

# USDD

## Over-Collateralized Decentralized Stablecoin Protocol

V2.0

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### **Abstract**

Diversified use cases can increase a currency's value and transaction scale. In addition to the stable price and purchasing power, the scale effect is key to the widespread acceptance and long-term adoption of fiat money as a medium of exchange. USDD is a cryptocurrency issued by the TRON DAO Reserve with a stable price and diverse use cases. The guaranteed over-collateralization using various mainstream cryptocurrencies helps ensure the stability and security of USDD and consolidate its value as a true settlement currency. In addition, a decentralized currency protocol with a stable price will expand use cases for cryptocurrency in general, making it truly accessible with far-reaching implications for both the blockchain space and the real economy.

# 1 Introduction

Bitcoin is one of the earliest cryptocurrencies, but it is not yet widely accepted as a settlement currency in daily life. The primary cause of this is its high price volatility, which results in losses for at least one party involved in a transaction, especially in transactions that take a long time to complete. This uncertainty has made using Bitcoin costly and impossible in practice. Bitcoin creates strong market demand, which in turn generates sharp movements in its price; therefore, its scale of supply and use cases are limited. Yet, it is the transaction scale and use cases that determine the value of a currency.

USDD resolves short-term price fluctuations and cyclical price risks with its responsive monetary policy and mintage mechanism. The following content will explain the USDD protocol in detail and how it stabilizes the price and grows the transaction scale.

First, the USDD stablecoin protocol decides which asset USDD should be pegged to because stability is relative, and pegging to a specific asset will meet the demand of more users.

Second, the USDD protocol runs on the TRON network. TRON is a decentralized network where the external market decides token prices. Therefore, an efficient and stable price feed mechanism is needed to ensure the smooth running of the stablecoin system.

Last but not least, the protocol should be equipped with the tools to regulate the market against any deviation from the predetermined value to maintain the stability of the currency price.

The following section illustrates how the USDD protocol addresses the problems mentioned above.

## 2 Currency Peg

The USDD protocol is committed to meeting the needs of consumers for stable digital currency by enabling USDD to be used for electronic payments. To achieve this, the USDD protocol will be pegged to the USD - the most widely applied fiat currency in the world - to establish a stable,

decentralized, and tamper-proof USDD-USD system. The protocol will uncover the nature of currencies and bridge the gap between digital assets and their practical applications.

### **3 Over-Collateralization**

The security of a stablecoin protocol depends on whether there is sufficient asset value behind it. On the basis of the TRX burning mechanism implemented by the USDD protocol, the TRON DAO Reserve has also introduced high-liquidity digital assets such as BTC, USDT, and TRX for over-collateralization in the protocol. The total value of collateralized assets will consistently remain significantly higher than the total value of USDD in circulation, with the current minimum collateral ratio set at 130%. The responsive monetary policy mechanisms will allow the ratio to dynamically adjust to maintain stability based on fluctuating reserve asset values and market conditions. Additionally, all collateral assets are stored in public on-chain accounts and listed on the TRON DAO Reserve's website for full transparency.

### **4 Measuring Stability**

Since the price of USDD in the secondary market is exogenous to the TRON network on which the USDD protocol runs, the system must rely on a decentralized price oracle to estimate an accurate price. The mechanism for the price oracle is defined as follows:

- Super Representatives provide the USDD price oracle on the TRON network, who need to submit a vote for what they believe to be the current exchange rate in USD.
- The votes are tallied every  $n$  blocks by taking the weighted medians as the true rates.
- Rewards will be given to those who voted within one standard deviation of the elected median to incentivize Super Representatives to vote for the true rates.

There are some issues in implementing the price oracle, among which is the overarching problem of voters' ability to profit from coordinating on a false price vote. Limiting the votes to a specific subset of users with deeply-vested interest in the system, such as Super Representatives, can vastly decrease the odds of such coordination. Super Representatives who fail to submit their votes before the voting ends or who vote outside the standard deviation of the elected median will be punished by the system.

