

# **Sirius Finance: Polkadot-native stableswap AMM**

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**Abstract:** This litepaper introduces Sirius Finance, a Polkadot-native stableswap AMM on Astar network. Astar network is a smart contract parachain on top of Polkadot, which has unparalleled interoperability and upgradability that are believed to be the key to the success of its blockchain ecosystem.

This litepaper version discusses the following topics: the current Defi ecosystem's defect, the necessity of a native stableswap AMM on Polkadot, Sirius Finance's solution, market and growth potential, product features and roadmap.

## **Content:**

1. Drawbacks of the current Defi ecosystem
2. What is Sirius Finance and its vision?
3. What is a stableswap AMM?
4. Why does Polkadot need its own native stableswap AMM?
5. What is liquid staking and why does it matter on Polkadot?
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## 1. Drawbacks of the current Defi ecosystem

The year 2022 has witnessed the debacle of Defi, starting with the Terra UST collapse and followed by “subprime crisis” within other Layer 1 ecosystems. Our team attributes it in large part to the following two root causes:

1. Unlimited exposure to high risk algorithmic stablecoin, UST on Curve Finance, the largest stableswap AMM.
2. High yield leveraging of a chain's limited resources that creates no real value.

## 2. What is Sirius Finance and its vision?

Sirius aims to be the largest stableswap AMM on Polkadot serving the native stablecoins and liquid staking tokens with a risk-adjusted product model categorized into the following two key phrases:

1. Bootstraps tokens that create value.
2. Risk-adjusted platform for all assets.

## 3. What is a stableswap AMM?

An Automated Market Maker (AMM) is a protocol that uses a mathematical formula and a pricing algorithm to provide trading rates or prices.

In the Cryptocurrency ecosystem, most AMMs such as Uniswap, Pancakeswap, etc use this protocol and allow almost all types of assets to be added to their liquidity pools and traded. A Stablecoin AMM which Sirius Finance has built focuses mainly on stablecoins and stable assets, that is to say, stablecoins like USDC, USDT, etc. and stable assets such as LDOT/DOT can be added to liquidity pools for the minimal slippage costs.

Stablecoins & stable assets are usually held by big holders popularly known as whales or institutions for a steady yield, as well as for arbitraging opportunities. Please check **Algorithm** for more details.

## 4. Why does Polkadot need its own native stableswap AMM?

Polkadot has up to 100 parachain slots and once XCM is fully implemented and activated on parachains, there will be the need for native DApps that don't rely on other ecosystems, hence the need for a native stableswap AMM, such as Sirius, which will eliminate bribe costs that most projects need to bear for setting up an appealing pool on Curve Finance.

Please check Llama Airforce below for an overview of historical bribe costs.

<https://llama.airforce/#/votium/rounds>

## **5. What is liquid staking & why does it matter on Polkadot?**

Liquid staking is the act of delegating your tokens to a service that stakes for you without losing access to your funds thus allowing you to access your funds even after staking those tokens in a form of wrapped assets.

As a nPOS(nominated proof-of-stake) blockchain, Polkadot is a layer 0, heterogeneous multi-chain network with shared security and interoperability. There are no smart contracts on it and this is why you see no place for it on Defi Llama. In fact, more than \$4 billion worth of DOTs is now staked, accounting for more than 50% of total market capitalization of DOTs, according to Staking Rewards.

With Cross-Consensus Message Format, “XCM”, the internal communication format, going live, the native coin, DOT, can be “bridged” to dapps on various parachains for both staking and liquid staking. Liquid staking, therefore, frees up massive staked DOTs that are currently worth \$4 billion in market capitalization. Indeed, most parachains on Polkadot do have strong demands for liquid staking. You might find that more than \$200 million worth of its native tokens is now under staked status.

## **6. How does liquid staking fit into Sirius Finance ecosystem?**

The ultimate goal of liquid staking is to allow existing stakers to exit their position when needed by swapping their liquid staking token with an underlying token.

For instance, a liquid staking solution allows users to mint LDots for staked Dots. The valuation of LDots is the value of staked Dots plus the rewards accrued. The price of LDots are usually traded within the price range of Dots for the valuation equation above. LDots/Dots is therefore considered stable and Sirius’s AMM supports such features and provides minimal slippage cost for such pairs.

