

## NOTICE AND DISCLAIMER

PLEASE READ THE ENTIRETY OF THIS "NOTICE AND DISCLAIMER" SECTION CAREFULLY. NOTHING HEREIN CONSTITUTES LEGAL, FINANCIAL, BUSINESS OR TAX ADVICE AND YOU SHOULD CONSULT YOUR OWN LEGAL, FINANCIAL, TAX OR OTHER PROFESSIONAL ADVISOR(S) BEFORE ENGAGING IN ANY ACTIVITY IN CONNECTION HEREWITH. NEITHER TROPICAL BLACK HOLE FOUNDATION (THE **FOUNDATION**), ANY OF THE PROJECT TEAM MEMBERS (THE **SIFCHAIN TEAM**) WHO HAVE WORKED ON SIFCHAIN (AS DEFINED HEREIN) OR PROJECT TO DEVELOP SIFCHAIN IN ANY WAY WHATSOEVER, ANY DISTRIBUTOR/VENDOR OF ROWAN TOKENS (THE DISTRIBUTOR), NOR ANY SERVICE PROVIDER SHALL BE LIABLE FOR ANY KIND OF DIRECT OR INDIRECT DAMAGE OR LOSS WHATSOEVER WHICH YOU MAY SUFFER IN CONNECTION WITH ACCESSING THIS WHITEPAPER IN THE WEBSITE AT [HTTPS://SIFCHAIN.FINANCE](https://sifchain.finance) (THE **WEBSITE**) OR ANY OTHER WEBSITES OR MATERIALS PUBLISHED BY THE FOUNDATION OR SIFCHAIN TEAM.

**Project purpose:** You agree that you are acquiring Rowan to participate in Sifchain and to obtain services on the ecosystem thereon. The Foundation, the Distributor and their respective affiliates would develop and contribute to the underlying open source code for Sifchain. The Foundation is acting solely as an arms' length third party to you in relation to the Rowan distribution, and not in the capacity as a financial advisor or fiduciary of any person with regard to the distribution of Rowan.

**Nature of the Whitepaper:** The Whitepaper and the Website are intended for general informational purposes only and do not constitute a prospectus, an offer document, an offer of securities, a solicitation for investment, or any offer to sell any product, item or asset (whether digital or otherwise). The information herein may not be exhaustive and does not imply any element of a contractual relationship. There is no assurance as to the accuracy or completeness of such information and no representation, warranty or undertaking is or purported to be provided as to the accuracy or completeness of such information. Where the Whitepaper or the Website includes information that has been obtained from third party sources, the Foundation, the Distributor, their respective affiliates and/or the Sifchain team have not independently verified the accuracy or completeness of such information. Further, you acknowledge that circumstances may change and that the Whitepaper or the Website may become outdated as a result; and neither the Foundation nor the Distributor is under any obligation to update or correct this document in connection therewith.

**Token Documentation:** Nothing in the Whitepaper or the Website constitutes any offer by the Foundation, the Distributor or the Sifchain team to sell any Rowan (as defined herein) nor shall it or any part of it nor the fact of its presentation form the basis of, or be relied upon in connection with, any contract or investment decision. Nothing contained in the Whitepaper or the Website is or may be relied upon as a promise, representation or undertaking as to the future performance of Sifchain. The agreement between the Distributor (or any third party) and you, in relation to any distribution or transfer of Rowan, is to be governed only by the separate terms and conditions of such agreement.

The information set out in the Whitepaper and the Website is for community discussion only and is not legally binding. No person is bound to enter into any contract or binding legal commitment in relation to the acquisition of Rowan, and no virtual currency or other form of payment is to be accepted on the basis of the Whitepaper or the Website. The agreement for distribution of Rowan and/or continued holding of

Rowan shall be governed by a separate set of Terms of Token Sale setting out the terms of such distribution and/or continued holding of Rowan (the Terms of Sale), which shall be separately provided to you or made available on the Website. The Terms of Sale must be read together with the Whitepaper. In the event of any inconsistencies between the Terms of Sale and the Whitepaper or the Website, the Terms of Sale shall prevail.