## 5 Achieving Price Stability

The USDD market follows the simple law of supply and demand for a pegged currency. Once the system detects the deviation of the USDD price from its peg, it takes countermeasures to normalize the price. Which are:

- Contracting the money supply will result in a higher relative price level. When the USDD price level is below the target, a reduction in the USDD supply will bring the price level back to normal.
- Expanding the money supply will result in a lower relative price level. When the USDD price level is above the target, an appropriate increase in the USDD supply will bring the price level back to normal.

As we know, contraction of the money supply incurs costs like any other asset. In the USDD protocol, TRON's Super Representatives absorb the volatility of the USDD price, bearing the costs in the short term. When the USDD price falls below the target, users will burn their USDD to mint TRX, which brings the USDD price back to the target level. The minting of TRX will temporarily dilute the TRX mining power of the Super Representatives. In the medium to long term, Super Representatives are compensated with fee rewards incurred from token swaps by the USDD protocol. In summary, Super Representatives bear the costs of USDD price volatility in the short term but will be compensated in the long term. In this manner, they will earn stable rewards from the USDD protocol. We will elaborate on the reward-related rules in the sections below.

## 6 Adjustment of Short-term Price Fluctuation

The USDD protocol runs on the TRON network, of which TRX is the native token and the most natural defense against USDD price fluctuations. The USDD protocol uses TRX as the base currency to price USDD. The USDD protocol maintains the market price of USDD around the target price regardless of market conditions using the following method:

- When USDD's price  $< 1$  USD, users and arbitrageurs could swap 1 USDD to 1 USD worth of TRX in the protocol.

When  $1 \text{ USDD} = 0.9 \text{ USD}$ , an arbitrageur can buy 1 USDD with 0.9 USD in the external market and then swap 1 USDD for 1 USD worth of TRX in the system. After that, the

arbitrageur can sell 1 USD worth of TRX in the external market at 1 USD. In this way, the arbitrageur spends 0.9 USD to get 1 USD, and earns 0.1 USD without taking any risks. As a result of the above arbitrage, 1 USDD will be burned, and 1 USD worth of TRX will be minted. As the supply of USDD decreases, USDD's price will increase, to the point where there is no room for arbitrage and 1 USDD re-equates to 1 USD.

- When USDD's price > 1 USD, users and arbitrageurs could swap 1 USD worth of TRX to 1 USDD in the protocol.

When 1 USDD = 1.1 USD, an arbitrageur can pay 1 USD for TRX of the same value in the external market and then swap 1 USD worth of TRX for 1 USDD in the system. After that, the arbitrageur can sell 1 USDD in the external market at 1.1 USD. The arbitrageur spends 1 USD to get 1.1 USD and earns 0.1 USD without taking any risks. As a result of the above arbitrage, 1 USD worth of TRX will be burned, and 1 USDD will be minted. As the supply of USDD rises, USDD's price will go down, to the point where there is no room for arbitrage and 1 USDD re-equates to 1 USD.

## 7 Rewards

The Super Representatives (SRs) on TRON play a pivotal role in guaranteeing the security and stability of the USDD protocol. Specifically, they safeguard the TRON network by participating in the Delegated Proof of Stake (DPoS) consensus mechanism and provide stability for USDD by absorbing short-term price volatility. To incentivize SRs for the long run, the USDD protocol rewards them with fee incomes incurred from stablecoin swaps and TRX-stablecoin swaps.

- Tobin Tax: This is the fixed fee rate for stablecoin swaps in an ecosystem. The fee rate depends on the stablecoin involved in the swap. Since USDD is currently the only stablecoin in the USDD protocol, Tobin Tax is not applicable at this stage and will come into play after more stablecoins are introduced.
- Spreading fee: Each swap between USDD and TRX will incur a spreading fee (0.5% at the minimum). The USDD protocol will maintain stability under extreme market volatility by automatically adjusting the fee rate.

# 8 Roadmap

## USDD 1.0: Space

On May 5, 2022, USDD will be issued and enter circulation. The TRON DAO Reserve and its members (whitelisted institutions) will be the first minters of USDD.