## **7. Growth potential & strategy**

- Over-collateralized stablecoins native to Polkadot – Sirius is supported by Astar & Acala:  
BAI, the stablecoin native to Astar is already supported on Sirius.  
aUSD, known as the stablecoin native to Polkadot and developed by Acala will soon be live on Sirius.  
More will be supported from more parachains and also those bridged from beyond Polkadot.
- Liquid staking tokens: nAstar/Astar, LDOT/DOT support for more up and coming parachains including but not limited to Acala, Moonbeam, Parallel and Biforst.
- Crowdloan DOT derivatives on Polkadot, such as tDOT.

Given the priority of each token, Sirius along with their partners such as Astar, Acala, and more in the future, will apply dual rewards to incentivize liquidity providers.

## 8. Why Sirius Finance?

Sirius Finance is a cross-chain stablecoin AMM, attracting and locking tremendous value with low-slippage trading costs, attractive APY for LPs on Astar Network, allowing for more financial innovations & yield enhancements for Astar users.

Ultimately, it serves as a low-slippage swap protocol connecting Polkadot, EVM-compatible chains and other major layer1 chains, expanding use cases from stablecoins to other similar valuable tokens.

- Low slippage: Assets are priced according to a pricing formula instead of an order book. The formula used by Sirius Finance is specifically designed to facilitate swaps that happen in a roughly similar range. For example, we know that 1 USDT should equal 1 USDC, which should equal roughly 1 BUSD, and so on. However, if you would like to convert 100 million dollars of USDT to USDC, then convert it to BUSD, some slippage is going to occur. Sirius Finance's formula is designed to minimize this slippage as much as possible. And this leads to extremely low slippage for even large amounts of tradings. In fact, the spread on Sirius Finance can meaningfully compete with some of the centralized exchanges and OTC desks with the best liquidity.
- Decentralization: Sirius users participate in the Sirius protocol in a decentralized way via our vetoken model. Users can vote for their interests in terms of various parameters by vote-locking SRS.
- Deep liquidity and high yields: basic APY, APY boost and APY enhancement
  - Basic APY: Every user that participates in the protocol, will be able to gain SRS via liquidity farming and so on
  - APY boost: liquidity providers can stake SRS and gain veSRS, which further allows them to share trading fees or lending pool profits from third-party lending protocols
  - APY enhancements: liquidity providers can earn and share extra token rewards as Sirius works with other projects and attracts more users to provide liquidity
- Exchange hub on Polkadot: vision to build the future exchange hub on Polkadot and so far we have designed and built four major types of asset pools accordingly, including base pool, meta pool, legal fiat-pegged currency pools as well as tokenized derivatives

## 9. Why Astar Network?

Astar is the best fit due to its cross-chain nature and ambition of being the central dapp hub on Polkadot. This allows Sirius Finance to have access to a great variety of stablecoins, not only on Astar, but also on polkadot, or even other chains, to increase liquidity, improve TVL and increase trading options. This great variety further encourages decentralization of our protocol since we can have a number of pools competing for a higher APY.

Secondly, Astar is building massive native defi protocols, like lending & borrowing, yield aggregators, a great number of NFT and Metaverse projects. This is in sharp contrast with other parachains. These native protocols would work closely with Sirius Finance to enhance yield for liquidity providers.

Astar is a rising star from Japan, whose government approved policies to drive Web3.0 adoption on June 9th this year and please check the link below for more info:

<https://coinculture.com/au/policy-regulation/japanese-government-approves-policy-to-accelerate-web-3-0-adoption/>

## 10. Sirius Finance pools and algorithm

### *Sirius Base Pool*

The Sirius Finance stable pool consists of 4 tokens — DAI, USDC, USDT and BUSD. The distribution of tokens within the pool is not always equal, as traders trade within the pool, it adds and removes tokens from the pool, changing the amount of pooled tokens and their weights.

To incentivize traders to balance the stable pool's composition, Sirius Finance applies deposit bonus and withdrawal penalty as the pool tries to balance itself back into equal weights.

