White paper

v1.0

Introduction

Balanced is a DAO (Decentralized Autonomous Organization) consisting of a decentralized balance sheet of ICX collateral, with the vision of creating the de-facto stablecoins of the ICON Network. It allows users to mint and retire tokens pegged to the value of real world assets, while also providing market makers with clearly defined arbitrage opportunities. The initial iteration of Balanced will support the minting and retiring of USD-pegged tokens referred to as ICON Dollars (ICD).

Participants must deposit ICX collateral in order to mint pegged tokens, and all collateral deposits are offered to arbitrage traders to maintain the value of the pegged tokens. In exchange for collateral contributions and participation in Balanced, users will be rewarded with Balance Tokens. This process will be referred to as "mining". Balance Tokens represent ownership in the Balanced DAO and come with several benefits discussed in the Balance Token Economics section of this paper.

The Balanced Team believes an excellent use case of blockchain protocol tokens such as ICX is to be used as a form of collateral. Being used as a form of payment has proven to be unreliable, as the value of protocol tokens experiences significant volatility. However, if the protocol token is used as collateral to back a stable asset, the token's direct utility becomes collateralization while still indirectly facilitating stable payments.

Collateral Management

The only form of collateral accepted by Balanced is ICX. Borrowers (participants that deposit collateral and mint stablecoins) must overcollateralize their debt by a minimum of 400% (Mandatory Collateral Ratio). For example, if a borrower deposits $400 worth of ICX, Balanced will give them the right to mint up to 100 ICD.

If a borrower drops below the Mandatory Collateral Ratio, the borrower no longer has the right to withdraw collateral from the network. The borrower will not have access to their collateral until the Mandatory Collateral Ratio of 400% is met.

sICX

ICX has a built-in reward rate for staking and voting on the ICON Network. Because of this feature, users would not be inclined to use their ICX as collateral knowing they would be missing out on these rewards.

In order to solve this problem, ICX collateral will first be deposited into a staking and voting smart contract (Staking Pool). When a user deposits collateral into the Balanced collateral pool, the ICX first gets converted into sICX (Staked ICX), then sICX is deposited as collateral. The amount of sICX received is a function of the amount of ICX in the Staking Pool and the total sICX outstanding. The amount of sICX received for deposits into the Staking Pool will be based on the following formula:

Cost of sICX = (Amount of ICX in the Staking Pool / Total sICX Outstanding)

