DeGate Whitepaper 1.0

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1. Overview

DeGate aims to be an Ethereum layer-2 (L2) native decentralized exchange (DEX) protocol that is formed, governed, and owned by the community as a Decentralized Autonomous Organization (DAO), whereby the token will be distributed to the community via a fair-launch process.

We expect the protocol to encompass a full-set of exchange-related modules including but not limited to autonomous-market-making (AMM) functionalities, orderbooks, leverage-capabilities, L1-L2 bridge, fiat on/off-ramps, and initial-offering capabilities.

The governance of the protocol will be conducted via Home DAO and Council DAO:

- Home DAO owns and controls the DeGate protocol, and is thereby entitled to the revenue generated.
- Council DAO is entrusted by the Home DAO to manage the day-to-day decision-making.

2. Background

The technical constraint of Ethereum layer-1(L1) brought forth an interesting challenge: due to high cost and uncertain process timing, the common orderbook + market-depth exchange model practiced in traditional finance does not really work. Thankfully, the ingenuity behind the Uniswap team brought forth a new, cheap way of trading ERC-20 tokens effectively – a mathematical-formula-driven, "vending-machine-like" model which we call Autonomous Market-Maker (AMM). The elegance of this solution plays well into the confines of Ethereum L1 today and achieved strong product-market-fit, evident by the ~1-1.2 Bn USD of transactional volume per day by Uniswap alone (No.4 in the world if we compare across all crypto exchanges). It appears self-evident to us that the AMM DEX model is not only the mainstream, but also the optimal way of exchanging tokens on Ethereum today.

As layer-2 technology on Ethereum matures, however, we believe that the transactional throughput within the Ethereum ecosystem is about to explode by at least 2 orders of magnitude in the coming years, if not months. The significant reduction in cost per transaction (Tx) on L2 thanks to rollups (See "An Incomplete Guide to Rollups") will make cost-prohibitive / uneconomic design-choices on L1 possible, or even optimal. We strongly believe that this sea-change will empower new design primitives and lead to significant market share shifts – it is with this belief that we are throwing our hats in the ring with DeGate.

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3. DeGate Functions

DeGate will be deployed to Ethereum's largest L2-network and aim to become a L2-liquidity hub. We are currently studying Optimism, Arbitrum, and zkSync acutely and are open to other alternatives.

3.1. DeGate DEX

Our DEX includes 3 modules enabling AMM, orderbook, and leverage capabilities:

3.1.1. DeGate AMM

The AMM module will follow the most commonly adopted "x*y=k market maker" design with "virtual quantities" to prevent front-running. The various key metrics including but not limited to commission %, virtual quantities setting, Home DAO take-rate, and liquidity-mining schedules. In particular, we aim to set the commission rate to be markedly below existing L1 AMMs today.

There will be no admin key to siphon or access user capital within the AMM Pools in any way. Any user can deploy the open-sourced code and interact with the AMM module directly.

3.1.2. DeGate Orderbook

The orderbook module will follow a design of off-chain order submission + on-chain match-making in order to save on on-chain transactional fees as well as processing time lag / inefficiency around the on-chain submission process. We feel that the "permissionless" feature is retained through this process – despite the order being submitted off-chain pre-match-making – as the order is digitally signed and tamper-proof from a 3rd-party.

There will be no admin key to siphon or access user capital within the orderbook in any way. Any user can deploy the open-sourced code and interact with the orderbook module directly.

3.1.3. DeGate Leveraged Trading

Leverage had always been a core need amongst crypto users – and our leveraged trading module aims to offer a permissionless and robust user experience via close collaboration with outside decentralized lending / borrowing protocols.

There will be no admin key to siphon or access user capital within the leverage trading pool in any way. Since the user asset is in-effect deposited in 3rd party contracts (along with the liability) to enable leverage, we must also ensure that such 3rd party smart contracts are sufficiently robust. Council DAO plans to review the collaborating protocols thoroughly in particular around admin key rights on custodied assets. Given the significance of selecting an outside partner, this decision would also be voted on by Home DAO via our DG token. Any user can deploy the open-sourced code and interact with the leveraged trading module directly.

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3.2 DeGate Bridge

DeGate bridge aims to establish a 2-sided market for “fast-track” transfer of assets across different layers. We would aim to first enable a fast-track between L1 and L2, then fast-tracks between L2s. The design would start off in a centralized manner, where the assets custodied are fully guaranteed by the net asset within Home DAO; as Ethereum L2 oracle matures, DeGate Bridge will move to decentralize the mechanism.

