

RealSafe

How a decentralized DAPP of DAOs can facilitate a 100% automated Fractional Real Estate Asset, Obligations, And Contractual Income Management and Trading Platform on Blockchain

V0.3

Disruption of the Exchange-Traded Fund. Extending Ownership, Tradability, Liquidity and Governance of any Asset and Real World Organization to Structures which can Co-exist on a Single Blockchain with Autonomous Regulation and No Forced Settlement Date.

Ken Silverman

kensilverman1@gmail.com

Confidential - for consideration of RealSafe product pre-purchases only. Copyright @2017 RealSafe LLC

Section 1 - Introduction

One of the largest challenges facing owners and managers of cash-generating assets is how to raise money to maintain or grow the structure, or leverage cash generating potential to access upfront liquidity. To date, mortgage/reverse mortgage, bridge loans, refinance or sale of one of the assets in the structure are common methods. Loans are expected to be paid back with interest while duress sales, expiring terms and forced settlement dates give buyers opportunistic advantage.

Then there are other challenges in order of importance:

- 1) **Tradability/Liquidity of owner interests:** Enhanced market interest in offerings by increasing liquidity of the ownership when an owner wants to cash out – where can he find a buyer? How can he create a market? How can she sell off just a small part of her ownership rights, responsibility, and interests without paying more in legal fees than what she wants to sell?
- 2) **International Reach:** Access international investment pools without attorneys, paperwork, selling shares, without paying exorbitant fees to convert structure into an exchange-traded fund.
- 3) **Auto-Distributions:** Pay-out distributions monthly, quarterly or annually to just one place and have that distribution automatically apportioned to all shareholders based on ownership proportions at a prior or future date of choosing – and have those payouts notarized, time-stamped, and necessarily accessible as proof for all time in a decentralized structure.
- 4) **Integrated Project Funding:** Secondary offerings to fund a project within the organization
- 5) **Automated Issue Generation and Voting:** Gain the use of a well-designed autonomous and decentralized voting system where anyone can place issues up for vote with a frequency proportional to their voting ownership interest. Store and regulate proxies, and relate pertinent documents to votable issues and oversight regulation, with automated, decentralized notarization. Gain protection of the organization through use of Blockchain.
- 6) **Decentralized yet rule-based Ownership and Voting Transfer:** Automated control of ownership interest via transfer restrictions, such as ownership limits, private membership, enforceable buy/sell limits, trade frequency limits, and tight control of the voting membership circle.
- 7) **Decentralized Owner Verification:** Incredibly, in the United States and other countries, to sell millions of dollars worth of units in an LLC, or anonymous society, all one need do is write it into a single notebook. That book can easily be lost, stolen or forged.
- 8) **Autonomous-Notarization of Actionable Communication:** Make owners and voters accountable to each other in a convenient, decentralized and reconcilable manner. Replace the centralized/3rd party writing of minutes in book or central computer, with a decentralized time-stamped system. Remove paying 3rd parties to record documents.
- 9) **Safety:** All business conducted in safer environment than current methods in use.

We explore a solution to all of these problems that does not in any way limit the current working structure of the organization.

Section 2 Executive Summary

This section also has contribution by: jyen@iontrading.co

RealSafe is a platform for fractionalized equitization of the world's Real Estate and other cash-generating/potential cash generating assets.

Investor Protection. Voting Rights. Automated Secondary Offerings. RealSafe is a network of independently run organizations, sharing a trading exchange, voting and auditing services but remaining completely independent from each other.

The main structure of the RealSafe platform is the RealSafe Organization (RSO), an independent, autonomous organization that extends the management, ownership, governance and tradability of some particular real world organization, group of assets, fund, corporation or single asset. An RSO creator is an asset manager or owner wishing to extend his structure into an RSO for the many benefits of fractionalized tradability, accountable voting, automated payouts and countless other features the RSO has to offer.

Each RealSafe Organization (RSO) is a Decentralized Organization backed by Real Estate or other real world assets with a secure blockchain-based value transfer and voting mechanism. **RSOs are not funds - rather they are comparable constructs only with regard to tradability; the RSO provides far greater functionality.**

RealSafe is a platform for asset owners and asset managers to access liquidity by allowing fractionated ownership in all or part of producing real world assets and operations in the form of an RSO. The RSO provides features for direct co-investments by private developers, project managers or governmental entities to raise funds to develop owned assets and projects for operations, to participate in secured transactions and to access a broader universe of investment opportunities by co-participating or investing directly in real world assets and income generating operations.

RealSafe uses a tiered system to segregate investments from potential volatility otherwise introduced by using a single-tiered system. By each RSO establishing its own currency, it maintains a structure that is disassociated from external factors, enabling RealSafe to provide a stable platform to execute transactions and realize returns. The RealSafe token is the underlying fuel of the system, the payment if which is necessary to use the RealSafe network. However, each RSO is assigned value based on its own token, the value of which should directly correlate to the value of combined assets the RSO represents. Each unique RSO token-type trades freely against RST and Ether. This allows the RSO's token to float and be traded at market value, not in any way being affected by the value of the RealSafe token (RST) which derives its value exclusively from the popularity of the RealSafe network through the addition and of new RSOs, addition of RSO assets, the amount of daily trade volume and the amount of dividends elected to be distributed in RST instead of ETH by each RSO manager

RSO Valuation

RealSafe facilitates separate, third party sources to use blockchain to sense, confirm and store key real-world figures to determine an RSO's valuation and legitimacy. The value of an asset is typically based on its cash flow generation, replacement value, comparable sales, and other inherent valuations metrics used in the real world inclusive of perceived notions of some future macroeconomic drivers.

Forward looking factors and numerous investor concerns may cause the investor to buy or sell into a fully valued RSO. In this instance the RSO will float at a premium or at a discount to its market valuation. Different people's valuation metrics will facilitate a market value that will change as does a REIT on a stock exchange.

The valuation at the time of extension of the ownership entity to the RSO will undoubtedly be based on a variety of factors, however, no such value is set in stone as once the transition is effected, any primary owner can offer tokens on the RealSafe exchange at whatever he believes the value to be, hence the initial market is created. Each of the original investors are the initial market makers in their new RSO.

An interesting aspect of an easily tradeable and highly fractionated asset is one in which we believe will add substantial valuation to each RSO that distributes their shares widely. This is due to Metcalf's law associating higher value to a greater distribution of owners.

RealSafe is designed to address the issues of investor demand and available investor opportunity sets disequilibrium. As well, we seek to address the issue of fund access inequality. We hope to create a safe and stable platform for citizens of the world to invest for future needs directly in real world assets and operations.

Asset and project owners/managers must meet various requirements in disclosure, governance and third party authentication, jurisdiction and arbitration agreements and any required reporting in order to market their assets. RealSafe provides an easy to use platform for investor redirection for viewing of pertinent regulatory documents they need to share with their members and prospective traders of their token. Investors retaining voting-type tokens will be allowed to vote and nominate verified, third party representatives on their behalf to manage the real world assets. Dividends will be distributed equitably via RealSafe's dividend and income distribution system among equity-token holders, and asset valuation will occur periodically where applicable, verified by an internal network of incentivized auditors using proof of stake. Voting tokens are marked with a -v at the end. So for example, the NYC1 token also has NYC1-v tokens to represent the voting interest.

Elections are achieved through the positing of Actionable Issues. These are typed. One such type is the Secondary Token Offering. Selling tokens that are reversible if the goal is not met is achievable here. These offers can only come from an elected property management issue of type (STO) - and pertain to needs such as cash flow infusions to buy another building or maintain existing assets. This is like a secondary offering and involves the creation of more tokens to be distributed. The features main point is that the tokens are locked in escrow and reversible should the target amounts and dates not be met. Further, the feature can only be utilized if voted in by the majority set in the fund's creation.

Hence, RealSafe spontaneously generates a trust escrow system to assign ownership for the STO. Producing asset and managed co-investments offers can be closed in blocks, instantaneously, or on a temporal basis. Asset float versus income generation and valuation will function similar to a REIT on producing real assets and co-investments/participations, whereas on project or operational funding investors may retain commonized pegged fiat tokens that enter a temporal lockup escrow on an all or none basis. Projects or operations that are funded will float following settlement in similar format.

Ownership is determined by proportionate voting shares token investment, and third party asset managers are subject to being elected on a majority voting shares ownership basis.

Liquidity is provided on several fronts:

Ownership vehicle is the RSO. Each RSO generates its own liquidity by members making markets for the tokens they own via offering them on the RealSafe exchange. The ability to trade small quantities of RSO ownership in a commonly known forum in and of itself produces liquidity. However, a range of existing owner-centric offer types are available. One such offer type allows existing owners first right of refusal with various RSO-settable conditions with time sensitive margins. [For example, a reserve system with progressive bid steps and ownership accretion by remaining owners. Existing owners can have priority in matching purchase offers versus new bidder] This is useful where there is low liquidity - alerting owners of pending sales and allowing or enforcing ownership accretion by remaining owners when the settlement difference is small. The majority of RSOs are

Liquidity of RealSafe Exchange for fees: This is handled by a combination of sensing available RST and the RealSafe reserve contract infusing RST to meet the demands of trading when necessary. More on this in the technical sections to follow.

