VUSD

A DeFi-native, collateral-backed stablecoin.
WP v0.9.3

Summary

VUSD has a very simple design: A stablecoin pegged to the US Dollar, backed by over-collateralized, interest-generating collateral tokens. The interest generated creates sustainable operations that enable **a new base token for DeFi**.

Contract: 0x677ddbd918637E5F2c79e164D402454dE7dA8619 (Ethereum mainnet)

Rationale

Despite “a new stablecoin every day” algorithmic circus, the options for **on-chain, Ethereum-native, DeFi-native, over-collateralized, reserve backed** stablecoins are very few. The primary existing decentralized stablecoin options like DAI require significant debt and liquidation machinery, fee selection and an entire management ecosystem. Other stablecoin options store assets off-chain with reduced transparency and increased custodial risks (vs on-chain).

Maximum permissionlessness, decentralization and payment freedom is best achieved through on-chain, auditable, transparent, provable (in the cryptographic sense) stablecoin solutions. Recent innovations such as Curve and Uniswap V3 greatly assist in peg maintenance for on-chain, reserve-backed stablecoins, making VUSD More Likely To Succeed.

How It Works

Security Through Simplicity

It’s a stablecoin that maintains its peg through sustainable collateral management. That’s it. There are no debts, no liquidations, no auctions, just top level management of the collateral to mitigate familiar risks (crypto market crash, individual token collapse) and other known risks.

Minter: USD peg via mint swap

Users swap USDC, USDT or DAI to VUSD, minting new VUSD.

An unlimited amount of VUSD may be minted on demand*. Users permanently transfer collateral to a *Minter*, and receive newly minted VUSD. VUSD is minted on a 1:1 basis for

received DAI/USDC/USDT/ETH/WBTC, excluding a minting fee. The collateral is forwarded to *Collateral Treasury* for management.
As of this writing, the mint fee is fixed at zero (0.0%). Future versions of VUSD will adjust the Mint Fee up or down based on whether the Treasury is overweight or underweight the collateral token provided by the user.

*In the beta phase, a total supply limit of 50M exists, as a to-be-removed-later guardrail.

Redeemer: USD peg via redemption swap

Users swap VUSD to USDC, USDT or DAI.

Any amount of VUSD may be redeemed (burned), and the user receives the requisite amount of DAI/USDC/USDT/ETH/WBTC, less a redeem fee *if and only if the Treasury has the requested token in its inventory*. A keeper system (V2) watches the Redeemer contract, and periodically transfers from Collateral Treasury to Redeemer, when Redeemer runs out of funds.

Each user chooses the token to be received, when burning their VUSD during this redemption process. This limits each individual redemption to the maximum of VUSD in the user's wallet, or the amount of to-be-received collateral token in the Treasury. For example, if a user wishes to redeem 100,000 VUSD for USDC, and the VUSD treasury contains only 1,000 USDC, then 1,000 VUSD is the maximum possible redemption for that user.

As of this writing, the redeem fee is fixed at 0.1%. Future versions of VUSD will adjust the Redeem Fee up or down based on whether the Treasury is overweight or underweight the to-be-received collateral token.

Uniswap V3 & Curve V2 LP: USD peg via tight LP curves

A Curve metapool and a number of Uniswap V3 trading pairs will be seeded, vs other stablecoins, using tight curves with 0.05% fees, and concentrated price ranges. *As the collateral base increases, ever-more liquidity is seeded at V3, Curve and similar DEXes.*

Governance

Phase I - Vesper bootstrap and governance

Today, VUSD is governed by the pre-existing, progressively decentralizing Vesper governance structure (VVSP voting, ops multi-sig, etc.).

Phase II - Independence from Vesper

VUSD is governed by its own governance token, independent from Vesper's governance structure.

Phase III - Ungoverned

The ideal state is ungoverned, with no owner. Can this be achieved? Open question. Ideas solicited.

Treasury

Roadmap

Phase I ("meta-stable bootstrap"): DAI, USDC, USDT and other USD stablecoins are managed in treasury. VUSD is a meta-stablecoin in some sense, in Phase I. Minting fees are zero. Redemption fee is manually managed (0.1% as of this writing).

This phase generates stablecoin interest in the Treasury, which funds necessary LP-liquidity and token-may-implode self-coverage.

Phase II ("Full operation"): Volatile currencies such as ETH and BTC are managed in treasury also. Fees vary per-token, per price oracle. Similar to DeFi lending platforms, deposit of a volatile token such as ETH is minted 1:1 to VUSD for the user, yet only internally credited as growing the collateral base by 50% of the ETH's value.

Asset Management Meta-Strategy and Plan

Phase I: Store DAI, USDC, USDT directly in Compound and Aave. Manual LP at Uniswap V3, SushiSwap, Curve and Balancer.
Phase II: Use Vesper modular strategies to manage individual whitelisted currencies. LP begins to be automated.
Phase III: Fully automated management & LP.

