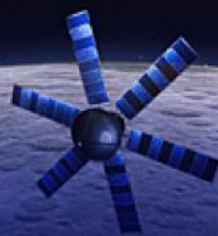


# DEPLUTUS

A Protocol for Decentralized  
Asset Management



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V1.3

## **Abstract**

We present DePlutus, a decentralized asset management protocol, for people or entities to manage their wealth as well as the wealth of others within a customizable and safe environment. DePlutus empowers anyone to initialize, manage and invest in customized and secure on-chain investment vehicles.

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### **1. Introduction**

The DePlutus Protocol is a Non-custodial, decentralized social trading asset management for crypto assets on Ethereum, BSC and Heco.

Non-custodial: users retain ownership over their funds. Asset pool is created via Smart Contracts, enabling both professional as well as retail investors, and delivering a higher capital efficiency.

Decentralized asset management: DePlutus aims to create an on-chain permissionless and open social trading asset management protocol, delivering premium investment returns for crypto, synthetic and mirror assets via a set of management tools.

DePlutus is a one-stop location for managing investment activities on multi-chains where investors can put their capital to work in a variety of portfolios with different strategies. All the transactions are transparent and based on track record.

In traditional finance, investing in a fund can be hard for the average person. Launching a fund can be even harder. DeFi can help change this though. Asset Management Protocols in DeFi streamline and codify the fund launch process, while the open nature of the networks they're built on democratizes access to all investors, in addition to boosting transparency.

In DeFi today, Asset Management Protocols are utilized by two main user types. Risk-seeking investors who are willing to outsource due diligence and investment decisions by paying fees, and Risk-taking fund managers that think they have what it takes to generate alpha.

With DeFi and the DePlutus, a non-custodial decentralized social trading asset management protocol, we deliver secure and transparent asset management

services to a target group of crypto investors, and also help fund managers with a variety of asset management tools.

The DePlutus Protocol allows any wannabe fund manager to initiate a fund and deploy capital across the full range of crypto assets. On the flip side, investors decide which vehicle they want to allocate capital to and receive the DF\_x token, the fund's pool token in return, representing their pro-rata share and specific ownership of the fund.

## **2. End Users**

There are two primary end user groups of the DePlutus Protocol: fund managers and investors.

The DePlutus Protocol is designed to have protections in place for both of these parties without being overly restrictive and rigid.

### **2.1 Fund managers**

Each fund has a manager, and stores in the pool.

Managers invoke DePlutus smart contracts to create pools. Managers may have public pools allowing anyone to become an investor.

Managers make decisions on behalf of pools of funds, and can use active management strategies, algorithmic strategies, or invest in other pools on DePlutus.

The fund managers can configure the rules and terms of their funds, such as investment strategies, operational period, max drawdown.

### **2.2 Investors**

A fund can theoretically have unlimited investors, who get exposure to a fund's performance by buying and redeeming fund shares.

Investors may use a wide range of cryptocurrencies to buy into a pool through corresponding smart contract to obtain DF\_x tokens, specific tokens to the fund.

## **3. DF\_x Token: Token of Specific Fund**

The DF\_x token represents partial ownership of the specific fund, and reflects the share of ownership in the fund with a value proportional to the fund's current value.

The DF\_x tokens can be sold, redeemed, traded, exchanged, and staked on the DePlutus as well other mainstream DeFi market like Aave. Therefore, the DF\_x token provides additional liquidity and helps to reduce gas fee.

The DF\_x tokens also enable investors to enter or exit a pool at any time by interacting with the pool smart contracts, and they can easily monitor pool performance directly from DePlutus.

In addition, the DF\_x holders also receive the DePlutus protocol's PLUT tokens as liquidity mining rewards for staking their fund tokens in the Uniswap DF\_x/USDT pool. When exiting the pool, the investor receives its share of the assets in the pool.

#### **4. Fund Operation**

The fund manager can launch a new fund at any moment and configure parameters like fundraising size, the self-financing rate, the hurdle rate and max drawdown. The fund manager should deposit USDT equivalent to the self-finance share into the pool when it is initialized.

The retail investors who accept the terms of the fund can deposit cryptocurrencies into the fund pool and receive DF\_x tokens representing the share claimed.

