New applications for the RealToken DAO

The goal of this document is to guide users in discovering new components of the RealTokens ecosystem.

Summary of the current situation.
RealTokens are tokens created by RealT, during the tokenization of real estate.
The application environment around these tokens consists of:

- of a *core*
  under the full responsibility of RealT, including: the token creation system as well as the Realt.co site for its marketing and the management of associated revenues.
- an *ecosystem* of applications usable with the token
  Some are developed by RealT, with the intention of being transferred to the Community of its users: YAM, RMM, .. (and others to come).
  Others are developed directly by users, who may (or may not) transfer them to the Community.
  - Community Applications: Dashboard, Wiki, API, GitHub, ...
  - Non-Community Applications (currently): Crypt'Alloc, ehpst, Pits'BI,…

To structure the Community, a DAO is being created with its governance token: the REG (RealToken Ecosystem Governance).
RealT is helping to create the DAO and will ultimately be just one of the DAO's service providers, among other companies.

The characteristic of a DAO is transparency and co-management by its members. The first components of the DAO were therefore:

- The “white paper”, the founding document and roadmap of the project,
- the issue of the REG, with an initial distribution to establish parity .

New components in the ecosystem

They mainly concern the Governance of the DAO:

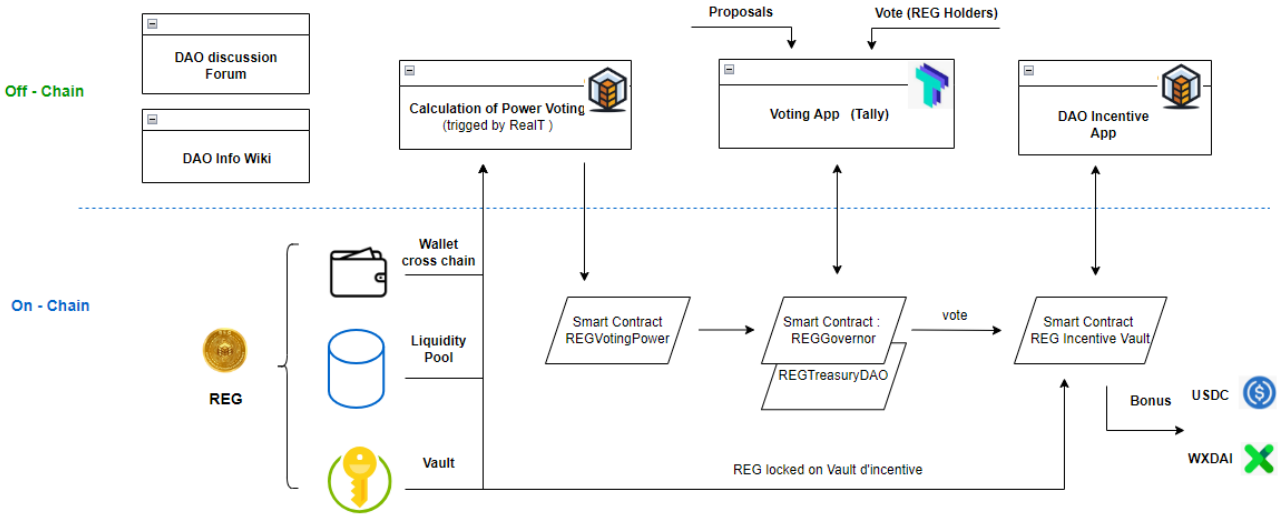
- the participation of members in informing everyone,
- decision making to build the DAO and develop the ecosystem.

Five new application components have been implemented by RealT and some members of the Community.
These first bricks are used to concretize the basic concepts of the DAO, so that its members can test them and begin to engage in the process. They were built from open-source solutions and some specific developments made by RealT. They are obviously perfectible, and will have to be consolidated based on the use that will be made of them.

The five new applications are (see diagram from left to right)

- The **Discussion Forum** , which is used to construct decision proposals that will be submitted to votes,
- A (new) **Wiki** , to improve knowledge sharing, by simplifying participation in articles,
- A **Voting Power system** , to take into account the different ways of holding REGs when voting,
- An application for **Blockchain Voting** ,
- **voting incentive** device .

https://drive.google.com/file/d/1UCLR3qFUJDJX08GDmaTYI1vNLkFzCOD4



The use of each of these new applications is detailed in the following chapters.