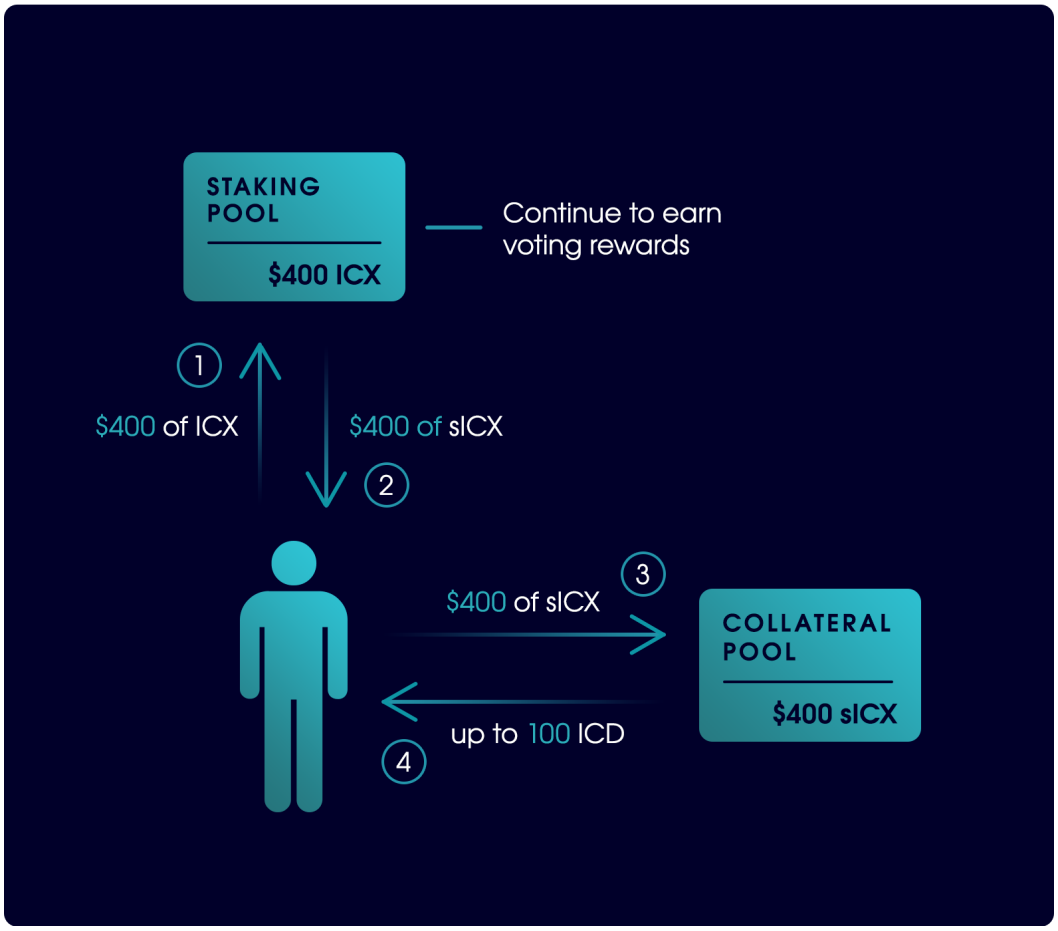


Figure 1: $400 of ICX being converted into sICX

The ICX in the Staking Pool will be staked and delegated. I-Score will be claimed, ICX will be re-staked, and re-delegated every time a user deposits ICX into the Staking Pool. Balance Token holders will have the right to direct delegations of the Staking Pool to specific nodes on the ICON Network (P-Reps).

1 sICX will always have the claim to its pro-rata share of the ICX in the Staking Pool. For example, if somebody holds 10% of all sICX, and there are 500,000 ICX in the Staking Pool, this person can convert their sICX into 50,000 ICX. When converting sICX into ICX, the ICX will not be received until the unstaking period is complete. The unstaking period varies on the ICON Network, and can range anywhere from 5 days to 20 days. Given the lengthy unstaking period, Balanced will also provide a decentralized exchange (DEX) to provide immediate liquidity for swapping between sICX and ICX for a nominal fee.

Stability and Arbitrage

The stability of pegged tokens minted by borrowers is ensured via constant arbitrage opportunities provided by the Balanced decentralized balance sheet of sICX. Collateral deposits are used to support arbitrage traders at all times. 1 ICD will always have the right to claim 1 dollar's worth of sICX from the collateral pool. The value of ICX and sICX will be provided by an Oracle solution.

When an arbitrage trader takes advantage of this opportunity, collateral is sold by all Balanced participants on a pro-rata basis according to their relative debt within the network. The debt of each participant is then lowered by the amount of collateral sold. This arbitrage mechanism ensures that the value of pegged tokens on exchanges will always remain close to their true value.

As more borrowers participate in Balanced, the effect of an arbitrage trader becomes less and less noticeable to the individual. The minimum amount of ICD to take advantage of arbitrage opportunities is 100 ICD.

As an example, imagine the total collateral pool is 2,500 sICX and total debt on Balanced is 500 ICD. For simplicity purposes, 1 sICX = 1 USD and no fees will be included in this example. Borrower A accounts for 20% (100 ICD) of the debt and Borrower B accounts for 80% (400 ICD) of the debt. Arbitrage Trader has purchased 50 ICD on an exchange for only 40 USD and would like to take advantage of the arbitrage opportunity provided by Balanced.

Arbitrage Trader visits the Balanced dashboard to convert 50 ICD into 50 USD worth of sICX. Borrower A accounts for 20% of the debt, therefore Borrower A will automatically sell $10 worth of their collateral to Arbitrage Trader. In return for selling $10 worth of collateral, Borrower A's debt is decreased by 10 ICD (from 100 ICD to 90 ICD). Additionally, Borrower B accounts for 80% of the debt, therefore Borrower B will automatically sell $40 worth of their collateral to Arbitrage Trader. In return for selling $40 worth of collateral, Borrower B's debt is decreased by 40 ICD (from 400 ICD to 360 ICD). In terms of value, neither Borrower A nor Borrower B has

lost anything. For every 1 dollar's worth of collateral sold, their debt was decreased by 1 ICD.

