizes, and rely on independence of jury   max Tech implementation   public control

Free TON DGO
basic values

Solution

Free TON's technical solution allows participation in governance mechanisms that can significantly affect the life of this decentralized ecosystem. Governance events, according to the DGO logic, are things that happen not just once, but from time to time, perhaps even quite regularly. Therefore, it becomes necessary, speaking at a 'high level', to create, excite, use certain governance cycles. Cyclic logic implies that the same operating principle can be automatically used at the right time, so that the process does not need to be specially created and discussed in detail. Sentences from section B describe several types of governance cycles. This is related, since the community needs to regularly address issues (social level), and technical systems implement regular challenges in certain events (technical level[4]).

more control and outcome, predictability, crystallization of practice

sporadic and cyclic events

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[4] https://lwn.net/Articles/557073/

The jury is the object that performs the function. Execution of a function is related to the execution of work, and work is related to the execution of processes. Based on the above (jury work issues), it is possible to highlight following objects (results) and processes are associated with the jury *entity*:

object	power	assessment	accordance
process	management	expert review	audit
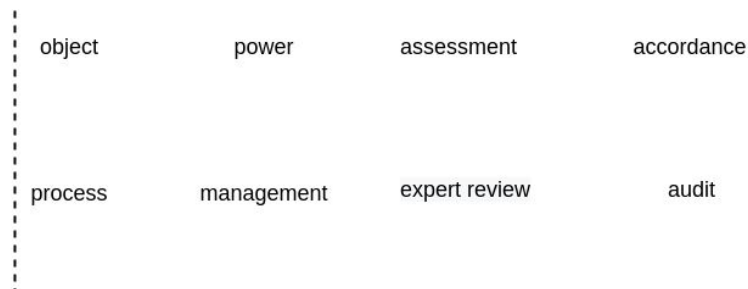
This submission agrees with the necessity of the existence of a jury, because only a limited circle of declared persons can effectively carry out costly management and audit processes, as well as utilize their proven knowledge.

At the same time, such a significance of the jury is associated with various vectors of attack. It is in the interest of the community to reduce the damage and the likelihood of various attacks targeting the DGO system, targeting the processes implemented by the subgovernments.

Such attack vectors (from jury's point) are:

1. power - management - refusal to exercise community power (power grab);
2. assessment - expert review - false and / or unhelpful and / or unreasonable conclusion (unintentional or malicious - it's an attack in any case)
3. accordance - audit - assumption of non-compliance - when we know about this type of non-compliance, but still letting it be.

The proposed solution is to implement the principle of decentralized execution. The formulated principle is borrowed and reads:

As a rule, centralized control of operations ensures effective employment of limited assets, while decentralized execution allows tactical adaptation and accommodates the components' different employment concepts and procedures in a joint environment.[5]

For the proposed DGO, "centralized management" is carried out by a smart contract, so we can think of it as a management delegated to a fairly good faith and courteous technical system.

Decentralized execution in relation to peer review work (and also, probably, compliance audit) can involve practices such as breaking the project assessment into multiple sub-parts. Let's imagine that a proposition is a set of verifiable propositions. Then, the estimated jury proposes* is divided into several parts, and each part is evaluated by one member of the jury, which may somewhat cover the requirement for jury's self-control.

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[5]https://www.doctrine.af.mil/Portals/61/documents/Annex_3-70/3-70-D10-STRAT-CC-DE.pdf

To make the process more effective, the following requirements must be met:

Proposal must be suitable for verification by a decentralized method:

    A. the sentence must contain statements;
    B. the proposition must be separable[6];
    C. parts of the proposition must be autonomous;
    D. independent and dependent parts of the proposition must be marked;* <- attack
    E. Proposals must be of the same format; *
    F. parts of a proposition that can be verified automatically must be verified automatically. *

*Example: Proposals receiving a reject due to lack of contact details should not exist. This check can be carried out in a technical way, so that the author of the submission will not forget to enter the required data (fields check).

*Using the same terms, basic concepts will reduce the requirement for checking the competence of a submission, and improve the quality of submissions.

The proposals assessment procedure should maximally implement the decentralized method:

    a) automatically checked parts are checked automatically first of all, if one automatic part depends on another, then they are executed in accordance with this dependency;
    b) all independent parts of the proposition are evaluated first, and then the dependent ones are evaluated.