**Deemed Representations and Warranties:** By accessing the Whitepaper or the Website (or any part thereof), you shall be deemed to represent and warrant to the Foundation, the Distributor, their respective affiliates, and the Sifchain team as follows:

- (a) in any decision to acquire any Rowan, you shall not rely on any statement set out in the Whitepaper or the Website;
- (b) you will and shall at your own expense ensure compliance with all laws, regulatory requirements and restrictions applicable to you (as the case may be);
- (c) you acknowledge, understand and agree that Rowan may have no value, there is no guarantee or representation of value or liquidity for Rowan, and Rowan is not an investment product nor is it intended for any speculative investment whatsoever;
- (d) none of the Foundation, the Distributor, their respective affiliates, and/or the Sifchain team members shall be responsible for or liable for the value of Rowan, the transferability and/or liquidity of Rowan and/or the availability of any market for Rowan through third parties or otherwise; and
- (e) you acknowledge, understand and agree that you are not eligible to participate in the distribution of Rowan if you are a citizen, national, resident (tax or otherwise), domiciliary and/or green card holder of a geographic area or country (i) where it is likely that the distribution of Rowan would be construed as the sale of a security (howsoever named), financial service or investment product and/or (ii) where participation in token distributions is prohibited by applicable law, decree, regulation, treaty, or administrative act (including without limitation the United States of America and the People's Republic of China); and to this effect you agree to provide all such identity verification document when requested in order for the relevant checks to be carried out.

The Foundation, the Distributor and the Sifchain team do not and do not purport to make, and hereby disclaims, all representations, warranties or undertaking to any entity or person (including without limitation warranties as to the accuracy, completeness, timeliness or reliability of the contents of the Whitepaper or the Website, or any other materials published by the Foundation or the Distributor). To the maximum extent permitted by law, the Foundation, the Distributor, their respective affiliates and service providers shall not be liable for any indirect, special, incidental, consequential or other losses of any kind, in tort, contract or otherwise (including, without limitation, any liability arising from default or negligence on the part of any of them, or any loss of revenue, income or profits, and loss of use or data) arising from the use of the Whitepaper or the Website, or any other materials published, or its contents (including without limitation any errors or omissions) or otherwise arising in connection with the same. Prospective acquirors of Rowan should carefully consider and evaluate all risks and uncertainties (including financial and legal risks and uncertainties) associated with the distribution of Rowan, the Foundation, the Distributor and the Sifchain team.

**Informational purposes only:** The information set out herein is only conceptual, and describes the future development goals of Sifchain. In particular, the project roadmap in the Whitepaper is being shared in order to outline some of the plans of the Sifchain team, and is provided solely for **INFORMATIONAL PURPOSES** and does not constitute any binding commitment. Please do not rely on this information in

deciding whether to participate in the token distribution because ultimately, the development, release, and timing of any products, features or functionality remains at the sole discretion of the Foundation, the Distributor or their respective affiliates, and is subject to change. Further, the Whitepaper or the Website may be amended or replaced from time to time. There are no obligations to update the Whitepaper or the Website, or to provide recipients with access to any information beyond what is provided herein.

**Regulatory approval:** No regulatory authority has examined or approved, whether formally or informally, of any of the information set out in the Whitepaper or the Website. No such action or assurance has been or will be taken under the laws, regulatory requirements or rules of any jurisdiction. The publication, distribution or dissemination of the Whitepaper or the Website does not imply that the applicable laws, regulatory requirements or rules have been complied with.

**Cautionary Note on forward-looking statements:** All statements contained herein, statements made in press releases or in any place accessible by the public and oral statements that may be made by the Foundation, the Distributor and/or the Sifchain team, may constitute forward-looking statements (including statements regarding intent, belief or current expectations with respect to market conditions, business strategy and plans, financial condition, specific provisions and risk management practices). You are cautioned not to place undue reliance on these forward-looking statements given that these statements involve known and unknown risks, uncertainties and other factors that may cause the actual future results to be materially different from that described by such forward-looking statements, and no independent third party has reviewed the reasonableness of any such statements or assumptions. These forward-looking statements are applicable only as of the date indicated in the Whitepaper, and the Foundation, the Distributor as well as the Sifchain team and expressly disclaim any responsibility (whether express or implied) to release any revisions to these forward-looking statements to reflect events after such date.

**References to companies and platforms:** The use of any company and/or platform names or trademarks herein (save for those which relate to the Foundation, the Distributor or their respective affiliates) does not imply any affiliation with, or endorsement by, any third party. References in the Whitepaper or the Website to specific companies and platforms are for illustrative purposes only.

**English language:** The Whitepaper and the Website may be translated into a language other than English for reference purpose only and in the event of conflict or ambiguity between the English language version and translated versions of the Whitepaper or the Website, the English language versions shall prevail. You acknowledge that you have read and understood the English language version of the Whitepaper and the Website.