Please refer to Figure 2 below for a visual representation of the aforementioned example.

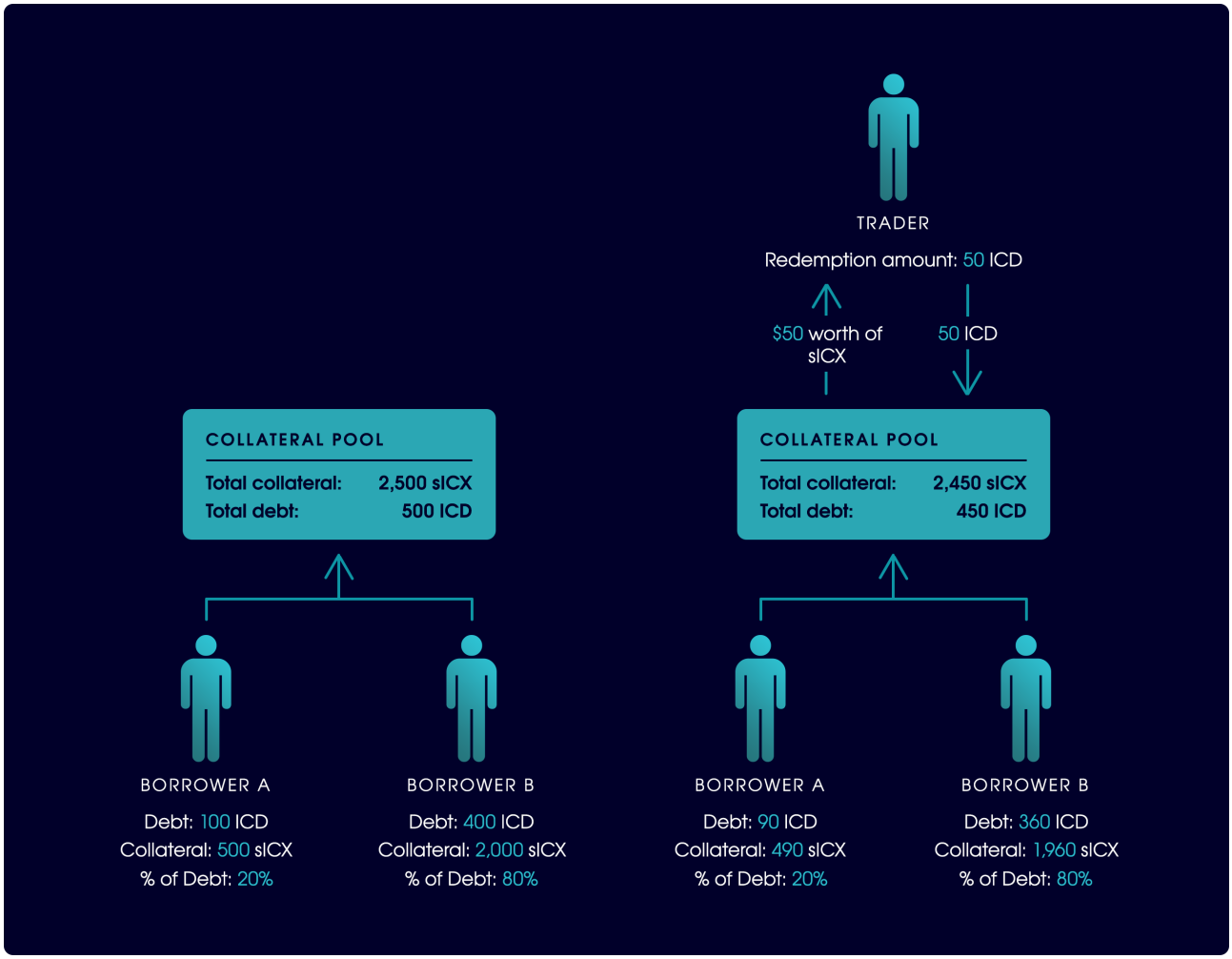


Figure 2: Arbitrage process

Emergency Reserve Fund

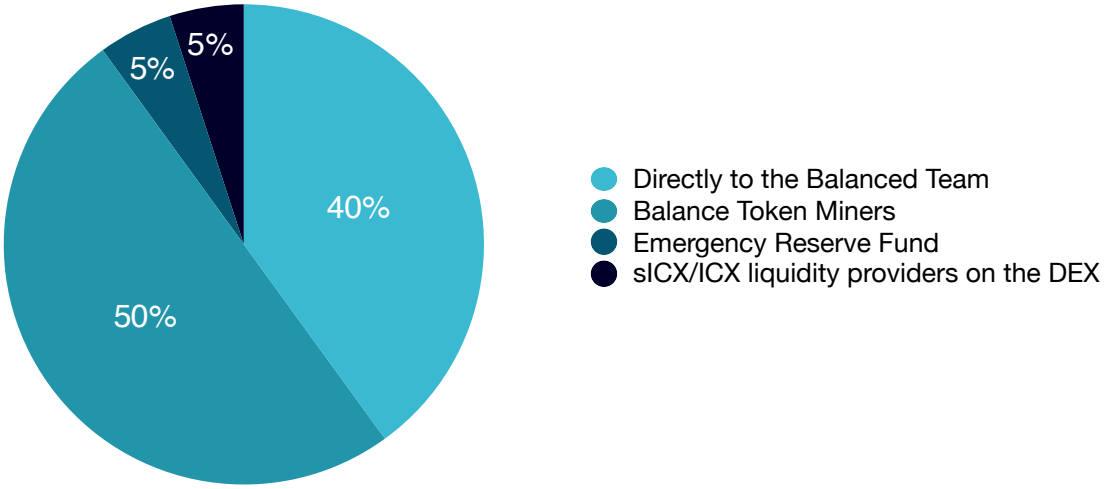
In extreme circumstances where the value of all sICX collateral held by Balanced is not enough to honor arbitrage traders, an Emergency Reserve Fund will be made available to support the arbitrage traders. 5% of Balance Tokens mined on a daily basis are set aside to build this fund over time.

Balance Token Economics

Balance Tokens represent ownership in the Balanced DAO. They are entitled to governance and network fees, and they are mined via contributing collateral and borrowing stablecoins. Balance Tokens must be staked in order to capture any of the benefits entitled to Balance Tokens. The unstaking period for Balance Tokens will be 3 days. All of this is enforced via autonomous smart contracts.

Distribution of Balance Tokens

There will be no pre-mine of Balance Tokens and there is no maximum supply. Starting at launch, 100,000 tokens will be mined per day, with the following allocations:



Approximately every 300 days, the daily mining reward will be cut in half. This will last for approximately 1,800 days. This will result in a daily mining reward of 1,562.5 and a sub 1% annual inflation rate to perpetuity after day 1,800.

Mining Balance Tokens

In order to participate in Balance Token mining, one must meet the following qualifications:

- Deposit collateral into Balanced
- Borrow pegged tokens from Balanced
- Meet the Target Collateralization Ratio of 500%

After meeting the above qualifications, the formula to calculate an individual's mining rewards on any given day is a function of the amount of debt they have in the Balanced DAO relative to the total debt. The precise formula is detailed below:

My Mining Rewards = (My Debt / Total Debt on Balanced) x Rewards Allocation to Balance Token Miners x Daily Mining Rewards

Entitlements of Balance Tokens

In order to receive any of the following entitlements associated with holding Balance Tokens, one must first stake Balance Tokens from a wallet that also has debt in the Balanced Network. With this policy in place, only users of Balanced will be entitled to the benefits associated with Balance Tokens.

Network Fees

Below is a list of fees associated with using Balanced. All fees are adjustable via a token holder vote:

- 0.00% Transfer Fee - Charged each time a pegged token minted on Balanced is transferred from one wallet to another. The transfer fee will be set at 0%.
- 0.10% Origination Fee - Charged each time a borrower mints new pegged tokens.
- 0.25% Decentralized Exchange Fee - Charged each time a trader executes a trade on the Balanced Decentralized Exchange.
- 1.00% Arbitrage Fee - Charged each time a non-borrower claims collateral in exchange for retiring a pegged token.

