

Komodo Secured Bond — KSB

Ø Crypto Union

December 10, 2018

Abstract

Komodo Secured Bond (KSB) is a secured and asset-backed token that answers the need to access capital via loans and to safely store value in an accessible, secure and transparent way. This unit allows transfer of value from anywhere and at anytime that stable and verified value is needed.

KSB is both a fiduciary unit and a component of Ø Crypto Union's financial services switchblade. Based on payments capabilities via an Electronic Money License, Ø Crypto Union is creating an upcoming Credit Union that allows the company to issue payment methods including fiat and crypto transfer, debit and credit card payments and payment collection. We strive to provide banking services to the unbanked and to crypto-currency holders, allowing users an access to International Bank Account Number (IBAN), debit cards and credit lombard (crypto-backed collateralized loans.) In order to manage the debt underwritten by our asset-backed loans service, we introduce a comprehensive debt underwriting and management platform powered by blockchain technology. We envision KSB as a one-stop shop to issue and manage both money and debt. Although in our case, we use KSB to manage crypto asset-backed loans, the system is flexible enough to adapt to other kinds of debt.

The tracking of debt ownership and value of each KSB is a token of a Komodo asset-chain. Each KSB token cryptographically references the secured promissory note originating the loan with an OP_RETURN data entry. Each hash of the individual secured promissory note leads to the debtor and the public key (address) leads to the creditor involved on the debt-money generation, KSB. An Explorer allows access to the anonymized debt documentation to determine the following data: debt amount contracted, deposit address of the collateral and its value, public key (address involved), time and date (without involving the actual name of the individual behind the loan). The rest of the system uses traditional software engineering to provide automatization of all aspects of debt management.

Our platform is an intermediary between debtors who own crypto assets (and who also need fiat-denominated loans) and creditors who are institutional actors interested in purchasing debt.

KSB+ acts as a warehouse lending platform necessary to advance funds to debtors. The short-term debt underwritten in this way constitutes a crypto-currency backed stablecoin which will be purchased by companies and individuals seeking a stable coin product. It will subsequently be sold to institutional creditors via a Special Purpose Corporation in traditional bond markets.

We use a blockchain platform for transparency. Our books are always available and show comprehensive ownership information of the issued

debt. Unlike similar projects, the blockchain is only used for accounting purposes – not as a way to store collateral value.

Contents

1	Introduction	4
2	Context	4
3	KSB; A stable currency	4
3.1	Function 1 - A Unit of Account, measurement of value	4
3.2	Function 2 - The Basis of Credit:	4
3.3	Function 3 - A Standard of Postponed Payment:	5
3.4	Function 4 - Medium of exchange	5
3.5	Function 5 - A Store of Value (Purchasing Power):	5
4	Mechanisms	6
4.1	KSB Value	6
4.2	Circulating KSB	6
4.3	KSB sitting on the \emptyset Lending Wallet, KSB+	7
4.3.1	Examples	7
5	Warehouse and mechanism	7
5.1	debtors	7
5.2	Limits & Collateral management	8
6	Performance engine of KSB +	9
6.1	A Warehouse lending platform	9
6.2	Bond market	9
6.2.1	Legal	9
7	Similar projects	10
7.1	Debt platforms	10
7.1.1	MakerDAO	10
7.1.2	Dharma	11
7.2	Stable Coin	11
7.2.1	Tether	11
7.2.2	tUSD	11
8	Definitions:	11

1 Introduction

6,000 years ago, civilizations in Mesopotamia, the Indus Valley and Egypt created the concept of debt before creating the concept of money. In 2018, the world that most people know is one of speculation – where hyperinflation has impacted billions of people. States, regulators and banks don't inspire faith. Assets issued by centralized organizations are difficult to track and evaluate, making life for billions of people unpredictable. Initiatives have risen across the world to provide alternative solutions that consist of a trustworthy, fungible and easy-to-access currency.

A blockchain is a ledger showing who owns and controls a unit at a specific time. One of the increasing usages for blockchain technology, the reporting of “who owns what” is one of its fundamental core functions. This is so far the most successful use case for the blockchain technology as designed by Satoshi Nakamoto the October 31, 2008.

2 Context

As Neo bankers, we decided to issue this cryptocurrency for anyone who needs a stable, tradable unit. One application of KSB financial services which include payments (debit and credit cards), savings and lending capabilities. Our payment solutions are independent services and naturally compliment KSB – providing flexibility on how the loans can be spent.

