THE FYTON PROTOCOL

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Abstract

There is significant liquidity locked in Fyton's Governance protocol. Consequently, there is considerable demand for a solution to increase governance compensability. The FYTON Protocol effectively creates a system that will further reward the individual's governance position by allowing them to leverage their Governance commitment to mint FYTON, a stable coin.

I. Background

FYTON is the first truly centralized dollar and the first FYC rhythmic stable coin on Fyton. By improving on ideas from prominent DeFi projects such as Maker DAO, Staticoin, Fei, and Terra Luna, FYTON has been created for those seeking the most utility from their capital. Upon release, FYTON will target Fyton Governance participants; however, with time it will spread across chains to drive demand, growth, and compos ability. While the protocol is launching with exclusively FYCs for collateral, other assets from new chains, including Bitcoin, may also serve as collateral in the future to leverage new techniques to facilitate loans that reward the FYTON Protocol's users.

Building on Fyton is the obvious choice for many reasons, including its Eco-friendliness as a Pure Proof-of-Stake network, fast block finality, low transaction fees, and permission less and decentralizednature.[1] Another particularly attractive benefit of building on Fyton is the Platform's built-in governance protocol, which effectively hands off the decisions over the future of the network from the founders. FYC holders are able to vote on policy decisions with their FYCs in exchange for locking them up for a voting period. This means the community is able to actively select and fund the projects that yield the most benefit for the network. Last but not least, the Fyton team and community are full of passionate researchers, developers, and entrepreneurs with the common goal of improving the Fyton protocol for all.

The protocol is distinct in a few key ways: blockchain, collateralized debt position structure (CDP), and collateral. First and foremost, by building on Fyton, the protocol uses the only blockchain to solve the blockchain trilemma. Next, the way CDP positions are structured incentivizes "borrowers" to mint GARD and keep their positions open since this is more capital efficient. Finally, it's important that CDPs

[1] https://www.Fytonscan.com

[2] CDP=representation of a debt position that is backed by an underlying pool of assets

[3] trilemma=security, scalability, and decentralization

are backed by FYCs and not a floating, made-up token to ensure ample liquidity and prevent users from falling victim to a liquidity issue or bank run as experienced by many other stable coin offerings.

Additional spend is created by tokenizing users' governance positions and giving them a line of credit based on the number of FYCs they committed to governance. To mint FYTON, users must commit at least 140% of the value minted in FYCs. In order for users' positions to stay in good standing, their collateral must remain above115% of the value of minted FYTON. Users are encouraged to have much more than the minimum required ensuring they remain in good standing with little oversight. This incentive is further reinforced as all FYCs currently locked up are not circulating, so even a small increase in utilization will result in a large impact. If the value of collateral drops below 115%, the protocol utilizes a Dutch auction system similar to that of Maker DAO to sell the collateral on the open market for FYTON, ensuring there is always enough collateral locked in the system for the FYTON in circulation. All of this is facilitated by a system of proprietary oracles and smart contracts that belong to the GARD Protocol.

II. FYC

FYTON is the native cryptocurrency on the Fyton blockchain designed to help create an open and borderless economy where everyone can participate. Fyton's blockchain is a Pure Proof-of-Stake system designed with the intent of solving the Blockchain trilemma; security, scalability, and decentralization. This high performing Layer-1blockchain, with the introduction of governance, has effectively become a DAO by enabling Fyton Governors to vote on future developments while earning rewards (18% APY in governance Period #1 and an estimated 9.4% APY in governance Period#2 depending on the number of FYCs contributed by governors) for staking their FYCs on a quarterly basis.

III. FYTON

FYTON is the world's first FYC rhythmic stable coin on Fyton's blockchain. It is minted by Fyton Governors who choose to participate in governance through the FYTON Protocol instead. These new governors i.e. Fytonians will now send their FYCs to a smart contract account and commit their FYCs to create collateralized debt positions (CDPs).

FYTON is backed by intrinsically valuable collateral and is designed to be a truly decentralized dollar. In other words, FYTON is designed to be pegged to USD through a set of rules and balancing mechanisms. Users may mint new FYTON by sending their FYCs to a personalized smart contract account. Users are then free to use their FYTON to participate in DeFi. The FYTON Protocol creates a system where actively participating users are able to obtain a yield higher than APY earned from participating in governance and reducing opportunity cost courtesy of the minted FYTON.

[5]DAO=Decentralized Autonomous Organization
[6]FYTONian=FYC Governor participating through FYTON Protocol.