**No Distribution:** No part of the Whitepaper or the Website is to be copied, reproduced, distributed or disseminated in any way without the prior written consent of the Foundation or their respective affiliates. By attending any presentation on this Whitepaper or by accepting any hard or soft copy of the Whitepaper, you agree to be bound by the foregoing limitations.

# Sifchain: The Omni-Chain Decentralized Cryptocurrency Exchange Lite Paper

Version 0.4

February 2021

Note: The contents of this document are subject to change.

## Background

In 2019, \$8.5 billion in cryptocurrency derivatives trading occurred per day for a total of \$3 trillion in the year<sup>1</sup>. Most of this trading occurred on centralized exchanges even though cryptocurrency investors prefer decentralized exchanges because they can maintain standards of security, availability, reliability, and censorship resistance on a publicly verifiable blockchain.

A primary constraint for existing decentralized exchanges is that they limit investors to a small subset of blockchain ecosystems. Another constraint is that they are slow and charge high fees due to performance limitations of their underlying blockchain. To capture the full market, an omni-chain solution on a more performant blockchain is needed.

Sifchain is that solution. Built with the Cosmos SDK, Sifchain processes substantially more transactions per second than Ethereum, making it 100x more efficient than the current leading DEXes. Sifchain uses Thorchain as a reference implementation and uses pegged tokens to support a wide array of blockchains. Sifchain will support cross-chain transactions for 20-25 of the top blockchains such as Bitcoin, BinanceChain, Polkadot, and EOS. These blockchains represent the overwhelming majority of all cryptocurrency trading volume. In addition, Sifchain will support an on-chain governance process for developing additional pegged tokens for new blockchains as needed.

## Hybrid Orderbook and CLP

Sifchain uses both an order book and a CLP for trade completion. Orders are placed with a commit-reveal scheme<sup>2</sup> to circumvent front-running from validators. Committing a limit order will

<sup>1</sup> [TI-2019Cryptocurrency Derivatives Exchange Industry Annual Research Report-20200117](#)<sup>2</sup> [Commitment Scheme](#) Generally speaking, this scheme is still vulnerable by either: (i) committing multiple transactions and selectively revealing only the profitable ones, or (ii) committing multiple transactions and selectively invalidating the unprofitable ones (not enough collateral, or proxy contract exception). However, we considered a transaction valid only if it was revealed within n blocks of being

committed. If  $n$  is sufficiently small, traders will have nearly no time to selectively reveal. require traders to actually transfer the value posted, regardless of whether or not it is revealed. Sifchain derives its internal asset price from its CLPs. One CLP is used for trades directly involving Rowan, two CLPs are used for all other trades. For example, the USDC:BTC internal price is calculated using the USDC:ROWAN and ROWAN:BTC CLPs.

Traders execute market orders (swaps) directly against CLPs immediately after placing them. Traders place limit orders by posting an on-chain transaction depositing their capital in whichever currency they prefer, along with the name of the currency they'd like to purchase and their requested price. When Sifchain's internal asset price moves to a favorable range for a limit order, a CLP swap is executed so that the limit order is filled with an average price that does not exceed the trader's requested price. This means limit orders may be partially filled.

The key benefit of the CLP is the fee structure, which is responsive to the demand for liquidity by market-takers. Prices inherit an inertia since large fast changes cause high fee revenue. As demand subsides, the fee paid decreases. This liquidity-sensitive fee penalises traders for being impatient. This is an important quality in markets, since it allows time for market-changing information to be propagated to all market participants, rather than a narrow few having an edge.

Sifchain supports conditional market and limit orders, including stop loss and take profit orders. It also supports amending limit orders that have been placed but not executed to enable trailing orders.

Sifchain prioritizes limit order execution based on the yet-fulfilled quantity of purchased tokens, not the time the orders are placed or the requested price. This allows CLP liquidity providers to maximize revenue and encourages traders to post trades that accurately reflect their market view. CLPs are expected to maintain accurate asset prices because any inaccurate asset price presents an opportunity for market makers to profit through arbitrage<sup>3</sup>. However, traders are able to request oracle verification if they believe the internal asset price may temporarily deviate substantially from its external asset price. In such a case, orders will only be executed to the extent that the average price is within a specified range of the oracle price.

Sifchain enables liquidity providers to add liquidity into Sifchain's liquidity pools where they can earn income proportionate to their services rendered without the constraints that other exchanges put on them. Liquidity providers are able to deposit any token Sifchain supports to the appropriate pool. They can add liquidity asymmetrically, meaning they can add only Rowan or only a token for any token pair. Liquidity providers can add or remove liquidity whenever they choose.