Platform Highlights: Income-Generating Assets, Potential Income-Generating Assets

- RealSafe Allows Owners of income generating Assets to Generate Liquidity by extending all or partial ownership of a single deed, trust, or corporation (LLC or SLLC) to a tokenized, blockchain structure (RSO), who upon realization of such, can freely trade ownership interest. Trading of RSO tokens allows the market value of its underlying asset or assets to float relative to their income generation and periodic fiat appreciation or depreciation based valuation in a structure similar to the current existence of publicly traded reits. REITs and other fund-like structures can also benefit by extension into an RSO.
- Owners of voting share tokens are entitled to decentralized proportional voting, equitable dividend/interest/profit-sharing distribution, and communication and organization to determine trust representation, diligence, verification, and management (in the case of trust majority ownership)
- Real world Trust or Corp. may be dissolved or devolved from attached asset by 100% vote precluded by a token buyout in RealSafe from the RSOs token type to Ether or RST.
- Investor protection requirements and disclosures are responsibility of the RSO creator. All management, representative fees, arbitration, jurisdiction, and other material particulars should reside in documentation viewable at asset-manager controlled Internet URLs noted in the RSO. (RSO-url)

- the RealSafe Issues voting system allows private offerings and settlements for parties that are pre-approved to participate or share business sensitive material pertaining to the issue.
- the RealSafe Issues voting system features project fundraising ability for potentially income-producing assets or projects, using the secondary offerings (STO) Issue type. Projects offered on an all or none basis. Project funds in Eth or RST are locked up for designated periods of time, before project either dissolves or target is raised. If target is reached, new RSO Tokens are automatically minted, distributed and tradable.

Section 3 - Autonomous Real Estate Asset management, Trading and Governance on Blockchain

Notary - Proof of Existence

One of the most commonly discussed applications of blockchain involves its use as a notary system, where as a side effect of recording a transaction, other data may also be stored. In reality, the entire transaction itself is, in effect, a notarized transaction, where the notarization of the transaction is comprised of a large group of machines recording the transaction indefinitely. Examples which use the blockchain as an independent notary system include Eternity Wall.

Applications of notarization are numerous and include national interests such as that as pertain to recording legal documents on a county, state or federal level. Closely related to notarization is proof of existence. A blockchain, such as bitcoin itself lends well to the recording of the proof of existence of a document at a given time, simply by recording a hash of the document as signature embedded in a transaction. Typically, recording entire documents is not saleable on blockchain due to memory constraints. However, one could design a system that redundantly stores documents in only a subnet of the entire network so that such a network would scale.

Further, due to the nature of a transaction, in which there are inputs and outputs, if the transaction also includes the hash of a document, a contract is born. Now that transaction with transference as an additional property allows for a document and parties to the document to be established, where in

place of or in parallel to coin being sent, transference of a role in a document, such as the role of owner, may be achieved.

In fact, a blockchain, as the concept existed before the notion of smart contracts, can provide a sophisticated contract-like platform for simple necessities, such as escrow via a script message awaiting some condition to be met before releasing funds or proving the existence of a document at an exact time, or when the document itself has very little information, all of its detail may itself be included on the blockchain as an encrypted message.

Ownership representation - TOKEN system

Adding a layer on top of an existing chain, one could interpret base transactions in novel ways. Assuming that each transaction has as characteristic: 1) transference 2) some additional message space for notarization, a third element could be used by the top layer. That element involves the use of additional message space to tag each transaction by type. Hence, a token-based system is born, where transactions are grouped according to some message tagging, hence multiple tokens can exist side by side all on the same layer. Indeed many such systems exist including, OmniCoin, CounterParty, Waves, and others that facilitate this use. These support the potential for many different digital currencies to co-exist on the same chain and be traded in a decentralized way. Yet, it appears each such currency on these platforms might exist only for that purpose – to be traded, rather than provide some other specific service or allow for governance. The point is that all transactions tagged to a certain “key” can represent a private economy within the *same* blockchain, whether called a digital currency, coin or a token.

Ethereum vs Proprietary solution to control token transfer.

Before Ethereum, an address on the blockchain was simply the tagging of all transactions that contain that address to arrive at one number, how much money that address has to be spent and optionally if some simple condition has been met to spend it. Therefore an address is just a referenced number. Rather it is the transaction that has “stuff” in it. Enter smart-contract based systems where an address is also a place to store “stuff” such as a program. A program that can be run to create tokens, and hold complex conditions for which those tokens can be “released” from the contract. This complexity has created the desire to build token-based systems that do more than just act as a currency to be traded. Ethereum has become a standard for most token-based applications called DAPPS. An important distinction is externalizable and internalized-only token constructs. Ethereum supports both. More on that later.

Token Economies

In a typical token economy in Ethereum, tokens represent the fuel necessary to provide service of the application that made them, for example, if the platform provides storage space, tokens of that platform are used to pay for storage. In still other cases, tokens represent the ownership of a virtual entity where that virtual entity can vote on what it does. That type of DAPP is called a DAO (decentralized Autonomous Organization) However, until recently, there were no DAOs where ownership represents

anything more than ownership of that virtual structure itself. It's like a group of people getting together and agreeing to all own a piece of something – only they don't know what quite yet. The possibilities are great but untapped in the typical DAO. Some are more concrete, forming DAOs that will provide futures, options and exchange trading. This is a logical progression because the very nature of an Ethereum smart contract is being able to lock the tokens that it creates, making them available for "withdrawal" only upon a certain condition being met, which is the essential core of a futures contract, an escrow contract representing some real world event. Of course a prediction engine where the best prognosticator takes all is another example of an obvious use of a smart contract. Enter several new prediction systems such as Augur and Gnosis which have emerged. Augur is active. What makes them interesting is their incorporation of voting to achieve consensus on outcomes of real world events.

Voting as Real World Sensing Apparatus / Reputation-Based Consensus within the Organization

Within an organization, voting on blockchain can be used to govern its operations when there is already a property management agent in place.

However, voting can also be used as a real world sensing apparatus. For example, voting on a macro level by independent auditors to achieve consensus on the validity of the organization and its representation of its assets' values. Similar to how consensus is used by Augur to confirm the real world result of a condition in a futures contract, a network of auditors incentivized to have good reputation score with proof of reputation type staking is possible. Auditors may use a number of techniques to perform their service such as auto-analysis of online documents, verifying names on documents, digital confirmation of document existence via cross-checks to governmental databases. Reputation scores of auditors verifying organizational constructs may result in an overall credibility number associated with each organization.

Both the micro and macro levels of consensus may operate within the same network. Governance and oversight within and without the organization, sensing of real world events and acting upon them is achieved through actionable results reportable to real world management companies or persons hosting the blockchain organization. When necessary, such election results may be tied to certain transaction events, for example in the process of a secondary offering. Various voting types can be developed to augment trading transactions, such as when a vote to raise money within an organization is approved. Locking tokens in escrow until a certain amount are sold is achievable using a typed- Issue system for example an Issue of type of "ICO" or "STO" - secondary token offering might be used to vote on "raising funds to buy a new building". A necessary side effect of raising those funds is increasing the total tokens in existence within the company, hence, if the goal amount is raised, minting new tokens.

We see that consensus is relevant at the level of an organization for managing its affairs and also exterior to the organization (over a wider/independent audience) for managing auditing roles to verify its stated asset values and other auditing functions such as legitimacy of the organization's claims.

Consensus and Oversight - Auditing, Appraisals, Confirmation of Legitimacy of the Organization

External consensus: An oracle can be defined simply as a real-world data-sensing tool. In a typical blockchain design, an oracle as digital data sensor/provider has some known problems that do not affect the proposed design:

- a) Persistence: on a blockchain accessible via a smart Contract, an oracle must be persistent with respect to the results given at different times to support the redundant verification of blockchain. An oracle can be designed to know what persistent, unchanging answer to provide using the transaction Id as a timestamp key in a lookup table to provide a consistent response. However, we do not require direct smart contract interaction with real world data. That is because the data we require is not essential for any future transaction to occur. An auditor creates a single transaction to reflect an audit result, for example, a value of an underlying asset in an RSO. That transaction detail is an asynchronous flow parameter. It does not need to affect the immediate trading of an RSO token but simply provides added trust to the RSO as a whole. That RSO VerifiedTrust value may change over time.
- b) Trust: The Trust of a particular oracle would be crucial if we did not have an alternative, consensus network of multiple auditors. There is no dependence on single auditor trust because the answers to real-world questions we seek may be gradually arrived at, allowing a consensus solution to work. Multiple oracles with a consensus-based reputation score can represent the auditor network. Oracles also relate to fiat transaction sensing. For the purposes of this analysis, the sensing of FIAT currency transaction states is unnecessary because Ethereum/btc has a high enough market cap. to fulfill the transient necessity of providing value during a distribution or dividend payout. Each organization's disclosed real world asset values may be maintained by the organization itself. The documents the organization maintain for public viewing should provide enough information for buyers to do their own due diligence. Nevertheless an auditor network is proposed. Until such auditing network can mature with proper incentivization to conduct accurate audits, an economy of organizations can begin to thrive on their own merits. Automatic referential auditing in phase 1, using data sources such as **zillow.com** may provide a base source for emulating an auditing source, but for verifying legitimacy of an organization's rightful ownership of assets via authenticating public documents, digital data sources may be more scarce, requiring manual audits and buyer due diligence as the only means of ensuring the information is accurate. Other data sources may require payment to confirm legitimacy, hence the typical auditor must be incentivized and may provide the data manually to the network for the appropriate fee.