3 KSB; A stable currency

3.1 Function 1 - A Unit of Account, measurement of value

A **unit of account** is something that can be used to value goods and services, record debts, and make calculations. In other words, it's a measurement for the value used to represent the real value (or cost) of any economic item; i.e. goods, services, assets, liabilities, income, expenses. It is one of three well-known functions of **money**. It lends meaning to profits, losses, liability, or assets.

3.2 Function 2 - The Basis of Credit:

Credit is a contractual agreement in which a borrower receives something of value now and agrees to repay the lender at some later date with consideration, generally with interest. Use cases:

- Student debt
- Credit card
- P2P loan
- Equity Loan
- Seller financing

3.3 Function 3 - A Standard of Postponed Payment:

It is the function of being a widely accepted way to value a debt; thereby allowing goods and services to be acquired now and paid for in the future. Use cases:

- Consignment shop
- Seller financing

3.4 Function 4 - Medium of exchange

A medium of exchange is something that buyers will exchange with a seller when they want to purchase goods or services from the seller. While many things could be used as a medium of exchange in an economy, money is the most common and useful medium of exchange in our society. Use cases:

- Gas
- Decentralized and stable marketplace
- Smart Grid
- Peer to Peer transactions
- On demand Prepaid industry (ex: bitmedia.io)

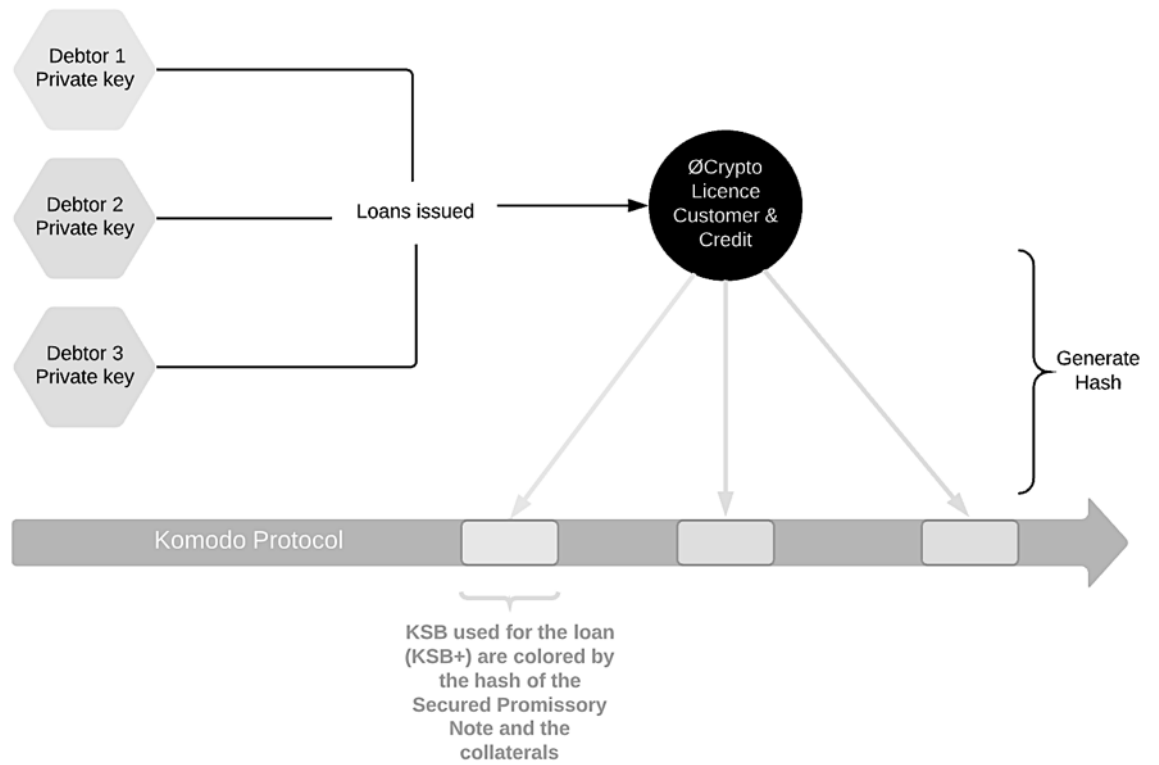
3.5 Function 5 - A Store of Value (Purchasing Power):

A store of value is the function of an asset that can be saved, retrieved and exchanged at a later time, and be predictably useful when retrieved Use cases:

- Savings
 - Retirement plan
 - Tontines
 - Insurance (health, car, home ownership)
 - Health plan
 - Vacations