Let's say we have several submissions, in fact, sets of judgments to check that need to be checked, and there are several judges who evaluate them. These submissions are split into parts and each part is reviewed by a jury member.

If the jury is not in cahoots and all submissions undergo an initial automatic review, then the evaluation process goes as follows:

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[6]https://en.wikipedia.org/wiki/Atomic_sentence

Submissions
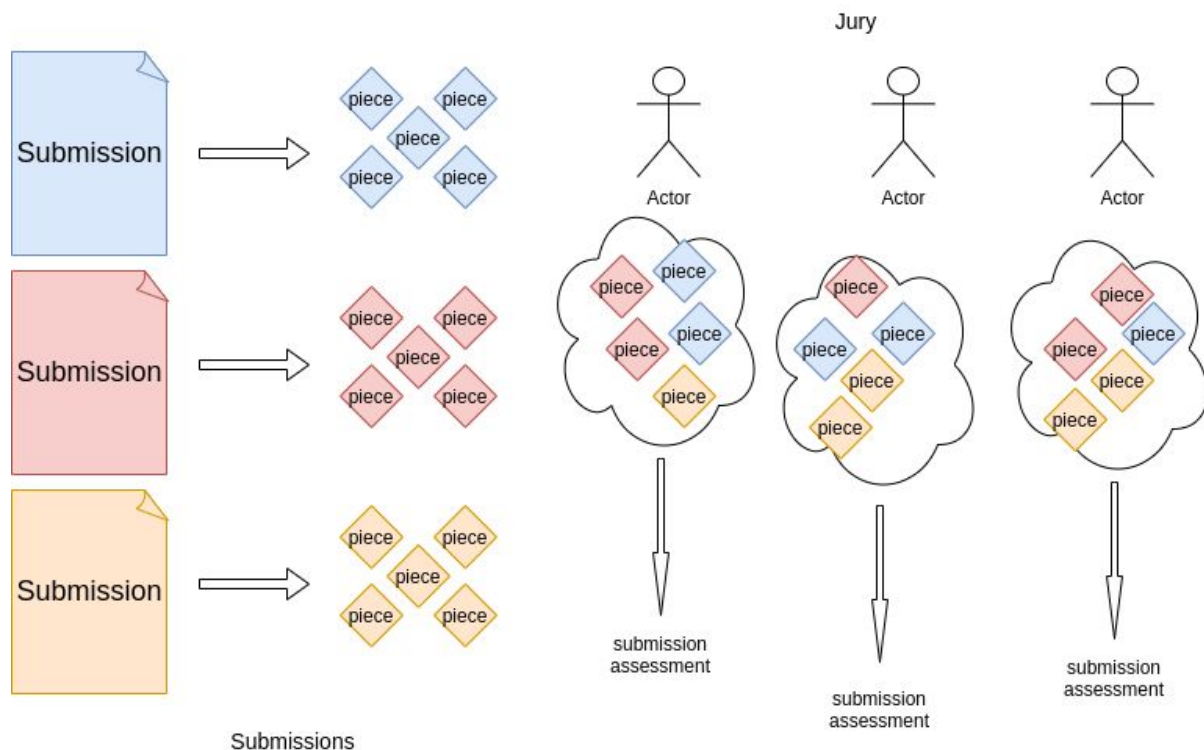
For example, in Bitcoin, you have to do a lot of heavy, pointless[7] work, but you can also do a lot of work so hard (also do work nice, or properly) so that one's behavior will be normalized in a certain way. In this scheme, decision-makers spend enough energy and time to save their statements on the blockchain in accordance with the rules established by the smart contract.

Using such a system, it can be assumed that each judge will be more closely associated with the process of checking submissions, will pay more attention to the formal side of the work (assessment process), and the actions of each representative will be more discrete, that is, in case of disagreement with the result of the check, there will be it is easier to refer to some mis-estimated fragment. (All jury scores for fragments will be securely stored in the blockchain and can be freely accessed, referring to the fragments saved in history as saved case materials[8]).

