Solayer USD: Yield-bearing Real World Assets Backed Synthetic Stablecoin

Solayer Team

v0, Part 1

Abstract

This paper introduces Solayer USD (sUSD), a pioneering dollar-pegged stablecoin backed by a basket of low risk profiled real world assets (RWAs), such as U.S. Treasury Bills, Bond, Gold etc, offering a secure 4-5% annual yield to holders through T-Bill-backed interest accrual initially. Utilizing Solana's Token2022 extension [Sol24], sUSD's innovative protocol adjusts balance multipliers instead of token amounts, allowing holders to realize yield growth seamlessly. Additionally, through a decentralized request-for-quote (RFQ) protocol, users' assets are diversified into various liquidity providers through matching engines, streamlining subscriptions and redemptions. Beyond basic yield through RWAs, sUSD can be delegated to modular AVSs, enabling holders to participate in the security of decentralized systems while earning additional returns. A focus on transparency, on-chain verifiability, and rigorous security measures ensures that sUSD maintains stability, security, and a reliable peg. Through Solayer USD, the Solana ecosystem advances toward a decentralized, bankless economy that redefines stablecoin utility and liquidity.

1 Solayer USD Manifesto

With stablecoin market cap standing at $170B, and stablecoins settled over $2.6 trillion dollars just in the first half of 2024 [For24, CIV24], we see tremendous market opportunity there. Ironically, most stablecoins are tethered completely to traditional banking infrastructure, drifting away from crypto's core promise of creating access to a more equitable financial system. Even further, most stablecoin issuers are yet another bank, making billions of dollars annually with users' deposits through collecting interest [Blo24].

With over $2B in stablecoin assets flowing into Solana from other ecosystems in just the past year [Def24], Solana's stablecoin ecosystem is growing rapidly, attracting new assets and demonstrating robust confidence in its infrastructure. To build on this momentum, we have created Solayer USD (sUSD) natively on Solana – a pioneering yield-bearing, dollar-pegged stablecoin designed to redistribute the RWAs interest back to users.

Our vision goes beyond just launching a stablecoin: we aim to lay the foundation for a bankless economy while fortifying the future of decentralised systems. RWAs backed stablecoin is the new paradigm of stablecoin. Anyone with internet access can acquire the stablecoin and its strong denominated financial instruments. It is the new global financial system that gives the powerless access to financial freedom.

With sUSD, we're not only enhancing stability and growth within the Solana ecosystem. We're paving the way for a more robust and interconnected financial infrastructure landscape.

2 sUSD: A Stable Gateway to Real World Infrastructure

Solayer USD (sUSD) is the first ever yield-bearing stablecoin on Solana that is pegged into the U.S. dollar and backed by real world assets including U.S. Treasury Bills (T-bills), Bond, Gold etc. This ensures that sUSD maintains a 1:1 peg with the U.S. dollar while simultaneously generating a 4-5% yield through T-bills initially, one of the safest short-term government debt instruments.

By serving as a reference implementation for the token 2022 interest-bearing extension, sUSD reinforces the stability of its 1:1 USD peg. The sUSD pool makes yield generation more accessible and efficient for the stablecoin ecosystem.

Given the constraint of Solana's account model, we can't mint tokens easily to all holders. So the interest bearing extension works in the way that it changes the "multiplier" of the holding amount with interest accumulation rather than changing the amount. The token amount is then calculated by multiplying the scale with the actual holding amount. This allows the amount of sUSD in a wallet to increase natively, much like the balance in a bank account grows with interest.

The interest on sUSD is distributed through automatic balance updates, allowing users to accumulate an annual yield of approximately 4-5% based on RWAs yield (initially from T-bill) simply by holding sUSD.

On top of that, sUSD holders could also optionally delegate sUSD to exogenous AVSs (exoAVSs), which are modular systems running in parallel to Solana. Through this process, sUSD restakers can earn intrinsic RWA-backed yield while gaining exposure to additional returns by contributing to the security of modular systems such as oracles, bridges, network extensions, rollups, etc.

We envision the entire world to have permissionless access to the dollar and earn yield on a dollar-denominated instrument. Through sUSD, anyone can access the real economy backed dollar-based yield on-chain at any time.

Ultimately, we envision sUSD becoming the permissionless on-chain liquidity layer, bridging fiat systems to the bankless economy.