All Network Fees will be split pro-rata amongst qualified Balance Token stakers and paid on a weekly basis.

Governance

Qualified Balance Token holders will have the right to make adjustments to the platform. Examples of such adjustments include, but are not limited to:

- Adjustments to fees
- Adjustments to the unstaking period
- Adjustments to collateral ratios
- Adding new pegged tokens

Additionally, qualified Balance Token holders will have the right to delegate the ICX held in the Staking Pool on a pro-rata basis. For example, if somebody holds 10% of all Balance Tokens, they can delegate 10% of the Staking Pool.

Decentralized Exchange

Balanced will provide a simple decentralized exchange to facilitate liquidity for the following pairs:

- sICX : ICX
- ICD : ICX
- Balance Tokens : ICX

Liquidity between sICX and ICX is essential to support arbitrage traders. Given the importance of supplying liquidity to this pair, 5% of the daily Balance Token mining rewards will be allocated to traders supplying ICX liquidity within a 3% range from the true value of sICX. The true value of sICX is derived from the amount of ICX held in the Staking Pool divided by the amount of circulating sICX.

The initial implementation of the DEX will support sICX : ICX trading, with additional pairs being added as Balanced continues to grow.

The DEX will function as a liquidity pool rather than the traditional bid and offer style orderbook. Users interested in supplying liquidity will have the ability to deposit assets into a liquidity pool along with a minimum selling price. Orders will be filled on a first-come, first-served basis.

Team

Balanced DAO is a community led project started by four different P-Rep teams: ICX_Station, PARROT9, AC3 x Mousebelt, and ICONOsphere. The representatives of each team dedicated to this project are below:

Scott Smiley – ICX_Station Co-Founder, ICON Strategy Team
Scott earned his Master of Science in Finance (MSF) from Vanderbilt University in 2016, followed by two years of Investment Banking experience at Deutsche Bank specializing in Asset Backed Securities.

During his time at Deutsche Bank he dedicated his nights and weekends to self-education on the nascent blockchain and cryptocurrency space, eventually leading to his current role as Co-Founder of ICX Station and member of ICON's Strategy Team since April of 2018.

Daniel Brehmer, PhD – Founder of ICONOsphere
Dan is an applied research scientist at his core. He's spent more than 25 years directing scientific research, and over 15 years leading highly skilled teams. He studied semiconductor materials physics at UC Santa Barbara, and worked at Stanford's SLAC National Accelerator Laboratory, where he led development of soft X-ray vacuum ultraviolet beamlines and instrumentation for materials research until 2013.

An entrepreneur since 1992, he became progressively more involved in the entrepreneurial community after he moved to Silicon Valley in 2001. In 2013, he left the national lab to build products and businesses based on blockchain, data science, and research.

Galen Danziger – CTO of MouseBelt
As the MouseBelt CTO, Galen works to implement and invest in emerging blockchain products. He's worked on software projects in gambling, fitness, internet

of things, and blockchain over the last decade, taking software products from an idea to serving hundreds of thousands of users. Currently, his focus is scaling the MouseBelt engineering team and delivering strong blockchain products to attract the next wave of users.

Lisa Verheul – UX Writer, PARROT9 Co-Founder

Lisa is a UX Writer for 1Password, an app that helps millions of people stay secure online. Over the last four years, she's been involved in every part of the user experience, from marketing, sales, and onboarding, to in-app wording, support articles, technical support, and webinars.

Dissatisfied with the quality of most digital services, she co-founded PARROT9, a company that specializes in user experience design. When she discovered blockchain, she knew it was far too complex for widespread adoption, so she's been using PARROT9 to fix it ever since.

Peter Denholm – UX Designer, PARROT9 Co-Founder

Peter has worked on over 300 design projects for more than 100 clients. He's spent the last five years working with a top 1% university, where he conducted UX research, optimized user flows, and increased conversions for various business units.

After he graduated in 2012, Peter started building PARROT9, a user experience design company that increases conversions for businesses. Recognising the untapped potential in the blockchain space, and an investor in ICON since the ICO, he decided to become an ICON P-Rep to help the ICON project lead with design.