Let us walk through an example on how this L1-L2 fast-track works, using Optimistic Rollup as the L2:

DeGate Bridge’s asset pool curve will look similar to that of Curve – where liquidity is utilized more efficiently around the 1.0 peg and ideal for in-kind assets. In our case of L1 asset pool : L2 asset pool, however, despite the assets being very much alike, the kink is that they share different states. In the case of Optimistic Roll-up, in particular, the transfer from L1 to L2 is instantaneous, while the transfer from L2 to L1 could take around 7 days. Therefore for in-kind assets, we expect L2 assets to trade at a slight discount to L1 to at least account for the time value of money.

For example, when Alice transfers 1 L1 ETH to L2 ETH, and assume that:

- 1 L2 ETH = 0.995 L1 ETH
- DeGate Bridge fee = Curve fee = 0.04%
- Gas price = 100 Gwei

Via the Optimistic Rollup native method:

- Alice sends off 1 L1 ETH
- Alice pays ~45,000 gas
- Alice receives 1 L2 ETH immediately as the Tx gets processed
- In the end, Alice paid 1.0045 L1 ETH for 1 L2 ETH.
- L2ETH / L1ETH = 1 / 1.0045 = 0.9955

Via the DeGate Bridge method:

- Alice sends off 1 L1 ETH
- Alice pays 21,000 gas for L1 Tx
- Alice receives 1 / 0.995 * (1 – 0.04%) L2 ETH in 5 minutes from DeGate.
- DeGate also charges Alice for x gas for L2 Tx – which should be negligible.
- In the end, Alice paid 1.0021 L1 ETH for 1.0046 L2 ETH.
- L2ETH / L1ETH = 1.0046 / 1.0021 = 1.0025

For an additional 5-minute wait and trusting the DeGate Bridge custodian process (which will eventually be decentralized), Alice would save ~0.7% on her transfer from L1 to L2 in this example.

Now let’s reverse the process and have Bob transfer 1 L2 ETH to L1 ETH:

Via the Optimistic Rollup native method:

- Bob sends off 1 L2 ETH
- Bob pays negligible gas on L2
- Bob pays ~61,000 gas to claim 1 L1 ETH after 7 days.
- In the end, Bob paid 1 L2 ETH for 0.9939 L1 ETH.

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Via the DeGate Bridge method:

- Bob sends off 1 L2 ETH
- Bob pays negligible gas on L2
- Bob receives 0.995 / 1 * (1 – 0.04%) L1 ETH in 5 minutes from DeGate.
- DeGate also charges Bob for 21,000 gas for L1 Tx
- In the end, Bob paid 1 L2 ETH for 0.9925 L1 ETH.

In this case, Bob effectively pays a ~0.14% fee to truncate his withdrawal time from 7 days to 5 minutes while trusting the DeGate Bridge custodian process.

It is important to note that the Optimistic Rollup design relies on 3rd parties posting challenges during the dispute period to ensure the fidelity of L2 to L1 transfers and L2 states. This challenge period is currently set at 7 days to be short enough for a smooth experience but also long enough to provide 3rd parties ample time to react. For more information, please see the research piece by Paradigm.

We believe that the decentralization of DeGate Bridge would depend on the abstraction of such transfer security into a faster oracle-feed. As a more robust oracle solution emerges, we will be able to upgrade DeGate Bridge to such that there will be no admin key to siphon or access user capital within the Bridge Pools in any way. Any user can deploy the open-sourced code and interact with the Bridge module directly.

3.3. DeGate Fiat

DeGate Fiat will serve as a fiat on/off ramp for stablecoins on L2. The product will interact directly with parties that hold financial licenses in respective regions to offer users smooth experiences to bring their fiat currency onto and off from L2. To utilize the service, users would have to abide by respective Anti Money Laundering / Know Your Customer (AML / KYC) rules set out by our partners.

As a L2-Fiat fast-track, we expect DeGate Fiat to provide significant support to our DEX business.

3.4. DeGate Launch

DeGate Launch will be a decentralized initial token offering platform, whereby it aims to only be a display tool for issuing projects as a differentiator. We do not plan to examine or approve any project launches.

There will be no admin key to siphon or access user capital within the launch pool in any way. Any user can deploy the open-sourced code and interact with the Launch module directly.

As a L1-L2 fast-track, we expect DeGate Bridge to provide significant support to our DEX business.

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4. DG Token

DG will be DeGate's native token with a total supply of 1 Billion, 100% owned by Home DAO initially.

Token Allocation:

- **19.8% for Founder Financing:** the founding team would acquire the stake for 990,000 USD, whereby the tokens will vest linearly over 4 years. The unvested DG tokens cannot be transferred but will enjoy the same set of token rights otherwise. All raised proceeds will be owned by the Home DAO treasury.