Auditors - Powerful Addition but Not Required

Auditors may evolve in the network to provide two essential numbers: 1) "Asset Value - Second Opinion, average weighted audit of x auditors in the system give an average value of \$3,200,000 to 32 Jane St and 2) " X auditors AGREE and Y auditors DISAGREE that the RSO actually owns all the assets it claims to have."

It is important to note that while interesting, a full blockchain economy of autonomously managed assets may thrive without auditors, simply on the merits of their own data inputs. The rationale is the same as that used when the average person logs into Fidelity to buy a share of Google. In fact, in the latter scenario the user is typically less informed than what is proposed. What is proposed, is that at a bare minimum, each tokenized organization has uploaded substantial documentation proving its ownership of assets. Any potential investor then has at their disposal a quick jumping off point to verify that data on their own, ie make phone calls or visit county records offices, call the attorney of record, etc.

Full Representation of Real World Structures

While the holy grail of finance is a fund of funds, Perhaps the holy grail of blockchain is a DAPP of DAOs and perhaps there is no more general place to go then to make the essence of each DAO be in and of itself a legal structure that represents any tangible asset, LLC, REIT, CLO or other real world organization. It is important to distinguish the difference of investor needs between:

- 1) Non-cash generating assets that can legally be utilized only by a singular owner (personal home).
- 2) Non cash-generating assets that *are* available to 3rd parties as time-share or other use.
- 3) Cash generating assets (LLC, corporation, Real Estate investment Trust, CLO, etc ...)

Why a 3rd party investor would appreciate an investment in each scenario is:

<u>CASE #</u>	<u>Incentives to Investors</u>
1	Guaranteed future settlement date (forced buy-back scenario)
2	Case 1 or some shared use of the asset during the time of investment or both
3	Dividend payouts, Secondary offering discounts, Distributions via sales and depreciation

We propose a system designed to handle all 3 scenarios but focus primarily on case 3. The following are logical candidates to extend to a blockchain structure facilitating both trading and autonomous voting:

- 1) Any structure currently in place that has a management company, is traded as a fund or producing dividends, capital distributions and other repeatable payments are candidates for extension to such a structure. The bridge to the outside world is an automated voting process to maintain, elect and guide the management company.
- 2) Any asset that can be utilized by a third party in some way, such as a personal home that is time-shared, a piece of art that may be rented out etc may be representable with typed-tokens representing the legal right to use of the space defined by elected Actionable Issues.
- 3) Finally, the familiar non cash generating asset where money is needed to be raised but the asset cannot be utilized by a third party is a candidate for a tokenized structure. Some tokens are conditionally offered at the owner's leisure, directly, autonomously and not through any 3rd party or auction. That offering may be tied to Actionable/Issues with the subtype "STOFS" (Secondary Token Offering with Future Settlement/Buy Back Date" where if not all of the tokens offered are bought, the investment is returned - and if the settlement is not achieved a

sale may be forced based on a document uploaded before the offering. Fully autonomous model.

Existing Fractionating Asset Platforms

Many have speculated and a few have introduced solutions to how real world assets can be fractionated. The conventional way to do this is via an electronically funds trading (EFT). Only large organizations such as REITs can enjoy the benefits of an EFT.

One company, however, is designed for the homeowner. **Point.com** records a deed of trust and a default option at the county level. The ownership is held until the seller sells the asset or the time limit on the purchase expires. This allows the seller to remain in control of his home and the funds he receives until the settlement date. However, if the seller is unable to pay back the encumbered value at time of settlement, he must sell his home. The owner is forced to a future buy-back date of the fraction of his asset that was sold. Point.com settlement agreement remains as a pending obligation.

Latoken takes point.com one step further by allowing multiple entities to own the sold off fraction on blockchain. However, Latoken is quite limited providing for an immediate auction of created tokens – and a required asset sale in the real world or buy back at some later date by the original owner. Latoken, has emphasized a strategy of relating the coin to the asset, however, as noted in their white paper, the token comes with strings – like with point.com, it is not equal to unencumbered ownership. As part of tokenization, a buy-back settlement date must be declared and at settlement, the Latoken centralized service must be called upon to act to distribute the profits upon actual sale of the asset, typically years in the future.

Thus, the platform is designed almost specifically for buying a futures contract in a piece of an asset specifically awaiting a settlement (Latoken.com or other trustee sells that asset in the real world and then distributes the cash among the owners of the token). This is a very specific purpose that does not allow a token owner to participate in the continuing profits of a commercial asset over a long period of time but rather conforms to the same business model as point.com – fractionate your asset as an owner to get cash now, before the later sale of your asset.

In the referenced companies, an initial sales event must occur at the time of fractionation, whether to Point.com or in an auction to secondary owners via Latoken. (Owner commits to a future sale date of her property. Latoken creates tokens and auctions them off pre-sale on blockchain. Tokens are then publicly tradeable on Latoken exchange.

For example, a house, can be broken out into ownership of 1000 tokens, and all those tokens can be sold to separate investors on the LA token exchange – but first there is a required auction. This creates a forced market-generating event when perhaps no such singular event might be necessary to raise the quantity of funds desired.

Sole purpose of these platform (from the perspective of the original owner) is to provide cash now. The secondary owners trading on the La Token exchange depend on a future pay date. They do not participate in any asset sharing or cash generating possibilities the asset has to offer before such settlement.

A tokenization system where there is no forced settlement date is possible

It is recognized that a guaranteed future settlement date to buy-back the amount sold may be a good strategy to raise cash if the underlying asset is not cash-generating by nature, like a residential home.

However, let us entertain the residential home example for a moment, and let us assume further that there is no forced settlement date. Assume, some owner Alice tokenizes 100% of her home into what we call a RealSafe Organization (RSO). Then she sells off 20% of those tokens on the RealSafe exchange. So then, the question arises, where is the incentive for the secondary owners to own any portion of an asset that does not generate cash? The only answer can be is if the secondary token holder could gain some use of the asset itself. While RealSafe is primarily for cash-generating assets, a system is proposed wherein Alice can offer tokens with privileges that provide a time-share use of the asset. This is a diversion from the primary purpose of this paper. Blockchain for time-shares – yet it is achievable within the proposed platform.

A Token Can Represent 100% Decentralized Conversion of Real World Units to Token Units

No strings. The ultimate realization of the asset tokenization event puts full ownership of the asset into the token, removes any necessary future third party, removes the need for any forced future sale or settlement altogether and requires no future action. **What this means is that once asset structures are tokenized, they may be sold in micro quantity portions time and time again. Never again are the underlying assets necessary to be sold in the outside world.** This removes the need for real estate brokers, attorneys and large banks to make large fees every time a piece of a trust or an actual asset changes hands. However, realizing this distinction does give rise to a few particular challenges. The first that comes to mind is how to add and remove particular assets to and from a trust after the entire trust ownership has been transferred into a 100% tokenized structure. The simple solution is incorporating into the structure a powerful decentralized voting system with typed-issues. This will be discussed later.

Section 4 - Introduction of RealSafe Platform

RealSafe is a tokenization, voting, and trading platform that allows any real world managed structure to be extended into into a Decentralized Autonomous Organization, or more specifically an

asset-backed RealSafe Organization (RSO). An RSO is a 100% immediate extension of the LLC, REIT, DEED or other organizational structure without any required buy-back of tokens or required subsequent sale of the underlying asset for fiat in the real world; thus, allocating tokens to their base current owners allowing those owners to subsequently offer any part of those tokens on the RealSafe exchange at their leisure. No required post-settlement or sale in the real-world.

RealSafe is focused on real estate assets, real estate investment trusts and other income producing assets, contracts, or obligations, requiring long-term management and benefiting from a decentralized arena for voting, trade, cash distributions and interfacing with property management. The owner's ability to get cash for a pre-sale event is achievable within RealSafe as well, but that is just one of many functions, and with no settlement date or real world fiat sale of the asset required.

Comparison

	LA token	RealSafe
Fractionate asset to tokens	yes	yes
Must sell asset in the real world yes	yes	votable at any time
Decentralized voting on ongoing operations	no	yes
Dividend management	no	yes
Payout through third-party	yes	no
Owner/manager controls all payouts	no	yes

LAToken sells asset and trustee must pay cash manually to all token holders, whereas each RealSafe asset (RSO) has a dedicated exchange address. The property manager makes one deposit of Ether into the corresponding RSO address. Those ether are then distributed to each token holder's wallet at some past, present or future date set by the distributor. All payouts are recorded on blockchain tagged with payment description, "dividend", "issue #224: sale of 32 Jane St.", etc .. in the message.

Each asset or group of assets in RealSafe is converted to its own DAO with its own token type, not only facilitating the tradability of fractionated asset similar to as a REIT is traded on a stock exchange, but creating an accountable, distributed voting process, stored on blockchain. A voting process that replaces ordinary minutes of an LLC or Trust.