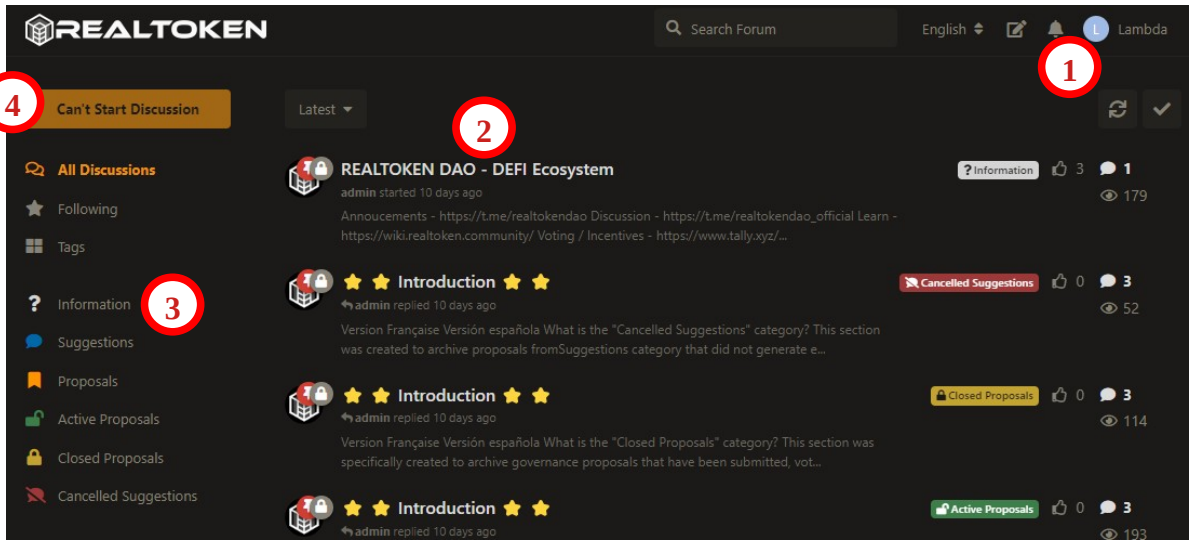
1 – The Discussion Forum

Before a proposal is put to a vote, it must be discussed among its members.

To enable this exchange, a solution was implemented based on the open source Flarum application (https://flarum.org/).

It is accessible at the following address: https://forum.realtoken.community/

Presentation :