4 Mechanisms

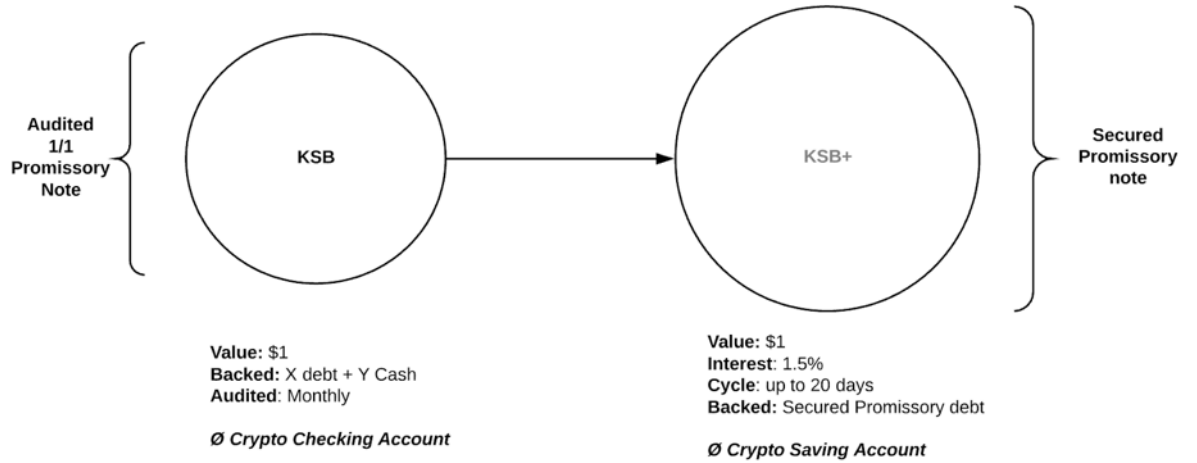
4.1 KSB Value



4.2 Circulating KSB

General: Each KSB is backed by \$1 USD of value deposit and each KSB+ is backed by dollar (or loan) secured by a minimum of 125% collateral at all times.

4.3 KSB sitting on the \emptyset Lending Wallet, KSB+



When a users KSB is placed onto the \emptyset Lending Wallet, it converts to become KSB+ for the duration of the lending cycle. The KSB+ and KSB present on the \emptyset Lending wallet ensure access to the warehouse performance engine that originates the debt. Each user of KSB+ is eligible to generate interest on their KSB if his or her coin is used on a loan.

The warehouse activates a return of 1.5% interest per cycle. Each cycle lasts 15 to 20 days. At the end of the cycle, the token holder can withdraw his/her tokens.

4.3.1 Examples

1. Hedge Function: KSB: Malcolm is interested in hedging this position against the volatility of the crypto market while earning interest on a stable coin product. In order to utilize KSB for this purpose, he must first exchange supported crypto assets for KSB to the specific Barterdex swapper—hypothetically using BTC—integrated on the KSB.io website. Immediately, the USD value of his BTC is credited to his account in KSB. If the BTC is worth \$5,000, Malcolm will get 5000 KSB per BTC in his wallet.

2.Hedge + Saving function: KSB +: In order to put his newly-acquired KSB to work, Malcolm deposits them onto the \emptyset Lending Wallet. His KSB now becomes KSB+ and is locked into a 20-day cycle. On day 15, Malcom has a choice between:

- Withdrawal demand for its KSB, which are now in the number of 5075
- Keep the function + for another cycle of 20 days