A "BetaNet" version of Sifchain will be released, which will have support for an ERC-20 standard compliant digital token on the Ethereum blockchain, and a native token on the Sifchain protocol. Users will be able to move Rowan back and forth from the Ethereum blockchain to Sifchain as often as they like.

<sup>3</sup> [Converging to Reference Prices](#)

Rowan are designed to be consumed/utilised, and that is the goal of the Rowan distribution. In fact, the project to develop Sifchain would fail if all Rowan holders simply held onto their Rowan and did nothing with it. In particular, it is highlighted that Rowan: (a) does not have any tangible or physical manifestation, and does not have any intrinsic value (nor does any person make any representation or give any commitment as to its value); (b) is non-refundable and cannot be exchanged for cash (or its equivalent value in any other virtual currency) or any payment obligation by the Foundation, the Distributor or any of their respective affiliates; (c) does not represent or confer on the token holder any right of any form with respect to the Foundation, the Distributor (or any of their respective affiliates), or its revenues or assets, including without limitation any right to receive future dividends, revenue, shares, ownership right or stake, share or security, any voting, distribution, redemption, liquidation, proprietary (including all forms of intellectual property or licence rights), right to receive accounts, financial statements or other financial data, the right to requisition or participate in shareholder meetings, the right to nominate a director, or other financial or legal rights or equivalent rights, or intellectual property rights or any other form of participation in or relating to Sifchain, the Foundation and/or their affiliates or respective service providers; (d) is not intended to represent any rights under a contract for differences or under any other contract the purpose or pretended purpose of which is to secure a profit or avoid a loss; (e) is not intended to be a representation of money (including electronic money), security, commodity, bond, debt instrument, unit in a collective investment scheme or any other kind of financial instrument or investment; (f) is not a loan to the Foundation or any of their respective affiliates, is not intended to represent a debt owed by the Foundation or any of their respective affiliates, and there is no expectation of profit; and (g) does not provide the token holder with any ownership or other interest in the Foundation or any of their respective affiliates. Notwithstanding the Rowan distribution, users have no economic or legal right over or beneficial interest in the assets of the Foundation or any of their affiliates after the token distribution.

## Margin

Traders are able to borrow liquidity from a CLP. This allows them to long cryptocurrency on margin, leveraging the value of the cryptocurrency they already own and increase their investment size. This enables traders to potentially magnify returns, assuming the value of the investment rises. Traders borrow the currency they're using as collateral (for example, if a trader is using USDC as collateral, they will borrow USDC). Interest is set based on market demand and CLP supply. The borrow occurs when the trade is executed, not when it is placed.

After a trade with no margin occurs, the purchased tokens are released to the trader. However, after a trade with margin, the purchased tokens are held by the protocol. A trader can manage the position by placing and updating orders. To exit a position, they must sell all of the assets they purchased. At this point, their collateral is returned with adjustments for gains or losses.

A position can be liquidated if the price of an asset falls below a liquidation threshold. This liquidation threshold is a function of both the purchase price and the amount of margin used. Positions with less margin will have more favorable liquidation thresholds, all else being equal. As with spot traders, margin traders can decide whether to use Sifchain' internal asset price or

an oracle's external asset price for liquidation or orders related to their position.

Both borrowing and returning capital unbalances the CLP, making it profitable for arbitrageurs to fix. Thus, margin trading both provides a new revenue source for liquidity providers (lending) and increases the revenue from trading fees.

## Rowan

The native digital cryptographically-secured utility token of Sifchain, the **Rowan**, is a transferable representation of attributed functions specified in the protocol/code of Sifchain, which is designed to play a major role in the functioning of the ecosystem on Sifchain and intended to be used solely as the primary utility token on the network.

Rowan is a non-refundable functional utility token which will be used as the medium of exchange between participants on Sifchain. The goal of introducing Rowan is to provide a convenient and secure mode of payment and settlement between participants who interact within the ecosystem of Sifchain, and it is not, and not intended to be, a medium of exchange accepted by the public (or a section of the public) as payment for goods or services or for the discharge of a debt; nor is it designed or intended to be used by any person as payment for any goods or services whatsoever that are not exclusively provided by the issuer. Rowan does not in any way represent any shareholding, participation, right, title, or interest in the Foundation, their respective affiliates, or any other company, enterprise or undertaking, nor will Rowan entitle token holders to any promise of fees, dividends, revenue, profits or investment returns, and are not intended to constitute securities in Singapore or any relevant jurisdiction. Rowan may only be utilised on Sifchain, and ownership of Rowan carries no rights, express or implied, other than the right to use Rowan as a means to enable usage of and interaction within Sifchain.