The fund will automatically come into operation when it meets the fundraising size.

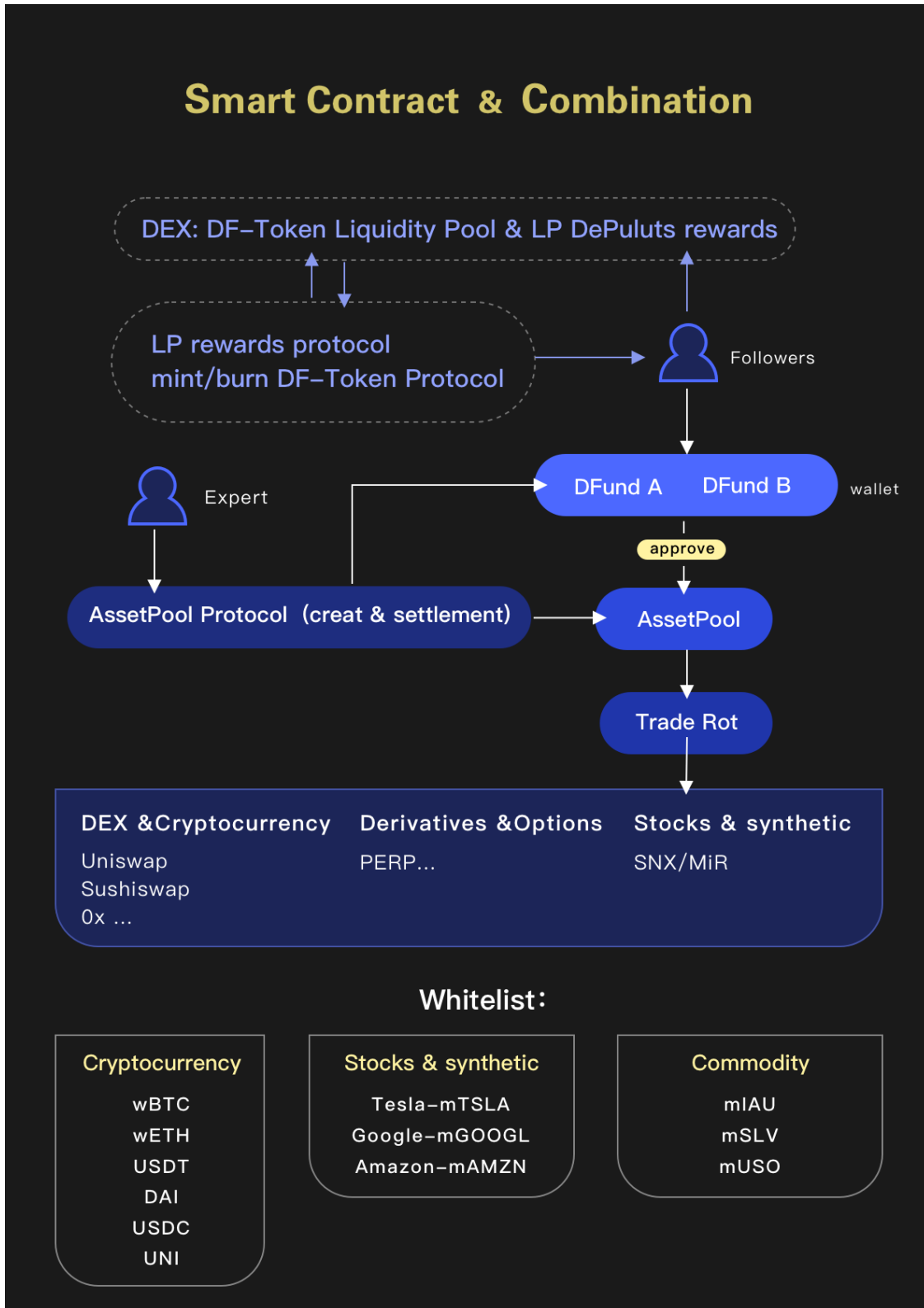
In the fund closure period, the fund token holders cannot redeem but are allowed to trade via Uniswap DF\_x/USDT pair, helping to provide liquidity to the fund tokens and avoiding the shortcomings of redemption issues of a closed-end fund.