Legal Construct - Extending units/shares to Tokens

RealSafe RSO tokens not only represent ownership of an asset or group of assets, but can actually be declared as the actual ownership units as written in a Trust, operating agreement, articles of organization, articles of incorporation or other organizational document such that the tokens not only reflect but actually are the ownership units of the organization. This applies to LLCs, SLLCS, Trusts, C-Corps. S-Corps and anonymous societies where the base unit of ownership to be extended is typically a "unit", or a "share".

In this way, when an asset's ownership is represented as 1000 tokens for example, and then offered on the RealSafe exchange, it not only may change hands to 1000 or more separate owners in a reflective manner, but also in a very real way. So real, that the asset never need be sold again in the real world. The real world organization remains in the recorded trust, deed or LLC, only changed to reflect the unit of ownership, whereby it becomes wholly tradeable only on a RealSafe exchange – secured by blockchain. If at some future time, an Issue/Action voted on via the RealSafe wallet declares that an asset may be sold in the real world and the Issue/Action declares how the proceeds of the asset should be handled, as dividend, or to buy another asset etc... the ownership of the tokens remain the same – even if the RSO no longer contains any assets awaiting some future purchase. The blockchain takes the place of the “minutes” and ever-evolving “articles of organization” of the LLC. Depending on the kyc set by the RSO, owners names as parties to every transaction are recorded in embedded messages, encrypted using the key of the RSO creator address.

Reporting, variable privacy, proof of ownership and the RSO_URL

For reporting purposes, depending on the country of inception of the organization that is extended into an RSO, RealSafe maintains a blockchain explorer that allows the current members of any RSO to be listed, to the extent that each member has advertised himself in the purchase of his tokens, which is reflective only in the rules of the RSO itself which must reflect the appropriate laws both where the underlying asset resides, the purchaser resides and any regulatory measure that the creator of the RSO is solely responsible to ensure. Each purchase on the RealSafe exchange is subject to the kyc rules of the RSO alone. The kyc level has fine control to reflect the potentially varying kyc requirements of each country. A country requiring zero kyc would allow a purchaser to use the RealSafe exchange to buy and sell tokens of the given RSO in those countries with zero personal information provided. However, the customer does so realizing that losing his private keys, means losing his ownership in the asset. Whereas, an RSO requiring full kyc may have a second means of recovery in the event of loss of private keys. In phase 1, all users of the RealSafe exchange will upload ID to trade on the exchange. kyc disclosed to the RSO creator is based on the rules of the RSO – viewable through any RealSafe explorer.

Each RSO retains a field called the RSO_URL which contains the website address of the RSO (unaffiliated with RealSafe) which must contain all documents relevant to 1) regulation 2) proof of ownership and 3) proof of extension of the unit of ownership into the specific RSO token with unique given symbol expressed.

Selling the underlying LLC, REIT or TRUST after tokenization

Assets in an RSO may be sold according to vote - using the “**Asset Sale**” Issue type. The underlying Trust itself may not be sold in the real world after the ownership units are tokenized unless an issue declaring the terms of the sale is elected via the RealSafe wallet voting system. Such terms would likely include the new purchaser buying all the tokens at a fixed rate that cannot increase after the vote is accepted. The RSO would lock the token-price and force sale of all tokens at the set price, payable in Ether/bitcoin if the Issue that is voted in is of the type “**RSO FULL TRANSFER**”. Should a full sale be

voted in at a very low price, and the rules of the real world structure prevent that, then the property manager who allowed that sale to happen and proposed the vote would be held liable in the same way he would be held liable in the real world by not acting in the best interests of the token holders. There is no more ability for fraud in RealSafe as there is in the real world. In fact, there is far less due to the intrinsic notarization of transfers issues and votes.

RSO Burn

If the RSO no longer contains any assets and all its owners have been fully paid out in distributions, the empty RSO may still serve awaiting some future purchase or it may be completely dissolved only on an agreed upon “burn” event, an Issue with type “**burn**”. The dissolution of an RSO does not dissolve the real world structure. Therefore an RSO burn Issue includes a series of steps which must be taken in sequence. 1) The “burn” Issue is elected in accordance with RSO structure and all token trading for the RSO is suspended 2) the manager authorized to do so, sells the real-world company with agreed payout to an escrow account in fiat. 3) The manager makes the final distribution to the token holders in Ether. 4) The RSO is “burned” and the token for that RSO no longer exists.

Consensus – required majority percentage for issues to become actionable in voting

The minimum percentage of tokens required by the RSO for majority consensus of an Issue to be successfully voted in is a feature that is set upon creation of the RSO in the RealSafe wallet.

Legal Aspect of RSO creation

Legal procedures are in place to make an RSO reflect the extended ownership of the various real world structures, LLC, anonymous societies, REITs, Other cash generating Trusts, Foundations, Warranty Deeds, Collateralized Loan Obligations, trade obligations, c-corps and s-corps. Suffice to say, through a bit of legal manipulation of Operating Agreements, Articles of incorporation, Trusts and Deeds, it is possible to extend the defined unit of ownership for a majority of the organizational configurations to reflect as a particular RSO token-type with a unique symbol name. The procedure is:

- 1) Generate the RSO and its tokens via the RealSafe wallet
- 2) Distribute the tokens to the wallets of the original owners
- 3) Update the operating agreements to extend to the RSO

All tokens are distributed into the RealSafe wallets of the original owners, where each owner certifies on the appropriate document, that he/she controls a private key corresponding to a particular base address which represents their wallet on the Ethereum chain for the purposes of initial transfer.

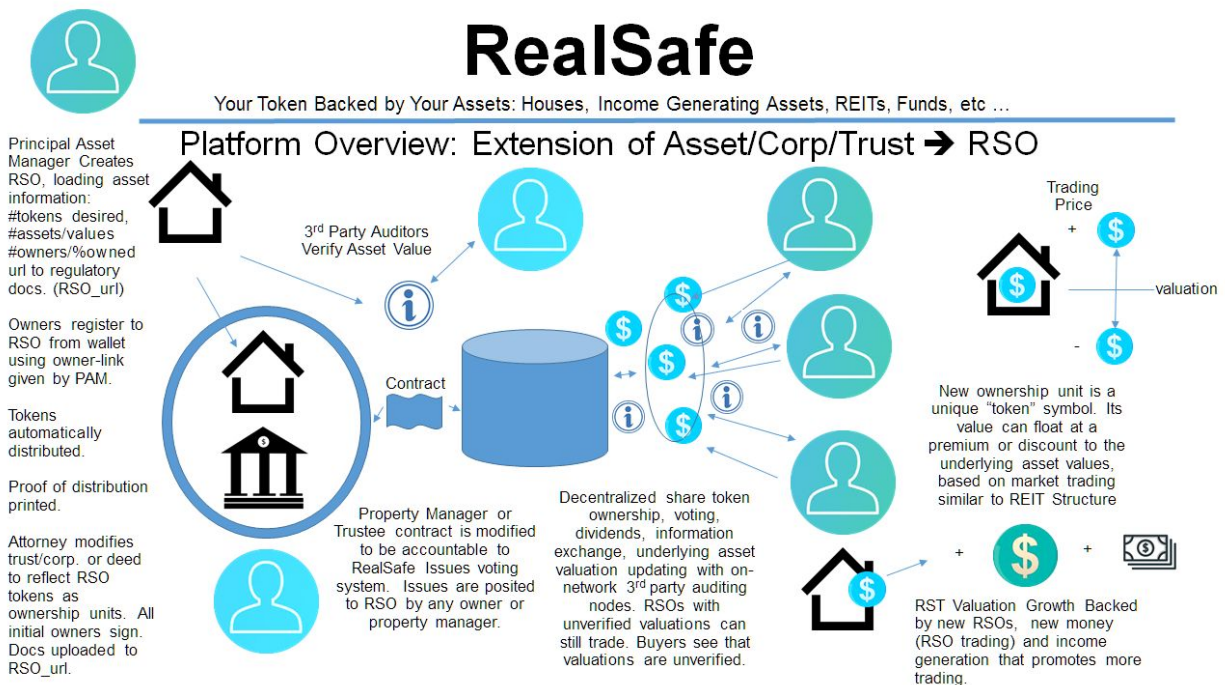


Figure 1 - RSO Creation Flow

Multiple RealSafe assets and therefore multiple token-types on one platform

RealSafe goal is to ultimately hold many thousands of RSOs representing anything from single assets to REITs, CLOs, LLCs and Trust structures. RealSafe maintains a single network of RSOs – each a subnetwork, token-based sub-economy within RealSafe. Many existing blockchains and layers are the same in that regard, Ethereum, OmniLayer/MasterCoin CounterParty/Waves and many others. They all support multiple token-based economies. Each RSO requires some flexibility in setting the rules of transfer. Ethereum blockchain supports tokens that are both internalized (RSO type tokens) and externalizable (the RST token) as ERC-20. This is needed for the RST token which drives RSO token creation and trading and will itself be tradeable on other exchanges. RSO tokens however are only tradable inside a RealSafe exchange. This allows automated dividend payouts to occur which would not be possible using ERC-20 tokens if some of those tokens were stored on other exchanges. Automated dividend payouts is a core feature of the RealSafe system, ensuring fairness and requiring the property manager to payout to just one address.