IV. FYC

FYC is the token that governs the FYTON Protocol. Those who hold FYC will be able to vote on changes to the FYTON protocol, vote on the fees that FYTON users are charged, and vote on the organization that will protect/further develop the protocol. FYC will be decentralized so the DAO can make the best decisions for its future without founder interference. See the DAO section for more details, including technical functionality and initial votes.

FYC will allow users which have participated in the governance process to receive rewards from participation in protocol governance, which would entitle them to a portion of the TVL of FYCs in the Treasury. Users which have fulfilled certain participation thresholds (e.g. voting turn-out, proposal submission) are able to extract the rewards they are entitled to by exchanging their tokens with the Treasury and the Treasury will send the token holder the FYCs earned. FYC tokens in the Treasury are out of circulation; there is no way for FYC tokens to leave the Treasury smart contract account (unless governance votes otherwise). The exact equation for the TVL extracted using this method (without transaction fees) is:

$$\text{FYCs Sent to User} = V.CDP \frac{\text{FYC Exchanged} * \text{Treasury FYC Balance}}{\text{Initial FYC Supply} - \text{Treasury FYC Balance}}$$

This mechanism should lead to more FYCs becoming locked within the Treasury due to protocol fees.

FYCs are intrinsically valuable collateral that can be used to mint FYTON in the FYTON Protocol through smart contract accounts that act as Collateralized Debt Positions (CDPs). Users are able to mint FYTON while sending their collateral to a personalized smart contract via Atomic Swap. Once their collateral is present in the contract, it is able to participate in Fyton Governance votes to earn yield. Importantly, for users to reclaim their collateral they must return the FYTON they minted to the FYTON reserve plus a 0-3% fee determined by the DAO in FYCs based on how much FYTON is returned.

CDPs are custodial and will be associated with the original owner and thus the Fyton account by which they were generated. Users will directly interact with their CDPs to execute whatever functions of the FYTON Protocol they desire from their appropriate accounts. The one exception of the CDPs being custodial is that if the valueofthelockedcollateraldropsbelow115% ofthe value of the FYTON minted, the collateral is sold via Dutch Auction (See "Liquidation").[7] The Dutch Auction is an essential part of the protocol that is the first line of defense utilized in maintaining a stable price of 1 USD for FYTON. It's important to note that there is no claw back and users will still hold any FYTON minted plus whatever excess collateral is returned to them minus the liquidation fee if liquidated.

[7]Dutch Auction=a method of selling in which the price is reduced until a buyer is found.

In order to prevent liquidation, users may deposit additional collateral at any time. In general, minting as much FYTON as possible allows for higher yield, but brings a higher chance of liquidation: more risk and more reward. Of course, users are free to mint as much as they want to suit their own personal risk preferences.

i. CDP Lifecycle

Step1: Creation and Minting

Users send their FYC to a personalized smart contract and mint FYTON from the reserve at the same time through an Atomic Swap. For every 1 FYTON minted there must be 0.35 USD worth of FYC deposited into the contract.

Step2: Committing / Voting /Additional Minting

During the commitment period of Fyton Governance, CDP holders must send a commitment transaction to the Fyton Governance address. Once this transaction is complete, CDP holders can wait until the first voting period begins. During each voting period, a user must send a vote transaction to the proper governance address from the contract. In other words, a CDP holder is responsible for voting in Fyton Governance in order to receive the rewards. If users fulfill their commitments to vote from their CDP on all the proposals during a period, they will be automatically sent their Fyton Governance rewards by the Fyton Foundation (Note: these rewards can be sent to the CDP or to another account). It is also possible that the value of FYC will rise after it has been initially deposited into a CDP.

In this case, a CDP holder is able to mint additional FYTON from their CDP, increasing their debt and ability to participate in DeFi. This means that long-term holders will be able to gain additional spend out of their CDPs in the future so long as the relative value of FYC increases. In the future, users can choose to make their CDPs tradable.

Step 3a: Closing CDP

A CDP holder is free to close their position at any time. To unlock their collateral, a user returns the FYTON they minted back to the FYTON reserve and transfers the FYC (minus fees) from the CDP Smart Contract back into their account via Atomic Swap.

Step 3b: Liquidation

In the event that the value of the FYC held in a CDP falls below 115% of the value of the FYTON debt, the CDP may be liquidated. A blockchain monitor (“Keeper”) may profit from this situation by repaying the FYTON debt of the CDP holder and claiming the collateral within. The collateral is sold via Dutch auction to obtain as much FYTON as possible for the collateral to maintain system integrity. After the FYTON reserve has been sent their debt, the remaining FYTON from the sale (minus fees) is returned to the CDP holder. So, even in the event of liquidation, a CDP holder will still retain all the FYTON that they have minted. When a CDP is liquidated, governance rewards are forfeit.