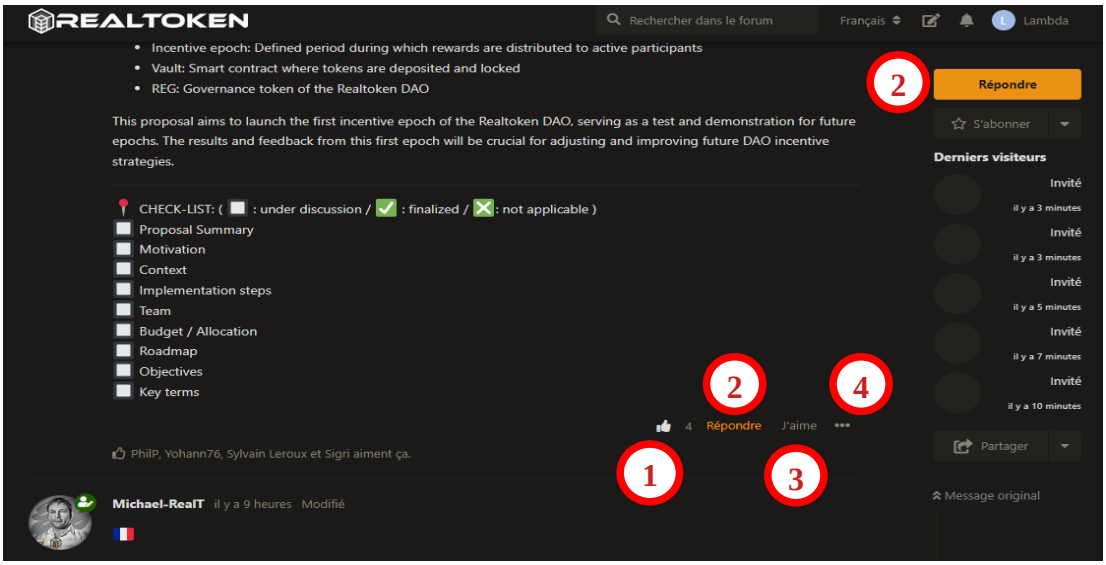


1. To participate in the discussions, you must register by creating an account with: username, email and password. The discussions are nevertheless readable by everyone (without an account).
   In this part, you can choose a language. It will only be used for the presentation of the application and not in the content of the discussions.
2. In the center are listed all the discussions, which you can sort in multiple ways (selector at the top left, on the "Activity" position by default).
   Those that you have not read, appear highlighted.
   At the end of the line, you see the tag, and the numbers of: thumbs, replies and views of the discussion. You can also subscribe to it (making a star appear, to recognize it more easily in the list)
3. Discussions are categorized (and "tagged") according to their maturity status:
   - The *Information status* groups together the messages to read to fully understand how to participate,
   - the *Suggestions status* is the entry point for any idea so that it can be debated. Registered users will be able to: discuss the suggestion, give their opinion, or even participate in surveys.
   - the *Proposals status,* corresponds to a suggestion that was retained by the members to move to the stage of a proposal which will be formatted,

- the *Active Proposals status* corresponds to a proposal ready for a vote (outside the Forum, in the blockchain voting application),
- the *Closed Proposals status* qualifies and groups together the proposals voted on (whatever the result),
- *Cancelled Suggestions* status corresponds to suggestions not retained to go to the vote. This content is obviously to be read, before any suggestion!..

4. Button to open a new discussion,(which will be disabled initially)

Possible actions on a discussion (or a response)



The background being dark, the possible options only appear by hovering your cursor over the bottom of the discussion text.

You can :

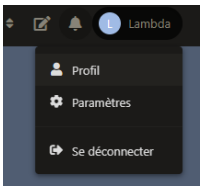
1. Putting or removing a thumb on a discussion
   This corresponds to a "vote" on the forum (and not an onchain vote), and which is counted in the list of discussions (see previous image),
   This is only possible on one of the translated versions (here the EN version).
2. Reply (your answer is editable, until a next answer is posted),
3. Adding or removing a "like"
   This option is different from the thumb vote (point 1) :
   - it is possible on a response (unlike the thumb vote, which is only possible on a discussion),
   - the like only appears on the message (and not in the discussion list).
4. Behind the …: Report to the moderators if the message seems to you: off topic, inappropriate, spam or other.

New discussion

5. The first action is to put a label on your discussion. As we saw previously the only possibility will be *Suggestions*,
6. Afterwards you will have to put a Title to the discussion, quite explicit since it is the only thing that will appear in the list of discussions,
7. You can then write your suggestion, using the editing bar at the bottom,
8. By clicking on the save icon, you store your suggestion in draft mode.
   You can access your drafts, at the top right of the screen with the icon with a pencil
9. Button to publish your discussion. It will always be possible to modify it by going to it.

Viewing and editing your account information

From your nickname icon, top right:



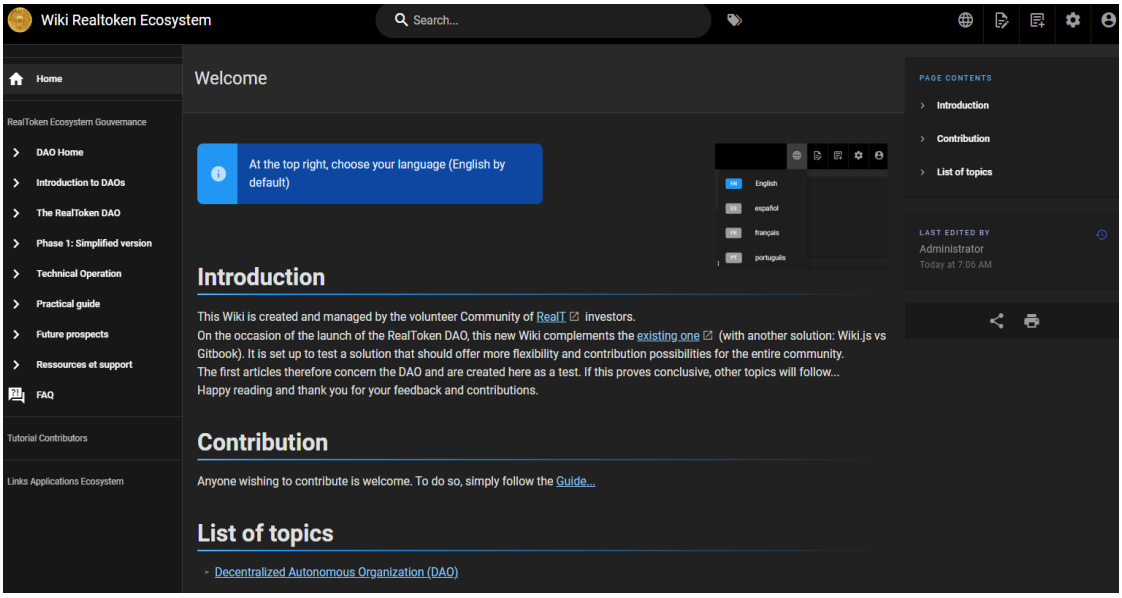
2 – Wiki

The existing Community wiki (https://community-realt.gitbook.io/tuto-community) is based on the GitBook solution. In its free version, this solution is limited to 2 contributors, or you have to go through the GitHub development management system. This option has been implemented, but its technicality limits contributions.

So we are going to test a new solution based on the open source application Wiki.js, which will be hosted on a Community server. It is multi-contributor, with a very simple editing interface.

The application is accessible at: https://wiki.realtoken.community/

The first articles available concern DAO, it is up to you whether there are others….



We will not go further, concerning its use, because it is extremely simple.
The presentation is classic with: list of articles on the left, articles in the center and table of contents of the article on the right.
To contribute, you will just have to follow the guide available on the wiki.

3 - Voting power

To take into account the different modes of holding REG (Wallet, Liquidity Pool, Vault), RealT has developed a tool to: collect the amounts, calculate the corresponding voting power and transmit it to the REG-Voting-Power contract.

This tool is off-blockchain (it will be open source eventually), it currently collects the number of REG on:

- wallets of different blockchains (REG being, to date, available on: Gnosis, Polygon and Ethereum),
- the main liquidity pools on Gnosis (possible to add more on demand),
  The non-REG part of the pools can also be counted.
- the vaults and first the incentive one.

Some REG holding methods may be boosted (DAO decision, to encourage certain actions), a REGVotingPower will then not necessarily be equal to a REG.

This application is triggered manually and punctually before a vote (the value being fixed for the entire voting period), which can cause a discrepancy between: the number of REGs held and the voting power, at a given moment.

In order to avoid manipulation, the calculation of voting power is done using snapshots at a time that is not precisely known, this avoids the acquisition of REG to obtain voting power and immediate resale.

Smart contract tokens:

- REG: https://gnosisscan.io/address/0x0AA1e96D2a46Ec6beB2923dE1E61Addf5F5f1dce
- REGVotingPower: https://gnosisscan.io/address/0x6382856a731Af535CA6aea8D364FCE67457da438

4 - Vote

The on-chain voting solution includes: a presentation application (Tally) and smart contracts (the main one being OpenZeppelin's Governor, slightly modified).