RSO token-type and Automated Distributions

Other considerations in determining that an RSO token may not also be an ERC-20 token are the need to payout dividends by the RSO manager where the total addresses reflecting amount of tokens in an RSO at any desired date past or future can be automatically apportioned a proportional amount of Ether regardless of where those tokens are. This could not be achieved if the tokens were externalized as, for

example, residing on an exchange; an exchange other than the RealSafe exchange. Therefore it is necessary to make our RSO tokens internalized as we explored earlier, achievable via Ethereum non-ERC-20 compliant token-types.

why not a cloned-Ethereum? Plausible option, however gives up the security of a mature chain. With such a large valuation of assets going into it, there is more reason to use a mature chain and a payout mechanism using a coin with a high market cap. To ensure volatility is minimal from the time an owner receives Ether to the time he is able to convert that Ether to fiat. Nevertheless the point is still up for exploration. We are building on Ethereum and can easily move to private cloned Ethereum since the code would not change much to do this – but then we would be subject to the burden of maintaining a secure network, proof of work for a long time moving to proof of stake at some future date. This is not out of the question at a later date should Ethereum have any scaling issues that might affect our network.

Section 5 RealSafe Economy, Exchange, Wallet, Token Structure

Point of Service

RealSafe maintains a certain set of services. These services are designed to be able to be provided by others in the future. Even the RealSafe Exchange itself will ultimately be handed off to the RealSafe Foundation in the final phase of this project.

The RealSafe service economy consists of:

- 1) RealSafe Wallet
- 2) RealSafe Blockchain Explorer and API
- 3) RealSafe Exchange
- 4) Phase 2: RealSafe Auditor's Consensus Network

The RealSafe Wallet - RSO Generation

- 1) Property owner, real-estate trust or fund manager (user) creates an RSO in RealSafe wallet and assigns all owner addresses in one time - or later - the symbol name desired - total number of tokens to be created and allocations and other parameters, etc
- 2) RealSafe wallet requests/executes from RealSafe Master contract to confirm/generate unique symbol that is not already taken. Voting rules and other features/parameters are requested to be confirmed as acceptable from RealSafe Master contract.
- 3) RealSafe wallet receives suggestion and user confirms which calls the RSO-Generate(symbolName,) on the RealSafe Master contract.
- 4) RealSafe master contract generates the RSO contract using the callers wallet address as the initial recipient of all tokens and broadcasts it to the eth network via its RSOGenerate method receiving back the address location of the RSO contract so it can add it to its own hashtable and all RealSafe wallets can become aware of it.
- 5) The RSO is born with the correct number of tokens transferred to the creator.
- 6) RSO is locked to be fair to all from that moment on.
- 7) User receives all tokens created and transfers them to other owner address that registered to that RSO. Legal Documents are prepared to reflect the new RSO structure.

8) Private auditors may act as “miners” at this time by ascribing or validating RSO asset values. For phase 1 there will be no network auditors and the values of all assets in each RSO will operate with a perceived value strictly on its own merits. The investor/trader must do his own due diligence based on the data uploaded by the RSO creator, which should include names and addresses of attorney organizing the structure and any recorded deeds or Trusts recognizing the RSO as owner of each asset. The cost of creation of an RSO is \$1,000 per asset added to the RSO. this is payable in RST and in phase 1 will go to RealSafe LLC. In phase 2 that fee will go 50% to private auditors and 50% to be determined. RealSafe LLC will create an automatic auditing system using 3rd party services such as zillow.com where possible. In phase 2, other automatic auditor/appraisers should come available for confirmation/generation of average value and the listing fee will be split among all auditor/appraiser developer mechanisms that come online in exchange for operating CPU or network-intensive RealSafe operations. Once fee is paid, the RSO tokens will become tradable.

Needless to say, with or without auditors, secondary owners must do their own due diligence, same as when investing in any alt-coin or share. RSOs are at least secured by real assets with easily estimable values, 99% of all companies are not. Additional assets can be added to the RSO at anytime and reflect in any RealSafe Block Explorer. Similarly for each new, added asset, a \$1,000 fee is paid in RST.

Phase 2: 100% decentralization of the listing fee – 50% to auditors and 50% undetermined or for proof of stake of Real Safe Token (RST). It is important to note that even by trusting RSO creators to use good estimations, the RealSafe system works simply because traders are expected to do their own due diligence and the market will be made by those offering the tokens – original owners who know the value. It is up to the buyer to decide if the value is there. Accountability, however, to RSO creators will be held to the same standards as they are in the real-world when submitting appraised values and historic/projected returns. Minimally, “No appraisal, we guarantee our ownership - and estimate the value as \$xyz but buyer must do his own due diligence. We project \$xyz monthly dividends based on ...”

Sneak Preview of RealSafe Blockchain Explorer

RDAO Profile



Lower Manhattan Real Estate Trust, LLC
NYC1

Name and Token Symbol

Total Tokens Issued: 100,000

Owners: 17

Created: Feb. 3, 2018

NYC1 Assets Listed on RealSafe Blockchain: 2

NAME	LOT#	Estimated Value	Date of Value Estimation
32 Jane St.	32BLKA	\$1,200,000	3/10/2016
9 Houston	9BLKB	\$8,500,000	4/12/2015

Outstanding Issues for Open Voting: 4

TYPE	Issue	YES	NO	EXPIRES
Secondary Offering	Raise \$1,000,000 to buy 62 Jane St.	42%	23%	3 Days
Mngmt Change	Change Property Manager	12%	83%	CLOSED
Real World Sell	Sell 32 Jane at minimum of \$3,200,000	83%	22%	6 DAYS
Real World Sell	Sell 32 Jane at minimum of \$3,200,000	83%	22%	6 DAYS

RSO - Asset Values, Viewing and Adding

Blockchain Explorer allows market cap. of each RSO to be viewable via any website that hosts a RealSafe blockchain explorer. For an RSO creator to add or change a property value of an asset in its RSO, a signed message transaction is broadcast with property address and valuation. Only the RSO creator or controller of the RSO wallet may broadcast a property valuation add/change (although independent auditors may add their own values asynchronously). The broadcast occurs from the smart contract address of the RSO, specifically `addProp(propKey,propAddress,propValue)` method. The person who controls the RSO master wallet should be the Property manager or principal owner of the organization. RealSafe has some extraordinary safety features in place. For example, even the owner of the RSO wallet cannot mint new tokens without raising an “STO” (Secondary Token Offering) Issue for vote which must last at least 3 days and the number of tokens and all the parameters for Eth/Btc to be raised must be specified in the Issue. Only voting token holders can vote on the Issue.

The result of a verified call to `addProp()` is to change state of the property hashtable, which is permanently recorded on the blockchain and viewable by any blockchain explorer to calculate an estimated market-cap. – and compare it with the actual token-based market cap.

Phase 2: Auditors (incentivized via proof of reputation staking) respond to asset valuation changes with their own assessments. Each asset has two values, RSO stated value and Audited Value - Audited value is the average value of all high reputation auditors that have responded. Next to the audited value one can see the number of auditor nodes that have responded. The listing fee is \$1,000 per asset added to the RSO payable in RST. In phase 1, there may be no auditors and the value of each asset will be populated using only the RSO’s own estimates. It is up to any buyer to do his own due diligence in examining any documents the RSO exposes to verify asset values and RSO legitimacy. In theory, audited property values will increase the RSO actual market cap. of the tokens when inspected by potential investors. This in turn, will raise the value of the RSO for trading its token. As mentioned earlier, such market value is estimable using available data on the website of whoever is providing such a RealSafe Blockchain Explorer to view network data, like the RealSafe Explorer itself. The block-chain explorer contains the lot numbers and addresses of all assets contained by the LLC at its inception. The value of an RSO is determined by the market but assumed to be very closely correlated to the actual market value of the combined assets of the RSO.

Voting

Issues are raised from RealSafe wallet, issues and voting state are viewable from blockchain explorer.

Voting algorithm, and Safe Voting when people trade their tokens.

In phase 1, RealSafe tokens are locked as non-tradeable when they are voted on an idea until the vote period is over. All votes must, therefore, have this structure and be no more than one day. To allow more than one idea to be voted on in a day, ideas scheduled for the same day are merged and must all be voted on, as all or nothing. This allows for smooth rolling votes on a seemingly unlimited number of ideas, limited only by the fact that low percentage owners cannot submit more than one idea per unit time-frame, and higher percentage owners can submit ideas more frequently. The algorithm for that

timeframe is complex enough to allow for more flexibility when there are less owners in total. It is set as such:

Minimum time between voting days: 1 day, 1 week, 1 month, N months

Minimum Lead time from idea to vote: 3 days, 1 week, 1 month, N months

Maximum number of ideas that can be merged to same day: 1, 10, 100

Average, maximum, acceptable forced waiting period for an idea (determined by a Gaussian at 1 standard deviation): (Minimum time between voting days) * waitPeriodsdueToFullVotingStream

The algorithm takes a Gaussian using this data and the number of people who currently own the given RSO token such that waitPerioddueToFullvotingStream is never greater than 2.