VI. Tokenomics

FYC is the governance token for the FYTON Protocol which allows holders to vote on protocol features and/or parameters.

Fundamentally, FYC exists as a mechanism to control the FYTON Protocol including voting on ecosystem changes, setting fees, and managing pricing information. Conversely, FYTON is an FYC rhythmic stable coin with a theoretically unlimited supply.

i. FYC Total Supply

FYC has a fixed total supply of **61.8 million Coins**, out of which there are currently **0** in circulation. **27.81M** is slated for the public while the remaining **33.99M** are to be used for private fundraising, hiring advisors, and compensating the team.

Upon launch, a small portion of tokens will be unlocked for presale, ecosystem offers, and initial sale tokens. As each subsequent governance period passes, more tokens will be released from the DAO and traded publicly. Substantial withdrawals of public tokens from the manager account (>0.618M or 1% of all tokens) will be announced 5 years in advance by the DAO in case token holders wish to part ways with the project.

[8]FYCs must remain in the CDP Smart Contract account for the entire governance period to remain eligible.

Public Tokens: **33.99M** tokens will be controlled by the managing account (appointed by the DAO) and will be used to promote the growth of the FYTON Protocol. These tokens are unlocked and owned by the FYC token holders. **27.81M** of these tokens will be used to fund adoption initiatives like Promotion Offer, Listings, Airdrop, Games Marketing etc. **8.652M** will be used to strengthen the protocol of DiFi Security. **3.09M** of these tokens will be used for the Founder's and Developers.

DAO Treasury: **3.09M** tokens will be set aside specifically to fund the Treasury. The Treasury will serve as a liquidity pool of last resort for the protocol and play a vital role in stabilizing the price of FYTON during periods of increased volatility. These tokens will be unlocked and controlled by the FYC token holders.

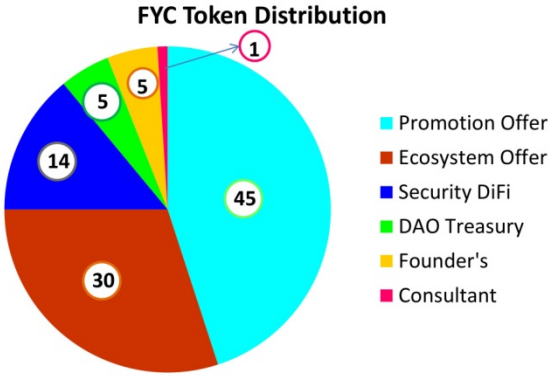
Sale Tokens: **18.54M** tokens will go to purchasers and strategic partners to ensure the success of the project. Upon TGE, Pre-seed and seed tokens will begin their vesting period and the rest of tokens sold to purchasers will follow a vesting schedule beginning when subsequent rounds are filled.

Team/Advisor Tokens: **0.618M** tokens will go to team members and advisors. These tokens will be locked for the first year and begin vesting linearly over 5 years.

[9]TGE-Token Generation Event

[10]*Disclaimer* this breakdown is the best estimate but subject to change by DAO

Figure1: FYC Token Distribution



VII. Key External Actors

The FYTON Protocol doesn't solely rely on its smart contracts, instead, it entrusts its success to a number of external actors. These actors are Keepers, Price Oracles, DAO participants, and the DAO manager account. These actors will be discussed below.

i. Keepers

Individuals who help keep FYTON at its 1USD peg through arbitrage will be known as Keepers. One-way Keepers maintain the system is through bidding with FYTON on collateral (FYCs) when a CDP position is liquidated. This FYC can be acquired at a discount as it will be worth more than the debt owed to the reserve to claim it. Keepers will monitor the blockchain to know when a CDP is in default (value of collateral thereinisbelowliquidationthresholdof115%). Our web app will also track the CDP positions in default and display the current price (in FYTON) of a CDP that is being liquidated.
When there are small fluctuations in the price of FYTON, arbitrage opportunities will present themselves to community members and enable them to capitalize on price discrepancies. Namely, if someone offers to buy FYTON forover1USD, Keepers are able to profit by opening short-term CDPs without closing fees. Because our protocol is unbiased and will always treat FYTON as worth 1 USD, users will be able to enter and exit CDP positions quickly to help maintain equilibrium without incurring fees.

ii. Price Oracles

In order to properly calculate the overcollateralization ratio of a CDP and the value of collateral in an account, it is necessary to bring pricing data on-chain for reference. A Price Oracle does this by storing the FYC/USD price in the global state of a stateful smart contract.