### *Sirius Meta Pool*

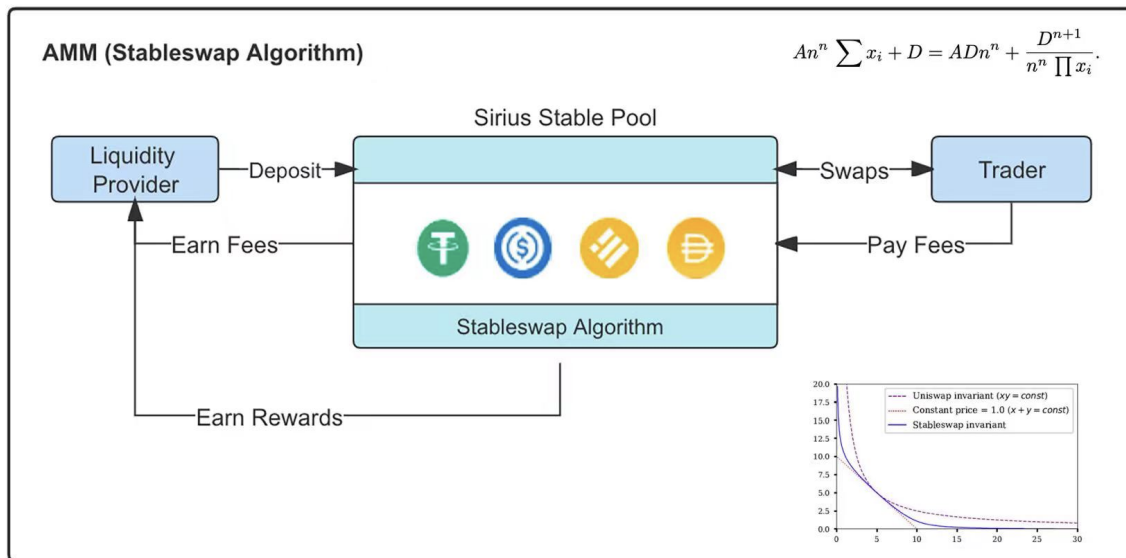
Meta pools allow for one token to seemingly trade with another underlying base pool, providing an opportunity for the base pool liquidity providers to earn additional trading fees by depositing their LP tokens into the metapool. The design of metapool helps maintain the stability of protocol in various ways:

- Prevents the dilution of an existing stablecoin base pool caused by increased participation of multiple parties
- Enables more programs with less or inadequate liquidity to launch on Sirius Finance
- Separates the risks for base pool liquidity providers where majority of liquidity comes from mainstream stablecoins
- Brings larger volumes of transactions and more transaction fee incomes as well as other profits to Sirius Finance

### ***Sirius Tripool***

Tripool consists of 3 tokens — DOT, ASTR, 4SRS, and will be used as the base pool for the meta pools which include volatile crypto assets. Tripool is expected to be the most liquid and cheapest way to interact, providing DOT and ASTR holders with a low trading fee and low slippage pool. Also, it is the same as the base pool in that the distribution of tokens within the pool is not always equal. When Sirius launches a new crypto metapool, that new pool automatically gets the ability to pair with any of the tokens within Tripool and 4Pool, such as USDC/USDT/BUSD/DAI/ASTR/DOT. This could greatly reduce the cost of providing initial liquidity for a project, and at the same time users could benefit from much lower trading fees and less price impacts.

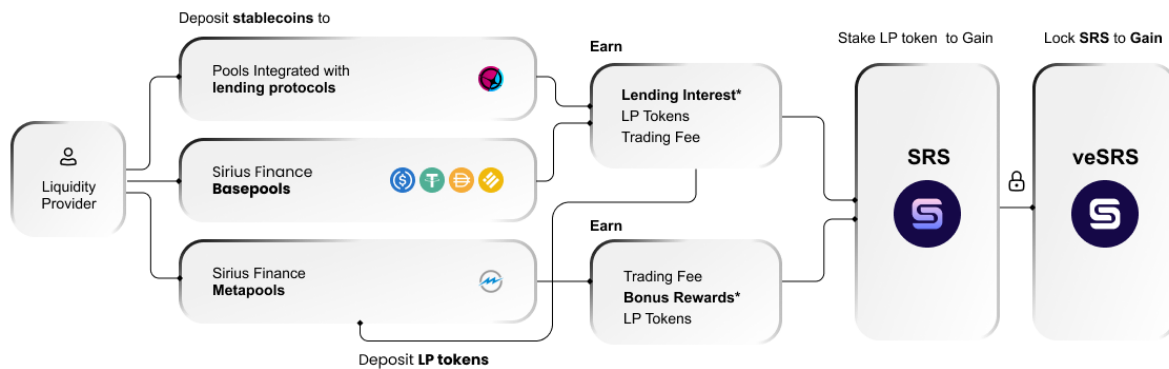
### ***Algorithm***



## **11. How to gain SRS & veSRS?**

Apart from buying SRS from the secondary market, joining IDO or earning from the incentive program, the following are the main ways for liquidity providers to gain, and that's from the 43% of the SRS total supply in Sirius Finance pools by staking LP tokens:

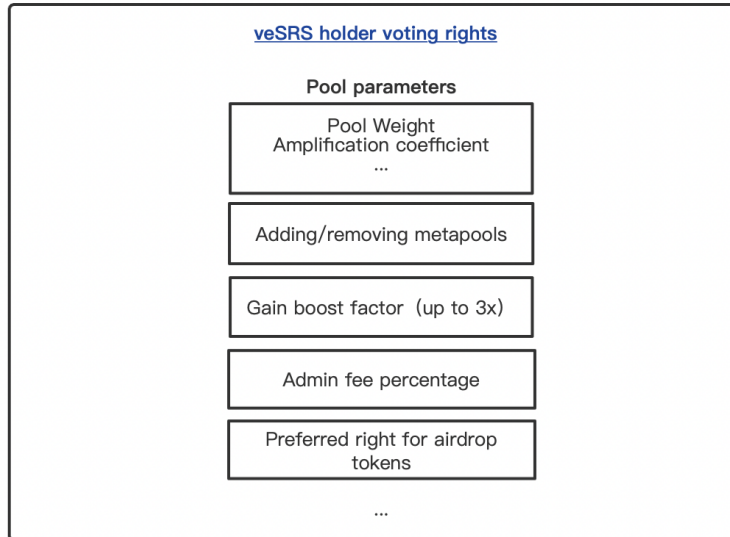
Providing USDC, USDT, DAI or BUSD in the stable pool; Depositing LP tokens or other stablecoins in the metapools and; Joining pools integrated with lending protocols.



## 12. How does voting right work?

The veToken is a token model that gives token holders the option to lock their SRS for (vote-escrowed SRS) veSRS, with longer locking periods yielding more veSRS. Sirius allows all users to benefit from the protocol via veToken and other incentive mechanisms, encouraging all the users to actually participate in the protocol governance, managing the protocol in a decentralized way, and provide stablecoin services for the Polkadot ecosystem.

To vote on Sirius Finance, users need to vote lock their SRS and gain veSRS. By doing so, participants can earn a boost (up to x3) on their provided liquidity rewards and vote on pools related proposals including various pool parameters, pool weights, adding/removing metapools, gain boost factor, admin fee percentage, preferred rights for airdrop tokens, etc. veSRS holders also share additional trading fees and they can claim admin fee rewards on Sirius Finance.



## 13. Roadmap

### Q1

- Add basepool for USDT, USDC, DAI, BUSD
- Technical Research & Validation
- Brand design & VI
- Litepaper/Pitch deck
- Astar incubation program application
- Stablecoin swap desktop UI launch
- Seed round fundraising

### Q2

- Official Website launch
- DApp production launch
- \$SRS token launch (Non-transferrable)
- Add governance using snapshot for SIPs (Sirius Improvement Proposals)
- Ve locking and voting functions go live.
- DApp mobile version launch
- Build the Sirius ecosystem with partners on the Astar chain
- Kickoff rewarding program
- Early Adopter rewarding program
- Dashboard launch (one place to see all rewards)
- Documentation publishing
- Stable Metapools launch. (BAI, oUSD, Starlay, etc).
- Crypto Metapools launch. (WBTC, WETH, WBNB, etc).
- Fiat-pegged crypto metapools launch (JPYC).



- DApp supports i18n. (Multilingual).
- Vesting/Claim pages launch.

### **Q3**

- xcDOT/ASTR/4SRS crypto basepool Tripool launch.
- IDOT/tDOT/DOT, nASTR/vASTR/ASTR stable pairs launch.
- Polkadot native Stablecoins basepool launch. (aUSD/BAI/4SRS).
- More XCM assets metapools launch. (xcGLMR, etc.)
- Launch admin fee collection for veHolders
- Multisig for smart contracts
- Private fundraise
- Protocols optimization
- Factory (for creating tripool based metapool) research/development.
- Website V2 launch
- DApp V2 launch to provide a smoother user experience
- DAO launch
- Permissionless pool creation
- Sirius API & SDK publish
- Unlock Transfer of \$SRS
- Public fundraise (IDO).
- Potential CEXes listing

### **Q4**

- Multichain/crosschain research/deployment.
- Native bridge on polkadot parachain research.
- Make SRS as a XCM based asset crossing parachains on Polkadot.
- Smoothly move governance from committee to DAO

## **14. Conclusion**

Both Astar & Polkadot are still in the early stage as most parachains are still working on their own on connecting with each other with XCM as at the time of writing this litepaper.

Sirius Finance holds a solid faith in such a more secure, interoperable & upgradable cross-chain ecosystem, where innovative projects share and contribute their unique features.