To ensure the fund security, all fund managers only have trading access to smart contracts, and do not have asset withdrawal permissions.

The fund managers can invoke the swap() function via DEX contracts like Uniswap to trade the target assets such as WBTC and Aave.

The fund tokens are secured by smart contract and are not available to the fund managers during the operational period.

The fund manager may start the liquidation process in the lock-up period if a satisfactory yield rate is achieved. The liquidation will automatically start when the fund meets its terms by invoking liquidate().



After liquidation, investors can redeem the corresponding percentage of fund assets with DF\_x Token. The fund managers are entitled to claim excess return if the fund generates a higher performance.

Investors can redeem the DF\_x tokens to claim equivalent underlying assets by invoking `redeem()`.

The fund investors take all gains and losses. The excess earnings will be allocated to the fund managers as incentives.

While each transaction within the fund market is transparent, the actual investment strategy can remain opaque to the outside world in order to protect the innovation efforts.

Thanks to DePlutus analytics and the transparent nature of the Ethereum blockchain, investors can track exactly what trades a manager has made.

## **5. Key Contracts**

At the technical level, the core of the DePlutus protocol consists of the following contracts:

- Registry Contract
- Fund Contract
- Mining Contract

### **5.1 Registry Contract**

NameRegistry: manage all registered fund managers. Due to the open nature of DeFi, anyone can register as a fund manager. To prevent disorderly registration, the platform will charge a fixed amount of ETH as registration fee at the time of registration and any address can only be registered once.

### **5.2 Fund Contract**

FundManager: the management center for all the funds. A registered fund manager can initiate a new fund by invoking FundManager's `createFund` function.

FundManager will deploy a new DeFund contract for the fund manager and config the relevant properties according to the parameters submitted by the fund manager, after which the DeFund contract will come into fundraising process.

Fund contract provides the trading functions for the fund manager as:

```
function swapExactTokensForTokens(
    uint256 amountIn,
    uint256 amountOutMin,
    address[] calldata path,
    uint256 deadline
) external inRun() ready() nonContract() onlyManager() {
    require(deadline >= block.timestamp, "expired");
    require(path.length > 1, "path length <= 1");
    address last = path[path.length - 1];
    require(_inGetToken(last), "not in getToken");
    address first = path[0];
    address uniswapV2Router = IFundManager(controller).uniswapV2Router();
    _checkAndSetMaxAllowanceToUniswap(first, uniswapV2Router);
    IUniswapV2Router02(uniswapV2Router).swapExactTokensForTokens(
        amountIn,
        amountOutMin,
        path,
        address(this),
        block.timestamp
    );
    _notify();
}
```

The fund manager is only authorized to invoke the fund contract, and is subject to a series of checks such as status checks, whitelisting of trading assets. It prohibits invoking external contracts in order to prevent re-entry attacks.

All the fund assets are stored in the fund contract. The fund managers do not have permission to withdraw assets, ensuring the asset security of all investors and realizing the decentralized nature of DeFi.

### **5.3 Stake Contract**

StakeManager: manage all mining contracts.

Some of the funds will be selected as target mining pools through the DePlutus community governance. The associated stake contracts will be created for these funds afterwards. DF\_x fund investors will be rewarded with Uniswap LP tokens by adding liquidity. The LP tokens can be staked on the stake contract to receive PLUT tokens as awards based on mining duration and ownership percentage in the asset pool.



Investors will be rewarded with LP tokens after providing liquidity to Uniswap DF\_x/USDT trading pair. The LP tokens can be staked by invoking stake() of the stake contract:

```
function stake(uint256 _amount) external enable() lock()
updateReward(msg.sender) {
    require(_amount > 0, "amount = 0");
    require(block.timestamp <= endDateOfMining, "stake not begin or complete");
    _totalSupply += _amount;
    stakers[msg.sender].amount += _amount;
    TransferHelper.safeTransferFrom(stakeToken, msg.sender, address(this),
    _amount);
    emit StakeUpdated(msg.sender, true, _amount, stakers[msg.sender].amount);
    _notify();
}
```