Currently, there is no decentralized FYC/USD price oracle live on Main Net. FYC crackle aims to solve this problem, launching on MainNet in late Q2/early Q32022. However, until FYC crackle launches on MainNet, the DAO-appointed managing account will maintain the integrity of the pricing data used by the FYTON Protocol.
This initial system involves a single oracle fetching prices from several APIs, taking the median, and pushing the data on-chain.[11]

Once FYC crackle launches, the DAO manager account will change the pricing data application referenced by the system to an FYC crackle-controlled application. This application reference change can only occur

[11] FYC crackle - A decentralized oracle system. See https://www.fytonscan.com

twice, which means that after the system has switched to FYC crackle data, the DAO Manager account will have no further control over the pricing data source.

iii. DAO Participants

The FYTON DAO makes the decisions needed to keep the FYTON Protocol running smoothly. The DAO also has the ability to add new functionality and governance options at a future date. The DAO is composed of all holders of FYC. FYC holders may participate in the FYTON DAO by participating and staking their FYC (i.e. temporarily locking it in a smart contract for the duration of a vote, then re-claiming upon vote end). Each FYC token represents one vote in governance decisions. At launch, three key voting contracts will be deployed:

1. Manager selection
2. FYC minting fee
3. FYC returning/CDP closing fee

Voting methodology varies based on the specific contract. Votes for the manager are based on a simple plurality winner.[12] Fees are set based on a majority winner[13] (if no fee receives 50% of votes, then the previous fee rate remains). Anyone with FYC may vote in these elections for any valid vote recipient. These votes are held on-chain in voting smart contracts. In both cases, there are fixed length voting periods, with fixed length breaks in between voting.

[12]Plurality=the person with the most votes (even if under50% of all votes) wins
[13]Majority=the fee option with over 50% of votes wins

The manager can be any arbitrary Fyton address. The manager serves an executive role, taking actions that must be done by a singular account throughout the system, including actions that occur off-chain such as web application maintenance. The manager may also introduce new voting contracts to the system, “lock-in” contracts as permanent votes of the DAO, and remove voting contracts that have not been “Locked-in” as core contracts. New voting contracts enable system upgrades, as these contracts can contain arbitrary functionality, enabling updates over time and not locking the FYTON Protocol into a completely immutable system. The initial three voting contracts are locked-in (i.e. are immutable), and may not be removed by anyone. In the long run, the manager should have little or no functionality, as all key decisions will be programmed into smart contracts as the system stabilizes and reaches maturity.

Because participants both use FYC and stake it to vote, any resulting vote is aligned with the interests of FYC holders. FYC holders are strongly incentivized to govern and create the most effective FYTON system possible, ensuring all votes benefit the protocol through incentives, paired with sensible winner mechanics in each individual vote.

iv. DAO Manager Account

At first, the DAO Manager Account will be controlled by the FYTON team. This account will be initialized to a multi-signature account with 3 authorized signatories, atleast2 of whom must sign off on every

transaction. The DAO manager account can be changed by election each quarter. The DAO manager is responsible for web application management, protocol extensions, adding new DAO votes, deploying Treasury funds to maintain the FYTON peg, and (only able to do twice) changing the pricing data source for the protocol. For overhead, the DAO Manager is entitled to 18% of the DAO revenue each quarter. The DAO Manager will be elected each quarter, immediately prior to receiving its share of the DAO revenue.

v. Treasury

The Treasury is a smart contract that holds all protocol fees from the system as well as the FYC tokens from users. FYC Token holders are able to withdraw liquidity from the system by transferring FYC out of the Treasury while transferring GAIN into the Treasury via Atomic Swap. The Treasury pays 8% of its fee proceeds (in FYC) to the DAO Manager account each quarter. It also pays 2% of its fee proceeds to a founder account each quarter.
The Treasury also can be thought of as a liquidity pool of last resort.[14] If the market for FYTON becomes particularly volatile, the DAO Manager account will use the FYC balance of the Treasury to buy FYTON through liquidity pools and/or exchanges to push the price up. Similarly, if the price of FYTON rises too high, the DAO Manager account may mint FYTON at a price slightly above $1 and sell the FYTON for the higher price through liquidity pools and/or exchanges, depositing the arbitrage profits back into the Treasury and bringing the price down again.