3 sUSD's Decentralised Request-for-quote Protocol

sUSD is a decentralized stablecoin through the Solayer RFQ (Request for Quote) protocol, a marketplace matching engine. The marketplace facilitates USDC quotes and qualified tokenizers, with a matching engine that yields the most optimized interest. The marketplace interface is a non-custodial, fully automated smart contract that conducts minting, redemption, and order matching procedures. Instead of juggling multiple platforms and providers, users can access a variety of real-world asset providers through a single, streamlined interface.

3.1 Subscription Process

First, the user locks USDC through the protocol to initiate a transaction, which creates a quote that specifies the amount of USDC, expiry time, and the commission rate for the trade. Then the qualified liquidity provider fulfils the buy order by transferring the wrapped T-Bill (tokenized representation of a T-Bill) in as proof and transferring out the USDC. After that, the decentralized RFQ protocol forwards the wrapped T-Bill to the sUSD minting program, locking it there and the program will mints sUSD based on the value of the wrapped T-Bill to users while maintaining a 1:1 price peg with USDC. Optionally, users could delegate sUSD to secure our exogenous AVSs (coming soon) when it goes live.

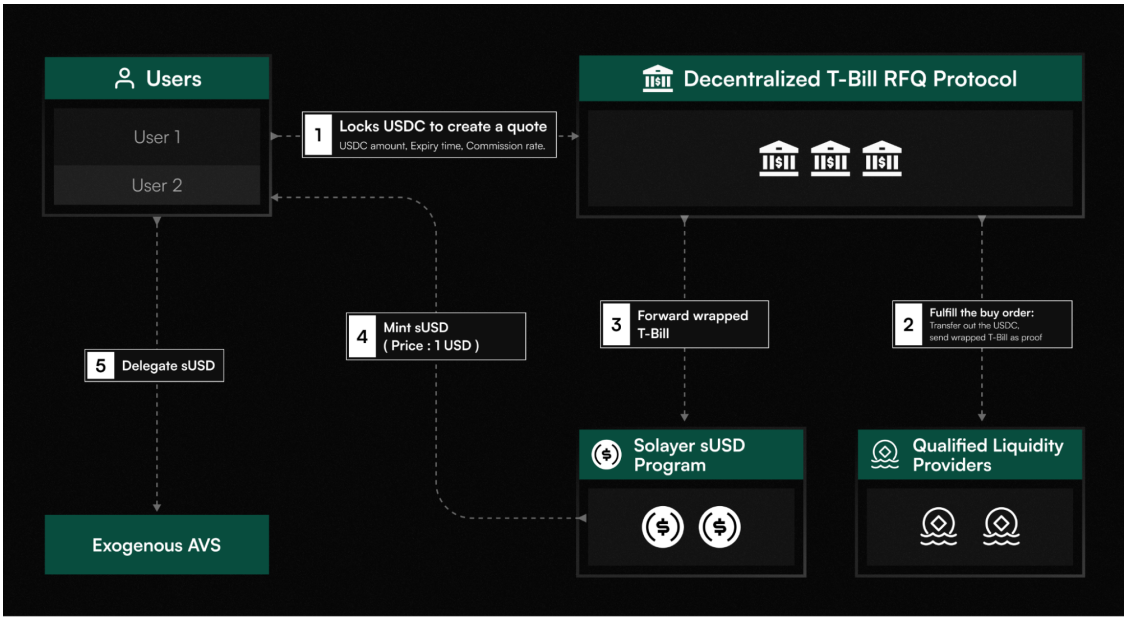

Figure 1: Solayer USD Subscription Process

3.2 Redemption Process

The redemption process starts from users undelegate sUSD from exoAVSs. Then users send sUSD back to the sUSD program, which then calculates the corresponding amount of wrapped T-Bill, sends it to the RFQ system, and creates a redemption order. After that, qualified liquidity providers fulfil the redemption order by transferring in the corresponding amount of USDC to the protocol and transferring out the wrapped T-Bill. Finally, the RFQ completes the redemption process by transferring USDC back to the users.