Infosec and Economic Risks

Risk #1: Minting broken

If minting is lost, the system can continue, but the peg will break.
If minting is stolen, then the system confidence is lost.

Risk #2: Treasury broken

Loss of treasury is devastating to a collateral-backed stablecoin. As a young stablecoin, treasury loss may not be survivable. As a mature stablecoin, invested incumbents pursuing disaster recovery would likely IOU + help sustain the Redeemer, until the collateral base is rebuilt.

Risk #3: Peg broken

If treasury management is broken or sleeping, or mint/redeem demand cannot be satisfied in the long term, the peg will not hold. This is fatal for the “USD stablecoin” claim, but it is *not* fatal for the currency, which simply morphs into a floating-peg coin.

Risk #4: Treasury mismanagement

If the treasury is managed poorly, the collateral base can be eroded, rather than continually increased, eventually impacting mint/redeem demand satisfaction.

Risk #5: Fractional reserve

This risk is largely listed as a FAQ, rather than an outsized risk. A collateral backed stablecoin dipping below 100% backing does not cause instant VUSD failure. **Peg retention through market buy/sell demand** is the top-level outcome users seek. This can be satisfied by satisfying minting demand, redemption demand, and LP liquidity needs.

Thus a collateral base of 70%, 80%, 90% is a hole to climb out of, but not an existential event. Dipping below 50% and trending towards lower numbers becomes an existential danger zone.

Risk #6: Broken collateral token.

It is possible that one of the collateral tokens managed by the treasury will become zero value, or impossible to transfer.

Risk #7: Broken downstream platform.

If e.g. Uniswap V3 or Curve suffers a bug or hack, a large portion of the DEX liquidity and/or collateral base could be destroyed, or put into a disaster recovery state and made inaccessible for long periods of time.

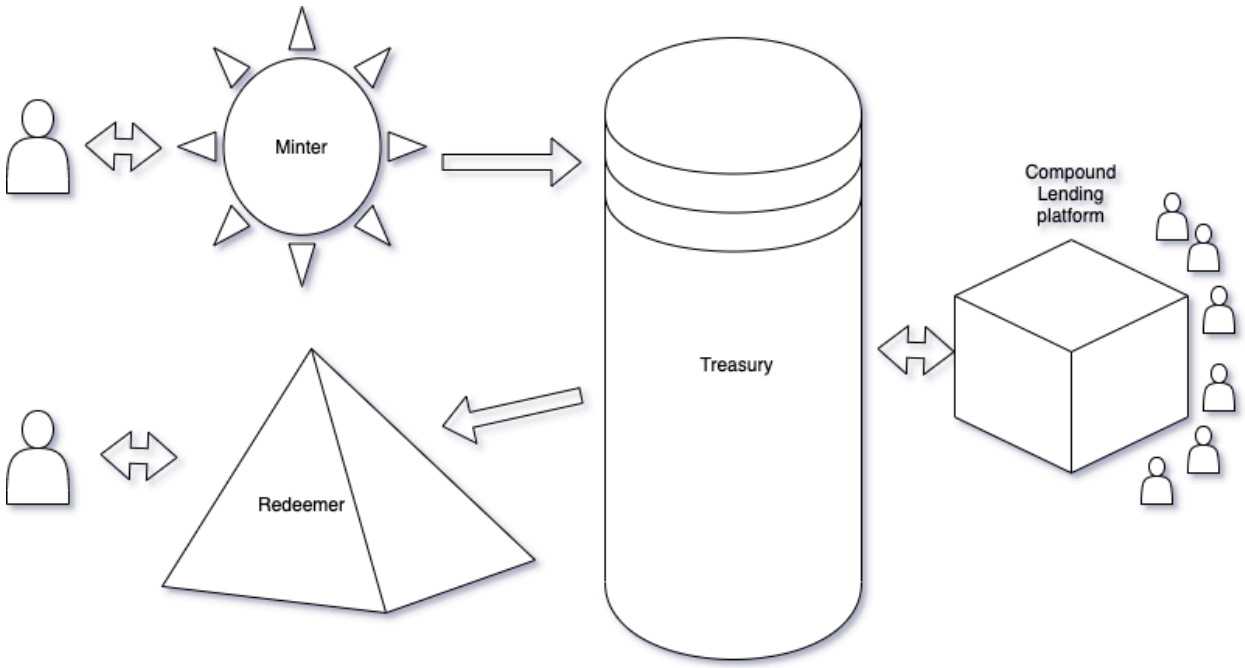
VUSD Relationship to Vesper

We want VUSD to be a truly decentralized stablecoin, independent from Vesper or any other entity.

During the early days VUSD will be governed by a “VUSD ops” multi-sig and the collateral will be deposited into conservative lending markets such as Compound.

The long term goal is a governance token and/or ungoverned.

System Diagram (v1.1)



Comparison Matrix

	Decentralized, Censor-Resistant	Reserve Verifiability	No Stability Fees
VUSD			
DAI			
USDC			
USDT			