As described in this document, Rowan would also provide the economic incentives which will be consumed to encourage users to contribute and maintain the ecosystem on Sifchain, thereby creating a win-win system where every participant is fairly compensated for its efforts. Rowan is an integral and indispensable part of Sifchain, because without Rowan, there would be no incentive for users to expend resources to participate in activities or provide services for the benefit of the entire ecosystem on Sifchain. Given that additional Rowan will be awarded to a user based only on its actual usage, activity and contribution on Sifchain, users of Sifchain and/or holders of Rowan which did not actively participate will not receive any Rowan incentives.

Post-BetaNet, all protocol changes will be voted on by Rowan-holders and it is these community members which would drive development of Sifchain. In order to promote community governance for the network, Rowan would allow holders to propose and vote on governance proposals to determine features and/or parameters of Sifchain, with voting weight calculated in proportion to their token holdings. For the avoidance of doubt, the right to vote is restricted solely to voting on features of Sifchain; the right to vote does not entitle Rowan holders to vote on the operation and management of the Foundation, its affiliates, or their assets, and does not constitute any equity interest in any of these entities. It is envisaged that SifDAO (Sifchain's

Decentralized Autonomous Organization) will be deployed with Rowan as the governance token.

Computational resources are required for validating information / executing transactions on Sifchain, so validators providing these services / resources would require payment for the consumption of these resources by way of protocol emission (i.e. "mining" for block rewards on Sifchain) to maintain network integrity, and Rowan will be used to quantify and pay the costs of the consumed computational resources. As an indication of commitment to the system and service standard assurance, validators would be required to stake an amount of Rowan as security deposit before participating in mining in order to ensure service standards and prevent malicious behaviour.

Finally, as the native token of the Sifchain platform, Rowan would be used to settle various transactions within the ecosystem. Traders must directly or indirectly purchase Rowan to execute trades against CLPs, therefore ensuring that there is demand for the token for utility functions.

## Underlying Architecture

As a Cosmos SDK blockchain, it uses the Tendermint consensus algorithm<sup>4</sup> and will support the Cosmos Networks' Inter-blockchain Communication Protocol (IBC)<sup>5</sup>.

In many blockchain orderbook systems, cancellations and order updates are sensitive to suppression attacks such as intentional mempool spam from other traders. Validators would not accept totally nonsensical transactions, but attackers can still spam low-stakes transactions—e.g., calling a no-op function, or moving funds between wallets they own. Attackers would have the goal of getting the validators to fill blocks with these useless (but valid) transactions plus their profit-taking transaction, before an honest user's other transactions such as order cancellations or order updates can get through.

Sifchain levels the playing field here by requiring that validators reorder all transactions in a block so that those with the highest transaction fees are processed first. This way, traders can post transactions for cancellations and order updates with substantially higher gas fees than the average transaction so that they are prioritized ahead of others (and so that the costs of spamming the mempool is prohibitively expensive for attackers).

<sup>4</sup> [What is Tendermint?](#)

<sup>5</sup> [Inter-Blockchain Communication \(IBC\)](#)

## Cross-Chain Communication

Sifchain uses a two-way peg protocol which results in the swap of pegged tokens. For example,



a trade of LTC for TRX would be executed as transactions of pegged tokens (cLTC and cTRX) on a Cosmos SDK blockchain.

The technical architecture of each pegged token will differ depending on the blockchain but each will have some common infrastructure. Each source chain (for example, Stellar or Cardano) will have a specified peg chain (also known as a peg zone) in the Cosmos Network with its own validators separate from Sifchain. Sifchain can verify peg zone validators' transactions through Cosmos Network's IBC.

Peg zone validators must run a full node only for their peg zone blockchain and the blockchain to which they are pegged. For example, a Tezos peg zone validator only needs to run a full node for the Tezos peg zone and the Tezos blockchain. Peg zone validators can choose to validate multiple peg zones (the Cosmos Hub will likely be the peg zone for multiple blockchains) but this is not required.

## Perennial Permissionless Asset Listing

Anyone can create a new CLP by pooling Rowan and a new token into a pool initialization transaction. The price of the new token will be set based on the amount of Rowan pooled. Sifchain will enforce a minimum CLP size, but multiple depositors can contribute to the creation of a single CLP.