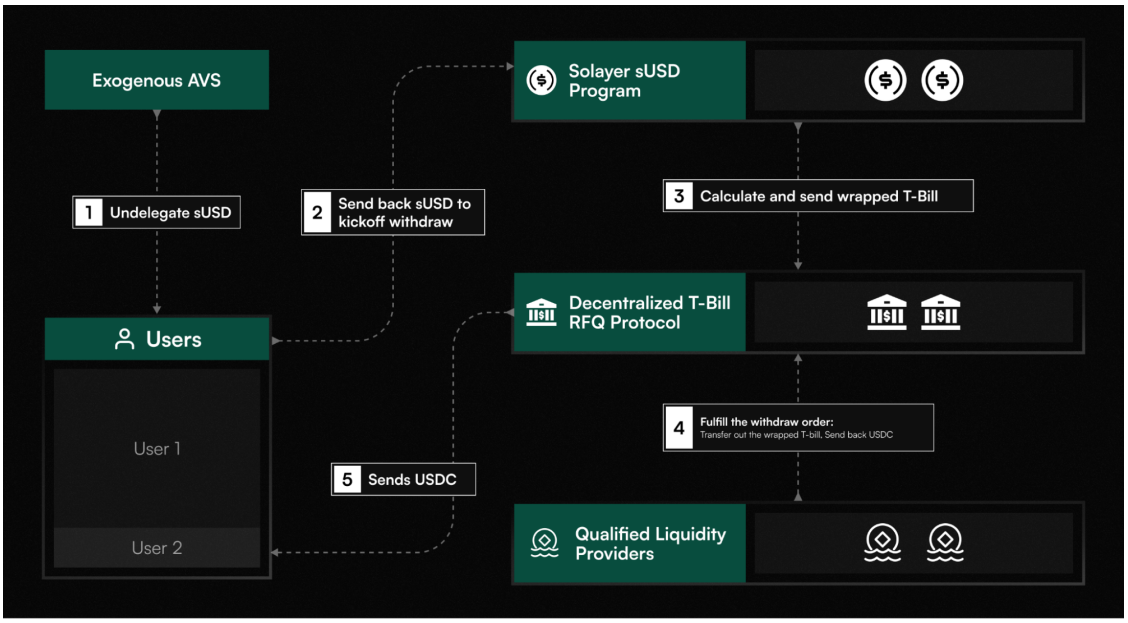

Figure 2: Solayer USD Redemption Process

4 Transparency and Security

4.1 On-Chain Verifiability and Attestation

Solayer USD is based on a fully decentralized RFQ protocol. Given the transparency nature of blockchain, all transactions and wrapped T-Bill holdings are recorded on chain, providing an immutable and transparent ledger for all participants. At any time, there is no any sort of off-chain asset custody. While users' USDC is eventually converted to USD and buy T-Bill off-chain, liquidity providers need to mint wrapped T-Bill as the on-chain proof and anyone holding the wrapped T-Bill token can redeem USDC back. At the time of writing this litepaper, the wrapped T-Bill token is held by the RFQ protocol at this account.

4.2 Liquidity Provider Legitimacy

We perform very strict due diligence checks over the liquidity providers, including but not limited to their fund management process, subscription/redemption time SLA, legal compliance, smart contract security, etc.

We are working on adding more liquidity providers in the future, helping users maximizes yield opportunities by leveraging the strengths of different providers as well as distributing risks.

4.3 On-Chain Program Security

We have gone through auditing with halborn and plan to do more auditing in the future.

We use multisig committees to manage our on-chain program, more details in our doc.

4.4 sUSD Interest Rate Stability

sUSD adopts solana token2022 interest bearing extension to make sure sUSD price is pegged to 1 USD. The Solayer team monitors and updates the interest rate of sUSD to catch up the exchange rate of underlying wrapped-TBill token and users can simply retrieve the updated total, including interest, at any given moment.

We have set up couple guardrails around the interest rate update:

- We protect rate from significant deviating from the rolling average exchange rate during redemption and minting
- We have off-chain rate program syncs with wrapped T-Bill interest rate
- We have designed algorithms to ensure smooth convergence between the actual rate and the token total scale
- We check and update the rate hourly to minimize the risk of overshooting
- The rate update authority is securely managed by solayer team

5 Conclusion

Solayer USD (sUSD) represents a transformative step in the evolution of stablecoins by introducing a yield-bearing, RWA-backed model that operates natively on Solana. With a structure designed to provide both stability and accessibility, sUSD enables users to earn a secure, passive yield, bridging traditional financial assets with decentralized infrastructure. Its decentralized RFQ protocol and modular AVS system facilitate efficient liquidity, transparency, and enhanced security, reinforcing user trust and system resilience. As sUSD establishes itself as a liquidity layer within Solana, it sets a precedent for the broader stablecoin ecosystem by shifting toward a model that favors user yield over centralized

profits. Ultimately, sUSD aims to support a bankless economy, further decentralizing finance and fostering a more interconnected, resilient financial future.

References

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