The DePlutus team has optimized the various existing stake contracts for a better stake contract. Instead of giving out rewards at fixed hourly or daily interval bases, DePlutus' stake contract can issue rewards at the second-level interval base, fairer and more transparent to all users.

```
modifier updateReward(address _staker) {
    rewardPerTokenStored = rewardPerToken();
    lastUpdatedTimestamp = lastTimeRewardApplicable();
    if (_staker != address(0) && stakers[_staker].amount > 0) {
        stakers[_staker].reward = rewardOf(_staker);
        stakers[_staker].rewardDebt = rewardPerTokenStored;
    }
    _;
}
```

The formula for rewards calculation:

$$R = \sum_{start}^{end} \frac{rd}{24 \times 3600} \times \frac{stakedLP}{totalLP} \times t$$

Where rd is daily reward amount, stakedLP is the amount of stated LP tokens of the users, totalLP is the total amount of current LP tokens staked, t is a certain duration of time, the amount of user reward is the cumulative value of each fluctuating interval of time.

For instance, a fund aims to raise 100,000 USD, which is equivalent to 100,000 DF\_x tokens. If all the DF\_x tokens were staked to the Uniswap liquidity pool for

mining, and the pool generated 100,000 DePlutus tokens per day for 30 consecutive days, the fund yield rate would be 120% with the DePlutus token priced at \$0.2. The total return for all investors of this fund would be:

Total revenue = Fund revenue + mining revenue =  $100K \times 120\% + 0.2 \times 10K \times 30 = 180K$

Yield rate for investor = total revenue / total investment =  $180K / (100K + 100K) = 90\%$

APY (annual percentage yields) is  $90\% / 30 \times 365 = 1095\%$

To help the fund managers to generate a higher yield rate, DePlutus is planned to integrate Sushiswap, Aave and other mainstream DeFi applications in the future.

The DePlutus protocol are designed with scalability in mind and can be upgraded to new versions easily without affecting the operation of fund managers and investors.

## **6. Fund Security**

The smart contract and DeFi together safeguard the asset of investors on the pool. Proper permissions are assigned to fund managers to ensure security of the funds in smart contracts. The fund managers can only allocate funds to whitelisted DeFi markets. All fund managers only have trading access to smart contracts and do not have any withdrawal permissions.

DePlutus Protocol has passed the code audits conducted by well-known third-party organizations including SlowMist to ensure the reliability of the protocol and Smart Contracts.

## **7. Supported Assets**

DePlutus fund managers can trade a wide range of crypto assets including Ethereum assets, commodities, and index tokens.

For each investment fund, the fund manager is granted with the proper permissions according to the given smart contract, which allows the manager to allocate funds to the whitelisted tokens and DeFi protocols, such as WBTC, ETH, Compound, 0x, and Synthetix.

The amount of assets allocated to each DeFi protocol cannot exceed a pre-set limit and can only be revised through fund-level governance.

## **8. Protocol Fee**

The DePlutus protocol claims rewards through fund management fee after redemption, transaction fees for DF\_x token exchange and liquidity mining.

All the protocol fees collected will deposit to a designated account under the protocol. 75% of the total will be used to buy back PLUT tokens, and the left is to cover project operation costs.

## **9. PLUT Token**

The DePlutus token, PLUT, is the governance token for the DePlutus protocol.

### **9.1 Introduction**

PLUT token serves multiple functions:

- Facilitate decentralized governance
- Incentivize fund managers to earn greater return
- Incentivize investors to follow with top-performing managers to invest into the assets pool

The max total supply will be fixed at 1,000,000,000 PLUT tokens. PLUT is to have its token generation event in April, 2021.

The DePlutus charges Protocol Fee on fund redemption, DF\_x Token trade and liquidity mining exit. At least 75% of the platform fee rewards will be used to buy back PLUT tokens and burn afterwards in order to enhance its long-term value.