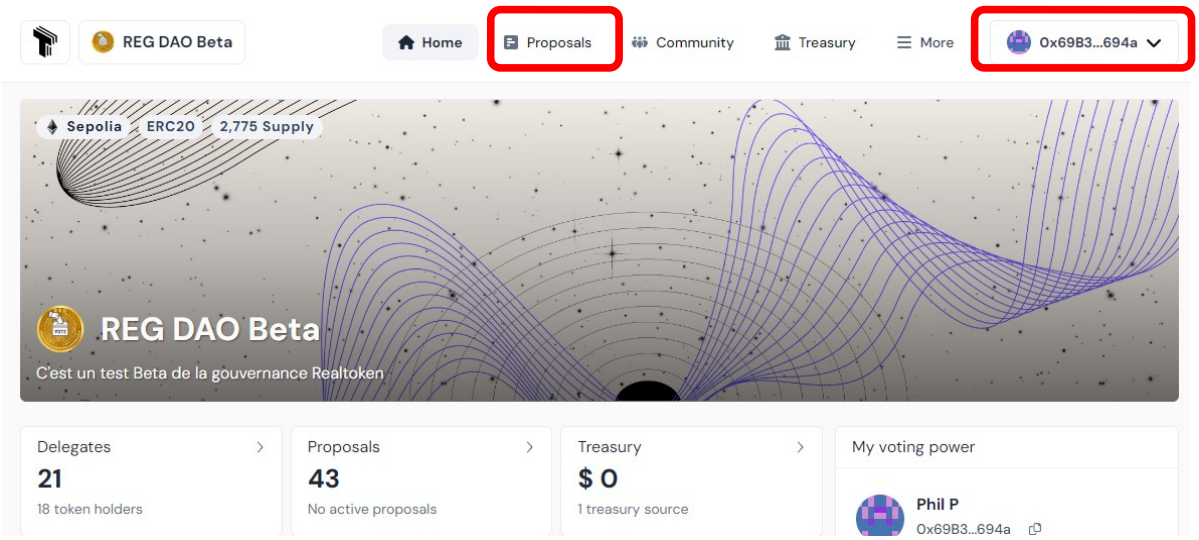
It allows: to submit voting proposals (under certain conditions), to vote and to automatically execute on-chain decisions.

Initially (testing phase), the submission of voting proposals will be limited to RealT, then to a few DAO members involved in the implementation of the solution. Opening to all members will take place later, with a minimum threshold of REG.

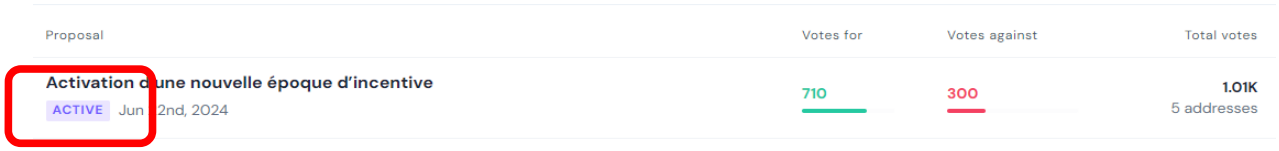
Voting with the app is quite simple and intuitive:

https://www.tally.xyz/gov/realtoken-ecosystem-governance

- in the top banner: you must authenticate, then “Proposals”:



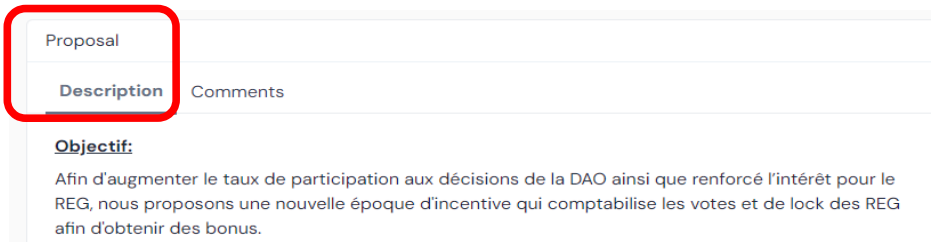
- The proposals you can vote for have the status "Active":