Voting structure

RealSafe is a DAO. As such it must have a completely decentralized, transparent and variably-smooth voting structure where higher-percent owners not only have higher voting power but a proportionally more visible voice. For example, a 1% token holder may only list his ideas for votes 1 time every N days (100 days for example). However, the algorithm is smart enough to soften this limitation when there are only a few owners in total. Nobody with less than x% ownership can list an idea for vote where x is set upon listing of the RealSafe asset. A 50% owner can conversely publicize an idea for voting once every two days. The upvotes of the idea start at the percent ownership of the idea maker. Any idea that is upvoted to beyond 50% gets recorded on the blockchain as approved and then deleted from all full node wallets. Ideas can be as trivial as the color of a building to as major as the property manager being used. Most ideas are not feasible to list on the blockchain because the property manager itself addresses most concerns. And therefore, only one idea is required to be maintained yearly by the blockchain, that is the idea as to what property manager is to be used.

All ideas and all votes must be stored on the blockchain and therefore there is a nominal cost to vote and idea making – and all ideas must be succinct, limited in words as a twitter message is. The RealSafe wallet will communicate with a special form of blockchain explorer to form the voting system. Any real world necessity is addressable through the property manager.

Only RSO owners using RealSafe full-node wallets can submit ideas and vote. A RealSafe full node is not necessarily an Ethereum full node, rather it is simply a RealSafe wallet tracking RSO transactions. For voting, tracking only those RSOs to which the minimum number of voting tokens are allocated to the address of the wallet.

TYPED-Issues/Actions (available for voting in an RSO)

- 1) **"ASSET SALE"** - Sale of real world asset, a miscellaneous event, proceeds as capital distribution.
- 2) **"STO"** - Secondary Token Offering - Raise money for a company project. Sell x tokens at a locked price, hold funds in escrow until minimum is met. New tokens are minted if minimum funding is 100% successful. However, funds are returned (ETH or RST) if target quantity of tokens to be sold is not met.
Example: "Buy 56 Sullivan, give up to 6 months - 3.2 million needed minimum to make offer, if offer not accepted or money not raised, it is returned."
- 3) **"RSO TRANSFER"** - Sell all owner's tokens to one buyer at a locked price. Current owners receive ETH or RST, same as in a dividend payout. Similar flow structure to an STO but no new coins are minted.
- 3) **"RSO BURN - SOLD"** - Dissolve the RSO. Flow structure involves a representational buyout of all tokens by the asset Manager. This is similar flow to an RSO transfer except that it appears that the asset manager is the actual buyer before dissolution. This Issue type makes it clear that is not the case. The asset manager first receives cash from the buyer in the real world - the actual buyer. Final distribution to RSO owners is in ETH or RST.
- 4) **"RSO BURN - LEGAL"** - Dissolve the RSO due to bankruptcy. Flow structure involves a representational buyout of all tokens by the asset Manager for \$1 US. This is similar flow to an RSO transfer except that it appears that owners will receive nothing for their tokens. This is done only in a court ordered bankruptcy where the attorney of the RSO considered it illegal to trade in a representation of a structure which no longer exists. Final distribution to RSO owners of near zero is in ETH or RST. Alternatives to the RSO burn, would be the "RSO LOCK"
- 5) **"RSO LOCK - LEGAL"** Pending investigation, the asset manager may suspend trade activities of the RSO. This may only be done with a court order to the RSO principal - current owner of the RSO mater wallet. This is the only issue type that may not need a majority of voters. However, if RSO creator believes that his RSO is exempt from this kind of control he may set it up not to have the locking feature. RSO attribute of "100% tradable - not lockable" will be clearly visible in Blockchain Explorer.
- 6) **"MISC"** - "Major Roof overhaul on building #103 this year or next?"
- 7) **"TOFF"** - For low liquidity instances, an owner can offer some of his tokens to be bid on or at some set value only to existing owners or open to public as well. Limit pricing is settable.
- 8) **Cover Loss (CCL)** - vote: proportional liquidation to cover a failing asset - or foreclose asset. Each owner has tokens sold on exchange or to existing owner, ETH raised sent to RSO property manager address used to pay loss.
- 9) **Asset Sale by Token (AST)** - Sell or auction asset to high bidder - result forms a new RSO to high bidder or successful buyer..
- 10) **Other** - types to be added.

All Issues put up for vote have a fee of 10 RST to 100 RST depending on the issue type.

Example of an Issue put up for vote: AN RSO contains 112 assets. One of them is desired to be sold by the property manager where that property manager was elected by all token holders via an automated vote through the RSO voting system in the RealSafe wallet to faithfully represent the RSO – same as it

does in the real world. If the Issue/Action was worded as “sell 151 Main St. at \$500,000 or more – authorized as actionable for one year from today. 50% used to fix 129 Main St. 50% as dividends to owners in Ether” and the result of the blockchain recorded vote tally for “yes” was over the majority set in the RSO creation settings, then the property manager may sell the asset in the real world for a period of one year.

Section 6 the RST Token

RealSafe LLC will provide services-as-products over the RealSafe network which it is building. Those services are provided at a cost. The payment currency used to effect service over the RealSafe network is a crypto-currency token called RST established as an ERC-20 token over the Ethereum network. There are only two products that RealSafe LLC is making available to be pre-purchased as part of what we are calling an Initial Asset Listing Offering (IALO). This can also be called an Initial Coin Offering (ICO) because RealSafe LLC is offering these products purchased with Ether by providing RST which serve as the pre-sale certificate and only mechanism to redeem the products through the RealSafe network.

The products being pre-sold are these:

- 1) \$100 = buys 1 RSO to the RealSafe network. 10 RST are granted to represent the pre-sale certificate of one RSO. RST are not resaleable or transferable until contributor receives the ability to add her RSO on the RealSafe network, ensuring that RealSafe LLC has fulfilled its pre-order agreement to contributor. Discounts are available in the pre-ICO stages.
- 2) \$1,000 = 1 asset-adding credit. Add 1 asset to any RSO that contributor controls. Multiple assets can be added to each RSO controlled by contributor but each asset may only be added to one RSO. Discounts are available in the pre-ICO stages.

Individuals (pre-purchasing contributors) are invited to pre-purchase RSOs and asset-adding credits well before the RealSafe network is realized but only under the condition that they represent that they are pre-purchasing one or more of these products. The pre-purchaser should attest to the following:

- a) I certify that I am a person or organization wishing to create one or more RSO(s) on the RealSafe network at some future date for the purposes of extending one or more valuable assets that I control or manage to a fractionated trading platform on the RealSafe platform.
- b) I will not pre-purchase more RSOs than I intend to place assets into. For example, if I purchase 2 RSOs, I must also purchase at least 2 asset-adding credits.

- c) I would like to pre-purchase ____ RSOs and ____ asset-adding credits and acknowledge the total cost is ____ ETHER and that I will be granted ____ RST to be used as proof of purchase receipts enabling me to redeem my products when the REalSAfe network is opened at some future date.
- d) I understand that there is a risk that the RealSafe network may not ever be realized due to various factors. In that event I accept that I am not entitled to refund of my pre-purchases. I accept this risk with the belief that if I wait to purchase these products until after the RealSafe network is completed, they might be far more expensive.
- e) I understand that RealSafe LLC may increase its price for RSO purchase and/or reach its RSO sales limit well before the RealSafe network is established and am therefore eager to purchase RSOs and asset-adding credits before such limit is reached.

The RSO ICO contract ensures that each buyer purchase at least as many assets as RSOs purchased and a minimum of 1 RSO is purchased.

Why RealSafe LLC might sell out of pre-sale RSOs and assets

RealSafe LLC will not allow the sale of more than 100,000 RSOs (and corresponding asset registrations) until several months after the RealSafe network is active to ensure the network runs well in phase 1.

Donations

Any person or organization wishing to donate to RealSafe in the hopes of being able to realize the dream of a decentralized economy of self-governing asset-backed organizations on blockchain may donate for this purpose at other non-ICO addresses RealSafe LLC will provide.

RST Tradability

Tokens will not be available for public trading on any exchange for at least 3 months after the formal ICO. However, if it becomes clear for any reason, that RealSafe LLC will not be able to list RST ERC-20 token on at least one crypto exchange for trading within 12 months of the ICO, tradability will still be realized in the following ways:

- 1) ERC-20 tokens will be instantly sendable on the ETH network and therefore effectively tradable on a trust basis. (Example "send me .01 Eth and I will send you an RST token".)
- 2) Tradable on the Ethereum network: RealSafe LLC will provide a simple trading system for the Eth network should, for any reason RST not be listed on any other crypto exchange thereby satisfying the requirement before the 12-month deadline.

ICO Funds Safety

RealSafe LLC will take every precaution it is capable and aware of to protect raised funds, but in the light of several recent thefts of crypto-funds in other ICOs, pre-purchaser contributors agree that RealSafe is not responsible and contributor takes full responsibility for the risk of theft of funds occurring beyond

the control of RealSafe LLC. To be sure, RealSafe LLC will use an escrow agent during ICO funding period (not during pre-ICO period of up to \$5,000,000) whereby RealSafe LLC will have no access to funds until the minimum funding goal is met and the ICO is completed. After funding, only the RealSafe founders will have access to private keys controlling those funds. 50% of all funds raised (less ICO fees) will be placed in FDIC insured fiat accounts. Only 50% will remain in crypto and all of that will remain in cold storage distributed over several 24-word BIP39 seeded key wallets. Any amounts of funds paid out for development and oversight will not be refundable under any circumstances. Some such development and oversight of the RealSafe platform for which payment will be due immediately after the ICO has already begun.