### **9.2 Allocation**

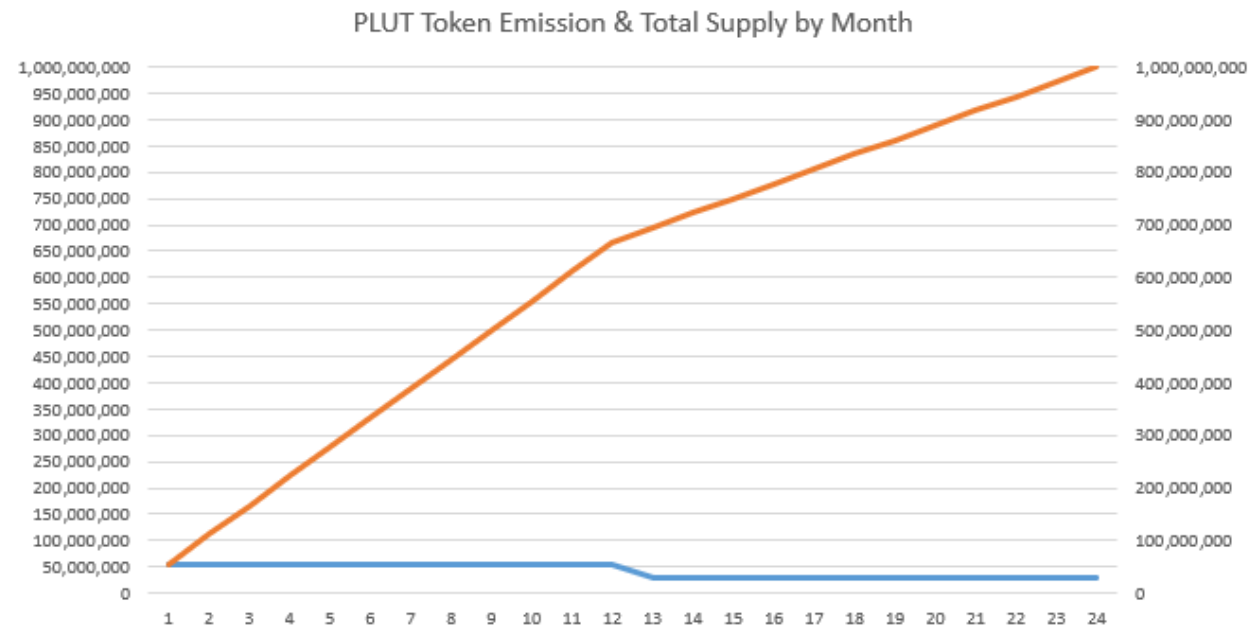
There are 1,000,000,000 PLUT tokens with the following allocation schedule:

	<b>PLUT Allocated</b>	<b>Amount of Tokens</b>
Liquidity mining	70%	700,000,000 PLUT
Community Incentive & Airdrop	10%	100,000,000 PLUT
Early Institutional Investors & Community Contributors	10%	100,000,000 PLUT
Core Team	10%	100,000,000 PLUT
<b>Total</b>	<b>100%</b>	<b>1,000,000,000 PLUT</b>

### 9.3 Emission and Supply

The PLUT token emission:

- 1<sup>st</sup> -12<sup>th</sup> Month: 5.5556% of the total for 12 consecutive months
- 13<sup>th</sup> -24<sup>th</sup> Month: 2.7778% of the total for 12 consecutive months



### 10. Initial Liquidity Mining

70% of the PLUT tokens are distributed by liquidity mining.

## **10.1 Summary**

Liquidity mining will be officially opened by late May or early June 2021, with ETH, BSC and Heco online for 90 days, awarding a total of 116.7 million PLUTs.

The Ropsten Test Network is now online.

Simultaneous docking with Solana, Polkadot and OKchain is also underway.

Meanwhile DePlutus agreement reached a strategic cooperation with Ploy Network to explore in depth in asset cross-chain and other aspects.

## **10.2 Mining Works**

Users get rewarded PLUT when they invest in pools on the DePlutus platform that have good performance, or stake their fund-specific tokens into the Uniswap DF\_x/USDT liquidity mining pool. This is a way to incentivize participants, distribute PLUT to the actual members of the DePlutus ecosystem and to reward good performing managers.

## **10.3 Criteria for Mining Reward**

Only investments into eligible pools count towards rewards. Eligibility criteria is subject to change.

Pools need to:

- Have a positive Sortino Ratio (meaning they have returns above a certain threshold)
- Have been funded more than 1 weeks ago

PLUT tokens as rewards are to be distributed pro-rata based on the value of every investor's investment on the DePlutus platform.