Four years into its inception, the TRON blockchain has grown into the world's largest stablecoin network. The circulating supply of TRC-20 USDT has exceeded that of ERC-20 USDT, standing at \$41 billion. The TRON network boasts over \$55 billion worth of financial assets, including on-chain stablecoins, and has settled and cleared total financial assets of over \$4 trillion. It is now taking a step further to found the TRON DAO Reserve, the blockchain industry's first decentralized crypto reserve.

The TRON DAO Reserve aims to safeguard the overall blockchain industry and crypto market, prevent panic trading caused by extreme events, and mitigate severe and long-term economic downturns. The TRON DAO Reserve will be able to stabilize the exchange rates of centralized and decentralized stablecoins on TRON and other blockchains by setting benchmark interest rates and regulating the market through liquidity provision.

It also intends to formulate and implement monetary and exchange rate policies, play the role of a lender of last resort, and maintain reserve assets of various blockchains or blockchain-powered financial institutions to minimize systemic risks and ensure the stability of the financial market.

The TRON DAO Reserve will raise \$10 billion in early-stage reserves from prominent blockchain industry partners, effectuating deposits over six to twelve months. Concurrently, it will continue to attract more liquid assets and whitelist more compliant institutions on board as members to better serve its role as a decentralized organization.

As the early custodian, the TRON DAO Reserve will manage the permissions of USDD, ensuring price stability and decentralization by over-collateralizing USDD with its reserves. It will also have a built-in incentive mechanism and a responsive monetary policy, which will allow USDD to self-stabilize against any price fluctuations. Over time, the TRON DAO Reserve will work towards consolidating the value of USDD as a true settlement currency.

Upon its establishment, the TRON DAO Reserve will set its benchmark interest rate to 30% per annum and facilitate other decentralized and centralized organizations that accept USDD to implement consistent interest rate policies.

In 1.0: Space, the USDD management will be entrusted to the TRON DAO Reserve and other major blockchain institutions. The former will be tasked to provide custody service for the \$10 billion worth of highly liquid assets raised from initiators of the blockchain industry, use them as an early-stage reserve, keep the exchange rate of USDD stable, and enforce convertibility fully.

## **USDD 2.0: ISS**

Oct 10, 2022

Testnet of USDD decentralized network will go live, including:

1. TRON v5.0 supporting USDD is pre-released.
2. TRON v5.0 is deployed on TRON Testnet (Shasta and Nile).
3. Oracle is deployed to test the price feed system on TRON Testnet SRs.
4. TRON Testnet SRs determined to propose USDD, USDD Testnet is officially launched.

## **USDD 3.0: Moon**

Nov 30, 2022

USDD decentralized network will be released officially, including:

1. TRON v5.0 supporting USDD is released.
2. USDD implements comprehensive decentralized minting, swapping, and burning. Rights of mintage and burning are devolved to TRON Mainnet.

## **USDD 4.0: Mars**

Dec 30, 2022

USDD Mainnet will go live, including:

1. TRON SRs are updated to v5.0.
2. TRON SRs start price feed with oracles deployed and ensure the stability of the system.
3. TRON SRs initiate proposals, including VM proposals and Market proposals.

4. USDD Mainnet officially goes live, and TRON DAO Reserve devolves its rights of minting and burning USDD to TRON Mainnet.

## **9 USDD Issuance in 1.0 Space**

At the initial stage of USDD 1.0: Space, management of USDD will be entrusted to the TRON DAO Reserve and other prominent blockchain institutions. This chapter will explain the process of issuance and management of USDD in 1.0: Space.

### **9.1 Inception**

The USDD token was issued on April 30th, 2022, with USDD 1.0: Space being officially launched on May 5th, 2022. At this stage, the TRON DAO Reserve will pre-issue 999 billion TRC-10 USDD and transfer 1 billion of them to an authorized, multi-signature contract as the early USDD reserves. The remaining 998 billion USDD will be transferred and staked in an issuance contract, a smart contract based on the decentralized TRON network with 5/7 decentralized institution-controlled 10-day time-lock multisig. In cases of insufficient USDD reserved in the authorized contract, the TRON DAO Reserve will authorize part of the USDD tokens from the issuance contract via 5/7 multi-signature to replenish the reserves.