ICO Regulation

ICO regulation is coming and already exists depending on what is being represented in the nature of a contribution

We discuss why RST is not a security instrument at this time.

Q: “Do you think the RST token will be considered a security instrument by the SEC? It somewhat seems that it would be, because RST investors would pretty much be buying it purely in the hope it would increase in value due to the effort of others. What is the argument that RST is not a security?”

ICO and pre-ICO Contributing pre-purchasers must be anticipated users of the RealSafe network, certifying to that and pre-purchasing distinct service products. I do not believe the hope of others making the pre-purchased product more valuable in the future should for any reason make the pre-purchasing of such product deemed a security. Contributors should want what RealSafe is offering as a service-product with the likely reality that they can get it nowhere else.

For example, BitMain pre-sells D3 miners for delivery in 3 months from today. Most people who purchase them believe the value of each miner (represented only by a pre-sale receipt) will go up in value. Meanwhile that pre-sale receipt can be sold to another party before taking delivery of the item and with the very real risk the item may never get built. But I do not believe anyone can construe those pre-sale receipts as an SEC registrable security. RST tokens granted for pre-purchase are analogous to the pre-sale receipt.

For point of reference, on August 12th, 2017, BitMain raised \$60,000 in 45 minutes for pre-sales of items that do not exist yet.

RSTs confer no ownership interest in any entity. RST Pays no dividends - however, PoS may be implemented eventually. After rigorous legal examination, should we find no regulatory conflict, proof of stake will inevitably be implemented by the RealSafe Foundation as so many other cryptocurrencies are beginning to do. RealSafe network auditor nodes will also accrue RST as incentive to provide their service.

Definition: “Equity securities entitle the holder to some control of the company on a pro rata basis, via voting rights.”

RSTs have with them no voting rights. Realsafe is itself not a decentralized organization, but rather it is a decentralized service network containing decentralized autonomous organizations (RSOs) RealSafe is a DAPP of autonomous - unaffiliated/self-regulating DAOs. (RSOs).

Definition: “Generally, securities represent an investment and a means by which municipalities, companies and other commercial enterprises can raise new capital.”

Each RSO may also raise capital accordingly using the RSO Issue-type “**STO**”. The process is a completely self-regulating act, voted upon by the RSO owners and completely unaffiliated with RealSafe LLC, its founders, developers or the RealSafe Foundation. Each RSO is responsible for its own SEC, federal, state county and city regulations.

ICO regulation in the united States is coming. In the event that at any time or in any way an RST is considered a security in the United States, we believe it would have to be for reasons beyond the current definition of a security and beyond the scope of our pre-purchase offering. Nevertheless, should that moment arise, we will no longer be able to accept any contributions from US pre-purchasers wishing to pre-buy RealSafe services.

In that event we will stipulate:

- a) **Person or organization is an accredited investor**
- b) **No more than \$5,000,000 is raised by RealSafe LLC in total in the 12 month period during which the new regulation has taken effect**

Or we will move operations outside the united States and stipulate that no future ICO pre-purchaser contributor may be from the United States.

RST - Tokens, Donations, ICO and RealSafe Exchange trading pairs

From 42% to 68% of the total 110,000,000 RST that will be minted at or pre-ICO will be granted to pre-purchasers of RealSafe products as specified earlier in this section. ICO or Pre-ICO funds must exceed \$2,000,000 in total pre-orders before Dec 31, 2018 or funds are returned. For those who pre-purchase, a matching 20% of all RealSafe tokens are distributed as 10% to the founders immediately and 10% to developers as they are contracted. 20% are reserved in escrow for future maintenance, bounties, drops and unforeseeable events. 5% for referrals, 5,000,000 for distribution over all Ether holders.

Investors who do not intend to pre-purchase to use the RealSafe platform are not invited to invest pre-ICO at this time. However, investors might be interested to purchase RST on a secondary market. Reasons for RST to go up in value as more assets are listed are:

This is not a prospectus and the following forward-looking statements are personal views and not meant to influence any pre-purchase decisions:

- 1) **During the tokenizing event (a RealSafe Wallet user creating an RSO) , assets are added with values. The market value ascribed to each asset will help traders to determine how much the RSO is worth. Listing a physical asset to the RSO requires the Trustee to pay 1000 RST. This amount is controlled by the RealSafe Master Contract and may change over time in-line with RST liquidity and maintaining fair**

barriers to entry to RSO creators. Nevertheless, total number of RSOs and assets in the RealSafe network will quickly rise, hence the total market cap. of RST estimated at \$110,000,000 immediately post-ICO must also rise to allow for increasing demand to buy RST to add new RSOs and assets. If an asset is sold, taken off and a new asset is added to the same RSO (for example the NYC REIT (NYC1)), a new \$1,000 fee in RST is paid when the Trustee adds that property to the RSO.

- 2) Whenever an RSO is traded with its unique token-type on the RealSafe exchange, .18% of the trade value is paid in RealSafe tokens (RST). This means an increasing demand for RST to accommodate increasing trading of an expanding RSO base. RST is needed to buy into RSOs.
- 3) Direct ETH pairs. Dividends & interest are distributed via RealSafe Internal system. The asset manager will have the option of paying out in ETH or RST. If the market cap. of RST is not at least 10x the total daily trading volume of RSOs on the RealSafe network, all dividend payouts will be in Ether only. Similarly RST is needed to trade each RSO's token types. However, should there be low liquidity that the RealSafe Reserve contract cannot effectively handle or an environment exists that RealSafe LLC or the Foundation deems to be an unreasonable volatility or liquidity risk in the RST market, or low market cap. In relation to the large value of RSO trade volume, the RealSafe exchange will be equipped to allow direct ETH/RSO trading pairs. The goal is to keep a balance between pair activity such that RST value and market cap. Remain high while allowing low volatility of RST and maintaining liquidity for fluid trading of RSO tokens. Incentives for RST/RSO trade pairs will be provided, such as reduction of trade fee to .1% from .18%.

Section 7 RealSafe Flow - LLC \Rightarrow RSO \Rightarrow Trading

The RealSafe architecture consists of real world and blockchain components:

- 1) **Wallet** enables receiving and sending of RealSafe tokens. The wallet is the tool for which voting on ideas in RealSafe RSO's for which ownership reflected in that wallet is non-zero. RealSafe tokens can be sent to and from the RealSafe exchange where they can be used to buy and sell RealSafe tokenized assets via their respective symbol name. The RealSafe wallet also allows RealSafe sub-token types to be sent to and from the RealSafe exchange and or other wallets.
- 2) **Blockchain Explorer** is more than a tool to view the contents of addresses and UTOs. It is a tool to view any RealSafe sub-token's virtual and real world market cap as well as the physical addresses and lot numbers of each asset that the given sub-token represents.
- 3) **100% automated Listing Service**, extends assets into RSO (a 100% tradable and governable asset platform) where the given owners are now represented in full by their control of the private keys of their RealSafe wallets. While the service is automated, an attorney in the country of the

asset(s) being tokenized is required to secure all the listed document requirements and attest personally to the conversion. Any registered and verified owner or asset trustee may create an RSO from within the RealSafe wallet.

- 1) Create token subtype specifying quantity of total tokens, name of token. Specify number of base owners, their names and ID numbers, and share amounts. Estimate total value of assets that will be transferred. Pay 100 RealSafe tokens (RST).** RSO is created in a locked state until all original owners are paid out or unlocked immediately.
- 2) If more than one owner, each base owner must create a RealSafe wallet and register to the token.** They are paid tokens immediately if matching the creator provided link detail.
- 3) In the real world create Deed of Trust or modify Corporation organizational document to reassign the unit of ownership to the specific RSO token and symbol. Note the divisibility of each token to the desired fraction, specifiable in the RSO setup as well.**
- 4) Add properties/assets individually to RSO. Each RSO has a smart contract address that handles the adding and removing of assets. Adding a property includes adding:**

Real World Documents:

LOT NUMBERS and addresses: in format recognized by most 3rd party valuation services such as zillow.com

URL to document of proof that the RealSafe RSO with unique symbol is now the ownership entity. Information of authorizing attorney must be clearly visible.

URL to Phone number/address of county, documents registered at.

URL to operating agreement document

URL to most recent appraisal document

Valuation is according to RSO owner upload. Each asset registered as an RSO is assessed a one time 1000 RST fee. Phase 2: independent auditors will provide an additional appraised value for each RSO asset asynchronously at any time in the future such values may be updated by the auditor network. The owner value is also updatable anytime to what he chooses.

- 5) Token remains unlocked and tradeable during price updates - locked for trading only if any asset in the RSO is not with at least estimated value which should not be possible as it will not be allowed to upload an asset without at least a good faith-estimated value. Links to any known appraisal docs must be included and will help auditors give a favorable legitimacy value to the RSO.**

Inter-trading of RSOs

RealSafe asset tokens may be traded directly for another RealSafe asset by first selling to RST on the RealSafe exchange.

Dividend Payout Currency

Dividends paid in ETH or RST incur a very small ETH network use fee plus a .1% fee which is waived for dividend payments in RST as incentive to use the RST token for payouts.