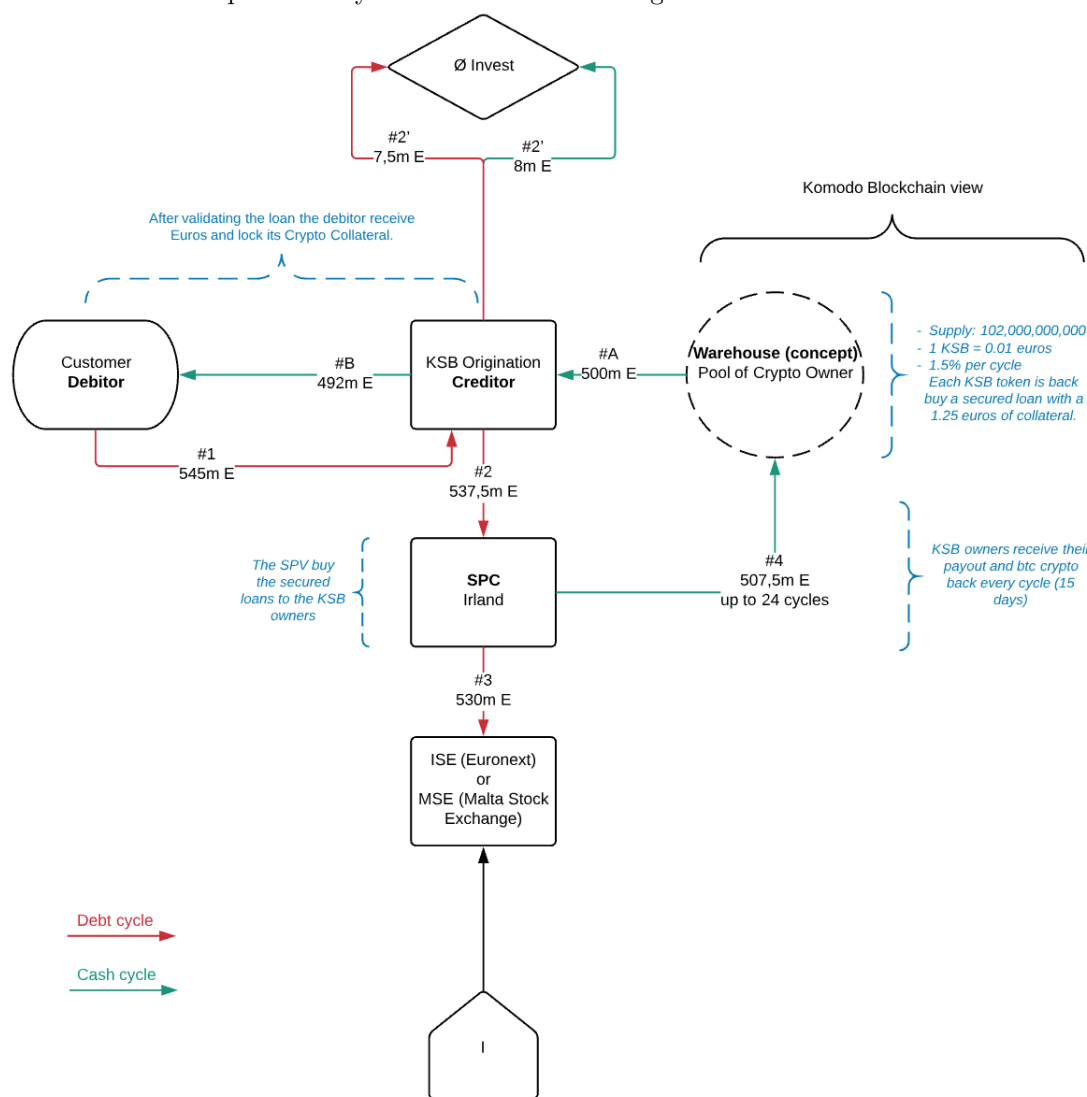
5 Warehouse and mechanism

5.1 debtors

Debtors own crypto assets and need a loan denominated in fiat currency. Crypto assets are used as collateral for the loan and are kept in custody until the loan

is paid back. The maximum amount of the credit granted to a debtor is a function of the value of intangible assets (such major crypto assets) posted as collateral. The debtor can freely request and reimburse debt via the ØPay app under the maximal limit allowed (i.e. up to 40% of the value of the collateral). At all times, the debtor maintains ownership of his/her crypto collateral. At the debtor's discretion, interest and principal will be paid back in fiat currency or debited from the collateral (which will be partly sold to cover its obligations) under a maximum time limit (i.e. three years).

After verifying the collateral requirement, each loan is generated on the app where the user's private key authenticates and signs the transaction.