## **10.4 Airdrops**

From April 2021, an airdrop event is to be scheduled.

Detailed information regarding airdrop will be announced via DePlutus official Twitter account in advance.

## **11. Governance Overview**

DePlutus will begin with decentralized control of the protocol by community and stakeholder. We are looking forward to innovations like development incentives and ecosystem grants to encourage further growth of the PLUT ecosystem.

The governance on the Plutus Protocol platform:

- The overall protocol level, governed by all PLUT token holders
- The fund level by the fund manager and DF\_x Token holders

### **11.1 Governance on Protocol-level**

The governance process is fueled by governance forums through on-chain PLUT Improvement Proposals. PLUT holders have the ownership of DePlutus Protocol governance, Platform fee, and PLUT community treasury.

PLUT token holders can propose and vote on protocol-level decisions, like updating the default DeFi protocol whitelist, changing the governance model and pricing oracle, adding new features, adjusting the platform fee, as well as vote on how to distribute the tokens in the community treasury for further tasks.

PLUT token holders take the responsibility to ensure that governance decisions are taken in accordance with relevant laws and regulations.

### **11.2 Governance on Fund-level**

Fund-level governance provides flexibility to fund managers and investors. The fund manager and investors (DF\_x tokens holders) jointly control the operations of the fund. They can propose adjustment plans, and vote to determine whether to implement.

The changes that can be proposed include changing fund management fees, adding or remove accepted tokens, adding new DeFi protocols to fund-level whitelist, and replacement for fund managers.

## **12. Roadmap**

**2020 Q1**

Core team assembled

**Q2**

White paper released

**Q3**

Concept & function  
verification

**Q4**

Complete technical  
architecture &  
release the Demo

**2021 Q1**

Complete testing  
& pass code audit

**Q2**

Launch on Ethereum  
mainnet & liquidity  
mining

**Q3**

Launch V2, enabling  
perpetual ETF funds

**Q4**

Enable Layer2  
cross-chain  
solution &  
deliver Social  
Invest Network

### **13. Core Team**

The core leadership of DePlutus is composed of prominent researchers, distinguished scientists and business leaders with backgrounds from Wall Street, the Silicon Valley. Our collective experience ranges across the fields of economics, cryptography and game theory.

#### **Andrew Shi, Project Lead**

Founder of ECO Forum, early investor of Bitcoin, and a promotor of crypto currency. He translated "Bank 3.0", Chinese Edition, and Co-founder of Wall Street Blockchain, a N.G.O. focused on promoting blockchain technology. Mr. Shi graduated from School of Finance and Management in London.

#### **Bo Hong, Tech Lead**

Former principal software engineering manager at Microsoft HQ, U.S., and project owner of the SDET program. Mr. Hong has many years of research experience in distributed database and is a senior researcher in Bitcoin and distributed technologies

#### **David Zhang, Business Lead**

CFA, many years of experience in global asset management, and blockchain industry. David is the translator of "SnowBall", Chinese Edition

#### **Decater Collins, Marketing Lead**

An expert in digital marketing, and dedicated to promoting blockchain and decentralization concept. He is also the co-founder of The Hood Collective, a content creation and marketing company focused on online promotion. He used to work in China for many years, assisting a number of TOP 500 companies like Microsoft, Qualcomm, EMC and GE to promote business and products in Asia.

### **14. Summary**

We introduced a novel idea of specific fund tokenization to DePlutus, to generate additional liquidity by allowing each investor to stake their already deposited assets in the vast DeFi ecosystem. It helps our users to further enhance capital efficiency. PLUT and DF\_x token are powerful tools helping us to hide away the details of underlying tokens and focus on higher-level concepts. DePlutus serves as a fundamental role for composing more complex financial instruments in the crypto



world. It is a powerful tool that allows fund managers and investors to seize the current market growth opportunities. We believe there will be a limitless number of use cases for PLUT in the near future.

## **15. Disclaimer**

This paper is for general information purposes only. It does not constitute investment advice or a recommendation or solicitation to buy or sell any investment and should not be used in the evaluation of the merits of making any investment decision. It should not be relied upon for accounting, legal or tax advice or investment recommendations. This paper reflects current opinions of the authors only. The opinions reflected herein are subject to change without being updated.