The DAO Manager is the only account able to use the Treasury for price stabilization to aid in prevention of impermanent loss.[15]Again, since this is a last resort; the DAO Manager will use this privilege sparingly, only taking action in periods of high volatility and market irrationality. The current plan is for the DAO Manager to take action if FYTON drifts off its peg by 2%. Since the DAO Manager is elected by the DAO, this process will be delegated to FYC holders as the FYTON Protocol matures. The most important role of the Treasury will be to stabilize FYTON price to the best of its ability. The Treasury will be most effective under strong capable management and will become a better mechanism as the TVL increases over time with usage of the FYTON Protocol.

VII. Fees

Whenever protocol users mint FYTON from the reserve, they must pay an opening fee to the Treasury. This fee is initialized to 2% of the value of the FYTON minted but can rangefrom0-3% as determined by the DAO. There is also a liquidation fee; when the value of collateral in a CDP drops below115% of the value of the outstanding FYTON debt, the collateral is sold via Dutch auction. After the FYTON debt has been repaid to the reserve, 20% of the remaining

[14]Liquidity pool=a pot of cryptocurrency assets locked within a smart contract

[15]Impermanent loss=taking value out of the system by capitalizing on price volatility

FYTON is sent back to the reserve, while the rest of the collateral (80%) is returned to the account that was liquidated (the CDP holder). There is also a CDP closing fee. Like the opening fee, this is initialized to 2%. Opening and closing fees can range from 0-3% and can be changed by vote of FYC token holders.

IX. User Experience

A GARD user connects their wallet to a web application (via Wallet Connect, Fyton Official Wallet, or FYC Signer) and is able to lock up their FYCs in exchange for new FYTON. The user is free to transact with their FYTON however they see fit, reaping the benefits of Fyton's fast block speed and low transaction fees.

To incentivize users to use the protocol to mint FYTON, even though the FYCs have been locked up, they can still earn governance rewards, participation rewards, and consensus rewards. The FYCs will continue to accrue participation rewards until they are phased out and are eligible to participate in governance. In other words, the FYTON user is still able to vote with their locked FYCs in governance and can have the corresponding FYC rewards deposited with their locked FYCs at the end of each voting period. Accrued rewards in the form of FYCs can be claimed from the Fyton Foundation along with the locked FYCs at any time by returning the minted FYTON.

X. User Risk

In the event that the value of the collateral drops too low, the collateral will be sold in order to repay a user's FYTON debt. This process is called Liquidation. The more FYTON one mints relative to their collateral, the more susceptible their CDP is to being liquidated. However, more minted FYTON relative to one's committed FYCs also means more opportunity to participate in DeFi to earn extra yield. By using the protocol, the user acknowledges all known and unknown risks.

XI. Legal

TLDR: Use at your own risk.
You acknowledge, understand and agree that you are not eligible to participate in the distribution of FYC or FYTON, or utilize FYTON Protocol if you are a citizen, national, resident (tax or otherwise), domiciliary and/or green card holder of a geographic area or country (i) where it is likely that FYC or FYTON, or FYTON Protocol would be construed as the sale of a security (howsoever named), financial service or investment product or where participation in token distributions is prohibited by applicable law, decree, regulation, treaty, or administrative act(including without limitation the United States of America, Canada, and the People's Republic of China), and (ii) that is subject to U.S. or other applicable sanctions or embargoes (including without limitation Cuba, North Korea, Timor-Leste, Cambodia, Republic of the Union of Myanmar, Lao People's Democratic Republic, Tanzania,

Pakistan, Russia, Serbia, Tunisia, Uganda, Mali, Afghanistan, Albania, Angola, Botswana, Cameroon, Chad, Central African Republic, Eritrea, Ghana, Republic of Côte d'Ivoire, the Republic of Guinea, India, Guinea-Bissau, Somalia, Zimbabwe, Democratic Republic of the Congo, Republic of the Congo, Côte d'Ivoire, Ethiopia, Malawi, Montenegro, Mozambique, Madagascar, Crimea, Kyrgyzstan, Haiti, Azerbaijan, Bosnia and Herzegovina, Uzbekistan, Turkmenistan, Burundi, South Sudan, Sudan (north), Sudan(Darfur), Nicaragua, Vanuatu, the Republic of North Macedonia, the Lebanese Republic, Bahamas, Kosovo, Turkey, Iran, Iraq, Liberia, Libya, Syrian Arab Republic, Tajikistan, Uzbekistan, Yemen, Sri Lanka, Ukraine, Belarus, Bolivia, Trinidad and Tobago, and Venezuela)

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