5.2 Limits & Collateral management

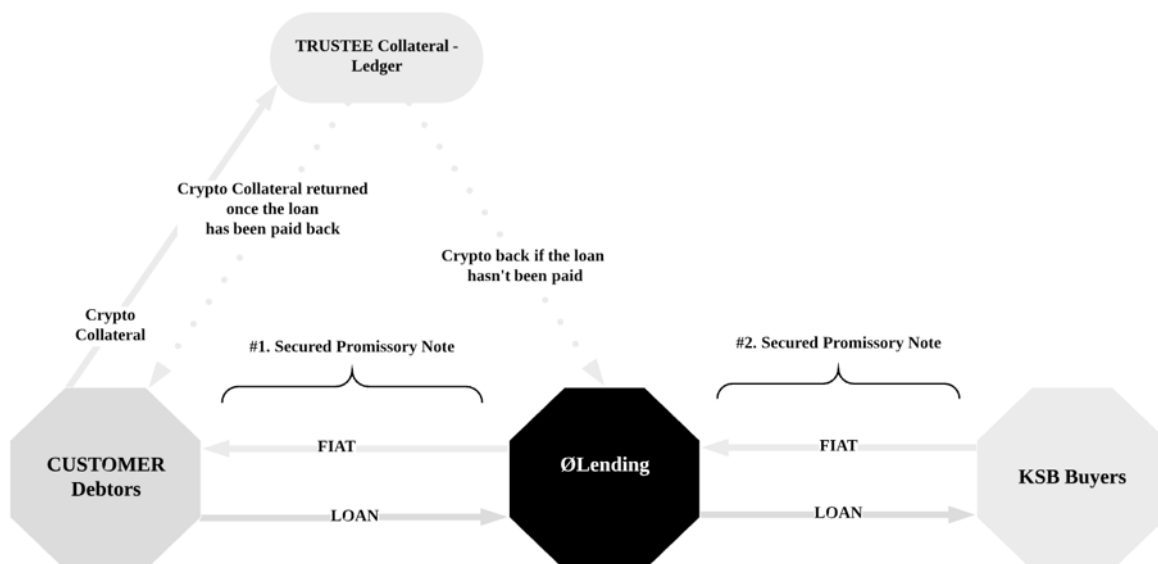
- Limit of spending: 40% of the average value of the pledged asset on Gemini - itbit - Bitstamp - Gdax - Kraken

- Limit of engagement & Margin call: 80% of the average value of the pledged asset on Gemini - itbit - Bitstamp - Gdax - Kraken
- Security & Liquidation: Our proprietary algorithm (developed by our Quant, ex Société Générale) is set to detect any possible breach of 80% engagement of the collateral deposit. This triggers an automatic sell order carried via API integration to the corresponding amount (USD value of the asset that exceeds the 80% margin) upon our preferred exchanges

6 Performance engine of KSB +

6.1 A Warehouse lending platform

KSB provides the necessary warehouse lending platform to act as a buffer between debtors and creditors. The warehouse is funded by actors wanting to acquire a stable coin product collateralized by debtors' crypto-currency held in custody and materialized by transactions and data on the Komodo blockchain protocol.



6.2 Bond market

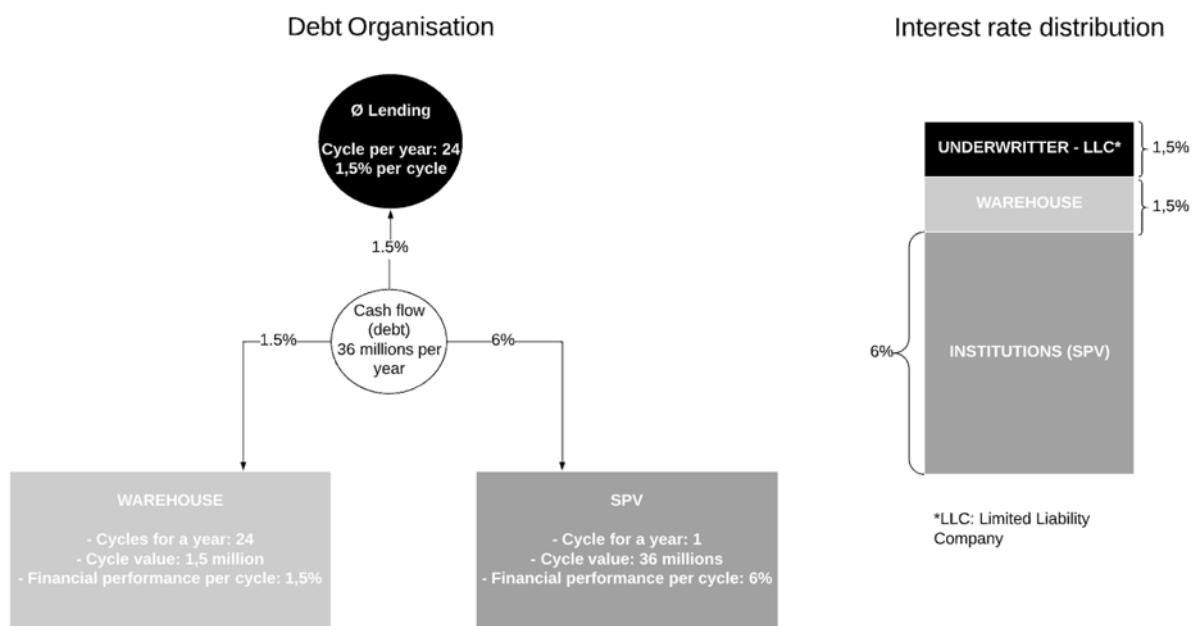
The final purchasers of crypto asset-backed loans are institutional actors seeking to purchase short to middle term debt instruments in traditional debt markets. Our SPC will be listed on the Irish Stock Exchange¹. The SPC is bound to buy all debt underwritten by the warehouse lending platform. This allows KSB to uniquely offer a stable and ever-liquid token.