- after selecting the proposal, you can vote…

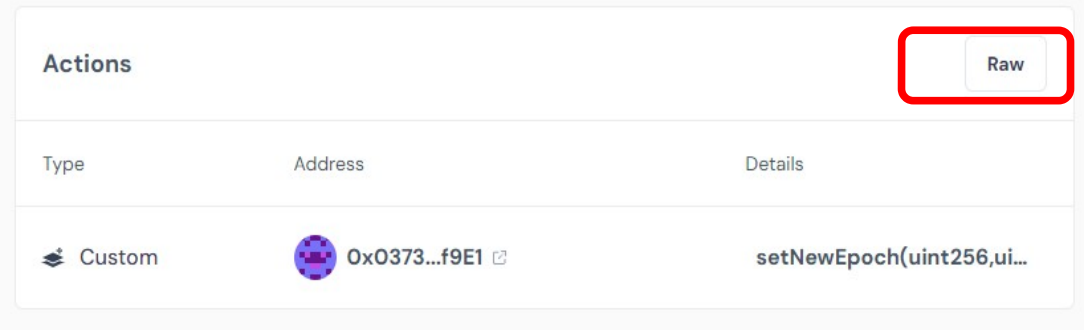
The longest part is not voting, but understanding the scope of your vote...
Voting is not just giving your opinion, but an impactful act that validates the content of a proposal and therefore of all the onchain actions programmed there.

- A first level of description appears at the bottom of the page, in the “Proposal” section.



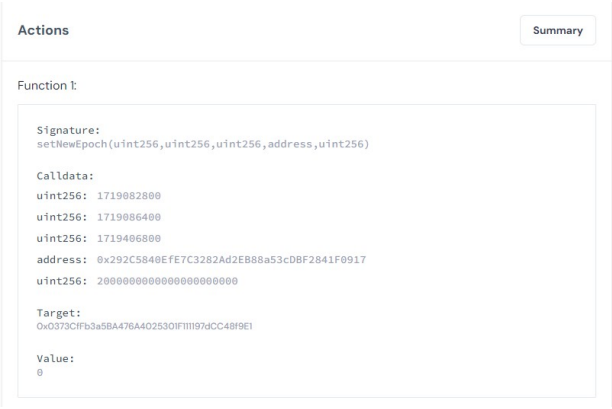
The “Comments” tab, containing voters’ comments.

- When, after the vote, an action must be executed automatically on the blockchain, the corresponding code is visible in the “Actions” section by clicking on “Raw”



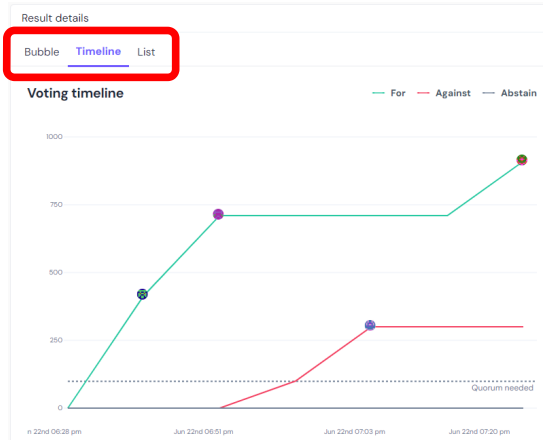
Example :

- on the “Target” smart contract,
- the “Signature” function will be executed,
- with the parameters indicated in “Calldata”.

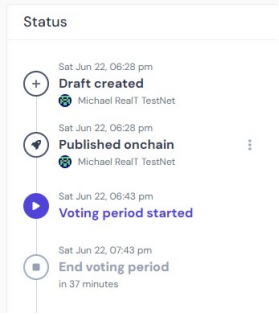


During the voting period:

- you see, where the votes are:
  in the “Details” section, in three different formats:
  - Bubble (whose size and color vary depending on the votes),
  - Chronology,
  - or List (of voters).

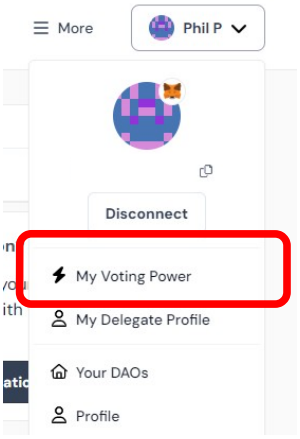


In the right part "Status", you see the sequence of steps and in particular: when the vote started and when it ends.



The duration of the votes is a parameter fixed for all the votes.