Section 8 - RSO Funds and Super-Funds

The typical asset owner or manager may want to create an RSO for many reasons. The first reason presented earlier in the paper is to create cash-flow, raise money for some project without taking out a loan. The RealSafe network facilitates such projects by providing an exchange where small quantities of the RSO can be traded easily and a wallet where any ownership amount can be transferred remotely.

However, while very convenient, an RSO with a high market-cap might not have the visibility needed to provide for high liquidity. While a small RSO representing a single candy store, for example, might make a particular investor skeptical to invest due to the risk of failure of a single candy store vs. many candy stores altogether.

While the RealSafe exchange expects to draw many speculators, a particular RSO will be competing with many others for attention. This makes each RSO dependent on its own marketing resources to bring it to the public eye, to match potential investors to the RSO.

There is another way. Many investors are interested in specific markets they cannot find on their own or otherwise have access to; markets that might be right in line with the assets of a particular grouping of RSOs. By introducing themed, region and asset-class typed-funds, RealSafe matches investors to RSO classes, creating liquidity for all the RSOs in that class by providing the investor broad access to her market; lower overall risk by distributing her investment over many assets.

A RealSafe fund can be of two types, verified and unverified.

Verified market cap. Fund

All member RSOs should have all its asset values verified by independent RealSafe fund auditor nodes. The first phase of those nodes might be a simple automated transaction oracle that uses zillow.com or other 3rd party valuation service. As discussed earlier, a network of auditor nodes are scheduled to appear in phase 2.

Unverified market cap. Fund

All member RSOs have report their own market cap. Using RSO manager-supplied information.

Machine Learning, Clustering, How an empty fund is suggested for creation with AI

Each RSO must tag its assets by region and type. An RSO also has settings such as whether it is tradable by the public or only an exclusive set of addresses. The RealSafe fund is generated by the investor. A machine learning algorithm in the RealSafe Node software may suggest funds using clustering of all qualified RSOs to determine what funds could exist, based on the different characteristics an RSO and its assets can have - such as location, asset type: (multi-family, shopping mall, single family, coal mine, gold mine, energy) etc... This AI can be used to generate recommended fund structures on demand, even as the recommended fund might not exist yet. In phase 1, fund types will be limited to distinct regions, and asset types and a more simple algorithm will be used to add RSOs to existing funds.

Example

Bob has a four-family building rented out at \$12,000 per month and creates an RSO for it, offering up 10% of his tokens. He lists features of his RSO: "1,000,000" tokens "Potomac, NJ", "single-family homes", status: "income-producing" tradability as "public". Dividend-type "yearly" dividend-date "12/31" projected NET payout-profit annual "5%". He also adds the RSO_URL pointing to a website with an image of the title document Deed Extension, appraised value and rules of his dividend payout structure and regulatory compliance to offer his building in this regard. He registers his asset to the RSO with a value of \$3,000,000 and to be sure: "multi-family", "No liens". And pays the 1000 RST.

There is now a listing on the RealSafe exchange for 10% of Bob's home represented as "100,000 BHT at \$1.50 per token"

In the near future, Bob sees only 5,000 are bought on the exchange so he calls his friends and they like the idea so they buy up some more tokens, but still there are 80,000 left to sell so he waits ...

A speculator, Alice, comes to RealSafe and inquires "multi-family buildings in Eastern NJ". No such fund exists yet, however, there are currently 3 RSOs matching the request. Alice sees the fund as if it already exists and notes that it is comprised of 3 RSOs whose stats are visible independently via their RSO_urls or collective averages noted by the Fund description.

Alice can buy into each RSO separately but would prefer a system of purchase that will automatically add other matching RSOs to her investment as they come available. So Alice, replies "buy 10000 RST worth of the Eastern NJ fund".

Behind the scenes

RealSafe calculates the market cap. of each fund to determine equal proportions of purchase and concludes that 10,000 RST is worth 4 tokens of A, 14 tokens of B and 6 tokens of C or more precisely as displayed to Alice:

"Minimum Investment in any RealSafe fund is 1,000 RST"

For establishment of the fund for the first time:

"Eastern NJ Multi Families: 1 NJMF-F Token (value 1,000 RST). For each NJMF-F token you buy, the fund will buy .4 tokens of A, 1.4 tokens of B and .6 tokens of C"

Alice selects to buy 10 NJMF-F tokens.

The RealSafe Exchange requests the Master Fund Contract to create the new NJMF-F contract. The Fund token is minted reflecting the purchase and the total tokens of the member RSOs are now owned by the NJMF-F contract (Actually owned by the fund address ascribed as fund owner address - which is an exchange owned address that represents as the "NJMF-F underlying assets storage address")

Stepped fund growth - only upon new purchases

If new multi-family house in Eastern NJ emerges as an RSO, there could be an automatic selling of existing fund assets to buy some of the new RSO, however that would require an automated sweeping node and is likely not necessary. Rather the fund may simply evolve with new purchases into it. For example:

A 2nd investor sees the Eastern NJ Fund and wishes to purchase 10 tokens. At this time, the combined market cap and ratios of all RSOs that currently meet criteria for inclusion are compared against the current assets of the fund. It is concluded by the fund algorithm that only a purchase of just the 4th RSO is necessary to more properly match the fund requirements. 10 new NJMF-F tokens are minted and Julie receives her 10 tokens. Now Alice and Julie, who both own 50% of the fund, each also own a share in 4 RSOs and the total outstanding number of NJMF-F tokens is 20.. The cost Julie had to pay for the 10 NJMF-F tokens is based on the current market cap. of the total assets in the fund before her purchase divided by the total outstanding tokens in the fund before her purchase. This determines the current price of the NJMF-F token at anytime. The new funds are used to buy more underlying assets and new NJMF-F tokens .

Keeping existing funds distinct, active and relevant, neither too general nor too specific

Various machine learning algorithms can be put in place to ensure that once funds exist, new funds must be highly distinct from existing and in demand. The ability to auto-delete funds that are not active converting them into the actual underlying-RSOs of holding to their current owners should be a fundamental part of the core system of fund generation. Strict limits to the total funds on the RealSafe network should be in place to protect against DoS attacks and other network-congestion possibilities caused by near-redundant groupings of RSOs into fund structures.

Super Funds - a Hierarchical tree of RSO Funds

Each fund is tagged with characteristics that can allow it to form part of parent funds, thereby establishing a hierarchical network of super-funds. Each such super-fund can be tagged with appropriate typing to allow a hierarchical structure of funds to form autonomously ... This achievement would mark the most mature stage of the RealSafe network realization and most complex structure upon it.

Deregulation of Funds - Baskets of RSOs instead

To avoid reporting and oversight associated with running a fund, the Fund structures noted may be created a bit differently. Specifically, what makes a fund a fund, is that the underlying RSO tokens are held by the Fund itself. Rather, a system is proposed where, for example, the mechanism suggesting the fund “NJ shopping malls” does not take the extra step of actually creating the fund, but rather recommends the basket of RSOs to the potential investor and provides the feature to buy into them at the correct proportions. The system can be directed to automatically buy into or sell out of the basket to expand or contract the basket as new RSOs are added to the RealSafe network that may fit criteria for inclusion into the basket of RSOs known as “NJ shopping malls”.

Section 10 - Liens, applicable laws, and taxes

Disclosures

Regardless whether an asset reports earnings in fiat, ETH or RST, it is the trust administrator’s responsibility to ensure applicable laws are in compliance via disclosure via the RealSafe Issues system, posting of documentation at the RSO_url or filing of documents in the real world.

Losses

If an RSO asset generates a loss, and requires cash cover, a RealSafe issue known as Cash **Cover Loss (CCL)** may be voted upon to effect proportionate liquidation of Tokens saleable as ETH to the manager to cover the loss. The alternative would be that the vote allows for foreclosure or bankruptcy of the underlying asset. The detail of the Issue put up for vote should be clearly specified.

Generation of a Lien

Owners may not place additional liens without 100% voting approval. Such lien is voted for under the “Misc” Issue type because its result would not involve any action to be taken in the RealSafe system other than recording the outcome of the vote. Any liens of course should be reported in the RSO_url and as dividend projections may be lowered due to the lien, the estimated value of the RSO should be adjusted by the manager even though the value of the underlying asset supporting the lien might not be affected by the lien itself.

Removing an asset from the RSO

Distressed assets and assets in pre-bankruptcy may vote to be sold or auctioned on or off platform. Off platform is simply a “misc” Issue where the income is disseminated as capital distribution. On-platform involves a special Issue type, **Asset Token Sale (ATS)** the outcome of which auto-generates a new RSO to the successful bidder.

Other disclosures

Governmental offers may be listed but must detail investor protection in place and also any guarantees, sovereign or otherwise. Concessions and any investment initiatives must also be clearly detailed. Other special situations transactions must disclose procedures and risks adequately. All transaction owners and all trust representatives are responsible for ensuring compliance with local regulation.

From this document, a formal development process may begin.

Thank you for reading.

V0.3

Disruption of the Exchange-Traded Fund. Extending Ownership, Tradability, Liquidity and Governance of any Asset and Real World Organization to Structures which can Co-exist on a Single Blockchain with Autonomous Regulation and No Forced Settlement Date.

We, at RealSafe LLC invite early participation in pre-purchase of RSO structures and asset registration credits.

Ken Silverman

kensilverman1@gmail.com

James Yen

jyen@iontrading.co