6.2.1 Legal

- Debt issuing

¹<http://www.ise.ie>

- Regulations: USA - State of Utah
- Entity: Ø Lending LLC
- Scope
- Warehouse - secured promissory note)
 - Regulations: State of Utah
 - Entity: Ø Lending investors
 - Scope



7 Similar projects

7.1 Debt platforms

While other notable blockchain-based debt platforms exist today (detailed below), KSB significantly expands and evolves the current offerings. Through KSB, we are not merely launching a decentralized debt issuance platform but rather designing and operating a comprehensive solution including liquidity provision and payment solution. We use our debt platform as a warehouse lending facility with short-term debt cycles.

7.1.1 MakerDAO

MakerDAO² is a smart contract based system deployed upon the Ethereum blockchain. MakerDAO makes it possible to issue collateralized debt in the form of DAI stable coin by holding pooled ETH on the contract. Ethereum is

²<https://makerdao.com>

used as the store of collateralized assets and is the only form of collateral usable on the system.

Our system does not involve on-chain collateralisation of assets. KSB instead uses a custodian which enables us to freely accept many different cryptocurrencies as collateral. As collateral lives off-chain our system can liquidate quickly and efficiently at any point through any given exchange.

7.1.2 Dharma

Dharma³ is a protocol that enables origination, underwriting, issuance, and administration of tokenized debt assets. The system comprises three smart contracts on the Ethereum blockchain and its design is strongly inspired by the 0x protocol⁴. As with MakerDAO, Dharma is a debt platform and not a complete debt solution. Also, while our platform keeps track of individual loans issued, KSB can be transferred transparently and is thus, inherently fungible.

7.2 Stable Coin

Stable coin refers to a new class of cryptocurrencies which offer price stability and/or are backed by reserve asset(s). In recent times, stablecoins have gained enough traction as they attempt to offer the best of both world's – the instant processing and security of payments of cryptocurrencies, and the volatility-free stable valuations of fiat currencies⁵.

7.2.1 Tether

Tether is a crypto-currency issued by Tether Limited. Tether is one of the famous stable coins in the crypto-sphere, with more than 2 billion capitalization. Tether was founded in 2014 on the omni protocol, a meta-layer on Bitcoin. For each Tether in circulation, there must be one dollar in the Tether Limited bank account. However, Tether offers limited innovation and a considerable lack of transparency. The implication of Bitfinex is also unclear in Tether.

7.2.2 tUSD

TrueUSD is another leading stable coin, with more than 100M in circulation. Their cryptocurrency is issued by Trust Token. Contrary to Tether, TrueUSD aims to be fully regulated. Each person can redeem USD if they have True USD. TUSD is represented as an ERC20 token on the Ethereum blockchain.

8 Definitions:

Credit Union: A credit union is a type of financial cooperative. Ranging in size from small, volunteer-only operations to large entities with thousands of participants, credit unions can be formed by large corporations, organizations and other entities for their employees and members. Credit institutions are created, owned and operated by their participants.

³<https://whitepaper.dharma.io>

⁴https://0xproject.com/pdfs/0x_white_paper.pdf

⁵<https://www.investopedia.com/terms/s/stablecoin.asp>

Underwriter: An underwriter is any party that evaluates and assumes another party's risk for a fee, such as a commission, premium, spread or interest. Underwriters operate in many aspects of the financial world, including the mortgage industry, insurance industry, equity markets, and common types of debt securities.

SPV/ SPC: A Special Purpose Vehicle/ Corporation, is a "bankruptcy-remote entity" that a parent company uses to isolate or securitize assets and often holds their off-balance sheets. Some also call this a "bankruptcy-remote entity" or "variable interest entities" since its operations are limited to the acquisition and financing of specific assets as a method of isolating risk.