This process certainly contains complications. For example, the verification process has yet to be developed and so far it is only "known" that proposals (submissions) are proposed to be split and mixed. But submissions also contain expressions A => B, that is, logical pieces, and the result of the check depends on whether the previous links of the logical chain are checked correctly. The judge must also roughly understand what can and cannot be placed in a given piece, for example, some necessary fact. Finally, the submissions themselves must be provided by suitably qualified participants sharing a common context (set of terms, rules...). It is also necessary to clarify which submissions are checked in this way. It is a little easier to assess the submissions associated with the global distribution of the system's

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[7]https://arxiv.org/abs/2007.01046
[8]https://jonasgross.medium.com/legal-aspects-of-blockchain-technology-part-1-blockchain-as-evidence-in-court-704ab7255cf5

finances, as well as those associated with technical changes. Perhaps such an approach (at least in the form presented above) will be extracessive for creativity community contests or for partnerships proposals. Perhaps this mechanism can be included only in a part of specific DGOs.

Supplementing submissions and proposals with facts, context, links

In the described situation, we have separate parts of the submission, in fact, a set of statements, each part of which is publicly available. It is in the applicant's interest to supplement it with as much information as possible to support her position. To "saturate" this set of statements, one can use content links like those implemented in cyber[9] blockchain project, or use the specific content link system for the Free TON repository.

An example of an assessed piece of work with the possibility of public comment:

submission shard,
interface example

Submission 3

Subgovernance name
Free TON DGO Governance

Submission date
September 01, 2020, 10:59

Discussion
#3 Informal specifications for DGO main service

Status
Active

Submission address
QmT5NvUtoM5nWFfrQdVrFtvGfKFmG7AHE8P34isapyhCxX

Submission shard
bafybeiemxf5abjwjbikoz4mc3a3dla6ual3jsgpdr4cjr3oz3evfyavhwq

Content
! Marked as meaningful
To rate a submission piece by piece (see shard bafyb...gd), each part of the submission will be stored separately in the Free TON storage (see elwle...4x). It is proposed to combine these parts semantically, for

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[9] https://cybercongress.ai/

example, using content links (see eewpe...8B) for more connected access.

Proofs

Submission shard shard bafyb...gd

Context

elwle...4x
eewpe...8B

Assessment (anonymous)

1/2

(1/1) Free TON storage will exist and will support storaging files
(0/1) Free TON blockchain does not support the creation of special semantic content links

Public control

Discuss on forum

Show details

Public control

Free TON's blockchain has the necessary functionality for public control. It seems possible to use mechanisms such as voting and discussion on the forum with a link to a specific part of the submission (shard with provided content/proofs).

interface example,
sample for https://gov-playground.rsquad.io/

Contest Proposals   Convert post

submission_author , 16.11.2020, 01:41:57, **in**
FIRST GROUP

Submission shard bafybeiemxf5abjwjbikoz4mc3a3dla6ual3jsgpdr4cjr3oz3evfyavhwq

This is automatic message caused by the appearance of a shard submission. Discuss it, express whether you agree with the assessment of the proposal or vote for someone else's post below.

poster 1 16.11.2020, 01:43:04
>it is proposed... use content links
I don't understand why it deserves a score of 0. This does not contradict logical rules and the shard has the meaningful status

poster 2 16.11.2020, 01:46:35
rules for this contest take into account that only existing Free TON capabilities should be discussed, and not those that may appear later

poster 3 16.11.2020, 01:47:02
as poster 2 mentioned, the jury's opinion corresponds to the regulations of this contest

💬 3   Comment

Organizational/financial Proposal discussion

So, we have the described system for proving decisions and storing information about decisions that are available for public control and discussion. This system is universal and can be used for groups of smart contracts of other types, such as those related to financial management or organizational matters.

So, the simplest contract should describe the purpose of financing and the address (s) to which funds are transferred; the contract must contain information about the beneficiaries and parties that may incur financial costs; contracts may also estimate the expected proportion of such participants. After the proposal (for example, funds distribution for subgovernments) is submitted, it is necessary to carry out a discussion. After that, if the process was conducted correctly, the decision is made by a simple majority of votes. Some parts of the proposals can be revised again over time (cyclically). The costs of the revision must be paid to the subgovernment.

A simple majority vote can also be held for each statement about funding separately. For example, from a general submission, the community can accept the proposal to fund one task described in the submission and not fund other tasks and not control their implementation.

Proposals may also be estimated by the community in accordance with the following previously mentioned principles[10]:

(a) propriety;
(b) sound governance;
(c) accountability;
(d) transparency;
(e) risk management and internal control;
(f) internal audit;
(g) external audit; and
(h) fraud prevention and detection.

Sources

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8. cyber~Congress // cyber~Congress (https://cybercongress.ai/)

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[10]https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_2016_03/20160316_2016-nfr-nfp.PDF