### **9.2 Issuance**

During USDD 1.0: Space, whitelisted institutions of the TRON DAO Reserve are entitled to the rights of minting and issuing USDD with TRX. After they transfer TRX to a TRX burning contract, the TRON DAO Reserve will calculate the equivalent amount of USDD based on the real-time exchange rate and transfer them from the authorized contract to the circulation account via 5/7 decentralized multi-signature. Following this step, the TRON DAO Reserve will convert the TRC-10 USDD in the circulation account into TRC-20 USDD and transfer the assets to whitelisted institutions. The issuance of USDD is thereby completed.

### **9.3 Replenish Reserves of the Authorized Contract**

When reserves become insufficient in the authorized contract, the TRON DAO Reserve would release a certain amount of USDD from the issuance contract to the authorized contract after obtaining five out of the seven signatures. Such signature-authorized USDD will be locked for 10 days prior to being able to withdraw to the authorized contract.

## 9.4 Contract and USDD Token Address

Below are the associated contracts at the stage of USDD 1.0: Space.

<b>TRX Burning Contract</b>	TNMcQVGPzqH9ZfMCSY4PNrukevtdGp24dK
<b>Issuance Contract</b>	TRFGnuUqED3NDpMYgqZY1X3gAeVHNw1SDq
<b>Authorized Contract</b>	TTsASxQhMk4t3S5vZMVVJ7nR2GQjDXNRnq

The TRX Burning Contract, the Issuance Contract, and the Authorized Contract are all secured by seven different institutions in a decentralized manner, with a five-out-of-seven decision rule being strictly implemented.

Below are USDD addresses on the different blockchains currently available.

<b>TRON</b>	TRC-10 USDD	1004777
	TRC-20 USDD	TPYmHEhy5n8TCEfYGqW2rPxsgHsfzghPDn
<b>BNB Chain</b>	BEP-20 USDD	0xd17479997f34dd9156deef8f95a52d81d265be9c
<b>Ethereum</b>	ERC-20 USDD	0x0C10bF8FcB7Bf5412187A595ab97a3609160b5c6
<b>BitTorrent Chain (BTTC)</b>	USDD_t	0x17f235fd5974318e4e2a5e37919a209f7c37a6d1
	USDD_e	0xb602f26bf29b83e4e159524400e0111a9d39f62
	USDD_b	0x74e7cef747db9c8752874321ba8b26119ef70c9e

## 10 Conclusion

The USDD protocol is a decentralized stablecoin protocol secured by the over-collateralization of multiple mainstream digital assets, which complements existing fiat currencies and cryptocurrencies as means of transaction and store of value. We introduced the issuance process and management mechanism of the protocol in the USDD 1.0: Space phase. At this stage, the TRON DAO Reserve and prominent blockchain institutions in the industry will conduct the issuance and management of USDD, which are completely based on the TRON decentralized network and adopt multi-signature methods to ensure transparency and security of issuance and management. In the USDD 4.0: Mars phase, the TRON DAO Reserve will transfer the USDD issuance and management authority to the TRON USDD decentralized network.

USDD has immense potential for adoption and applications. We will continue to focus on business use cases in the field of cryptocurrency. We will soon see increasing users adopting USDD as an online medium of payment, which greatly reduces transaction fees. As the world becomes more decentralized, we will see USDD being integrated with more dApps thanks to its solid tokenomics. The USDD protocol will empower people to further pursue the next stage of global financial accessibility, collectively leveraging blockchain technology on the masses. With perpetual existence and zero dependence on any centralized entity, USDD will become the most decentralized stable currency in human history.

If you want to support the USDD protocol, please contact us at [contact@usdd.io](mailto:contact@usdd.io).