Your voting power is visible:
in the wallet features connected (top right) or when voting



In v1, it is not possible to delegate your voting power (it is automatically delegated to yourself, to simplify – initially – the accounting of incentives)

Smart contracts:

- REGGovernor: https://gnosisscan.io/address/0x4A5327347f077E72d2AaB19F68Ba8A7F12ec5d63
- REGTreasury DAO: https://gnosisscan.io/address/0x3f2d192F64020dA31D44289d62DB82adE6ABee6c

Realtoken Wallet

Concerning the (happy) owners of this kind of wallet ;-)

You can connect to the voting application with Wallet Connect (by choosing Gnosis).
For the record, if you don't know how to do it:
https://community-realt.gitbook.io/tuto-community/site-realt/option-realtoken-wallet-account-abstraction/dapp-realtoken-wallet#connexion-walletconnect

5 – Incentive

Members who vote **and** deposit REGs into a vault *can* benefit from incentives (*Bonuses*). This encourages active participation and engagement in the governance process, decreases the number of REGs in circulation and increases their value...

The Bonus amount depends on the number of locked REGs (not PowerVoting) and the number of votes cast during a Session.

As with the voting solution, the application is composed of a presentation application and a smart contract (REG Incentive Vault). The whole was developed by RealT.

The address of the Incentive smart contract is:

https://gnosisscan.io/address/0xe1877d33471e37fe0f62d20e60c469eff83fb4a0

Incentive periods

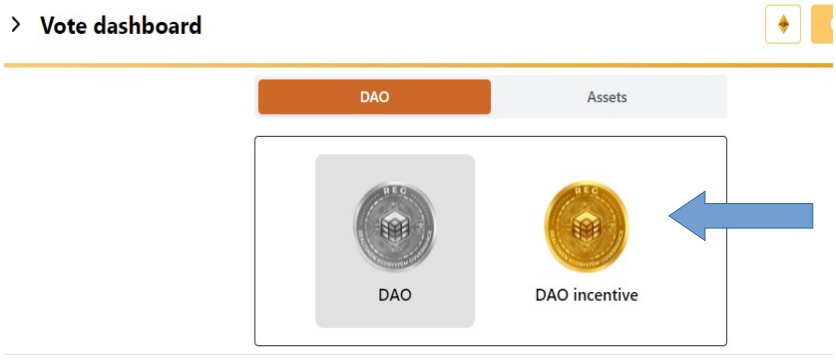
The operation of an Incentive Session (epoch) is as follows:

- It begins with a " *Subscription* " phase, during which holders can deposit their REG in the safe,
- *Locking* " phase , during which:
  - the deposited REGs will be blocked in the smart contract vault,
  - The votes of the depositing wallet are counted for the allocation of Bonuses.
- when the session is over, we move to the " *Out of incentive* " phase,
- withdrawal of REG with payment of Bonuses is possible: during the "Subscription" and "Excluding Incentive" phases,
- Bonus claims are possible at any time (on completed sessions).

	Epoch		Not Active	
	Souscription Period	Lock Period	Epoch	
Deposit (REG)	X			
Withdraw (REG) + Claim Bonus	X		X	
Record Vote		X		
Claim Bonus	X	X	X	(Not current Epoch)

In the "DAO Incentive" application:

https://vote.realtoken.network/asset

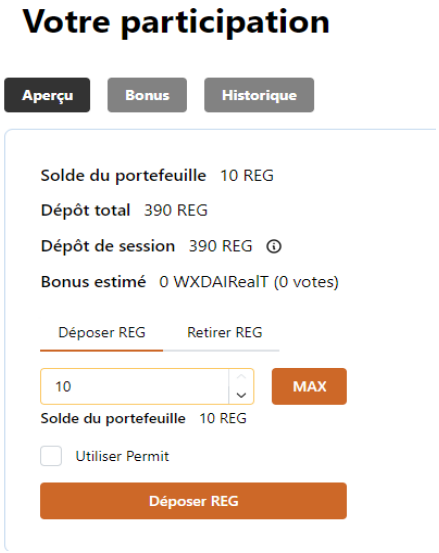


The timeline appears at the top right:

- Indication of the current phase: Out of incentive, Not started, Subscription or Lock,
- as well as the progress of the current or previous incentive session (if “Outside incentive”): Start, End of subscription and Duration of the lock.
  (times are presented in GMT+2)

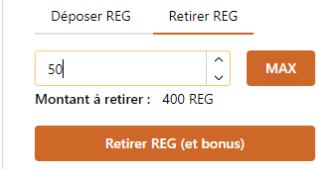
Deposit and Withdrawal of REG

On the left side of the application, under the “Preview” tab, are presented:



- the number of REG available on the connected wallet,
- the number currently on deposit,
- the number on deposit, during the current or previous session,
- the estimated bonus amount (for the current session: based on the votes cast, or for the previous session: the actual bonus)
- “Deposit REG”:
  - It is only possible to Deposit REGs during the Subscription phase. Outside of this period, the tab is either grayed out or inaccessible.
  - If you check the "Permit" mode: The first approval (to access the REG of your wallet) during the deposit will be done in the form of a signature <u>without fees.</u>
    If you do not check this Permit mode, the first approval will be done with a transaction therefore <u>with fees</u> . Some wallets do not support this mode.

- “Remove REG”
  - You can only withdraw your REGs outside of the locking phases,
  - When you withdraw your REG, you claim your Bonuses at the same time. It is not possible to just withdraw your REGs, but it is possible to just claim your Bonuses.



The “History” tab allows you to see the history of your REG deposits and withdrawals on the Incentive contract.

Bonus

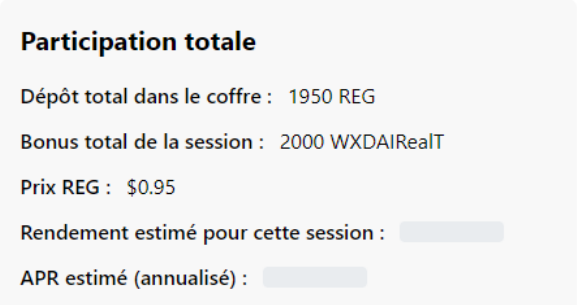
When the session is initialized, a Bonus budget (in Stablecoin) is deposited on the Incentive contract. At the end of the session, the entire budget is allocated to the voters, who have blocked REG in the incentive contract. The proportion that is allocated to each participant is calculated as follows:

share of Bonus budget (in %) = V1*N1 / (V1*N1+V2*N2+...Vj*Nj) with:

- V1=number of my votes and N1=number of my locked REGs,
- V2=number of votes and N2=Number of REGs locked, by hoder 2,
- Vj=number of votes and Nj=Number of REGs locked, by holder j, j being the total number of holders who participated in the session.

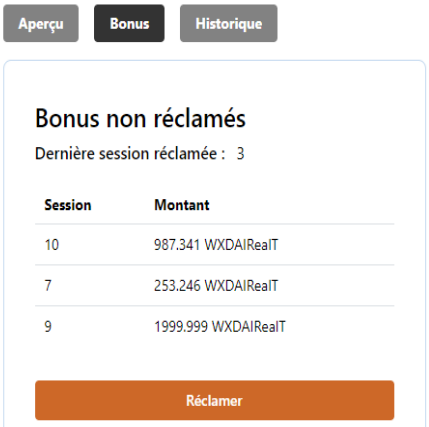
In the application:

- at the bottom right you see for the current or previous session:
  - the number of REGs filed,
  - The Bonus budget allocated to the session,
  - the price of the REG (which allows estimates to be calculated)

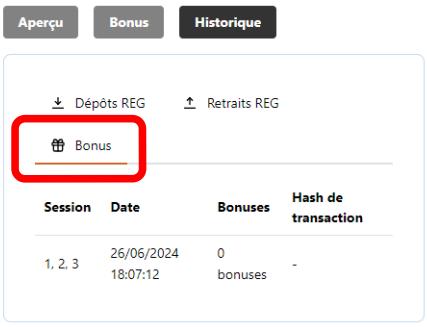


  - Estimated yield (for the current session: based on the votes cast, or for the previous session: the actual yield)

- on the left, “Bonus” tab, you see:
  - the last session where you claimed your bonuses,
  - the amount of bonuses awarded during the sessions that followed,
  - and a button to claim all Bonuses at any time.



In the History tab you will find the history of claimed Bonuses



Launching a session

The activation of an incentive session is done in the form of a vote: for a proposal defining the dates and times of the different phases of the session as well as the budget (in USDC or XDAI) of the Bonuses. The funds allocated to the Bonuses come from those available within the DAO (hence the vote for their use...).