- **44.0% for Incentives:** we plan to allocate most of these tokens towards liquidity mining. We expect 1/11 of the 44% (4% of total) to be allocated for token-swap offering to KEY holders (which naturally would be BIHU and MYKEY users). We plan to initially allocate half of the 4% (2% of total) immediately to phase 1 of this swap exchange offering, while the remaining half will be reserved for a similar process later subject to Home DAO decisions. We believe such a DG : KEY exchange channel will help build consensus and expand DeGate's reach immediately, levering the sizable BIHU / MYKEY community. Additionally, any operational expenses related to community-building and marketing would be paid from the 44% incentive pool also.

- **20% for Financing:** this 20% allocation can either be offered publicly or privately to raise capital for our continuous growth. However, those privately offered prices must be derived from publicly traded ones. All raised proceeds will be owned by the Home DAO treasury.

- **9% for Business Development:** this 9% allocation would be used to compensate strategic partners in exchange for any services, support, and other forms of collaboration. The allocation can also be sold via structured products (such as long-dated options) to strategic partners to align long-term interests . All raised proceeds will be owned by the Home DAO treasury.

- **5.2% for Reserve:** reserved for Home DAO on any unforeseen or immediate needs.

- **2% for Liquidity Pool:** we plan to contribute half of the 2% allocation (1% of total) to an AMM pool at the Founder Financing round valuation of ~5 million USD to bootstrap day 1 token liquidity. The remaining half of the 2% (1% of total) will be deployed into the same pool for further liquidity. All raised proceeds will be owned by the Home DAO treasury.

5. Governance

The only thing that doesn't change is change itself. The ability to adapt quickly as the market condition evolves is paramount to us and thereby places a great importance on governance structure.

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5.1. Foundational principles

While Home DAO pertains the right to change almost everything about the DeGate protocol, we view the following points as our foundational principles – whereby as a social contract that will not be lightly altered.

- Home DAO will be responsible for 100% of the losses caused by DeGate protocol's own negligence.
- Home DAO will aim to minimize the tyranny of (token) majority.
- The governance structure should be conducted via a two-tiered DAO system that balances stability and flexibility.

5.2. Two-tiered DAO system

The governance of the protocol will be conducted via a two-tiered system: **Home DAO** and **Council DAO**.

- Home DAO owns and controls the DeGate protocol, and is thereby entitled to the revenue generated.
- Council DAO is entrusted by Home DAO to manage the day-to-day decision-making.

5.2.1. Home DAO

Home DAO owns and controls the DeGate protocol, and is thereby entitled to the revenue generated:

- Revenue generated will typically be converted into the DG token and custodied within the Home DAO account / treasury.
- Council DAO members will be selected via an election process, where the DG token will act as votes.
- Home DAO will allocate budgets to Council DAO from time to time and entrust it to exercise capital allocation power at its discretion.
- The Council DAO smart contract is beholden to Home DAO. In other words, Home DAO would have the ability to freeze and withdraw Council DAO funds, in effect ability to re-elect Council DAOs.
- Home DAO can vote with its DG token on any governance proposals. Governance proposals can be initiated by both Council DAO and DG token holders (subject to minimal DG ownership requirement).
- Major matters will be decided by Home DAO directly. What defines as a "major matter" will be either clarified in the subsequent DeGate Governance Whitepaper after extensive community discussion, or whatever the Council DAO deems as such. We believe Home DAO's ability to decide on major matters helps with stability and consistency of decision making and will help to garner trust.

5.2.2. Council DAO

Council DAO is entrusted by Home DAO to manage the day-to-day decision-making.
Council DAO will have partial rights to part of the DeGate protocol's smart contracts:

- Council DAO will have control over the periodic budget transferred from Home DAO for day-to-day DeGate operations.
- The formation of Council DAO is to allow the protocol to react quickly in the highly competitive market environment.
- Council DAO board members will be elected by DG token holders, whereby Council DAO decisions will be settled by 1 board member 1 vote. We expect to start Council DAO with 5 or 7 board members with potentially subsequent increases as the DeGate protocol scales. Board members should be capable and will be compensated via the Council DAO budget, while their work ethics will be scrutinized by the community.

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- Council DAO can hire employees directly and/or outsource tasks to outside 3rd parties.
- There will be no admin key to siphon or access user capital within the orderbook in any way. Any user can deploy the open-sourced code and interact with the orderbook module directly.

5.3. Governance infrastructure build-out

Practicing governance via "**Code is Law**" is important to us. The build-out of governance infrastructure and the migration towards eventually code-induced governance power is a long-term process that requires meticulous planning. We aim to start this process with a multi-signature in the DAOs as a temporary patch-work solution but will work hard to evolve towards a robust governance process.

The whitepaper you see only describes the foundational concept around governance at a high-level. For specificity around governance boundaries and respective metrics, we expect to reach such granularity via extensive community discussion and will subsequently publish the **DeGate Governance Whitepaper**.

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